PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

EILEEN DONDERO FOLEY COUNCIL CHAMBERS
CITY HALL, MUNICIPAL COMPLEX, 1 JUNKINS AVENUE

6:00 PM Meeting Begins **December 15, 2022**

AGENDA

REGULAR MEETING 6:00pm

I. PRESENTATIONS

A. Receive a presentation and consider a recommendation to the City Council to adopt the proposed **FY2024- 2029 Capital Improvement Plan**.

II. APPROVAL OF MINUTES

A. Approval of the November 17, 2022 meeting minutes. *(Expected start time 7:00 pm)*

III. DETERMINATIONS OF COMPLETENESS

SUBDIVISION REVIEW

A. The request of Port Harbor Land, LLC (Owner and Applicant), for property located at 2 Russell Street requesting Lot Line Revision Approval to adjust the boundary lines on three lots. (LU-22-111)

B. The request of Jonathan Watson Sobel Revocable Trust (Owner), for property located at 49 Sheafe Street requesting preliminary and final subdivision approval to subdivide one (1) lot into two (2) lots. (LU-22-179)

SITE PLAN REVIEW

A. The request of Port Harbor Land, LLC (Owner and Applicant), for property located at 2 Russell Street requesting Site Plan Approval for the construction of 80 residential units, commercial space, and parking in three buildings. (LU-22-111)

B. The request of Tom Balon and EightKPH, LLC (Owner and Applicant), for property located at 161 Deer Street requesting Site Plan Review approval for the construction of a four (4) story building to include a penthouse, commercial space, 19 dwelling units, and associated site improvements. (LU-22-173)

C. The request of Seaport Realty LLC (Owner), for property located at 85 Daniel Street requesting Site Plan Approval to add a two-story rear addition and convert the existing structure into a four unit building consisting of 4 apartments. (LU-22-75)

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

A. The request of **Jason A.** and **Kristin E. Britt (Owners)**, for property located at **29 Versailles Avenue** requesting Conditional Use Permit approval as permitted under Section 10.815 of the Zoning Ordinance to create a Garden Cottage (Accessory Dwelling Unit). Said property is shown on Assessor Map 222 Lot 61 and is located within the General Residence A (GRA) District. (LU-22-200)

B. The request of **Port Harbor Land, LLC (Owner and Applicant),** for property located at **2 Russell Street** requesting Lot Line Revision Approval to adjust the boundary lines on three lots to create one lot with 18,237 square feet (0.418 acres) of lot area, one lot with 52,651 square feet (1.209 acres) of lot area, and one lot with 19,141 square feet (0.429 acres) of lot area. Said properties are located on Assessor Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21 and lie within the Character District 5 (CD5), North End Incentive Overlay District, Historic District, and the Downtown Overlay District. (LU-22-111)

C. The request of **Port Harbor Land, LLC (Owner and Applicant),** for property located at **2 Russell Street** requesting Site Plan Approval for the construction of 80 residential units, commercial space, and parking in three buildings with associated community space, paving, utilizes, landscaping, and other site improvements including three proposed land transfers to allow for the realignment of the Russell Street & Deer Street intersection and for the City's future construction of a roundabout at Russell Street and Market Street (Land transfer area 1 is proposed from Map 119 Lot 4 to the City of Portsmouth. Land transfer areas 2 and 3 are from Map 119 Lot 1-1C to the City of Portsmouth); Conditional Use Permit Approval to provide 334 parking spaces on separate lots where 334 spaces are required as permitted under Section 10.1112.62 of the Zoning Ordinance; and Conditional Use Permit Approval to allow a 40,000 square foot building footprint within the CD5 as permitted under 10.5A43.43 of the Zoning Ordinance. Said properties are located on Assessor Map 118 Lot 28, Map 124 Lot 12, Map 125 Lot 21, Map 119 Lot 4, and Map 119 Lot 1-1C and lie within the Character District 5 (CD5),

North End Incentive Overlay District, Historic District, and the Downtown Overlay District. (LU-22-111)

D. The request of **Tom Balon and EightKPH, LLC (Owner and Applicant),** for property located at **161 Deer Street** requesting Site Plan Review approval for the construction of a four (4) story building to include a penthouse, commercial space, 19 dwelling units, and associated site improvements. Said property is shown on Assessor Map 125 Lot 17-3 and lies within the Character District 5 (CD5), Downtown Overlay, North End Incentive, and Historic Districts. (LU-22-173)

E. The request of **Seaport Realty LLC (Owner),** for property located at **85 Daniel Street** requesting Site Plan Approval to add a two-story rear addition and convert the existing structure into a four unit building consisting of 4 apartments with associated stormwater, utility and site improvements. Said property is shown on Assessor Map 107 as Lot 8 and lies within the Character District 4 (CD4) and Historic Districts. (LU-22-75)

F. The request of **Jonathan Watson Sobel Revocable Trust (Owner)**, for property located at **49 Sheafe Street** requesting preliminary and final subdivision approval to subdivide one (1) lot with an area of 5,402 s.f. and 50.55 ft. of continuous street frontage on Sheafe Street and 22.93 feet of frontage on Custom House Court into two (2) lots as follows: Proposed lot 1 with an area of 1,855 s.f. and 22.93 ft. of continuous street frontage on Custom House Court; and Proposed Lot 2 with an area of 3,548 s.f. and 50.55 ft of continuous street frontage on Sheafe Street. Said property is shown on Assessor Map 107 Lot 21 and lies within the CD4 and Historic Districts. (LU-22-179)

G. The request of **Darren Kenny (Owner),** for property located at **800 Mcgee Drive** requesting a Wetland Conditional Use Permit under section 10.1017. This project proposes a disturbance of 168 s.f. within the 100' wetland buffer zone. This application proposes constructing a 10 x 12' shed on top of 2" of crushed stone in an area that is 12 x 14' within the wetland buffer. The applicant is proposing an area that is farthest from the wetland edge and has already done invasive species removal on site and within the 25' vegetated buffer strip. Said property is shown on Assessor Map 219 Lot 45-6 and lies within the Single Residence B (SRB) District. (LU-22-208)

H. The request of **Jaws LJ Jaws Brindamour Revocable Trust** and **SC Brindamour Revocable Trust (Owners)**, and **Luke J. Brindamour (Applicant),** for property located at **653 Greenland Road** requesting Conditional Use Permit approval as permitted under Section 10.814.50 of the Zoning Ordinance to create a Detached Accessory Dwelling Unit in an existing Garage. Said property is shown on Assessor Map 259 Lot 31 and is located within the Single Residence B (SRB) District. (LU-22-228)

V. CITY COUNCIL REFFERALS

A. Review and discuss Phase II Regulatory Amendments and set a public hearing date for consideration.

VI. OTHER BUSINESS

A. **Gregory and Amanda Morneault (Owners)**, for the property located at **137 Northwest Street** requesting a 1-Year Extension to the Planning Board approval for a Wetland Conditional Use Permit granted on January 27, 2022. (LU-20-222)

B. **2422 Lafayette Road Associates LLC (Owner),** and **Torrington Properties Inc. (Applicant),** for property located at **2454 Lafayette Road** requesting a 1-year Extension to the Planning Board approval for Site Plan and CUP permits granted on December 30, 2021. (LU-21-192)

C. Chairman's Updates and Discussion Items

D. Board Discussion of Regulatory Amendments and Other Matters

VII. ADJOURNMENT

**Members of the public also have the option to join this meeting over Zoom. A unique meeting ID and password will be provided once you register. To register, click on the link below or copy and paste this into your web browser:*

https://us06web.zoom.us/webinar/register/WN_yALGNh0WSB2451cYdwULFg

City of Portsmouth
Planning Department
1 Junkins Ave, 3rd Floor
Portsmouth, NH
(603)610-7216

Memorandum

To: Planning Board
From: Beverly Mesa-Zendt, Planning Director
Peter Stith, Planning Manager
Date: December 15, 2022
Re: Recommendations for the December 15, 2022 Planning Board Meeting

---

I. PRESENTATIONS

A. Receive a presentation and consider a recommendation to the City Council to adopt the proposed **FY2024- 2029 Capital Improvement Plan.**

Background

The Capital Improvement Plan (CIP) is both a financial and infrastructure planning tool that sets forth a multi-year schedule and financing strategies for accomplishing public capital projects that both maintain safe quality city infrastructure and assist in the achievement of Citywide Goals. Careful development of and adherence to the CIP ensures that needed capital projects are accomplished within the City's financial capability. In combination with the annual City budget, the Capital Improvement Plan has a significant impact on the planned allocation of fiscal resources, and is thus one of the most important documents considered by the City Council.

State/Local Regulatory Context

RSA 674.5: Capital Improvement Program

"674:5 Authorization. – In a municipality where the planning board has adopted a master plan, the local legislative body may authorize the planning board to prepare and amend a recommended program of municipal capital improvement projects projected over a period of at least 6 years.

…

The capital improvements program may encompass major projects being currently undertaken or future projects to be undertaken with federal, state, county and other public funds. The sole purpose and effect of the capital improvements program shall be to aid the mayor or selectmen and the budget committee in their consideration of the annual budget."

City Charter

City Charter Section 7.6 - Capital Program:

The Manager shall prepare and submit to the Council a six (6) year capital program at least three (3) months prior to the final date for submission of the budget. The program shall include:

- *A general summary of its content;*
- *A list of all capital improvements proposed during the next six (6) fiscal years;*
- *Cost estimates, methods of financing, recommended time schedules for each improvement; and*
- *Estimating annual operating and maintenance costs.*

The purposes of the CIP is to:

1. Implement needed improvements on a scheduled basis
   - Provides a complete picture of the City's major development needs
   - Coordinates activities of various City departments and agencies
   - Assists in implementing recommendations of the City's Master Plan
2. Forecast future allocation of fiscal resources
   - Establishes fiscal priorities for projects
   - Aids in the proper utilization of funding sources
3. Help plan for future City expenditures
   - Discourages piecemeal improvements and duplication of expenditures
4. Ensure capital project needs are provided within the City's financial capability
   - Informs the taxpayers of anticipated future improvements
   - Helps to schedule major projects to avoid large fluctuations in the tax rate

Plan Development Process

The capital planning process is coordinated by the Finance and Planning Departments under the direction of the City Manager. Capital project requests are initially formulated by City Department Heads and submitted to the Finance Department. Members of the public may also submit project requests, which are reviewed by City Departments and incorporated into the departmental project submissions as appropriate. This year's process introduced an additional opportunity for public involvement with the November 3, 2022 CIP Subcommittee meeting where citizens requests were reviewed and additional citizen input was invited.

CIP projects originate from three sources.

- Capital Improvement Plan from the Prior Fiscal Year
- City Staff
- Citizen Requests

Citizen Requests

This year the City received 104 citizen requests, nearly double any previous year. Process enhancements included:

- A simplified submittal form,
- Broader public outreach, and
- More opportunities to submit requests including Viewpoint, QR code and paper submittals.

Of the 104 requests, staff combined duplicative requests to come up with 84 unique project requests. Staff further sorted the requests into those that were CIP eligible (58) and those requests that were better served by other processes (26). At their November 3rd meeting, the City Council CIP Subcommittee took some time to review the citizen requests and receive additional public input on those requests. The Subcommittee provided preliminary feedback on citizen requests to be considered in the draft CIP. The Finance Department has incorporated the Subcommittee's recommendations into the revised CIP before the Planning Board. Citizen Requests can be found in Appendix I of the CIP.

Staff Submittals and Updates

Staff works to update the prior year's CIP projects to reflect the current status, project needs and costing. After city departments and residents submit their new requests for capital project, staff works with the City Manager to prioritize them by utilizing the following criteria:

- **Project requirements** – Is the project required to meet legal, compliance, or regulatory requirements?
- **Timing** – How soon does the project need to be implemented to address the needs identified?
- **Strategic alignment** – To what extent is the project aligned with other city projects, policies, processes?
- **Public value** – How much value does the outcome of this project provide to the general public? How much public support is there for implementing this project?
- **Finance planning** – Is the project fundable in the time frame identified, are there available funding sources for this project?

Although the factors above are consistently utilized in the prioritization process, other factors, such as urgent community needs or public health and safety, may also contribute to the final project placement, allowing the process to be nimble and responsive to emerging community needs.

Planning Board Advisory Committee and City Council Adoption

The Planning Board has appointed a three member Advisory Committee to review the projects in the draft CIP. The Advisory Committee met on December 5, 2022 to review the proposed staff CIP projects with staff representatives from

each department. The Finance Department has incorporated the Advisory Committee's recommendations into the draft CIP before the Planning Board. The Planning Board should invite additional public comment and vote to recommend the adoption of the document to the City Council. The City Council will review the proposed CIP, hold a public hearing, and adopt the CIP in accordance with City Charter requirements. Once adopted, the CIP is utilized in the development of the annual budget in accordance with RSA 674.5.

Timeline

- August 18, 2022. Planning Board Presentation regarding CIP Process and Schedule *Completed*
- August 22, 2022. City Council Presentation regarding CIP Process and Schedule
- September 30, 2022. Deadline for citizen project suggestions to be submitted. These citizen requests will be circulated to the appropriate department for consideration. *Completed*
- October 7, 2022. City Departments submit CIP project requests (new and updated) to Finance *Completed*
- November 3, 2022. City Council Subcommittee meets to review Citizens Request Projects *Completed*
- November 17, 2022. Planning Board CIP Public Information Presentation *Completed*
- December 5, 2022. Planning Board CIP Advisory Committee meets with *each department to review and prioritize capital requests Completed*
- ***December 15, 2022. Planning Board votes to recommend the CIP to City Council for adoption***
- January City Council Work Session on the CIP (with Presentation) on CIP
- February City Council Public Hearing on CIP
- March City Council votes to adopt CIP

Planning Department Recommendation

1) Receive additional public comment and vote to recommend adoption of the Capital Improvement Plan to the City Council.

II. APPROVAL OF MINUTES

A. Approval of the November 17, 2022 minutes.

Planning Department Recommendation

1) Board members should determine if the draft minutes include all relevant details for the decision making process that occurred at the November 17, 2022 meeting and vote to approve meeting minutes with edits if needed.

III. DETERMINATION OF COMPLETENESS

SUBDIVISION REVIEW

A. The request of Port Harbor Land, LLC (Owner and Applicant), for property located at 2 Russell Street requesting Lot Line Revision Approval to adjust the boundary lines on three lots. (LU-22-111)

B. The request of Jonathan Watson Sobel Revocable Trust (Owner), for property located at 49 Sheafe Street requesting preliminary and final subdivision approval to subdivide one (1) lot into two (2) lots. (LU-22-179)

Planning Department Recommendations

1) *Vote to determine that the applications are complete according to the Subdivision Regulations, (contingent on the granting of any required waivers) and to accept the applications for consideration.*

SITE PLAN REVIEW

A. The request of Port Harbor Land, LLC (Owner and Applicant), for property located at 2 Russell Street requesting Site Plan Approval for the construction of 80 residential units, commercial space, and parking in three buildings.

B. The request of Tom Balon and EightKPH, LLC (Owner and Applicant), for property located at 161 Deer Street requesting Site Plan Review approval for the construction of a four (4) story building to include a penthouse, commercial space, 19 dwelling units, and associated site improvements. (LU-22-173)

C. The request of Seaport Realty LLC (Owner), for property located at 85 Daniel Street requesting Site Plan Approval to add a two-story rear addition and convert the existing structure into a four unit building consisting of 4 apartments. (LU-22-75)

Planning Department Recommendations

1) *Vote to determine that these applications are complete according to the Site Plan Review Regulations, (contingent on the granting of any required waivers under Sections III and IV of the agenda) and to accept the application for consideration.*

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

A. The request of **Jason A.** and **Kristin E. Britt (Owners)**, for property located at **29 Versailles Avenue** requesting Conditional Use Permit approval as permitted under Section 10.815 of the Zoning Ordinance to create a Garden Cottage (Accessory Dwelling Unit). Said property is shown on Assessor Map 222 Lot 61 and is located within the General Residence A (GRA) District. (LU-22-200)

Project Background

The applicant is proposing the conversion of an existing one car garage to a 216 SF Garden Cottage.

Project Review, Decisions, and Recommendations

City staff have provided an analysis of the proposed ADU. See below for more details.

Staff Review | Garden Cottage Standards 10.815.30

Different from an Accessory Dwelling Unit, a Garden Cottage that complies with the standards of Section 10.815 is otherwise exempt from the residential density standards of the Zoning Ordinance (e.g. minimum lot area per dwelling unit). Garden Cottages must comply with the standards in Section 10.815.30 (below). Staff has conferred with the Building Official regarding the size and configuration of the proposed unit and has verified general compliance with the building code. Under state law, ADU minimum and maximum size may be specified by the local municipality but the municipality cannot require ADUs to be smaller than 750 SF. The Zoning Ordinance provides for a maximum 600 SF for a garden cottage but no minimum.

In granting a conditional use permit for a garden cottage, the Planning Board may modify a specific dimensional or parking standard set forth in Section 10.815.30, including requiring additional or reconfigured off-street parking spaces, provided that the Board finds such modification will be consistent with the required findings in Section 10.815.40.

Garden cottages must comply with standards set forth in the following sections of the Zoning Ordinance:

- 10.814.10
- 10.814.30
- 10.815.20
- 10.815.30
- 10.815.40

Required Standards (10.815.30)	Meets Standard	Does Not Meet Standard	Comments
10.815.31. The existing accessory building shall not be expanded either vertically or horizontally, other than through the addition of a front entry not to exceed 50 sq. ft., or a side or rear deck not to exceed 300 sq. ft.	√		No expansion proposed
10.815.32 The garden cottage shall not be larger than 600 sq. ft. gross floor area.	√		Total 216 SF
10.815.33 A garden cottage that is within the required yard for the zoning district shall not have any windows or doors higher than eight feet above grade facing the adjacent property.	√		The rear of the garage is in the setback but no windows are located on that side of the structure.
T10.815.34. The principal dwelling unit and the garden cottage shall not be separated in ownership (including by condominium ownership); and either the principal dwelling unit or the garden cottage shall be occupied by the owner of the property.	√		Required condition per zoning ordinance.
Where municipal sewer service is not provided, the septic system shall meet NH Water Supply and Pollution Control Division requirements for the combined system demand for total occupancy of the premises.	√		Property is on municipal water service.

Planning Department Recommendation

1) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.815.40 and to adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.815.40 and to adopt the findings of fact as amended and read into the record.

2) Vote to grant the conditional use permit with the following stipulation.

2.1) In accordance with [Sec. 10.814.70] of the Zoning Ordinance, the owner is required to obtain a certificate of use from the Planning Department verifying compliance with all standards of [Sec. 10.814], including the owner-occupancy requirement, and shall renew the certificate of use annually.

The carport may not be enclosed without providing new direct egress for the unit.

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

It is recommended that Item IVB and IVC be discussed together and voted on separately.

A motion is required to consider these items together.

B. The request of **Port Harbor Land, LLC (Owner and Applicant),** for property located at **2 Russell Street** requesting Lot Line Revision Approval to adjust the boundary lines on three lots to create one lot with 18,237 square feet (0.418 acres) of lot area, one lot with 52,651 square feet (1.209 acres) of lot area, and one lot with 19,141 square feet (0.429 acres) of lot area. Said properties are located on Assessor Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21 and lie within the Character District 5 (CD5), North End Incentive Overlay District, Historic District, and the Downtown Overlay District. (LU-22-111)

C. The request of **Port Harbor Land, LLC (Owner and Applicant),** for property located at **2 Russell Street** requesting Site Plan Approval for the construction of 80 residential units, commercial space, and parking in three buildings with associated community space, paving, utilizes, landscaping, and other site improvements including three proposed land transfers to allow for the realignment of the Russell Street & Deer Street intersection and for the City's future construction of a roundabout at Russell Street and Market Street (Land transfer area 1 is proposed from Map 119 Lot 4 to the City of Portsmouth. Land transfer areas 2 and 3 are from Map 119 Lot 1-1C to the City of Portsmouth); Conditional Use Permit Approval to provide 334 parking spaces on separate lots where 334 spaces are required as permitted under Section 10.1112.62 of the Zoning Ordinance; and Conditional Use Permit Approval to allow a 40,000 square foot building footprint within the CD5 as permitted under 10.5A43.43 of the Zoning Ordinance. Said properties are located on Assessor Map 118 Lot 28, Map 124 Lot 12, Map 125 Lot 21, Map 119 Lot 4, and Map 119 Lot 1-1C and lie within the Character District 5 (CD5), North End Incentive Overlay District, Historic District, and the Downtown Overlay District. (LU-22-111)

Project Background

The proposed project will include lot line adjustments for three existing lots and the construction of three buildings consisting of office, retail/commercial, and residential uses. Building 1 is a proposed 4-story office building at the corner of Deer Street and Maplewood Avenue, Building 2 is a proposed 5-story mixed-use residential building at the corner of Deer Street and Russell Street with below ground parking, first floor residential lobby, commercial space and parking and

56 upper floor residential units, and Building 3 is a proposed 5-story mixed-use residential building along Russell Street with first floor residential lobby and commercial space and 24 upper floor residential units.

The existing condition of the proposed redevelopment parcels does not provide any stormwater treatment. The proposed development will provide stormwater treatment to runoff from the new buildings and surface pedestrian ways via stormwater filtration treatment units. In addition, underground detention systems have been incorporated into the design to address peak runoff rates from the site. The stormwater management system is described in further detail in the enclosed Drainage Analysis.

The project also includes on-site and off-site improvements including wide sidewalks, roadway improvements, community space, lighting, landscaping, and utilities. The proposed development will provide landscape improvements including an enhanced streetscape and plantings, plaza area at the redesigned intersection of Deer Street and Russell Street, and community space areas. The proposed project is providing 22,353 SF of off-site, pedestrian orientated and park space public improvements.

Project Review, Discussion, and Recommendations

The project has been before the Technical Advisory Committee and the Historic District Commission. See below for details.

Historic District Commission Review

The Historic District Commission, at its regularly scheduled meeting of Wednesday, August 10, 2022, considered the application for the construction of (3) new freestanding structures (4-5 story mixed-use and office buildings) as per plans on file in the Planning Department. The Commission voted to grant the Certificate of Approval with the following stipulations:

1) Option 1 shall be used showing the dual raised platforms for the open space area aligned with Portwalk Place.
2) If allowed by variance or the Zoning Ordinance, Option 2 for the raised cornice shall be used.
3) If the garage screen on the rear of the building is changed, the applicant shall return for Administrative Approval.
4) The applicant shall do a mockup of a portion of the garage screen prior to installation.
5) The applicant shall do a mockup to show the pattern of the blended bricks prior to installation.

Technical Advisory Committee Review

The Technical Advisory Committee, at its regularly scheduled meeting of Tuesday,

November 1, 2022, considered the application for Lot Line Revision, and Site Plan Approval and Conditional Use Permit Approval to provide 334 parking spaces on separate lots where 334 spaces are required; and Conditional Use Permit Approval to allow a building footprint up to 40,000 SF within the CD5 as permitted under 10.5A43.43 of the Zoning Ordinance. The Committee voted to recommend:

- Lot Line Revision **approval**;
- Site Plan **approval**; and
- Both Conditional Use Permit **approvals** to the Planning Board with the following **conditions**:

Conditions to be satisfied prior to the Planning Board Submittal date:

1) Applicant will replace the speed bump with a speed hump and will include construction details consistent with ITE standards.
2) The farthest east parking space on Deer Street next to the fire hydrant will be eliminated.
3) The applicant will work with the Department of Public Works to coordinate the relocation of the Sewer Main.
4) Applicants will update plans to include a high visibility at-grade crosswalk with striping and ADA compliant ramps and RRFB's to be reviewed and approved by the Department of Works.
5) Per NHDOT standards applicant will update plans to show all street lights on either end of crosswalks will be no less than 10 feet from the nearest edge of the crosswalk with luminaire centered over the travel lane of the street, and RRFB push buttons will be no more than 5 feet from the edge of crosswalks and no more than 10 inches from level landings.
6) Applicant will update plans to provide sharrow markings every 100 feet.
7) Per MUTCD requirements, applicant will update plans, related notes, and sign summary (sheet C-503) to include a ONE WAY sign at the intersection of Maplewood Ave and the rear shared roadway and a DO NOT ENTER sign at the end of the rear shared roadway at its intersection with Green St.
8) Applicant will remove the left/through pavement arrow on Deer Street at Russell Street.
9) Applicant will provide borings data and other supporting information to demonstrate why on-site infiltration is not practical in this redevelopment. Data and supporting information to be submitted to CMA Engineers for reviewed. The Department of Public Works to review final comments by CMA.
10) The applicant will update plans, related notes, and sign summary (sheet C-503) to include the installation of a MUTCD-compliant stop sign (R1-1) at the northerly end of the rear access aisle where it meets Green Street.
11) Applicant will update plans, related notes, and sign summary (sheet C-503) to provide clearly visible signage to indicate "No Public Parking" along both ends of the driveway northerly driveway to deter public parking and unnecessary on-site conflicts.

12) Applicant will provide a letter with their next submission addressing the changes that have been made to the plan set as a result of the TAC stipulations of approval or further project development.
13) Applicant will update the access easement plan to provide a temporary construction access easement across the entirety of map 119 lot 4.

Subsequent to Planning Board approval but prior to Building Permit issuance:

14) Proposed tree grates, planting details, and planting species will be require approval from the Trees and Greenery Committee.
15) Proposed changes to on-street parking will require approval from Parking and Traffic Safety Committee and the City Council.
16) Applicant will copy the City of Portsmouth DPW on all related correspondence because this infrastructure lies within the City's right-of-way and can affect traffic operations at the adjacent municipal intersections. The location of the proposed sign cluster at the northerly end of the rear access aisle will need to be coordinated with the ultimate location of the Green Street sidewalk / railroad crossing treatment.
17) Fair share contribution for the roundabout at Market Street and Russell Street.

The updated submission, as provided to the Planning Board, satisfies all stipulations above with the exception of those identified as *Subsequent to Planning Board approval but prior to Building Permit issuance.* The Department of Public Works reviewed the most recent submittal and plans and have requested the following additional conditions be included with a Planning Board approval:

- "No public parking" sign at garage entrance from backside.
- An easement will be needed across map 119, map 4 for the construction of the round-a-bout.
- Applicant will copy the City of Portsmouth DPW on all related correspondence with CSX. This project abuts CSX property and could affect railroad and vehicular operations in adjacent municipal intersections. The location of the proposed sign cluster at the northerly end of the rear access aisle will need to be coordinated with the ultimate location of the Green Street sidewalk / railroad crossing treatment.

Planning Department Recommendation
Subdivision

1) *Vote to find that the Subdivision (Lot Line Revision) application meets the standards and requirements set forth in the Subdivision Rules and Regulations to adopt the findings of fact as presented.*

(Alt.) Vote to find that the Subdivision (Lot Line Revision) application meets the standards and requirements set forth in the Subdivision Rules and Regulations to adopt the findings of fact as amended and read into the record.

2) Vote to grant subdivision approval with the following stipulations:

2.1) The subdivision plan, and any easement plans and deeds shall be recorded simultaneously at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.2) Property monuments shall be set as required by the Department of Public Works prior to the filing of the plat;

2.3) GIS data shall be provided to the Department of Public Works in the form as required by the City;

Site Plan Approval

1) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented.

(Alt.) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as amended

2.) Vote to grant Site Plan Approval with the following conditions:

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.4) "No public parking" sign at garage entrance from backside (show on plans).

2.5) An easement will be needed across map 119, map 4 for the construction of the round-a-bout. .

2.6) Applicant will copy the City of Portsmouth DPW on all related correspondence with CSX. This project abuts CSX property and could affect railroad and vehicular operations in adjacent municipal intersections. The location of the proposed sign cluster at the northerly end of the rear access aisle will need to be coordinated with the ultimate location of the Green Street sidewalk / railroad crossing treatment.

2.7) The site plan, and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.8) The applicant shall prepare a Construction Management and Mitigation Plan (CMMP) for review and approval by the City's Legal and Planning Departments.

2.9) The applicant shall agree to pay for the services of an oversight engineer,

to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.10) Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit https://www.cityofportsmouth.com/publicworks/stormwater/ptap

Prior to the issuance of a Certificate of Occupancy or release of the bond:

2.11) The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance.

2.12) A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.

Conditional Use Permit – 10.1112.62 Shared Parking

1) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.1112.62 and to adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.1112.62 and to adopt the findings of fact as amended and read into the record.

2) Vote to find that the number of off-street parking spaces provided will be adequate and appropriate for the proposed use of the property and to grant the conditional use permit as presented with the following condition:

2.1) The shared parking arrangement shall be secured by a covenant acceptable to the City and recorded at the Rockingham County Registry of Deeds.

Conditional Use Permit – 10.5A43.43 Maximum Building Footprint

1) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.5A43.43 and to adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.5A43.43 and to adopt the findings of fact as amended and read into the record.

2) Vote to grant the conditional use permit to allow a building footprint up to 40,000 SF within the CD5 as permitted under 10.5A43.43.

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

D. The request of **Tom Balon and EightKPH, LLC (Owner and Applicant),** for property located at **161 Deer Street** requesting Site Plan Review approval for the construction of a four (4) story building to include a penthouse, commercial space, 19 dwelling units, and associated site improvements. Said property is shown on Assessor Map 125 Lot 17-3 and lies within the Character District 5 (CD5), Downtown Overlay, North End Incentive, and Historic Districts. (LU-22-173)

Project Background

The project consists of the replacement of the existing one story commercial building at 161 Deer Street with a new 4 story with a Penthouse building with the associated and required site improvements. The new building is intended to be known as 88 Maplewood Avenue. The re-development will include parking below street level. The site redevelopment consists of replacing the existing structure with a new structure. The site is known as DSA Lot 5; part of the Consolidation and Subdivision Approved by the Planning Board in 2016. The property was a part of the overall planning for development on the 5 lots and had a proposed building designed; however that building did not go through and complete the permit process entirely. This application revises the proposed building and as such is in HDC review.

Project Review Discussion and Recommendations

The application has been before the Historic District Commission and the Technical Advisory Committee. See below for more details.

Historic District Commission

The Historic District Commission, at its regularly scheduled meeting of Wednesday, October 05, 2022, considered the application for the demolition of the existing structure and the new construction of a new mixed-use building as per plans on file in the Planning Department. The Commission voted to grant the Certificate of Approval as presented.

Technical Advisory Committee Review

The Technical Advisory Committee, at its regularly scheduled meeting of Tuesday, October 4, 2022, considered the application for Preliminary and Final Subdivision and voted to recommend approval to the Planning Board at the October meeting with the following stipulations:

1) Applicant will update plan set to reflect proposed 70 Maplewood address.

2) Applicant will update landscaping plan to add additional tree to northern corner of- the property as presented to TAC at the 11/1 meeting.
3) Applicant will update the demolition plan to show existing water and sewer service is terminated at the main. Updates to be reviewed by Department of Public Works.
4) New proposed location of wayfinding sign (Sheet C-3) will be reviewed and approved by Department of Public Works.
5) New layout of the sprinkler room will be reviewed and approved by Department of Public Works.
6) Applicant will updated street lighting circuit to originate from a streetlight or street light pull box for Department of Public Works review and approval.
7) Updated language pertaining to extending existing water stubs to building (call out box in southern corner of proposed building, sheet C-5) will be reviewed and approved by DPW.
8) Applicant will update standard light pole detail to be consistent with the City standard pole detail for Department of Public Works review and approval.
9) Applicant will work with Eric Eby to determine proper width of parking level entrance.
10) Applicant will make a $50,000 contribution to the Maplewood Avenue corridor video detection signal system.
11) Applicant will include all approvals from Trees and Greenery with the updated submission
12) Applicant will update plans to include revised existing easement and proposed easement(s) with Eversource, and will coordinate with the Department of Public Works to create a new easement around the drain line to the west of the building if needed. Applicant will also confirm how access rights are being provided across adjacent lot and provide an access easement if needed. If total number of easements equals 3 or more, applicant will provide an easement plan with unique identifiers and corresponding table.
13) Applicant will update plans, related notes, and detail sheets to include a pedestrian and vehicle warning at the garage entrance to be reviewed and approved by Department of public works.
14) Applicant will present a redesign of the pocket park entrance at Maplewood Avenue to increase radii of walkway and encourage better pedestrian circulation to Nick Cracknell in the Planning Department.
15) Applicant will provide a letter with their next submission addressing the changes that have been made to the plan set as a result of the TAC stipulations of approval or further project development.

The updated submission, as provided to the Planning Board, satisfies all stipulations above with the exception of #6 which has been revised by Public Works to read:

- Install new pull box on each side of conduit crossing Deer Street for street lights.

In addition to stipulation #6, DPW have reviewed and have requested the following additional conditions be included with a Planning Board approval:

- Proposed easement to Eversource must be expanded to include area over conduit crossing map 125, lot 17-2.
- Provide detail sheet on pedestrian/vehicle warning sign/device at garage entrance.

Planning Department Recommendation

1) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented.

(Alt.) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as amended

2.) Vote to grant Site Plan Approval with the following conditions:

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.1) Proposed easement to Eversource must be expanded to include area over conduit crossing map 125, lot 17-2

2.2) Provide detail sheet on pedestrian/vehicle warning sign/device at garage entrance.

2.3) The site plan and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.4) The applicant shall prepare a Construction Management and Mitigation Plan (CMMP) for review and approval by the City's Legal and Planning Departments.

2.5) The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.6) Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit

https://www.cityofportsmouth.com/publicworks/stormwater/ptap

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a certificate of occupancy and release of the surety:-

2.7) *Install new pull box on each side of conduit crossing Deer Street for street lights.*

2.8) *The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance;*

2.9) *A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.*

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

E. The request of **Seaport Realty LLC (Owner),** for property located at **85 Daniel Street** requesting Site Plan Approval to add a two-story rear addition and convert the existing structure into a four unit building consisting of 4 apartments with associated stormwater, utility and site improvements. Said property is shown on Assessor Map 107 as Lot 8 and lies within the Character District 4 (CD4) and Historic Districts. (LU-22-75)

Project Background

This site review application is for renovations and site improvements to an existing, fully developed site. The existing building consists of dormant retail units and a residential unit with paved parking accessed via Custom House Court. This application contemplates executing the approved additions to the existing building and converting the property into four residential units, with associated improvements. The proposal is to create two residential units of less than 500 square feet on the first floor with associated home office space, and two larger units on the second and third floors. Four off street parking spaces are to be provided, two in the garage and two outside. Proposed improvements include renovation to the interior and exterior of the building, adding the dormers and garage, removal and relocation of utility pole in the rear of the site, relocating the sewer connection in the rear of the site and installation of new parking areas.

Project Review Discussion and Recommendations

The application has been before the Historic District Commission and the Technical Advisory Committee. See below for more details.

Historic District Commission

The Historic District Commission, at its regularly scheduled meeting of **Wednesday, May 04, 2022**, considered the application for allow new construction to an existing structure (remove and replace rear addition and remove and replace roof with new dormers) and renovations to an existing structure (replace windows, siding, trim, and front stoop) as per plans on file in the Planning Department. The Commission voted to **grant** the Certificate of Approval with the following stipulations:

1) Half-screens shall be used.
2) The applicant shall return for Administrative Approval for the garage doors to ensure that they have a smooth texture and not a faux wood grain finish.

Technical Advisory Committee Review

The Technical Advisory Committee, at its regularly scheduled meeting of **Tuesday November 1 , 2022,** considered the application for Site Plan Approval The Committee voted to recommend approval to the Planning Board with the following condition:

To be satisfied prior to the Planning Board submittal date:

1) Applicant will work with Fire and Building department to confirm proposed lift system is compliant with building and life safety codes or will request a parking Conditional Use Permit.

Conditions have been satisfied with the updated submission as provided to the Planning Board. The applicant met with the Building Official, Shanti Wolph on 11/3/22 and 11/4/22 to review the parking lift information and it was determined that the proposed model lift and layout would be compliant with applicable codes.

Planning Department Recommendation

1) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented.

(Alt.) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as amended

2.) Vote to grant Site Plan Approval with the following conditions:

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.1) The site plan, and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

F. The request of **Jonathan Watson Sobel Revocable Trust (Owner)**, for property located at **49 Sheafe Street** requesting preliminary and final subdivision approval to subdivide one (1) lot with an area of 5,402 s.f. and 50.55 ft. of continuous street frontage on Sheafe Street and 22.93 feet of frontage on Custom House Court into two (2) lots as follows: Proposed lot 1 with an area of 1,855 s.f. and 22.93 ft. of continuous street frontage on Custom House Court; and Proposed Lot 2 with an area of 3,548 s.f. and 50.55 ft of continuous street frontage on Sheafe Street. Said property is shown on Assessor Map 107 Lot 21 and lies within the CD4 and Historic Districts. (LU-22-179)

Project Background

The applicant is seeking to subdivide one lot into two lots for estate planning purposes. The existing lot has 3 buildings. Proposed Lot 1 will contain one of the existing buildings and will be 1,855 square feet in lot size and will have access from Sheafe Street from the walkway that extends from Sheafe Street to the front door. The walkway will continue to provide access to Lot 2. Parking for Lot 1 is in a garage accessed from Custom House Court. Proposed Lot 2 contains two buildings and will be 3,548 square feet in lot size. Both lots will maintain Sheafe Street addresses.

Project Review Discussion and Recommendations

This project was before the Technical Advisory Committee. For more information see below.

Technical Advisory Committee Review

The Technical Advisory Committee, at its regularly scheduled meeting of **Tuesday December 6, 2022,** considered the application for preliminary and final subdivision approval. The Committee voted to recommend approval to the Planning Board with the following condition:

1) Water service line shall be installed and functioning prior to recordation of the subdivision plat.

Planning Department Recommendation

1) Vote to find that the Subdivision application meets the standards and requirements

set forth in the Subdivision Rules and Regulations to adopt the findings of fact as presented.
(Alt.) Vote to find that the Subdivision application meets the standards and requirements set forth in the Subdivision Rules and Regulations to adopt the findings of fact as amended and read into the record.

2) Vote to grant preliminary and final subdivision approval with the following stipulations:

2.1) Water service line shall be installed and functioning prior to recordation of subdivision plat;

2.2) Property monuments shall be set as required by the Department of Public Works prior to the filing of the plat;

2.3) GIS data shall be provided to the Department of Public Works in the form as required by the City;

2.4) The subdivision plan, and any easement plans and deeds shall be recorded simultaneously at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

G. The request of **Darren Kenny (Owner),** for property located at **800 Mcgee Drive** requesting a Wetland Conditional Use Permit under section 10.1017. This project proposes a disturbance of 168 s.f. within the 100' wetland buffer zone. This application proposes constructing a 10 x 12' shed on top of 2" of crushed stone in an area that is 12 x 14' within the wetland buffer. The applicant is proposing an area that is farthest from the wetland edge and has already done invasive species removal on site and within the 25' vegetated buffer strip. Said property is shown on Assessor Map 219 Lot 45-6 and lies within the Single Residence B (SRB) District. (LU-22-208)

Project Background

Applicant is requesting a wetland conditional use permit to install a new shed on their property. The shed is located completely within the 100' wetland buffer where there is currently lawn.

Project Review Discussion and Recommendations

This application has been before the Conservation Commission. See below for more details.

Conservation Commission

The Conservation Commission, at its regularly scheduled meeting of Wednesday, November 09, 2022, considered the application for a Wetland Conditional Use Permit under section 10.1017. The Commission voted to recommend approval of the Wetland Conditional Use Permit to the Planning Board with the following stipulations.

1. The Conservation Commission recommends the property owner follow NOFA land care standards on the site. http://www.organiclandcare.net/sites/default/files/nofa_organic_land_care_standards_6thedition_2017_opt.pdf
2. The Conservation Commission recommends the property owner consider native plantings where bittersweet currently is being removed.

Staff Analysis

1. The land is reasonably suited to the use activity or alteration.

Applicant is proposing to construct a new shed in an area of lawn just beyond the driveway. The shed itself will be 10x12 in size and will be placed on a crushed stone area 12x14 in size. The size of the stone area will allow for infiltration of stormwater from the shed below the footprint

area of the shed. Given that this will be located approximately 75 feet from the edge of the wetland, the proposal is within the 100' wetland buffer where grass currently exists.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.

Given the side yard setback, the shed is being placed 10 feet from the property line and cannot be placed in front of the principal structure. The entire backyard of the property is within the 100' wetland buffer therefore the location is as far from the resource as practicable.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.

The small size of the shed, distance from the wetland and the infiltration proposed with the crushed stone will reduce any impacts due to the new impervious surface area of 120square feet.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.

The shed is proposed to be located over an existing lawn area. Given the lawn area will be replaced with crushed stone and the shed there is some lawn area being removed. This work will amount to 168 square feet of new crushed stone in an area of lawn. The applicant has been removing invasive species from the wetland buffer. A planting plan for the buffer would be appropriate in order to establish a more effective buffer along the shoreline of the pond.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.

Given the small size of the project there significant impacts are not expected. A plan for replanting the 25' vegetated buffer would easily offset any impacts from the proposed shed.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.

The applicant has been removing a well-established area of Asian bittersweet. The shoreline would benefit from the planting of native plants in this location.

Planning Department Recommendation

1) Vote to find that the Conditional Use Permit application meets the criteria set forth in

Section 10.1017.50 and to adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.1017.50 and to adopt the findings of fact as amended and read into the record.

2) Vote to grant the Wetland Conditional Use permit with the following conditions:

2.1) The Conservation Commission recommends the property owner follow NOFA land care standards on the site. http://www.organiclandcare.net/sites/default/files/nofa_organic_land_care_standards_6thedition_2017_opt.pdf
2.2) The Conservation Commission recommends the property owner consider native plantings where bittersweet currently is being removed.

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

H. The request of **Jaws LJ Jaws Brindamour Revocable Trust** and **SC Brindamour Revocable Trust (Owners)**, and **Luke J. Brindamour (Applicant),** for property located at **653 Greenland Road** requesting Conditional Use Permit approval as permitted under Section 10.814.50 of the Zoning Ordinance to create a Detached Accessory Dwelling Unit in an existing Garage. Said property is shown on Assessor Map 259 Lot 31 and is located within the Single Residence B (SRB) District. (LU-22-228)

Project Background

*A*n accessory dwelling unit that is constructed within an accessory building on a lot containing one single-family dwelling. A detached accessory dwelling unit may be connected to the single-family dwelling by an unenclosed structure (such as a breezeway) or by an unconditioned space.

The proposal is for the conversion for an existing detached garage and recreation space to a detached accessory dwelling unit. Accessory Dwelling Unit regulations (ADU) were adopted in 2017, the garage appears to have been built in 2010 allowing this to qualify for a garden cottage – meeting all the requirements for a garden cottage except the maximum size of 600 SF. The applicant has submitted this as a detached ADU and requires the following modification to standards shown below in the staff analysis.

Attached accessory dwelling units must comply with standards set forth in the following sections of the Zoning Ordinance:

- 10.814.10
- 10.814.20
- 10.814.30
- 10.814.50

Project Review, Decisions, and Recommendations

City staff have provided an analysis of the proposed ADU. See below for more details.

Staff Review | Detached Accessory Dwelling Unit Standards 10.814

In granting a conditional use permit for an accessory dwelling unit, the Planning Board may modify a specific standard set forth in Sections 10.814.52 through 10.814.56, including requiring additional or reconfigured off-street parking

spaces, provided that the Board finds such modification will be consistent with the required findings in Section 10.814.60.

Required Standards (10.814.50)	Meets Standard	Does Not Meet Standard	Comments
10.814.51 In a General Residence district, the combination of the principal dwelling and the DADU shall comply with the minimum lot area per dwelling unit specified for the district. (For example, the required lot area for a single-family dwelling with a DADU in the GRA district is 7,500 sq. ft. per dwelling unit multiplied by 2 dwelling units, or 15,000 sq. ft.) In a Single Residence or Rural district, a lot with a DADU shall comply with the minimum lot area for the district, but need not comply with the minimum lot area per dwelling unit.	√		Lot area for the property is 22,215 SF
10.814.52 The DADU shall not have more than two bedrooms and shall not be larger than 750 sq. ft. gross floor area; except that the maximum gross floor area shall be 1,000 sq. ft. if the lot area is 2 acres or more.	√		One bedroom, 660 SF DADU is proposed
10.814.53 The DADU shall be clearly subordinate to the principal single-family dwelling in scale, height and appearance.	√		The DADU is 24 feet to the peak of the roof including the second floor with dormer. The primary residence is 35 feet in from and 45 feet in the rear. The DADU presents as a smaller out building/garage.
10.814.531 The façade area of the DADU that faces a street on which the lot has frontage shall be no more than 40 percent of the combined visible façade areas of the principal single-family dwelling and the DADU facing the same street.	√		Applicant indicates that the total façade percentage as viewed from Versailles is 39%.
10.814.532 The building height of the DADU shall be less than the building height of the principal single-family dwelling.	√		The DADU is 24 feet to the peak of the roof including the second floor with dormer. The primary residence is 35 feet in the front and 45 feet in the rear.
10.814.533 The DADU shall be architecturally consistent with the principal dwelling through the use of similar materials, detailing	√		The proposed DADU appears to be the same material and color with the same trim details as the primary structure. The roof pit, presence of dormers, and roof material are similar to the primary structure.

Required Standards (10.814.50)	Meets Standard	Does Not Meet Standard	Comments
10.814.54 The DADU shall be separated from the single-family dwelling by at least 20 feet.		√	Aerial measurement suggests that the building separation is 20 feet. Applicant has indicated that the distance is just short of 20 feet.
10.814.55 The front wall of the DADU shall be set back at least 10 feet further from the front lot line than the existing front wall of the single-family dwelling.		√	As a corner lot, the building has two front lot lines. The existing garage is not within the required setback but is forward of the existing dwelling unit.
10.814.56 No portion of the DADU shall be located in any required front yard, regardless of the location of the single-family dwelling.	√		DADU is 30ft from the front lot line in accordance with required front yard.

Planning Department Recommendation

1) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.814.60 and to adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.814.60 and to adopt the findings of fact as amended and read into the record.

2) Vote to grant the conditional use permit with the following modification and conditions.

- *Modification to 10.814.54 to allow the DADU shall be separated from the single-family dwelling by less than 20 feet.*
- *Modification to 10.814.55 to allow the front wall of the DADU to be closer to the front lot line than the existing front wall of the single-family dwelling.*

2.1) In accordance with [Sec. 10.814.70] of the Zoning Ordinance, the owner is required to obtain a certificate of use from the Planning Department verifying compliance with all standards of [Sec. 10.814], including the owner-occupancy requirement, and shall renew the certificate of use annually.

V. CITY COUNCIL REFERRALS

Review and discuss Phase II Regulatory Amendments and set a public hearing date for consideration.

Project Background

On February 7, 2022, the City Council established the Land Use Committee to look at diversifying land use regulations within the City. As part of the first package of amendments, the Land Use Committee has focused on advancing the citywide housing goals identified by City Council in their 2022-2023 Goals. These objectives were refined on February 27, 2022 and include:

1. Increase diversity of housing types and price points;
2. Remove regulatory barriers for housing diversification in neighborhoods (ADUS) with context sensitive design and consideration to impacts to traffic, on street parking and other infrastructure impacts;
3. Restructure incentives to deliver greater public benefit in workforce housing construction; and
4. Identify and maximize partnerships, coalitions, and funding opportunities to deliver affordable housing.

Regulatory Amendment Work Plan and Phase 1 Amendments

On April 9, 2022, the Land Use Committee approved transmittal of the draft 2021 Regulatory Amendment Work Plan to City Council. The City Council approved the Regulatory Work Plan on April 18, 2022. The work plan consists of three phases:

1. **Phase 1: Code Clean-Up – Building Height Standards. *Adopted***
   Purpose: Improve regulatory implementation and align with legislative intent. Eliminate ambiguous sections that result in unintended consequences.
2. **Phase 2: Accessory Dwelling Unit Amendments (ADUs) *Under Consideration***
   Purpose: Remove barriers and expand the number of eligible properties for ADUs and Senior Housing Facilities.
3. **Phase 3: Incentive Amendments Anticipated Drafts in 2023**
   Purpose: Adjust incentives to place a higher emphasis on Workforce Housing.

Phase 2 Public Involvement Summary Report

On July 11, 2022, staff presented a Public Involvement Summary Report to City Council. The Summary Report provided an overview of outreach that had taken place in the spring of 2022 and was developed to inform regulatory

amendments. The report identified the first two phases of outreach summarized below.

1. **Small Focus Group Meetings.** Four meetings took place over the course of two weeks from June 9th to June 15th when staff and a representative/moderator from the Land Use Committee met with representatives from four groups of stakeholders:
    - Previous applicants,
    - Architects,
    - Engineers, and
    - Neighborhood representatives.

2. **ADU Direct Abutter Survey.** A survey was distributed to over 200 direct abutters of approved ADUs built within the last five years.

Key Themes

The following key themes were identified in response to public outreach and were summarized in the Public Involvement Summary Report.

1. Process navigational support is needed.
2. Dimensional relief is both an obstacle and a protection.
3. There is considerable cost and risk in the process and this is a deterrent.
4. Regulations for ADUs need to be clear and implementable.
5. Foremost among abutters concerns are: parking, short term rentals, neighborhood character, and buffering and separation.
6. Abutters were generally positive about ADU's.

The third phase of public involvement will take place through public meetings and public hearings. This phase has includes public input provided in the Land Use Committee.

Phase 2 Amendments Timeline | Land Use Committee Review and Recommendation

The Land Use Committee reviewed public input provided in the Public Involvement Summary Report on July 1, 2022, the product of outreach to stakeholders, ADU abutters, and subject matter experts. On August 5, 2022, the Land Use Committee began their work to develop draft ADU amendments to address City Council adopted goals. Between August and November, the Land Use Committee received significant public input and has continued to work with consultant Rick Taintor to respond to public input in the refinement of ADU regulations. On November 4, 2022, the Land Use Committee finalized recommended amendments and forwarded those to City Council for referral to the Planning Board.

On November 14, the City Council referred draft regulations to the Planning Board for a recommendation.

Planning Department Recommendation

Vote to set date for a public hearing at the regular Planning Board meeting scheduled for January 19, 2022 and to schedule a workshop for one of the two dates identified in the recent poll to the Planning Board:

- *December 22, 2022 or*
- *January 26, 2022.*

VI. OTHER BUSINESS

A. Gregory and Amanda Morneault (Owners), for the property located at **137 Northwest Street** requesting a 1-Year Extension to the Planning Board approval for a Wetland Conditional Use Permit granted on January 27, 2022. (LU-20-222)

Project Background

The Planning Board, at its regularly scheduled meeting of Thursday, January 27, 2022, considered the application for Wetland Conditional Use Permit under Section 10. 1017 of the Zoning Ordinance to impact 5,062 square feet of wetland buffer and 45 square feet of tidal wetland. The Board voted to grant the request.

10.1017.72 The Planning Board may grant a one-year extension of a conditional use permit if the applicant submits a written request to the Planning Board prior to the expiration date. Any other extension may be granted only after a new public hearing on the reconsideration of the application.

Planning Department Recommendation

1) Vote to grant a one-year extension of the Wetland Conditional Use Permit as requested.

VI. OTHER BUSINESS

B. 2422 Lafayette Road Associates LLC (Owner), and **Torrington Properties Inc. (Applicant),** for property located at **2454 Lafayette Road** requesting a 1-year Extension to the Planning Board approval for Site Plan and CUP permits granted on December 30, 2021. (LU-21-192)

The Planning Board, at its regularly scheduled meeting of **Tuesday, December 30, 2021**, considered the application to amend a previously granted Conditional Use Permit to provide less than required parking in accordance with Section 10.1112.14 of the Zoning Ordinance and Conditional Use Permits for increased housing density and for increased building height as allowed by Section 10.5B72.10 and Section 105B72.20 of the Zoning Ordinance, and development within the Gateway Neighborhood Mixed Use District in accordance with Section 10.5B40 of the Zoning Ordinance; and for Site Plan Review to demolish the existing structure and construct a five (5) story structure with 95 condominium units with 20% designated as workforce housing units and provide 21,896 square feet of community space The Board voted to grant the approval with conditions.

10.246.10 A conditional use permit shall expire unless a building permit is obtained within a period of one year from the date granted, unless otherwise stated in the conditions of approval. The Board may, for good cause shown, extend such period by as much as one year if such extension is requested and acted upon prior to the expiration date. No other extensions may be requested.

Section 2.14 of the Site Plan Review Regulations provide that the Planning Board may, for good cause shown, extend such period by as much as one (1) year if requested and acted upon prior to the expiration date.

Planning Department Recommendation

1) Vote to grant a one-year extension to the Planning Board Approval of the Site Plan and Conditional Use Permit as requested.

VI. OTHER BUSINESS

C. Chairman's Updates and Discussion Items

D. Board Discussion of Regulatory Amendments and Other Matters
Vote to schedule a workshop for one of the two dates identified in the recent poll to the Planning Board:

- *December 22, 2022 or*
- *January 26, 2022.*

VII. ADJOURNMENT

City of Portsmouth, New Hampshire

Capital Improvement Plan

Planning Board: December 15, 2022
City Council Public Hearing: February 6, 2023
City Council Adoption: March 6, 2023

FY 2024 - FY 2029

This page is intentionally blank.

CAPITAL IMPROVEMENT PLAN

FY 2024 to FY 2029

CITY OF PORTSMOUTH, N.H.

CITY COUNCIL
Deaglan McEachern, Mayor
JoAnna "Jo" Kelley, Assistant Mayor
John Tabor
Josh Denton
Beth Moreau
Andrew Bagley
Vincent Lombardi
Rich Blalock
Kate Cook

CITY MANAGER
Karen Conard

PLANNING BOARD MEMBERS

Rick Chellman, Chair, and Member of the CIP Advisory Committee
Corey Clark, Vice Chair, and member of the CIP Advisory Committee
Beth Moreau, City Council Representative
Jane Begala
Peter Harris
James Hewitt
Greg Mahanna, Member of the CIP Advisory Committee
Peter Harris
Andrew Samonas, Alternate

Karen Conard, City Manager, Ex-officio
Joe Almeida, Facilities Manager
Peter Stith, Planning Board Liaison

Prepared By
Beverly M. Zendt, Planning Director
Andrew Purgiel, Finance Department
Abby Mills, Finance Department

This page is intentionally blank.

CAPITAL IMPROVEMENT PLAN

FY 2024 to FY 2029

Table of Contents

Section V: Appendix

Acronyms

ADA	Americans with Disabilities Act
A/V	Audio/Visual
B&M RR	Boston and Maine Railroad
BI	Buildings and Infrastructure
CB	Catch Basin
CDBG	Community Development Block Grant
CIP	Capital Improvement Plan
CISC	Complex Instruction Set Computing
CJIS	Criminal Justice Information Services
CMAQ	Congestion Mitigation Air Quality
CMS	Content Management System
COAST	Cooperative Alliance for Seacoast Transportation
COM/COMBO	Combined (Projects)
COOP	Continuity of Operations
CPR	Cardiopulmonary resuscitation
DOT	Department of Transportation
DPW	Department of Public Works
DSL	Data Subscriber Line
EF	Enterprise Fund
FD	Fire Department
FED	Federal
FEMA	Federal Emergency Management Association
FI	Finance Department
FY	Fiscal Year
GASB	Governmental Accounting Standards Board
GF	General Fund
GPM	Gallons Per Minute
HDMI	High Definition Multimedia
HDPE	High Density Polyethylene
HVAC	Heating, Ventilation, and Air Conditioning
IAFIS	Integrated Automated Fingerprinting Information System
IS	Information System
IT	Information Technology
LAN	Local Area Network
LCN	Liquid Crystal Display
LEED	Leadership in Energy and Environmental Design
LF	Linear Foot/Feet
LRTP	Long Range Transportation Plan
LTCP	Long Term Control Plan
LUCAS	Lund University Cardiac Assist System
LWAN	Local Wide Area Network
MAN	Metropolitan Area Network
MEP	Mechanical, Electrical and Plumbing
MPS	Megabytes per Second
MS WS	Microsoft Windows Server

MS4	Municipal Separate Storm Sewer System
MOU	Memorandum of Understanding
MUTCD	Manual on Uniform Traffic Control Devices
NFPA	National Fire Prevention Association
NH	New Hampshire
NHDOT	New Hampshire Department of Transportation
NHPA	New Hampshire Port Authority
NPDES	National Pollutant discharge Elimination System
OSHA	Occupational and Safety Health Administration
PD	Police Department
PDA	Pease Development Authority
PIT	Pease International Tradeport
PL	Planning Department
PPP	Public Private Partnership
PTS	Parking and Traffic Safety (Committee)
PW	Public Works
PY	Past Year(s)/Prior Year(s)
RC	Recreation Department
RISC	Reduced Instruction Set Computing
RMS/CAD	Records Management System/Computer Aided Dispatch
RPC	Rockingham Planning Commission
RTE	Route
SC	School Department
SCADA	Supervisory Control and Data Acquisition
SCBA	Self-contained Breathing Apparatus
SCP	Supplemental Compliance Plan
SD	Sewer Division
SMPO	Seacoast Metropolitan Planning Organization
SRF	State Revolving Loan Fund
SRTS	Safe Routes to School
SSES	Sewer System Evaluation Survey
STIP	State Transportation Improvement Plan
STYP	State Ten Year Transportation Plan
TBD	To Be Determined
TIP	Transportation Improvement Plan
TMA	Transportation Management Agency
TSM	Transportation System Management
VDI	Virtual Desktop Interface
VE	Vehicles and Equipment
VFD	Variable Frequency Drive
VMT	Vehicle Miles Traveled
VMw	Virtual Machine/VM Ware
WAN	Wide Area Network
WD	Water Division
WWTF	Waste Water Treatment Facility

Impact on Operating Budget

Description of box labeled "Impact on Operating Budget" is as follows:

1. **Reduce – will generate revenue**
   The project will generate some revenue to offset expenses.

2. **Reduce – will reduce Operating Cost**
   The project will reduce operating costs

3. **Negligible < $5,001**
   The project will generate less than $5,001 per year in increased operating expenditures.

4. **Minimal $5,001 to $50,000**
   The project will generate between $5,001 and $50,000 per year in increased operating expenditures.

5. **Moderate $50,001 to $100,000**
   The project will generate between $50,001 and $100,000 per year in increased operating expenditures.

6. **High $100,001 or more**
   The project will generate $100,001 or more annually in increased operating expenditures.

This page is intentionally blank.

RESERVED FOR PLANNING BOARD LETTER PAGE 1

RESERVED FOR PLANNING BOARD LETTER PAGE 2

RESERVED FOR PLANNING BOARD CERTIFICATE

This page is intentionally blank.

A Quick Guide to the

FY2024 – 2029 Capital Improvement Plan (CIP)

for the City of Portsmouth, New Hampshire

How does a project go from idea to finished?

Many projects in the Implementation Phase can be found on the City's Project Webpage as they progress. ***CityofPortsmouth.com/publicworks/projects***

#1 Project Need Identified

#2 CIP Project Submitted

#3 Project Funded (Budget/ Bond Authorization)

Planning Phase (CIP) (Timeline approx. 6 years)

#4

**** PROJECT TRANSITION ****

Project Moves *from* the **Planning Phase (CIP)** *to the* **Project Implementation Phase** .

#5 Feasibility Study/ Plan

#6 Design

#7 Coordinate with Synergistic Projects

#8 Project Construction

Project Implementation (Timeline Varies by Project)

Where do I find Information On . . . . ?

- Acronyms utilized in the CIP → Acronyms *(beginning on page 3)*
- Explanation of the Project Element Sheet → Introduction *(beginning on page 15)*
- Pay-as-you-go Funding Details → Section II: Method of Financing *(beginning on page 25)*
- Bonding/Debt Schedules → Section II: Method of Financing *(beginning on page 25)*
- Citizen Project Requests with Staff Analysis → Appendix I
- NHDOT Projects Occurring in Portsmouth (But not under control of City Staff) → Appendix II

A Quick Guide to the

FY2024 – 2029 Capital Improvement Plan (CIP)

for the City of Portsmouth, New Hampshire

CIP FY24 – FY29 By the Numbers

107 *Projects in the FY24-29 CIP*

9 *Vehicle & Equipment Projects (VE)*

40 *Buildings & Infrastructure Projects (BI)*

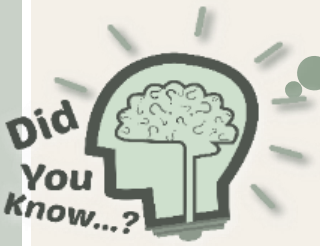
6 *Information System Management Projects (IS)*

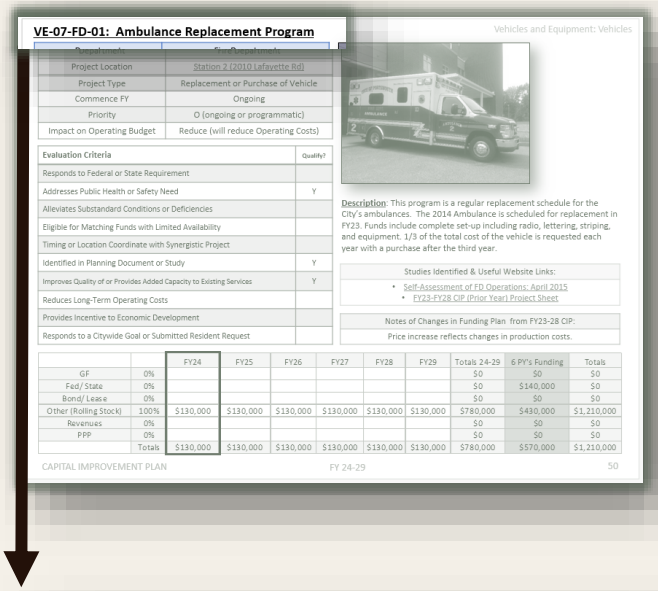
27 *Transportation Systems Management Projects (TSM)*

17 *Enterprise Funds (Water & Sewer) Projects (EF)*

8 *Combined Funds Projects (COM)*

Did you know the CIP Project Names Have Meaning?





VE-07-FD-01: Ambulance Replacement Program

Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Vehicles and Equipment: Vehicles

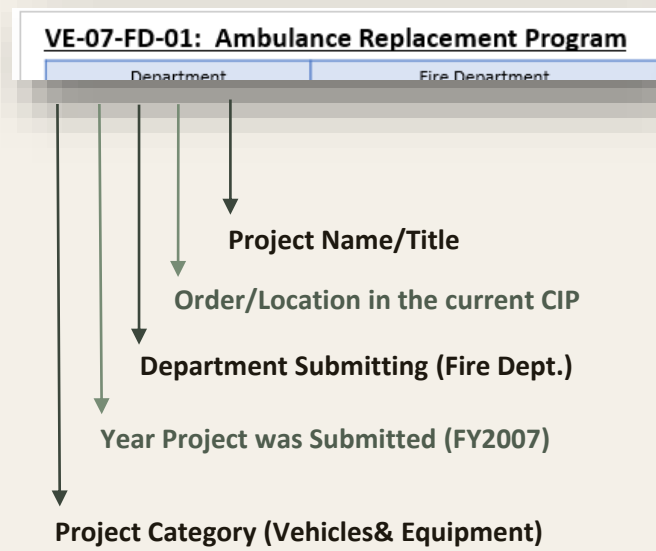
Description: This program is a regular replacement schedule for the City's ambulances. The 2014 Ambulance is scheduled for replacement in FY23. Funds include complete set-up including radio, lettering, striping, and equipment. 1/3 of the total cost of the vehicle is requested each year with a purchase after the third year.

Studies Identified & Useful Website Links:
- Self-Assessment of FD Operations: April 2015
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Price increase reflects changes in production costs.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 FY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$140,000	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	100%	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$780,000	$430,000	$1,210,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$780,000	$570,000	$1,210,000

CAPITAL IMPROVEMENT PLAN FY 24-29 50



Numbers as of 11/15/2022

SECTION I: INTRODUCTION

What is the CIP?

The Capital Improvement Plan (CIP) is both a financial and infrastructure planning tool that sets forth a multi-year schedule and financing strategies for accomplishing public capital projects that both maintain safe quality city infrastructure and assist in the achievement of Citywide Goals.

Careful development of and adherence to the CIP ensures that needed facilities are provided within the City's financial capability. In combination with the annual City budget, the CIP has a significant impact on the allocation of fiscal resources, and is thus one of the most important documents considered by the City Council.

What is the Purpose of the CIP?

- Implement needed improvements on a scheduled basis by:
  - Providing a comprehensive picture of the City's major development needs;
  - Coordinating activities of various City departments and agencies; and
  - Assisting in implementing recommendations of the City's Master Plan.
- Guides the allocation of fiscal resources by:
  - Establishing fiscal priorities for projects and
  - Balancing the use of funding sources.
- Help plan for future City expenditures by:
  - Discouraging piecemeal improvements and duplication of expenditures.
- Ensure that needed facilities are provided within the City's financial capability by:
  - Informing the taxpayers of anticipated future improvements
  - Helping to schedule major projects to reduce fluctuations in the tax rate
- Maintains an accessible and inclusive process for City residents by:
  - Welcoming City residents to submit project requests during the CIP Process;
  - The 6-year plan lays out upcoming capital needs and informs residents to proposed future major capital expenditures
  - Public input opportunities allow the public to comment on how capital monies are spent

What qualifies as a CIP project?

A capital improvement project is defined as a major fiscal expenditure that typically falls into one or more of the following categories:

- ✓ Land acquisition;
- ✓ Construction or expansion of a public facility, street, utility, or public infrastructure;
- ✓ Rehabilitation of a public facility or public infrastructure provided the cost is $50,000 or more;
- ✓ Design work or planning study related to a capital project or implementation of the Master Plan;
- ✓ Any item or piece of equipment, non-vehicular in nature, that costs more than $50,000 and has a life expectancy of 5 or more years; or
- ✓ Replacement and purchase of vehicles that have a life expectancy of more than 5 years or cost more than $50,000.

What is Infrastructure?

Infrastructure is the basic physical structures and facilities (i.e. city buildings, roads, sewer pipes, water systems, parks, etc.) needed for the operation of a municipality. Infrastructure impacts the public health, safety, and quality of life of the City's Community.

How is the CIP organized?

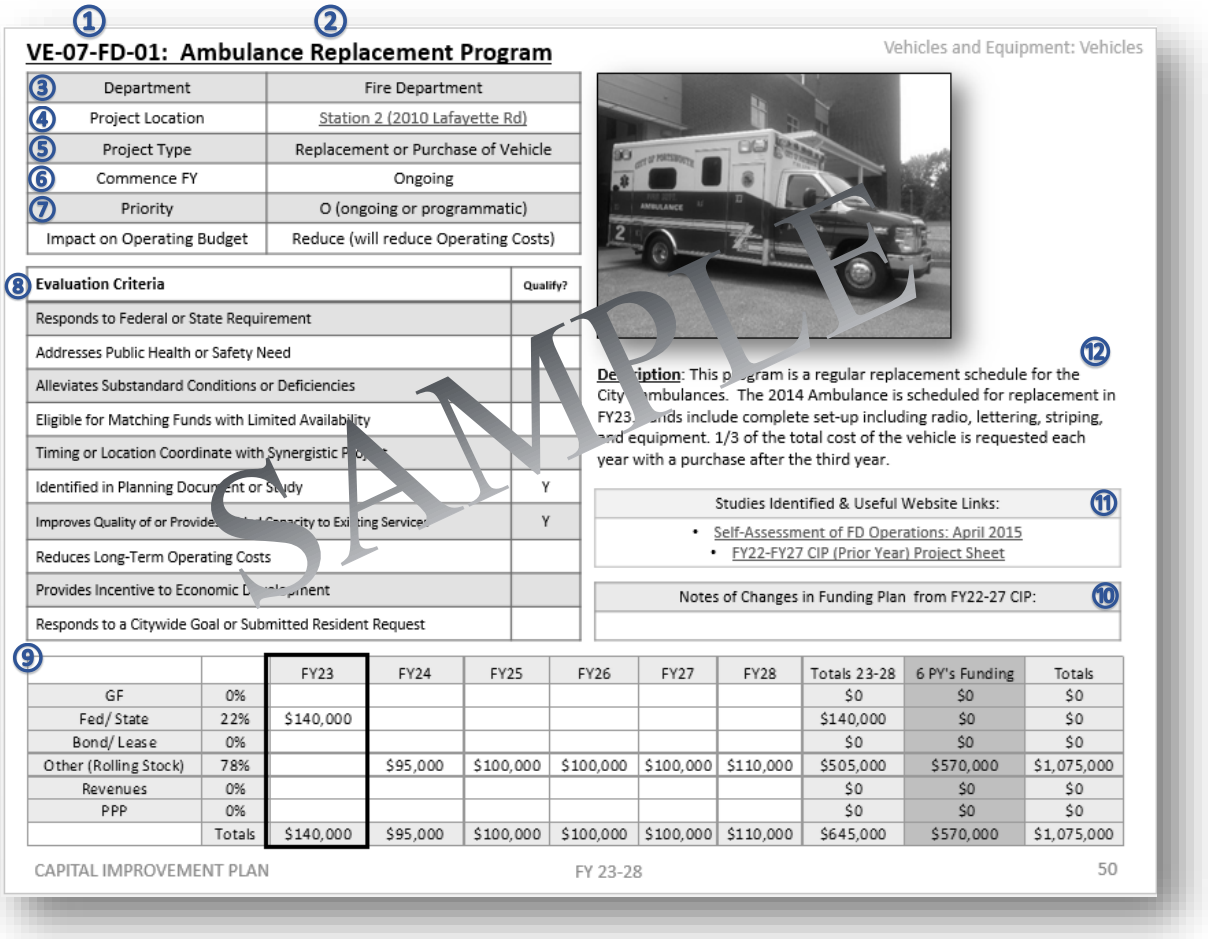
- Introduction – Introduction into the document and its content to aid the reader in gaining the information they desire for each proposed project.
- Method of Financing – Describes each of the funding sources proposed to enable the completion of each CIP Project.
- Financial Summary – Detailed financial summaries of the proposed projects within this document including an overall summary, capital outlay (general fund, pay-as-you-go funding), and debt schedule.
- Project Element Sheets – Each project is featured in a one to two page element sheet that details key information such as project timing, cost and funding source. Projects are divided into six (6) different categories.
- Appendices:
  - *Appendix I → Citizen Requests* - All Citizen Requested Projects, the Submitter's name and Project Requested as well as Staff Assessments regarding that request.
  - *Appendix II → NH DOT Portsmouth Projects* – A list of projects occurring within the Portsmouth city limits but are funded and operated by the State of NH.
  - *Appendix III → Studies Listed within the CIP* - A list of the studies cited throughout the document (many of which are linked to the studies online).
  - *Appendix IV → Historic Document Restoration Index* – A list of the City's Permanent Financial Documents requiring restoration as well as their proposed costing for restoration and preservation.
  - *Appendix V → Ward Maps* – Maps of all five (5) city wards: Each ward features a Facilities & Parks Map and a Sewer & Water Facilities Map as well as a list of streets in each ward.

Capital Improvement Plan Projects - the CIP Projects are split into six (6) distinct sections:

(VE) Vehicles and Equipment Projects that fund the purchase of a vehicle or piece of non-vehicular equipment.	**(BI) Buildings and Infrastructure** Projects that support or augment the infrastructure of the city's buildings, parks, playgrounds, and more.
(IS) Information System Projects that include the purchase or improvement of the information technology needs of the City.	**(TSM) Transportation Management** Projects that invest in the City's vehicular, bicycle and pedestrian throughways.
(EF) Enterprise Funds Projects that support or expand the city's infrastructure to provide high quality drinking water and/or collect wastewater.	**(COM) Combined Projects** Projects that require more than one funding source (General Fund, Enterprise Fund)

What information is on the Project Element Sheet?

Each of the projects has its own Project Elements Sheet featuring a wealth of information about each individual project proposal. The sample sheet below has numbers indicating specific features about the elements sheet that are described in detail below.



VE-07-FD-01: Ambulance Replacement Program (1) (2)

Vehicles and Equipment: Vehicles

(3) Department	Fire Department
(4) Project Location	Station 2 (2010 Lafayette Rd)
(5) Project Type	Replacement or Purchase of Vehicle
(6) Commence FY	Ongoing
(7) Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

(8) Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Projects	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Additional Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

(12) Description: This program is a regular replacement schedule for the City's ambulances. The 2014 Ambulance is scheduled for replacement in FY23. Funds include complete set-up including radio, lettering, striping, and equipment. 1/3 of the total cost of the vehicle is requested each year with a purchase after the third year.

(11) Studies Identified & Useful Website Links:
- Self-Assessment of FD Operations: April 2015
- FY22-FY27 CIP (Prior Year) Project Sheet

(10) Notes of Changes in Funding Plan from FY22-27 CIP:

(9)

		FY23	FY24	FY25	FY26	FY27	FY28	Totals 23-28	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	22%	$140,000						$140,000	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	78%		$95,000	$100,000	$100,000	$100,000	$110,000	$505,000	$570,000	$1,075,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$140,000	$95,000	$100,000	$100,000	$100,000	$110,000	$645,000	$570,000	$1,075,000

CAPITAL IMPROVEMENT PLAN FY 23-28 50

SAMPLE

Each project request includes the following information:

① **Project Number.** These numbers are broken down into 4 parts:

- Project Category
  - VE – Vehicles & Equipment
  - BI – Buildings & Infrastructure
  - IS – Information Systems Management
  - TSM – Transportation System Management
  - EF – Enterprise Funds
  - COM- Combined Funding

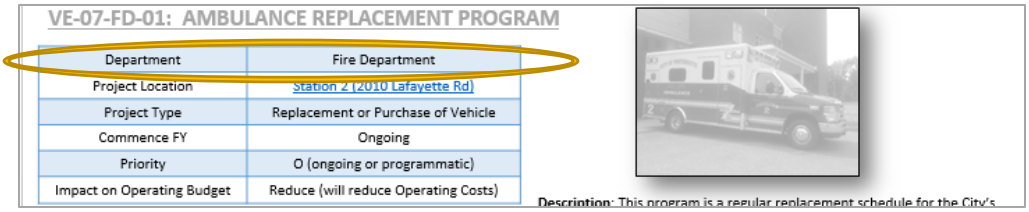
- Year of Project Submission
  - i.e. -07 → FY2007 Submission

- Submitting Department
  - FD – Fire Department
  - PD – Police Department
  - SC – School Department
  - LI – Public Library
  - FI – Finance Department
  - PL – Planning Department
  - RC – Recreation Department
  - CD – Community Development Department
  - PW – Public Works Department
  - PW/NH – Public Works & State of New Hampshire
  - PL/NH – Planning Department & State of New Hampshire
  - IT – Information Technology
  - WD – Water Division
  - SD – Sewer Division

- Location within the CIP
  - Projects are given a sequential number throughout the document.

② **Project Name**

③ Submitting Department(s)

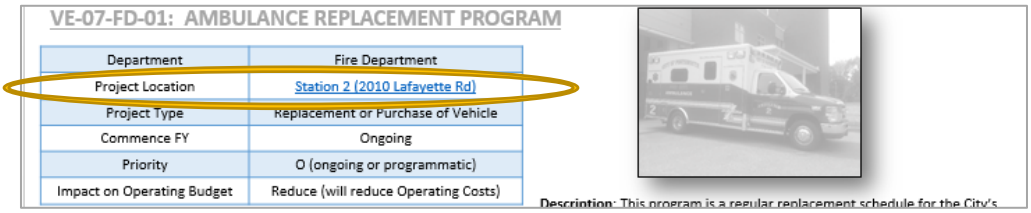


VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Description: This program is a regular replacement schedule for the City's

④ Project Location

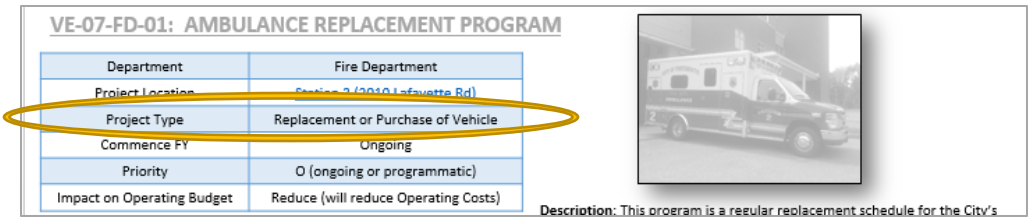


VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Description: This program is a regular replacement schedule for the City's

⑤ Project Type



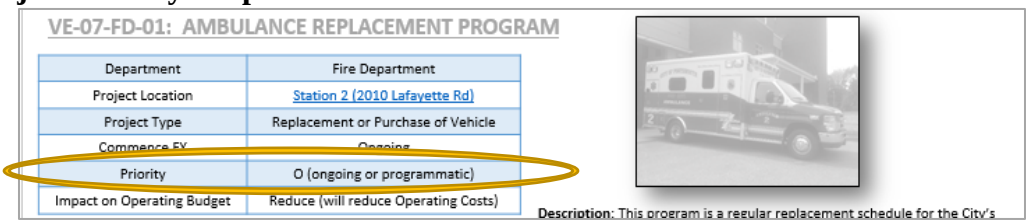
VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Description: This program is a regular replacement schedule for the City's

a. Land acquisition;
b. Construction or expansion of a new public facility or public infrastructure;
c. Non-recurring rehabilitation of a public facility or public infrastructure provided the cost is $50,000 or more;
d. Design work or planning study related to a capital project or implementation of the Master Plan;
e. Any item or piece of equipment, non-vehicular in nature, that costs more than $50,000 and has a life expectancy of 5 or more years; or
f. Replacement and purchase of vehicles which have a life expectancy of more than 5 years or cost more than $50,000.

⑥ Project Priority/Proposed Time Frame:



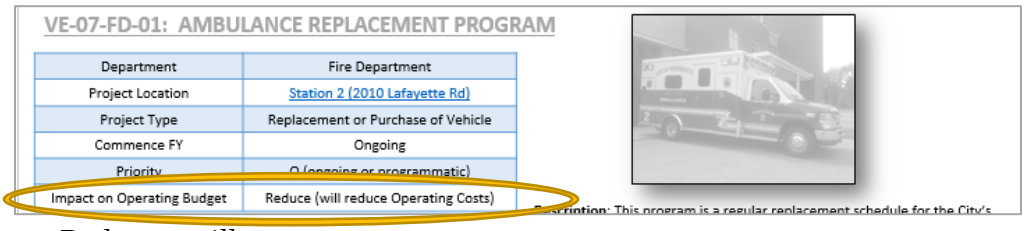
VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Description: This program is a regular replacement schedule for the City's

- (A) Implement within 3 years
- (B) Implement within 4 to 6 years
- (C) Implement after 6 years
- (O) Ongoing allocations of funding are required for this project

⑦ Impact on Operating Budget



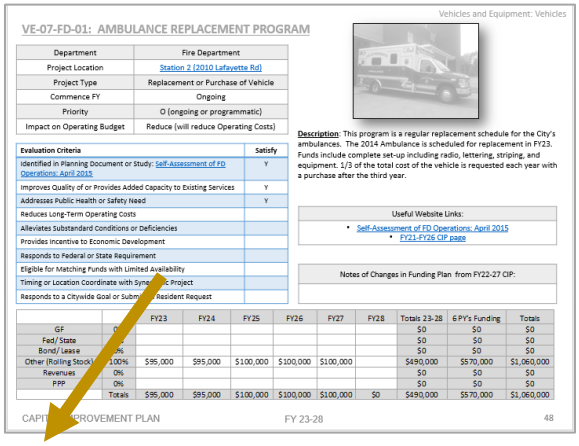
VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

- Reduce – will generate revenue
- Reduce – will reduce Operating Cost
- Negligible – < $5,001 Impact
- Minimal – $5,001 to $50,000
- Moderate – $50,001 to $100,000
- High – $100,001 or more

⑧ Evaluation Criteria (utilized in the prioritization process):

- Identified in planning document or study
- Improves quality of existing services
- Provides added capacity to existing services
- Addresses public health or safety need
- Reduces long-term operating costs
- Alleviates substandard conditions or deficiencies
- Provides incentive to economic development
- Responds to federal or state requirement
- Eligible for matching funds with limited availability



Vehicles and Equipment: Vehicles

VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Satisfy
Identified in Planning Document or Study: Self-Assessment of FD Operations: April 2015	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Addresses Public Health or Safety Need	Y
Reduces Long-Term Operating Costs	
Alleviates Substandard Conditions or Deficiencies	
Provides Incentive to Economic Development	
Responds to Federal or State Requirement	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This program is a regular replacement schedule for the City's ambulances. The 2014 Ambulance is scheduled for replacement in FY23. Funds include complete set-up including radio, lettering, striping, and equipment. 1/3 of the total cost of the vehicle is requested each year with a purchase after the third year.

Useful Website Links:
- Self-Assessment of FD Operations: April 2015
- FY21-FY26 CIP page

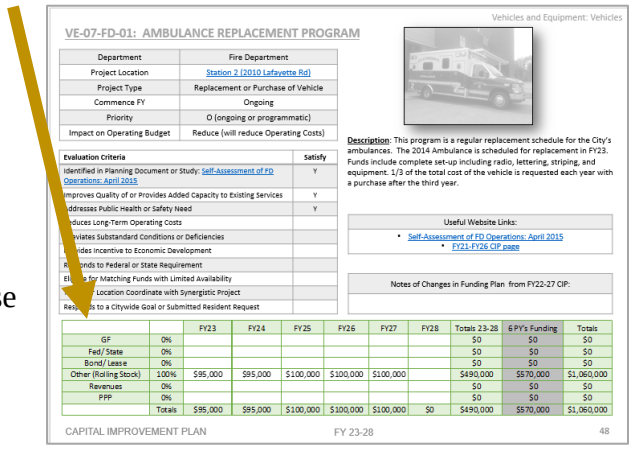
Notes of Changes in Funding Plan from FY22-27 CIP:

		FY23	FY24	FY25	FY26	FY27	FY28	Totals 23-28	6 FY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	100%	$95,000	$95,000	$100,000	$100,000	$100,000		$490,000	$570,000	$1,060,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$95,000	$95,000	$100,000	$100,000	$100,000	$0	$490,000	$570,000	$1,060,000

CAPITAL IMPROVEMENT PLAN FY 23-28 48

⑨ Cost Estimate and Proposed Funding Sources

- GF (General Fund) – Funded by Capital Outlay Funds
- Fed/State – Federal/State Funding
- Bond/Lease – Bond/Lease Borrowing
- Other (Rolling Stock) – Non-Operating Budget Funding
- Revenues – From Special Revenue/Enterprise Funds (Parking/Water/Sewer)
- PPP (Public Private Partnership) – Partnership funding through a private entity



Vehicles and Equipment: Vehicles

VE-07-FD-01: AMBULANCE REPLACEMENT PROGRAM

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Satisfy
Identified in Planning Document or Study: Self-Assessment of FD Operations: April 2015	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Addresses Public Health or Safety Need	Y
Reduces Long-Term Operating Costs	
Alleviates Substandard Conditions or Deficiencies	
Provides Incentive to Economic Development	
Responds to Federal or State Requirement	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This program is a regular replacement schedule for the City's ambulances. The 2014 Ambulance is scheduled for replacement in FY23. Funds include complete set-up including radio, lettering, striping, and equipment. 1/3 of the total cost of the vehicle is requested each year with a purchase after the third year.

Useful Website Links:
- Self-Assessment of FD Operations: April 2015
- FY21-FY26 CIP page

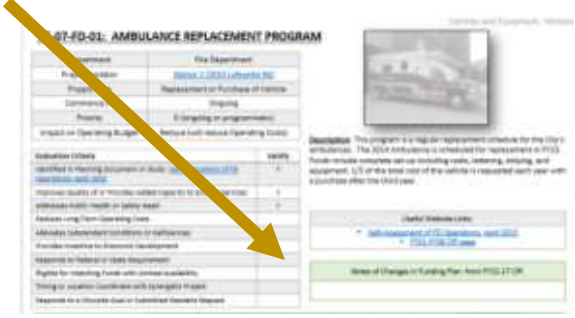
Notes of Changes in Funding Plan from FY22-27 CIP:

		FY23	FY24	FY25	FY26	FY27	FY28	Totals 23-28	6 FY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	100%	$95,000	$95,000	$100,000	$100,000	$100,000		$490,000	$570,000	$1,060,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$95,000	$95,000	$100,000	$100,000	$100,000	$0	$490,000	$570,000	$1,060,000

CAPITAL IMPROVEMENT PLAN FY 23-28 48

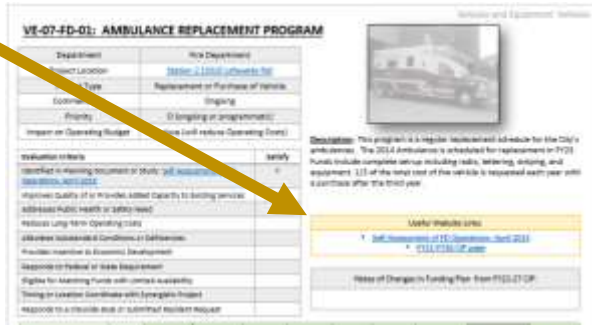
⑩ Notes of Changes in Funding Plan from Prior Year CIP

- Notes made by staff regarding funding request changes or timing request changes for a specific project from the prior year.



⑪ Useful Website Links

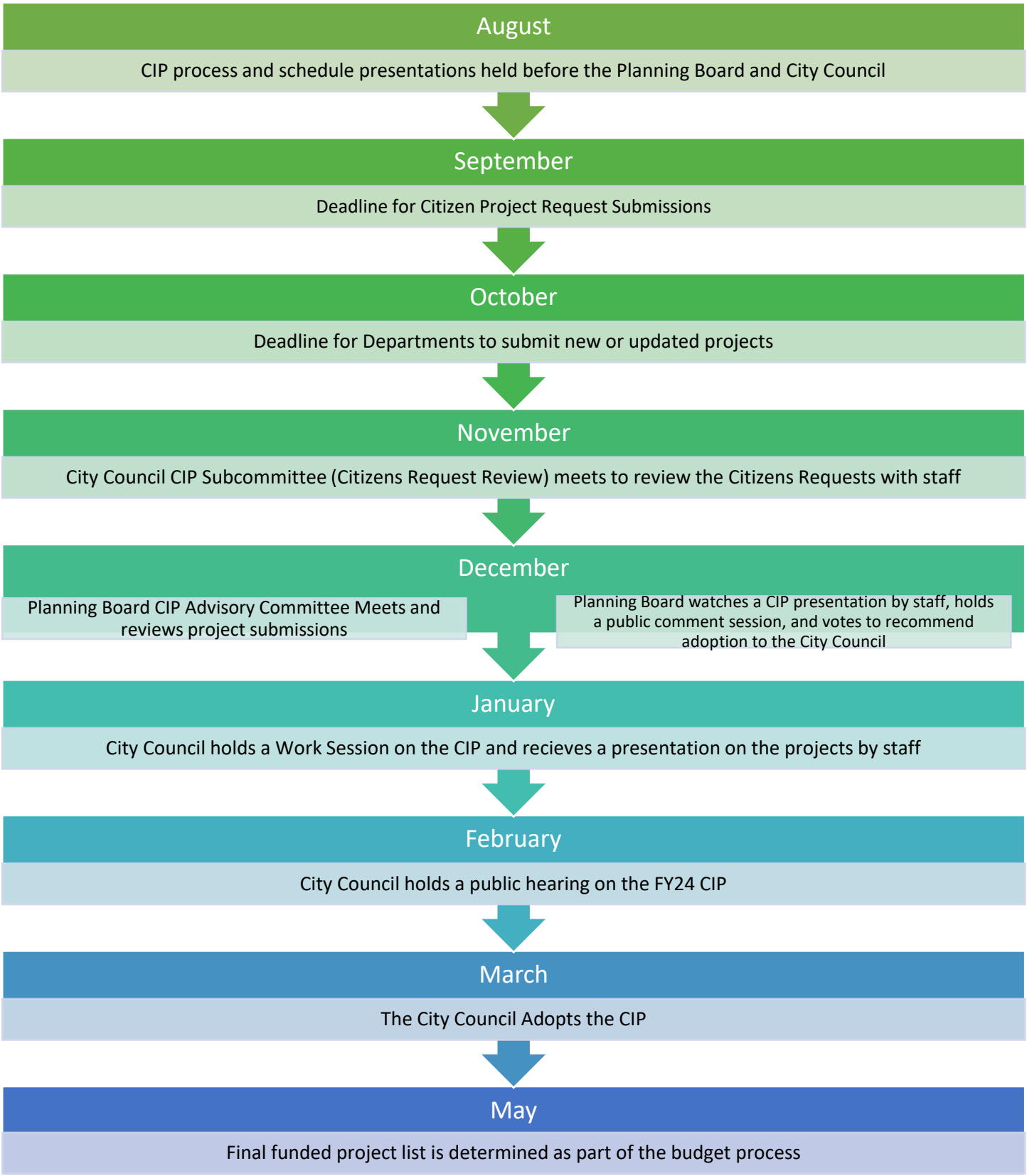
- Links to project web pages, prior year funding pages and more.



⑫ Project Description and Photo

- Brief description and relevant photo of the project proposed.

The FY24 CIP Process



The CIP Process

The capital planning process is coordinated by the Finance and Planning Departments under the direction of the City Manager.

Who develops the CIP?

Portsmouth Residents

City of Portsmouth residents are invited to submit projects to the Capital Improvement Plan. Submissions are analyzed by applicable departments and are submitted for review by a subcommittee of the City Council. The Subcommittee determines which projects should be placed in the capital plan within the allotted time frame. All Citizens Requests are listed in Appendix I of the CIP.

Departments and Divisions

City Staff utilize studies, master plans, needs assessments and other Capital Planning documents to determine capital needs. City Staff also review regulatory requirements and public health needs of the City and submit appropriate projects to ensure compliance. City Staff reassess 5 existing and ongoing CIP projects on an annual basis. Each year, every project is updated as needed for changes to project costs, timeline or scope.

Why are projects removed from the Capital Improvement Plan?

CIP projects remain in the document while they still require funding. Projects are removed from the document for two reasons:

1) The Project has been fully funded. No fully funded projects remain in the document.
2) The project is no longer feasible, desired within the timeline, or needs a re-evaluation of the Capital Improvement Plan.

As the majority of projects move forward from planning (CIP) to implementation they are placed on the City's project page on the website: https://www.cityofportsmouth.com/publicworks/projects

Prioritization of the Projects

After City department heads submit their capital project requests, an Advisory Committee of the Planning Board meets with department representatives to review these requests. The Advisory Committee then evaluates and prioritizes each request and makes recommendations to the Planning Board.

The following factors are considered when prioritizing projects:

- **Project requirements** – Is the project required to meet legal, compliance, or regulatory requirements?
- **Timing** – How soon does the project need to be implemented to address the needs identified?
- **Strategic alignment** – To what extent is the project aligned with other city projects, policies, processes?
- **Public value** – How much value does the outcome of this project provide to the general public? How much public support is there for implementing this project?
- **Finance planning** – Is the project fundable in the time frame identified, are there available funding sources for this project?

The Finance Department incorporates the Advisory Committee's recommendations into a recommended Capital Improvement Plan which is reviewed and recommended to the City Council for Adoption by the Planning Board.

The CIP is conveyed to the City Council for a work session, public hearing, and adoption in accordance with City Charter requirements. Projects are reviewed and prioritized in accordance with state and federal laws, public health and safety needs, city infrastructure plans and City Council Citywide Goals. After adoption, all applicable projects, those that affect the upcoming budget cycle, are conveyed from the Capital Improvement Plan to the City Manager's Proposed Budget. These Capital items are reviewed and prioritized throughout the budget process and finalized in tandem with the Budget process.

All projects that are in the Capital Improvement Plan but are not fully funded in the upcoming budget year may change in the subsequent Capital Plan due to changes in the project's cost, timeline, scope or priorities.

Changing the CIP

It is vital to remember that the CIP is both a budgeting tool and a planning tool that looks well into the future. The document is not static, even after its adoption, but remains fluid and nimble to adjust with each passing year for a number of reasons (i.e. project costs change, timelines change due to other projects, policy changes, funding capabilities, priority changes, etc.) and in order for the CIP to remain relevant and effective, it must reflect these changes.

How is the CIP changed?

Changes Made by Department Heads/City Staff:

- Before the start of the new CIP cycle, the City Manager asks the departments to review every project and adjust the costs, timeline or other parameters with up-to-date information. If the changes are drastic, they are noted on the project's element sheet.

Changes Made by the Planning Board

- The Planning Board Advisory Committee may recommend changes to the Capital Improvement Plan after they review the projects with the departments.
- The Planning Board may request changes of the departments during their work session. These changes must be voted on and agreed to by a majority of the Board Members.

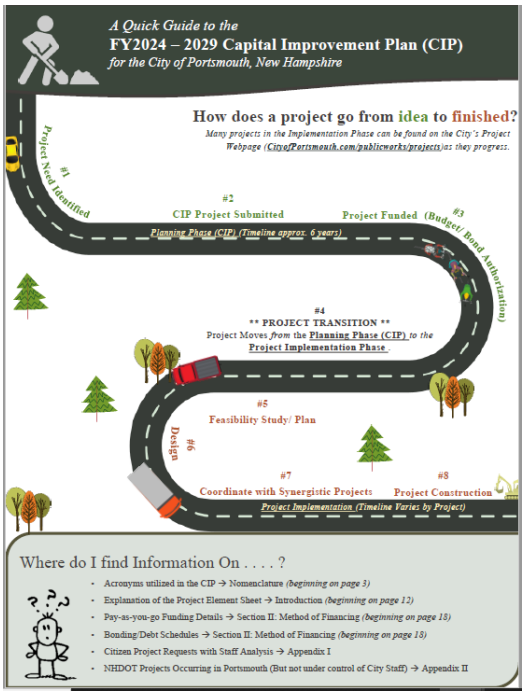
Changes Made by the City Council

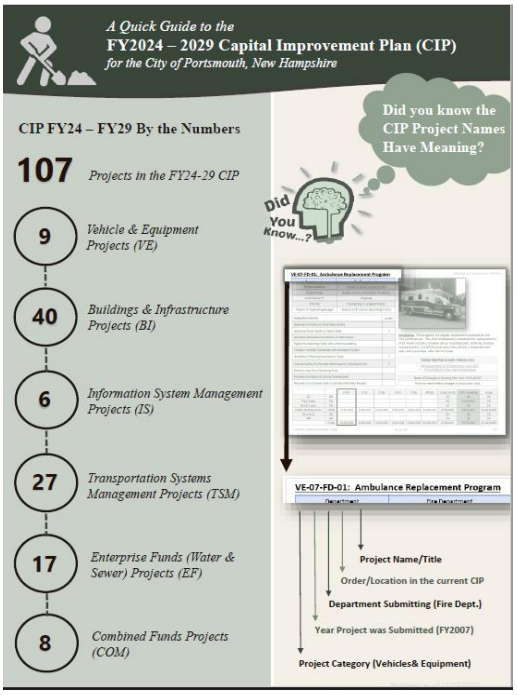
- The City Council may vote on changes to the CIP during their Work Session or Adoption of the CIP. A councilor can make a motion to change a project in any way but it must be adopted by a majority of the council in order to amend the document.
- The City Council may make adjustments to the CIP during the budget process, especially to those projects that affect the budget year in question.

New for the FY24 CIP Document

The City Staff work diligently on an annual basis to produce a document that is both comprehensive and comprehensible by a multitude of stakeholders. As part of this objective, modifications are made to the document to reflect requests made by the City Council, City Staff and the residents as well as to meet updated requirements by municipal financial groups.

- **Quick Guide (See Page 11)**
  For the FY24 Capital Improvement Plan a Quick Guide was inserted to give quick information to the reader on first glance including how to utilize the project sheets and where to find vital information.





- **New Projects (See Page 24)**
  Projects new to the FY24 CIP are listed for the reader for easy reference.

- **Projects that did not move forward from FY23 → FY24 (See Page 24)**
  Projects that appear in the FY23 CIP but not in the FY24 document are listed for the reader along with a brief explanation as to their removal.

New Projects to the FY24 CIP

These are projects that were introduced for the first time in this FY24 CIP. Not all FY24 projects are funded in FY24.

FY23 Project Number	Project Name
VE-24-FD-03	Vehicle Replacement - Truck 5
VE-24-FD-04	Vehicle Replacement - Engine 6
BI-24-PD-06	Police Body Cameras
BI-24-FD-08	Fire Station Security Upgrade
BI-24-LI-12	Library Courtyard Renovation
BI-24-SC-15	Fit-Up of Community Campus
BI-24-FI-18	Active Permanent Document - Digital Backup Infrastructure
BI-24-PL-24	Master Plan Update
BI-24-RC-25	Indoor Pool Facility Needs
BI-24-RC-26	South Mill Pond Playground
BI-24-PW-46	Foundry Place Parking Offices
BI-24-PW-47	Mechanic Street Wharf Pier
IS-24-IT-49	Expansion and Improvement of Network
IS-24-IT-50	Cybersecurity Enhancements
IS-24-IT-51	Document Management System
IS-24-FI-52	Fire Department Software Upgrade
TSM-24-PW-80	At Grade Railroad Crossings
EF-24-WD-86	Greenland Well Treatment
EF-24-WD-87	Dover Water Emergency Interconnection
EF-24-SD-96	Peirce Island WWTF

Projects that did not move forward from FY23 → FY24

This is a list of the projects that were part of the FY23 Capital Improvement Plan but are not found in the FY24 Plan. Reasons for their removal are also listed.

FY23 Project Number	Project Name	Reason for Removal
VE-23-FD-03	Durable Medical Equipment	Funded July 1, 2022 (Capital Outlay)
BI-23-SC-13	Sherburne School Upgrade	Removed as school is moving to Community Campus. Replaced with a project to Fit Up Community Campus for the Lister Academy School (BI-24-SC-15).
BI-19-PL-18	Vaughan-Worth-Bridge Strategic Version Development	This project was dropped due to policy changes.
BI-23-PL-21	Climate Action Plan	Funded (Utilizing ARPA Funds)
BI-00-PW-30	Implementation of the PI Master Plan	Master Plan was tied to the Peirce Island Committee. Committee was dissolved this past year as Master Plan was substantially complete. Therefore, the program was no longer necessary.
BI-23-PW-35	City Fuel Station Upgrade	Funding Authorized (Bonding Authorized 7/15/22) Project Funded. Final design is complete, anticipate bid in Late Fall 2022.
BI-23-PW-36	Bow St Overlook	Funded July 1, 2022 (Capital Outlay) Project funded. Pending design and bid.
IS-21-FI-47	Record Retention Software	Funded July 1, 2022 (GF Non Operating)
IS-17-PD-48	Public Safety Records Management/Computer Aided Dispatch	Funded (Utilizing ARPA Funds)
TSM-21-PL-53	Middle Street Bike Lanes Connection to Downtown	The project was dropped due to changing priorities.
TSM-16-PL/NH-59	Maplewood Ave Downtown Complete Street	Portions of this project have been completed, the remaining items will be addressed based on policy considerations.
EF-20-WD-81	Water Storage Tanks Painting	Funding Authorized (Bonding Authorized 7/15/22) Project pending design and bid.
EF-23-SD-90	Sewer Main for Sagamore Avenue Area Sewer Extension	Funding Authorized (Bonding Authorized 7/15/22) Project underway.
COM-23-PW-93	Bartlett Street	Funding Authorized (Bonding Authorized 7/15/22) Project in design, expect Summer 2023 construction.

SECTION II: METHOD OF FINANCING
(Where the Money Comes From)

Capital improvement projects are funded from a variety of sources. These funding sources include: General Fund (GF) Capital Outlay; Federal/State Grants; Bond or Lease; Revenues (Parking, Water and Sewer); State Revolving Loan Fund (SRF) and Public Private Partnerships (PPP).

General Fund (Capital Outlay) (GF)

- Funded from General Fund Revenues, Includes the money raised by the local property tax for a given year.
- Its entire cost is paid off within the year.
- The intent is to budget approximately 2% of the previous Fiscal Year General Fund total Budget to address City General Fund priorities.

Federal/State Grants (Fed/State)

- One source of grants is from other levels of government, for example, the Environmental Protection Agency, the NH Department of Health and Human Services, U.S. Housing and Urban Development, NH Department of Environmental Services, and the NH Department of Transportation.
- Generally, these Federal and State sources provide an outright grant or matching funds to go with locally raised funds.
- The City also pursues non-governmental private grants when applicable.

General Obligation Bonds (Leases/Bonds)

- Bonds are used to finance major municipal capital projects.
- These are issued for a period of time generally extending from ten to thirty years during which time principal and interest payments are made.
- They are secured by the full faith and credit of the Municipal Government.
- This type of payment has the advantage of allowing the costs to be amortized over the life of the project and of allowing taxpayers or rate payers to pay a smaller amount of the project's cost at a time.
- However, they do commit the City's resources over a long period of time and decrease the flexibility of how yearly revenues can be utilized.
- The City's bonding capacity is a limited resource.
- All projects that are to be bonded should meet minimum eligibility criteria and must have a useful life of at least equal to the bond terms.
- **Projects that are funded through bonds must go through an additional process, after the adoption of the CIP and the budget, of authorization by the City Council after a public hearing.**

Revenues (Enterprise Funds)

- The City has two established Enterprise Funds (Water and Sewer).
- The needs for these two divisions are met through the revenues raised from providing that particular service.
- Utilizing this funding source has no impact on the City's tax rate.

Revenues (Special Revenue Funds)

- The City has a Parking and Transportation Fund (Special Revenue Fund).
- Revenues derived from the City's parking functions are transferred to this fund in order to operate the City's parking and traffic related activities.
- Utilizing this funding source has no impact on the City's tax rate.

State Revolving Loan Fund (SRF)

- This is a program offered through the NH Department of Environmental Services for the purpose of providing low interest rate funding for approved water pollution control projects.
- State approval of applications does not bind the City to any of the individual projects but does lock into a low interest rate loan.
- Upon completion of projects, the loan becomes a serial bond payable by the City of Portsmouth Sewer or Water Fund to the State of NH.
- In addition, the City applies for State Aid Grant (SAG) funding to assist in repaying SRF loans up to 30% of the total project cost.

Public Private Partnership (PPP)

- This method of financing involves joint funding of a particular project between the City and one or more private sector or non-governmental partners.
- This method is used for projects that will benefit the partners and help to minimize costs to local taxpayers.
- Deciding on which method of financing should be selected for a given project is dependent on a number of factors.
- These include the cost of the project, its useful life, the eligibility of the project to receive funds from other than local taxes, long-term and short-term financial obligations of the City and a project's relative priority in terms of implementation.
- The Capital Improvement Plan seeks to maximize the potential benefits from all revenue sources.

SECTION III: FINANCIAL SUMMARY

Section III contains useful summary information detailing the specifics of the Capital Plan. These include the following:

1. Overview
2. Capital Improvement Plan Summary, all funds (FY 24-29);
3. A graph displaying the FY 2024 Distribution of Capital Improvement Plan Funding (Non-Enterprise Funds);
4. General Fund, Capital Outlay Projects only (FYs 18-24);
5. Computation of Legal Debt Margin as of June 30, 2022;
6. Long-Term Debt Service Forecast Model (General Fund);
7. Projected Net Long-Term Debt Service as a Percentage of the General Fund Budget;
8. Long-Term Debt Service Forecast Model (Parking Fund);
9. Long-Term Debt Service Forecast Model (Debt Service Fund);
10. Long-Term Debt Service Forecast Model (Water Fund);
11. Long-Term Debt Service Forecast Model (Sewer Fund);
12. Long-Term Debt – Outstanding Balance (All Funds).

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded
Page *Type* **Year* *Dept.* *#*

						FY 24 Distribution							**FY '25 to FY '29 Schedule**						
						GF	**Enterprise**	**Bond/Lease**	**Federal/State**	**Other/Revenues**	**PPP**	**FY '24**	**FY '25**	**FY '26**	**FY '27**	**FY '28**	**FY '29**	**Total Cost**
	I. VEHICLE and EQUIPMENT SCHEDULE																		
					VEHICLES														
57	VE-	07-	FD-	01	**Ambulance Replacement (Funded through Rolling Stock Line Item)**					$130,000		**$130,000**	$130,000	$130,000	$130,000	$130,000	$130,000	**$780,000**
58	VE-	14-	FD-	02	**Vehicle Replacement - Fire Engine #4**							**$0**	$800,000					**$800,000**
59	VE-	24-	FD-	03	**Vehicle Replacement - Tower5**							**$0**				$1,500,000		**$1,500,000**
60	VE-	24-	FD-	04	**Vehicle Replacement - Fire Engine #6**							**$0**					$800,000	**$800,000**
					EQUIPMENT													
61	VE-	18-	FD-	05	**Personal Protective Clothing Replacement**	$70,000						**$70,000**	$70,000			$80,000	$80,000	**$300,000**
62	VE-	21-	FD-	06	**Self Contained Breathing Apparatus (SCBA) Replacement**	$185,000						**$185,000**	$185,000	$185,000				**$555,000**
63	VE-	23-	FD-	07	**Cardiac Monitors**				$125,000			**$125,000**						**$125,000**
64	VE-	24-	PD-	08	**Police Body Cameras**							**$0**		$113,250				**$113,250**
65	VE-	23-	PW-	09	**Brine Equipment**	$55,000						**$55,000**	$55,000					**$110,000**
					I. TOTAL EQUIPMENT AND VEHICLE SCHEDULE	**$310,000**	**$0**	**$0**	**$125,000**	**$130,000**	**$0**	**$565,000**	**$1,240,000**	**$428,250**	**$130,000**	**$1,710,000**	**$1,010,000**	**$5,083,250**
	II. BUILDINGS AND INFRASTRUCTURE																		
67	BI-	24-	FD-	10	**Fire Station Security Upgrade**	$20,000						**$20,000**	$150,000					**$170,000**
68	BI-	16-	PD-	11	**Police New Facility - Land Acquisition**							**$0**						**$0**
69	BI-	15-	PD-	12	**New Police Department Facility**							**$0**	$38,000,000					**$38,000,000**
70	BI-	21-	PD-	13	**Police Facility Deficiencies & Repair Project**			$400,000				**$400,000**						**$400,000**
71	BI-	24-	LI-	14	**Library Courtyard Renovation**	$30,000			$30,000			**$60,000**						**$60,000**
72	BI-	07-	SC-	15	**School Facilities Capital Improvements**			$550,000				**$550,000**	$650,000	$650,000	$1,000,000			**$2,850,000**
74	BI-	08-	SC-	16	**Elementary Schools Upgrade**							**$0**		$3,000,000			$2,000,000	**$5,000,000**
75	BI-	24-	SC-	17	**Fit-up Of Community Campus Space for Robert J Lister Academy**			$2,000,000				**$2,000,000**						**$2,000,000**
76	BI-	17-	FI-	18	**Permanent Records Storage Facilities**							**$0**	$100,000	$100,000	$100,000	$100,000	$100,000	**$500,000**
77	BI-	18-	FI-	19	**Permanent/Historic Document Restoration Preservation & Scanning**	$50,000						**$50,000**	$150,000	$150,000	$150,000	$150,000	$150,000	**$800,000**
78	BI-	24-	FI-	20	**Disposition of Municipal Records**	$25,000						**$25,000**	$25,000	$25,000	$25,000			**$100,000**
79	BI-	95-	PL-	21	**Land Acquisition**			$500,000				**$500,000**	$500,000				$500,000	**$1,500,000**
80	BI-	22-	PL-	22	**Historic District Guidelines - Part 2**							**$0**	$50,000					**$50,000**
81	BI-	21-	PL-	23	**Trail Development Projects**	$25,000						**$25,000**						**$25,000**
82	BI-	05-	PL-	24	**McIntyre Federal Office Building Redevelopment**							**$0**						**$0**
83	BI-	23-	PL-	25	**Groundwater Study to Identify Impacts**							**$0**	$50,000					**$50,000**
84	BI-	24-	PL-	26	**City of Portsmouth Master Plan Update**	$150,000				$100,000		**$250,000**	$150,000					**$400,000**

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded
Page

Page	Type	*Year	Dept.	#		FY 24 Distribution							FY '25 to FY '29 Schedule					
						GF	Enterprise	Bond/Lease	Federal/State	Other/Revenues	PPP	FY '24	FY '25	FY '26	FY '27	FY '28	FY '29	
85	BI-	24-	RC-	27	Indoor Pool Facility Needs							**$0**	$50,000	$50,000	$50,000	$50,000	$50,000	**$250,000**
86	BI-	24-	RC-	28	South Mill Pond Playground						$15,000	**$15,000**					$1,500,000	**$1,515,000**
87	BI-	12-	RC-	29	Existing Outdoor Recreation Field and Facility Improvements	$75,000						**$75,000**	$150,000	$150,000	$150,000	$150,000	$150,000	**$825,000**
88	BI-	12-	RC-	30	Additional Outdoor Recreation Fields (formerly New Outdoor Rec Fields)							**$0**				$100,000	$3,000,000	**$3,100,000**
89	BI-	20-	RC-	31	Greenland Road Recreational Facility (formerly Greenland Rd Practice Field)						$170,350	**$170,350**				$100,000	$6,100,000	**$6,370,350**
90	BI-	02-	RC-	32	Citywide Playground Improvements	$75,000						**$75,000**	$75,000	$10,000	$200,000			**$360,000**
91	BI-	15-	RC-	33	Leary Field - Bleachers/ Grandstands							**$0**	$100,000	$1,000,000				**$1,100,000**
92	BI-	22-	RC-	34	Outdoor Pool Aquatics Upgrade and Pool House (formerly Outdoor Pool House)			$1,500,000				**$1,500,000**				$100,000	$3,250,000	**$4,850,000**
93	BI-	23-	PW-	35	Community Campus Facility Needs	$200,000						**$200,000**	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,200,000**
94	BI-	02-	PW-	36	Citywide Park & Monument Improvements	$50,000						**$50,000**	$100,000		$100,000		$100,000	**$350,000**
95	BI-	04-	PW-	37	Citywide Tree & Public Greenery Program	$20,000						**$20,000**	$20,000	$20,000	$20,000	$20,000	$20,000	**$120,000**
96	BI-	19-	PW-	38	Prescott Park: Master Plan Implementation			$1,750,000				**$1,750,000**	$125,000	$125,000	$125,000	$1,875,000	$1,875,000	**$5,875,000**
97	BI-	11-	PW-	39	Prescott Park: Facilities Capital Improvement	$50,000						**$50,000**	$50,000	$50,000	$50,000	$50,000	$50,000	**$300,000**
98	BI-	21-	PW-	40	City Hall HVAC Improvements							**$0**	$200,000	$500,000			$1,000,000	**$1,700,000**
99	BI-	18-	PW-	41	Recycling & Solid Waste Transfer Station							**$0**					$7,500,000	**$7,500,000**
100	BI-	05-	PW-	42	Historic Cemetery Improvements	$40,000						**$40,000**	$40,000	$40,000	$40,000	$40,000	$40,000	**$240,000**
102	BI-	15-	PW-	43	Citywide Retaining Walls Repairs and Improvements							**$0**	$50,000		$50,000		$50,000	**$150,000**
103	BI-	07-	PW/NH-	44	Sound Barriers in Residential Area Along I-95							**$0**	$200,000	$100,000	$100,000	$100,000	$100,000	**$600,000**
104	BI-	01-	PW-	45	Citywide Facilities Capital Improvements			$500,000				**$500,000**	$500,000	$1,000,000	$500,000	$500,000	$1,000,000	**$4,000,000**
106	BI-	21-	PW-	46	Downtown Aerial Utilities Undergrounding							**$0**					$5,000,000	**$5,000,000**
107	BI-	20-	PW-	47	Level 2 (120/208 Volt Single Phase) and Level 3 (480 Volt Three Phase) EV Charging Stations				$100,000	$50,000		**$150,000**	$150,000	$150,000	$150,000	$150,000		**$750,000**
108	BI-	24-	PW-	48	Foundry Place Parking Offices					$1,250,000		**$1,250,000**						**$1,250,000**
109	BI-	24-	PW-	49	Mechanic Street Wharf/Pier							**$0**	$1,020,000					**$1,020,000**
					II. TOTAL BUILDINGS AND INFRASTRUCTURE	**$810,000**	**$0**	**$7,200,000**	**$130,000**	**$1,400,000**	**$185,350**	**$9,725,350**	**$42,855,000**	**$7,320,000**	**$3,010,000**	**$3,685,000**	**$33,735,000**	**$100,330,350**

Capital Improvement Plan Summary '24-'29

CIP Book Page	Type	*Year	Dept.	#	Project	GF	Enterprise	Bond/Lease	Federal/State	Other/Revenues	PPP	FY '24	FY '25	FY '26	FY '27	FY '28	FY '29	Total Cost
						FY 24 Distribution							FY '25 to FY '29 Schedule					
					III. INFORMATION SYSTEMS MANAGEMENT													
111	IS-	06-	IT-	50	Information Technology Upgrades and Replacements (Funded through General Fund-Other General Non-Operating)					$1,056,558		$1,056,558	$1,068,538	$889,108	$858,608	$959,658	$1,148,608	$5,981,078
117	IS-	24-	IT-	51	Expansion and Improvement of Network (Funded through General Fund-Other General Non-Operating)					$50,000		$50,000						$50,000
118	IS-	24-	IT-	52	Cybersecurity Enhancements (Funded through General Fund-Other General Non-Operating)					$50,000		$50,000						$50,000
119	IS-	24-	IT-	53	Document Management System (Funded through General Fund-Other General Non-Operating)							$0	$150,000	$150,000	$150,000	$150,000	$150,000	$750,000
120	IS-	24-	FI-	54	Fire Department Software Upgrade (Funded through General Fund-Other General Non-Operating)					$169,778		$169,778						$169,778
121	IS-	21-	FI	55	Financial Software Upgrade (Funded through General Fund-Other General Non-Operating)					$300,000		$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,800,000
					III. TOTAL INFORMATION SYSTEMS MANAGEMENT	$0	$0	$0	$0	$1,626,336	$0	$1,626,336	$1,518,538	$1,339,108	$1,308,608	$1,409,658	$1,598,608	$8,800,856
					IV. TRANSPORTATION MANAGEMENT													
					PARKING													
123	TSM-	12-	PW-	56	Parking Lot Paving					$150,000		$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$900,000
124	TSM-	08-	PW-	57	Parking Meters					$50,000		$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000
					BICYCLE/PEDESTRIAN													
125	TSM-	15-	PL/NH-	58	Hampton Branch Rail Trail (NH Seacoast Greenway)							$0	$403,000				$880,000	$1,283,000
126	TSM-	15-	PL-	59	Bicycle/Pedestrian Plan Implementation					$50,000		$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000
127	TSM-	21-	PL-	60	Market Street Side Path							$0	$160,000	$2,000,000				$2,160,000
128	TSM-	08-	PL/NH-	61	US Route 1 New Side Path Construction							$0	$295,000	$1,000,000				$1,295,000
129	TSM-	16-	PL/NH-	62	US Route 1 Crosswalks and Signals							$0	$50,000	$110,000	$110,000			$270,000
130	TSM-	17-	PL-	63	Elwyn Park Traffic Calming and Pedestrian Improvements			$1,500,000				$1,500,000						$1,500,000
131	TSM-	23-	PL-	64	Borthwick Avenue Bike Path			$400,000				$400,000						$400,000
132	TSM-	08-	PW-	65	Wayfinding System					$350,000		$350,000						$350,000
133	TSM-	21-	PW-	66	Greenland Rd/Middle Rd Corridor Bicycle/Pedestrian Improvements							$0		$585,000				$585,000
134	TSM-	15-	PW-	67	Market Square Upgrade							$0	$50,000	$1,000,000		$1,000,000		$2,050,000
135	TSM-	19-	PW-	68	Sagamore Avenue Sidewalk			$300,000				$300,000						$300,000
136	TSM-	95-	PW-	69	Citywide Sidewalk Reconstruction Program			$800,000				$800,000				$800,000	$400,000	$2,000,000

* Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded

Page *Type* **Year* *Dept.* *#*

						FY 24 Distribution							**FY '25 to FY '29 Schedule**					
						GF	**Enterprise**	**Bond/Lease**	**Federal/State**	**Other/Revenues**	**PPP**	**FY '24**	**FY '25**	**FY '26**	**FY '27**	**FY '28**	**FY '29**	
					INTERSECTION/SIGNALS													
138	TSM-	10-	PW-	70	**Citywide Traffic Signal Upgrade Program**	$100,000						**$100,000**	$100,000	$350,000	$100,000	$100,000	$100,000	**$850,000**
139	TSM-	11-	PW-	71	**Citywide Intersection Improvements**	$100,000						**$100,000**	$100,000	$100,000	$100,000	$100,000	$100,000	**$600,000**
140	TSM-	16-	PL-	72	**Russell/Market Intersection Upgrade**			$2,200,000				**$2,200,000**						**$2,200,000**
141	TSM-	16-	PL-	73	**Railroad Crossings**							**$0**	$172,500					**$172,500**
					BRIDGES													
142	TSM-	18-	PW-	74	**Citywide Bridge Improvements**							**$0**	$100,000	$50,000	$50,000	$50,000	$50,000	**$300,000**
143	TSM-	08-	PW-	75	**Cate Street Bridge Replacement**							**$0**	$1,500,000					**$1,500,000**
					ROADWAY													
144	TSM-	20-	PW-	76	**Coakley-Borthwick Connector Roadway**							**$0**		$1,000,000				**$1,000,000**
145	TSM-	21-	PW-	77	**Traffic Calming (formerly South St. @ Middle Rd. Ped. Accomm. & Traffic Calm)**	$150,000						**$150,000**	$50,000	$50,000	$50,000	$50,000	$50,000	**$400,000**
146	TSM-	94-	PW-	78	**Street Paving, Management and Rehabilitation**			$4,000,000				**$4,000,000**				$4,000,000	$2,000,000	**$10,000,000**
148	TSM-	11-	PW-	79	**Pease International Tradeport Roadway Rehabilitation**			$3,200,000				**$3,200,000**				$1,000,000	$500,000	**$4,700,000**
150	TSM-	15-	PW-	80	**Junkins Avenue Improvements**							**$0**				$150,000	$1,100,000	**$1,250,000**
151	TSM-	20-	PW-	81	**Pinehurst Road Improvements**							**$0**					$300,000	**$300,000**
152	TSM-	20-	PW-	82	**Madison Street Roadway Improvements**							**$0**					$350,000	**$350,000**
					IV. TOTAL TRANSPORTATION MANAGEMENT	**$350,000**	**$0**	**$12,400,000**	**$0**	**$600,000**	**$0**	**$13,350,000**	**$3,230,500**	**$6,495,000**	**$660,000**	**$7,500,000**	**$6,080,000**	**$37,315,500**

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded

Page *Type* **Year* *Dept.* *#*

						FY 24 Distribution							FY '25 to FY '29 Schedule					
						GF	Enterprise	Bond/Lease	Federal/State	Other/Revenues	PPP	FY '24	FY '25	FY '26	FY '27	FY '28	FY '29	Total Cost
V. ENTERPRISE FUNDS																		
Water																		
155	EF-	02-	WD-	83	**Annual Water Line Replacement**			$1,000,000				**$1,000,000**		$1,000,000		$1,000,000		**$3,000,000**
156	EF-	08-	WD-	84	**Well Station Improvements**							**$0**		$700,000				**$700,000**
157	EF-	15-	WD-	85	**Reservoir Management**							**$0**		$1,000,000				**$1,000,000**
158	EF-	18-	WD-	86	**New Groundwater Source**			$2,000,000				**$2,000,000**						**$2,000,000**
159	EF-	22-	WD-	87	**Water Storage Tanks Improvements**							**$0**	$400,000		$4,000,000			**$4,400,000**
160	EF-	22-	WD-	88	**Madbury Water Treatment Plant - Facility Repair and Improvements**							**$0**	$650,000	$125,000	$125,000			**$900,000**
161	EF-	24-	WD-	89	**Greenland Well PFAS Treatment**			$2,500,000				**$2,500,000**						**$2,500,000**
162	EF-	24-	WD-	90	**Dover Water Emergency Interconnection**			$1,726,500				**$1,726,500**						**$1,726,500**
					Water Subtotals:	**$0**	**$0**	**$7,226,500**	**$0**	**$0**	**$0**	**$7,226,500**	**$1,050,000**	**$2,825,000**	**$4,125,000**	**$1,000,000**	**$0**	**$16,226,500**
Sewer																		
164	EF-	12-	SD-	91	**Annual Sewer Line Replacement**			$1,000,000				**$1,000,000**		$1,000,000		$1,000,000		**$3,000,000**
165	EF-	12-	SD-	92	**Pease Wastewater Treatment Facility**			$30,800,000			$34,500,000	**$65,300,000**						**$65,300,000**
166	EF-	23-	SD-	93	**Wastewater Reuse at Pease WWTF**							**$0**	$2,000,000		$6,300,000			**$8,300,000**
167	EF-	16-	SD-	94	**Long Term Control Plan Related Projects**			$300,000				**$300,000**		$1,000,000	$1,000,000	$1,000,000		**$3,300,000**
168	EF-	17-	SD-	95	**Wastewater Pumping Station Improvements**							**$0**	$500,000		$500,000		$500,000	**$1,500,000**
169	EF-	20-	SD-	96	**Woodbury Avenue Sewer Separation**			$250,000				**$250,000**						**$250,000**
170	EF-	22-	SD-	97	**Sewer Service Funding for Sagamore Ave. Area Sewer Extension**			$365,000				**$365,000**	$365,000	$365,000	$365,000	$365,000	$365,000	**$2,190,000**
171	EF-	13-	SD-	98	**Mechanic Street Pumping Station Upgrade**							**$0**						**$0**
172	EF-	24-	SD-	99	**Peirce Island WWTF**							**$0**	$1,900,000		$3,000,000			**$4,900,000**
					Sewer Subtotals:	**$0**	**$0**	**$32,715,000**	**$0**	**$0**	**$34,500,000**	**$67,215,000**	**$4,765,000**	**$2,365,000**	**$11,165,000**	**$2,365,000**	**$865,000**	**$88,740,000**
					V. TOTAL ENTERPRISE FUNDS	**$0**	**$0**	**$39,941,500**	**$0**	**$0**	**$34,500,000**	**$74,441,500**	**$5,815,000**	**$5,190,000**	**$15,290,000**	**$3,365,000**	**$865,000**	**$104,966,500**

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded

Page *Type* **Year* *Dept.* *#*

				FY 24 Distribution							FY '25 to FY '29 Schedule					
				GF	Enterprise	Bond/Lease	Federal/State	Other/Revenues	PPP	FY '24	FY '25	FY '26	FY '27	FY '28	FY '29	
VI. COMBINED FUNDS PROJECTS (General Fund-Water Fund-Sewer Fund)																
176	COM- 20-	PW-	100	**Fleet Street Utilities Upgrade and Streetscape**												
				General Government						**$0**		$2,000,000				**$2,000,000**
				Water Fund						**$0**		$2,000,000				**$2,000,000**
				Sewer Fund			$2,000,000			**$2,000,000**		$3,000,000				**$5,000,000**
				Total Project	**$0**	**$0**	**$2,000,000**	**$0**	**$0**	**$0**	**$2,000,000**	$0	$7,000,000	$0	$0	$0	**$9,000,000**
178	COM- 23-	PW-	101	**Edmond Avenue**												
				General Government			$1,050,000			**$1,050,000**						**$1,050,000**
				Water Fund			$500,000			**$500,000**						**$500,000**
				Sewer Fund			$200,000			**$200,000**						**$200,000**
				Total Project	**$0**	**$0**	**$1,750,000**	**$0**	**$0**	**$0**	**$1,750,000**	$0	$0	$0	$0	$0	**$1,750,000**
180	COM- 15-	PW-	102	**Citywide Storm Drainage Improvements**												
				General Government	$200,000					**$200,000**	$250,000	$300,000	$300,000	$300,000	$350,000	**$1,700,000**
				Water Fund						**$0**						**$0**
				Sewer Fund		$200,000				**$200,000**	$250,000	$300,000	$300,000	$300,000	$350,000	**$1,700,000**
				Total Project	**$200,000**	**$200,000**	**$0**	**$0**	**$0**	**$0**	**$400,000**	$500,000	$600,000	$600,000	$600,000	$700,000	**$3,400,000**
182	COM- 23-	PW-	103	**Chapel Street**												
				General Government						**$0**		$340,000				**$340,000**
				Water Fund						**$0**		$330,000				**$330,000**
				Sewer Fund						**$0**		$330,000				**$330,000**
				Total Project	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$0	$1,000,000	$0	$0	$0	**$1,000,000**
184	COM- 20-	PW	104	**DPW Complex Improvements**												
				General Government						**$0**						**$0**
				Water Fund						**$0**		$1,000,000				**$1,000,000**
				Sewer Fund						**$0**		$1,000,000				**$1,000,000**
				Total Project	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$0	$2,000,000	$0	$0	$0	**$2,000,000**
186	COM- 22-	PW	105	**The Creek Neighborhood Reconstruction**												
				General Government						**$0**	$500,000		$800,000		$1,000,000	**$2,300,000**
				Water Fund						**$0**	$500,000		$800,000		$1,000,000	**$2,300,000**
				Sewer Fund						**$0**	$500,000		$800,000		$1,000,000	**$2,300,000**
				Total Project	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$1,500,000	$0	$2,400,000	$0	$3,000,000	**$6,900,000**

Capital Improvement Plan Summary '24-'29

CIP Book * Year is the Fiscal Year initially introduced in CIP not the first Fiscal Year Funded
Page *Type* **Year* *Dept.* *#*

					FY 24 Distribution							FY '25 to FY '29 Schedule					
					GF	Enterprise	Bond/Lease	Federal/State	Other/Revenues	PPP	FY '24	FY '25	FY '26	FY '27	FY '28	FY '29	
188	COM- 22-	PW	106	**Islington Street Improvements**													
				General Government			$2,500,000				**$2,500,000**						**$2,500,000**
				Water Fund			$850,000				**$850,000**						**$850,000**
				Sewer Fund			$2,100,000				**$2,100,000**						**$2,100,000**
				Total Project	**$0**	**$0**	**$5,450,000**	**$0**	**$0**	**$0**	**$5,450,000**	$0	$0	$0	$0	$0	**$5,450,000**
190	COM- 17-	PW	107	**Union Street Reconstruction**													
				General Government			$700,000				**$700,000**						**$700,000**
				Water Fund			$700,000				**$700,000**						**$700,000**
				Sewer Fund			$700,000				**$700,000**						**$700,000**
				Total Project	**$0**	**$0**	**$2,100,000**	**$0**	**$0**	**$0**	**$2,100,000**	$0	$0	$0	$0	$0	**$2,100,000**
				TOTAL COMBINED PROJECTS (General Fund-Water Fund-Sewer Fund)													
				General Government	$200,000	$0	$4,250,000	$0	$0	$0	**$4,450,000**	$750,000	$2,640,000	$1,100,000	$300,000	$1,350,000	**$10,590,000**
				Water Fund	$0	$0	$2,050,000	$0	$0	$0	**$2,050,000**	$500,000	$3,330,000	$800,000	$0	$1,000,000	**$7,680,000**
				Sewer Fund	$0	$200,000	$5,000,000	$0	$0	$0	**$5,200,000**	$750,000	$4,630,000	$1,100,000	$300,000	$1,350,000	**$13,330,000**
				Total Project	**$200,000**	**$200,000**	**$11,300,000**	**$0**	**$0**	**$0**	**$11,700,000**	$2,000,000	$10,600,000	$3,000,000	$600,000	$3,700,000	**$31,600,000**

SUMMARY **TOTALS PER SECTION**

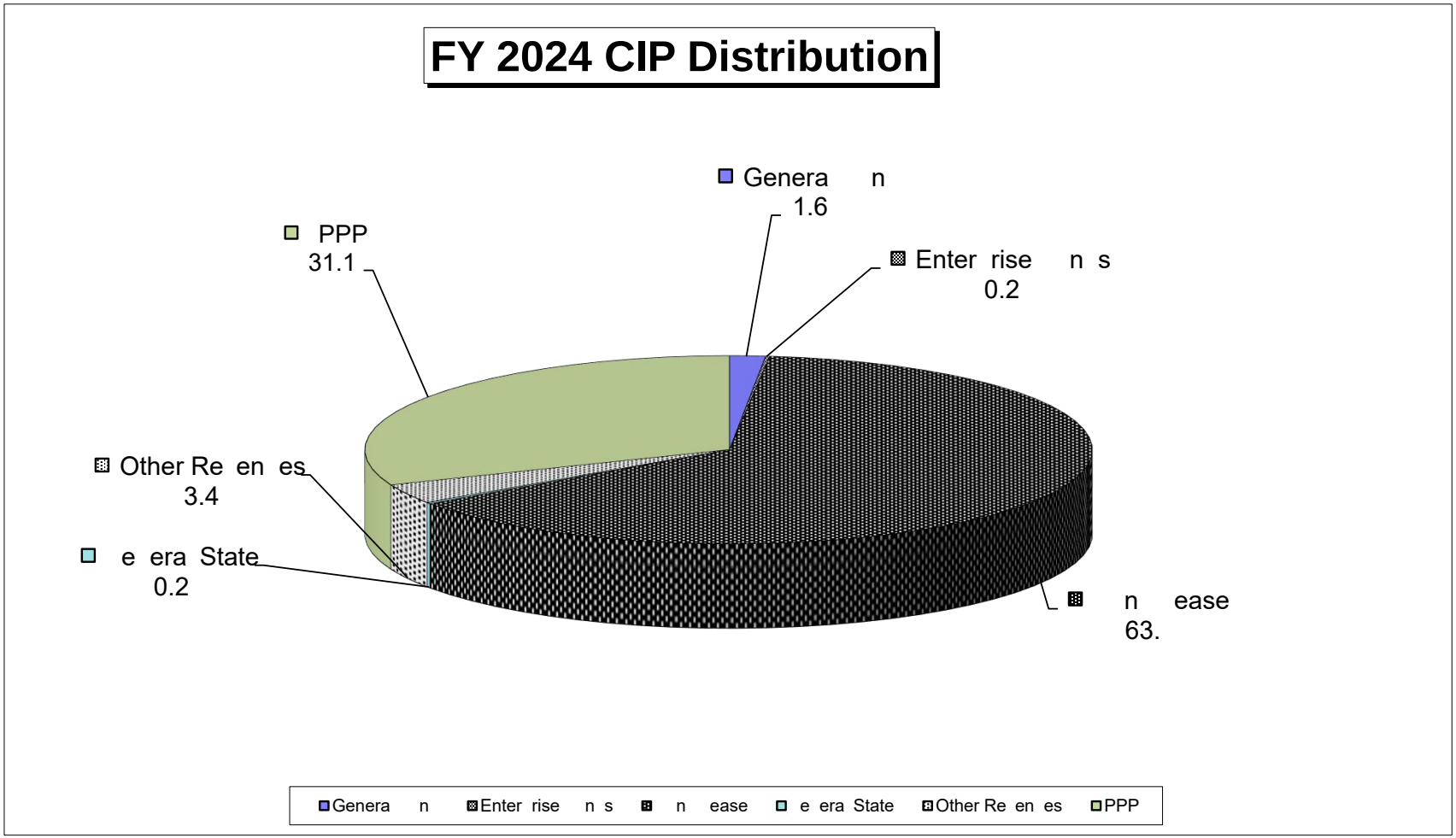
I.	EQUIPMENT AND VEHICLE SCHEDULE	$310,000	$0	$0	$125,000	$130,000	$0	**$565,000**	$1,240,000	$428,250	$130,000	$1,710,000	$1,010,000	**$5,083,250**
II.	BUILDING & INFRASTRUCTURE	$810,000	$0	$7,200,000	$130,000	$1,400,000	$185,350	**$9,725,350**	$42,855,000	$7,320,000	$3,010,000	$3,685,000	$33,735,000	**$100,330,350**
III.	INFORMATION MANAGEMENT SYSTEMS	$0	$0	$0	$0	$1,626,336	$0	**$1,626,336**	$1,518,538	$1,339,108	$1,308,608	$1,409,658	$1,598,608	**$8,800,856**
IV	TRANSPORTATION MANAGEMENT PLAN	$350,000	$0	$12,400,000	$0	$600,000	$0	**$13,350,000**	$3,230,500	$6,495,000	$660,000	$7,500,000	$6,080,000	**$37,315,500**
V	ENTERPRISE FUNDS	$0	$0	$39,941,500	$0	$0	$34,500,000	**$74,441,500**	$5,815,000	$5,190,000	$15,290,000	$3,365,000	$865,000	**$104,966,500**
VI	COMBINED FUND PROJECTS	$200,000	$200,000	$11,300,000	$0	$0	$0	**$11,700,000**	$2,000,000	$10,600,000	$3,000,000	$600,000	$3,700,000	**$31,600,000**
	CAPITAL CONTINGENCY	$100,000	$0	$0	$0	$0	$0	**$100,000**	$100,000	$100,000	$100,000	$100,000	$100,000	**$600,000**
	SUBTOTALS	**$1,770,000**	**$200,000**	**$70,841,500**	**$255,000**	**$3,756,336**	**$34,685,350**	$111,508,186	**$56,759,038**	**$31,472,358**	**$23,498,608**	**$18,369,658**	**$47,088,608**	$288,696,456

TOTALS BY FUNDING TYPE:

	GOVERNMENTAL FUNDS	$1,770,000	$0	$23,850,000	$255,000	$3,756,336	$185,350	**$29,816,686**	$49,694,038	$18,322,358	$6,308,608	$14,704,658	$43,873,608	**$162,719,956**
	WATER FUND	$0	$0	$9,276,500	$0	$0	$0	**$9,276,500**	$1,550,000	$6,155,000	$4,925,000	$1,000,000	$1,000,000	**$23,906,500**
	SEWER FUND	$0	$200,000	$37,715,000	$0	$0	$34,500,000	**$72,415,000**	$5,515,000	$6,995,000	$12,265,000	$2,665,000	$2,215,000	**$102,070,000**
	TOTAL BY FUNDING TYPE	**$1,770,000**	**$200,000**	**$70,841,500**	**$255,000**	**$3,756,336**	**$34,685,350**	$111,508,186	**$56,759,038**	**$31,472,358**	**$23,498,608**	**$18,369,658**	**$47,088,608**	$288,696,456

Other/Revenue

Rolling Stock	$130,000
IT Upgrades/Replacements	$1,626,336
Parking Capital Outlay	$750,000
Total Other/Revenue	**FALSE**



	General Fund	Enterprise Funds	Bond/Lease	Federal/State	Other Revenues	PPP	Totals
Amount	$1,770,000	$200,000	$70,841,500	$255,000	$3,756,336	$34,685,350	$111,508,186
% of Total	1.6%	0.2%	63.5%	0.2%	3.4%	31.1%	

Capital Improvements
Fiscal Year 2024
Taken from Capital Improvement Plan 2024-2029
General Fund, Capital Outlay Projects Only FYs 18-24

PAGE		FY 18	FY 19	FY 20	FY 21	FY22	FY23	Total FY's 18-23	Proposed Department Request FY 24	Advisory Committee Adjusted	Advisory Committee
I. EQUIPMENT AND VEHICLE SCHEDULE (VE)											
61	Pers na Pr tecti e thin Re ace ent (ire)	60,000	60,000	60,000	0	0	0	**$180,000**	**$70,000**		**$70,000**
62	S A Re ace ent Pr ra						0	**$0**	**$185,000**		**$185,000**
65	rine E i ent							**$0**	**$55,000**		**$55,000**
	ra e Me ica E i ent			0	0	0	0	**$0**			**$0**
	ire - H ra ic Resc e T Re ace ent			0	30,000	30,000	0	**$60,000**			**$0**
	ire - E er enc Generat r Re ace ent - Stati n 1			100,000	0	0	0	**$100,000**			**$0**
	Vehic e Re ace ent - ire En ine Re air		60,000	0	0	0	0	**$60,000**			**$0**
	Ther a l a in a era	22,000	24,000	0	0	0	0	**$46,000**			**$0**
	P ice G E i ent	20,000	20,000	0	0	0	0	**$40,000**			**$0**
	Total Equipment and Vehicle	**$102,000**	**$164,000**	**$160,000**	**$30,000**	**$30,000**	**$0**	$486,000	**$310,000**	**0**	**$310,000**
II. BUILDINGS AND INFRASTRUCTURE (BI)											
67	ire Stati n Sec rit U ra e	0	0	0	0	0	0	**$0**	**$20,000**		**$20,000**
71	i rar rt ar Ren ati n							**$0**	**$0**	**30,000**	**$30,000**
77	Per anent Hist ric c ent Rest rati n, Preser ati n an Scannin	0,000	88,000	100,000	0	0,000	100,000	**$388,000**	**$50,000**		**$50,000**
78	is siti n M nici a Rec r s	0	0	0	0	0	0	**$0**	**$25,000**		**$25,000**
81	Trai e e ent Pr jects						2 ,000	**$25,000**	**$25,000**		**$25,000**
84	it P rts th Master P an U ate							**$0**	**$150,000**		**$150,000**
87	E istin O t r Recreati n ie l r e ents		,000	1 0,000	0	0	0	**$225,000**	**$75,000**		**$75,000**
90	it wi e P a r n l r e ents	3 , 00		100,000	0	0	0,000	**$187,500**	**$75,000**		**$75,000**
93	nit a s aci it Nee s						100,000	**$100,000**	**$200,000**		**$200,000**
94	it wi e Par M n ent l r e ents	3 , 00		100,000	0	0	200,000	**$337,500**	**$50,000**		**$50,000**
95	it wi e Trees an P ic Greener Pr ra	20,000	20,000	20,000	10,000	20,000	0	**$90,000**	**$20,000**		**$20,000**
97	Presc tt Par aci ities a ita l r e ents	80,000	0,000	12 ,000	0	0,000	0	**$305,000**	**$50,000**		**$50,000**
100	Hist ric e eter l r e ents	40,000		2 ,000	0	0	40,000	**$105,000**	**$40,000**		**$40,000**
	Per anent Rec r s St ra e aci ities	0,000	0,000	0,000	0	0,000	0	**$200,000**			**$0**
	Presc tt Par Master P an l e entati n					12 ,000	0	**$125,000**			**$0**
	S n arriers in Resi entia Area A n l-	0,000		0	100,000	0	0	**$150,000**			**$0**
	McInt re e era O ice i in Re e e ent	2 ,000	0,000	2 ,000	2 ,000	2 ,000	0	**$150,000**			**$0**
	w Street O er						0,000	**$50,000**			**$0**
	I e entati n Peirce Is an Master P an Pr ject	2 ,000		2 ,000	0	0	0	**$50,000**			**$0**
	it Ha e E ectrica U ra es		0,000	0	0	0	0	**$50,000**			**$0**
	i ate Resi ience P annin		2 ,000	0	0	0	0	**$25,000**			**$0**
	i ersit , E it , an Inc si n Strate ic P an					2 ,000	0	**$25,000**			**$0**
	E e entar Sch s U ra e				200,000	0	0	**$200,000**			**$0**
	E er enc Res nse Nee s		0,000	0,000	0	0	0	**$100,000**			**$0**
	I e entati n Sa a re ree Parce nce t a Master P an	2 ,000		0	0	0	0	**$25,000**			**$0**
	an Ac isiti n	0		2 ,000	0	0	0	**$25,000**			**$0**

Capital Improvements
Fiscal Year 2024
Taken from Capital Improvement Plan 2024-2029
General Fund, Capital Outlay Projects Only FYs 18-24

PAGE		FY 18	FY 19	FY 20	FY 21	FY22	FY23	Total FY's 18-23	Proposed Department Request FY 24	Advisory Committee Adjusted	Advisory Committee
	an Use Re ati n Re isi n	0,000	2 ,000	0	0	0	0	$75,000			$0
	i rar rnit re - Seatin				2 ,000	0	0	$25,000			$0
	O en S ace P an	0,000		0	0	0	0	$50,000			$0
	Pannawa Man r Gatewa Par		0,000	0	0	0	0	$50,000			$0
	PHA rt Street Pr ject ri ewa					82,000	0	$82,000			$0
	PHA rt Street Pr ject E ectrica In rastr ct re				120,000	0	0	$120,000			$0
	Rec c in S i aste T tes		0,000	0	0	0	0	$50,000			$0
	Rec c in S i aste Trans er Stati n		100,000	2 0,000	0	0	0	$350,000			$0
	Stati n 1 O erhea r				0	100,000	0	$100,000			$0
	Va han- rth ri e Strate ic Visi n e e ent		2 ,000	2 ,000	2 ,000	0	0	$75,000			$0
	Total Buildings and Infrastructure	**$540,000**	**$708,000**	**$1,070,000**	**$505,000**	**$527,000**	**$565,000**	**$3,915,000**	**$780,000**	**$30,000**	**$760,000**
	IV. TRANSPORTATION MANAGEMENT (TSM)										
138	it wi e Tra ic Si na U ra e Pr ra	100,000	100,000	100,000	100,000		160,000	$560,000	$100,000		$100,000
139	it wi e Intersecti n I r e ents	100,000		100,000	0		0	$200,000	$100,000		$100,000
145	Tra ic a in (r er) S th St. at Mi e R . Pe estrian Acc ati ns Tra ic a in					20,000	100,000	$120,000	$150,000		$150,000
150	n ins A en e I r e ents						0	$0			$0
	R sse -Mar et Intersecti n U ra es		200,000	0	0	0	0	$200,000			$0
	it wi e ri e I r e ents	100,000		1 0,000	0	0,000	0	$300,000			$0
	ate Street nnect r				366,000		0	$366,000			$0
	US R te 1 New Si e Path nstr cti n					130,000	0	$130,000			$0
	E w n Par Tra ic a in an Pe estrian I r e ents	20,000		0	0		0	$20,000			$0
	ic c e Pe estrian P an I e entati n	0,000	30,000	0	0		0	$80,000			$0
	ri e Master P an I e entati n			0	0		0	$0			$0
	hestn t Street Pe estrian nnect r	0,000		0	0		0	$50,000			$0
	wnt wn Ma ew A e ete Street			0	0		0	$0			$0
	E w n R a Si e ath			0	1 0,000		0	$170,000			$0
	E w n R a Si ewa E tensi n			30,000	0		0	$30,000			$0
	Green an R . Mi e R . rri r Tra ic a in an i e e I r e ents					0,000	0	$50,000			$0
	Ha t n ranch Rai Trai	22 ,000		0	0		0	$225,000			$0
	E Street i ht n ersi n	181,000		0	0		0	$181,000			$0
	PHA rt St. Pe estrian an Par I r e ents					1 3,000	0	$173,000			$0
	Si n In ent r	4 ,000		0	0	0	0	$45,000			$0
	S inne R a New Si ewa nstr cti n		1 ,000	0	0	0	0	$175,000			$0
	Trai e e ent Pr jects			0	,000	0	0	$5,000			$0
	r A e Mar et St. Pe estrian Intersecti n I r e ent	21 ,000		0	0	0	0	$219,000			$0
	Total Transportation Management	**$1,090,000**	**$505,000**	**$380,000**	**$641,000**	**$423,000**	**$260,000**	**$3,299,000**	**$350,000**	**0**	**$350,000**

Capital Improvements
Fiscal Year 2024
Taken from Capital Improvement Plan 2024-2029
General Fund, Capital Outlay Projects Only FYs 18-24

PAGE		FY 18	FY 19	FY 20	FY 21	FY22	FY23	Total FY's 18-23	Proposed Department Request FY 24	Advisory Committee Adjusted	Advisory Committee
VI. COMBINED FUNDS PROJECTS (General Fund-Water Fund-Sewer Fund)											
180	it wi e St r raina e l r e ents	200,000	200,000	100,000	100,000	100,000	0	**$700,000**	**$200,000**		**$200,000**
	E n A en e						60,000	**$60,000**			**$0**
	Total Combined Fund Projects	**$200,000**	**$200,000**	**$100,000**	**$100,000**	**$100,000**	**$60,000**	**$760,000**	**$200,000**	**$0**	**$200,000**

SUMMARY

TOTALS PER SECTION

I.	E UIPMENT AN VEHI E S HE U E	102,000	164,000	160,000	30,000	30,000	0	**$486,000**	**$310,000**	**0**	**$310,000**
II.	UI ING IN RASTRU TURE	40,000	08,000	1,0 0,000	0 ,000	2 ,000	6 ,000	**$3,915,000**	**$780,000**	**30,000**	**$810,000**
IV.	TRANSPORTATION MANAGEMENT P AN	1,0 0,000	0 ,000	380,000	641,000	423,000	260,000	**$3,299,000**	**$350,000**	**0**	**$350,000**
VI.	OM INE UN PRO E TS	200,000	200,000	100,000	100,000	100,000	60,000	**$760,000**	**$200,000**	**$0**	**$200,000**
v.	APITA ONTINGEN	3,000	8,000	100,000	0	0	100,000	**$311,000**	**$100,000**	**0**	**$100,000**
	TOTAL	**$1,985,000**	**$1,635,000**	**$1,810,000**	**$1,276,000**	**$1,080,000**	**$985,000**	**$8,771,000**	**$1,740,000**	**30,000**	**$1,770,000**

Fiscal Year	1	18	1	20	21	22		23		23
Budget	**$107,462,843**	**$110,744,920**	**$114,295,207**	**$118,638,630**	**$119,115,338**	**$126,425,033**	A era e	132,2 4, 11		132,2 4, 11
Percentage of previous FY Budget	1.8	1.48	1. 8	1.08	0. 1	0. 8	1.28	1.32		1.34
					6 r t ta	8, 1,000				
					a e	1,461,833				

IT O PORTSMOUTH, NE HAMPSHIRE
tati n e a e t Mar in
As ne 30, 2022

M i ie ca assesse a ati n	6,42 ,834, 1
e art ent Re en e A inistrati n in ent r a j st ent	1,6 6, 68,613
E a i e assesse a ati n	8,082,803, 30
A j st ent RSA 31-A	-
Base valuation for debt limit (1)	**$ 8,082,803,530**

	3.0% of base (General Debt)	7.0% of base (School Debt) (2)	10% of base (Water Fund) (3) (4)
Bonded debt limit -	242,484,106	6 , 6,24	808,280,3 3
Gr ss n e e t ne 30	8, 33,600	3 , 8,300	3 , 14,028
ess an i ( )			
S -t ta	8, 33,600	3 , 8,300	3 , 14,028
A th ri e t niss e			
201 Streets Si ewa s	4, ,000		
2018 Streets an Si ewa s	0,000		
20 Steet si ewa s aci ites	800,000		
20 ire A arat s	8,63		
21 O t r P ls in t n St	2,000,000		
Presc tt ar an Streets si ewa s	8,300,000		
Par in Gara e	6,300,000		
P ic aci it	1,400,000		
nit a s	8,423,821		
20 ater in rastr ct re ra es			8 0,000
21 ater in rastr ct re ra es			,300,000
T ta A th ri e niss e	33,00 ,4 6	0	8,1 0,000
Total debt applicable to limitation	**$91,741,056**	**$37,998,300**	**$43,664,028**
% Debt used of limitation	**38%**	**7%**	**5%**
e a e t Mar in	**$150,743,050**	**$527,797,947**	**$764,616,325**
e a e t Mar in	62	3	

(1) The e ai ati n a ta a e r ert in the State New Ha shire is c n cte ann a the New Ha shire e art ent Re en e A inistrati n n er the r isi ns RSA 21- 3(III).
(2) S ject t a se arate e t i it the it s ase a ati n er RSA 33 4-a
(3) Enter rise n s.
(4) S ject t a se arate e t i it 10 the it s ase a ati n er RSA 33 -a.
( ) E e t er RSA 33 - .

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
ISSUED DEBT										
	GENERAL FUND-Issued Debt									
	General Government									
AAA	**06/27/13 13 Improvements**	**2,267,000**								
	Principal-Last Pmt FY 23	10 R		22 ,000						
	Interest			6, 0						
AAA	**06/25/14 14 Improvements**	**5,750,000**								
	Principal-Last Pmt FY 24	10 R		,000	,000					
	Interest			, 00	28, 0					
AAA	**06/20/19 18 Fire Boat**	**$180,000($164,000)**								
	Principal-Last Pmt FY 24	R		30,000	2 ,000					
	Interest			2, 0	1,2 0					
AAA	**06/20/19 19 Fire Apparatus**	**$600,000($544,000)**								
	Principal-Last Pmt FY 24	R		10 ,000	10 ,000					
	Interest			10, 00	,2 0					
AAA	**06/23/15 15 Improvements**	**3,475,000**								
	Principal-Last Pmt FY 25	10 R		34 ,000	34 ,000	34 ,000				
	Interest			41,400	2 ,600	13,800				
AAA	**06/23/15 Library-Refunded**	**3,685,000**								
	Principal-Last Pmt FY 26	10 R		32 ,000	320,000	320,000	31 ,000			
	Interest			3 ,8	30,200	1 ,000	6,300			
AAA	**06/15/16 16 Improvements**	**6,100,000**								
	Principal-Last Pmt FY 26	10 R		610,000	610,000	610,000	610,000			
	Interest			,600	3,200	48,800	24,400			
AAA	**06/23/17 17 Fire Station 3 Improvements**	**610,000**								
	Principal-Last Pmt FY 27	10 R		60,000	60,000	60,000	60,000	60,000		
	Interest			12,000	,600	,200	4,800	2,400		
AAA	**06/23/17 17 Improvements**	**6,850,000**								
	Principal-Last Pmt FY 27	10 R		68 ,000	68 ,000	68 ,000	68 ,000	68 ,000		
	Interest			13 ,000	10 ,600	82,200	4,800	2 ,400		
AAA	**06/20/18 18 Improvements (Part I)**	**6,200,000**								
	Principal-Last Pmt FY 28	10 R		620,000	620,000	620,000	620,000	620,000	620,000	
	Interest			186,000	1 ,000	124,000	3,000	62,000	31,000	
	City Field Lighting	**600,000**								
	Bi-Annual Sidewalk Improvements	**800,000**								
	Lafayette/Andrew Jarvis Intersection	**800,000**								
	Hoover/Taft Drainage	**250,000**								
	Pleasant Street	**750,000**								
	Bi-Annual Citywide Street Paving	**3,000,000**								
AAA	**06/15/16 Fire Station 2 Replacement-Refunded**	**1,713,000**								
	Principal-Last Pmt FY 28	10 R		1 0,000	1 0,000	1 0,000	1 0,000	16 ,000	16 ,000	
	Interest			33,800	2 ,000	20,200	13,400	6,600	3,300	
AAA	**06/15/16 Fire Station 2 Land-Refunded**	**619,000**								
	Principal-Last Pmt FY 28	10 R		60,000	60,000	60,000	60,000	60,000	,000	
	Interest			11, 00	, 00	,100	4, 00	2,300	1,100	
AAA	**06/15/16 Fire Station 2 Replacement-Refunded**	**708,500**								
	Principal-Last Pmt FY 29	10 R		0,000	0,000	0,000	0,000	0,000	0,000	68, 00
	Interest			1 , 40	16, 40	13, 40	11,140	8,340	, 40	2, 40
AAA	**06/20/19 FY 18 Improvements (Part II)**	**$3,300,000($2,802,000)**								
	Principal-Last Pmt FY 29	10 R		28 ,000	28 ,000	280,000	2 ,000	2 ,000	2 ,000	2 0,000
	Interest			,2 0	83,000	68, 0	4, 0	41,000	2 ,2 0	13, 00
	McDonough Street	**800,000**								
	Islington Street	**2,500,000**								

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
AAA	06/20/19	FY 19 Improvements (Part I)	$2,375,000($2,018,000)							
		Principal-Last Pmt FY 29	10 R	20 ,000	20 ,000	20 ,000	200,000	200,000	1 ,000	18 ,000
		Interest		6 , 0	, 00	4 ,2 0	3 ,000	2 ,000	1 ,000	,2 0
		Fire Station One Renovation	325,000							
		Citywide Bridge Upgrades	350,000							
		Market St Gateway	1,700,000							
AAA	04/06/21	FY 18 Improvements (Part III)	$500,000($425,600)							
		Principal-Last Pmt FY 31	10 R	4 ,000	4 ,000	4 ,000	4 ,000	40,000	40,000	40,000
		Interest		16,000	14,200	12,400	10,600	8,800	,000	,200
		North Mill Pond Mutai Use Path	500,000							
AAA	06/23/22	FY 21 Fire Apparatus	$1,342,080.36($1,188,500)							
		Principal-Last Pmt FY 32	10 R	118, 00	120,000	120,000	120,000	120,000	120,000	120,000
		Interest		6, 80	2,3 0	46,3 0	40,3 0	34,3 0	28,3 0	22,3 0
		Ladder #2	1,342,080							
AAA	04/06/21	FY 19 Improvements (Part II)	$5,900,814($5,406,700)							
		Principal-Last Pmt FY 41	20 R	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000
		Interest		1 3,488	142,488	131,48	120,488	10 ,488	,113	84, 38
		Multi-Purpose Fields	2,840,000							
		City Hall Electrical Upgrades	600,000							
		Longmeadow Road Extension	400,000							
		Senior Center	2,060,815							
AAA	04/06/21	FY 20 Improvements (Part I)	$6,600,000($6,044,400)							
		Principal-Last Pmt FY 41	20 R	31 ,000	31 ,000	31 ,000	310,000	310,000	310,000	30 ,000
		Interest		1 2,288	1 ,688	14 ,088	134,488	122,088	108,138	4,188
		Citywide Facility Improvements	1,000,000							
		Bi-Annual Sidewalk Improvements	400,000							
		Citywide Bridge Improvements	1,200,000							
		Maplewood Ave Bridge Improvements	500,000							
		Cate St Connector	1,500,000							
		Bi-Annual Citywide Street Paving	2,000,000							
AAA	04/06/21	FY 21 Improvements (Part I)	$400,000($364,000)							
		Principal-Last Pmt FY 41	20 R	20,000	20,000	20,000	20,000	20,000	20,000	20,000
		Interest		10,638	,838	,038	8,238	,438	6, 38	,638
		Police Station Upgrades	400,000							
AAA	06/23/22	FY 19 Improvements (Part III)	$750,000($694,000)							
		Principal-Last Pmt FY 42	20 R	34,000	3 ,000	3 ,000	3 ,000	3 ,000	3 ,000	3 ,000
		Interest		2 , 0	28, 63	26,813	2 ,063	23,313	21, 63	1 ,813
		Prescott Park Master Plan Improvements	750,000							
AAA	06/23/22	FY 20 Improvements (Part II)	$750,000($694,000)							
		Principal-Last Pmt FY 42	20 R	34,000	3 ,000	3 ,000	3 ,000	3 ,000	3 ,000	3 ,000
		Interest		2 , 0	28, 63	26,813	2 ,063	23,313	21, 63	1 ,813
		Pease Tradeport Street Rehab	750,000							
AAA	06/23/22	FY 21 Improvements (Part II)	$1,640,000($1,518,500)							
		Principal-Last Pmt FY 42	20 R	8, 00	80,000	80,000	80,000	,000	,000	,000
		Interest		64, 6	62,343. 6	8,343. 6	4,343. 6	0,343. 6	46, 3. 6	42,843. 6
		Islington Street Phase 1B	1,640,000							
AAA	06/23/22	FY 22 Improvements (Part I)	$3,100,000($2,865,100)							
		Principal-Last Pmt FY 42	20 R	1 0,100	1 ,000	1 ,000	1 0,000	1 0,000	14 ,000	14 ,000
		Interest		122,820	118,106	110,3 6	102,606	,106	8 ,606	80,3 6
		Police Station Upgrades	400,000							
		Banfield Road Pedestrian Accommodations	500,000							
		Willard ave Reconstruction	1,200,000							
		Union Street Reconstruction	1,000,000							
		Total General Fund-Gen Gov Issued Debt Principal Due		,440,100	,21 ,000	4, 0 ,000	4,13 ,000	3,1 ,000	2,43 ,000	1, 3, 00
		Total General Fund-Gen Gov Issued Debt Interest Due		1,4 ,804	1,2 2,328	1,022, 2	82 , 28	6 3,2 8	11,6 3	400,428
		Total General Fund-Gen Gov Issued Debt		6, 1 , 04	6,46 ,328	, 2 , 2	4, 62, 28	3,848,2 8	2, 46,6 3	1, 3, 28
		Schools								
AAA	06/27/13	13 School Building Improvements	500,000							
		Principal-Last Pmt FY 23	10 r	0,000						
		Interest		1, 00						
AA	05/17/12	High School Renovations-Refunding	17,325,000							
		Principal-Last Pmt FY 23	10 R	1,6 0,000						
		Interest		33,000						
AAA	06/23/15	15 School Field Lighting	750,000							
		Principal-Last Pmt FY 25	10 r	,000	,000	,000				
		Interest		,000	6,000	3,000				
AAA	06/15/16	16 School Building Improvements	500,000							

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
		Principal-Last Pmt FY 26	10 r	0,000	0,000	0,000	0,000			
		Interest		8,000	6,000	4,000	2,000			
AAA	06/20/18 18	Athletic Field Lighting	550,000							
		Principal-Last Pmt FY 28	10 r	,000	,000	,000	,000	,000	,000	
		Interest		16, 00	13, 0	11,000	8,2 0	, 00	2, 0	
AAA	06/20/19 19	School Building Improvements	$500,000($426,000)							
		Principal-Last Pmt FY 29	10 r	4 ,000	4 ,000	4 ,000	40,000	40,000	40,000	3 ,000
		Interest		14, 00	12,2 0	10,000	, 0	, 0	3, 0	1, 0
AAA	04/06/21 10	Middle School Renovation-Refunding	5,773,500							
		Principal-Last Pmt FY 30	10 R	640,000	64 ,000	640,000	640,000	640,000	640,000	640,000
		Interest		21 ,800	1 2,200	166,400	140,800	11 ,200	86,400	,600
AAA	12/14/21 11	Middle School Renovation-Refunding	9,430,000							
		Principal-Last Pmt FY 32	10 R	00,000	1 ,000	2 ,000	3 ,000	40,000	0,000	,000
		Interest		44 ,000	403,62	3 ,62	311,12	264,2 0	21 ,000	16 ,3
AAA	06/25/14 14	Middle School Renovation	3,300,000							
		Principal-Last Pmt FY 34	20 R	16 ,000	16 ,000	16 ,000	16 ,000	16 ,000	16 ,000	16 ,000
		Interest		84,1 0	, 00	6 ,6 0	,400	1,1 0	46,200	3 ,600
AAA	06/15/16 16	Elementary Schools Renovations	5,000,000							
		Principal-Last Pmt FY 36	20 R	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000
		Interest		10 ,000	,000	8 ,000	,000	6 ,000	60,000	,000
AAA	06/23/17 17	Elementary Schools Renovations	5,000,000							
		Principal-Last Pmt FY 37	20 R	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000
		Interest		120,313	110,313	100,313	0,313	80,313	0,313	6 ,313
AAA	06/20/18 18	Elementary Schools Renovations	5,000,000							
		Principal-Last Pmt FY 38	20 R	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000
		Interest		1 4,688	142,188	12 ,688	11 ,188	104,688	2,188	,688
AAA	06/20/19 19	Elementary Schools Renovations	$5,000,000($4,508,500)							
		Principal-Last Pmt FY 39	20 R	22 ,000	22 ,000	22 ,000	22 ,000	22 ,000	22 ,000	22 ,000
		Interest		1 0, 4	13 ,344	128,0 4	116,844	10 , 4	4,344	83,0 4
AAA	04/06/21 20	Elementary Schools Renovations	$2,000,000($1,833,000)							
		Principal-Last Pmt FY 41	20 R	,000	,000	,000	,000	,000	,000	0,000
		Interest		2,100	48,300	44, 00	40, 00	36, 00	32,62	28,3 0
AAA	04/06/21 21	School Facilities Improvements (Part I)	$500,000($454,800)							
		Principal-Last Pmt FY 41	20 R	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000
		Interest		13,300	12,300	11,300	10,300	,300	8,1	,0 0
AAA	06/23/22 21	School Facilities Improvements (Part II)	$500,000($459,800)							
		Principal-Last Pmt FY 42	20 R	24,800	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000	2 ,000
		Interest		1 , 12	1 ,12	1 ,8	16,62	1 ,3	14,12	12,8
AAA	06/23/22 22	Elementary Schools Renovations	$1,100,000($1,018,500)							
		Principal-Last Pmt FY 42	20 R	3, 00	,000	,000	,000	0,000	0,000	0,000
		Interest		43,4	41,813	3 ,063	36,313	33, 63	31,063	28, 63
		Total General Fund-School Issued Debt Principal Due		4,803,300	3,12 ,000	3,130,000	3,060,000	3,010,000	3,020,000	2, 60,000
		Total General Fund-School Issued Debt Interest Due		1,4 2,8	1,318,106	1,1 , 06	1,032,606	8 2, 81	8, 31	628,2 6
		Total General Fund-School Issued Debt		6,2 6,1	4,443,106	4,30 , 06	4,0 2,606	3, 02, 81	3, 8, 31	3, 88,2 6
		Total General Fund- Issued Debt Principal Due		10,243,400	8,340,000	,63 ,000	,1 ,000	6,20 ,000	,4 ,000	4, 33, 00
		Total General Fund-Issued Debt Interest Due		2, 2,6	2, 0,434	2,1 8,434	1,860,134	1, 4 ,8	1,2 0, 84	1,028,684
		Total General Fund-Issued Debt		13,216,0	10, 10,434	,833,434	,0 ,134	, 0,8	6, 2 , 84	, 62,184
		Issued Debt Related Revenues								
	G	Use Un se n Pr cee s								
	G	Use e t Reser e		(1, 00,000)	(1,600,000)	(1, 00,000)	(1, 00,000)	(1, 00,000)	(1, 00,000)	(1,332,386)
	G	Sch i in Ai (Hi h Sch)		(1,016,222)						
	G	Sch i in Ai n 40.8 (Mi e Sch 40)		(40, 4)	(40, 4)	(40, 4)	(40, 4)	(40, 4)	(40, 4)	(40, 4)
		Total Issued Debt Related Revenues-General Fund		**(3,457,196)**	**(2,340,974)**	**(2,240,974)**	**(2,240,974)**	**(2,240,974)**	**(2,240,974)**	**(2,073,360)**
		Total Net Issued Debt-General Fund		**9,758,863**	**8,569,460**	**7,592,460**	**6,814,160**	**5,509,885**	**4,484,610**	**3,488,824**

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
GENERAL FUND-Projected Future Debt									
	Iss e i erence ete s act a		13 , 88						
20 r .0	18-MAP E OO AVE OMP ETE STREET	4 0,000						4 ,000	43,8
20 r .0	18-NE RAN IN OO UR ORRI OR IN	00,000						0,000	48, 0
FY 18	**Authorized 07/10/17**								
		950,000							
20 r .0	1 -O t r P	1,000,000		100,000	, 00	,000	2, 00	0,000	8 , 00
20 r .0	1 -Presc tt Par Master P an I r e ents	1, ,000		1 , 00	1 3, 63	14 ,62	14 ,688	141, 0	13 ,813
	iss e 0,000 22, 1, ,000 22								
20 r .0	1 -Pe er Hi R a l r e ents	2,200,000		220,000	214, 00	20 ,000	203, 00	1 8,000	1 2, 00
FY 19	**Authorized 08/06/18**								
		4,775,000							
20 r .0	20- it wi e ri e l r e ents	800,000		80,000	8,000	6,000	4,000	2,000	0,000
	iss e 1,200,000 21, 800,000 23								
FY 20	**Authorized 07/15/19**								
		800,000							
20 r .0	21-O t r P U ra es	2,000,000		200,000	1 ,000	1 0,000	18 ,000	180,000	1 ,000
	Authorized 12/07/20								
	Total FY 21 New Bonding	**2,000,000**							
20 r .0	22-Presc tt Par Master P an I r e ents	1, 0,000		1 ,000	1 0,62	166,2 0	161,8	1 , 00	1 3,12
20 r .0	22- it wi e Si ewa Rec nstr cti n Pr ra	800,000		80,000	8,000	6,000	4,000	2,000	0,000
20 r .0	22-Street Pa in , Mana e ent an Reha i itati r	4,000,000		400,000	3 0,000	380,000	3 0,000	360,000	3 0,000
20 r .0	22-Pease Tra e rt Street Reha i itati n	0,000		,000	3,12	1,2 0	6 ,3	6 , 00	6 ,62
20 r .0	22-Ma ew A en e ri e Re ace ent	1,000,000		100,000	, 00	,000	2, 00	0,000	8 , 00
	Authorized 08/02/21								
	Total FY 22 New Bonding	**8,300,000**							
	22 nit a s AN Interest n	8,423,821	AN Interest(3.2) 2 3, 4	AN Interest (3.) 31 ,8 3	842,382	821,323	800,263	,203	8,144
	Authorized 04/18/22								
20 r .0	22-New P ice Stati n	1,400,000		140,000	136, 00	133,000	12 , 00	126,000	122, 00
	Authorized 04/04/22								
	Total FY 22 New Bonding	**1,400,000**							
20 r .0	23-P ice Stati n U ra es	400,000		40,000	3 ,000	38,000	3 ,000	36,000	3 ,000
20 r .0	23-Sch aci ities a ita l r e ents	1,600,000		160,000	1 6,000	1 2,000	148,000	144,000	140,000
20 r .0	23-E e entar Sch s U ra e	1, 00,000		1 0,000	146,2 0	142, 00	138, 0	13 ,000	131,2 0
20 r .0	23-Green an R a Recreati n aci it	1,80 ,000		180, 00	1 , 88	1 1,4	166, 63	162,4 0	1 , 38
20 r .0	23-O t r P	2,000,000		200,000	1 ,000	1 0,000	18 ,000	180,000	1 ,000
20 r .0	23- it e Stati n U ra es	1,000,000		100,000	, 00	,000	2, 00	0,000	8 , 00
20 r .0	23- it wi e aci ities a ita l r e ents	1,000,000		100,000	, 00	,000	2, 00	0,000	8 , 00
20 r .0	23- wnt wn Aeria Uti ities Un er r n in	2, 00,000		2 0,000	243, 0	23 , 00	231,2 0	22 ,000	218, 0
20 r .0	23- art ett Street Uti ities U ra es an Streetsca	800,000		80,000	8,000	6,000	4,000	2,000	0,000
	Authorized 07/15/22	**12,605,000**							

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
20 r .0	23-New P ice Stati n	2,800,000		280,000	2 3,000	266,000	2 ,000	2 2,000	24 ,000
	as of 12/15/22 not authorized								
	Total FY 23 New Bonding	**15,405,000**							
20 r .0	24-P ice Stati n U ra es	400,000			40,000	3 ,000	38,000	3 ,000	36,000
20 r .0	24-Sch aciities a ita l r e ents	0,000			,000	3,62	2,2 0	0,8	4 , 00
20 r .0	-24 it-U nit a s S ace r R is	2,000,000			200,000	1 ,000	1 0,000	18 ,000	180,000
20 r .0	24- an Ac isiti n	00,000			0,000	48, 0	4 , 00	46,2 0	4 ,000
20 r .0	24-O t r P	1, 00,000			1 0,000	146,2 0	142, 00	138, 0	13 ,000
20 r .0	24-Presc tt Par Master P an l r e ents	1, 0,000			1 ,000	1 0,62	166,2 0	161,8	1 , 00
20 r .0	24- it wi e aci ities a ita l r e ents	00,000			0,000	48, 0	4 , 00	46,2 0	4 ,000
20 r .0	24-E w n Par Si ewa s Tra ic a in	1, 00,000			1 0,000	146,2 0	142, 00	138, 0	13 ,000
20 r .0	24- rthwic A en e i e Path	400,000			40,000	3 ,000	38,000	3 ,000	36,000
20 r .0	24-Sa a re A en e Si ewa	300,000			30,000	2 ,2 0	28, 00	2 , 0	2 ,000
20 r .0	24- it wi e Si ewa Rec nstr cti n Pr ra	800,000			80,000	8,000	6,000	4,000	2,000
20 r .0	24-R sse Mar et Intersecti n U ra e	2,200,000			220,000	214, 00	20 ,000	203, 00	1 8,000
20 r .0	24-Street Pa in , Mana e ent an Reha i itati r	4,000,000			400,000	3 0,000	380,000	3 0,000	360,000
20 r .0	24-Pease Tra e rt Street Reha i itati n	3,200,000			320,000	312,000	304,000	2 6,000	288,000
20 r .0	24 E n A e	1,0 0,000			10 ,000	102,3	, 0	,12	4, 00
20 r .0	24 Is in t n St	2, 00,000			2 0,000	243, 0	23 , 00	231,2 0	22 ,000
20 r .0	24 Uni n St	00,000			0,000	68,2 0	66, 00	64, 0	63,000
	Total FY 24 New Bonding	**23,850,000**							
10 r4.	2 - ire En ine 4	800,000				116,000	112,400	108,800	10 ,200
	Authorized 11/14/22					an Interest	an Interest		
20 r .0	2 -New P ice aci it	38,000,000				400,000	800,000	3,800,000	3, 0 ,000
20 r .0	2 -Sch aciities a ita l r e ents	6 0,000				6 ,000	63,3	61, 0	60,12
20 r .0	2 - an Ac isiti n	00,000				0,000	48, 0	4 , 00	46,2 0
20 r .0	2 - it wi e aci ities a ita l r e ents	00,000				0,000	48, 0	4 , 00	46,2 0
20 r .0	2 -Mechanic Street har Pier	1,000,000				100,000	, 00	,000	2, 00
20 r .0	2 - ate St ri e Re ace ent	1, 00,000				1 0,000	146,2 0	142, 00	138, 0
20 r .0	2 -The ree Nei h rh Rec nstr cti n	00,000				0,000	48, 0	4 , 00	46,2 0
	Total FY 25 New Bonding	**43,450,000**							
20 r .0	26-Sch aciities a ita l r e ents	6 0,000					6 ,000	63,3	61, 0
20 r .0	26-E e entar Sch s U ra e	3,000,000					300,000	2 2, 00	28 ,000
20 r .0	26- ear ie - eachers Gran stan	1,000,000					100,000	, 00	,000
20 r .0	26- it Ha HVA l r e ents	00,000					0,000	48, 0	4 , 00
20 r .0	26- it wi e aci ities a ita l r e ents	1,000,000					100,000	, 00	,000
20 r .0	26-Mar et St Si e Path	400,000					40,000	3 ,000	38,000
20 r .0	26-US R te 1 New Si e Path nstr cti n	1,000,000					100,000	, 00	,000
20 r .0	26-Green an R Mi e R i e Pe l r e e	8 ,000					8, 00	,038	,
20 r .0	26- a e - rthwic nnect r R a wa	1,000,000					100,000	, 00	,000
20 r .0	26- eet Street Uti ities U ra es Streetsca e	2,000,000					200,000	1 ,000	1 0,000
20 r .0	26- ha e Street	340,000					34,000	33,1 0	32,300
	Total FY 26 New Bonding	**11,475,000**							
20 r .0	2 -Sch aciities a ita l r e ents	1,000,000						100,000	, 00
20 r .0	2 - it wi e aci ities a ita l r e ents	00,000						0,000	48, 0
20 r .0	2 -The ree Nei h rh Rec nstr cti n	800,000						80,000	8,000
	Total FY 27 New Bonding	**2,300,000**							
10 r4.	28- ire T wer	1, 00,000							
20 r .0	28-Presc tt Par Master P an l r e ents	1, 0,000							1 ,000
20 r .0	28- it wi e aci ities a ita l r e ents	00,000							0,000
10 r4.	28- it wi e Si ewa Rec nstr cti n Pr ra	800,000							116,000

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

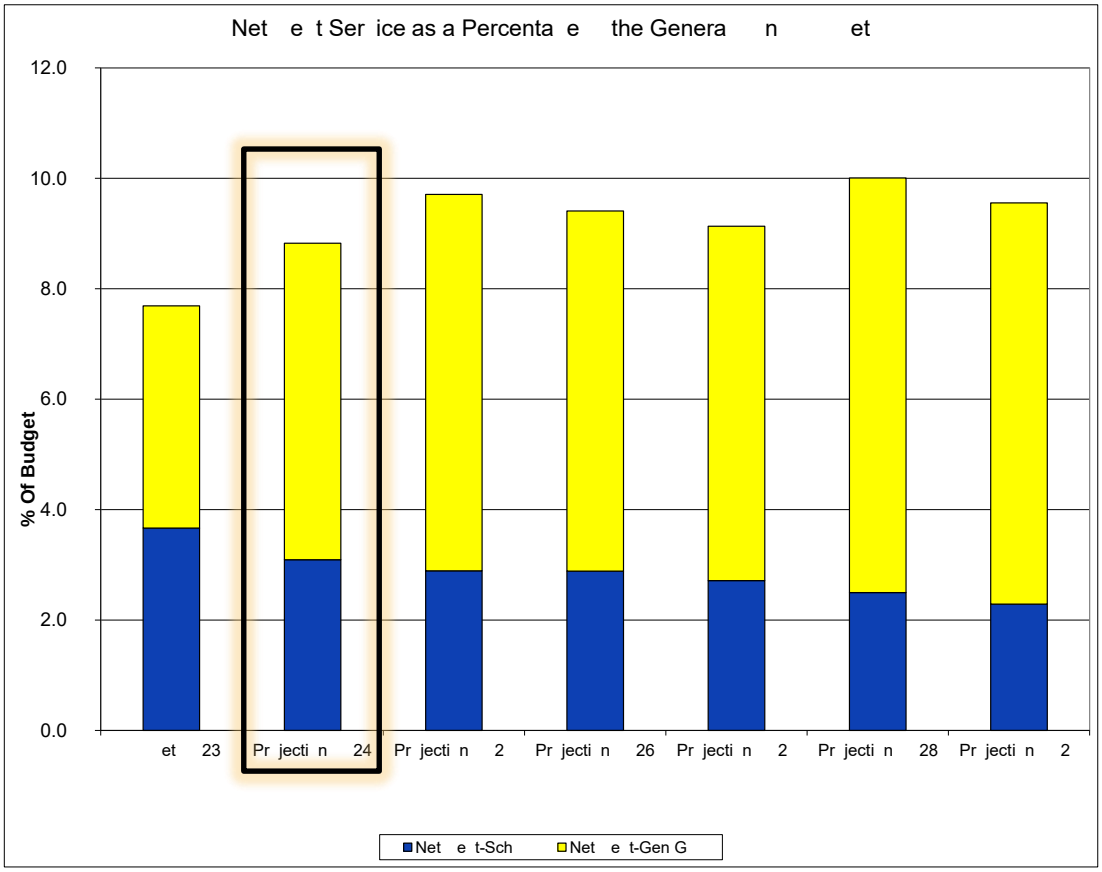
n Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
10 r 4.	28-Street Pa in , Mana e ent an Reha i itati r	4,000,000							80,000
10 r 4.	28-Pease Tra e rt Street Reha i itati n	1,000,000							14 ,000
	Total FY 28 New Bonding	**8,050,000**							
10 r 4.	2 - ire En ine 6	800,000							
20 r .0	2 -E e entar Sch s U ra e	2,000,000							
20 r .0	2 - an Ac isiti n	00,000							
20 r .0	-2 S th Mi P n Pa r n	1, 00,000							
20 r .0	2 -New O t r ie s	3,000,000							
20 r .0	2 -Green an R a Recreati n aci it	6,100,000							
20 r .0	2 -O t r P H se	3,2 0,000							
20 r .0	2 -Presc tt Par Master P an l r e ents	1, 0,000							
20 r .0	2 - it Ha HVA l r e ents	1,000,000							
20 r .0	2 -Rec c in S i aste Trans er Stati n	, 00,000							
20 r .0	2 - it wi e aci ities a ita l r e ents	1,000,000							
20 r .0	2 - wnt wn Aeria Uti ities Un er r n in	2, 00,000							
20 r .0	2 -Ha t n ranch Rai Trai (NH Seac ast ree	880,000							
10 r 4.	2 - it wi e Si ewa Rec nstr cti n Pr ra	400,000							
10 r 4.	2 -Street Pa in , Mana e ent an Reha i itati r	2,000,000							
10 r 4.	2 -Pease Tra e rt Street Reha i itati n	00,000							
10 r 4.	2 - n ins A en e	1,100,000							
10 r 4.	2 -Pineh rst R a l r e ents	300,000							
10 r 4.	2 -Ma is n St R a wa l r e ents	3 0,000							
10 r 4.	2 -The ree Nei h rh Rec nstr cti n	1,000,000							
	Total FY 29 New Bonding	**36,630,000**							
	Total Projected CIP FY 24-29	**125,755,000**							
	Total Projected not Authorized FY 23	**2,800,000**							
	Total Authorized Unissued FY 18-22	**39,253,821**							
	Total General Fund-Projected Future Debt		**413,763**	**3,583,893**	**6,413,682**	**7,232,298**	**8,602,188**	**11,720,891**	**12,477,469**
Future Debt Related Revenues									
	Total Future Debt Related Revenues-General Fund		**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Total Net Projected Future Debt-General Fund		413, 63	3, 83,8 3	6,413,682	,232,2 8	8,602,188	11, 20,8 1	12,4 ,46
	Total Gross Issued and Projected Debt-General Fund		**13,629,821**	**14,494,327**	**16,247,116**	**16,287,431**	**16,353,047**	**18,446,475**	**18,039,653**
	Total Debt Related Revenues Actual and Projected		**(3,457,196)**	**(2,340,974)**	**(2,240,974)**	**(2,240,974)**	**(2,240,974)**	**(2,240,974)**	**(2,073,360)**
Total Net Issued and Projected Debt-General Fund			**10,172,625**	**12,153,353**	**14,006,142**	**14,046,457**	**14,112,073**	**16,205,501**	**15,966,293**

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG TERM DEBT SERVICE FORECAST MODEL

City of Portsmouth

Net Debt Service as a Percentage of the General Fund Budget

	Budget FY23	Projection FY24	Projection FY25	Projection FY26	Projection FY27	Projection FY28	Projection FY29
T ta Gen n ith t e t Ser ice	118,64 ,0 0	123,248, 1	128,030, 62	132, 8,148	138,1 8,4 6	143, 1 ,02	14 ,08 , 63
Increase FY 24 and beyond:							
3.88							
E istin e t Ser ice-Sch	6,2 6,1	4,443,106	4,30 , 06	4,0 2,606	3, 02, 81	3, 8, 31	3, 88,2 6
E istin e t Ser ice-Gen G	6, 1 , 04	6,46 ,328	, 2 , 2	4, 62, 28	3,848,2 8	2, 46,6 3	1, 3, 28
Pr jecte e t Ser ice-Sch	310,000	,2 0	608,12	,3	1,032, 00	1,00 ,12	, 0
Pr jecte e t Ser ice-Gen G	103, 63	3,026,643	,80 ,	6,2 4, 23	, 6 ,688	10, 1 , 66	11,4 , 1
Total Gross Debt Service	**13,629,821**	**14,494,327**	**16,247,116**	**16,287,431**	**16,353,047**	**18,446,475**	**18,039,653**
e t Ser ice Re ate Re en es-Sch s	(1, ,1 6)	(40, 4)	(40, 4)	(40, 4)	(40, 4)	(40, 4)	(40, 4)
e t Ser ice Re ate Re en es-Gen G	(1, 00,000)	(1,600,000)	(1, 00,000)	(1, 00,000)	(1, 00,000)	(1, 00,000)	(1,332,386)
Net e t-Sch	4,848,	4,2 ,382	4,1 2,6	4,30 ,00	4,1 4,10	4,043,082	3,82 ,032
Net e t-Gen G	,323,666	,8 3, 1	,833,484	, 3 ,4 0	, 1 , 66	12,162,418	12,141,260
Total Net Debt	**10,172,625**	**12,153,353**	**14,006,142**	**14,046,457**	**14,112,073**	**16,205,501**	**15,966,293**
T ta Pr jecte Genera n et	132,2 4, 11	13 , 42,846	144,2 ,6	14 ,28 ,	1 4, 11, 22	161, 6 ,4	16 ,12 ,21
Percenta e Net e t-Sch et	**3.67%**	**3.09%**	**2.89%**	**2.89%**	**2.71%**	**2.50%**	**2.29%**
Percenta e Net e t-Gen G et	**4.02%**	**5.73%**	**6.82%**	**6.52%**	**6.42%**	**7.51%**	**7.26%**
	et 23	Pr jecti n 24	Pr jecti n 2	Pr jecti n 26	Pr jecti n 2	Pr jecti n 28	Pr jecti n 2
Total Percentage Net Debt Service of Budget:	**7.69%**	**8.82%**	**9.71%**	**9.41%**	**9.13%**	**10.01%**	**9.55%**



CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
ISSUED DEBT									
	PARKING & TRANSPORTATION FUND-Issued Debt		**FY 23**	**FY 24**	**FY 25**	**FY 26**	**FY 27**	**FY 28**	**FY 29**
AAA	**06/20/19 19 Foundry Parking Garage**	**$26,200,000($23,149,000)**							
	Principal-Last Pmt FY 39	20 r	80,000	1,02 ,000	1,080,000	1,130,000	1,1 ,000	1,2 0,000	1,31 ,000
	Interest		800,063	1,063	6 ,813	64 ,813	8 ,313	2 , 63	46 ,063
	Total Parking/Trans Fund Issued Debt Principal Due		80,000	1,02 ,000	1,080,000	1,130,000	1,1 ,000	1,2 0,000	1,31 ,000
	Total Parking/Trans Fund Issued Debt Interest Due		800,063	1,063	6 ,813	64 ,813	8 ,313	2 , 63	46 ,063
	Total Parking/TransFund-Issued Debt		1, 80,063	1, 6,063	1, ,813	1, ,813	1, 84,313	1, , 63	1, 82,063
PROJECTED FUTURE DEBT:									
	Act a t ete a j st ent								
	PARKING/TRANSPORTATION FUND-Projected Future Debt		**FY 23**	**FY 24**	**FY 25**	**FY 26**	**FY 27**	**FY 28**	**FY 29**
			AN Interest						
20 r4.	22 Hi h Han er aci it - a ita l r e ents	6,300,000	6 ,000	630,000	614,2 0	8, 00	82, 0	6 ,000	1,2 0
	Authorized 08/02/21								
20 r .0	24- n r P ace ar in O ices	1,2 0,000			12 ,000	121,8	118, 0	11 ,62	112, 00
20 r .0	26-Mar et S are U ra es	1,000,000					100,000	, 00	,000
20 r .0	28-Mar et S are U ra es	1,000,000							100,000
	Total Parking/Transportation Fund-Projected Future Debt		**65,000**	**630,000**	**739,250**	**720,375**	**801,500**	**780,125**	**858,750**
	Future Debt Related Revenues		**FY 23**	**FY 24**	**FY 25**	**FY 26**	**FY 27**	**FY 28**	**FY 29**
	Total Future Debt Related Revenues-Parking/Transportation Fund		-	-	-	-	-	-	-
	Total Net Projected Future Debt-Parking/Transportation Fund		6 ,000	630,000	3 ,2 0	20,3	801, 00	80,12	8 8, 0
	Total Net Issued and Projected Debt-Parking/Transportation Fund		1,84 ,063	2,406,063	2, 1 ,063	2,4 6,188	2, 8 ,813	2, ,688	2,640,813

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

n Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
ISSUED DEBT										
	DEBT SERVICE FUND-Issued Debt			**FY 23**	**FY 24**	**FY 25**	**FY 26**	**FY 27**	**FY 28**	**FY 29**
AAA	**06/15/16**	**Commerce Way-Betterment**	**1.39%** **1,524,710**							
		Principal-Last Pmt FY 26		160,000	16 ,000	1 0,000	180,000			
		Interest		2 ,000	20,600	14,000	,200			
		Total Debt Service Fund Issued Debt Principal Due		160,000	16 ,000	1 0,000	180,000	-	-	-
		Total Debt Service Fund Issued Debt Interest Due		2 ,000	20,600	14,000	,200	-	-	-
		Total Debt Service Fund-Issued Debt		18 ,000	18 ,600	184,000	18 ,200	-	-	-
		Issued Debt Related Revenues								
		Pr erties S ject t erce a etter ent Assess ent		(18 ,000)	(18 ,600)	(184,000)	(18 ,200)			
		Total Net Issued Debt Service Fund		-	-	-	-	-	-	

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
	ISSUED DEBT									
	WATER FUND-Issued Debt									
SR	**11/01/02 03 SRF-Constitution Avenue**	**4,800,000**								
	Principal-Last Pmt FY 23	20 ear		240,000						
	Interest			8,8 0						
SR	**12/01/02 03 SRF-Spinney Tank**	**1,162,560**								
	Principal-Last Pmt FY 23	20 ear		8,128						
	Interest			2,168						
SR	**06/01/08 08 SRF-Madbury Treatment Plant-Design**	**2,000,000**								
	Principal-Last Pmt FY 28	20 ear		100,000	100,000	100,000	100,000	100,000	100,000	
	Interest			20, 28	1 ,440	13, 2	10,464	6, 6	3,488	
AAA	**06/20/18 18 Pleasant St Water Line**	**600,000**								
	Principal-Last Pmt FY 28	10 ear		60,000	60,000	60,000	60,000	60,000	60,000	
	Interest			18,000	1 ,000	12,000	,000	6,000	3,000	
AA	**01/15/09 09 Madbury Treatment Plant-Refunded**	**7,921,500**								
	Principal-Last Pmt FY 29	20 ear		,000	,000	0,000	0,000	0,000	0,000	86, 00
	Interest			221,460	18 ,660	1 ,860	126,260	4,660	63,060	31,460
AAA	**06/20/19 19 Annual Waterline Replacement**	**$500,000($426,000)**								
	Principal-Last Pmt FY 29	10 ear		4 ,000	4 ,000	4 ,000	40,000	40,000	40,000	3 ,000
	Interest			14, 00	12,2 0	10,000	, 0	, 0	3, 0	1, 0
SR	**02/01/12 12 SRF-Madbury Treatment Plant**	**5,000,000**								
	Principal-Last Pmt FY 32	20 ear		2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000	2 0,000
	Interest			68,000	61,200	4,400	4 ,600	40,800	34,000	2 ,200
AAA	**06/25/14 14 Hobbs Hill Water Tank**	**3,500,000**								
	Principal-Last Pmt FY 34	20 ear		1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000
	Interest			8 ,2 0	80, 00	1, 0	63,000	4,2 0	4 ,000	42,000
AAA	**06/23/15 15 Water Improvements**	**4,800,000**								
	Principal-Last Pmt FY 35	20 ear		240,000	240,000	240,000	240,000	240,000	240,000	240,000
	Interest			10 ,600	6,000	86,400	6,800	6 ,600	62,400	,200
AAA	**06/15/16 16 Water Improvements**	**4,100,000**								
	Principal-Last Pmt FY 36	20 ear		20 ,000	20 ,000	20 ,000	20 ,000	20 ,000	20 ,000	20 ,000
	Interest			86,100	, 00	6 , 00	61, 00	3,300	4 ,200	4 ,100
AAA	**06/23/17 17 Water Improvements**	**2,250,000**								
	Principal-Last Pmt FY 37	20 ear		11 ,000	11 ,000	11 ,000	11 ,000	11 ,000	110,000	110,000
	Interest			3, 38	4 ,338	44, 38	40,138	3 , 38	30, 38	28, 38
AAA	**06/20/18 18 Water Improvements**	**2,500,000**								
	Principal-Last Pmt FY 38	20 ear		12 ,000	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000
	Interest			,344	1,0 4	64,844	8, 4	2,344	46,0 4	3 ,844
AAA	**06/20/19 19 Annual Waterline Replacement**	**$2,200,000($1,981,400)**								
	Principal-Last Pmt FY 39	20 ear		100,000	100,000	100,000	100,000	100,000	100,000	100,000
	Interest			66,3 4	61,3 4	6,3 4	1,3 4	46,3 4	41,3 4	36,3 4
AAA	**04/06/21 20 Water System Upgrades (Part I)**	**$4,023,000($3,633,000)**								
	Principal-Last Pmt FY 41	20 ear		1 0,000	1 0,000	1 0,000	18 ,000	18 ,000	180,000	180,000
	Interest			103,02	,42	8 ,82	80,22	2,82	64, 00	6,400
	Annual Waterline Replacement	**1,000,000**								
	Madbury Well #5	**750,000**								
	Water Transmission Main Replacement	**250,000**								
	Maplewood Ave Waterline	**1,200,000**								
	Pleasant St Water Mains	**823,000**								
AAA	**04/06/21 21 Water System Upgrades**	**$2,750,000($2,516,000)**								
	Principal-Last Pmt FY 41	20 ear		13 ,000	13 ,000	130,000	130,000	130,000	130,000	130,000
	Interest			1, 00	66, 00	61,100	, 00	0, 00	44,8 0	3 ,000
	New Groundwater Source	**500,000**								
	Water Transmission Main Replacement	**600,000**								
	Islington St Phase 1B	**1,650,000**								
AAA	**06/23/22 20 Water System Upgrades (Part II)**	**$600,000($552,800)**								
	Principal-Last Pmt FY 42	20 ear		2 ,800	30,000	30,000	30,000	30,000	30,000	30,000
	Interest			23,82 .6	22, 81.26	21,481.26	1 , 81.26	18,481.26	16, 81.26	1 ,481.26
	Reservoir Management									
AAA	**06/23/22 22 Water System Upgrades (Part I)**	**$6,600,000($6,106,600)**								
	Principal-Last Pmt FY 42	20 ear		311,600	31 ,000	31 ,000	31 ,000	31 ,000	310,000	30 ,000
	Interest			260, 84	2 1,131	23 ,381	21 ,631	203,881	188,131	1 2,631
	Annual Waterline Replacement	**1,000,000**								
	Islington Street Phase 2	**2,300,000**								

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
	Willard Avenue Reconstruction	**1,800,000**							
	Union Street Reconstruction	**1,500,000**							
	Total Water Fund Issued Debt Principal Due		3,1 2, 28	2,880,000	2,8 0,000	2,860,000	2,860,000	2,84 ,000	2,6 1, 00
	Total Water Fund Issued Debt Interest Due		1,2 2,110	1,16 ,813	1,04 ,82	28,23	811,4	00, 86	1,1 8
	Total Water Fund-Issued Debt		4,464,638	4,04 ,813	3, 1 ,82	3, 88,23	3,6 1,4	3, 4 , 86	3,262,6 8
PROJECTED FUTURE DEBT:									
	WATER FUND-Projected Future Debt								
	lss e Re n e i erence ete s act a		23, 86						
20 r .0	21- ater St ra e Tan s Paintin	8 0,000		8 ,000	82,8	80, 0	8,62	6, 00	4,3
FY 21	**Authorized 12/07/20**								
	Total FY 21 New Bonding	**850,000**							
20 r .0	22- ater Trans issi n Main Re ace ent	,300,000		30,000	11, 0	6 3, 00	6 ,2 0	6 ,000	638, 0
FY 22	**Authorized 08/23/21**								
	Total FY 22 New Bonding	**7,300,000**							
30 r .	23- e Stati n l r e ents	1,000,000		103,333	101,000	8,66	6,333	4,000	1,66
30 r .	23- ater St ra e Tan s Paintin	3 0,000		36,16	3 ,3 0	34, 33	33, 1	32, 00	32,083
30 r .	23- art ett Street Utiities U ra es an Streets	800,000		82,66	80,800	8, 33	,06	,200	3,333
FY 23	**Authorized 07/11/22**								
	Total FY 23 New Bonding	**2,150,000**							
30 r .	24-Ann a ater ine Re ace ent	1,000,000			103,333	101,000	8,66	6,333	4,000
30 r .	24-New Gr n water S rce	2,000,000			206,66	202,000	1 ,333	1 2,66	188,000
30 r .	24-Green an e P AS Treat ent	2, 00,000			2 8,333	2 2, 00	246,66	240,833	23 ,000
30 r .	24- er ater E er enc Interc nnecti n	1, 26, 00			1 8,40	1 4,3	1 0,348	166,320	162,2 1
30 r .	24-E n A e	00,000			1,66	0, 00	4 ,333	48,16	4 ,000
30 r .	24-Is in t n 2c	8 0,000			8 ,833	8 ,8 0	83,86	81,883	, 00
30 r .	24-Uni n St	00,000			2,333	0, 00	6 ,06	6 ,433	6 ,800
	Total FY 24 New Bonding	**9,276,500**							
30 r .	2 - ater St ra e Tan s l r e ents	400,000				41,333	40,400	3 ,46	38, 33
30 r .	2 -Ma r ater Treat ent P ant aci it l	6 0,000				6 ,16	6 ,6 0	64,133	62,61
30 r .	2 -The ree Nei h rh Rec nstr cti n	00,000				1,66	0, 00	4 ,333	48,16
	Total FY 25 New Bonding	**1,550,000**							
30 r .	26-Ann a ater ine Re ace ent	1,000,000					103,333	101,000	8,66
30 r .	26- e Stati n l r e ents	00,000					2,333	0, 00	6 ,06
30 r .	26-Reser ir Mana e ent	1,000,000					103,333	101,000	8,66
30 r .	26- eet Street Uti ities U ra es Stretsca e	2,000,000					206,66	202,000	1 ,333
30 r .	26- ha e Street	330,000					34,100	33,330	32, 60
30 r .	26- P e l r e ents	1,000,000					103,333	101,000	8,66
	Total FY 26 New Bonding	**6,030,000**							
30 r .	2 - ater St ra e Tan s l r e ents	4,000,000						413,333	404,000
30 r .	2 -The ree Nei h rh Rec nstr cti n	800,000						82,66	80,800
	Total FY 27 New Bonding	**4,800,000**							
30 r .	28-Ann a ater ine Re ace ent	1,000,000							103,333
	Total FY 28 New Bonding	**1,000,000**							
30 r .	2 -The ree Nei h rh Rec nstr cti n	1,000,000							
	Total FY 29 New Bonding	**1,000,000**							
	Total Projected FY 24-29	**23,656,500**							
	Total Authorized Unissued	**10,300,000**							
	Total Water Fund-Projected Future Debt		**23,986**	**1,037,167**	**1,970,347**	**2,083,477**	**2,655,923**	**3,087,200**	**3,114,609**
	Total Issued and Projected Debt Water Fund		**4,488,624**	**5,084,979**	**5,888,171**	**5,871,713**	**6,327,422**	**6,632,985**	**6,377,307**

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
SR	**05/04/05 05 SRF-Sewer Projects Phase 2**	**8,898,110**							
	Principal-Last Pmt FY 25	20 ear	**444,905**	444, 0	444, 0				
	Interest-State reca c ate interest startin in 1 t ta sa in 04,1 6		24,	16,63	8,320				
AAA	**06/15/16 16 Sewer System Improvements**	**1,000,000**							
	Principal-Last Pmt FY 26	10 ear	**100,000**	100,000	100,000	100,000			
	Interest		16,000	12,000	8,000	4,000			
AAA	**06/15/17 17 Goose Bay and Pumping Stations**	**900,000**							
	Principal-Last Pmt FY 27	10 ear	**90,000**	0,000	0,000	0,000	0,000		
	Interest		18,000	14,400	10,800	,200	3,600		
SR	**12/01/08 09 SRF-Sewer Projects Phase 3**	**5,508,137**							
	Principal-Last Pmt FY 28	20 ear	2 ,40	2 ,40	2 ,40	2 ,40	2 ,40	2 ,40	
	Interest-State reca c ate interest startin in 1 t ta sa in 306,168		3 ,328	32, 3	26,21	1 ,664	13,10	6,	
SR	**12/01/08 09 SRF-Lower Court Street Loan**	**688,562**							
	Principal-Last Pmt FY 28	20 ear	34,428	34,428	34,428	34,428	34,428	34,428	
	Interest-State reca c ate interest startin in 1 t ta sa in 36,048		4, 16	4,0	3,2 8	2,4 8	1,63	81	
AAA	**06/20/18 18 Sewer Line and Pump Station Improvements**	**1,800,000**							
	Principal-Last Pmt FY 28	10 ear	180,000	180,000	180,000	180,000	180,000	180,000	
	Interest		4,000	4 ,000	36,000	2 ,000	18,000	,000	
AAA	**06/20/19 19 Consent Decree-Union St-Annual Sewerline**	**$1,600,000($1,361,100)**							
	Principal-Last Pmt FY 29	10 ear	140,000	140,000	140,000	13 ,000	13 ,000	12 ,000	120,000
	Interest		46, 0	3 , 0	32, 0	2 , 0	1 ,000	12,2 0	6,000
SR	**01/01/11 11 SRF-Rye Line Pump Station Upgrades**	**1,069,714**							
	Principal-Last Pmt FY 30	20 ear	3,486	3,486	3,486	3,486	3,486	3,486	3,486
	Interest-State reca c ate interest startin in 1 t ta sa in 2 ,4 6		11,0	,6 4	8,2 2	6, 10	, 28	4,146	2, 64
SR	**01/01/11 11 SRF-201 Facilities Plan Updates**	**1,000,000**							
	Principal-Last Pmt FY 30	20 ear	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Interest-State reca c ate interest startin in 1 t ta sa in 24,288		10,336	,044	, 2	6,460	,168	3,8 6	2, 84
SR	**12/16/11 12 SRF-LTCP Bartlett St. Area Sewer Ext**	**5,290,233**							
	Principal-Last Pmt FY 31	20 ear	264, 12	264, 12	264, 12	264, 12	264, 12	264, 12	264, 12
	Interest-State reca c ate interest startin in 1 t ta sa in 1 1,222		62,324	,3	48,4 4	41, 4	34,62	2 , 00	20,
AAA	**12/14/21 12 P.I.W.W.T.P. Prel. Eng and LTCP Imp-Refunding**	**1,260,000**							
	Principal-Last Pmt FY 32	10 R	120,000	120,000	12 ,000	12 ,000	12 ,000	12 ,000	130,000
	Interest		60,000	4,000	4 ,8	41,62	3 ,3	2 ,12	22, 0
AA	**03/19/12 12 LTCP Contract #3B and Cass St Area**	**8,000,000**							
	Principal-Last Pmt FY 32	20 ear	400,000	400,000	400,000	400,000	400,000	400,000	400,000
	Interest		106, 00	4, 00	86,000	6, 0	66,000	4,000	42,000
AAA	**06/27/13 13 LTCP Contract #3C Lincoln Area**	**3,929,000**							
	Principal-Last Pmt FY 33	20 ear	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000
	Interest		6 , 10	60,060	4,210	48,360	42, 10	36,660	30,810
SR	**06/01/14 14 SRF-LTCP Contract #3C**	**5,595,874**							
	Principal-Last Pmt FY 33	20 ear	2 , 4	2 , 4	2 , 4	2 , 4	2 , 4	2 , 4	2 , 4
	Interest		103,166	3, 8	84,408	,02	6 ,6 1	6,2 2	46,8 3
AAA	**06/25/14 14 Peirce Island WWTP**	**10,000,000**							
	Principal-Last Pmt FY 34	20 ear	00,000	00,000	00,000	00,000	00,000	00,000	00,000
	Interest		2 ,000	230,000	20 ,000	180,000	1 ,000	140,000	120,000
AAA	**06/25/14 14 Pease WWTP**	**3,500,000**							
	Principal-Last Pmt FY 34	20 ear	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000
	Interest		8 ,2 0	80, 00	1, 0	63,000	4,2 0	4 ,000	42,000
AAA	**06/23/15 15 Pease WWTP**	**1,000,000**							
	Principal-Last Pmt FY 35	20 ear	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Interest		22,000	20,000	18,000	16,000	14, 00	13,000	11, 00
AAA	**06/15/16 16 Lafayette Rd Pumping Station**	**3,000,000**							
	Principal-Last Pmt FY 36	20 ear	**150,000**	1 0,000	1 0,000	1 0,000	1 0,000	1 0,000	1 0,000
	Interest		63,000	,000	1,000	4 ,000	3 ,000	36,000	33,000
AAA	**06/15/17 17 Annual Sewerline**	**2,500,000**							
	Principal-Last Pmt FY 37	20 ear	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000
	Interest		60,1 6	,1 6	0,1 6	4 ,1 6	40,1 6	3 ,1 6	32,6 6
AAA	**06/15/18 18 Annual Sewerline and Pumping Stations**	**3,000,000**							
	Principal-Last Pmt FY 38	20 ear	1 0,000	1 0,000	1 0,000	1 0,000	1 0,000	1 0,000	1 0,000
	Interest		2,813	8 ,313	,813	0,313	62,813	,313	4 ,813
AAA	**06/20/19 19 Pease Wastewater Treatment Plant**	**$7,200,000($6,490,000)**							
	Principal-Last Pmt FY 39	20 ear	32 ,000	32 ,000	32 ,000	32 ,000	32 ,000	32 ,000	32 ,000
	Interest		21 ,444	201,1 4	184, 44	168,6 4	1 2,444	136,1 4	11 , 44
AAA	**04/06/21 20 Sewer System Upgrades**	**$2,745,000($2,432,300)**							
	Principal-Last Pmt FY 41	20 ear	130,000	130,000	130,000	120,000	120,000	120,000	120,000
	Interest		68, 00	63, 00	8, 00	3,300	48, 00	43,100	3 , 00
	Annual Sewerline Replacement	**1,000,000**							
	Pleasant St Sewerline	**770,000**							
	Maplewood Ave Sewerline	**975,000**							

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin			FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
AAA	**04/06/21 21 Sewer System Upgrades**	**$5,250,000($4,816,700)**							
	Principal-Last Pmt FY 41	20 ear	24 ,000	24 ,000	240,000	240,000	240,000	240,000	240,000
	Interest		136,000	126,200	116,400	106,800	,200	86,400	,600
	Mechanic St Pump Station Force Main	**3,600,000**							
	Islington St Phase 1B	**1,650,000**							
AAA	**06/23/22 22 Sewer System Upgrades (Part I)**	**$8,900,000($8,232,200)**							
	Principal-Last Pmt FY 42	20 ear	422,200	42 ,000	42 ,000	42 ,000	420,000	420,000	41 ,000
	Interest		3 1, 2	338,613	31 ,363	2 6,113	2 4,863	2 3,863	232,863
	Annual Sewerline Replacement	**500,000**							
	Mechanic Street Pumping Station	**2,000,000**							
	Islington Street Phase 2	**2,300,000**							
	Willard Avenue Reconstruction	**3,000,000**							
	Union Street Reconstruction	**1,100,000**							
SR	**04/01/22 22 SRF-PI WWTP Upgrades**	**80,883,042**							
	Principal-Last Pmt FY 51	30 ear	2, ,6 4	2, ,6 4	2, ,6 4	2, ,6 4	2, ,6 4	2, ,6 4	2, ,6 4
	Interest		1,483,23	1,432,30	1,381,1	1,330,001	1,2 8,84	1,22 ,6 3	1,1 6, 3
	T ta Interest sa in s r State reca c ati n 1 - 31 1, 3 ,384								
	Total Sewer Fund Issued Debt Principal Due		,4 ,42 .6	,460,22 .6	,460,22 .6	,000,320.1	6,8 ,320.1	6, ,320.2	6,300,48 .1
	Total Sewer Fund Issued Debt Interest Due		3,462, 2	3,231,108	2, 4,4 8	2, ,133	2, 2 ,	2,316,121	2,104,1 1
	Total Sewer Fund-Issued Debt		10, 20,1 8	10,6 1,334	10,4 4,684	, ,4 3	,423,0	,111,442	8,404,6 6

Issued Debt Related Revenues	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
Phase 2-State Ai - 06	(140,)	(138,463)	(13 , 6)				
R e ine P Stati n -8 6	(22,264)	(21,8 1)	(21,436)	(21,021)	(20,60)	(20,1 2)	(1 , 8)
inc n Area ntract 3 -8	(81,6 2)	(,463)	(,23)	(,006)	(2,)	(0, 4)	(68,8 8)
inc n Area ntract 3 -8 8	(,3 4)	(, 60)	(6,126)	(4,4 2)	(2,860)	(1,226)	(6 , 2)
ass St Area -8	(1,3)	(4 , 6)	(48,)	(4 ,1 4)	(4 , 3)	(44,3 2)	(43,301)
art ett Area -860	(0, 0)	(6 , 22)	(68,13)	(66, 2)	(6 ,36)	(63, 82)	(62,)
inc n Area 3A -861	(80,344)	(8,468)	(6, 2)	(4, 16)	(2,841)	(0, 6)	(6 ,08)
Peirce Is an TP - 00	(43,863)	(42,)	(42,088)	(40,820)	(3 , 2)	(38,28)	(3 ,01)
Total Issued Debt Related Revenues-Sewer Fund	**(570,780)**	**(558,078)**	**(546,136)**	**(399,961)**	**(389,757)**	**(379,551)**	**(370,252)**
Total Net Issued Debt-Sewer Fund	**10,349,418**	**10,133,256**	**9,908,548**	**9,357,492**	**9,033,340**	**8,731,891**	**8,034,424**

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
	SEWER FUND-Projected Future Debt									
	lss e i erence ete s act a									
				2 ,0 1						
	1 -P.I. . .T.P. U ra es		,000,000							
	SR iss e 22 2		(3, 83,043)							
30 r 4	a ance A th ri ati n		1,016,	6,801	10 ,086	102, 13	100,340	, 6	, 4	3,221
	Authorized 03/14/16									
30 r 2	20- nsent Miti ati n (SR)		4,400,000	4 ,000	1 ,46	1 6, 3	1 4,480	1 1, 8	18 ,4 3	18 ,000
	Authorized 07/15/19									
	ess Princi a r i eness (1)		(660,000)							
FY 20	**Total SRF**		**3,740,000**							
30 r 2	22-Pease astewater Treat ent aci it - ssi e SR		1, 00,000	6, 6	68,373	67,519	66,664	65,809	64,955	64,100
	Authorized 08/02/21									
	irst ,000 r i eness		(,000)							
	S T ta		1,42 ,000							
	10 r i eness therea ter		(142, 00)							
	T ta SR		**1,282,500**							
20 r .0	22-P in Stati n U ra es		0,000		,000	3,12	1,2 0	6 ,3	6 , 00	6 ,62
20 r .0	22-Marj rie St P in Stati n		1,000,000		100,000	, 00	,000	2, 00	0,000	8 , 00
20 r .0	22-Sewer Ser ice r Sa a re A e Sewer E tensi n		300,000		30,000	2 ,2 0	28, 00	2 , 0	2 ,000	26,2 0
FY 22	**Authorized 08/02/21**									
	Total FY 22 New Bonding		**2,050,000**							
30 r .	23-Ann a Sewer ine Re ace ent		00,000		1,66	0, 00	4 ,333	48,16	4 ,000	4 ,833
30 r .	23-Pease astewater Treat ent aci it		0,000		6,833	, 0	4,26	2, 83	1, 00	0,41
30 r .	23-P in Stati n U ra es		800,000		82,66	80,800	8, 33	,06	,200	3,333
30 r .	23-Sewer Main r Sa a re A en e Area Sewer E tensi n		2, 00,000		2 8,333	2 2, 00	246,66	240,833	23 ,000	22 ,16
30 r .	23-Sewer Ser ice r Sa a re A e Sewer E tensi n		1,200,000		124,000	121,200	118,400	11 ,600	112,800	110,000
30 r .	23- art ett Street Utiities U ra es an Streetsca e		800,000		82,66	80,800	8, 33	,06	,200	3,333
30 r .	23- eet Street Uti ities U ra es Stretsca e		2,200,000		22 ,333	222,200	21 ,06	211, 33	206,800	201,66
FY 23	**Authorized 07/11/22**									
	Total FY 23 New Bonding		**8,550,000**							
30 r .	24-Ann a Sewer ine Re ace ent		1,000,000			103,333	101,000	8,66	6,333	4,000
30 r .	24-Pease astewater Treat ent aci it		30,800,000			3,182,66	3,110,800	3,038, 33	2, 6 ,06	2,8 ,200
30 r .	24- n Ter ntr Re ate Pr jects		300,000			31,000	30,300	2 ,600	28, 00	28,200
30 r .	24- r A en e Sewer Se arati n		2 0,000			2 ,833	2 ,2 0	24,66	24,083	23, 00
30 r .	24-Sewer Ser ice r Sa a re A e Sewer E tensi n		36 ,000			3 , 1	36,86	36,013	3 ,162	34,310
30 r .	24- eet Street Uti ities U ra es Stretsca e		2,000,000			206,66	202,000	1 ,333	1 2,66	188,000
30 r .	24 E n A e		200,000			20,66	20,200	1 , 33	1 ,26	18,800
30 r .	24 Is in t n 2c		2,100,000			21 ,000	212,100	20 ,200	202,300	1 ,400
30 r .	24 Uni n St		00,000			2,333	0, 00	6 ,06	6 ,433	6 ,800
	Total FY 24 New Bonding		**37,715,000**							
30 r .	2 - astewater Re se at Pease T		2,000,000				206,66	202,000	1 ,333	1 2,66
30 r .	2 -P in Stati n U ra es		00,000				1,66	0, 00	4 ,333	48,16
30 r .	2 -Sewer Ser ice r Sa a re A e Sewer E tensi n		36 ,000				3 , 1	36,86	36,013	3 ,162
30 r .	2 -Peirce Is an astewater Treat ent aci it		1, 00,000				1 6,333	1 1, 00	18 ,46	183,033
30 r .	2 -The ree Nei h rh Rec nstr cti n		00,000				1,66	0, 00	4 ,333	48,16
	Total FY 25 New Bonding		**5,265,000**							
30 r .	26-Ann a Sewer ine Re ace ent		1,000,000					103,333	101,000	8,66
30 r .	26- n Ter ntr Re ate Pr jects		1,000,000					103,333	101,000	8,66
30 r .	26-Sewer Ser ice r Sa a re A e Sewer E tensi n		36 ,000					3 , 1	36,86	36,013
30 r .	26- eet Street Uti ities U ra es Stretsca e		3,000,000					310,000	303,000	2 6,000
30 r .	26- ha e Street		330,000					34,100	33,330	32, 60
30 r .	26- P e l r e ents		1,000,000					103,333	101,000	8,66
	Total FY 26 New Bonding		**6,695,000**							

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL
n **CASH BASIS**

Ratin				FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
	30 r .	2 - astewater Re se at Pease T	6,300,000						6 1,000	636,300
	30 r .	2 - n Ter ntr Re ate Pr jects	1,000,000						103,333	101,000
	30 r .	2 -P in Stati n U ra es	00,000						1,66	0, 00
	30 r .	2 -Sewer Ser ice r Sa a re A e Sewer E tensi n	36 ,000						3 , 1	36,86
	30 r .	2 -Peirce Is an astewater Treat ent aci it	3,000,000						310,000	303,000
	30 r .	2 -The ree Nei h rh Rec nstr cti n	800,000						82,66	80,800
		Total FY 27 New Bonding	**11,965,000**							
	30 r .	28-Ann a Sewer ine Re ace ent	1,000,000							103,333
	30 r .	28- n Ter ntr Re ate Pr jects	1,000,000							103,333
	30 r .	28-Sewer Ser ice r Sa a re A e Sewer E tensi n	3 0,000							36,16
		Total FY 28 New Bonding	**2,350,000**							
	30 r .	2 -P in Stati n U ra es	00,000							
	30 r .	2 -Sewer Ser ice r Sa a re A e Sewer E tensi n	36 ,000							
	30 r .	2 -The ree Nei h rh Rec nstr cti n	1,000,000							
		Total FY 29 New Bonding	**1,865,000**							
		Total Projected FY 24-29	**65,855,000**							
		Total Authorized Unissued (includes SRF)	**15,622,500**							
		Total Sewer Fund-Projected Future Debt		**135,437**	**1,461,426**	**5,327,846**	**5,753,099**	**6,313,833**	**7,403,512**	**7,471,723**
		Total Net Projected Future Debt-Sewer Fund		13 ,43	1,461,426	,32 ,846	, 3,0	6,313,833	,403, 12	,4 1, 23
		Total Gross Issued and Projected Debt-Sewer		11,0 ,63	12,1 2, 60	1 , 82, 30	1 , 10, 2	1 , 36, 30	16, 14, 4	1 ,8 6,3
		Total Net Issued and Projected Debt-Sewer Fund		**10,484,855**	**11,594,682**	**15,236,394**	**15,110,591**	**15,347,173**	**16,135,403**	**15,506,147**

CITY OF PORTSMOUTH, NEW HAMPSHIRE
LONG-TERM DEBT SERVICE FORECAST MODEL

City of Portsmouth

Outstanding Debt Service by Fiscal Year

		General Fund-Gen Gov				General Fund-School				Total General Fund			
Fiscal Year		**Principal**	**Interest**			**Principal**	**Interest**			**Principal**	**Interest**		
FY 24	1	,21 ,000	1,2 2,328	16	16	3,12 ,000	1,318,106			8,340,000	2, 0,434	13	13
FY 25	2	4, 0 ,000	1,022, 2	14	30	3,130,000	1,1 , 06		1	,63 ,000	2,1 8,434	12	24
FY 26	3	4,13 ,000	82 , 28	13	43	3,060,000	1,032,606		28	,1 ,000	1,860,134	11	3
FY 27	4	3,1 ,000	6 3,2 8	10	3	3,010,000	8 2, 81		3	6,20 ,000	1, 4 ,8		4
FY 28	5	2,43 ,000	11,6 3	8	61	3,020,000	8, 31		46	,4 ,000	1,2 0, 84	8	3
FY 29	6	1, 3, 00	400,428		66	2, 60,000	628,2 6			4, 33, 00	1,028,684		60
FY 30	7	1,0 0,000	32 ,638	3	6	2, 3 ,000	0 ,11		64	3, 8 ,000	830, 6	6	66
FY 31	8	1,040,000	2 6,338	3	2	2,300,000	384,66		1	3,340,000	661,006		1
FY 32	9	1,000,000	230,688	3		2,30 ,000	28 , 4		8	3,30 ,000	20,281		
FY 33	10	880,000	202, 88	3	8	1,32 ,000	22 ,444	4	82	2,20 ,000	428,031	3	80
FY 34	11	880,000	1 8, 00	3	81	1,32 ,000	181,4 4	4	86	2,20 ,000	3 , 4	3	83
FY 35	12	860,000	1 4,413	3	83	1,1 ,000	140,044	3	8	2,01 ,000	2 4,4 6	3	86
FY 36	13	860,000	134, 31	3	86	1,1 ,000	10 ,8 0	3	3	2,01 ,000	240, 81	3	8
FY 37	14	8 ,000	11 ,0 0	3	8	0 ,000	1,063	3	6	1, 60,000	186,113	3	2
FY 38	15	8 0,000	,188	3	1	6 ,000	43,3	2		1, 0 ,000	138, 63	2	4
FY 39	16	8 0,000	3, 88	3	4	400,000	23, 38	1		1,2 0,000	, 2	2	6
FY 40	17	8 0,000	2, 88	3		180,000	12,013	1		1,030,000	64,800	2	8
FY 41	18	84 ,000	31,238	3		180,000	,2	1	100	1,02 ,000	38, 13	2	
FY 42	19	2 0,000	, 88	1	100	0,000	2, 38	0	100	340,000	12,32	1	100
Totals		**32,148,500**	**6,549,072**			**33,195,000**	**7,798,000**			**65,343,500**	**14,347,072**		
Re en e		RE				RE				RE			
Net Debt		**#REF!**				**#REF!**				**#REF!**			

		Parking/Transportation Fund				Debt Service Fund				Total Governmental Funds			
Fiscal Year		**Principal**	**Interest**			**Principal**	**Interest**			**Principal**	**Interest**		
FY 24	1	1,02 ,000	1,063			16 ,000	20,600	32	32	, 30,000	3,342,0 6	11	11
FY 25	2	1,080,000	6 ,813	6	11	1 0,000	14,000	33	6	8,88 ,000	2, 12,246	10	22
FY 26	3	1,130,000	64 ,813	6	1	180,000	,200	3	100	8, 0 ,000	2, 13,146	10	32
FY 27	4	1,1 ,000	8 ,313	6	23					,400,000	2,13 ,1 1		40
FY 28	5	1,2 0,000	2 , 63	6	2					6, 0 ,000	1,800,146	8	48
FY 29	6	1,31 ,000	46 ,063		36					,848, 00	1,4 , 46		
FY 30	7	1,3 ,000	401,313		43					,360,000	1,232,06	6	61
FY 31	8	1,43 ,000	346,313		0					4, ,000	1,00 ,31	6	6
FY 32	9	1,4 ,000	288, 13	8	8					4,800,000	80 ,1 4	6	2
FY 33	10	1, 2 ,000	2 ,2	8	66					3, 30,000	683,306	4	
FY 34	11	1, 0,000	1 4,2	8	4					3, ,000	4,26	4	81
FY 35	12	1,62 ,000	1 0, 0	8	82					3,640,000	44 ,006	4	86
FY 36	13	1,6 ,000	103,831		1					3,6 0,000	344,413	4	0
FY 37	14	1,2 0,000	3, 81	6						3,010,000	23 ,6 4	4	3
FY 38	15	260,000	16,081	1						1, 6 ,000	1 4,644	2	
FY 39	16	26 ,000	8,281	1	100					1, 1 ,000	10 ,806	2	
FY 40	17									1,030,000	64,800	1	8
FY 41	18									1,02 ,000	38, 13	1	100
FY 42	19									340,000	12,32	0	100
Totals		**19,490,000**	**5,501,038**			**515,000**	**41,800**			**85,348,500**	**19,889,910**		
Re en e						(1 ,000)	(41,800)			RE			
Net Debt		**19,490,000**				**0**	**0**			**#REF!**			

Fiscal Year		Water Fund				Sewer Fund				Total City of Portsmouth			
		Principal	Interest			Principal	Interest			Principal	Interest		
FY 24	1	2,880,000	1,16 ,813			,460,226	3,231,108	6	6	**19,870,226**	**7,741,017**	8	8
FY 25	2	2,8 0,000	1,04 ,82		18	,460,226	2, 4,4 8	6	12	**19,215,226**	**6,954,528**	8	16
FY 26	3	2,860,000	28,23		2	,000,320	2, ,133	6	18	**18,365,320**	**6,198,515**	8	24
FY 27	4	2,860,000	811,4		3	6,8 ,320	2, 2 ,	6	24	**17,155,320**	**5,474,447**		31
FY 28	5	2,84 ,000	00, 86		44	6, ,320	2,316,121	6	2	**16,345,320**	**4,817,053**		38
FY 29	6	2,6 1, 00	1,1 8	8	3	6,300,48	2,104,1 1		34	**14,820,485**	**4,191,135**	6	44
FY 30	7	1,8 0,000	4 1,100	6	8	6,180,486	1, 11,8 3		3	**13,390,486**	**3,635,022**	6	0
FY 31	8	1,84 ,000	424, 00	6	64	6,0 ,000	1, 2 ,844		44	**12,697,000**	**3,159,663**		
FY 32	9	1,84 ,000	3 6, 0	6	0	,812,488	1, 46,121		4	**12,457,488**	**2,712,065**		60
FY 33	10	1, 0,000	300,044			,2 ,488	1,3 ,424	4	3	**10,597,488**	**2,380,774**	4	6
FY 34	11	1, 8 ,000	24 , 63			4,802,6 4	1,24 ,6 6	4		**10,182,694**	**2,049,907**	4	6
FY 35	12	1,410,000	1 2, 2	4	84	4,122,6 4	1,121,360	3	61	**9,172,694**	**1,759,291**	4	3
FY 36	13	1,160,000	1 1,613	4	8	4,0 2,6 4	1,02 ,862	3	64	**8,922,694**	**1,521,887**	4	6
FY 37	14	,000	118, 38	3	0	3, 22,6 4	31, 21	3	6	**7,887,694**	**1,289,952**	3	80
FY 38	15	84 ,000	1,46	3	3	3, 8 ,6 4	841,01	3	0	**6,397,694**	**1,087,129**	3	82
FY 39	16	1 ,000	6 ,02	2		3,63 ,6 4	4,001	3	3	**5,867,694**	**926,832**	2	8
FY 40	17	620,000	46, 81	2		3,31 ,6 4	6 1,64	3	6	**4,967,694**	**783,228**	2	8
FY 41	18	61 ,000	2 ,100	2		3,312,6 4	8, 3	3		**4,952,694**	**666,405**	2	8
FY 42	19	320,000	11,600	1	100	2, ,6 4	26,03	2	81	**3,617,694**	**549,964**	2	0
FY 43	20					2, ,6 4	460,38	2	83	**2,557,694**	**460,385**	1	1
FY 44	21					2, ,6 4	40 ,231	2	8	**2,557,694**	**409,231**	1	3
FY 45	22					2, ,6 4	3 8,0	2	8	**2,557,694**	**358,077**	1	4
FY 46	23					2, ,6 4	306, 23	2	0	**2,557,694**	**306,923**	1	
FY 47	24					2, ,6 4	2 , 6	2	2	**2,557,694**	**255,769**	1	6
FY 48	25					2, ,6 4	204,616	2	4	**2,557,694**	**204,616**	1	
FY 49	26					2, ,6 4	1 3,462	2	6	**2,557,694**	**153,462**	1	8
FY 50	27					2, ,6 4	102,308	2	8	**2,557,694**	**102,308**	1	
FY 51	28					2, ,6 4	1,1 4	2	100	**2,557,694**	**51,154**	1	100
Totals		**32,341,500**	**7,774,962**			**122,212,853**	**32,535,868**			**239,902,853**	**60,200,740**		
Re en e						(4, 26,868)				RE	(41,800)		
Net Debt		**32,341,500**				**117,485,985**				**#REF!**	**60,158,940**		

I. VEHI ES AN E UIPMENT

VE-07-FD-01: Ambulance Replacement Program

Department	Fire Department
Project Location	Station 2 (2010 Lafayette Rd)
Project Type	Replacement or Purchase of Vehicle
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This program is a regular replacement schedule for the City's ambulances. The 2017 Ambulance is scheduled for replacement in FY26. Funds include complete set-up including radio, lettering, striping, and equipment. 1/3 of the total cost of the vehicle is requested each year with a purchase after the third year.

Studies Identified & Useful Website Links:
• Self-Assessment of FD Operations: April 2015 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Price increase reflects changes in production costs.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	10%							$0	$140,000	$140,000
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	90%	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$780,000	$430,000	$1,210,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$780,000	$570,000	$1,350,000

VE-14-FD-02: Vehicle Replacement – Fire Engine 4

Department	Fire Department
Project Location	Station 1 (170 Court Street)
Project Type	Replacement or Purchase of a Vehicle
Commence FY	2025
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project continues the CIP Rolling Stock Replacement Program for large apparatus. This allocation will purchase a new custom rescue pumper with a 4-person cab with medical compartments, five-hundred (500) gallon water tank, 1,500 GPM pump, and related equipment to replace this 2006 Emergency One pumper. Funds include complete set-up including radio, lettering and striping as well as equipment.

Studies Identified & Useful Website Links:
• Self-Assessment of FD Operations: April 2015 • Fire Department Webpage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Funding changes reflect increases in production costs.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%		$800,000					$800,000	$0	$800,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$800,000	$0	$0	$0	$0	$800,000	$0	$800,000

VE-24-FD-03: Vehicle Replacement – Truck 5

Department	Fire Department
Project Location	
Project Type	Replacement or Purchase of a Vehicle
Commence FY	
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project continues the CIP Rolling Stock Replacement Program for large apparatus. This allocation will purchase a new aerial ladder, with a 6-person cab with medical compartments, three-hundred (300) gallon water tank, 2,000 GPM pump, and related equipment to replace this 2007 Ferrara Tower Ladder. Funds include complete set-up including radio, lettering and striping as well as equipment.

Studies Identified & Useful Website Links:
• Fire Department Webpage

Notes of Changes in Funding Plan from FY23-28 CIP:
New Project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%					$1,500,000		$1,500,000	$0	$1,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$1,500,000	$0	$1,500,000	$0	$1,500,000

VE-24-FD-04: Vehicle Replacement – Engine 6

Department	Fire Department
Project Location	
Project Type	Replacement or Purchase of a Vehicle
Commence FY	
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project continues the CIP Rolling Stock Replacement Program for large apparatus. This allocation will purchase a new custom pumper with a 6-person cab with medical compartments, five-hundred (500) gallon water tank, 1,500 GPM pump, and related equipment to replace this 2011 Emergency One pumper. Funds include complete set-up including radio, lettering and striping as well as equipment.

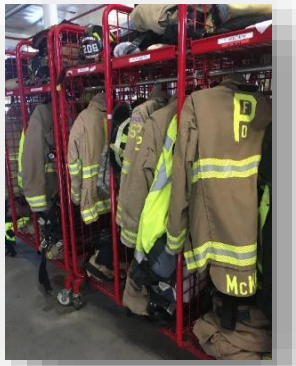
Studies Identified & Useful Website Links:
• Fire Department Webpage

Notes of Changes in Funding Plan from FY23-28 CIP:
New Project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%						$800,000	$800,000	$0	$800,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$800,000	$800,000	$0	$800,000

VE-18-FD-05: Personal Protective Clothing Replacement

Department	Fire Department
Project Location	All Fire Stations
Project Type	Equipment (non-vehicular)
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Reduce (will reduce Operating Costs)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project will continue the practice of replacing personal protective clothing every 5 years so that all personnel have a primary and secondary set of structural firefighting gear that is no more than 10 years old as required by NFPA 1851. Best practices of firefighter cancer prevention allows each firefighter to have a secondary set of gear so that an acutely soiled set can be cleaned while the firefighter remains on duty and in service.

Studies Identified & Useful Website Links:

- Fire Department Webpage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

The funds are dispersed over a 3 year period to match the recommended replacement of existing gear. 1/3 of the members will replace gear for 3 consecutive years.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	87%	$70,000	$70,000			$80,000	$80,000	$300,000	$180,000	$480,000
Fed/ State	13%							$0	$70,000	$70,000
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$70,000	$70,000	$0	$0	$80,000	$80,000	$300,000	$250,000	$550,000

VE-21-FD-06: Self Contained Breathing Apparatus (SCBA) Replacement

Department	Fire Department
Project Location	All Fire Stations
Project Type	Equipment (non-vehicular)
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project would provide for the replacement of our entire compliment of Self Contained Breathing Apparatus (SCBA). This project will include new SCBA, air bottles, masks, accountability and rescue systems. The replacement of this essential equipment is necessary based on the current age and wear of our existing units. Updated versions of these units provide for more air and breathing capacity and weigh less than our current SCBA in addition to utilizing the latest technology to improve the communication and accountability necessary to keep our members safe.

It is imperative to replace all of these units at one time to avoid the potential of substantial model year changes that would compromise firefighter safety by having differing emergency operation features or designs. I.E. Emergency Evacuation Activation, Rescue Breathing Attachments, etc.

Studies Identified & Useful Website Links:
• Fire Department Webpage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Cost of the project has been updated with recent quote from vendor. The disbursement of funds would be for $550,000 at the end of year 3.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$185,000	$185,000	$185,000				$555,000	$0	$555,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$185,000	$185,000	$185,000	$0	$0	$0	$555,000	$0	$555,000

VE-23-FD-07: Cardiac Monitors

Department	Fire Department
Project Location	Citywide
Project Type	Equipment (non-vehicular)
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project replaces three (3) front line cardiac monitor/defibrillators. These devices defibrillate, monitor, pace and diagnose cardiac arrhythmias as well as monitor blood levels of oxygen, carbon monoxide and carbon dioxide. These highly specialized devices are vital to the continuance of providing high-quality, critical medical care to the community.

Studies Identified & Useful Website Links:
• Portsmouth Fire Department Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

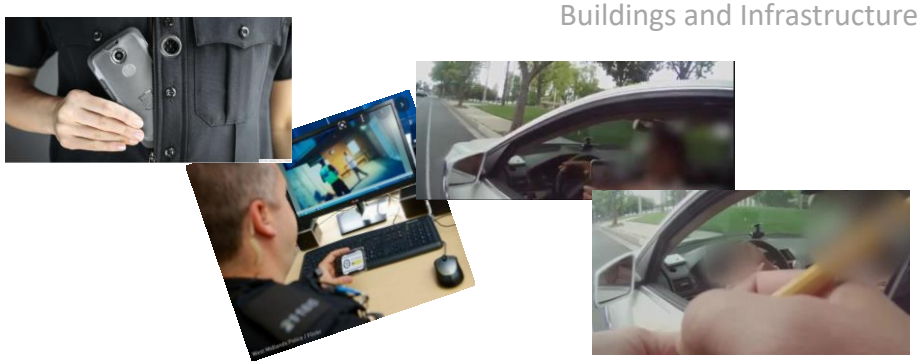
Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State (ARPA)	100%	$125,000						$125,000	$0	$125,000
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$125,000	$0	$0	$0	$0	$0	$125,000	$0	$125,000

VE-24-PD-08: Police Body Cameras

Department	Police Department
Project Location	Police Department
Project Type	Rehabilitation of a Facility
Commence FY	2021
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: In October 2021 the Police Commission adopted a set of recommendations to "improve police practices". These recommendations were the result of a year long collaboration between the police staff, the Police Commission, and a newly formed Portsmouth Resident Advocacy Group. The recommendation under 5(d) of the document is to re-assess the feasibility of Body Worn Cameras (BWC). In 2018, a 7-member resident sub-committee assessed "the pros and cons of requiring PPD officers to use body-worn cameras" and concluded not to purchase BWC at that time. Since then, developments throughout the state, in the form of the Governor's Commission on Law Enforcement Accountability (LEACT), and the legislature enacting a fund to cover initial purchase costs of BWC, influenced the groups decision to revisit this project. This request identifies the project under the CIP as a future cost item in an out year. This project is anticipated to include staff, equipment, and vendor services. Grants will be sought to off-set this project.

Studies Identified & Useful Website Links:
• Portsmouth Police Department Homepage

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	76%			$86,500				$86,500	$0	$86,500
Fed/ State	24%			$26,750				$26,750	$0	$26,750
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$113,250	$0	$0	$0	$113,250	$0	$113,250

VE-23-PW-09: Brine Equipment

Department	Public Works Department
Project Location	Citywide
Project Type	Equipment, Non Vehicular
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: This piece of equipment will provide a proven and safe method to pre-treat roads for winter. Brine is commonly used in anti-icing operations. It is made by mixing salt in water to approximately a 23% solution by weight (23% salt / 77% water). This type of treatment contributes less salt to local water bodies. The equipment will assist in the City's compliance with the Municipal Separate Storm Sewer System (MS4) permit.

Studies Identified & Useful Website Links:
• Department of Public Works – Highway Division • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Final project funding split over FY24 and FY25

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$55,000	$55,000					$110,000	$0	$110,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$55,000	$55,000	$0	$0	$0	$0	$110,000	$0	$110,000

II. UI INGS AN IN RASTRU TURE

BI-24-FD-10: Fire Station Security Upgrade

Department	Fire Department
Project Location	Fire Stations 1, 2 and 3
Project Type	Equipment, non-vehicular
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project provides safety and security to the staff of the fire department, and secures the inventory, and assets of the Department. Goal is to hire a consultant to help identify needs, right technology, and future needs then install a security system for the store rooms, offices and public entrances of the buildings using a key card or fob to grant authorized access. System would also add cameras and tie in existing cameras to security. Additionally computer software and hardware to support system and its anticipated growth.

Studies Identified & Useful Website Links:

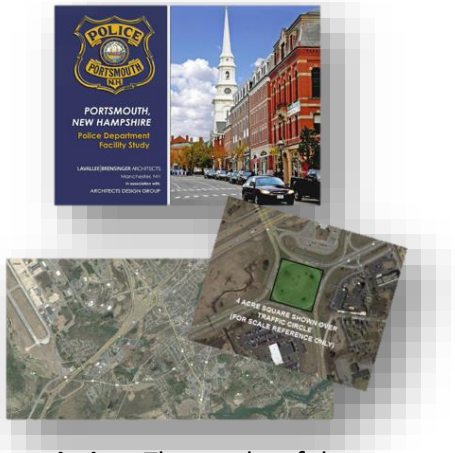
Notes of Changes in Funding Plan from FY23-28 CIP:
New Project – FY24

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$20,000	$150,000					$170,000	$0	$170,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$20,000	$150,000	$0	$0	$0	$0	$170,000	$0	$170,000

BI-16-PD-11: Police New Facility – Land Acquisition

Department	Police Department
Project Location	To Be Determined
Project Type	Land Acquisition
Commence FY	To Be Determined
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: The results of the space needs study conducted in FY14 determined the current facility no longer meets the needs of the Police Department. This project would fund the purchase of land for a new facility, if a current City-owned site is not available for this purpose. In the FY15 CIP, $50,000 was set aside for a site location selection study.

This slide is a place holder only to acknowledge the site for a new police department may not currently be owned by the city.

Studies Identified & Useful Website Links:
• Police Department Facility Study • Portsmouth Police Department Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$0	$0	$0	$0

BI-15-PD-12: New Police Department Facility

Department	Police Department
Project Location	To Be Determined
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	To Be Determined
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	High ($100,001 or more)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: The results of the space needs study conducted in FY14 determined the current facility no longer meets the needs of the Police Department. This project would fund the design and construction of a new facility after a site selection study and conceptual design are complete. In FY22, $1,400,000 was approved in the CIP to fund the preliminary designs once prospective sites were chosen. In FY23, an additional $2,800,000 was allocated to complete the pre-construction process and provide the necessary documents and information needed to make a final decision regarding construction (this funding was approved as part of the budget process, but has yet to be authorized). Note: The cost estimates provided are based on those provided in a prior study and the pricing is escalated to the current year.

Studies Identified & Useful Website Links:

- Police Department Facility Study
- Portsmouth Police Department Homepage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%		$38,000,000					$38,000,000	$4,200,000	$42,200,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$38,000,000	$0	$0	$0	$0	$38,000,000	$4,200,000	$42,200,000

BI-21-PD-13: Police Deficiencies & Repair Project

Department	Police Department
Project Location	Police Department
Project Type	Rehabilitation of a Facility
Commence FY	2021
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: A 2014 space needs study of the police facility identified deficiencies in the space allocated to the police department, as well as, operational deficiencies in function. In addition, a 2018 public presentation from a public safety architect provided insight into some of the unique needs and requirements of a police facility. Although a funding request for a new facility has been included in the CIP plan since 2015, other citywide projects have had to take precedence. A new police facility is still the goal, and preliminary steps have been taken with monies appropriated for this effort.

In the interim, the current facility has needed significant repair and upgrades to make it safe and functional. Although initial projects were identified in FY21, the funding has been used to cover mold and asbestos abatement, and restoration of the areas after the contaminated materials were removed. Luckily, some of the restoration work overlapped with projects originally identified. With the abatement project coming to a close in FY23, the department will resume working on the projects that have been on hold. It should be noted: if the police department moves into a new facility, all the necessary repairs done to the current facility will benefit any city department moving into the space.

The remaining projects include: upgrade HVAC filtration in the range, security, ADA compliance, server room upgrade, RDC (redundant/disaster recovery center) upgrade at Fire Station II, dispatch upgrade, updating old lighting throughout the PPD, evidence processing and submittal areas upgrade, renovation of former generator rooms for equipment storage, archive space, and gym area, K9 office conversion, and upgrade back parking lot surface and security fencing.

Studies Identified & Useful Website Links:

- Police Department Facility Study
- Portsmouth Police Department Homepage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

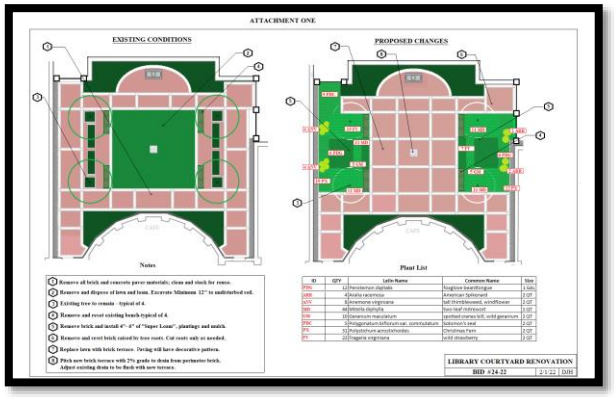
This project will end in FY24. The projected 400K in FY25 and FY26 has been removed.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$400,000						$400,000	$1,200,000	$1,600,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$400,000	$0	$0	$0	$0	$0	$400,000	$1,200,000	$1,600,000

BI-24-LI-14: Library Courtyard Renovation

Department	Library Department
Project Location	The Library Courtyard (175 Parrot Ave)
Project Type	Non-recurring rehab of a public facility
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: Renovation of the library courtyard, built in 2006. The courtyard has been closed since 2021 due to tree roots lifting and damaging brick walkways, making it unsafe. It is a great space for individuals and families, and during the pandemic we have seen increased interest in outdoor programming and would therefore like to use it more than in the past and the design work shows that, providing better space for musical performances, youth programming such as storytimes and more outdoor programs for all ages.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:
CIP Advisory Committee Changed FY25 and FY26 funding to FY24 funding split between GF and ARPA

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	35%	$30,000						$30,000	$0	$30,000
Fed/ State (ARPA)	50%	$30,000						$30,000	$0	$30,000
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	29%							$0	$25,000	$25,000
	Totals	$60,000	$0	$0	$0	$0	$0	$60,000	$25,000	$85,000

BI-07-SC-15: School Facilities Capital Improvements

Department	School Department
Project Location	District Wide
Project Type	Rehabilitation of Existing Facilities
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Description: The Portsmouth School Department has maintenance responsibilities for seven (7) buildings and the grounds that accompany them. These appropriations are used for buildings and grounds improvement projects including paving, roofing, energy efficiency improvements, infrastructure replacement, and security improvements.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Studies Identified & Useful Website Links:

- Portsmouth School Department Homepage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

1) Removes $450,000 from FY24 in PHS mechanical infrastructure and Districtwide energy projects and focuses on paving and roofing needs
2) Introduces $650,000 in both FY25 and FY26 for multi-phase paving and exterior lighting work and roof replacement at Portsmouth High School
3) Anticipates $1,000,000 in FY27 to continue ongoing capital upgrades in the athletic complex, physical security, interior upgrades, and energy work

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$550,000	$650,000	$650,000	$1,000,000			$2,850,000	$3,100,000	$5,950,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$550,000	$650,000	$650,000	$1,000,000	$0	$0	$2,850,000	$3,100,000	$5,950,000

BI-07-SC-15: SCHOOL FACILITIES CAPITAL IMPROVEMENTS

aci it Sch	I r e ent Pr ject	24	2	26	2	28	2	T ta s
istrict i e	Pa in E teri r i htin I r e ents	300,000	400,000	400,000	200,000			1,300,000
istrict i e	R Re ace ent	2 0,000	2 0,000	2 0,000	2 0,000			1,000,000
Hi h Sch	Ath etic e U ra es (Irri ati n, In rastr ct re)				22 ,000			22 ,000
Hi h Sch	Sec rit U ra es - rs Har ware, S r ei ance				100,000			100,000
Hi h Sch	Interi r U ra es - Paintin a Ti e				12 ,000			12 ,000
Hi h Sch	Ener E icienc U ra es i htin Mechanica				100,000			100,000
R. . ister Aca e	i e Sa et , Sec rit an Mechanica In rastr ct re							0
istrict i e	Mechanica In rastr ct re U ra es							0
istrict i e	rin I r e ents							0
Total District Wide City Capital Improvement		**$550,000**	**$650,000**	**$650,000**	**$450,000**	**$0**	**$0**	**$2,300,000**
Total High School Capital Improvement		**$0**	**$0**	**$0**	**$550,000**	**$0**	**$0**	**$550,000**
Total R.J. Lister Academy Capital Improvement		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL IMPROVEMENTS		**$550,000**	**$650,000**	**$650,000**	**$1,000,000**	**$0**	**$0**	**$2,850,000**

BI-08-SC-16: Elementary Schools Upgrade

Department	School Department
Project Location	Elementary Schools
Project Type	Rehabilitation of an Existing Facilities
Commence FY	2016
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This appropriation continues upgrading of the infrastructure of our Elementary Schools. Comprehensive renovation of the New Franklin interior is projected for both Fiscal Year 2026 and 2029 that will address accessibility issues, upgrades to entrance security, and building storage needs.

Studies Identified & Useful Website Links:
• Portsmouth School Department Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
FY26 Funding split into $3 Million (FY26) and $2 Million (FY29)

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	1%							$0	$200,000	$200,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	99%			$3,000,000			$2,000,000	$5,000,000	$14,600,000	$19,600,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$3,000,000	$0	$0	$2,000,000	$5,000,000	$14,800,000	$19,800,000

BI-24-SC-17: Fit-Up of Community Campus Space for RJ Lister Academy

Department	School Department
Project Location	Community Campus
Project Type	Rehabilitation of an Existing Facilities
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City's acquisition of the Community Campus property made space available to relocate Robert J Lister Academy from an aging Sherburne School. Space on the lower level of Community Campus formerly occupied by Families First will provide an excellent location for the Lister Academy program. Fit-up of that square footage will require renovation of many small clinical rooms and offices into appropriately sized school classrooms and program spaces.

Studies Identified & Useful Website Links:
• Portsmouth School Department Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
New project – replaced FY23's project Sherburne School (BI—23-SC-13)

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$2,000,000						$2,000,000	$0	$2,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$2,000,000	$0	$0	$0	$0	$0	$2,000,000	$0	$2,000,000

BI-17-FI-18: Permanent Record Storage Facilities

Department	Finance Department/ City Clerk
Project Location	City Hall
Project Type	New Construction/ Refurbishment
Commence FY	2018
Priority	A (Needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: In FY18, the CIP funded the rehabilitation of the first permanent document storage area (City archive) within City Hall. This Permanent Records Room features a new waterless Inergen® Gas Fire Suppression System (nitrogen 52%/argon 40%/carbon dioxide 8%), local temperature control and monitoring, humidity monitoring and archival quality shelving for many of the City's oldest and most important and legally required records not located in the City Clerk's vault. The facility also features a separate document quarantine area for documents contaminated with mold, red rot or maladies that may potentially spread to healthy documents. The Archive houses records from many departments including the City Clerk, Finance, Planning, Public Works, Human Resources, Trustees, and the Fire Department. The documents in this room range from the 1700's to current permanent records. Future funding would help the expansion and continued maintenance of the current City as well as towards either relocation or expansion of the archive in the future.

Studies Identified & Useful Website Links:
• Study: Goodman Report on the Survey of the Municipally Owned Historic Artifacts and Documents in Portsmouth, NH
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Funding removed from FY24 due to funding constraints.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$100,000	$100,000	$100,000	$100,000	$100,000	$500,000	$200,000	$700,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$100,000	$100,000	$100,000	$100,000	$100,000	$500,000	$200,000	$700,000

BI-18-FI-19: Permanent/Historic Document Restoration, Preservation, & Scanning

Department	Finance Department/ City Clerk
Project Location	City Hall
Project Type	Other
Commence FY	2018
Priority	A (Needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: By law, the City is required to keep certain types of documents in perpetuity (i.e. tax warrants, assessing information, city council records, etc..). These historic/permanent documents, ranging in age from 20 – 300+ years, are not in current city use by City Staff, and are being stored in the archive. Many of these permanent records are showing signs of maladies including red rot and mold that increase the rate of deterioration. The requested funds will be utilized to restore/preserve these permanent documents as well as scan them for preservation purposes to digital format (pdf/a) and/or microfilm. The monies requested fund both City Clerk ($25,000) and Finance Department ($25,000) Archival Records preservation. The total amount of funds needed to preserve the contaminated documents, overtime, will continue to grow as preservation costs increase and is likely to last decades at this current funding plan. In October FY23 the Finance Department was awarded its 6th consecutive MoosePlate Grant from the NH State Library to preserve additional documents ($9,680), bringing the total of grant funding to $46,096. A list of documents with current preservation needs can be found in Appendix III.

Studies Identified & Useful Website Links:

- Study: Goodman Report on the Survey of the Municipally Owned Historic Artifacts and Documents in Portsmouth, NH
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

A funding increase was requested in out years to accommodate the changes in cost for document restoration. FY24 Funds were decreased to $50,000.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	96%	$50,000	$150,000	$150,000	$150,000	$150,000	$150,000	$800,000	$398,000	$1,198,000
Fed/ State	4%							$0	$46,096	$46,096
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$50,000	$150,000	$150,000	$150,000	$150,000	$150,000	$800,000	$444,096	$1,244,096

BI-24-FI-20: Disposition of Municipal Records

Department	Finance Department/ City Clerk
Project Location	City Hall
Project Type	Other
Commence FY	2018
Priority	A (Needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: Per RSA 33a, the City is required to keep many records in perpetuity. A number of these records are still actively utilized by staff on a day-to-day basis and are not held in the City's Archive. Many of these records are original, paper copies of records that have no digital backup of any kind. This project would provide funds to scan these documents to a PDF/A format as a digital backup in the case of damage, destruction or theft of the original paper documents. The purpose of this project is to not only ensure compliance with the NH RSA but to also ensure continuity of services in the case of an emergency or disaster that linked access to the paper originals.

Studies Identified & Useful Website Links:
• Study: Goodman Report on the Survey of the Municipally Owned Historic Artifacts and Documents in Portsmouth, NH

Notes of Changes in Funding Plan from FY23-28 CIP:
New project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$25,000	$25,000	$25,000	$25,000			$100,000	$0	$100,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$25,000	$25,000	$25,000	$25,000	$0	$0	$100,000	$0	$100,000

BI-95-PL-21: Land Acquisition

Department	Planning Department
Project Location	Citywide
Project Type	Land Acquisition
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project funds the purchase of land that has been determined should protected for conservation and recreation. Ownership is usually sought to secure environmentally sensitive areas to purchase the development rights to a particular parcel, or for some municipal use. Protection may also be provided through the purchase of development rights by way of conservation easements and/or restrictions. Funds can be used as match for leverage on existing grant programs and to support and supplement the City's existing Conservation Fund. Acquisition of land is consistent with the goals and visions stated in the City Master Plan and Open Space Plan.

Studies Identified & Useful Website Links:
• Open Space Plan • Master Plan 2025 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Due to funding constraints within the debt schedule, proposed funding was added to FY29 but was removed from FY26 through FY28.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	3%							$0	$50,000	$50,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	97%	$500,000	$500,000				$500,000	$1,500,000	$0	$1,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$500,000	$500,000	$0	$0	$0	$500,000	$1,500,000	$50,000	$1,550,000

BI-22-PL-22: Historic District Guidelines Part 2

Department	Planning Department
Project Location	Citywide
Project Type	Design work or planning study
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	


CITY OF PORTSMOUTH
Historic District Commission
Guidelines Introduction

Description: This project would be to update and expand the design guidelines for new construction within the Historic District. These design guidelines are used by applicants and Historic District Commission members in review of building projects requiring a Certificate of Approval in the Historic District. This project should be informed by the Master Plan Update consistent with the updated community vision.

Studies Identified & Useful Website Links:
• Master Plan 2025 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Moved funding from FY24 to FY25

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$50,000					$50,000	$0	$50,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$50,000	$0	$0	$0	$0	$50,000	$0	$50,000

BI-21-PL-23: Trail Development Projects

Department	Planning Department
Project Location	Great Bog and Area North of Lang Road
Project Type	Construction or Expansion of a public facility, street or utility
Commence FY	2021
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Construction and upgrading of trails on City owned properties consistent with recommendations from the citywide Open Space Plan.

Studies Identified & Useful Website Links:
• Open Space Plan • Planning Department Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$25,000						$25,000	$30,000	$55,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$25,000	$0	$0	$0	$0	$0	$25,000	$30,000	$55,000

BI-05-PL-24: McIntyre Federal Office Building Redevelopment

Department	Planning Department
Project Location	80 Daniel Street
Project Type	Other (explained below)
Commence FY	2019
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City is working to acquire the McIntyre site through the Historic Monument Program. Following the submittal of an application to the National Park Service and its acceptance, additional work will be associated with implementing the application and overseeing the redevelopment partnership agreements. This project provides additional funding for these purposes.

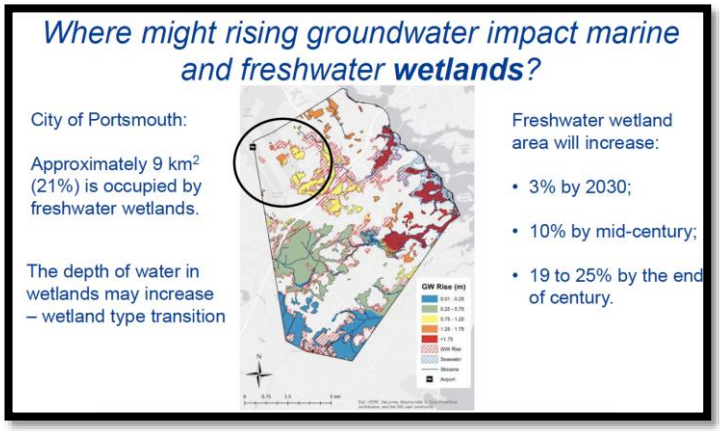
Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%							$0	$150,000	$150,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$0	$0	$150,000	$150,000

BI-23-PL-25: Groundwater Study to Identify Impacts

Department	Planning Department
Project Location	Focus on lower elevation portions of the municipality
Project Type	Design work or planning study
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: As identified in the Coastal Resilience Initiative impacts to Municipal infrastructure will increase as the impacts of sea level rise and coastal flooding increase. A study which includes monitoring equipment to better understand the flow of groundwater over time will help identify where issues with infrastructure are going to occur. Additionally, monitoring equipment can serve as an early warning to detect where impacts likely to occur in the short term.

Studies Identified & Useful Website Links:
• Coastal Resilience Initiative • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Study was moved to FY25

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%		$50,000					$50,000	$0	$50,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$50,000	$0	$0	$0	$0	$50,000	$0	$50,000

BI-24-PL-26: City of Portsmouth Master Plan Update

Department	Planning Department
Project Location	Citywide
Project Type	Design Work or Planning Study
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: A master plan is a planning document that serves to guide the overall character, physical form and development of a community (RSA 674:2). It describes how, why, where and when to build or rebuild a city. It provides guidance to local officials making decisions on budgets, ordinances, capital improvements,
zoning and subdivision matters, and other development-related issues. The master plan shall include, at a minimum, the following required sections:
(a) A vision section that serves to direct the other sections of the plan. This section shall contain a set of statements which articulate the desires of the citizens affected by the master plan, not only for their locality but for the region and the whole state. It shall contain a set of guiding principles and priorities to implement that vision.
(b) A land use section upon which all the following sections shall be based. This section shall translate the vision statements into physical terms. Based on a study of population, economic activity, and natural, historic, and cultural resources, it shall show existing conditions and the proposed location, extent, and intensity of future land use.
Portsmouth last updated their master plan in 2016. At that time the community articulated a vision for the future of Portsmouth. This included key themes including goals and strategies for advancing those the community values articulated in those themes. The plan also included focus growth areas where opportunities and challenges were explored and actions were identified that would guide the development and transformation of those areas.
Under RSA 674:3 Master Plan Preparation. –revisions to the plan are recommended every 5 to 10 years. Portsmouth is nearing the end of the planning horizon for the current master plan, Portsmouth 2025. The development of a master plan involves significant community involvement to ensure development of the community vision is inclusive and broadly representative. Staff anticipates a 18 to 24 month process for completing the plan update. Funding would support professional services support for this community-wide process with consultant recruitment beginning late 2022 or early 2023.

Studies Identified & Useful Website Links:

- 674:3 Master Plan Preparation. –
- http://www.gencourt.state.nh.us/rsa/html/LXIV/674/674-3.htm
- 674:2 Master Plan; Purpose and Description. –
- http://www.gencourt.state.nh.us/rsa/html/LXIV/674/674-2.htm

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	75%	$150,000	$150,000					$300,000	$0	$300,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	0%							$0	$0	$0
Revenues (parking)	2500%	$100,000						$100,000	$0	$100,000
PPP	0%							$0	$0	$0
	Totals	$250,000	$150,000	$0	$0	$0	$0	$400,000	$0	$400,000

BI-24-RC-27: Indoor Pool Facility Needs

Department	Recreation
Project Location	Indoor Pool
Project Type	Rehabilitation of a Facility
Commence FY	2024
Priority	O (Ongoing Capital Item)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: With the City re-acquiring the Indoor Pool from Save The Indoor Portsmouth Pool (SIPP), there is a need to set up an on-going capital maintenance plan. These monies would address projects such as locker room upgrades, carpeting, painting, and aquatics upgrades. Many of these projects are to be in compliance with state standards.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:
New Project

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$50,000	$50,000	$50,000	$50,000	$50,000	$250,000	$0	$250,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$50,000	$50,000	$50,000	$50,000	$50,000	$250,000	$0	$250,000

BI-24-RC-28: South Mill Pond Playground

Department	Recreation
Project Location	South Mill Pond Playground
Project Type	Rehabilitation of a Facility
Commence FY	2025
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Moderate ($50,000 to $100,000)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: This project would be to replace the playground with a new, universal design ADA compliant, age-friendly inclusive playground. Along with the playground overhaul, would be the addition of restroom facilities. The ADA compliant, family-friendly facilities would replace the port-a-potties. This area is heavily utilized throughout the year with pickleball, basketball, and tennis courts nearby, as well as Leary Field and the dog park. This area is also host to multiple city events such as the fireworks, farmer's market, and Easter Egg Hunt.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:
New Project

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	99%						$1,500,000	$1,500,000	$0	$1,500,000
Other (Rolling Stock)	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP (Rotary)	1%	$15,000						$15,000	$0	$15,000
	Totals	$15,000	$0	$0	$0	$0	$1,500,000	$1,515,000	$0	$1,515,000

BI-12-RC-29: Existing Outdoor Recreation Field and Facility Improvements

Department	Recreation Department
Project Location	Various Locations
Project Type	Rehabilitation of a Facility
Commence FY	2020
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Project includes site improvements to fields and facilities. The goal is to increase playability and improve services. Site improvements will include: addressing drainage issues, improving turf systems, converting practice fields to competition fields and upgrading infrastructure. The 2015 Recreation Field Report highlights opportunities to improve the City's athletic fields.

Studies Identified & Useful Website Links:
• 2015 Recreation Field Report • Comprehensive Recreation Needs Study 2010; • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Reduced FY24 to $75,000.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	100%	$75,000	$150,000	$150,000	$150,000	$150,000	$150,000	$825,000	$225,000	$1,050,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$75,000	$150,000	$150,000	$150,000	$150,000	$150,000	$825,000	$225,000	$1,050,000

BI-12-RC-30: Additional Outdoor Recreation Fields

Department	Recreation Department
Project Location	100 Campus Drive/680 Peverly Hill Road
Project Type	Construction or expansion of a new public facility or public infrastructure.
Commence FY	2026
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Project will fund the design and construction of an additional field and related amenities at the property behind the City's Public Works facility. Previous funding was utilized to acquire the land and complete construction of the first field. The project is being constructed in phases due to projected costs. Funding will be required for a third phase to realize the site's full potential for adding to the city's field inventory.

Studies Identified & Useful Website Links:

- Athletic Field – Project Page
- Comprehensive Recreation Needs Study 2010
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Moved to FY29 with design work in FY28 in an attempt to balance funding constraints in tandem with the continued need for additional fields.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	3%					$100,000		$100,000	$0	$100,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	97%						$3,000,000	$3,000,000	$0	$3,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$100,000	$3,000,000	$3,100,000	$0	$3,100,000

BI-20-RC-31: Greenland Road Recreation Facility

Department	Recreation Department
Project Location	Route 33
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Moderate ($50,001 to $100,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Project will be a phased build out of the Stump Dump lot Master Plan. Phase I would include a skate park and parking. Phase II would be a pump track and parking. This would also be the main access point to the NH Seacoast Greenway Route (Rail Trail). Additional phases to include walking paths, additional parking, lighting and field upgrades.

Studies Identified & Useful Website Links:

- Skatepark/ Stump Dump Site Design
- Comprehensive Recreation Needs Study 2010
- 2015 Recreation Field Report
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

FY24 Funding was completed in FY23 through a movement in the funding during the budget process. FY23 PPP reflects fundraising completed as of the end of FY22. FY28 and FY29 funding reflects the design and construction Phase II of the project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	4%					$100,000		$100,000	$200,000	$300,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	94%						$6,100,000	$6,100,000	$1,805,000	$7,905,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP (Donations)	2%	$170,350						$170,350	$24,650	$195,000
	Totals	$170,350	$0	$0	$0	$100,000	$6,100,000	$6,370,350	$2,029,650	$8,400,000

BI-02-RC-32: Citywide Playground Improvements

Department	Recreation Department
Project Location	Various
Project Type	Rehabilitation of an Existing Facility
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project provides funding for continued investment in City playgrounds. It will maintain the level of service resulting from many investments over the past few years. Funding will be used for replacing equipment, upgrading furnishings, and other amenities as needed. Future upgrades are intended for the Aldrich Park Playground in FY24 and an additional basketball court at Plains Ballfield.

Studies Identified & Useful Website Links:

- Parks and Playgrounds Homepage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Added additional $50,000 for FY25 for building a new basketball court at Plains Ballfield/Playground.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$75,000	$75,000	$10,000	$200,000			$360,000	$212,500	$572,500
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$75,000	$75,000	$10,000	$200,000	$0	$0	$360,000	$212,500	$572,500

BI-15-RC-33: Leary Field – Bleachers/Grandstands

Department	Recreation Department
Project Location	Citywide
Project Type	Rehabilitation of Existing Facility
Commence FY	2025
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project is to refurbish the Leary Field grandstand. The refurbishment will bring the grandstand into compliance with the National Fire Protection Association (NFPA) standard 102-5.10. Improvements and upgrades to the concession stand and walkways are also included in this project.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Moved the funding back to allow for design phase in FY25.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	9%		$100,000					$100,000	$0	$100,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	91%			$1,000,000				$1,000,000	$0	$1,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$100,000	$1,000,000	$0	$0	$0	$1,100,000	$0	$1,100,000

BI-15-PW-34: Outdoor Pool Aquatics Upgrade and Pool House

Department	Public Works and Recreation Department
Project Location	99 Pierce Island Road
Project Type	Rehabilitation of a Facility
Commence FY	2019
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project will be constructed in several phases. The first phase will include upgrades to the pool filter, liner, and pump house. This first phase was bid but exceeded available funds. The FY24 request is for this required additional monies to cover that first phase of the project. The next phase will include the construction of a new pool house. FY28 funds will be used for the design of the updated pool house with projected construction in FY29.

Studies Identified & Useful Website Links:
• Outdoor Pool Page • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Project transferred to Public Works in FY24. (RC to PW)

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	1%					$100,000		$100,000	$0	$100,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	99%	$1,500,000					$3,250,000	$4,750,000	$5,500,000	$10,250,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,500,000	$0	$0	$0	$100,000	$3,250,000	$4,850,000	$5,500,000	$10,350,000

BI-23-PW-35: Community Campus Facility Needs

Department	Public Works and Recreation Department
Project Location	Community Campus
Project Type	Other
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City acquired all of the real estate (land and buildings) at 100 Campus Drive in 2022. While the property is in good shape, it is a 20 year old facility and upgrades are needed. These monies would address capital maintenance items such as HVAC, kitchen equipment, and roofing, along with retaining wall maintenance, playground updates and other improvements as identified.

Studies Identified & Useful Website Links:

- Announcement of Potential Acquisition of Community Campus
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY22-27 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	100%	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,200,000	$100,000	$1,300,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,200,000	$100,000	$1,300,000

BI-02-PW-36: Citywide Park & Monument Improvements

Department	Public Works Department
Project Location	Various
Project Type	Rehabilitation of an Existing Facility
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Negligible (< $5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project provides funding for continued investment in city parks. Community discussions about existing park facilities (Goodwin Park, Haven Park, Aldrich Park, South School Street Playground, Plains Ballfield, Leary Field, Langdon Park, Pine Street Park and Vaughan Mall) and investments in new parks, have emphasized the need for continued investment in park improvements. Funding will improve furnishings and signage, walkways, landscaping, lighting, and drainage. FY24 funding is for fence maintenance and improvements at City fields and parks.

Studies Identified & Useful Website Links:

- Parks and Playgrounds Homepage
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Monies put in to FY24 for fence improvements

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$50,000	$100,000		$100,000		$100,000	$350,000	$362,500	$712,500
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$50,000	$100,000	$0	$100,000	$0	$100,000	$350,000	$362,500	$712,500

BI-04-PW-37: Citywide Tree & Public Greenery Program

Department	Public Works Department
Project Location	Citywide
Project Type	Other (explained below)
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City of Portsmouth has received recognition as a Tree City USA for over twenty years. The City has a long tradition of caring for urban forests. The City Arborist and the Trees and Public Greenery Committee administers this program. The program focuses on proactive plantings, managing street tree planting projects, inspecting, pruning or removing hazardous trees in the right-of-way, and provides information and resources to residents, homeowners and builders.

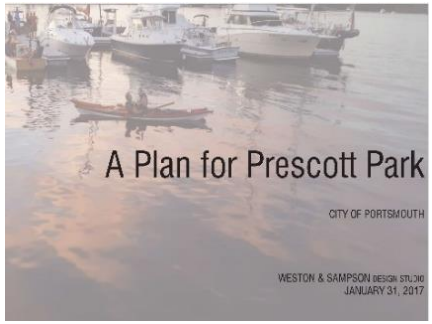
Studies Identified & Useful Website Links:
• Trees & Public Greenery Committee • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$120,000	$110,000	$230,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$120,000	$110,000	$230,000

BI-19-PW-38: Prescott Park Master Plan Implementation

Department	Public Works Department
Project Location	Prescott Park
Project Type	Rehabilitation of an Existing Facilities
Commence FY	Ongoing
Priority	A (Needed in the next 0 to 3 years)
Impact on Operating Budget	High ($100,001 or more)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City Council adopted the Prescott Park Master Plan in 2017. The plan calls for extensive park-wide reconfiguration, restructuring services and developing new park policies. Renovation to the park presents opportunities to plan for climate adaptation, preserve antique historic structures, accommodate performances and event space, and ensure iconic Portsmouth places continue to serve the public.

Studies Identified & Useful Website Links:

- Prescott Park Master Plan 2017
- Prescott Park Implementation Committee
- Prescott Park Homepage
- Prescott Park Advisory Committee
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

PPP funding was removed due to a lack of committed Partnerships. FY26 Bonding was moved due to funding constraints.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	7%		$125,000	$125,000	$125,000	$125,000	$125,000	$625,000	$125,000	$750,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	93%	$1,750,000				$1,750,000	$1,750,000	$5,250,000	$4,075,000	$9,325,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,750,000	$125,000	$125,000	$125,000	$1,875,000	$1,875,000	$5,875,000	$4,200,000	$10,075,000

BI-11-PW-39: Prescott Park Facilities Capital Improvements

Department	Public Works Department
Project Location	Prescott Park
Project Type	Rehabilitation of an Existing Facilities
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Description: The City of Portsmouth is responsible for the care and maintenance of Prescott Park and Four Tree Island. Among the abundant gardens and green space, there are several historic buildings, access ways, foot paths, period lights, plazas, fountains, park furnishings and marine infrastructure. They need significant rehabilitation or upgrades. In 2017, a master plan was completed identifying changes to the park. However, there are several projects that require funding. These projects include: various improvements to the Shaw and Sheafe warehouses, Four Tree Island bathrooms, upgrade and replacement of paved surfaces, replacement of perimeter fencing along the waterfront, dock repairs, electrical and lighting rehabilitation, and irrigation and fountain improvements.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Studies Identified & Useful Website Links:

- Prescott Park Master Plan 2017
- Prescott Park Homepage
- Prescott Park Advisory Committee
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 22-27	6 PY's Funding	Totals
GF	100%	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$385,000	$685,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$385,000	$685,000

BI-21-PW-40: City Hall HVAC Improvements

Department	Public Works Department
Project Location	1 Junkins Ave
Project Type	Rehabilitation of a Facility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Moderate ($50,001 to $100,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project addresses City Hall complex's antiquated heating and air conditioning system. The remaining original system is deteriorating and does not provide reliable heating, cooling and dehumidification. In recent years, half of the piping has been replaced. Problematic issues continue to be of concern that require additional investment. Issues include pipe corrosion, heavy condensation and leaks, which can contribute to mold growth and results in additional maintenance.

Studies Identified & Useful Website Links:
• HVAC Study 2019 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Additional monies added in FY25 for design.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	19%		$200,000					$200,000	$150,000	$350,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	81%			$500,000			$1,000,000	$1,500,000	$0	$1,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$200,000	$500,000	$0	$0	$1,000,000	$1,700,000	$150,000	$1,850,000

BI-18-PW-41: Recycling & Solid Waste Transfer Station

Department	Public Works Department
Project Location	Peverly Hill Road
Project Type	Construction or Expansion of A Public Facility, Street or Utility
Commence FY	2019
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	High ($100,001 or more)

Description: The purpose of this project is to design and build a new recycling center at the Public Works Department. The new recycling center will improve safety, increase efficiency (by adding infrastructure so recycling and solid waste materials can be consolidated for transport), provide additional disposal options, and cost savings. The preliminary design phase has been completed. Final design is pending available funding. As requested by residents, the new facility will include a Swap Shop.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Studies Identified & Useful Website Links:

- DPW Master Complex Summary July 2020 (draft)
- Recycling Facility Basis of Design Report March 2020 (draft)
- Solid Waste and Recycling Info
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Project has been delayed due to competing funding needs and budget / bond funding limits. Funding increased from $5.73m to $7.5m based on updated estimates with rate of inflation calculation.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	4%							$0	$350,000	$350,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	96%						$7,500,000	$7,500,000	$0	$7,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$7,500,000	$7,500,000	$350,000	$7,850,000

BI-05-PW-42: Historic Cemetery Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a facility
Commence FY	Ongoing
Priority	O (Ongoing and Programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Description: The City maintains six (6) historic cemeteries: Point of Graves Burial Ground, North Cemetery, Union Cemetery, Pleasant Street Burial Ground, the African Burying Ground, and Cotton Cemetery. The City is responsible for maintaining the grounds and headstones; hill, ledgers, and chest tombs; cemetery walls and related structures. The City has conducted an assessment of these historic resources and the City's Cemetery committee has reviewed this assessment and created a prioritized list of restoration and repair projects. The projects will be carried out over a multi-year period.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Studies Identified & Useful Website Links:

- Cemetery Existing Conditions Assessment and Restoration Plan (2013)
- Portsmouth Historic Cemeteries
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

At the 3-7-22 meeting the City Council voted to increase the annual ongoing allotment to the project from $25,000 per year to $40,000 per year for all 6 years

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	95%	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$240,000	$105,000	$345,000
Fed/ State	5%	$20,000						$20,000	$0	$20,000
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
Donation	0%							$0	$0	$0
	Totals	$60,000	$40,000	$40,000	$40,000	$40,000	$40,000	$260,000	$105,000	$365,000

BI-05-PW-42 : Historic Cemetery Improvements

- North Cemetery Phase II
- Point of Graves Stone Wall Rebuild
- Professional Repair and Straighten Headstone – All Cemeteries
- Replace and Restore Wrought Iron Fixtures – All Cemeteries
- Hall Cemetery Clean Up and Tree Removal Pleasant Street Cemetery Wall Repair
- Cotton Cemetery Slope Cleanup Date
- Cotton Cemetery South Street Façade Repair Two Doors
- Cotton Cemetery Rebuild and Replace Missing Sections Side Wall
- Improve/Repair Entrance at Point of Graves
- Cotton Cemetery Front Stone Wall Tear down and Rebuild
- Union Cemetery Rebuild of Original Receiving Tomb Framing/Masonry

BI-15-PW-43: Citywide Retaining Walls Repair and Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City owns over 30 retaining walls. This project involves repairing failing retaining walls that pose a safety concern or that could cause damage to adjacent private properties.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
FY24 Funding removed, monies added to FY29

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$50,000		$50,000		$50,000	$150,000	$0	$150,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Bond Prem Supp.	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$50,000	$0	$50,000	$0	$50,000	$150,000	$0	$150,000

BI-07-PW/NH-44: Sound Barriers in Residential Area Along I-95

Department	Public Works Department
Project Location	I-95 Corridor
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2019
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: The purpose of this project is to mitigate sound pollution in neighborhoods along Interstate 95. The State of NH DOT has determined the north side of I-95 is eligible for funding, the South side was deemed ineligible. City staff are working to determine if a sound barrier can be installed at the City's expense on the South side. Monies identified in this project will be used to investigate and implement sound barriers on the southern side. The City continues to work with DOT to explore possible state funding.

Studies Identified & Useful Website Links:

- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Federal/State Funds were removed due to the results of the evaluation completed by NH DOT. FY24 funds were delayed to FY25 due to ongoing discussions with NHDOT on the project scope and schedule.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$200,000	$100,000	$100,000	$100,000	$100,000	$600,000	$250,000	$850,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$200,000	$100,000	$100,000	$100,000	$100,000	$600,000	$250,000	$850,000

BI-01-PW-45: Citywide Facilities Capital Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The Public Works Department is responsible for maintaining all General Fund municipal facilities. These facilities serve multiple uses. Many facilities need to be updated due to age and usage. A backlog of projects is shown on the next page.

Studies Identified & Useful Website Links:

- Facility Condition Assessment 2015
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$500,000	$500,000	$1,000,000	$500,000	$500,000	$1,000,000	$4,000,000	$3,000,000	$7,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$500,000	$500,000	$1,000,000	$500,000	$500,000	$1,000,000	$4,000,000	$3,000,000	$7,000,000

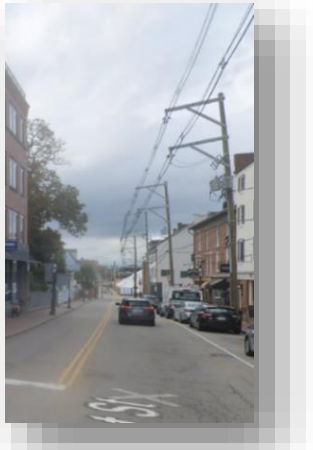
BI-01-PW-45 : Citywide Facilities Capital Improvements

- 95 Mechanic Street
- City Hall Archive
- City Hall Dept. Renovations
- City Hall Masonry Repointing And Sealing
- City Hall Slate Roof Repairs/Replacement
- City Hall New Carpet Throughout
- City Hall New Paint Throughout
- DPW Complex
- Connor’s Cottage Basement / Drainage Project
- Connor’s Cottage Basement and Tunnel Renovations
- Library HVAC Controls
- South Meeting House
- Facilities Safety Inspection Action Items
- Discovery Center Handicap Accessibility

BI-21-PW-46: Downtown Aerial Utilities Undergrounding

Department	Public Works Department
Project Location	Various
Project Type	Rehabilitation of a Facility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: Opportunities to bury overhead utilities were identified with Eversource, the local utility company, during a citywide reliability and needs assessment meeting. These projects will bury overhead utilities from Fleet St at Hanover St to State St, as well as, Deer St at Market St to Bow St, Penhallow St, Daniel St to Market Square. In addition, these steps will enable the eventual removal of the power lines over North Mill Pond.

Studies Identified & Useful Website Links:

- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

FY26 funding delayed until FY29 due to competing funding requests.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	67%						$2,500,000	$2,500,000	$2,500,000	$5,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	33%						$2,500,000	$2,500,000	$0	$2,500,000
	Totals	$0	$0	$0	$0	$0	$5,000,000	$5,000,000	$2,500,000	$7,500,000

BI-20-PW-47: Level 2 (120/208 Volt Single Phase) & Level 3 (480 Volt Three Phase) Electric Vehicle Charging Station

Department	Public Works – Parking and Transportation Division
Project Location	Citywide
Project Type	Construction of a New Facility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City of Portsmouth continues to work on expanding its EV charging station network. In addition to its station at Hanover Garage, the City has a station in the City Hall Lower Lot, located at the corner of Junkins Avenue and South Streets. The Foundry Garage is equipped with three (3) EV Stations. Currently the City Plans to add additional stations to the Bridge Street lot as part of a parking lot renovation project.
This project previously existed in the FY21-26 CIP but was temporarily eliminated due to complications with existing electrical system capabilities. At the 3-7-22 City Council CIP Adoption Meeting this project was voted to be re-entered into the CIP with $150,000 in Fiscal Years 2024, 2025, 2026, 2027, and 2028

Studies Identified & Useful Website Links:

- Public Works Homepage
- FY21-26 CIP page

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	67%	$100,000	$100,000	$100,000	$100,000	$100,000		$500,000	$0	$500,000
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues (Parking)	33%	$50,000	$50,000	$50,000	$50,000	$50,000		$250,000	$0	$250,000
PPP	0%							$0	$0	$0
	Totals	$150,000	$150,000	$150,000	$150,000	$150,000	$0	$750,000	$0	$750,000

BI-24-PW-48: Foundry Place Parking Offices

Department	Public Works – Parking and Transportation Division
Project Location	Foundry Garage
Project Type	Other
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This is a revamp of project FY19 #BI-19-PW-40: Foundry Garage Parking Offices. That project was put on hold in 2018 until the use of the garage could be reexamined after opening.

The garage has been in use for some time now and this project would address the buildout of the 4500 sf of office space to accommodate the Parking Division's three groups of employees in one location.

The cost of the project bonding will be covered by parking revenues only, no general fund monies (including property taxes) will be used for this project.

Studies Identified & Useful Website Links:

- Parking Operations Offices Plan (as part of Construction Specifications of 8/2017)
- FY19-24 CIP page

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease (Parking)	100%	$1,250,000						$1,250,000	$0	$1,250,000
Other	0%							$0	$0	$0
Revenues (Parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,250,000	$0	$0	$0	$0	$0	$1,250,000	$0	$1,250,000

BI-24-PW-49: Mechanic Street Wharf/Pier

Department	Public Works – Parking and Transportation Division
Project Location	Foundry Garage
Project Type	Other
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: This project will replace the "Snappy LaCava" Wharf that had been at 95 Mechanic Street. The project was bid with the recently completed sea wall replacement but due to a lack of funding was not completed.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:
New Project for FY24

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	2%		$20,000					$20,000	$0	$20,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	98%		$1,000,000					$1,000,000	$0	$1,000,000
Other	0%							$0	$0	$0
Revenues (Parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$1,020,000	$0	$0	$0	$0	$1,020,000	$0	$1,020,000

III. INFORMATION SYSTEMS

IS-06-IT-50: Information Technology Upgrades & Replacements

Department	IT Department
Project Location	Citywide
Project Type	Equipment (non-vehicular)
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: The Information Technology Upgrades Replacements incorporates the General Government (City Hall, Public Works, Recreation, and Library), Police, Fire and School Departments technology needs. The replacement/ upgrade of computers, servers and other technology upgrades follow by location for FY24.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Significant increase reflect both the increase in costs for IT products as well as the increased need for IT services within city departments.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
GF (Non-Operating)	100%	$1,056,558	$1,068,538	$889,108	$858,608	$959,658	$1,148,608	$5,981,078	$4,213,468	$10,194,546
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,056,558	$1,068,538	$889,108	$858,608	$959,658	$1,148,608	$5,981,078	$4,213,468	$10,194,546

IS-06-IT-50: Information Technology Upgrades & Replacements

Computers/Notebooks/Tablets

(sts inc e insta ati n)

Location	Inventory	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
it Ha	1 0			46	4	3	40
P ic r s	6	3	30				
i rar	11	1	68			1	68
Recreati n	1	4	11			4	11
P ice	12	2	2	2	2	2	2
ire	4	10	10	1	10	10	1
T ta ters	43	12	144	0	80	12	163

Cost of Replacement	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
it Ha	0	0	46,000	4 ,000	3 ,000	40,000
P ic r s	3 ,000	30,000	0	0	0	0
i rar	1,000	68,000	0	0	1,000	68,000
Recreati n	4,000	11,000	0	0	4,000	11,000
P ice	,000	,000	,000	,000	,000	,000
ire	10,000	10,000	1 ,000	10,000	10,000	1 ,000
Computers/Notebooks Cost per Yea	**$159,000**	**$176,000**	**$122,000**	**$112,000**	**$161,000**	**$195,000**

IS-06-IT-50: Information Technology Upgrades & Replacements

Servers

(sts inc e insta ati n an s tware)

Location	Inventory	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
it Ha Ser er R	3		3				3
P ic r s							
i rar	1	1					1
P ice	10	2	2	2	2	2	2
ire							
T ta Ser ers	14	3		2	2	2	6

Cost of Replacement	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
it wi e	0	1 0,000	0	0	0	1 0,000
P ic r s	0	0	0	0	0	0
i rar	,000	0	0	0	0	,000
P ice	40,000	40,000	40,000	40,000	40,000	40,000
ire	0	0	0	0	0	0
Servers Cost per Year	**$45,000**	**$190,000**	**$40,000**	**$40,000**	**$40,000**	**$195,000**

IS-06-IT-50: Information Technology Upgrades & Replacements

Other Technology Replacements and Upgrades

Location	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
Citywide						
P tter (it Ha)	0	0	0	10,000	0	0
Micr s t O ice E chan e (320 it wi e)	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000	12 ,000
S a i ter (300 Har ware S tware)	10,000	10,000	10,000	10,000	10,000	10,000
hanne 22 techn e i ent	0	2 ,000	2 ,000	0	0	0
i i Access P ints (it Ha)	,2 0	00	00	00	,2 0	00
i i nt er (it wi e)	20,000	0	0	0	0	20,000
Interacti e is a Pane s (it Ha)	20,000	20,000	0	0	20,000	20,000
Netw r Mana e ent S ste (it wi e)	10,000	10,000	10,000	10,000	10,000	10,000
AN Switches a es irewa s (it Ha - 4)	20,000	20,000	20,000	20,000	20,000	20,000
MS an ata n ersi n (it wi e)	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000	1 ,000
Total City Hall	**$225,250**	**$225,700**	**$205,700**	**$190,700**	**$205,250**	**$220,700**
Public Works						
Ra i s (80)	0	0	20,000	20,000	0	0
i i Access P ints	2,100	2,100	2,100	2,100	2,100	2,100
Interacti e is a Pane s	0	20,000	0	0	20,000	0
AN Switches	10,000	10,000	10,000	10,000	10,000	10,000
Total Public Works	**$12,100**	**$32,100**	**$32,100**	**$32,100**	**$32,100**	**$12,100**
Library						
Interacti e is a Pane s	20,000	0	20,000	0	20,000	0
i i Access P ints	0	0	0	10, 00	0	0
i i ntr er	0	0	0	1 ,000	0	0
AN Switches (1)	,000	,000	,000	,000	,000	,000
Total Library	**$25,000**	**$5,000**	**$25,000**	**$30,500**	**$25,000**	**$5,000**
Recreation						
Interacti e is a Pane s	20,000	0	0	0	0	20,000
i i Access P ints	10, 00	2,100	2,100	2,100	2,100	2,100
i i ntr er	1 ,000	0	0	0	0	0
AN Switches	20,000	,000	,000	,000	,000	,000
Total Library	**$65,500**	**$7,100**	**$7,100**	**$7,100**	**$7,100**	**$27,100**

IS-06-IT-50: Information Technology Upgrades & Replacements

Other Technology Replacements and Upgrades

Location	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
Police						
Ra i s- rta e (1 4)	6,000	6,000	6,000	6,000	6,000	6,000
Ra i s- i e (42)	1 ,200	1 ,200	1 ,200	1 ,200	1 ,200	1 ,200
Printers (68)	4,200	4,200	4,200	4,200	4,200	4,200
IS iance	,000	,000	,000	,000	,000	,000
irewa s (4)	3,000	3,000	3,000	3,000	3,000	3,000
Ta e ac s (2)	,000	0	,000	0	,000	0
NAS (Netw r Attache St ra e) (6)	2, 00	2, 00	2, 00	2, 00	2, 00	2, 00
Scanners (14)	1,600	1,600	1,600	1,600	1,600	1,600
MS S1 ata enter (2)	0	0	0	0	10,000	0
MSA St ra e ri es	23, 00	0	0	0	0	0
i i Access P ints ( )	0	3, 00				3, 00
isc netw r Switches (10) (2)	0	0	0	0	12,000	0
isc netw r Switches (1) (6)	6,000	0	6,000	0	6,000	0
enter-Ra i S ste Re ace ent	261,8 8	261,8 8	261,8 8	261,8 8	261,8 8	261,8 8
Total Police	**$387,858**	**$356,858**	**$364,358**	**$353,358**	**$386,358**	**$356,858**
Fire						
Ra i s- rta e ( )	18,000	18,000	18,000	18,000	18,000	18,000
Ra i s- i e (44)	,000	,000	,000	,000	,000	,000
Printers (13)	2, 0	2, 0	2, 0	2, 0	2, 0	2, 0
i i Access P ints	2,100	2,100	2,100	2,100	2,100	2,100
Interacti e is a Pane s	20,000	20,000	0	0	20,000	20,000
M t a in EO	24,000	0	0	0	0	24,000
AN Swtiches (3)	,000	,000	,000	,000	,000	,000
Total Fire	**$76,850**	**$52,850**	**$32,850**	**$32,850**	**$52,850**	**$76,850**
School Department						
i i Access P ints	1 ,000	0	,000	30,000	20,000	1 ,000
assr Interacti e Pane s r Pr ject rs	0	1 ,000	10,000	30,000	1 ,000	0
Virt a es t Inter ace (V l) E ansi n	1 ,000	1 ,000	1 ,000	0	0	1 ,000
irewa	0	0	0	0	0	0
AN Netw r Switches	0	0	0	0	1 ,000	30,000
AN Switches (6)	30,000	0	30,000	0	0	0
Total School	**$60,000**	**$30,000**	**$60,000**	**$60,000**	**$50,000**	**$60,000**
Other Technology Replacement/Upgrades Cost per Year	**$787,058**	**$702,508**	**$720,008**	**$699,508**	**$751,558**	**$731,508**

IS-06-IT-50: Information Technology Upgrades & Replacements

Totals by Location	FY 24	FY 25	FY 26	FY 27	FY 28	FY29
it wi e	22 ,2 0	3 , 00	2 1, 00	23 , 00	244,2 0	410, 00
P ic r s	4 ,100	62,100	32,100	32,100	32,100	12,100
i rar	81,000	3,000	2 ,000	30, 00	6,000	8,000
Recreati n	6 , 00	11,030	,100	,100	11,100	38,100
P ice	484,8 8	4 3,8 8	461,3 8	4 0,3 8	483,3 8	4 3,8 8
ire	86,8 0	62,8 0	1,8 0	42,8 0	62,8 0	,8 0
Sch	60,000	30,000	60,000	60,000	0,000	60,000
Total Information Technology Replacement and Upgrades	**$1,056,558**	**$1,068,538**	**$889,108**	**$858,608**	**$959,658**	**$1,148,608**

IS-24-IT-51: Expansion and Improvement of Network

Department	IT Department
Project Location	Citywide
Project Type	Equipment (non-vehicular)
Commence FY	Ongoing
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: This project is to fund professional services to conduct a thorough network analysis and produce specific remediation plans to address any network weakness and contribute to the development of a strategic plan for the future.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
GF (Non-Operating)	100%	$50,000						$50,000	$0	$50,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$50,000	$0	$0	$0	$0	$0	$50,000	$0	$50,000

IS-24-IT-52: Cybersecurity Enhancements

Department	IT Department
Project Location	Citywide
Project Type	Equipment (non-vehicular)
Commence FY	FY2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: In order to improve cybersecurity, the city intends to fund an assessment of its technology environment and develop a remediation plan conducted by specialized professional services.

Studies Identified & Useful Website Links:

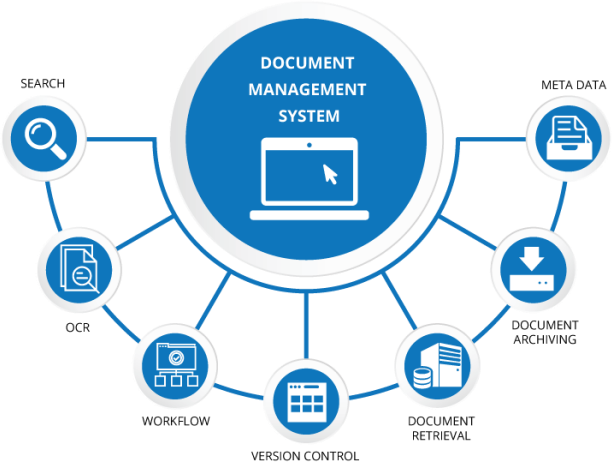
Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
GF (Non-Operating)	100%	$50,000						$50,000	$0	$50,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$50,000	$0	$0	$0	$0	$0	$50,000	$0	$50,000

IS-24-IT-53: Document Management System

Department	IT Department
Project Location	Citywide
Project Type	Equipment (non-vehicular)
Commence FY	FY2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y



Description: The document management system project would entail identifying, scanning, organizing, and making more readily assessable current paper files that are distributed throughout municipal departments and buildings. The goal would be to make these documents more accessible for municipal staff and for purposes of public records requests and transparency as well as assist with the City's statutory compliance obligations relative to records maintenance. Proposed is a hybrid system towards implementation using in-house staff, a third party vendor and a third party software application to ensure the project is completed in a timely fashion.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
GF (Non-Operating)	100%		$150,000	$150,000	$150,000	$150,000	$150,000	$750,000	$0	$750,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$150,000	$150,000	$150,000	$150,000	$150,000	$750,000	$0	$750,000

IS-24-FD-54: Fire Department Software Upgrade

Department	Fire Department
Project Location	Dispatch Center, Fire Stations 1, 2 and 3
Project Type	Equipment, non-vehicular
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project increases the efficiency and technology of the Dispatch Center. This project identifies and replaces several system upgrades and out of date critical hardware that is in need of replacing prior to failure.

The Zetron alerting system that the City uses was installed in 2017. Since that time due to human error the system has not been updated since 2018. This has led to intermittent system failures and the system going off line for brief time periods with no apparent cause. The current configuration may be updated and repaired for approximately $104,000, but will no longer be serviceable within a five year horizon.

This project seeks to upgrade the software systems to the most modern edition and a coupled with a change in configuration of the system, utilizing a majority of the current infrastructure at the City's existing Fire Stations (and using the cabling and wiring in place) will make the station alerting capabilities more secure and redundant between the primary site at the Police Department facility and the backup center at Fire Station 2.

Total cost of the new upgrades and installation is $145,000 with $24,750 budgeted for service and support over three years for a total cost of $169,778.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$169,778						$169,778	$0	$169,778
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (Rolling Stock)	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$169,778	$0	$0	$0	$0	$0	$169,778	$0	$169,778

IS-21-FI-55: Financial Software Upgrade

Department	Finance Department
Project Location	City Hall
Project Type	Equipment (non-vehicular)
Commence FY	2021
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: There are several different software utilized to perform the necessary financial functions of the city which need to be upgraded and/or expanded for Citywide efficiencies. Due to the size and cost of this project, it is recommended that this funding be spread out over several years with a phased in implementation commencing in FY25 for the City's major financial software, while other specialized software are introduced and upgraded concurrently. These upgrades will enable more efficiencies and the streamlining of the current payroll, A/P, Cash Receipting and other processes for all City Departments.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other (GF Non Operating)	100%	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,800,000	$425,000	$2,225,000
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,800,000	$425,000	$2,225,000

IV. TRANSPORTATION MANAGEMENT

TSM-12-PW-56 Parking Lot Paving

Department	Public Works: Parking and Transportation Division
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Parking lots require maintenance and periodic repaving.
The City owns metered and unmetered parking lots.
There are five (5) metered lots: Bridge, Hanover, Ladd, Memorial, and Worth
There are seven (7) unmetered lots: Parrott, Prescott, Water, Peirce Island, South Mill Pond, City Hall, and McIntyre

Studies Identified & Useful Website Links:
• Park Portsmouth • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues (Parking)	100%	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$900,000	$700,000	$1,600,000
PPP	0%							$0	$0	$0
	Totals	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$900,000	$700,000	$1,600,000

TSM-08-PW-57: Parking Meters

Department	Public Works – Parking and Transportation Division
Project Location	Downtown Business District
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: These funds allow for an enhanced user experience. Funding covers meter replacement and/or upgrades to ensure current technology required by all cell providers.

Studies Identified & Useful Website Links:
• Park Portsmouth • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Modest funding increased due to technology requirements.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues (Parking)	100%	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$250,000	$550,000
PPP	0%							$0	$0	$0
	Totals	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$250,000	$550,000

TSM-15-PL/NH-58: Hampton Branch Rail Trail (NH Seacoast Greenway)

Department	Planning Department
Project Location	Former Hampton Branch Rail Line
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,002 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: A now abandoned rail corridor between Portsmouth and the Massachusetts border includes 3.6 miles in Portsmouth. This corridor has been designated as the future off-road route of the NH Seacoast Greenway. In 2019, the NH Department of Transportation acquired the rail corridor and also has secured some federal funding to convert it to a multiuse trail. Design and construction of the trail will be done through a collaboration between NHDOT and corridor communities. The project cost estimates assume that NHDOT will be responsible for initial design, permitting and engineering as well as construction costs to create a gravel trail base. The City's portion of the costs will include additional costs required to build a paved surface as well as any amenities such as trail access areas and interpretive signs. This should be reassessed in FY24 based trail progress.

Studies Identified & Useful Website Links:

- NH Seacoast Greenway in Portsmouth
- Bicycle and Pedestrian Plan 2014
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

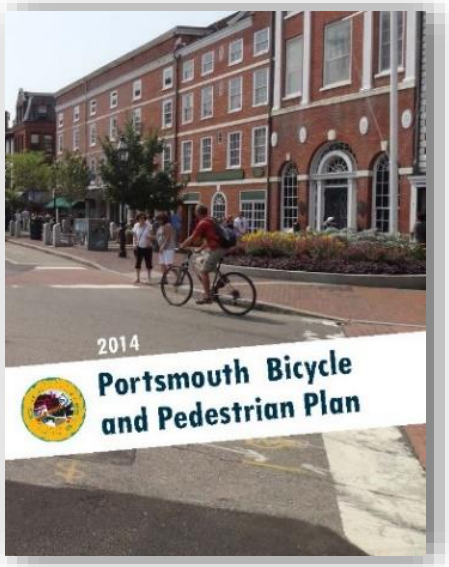
FY27 funding moved to meet funding constraints

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	26%		$403,000					$403,000	$544,000	$947,000
Fed/ State	50%							$0	$1,800,000	$1,800,000
Bond/ Lease	24%						$880,000	$880,000	$0	$880,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$403,000	$0	$0	$0	$880,000	$1,283,000	$2,344,000	$3,627,000

TSM-15-PL-59: Bicycle/Pedestrian Plan Implementation

Department	Planning Department
Project Location	Citywide
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	Ongoing
Priority	O (Ongoing)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	



Description: This project is to implement the projects identified in the Bicycle and Pedestrian Plan. Demand for bicycle and pedestrian facilities continues to grow and these funds will be used as opportunities become available to expand and improve the citywide bicycle and pedestrian networks.

Studies Identified & Useful Website Links:

- Bicycle & Pedestrian Planning
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	17%							$0	$80,000	$80,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues (parking)	83%	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$100,000	$400,000
PPP	0%							$0	$0	$0
	Totals	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$300,000	$180,000	$480,000

TSM-21-PL-60: Market Street Side Path

Department	Planning Department
Project Location	Market Street between Kearsarge Way and Maplewood Ave
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2025
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project would complete a link in the City's bicycle network and improve pedestrian connections by constructing a side path on one side of Market Street between Kearsarge Way and Woodbury Ave.

Studies Identified & Useful Website Links:
• Bicycle and Pedestrian Plan 2014 • Bicycle & Pedestrian Planning • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	7%		$160,000					$160,000	$0	$160,000
Fed/ State (CMAQ)	74%			$1,600,000				$1,600,000	$0	$1,600,000
Bond/ Lease	19%			$400,000				$400,000	$0	$400,000
Other	0%							$0	$0	$0
Revenues (parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$160,000	$2,000,000	$0	$0	$0	$2,160,000	$0	$2,160,000

TSM-08-PL/NH-61: US Route 1 New Sidepath Construction

Department	Planning Department and Public Works
Project Location	US Route 1 from Andrew Jarvis to Elwyn Rd
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project calls for creation of a walkable and bike-able connection for neighborhoods and destinations along Route 1 through construction of ten ft. sidepaths on each side of road in available NH DOT right-of-way. This will be a phased project, the first phase of which will extend from the intersection of Elwyn Road/Peverly Hill Road to Heritage Ave to correspond with the NHDOT Route 1 Corridor Project. Most of the project falls within NHDOT jurisdiction, and requires coordination and permission from the state agency to implement and maintain. A separate but related project would add ADA-Compliant crosswalks and actuated pedestrian signals to cross Lafayette Rd at key intersections. Progress is dependent upon NHDOT.

Studies Identified & Useful Website Links:

- US Route 1 Corridor Project (NHDOT)
- Bicycle and Pedestrian Plan 2014
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Funding moved to FY25 (design) and FY26 (implementation) to stay aligned with progress of other related projects.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	30%		$295,000					$295,000	$130,000	$425,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	70%			$1,000,000				$1,000,000	$0	$1,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$295,000	$1,000,000	$0	$0	$0	$1,295,000	$130,000	$1,425,000

TSM-16-PL/NH-62: US Route 1 Crosswalks and Signals

Department	Planning Department & Public Works
Project Location	US Route 1 Lafayette Road from Elwyn Road/ Peverly Hill Road to Rye town line
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Project supports US Route 1 Sidepath project (separate project) in order to improve bicycle and pedestrian safety crossing US Route 1 / Lafayette Rd. Includes addition of ADA-compliant crosswalks and actuated pedestrian signals to cross Lafayette Rd at Campus Dr., Elwyn Rd, Heritage Ave, Ocean Rd / Longmeadow Rd, Wilson Rd, and White Cedar Blvd.

Studies Identified & Useful Website Links:

- US Route 1 Corridor Improvement Project (NHDOT)
- Bicycle and Pedestrian Plan 2014
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Funding delayed by one year to keep project aligned with other related projects.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%		$50,000	$110,000	$110,000			$270,000	$0	$270,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP (Walmart)	0%							$0	$0	$0
	Totals	$0	$50,000	$110,000	$110,000	$0	$0	$270,000	$0	$270,000

TSM-17-PL-63: Elwyn Park Traffic Calming and Pedestrian Improvements

Department	Planning Department & Public Works
Project Location	Elwyn Park (McKinley Rd, Harding Rd, Van Buren Rd, Fillmore Rd)
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project will provide safe pedestrian connections and traffic calming throughout the Elwyn Park Neighborhood. A feasibility study has been completed using prior year Capital funding which identified priority streets within the neighborhood for addition of sidewalks and recommended traffic calming measures.

Studies Identified & Useful Website Links:
• Elwyn Park Sidewalks and Traffic Calming Project Page • Elwyn Park Sidewalk Study June 2020 • Bicycle and Pedestrian Plan 2014 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	11%							$0	$180,000	$180,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	89%	$1,500,000						$1,500,000	$0	$1,500,000
Other	0%							$0	$0	$0
Revenues (parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,500,000	$0	$0	$0	$0	$0	$1,500,000	$180,000	$1,680,000

TSM-23-PL-64: Borthwick Avenue Bike Path

Department	Planning Department
Project Location	Connection to Hampton Branch Trail via Route 1 Bypass & Eileen Dondero Foley Ave
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

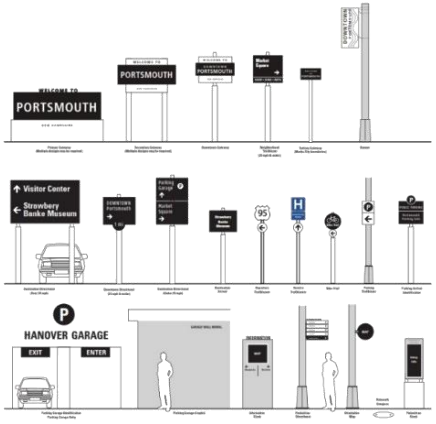
Description: This project could construct a new multi-use path along Borthwick Ave. The path would start at the Route 1 Bypass intersection with Borthwick Ave/Hodgdon Way and travel approximately 2400' along Borthwick Ave toward the Portsmouth Hospital to connect to the existing sidewalk and bike routes that currently end at the intersection of Eileen Dondero Foley Ave. This path would thus finish the pedestrian link on Borthwick Ave and connect the West End to the planned rail trail.

Studies Identified & Useful Website Links:
• Bicycle and Pedestrian Plan 2014 • FY23-FY28 CIP (Prior Year) Project Sheet
Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$400,000						$400,000	$0	$400,000
Other	0%							$0	$0	$0
Revenues (parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$400,000	$0	$0	$0	$0	$0	$400,000	$0	$400,000

TSM-08-PW-65: Wayfinding System

Department	Public Works Department
Project Location	Citywide
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	Ongoing
Priority	O (Ongoing)
Impact on Operating Budget	Minimal ($5,001 to $50,000)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City's Wayfinding System is designed to help visitors navigate efficiently to major destinations within the Downtown and throughout the City, using a variety of tools (both physical and virtual). The system is designed to assist pedestrians, bicyclists and transit users, as well as motorists. The program includes a phased program for implementation over several years; and is designed to be easy to maintain.

Studies Identified & Useful Website Links:
• Master Plan 2005
• Wayfinding Analysis 2014
• Wayfinding Program
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Moved from a Planning to a Public Works project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues (parking)	100%	$350,000						$350,000	$0	$350,000
PPP	0%							$0	$0	$0
	Totals	$350,000	$0	$0	$0	$0	$0	$350,000	$0	$350,000

TSM-21-PW-66: Greenland Rd/Middle Rd Corridor Bicycle/Pedestrian Improvements

Department	Public Works Department
Project Location	Middle Road and Greenland Road from Spinney Rd. to Harvard St.
Project Type	Construction or expansion of a public facility, street or utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project would complete a link in the City's bicycle network for the residential neighborhoods along Middle Road. Proposed improvements include bicycle lanes along Middle Road, a shared use path along the north side of Greenland Road.

Studies Identified & Useful Website Links:
• Bicycle and Pedestrian Plan 2014 • Bicycle & Pedestrian Planning • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Changed to a Public Works project for FY24

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	8%							$0	$50,000	$50,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	92%			$585,000				$585,000	$0	$585,000
Other	0%							$0	$0	$0
Revenues (parking)	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$585,000	$0	$0	$0	$585,000	$50,000	$635,000

TSM-15-PW-67: Market Square Upgrade

Department	Public Works and Planning Department
Project Location	Market Square
Project Type	Rehabilitation of a Facility
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Description: Market Square was constructed in 1977. Minor improvements have been completed over the years. Streets and buildings around the Square have been upgraded, but sidewalk and lighting upgrades are now required. The increase of funding by $50,000 will support the current scope of work and the expected engagement of the community in developing consensus on a vision plan for improving Market Square. The intent of this study is to engage the community in a City-wide process that will allow us to better understand the vision, values, and funding priorities for Market Square through public outreach. The study will be completed in FY25 and will inform Phase 1 Capital Investments. This project will be implemented in phases and will include streetscape improvements, pedestrian enhancements, and upgrades to water, sewer, and drainage.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	Y

Studies Identified & Useful Website Links:

- Bicycle and Pedestrian Plan 2014
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

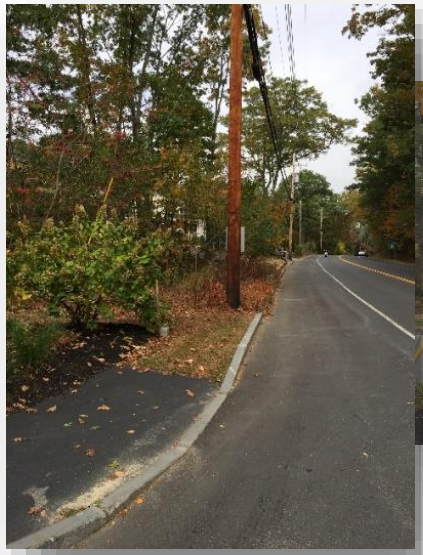
Trying to tie this project with the Fleet Street Project.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	2%		$50,000					$50,000	$0	$50,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease (parking)	98%			$1,000,000		$1,000,000		$2,000,000	$0	$2,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$50,000	$1,000,000	$0	$1,000,000	$0	$2,050,000	$0	$2,050,000

TSM-19-PW-68: Sagamore Avenue Sidewalk

Department	Public Works Department
Project Location	Sagamore Ave
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y



Description: Project will construct a sidewalk along Sagamore Avenue from Odiorne Point Road to the old Moose Club access road.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Project to be coordinated with the Sagamore Sewer project (EF-22-SD-93)

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$300,000						$300,000	$0	$300,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$300,000	$0	$0	$0	$0	$0	$300,000	$0	$300,000

TSM-95-PW-69: Citywide Sidewalk Reconstruction Program

Department	Public Works
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The Public Works Department completed a conditional sidewalk assessment of City maintained sidewalks. The assessment contains detailed information on 74 miles of sidewalk. These sidewalks are not included in parks, fields and other City maintained facilities. The results give staff a clear depiction of the overall conditions. This project consists of sidewalks identified as poor to fair condition. Reconstruction work is based on need. Reconstruction work is coordinated with other street and utility improvement projects.

Studies Identified & Useful Website Links:
• Roads & Sidewalks Project Page • Sidewalk Condition Index 2018 • Public Works Homepage • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$800,000				$800,000	$400,000	$2,000,000	$1,600,000	$3,600,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$800,000	$0	$0	$0	$800,000	$400,000	$2,000,000	$1,600,000	$3,600,000

TSM-95-PW-69: Citywide Sidewalk Reconstruction Program

PROPOSED CAPITAL IMPROVEMENTS ON EXISTING SIDEWALKS:

- Bartlett St
- Edmond Avenue
- Kensington Road
- Lawrence Street
- Mendum Avenue
- Summit Avenue
- Willard Avenue
- Sherburne Rd/Greenland Rd (near Borthwick/Pannaway)
- TJ Gamester
- Miscellaneous

The list above represents a backlog of high priority sidewalk projects as identified by the Conditional Sidewalk Assessment and other capital projects. The amount of work completed depends on available funds and construction bid prices.

TSM-10-PW-70: Citywide Traffic Signal Upgrade Program

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City continues to replace antiquated signal systems. These replacements improve traffic flow, emergency response, efficiency and safety at intersections. The upgrades include new traffic signals, controllers, compliance with pedestrian ADA requirements and minor roadwork. The FY26 funds are for the intersection and signal system upgrade at Middle Street and Miller Avenue/Summer Street.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
FY26 funds increased to fund the intersection and system upgrade @ Middle St and Miller Ave/Summer St.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$100,000	$100,000	$350,000	$100,000	$100,000	$100,000	$850,000	$500,000	$1,350,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$100,000	$100,000	$350,000	$100,000	$100,000	$100,000	$850,000	$500,000	$1,350,000

TSM-11-PW-71: Citywide Intersection Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The Parking and Traffic Safety (PTS) Committee receives numerous requests to address traffic volumes, vehicle speeds, and pedestrian safety. A majority of these requests deal with street intersections, which could be enhanced with minor modifications to the geometry of the streets at the intersections. This project would fund improvements to various intersections involving realignment, curbing, signage and other traffic calming methods. These slight modifications would improve safety for both pedestrian and motor vehicle traffic. The Greenleaf Avenue and Lafayette Road intersection has been identified as a difficult intersection, which needs improvement.

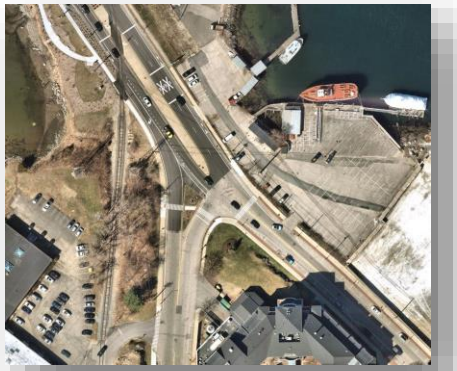
Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
$100K added for the design of Greenleaf Ave / Lafayette Rd intersection.
Future monies will be used for the Miller/Middle/Summer signal project identified in the Citywide Traffic Signal element sheet.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$600,000	$200,000	$800,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$600,000	$200,000	$800,000

TSM-16-PL-72: Russell/Market Intersection Upgrade

Department	Planning Department/Public Works Department
Project Location	Russell and Market Streets
Project Type	Rehabilitation of a Facility
Commence FY	2026
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The volume of traffic at the intersection of Russell Street and Market Street has increased over time. Traffic is expected to continue to increase due to nearby private development projects. Improvements are needed to address traffic flow and safety. This work would complement the recently completed Market Street Gateway Project. In addition this project will progress in conjunction with the upcoming Market Street railroad crossing reconstruction project by NHDOT and coordinate with adjacent development.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Funding changes due to coordination efforts with the DOT

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	8%							$0	$200,000	$200,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	87%	$2,200,000						$2,200,000	$0	$2,200,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP (developers)	5%							$0	$117,500	$117,500
	Totals	$2,200,000	$0	$0	$0	$0	$0	$2,200,000	$317,500	$2,517,500

TSM-16-PL-73: Railroad Crossings

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	2026
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Minimal ($5,001 to $50,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	Y
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: NHDOT has identified the need to upgrade the railroad crossing on Maplewood Ave as well as the crossing on Market Street near its intersection with Russell Street. These hazard elimination projects, which are included in the NH DOT 10 year plan, includes upgrade of the rail, the roadway approaches, drainage improvements and the need for protective devices at the crossing. A portion of local match has been appropriated in previous programs.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Monies are needed to address these issues in conjunction with the NHDOT's 10-Year-Plan

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	76%		$172,500					$172,500	$200,000	$372,500
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP (developers)	24%							$0	$117,500	$117,500
	Totals	$0	$172,500	$0	$0	$0	$0	$172,500	$317,500	$490,000

TSM-18-PW-74: Citywide Bridge Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Project provides maintenance for city bridges. Typical bridge maintenance includes sealing the concrete surfaces, replacing the pavement surfaces and membranes, and maintaining or upgrading railing systems and fences.

Studies Identified & Useful Website Links:
• Citywide Bridge Evaluation 2018 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
FY24 and FY25 funding combined in FY25 due to project coordination.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	20%		$100,000	$50,000	$50,000	$50,000	$50,000	$300,000	$300,000	$600,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	80%							$0	$2,350,000	$2,350,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$100,000	$50,000	$50,000	$50,000	$50,000	$300,000	$2,650,000	$2,950,000

TSM-08-PW-75: Cate Street Bridge Replacement

Department	Public Works Department
Project Location	Cate Street
Project Type	Other (explained below)
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This bridge is beyond its 50-year design life. It cannot handle heavy truck volumes and loads. The bridge needs to be replaced. Residents have asked for the bridge to remain open if the median on Route 1 Bypass is extended past Cottage Street. This ensures emergency vehicle access to the Portsmouth Hospital from the neighborhood.

Studies Identified & Useful Website Links:

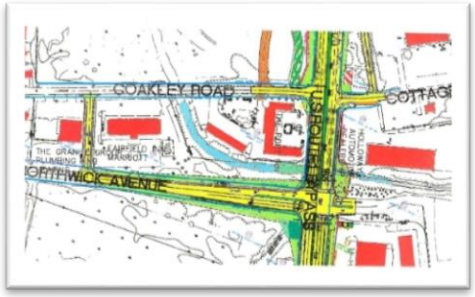
- Citywide Bridge Evaluation 2018
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	6%							$0	$100,000	$100,000
Bond/ Lease	94%		$1,500,000					$1,500,000	$0	$1,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$1,500,000	$0	$0	$0	$0	$1,500,000	$100,000	$1,600,000

TSM-20-PW-76: Coakley-Borthwick Connector Roadway

Department	Public Works Department
Project Location	Coakley Road and Borthwick Avenue
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2026
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project may be considered after the construction of Hodgdon Way. If determined to be necessary to improve traffic flow, the signal at the intersection of Coakley Road, Cottage Street and the Route 1 Bypass may be removed and the median on the Bypass extended through the intersection to prohibit left turns. To provide left turn access to and from the Bypass for the users of Coakley Road, this project would construct a connector roadway between Coakley Road and Borthwick Avenue. This project is subject to NHDOT approval and would be contingent upon acquiring the necessary right-of-way.

Studies Identified & Useful Website Links:
• Citywide Bridge Evaluation 2018, • NHDOT long range vision for the Bypass • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
In FY24 Changed to a Public Works Project (PL to PW)

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%			$1,000,000				$1,000,000	$0	$1,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$1,000,000	$0	$0	$0	$1,000,000	$0	$1,000,000

TSM-21-PW-77: Traffic Calming

Department	Public Works Department
Project Location	Citywide
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: Residents have been calling for traffic calming throughout the City. This project addresses funding for calming in several areas around the City. FY24 funding will be for projects on Aldrich Road, South Street and Middle Road. These measures may include reconfiguring the intersection of South Street and Middle Road and adding speed tables on Aldrich Road to limit vehicle speeds. These improvements would improve safety and access for pedestrians destined for Portsmouth High School and area playgrounds.
It is being moved forward due to requests by the residents. Funding was increased.

Studies Identified & Useful Website Links:
• Neighborhood Traffic Calming Program • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
FY24 Funding was reduced due to funding constraints.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	100%	$150,000	$50,000	$50,000	$50,000	$50,000	$50,000	$400,000	$20,000	$420,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	0%							$0	$0	$0
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$150,000	$50,000	$50,000	$50,000	$50,000	$50,000	$400,000	$20,000	$420,000

TSM-94-PW-78: Street Paving, Management, and Rehabilitation

Department	Public Works Department
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: The Pavement Condition Management Program started in 1993. An annual report updating the city's pavement management system is completed as part of this program. City road conditions are evaluated, the road network conditions and budget requirements are analyzed, and road-paving programs are developed. The report provides recommended funding to maintain street conditions at current levels. These are capital costs. They are implemented over a two-year period with an expected life of 20 years. The Public Works operational budget includes maintenance costs with an expected life of 10 years. A list of streets needing improvements is on the next page.

Studies Identified & Useful Website Links:

- Pavement Management Index 2020 (draft)
- Pavement Management Index
- Department of Public Works Projects Page
- Roads & Sidewalks Project Page
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

FY24 Funding was increased due to an increased scope and increased material costs. FY26 funding was delayed due to funding constraints.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$4,000,000				$4,000,000	$2,000,000	$10,000,000	$11,000,000	$21,000,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$4,000,000	$0	$0	$0	$4,000,000	$2,000,000	$10,000,000	$11,000,000	$21,000,000

TSM-94-PW-78: Street Paving, Management, and Rehabilitation

PROPOSED CAPITAL IMPROVEMENTS FISCAL YEAR 2024

STREETS LISTING:

- Middle Street
- Woodbury Ave (Bartlett to Market Street)
- Pannaway Manor
- Atlantic Heights (Phase 2)
- Maple Haven
- Michael Succi Dr
- Morning Street
- Miscellaneous

The list above represents a backlog of high priority pavement projects as identified by the Pavement Management Index and other capital projects. The amount of work completed depends on available funds and construction bid prices.

TSM-11-PW-79: Pease International Tradeport Roadway Rehabilitation

Department	Public Works Department
Project Location	Pease International Tradeport
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Per the Municipal Service Agreement between the City of Portsmouth and Pease Development Authority, the City will provide public work services in the non-airfield area of the Pease International Tradeport. Services include maintaining and repairing roads, streets, bridges and sidewalks. A list of streets needing improvements is on the next page. FY24's funding is to complete Corporate Drive.

Studies Identified & Useful Website Links:

- Pavement Management Index 2020 (draft)
- Pavement Management Index
- Department of Public Works Projects Page
- Roads & Sidewalks Project Page
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

FY24 Funding was increased due to an increased scope and increased material costs. FY26 funding was delayed due to funding constraints.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$3,200,000				$1,000,000	$500,000	$4,700,000	$4,000,000	$8,700,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$3,200,000	$0	$0	$0	$1,000,000	$500,000	$4,700,000	$4,000,000	$8,700,000

TSM-11-PW-79: Pease International Tradeport Roadway Rehabilitation

PEASE INTERNATIONAL TRADEPORT FOR FISCAL YEAR 2024

STREETS LISTING:

- Airline Avenue
- Aviation Avenue
- Corporate Drive
- Newfields Street
- Rochester Avenue
- Rye Street
- Miscellaneous

The list above represents a backlog of high priority pavement projects in the Pease International Tradeport as identified by the Pavement Management Index and other capital projects. The amount of work completed depends on available funds and construction bid prices.

TSM-15-PW-80: Junkins Avenue Improvements

Department	Public Works Department
Project Location	Junkins Avenue
Project Type	Upgrade of Existing Facilities
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: This project will be completed in conjunction with the replacement of failing drainage pipes and culverts located on the City Hall lower parking lot. The goal is to create a "complete street", as defined in the Complete Streets Policy, which will also include work to be done on the pond trail sidewalk.

Studies Identified & Useful Website Links:
• Bicycle and Pedestrian Plan 2014 • FY23-FY28 CIP (Prior Year) Project Sheet

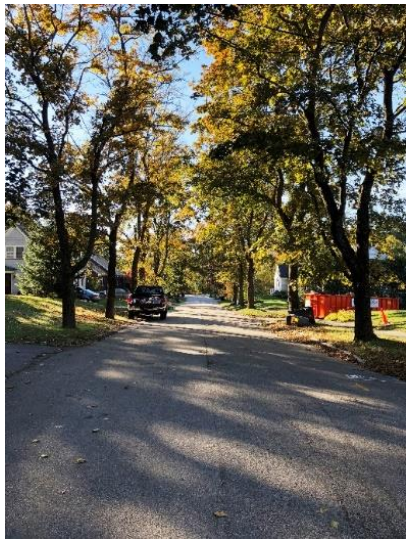
Notes of Changes in Funding Plan from FY23-28 CIP:
Funding was moved to FY28 (Design) and FY29 (Project) for this project due to funding limitations.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	12%					$150,000		$150,000	$0	$150,000
Fed/ State	0%							$0	$0	$0
Bond/ Lease	88%						$1,100,000	$1,100,000	$0	$1,100,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$150,000	$1,100,000	$1,250,000	$0	$1,250,000

TSM-20-PW-81: Pinehurst Road Improvements

Department	Public Works Department
Project Location	Pinehurst Road
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2025
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y



Description: Residents have requested drainage improvements on Pinehurst Road to control stormwater runoff and prevent ponding in lower elevation properties.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Project delayed to FY29 due to funding constraints

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%						$300,000	$300,000	$0	$300,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$300,000	$300,000	$0	$300,000

TSM-20-PW-82: Madison Street Roadway Improvements

Department	Public Works Department
Project Location	Upper Madison St.
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2025
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: Residents are parking on the front lawn of Madison Street Apartments. Madison Street residents requested curbing and other roadway improvements, including parking.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

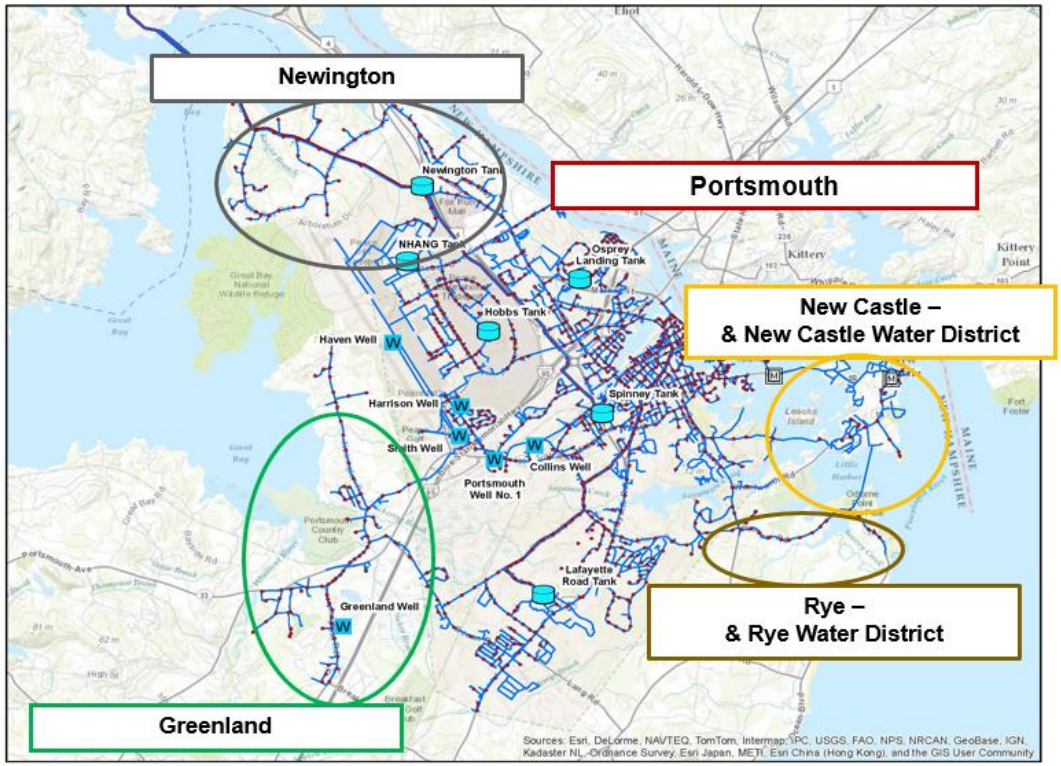
Notes of Changes in Funding Plan from FY23-28 CIP:
Project funding delayed due to funding constraints

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%						$350,000	$350,000	$0	$350,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$350,000	$350,000	$0	$350,000

This page intentionally left blank.

V. ENTERPRISE UN S

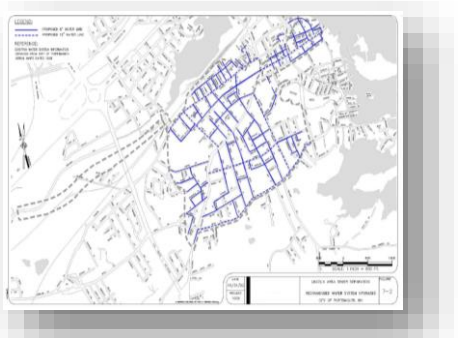
WATER



EF-02-WD-83: Annual Water Line Replacement

Department	Public Works – Water Division
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (Ongoing)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: The water distribution system consists of more than 150 miles of pipe. Many of the older pipes are 50 to 100 years old, undersized and at the end of their design life. Pipes are replaced programmatically as part of water specific capital projects, roadway reconstruction and prior to annual paving. This item will fund the purchase of pipe, valves and associated materials used to replace those pipes. Bond funds for large full road reconstruction projects.

Studies Identified & Useful Website Links:

- Water System Master Plan 2013
- Water Department
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	95%	$1,000,000		$1,000,000		$1,000,000		$3,000,000	$6,500,000	$9,500,000
Other	0%							$0	$0	$0
Revenues	5%							$0	$500,000	$500,000
PPP	0%							$0	$0	$0
	Totals	$1,000,000	$0	$1,000,000	$0	$1,000,000	$0	$3,000,000	$7,000,000	$10,000,000

EF-08-WD-84: Well Stations Improvements

Department	Public Works – Water Division
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project involves upgrades to existing well pump stations. Improvements include upgrades to premium efficiency motors, variable frequency drives, the radio telemetry and SCADA system. It also includes an evaluation of options to improve the efficiency of Collins Well and structural upgrades to the building.

Studies Identified & Useful Website Links:
• Water System Master Plan 2013 • Water Department • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	83%			$700,000				$700,000	$1,000,000	$1,700,000
Other	0%							$0	$0	$0
Revenues	17%							$0	$350,000	$350,000
PPP	0%							$0	$0	$0
	Totals	$0	$0	$700,000	$0	$0	$0	$700,000	$1,350,000	$2,050,000

EF-15-WD-85: Reservoir Management

Department	Public Works – Water Division
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project consists of the study, design and implementation of measures to ensure the sustainability of the dam and the Bellamy Reservoir, which is the surface water supply for the Portsmouth Water Treatment Facility in Madbury. This includes an engineering assessment of the condition of the Bellamy Reservoir Dam and the design and implementation of measures to improve the dam structure, the design and construction of an improved outlet flow structure, water quality improvements and the protection of the Bellamy Reservoir.

Studies Identified & Useful Website Links:
• Water System Master Plan 2013 • Water Department • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	89%			$1,000,000				$1,000,000	$600,000	$1,600,000
Other	0%							$0	$0	$0
Revenues	11%							$0	$200,000	$200,000
PPP	0%							$0	$0	$0
	Totals	$0	$0	$1,000,000	$0	$0	$0	$1,000,000	$800,000	$1,800,000

EF-18-WD-86: New Groundwater Source

Department	Public Works – Water Division
Project Location	Citywide
Project Type	Construction or Expansion of a Public Facility, Street or Utility
Commence FY	2018
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project consists of constructing, permitting and connecting a new groundwater supply well, adjacent to the existing Collins Well, into the Portsmouth water system. This project is important to ensure long-term sustainability of the water supply.

Studies Identified & Useful Website Links:

- Water Projects Page
- Water System Master Plan 2013
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

This project has been moved out an additional year to allow for the necessary time to continue with new source development, permitting and design of supporting infrastructure.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	88%	$2,000,000						$2,000,000	$500,000	$2,500,000
Other	0%							$0	$0	$0
Revenues	12%							$0	$350,000	$350,000
PPP	0%							$0	$0	$0
	Totals	$2,000,000	$0	$0	$0	$0	$0	$2,000,000	$850,000	$2,850,000

EF-22-WD-87: Water Storage Tanks Improvements

Department	Public Works – Water Division
Project Location	Lafayette Road
Project Type	Rehabilitation of a Facility
Commence FY	2023
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This CIP item accounts for the on-going need to repair and improve the conditions of our water storage tanks beyond routine painting. Currently the Lafayette Road Water Storage Tank is in need of painting, however, due to its very large capacity (7.5 MG) the water in this storage tank does not turnover and mix sufficiently. This causes declines in residual chlorine disinfectant. An engineering assessment needs to be performed to evaluate options for improving this tank's performance and minimizing water quality issues associated with inadequate mixing. Funds for tank improvement design are also included for planning purposes. After the engineering assessment, construction costs will be adjusted accordingly.

Studies Identified & Useful Website Links:
• Water Department • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	98%		$400,000		$4,000,000			$4,400,000	$0	$4,400,000
Other	0%							$0	$0	$0
Revenues	2%							$0	$100,000	$100,000
PPP	0%							$0	$0	$0
	Totals	$0	$400,000	$0	$4,000,000	$0	$0	$4,400,000	$100,000	$4,500,000

EF-22-WD-88: Madbury Water Treatment Plant - Facility Repair and Improvements

Department	Public Works – Water Division
Project Location	Madbury Water Treatment Plant
Project Type	Rehabilitation of a Facility
Commence FY	2026
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City's surface water treatment facility located in Madbury began operation in 2011. Since that time, facility maintenance items have been covered in annual line-item budgets. After nearly ten years of 24/7 operation, the facility is beginning to see wear that needs to be addressed with more than annual maintenance. These items include the replacement of the water treatment filter media, replacement of water pump drives, the purchase of a backup finished water pump, replacement of building siding, and the construction of a storage shed for equipment and spare parts.

Studies Identified & Useful Website Links:
• Water Department • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	72%		$650,000					$650,000	$0	$650,000
Other	0%							$0	$0	$0
Revenues	28%			$125,000	$125,000			$250,000	$0	$250,000
PPP	0%							$0	$0	$0
	Totals	$0	$650,000	$125,000	$125,000	$0	$0	$900,000	$0	$900,000

EF-24-WD-89: Greenland Well Treatment

Department	Public Works - Water Division
Project Location	Public Works Water
Project Type	Construction or expansion of a new facility or infrastructure.
Commence FY	
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Moderate ($50,000 to $100,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project involves installing groundwater treatment at the Greenland Well to address potential PFAS regulations soon to be established by the EPA.

Studies Identified & Useful Website Links:

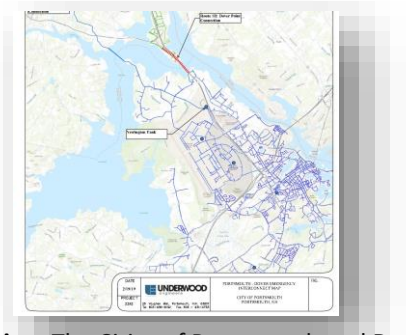
Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$2,500,000						$2,500,000	$0	$2,500,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$2,500,000	$0	$0	$0	$0	$0	$2,500,000	$0	$2,500,000

EF-24-WD-90: Dover Water Emergency Interconnection

Department	Public Works - Water Division
Project Location	General Sullivan Bridge between Dover and Newington
Project Type	Construction of a new facility or infrastructure.
Commence FY	2024
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: The Cities of Portsmouth and Dover have been working for a number of years to create an interconnection between their two water systems across the soon to be replaced General Sullivan Bridge. This interconnection would link four communities to the north of the bridge and eight communities to the south. The bridge is currently in design with construction set to begin in late 2023. Costs would be split between the communities. Due to the importance of this connection for emergency purposes the New Hampshire Drinking Water and Groundwater Trust approved $223,000 of funding to cover the design costs. Representative Pappas also included this project in recent congressional funding earmarks totaling $3,452,972, which would cover 50% of the anticipated project costs. The other 50% would be split between the two communities. However, we will continue to seek state funding assistance due to the regional benefit of this project.

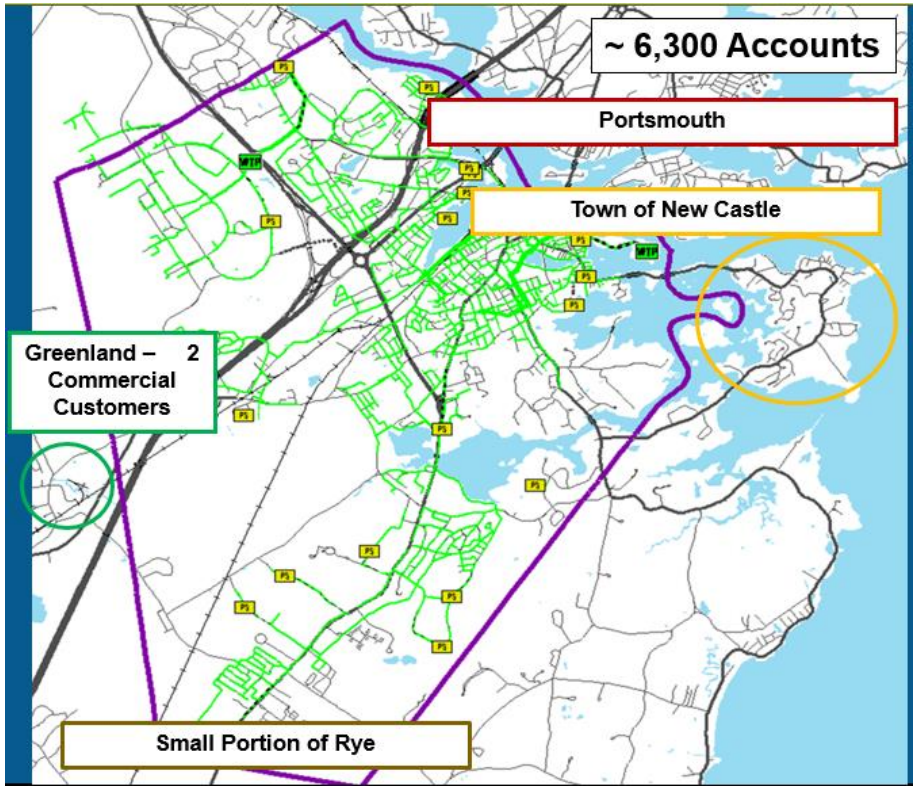
Studies Identified & Useful Website Links:
• Emergency Water Interconnection Preliminary Design Report

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$1,726,500						$1,726,500	$0	$1,726,500
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$1,726,500	$0	$0	$0	$0	$0	$1,726,500	$0	$1,726,500

V. ENTERPRISE UN S

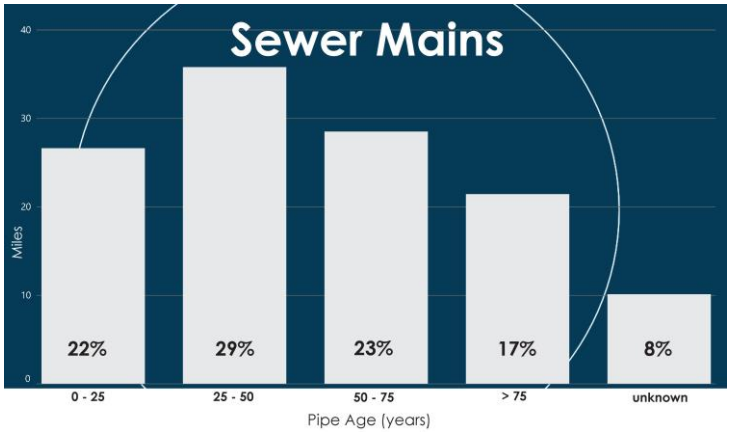
SEWER



EF-12-SD-91: Annual Sewer Line Replacement

Department	Public Works – Sewer Division
Project Location	Citywide
Project Type	Upgrade of Existing Facilities
Commence FY	Ongoing
Priority	O (Ongoing or Programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: The wastewater collection system consists of more than 120 miles of pipe. Many of the older pipes are 50 to 100 years old, undersized and at the end of their design life. Pipes are replaced programmatically as part of sewer specific capital projects, roadway reconstruction and prior to annual paving. This item will fund the purchase of pipes and associated materials used to replace those pipes.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	77%	$1,000,000		$1,000,000		$1,000,000		$3,000,000	$2,000,000	$5,000,000
Other	0%							$0	$0	$0
Revenues	23%							$0	$1,500,000	$1,500,000
PPP	0%							$0	$0	$0
	Totals	$1,000,000	$0	$1,000,000	$0	$1,000,000	$0	$3,000,000	$3,500,000	$6,500,000

EF-12-SD-92: Pease Wastewater Treatment Facility

Department	Public Works – Sewer Division
Project Location	Pease WWTF at Corporate Dr
Project Type	Upgrade of Existing Facilities
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	High ($100,000 or more)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Description: The Pease treatment facility was original constructed in the 1950's and was upgraded in the 1990's. Selected upgrades have been completed since the 1990's with the Headworks and primary clarifier project completed in 2021, but much of the facility has exceeded its useful lifespan and needs replacement. The City also received an updated NPDES permit allowing for an increase in design flow rate from 1.2 million gallons per day to 1.77 million gallons per day from the Environmental Protection Agency. This increase in flow rate at the treatment facility will support the build out of the Pease International Tradeport and provide additional treatment capacity for Tradeport tenants including Lonza Biologics' proposed expansion. Initial engineering to plan for the upgrade is underway and information from these efforts will facilitate discussions regarding project timing and policy decisions regarding cost apportionment. Costs provided in the previous FY22 and FY23 element sheet were placeholders and have been updated based on informed cost estimates for projects of this similar size, scope and recent cost increases. Funding under the bond category represent the costs to design and construct replacement for aged equipment and other upgrades for the existing facility. Funding under the PPP category represent costs for an increase in capacity. Costs are conceptual and will be refined as studies and design moves forward. Updated information will be presented to the City Council. The City is working to fund this project using revolving loan funds (SRF) in order to take advantage of principal forgiveness, lower interest rates and favorable construction financing.

Studies Identified & Useful Website Links:

- Pease Wastewater Facility NPDES Permit Renewal 2019
- Pease Wastewater Treatment Facility
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Project costs updated based on costs for upgrades at similar facilities.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	51%	$30,800,000						$30,800,000	$9,800,000	$40,600,000
Other	0%							$0	$0	$0
Revenues	1%							$0	$850,000	$850,000
PPP	47%	$34,500,000						$34,500,000	$3,000,000	$37,500,000
	Totals	$65,300,000	$0	$0	$0	$0	$0	$65,300,000	$13,650,000	$78,950,000

EF-23-SD-93: Wastewater Reuse at Pease WWTF

Department	Public Works – Sewer Division
Project Location	Pease WWTF at Corporate Dr
Project Type	Construction or expansion of a new public facility or public infrastructure
Commence FY	2024
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Reuse of wastewater is a sustainable and resilient initiative that can assist in reducing the impact of non-potable water demands on the drinking water system. Wastewater reuse requires additional level(s) of treatment and construction of a distribution system to carry the reuse water to the user. There are many applications for reuse water including, but not limited to, irrigation and water for cooling towers. This item covers the potential cost of a water reuse treatment and initial distribution system for the Pease Wastewater Treatment Facility. Prior year's funds will be to update a planning and feasibility study that will be used to inform costs and timing.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	99%		$2,000,000		$6,300,000			$8,300,000	$0	$8,300,000
Other	0%							$0	$0	$0
Revenues	1%							$0	$100,000	$100,000
PPP	0%							$0	$0	$0
	Totals	$0	$2,000,000	$0	$6,300,000	$0	$0	$8,300,000	$100,000	$8,400,000

EF-16-SD-94: Long Term Control Plan Related Projects

Department	Public Works – Sewer Division
Project Location	Citywide
Project Type	Rehabilitation of a Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City has a combined sewer collection system and is required by the Environmental Protection Agency to implement a Long Term Control Plan to reduce and otherwise mitigate combined sewer overflows. The City is moving forward with a Supplemental Compliance Plan (SCP) that stipulates sewer separation projects to be constructed. The SCP sewer separation projects are funded under other items. This project includes the costs for study, design and construction of other Long Term Control Plan projects, such as a Long Term Control Plan Update, infiltration and inflow identification and removal, sump pump removal programs, and other mitigations projects.

Studies Identified & Useful Website Links:

- Infiltration and Inflow Study 2016
- Post Construction Monitoring Plan 2017
- CSO Supplemental Compliance Plan 2017
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

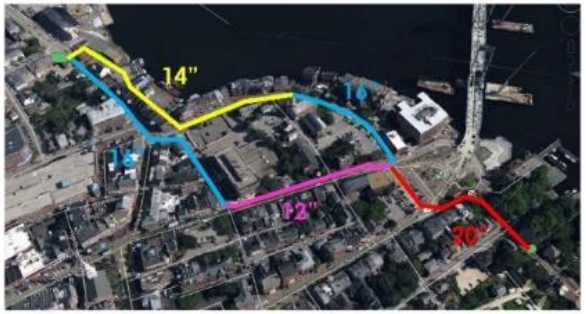
$300,000 moved from FY25 to FY24 to align with requirements of the Supplemental Compliance Plan where the project begins in October 2023 (FY24).

Added $2M for potential future projects to be identified in FY24 study.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	3%							$0	$100,000	$100,000
Bond/ Lease	85%	$300,000		$1,000,000	$1,000,000	$1,000,000		$3,300,000	$0	$3,300,000
Other	0%							$0	$0	$0
Revenues	13%							$0	$500,000	$500,000
PPP	0%							$0	$0	$0
	Totals	$300,000	$0	$1,000,000	$1,000,000	$1,000,000	$0	$3,300,000	$600,000	$3,900,000

EF-17-SD-95: Wastewater Pumping Station Improvements

Department	Public Works – Sewer Division
Project Location	Citywide
Project Type	Rehabilitation of Existing Facility
Commence FY	Ongoing
Priority	O (ongoing or programmatic)
Impact on Operating Budget	Negligible (<$5,001)



Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City owns and operates twenty (20) wastewater pumping stations. The projected life span of a pumping station is twenty (20) years. This project plans for the replacement or major rehabilitation of pumping stations and/or force mains that have not been included as separate projects in the CIP. The work will generally follow the recommendations detailed in the Wastewater Pumping Station Master Plan dated 2019.

Studies Identified & Useful Website Links:

- Wastewater Pump Station Master Plan 2019
- Projects Page – Department of Public Works
- Wastewater Pumping Stations Page
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	97%		$500,000		$500,000		$500,000	$1,500,000	$5,400,000	$6,900,000
Other	0%							$0	$0	$0
Revenues	3%							$0	$250,000	$250,000
PPP	0%							$0	$0	$0
	Totals	$0	$500,000	$0	$500,000	$0	$500,000	$1,500,000	$5,650,000	$7,150,000

EF-20-SD-96: Woodbury Avenue Sewer Separation

Department	Public Works – Sewer Division
Project Location	Woodbury Avenue from Farm Lane to Rockingham Avenue
Project Type	Construction or Expansion of a Public Facility, Street, or Utility
Commence FY	2023
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,000)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: Construct drainage on Woodbury Avenue from Farm Lane to Rockingham Avenue. This project will remove catch basins along Woodbury Avenue that are currently connected to the sewer. A new drainage outfall will be constructed at Rockingham Avenue. This work will be coordinated with the re-paving of Woodbury Avenue.

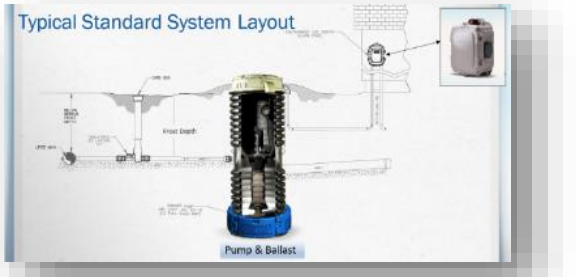
Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	81%	$250,000						$250,000	$0	$250,000
Other	0%							$0	$0	$0
Revenues	19%							$0	$60,000	$60,000
PPP	0%							$0	$0	$0
	Totals	$250,000	$0	$0	$0	$0	$0	$250,000	$60,000	$310,000

EF-22-SD-97: Sewer Service Funding For Sagamore Avenue Area Sewer Extension

Department	Public Works – Sewer Division
Project Location	Portions of Sagamore Ave and Wentworth House Rd; Cliff Rd, Walker Bungalow Rd and Sagamore Grove
Project Type	Construction or Expansion of A Public Facility, Street or Utility
Commence FY	2022
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)



Description: The City has approached this project in order to obtain pricing for the private side work for converting existing septic systems to a pumped sewer connection. Bids were received in August 2021 and pricing was found to be higher than anticipated. The project will be re-bid and updated prices obtained. City staff will present updated cost information to the City Council in order to conclude an approach to the cost sharing proposal. This item sets aside funds in anticipation of City Council action.

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Studies Identified & Useful Website Links:
• Consent Decree Second Modification. • Sagamore Ave Sewer Extension Project Page • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
New bid received in 2022, funding was lowered.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%	$365,000	$365,000	$365,000	$365,000	$365,000	$365,000	$2,190,000	$1,500,000	$3,690,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$365,000	$365,000	$365,000	$365,000	$365,000	$365,000	$2,190,000	$1,500,000	$3,690,000

EF-13-SD-98: Mechanic Street Pumping Station Upgrade

Department	Public Works – Sewer Division
Project Location	113 Mechanic Street
Project Type	Upgrade of Existing Facilities
Commence FY	2030
Priority	C (needed after 6 years)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	Y
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The Mechanic Street Wastewater Pumping Station is the largest in the City. The station will undergo a limited upgrade project in FY23/FY24 to extend the lifespan up to ten years. The station will need a comprehensive upgrade and it is anticipated the work will be scheduled around the same time as the replacement of the Peirce Island Road Bridge. The element sheet has been retained due to the significance of this project but is not funded in this CIP time period.

Studies Identified & Useful Website Links:

- Wastewater Pump Station Master Plan 2019
- Lifespan Evaluation (ongoing)
- FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

No current funding entered.

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	98%							$0	$2,500,000	$2,500,000
Other	0%							$0	$0	$0
Revenues	2%							$0	$50,000	$50,000
PPP	0%							$0	$0	$0
	Totals	$0	$0	$0	$0	$0	$0	$0	$2,550,000	$2,550,000

EF-24-SD-99: Peirce Island Wastewater Treatment Facility

Department	Public Works – Sewer Division
Project Location	200 Peirce Island Road
Project Type	Equipment, Non-vehicular
Commence FY	
Priority	A (Needed within 0 to 3 years)
Impact on Operating Budget	

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: The Peirce Island Wastewater Treatment Facility was officially put on line in the spring of 2020. Portions of the new wastewater treatment facility have been operational since an upgrade in 2015. The City is planning for the long term improvements needed at this facility to address capital equipment replacement, permit modifications and operational needs over time. The FY25 funds are for a 3rd inclined screw press for sludge de-watering. This 3rd press will allow for redundancy to improve reliable sludge de-watering operations.

Studies Identified & Useful Website Links:

Notes of Changes in Funding Plan from FY23-28 CIP:
Multiple Projects Cited in Cost Estimate – current project slated to be $4.9 million

		FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
GF	0%							$0	$0	$0
Fed/ State	0%							$0	$0	$0
Bond/ Lease	100%		$1,900,000		$3,000,000			$4,900,000	$0	$4,900,000
Other	0%							$0	$0	$0
Revenues	0%							$0	$0	$0
PPP	0%							$0	$0	$0
	Totals	$0	$1,900,000	$0	$3,000,000	$0	$0	$4,900,000	$0	$4,900,000

This page intentionally left blank.

VI. OM INE UN ING

COM-20-PW-100: Fleet Street Utilities Upgrade and Streetscape

Department	Public Works Department
Project Location	Fleet Street
Project Type	Rehabilitation of a Facility
Commence FY	2020
Priority	A (needed (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	Y
Responds to a Citywide Goal or Submitted Resident Request	

Description: The City is moving forward with a sewer separation project on Fleet Street. It is required through the City's Long Term Control Plan and Supplemental Compliance Plan. The project includes water, sewer, drainage upgrades along with full streetscape rework and other pedestrian enhancements. Funding for this work will come from the water and sewer enterprise funds and the general fund (property taxes).

Given the scope of this project, it will need to be completed in phases. The FY24 funding is for construction of a new drain line from Hanover St. to the North Mill Pond. Phase 2 will be Fleet Street from Hanover Street to Court Street as well as a potential expansion of the project limits as determined during the design. The expansion could include portions of Congress Street, State Street and Vaughan Mall. Downtown Aerial Utilities Underground (BI-21-PW-43) project is funded to bury the Fleet Street overhead utilities. Market Square Upgrade project (TSM-15-PW-61) will be coordinated with this project.

Studies Identified & Useful Website Links:
• Long Term Control Plan Update 2010; • CSO Supplemental Compliance Plan 2017Public Works Department • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Added funding to FY23 in order to design and construct a new drainage outfall to North Mill Pond, that is needed to accommodate separate drainage.

COM-20-PW-100: Fleet Street Utilities Upgrade and Streetscape

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	18%			$2,000,000				$2,000,000	$0	$2,000,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	18%			$2,000,000				$2,000,000	$0	$2,000,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	0%							$0	$0	$0
	Bond/Lease	64%	$2,000,000		$3,000,000				$5,000,000	$2,200,000	$7,200,000
	PPP	0%							$0	$0	$0
	Total General Fund	18%	$0	$0	$2,000,000	$0	$0	$0	$2,000,000	$0	$2,000,000
	Total Water Fund	18%	$0	$0	$2,000,000	$0	$0	$0	$2,000,000	$0	$2,000,000
	Total Sewer Fund	64%	$2,000,000	$0	$3,000,000	$0	$0	$0	$5,000,000	$2,200,000	$7,200,000
	Totals		**$2,000,000**	**$0**	**$7,000,000**	**$0**	**$0**	**$0**	**$9,000,000**	**$2,200,000**	**$11,200,000**

COM-23-PW-101: Edmond Avenue

Department	Public Works Department
Project Location	Edmond Ave from Maplewood Ave to Woodbury Ave
Project Type	Construction or expansion of a new public facility or public infrastructure
Commence FY	2023
Priority	A (needed (needed within 0 to 3 years)
Impact on Operating Budget	Reduce (will reduce Operating Costs)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y

Studies Identified & Useful Website Links:

- FY23-FY28 CIP (Prior Year) Project Sheet

Description: This project includes reconstruction of a section of water line on Edmond Avenue and McGee Drive. Work will include replacement of the water main, a low pressure sewer near Maplewood Avenue and drainage improvements along the roadway. In addition, residents have requested installation of a sidewalk along Edmond Avenue to improve pedestrian safety.

Notes of Changes in Funding Plan from FY23-28 CIP:

An additional $550,000 to accommodate resident request for sidewalk has been added for sidewalks.

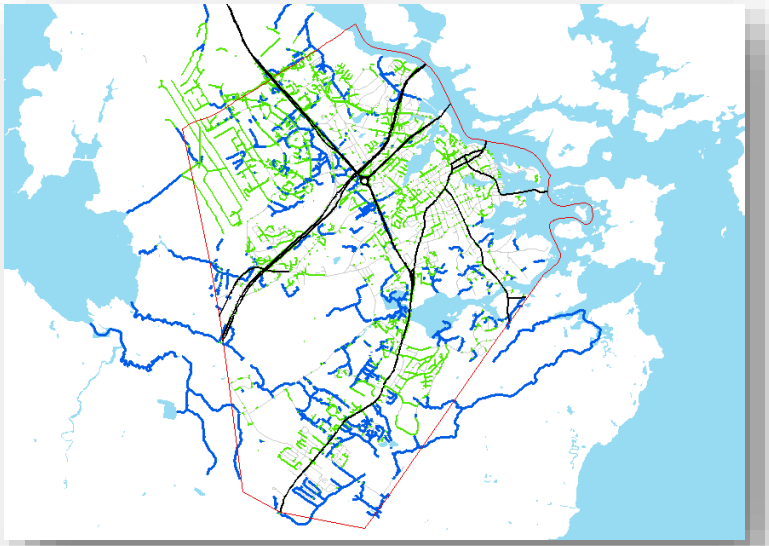
COM-23-PW-101: Edmond Avenue

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	3%							$0	$60,000	$60,000
	GF-Bond/ Lease	56%	$1,050,000						$1,050,000	$0	$1,050,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	3%							$0	$60,000	$60,000
	Bond/Lease	26%	$500,000						$500,000	$0	$500,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	1%							$0	$20,000	$20,000
	Bond/Lease	11%	$200,000						$200,000	$0	$200,000
	PPP	0%							$0	$0	$0
	Total General Fund	59%	$1,050,000	$0	$0	$0	$0	$0	$1,050,000	$60,000	$1,110,000
	Total Water Fund	30%	$500,000	$0	$0	$0	$0	$0	$500,000	$60,000	$560,000
	Total Sewer Fund	12%	$200,000	$0	$0	$0	$0	$0	$200,000	$20,000	$220,000
	Totals		**$1,750,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,750,000**	**$140,000**	**$1,890,000**

COM-15-PW-102: Citywide Storm Drainage Improvements

Department	Public Works Department
Project Location	Citywide
Project Type	Construction or expansion of a new public facility, street or utility
Commence FY	Ongoing
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	Y
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	



Description: The City owns and maintains storm drains, catch basins and outfalls. Many of these structures are failing and need upgrades. Drainage improvements are upgraded as part of specific capital projects, roadway reconstruction and prior to annual paving. In addition to pipe work, the existing stormwater ponds and swales need to be maintained.

Funding for this work will come from the sewer enterprise fund and the general fund (property taxes).

Studies Identified & Useful Website Links:
• Stormwater Master Plan 2007 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

COM-15-PW-102: Citywide Storm Drainage Improvements

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
General Fund	Fed/State	8%							$0	$400,000	$400,000
	GF-Capital Outlay	51%	$200,000	$250,000	$300,000	$300,000	$300,000	$350,000	$1,700,000	$800,000	$2,500,000
	GF-Bond/ Lease	0%							$0	$0	$0
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Sewer	Revenues	41%	$200,000	$250,000	$300,000	$300,000	$300,000	$350,000	$1,700,000	$350,000	$2,050,000
	Bond/Lease	0%							$0	$0	$0
	PPP	0%							$0	$0	$0

	Total General Fund	59%	$200,000	$250,000	$300,000	$300,000	$300,000	$350,000	$1,700,000	$1,200,000	$2,900,000
	Total Water Fund	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Sewer Fund	41%	$200,000	$250,000	$300,000	$300,000	$300,000	$350,000	$1,700,000	$350,000	$2,050,000
	Totals		**$400,000**	**$500,000**	**$600,000**	**$600,000**	**$600,000**	**$700,000**	**$3,400,000**	**$1,550,000**	**$4,950,000**

COM-23-PW-103: Chapel Street

Department	Public Works Department
Project Location	680 Peverly Hill Road
Project Type	Rehabilitation of a Facility
Commence FY	2027
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	Y
Alleviates Substandard Conditions or Deficiencies	Y
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project includes reconstruction of Chapel Street from Daniel Street to Bow Street. Work will include replacement of the water main, sewer main, and drainage improvements along the roadway.

Studies Identified & Useful Website Links:
• FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:
Funding increase due to project cost.

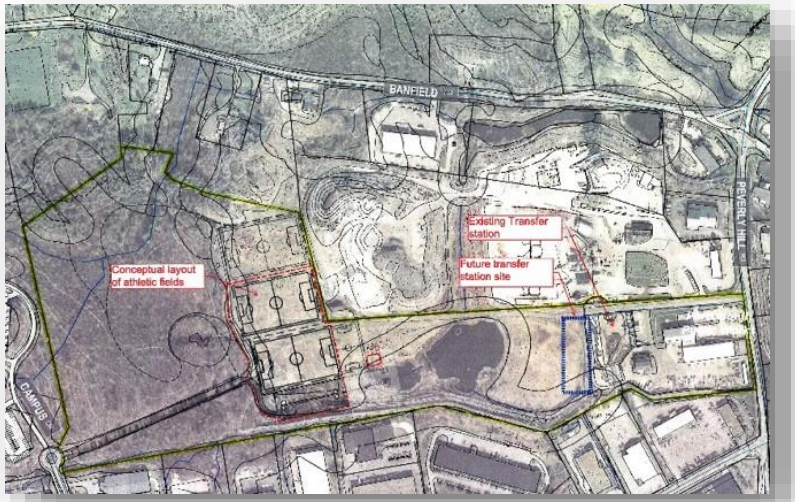
COM-23-PW-103: Chapel Street

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	11%			$340,000				$340,000	$0	$340,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	44%			$330,000				$330,000	$1,000,000	$1,330,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	0%							$0	$0	$0
	Bond/Lease	44%			$330,000				$330,000	$1,000,000	$1,330,000
	PPP	0%							$0	$0	$0
	Total General Fund	11%	$0	$0	$340,000	$0	$0	$0	$340,000	$0	$340,000
	Total Water Fund	44%	$0	$0	$330,000	$0	$0	$0	$330,000	$1,000,000	$1,330,000
	Total Sewer Fund	44%	$0	$0	$330,000	$0	$0	$0	$330,000	$1,000,000	$1,330,000
	Totals		**$0**	**$0**	**$1,000,000**	**$0**	**$0**	**$0**	**$1,000,000**	**$2,000,000**	**$3,000,000**

COM-20-PW-104: DPW Complex Improvements

Department	Public Works Department
Project Location	680 Peverly Hill Road
Project Type	Rehabilitation of a Facility
Commence FY	2027
Priority	B (needed within 4 to 6 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y



Description: The Department of Public Works Municipal Complex needs improvements to optimize efficiency. This project will provide upgrades to improve water and sewer divisions operations including high bay storage for critical equipment, which requires indoor storage. Funding will be used to complete design, permitting and construction.

Funding for this project will come from the water and sewer enterprise funds.

Studies Identified & Useful Website Links:
• Stormwater Master Plan 2007 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

COM-20-PW-104: DPW Complex Improvements

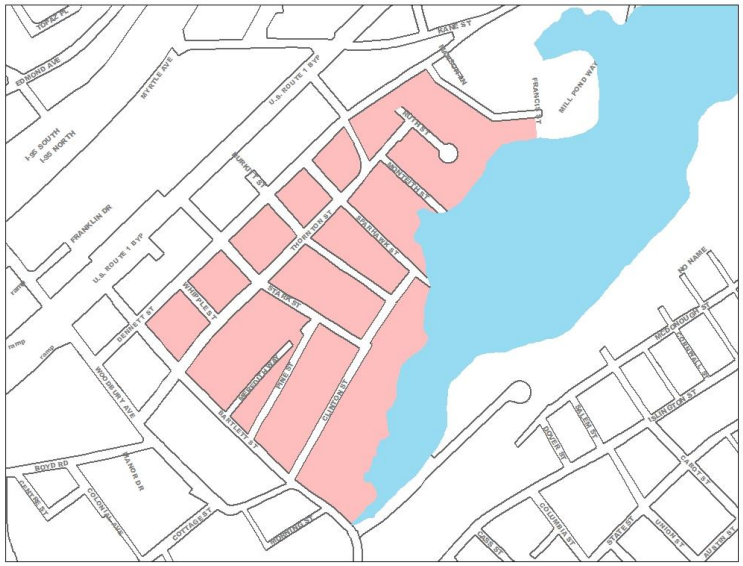
			FY24	FY25	FY26	FY27	FY28	FY29	Totals 23-28	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	0%							$0	$0	$0
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	50%			$1,000,000				$1,000,000	$1,000,000	$2,000,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	0%							$0	$0	$0
	Bond/Lease	50%			$1,000,000				$1,000,000	$1,000,000	$2,000,000
	PPP	0%							$0	$0	$0

	Total General Fund	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Water Fund	50%	$0	$0	$1,000,000	$0	$0	$0	$1,000,000	$1,000,000	$2,000,000
	Total Sewer Fund	50%	$0	$0	$1,000,000	$0	$0	$0	$1,000,000	$1,000,000	$2,000,000
	Totals		**$0**	**$0**	**$2,000,000**	**$0**	**$0**	**$0**	**$2,000,000**	**$2,000,000**	**$4,000,000**

COM-22-PW-105: The Creek Neighborhood Reconstruction

Department	Public Works
Project Location	Dennett Street to North Mill Pond to Bartlett Street
Project Type	Construction or expansion of a public facility, street, or utility
Commence FY	2025
Priority	A (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	Y



Description: This project will address water, sewer, drainage and streetscape improvements in the Islington Creek Neighborhood. It will be implemented in phases similar to the McDonough Street area project completed in 2019. Phase one will include design and the development of the phased implementation plan.

Useful Website Links:
• Stormwater Master Plan 2007 • FY23-FY28 CIP (Prior Year) Project Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

COM-22-PW-105: The Creek Neighborhood Reconstruction

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	33%		$500,000		$800,000		$1,000,000	$2,300,000	$0	$2,300,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	33%		$500,000		$800,000		$1,000,000	$2,300,000	$0	$2,300,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	0%							$0	$0	$0
	Bond/Lease	33%		$500,000		$800,000		$1,000,000	$2,300,000	$0	$2,300,000
	PPP	0%							$0	$0	$0
	Total General Fund	33%	$0	$500,000	$0	$800,000	$0	$1,000,000	$2,300,000	$0	$2,300,000
	Total Water Fund	33%	$0	$500,000	$0	$800,000	$0	$1,000,000	$2,300,000	$0	$2,300,000
	Total Sewer Fund	33%	$0	$500,000	$0	$800,000	$0	$1,000,000	$2,300,000	$0	$2,300,000
	Totals		**$0**	**$1,500,000**	**$0**	**$2,400,000**	**$0**	**$3,000,000**	**$6,900,000**	**$0**	**$6,900,000**

COM-03-PW-106: Islington Street Improvements

Department	Public Works Department
Project Location	Islington Street from Albany Street to Congress Street
Project Type	Rehabilitation of a Facility
Commence FY	2020
Priority	A (needed (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	Qualify?
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	
Reduces Long-Term Operating Costs	
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

Description: This project funds work related to reconstruction on Islington Street. Phase 1 was completed in FY23 with previous year funding and included work from the Route 1 Bypass to Dover Street. Construction bids for Phase 2 were received in the fall of 2022 and Phase 2a from Dover Street to Cornwall Street has been awarded for construction with previous years funding. Phase 2b form Cornwall Street to Maplewood Avenue requires additional funding and is requested in FY24.
Funding for this work will come from the water and sewer enterprise funds and the general fund.
This project will include sewer separation and credit will be provided under the City's Long Term Control Plan.

Studies Identified & Useful Website Links:
• Long Term Control Plan Update 2010; • CSO Supplemental Compliance Plan 2017 • Public Works Department • Sewer Department • FY21-26 CIP page

Notes of Changes in Funding Plan from FY23-28 CIP:

COM-03-PW-106: Islington Street Improvements

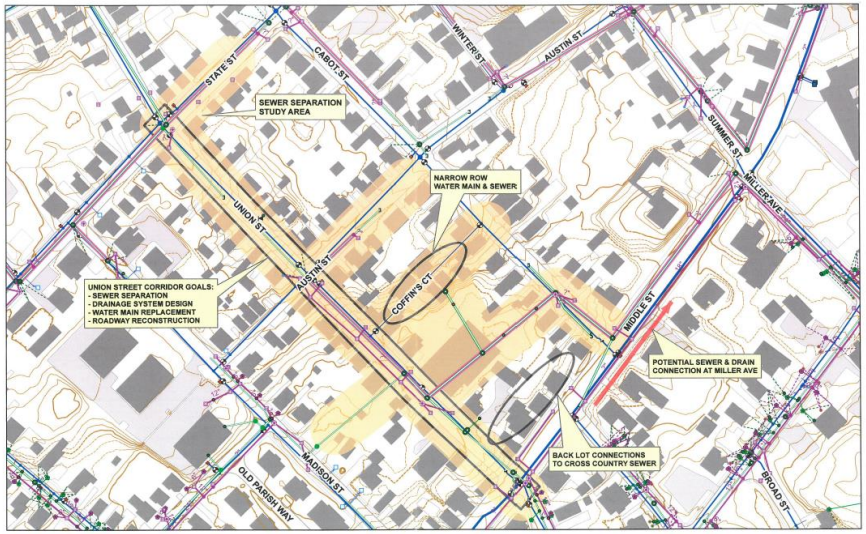
			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	46%	$2,500,000						$2,500,000	$0	$2,500,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	16%	$850,000						$850,000	$0	$850,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	0%							$0	$0	$0
	Bond/Lease	39%	$2,100,000						$2,100,000	$0	$2,100,000
	PPP	0%							$0	$0	$0
	Total General Fund	46%	$2,500,000	$0	$0	$0	$0	$0	$2,500,000	$0	$2,500,000
	Total Water Fund	16%	$850,000	$0	$0	$0	$0	$0	$850,000	$0	$850,000
	Total Sewer Fund	39%	$2,100,000	$0	$0	$0	$0	$0	$2,100,000	$0	$2,100,000
	Totals		**$5,450,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,450,000**	**$0**	**$5,450,000**

COM-17-PW-107: Union Street Reconstruction

Department	Public Works Department
Project Location	Union Street
Project Type	Construction or Expansion of Public Infrastructure
Commence FY	2020
Priority	A (needed (needed within 0 to 3 years)
Impact on Operating Budget	Negligible (<$5,001)

Evaluation Criteria	**Qualify?**
Responds to Federal or State Requirement	
Addresses Public Health or Safety Need	
Alleviates Substandard Conditions or Deficiencies	
Eligible for Matching Funds with Limited Availability	
Timing or Location Coordinate with Synergistic Project	
Identified in Planning Document or Study	Y
Improves Quality of or Provides Added Capacity to Existing Services	Y
Reduces Long-Term Operating Costs	Y
Provides Incentive to Economic Development	
Responds to a Citywide Goal or Submitted Resident Request	

FIGURE 1: UNION STREET RECONSTRUCTION



Description: This project is part of the City's ongoing Combined Sewer Overflow Long Term Control Plan in accordance with the EPA Supplemental Compliance Plan. The project includes water, sewer, drainage and streetscape modifications on Union Street from Middle Street to State Street. The project will also address side streets, including Coffins Court, Cabot Street and sections of Austin Street. Additional sewer funding will be used from the previous CIP sewer project (EF-17-SD-95 Union Street Reconstruction).

Studies Identified & Useful Website Links:

- Long Term Control Plan Update 2010;
- Public Works Department
- Sewer Department
- CIP FY22-27 Original Phase Element Sheet

Notes of Changes in Funding Plan from FY23-28 CIP:

Prior Year Funding is from the original phase of the project COM-17-PW-100 from FY22-27

COM-17-PW-107: Union Street Reconstruction

			FY24	FY25	FY26	FY27	FY28	FY29	Totals 24-29	6 PY's Funding	Totals
General Fund	Fed/ State	0%							$0	$0	$0
	GF-Capital Outlay	0%							$0	$0	$0
	GF-Bond/ Lease	31%	$700,000						$700,000	$1,000,000	$1,700,000
	Other	0%							$0	$0	$0
	PPP	0%							$0	$0	$0
Water	Revenues	0%							$0	$0	$0
	Bond/Lease	40%	$700,000						$700,000	$1,500,000	$2,200,000
	PPP	0%							$0	$0	$0
Sewer	Revenues	3%							$0	$150,000	$150,000
	Bond/Lease	26%	$700,000						$700,000	$700,000	$1,400,000
	PPP	0%							$0	$0	$0
	Total General Fund	31%	$700,000	$0	$0	$0	$0	$0	$700,000	$1,000,000	$1,700,000
	Total Water Fund	40%	$700,000	$0	$0	$0	$0	$0	$700,000	$1,500,000	$2,200,000
	Total Sewer Fund	28%	$700,000	$0	$0	$0	$0	$0	$700,000	$850,000	$1,550,000
	Totals		**$2,100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,100,000**	**$3,350,000**	**$5,450,000**

This page intentionally left blank.

A en i I. iti en Re este Pr jects

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Borthwick Ave/ Greenland Road/ Sherburne Road	Existing Project in the CIP	Redesign the intersections containing these 3 roads with stop signs, speed humps and new wider sidewalks. These changes would increase safety for pedestrians, bicyclists and other motor vehicles by slowing traffic.	Alexander Mulcahey	Funding has been set aside from the development of Eileen Dondero Foley Ave for the design of these improvements. Additional Funding will be requested if needed upon completion of this design.
2024	Cate Street Bridge over Hodgson Brook	Existing Project in the CIP	Replace NHDOT Red-Listed Cate Street Bridge (under documents cited: Project in CIP through 2022-2027)	James Hewitt	This project is already found in the CIP (FY23 CIP # TSM-08-PW-68 - "Cate Street Bridge Replacement"). The FY23 CIP lists funding for FY24 and FY25.
2024	City Buildings	Existing Project in the CIP	Switch interior and exterior lighting at City properties with energy-efficient LEDs. A) Investigate what types of bulbs/lamps are used inside buildings (corridors, rooms, desk lamps etc.) and on the outside of buildings (Security Lights) b) calculate electricity cost savings and CO2 Savings to be gained from switching from less-efficient to most efficient lighting options c) investigate, and if indicated, replace, lighting automation systems- so that most lights and switched off when not in use, or go to a suitable low-power mode.	James Christie	This is an on-going City initiative that is being funded through an existing CIP item (FY23 #BI-01-PW-42 "Citywide Facilities Capital Improvements").
2024	Citywide	Existing Project in the CIP	This is to create a budget to plant trees in the City of Portsmouth. The City should designate a number of trees to be planted each year, not just the 400th Anniversary year. The City should use it's bulk buying power to buy trees for planting by the City as well as for residents to plant on their properties. More trees will help decrease green house gases and reduce heat island effects with the shade trees can provide. (under documents identifies "Portsmouth Master plan, should also be in the Climate Action Plan")	Allison Tanner	There is an existing, ongoing CIP item (FY23 # BI-04-PW-32 "Citywide Tree & Public Greenery Program") that provides funds annually for this program.
2024	Citywide	Existing Project in the CIP	At the September 14, 2022 Portsmouth Conservation Commission meeting, the commission voted to request a $500,000 land acquisition item in the FY 2023 - FY28 CIP be funded for the purchase of conservation lands and/or easements. Funding was removed for this item in last year's CIP and the conservation commission requests funding for the next 5 years starting this year. For the last several years, the conservation commission has worked closely with city staff to identify and prioritize undeveloped properties that follow recommendations from the Open Space Plan (2020). The Open Space Plan is a comprehensive plan following the Portsmouth Public Undeveloped Lands Assessment (PULA) study (2010), and included a public process to research and prioritize additional undeveloped land for protection, provide land stewardship guidance for existing open space lands, and identify opportunities to expand connectivity between existing open space assets, neighborhoods and trails. The Plan also considers integration of climate resiliency objectives as they relate to open space. Having funds available to respond to conservation land opportunities as they become available is crucial to implementing the plan and conservation commission and city staff follow-up research and planning. As a sustainable community, there are many additional benefits to securing these funds for conservation lands: 1) Preserving open space has been one of the primary concerns of the citizens of Portsmouth and is prominent in the Master Plan. 2) Open space provides a balance for increasing density of development and urbanization occurring in Portsmouth. 3) Purchasing land for conservation is the only sure method to permanently preserve land for future generations. 4) Limited existing Current Use conservation funds can be leveraged along with potential grant funding. 5) Conserved land can improve air and water quality, provide habitat that supports biodiversity and support reductions in greenhouse gases. 6) Maintaining this line item in the CIP is an action that this council can take to keep our environment healthy and sustainable for residents of Portsmouth now and in the future.	Barbara McMillan (Portsmouth Conservation Commission Chair - on behalf of the commission)	There is an existing CIP item for this project (FY23 CIP # BI-95-PL-16 "Land Acquisition") with current funding for FY24 set at $500,000. Changes to the funding can be made by either the Planning Board or City Council throughout the CIP process.
2024	Citywide Cemeteries (Union Cemetery, North Cemetery, Point of Graves, Pleasant Street, Old Hall, Cotton Cemetery, and Elmwood Cemeteries)	Existing Project in the CIP	Completion of the 2013 Existing Conditions Assessment Report and Restoration Plan. The remaining twelve projects are starting to become time sensitive. Conditions have become worse in the last 10 years. We are writing grants and planning a capital fundraising plan, however those are not guaranteed. The following are options that you might consider during the budgeting process. $50,000 would finish seawall at North. $30,000 would start wrought iron replacement or headstone repair, $15,000 would complete three small projects that are equally important in the restoration. (also see provided project list totaling $408,000 for project suggestions).	Portsmouth Historic Cemetery Committee	There is an item in the CIP project (FY23 # BI-05-PW-39 "Historic Cemetery Improvements") that is funded at $40,000 per year, providing annually for this program. A sheet naming the Cemetery Committee's list of backlog projects can be added to the existing project. Funding adjustments can be made during the CIP process.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Community Campus turf field to DPW Driveway	Existing Project in the CIP	The new athletic fields were proposed to include direct bike/ped access from the DPW Driveway on Peverly Hill Road, but that piece was cut out of Phase 1. Please allow public access immediately and construct a side path past the Pike Industries driveway before the Peverly Hill project is completed. https://www.cityofportsmouth.com/sites/default/files/2019-11/RecreationFieldsBikePathPhase1.pdf.	Matthew Glenn	Funding for this project has been identified in an existing CIP project (FY23 # BI-12-RC-24 "Additional Outdoor Recreation Fields").
2024	Elwyn Road Side Path	Existing Project in the CIP	Elwyn Road Side Path (identified in document FY2021-2026 CIP. . Then it disappeared).	James Hewitt	The project has been funded and is in the design phase. The project was removed from the CIP once it was fully funded. Projects are removed from the CIP for two reasons 1) They are fully funded. 2) They are no longer possible given the current project conditions within the CIP timeline or are no longer desired by the City's Policy making bodies. The majority of projects that are fully funded and in process are found on the City's Project Page https://www.cityofportsmouth.com/publicworks/projects.
2024	Four Tree Island	Existing Project in the CIP	This spring I observed that one of the lamp posts was tipped over and submitted a picture to Portsmouth DPW via the Click Fix App. Yesterday I received a notification that the lamp post has been removed but the staff determined that the scope Is a capital project that goes beyond routine maintenance. They suggested that a new lighting system should be requested through the CIP Process. I don't believe that any of the lamp posts have been lighted all summer.	Julie Cousins	Four Tree Island is managed as part of Prescott Park. Capital Funding is identified in the CIP project (FY23 #BI-11-PW-34 - "Prescott Park Facilities Capital Improvements") for upgrades to Prescott Park's infrastructure. This item will be added to projects to be completed.
	Frank Jones Farm Neighborhood for the area from Woodbury Avenue between Granite Street and Bartlett Street Intersections as well as involved connecting streets	Existing Project in the CIP	Major traffic and safety challenges have impacted the 1.10 mile distance that includes residential Woodbury Avenue and connecting streets. This application is in reference to the current accesses and egresses to and from residential Woodbury Avenue: This one-mile-plus stretch of Woodbury Avenue between Market Street Extension/Granite Street traffic lights and the Bartlett Street intersection has: No stop signs, One radar speed-limit sign, without data collection, on one side of street, No speed humps or tables, One raised pedestrian crossing. No crossing signs at school bus stop intersections , No signage or pedestrian crossing at access and egress for New Franklin Elementary School. The last vehicle count on this stretch was over 57,000 vehicles per week in a then SR2-zoned neighborhood. The most recent count public records online are from 1998. There is no current count available. In summary, there are 23 accesses and egresses on residential Woodbury Avenue, not including more than 50 residential driveways, at which vehicles are not ever required to stop. Two persons have been killed in traffic accidents on Woodbury Avenue, one on nearby commercial section and one at the intersection of Dennett Street. The number of minor and major accidents involving vehicles, pedestrians, pets, property damage, and near misses, are numerous. Those reported are available in City records, have been reported in local newspapers and recounted by Frank Jones Farm Neighborhood residents and witnesses. This acute traffic and safety situation demands a systemic, complete solution, rather than a piecemeal, temporary response. Residents and homeowners in the Frank Jones Farm Neighborhood have submitted numerous requests and petitions with detailed measures that should be implemented to make our neighborhood safe, many of which are included in this request.	Lenore Bronson	Traffic calming along Woodbury Avenue is currently funded and in design. Funds were previously approved to make improvements to the gateway to this neighborhood which will include traffic calming.
2024	Haven Park, Pleasant Street	Existing Project in the CIP	Improve Lighting - The park is very dark at night, please find some way to provide lighting along the path.	Mary Cline	There is an existing CIP project (FY23 #BI-02-PW-31 "Citywide Park & Monument Improvements") that may address this project. This item can be added to the list of maintenance upgrades.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	I-95 Sound Walls (2 Requests)	Existing Project in the CIP	Construct Sound Walls for Pannaway Manor, from Woodbury to Maplewood, and New Franklin School (under document "Identified in CIPS from 2007 to 2022). The constant noise pollution coming from this major highway through the Portsmouth neighborhoods along this section is tremendous and has increased over the years. My family and neighbors can no longer leave their porch doors and windows open while inside having a conversation, phone call, or work meeting or have a gathering outside due to the noise and inability to hear anything else. The intense noise has brought the property value of this neighborhood down, along with the litter created. Unfortunately speed humps and medians have been added to Maplewood Avenue: trucks, trucks with trailers & equipment, dump trucks, school buses, campers & RVs (all scrape, clang, people that drive over them intentionally with increased speed, people that "Whooooo!" when driven over them, have added to the loud constant baseline from 95. I could go on if needed and will if that helps get something, anything initiated to alleviate this problem. (Identified in document: Identified in CIPS from 2007 to 2022)	James Hewitt & Jessica Dolan	There is an existing CIP project (FY23 #BI-07-PW/NH-41 "Sound Barriers in Residential Area Along I-95") that addresses this issue. The NHDOT has determined east side of I-95 is not eligible for State and Federal Funding. Staff has reached out to determine if a solely City funded project could be completed. Previously allocated funds can be used to study this request and determine the appropriate funding level for a sound barrier project.
2024	Maplewood Ave Culvert / Bridge	Existing Project in the CIP	Replace NHDOT Red-Listed Bridge (under documents cited: Portsmouth CIP to FY 2022-2027 CIP)	James Hewitt	This project is in design and has already been funded. The project was removed from the CIP once it was fully funded. Projects are removed from the CIP for two distinct reasons 1) They are fully funded. 2) They are no longer possible given the current project conditions within the CIP timeline or are no longer desired by the City's Policy making bodies. Projects that are fully funded and are in process are found on the City's Project Page https://www.cityofportsmouth.com/publicworks/projects
2024	Market Street and Russell Street	Existing Project in the CIP	Potential Roundabout Intersection (Identified in document: Last year's CIP TSM-16-PL-66)	James Hewitt	This intersection is an existing CIP project (FY23 #TSM-16-PL-57 "Russell/Market Intersection Upgrade").
2024	Market St from Kearsarge Way to Woodbury Avenue	Existing Project in the CIP	Expanding/reconstruction of existing asphalt pedestrian path to a multimodal path for pedestrians, biking, and micro mobility vehicles. To include priority crossing at all road crossings (Kearsarge Way, Spinnaker Way, Portsmouth Blvd), improve wayfinding, and pedestrian focus illumination along paths.	Kenneth Ferrer	There is an existing project that could encompass this request (FY23 #TSM-21-PL-56 "Market Street Sidepath").
2024	Middle Street and Middle Road	Existing Project in the CIP	The slip lane at Middle St/Middle Rd was blocked off to increase traffic calming on Middle Rd. The removal of the slip lane has reduced the speed, as was intended. For two years, bollards have been installed to block off the slip lane. When winter comes, jersey barriers from downtown dining are moved into place for the winter months. It seems time to make the removal of the slip lane permanent and more attractive. There is an active CIP request in the CIP concerning traffic calming measures for Middle Rd. It would be nice if the slip lane removal could be rolled into that projected work, with money added to accomplish the work if necessary.	Liza Hewitt	This request is currently in the planning process and will be completed with funds identified in CIP item (FY23 #TSM-21-PW-71 "Traffic Calming")
2024	Pannaway Manor	Existing Project in the CIP	Complete Street Program - Pannaway Manor was established in 1940 making utilities (water, sewer & drainage) 82 years old and past their designed lifespan. Sidewalks and roadway reconstruction are scheduled in 2023. Pannaway is in need of a complete street makeover and not just sidewalks and roadway repairs.	Tyler Dow	Roadway paving is scheduled based on the City's Pavement Management Plan which is revised annually. Sidewalks are programmed to be upgraded starting in 2023. No further action is recommended.
2024	Parrot Avenue	Existing Project in the CIP	On parrot Avenue there is no sidewalk from Junkins Avenue to Fleet Street. Request that a sidewalk be installed in this area.	Ken Goldman	This project is part of an existing project (FY23 TSM-15-PW-74 "Junkins Avenue Improvements").
2024	Robert Lister Academy - Far right side of the driveway located in front	Existing Project in the CIP	Sidewalk - continue the concrete sidewalk with curbs where needed to Borthwick Avenue. The existing sidewalk disappears in places. What is existing is unsafe to walk on.	Donna J. Garganta	CIP item exists. Will be included in the Pannaway Manor Sidewalk project.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	South Playground	Existing Project in the CIP	There is a desperate need for public restrooms for Spring-Summer and Fall use of the South Playground. Currently what exists are 3 porta-potties which are very unhealthy. The fields are used daily by 100's of pickleball players, dog park attendees, playground attendees, tennis courts, basketball courts, ballfields, etc. The construction of seasonal restrooms for public use between hours of 8am and 8pm and months of April to November would be a huge addition to our beautiful recreation facility. To be able to use the facility/ wash hands/ privacy etc. would be a highly appreciated for the hundreds of South Playground users. Perhaps similar to what is at Prescott Park	Brooks Stevens	This project is part of a new recreation project submission for FY24.
2024	Thorton Street Extension	Existing Project in the CIP	Create a safer and less busy road, making this street one way or adding sidewalk	Nathan Krakow	Part of an existing CIP project COM-22-PW-99 'Creek Neighborhood Reconstruction' Funding FY25
2024	Coakley Road and Larry Lane	Sidewalks & Roadways	Repaving of Coakley and Larry Ln, additional length of sidewalk along Coakley to entrance of neighborhood.	Thomas Morley	Roadway paving is scheduled based on the City's Pavement Management Plan which is revised annually. Addition of sidewalk can be added as a CIP project for sidewalk upgrades.
2024	Edmond Avenue (16 Requests)	Sidewalks & Roadways	(Combined) New Sidewalk - Edmond Ave needs a sidewalk. There are many cars that use that road along with many children that take that road to go to school or home. It becomes very dangerous at night where there is no clear path for pedestrians.	Beatriz Alden, Mari Lister, Ryan Cress, Cayleigh Dalrymple, Tray George, Bill Shea, Cassandra L Jones Rev Trust, Brianna Spechvilli, Marie Lyford, Tyler Bradbury, Katheryn Avger-Campbell, George Silva, Phyllis O'Connell, Kellie O'Connell Lang, Ralph Minderhoud, and Caitlin Burke	This request can be incorporated into the existing Edmond Avenue Capital Project COM-23-PW-95. This request will require additional funds to be included and will extend the timeline of the project.
2024	Lafayette Rd, southbound side from Ocean Road to the entrance to Portsmouth Green (McKinnon's)	Sidewalks & Roadways	Sidewalk - This is a fairly high speed, and very highly trafficked area, with many pedestrians from Hillcrest, Beech stone, Patriot Park and the like. Accidents involving pedestrians, scooters, and bicycles are not uncommon here.	Scott Bornstein	There is an existing CIP Project (FY23 # TSM-08-PL/NH-57 "US Route 1 New Side path Construction") that would be able to encompass this request if desired. It could be added to the existing list of projects.
2024	Ocean Road (4 Requests)	Sidewalks & Roadways	(Combined) Construct a sidewalk along Ocean Road starting at Winchester Street and ending at the rail trail. I'm aware this is a state road so it would require state approval, but it would provide a safe way for residents of the Maple Haven neighborhood, Ocean Road and other adjacent neighborhoods to walk to the rail trail. - and- As discussed in the suburban Master Plan, connecting the suburban amenities through sidewalks, and bike paths will both connect the suburbs with downtown, as well as allow pedestrian and bike access to all of the amenities from Green Rd over to Rt 1/Lafayette and in between.	Charles Raye & Phil Casey & Fred & Elaine Butts (2 requests)	This is a busy street and would warrant a side path. Further investigation is needed for implementation.
2024	Corner of Topaz & Onyx	Sidewalks & Roadways	The blind turn on Topaz/ Onyx is so dangerous. Cars can't see kids and 3 with about 21 kids in the neighborhood biking/ walking. Someone will get hit.	Briana Spechvilli	This request can be incorporated into the existing Edmond Avenue Capital Project COM-23-PW-95. This request will require additional funds to be included.
2024	Peverly Hill Road	Sidewalks & Roadways	Add sidewalks for Peverly Hill Road (under documents cited: Portsmouth CIP until 2020-2025 then it stopped)	James Hewitt	Funds have been allocated for this project. Additional funds will be requested if the opinion of cost indicates more funding is needed.
2024	TJ Gamester Ave/FW Hartford Drive	Sidewalks & Roadways	Replace sidewalks, which are mostly deteriorated and not in good shape. Sidewalks are about 30 years old and are cracking, uneven, eroded. I think maintaining existing sidewalks should take precedence over constructing new sidewalks.	David Heller	There is funds currently identified for sidewalk improvements every 2 years (TSM-95-PW-64 "City Sidewalk Reconstruction"). This request can be put on the list of sidewalk projects to be scheduled to be rehabilitated.
2024	Banfield Rd - 850 BANFIELD RD, map-lot 0275-0005-0000 (City Owned parcel)	Bicycle & Pedestrian	Parking for the rail trail will be necessary for many of the residents in the suburban area because bike paths are not available to get to the Rail Trail. Equally important, having a small park where riders can pull off the trail and eat lunch or rest would significantly increase the enjoyment of the trail for riders and local residents. I will be submitting other CIP's for an increase in parks in the greater Ocean Rd and Banfield Rd Suburban areas as well.	Fred & Elaine Butts	During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current project set aside to fund projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Citywide (with an emphasis on school and downtown areas)	Bicycle & Pedestrian	(abridged) "The goal of this proposal is comprehensive, safe bicycling infrastructure for the city of Portsmouth". Example Project #1 Congress and State Street reroute. Shut down Congress street to automobile traffic from Maplewood all the way through Daniel Street up to Bow St/Scott Ave. Example Project #2) Create a bike and pedestrian centric route from Market Street to Gosling Road; Market Street all the way from the heart of downtown to Gosling Road and into Newington and into the commercial entities there achieved through road narrowing and bike/ped path widening as well as other road and street modifications. Example Project #3) New Franklin School - Safe Routes to School path for the kids to bike to school. Example #4) North Mill Pond Trail and Greenway: Improved Bike/ped accommodations along the bank of North Mill Pond as well as access roads such as Bartlett and Maplewood.	Rebecca M. Hanley	During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current ongoing CIP project to fund capital projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Downtown	Bicycle & Pedestrian	Expanding Sidewalks along popular streets. Downtown Portsmouth has narrow sidewalks but large number of on street parking spaces. This proposal asks that the City consider eliminating some parking spaces and widening sidewalks. This would help redesign the downtown experience, making it a much more pleasant place to visit. Multiple other benefits can be realized: wider sidewalks are needed for ADA reasons, as well as giving pedestrians enough space to move in busy months; wider sidewalks give opportunity to plan more social space as well as on-street dining options; air quality improves due to fewer cars, less idling, etc.; widening the sidewalks creates more opportunities to plant trees, thereby increasing shade and reducing the urban heat island effect. More trees help clean the air also; reducing parking is shown to actually encourage commercial activity - shops won't lose customers, but may gain; Removing all spots (except handicapped) from streets reduces the amount of cars cruising for a spot Two key locations to consider: Market St between Bow and Daniel St: remove all parking except for handicapped. & Top of Congress St: narrow road to one or two lanes instead of three. Remove all parking except for handicapped. Supporting material: Reducing parking makes cities more livable(EESI) https://www.eesi.org/articles/view/how-eliminating-parking-actually-makes-cities-better, Eliminating parking does not reduce visitor count or commercial activity. https://content.tfl.gov.uk/walking-cycling-economic-benefits-summary-pack.pdf	James Christie	This is a broad request but can be reviewed as a part of the update to the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current project set aside to fund projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Gosling Rd from Pease Blvd to Woodbury Ave	Bicycle & Pedestrian	Cycle track or Multi Use path on Gosling Rd, as recommended in the Bike/Ped plan: Remove travel lane and/or median for two-way cycle track on south side of road from Woodbury Ave to Spaulding Tpk ramps. Install sidewalks on both sides in conjunction with cycle track reconstruction.	Matthew Glenn	A section of this project has been completed, from the McDonalds on Gosling Rd to Woodbury Ave. The remainder of this request could be reviewed in conjunction with the update to the Bicycle/Pedestrian Plan. During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current ongoing CIP project to fund capital projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Hampton Branch Rail Trail	Bicycle & Pedestrian	(Combined) To make the soon to be created Hampton Branch Rail Trail as useful as possible the city should consider adding bike lanes to the roads that connect to the business corridor on Route 1 South. And so there should be bike lanes on Heritage Ave and Ocean Road. - and - Improve bike/ped access to the new Rail Trail, Skate Park and Peverly Hill path. From the 2018 update to the Bike/ped plan: Project 19: "Widen existing sidewalk on south side of Portsmouth Plains Field for side path connection from Peverly Hill Rd to Hampton Branch Trail. Provide side path connection through future athletic fields with parking access for trail users. " Project 20: "Provide trail link to existing sidewalk at NH 33 overpass. Widen existing sidewalk for side path from tail to Greenland Rd. Reconstruct sidewalk on Greenland Rd. Bike boulevard on Greenland Rd requires traffic calming near intersection with NH33 to provide low-stress connection to Borthwick Ave over existing pedestrian bridge."	Jonathan Sandberg	There is a current CIP project that exists that can be used to accomplish this request (FY23 # CIP-15-PL/NH-51 "Hampton Branch Rail Trail"). Currently there are a number of projects identified that will improve bicycle access to the new rail trail. This request can be added to the list of identified projects for this CIP funding.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Lafayette Road from Wilson Rd to Andrew Jarvis Drive	Bicycle & Pedestrian	Construct Side paths on both sides of Route 1. The state project (#29640) from Wilson south to Rye is crawling along, but there is a real need for a safe bike route across Sagamore Creek. From the Bike/Ped plan: Based on NHDOT existing Rte. 1 corridor study, construct side paths on each side of road in available ROW. No alteration of existing traffic patterns necessary.	Matthew Glenn	Parts of this request are addressed in a number of other capital projects.
2024	Mirona Rd and Lafayette Rd (at the intersection). On the side of Lafayette Rd.	Bicycle & Pedestrian	Creating walking and biking access to the Urban Forestry from Lafayette Rd would allow people to gain access to the park without having to walk or bike along dangerous sections of Lafayette Rd and Elwyn Rd. There is actually a makeshift path that goes from the UF trails to Lafayette, but it's not intentional or particularly safe as its overgrown.	Fred & Elaine Butts	There is an existing CIP Project (FY23 # TSM-08-PL/NH-56 "US Route 1 New Sidepath Construction") that would be able to encompass this request if desired. It could be added to the existing list of projects.
2024	Ocean Road	Bicycle & Pedestrian	Multi-use path on Ocean, connecting Maple Haven to Rail Trail	Sarah Jarvis	This request could be reviewed in conjunction with the update to the Bicycle/Pedestrian Plan. During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current ongoing CIP project to fund capital projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Urban Forestry Center connection to Gosport Road	Bicycle & Pedestrian	With the Elwyn Road side path project starting soon, there should be a better bike/ped connection on through to Gosport Road. At a minimum the existing narrow dirt trail could be leveled and widened with signage. From the 2018 update to the Bike/ped Plan. "Shared-use path through Urban Forestry Center connecting to Gosport Rd/ Odiorne Point partially through existing utility easement. Signed bicycle route on Gosport Rd/ Odiorne Point to connect to Sagamore Rd."	Matthew Glen	During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current project set aside to fund projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Woodbury Ave from Gosling Rd to Market Street	Bicycle & Pedestrian	Bike ped improvements to Woodbury Ave, as outlined in the 2018 Bike/ped plan update: Cycle track one-way each side for access to shopping and residential areas. Short term, may be street-level with flexible bollard separation; long term, full reconstruction with permanent separation. Lane narrowing and/or travel lane reduction require. Reconstruct and widen sidewalks on two sides for improved and ADA access to shopping and transit. Short term, make all crosswalks ADA-compliant. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Matthew Glen	During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current project set aside to fund projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Woodbury Ave	Bicycle & Pedestrian	Woodbury Ave Complete Street Reconstruction (City of Portsmouth Bicycle and Pedestrian Plan 2014) Project ID: 60 Sub Project ID 4. Cycle track one-way each side for access to shopping and residential areas. Short term, may be street-level with flexible bollard separation; long term, full reconstruction with permanent separation. Lane narrowing and/or travel lane reduction require. Reconstruct and widen sidewalks on two sides for improved an dADA access to shopping and transit. Short term, make all cross walks ADA compliant. Long term reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Kenneth Ferrer	During the updating of the 2014 Bicycle/Pedestrian Master Plan, this project could be considered as an addition to the project list. The Updated Bike/Ped Master Plan seeks to consider current community needs and values in its choices and prioritization of projects. There is a current project set aside to fund projects that are listed in the Bicycle/Pedestrian Plan (FY23 # TSM-15-PL-52 "Bicycle/Pedestrian Plan Implementation").
2024	Prescott Park		Make use of the rectangular cutout to the left of existing piers by adding floats so boats can dock. The use of existing granite stairs can be restored. Look at what Newburyport Mass did with their waterfront for ideas. More floats along the existing areas will allow visitors by boat to doc and explore the park and Portsmouth. There is significant room for expansion along the city waterfront for adding places for visitors to come by water.	Marc Stettner	This project would be eligible for consideration as part of Project FY23 BI-19-PW-33 "Prescott Park Master Plan Implementation."

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Citywide	Climate Action Plan	In the CIP the city should include funding of $500,000 per year for the transition of gas powered maintenance equipment to all electric, in the both city and school departments.	Ted Jankowski	This should be included as part of the Climate Action Plan (CAP) where technical analysis or public input can be completed. This item introduces a climate action capital investment priority in advance of the CAP. The CAP will engage the community and technical experts in a citywide discussion to determine the most impactful climate related investment priorities and timelines for implementation.
2024	TBD	Climate Action Plan	Plan, design and build a solar power array and battery storage facility of sufficient capacity to power all City buildings. The purpose is to provide a local, clean energy source that can offset the electricity used by City building and vehicles. Power generated is metered and fed into the local grid. Solar panels could be sited on City Building roofs, or aggregated into one site. The Public Undeveloped Land Assessment lists several sites that may be suitable. This project is intended to bring long-term efficiency savings to the city; the initial planning and construction costs should be paid back by the reduction in the city's utility bill.	James Christie	This should be included as part of the Climate Action Plan (CAP) where technical analysis or public input can be completed. This item introduces a climate action capital investment priority in advance of the CAP. The CAP will engage the community and technical experts in a citywide discussion to determine the most impactful climate related investment priorities and timelines for implementation.
2024	Downtown	Climate Action Plan	Plant a Shade way to give pedestrians shade and reduce urban heat. There seem to be many opportunities for placing more trees along popular routes through town. Examples: State Street in downtown, Parrot Ave from the Library to Junkins. This proposal asks that the city consider planting trees where there are wide gaps between trees now. The intention is to give pedestrians nearly unbroken shade during the hottest parts of the day. EPA: "Trees and vegetation lower surface and air temperatures by providing shade and through evapotranspiration. Shaded surfaces, for example, may be 20–45°F (11–25°C) cooler than the peak temperatures of unshaded materials." Reduced energy use: Trees and vegetation that directly shade buildings decrease demand for air conditioning. Improved air quality and lower greenhouse gas emissions: By reducing energy demand, trees and vegetation decrease the production of associated air pollution and greenhouse gas emissions. They also remove air pollutants and store and sequester carbon dioxide. Enhanced stormwater management and water quality: Vegetation reduces runoff and improves water quality by absorbing and filtering rainwater. Reduced pavement maintenance: Tree shade can slow deterioration of street pavement, decreasing the amount of maintenance needed. Improved quality of life: Trees and vegetation provide aesthetic value, habitat for many species, and can reduce noise.	James Christie	This should be included as part of the Climate Action Plan (CAP) where technical analysis or public input can be completed. This item introduces a climate action capital investment priority in advance of the CAP. The CAP will engage the community and technical experts in a citywide discussion to determine the most impactful climate related investment priorities and timelines for implementation.
2024	Maplewood Avenue Bridge	Climate Action Plan	Amendment to Existing Maplewood Avenue Bridge Replacement CIP Project - Please consider the addition of a self regulating tide gate or sluice gate to the Maplewood Avenue Bridge culvert to limit the impacts of sea level rise and flooding in the North Mill Pond neighborhoods. Such a gate would mute the high tide elevation in North Mill Pond, especially during storm events. The tide gate system should be designed in such a way that it does not inhibit recreational use of North Mill Pond (i.e. kayaks and canoes that currently pass through the culvert).	James Golden	This should be included as part of the Climate Action Plan (CAP) where technical analysis or public input can be completed. This item introduces a climate action capital investment priority in advance of the CAP. The CAP will engage the community and technical experts in a citywide discussion to determine most impactful climate action related investment, priorities and timelines for investment and implementation. This bridge has been identified for complete replacement in the State's 10-Year Plan, this project may be best to be revisited upon scheduling of that project.
2024	South Meeting House Marcy & Meetinghouse Hill	Facilities & Infrastructure	This building is in a terrible state of disrepair - it is historic and will soon be beyond repair if not addressed soon.	Mary Cline	This project is part of a city building and should be referred to staff for review. This is part of an Existing CIP item (BI-01-PW-42 "Citywide Facilities Capital Improvements"). This request will be added to back log of facilities projects.
2024	165 Woodlawn Circle - Portsmouth	Facilities & Infrastructure	I have lived in this home for over (45) years. Since new housing has been built in my neighborhood my finished basement has been flooded (3) times the last (10) years. I am not the only resident that has been affected by the ground water re-direction due to the new residences have been approved and built. If you need validation please poll all of the residents in the Woodlawn / Hillcrest and Echo Ave. neighborhoods. We would appreciate new storm water catch basins, under street culverts to mitigate this increased flooding. The underground water tables have now shifted permanently and this issue will only get worse as time goes by. If you have any questions or concerns related to this request please contact me	Jeffrey Abrams	There is an item in the CIP COM-15-PW-96 that provides funds annually for stormwater management. This project can be added to the list of drainage projects to be completed.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Bohenko Gateway Park	Better Served by Another Process - Purview of Another Board, Committee or City Department	Imagine a public sculpture garden welcoming visitors to Portsmouth as they take the Market Street Gateway from Interstate 95 into the city's downtown? That's the vision of the Portsmouth NH 400 Legacy Committee which is tasked with creating a project that will last well beyond the 400th anniversary in 2023, enriching the city for years to come. Located in the city's already existing Bohenko Gateway Park, this new sculpture garden will have a maritime theme, celebrating the river and all that is connected with it through public art. Just a short walk from our bustling downtown, this sculpture garden will attract visitors and residents of our Seacoast community, providing the perfect location for quiet reflection, a family picnic, or educational programs on the city's maritime history. According to city staff, the site could accommodate 6 to 8 sculptures. The task force recognizes this would be ideal but, because of time and resource limitations, it's not feasible to complete this project during the Portsmouth 400 celebration in 2023. The goal will be to start with one or two sculptures in 2023, funded through private and individual donations and grants, with plans to expand after the celebration. Over 30 artists, many of them local, have responded to the RFP, which was released in August of 2022, sharing exciting ideas for public art. In the next couple of months, the first artist will be selected by a review team including representatives from the city and from the community, chosen for their expertise in public art. The plan is to build on this in the years ahead. We are requesting $50,000 a year each year in Capital Improvement Program funding, which should provide for one new sculpture each year. This project connects with the city's action item to encourage public access, use and enjoyment of the downtown waterfront, which is included on p. 174 of the city's master plan.	Ernie (Ernestine) Greenslade	The City is forming a Public Arts Committee and this initiative should be directed to that group for consideration and prioritization.
2024	Citywide		In the CIP the city should include funding of $42,000 in FY24 for a deep tine aerator to help the DPW to efficiently aerate our parks and playing fields. Deep tine aeration allows oxygen and water to reach the roots of plants and grasses allowing them to thrive and grow. You may have noticed that many of our parks and playgrounds have become hard and impacted. Last year the DPW received a quote for $42,151 for a deep tine aerator, and i urge the city to support this needed machine and add it on the CIP.	Ted Jankowski	This equipment would be beneficial for the maintenance of the City's parks and fields, however, this request would be better served through the City's Rolling Stock Program which plans for future equipment purchases.
2024	Citywide (Where Street Signs Do Not Now Exist)		I moved to Portsmouth from Pennsylvania in November, 2021 and have experienced difficulty in finding my way around, mainly because of the lack of street signs. The main streets need to be identified at every cross street, not only where the main streets begin. For example, the streets leading from the light at the CVS and Islington Street to the service center on Cottage Street is poorly marked.	Mary Lou Green	This is not a capital request. The Department of Public Works (DPW) has a Signs and Lines group and this request will be passed on to the DPW staff.
2024	Community Campus		Quaint though it is, Puddle Duck is inadequate and over-subscribed. The city needs a municipal ice skating rink that serves everyone from hockey players to figure skaters. .. All of whom have to travel far afield to city-owned rinks elsewhere, if they can. And we are in New England! One possible model for this is Bryant Park in Manhattan - a public-private partnership that operates an outdoor rink during winter months. The contractor that installs and operates the rink removes it at winter's end, and the area returns to park land. There are fees to skate and rent skates. Portsmouth might adjust those depending on the whether the skaters reside in town. The city also might sell advertising, as pro sports stadiums do, to interested businesses.	Elizabeth Mooney	This project is currently under review as part of a Recreation Needs Study and may be moved forward as a capital project in a future year.
2024	Elwyn Rd, Regina Rd, Gosport		Resident is requesting a cross-walk and cross-walk signs be erected at the intersection of Elwyn Rd, Regina Rd, and Gosport Rd. When leaving Regina Rd to Elwyn Rd,m there are 2 blind corners on either side. A sidewalk would increase safety for pedestrians crossing Elwyn Rd. Frequently cars do not abide by the speed limits on Elwyn Rd and a crosswalk with signage would help alert motorists to slow to pedestrians especially when approaching the blind corners.	Joshua Carlson	Signage and crosswalks can be completed without a capital project. This request will be forwarded to the Parking and Traffic Safety Committee for consideration. The addition of a sidewalk or multi-use trail to improve accessibility and safety along Elwyn Road has been identified in the 2014 Bicycle and Pedestrian Plan.
2024	Emery Street		Add sidewalks and street lights so that elementary students from Cutts Cove neighborhood can safely walk to New Franklin School, and middle school students on Myrtle avenue can safely walk to the bus stop. Emery street can be dangerous with vehicle traffic, especially in winter when there are snow banks and it gets dark earlier.	Justin Maji	It would be most beneficial if this project were sent to the Parking, Traffic and Safety Committee for review and recommendation.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Gosling Road		Construction of Pedestrian Crosswalk with LED Signaling on Gosling Road (in the section separating Gosling Meadows from the Mall businesses in Newington). It is proposed that at least one pedestrian crosswalk path be constructed allowing Gosling Meadow residents to safely cross Gosling Road to access the businesses and the bus stop on the other side of the street including the mall businesses. The crosswalk should include LED flashing lights and an adequate timed duration so that safe crossing of the street is possible for seniors, mothers with baby-carriages as well as everyone else. The design and location should be determined after consulting with Gosling Meadows residents and the Portsmouth Housing Authority, which oversees the Gosling Meadows neighborhood.	Joan Hamblet & Peter Somssich	Mid-block crossings are not considered safe. Crosswalks with pedestrian signals already exist on Gosling Rd. This project should be reviewed by the Parking, Traffic and Safety Commission for further review of potential changes to this roadway.
2024	Greenleaf Avenue		Speed Bump or table on Greenleaf Avenue just southwest of where it intersects Lafayette Road. Traffic traveling southwest on Greenleaf Avenue using it as a shortcut to the Route 1 bypass travels at speeds well beyond the posted 20 MPH. A Zoom was conducted to two years ago to discuss road alterations, though a speed bump may be a more cost-effective solution.	Gregory Hebert	Traffic calming is identified in the CIP item TSM-21-PW-71. This item will need review and approval by the Parking and Traffic Safety Committee.
2024	Historic Areas		Replace all aluminum square sign (Stop, No Turn, Etc.) posts in/near market square - All the Stop, No Turn, etc. square aluminum sign posts need to be replaced. They are very ugly, dilapidated and do not match the street lamp posts. The city should form a committee just for this purpose to see what types of street sign posts are available that better match the lamp posts. Also the sign placement is confusing in some location and should be reviewed if these sign posts are replaced.	Marc Stettner	These sign posts can be replaced with crashworthy posts that meet current safety standards and are black. This can be done as part of regular sign maintenance. This would benefit from being referred to the Parking, Traffic and Safety Committee for further direction.
2024	Maple Haven Park		Water fountain upgrade.	Scott Young	This request should be referred to the City's Public Works Department. There is covered by an existing CIP project that covers upgrades to park infrastructure of this nature, and it could be added to the repair schedule for the maintenance of parks program.
2024	Marcy Street from Pleasant to Hancock		Traffic Calming - Marcy Street is a narrow two-way street. It is a cut-through for Maine and NH commuters in the morning and the evening. It serves as a corridor for commercial vehicles trying to bypass downtown Portsmouth. There are multiple blind driveways, multiple blind intersections and this area is frequented by pedestrians, bicyclists and pets. The speed limit is 20mph, but traffic routinely exceeds this - often by a factor of 1.5X to 2.0X (30-40mph). I would like to see speed tables - as have introduced in other areas of Portsmouth - one on either side of the highest point on Marcy Street at the south meeting house. Its only a matter of time before serious injury or property damage occurs.	Cris Forkel	This request falls into an existing CIP item TSM-21-PW-71. This request should start with a Parking and Traffic Safety Committee request. If deemed eligible, funding is already identified in the CIP. The next course of action is to request the Parking and Traffic Safety Committee to review.
2024	10 Middle Street		Accessibility access at Portsmouth Historical Society is in severe need of upgrading. The access makes no sense, the incline is incorrect & people with mobility issues are having difficulty accessing the building. This is a city owned building. To redesign and upgrade the accessible entrance to the Portsmouth Historical Society. The city assisted in getting our restrooms accessible now we need help getting the entrance/exit done.	Robin Lurie-Meyerkopf (on behalf of Portsmouth Historical Society)	This is part off a City-owned building and should be referred to city staff to review. There is an Existing CIP item BI-01-PW-21. that could fund this item. This request could be added to the back log of facilities projects.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	New Franklin School		(abridged) Proposed Safety Fence would be located on public land surrounding New Franklin School, in two locations: (1) between an abutting hotel parking lot and NFS Nature Path & Playground (see purple dotted line at right angle in map below); (2) between NFS playground and Route 1 (see purple dotted line in upper-right-hand corner). Additional detail/background for this project: On behalf of the New Franklin School PTO (of which all New Franklin School parents and teachers are members), we propose the construction of a tall, non-scalable "Safety Fence," at the sites described above, for the following, important safety reasons. Due in part to increased homelessness and lack of affordable housing in Portsmouth, it has become increasingly common for Portsmouth's homeless population to camp, and individuals to consume alcohol, smoke, and use drugs, in the public "green spaces" in and around two private hotels abutting New Franklin School - Anchorage Inn & Suites and Howard Johnson (both are visible in map above) - and in and around the Stark Street bridge crossing Route 1 (see upper-right-hand corner of map above). Our safety concerns are two-fold: First, without a proper physical barrier between these areas of known drug activity and the above pictured play areas (including the nature path and playgrounds), individuals who are camping out and/or using drugs (regardless of housing status) have access to our children. Second, without a secure barrier, beer cans, cigarette "butts," and drug paraphernalia are accessible to our children. Parents have recently witnessed many instances of these items and other evidence of drug use. This presents a serious safety issue. New England has seen multiple recent cases of children overdosing from mistakenly handling fentanyl residue. Without securing them from areas of known drug activity, our children are needlessly exposed to this risk. For all of the above reasons, building a Safety Fence on public land must be a top priority for the City of Portsmouth for as long as New Franklin School's children play and learn in immediate proximity to these corridors and hotels.	New Franklin School PTO	School department staff affirm the needs referenced in this proposal. This work can be better addressed as a part of the regular property maintenance and safety item through other local or federal funds. Staff will actively pursue resolution of this concern.
2024	Ocean Rd in the vicinity of the junction of map-lot 0282-0001-0000 and 0283-0018-0000		The traffic on Ocean Rd seems to only be increasing in volume and speed. It does not seem that DOT will allow speed tables on Ocean Rd. But the radar speed-reading devices are said to be effective by Portsmouth Police Department and could help slow traffic.	Fred & Elaine Butts	This can be done without a capital project and should be referred to the Parking, Traffic and Safety Committee.
2024	65 Onyx Road		Our small "jewel" neighborhood has exploded with young children over the past few years. The neighborhood is more of a loop, rather than "no outlet." Unfortunately, some drivers come through thinking that it's a quick exit to Maplewood Ave and they drive way too fast. Some delivery trucks are also guilty of excessive speed. We in the neighborhood feel that a mirror at the end of Onyx/ Topaz would be helpful for drivers to see any children that are playing and also those of us who walk. There are roughly 25 - 30 kids under 10 in our neighborhood. Thank you for your consideration.	Christine Randall	Mirrors are not an authorized traffic control device. A request to the Parking and Traffic Safety Committee should be made to review the road configuration.
2024	Pleasant Street at Howard Street		Speed table installation - Too many speeding vehicles, please add a speed table w speed detection corner off Howard St at Pleasant St. Ever since pleasant St was replaced and narrowed, it has become unsafe with two way traffic and for pedestrians. So many pickups in morning and late afternoons come flying down pleasant doing 35-40 mph. The same should be considered for Marcy Street between Gates and Meeting house on Marcy Street.	Peter Harris	This request falls into an existing CIP item TSM-21-PW-71. This request should start with a Parking and Traffic Safety Committee request. If deemed eligible Funding are already identified in the CIP. The next course of action is to request the Parking and Traffic Safety Committee to review.
2024	35 Sherburne Road, 40 Bedford Way, 25 Granite Street		(Abridged) According to the recently released 2022 Portsmouth Housing Market Report, the short supply of affordable housing in Portsmouth has, among other trends, resulted in valued residents reluctantly migrating out of the city, current residents being severely cost-burdened, and seniors being underserved by the lack of affordable options without modern accessibility features. The private market has responded to this demand by building a significant amount of rental housing in recent years, but the Report found the increase in housing supply has not offset the sharp rent increases in the city.	Craig Welch (on behalf of the Portsmouth Housing Authority)	This request, which is ultimatley is a policy decision by the Council, would be well served if it were referred to the City's incoming Housing Navigator for support and coordination with Planning and Public Works Departments for a possible future CIP Project(s).

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Spinnaker Point Adult Rec Center		This facility is fantastic as to the variety of activities it offers for adults of all ages. It is strategically located and serves a wide catchment area. The city should own it because doing so would be a better bang for taxpayer bucks than rental and certainly cheaper than building from scratch. The building warrants an energy audit, which doesn't cost a lot to do. Unitil and Eversource have rebate programs to offset capital costs of at least some kinds of energy efficiency upgrades. There may be shared savings programs available so that up-front out-of-pocket costs are minimized. IK think energy audits for all municipal buildings should be undertaken in this capital budget cycle and money set aside now for implementing recommendations. We will save green by going green.	Elizabeth Mooney	This request should go through the Recreation Board. An energy audit and facilities evaluation for Spinnaker has been completed and the City has implemented a number of upgrades recommended in that report. Further investments are not warranted unless the City purchased the facility.
2024	Spinnaker Point Fitness Center		Completion of Spinnaker Point Fitness Center Ventilation/Heating/Cooling Projects. During the pandemic period and with the help of federal funding, the Spinnaker Point Fitness Center was significantly rehabilitated, with many deferred maintenance repairs finally being able to be completed. However, two outstanding issues were not completely dealt with: the inadequate ventilation in the Men's Locker Room, and the lack of proper heating and cooling on the Indoor Track. The adequate ventilation continues to pose a health issue, with many members having complained of respiratory illnesses such as colds and similar symptoms, stemming from the use of the Men's Locker Room. The heating, cooling and ventilation system on the track has not been properly functioning for at least a decade, resulting in members requiring coats in the winter and excessive heat/humidity in the summer. These issues have been repeatedly mentioned at various forums, e.g. City Council meetings and Citywide Neighborhood Committee forums and have been noted. It is worth suggesting that since the ventilation and heating/cooling issues may be a building-wide problem, a comprehensive Energy Audit (provided by the utilities at no cost) should be undertaken Prior To any new measures being implemented. This would be also financially relevant since many energy efficiency measures would quality for energy rebates of up to 50% from our 2 utilities (Eversource and Unitil).	Peter Somssich & Larry Cataldo (Citywide Neighborhood Committee)	This request should go through the Recreation Board. An energy audit and facilities evaluation for Spinnaker has been completed and the City has implemented a number of upgrades recommended in that report. Further investments are not warranted unless the City were to purchase the facility.
2024	Bartlett Street RR trestle	Better Served by Another Process - Not city Property	Raise and widen the underpass of the Bartleet St RR trestle (under planning document cited: Portsmouth CIP for 20 years until 2016-2021 CIP).	James Hewitt	The City does not own or control this infrastructure. Previous funding has been contributed by a developer to study potential upgrades to the RR bridge. The City is exploring contracting with a consultant that specializes in RR projects to provide assistance in applying for a Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant which would fund a study to develop alterations or possible replacement of the RR bridge. The RR has to be a partner it this effort.
2024	Islington Street and Bartlett Street and Jewell Court		Re-Align Bartlett Street to create a 4 way intersection with Jewell Court (under documents cited: Was in CIPs until 2015-2020 and then it disappeared).	James Hewitt	This project is not practical at this time. It would require purchasing or the taking of property.
2024	Portsmouth Harbor Wharf near Sarah Long Bridge		New Wharf / Pier (identified in document: NH DOT Ten Year Plan)	James Hewitt	This is not a City project.
2024	Portsmouth Traffic Circle		Modernize antiquated 1950s era single lane rotary a modern 2 lane Roundabout. (under planning document cited: Modernizing the Portsmouth Traffic Circle was in the CIP for years until the 2016-2021 CIP. Then it mysteriously disapperred)	James Hewitt	State Project NHDOT. This project is the highest priority project being requested to be added to the state's Ten Year Plan by the Rockingham Planning Commission.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Sagamore Avenue (Route 1A)		TSMW-19-PW-62 Sagamore Avenue Sidewalk - This project extends the current sidewalk from "the old Moose Club access road" (the entrance to the Sea Star Cove Condominium Association) to Ordione Point Road in FY2024. As part of the approval for development of the 1169/1171 parcel, the developer will pay for about one third of this distance. This requirement should be enforced, and the project should be extended south to the Rye border. This is a developing part of town on a dangerous road: the 10unit Sea Star Cove association; the 6 unit development at the former Golden Egg property; The 10 unit development at 1169/1171; the sewer project. Residents walk to the Urban Forest and points in Rye such as the Atlantic Grill.	Bill Bowen	A portion of this project is currently in the CIP under project # (FY23 # TSM-19-PW-63 "Sagamore Ave Sidewalks") addressing the section of Sagamore Avenue that is in Portsmouth. Extending the sidewalk to Foyes Corner would entail constructing sidewalk outside the City limit in the Town of Rye . Doing this second portion of the sidewalks would require a Intermunicipal agreement between the City Council and the Town of Rye in conjunction with an agreement from the NH DOT. The secondary portion would require a policy decision and is not a capital request at this time.
2024	between the entrance to Tidewatch Condominium and Sagamore Creek Bridge on Sagamore Ave (2 Requests)		(combined) Sagamore Avenue is a popular route for cyclists traveling between Portsmouth and Rye and the southern NH seacoast. The southbound bike lane on Sagamore Ave. ends at the entrance to the Tidewatch Condominiums. Sagamore Ave at that point begins an ascent to the top of a ridge and the shoulder of the road narrows to about 12” and is bound by a curb on a riders’ right. Southbound motorists cannot see approaching traffic due to the crest of the ridge. Nevertheless, impatient motorists, of which there are plenty, will attempt to pass cyclists and do not provide the required 3 feet of distance between their vehicle and a cyclist. A cyclist has no chance to move to the right due to the curb. A cyclist is very likely to be seriously injured or an automobile is likely to collide with a northbound motorist if a proper bike lane is not extended over the crest of Sagamore Ave.	Peter Wissel & Andrew Jaffee	Given the right-of-way, there are limited adjustments that can be completed. The current sewer project will be working to improve bicycle safety along this section. Additional upgrades to widen the road shoulder or creating a multi-use path will require adjusting the width of the road right-of-way, requiring procurement of private property.
2024	US 1 By-Pass and Cottage Street and Coakley Road		Remove Traffic Signal. Make the Cottage Street and Coakley Road Right-In, Right Out only on to US 1 By-Pass TSM 20-PL-71 (Under documentation : TSM-20-PL-71)	James Hewitt	This is a State Road and intersection. A companion project TSM-20-PL-70 has been included in the CIP in anticipation of a modification to this intersection by NHDOT. The City Council can request this is project be moved in priority by NH DOT.
2024	Full Length of Banfield Road from Ocean Road, across Peverly Road and to Rt 1	Better Served by Another Process - Project Request Not Understood	As discussed in the suburban master plan, connecting the suburban amenities through sidewalks, and bike paths will both connect the suburbs with downtown, as well as allow pedestrian and bike access to all of the amenities from Green Rd over to Rt 1/Lafayette	Fred & Elaine Butts	This project request is unclear.
2024	710 Middle Road		Monster DADU 4,000 Warehouse	James Hewitt	Not clear as to the request.
2024	2-4 Woodbury Avenue		New Deck - Construction of Ground Level Deck in Rear	Steven Cook	Do not understand this request. Private Residence.
2024	Greater Ocean Rd and Banfield Rd Suburban area.	Better Served by Another Process - Not a Capital Request	The expansion and growth of the Banfield and Greater Ocean Rd neighborhoods with single-family homes, condos, and workforce housing leave thousands of existing and future residents without any nearby access to parks, fields, and courts. While there is a park down in Maplehaven, it's tucked away and not heavily used by the residents outside of Maplehaven. I am proposing a committee to consider the location, design, and construction of parks, fields, and courts on one of the many City of Portsmouth Parcels of land that are scattered throughout this suburb.	Fred & Elaine Butts	This is a request for a committee formation which is performed by the City Council as a policy request. This is not a capital request.
2024	Citywide		Property Acquisition Fund - In the CIP, policy makers should set aside 1% ($1.3 million in FY24) of the budget annually for the purpose of land conservation and open space protection. We should be prepared to quickly purchase new properties that are contiguous with our existing conservation areas. The one thing that there is no more of is land. Additionally, we should be ready to protect our core downtown open spaces, which today are parking lots, by obtaining voluntary first rights of refusal from current land owners. For instance, an example is the TD Bank Lot next to the Old South Church. Wouldn't it be better for the city to put a future pocket park there instead of a 70 foot tall development built curb line to curb line?	Ted Jankowski	Although there is an existing CIP item for this type of funding (FY23 CIP # BI-95-PL-16 "Land Acquisition"), the creation of a fund or funding level policy/percentage is a decision of the City Council and not a capital request.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2024	Citywide		The city should include funding of $225,000 in FY24 for a commercial grade steamer that can kills weeds without chemicals, remove graffiti, sanitize anything (sidewalks, playground equipment, etc.), can unfreeze manhole covers, and is a year round tool. Please see this one link http://weedtechnic.com as an example of one European manufacture. While there are currently no US manufactures, there are also US contractors that have bought the machines and could provide the service. However, I would support city staff doing the work. I urge the City to support this chemical free machine and add it to the CIP for FY24.	Ted Jankowski	The City's Public Works Department has piloted this equipment in conjunction with reviewing how Dover is using their equipment and determined that a mechanical means of weed control such as weedwackers or manually weeding is more effective.
2024	Citywide		Collecting Compost from residents and businesses in the City, either at designated locations throughout the City or curbside, to divert organics from the waste stream.	Allison Tanner (on behalf of Portsmouth Climate Solutions & WRAD)	This is not a capital project. It is an operational request. This can be considered by the City Council during the City's Annual Budget Process.
2024	Islington Corridor		Hello. As part of the 2009 Islington Street Corridor Action Plan, it was identified to work with Art-Speak to implement an art program. Details can be found here: https://files.cityofportsmouth.com/economic/FINALACTIONPLAN100212_Islington_actionmatrix.pdf The ask is to fund this program. Thanks.	Gregory LaCamera	This is a policy question not a capital project request.
2024	95 Mechanic Street		Conduct repairs and upgrades to make this 7 bedroom City Owned apartment building ready for occupancy	James Hewitt	This property was purchased to facilitate construction of a new wastewater pumping station. Investments in this property for any long term use is not recommended.
2024	Spinnaker Point Fitness Center		Purchase of the Spinnaker Point Fitness Center. The City of Portsmouth currently leases the Spinnaker Point Fitness Center from the Spinnaker Point Association. Our current lease is in place for the next 8 years. However, the association would most likely sell this property if the City were not leasing it, and paying for its maintenance. Even though the center has been designated as the City's premier senior fitness center, there is currently no replacement in sight should the City decide not to extend the lease. At the same time, at least for the next 8 years, the City will continue spending money on maintenance and upkeep for the facility, even if they do not own it, and it only makes this asset more valuable for the owners. Any consideration of a purchase should however only be made after a thorough review of energy and maintenance needs that are identified by way of an inspection and energy audit. Some kind of a collaboration with the residents of the Spinnaker Point Association should also be part of any negotiations. Membership fees, which have held steady for many years must also be part of any new ownership transition, helping to financially support a new and improved fitness center.	Peter Somssich & Larry Cataldo (Citywide Neighborhood Committee)	The purchase of this facility is a policy decision that should be reviewed and discussed by the City Council.
2024	Spinney Road		Construction of approximately 430 feet of curbing and sidewalk from Islington Street to Spinney Rd where no sidewalk currently exists. There is a very dangerous area to walk on the road due to the curve and elevation change on Spinney Rd resulting in a reduced sight distance.	Eric Doremus	This is an existing project that has been funded. Impacted property owners have not agreed to grant easements. Council will need to do a pubic necessity determination and initiate a condemnation to be able to complete the sidewalk
2023	Elwyn Road from Harding 300 feet eastward	Construction or expansion of a new public facility, street, or utility	The Elwyn Side Path project that is currently in planning would be greatly improved by extending it eastward by 300 feet to the last gate into Urban Forestry Center. The purpose of that existing project is Congestion Mitigation through bicycle and pedestrian connectivity, so of course it should connect to the broad dirt road that already exists within Urban Forestry. This will also open up the half of the Urban Forestry Center that is not currently accessible to those with disabilities. Otherwise there will effectively be a half mile paved road and a half mile dirt road that are only linked by one short and seriously degraded hiking trail. This 300 foot connection is important to do now in preparation for a future goal of the bike/ped plan, a right of way and path through to Gosport Road. This would in the future allow for a route almost entirely separated from traffic all the way from Sagamore Road to the Plains ballfield and the new athletic fields.	Matthew Glenn	This project has been expanded to include this request no additonal CIP funding needed.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2023	Grant Ave.	Other	Grant Ave. Greenspace rehab prjoect. City Property. Clear cut trees and shrubs and remove excessive ground debris. This will allow sunlight to a very enclosed, dark section of narrow roadway thus increasiong visibility and safety for motorist, cylist and pedestrians. It will aide with increasing the aesthetic value of the neighborhood and decrease randowm waste disposal and abutter vegetation debris dumping on city property.	Mark Syracusa	This level of maintenance is above typical level of service recommend the project to Adopt a Spot
2023	Gosport Road/Urban Forestry Center	Construction or expansion of a new public facility, street, or utility	Connect Tuckers Cove to the Elwyn Side Path in Urban Forestry Center with a bike/ped path, allowing a safe route all the way from Plains Ballfield to Sagamore Rd.These two were identified in Bike/Ped Plan: 13 Bike/Ped 2A/B:Lafayette , 5A/B:South High Elwyn Rd Alternative Route Shared-use path through Urban Forestry Center connecting to Gosport Rd/Odiorne Point partially through existing utility easement. Signed bicycle route on Gosport Rd/Odiorne Point to connect to Sagamore Rd.	Matthew Glenn	This request appears to be across private property to which the City does not have pedestrian easements.
2023	Lafayette/Peverly Hill/Elwyn intersection	Construction or expansion of a new public facility, street, or utility	Add a walk signal & crosswalk to connect the planned side path to the Yokens plaza and Peverly Hill bike lanes. This is the only leg of the intersection without a crosswalk, but there needs to be a way to connect to the new multi use path. In bike/ped plan, project ID 7, and in CIP as TSM-10-PW-66: CITYWIDE TRAFFIC SIGNAL UPGRADE PROGRAM)	Matthew Glenn	Working to expand scope of th e Elwyn Road side path to include this recommendation
2023	Route 33 between Plains Ballfield and NH Seacoast Greenway at the future skate park	Construction or expansion of a new public facility, street, or utility	Convert the sidewalk alongside 33 to a multi use path between the Plains Ballfield and the new skatepark & rail trail accessExisting project #TSM-21-PL-56: GREENLAND RD/MIDDLE RD CORRIDOR TRAFFIC CALMING AND BICYCLE/PEDESTRIAN IMPROVEMENTSIn bike/ped plan: 19 Bike/Ped 4A/B:Greenland/Borthwick High Hampton Branch Trail Connection at Middle Rd Widen existing sidewalk on south side of Portsmouth Plains Field for sidepath connection from Peverly Hill Rd to Hampton Branch Trail. Provide sidepath connection through future athletic fields with parking access for trail users.	Matthew Glenn	This request will be added to the backlog of pedestrian/bicycle requests
2023	Peverly Hill and Middle Road intersection	Construction or expansion of a new public facility, street, or utility	Add a walk or bike signal & crosswalk connecting the new multi use path directly to the Plains ballfield. There should be a way to cross directly-- most bike riders will not press and wait for two crosswalk signals that take them an extra distance, but darting across traffic on route 33 is not a safe option. This is also important to connect to the future skate park.	Matthew Glenn	Will be part of Pevery Hill road upgrade project
2023	Dept of Public Works Driveway to Athletic Fields		Allow Bike/Ped access to the new Athletic Field from the DPW driveway on Peverly Hill Road. This was planned when the fields were built, but hasn't been opened to the public yet. Ideally there should be a separated multi use path from Peverly Hill Rd through the shared DPW and Pike Industries driveway.	Matthew Glenn	This is part of the next phase of improvements for this property
2023	Borthwick Ave	Construction or expansion of a new public facility, street, or utility	Build a multi-use path on Borthwick from the Route 1 Bypass to Eileen Dondero Foley Drive or further, and install a bike crossing signal at the Bypass to the new multi use path on Hodgdon Way. This would connect the future North Mill Pond Greenway to many businesses and to the NH Seacoast Greenway, and would become the primary NH Seacoast Greenway route as identified in the city's own plans. If the Coakley/Borthwick connector is built it will be necessary to at least build a sidewalk here, but a shared path would be better. There is also a bus stop at this location.	Matthew Glenn	This is in the CIP

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2023	Rte 1 and Elwyn Road	Other	Requesting a crosswalk from the northwest side of rte 1 intersection at the corner of Peverly Hill to the north east side at the corner of Elwyn road to connect to Elwyn road sidewalk project. All of the lights at that intersection, including at Wilson road and rte 1, need to be red with no turn on red when cross sign is initiated. Furthermore, consideration of an expanded sidewalk all the way down Elwyn road is requested.	Amy-Mae Court	This request is covered as part of the Elwyn Road side path project
2023	Hampton Branch rail trail	Construction or expansion of a new public facility, street, or utility	TSM-15-PL/NH-51: HAMPTON BRANCH RAIL TRAIL (NH SEACOAST GREENWAY)	Anne Poubeau	This project is underway by NHDOT
2023	MIDDLE STREET BIKE LANES CONNECTION TO DOWNTOWN	Construction or expansion of a new public facility, street, or utility	Middle St between Highland StandIslington Street/ Congress Street Intersection	Charles Fleck Jr	There are sharos in place for this section of roadway
2023	Middle Road and Greenland Roadfrom Spinney Road to Harvard Street	Construction or expansion of a new public facility, street, or utility	TSM-21-PL-56: GREENLAND RD/MIDDLE RD CORRIDOR TRAFFIC CALMING AND BICYCLE/PEDESTRIAN IMPROVEMENTS	Charles Fleck Jr	this is a future project part of the bicyle master plan
2023	Market Streetbetween Kearsarge Way and Maplewood Ave	Construction or expansion of a new public facility, street, or utility	TSM-21-PL-57: MARKET STREET SIDE PATH	Charles Fleck Jr	future project of the bicyle master plan
2023	Maplewood Ave from Congress Stto Raynes Ave	Construction or expansion of a new public facility, street, or utility	TSM-16-PL-60: MAPLEWOOD AVE DOWNTOWN COMPLETE STREET	Charles Fleck Jr	this is on the sate NHDOT list
2023	US Route 1 from Andrew Jarvis to Elwyn Rd	Construction or expansion of a new public facility, street, or utility	TSM-08-PL/NH-58: US ROUTE 1 NEW SIDE PATH CONSTRUCTION	Charles Fleck Jr	Currently in CIP
2023	Former Hampton Branch Rail Line	Construction or expansion of a new public facility, street, or utility	TSM-15-PL/NH-51: HAMPTON BRANCH RAIL TRAIL (NH SEACOAST GREENWAY)	Charles Fleck Jr	Currently in CIP
2023	Elwyn road near Tucker's Cover/Urban Forestry Center	Construction or expansion of a new public facility, street, or utility	Alternative Route/Shared-use path through Urban Forestry Center connecting to Gosport Rd/Odiorne Point partially through existing utility easement.	Charles Fleck Jr	This is private property
2023	33 Near Plains Ballfield and New Skate Park location	Construction or expansion of a new public facility, street, or utility	Convert the sidewalk alongside 33 to a multi use path between the Plains Ballfield and the new skatepark & rail trail access	Charles Fleck Jr	Add this to listof backloged projects
2023	Peverly Hill Rd.	Construction or expansion of a new public facility, street, or utility	Peverly Hill Rd. has major safety issues due to poor road conditions (potholes, crumbling asphalt) and heavy and speeding traffic. While some issues will be addressed with the Peverly Hill Road Improvement project (sidewalk and multi-use lane), we absolutely need some speed and traffic control. I propose adding speed bumps/ speed tables to slow down the traffic, similar to Banfield Rd. set-up, as well as signs illuminating speed if you go too fast.	Eugene Zakharov	This is part of an existing project
2023	South Mill Pond Tennis Courts	Rehabilitation of a facility	Tennis courts (specifically the nets) have been completely destroyed by pickle ball players. We need new nets and the courts need to be resurfaced. It's the only facility with lights that allow to play in the evening and is a critical piece of infrastructure that needs attention.	Eugene Zakharov	This is a maintenance project not appropriate for CIP
2023	Portsmouth; multiple	Other	I support SABR and all their ideas as below:Support existing projects [http://files.cityofportsmouth.com/files/planning/cip/CityCouncilCIP_FY22FY27.pdf]:TSM-15-PL/NH-51: HAMPTON BRANCH RAIL TRAIL (NH SEACOAST GREENWAY)TSM-21-PL-54: MIDDLE STREET BIKE LANES CONNECTION TO DOWNTOWNTSM-21-PL-56: GREENLAND RD/MIDDLE RD CORRIDOR TRAFFIC CALMING AND BICYCLE/PEDESTRIAN IMPROVEMENTSTSM-21-PL-57: MARKET STREET SIDE PATHTSM-08-PL/NH-58: US ROUTE 1 NEW SIDE PATH CONSTRUCTIONTSM-16-PL-60: MAPLEWOOD AVE DOWNTOWN COMPLETE STREETBuild a multi-use path on Borthwick from the Route 1 Bypass to Eileen Dondero Foley Dr or further, and install a bike crossing signal at the Bypass. This would connect the future North Mill Pond Greenway to many businesses and to the NH Seacoast Greenway, and would become the primary NH Seacaost Greenway route.Peverly/Middle Road/33 intersectionâ€“ add a walk or bike signal & crosswalk connecting the new Peverly Hill multi use path directly to Plains ballfield.Convert the sidewalk alongside 33 to a multi use path between the Plains Ballfield and the new skatepark & rail trail access.Extend the planned Elwyn Road Sidepath 300 feet to the east to make a connection to the existing dirt road headed toward Tuckerâ€™s Cove, then connect Tuckers Cove to Urban Forestry Center with a bike/ped path, allowing a safe route all the way from Plains Ballfield to Sagamore Rd.Allow Bike/Ped access to the new Athletic Field at Community Campus from the DPW driveway on Peverly Hill Road	Anne Schwartzman	These projects have been covered in other CIP requests above
2023	(Continued from above)		Tuckerâ€™s Cove, then connect Tuckers Cove to Urban Forestry Center with a bike/ped path, allowing a safe route all the way from Plains Ballfield to Sagamore Rd.Allow Bike/Ped access to the new Athletic Field at Community Campus from the DPW driveway on Peverly Hill Road		

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2023	South Mill Pond at 438 and 444 Pleasant Street	Design work or planning study	Design and Planning for repair and rehabilitation of historic seawall with related landscaping and access improvements along the North side of the South Mill Pond.	Portsmouth Housing Authority Craig Welch	The wall in question is on PHA property. It will be investigated but no fuding at this time for that work.
2023	Borthwick Avenue	Construction or expansion of a new public facility, street, or utility	Build a multiuse path along Borthwick Avenue that allows users of the existing path on Hodgdon Way/Cate Street to continue across the bypass, to access the soon-to-be built Hampton Branch Rail Trail via Eileen Foley Drive, as well as the hospital and Pannaway Manor.	Jonathan Sandberg	This project is in the CIP currently
2023	Foundry Garage	Other	Buyout Pan Am Railroad (B&M RR) deeded right to an office in the Foundry Garage. This action would significantly reduce the need for trains to idle in the Portsmouth Yard while crews utilize the office. Reducing time trains spend in Portsmouth would have a significant impact on air quality, noise, hazards and general quality of life for the Isington Creek Neighborhood and Portsmouth in general.	Tom Hiney	This is a policy issue more suited to the legal department.
2023	Maplewood Ave.	Design work or planning study	New bicycle lanes painted on both sides of Maplewood Ave, just after the rail crossing. There is a risk of a cyclist colliding with a door opening from a parked car (getting doored), unless the cyclist is riding to the extreme outside of the lane. Bear in mind that a cyclist heading toward downtown could be moving very fast. I suggest "share the road" stripes instead.	Thomas Smart	This is not a CIP project. Request should be made to Parking Traffic and Safety Committee
2023	Intersection of Middle Street and Middle Road	Construction or expansion of a new public facility, street, or utility	Ma e er anent the i t re a the s i ane at the intersecti n Mi e Street an Mi e R a an c nstr ct a er anent T intersecti n there.(see attache)	Jim Hewitt	This is part of the CIP currently
2023	Cate & Barlett	Construction or expansion of a new public facility, street, or utility	Re e the i t s i ane that the it create at ate art ett n 16 an a e that a er anent T intersecti n i e the ne t e c nstr cte at Mi e Street an Mi e R a	Jim Hewitt	This is not the recommended approach
2023	Citywide	Other	n t insta an re t rist a in in si ns. The si ns intin t rists t war it Ha an the In r Swi in are ri ic s r i s reas ns. (1. i i n t ta c st)	Jim Hewitt	This is a policy comment not a CIP request
2023	Bartlett Street	Construction or expansion of a new public facility, street, or utility	Ret rn the art ett Street RR ri e re ace ent r ject t the IP as it was r 1 t 2016. Use the 20,000 that T rrin t n Pr erties a e the it r a ri e re ace ent easi i it st as a c n iti n est En ar s a r a. See attache	Jim Hewitt	This is a policy issue will review prior CIP requests
2023	Citywide	Other	The st i rtant re est is a r ject t restr ct re h w the IP is re are . In ee in with the it s tt it O en r an its a t a i i e trans arenc , the IP intr cti n nee s t inc e the win ra es-	Jim Hewitt	This is an issue of City policy
2022	Elwyn Road between Harding Road and Foyers Corner	Construction or Expansion of a New Public Facility, Street or Utility	Extend a sidewalk or path the entire length of Elwyn Road from Route 1 to Foyes Corner. Itâ€™s such a dangerous road to walk or ride bikes on. It would be great to be able to walk safely to the shops and restaurants at Foyes Corner. Similarly, it would be great to have a sidewalk from Foyes Corner along Sagamore Road to Odiorne Point Road for the same reason. It would be a tremendous benefit to those businesses.	Michael Bloom	Consider adding to CIP once existing Elwyn Road side path project is complete

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2022	Elwyn Road between Harding Road and Foyers Corner	Construction or Expansion of a New Public Facility, Street or Utility	Continue Elwyn Rd sidepath or sidewalk further down Elwyn beyond Harding toward Rye line.	Emma Chamberlain	Consider adding to CIP once existing Elwyn Road side path project is complete
2022	Mendum Avenue	Other (Sidewalk Restoration)	We are writing as neighbors who reside on the one block-long Mendum Avenue to ask the city of Portsmouth to restore sidewalks to the odd-numbered side of our street.	Janet Polasky	DPW to address as part of city-wide sidewalk maintenance program
2022	Middle Rd (Bypass to Plains Field) & Islington St (Bypass to Plains Field)	Design Work or Planning Study	Traffic control and space for bikes. The new sidewalks on Islington are nice, but very frightening to bring little kids on with speeds so high, same goes for Middle Rd side. The bridge over the bypass on Middle Rd is incredibly dangerous for bicycles. Blind corner with degrading asphalt shoulder. One major accident taking out telephone pole has already occurred. Speed to high over bridge. Heavily used by DPW trucks.	Stephen Parsons	Middle Road is part of an existing CIP project, Islington Street bike lanes not recommended in City-wide bike ped plan, future Hampton Branch Rail Trail is alternate route
2022	Middle Road	Construction or Expansion of a New Public Facility, Street or Utility	My wife and I have lived at 726 Middle Road for 6 years, which is located directly across from the 73 units at Riverbrook Condominiums. We chat regularly with many neighborhood pedestrians as our front porch is directly in front of the crosswalk from Riverbrook to the Middle Road sidewalk. Over the years we have learned our neighbors' top priorities for improvements to Middle Road are: 1) pedestrian safety and, 2) getting traffic to slow down. Therefore, I believe the City should listen to what the Middle Road residents want and spend 100% of the $650,000.00 allocated for project TSM- 21-PL-60 (attached) to achieve these two goals. With regard to pedestrian safety, the less pedestrians need to cross Middle Road, the less likely they are likely to be struck by a car. Since so many Riverbrook residents need to cross Middle Road to get to the sidewalk heading toward, or away from, downtown, the solution would be to build a sidewalk on the RIverbrook side (north) side of Middle Road. This would eliminate the need to cross Middle Road twice, once at the Riverbrook entrance and once at the crosswalk at Lois. As shown on the attached, the proposed sidewalk would run from Essex to Peverly Hill Road for approximately 2,000 ft. Assuming 4 ft wide sidewalk is $ 100/SY and granite curb is $80/LF to build, that sidewalk would only cost about $300,000.00. The remaining $350,000.00 could go towards traffic slowing raised crosswalk tables, new signage, a westbound automated speed indicator and extra police details. I look forward to the implementation of this CIP project based on addressing Middle Road residents' top priorities, namely 1) pedestrian safety and 2) slower traffic.	Jim Hewitt	Existing CIP project
2022	Pease Tradeport	Construction or Expansion of a New Public Facility, Street or Utility	I would like to see a true bike path on New Hampshire Ave, International Dr, Corporate Dr & Arboretum Dr. I would like the city, Pease Authority & Newington to collaborate on getting this under-used area to be more user-friendly for employees in the area, residents & even tourists to have the ability to get to the Wildlife Refuge area in a fun, safe & healthy way. The sidewalks are underused; the frontage of the businesses would allow for a nice wide path. The Market St pedestrian/ bike overpass and Rockingham Ave access to the bike bridge/trail are ideal and to further that into the Pease Tradeport area is a win-win. Portsmouth should be promoting this as a biking destination. We have opportunity to improve our biking infrastructure in many areas; this is just one. I encourage future bike lanes, painted sharrows and share the road signs throughout Portsmouth. Our small parks can be linked with bike & walk options and walking options are plentiful. Biking takes less time and is expanding in interest; let the city truly guide the ability for safe biking to tie in our parks, eateries and many cultural activities in the area. Tourism begs for choices such as this. Bike share abilities without safe opportunities will not work, but with safe accesss such as separated lanes & distinct paths is a win-win. I know the rail trail is in the works too, and that is great, but we can do more. Complete Streets for all. Thanks!	Anne Schwartzman	Review with Pease staff for future CIP project in collaboration with Newington

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2022	Sidewalks on FW Hartford Drive and TJ Gamester Drive (The Woodlands)	Rehabilitation of a Facility	Replace sidewalks on FW Hartford & TJ Gamester Drives in the Woodlands neighborhood. The sidewalks are owned & maintained by the City, but as President of the Woodlands HOA, I have received numerous complaints about the sidewalks (potholes, roots/bumps, uneven, etc.) over the past year with many residents stating that they walk in the street because the sidewalks are deteriorating in areas or too uneven and a safety hazard. Thank you very much for your consideration.	Todd Spencer	DPW to address as part of city-wide sidewalk maintenance program
2021	140-160 Court Street	Rehabilitation of a Facility	Requested improvements related to construction of new residential apartments (driveway) , stormwater upgrades, pedestrian and park improvements, and eletrical infrastructure	Craig Welch	These are being put forward as new CIP projects for FY21.
2021	1030 South Street	Construction or Expansion of a New Public Facility, Street or Utility	Implementation of granite curbing along the front of my house.	Linda Plumer	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	City of Portmsouth Parks and Playgrounds		Following on the City's Open Space Planning process, conduct a Parks and Playgrounds Planning Study. The Study would examine and assess existing conditions and maintenance needs, the diversity of uses and programming, recreational value, equity of distribution throughout the City, opportunities for ecologically-focused design, etc. Looking at parks and playgrounds together as a collection of City assets, this study would result in actionable priorities that involve replacement/renovation of existing parks and playgrounds, and identify opportunities for constructing new ones. This set of planning goals should focus on providing a diverse and progressive set of landscape experiences throughout the City, using the latest in landscape and playscape design practices.	Alice Carey	Recommend addressing through CIP project for playground improvements, which is an existing project in the CIP.
2021	Creek Neighborhood	Construction or Expansion of a New Public Facility, Street or Utility	The repaving of the cross streets between Dennett and Clinton with associated sidewalk improvements	Johnathan Wyckoff	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	Dondero Elementary (32 Van Buren Avenue)	Construction or Expansion of a New Public Facility, Street or Utility	Completion of Dondero Elementary School Nature Playground and Green Schoolyard Master Plan. Design and construction is ongoing, along with fundraising by the Dondero PTA. Considerable issues involving site drainage from the building and throughout the site have not been addressed to complete the full vision. City and School Department funding has previously matched private fundraising efforts, but more help is needed (beyond volunteer and PTA efforts) to realize the potential of this plan as a living/learning natural playscape and schoolyard environment, to benefit not only Dondero students but the surrounding neighborhood, for which this site serves as a public park. This request is for additional collaboration and leveraging of City resources and expertise for the completion of this important project.	Alice Carey	Recommend ongoing collaboration with School Department on this project.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2021	Elm Court	Construction or Expansion of a New Public Facility, Street or Utility	Paving of Elm Court	Jeffry Kisiel	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	Foundry Garage	Other (Screens for the Garage Walls)	The Foundry Garage lightening system needs to be completed. We were told that screens would be implemented to dim the lights. The garage lighting is still a concern and problem for us across the pond.	Dawn Przychoazien	Recommend addressing through the City's operations and management funding for parking garage.
2021	Harvard Street	Other - Repaving of a Side Street	While the city has occasionally repaired potholes on this side street, it has not kept up with the traffic on this road which consists of both residential and city truck traffic, given that both the temporary dog park and the city pump/well are along this road. Requesting that the city completely repave this side street in what feels like a forgotten neighborhood.	Jane Begala	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	Heritage Avenue	Other - Implement Bicycle and Pedestrian Plan	Complete bicycle and pedestrian plan for Heritage Road. This would allow for some access to Greenway trail, connecting Maple Haven when Route 1 improvements completed. Current state of Banfield Road and Ocean Road is unsafe for bicycle and pedestrian access to rail trail. Current shoulder on Route 1 wide enough to accommodate adult usage to Heritage, and then to trail. Further improvements would be needed for use by children or those uncomfortable biking on Route 1.	Sarah Jarvis	Recommend coordinating with NHDOT to pursue funding for connections along Ocean Road, which is a state roadway. Consider Heritage Road improvements once NHDOT Route 1 Corridor Improvements have been designed.
2021	Maplewood Avenue Bridge	Other (Amendment to Existing CIP project TSM-10-PW-65) Maplewood Avenue Bridge Replacement	Amend the current CIP project to address the impacts from climate change and the related sea level rise on the neighborhoods surrounding the North Mill Pond, by including this in the planning, design, and implementation of this project. See attachments hereto.	Douglas Woodward	Recommend incorporating into existing CIP project for Maplewood Ave bridge replacement.
2021	Market Square	Other - Adding an Underground Heating System on the Sidewalks in and Around Market Square	When Market Square is updated with underground utilities or sewer and water pipes please consider installing a sidewalk warming system to make it manageable in the winter. Holland, Michigan uses a water system from one of its utility plants. Not sure this is workable for Portsmouth, however, there are alternatives (similar to roof ice preventing electrical cords) that could be used. Below is an informational video on Holland's system, and a Chicago Tribune article.https://www.youtube.com/watch?v=XFWzDB7WvNI [https://www.youtube.com/watch?v=XFWzDB7WvNI]https://www.chicagotribune.com/news/ct-xpm-2014-02-01-ct-heated-sidewalks-met-20140201-story.html [https://www.chicagotribune.com/news/ct-xpm-2014-02-01-ct-heated-sidewalks-met-20140201-story.html]	Jane Nilles	Recommend considering as part of existing CIP project for Market Square.
2021	Middle Road	Design Work or Planning Study	Planning study on traffic calming and safety for autos, pedestrians, and bicycles on Middle Rd and South Street. Reconfigure intersection, sidewalks, street narrowing with parking.	Rebecca McBeath	This is being put forward as a new CIP project for FY21.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2021	Middle Road and South Street Triangle	Construction or Expansion of a New Public Facility, Street or Utility	Crosswalk paint and reflective sticks. 1. crosswalk at Spinney and Middle -- add reflecting sticks 2. crosswalk added to cross South Street where it meets the triangle island. Place markers liked used on Middle Street bike lanes in center and in center o	Rebecca McBeath	Corridor-wide traffic calming and streetscape improvements are being put forward as a new CIP project for FY21. Consider implementing interim measures through the City's Neighborhood Traffic Calming program.
2021	Middle Road between Essex and Peverly	Rehabilitation of a Facility	Propose curbing along sidewalk as cars use sidewalk as parking and passing lane frequently and this is the neighborhood's pedestrian access to the plains park	Janelle Clark	Corridor-wide traffic calming and streetscape improvements are being put forward as a new CIP project for FY21.
2021	Mill Pond Way	Construction or Expansion of a New Public Facility, Street or Utility	Improvements to city owned property to create low impact kayak launching area,offstreet parking,picnic area, and signage to inform residents.	Johnathan Wyckoff	This is being put forward as a new CIP project for FY21.
2021	Mill Pond Way	Construction or Expansion of a New Public Facility, Street or Utility	Build picnic tables and shelters and paths similar to Four Tree Island to encourage public access to the mill pond. Access is extremely limited on that side of the pond.	Dave Beadling	Recommend considering as part of existing CIP project for Market Square.
2021	Northwest Street	Construction or Expansion of a New Public Facility, Street or Utility	Pave Existing dirt turn around at the end of Northwest Street near Pump Station.	Jeffry Kisiel	Recommend addressing through CIP project for park improvements, which is an existing project in the CIP.
2021	Pannaway Manor	Other (Complete Street Program)	Pannaway Manor was established in 1941 making utilities, roads, sidewalks and park past their designed lifespan. Sidewalks are not walkable and are noted in the 2020-2025 CIP plan as "high priority." Pannaway Manor is in need of a complete street makeover.	Tyler Dow	Recommend addressing through the City's annual sidewalk improvement program and bike ped plan implementation funding which are ongoing CIP projects.
2021	Portsmouth Foundry Garage	Other (Reduce Light Pollution at the Foundry Garage)	Efforts to reduce the light pollution from the Foundry Garage have not resolved the issue for residents around the garage and across the North Mill Pond. Further efforts are needed!	Elizabeth Jefferson	Recommend addressing through the City's operations and management funding for parking garage.
2021	South street between middle and Lafayette	Other (Pedestrian Safety, traffic calming, school/playground safety near the high school and Lafayette park playground)	The residents of south street have requested assistance from PTS for more than a year because of speed and volume concerns impacting safety in the area. Reconfiguration of the triangle at south/middle, sidewalks on the south side of south street, curbing to lower speeds and a crosswalk to aid pedestrians move around this neighborhood to access the high school and playground is requested.	Molly Shaw Wilson	This is being put forward as a new CIP project for FY20.
2021	Sparhawk and Burkitt	Other (4 way stop sign on Sparhawk and Burkitt)	Vehicles are speeding down the hill with many small children and families posing a grave danger. Once cars continue through Stark stop, they speed. With construction on Islington people are driving dangerously thru the neighborhood.	Dawn Przychoazien	Recommend addressing through the City's Neighborhood Traffic Calming program.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2021	Sparhawk Street	Construction or Expansion of a New Public Facility, Street or Utility	I was told by the city four years ago that Sparhawk Street would be repaved in 1-2 years. I have had two sprains from the Potholes, there is grass growing up in the STREET cracks and sidewalks, The sideswalk is unwalkable and the street is quite narrow, My property has a "temporary" retaining wall that was installed almost 5 years ago, When will we see some improvement in the west end?	Elizabeth Jefferson	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	Sparkhawk and Burkitt	Other (Pave Roadway)	We've been waiting 11 years to have our road paved. It has been patched every other year and when we see ALL of the capital improvements all over town, we are beyond frustrated. We were told it was going to be paved 6 years ago.	Dawn Przychoazien	Recommend addressing through the City's street paving, management, and rehabilitation program.
2021	The Woodlands	Construction or Expansion of a New Public Facility, Street or Utility	I'd like to see the entire city modernized and have high speed fiber available to all citizens. This project would further Portsmouth a leader in technology in New Hampshire. It would also save the citizens a significant amount of money in the long run as fiber internet is significantly cheaper and hight quality than the Comcast provided Xfinity internet. Comcast charges $90 for inconsistent 150mb download speeds and fiber costs about half that for 1TB of speed and would open the door for additional saving through using online streaming services instead of paying for cable. Some neighborhoods already have this service available and I think it's time for the entire town to have the opportunity to use fiber. Selfishly, if I had to choose a neighborhood to start with, I'd choose the Woodlands where the Comcast internet often drops and Comcast contractors don't seem to be improving it. They have also cut Consolidated Communication lines here so needles to say it hasn't been a good experience with Comcast being the only option for internet.	Jonathan Weeks	This project is not being recommended at this time.
2021	West Road (from Lafayette to Campus Drive)	Construction or Expansion of a New Public Facility, Street or Utility	Add a sidewalk on the south side of West Rd from Lafayette Rd to the Community Campus. The bicycle/ pedestrian master plan specifies sidewalks on both sides and bicycle lanes, but to start, a sidewalk on one side would be a huge improvement for access to the senior center, Families First, New Heights, and Seacoast Community School.	Matthew Glenn	Consider incorporating these improvements into the City's construction of fields off Campus Drive which is an existing CIP project.
2021	Willard Ave, Orchard St, Ash St, Specifically 86-88 Orchard St	Rehabilitation of a Facility	Alleviate ponding in low areas where Orchard St and driveways meet	Vicki Robinson	Recommend addressing through the City's street paving, management, and rehabilitation program.
2020	Atlantic Heights	Rehabilitation of a Facility	The Atlantic Heights Centennial Committee would like to identify a public amenity within the neighborhood that can be rehabilitatied or built in honor of its centennial. The neighborhood has offered to fundraise. They are also interested in efforts that may make Maynard Park (now closed) safe and accessible to the public again.	Crisy Cardoso	The City is already coordinating with the Centennial Committee related to this request. Staff does not recommend adding a new CIP project for this item at this time.
2020	Cutts St, Central Ave, Beechwood St, Ashland St, Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Carrie Blake and Deirde Wallace	This is being put forward as a new CIP project for FY20.
2020	Cutts St, Central Ave, Beechwood St, Ashland St, Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Sergio Bonilla	This is being put forward as a new CIP project for FY20.
2020	Cutts St, Central Ave, Beechwood St, Ashland St, Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Eric C. Kovomhav	This is being put forward as a new CIP project for FY20.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2020	Cutts St, Central Ave, Beechwood St, Ashland St, Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Mark Lombardi	This is being put forward as a new CIP project for FY20.
2020	Cutts St, Central Ave, Beechwood St, Ashland St, Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Healther and Phil Pettis	This is being put forward as a new CIP project for FY20.
2020	Cutts St, Leslie Drive, Central Ave	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Johanna Lyons	This is being put forward as a new CIP project for FY20.
2020	Harvard St	Rehabilitation of a Facility	Request for repaving of Harvard Street.	Jane Begala	Recommended addressing through the City's street paving, management, and rehabilitation program.
2020	Leslie Drive	Rehabilitation of a Facility	New/improved drainage, sidewalks, utility and pavement	Kyle Langelier	This is being put forward as a new CIP project for FY20.
2020	Livermore St	Rehabilitation of a Facility	Request made to improve drainage, sidewalks, piping, sidewalks and the road surface.	Charlotte and Robert Holster	Recommended addressing through the City's street paving, management, and rehabilitation program.
2020	Pinehurst Road	New Construction	Request for construction of stormwater accomodations on the road.	Everett and Carol Eaton	This is being put forward as a new CIP project for FY20.
2020	Pinehurst Road	New Construction	Request for construction of stormwater accomodations on the road.	Guy A Pronesti	This is being put forward as a new CIP project for FY20.
2020	Pinehurst Road	New Construction	Request for construction of stormwater accomodations on the road.	34 Residents of Pinehurst Road (Samuel Witherspoon, Margaret Witherspoon, Richard Walent, Sandra Walent, Daniel Wyand, Lena Wyand, Everett Eaton, Carol Eaton, Michael Magnant, Denise Magnant, David Underhill, Linda Underhill, Anne Weidman, Mark Weidman, Guy Pronesti, Danielle Pronesti, Vicki Boyd, Anna Kay Vorsteg, David Mulhern, Sally Mulhern, Kurt Korn, Beth Korn, April Weeks, Richard Antal, Paul Hansen, Darci Knowles, Rosemary York, Robert Stevens, Jennifer Stevens, James Carmichael, Lindsey Carmichael, John Evans, Margaret Evans)	This is being put forward as a new CIP project for FY20.
2020	Route 1 Bypass North	Rehabilitaton of a Facility	Request to review the Route 1 Bypass North Gateway including streetscape and access improvements.	Johanna Lyons	Staff is not recommending this project at this time. Route 1 Bypass is not a City roadway.
2020	Sagamore Road	New Construction	Adaptation of the West side of Sagamore Rd between Luster King Car Care and Cliff Rd into a Shared Use Path.	Ned Raynolds	Recommend addressing through the City's annual road striping and/or CIP bicycle/pedestrian plan implementation funding if City-owned right of way is adequate to accommodate proposed design.
2020	Taft Road - near Elwyn	Rehabilitation of a Facility	Request to address the road's drainage system.	Ken Brown	Part of existing CIP projects (Elwyn Park sidewalks and Elwyn Road sidepath), which will include evaluation of drainage improvements.
2020	To Be Determined	New Construction	Playground that is accessible, Inclusive, Barrier-Free and Boundless for Children with phyiscal special needs.	Nikki Greenberg	Recommend addressing through the CIP project for playground improvements, which is an ongoing item in the CIP.
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Don and Becky Bardell	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	John A. Byron	This was added to the CIP in FY2019 (TSM-19-PW-74)

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Jen Chapnick	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Alison Clode	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Bob Cook	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Anne M. D'Averson	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	William Davis	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Carla Dow	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Claire Dube	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Julia Gindele	This was put forward as a new CIP project for FY19.
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Benjamin Goss	This was put forward as a new CIP project for FY19.
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	James Gould	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Catherine Harris	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Theresa Hill	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Pamela Hodgkins	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Marianne Janik	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Elizabeth Jefferson	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Nancy and Brian Johnson	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Elizabeth Kinney	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Scott McDermott	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Sarah McLaughlin	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Mireille Salmon (mimi)	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Lindsey Mogren	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Melinda Mulligan	This was put forward as a new CIP project for FY19.
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Jennifer Neslon	This was added to the CIP in FY2019 (TSM-19-PW-74)

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Michael O'Connor	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Anne Poubeau	This was put forward as a new CIP project for FY19.
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Louie A. Prince	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Dawn Przychodzien	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Johnathan Sandberg	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Matthew Schaepe	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Jim Sparling	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Swanne M. Stawartz	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Barbara Timmons	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Sam and Amanda Tombarelli	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Cate Street Connector	New Construction	A desire to reroute traffic away from Bartlett St by way of a Cate Street Connector	Joann Wyckoff	This was added to the CIP in FY2019 (TSM-19-PW-74)
2019	Greenleaf Ave (Intersection at Greenleaf Ave and Lafayette Road)	Road Closure	Close access to Greenleaf Ave from Lafayette Road for Reasons of Safety	Stephen and Suzy Gagnon	Recommend evaluating through the City's Neighborhood Traffic Calming Program process.
2019	Islington St. Crosswalk	Crosswalk Installation	Desire for a crosswalk at Albany St on Islington St.	Sara Curry	This is already planned as part of the City's Islington Street Corridor project, which is currently in design. Construction is anticipated to begin in 2018.
2019	Maynard Park	Rehabilitation of a Facility	Expressing a desire to reopen the park under the I-95 Bridge after the high rise rehab project is complete including an extension similar to that of the Memorial Bridge.	Jon McBride	Once the rehab project on the bridge is complete, the City is planning to coordinate with the state about the potential for re-opening the park.
2019	Spaulding Turnpike (200)	Land Acquisition	Purchase land for public park space	Sarah Gatchell	Staff is not recommending this project at this time.
2019	Williard Ave	Rehabilitation of a Facility	Sidewalk Repair	Lennie Mullaney	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Andrew Jarvis (Intersection of Andrew Jarvis Drive and Lafayette Road)	New Construction	Add new traffic signal	Stephen Bergeron	This was added to the CIP in FY2018 (TSM-PW-21)
2018	Elwyn Road	New Construction	Install safe bike and pedestrian path along road	Christine Groleau	This was added to the CIP in FY2018 (TSM-PW-15)
2018	Goodwin Park	New Construction	Update / install new lighting for Park	Tom Waterman	Recommended addressing through the CIP project for parks and playgrounds, which is an ongoing item in the CIP.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2018	Haven Park	Rehabilitation of a Facility	Park path improvements and lighting	Mary Cline	Recommend addressing through the CIP project for parks and playgrounds, which is an ongoing item in the CIP.
2018	Madison Street (between State Street and Austin Street)	New Construction	Install curbs and sidewalks, plant street trees	Lee Frank	This is being put forward as a new CIP project for FY20.
2018	Manning Street (18)	New Construction	Reconstruct curbing and build sidewalk in front of 18 Manning St	Judith L. Hiller	Staff is not recommending this project at this time.
2018	Mark Street	New Construction	Repave street	Jason Jenkins	Recommended addressing through the City's street paving, management, and rehabilitation program.
2018	Parrot/ Rogers Street	Rehabilitation of a Facility	Reduce of corner radius at the intersection of Parrot and Rogers Street to slow traffic speeds	Jason Jenkins	Recommended evaluating through the City's Neighborhood Traffic Calming Program process.
2018	Penhallow St (126-128)	Rehabilitation of a Facility	Repair / regrade brick sidewalk in front of property	Cynthia & Everett Barnes	Recommended addressing through the City's annual sidewalk improvement program.
2018	Pleasant Street	Rehabilitation of a Facility	Repair/ replace sidewalks, improve street lighting, re-surface road, improve drainage	Mary Cline	This was added to the CIP in FY2018 (TSM-PW-31).
2018	Sagamore (from 150' south of little Harbor Road to Shaw Road including)	Rehabilitation of a Facility	Reconstruction of Sagamore Ave road and sidewalks from south of Little Harbor Road to Shaw Road	Board of Directors Tidewatch Condominium Association	Recommended holding this project for future consideration as a CIP project. Sidewalk issues may be addressed through the annual sidewalk program.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Don and Judy Albertson	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Michael and Julie Bean	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Angie and Michael Bloom	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	William Cassidy	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Michael and Gail Clark	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Kevin and Vergie Clover	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	William Cassidy (duplicate)	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Mildre and Joseph Errico	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Jack and Rosemanry Gardner	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Michael and Donna Glodziak	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Gricel Goodman	This was put forward as a new CIP project for FY19.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Erica and Joshua Greenspan	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Alexandra Heidinger	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Carla Henderson	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Lee Horgan	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Chiran and Jan Jayartne	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Rebecca Spencer and Shawn Kulikowski	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Jeff Londres	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Richard Lyons	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Joan Lyons	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Carolyn Mannering	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Don and Joyce Marchand	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Michael and Lynn Marsh	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Kevin and Julie McCana	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Daniela and Chris O'Neill	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Joyce and John O'Reilly	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Keith Orr	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Kelly Orr	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Ashlie and Tim Peters	This was put forward as a new CIP project for FY19.

CIP Year	Location	Type/Category	Description	Submitter	Staff Comment
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Ron and Nancy Polind	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	William and Susan Riffer	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Kate Hester Siler	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Nancy and Zachary Slater	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Susan Stevens	This was put forward as a new CIP project for FY19.
2018	Sagamore Ave (Approx #1163 to Odiorne Point Road Intersection)	New Construction	Extend sidewalk to Tuckers Cove neighborhood	Janis Timerman	This was put forward as a new CIP project for FY19.
2018	Sherburne School to Borthwick Avenue	Rehabilitation of a Facilty	Replacement of sidewalk with concrete and curbing	Manuel S. Garganta	Recommended addressing through the City's annual sidewalk improvement program.
2018	Spinney Road (Eastern Side)	New Construction	Add new sidewalk from Islington street to Middle Road	Robert Patterson	This is an existing CIP project.
2018	Willard Ave	Rehabilitation of a Facility	Complete road improvements, sidewalk repairs, improve drainage	William Collins	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility		Patricia Edwards	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Sidewalk repairs, improve drainage	Curtis and Julianne Johnson	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Sidewalk repairs, improve drainage	Deborah Luff and David Luff	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Sidewalk repairs, improve drainage	Tim Malinowski	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Complete road and sidewalk reconstruction and address odors	Rhiis Buswell, Rachel Minnihan and Patrick Minnihan	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Completion of Willard Ave sidewalk and sewer project	John and Denise Pettigrew	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Complete road and sidewalk reconstruction, address drainage and odors	Brian and Martha Ratay	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave	Rehabilitation of a Facility	Completion of Willard Ave sidewalk and sewer project	Kevin and Jill Underwood	Recommend addressing through the City's annual sewer line replacement and sidewalk program.
2018	Willard Ave (Between Marsten and Lafayette)	Rehabilitation of a Facility	Sidewalk repairs	Thomas Silverman	Recommend addressing through the City's annual sewer line replacement and sidewalk program.

A en i II. NH OT P rts th Pr jects

NH OT P rts th Pr jects

NHDOT Project #	Route/Road	Program / Category	Scope	Funding Years*	Total State/Fed Funding*	Reference Document**
202 8	Pe er Hi R	MA	See IP r ject escri ti n	2020-2021	1, 40,036	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate
2 640	US R te 1 r a i r e ents	Hi hwa	R a i r e ents r nstit ti n t is n an r Ocean t hite e ar	201 -202	11,602,6 4	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate
2648	Ha t n ranch Rai rri r (Ha t n t P rts th)	MA	P rchase rai c rri r r Ha t n t P rts th an i r e trai s race.	201 -2022	8,0 , 04	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate
40 62	P rts th Internati na Air rt	Air rt	Preser ati n, erni ati n, an r e ansi n air rt aci ities annin st ies.	2021-2030	62,201,3 3	State Ten ear P an 2021-2030
41 2	E w n R M ti-Use Path	MA	See IP r ject escri ti n	201 -2022	8 4,240	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate
40644	Mar et St Rai r a r ssin	Hi hwa	U ra e rai r a cr ssin	2023-2026	88 ,436	State Ten ear P an 2021-2030
42608	Mar et St R sse St Intersecti n I r e ents	Hi hwa	See IP r ject escri ti n	2026-202	1,3 4,63	State Ten ear P an 2021-2030
42611	Gra t n ri e Intersecti n I r e ents	Hi hwa	Intersecti n i r e ents at P rts th Trans rtati n enter an Pease G rse	2026-2030	64 ,240	State Ten ear P an 2021-2030
42612	Internati na r Manchester S r rate r	Hi hwa	Si na i ati n intersecti n	202 -2030	38 ,	State Ten ear P an 2021-2030
428 4	E ectric Vehic e har in Stati ns	MA	P rchase an insta r e ectric char in stati ns r ari s cati ns ar n P rts th.	2021-2022	1,260	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate
428	New Ha shire A e Ar ret r Pease	MA	nstr cti n ri ht t rn ane n the n rth n irecti n NH A e intersecti n	2021-2024	420,442	State Trans rtati n I r e ent Pr ra 201 - 2022 U ate

*Projects may have been funded in prior years. Total funding includes prior years as well. Total funding does not include local match portion (if applicable).

**NHDOT prepares updates to the State Ten Year Transportation Improvement Plan (STYP) every two years.

The STYP outlines planned projects and programs funded with Federal and State transportation dollars for the next 10 years.

The Statewide Transportation Improvement Program (STIP) is the four-year state project listing for federally-funded projects.

A en i III.
St ies iste within the IP

Study Name	Cited In (Project #)	Page #	Project Name
Bicycle and Pedestrian Plan 2014	TSM-15-PL/NH-58	126	Hampton Branch Rail Trail (NH Seacoast Greenway)
	TSM-21-PL-60	128	Market Street Sidepath
	TSM-08-PL-NH-61	129	US Route 1 New Side Path Construction
	TSM-16-PL/NH-62	130	US Route 1 Crosswalks and Signals
	TSM-17-PL-63	131	Elwyn Park Traffic Calming and Pedestrian Improvements
	TSM-23-PL-64	132	Borthwick Avenue Bike Path
	TSM-21-PW-66	134	Greenland Rd/Middle Rd Corridor Bicycle/Pedestrian Improvments
	TSM-15-PW-67	135	Market Square Upgrade
	TSM-15-PW-80	151	Junkins Avenue Improvements
Cemetery Existing Conditions Assessment and Restoration Plan (2013)	BI-05-PW-42	101	Historic Cemetery Improvements
Citywide Bridge Evaluation 2018	TSM-18-PW-74	143	Citywide Bridge Improvements
	TSM-08-PW-75	144	Cate Street Bridge Replacement
	TSM-20-PW-76	145	Coakley-Borthwick Connector Roadway
Coastal Resilience Initiative	BI-23-PL-25	84	Groundwater Study to Identify Impacts
Comprehensive Recreation Needs Study 2010	BI-12-RC-30	89	Additional Outdoor Recreation Fields
	BI-20-RC-31	90	Greenland Road Recreation Facility
Conscent Decree Second Modification	EF-22-SD-97	171	Sewer Main for Sagamore Avenue Area Sewer Extension
CSO Supplemental Compliance Plan 2017	EF-16-SD-94	168	Long Term Control Plan Related Projects
	COM-20-PW-100	176	Fleet Street Utilities Upgrade and Streetscape
	COM-03-PW-106	188	Islington Street Improvements
DPW Master Complex Summary July 2020	BI-18-PW-41	100	Recycling and Solid Waste Transfer Station
Elwyn Park Sidewalk Study June 2020	TSM-17-PL-63	131	Elwyn Park Traffic Calming and Pedestrian Improvements
Emergency Water Interconnection Preliminary Design Report	EF-24-WD-90	163	Dover Water Emergency Interconnection
Facility Condition Assessment 2015	BI-01-PW-45	105	Citywide Facilities Capital Improvements
Goodman Report on the Survey of the Municipally Owned Historic Artifacts and Documents in Portsmouth, NH	BI-17-FI-18	77	Permanent Records Storage Facilities
	BI-18-FI-19	78	Permanent/Historic Document Restoration, Preservation, & Scanning
	BI-18-FI-20	79	Disoposition of Municipal Records
HVAC Study 2019	BI-21-PW-40	99	City Hall HVAC Improvements
Infiltration and Inflow Study 2016	EF-16-SD-94	168	Long Term Control Plan Related Projects
Life Span Evaluation	EF-13-SD-98	172	Mechanic Street Pumping Station Upgrade
Long Term Control Plan Update 2010	COM-20-PW-100	176	Fleet Street Utilities Upgrade and Streetscape
	COM-03-PW-106	188	Islington Street Improvements
	COM-17-PW-107	190	Union Street Reconstruction
Master Plan 2005	TSM-08-PW-65	133	Wayfinding System
Master Plan 2025	BI-95-PL-21	80	Land Acquisition
	BI-22-PL-22	81	Historic District Guidelines Part 2
Neighborhood Traffic Calming Program Page	TSM-21-PW-77	146	Traffic Calming
NH DOT Long Range vision for the Bypass	TSM-20-PW-76	145	Coakley-Borthwick Connector Roadway
NH Seacoast Greenway in Portsmouth	TSM-15-PL/NH-58	126	Hampton Branch Rail Trail (NH Seacoast Greenway)
Open Space Plan	BI-95-PL-21	80	Land Acquisition
	BI-21-PL-23	82	Trail Development Project
Parking Operations Offices Plan	BI-24-PW-48	109	Foundry Place Parking Offices
Pavement Management 2020 Update	TSM-94-PW-78	147	Street Paving, Management and Rehabilitation
	TSM-11-PW-79	149	Pease International Tradeport Roadway Rehabilitation
Pease Wastewater Facility NPDES Permit Renewal 2019	EF-12-SD-92	166	Pease Wastewater Treatment Facility
Police Department Facility Study	BI-16-PD-11	69	Police New Facility - Land Acquisition
	BI-15-PD-12	70	New Police Department Facility
	BI-21-PD-13	71	Police Deficiencies & Repair Project
Post Construction Monitoring Plan 2017	EF-16-SD-94	168	Long Term Control Plan Related Projects
Prescott Park Master Plan 2017	BI-19-PW-38	97	Prescott Park Master Plan Implementation
	BI-11-PW-39	98	Prescott Park Facilities Capital Improvements

Recreation Field Report 2015	BI-20-RC-31	90	Greenland Road Recreation Facility
Recycling Facility Basis of Design Report March 2020	BI-18-PW-41	100	Recycling and Solid Waste Transfer Station
Self Assessment of FD Operations: April 2015	VE-07-FD-01	58	Ambulance Replacement Program
	VE-14-FD-02	59	Vehicle Replacement - Fire Engine 4
Sidewalk Condition Index 2018	TSM-95-PW-69	137	Citywide Sidewalk Reconstruction Program
Stormwater Master Plan 2007	COM-15-PW-102	180	Citywide Storm Drainage Improvements
	COM-20-PW-104	184	DPW Complex Improvements
	COM-22-PW-105	186	The Creek Neighborhood Reconstruction
US Route 1 Corridor Project	TSM-08-PL/NH-61	129	US Route 1 New Sidepath Construction
	TSM-16-PL/NH-62	130	US Route 1 Crosswalks and Signals
Wastewater Pump Station Master Plan 2019	EF-17-SD-95	169	Wastewater Pumping Station Improvements
	EF-13-SD-98	172	Mechanic St Pumping Station
Water System Master Plan 2013	EF-02-WD-83	156	Annual Water Line Replacement
	EF-08-WD-84	157	Well Stations Improvements
	EF-15-WD-85	158	Reservoir Management
	EF-18-WD-86	159	New Groundwater Source
Wayfinding Analysis 2014	TSM-08-PW-65	133	Wayfinding System

This page has been left intentionally blank.

A en i IV.
Hist ric c ent Rest rati n In e

Completed Documents (Utilizing Funding from the CIP)					
Document Name/Type	**Document Year (Start)**	**(End)**	**Preservation Notes**	**Total Preservation Costs (Preservation, Microfilmn, Digital)**	**Year of Financing (FY)**
Marriages 1769-1841	1769	1841	Mylar	$ 2,226.00	FY17C
Births 1750-c 1856 and Burrials 1753-1849	1750	1849	Mylar	$ 1,198.00	FY17C
Marriages, Births, Deaths 1850-1864	1850	1864	Mylar	$ 1,808.00	FY17C
Marriages, Births, Deaths c 1858-1883	1858	1883	Mylar	$ 1,808.00	FY17C
Marriages, Births, Deaths 1861-1886	1861	1886	Mylar, Returned as 3 volumes	$ 4,139.00	FY17C
Births 1887-1911	1887	1911	Mylar	$ 3,077.00	FY17C
Deaths 1887-1904 (1911)	1887	1911	Mylar	$ 3,281.00	FY17C
Marriages 1887-1904	1887	1904	Mylar	$ 3,378.00	FY17C
Births 1912-1933	1912	1933	Mylar	$ 3,801.00	FY17C
Town Records Vol 1 1645-1713	1645	1713	Mylar	$ 4,726.00	FY17C
Town Records Vol 2 1695-1779	1695	1779	Mylar	$ 4,025.00	FY17C
Town Records Vol 3 1779-1807	1779	1807	Mylar	$ 3,624.00	FY17C
Tax Book 1737-1744	1737	1744	Mylar	$ 2,070.00	FY17C
Selectmen's Book 1728-1736	1728	1736	Mylar	$ 2,156.00	FY17C
[Overseers of the Poor]. March 29, 1850-March 18, 1853. UV	1850	1853	Mylar, 1 Vol (done with 0832), preserved, microfilmed, digitalized	$ 965.00	FY18
Board of Assessors' meeting minutes and abatements granted	1885	1897	Mylar, 2 vols, preserved, microfilmed, digitalized	$ 2,490.00	FY18
Census. Ward 1. April 1, 1878-May 8, 1878. 143pp. Index. BV	1878	1878	Sew, preserved, microfilmed, digitalized	$ 965.00	FY18
Final Tax List 1817	1817	1817	Sew, preserved, microfilmed, digitalized	$ 1,650.00	FY18
Final tax list 1829	1829	1829	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY18
Final tax list 1830	1830	1830	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY18
Tax Collector's Record 02	1909	1909	Preserved, microfilmed, digitalized	$ 1,815.00	FY18
Tax Collector's Record 03	1910	1910	Preserved, microfilmed, digitalized	$ 1,715.00	FY18
Births 1934-1945	1934	1934	sewn	$ 2,410.00	FY18C
Births 1945-1951	1945	1945	sewn	$ 1,958.00	FY18C
City Records Vol. 1, 1850-1853	1850	1853	sewn	$ 3,224.00	FY18C
City Records vol. 2, 1854-1859	1854	1859	sewn	$ 2,944.00	FY18C
Deaths 1912-1933	1912	1912	sewn	$ 3,090.00	FY18C
Deaths 1934-1951	1934	1934	sewn	$ 2,362.00	FY18C
Folsom Births 1853-1890	1853	1890	sewn	$ 1,040.00	FY18C
Marriage Intentions 1881-1889	1881	1881	sewn	$ 1,957.00	FY18C
Marriages 1842-1879	1842	1879	sewn	$ 2,016.00	FY18C
Marriages 1904-1917	1904	1904	sewn	$ 2,902.00	FY18C
Marriages c. 1868-1887	1868	1868	sewn	$ 1,367.00	FY18C
Naturalization Papers c. 1840's - 1920's	1840	1920	Mylar, 1 vol	$ 1,780.00	FY18C
Town Records Vol. 4, 1807-1821	1807	1821	Mylar, option	$ 3,296.00	FY18C
Town Records Vol. 4, 1807-1821 (DUP)	1807	1821	sewn option	$ 2,327.00	FY18C
Town Records Vol. 5, 1821-1833	1821	1833	sewn	$ 2,832.00	FY18C
Town Records Vol. 6, 1833-1844	1833	1844	sewn	$ 3,401.00	FY18C
Town Records Vol. 7, 1844-1849	1844	1849	sewn	$ 2,528.00	FY18C
[Overseers of the Poor] 1831-1838. 251pp Index UV (819 and 823 combined into 1 document)	1831	1838	Sew, preserved, microfilmed, digitalized	$ 1,373.00	FY19
List of poor whose vaults and drains City cleaned and to whom City supplied wood for heat	1875	1884	Mylar, 1 Vol , preserved, microfilmed, digitalized	$ 1,135.00	FY19
Meeting minutes of Board of Overseers of the Poor	1905	1905	Mylar, 1 Vol (done with 0825), preserved, microfilmed, digitalized	$ 1,505.00	FY19

Overseers of the Poor. April 17, 1817-March 1838. 342pp. UV	1817	1838	Sew, preserved, microfilmed, digitalized	$ 1,747.00	FY19
Supplies to poor by Ward	1808	1808	Mylar, 1 Vol , preserved, microfilmed, digitalized	$ 1,265.00	FY19
[Overseers of the Poor]. January 1, 1835-January 21, 1841. UV	1835	1841	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,215.00	FY19
Common Council meeting minutes, July 22, 1859-Feb. 25, 1873	1859	1873	Sew, preserved, microfilmed, digitalized	$ 3,275.00	FY19
Fire Department. 1875-1889. 216pp. UV	1875	1893	Sew, preserved, microfilmed, digitalized	$ 965.00	FY19
Fire Department. Portsmouth, N.H. 1875-1882. UV	1875	1882	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,245.00	FY19
Fire Department. 1883-1903. UV	1883	1903	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
List of Engineers, Companies 1-5	1843	1843	mylar, loose, preserved, microfilmed, digitalized	$ 515.00	FY19
Inquests. 1875-1876. 70pp. BV	1875	1876	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 965.00	FY19
Abatement applications	1872	1884	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,275.00	FY19
Record Book of Naturalized Citizens of Several Wards as Presented to the Board of Inspectors of Check Lists. City of Portsmouth, N.H. 1861-1894. 21pp. UV	1861	1894	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 965.00	FY19
City Records. Ward 3. Portsmouth, N.H. July 14, 1859-November 16, 1868. BV	1859	1868	Sew, preserved, microfilmed, digitalized	$ 1,115.00	FY19
City Records. Ward 1, Portsmouth, N.H. 1849-1865. BV	1849	1865	Sew, preserved, microfilmed, digitalized	$ 965.00	FY19
City Records. Ward 3. Portsmouth, N.H. November 7, 1868-April 1, 1876. BV	1868	1876	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
City Records. Ward 3. Portsmouth, N.H. October 25, 1849-June 30, 1859. BV	1849	1859	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Census. Ward 2. April 1, 1878-March 7, 1878. 157pp. BV	1878	1878	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1832	1832	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1833	1833	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1835	1835	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1834	1834	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1836	1836	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1831	1831	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Final tax list	1800	1900	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY19
Cash Accounts (Receipts and Expenditures)	1810	1815	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 965.00	FY19
[City Accounts] 1866 and 1877. 111pp. UV	1866	1877	Sew, preserved, microfilmed, digitalized	$ 965.00	FY19
Enrollment of Persons Liable for Military Duty July 1862, Heavy Artillery N. H. Volunteers Book 1, Book 2, Book 3	1862	1865	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,865.00	FY19
Inventories (983 and 984 combined into 1 document)	1875	1900	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,245.00	FY19
Vital Records: Ward 4. Births. 4pp. Undated [Probably 1879]. BV; Vital Records: Deaths. Ward 3. 1880 [Year determined by cross-referencing census data.] BV; Vital Records: Births. Ward 2. 1879. 4pp. BV; Vital Records: Births. Ward 3. 1879. 5pp. BV; Vital Records: Deaths. Ward 2. 1880-1881. 6pp. BV; Vital Records: Births in Ward Four, not dated	1879	1900	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,415.00	FY19

Unidentified ward census, not dated; Unidentified ward census, not dated, [Animal Census]. N.D. 193pp. Alphabetical index to owner. UV	1875	1900	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 965.00	FY19
Vital Records: Deaths Registered in Ward 2. October 8, 1882-March 31, 1883. 4pp; Vital Records: Ward Three Death Register; Vital Records: Intentions [Census] 1893. 133pp. UV	1882	1893	Mylar, 1 Vol, preserved, microfilmed, digitalized	$ 1,085.00	FY19
City Records Vol 4, 1864-1866	1864	1864	sewn	$ 2,704.00	FY19C
City Records Vol 5, 1868-1878	1868	1868	sewn	$ 2,646.00	FY19C
City Records Vol 6, 1873-1878	1873	1873	sewn	$ 2,687.00	FY19C
City Records Vol. 3, 1856-1864	1856	1856	sewn	$ 2,789.00	FY19C
City Records Vol. 7 thru 15, 1878-1913 (9 vols.)	1878	1878	sewn	$ 22,720.00	FY19C
Ordinances Vol. 1, 1850-1874	1850	1874	sewn	$ 1,978.00	FY19C
Ordinances Vol. 2, 1873-1886	1873	1873	sewn	$ 1,663.00	FY19C
Ordinances Vol. 3, 1886-1894	1886	1886	sewn	$ 1,826.00	FY19C
Selectmen's Records 1825-1849	1825	1849	Mylar 2 vols.	$ 3,024.00	FY19C
Selectmen's Records 1848	1848	1848	Mylar 1 vol	$ 1,198.00	FY19C
Receipts and expenditures	1838	1875	Sew, preserved, microfilmed, digitalized	$ 4,015.00	FY20
Final tax list	1875	1900	Sew, preserved, microfilmed, digitalized	$ 1,865.00	FY20
Final tax list	1887	1887	Sew, preserved, microfilmed, digitalized	$ 1,815.00	FY20
Final tax list	1888	1888	Sew, preserved, microfilmed, digitalized	$ 2,065.00	FY20
Final tax list	1847	1847	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1837	1837	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1836	1836	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1839	1839	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1841	1841	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1845	1845	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1842	1842	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1844	1844	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1838	1838	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1854	1854	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1846	1846	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1843	1843	Sew, preserved, microfilmed, digitalized	$ 1,515.00	FY20
Final tax list	1847	1847	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1843	1843	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1853	1853	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1855	1855	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1852	1852	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1858	1858	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1851	1851	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20

Final tax list	1850	1850	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1868	1868	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1867	1867	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1863	1863	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1862	1862	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1866	1866	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1859	1859	Sew, preserved, microfilmed, digitalized	$ 1,560.00	FY20
Final tax list	1861	1861	sew	$ 1,515.00	FY22
Final tax list	1865	1865	sew	$ 1,515.00	FY22
Final tax list	1871	1871	sew	$ 1,515.00	FY22
Final tax list	1864	1864	sew	$ 1,515.00	FY22
Final tax list	1873	1873	sew	$ 1,515.00	FY22
Final tax list	1869	1869	sew	$ 1,515.00	FY22
Final tax list	1875	1875	sew	$ 1,515.00	FY22
Final tax list	1878	1878	sew	$ 1,515.00	FY22
Final tax list	1876	1876	sew	$ 1,515.00	FY22
Final tax list	1879	1879	sew	$ 1,515.00	FY22
Final tax list	1874	1874	sew	$ 1,515.00	FY22
Final tax list	1870	1870	sew	$ 1,515.00	FY22
Final tax list	1877	1877	sew	$ 1,515.00	FY22
Final tax list	1883	1883	sew	$ 1,515.00	FY22
[City Accounts] 1884-86. 216pp. UV	1884	1886	binder	$ 2,490.00	FY21
Accounts	1861	1861	Mylar, 1 Vol.	$ 965.00	FY23
Completed Documents (Utilizing CIP Funding) - Total				**$ 257,756.00**	

Completed Documents (Utilizing Funding from the State Moose Plate Grant)					
Document Name/Type	**Document Year (Start)**	**(End)**	**Preservation Notes**	**Total Preservation Costs (Preservation, Microfilmn, Digital)**	**Year of Financing (FY)**
Final tax list	1825	1825	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 1,515.00	MG-FY17/18
Final tax list	1826	1826	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 1,515.00	MG-FY17/18
Final tax list	1827	1827	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 1,515.00	MG-FY17/18
Final tax list	1828	1828	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 1,515.00	MG-FY17/18
Record of Proceedings of the Overseers of the Poor of the City of Portsmouth. August 7, 1877-July 16, 1888. 218pp. UV	1877	1888	Mylar, 1 volume, combined 2 Documents, Preserved, microfilmed and digitalized, 1 microfilm copy stored at NH state archives	$ 1,505.00	MG-FY17/18
Shipping Log	1842	1871	Mylar, 1 volume, Preserved, microfilmed and digitalized, 1 microfilm copy stored at NH state archives	$ 2,401.00	MG-FY17/18

Portsmouth Almshouse. 1839-1841. UV	1839	1841	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 2,610.00	MG-FY18/19
[Payments to Military Dependents]. 1861-1865. 24pp. UV. Civil War	1861	1865	Sew, Preserved, microfilmed, digitalized, 1 microfilm copy stored at NH State Archives	$ 880.00	MG-FY18/19
Overseers of the Poor. March 26, 1856-December 17, 1860. UV and Overseers [of the Poor]. 1850-1868. UV	1850	1868	Mylar, 1 volume, combined 2 Documents, Preserved, microfilmed and digitalized, 1 microfilm copy stored at NH state archives	$ 2,195.00	MG-FY18/19
Town Ledger for the Overseers of the Poor. Ledger B. 1812-1838. 229pp. UV Pt 1	1812	1838	Mylar, 2 volumes, preserved, microfilmed and digitalized, 1 microfilm copy stored at NH state archives	$ 3,850.00	MG-FY18/19
Town Ledger for the Overseers of the Poor. Ledger B. 1812-1838. 229pp. UV Pt 2	1812	1838	Mylar, 2 volumes, preserved, microfilmed and digitalized, 1 microfilm copy stored at NH state archives	$ -	MG-FY18/19
[Application Affidavits for Government Bounties]. UV. Civil War	1863	1870	Mylar, 1 vol, preserved, microfilmed, digitalized, 1 microfilm copy to be stored in the NH state archives	$ 2,175.00	MG-FY19/20
Spanish-American and World War I veterans' service records	1924	1924	Mylar, 2 vol, preserved, microfilmed, digitalized, 1 microfilm copy to be stored in the NH State archives	$ 5,430.00	MG-FY19/20
Overseers [of the Poor]. 1873-1882. UV	1873	1882	Mylar, 1 Vol. (Combining 858 and 859)	$ 1,545.00	MG-FY20/21
[Overseers of the Poor]. October 5, 1880-July 3, 1885. 36pp. UV	1880	1885	Mylar, 1 Vol. (Combining 858 and 859)	$ -	MG-FY20/21
Overseers of the Poor. January 3, 1866-March 19, 1873. UV	1866	1873	sew	$ 1,115.00	MG-FY20/21
Overseers of the Poor. December 23, 1860-January 1865. UV	1860	1865	sew	$ 1,115.00	MG-FY20/21
County Pauper Ledger. November 1, 1857-1868. 168pp. Index. UV	1857	1868	sew	$ 965.00	MG-FY20/21
[Overseers of the Poor]. 1862-1864. UV	1862	1864	Mylar, 1 Vol	$ 1,015.00	MG-FY20/21
[Overseers of the Poor]. 1873-1878. Alphabetized. UV	1873	1878	Mylar, 1 Vol	$ 1,515.00	MG-FY20/21
[Overseers of the Poor]. March 25, 1853-April 9, 1856. UV	1853	1856	Mylar, 1 Vol.	$ 1,215.00	MG-FY20/21
Applications. January 2, 1883-September 1895. UV	1883	1895	sew	$ 965.00	MG-FY20/21
Inventories	1880	1880	Mylar, 2 vols.	$ 3,390.00	MG-FY21/22
Inventories	1899	1899	Mylar, 4 vols.	$ 5,760.00	MG-FY21/22
Completed Documents (Utilizing State Moose Plate Grant Funding) - Total				**$ 45,706.00**	

In Process Historic Documents (Utilizing Funding from the CIP)

Document Name/Type	Document Year (Start)	(End)	Preservation Notes	Total Preservation Costs (Preservation, Microfilmn, Digital)	Year of Financing (FY)
Inventories	1900	1900	Mylar, 3 Vols.	$ 6,645.00	FY23
Inventories	1902	1902	Mylar, 3 vols.	$ 5,925.00	FY23
Inventories	1903	1903	Mylar, 3 vols.	$ 5,925.00	FY23

Inventories	1904	1904	Mylar, 2 vols.	$ 1,830.00	FY23
Inventories	1906	1906	Mylar, 3 Vols.	$ 2,565.00	FY23
Register of City-owned property	1901	1901	Mylar, 2 vols.	$ 4,280.00	FY23
Register of City-owned property	1909	1909	Mylar, 2 vols.	$ 2,605.00	FY23
Register of City-owned property	1920	1929	Mylar, 2 vols.	$ 3,350.00	FY23
Register of City-owned property	1930	1939	sew	$ 2,615.00	FY23
Register of City-owned property	1938	1948	binder	$ 2,990.00	FY23
Tax Collectors Record	1907	1908	sew	$ 2,335.00	FY23
Tax Collectors Record 4	1911	1911	sew	$ 1,875.00	FY23
Tax Collectors Record 5	1912	1912	sew	$ 1,755.00	FY23
Tax Collectors Record 6	1913	1913	sew	$ 1,845.00	FY23
Tax Collectors Record 7	1914	1914	sew	$ 1,765.00	FY23
Tax Collectors Record 8	1915	1915	sew	$ 1,645.00	FY23
Tax payments	1852	1861	sew	$ 965.00	FY23
Taxes collected	1854	1855	Mylar, 2 vols.	$ 4,130.00	FY23
Taxes paid	1860	1862	sew	$ 965.00	FY23
In Process Documents (Utilizing CIP Funding) - Total				**$ 56,010.00**	

In Process Historic Documents (Utilizing Funding the NH State MoosePlate Grant)

Document Name/Type	Document Year (Start)	(End)	Preservation Notes	Total Preservation Costs (Preservation, Microfilmn, Digital)	Year of Financing (FY)
Final Tax List	1884	1884	sew	$ 1,985.00	MG-FY22/23
Final Tax List	1885	1885	sew	$ 1,905.00	MG-FY22/23
Final Tax List	1888	1888	sew	$ 2,110.00	MG-FY22/23
Inventories 1881 (Vol 1-5 Combined)	1881	1881	sew	$ 2,017.00	MG-FY22/23
Inventories 1881 (Vol 6-9 Combined)	1881	1881	sew	$ 1,665.00	MG-FY22/23
In Process Documents (Utilizing State Moose Plate Grant Funding) - Total				**$ 9,682.00**	

Documents to be Preserved

Document Name/Type	Document Year (Start)	(End)	Preservation Notes	Total Preservation Costs (Preservation, Microfilmn, Digital)	Year of Financing (FY)
Tax payments	1852	1861	sew	$ 965.00	FY21
Street sprinkling	1918	1918	sew	$ 965.00	FY21
Street sprinkling	1909	1909	sew	$ 965.00	FY21
Street sprinkling	1911	1911	sew	$ 965.00	FY21
Street sprinkling	1910	1910	sew	$ 965.00	FY21
Street sprinkling	1909	1909	sew	$ 965.00	FY21
Taxes paid	1860	1862	sew	$ 965.00	FY21
Enrollment Ward 4	1884	1884	Mylar, 1 vol. (984 and 985 to be done together)	$ -	FY21

Enrollment. Wards 2 and 4. 1887. 218pp. BV	1887	1887	sew	$	1,015.00	FY21
Ward Four election data	1907	1908	Mylar, 1 vol (combinding 1003, 1004, 1005, 1006, 1007 together)	$	1,815.00	FY21
Ward One election data	1907	1908	Mylar, 1 vol (combinding 1003, 1004, 1005, 1006, 1007 together)	$	-	FY21
Ward Three election data	1907	1908	Mylar, 1 vol (combinding 1003, 1004, 1005, 1006, 1007 together)	$	-	FY21
Ward Five election data	1907	1908	Mylar, 1 vol (combinding 1003, 1004, 1005, 1006, 1007 together)	$	-	FY21
Ward Two election data	1907	1908	Mylar, 1 vol (combinding 1003, 1004, 1005, 1006, 1007 together)	$	-	FY21
Final tax list	1884	1884	sew	$	1,515.00	FY21
Final tax list	1885	1885	sew	$	1,515.00	FY21
Final tax list	1888	1888	sew	$	1,815.00	FY21
Final tax list	1890	1890	sew	$	1,815.00	FY21
Final tax list	1891	1891	sew	$	1,815.00	FY21
Taxes collected	1854	1855	Mylar, 2 vols.	$	4,130.00	FY21
Receipts	1923	1931	sew	$	1,715.00	FY21
Bond issues	1939	1948	sew	$	1,423.00	FY21
Auditor's Record for Cash Disbursements 1911-1912	1911	1912	Sew	$	1,350.00	FY21
Census of unidentified ward (983 and 984 combined into 1 document)	1884	1884	Mylar, 1 vol. (984 and 985 to be done together)	$	1,440.00	FY21
Rate Lists & Accounts 1713-1727	1713	1727	Mylar	$	5,230.00	FY21C
Tax List 1812	1812	1812	sew	$	950.00	FY21C
Tax List 1813	1813	1813	sew	$	950.00	FY21C
Tax List 1814	1814	1814	sew	$	950.00	FY21C
Tax List 1815	1815	1815	sew	$	950.00	FY21C
Tax List 1818	1818	1818	sew	$	950.00	FY21C
Tax List 1819	1819	1819	sew	$	950.00	FY21C
Tax List 1820	1820	1820	sew	$	950.00	FY21C
Tax List 1821	1821	1821	sew	$	950.00	FY21C
Tax List 1821	1821	1821	sew	$	950.00	FY21C
Tax List 1822	1822	1822	sew	$	950.00	FY21C
Tax List 1822	1822	1822	sew	$	950.00	FY21C
Tax List 1823	1823	1823	sew	$	950.00	FY21C
Tax List 1823	1823	1823	sew	$	950.00	FY21C
Tax List 1824	1824	1824	sew	$	960.00	FY21C
Tax List 1824	1824	1824	sew	$	960.00	FY21C
Tax List 1825	1825	1825	sew	$	960.00	FY21C
Tax List 1826	1826	1826	sew	$	960.00	FY21C
Tax List 1827	1827	1827	sew	$	970.00	FY21C
Tax Lists & Accounts 1765-1775	1765	1775	Mylar	$	3,959.00	FY21C
Tax Lists & Accounts 1787-1790	1787	1790	Mylar	$	5,090.00	FY21C
Tax Lists & Accounts 1789-1807	1789	1807	Mylar	$	4,245.00	FY21C
Tax Lists 1754-1764	1754	1764	Mylar	$	3,638.00	FY21C
Tax Lists 1776-1787	1776	1787	Mylar	$	4,781.00	FY21C
Tax Lists 1801-1811	1801	1811	Mylar	$	4,204.00	FY21C
Inventories	1900	1900	Mylar, 3 Vols.	$	6,645.00	FY22
Inventories	1902	1902	Mylar, 3 vols.	$	5,925.00	FY22
Inventories	1903	1903	Mylar, 3 vols.	$	5,925.00	FY22
Inventories	1904	1904	Mylar, 2 vols.	$	1,830.00	FY22
Inventories	1906	1906	Mylar, 3 Vols.	$	2,565.00	FY22
Register of City-owned property	1895	1895	binder	$	2,353.00	FY22
Register of City-owned property	1901	1901	Mylar, 2 vols.	$	4,280.00	FY22
Tax Collectors Record	1907	1908	sew	$	1,935.00	FY22
Tax Collectors Record 4	1911	1911	sew	$	1,555.00	FY22
Tax Collectors Record 5	1912	1912	sew	$	1,450.00	FY22
Tax Collectors Record 6	1913	1913	sew	$	1,555.00	FY22
Tax Collectors Record 7	1914	1914	sew	$	1,765.00	FY22
Tax Collectors Record 8	1915	1915	sew	$	1,645.00	FY22

Fuel distribution	1869	1871	Mylar, 1 Vol	$	1,515.00	FY23
Ward Four supplies to poor	1905	1905	Mylar, 1 Vol.	$	965.00	FY23
Supplies to poor by Ward	1909	1909	Mylar, 1 Vol.	$	1,265.00	FY23
Supplies to poor by Ward	1909	1909	Mylar, 1 Vol.	$	1,265.00	FY23
Supplies to poor by Ward	1909	1909	Mylar, 1 Vol.	$	1,265.00	FY23
Supplies to poor by Ward	1909	1909	Mylar, 1 Vol.	$	1,265.00	FY23
Supplies to poor by Ward (receipts)	1908	1908	Mylar, 1 Vol.	$	1,265.00	FY23
Supplies to poor by Ward	1913	1913	Mylar, 1 Vol.	$	1,265.00	FY23
Index of people who received public funds	1862	1862	sew	$	965.00	FY23
Payroll for temporary City employees	1868	1877	Mylar, 1 Vol.	$	965.00	FY23
Aid to poor	1907	1907	Mylar, 1 Vol.	$	965.00	FY23
Poor support	1935	1935	sew	$	1,515.00	FY23
[Receipt Book for Monies Paid to Teachers]. July 1, 1864-December 31, 1867. UV	1864	1867	Mylar 1 vol. (1029 and 1030 to be done together)	$	1,335.00	FY23
[Receipt Book for Monies Paid to Teachers]. October 2, 1858-March 29, 1864. UV	1858	1864	Mylar 1 vol. (1029 and 1030 to be done together)	$	-	FY23
Register of City-owned property	1907	1907	sew	$	965.00	FY23
Register of City-owned property	1930	1939	sew	$	2,615.00	FY23
Register of City-owned property	1938	1948	binder	$	2,990.00	FY23
Register of City-owned property	1920	1929	Mylar, 2 vols.	$	3,350.00	FY23
Register of City-owned property	1909	1909	Mylar, 2 vols.	$	2,605.00	FY23
Tax Collectors Record 9	1916	1916	sew	$	1,845.00	FY23
Tax Collectors Record 10	1917	1917	sew	$	1,845.00	FY23
Tax Collectors Record 11	1918	1918	sew	$	2,035.00	FY23
Tax Collectors Record 12	1919	1919	sew	$	2,035.00	FY23
Tax Collectors Record 13	1920	1920	sew	$	2,125.00	FY23
[Preliminary Tax List]. Charles H. Shannon. Collector. 1865. BV, combined with 823)	1865	1865	sew	$	965.00	FY23
Board of Overseers of the Poor 1888-1903	1888	1903	Mylar	$	2,270.00	FY23C
Fire Department 1854-1873	1854	1873	sew	$	2,905.00	FY23C
Journal of Overseers of the Poor 1876-1895	1876	1895	Mylar	$	950.00	FY23C
Ledger of Overseers of the Poor 1818-1835	1818	1835	Mylar	$	2,405.00	FY23C
Letters of Overseers of the Poor 1815-1855	1815	1855	Mylar	$	2,130.00	FY23C
Police Record 1895-1900	1895	1900	sew	$	3,025.00	FY23C
Tax Book 1792	1792	1792	sew	$	950.00	FY23C
Tax Lists 1791-1801	1791	1801	Mylar	$	3,603.00	FY23C
Tax Lists 1807	1807	1807	sew	$	950.00	FY23C
Tax Lists 1808	1808	1808	sew	$	950.00	FY23C
Tax Lists 1809	1809	1809	sew	$	950.00	FY23C
Tax Lists 1810	1810	1810	sew	$	950.00	FY23C
Tax Lists 1811	1811	1811	sew	$	950.00	FY23C
Tax Lists 1811-1822	1811	1822	Mylar	$	2,877.00	FY23C
Board of Assessors' meeting minutes	1907	1922	Mylar, 1 vol.	$	1,535.00	FY24
Board of Assessors' meeting minutes	1905	1907	sew	$	965.00	FY24
Receipts and expenditures	1870	1870	sew	$	1,257.00	FY24
Index of Receipts and Expenditures	1869	1901	Mylar, 1 vol.	$	965.00	FY24
Tax Collectors Record 14	1921	1921	sew	$	2,685.00	FY24
Tax Collectors Record 15	1922	1922	sew	$	2,780.00	FY24
Tax Collectors Record 20	1927	1927	sew	$	1,455.00	FY24
Tax Collectors Record 21	1928	1928	sew	$	1,455.00	FY24
Tax Collectors Record 22	1929	1929	sew	$	1,455.00	FY24
Tax Collectors Record 23	1930	1930	sew	$	1,360.00	FY24
Tax Collectors Record 24	1931	1931	sew	$	1,360.00	FY24
Tax Collector's Record 35	1942	1942	sew	$	2,225.00	FY24
Tax Collector's Record 36	1943	1943	sew	$	2,125.00	FY24
Tax Collector's Record 37	1944	1944	sew	$	2,225.00	FY24
Tax Collector's Record 38	1945	1945	sew	$	2,225.00	FY24
Tax Collector's Record 39	1946	1946	sew	$	2,080.00	FY24
Tax Collector's Record 41	1948	1948	sew	$	1,935.00	FY24
Tax Collector's Record 42	1949	1949	sew	$	2,175.00	FY24
Tax Collector's Record 43	1950	1950	sew	$	1,985.00	FY24
Amount of tax paid on various items	1907	1907	sew	$	1,720.00	FY24
Amount of tax paid on various items	1908	1908	sew	$	1,640.00	FY24
Tax Book	1909	1909	sew	$	2,035.00	FY24
Tax Book	1909	1909	sew	$	2,035.00	FY24
Tax Book 1910	1910	1910	sew	$	2,125.00	FY24
Tax Book 1911	1911	1911	sew	$	2,175.00	FY24

Tax Book 1913	1913	1913	sew	$	2,125.00	FY24
Tax Book 1915	1915	1915	sew	$	1,455.00	FY24
Real estate transactions	1912	1913	sew	$	965.00	FY25
Vital Records: Registers and memoranda concerning burials and permission to remove a body to another cemetery (36 VOLUMES)	1930	1939	36 Volumes combine and returned as 18 volumes @ 1600 each, film 160 each, cd 160 each, shipping 15 each	$	34,830.00	FY25
Invoice	1879	1879	sew	$	1,240.00	FY25
Invoice	1878	1878	sew	$	1,215.00	FY25
Receipts and expenditures	1878	1891	sew	$	1,215.00	FY25
Tax Book 1917	1917	1917	sew	$	1,455.00	FY25
Tax Book 1917	1917	1917	sew	$	1,455.00	FY25
Tax Book 1917	1917	1917	sew	$	1,455.00	FY25
Tax Book 1919	1919	1919	sew	$	1,455.00	FY25
Tax Book 1919	1919	1919	sew	$	1,455.00	FY25
Tax Book 1920	1920	1920	sew	$	1,375.00	FY25
Tax Book 1920	1920	1920	sew	$	1,375.00	FY25
Invoice	1880	1880	sew	$	1,265.00	FY26
Invoice	1881	1881	sew	$	1,165.00	FY26
Invoice	1882	1882	sew	$	1,715.00	FY26
Bills Approved	1850	1850	Mylar, 1 Vol.	$	1,055.00	FY26
Auditors Record 3 - Cash Receipts	1910	1912	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	895.00	FY26
Treasurers Record 3 - Cash Receipts	1911	1912	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Auditors Record 2	1909	1910	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Treasurers Record 2 - Cash Receipts	1909	1910	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Treasurers Record 2 - Cash Disbursements	1909	1910	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Cash Receipts	1907	1908	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Cash Disbursements	1907	1908	Mylar (1 vol) (do 1225, 1226, 1227, 1229, 1230, 1231, and 1232 together as 1 item)	$	-	FY26
Treasurers Record 3 - Cash Disbursements	1910	1911	Mylar 1 vol.	$	2,195.00	FY26
Receipts and Disbursements	1929	1935	sew	$	1,630.00	FY26
Receipt Register	1928	1933	sew	$	1,505.00	FY26
Receipts and Disbursements	1923	1929	sew	$	1,455.00	FY26
Receipts and Disbursements	1933	1936	sew	$	905.00	FY26
Receipts and Disbursements	1934	1937	sew	$	1,465.00	FY26
Treasurers Record 4 - Cash Disbursements	1919	1920	Mylar, 2 vols.	$	5,020.00	FY26
Receipts and expenditures	1907	1908	sew	$	2,315.00	FY26
Receipts and expenditures	1907	1920	sew	$	1,349.00	FY26
Receipts and expenditures	1921	1931	sew	$	2,715.00	FY26
Receipts and expenditures	1904	1905	sew	$	1,983.00	FY26
Tax Collectors Record 14	1920	1921	sew	$	895.00	FY26
Valuation of Real and Personal Property	1938	1938	sew	$	3,915.00	FY26
Valuation of Real and Personal Property	1940	1940	sew	$	3,915.00	FY26
Valuation of Real and Personal Property	1941	1941	sew	$	3,915.00	FY26
Valuation of Real and Personal Property	1944	1944	sew	$	3,915.00	FY26
Valuation of Real and Personal Property	1945	1945	sew	$	3,915.00	FY26

Receipts and expenditures	1908	1910	Mylar, 1 Vol.	$	1,935.00	FY27
Control journal	1935	1935	Mylar, 1 Vol.	$	1,515.00	FY27
Control journal	1937	1937	sew	$	1,515.00	FY27
Control journal	1935	1935	sew	$	1,515.00	FY27
Control journal	1936	1936	sew	$	1,515.00	FY27
Control journal	1936	1936	sew	$	1,515.00	FY27
Invoice	1884	1884	sew	$	1,315.00	FY27
Invoice	1884	1884	sew	$	1,575.00	FY27
Invoice	1888	1888	sew	$	1,265.00	FY27
Invoice	1889	1889	sew	$	1,265.00	FY27
Invoice	1886	1886	sew	$	1,765.00	FY27
Invoice	1886	1886	sew	$	1,215.00	FY27
Invoice	1887	1887	sew	$	1,265.00	FY27
Invoice	1889	1889	Mylar, 1 vol.	$	1,695.00	FY27
Invoice	1888	1888	Mylar, 2 Vols.	$	2,190.00	FY27
Invoice	1889	1889	Mylar, 1 vol.	$	1,045.00	FY27
Payments	1908	1908	Mylar, 1 Vol. (priced to do w/ 1132, 1133 and 1134)	$	1,165.00	FY27
Payments	1907	1907	Mylar, 1 Vol. (priced to do with 1132, 1133 and 1134)	$	-	FY27
Invoice	1908	1908	Mylar, 1 Vol. (priced to do w/ 1132, 1133, and 1134)	$	-	FY27
Invoice	1900	1900	Mylar, 2 Vols. (Priced to do with 1136)	$	2,272.00	FY27
Invoice	1906	1906	Mylar, 2 Vols. (Priced to do with 1135)	$	-	FY27
Invoice blotter of Board of Assessors	1902	1902	sew	$	2,765.00	FY27
Additional taxes	1919	1919	Mylar, 2 vols.	$	4,130.00	FY27
Additional taxes & Cond Sales	1893	1927	Mylar, 2 vols	$	4,130.00	FY27
Receipts and expenditures	1890	1899	sew	$	965.00	FY27
Receipts and expenditures	1895	1900	sew	$	965.00	FY27
Receipts and expenditures	1899	1900	sew	$	965.00	FY27
Receipts and expenditures	1900	1901	Mylar, 1 vol.	$	965.00	FY27
Receipts and expenditures	1901	1901	sew	$	1,015.00	FY27
Receipts and expenditures	1901	1901	Mylar, 1 vol. (Combine 1185 and 1186 together)	$	1,585.00	FY27
Receipts and expenditures	1902	1902	Mylar, 1 vol. (Combine 1185 and 1186 together)	$	-	FY27
Receipts and expenditures	1904	1904	Mylar, 1 Vol.	$	1,105.00	FY27
Receipts and expenditures	1905	1905	sew	$	965.00	FY27
Receipts and expenditures	1906	1906	Mylar, 1 vol.	$	1,315.00	FY27
Receipts and expenditures	1908	1918	Mylar, 1 vol.	$	965.00	FY27
Receipts and expenditures	1920	1929	sew	$	965.00	FY28
Receipts and expenditures	1930	1939	binder	$	2,877.00	FY28
Receipts and expenditures	1901	1901	sew	$	1,857.00	FY28
Receipts and expenditures	1930	1939	binder	$	2,140.00	FY28
Valuation of Real and Personal Property	1946	1946	sew	$	3,915.00	FY28
Valuation of Real and Personal Property	1947	1947	sew	$	3,915.00	FY28
Valuation of Real and Personal Property	1948	1948	sew	$	3,915.00	FY28
Valuation of Real and Personal Property	1949	1949	sew	$	3,915.00	FY28
Valuation of real and personal property	1950	1950	sew	$	3,915.00	FY28
Valuations	1948	1948	sew	$	3,915.00	FY28
Valuations	1949	1949	sew	$	3,915.00	FY28
Valuations	1950	1950	sew	$	3,915.00	FY28
Valuations	1951	1951	sew	$	3,915.00	FY28
Valuations	1952	1952	sew	$	3,915.00	FY28
Tax Exemptions for Manufacturing Companies	1901	1917	sew	$	915.00	FY28
Receipts	1914	1914	sew	$	2,015.00	FY28
Abatements granted	1908	1912	Mylar 1 Vol (to be done with 964 and 965) Priced as one	$	1,635.00	FY29
Abatements granted	1906	1906	Mylar 1 Vol (to be done with 964 and 965) Priced as one	$	1,635.00	FY29
Abatements granted	1903	1904	Mylar 1 Vol (to be done with 964 and 965) Priced as one	$	-	FY29

Abatements granted	1907	1907	Mylar 1 Vol (to be done as 966,967 and 968) Priced as one	$ 1,815.00	FY29
Abatements granted	1905	1907	Mylar 1 Vol (to be done as 966,967 and 968) Priced as one	$ -	FY29
Abatements granted	1908	1908	Mylar 1 Vol (to be done as 966,967 and 968) Priced as one	$ -	FY29
Abatements granted	1909	1909	Mylar 1 Vol (to be done as 969, 970, and 971) Priced as one	$ 1,815.00	FY29
Abatements granted	1910	1910	Mylar 1 Vol (to be done as 969, 970, and 971) Priced as one	$ -	FY29
Abatements granted	1911	1911	Mylar 1 Vol (to be done as 969, 970, and 971) Priced as one	$ -	FY29
Abatements granted	1912	1912	Mylar 1 Vol (to be done as 972, 973 and 974) Priced as one	$ 1,815.00	FY29
Abatements granted	1913	1913	Mylar 1 Vol (to be done as 972, 973 and 974) Priced as one	$ -	FY29
Abatements granted	1914	1914	Mylar 1 Vol (to be done as 972, 973 and 974) Priced as one	$ -	FY29
Abatements granted	1915	1915	Mylar 1 Vol (to be done as 975, 976, and 977) Priced as one	$ 1,815.00	FY29
Abatements granted	1917	1917	Mylar 1 Vol (to be done as 975, 976, and 977) Priced as one	$ -	FY29
Abatements granted	1918	1918	Mylar 1 Vol (to be done as 975, 976, and 977) Priced as one	$ -	FY29
Abatements granted	1919	1920	Mylar 1 Vol (to be done as 978, 978, and 979) Priced as one	$ 1,815.00	FY29
Abatements granted	1916	1920	Mylar 1 Vol (to be done as 978, 978, and 979) Priced as one	$ -	FY29
Abatements granted	1922	1922	Mylar 1 Vol (to be done as 979 and 980) Priced as one	$ -	FY29
Abatements granted	1923	1923	Mylar 1 Vol (to be done as 981 and 982) Priced as one	$ 1,215.00	FY29
Abatements granted	1924	1924	Mylar 1 Vol (to be done as 981 and 982) Priced as one	$ -	FY29
Valuations	1953	1953	sew	$ 3,915.00	FY29
Valuations	1954	1954	sew	$ 3,915.00	FY29
Valuations	1955	1955	sew	$ 3,915.00	FY29
Valuations	1956	1956	sew	$ 3,915.00	FY29
Valuations	1957	1957	sew	$ 3,915.00	FY29
Valuations	1958	1958	sew	$ 3,915.00	FY29
Valuations	1959	1959	sew	$ 3,915.00	FY29
Valuations	1960	1960	sew	$ 3,915.00	FY29
Valuations	1961	1961	sew	$ 3,915.00	FY29
Poll Tax	1914	1914	sew	$ 915.00	FY30
Poll Tax	1914	1914	sew	$ 915.00	FY30
Poll Tax	1914	1914	sew	$ 915.00	FY30
Poll Tax	1915	1915	sew	$ 915.00	FY30
Poll Tax	1915	1915	sew	$ 915.00	FY30
Poll Tax	1915	1915	sew	$ 915.00	FY30
Poll Tax	1916	1916	sew	$ 915.00	FY30
Poll Tax	1916	1916	sew	$ 915.00	FY30
Poll Tax	1916	1916	sew	$ 915.00	FY30
Poll Tax	1917	1917	sew	$ 915.00	FY30

Poll Tax	1917	1917	sew	$	915.00	FY30
Poll Tax	1917	1917	sew	$	915.00	FY30
Poll Tax	1918	1918	sew	$	915.00	FY30
Poll Tax	1918	1918	sew	$	915.00	FY30
Poll Tax	1918	1918	sew	$	915.00	FY30
Poll Tax	1919	1919	sew	$	915.00	FY30
Poll Tax	1919	1919	sew	$	915.00	FY30
Poll Tax	1919	1919	sew	$	915.00	FY30
Poll Tax	1920	1920	sew	$	915.00	FY30
Poll Tax	1920	1920	sew	$	915.00	FY30
Poll Tax	1921	1921	sew	$	1,575.00	FY30
Poll Tax	1921	1921	sew	$	1,575.00	FY30
Poll Tax	1922	1922	sew	$	1,575.00	FY30
Poll Tax	1922	1922	sew	$	1,575.00	FY30
Poll Tax	1923	1923	sew	$	1,575.00	FY30
Poll Tax	1923	1923	sew	$	1,575.00	FY30
Poll Tax	1924	1924	sew	$	1,575.00	FY30
Poll Tax	1924	1924	sew	$	1,575.00	FY30
Poll Tax	1925	1925	sew	$	1,575.00	FY30
Poll Tax	1925	1925	sew	$	1,575.00	FY30
Poll Tax	1926	1926	sew	$	1,575.00	FY30
Poll Tax	1926	1926	sew	$	1,575.00	FY30
Poll Tax	1927	1927	sew	$	1,575.00	FY30
Poll Tax	1927	1927	sew	$	1,575.00	FY30
Poll Tax	1928	1928	sew	$	1,575.00	FY30
Poll Tax	1928	1928	sew	$	1,575.00	FY30
Poll Tax	1929	1929	sew	$	1,575.00	FY30
Valuations	1961	1961	sew	$	3,915.00	FY30
Poll Tax	1929	1929	sew	$	1,575.00	FY31
Poll Tax	1930	1930	sew	$	1,575.00	FY31
Poll Tax	1930	1930	sew	$	1,575.00	FY31
Poll Tax	1931	1931	sew	$	1,575.00	FY31
Poll Tax	1931	1931	sew	$	1,575.00	FY31
Poll Tax	1932	1932	sew	$	1,575.00	FY31
Poll Tax	1932	1932	sew	$	1,575.00	FY31
Poll Tax	1933	1933	sew	$	1,575.00	FY31
Poll Tax	1933	1933	sew	$	1,575.00	FY31
Poll Tax	1934	1934	sew	$	1,575.00	FY31
Poll Tax	1934	1934	sew	$	1,575.00	FY31
Poll Tax	1935	1935	sew	$	1,575.00	FY31
Poll Tax	1935	1935	sew	$	1,575.00	FY31
Poll Tax	1936	1936	sew	$	1,575.00	FY31
Poll Tax	1936	1936	sew	$	1,575.00	FY31
Poll Tax	1937	1937	sew	$	1,586.00	FY31
Poll Tax	1937	1937	sew	$	1,575.00	FY31
Poll Tax	1938	1938	sew	$	3,915.00	FY31
Poll Tax	1939	1939	sew	$	3,915.00	FY31
Poll Tax	1940	1940	sew	$	3,915.00	FY31
Poll Tax	1941	1941	sew	$	3,915.00	FY31
Poll Tax	1942	1942	sew	$	3,915.00	FY31
Voucher Register	1907	1908	sew	$	2,015.00	FY32
Poll Tax	1943	1943	sew	$	3,915.00	FY32
Poll Tax	1944	1944	sew	$	3,915.00	FY32
Poll Tax	1945	1945	sew	$	3,915.00	FY32
Poll Tax	1945	1945	sew	$	3,915.00	FY32
Poll Tax	1946	1946	sew	$	3,915.00	FY32
Poll Tax	1946	1946	sew	$	3,915.00	FY32
Poll Tax	1947	1947	sew	$	3,915.00	FY32
Poll Tax	1947	1947	sew	$	3,915.00	FY32
Poll Tax	1948	1948	sew	$	3,915.00	FY32
Poll Tax	1948	1948	sew	$	3,915.00	FY32
Poll Tax	1949	1949	sew	$	3,915.00	FY32
Poll Tax	1949	1949	sew	$	3,915.00	FY32
Poll Tax	1950	1950	sew	$	3,915.00	FY33
Poll Tax	1950	1950	sew	$	3,915.00	FY33
Poll Tax	1951	1951	sew	$	3,915.00	FY33
Poll Tax	1951	1951	sew	$	3,915.00	FY33
Poll Tax	1952	1952	sew	$	3,915.00	FY33

Poll Tax	1953	1953	sew	$	3,915.00	FY33
Poll Tax	1954	1954	sew	$	3,915.00	FY33
Poll Tax	1955	1955	sew	$	3,915.00	FY33
Poll Tax	1956	1956	sew	$	3,915.00	FY33
Poll Tax	1957	1957	sew	$	3,915.00	FY33
Poll Tax	1958	1958	sew	$	3,915.00	FY33
Poll Tax	1959	1959	sew	$	3,915.00	FY33
Poll Tax	1960	1960	sew	$	3,915.00	FY34
Poll Tax	1961	1961	sew	$	3,915.00	FY34
Poll Tax	1962	1962	sew	$	3,915.00	FY34
Poll Tax	1963	1963	sew	$	3,915.00	FY34
Poll Tax	1964	1964	sew	$	3,915.00	FY34
Poll Tax	1965	1965	sew	$	3,915.00	FY34
Poll Tax	1966	1966	sew	$	3,915.00	FY34
Poll Tax	1967	1967	sew	$	3,915.00	FY34
Poll Tax	1968	1968	sew	$	3,915.00	FY34
Poll Tax	1969	1969	sew	$	3,915.00	FY34
Poll Tax	1970	1970	sew	$	3,915.00	FY34
Poll Tax	1970	1970	sew	$	3,915.00	FY34
Water main construction proposal	1942	1942	Mylar, 1 vol.	$	965.00	FY35
Voucher Register	1923	1924	sew	$	1,539.00	FY35
Voucher Register	1923	1925	sew	$	1,539.00	FY35
Voucher Register	1925	1926	sew	$	1,539.00	FY35
Voucher Register	1923	1928	sew	$	1,539.00	FY35
Voucher Register	1925	1926	sew	$	1,539.00	FY35
Voucher Register	1926	1928	sew	$	1,539.00	FY35
Voucher Register	1927	1930	sew	$	1,539.00	FY35
Voucher Register	1928	1930	sew	$	1,539.00	FY35
Voucher Register	1930	1931	sew	$	1,539.00	FY35
Voucher Register	1930	1932	sew	$	1,539.00	FY35
Voucher Register	1931	1932	sew	$	1,539.00	FY35
Voucher Register	1932	1933	sew	$	1,539.00	FY35
Voucher Register	1934	1935	sew	$	1,539.00	FY35
Voucher Register	1933	1935	sew	$	1,539.00	FY35
Voucher Register	1935	1936	sew	$	1,539.00	FY35
Voucher Register	1935	1936	sew	$	1,539.00	FY35
Voucher Register	1932	1933	sew	$	1,539.00	FY35
Voucher Register	1936	1937	sew	$	1,539.00	FY35
Voucher Register	1937	1938	sew	$	1,539.00	FY35
Voucher Register	1937	1939	sew	$	1,539.00	FY35
Voucher Register	1938	1939	sew	$	1,539.00	FY35
Voucher Register	1938	1939	sew	$	1,539.00	FY35
Voucher Register	1939	1941	sew	$	1,539.00	FY35
Voucher Register	1939	1941	sew	$	1,539.00	FY35
Voucher Register	1941	1942	sew	$	1,539.00	FY35
Voucher Register	1941	1943	sew	$	1,539.00	FY36
Voucher Register	1942	1944	sew	$	1,539.00	FY36
Voucher Register	1943	1945	sew	$	1,539.00	FY36
Voucher Register	1944	1946	sew	$	1,539.00	FY36
Voucher Register	1946	1947	sew	$	1,539.00	FY36
Voucher Register	1946	1947	sew	$	1,539.00	FY36
Voucher Register	1948	1949	sew	$	1,539.00	FY36
Voucher Register	1949	1950	sew	$	1,539.00	FY36
Voucher Register	1952	1953	sew	$	1,539.00	FY36
Voucher register	1956	1956	sew	$	1,539.00	FY36
Voucher Register	1953	1954	sew	$	1,539.00	FY36
Voucher Register	1954	1955	sew	$	1,539.00	FY36
Voucher Register	1955	1957	sew	$	1,539.00	FY36
Tax Book 1932	1932	1932	sew	$	2,960.00	FY36
Tax Book 1932	1932	1932	sew	$	2,960.00	FY36
Tax Book 1933	1933	1933	sew	$	2,905.00	FY36
Tax Book 1933	1933	1933	sew	$	3,025.00	FY36
Tax Book 1934	1934	1934	sew	$	2,905.00	FY36
Tax Book 1934	1934	1934	sew	$	2,905.00	FY36
Tax Book 1934	1934	1934	sew	$	2,905.00	FY36
Tax Book 1935	1935	1935	sew	$	3,025.00	FY36

Tax Book 1935	1935	1935	sew	$	3,025.00	FY36
Amount of tax paid on various items	1936	1936	sew	$	3,025.00	FY36
Tax Book 1925	1925	1925	sew	$	1,830.00	FY37
Tax Book 1926	1926	1926	sew	$	1,830.00	FY37
Tax Book 1926	1926	1926	sew	$	1,830.00	FY37
Tax Book 1926	1926	1926	sew	$	1,830.00	FY37
Tax Book 1927	1927	1927	sew	$	2,065.00	FY37
Tax Book 1927	1927	1927	sew	$	2,065.00	FY37
Tax Book 1927	1927	1927	sew	$	2,065.00	FY37
Tax Book 1928	1928	1928	sew	$	2,785.00	FY37
Tax Book 1928	1928	1928	sew	$	2,785.00	FY37
Tax Book 1928	1928	1928	sew	$	2,785.00	FY37
Tax Book 1929	1929	1929	sew	$	3,025.00	FY37
Tax Book 1929	1929	1929	sew	$	3,025.00	FY37
Tax Book 1929	1929	1929	sew	$	3,025.00	FY37
Tax Book 1930	1930	1930	sew	$	2,905.00	FY37
Tax Book 1930	1930	1930	sew	$	2,905.00	FY37
Tax Book 1931	1931	1931	sew	$	2,905.00	FY37
Tax Book 1931	1931	1931	sew	$	2,905.00	FY37
Tax Book 1931	1931	1931	sew	$	2,905.00	FY37
Tax Book 1932	1932	1932	sew	$	2,905.00	FY37
Contract proposals, well construction	1942	1942	sew	$	3,025.00	FY38
Tax Collectors Record 16	1923	1923	sew	$	3,385.00	FY38
Tax Collectors Record 17	1924	1924	sew	$	3,205.00	FY38
Tax Collectors Record 18	1925	1925	sew	$	3,385.00	FY38
Tax Collectors Record 19	1926	1926	sew	$	3,385.00	FY38
Tax Collector's Record 26	1933	1933	sew	$	2,040.00	FY38
Tax Collector's Record 28	1935	1935	sew	$	2,190.00	FY38
Tax Collector's Record 29	1936	1936	sew	$	2,190.00	FY38
Tax Collector's Record 30	1937	1937	sew	$	2,190.00	FY38
Tax Collector's Record 32	1939	1939	sew	$	2,530.00	FY38
Tax Collector's Record 34	1941	1941	sew	$	2,660.00	FY38
Tax Book 1911	1911	1911	sew	$	2,725.00	FY38
Tax Book 1936	1936	1936	sew	$	3,025.00	FY38
Tax Book 1936	1936	1936	sew	$	3,025.00	FY38
Tax Book 1937	1937	1937	sew	$	3,025.00	FY38
Tax Book 1937	1937	1937	sew	$	3,025.00	FY38
Cash receipts	1927	1935	sew	$	3,025.00	FY38
Tax Book 1911	1911	1911	sew	$	2,725.00	FY39
Tax Book 1912	1912	1912	sew	$	2,725.00	FY39
Tax Book 1912	1912	1912	sew	$	2,725.00	FY39
Tax Book 1912	1912	1912	sew	$	2,725.00	FY39
Tax Book 1913	1913	1913	sew	$	2,660.00	FY39
Tax Book 1913	1913	1913	sew	$	2,660.00	FY39
Tax Book 1914	1914	1914	sew	$	1,760.00	FY39
Tax Book 1915	1915	1915	sew	$	1,760.00	FY39
Tax Book 1916	1916	1916	sew	$	1,830.00	FY39
Tax Book 1916	1916	1916	sew	$	1,765.00	FY39
Tax Book 1918	1918	1918	sew	$	1,830.00	FY39
Tax Book 1918	1918	1918	sew	$	1,830.00	FY39
Tax Book 1918	1918	1918	sew	$	1,830.00	FY39
Tax Book 1919	1919	1919	sew	$	1,830.00	FY39
Tax Book 1921	1921	1921	sew	$	1,830.00	FY39
Tax Book 1921	1921	1921	sew	$	1,830.00	FY39
Tax Book 1922	1922	1922	sew	$	1,830.00	FY39
Tax Book 1922	1922	1922	sew	$	1,830.00	FY39
Tax Book 1923	1923	1923	sew	$	1,830.00	FY39
Tax Book 1923	1923	1923	sew	$	1,830.00	FY39
Tax Book 1924	1924	1924	sew	$	1,830.00	FY39
Tax Book 1924	1924	1924	sew	$	1,830.00	FY39
Tax Book 1924	1924	1924	sew	$	1,830.00	FY39
Tax Book 1925	1925	1925	sew	$	1,830.00	FY39
Final tax list			sew	$	1,830.00	FY40
Invoice	1892	1892	Mylar	$	1,983.00	FY40

Invoice	1883	1883	sew	$ 1,470.00	FY40
Invoice	1882	1882	sew	$ 1,465.00	FY40
Invoice	1876	1876	sew	$ 1,470.00	FY40
Invoice	1877	1877	sew	$ 1,470.00	FY40
Invoice	1894	1894	Mylar	$ 3,397.00	FY40
Invoice	1892	1892	Mylar	$ 2,936.00	FY40
Invoice	1898	1898	Mylar	$ 3,228.00	FY40
Invoice	1891	1891	Mylar	$ 2,726.00	FY40
Invoice	1891	1891	Mylar	$ 2,077.00	FY40
Invoice	1893	1893	Mylar	$ 1,884.00	FY40
Invoice	1897	1897	Mylar	$ 2,026.00	FY40
Invoice	1896	1896	Mylar	$ 2,866.00	FY40
Invoice	1899	1899	Mylar	$ 2,142.00	FY40
Invoice	1897	1897	Mylar	$ 2,680.00	FY40
Invoice	1890	1890	Mylar	$ 2,429.00	FY40
Tax Book 1925	1925	1925	sew	$ 1,830.00	FY40
Invoice	1899	1899	Mylar	$ 3,006.00	FY40
Payroll and other expenditures	1906	1906			FY41+
Police Records. [Docket of Police Court]. September 1, 1864-November 15, 1873. UV	1864	1873			FY41+
Board of Assessors' minutes of meetings	1904	1904			FY41+
Blank book of forms for applicants for aid	1908	1908			FY41+
Overseers. 1865-1868. Alphabetized. UV	1865	1868			FY41+
Supplies to poor by Ward	1913	1913			FY41+
Supplies to poor by Ward	1913	1913			FY41+
Supplies to poor by Ward	1908	1908			FY41+
Supplies to poor by Ward	1913	1913			FY41+
Appropriations	1935	1936			FY41+
City-owned shares in railroads and banks	1933	1933			FY41+
Cemetery registrar's memoranda	1895	1897			FY41+
Street sprinkling	1913	1913			FY41+
Street sprinkling	1913	1913			FY41+
Street sprinkling	1912	1912			FY41+
Street sprinkling	1912	1912			FY41+
Street sprinkling	1911	1911			FY41+
Street sprinkling	1910	1910			FY41+
Street sprinkling	1914	1914			FY41+
Street sprinkling	1915	1915			FY41+
Street sprinkling	1916	1917			FY41+
Records. Liber 10. Mortgages of Personal Property. C. 1891-1912. Vol. 10. Index. 630pp. UV	1891	1912			FY41+
Motor vehicle registration, various years	1930	1939			FY41+
Automobile permit receipts	1946	1946			FY41+
Automobile permit receipts	1929	1931			FY41+
Automobile permit receipts	1942	1943			FY41+
Automobile permit receipts	1926	1928			FY41+
Automobile permit receipts	1936	1939			FY41+
Automobile permit receipts	1936	1939			FY41+
[Sewer Entries]. January 1, 1870-November 22, 1893. 46pp. BV	1870	1893			FY41+
Receipts and expenditures	1907	1907			FY41+
Portsmouth Water Works' Cash Book. February 1, 1899-November 14, 1910. 134pp. PCY	1899	1910			FY41+
Checkbook stubs and blank checks	1911	1911			FY41+
Checkbook stubs and blank checks	1911	1911			FY41+
Checkbook stubs and blank checks	1911	1911			FY41+
Correspondence concerning water works projects for defense	1942	1942			FY41+
Real estate tax exemptions for veterans	1927	1927			FY41+
Real estate tax exemptions for veterans	1924	1924			FY41+
Duplicate check deposit slips for various City accounts	1937	1945			FY41+

Bankbook	1957	1957			FY41+
Bankbook	1923	1923			FY41+
Checkbook stubs and blank checks	1934	1934			FY41+
Checkbook stubs and blank checks	1934	1934			FY41+
Bankbook	1935	1935			FY41+
Bankbook	1935	1935			FY41+
Contract for bitulithic pavement on drawbridge	1914	1914			FY41+
Receipts and expenditures	1935	1942			FY41+
Receipts and expenditures	1942	1944			FY41+
Receipts and expenditures	1928	1933			FY41+
Rent collection	1934	1934			FY41+
					FY41+
Lawsuit: Calvin Page vs. City	1934	1934			FY41+
Record of Josiah Webster's Estate	1835	1839			FY41+
Duplicate letters	1879	1882			FY41+
Blank printed forms for real estate tax sales	1900	1900			FY41+
Tax sale redemptions	1930	1939			FY41+
Tax sales	1929	1929			FY41+
Junk licenses	1901	1907			FY41+
Licenses	1908	1910			FY41+
Cash receipts	1925	1926			FY41+
Receipts and expenditures	1942	1948			FY41+
Receipts and expenditures	1920	1929			FY41+
Receipts and expenditures	1924	1933			FY41+
Checkbook stubs and blank checks	1922	1922			FY41+
Receipts and expenditures	1917	1922			FY41+
Cash receipts	1938	1938			FY41+
Sales journal	1939	1939			FY41+
Blank checkbook	1875	1900			FY41+
Receipt book	1941	1941			FY41+
Receipt book	1941	1941			FY41+
Receipt book	1942	1942			FY41+
Receipt book	1941	1941			FY41+
Receipt book	1942	1942			FY41+
Record of dog licenses	1900	1900			FY41+
Dog Licenses. May 4, 1891-May 22, 1893. UV	1891	1893			FY41+
Record of Dog Licenses. Portsmouth, N.H. April 6, 1899-September 7, 1901. 52pp. Indexed to owner. UV	1899	1901			FY41+
Record of dog licenses	1911	1911			FY41+
Record of dog licenses	1911	1911			FY41+
Record of dog licenses	1910	1910			FY41+
Record of dog licenses	1910	1911			FY41+
Record of dog licenses	1911	1912			FY41+
Record of dog licenses	1908	1908			FY41+
Record of dog licenses	1910	1910			FY41+
Record of dog licenses	1909	1909			FY41+
Record of dog licenses	1907	1908			FY41+
Record of dog licenses	1907	1907			FY41+
Record of dog licenses	1910	1910			FY41+
Record of dog licenses	1907	1907			FY41+
Record of dog licenses	1909	1910			FY41+
Record of dog licenses	1909	1909			FY41+
Record of dog licenses	1908	1908			FY41+
					FY41+
Duplicate deposit slips	1942	1944			FY41+
Teachers' payroll	1946	1946			FY41+
Street lamps	1853	1918			FY41+
Copies of letters	1865	1866			FY41+
					FY41+
Inventories	1901	1901			FY41+
Inventory	1893	1893			FY41+

Inventories	1881	1881			FY41+
Inventories	1898	1898			FY41+
Inventories	1897	1897			FY41+
Inventories	1896	1896			FY41+
Inventory recapitulation	1894	1894			FY41+
Inventories	1881				FY41+
Conditional sales	1912	1920			FY41+
Conditional sales	1920	1923			FY41+
Taxes Collected	1851	1860			FY41+
Conditional sales	1923	1924			FY41+
Taxes determined	1853	1854			FY41+
Conditional sales	1924	1925			FY41+
Taxes Collected	1851	1855			FY41+
Conditional sales	1925	1926			FY41+
Conditional sales	1926	1926			FY41+
Taxes collected	1868	1869			FY41+
Conditional sales	1926	1927			FY41+
Bills Approved	1862	1873			FY41+
Payroll and temporary loan	1902	1903			FY41+
Blank checks and filled-in check stubs	1875	1900			FY41+
Voucher stubs	1906	1906			FY41+
Voucher stubs	1906	1906			FY41+
Tax Sales	1861	1865			FY41+
Property owner list	1918	1918			FY41+
					FY41+
Checks, check stubs, blank checkbook	1879	1879			FY41+
Meeting minutes of the Board of Sinking Funds	1902	1925			FY41+
Receipts and expenditures	1856	1878			FY41+
Receipts and expenditures	1895	1906			FY41+
Receipts and expenditures	1900	1903			FY41+
Receipts and expenditures	1902	1902			FY41+
Receipts and expenditures	1904	1905			FY41+
Receipts and expenditures	1904	1904			FY41+
Receipts and expenditures	1904	1906			FY41+
Receipts and expenditures	1905	1905			FY41+
Expenditures	1925	1926			FY41+
Receipts and expenditures	1922	1922			FY41+
Appropriations	1930	1939			FY41+
Cash receipts	1912	1923			FY41+
Appropriations	1940	1949			FY41+
Bond issue disbursements	1934	1934			FY41+
Receipts	1931	1934			FY41+
Disbursements	1923	1927			FY41+
Cash receipts	1937	1937			FY41+
Blank Tax Collector inventory forms	1875	1900			FY41+
Contract proposals: sewer construction	1942	1942			FY41+
Contract proposals, mains and ground supply	1942	1942			FY41+
Contract proposals, waterworks improvements: mains to Odiorne Point	1942	1942			FY41+
Contract proposals, sewer construction	1943	1943			FY41+
Returned letters requesting poll tax payments	1912	1975			FY41+
Receipts and expenditures	1880	1889			FY41+
Receipts and expenditures	1880	1889			FY41+
Temporary loans	1900	1900			FY41+
Daily cash slips	1945	1945			FY41+
Tax receipts	1931	1931			FY41+
Receipts and expenditures	1950	1959			FY41+
Late and abated taxpayers	1939	1939			FY41+
Portsmouth public school teachers subject to poll tax	1940	1941			FY41+
Unpaid tax demands	1940	1940			FY41+

Boarded children, Works Projects Administration	1938	1938			FY41+
Cemetery improvement payroll, Works Projects Administration	1935	1936			FY41+
Navy Yard employment, Works Projects Administration	1936	1936			FY41+
Old age assistance cases, Works Projects Administration	1935	1936			FY41+
Sewing payroll, Works Projects Administration	1939	1939			FY41+
Street projects and payroll, Works Projects Administration	1935	1936			FY41+
Receipts and expenditures	1922	1922			FY41+
Sales	1937	1937			FY41+
Sales	1940	1940			FY41+
Vouchers and cancelled checks	1918	1939			FY41+
Accounts	1910	1916			FY41+
Accounts	1934	1936			FY41+
Payments	1904	1904			FY41+
Accounts	1911	1918			FY41+
Receipts and expenditures	1910	1910			FY41+
Approved bills	1925	1928			FY41+
Bills paid	1926	1926			FY41+
Payroll cards	1926	1926			FY41+
Check carbons	1923	1937			FY41+
Check carbons (9)	1931	1931			FY41+
Birth register, Ward 4	1883	1883			FY41+
Birth register, Ward 1	1883	1883			FY41+
Voluntary statements of personal and real property	1929	1929			FY41+
Meter readings	1934	1935			FY41+
Meter readings by street	1934	1936			FY41+
Poll tax receipts	1929	1929			FY41+
Sales	1944	1944			FY41+
Sales	1945	1946			FY41+
Water Bond Account, No. 2, cancelled checkbook	1942	1942			FY41+
Water Bond Account, check stubs	1942	1942			FY41+
Voucher register	1957	1958			FY41+
Voucher register	1958	1959			FY41+
Voucher Register	1956	1956			FY41+
Voucher register	1953	1956			FY41+
Real estate sold to pay 1853 taxes (1 page)	1854	1854			FY41+
Deposit slips	1926	1926			FY41+
Bankbook	1920	1920			FY41+
Index to unidentified ledger					FY41+
Checkbook with cancelled checks	1902	1902			FY41+
Certificate of purchase at tax sale	1955	1959			FY41+
Redemption certificate for property sold for delinquent taxes	1949	1962			FY41+
Board of Registrars time and wage book	1956	1956			FY41+
Board of Registrars time and wage book	1956	1957			FY41+
Board of Registrars time and wage book	1957	1958			FY41+
Board of Registrars time and wage book	1958	1958			FY41+
Board of Registrars time and wage book	1960	1960			FY41+
Board of Registrars time and wage book	1962	1962			FY41+
Board of Registrars time and wage book	1962	1963			FY41+
Board of Registrars time and wage book	1964	1964			FY41+
Board of Registrars time and wage book	1964	1964			FY41+
Board of Registrars time and wage book	1966	1967			FY41+
Board of Registrars time and wage book					FY41+
Conditional sales	1949	1950			FY41+
Conditional sales	1950	1950			FY41+
Conditional Sales	1950	1950			FY41+

Conditional sales	1951	1951			FY41+
Conditional sales	1951	1951			FY41+
Conditional sales	1951	1952			FY41+
Conditional sales	1952	1952			FY41+
Conditional sales	1952	1952			FY41+
Conditional sales	1952	1953			FY41+
Conditional sales	1953	1953			FY41+
Mortgages (conditional sales)	1956	1956			FY41+
Conditional sales	1953	1953			FY41+
Mortgages (conditional sales)	1956	1956			FY41+
Conditional sales	1953	1954			FY41+
Mortgages (conditional sales)	1956	1956			FY41+
Conditional sales	1954	1954			FY41+
Mortgages (conditional sales)	1956	1956			FY41+
Conditional sales	1954	1954			FY41+
Mortgages (conditional sales)	1956	1956			FY41+
Conditional sales	1954	1955			FY41+
Mortgages (conditional sales)	1956	1957			FY41+
Conditional sales	1955	1955			FY41+
Conditional sales	1955	1955			FY41+
Mortgages (conditional sales)	1957	1957			FY41+
Conditional sales	1955	1956			FY41+
Mortgages (conditional sales)	1957	1957			FY41+
Conditional sales	1955	1955			FY41+
Mortgages (conditional sales)	1957	1957			FY41+
Conditional sales	1956	1956			FY41+
Mortgages (conditional sales)	1957	1957			FY41+
Conditional sales	1956	1956			FY41+
Conditional sales	1956	1956			FY41+
Conditional sales	1956	1956			FY41+
Conditional sales	1956	1956			FY41+
Conditional sales	1957	1957			FY41+
Conditional sales	1957	1957			FY41+
Conditional sales	1957	1957			FY41+
Conditional sales	1957	1957			FY41+
Conditional sales	1957	1958			FY41+
Conditional sales	1958	1958			FY41+
Conditional sales	1958	1958			FY41+
Conditional sales	1958	1958			FY41+
Conditional sales	1960	1960			FY41+
Conditional sales	1960	1960			FY41+
Conditional sales	1959	1959			FY41+
Conditional sales	1959	1959			FY41+
Conditional sales	1959	1960			FY41+
Conditional Sales	1961	1961			FY41+
Conditional sales					FY41+
Conditional sales					FY41+
1970 Budget Exhibits - City of Portsmouth, New Hamsphire	1970	1970			FY41+
A Better New Hampshire	1968	1968			FY41+
A Better New Hampshire	1968	1968			FY41+
A Look at the Portsmouth Public Library. A Survey by the N.H. state Library. January 1967	1967	1967			FY41+
A Message from the Mayor - 1974	1974	1974			FY41+
A Report to the People - A summary of Municipal Activities for the Fiscal Year Ending December 31, 1952	1952	1952			FY41+
A Report to the People - A summary of Municipal Activities for the Fiscal Year Ending December 31, 1953	1953	1953			FY41+
A Summary of Municipal Activities for FYE 12/31/1952	1952	1952			FY41+

A Summary of Municipal Activities for the FYE 12/31/1953	1953	1953			FY41+
Abstract of the 12th Census 1900	1900	1900			FY41+
Activities of the Assessing Department 1961	1961	1961			FY41+
Activities of the Various City Departments 1962	1962	1962			FY41+
Activities of the Various City Departments 1962	1962	1962			FY41+
Annual Appropriations Bill of the city of Portsmouth for Fiscal Year Ending 12/31/69	1969	1969			FY41+
Annual Audit - City of Portsmouth Trust Funds - YE 12/31/1975	1975	1975			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1954	1954	1954			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1956	1956	1956			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1963	1963	1963			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1964	1964	1964			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1965	1965	1965			FY41+
Annual Audit by State Division of Municipal Accountants YE 12/31/1966	1966	1966			FY41+
Annual Audit FYE 6/30/1973	1972	1973			FY41+
Annual Audit YE 6/30/1974	1974	1974			FY41+
Annual Audit YE 6/30/1975	1974	1975			FY41+
Annual City receipts and expenditures and reports of the various departments	1883	1883			FY41+
Annual City receipts and expenditures and reports of the various departments	1885	1885			FY41+
Annual City receipts and expenditures and reports of the various departments	1886	1886			FY41+
Annual City receipts and expenditures and reports of the various departments	1887	1887			FY41+
Annual City receipts and expenditures and reports of the various departments	1888	1888			FY41+
Annual City receipts and expenditures and reports of the various departments	1889	1889			FY41+
Annual City receipts and expenditures and reports of the various departments	1894	1894			FY41+
Annual City receipts and expenditures and reports of the various departments	1895	1895			FY41+
Annual City receipts and expenditures and reports of the various departments	1896	1896			FY41+
Annual City receipts and expenditures and reports of the various departments	1898	1898			FY41+
Annual City receipts and expenditures and reports of the various departments	1899	1899			FY41+
Annual City receipts and expenditures and reports of the various departments	1900	1900			FY41+
Annual City receipts and expenditures and reports of the various departments	1901	1901			FY41+
Annual City receipts and expenditures and reports of the various departments	1903	1903			FY41+
Annual Report	1909	1909			FY41+
Annual Report	1910	1910			FY41+
Annual Report	1911	1911			FY41+
Annual Report	1912	1912			FY41+
Annual Report	1913	1913			FY41+
Annual Report	1914	1914			FY41+
Annual Report	1916	1916			FY41+
Annual Report	1917	1917			FY41+
Annual Report	1919	1919			FY41+

Annual Report	1922	1922			FY41+
Annual Report	1923	1923			FY41+
Annual Report	1927	1927			FY41+
Annual Report	1929	1929			FY41+
Annual Report	1959	1959			FY41+
Annual Report	1973	1973			FY41+
Annual Report	1974	1974			FY41+
Annual Report	1975	1976			FY41+
Annual Report	1976	1977			FY41+
Annual Report	1977	1977			FY41+
Annual Report	1908	1908			FY41+
Annual Report - "Your City Government 1945-1946-1947"	1945	1947			FY41+
Annual Report 1955	1955	1955			FY41+
Annual Report 1955 - Portsmouth, NH	1955	1955			FY41+
Annual Report 1956	1956	1956			FY41+
Annual Report 1956 - Portsmouth, NH	1956	1956			FY41+
Annual Report 1957	1957	1957			FY41+
Annual Report 1957 - Portsmouth, NH	1957	1957			FY41+
Annual Report 1958	1958	1958			FY41+
Annual Report 1958 - Portsmouth, NH	1958	1958			FY41+
Annual Report 1959	1959	1959			FY41+
Annual Report 1959 - Portsmouth, NH	1959	1959			FY41+
Annual Report 1960	1960	1960			FY41+
Annual Report 1961	1961	1961			FY41+
Annual Report 1961 - Portsmouth, NH	1961	1961			FY41+
Annual Report 1962 - Portsmouth, NH	1962	1962			FY41+
Annual Report 1963	1963	1963			FY41+
Annual Report 1963 - Portmsouth, NH	1963	1963			FY41+
Annual Report 1964	1964	1964			FY41+
Annual Report 1964 - Portsmouth, NH	1964	1964			FY41+
Annual Report 1965	1965	1965			FY41+
Annual Report 1965 - Portsmouth, NH	1965	1965			FY41+
Annual Report 1966	1966	1966			FY41+
Annual Report 1966 - Portsmouth, NH	1966	1966			FY41+
Annual Report 1967	1967	1967			FY41+
Annual Report 1967 - Portsmouth, NH	1967	1967			FY41+
Annual Report 1968	1968	1968			FY41+
Annual Report 1968 - Portsmouth, NH	1968	1968			FY41+
Annual Report 1969	1969	1969			FY41+
Annual Report 1969 - Portsmouth, NH	1960	1960			FY41+
Annual Report 1969 - Portsmouth, NH	1969	1969			FY41+
Annual Report 1970	1970	1970			FY41+
Annual Report 1970	1970	1970			FY41+
Annual Report 1970 - Portsmouth, NH	1970	1970			FY41+
Annual Report 1971-1972	1971	1972			FY41+
Annual Report 1971-1972	1971	1972			FY41+
Annual Report 1971-1972n - Portsmouth, NH	1971	1972			FY41+
Annual Report 1973	1973	1973			FY41+
Annual Report 1973 - Portsmouth, NH	1973	1973			FY41+
Annual Report 1974	1974	1974			FY41+
Annual Report 1974 - Portsmouth, NH	1974	1974			FY41+
Annual Report 1975	1975	1975			FY41+
Annual Report 1975-1976 - Portsmouth, NH	1975	1976			FY41+
Annual Report 1976-1977	1977	1977			FY41+
Annual Report 1976-1977 - Portsmouth, NH	1976	1977			FY41+
Annual Report 1980-1981 - Portsmouth, NH	1980	1981			FY41+
Annual Report 1981	1981	1981			FY41+
Annual Report 1981-1982 - Portsmouth, NH	1981	1982			FY41+
Annual Report 1982	1982	1982			FY41+
Annual Report 1982	1982	1982			FY41+
Annual Report 1982-1983	1983	1983			FY41+
Annual Report 1982-1983 - Portsmouth, NH	1982	1983			FY41+
Annual Report 1983-1984/1984-1985	1983	1985			FY41+

Annual Report 1983-1984/1984-1985	1983	1985			FY41+
Annual Report 1983-1984/1984-1985-Portmsouth, NH	1983	1985			FY41+
Annual Report for the State of New Hampshire 1899	1899	1899			FY41+
Annual Report for the State of New Hampshire 1911	1911	1911			FY41+
Annual Report for the State of New Hampshire 1913	1913	1913			FY41+
Annual Report for the State of New Hampshire 1914	1914	1914			FY41+
Annual Report for the State of New Hampshire 1915	1915	1915			FY41+
Annual Report of the Board of Instruction and High School Committee of the City of Portsmouth	1892	1892			FY41+
Annual Report of the Board of Instruction and High School Committee of the City of Portsmouth	1897	1897			FY41+
Annual Report of the City Auditor	1936	1936			FY41+
Annual Report of the City Auditor	1943	1943			FY41+
Annual Report of the City Auditor for year ending 12/31/1934	1934	1934			FY41+
Annual Report of the City Auditor YE 12/31/1908	1908	1908			FY41+
Annual Report of the City Auditor YE 12/31/1909	1909	1909			FY41+
Annual Report of the City Auditor YE 12/31/1916	1916	1916			FY41+
Annual Report of the City Auditor YE 12/31/1919	1919	1919			FY41+
Annual Report of the City Auditor YE 12/31/1922	1922	1922			FY41+
Annual Report of the City Auditor YE 12/31/1923	1923	1923			FY41+
Annual Report of the City Auditor YE 12/31/1925	1925	1925			FY41+
Annual Report of the City Auditor YE 12/31/1926	1926	1926			FY41+
Annual Report of the City Auditor YE 12/31/1927	1927	1927			FY41+
Annual Report of the City Auditor YE 12/31/1933	1933	1933			FY41+
Annual Report of the City Auditor YE 12/31/1938	1938	1938			FY41+
Annual Report of the City Auditor YE 12/31/1938	1938	1938			FY41+
Annual Report of the City Auditor YE 12/31/1942	1942	1942			FY41+
Annual report of the schools	1919	1919			FY41+
Annual Report of your Department of Assessment for 1962	1962	1962			FY41+
Appraisal of 1 Junkins Ave (at time Portsmouth Hospital) - September 1st, 1987 with original pictures	1987	1987			FY41+
Assessment Digest Sinapore/Australia - International Assessment - March/April 1984	1984	1984			FY41+
Assessment of the Portsmouth Hospital (now City Hall) 9/1/1987	1987	1987			FY41+
Assessor's Offce 11-21-84	1984	1984			FY41+
Assessor's Office 7/1/1985	1985	1985			FY41+
Audit - City of Portsmouth Trust Funds - YE 12/31/1974	1974	1974			FY41+

Audit Report 1969	1969	1969			FY41+
Audit Report for YE 6/30/1973	1973	1973			FY41+
Audit Report of Comments and Recommendations for Year Ending 6/30/1977	1977	1977			FY41+
Auditor's Report 1907	1907	1907			FY41+
Auidotrs Report of Comments and Reccomendations for FYE 6/30/1976	1975	1976			FY41+
Births 1912-1933	1912	1933			FY41+
Board of Instructors Report	1884	1884			FY41+
Bond issue disbursements	1939	1939			FY41+
Budget 1974-1975	1974	1975			FY41+
Capital Budget and Improvement Program 1978-1983	1978	1983			FY41+
Capital Improvement Plan (CIP) 1977-1982	1977	1982			FY41+
Capital Improvement Plan (CIP) 1978-1983	1978	1983			FY41+
Capital Improvements Program August, 1969	1969	1974			FY41+
Charter and assessing laws	1907	1907			FY41+
Charter and assessing laws	1907	1907			FY41+
Charter and Assessing Laws, City of Portsmouth	1907				FY41+
Charter Commission Report August 1977	1977	1977			FY41+
Charter Commission Reports	1969	1969			FY41+
Charter Commission Reports	1977	1977			FY41+
Charter Commission Reports (dated 10/27/1969)	1969	1969			FY41+
Charter Commission Reports (dated 10/29/1969)	1969	1969			FY41+
Charter Commission Reports (dated August 1977)	1977	1977			FY41+
Charter Commission Reports (dated August 1977)	1977	1977			FY41+
Charter Commission Reports (dated August 1977)	1977	1977			FY41+
Charter Commission Reports (dated August 1977)	1977	1977			FY41+
CIP 1969	1969	1974			FY41+
CIP 1978-1983	1978	1983			FY41+
City Manager's Budget Message 1970	1970	1970			FY41+
City Manager's Budget Message 1970	1970	1970			FY41+
City of Portsmouth Summary of Municipal Activity FY Ending 12/31/1953	1953	1953			FY41+
City of Portsmouth, New Hampshire - A Message from the Mayor - Reprinted for the 1974 Portsmouth City Directory	1974	1974			FY41+
City of Portsmouth, New Hamsphire 1970 Budget Exhibits	1970	1970			FY41+
City of Portsmouth, NH 1979-1980 Municipal Budget	1979	1980			FY41+
City of Portsmouth, NH 1979-1980 Municipal Budget	1979	1980			FY41+
City of Portsmouth, NH Municipal Budget Fiscal Year 1978-1979	1978	1979			FY41+
City of Portsmouth, NH Report on Examination of Financial Satements and Supplimental Data for YE 6/30/1975	1975	1975			FY41+
City of Portsmouth, NH Report on Examination of Financial Satements and Supplimental Data for YE 6/30/1976	1976	1977			FY41+
City of Portsmouth, NH Report on Examination of Financial Satements and Supplimental Data for YE 6/30/1977	1976	1977			FY41+
City Reports	1951	1951			FY41+
Claremont Tax Issue 1 of 10					FY41+

Claremont Tax Issue 2 of 10					FY41+
Claremont Tax Issue 3 of 10					FY41+
Comprehensive Transport Plan Portsmouth, New Hampshire December 1964	1964	1964			FY41+
Comrehensive Transportation Plan - Portsmouth, NH	1962	1962			FY41+
Department Head Memo	1983	1985			FY41+
Duplicating Deposit Slips - 1924	1924	1924			FY41+
Duplicating Deposit Slips - 1952	1952	1952			FY41+
Duplicating Despoit Slip - Water	Undated	undated			FY41+
Duplicting Deposit Slips - 1925	1925	1925			FY41+
Evaluation of the Effectiveness of Congregate Housing for the Elderly (from HUD)	1976	1976			FY41+
Evaluation of the Effectiveness of Congregate Housing for the Elderly (from HUD)	Undated	undated			FY41+
General Plan - City of Portsmouth	1969	1969			FY41+
General Plan - City of Portsmouth	1973	1973			FY41+
General Plan 1969 - Planning Board	1969	1969			FY41+
General Plan 1973 - Planning Board	1973	1973			FY41+
Historic District Visual Guidelines 1977	1977	1977			FY41+
Index to unidentifed ledger					FY41+
Itemized Summary of Assessed Valuations 11-21-84	1984	1984			FY41+
Location and Economic Study - Interstate Route 95 (Portsmouth, NH and Kittery, ME) - November 1962	1962	1962			FY41+
Location and Economic Study - Interstate Route 95 (Portsmouth, NH and Kittery, ME) - November 1962	1962	1962			FY41+
Maine/New Hampshire a Joint Proposal - Recommended Sites for East Coast Laboratory, Institute for Oceanography Ship Operating Base, Coast and Geodetic Survey	1966	1966			FY41+
Memo Regarding 1983/1984 Annual Report from Regina Lammes	1984	1984			FY41+
Memo to R.C. Violette - City Manager - presenting Annual Report 1962	1962	1962			FY41+
Merit System (1948)	1948	1948			FY41+
Merit System (1973)	1973	1973			FY41+
Merit System City of Portsmouth, NH	1961	1961			FY41+
Merit System City of Portsmouth, NH	1973	1973			FY41+
Miscellaneous loose papers	Undated	Undated			FY41+
Municipal Ordinances - City of Portsmouth	1956	1956			FY41+
Municipal Ordinances - City of Portsmouth	Undated	undated			FY41+
New Hamsphire State Port Authority - New marine Terminal Portsmouth, New Hamphsire (August, 1962)	1962	1962			FY41+
New Hamsphire Town and City - April 1979	1979	1979			FY41+
New Hamsphire Town and City - April 1980	1980	1980			FY41+
New Hamsphire Town and City - April 1984	1984	1984			FY41+
New Hamsphire Town and City - August 1979	1979	1979			FY41+
New Hamsphire Town and City - August 1980	1980	1980			FY41+
New Hamsphire Town and City - December 1978	1978	1978			FY41+
New Hamsphire Town and City - December 1979	1979	1979			FY41+
New Hamsphire Town and City - February 1979	1979	1979			FY41+
New Hamsphire Town and City - February 1980	1980	1980			FY41+

New Hamsphire Town and City - January 1978	1978	1978			FY41+
New Hamsphire Town and City - January 1979	1979	1979			FY41+
New Hamsphire Town and City - January 1980	1980	1980			FY41+
New Hamsphire Town and City - July 1978	1978	1978			FY41+
New Hamsphire Town and City - July 1979	1979	1979			FY41+
New Hamsphire Town and City - June 1979	1979	1979			FY41+
New Hamsphire Town and City - June 1980	1980	1980			FY41+
New Hamsphire Town and City - March 1978	1978	1978			FY41+
New Hamsphire Town and City - March 1979	1979	1979			FY41+
New Hamsphire Town and City - March 1980	1980	1980			FY41+
New Hamsphire Town and City - May 1978	1978	1978			FY41+
New Hamsphire Town and City - May 1979	1979	1979			FY41+
New Hamsphire Town and City - May 1980	1980	1980			FY41+
New Hamsphire Town and City - November 1980	1980	1980			FY41+
New Hamsphire Town and City - October 1978	1978	1978			FY41+
New Hamsphire Town and City - October 1979	1979	1979			FY41+
New Hamsphire Town and City - September 1978	1978	1978			FY41+
New Hamsphire Town and City - September 1980	1980	1980			FY41+
New Marine Terminal - Portsmouth, NH - August 1962 from New Hampshire State Port Authority	1962	1962			FY41+
Ordinances of the City of Portsmouth Revised July 1, 1977	1977	1977			FY41+
Pease Air Force Base 1956-1981 - 25th Anniversary Open House (7/12/1981)	1956	1981			FY41+
Pease Air Forse Base 1956-1981	1956	1981			FY41+
Peirce Island Sewage Treatment Plant 1965	1965	1965			FY41+
Peirce Island Seweage Treatment Plant	1965	1965			FY41+
Portrsmouth at the Crossroads - A Report on Changes and Choices in a New England Community - 1978?	1978	1978			FY41+
Portsmouth 350 Commemorative Book 1623-1973	1973	1973			FY41+
Portsmouth 350 Commemorative Book 1623-1973	1973	1973			FY41+
Portsmouth at the Crossroads - A Report on Changes and Choices in a New England Community	1977	1977			FY41+
Portsmouth Path to Progress - PHA	1961	1961			FY41+
Portsmouth Path to Progress - PHA	1963	1963			FY41+
Portsmouth Path to Progress - PHA	1963	1963			FY41+
Portsmouth Public Library - Survey by the NH State Library - January 1967	1967	1967			FY41+
Portsmouth, New Hampshire Newest World Port	Undated	Undated			FY41+
Portsmouth, New Hamsphire - Chamber of Commerce 1969	1969	1969			FY41+
Portsmouth, NH - Newest World Port	Undated	undated			FY41+
Portsmouth, NH (from the Chamber of Commerce)	1969	1969			FY41+
Portsmouth's Path to Progress - PHA	Undated	undated			FY41+
Proeprty Tax Warrant A-E 1984	1984	1984			FY41+
Property Tax Warrant 1978 A - L	1978	1978			FY41+
Property Tax Warrant 1978 M - Z	1978	1978			FY41+
Property Tax Warrant A-C 1986	1986	1986			FY41+
Property Tax Warrant a-D 1985	1985	1985			FY41+

Property Tax Warrant A-E 1987	1987	1987			FY41+
Property Tax Warrant A-E 1988	1988	1988			FY41+
Property Tax Warrant A-E 1990	1990	1990			FY41+
Property Tax Warrant A-E 1991	1991	1991			FY41+
Property Tax Warrant A-F 1989	1989	1989			FY41+
Property Tax Warrant A-G 1981	1981	1981			FY41+
Property Tax Warrant A-G 1983	1983	1983			FY41+
Property Tax Warrant D-Z 1986	1986	1986			FY41+
Property Tax Warrant E-Z 1985	1985	1985			FY41+
Property Tax Warrant F-Z 1984	1984	1984			FY41+
Property Tax Warrant F-Z 1987	1987	1987			FY41+
Property Tax Warrant F-Z 1988	1988	1988			FY41+
Property Tax Warrant F-Z 1990	1990	1990			FY41+
Property Tax Warrant F-Z 1991	1991	1991			FY41+
Property Tax Warrant G-Z 1989	1989	1989			FY41+
Property Tax Warrant H-Z 1980	1980	1980			FY41+
Property Tax Warrant H-Z 1981	1981	1981			FY41+
Property Tax Warrant H-Z 1983	1983	1983			FY41+
PTA Records	1950	1950			FY41+
Purchasing Manual 1969	1969	1969			FY41+
Receipt Register	1962	1964			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1890	1890	1890			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1890	1890	1890			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1902	1902	1902			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1925	1925	1925			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1926	1926	1926			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1927	1927	1927			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1928	1928	1928			FY41+
Receipts and Expenditures and Reports of the City Officers, Board of Instructors, Etc YE 12/31/1930	1930	1930			FY41+
Regarding numbers used to set the tax rate 1985	1985	1985			FY41+
Reply to Request from Robert Violette - City Manager	1961	1961			FY41+
Report of an examination and Audit of J. Warren Somerby - Tax Collector of Portsmouth Jan 1 - February 28, 1957 by the Division of Municipal Affairs 5/15/57	1957	1957			FY41+
Report of an Examination of the Accounts of the City of Portsmouth for the Fiscal Year ended December 31, 1964 made by the Division of Municipal of Accounting State Tax Commission May 13-June 6, 1965	1964	1964			FY41+
Report of an Examination of the Accounts of the City of Portsmouth for the Fiscal Year ended December 31, 1965 made by the Division of Municipal of Accounting State Tax Commission May 13-June 6, 1966	1965	1965			FY41+

Report of an Examination of the Accounts of the City of Portsmouth for the Fiscal Year ended December 31, 1968 made by the Division of Municipal of Accounting State Tax Commission May 13-June 6, 1969	1968	1969			FY41+
Report of Assessor's Department 1957	1957	1957			FY41+
Report of Assessor's Department 1957	1957	1957			FY41+
Report of the Citizens Task Force (State of NH) 1970	1970	1970			FY41+
Report of the Citizens Task Force (State of NH) 1970	1970	1970			FY41+
Report on Reconciliation of City Treasurer Fund Balance as of 3/26/1956 and Statement of Parking Meter Collections as Indicated by Records of the City Treasurer	1956	1956			FY41+
Resident tax - Tax Collector	1971	1971			FY41+
Resident Tax - Tax Collector	1972	1972			FY41+
Resident tax - Tax Collector	1973	1973			FY41+
Resident tax - Tax Collector	1974	1974			FY41+
Resident tax - Tax Collector	1975	1975			FY41+
Resident tax - Tax Collector	1976	1976			FY41+
Resident tax - Tax Collector	1977	1977			FY41+
Resident tax - Tax Collector	1978	1978			FY41+
Resident tax - Tax Collector	1979	1979			FY41+
Resident tax - Tax Collector	1980	1980			FY41+
Resident tax - Tax Collector 1981 A- G	1981	1981			FY41+
Resident tax - Tax Collector 1981 H-Z	1981	1981			FY41+
Resident tax - Tax Collector 1982 A-G	1982	1982			FY41+
Resident tax - Tax Collector 1983 A - G	1983	1983			FY41+
Resident Tax - Tax Collector 1984 G-Z	1984	1984			FY41+
Resident tax - Tax Collector 1985 A-F	1985	1985			FY41+
Resident tax - Tax Collector 1985 G - Z	1985	1985			FY41+
Resident Tax - Tax Collector 1986 A - E	1986	1986			FY41+
Resident Tax - Tax Collector 1986 F - Z	1986	1986			FY41+
Resident tax - Tax collector H-Z	1982	1982			FY41+
Resident Tax 1983 - Assessors Office	1983	1983			FY41+
Resident tax 1984 - Assessors Office	1984	1984			FY41+
Resident Tax 1985 - Assessors Office	1985	1985			FY41+
Resident Tax 1986 - Assessors Office	1986	1986			FY41+
School Dept PTA Minutes 1968	1968	1968			FY41+
School Meeting Minutes (PTA?)	1917	1917			FY41+
School PTA Minutes 1929	1929	1929			FY41+
School Report	1897	1897			FY41+
Soils and Their Interpretations for Various Land Uses - City of Portsmouth - S Dept of Agriculture Soil Conservation Service and Rockingham County Conservation District - February 1968	1968	1968			FY41+
Soils and Their Interpretations for Various Land Uses - City of Portsmouth - S Dept of Agriculture Soil Conservation Service and Rockingham County Conservation District - February 1968	1968	1968			FY41+
Submarines Portsmouth Naval Shipyard	1967	1967			FY41+
Submarines Portsmouth Naval Shipyard	1967	1967			FY41+
Submarines Portsmouth Naval Shipyard	1967	1967			FY41+
Tax Anticipation Notes (July 1987) $7,000,000	1987	1987			FY41+
Tax Anticipation Notes (July 1987) $7,000,000	1987	1987			FY41+
Tax Collector record	1966	1966			FY41+
The Norfolk Story	1964	1964			FY41+
The Norfolk Story	1964	1964			FY41+
The Norfolk Story	1966	1966			FY41+

The Norfolk Story	1966	1966			FY41+
The Norfolk Story	1967	1967			FY41+
The Norfolk Story	1967	1967			FY41+
The Role of the States in Strengthening the Property Tax Vol. 1	1963	1963			FY41+
The Role of the States in Strengthening the Property Tax Vol. 1	1963	1963			FY41+
Urban Renewal in Portsmouth NH January 1964	1964	1964			FY41+
Urban Renewal in Portsmouth, NH (January 1964) - PHA	1964	1964			FY41+
Urban Renewal in Portsmouth, NH (March 30, 1961) - PHA	1961	1961			FY41+
Urban Renewal in Portsmouth, NH March 1961	1961	1961			FY41+
Valuation - Assessor	1969	1969			FY41+
Valuation - Tax Collector	1965	1965			FY41+
Valuation - Tax Collector	1966	1966			FY41+
Valuation - Tax Collector	1968	1968			FY41+
Valuation - Tax Collector	1969	1969			FY41+
Valuation - Tax Collector A-G 1979	1979	1979			FY41+
Valuation 1970 - Assessors Office	1970	1970			FY41+
Valuation 1970 - Tax Collector	1970	1970			FY41+
Valuation 1972 - Tax Collector	1972	1972			FY41+
Valuation 1973 - Tax Collector	1973	1973			FY41+
Valuation 1974 - Tax Collector	1974	1974			FY41+
Valuation 1975 - Tax Collector	1975	1975			FY41+
Valuation 1977 - Tax Collector	1977	1977			FY41+
Valuation 1977 - Tax Collector	1977	1977			FY41+
Valuation 1978 - Assessors Office	1978	1978			FY41+
Valuation 1978 - Tax Collector	1978	1978			FY41+
Valuation 1979 - Assessor's Office	1979	1979			FY41+
Valuation 1980 - Assessor's Office	1980	1980			FY41+
Valuation 1981 - Assessors Office	1981	1981			FY41+
Valuation 1982 - Assessors Office	1982	1982			FY41+
Valuation 1983 - Assessors Office	1983	1983			FY41+
Valuation 1984 - Assessors Office	1984	1984			FY41+
Valuation 1985 - Assessors Office	1985	1985			FY41+
Valuation 1986 - Assessors Office	1986	1986			FY41+
Valuations - Tax Collector 1964	1964	1964			FY41+
Valutaion 1971 - Tax Collector	1971	1971			FY41+
Voucher Register	1974	1975			FY41+
Zoning Ordinance - City of Portsmouth (1/4/1965)	1965	1965			FY41+
Zoning Ordinance - City of Portsmouth (3/21/1966)	1966	1966			FY41+
Zoning Ordinance City of Portsmouth Adopted January 4, 1965	1965	1965			FY41+
Zoning Ordinance of the City of Portsmouth New Hampshire Adopted March 21,1966	1966	1966			FY41+
Current Total of Remaining Documents Needing Preservation				$ 992,821.00	

	Qty	Cost
Completed - Funded by General Fund (CIP)	164	$ 257,756.00
Completed - Funded by Moose Plate Grants	22	$ 45,706.00
In Process - Funded by General Fund (CIP)	45	$ 2,335.00
In Process - Funded by Moose Plate Grants	5	$ 56,010.00
Future Funding Needed (Quoting Completed)	372	$ 1,141,744.15
Future Funding Needed (Pricing needed)	644	$ 1,127,000.00
Project Totals	**1252**	**$ 2,630,551.15**

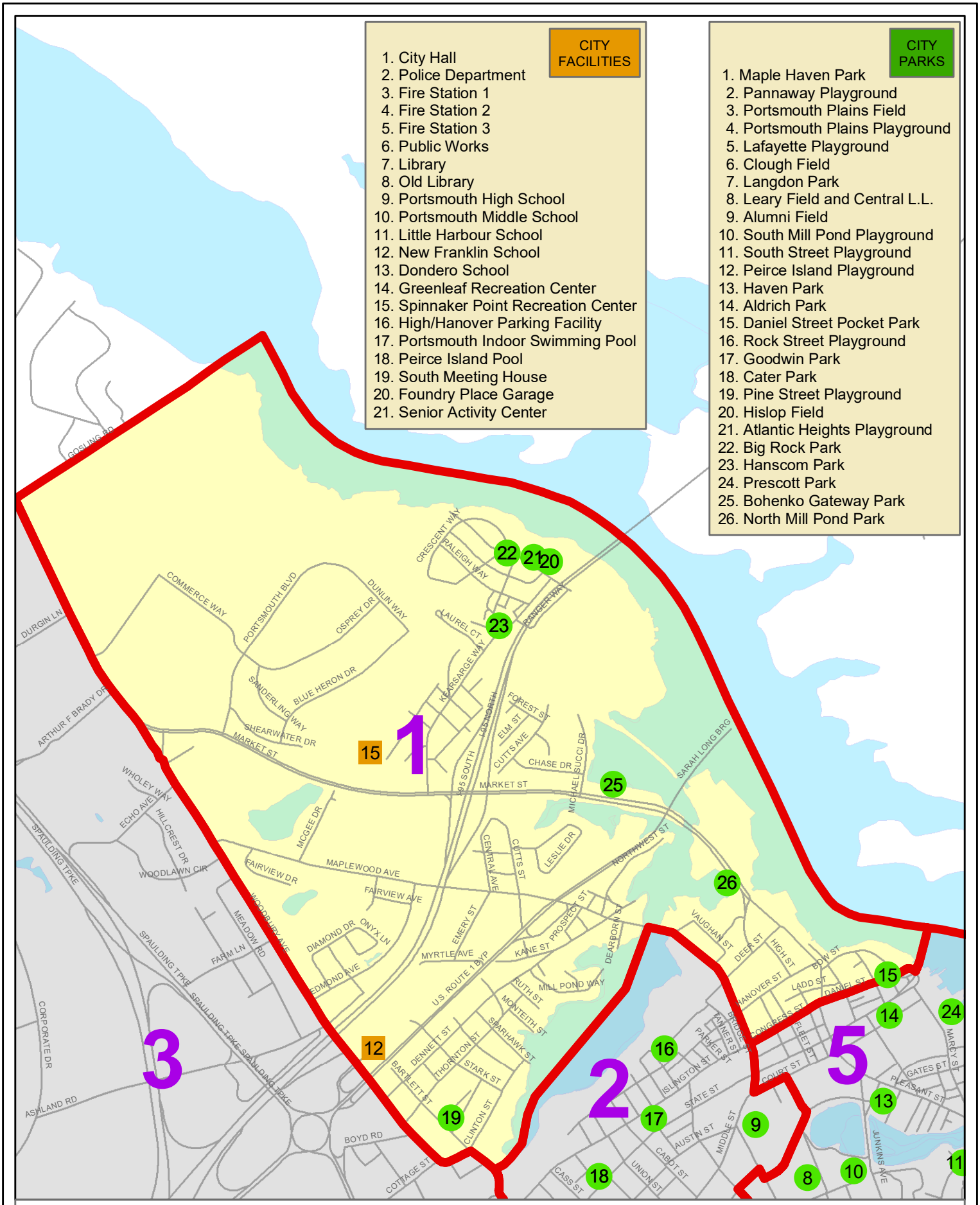
* Estimated $1,750 per document

This page has been left intentionally blank.

Appendix V: Ward Maps

Ward 1

- ✓ Parks and Facilities Map
- ✓ Street Listings
- ✓ Water and Sewer Facilities Map



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

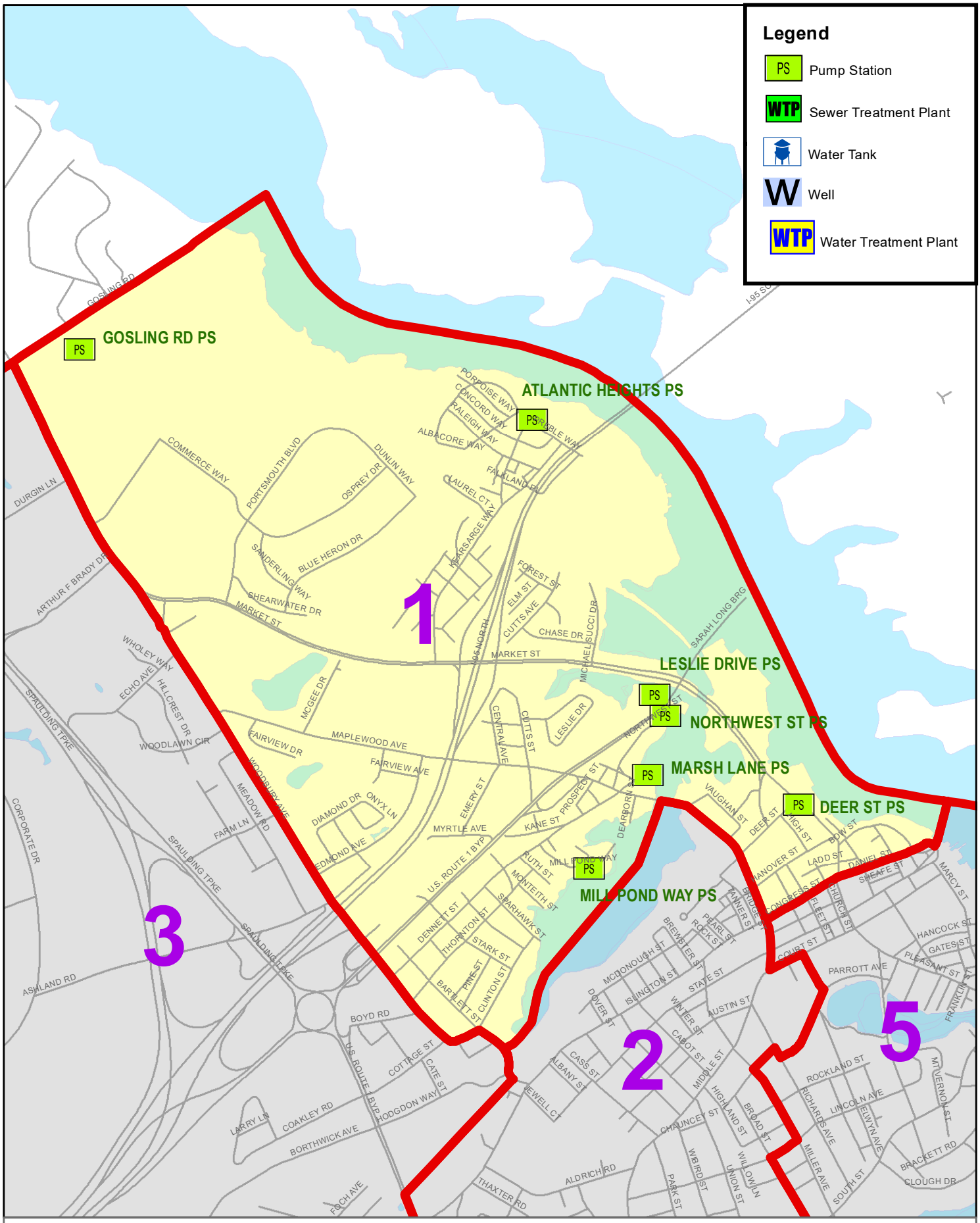
0 0.25 Miles

1 inch = 1,509 feet

Ward 1

Facilities and Parks Map

Map prepared by Portsmouth Department of Public Works 10/31/2022



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

0 0.25 Miles

1 inch = 1,509 feet

Ward 1

Sewer and Water Facilities Map

Map prepared by Portsmouth Department of Public Works 10/31/2022

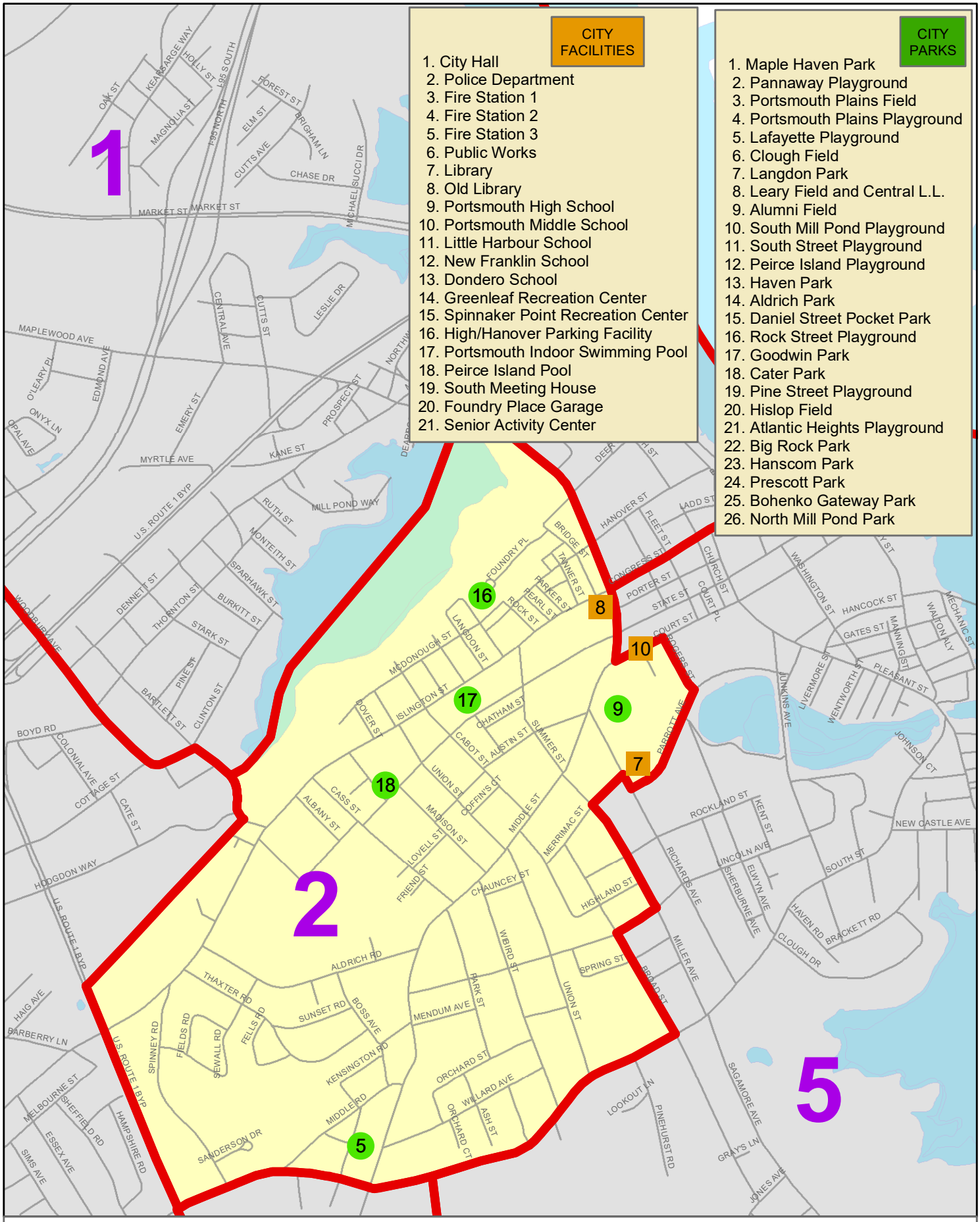
WARD 1 STREETS

ALBACORE WAY
ALDER WAY
ASHLAND ST
BARTLETT ST
BEDFORD WAY
BEECHWOOD ST
BIRCH ST
BLUE HERON DR
BOW ST
BRIGHAM LN
BURKITT ST
CENTRAL AVE
CERES ST
CHAPEL CT
CHAPEL ST
CHASE DR
CLINTON ST
COMMERCE WAY
COMMERCIAL ALY
CONCORD WAY
CONGRESS ST
CRESCENT WAY
CUTTS AVE
CUTTS ST
DANIEL ST
DEARBORN LN
DEARBORN ST
DEER ST
DENNETT ST
DIAMOND DR
DUNLIN WAY
EDMOND AVE
EMERY ST
FAIRVIEW AVE
FAIRVIEW DR
FALKLAND PL
FLEET ST
FOREST ST
FRANKLIN DR
GOSLING RD
GRANITE ST
GREEN ST
HANOVER ST
HAVEN CT
HIGH ST
HUNTERS HILL AVE
I-95 NORTH
I-95 SOUTH
JACKSON HILL ST
JACON ROAD
KANE ST
KEARSARGE WAY
LADD ST
LAUREL CT
LESLIE DR
MANGROVE ST
MAPLEWOOD AVE
MARKET SQ
MARKET ST
MARSH LN
MCGEE DR
MEREDITH WAY
MICHAEL SUCCI DR
MILL POND WAY
MONTEITH ST
MYRTLE AVE
NORTH SCHOOL ST
NORTHWEST ST
OAK ST
O'LEARY PL
ONYX LN
OPAL AVE
ORANGE ST
ORIENTAL GDNS
OSPREY DR
PENHALLOW ST
PINE ST
PORPOISE WAY
PORTSMOUTH BLVD
PORTWALK PL
PREBLE WAY
PROSPECT ST
RALEIGH WAY
RANGER WAY
RAYNES AVE
ROCKINGHAM AVE
RUBY RD
RUSSELL ST
RUTH ST
SANDERLING WAY
SAPPHIRE ST
SARATOGA WAY
SHEARWATER DR
SPARHAWK ST
SPINNAKER WAY
STARK ST
STAYSAIL WAY
SUBMARINE WAY
THORNTON ST
TOPAZ PL
U.S. ROUTE 1 BYP
VAUGHAN MALL
VAUGHAN ST
WALKER ST
WATSON’S LANDING
WHIPPLE ST
WOODBURY AVE

Appendix V: Ward Maps

Ward 2

- ✓ Parks and Facilities Map
- ✓ Street Listings
- ✓ Water and Sewer Facilities Map



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

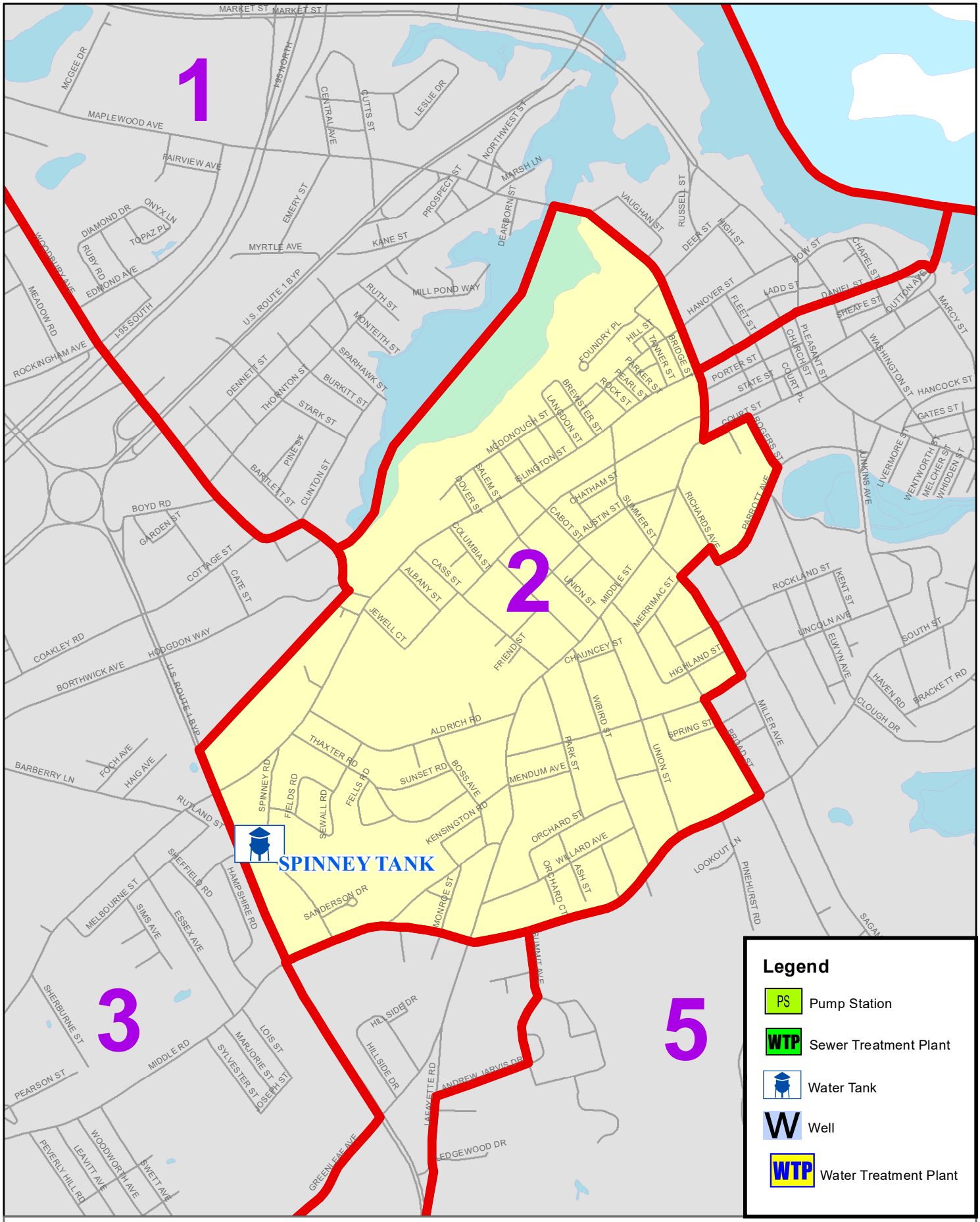
0 0.25 Miles

1 inch = 1,042 feet

Ward 2

Facilities and Parks Map

Map prepared by Portsmouth Department of Public Works 10/31/2022



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

0 0.25 Miles

1 inch = 1,093 feet

Ward 2

Sewer and Water Facilities Map

Map prepared by Portsmouth Department of Public Works 10/31/2022

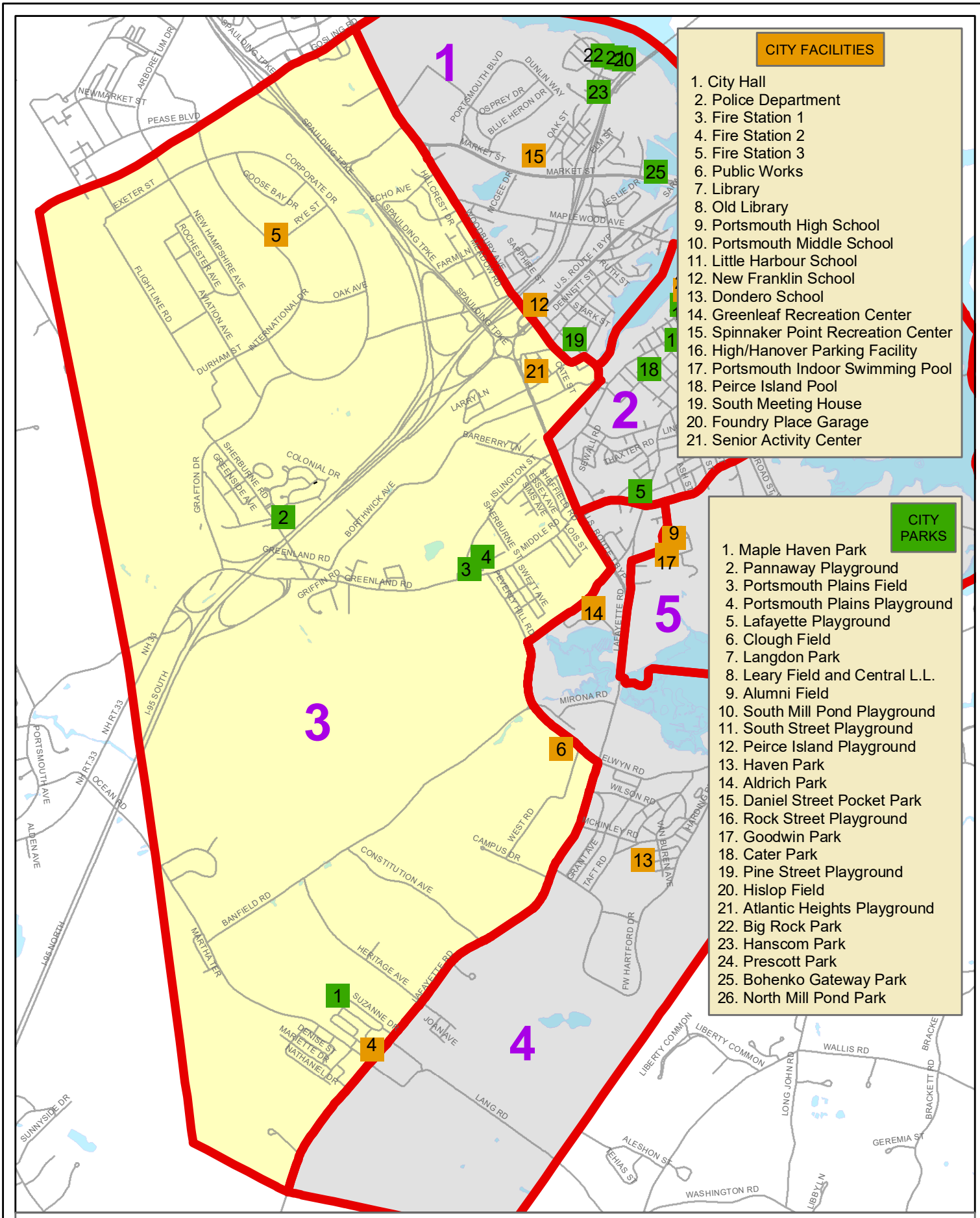
WARD 2 STREETS

ALBANY ST
ALDRICH CT
ALDRICH RD
ASH ST
AUSTIN ST
AUTUMN ST
BARTLETT ST
BOSS AVE
BREWERY LN
BREWSTER ST
BRIDGE ST
BROAD ST
CABOT ST
CASS ST
CHATHAM ST
CHAUNCEY ST
CHEVROLET AVE
COFFIN'S CT
COLUMBIA CT
COLUMBIA ST
CORNWALL ST
COURT ST
DEER ST
DOVER ST
ELM CT
FELLS RD
FIELDS RD
FOUNDRY PL
FRENCHMAN'S LN
FRIEND ST
HANOVER ST
HAWTHORNE ST
HIGHLAND ST
HILL ST
ISLINGTON ST
JEWELL CT
JOFFRE TER
KENSINGTON RD
LAFAYETTE RD
LANGDON ST
LAWRENCE ST
LINCOLN AVE
LOVELL ST
MADISON ST
MAPLEWOOD AVE
MARK ST
MARSTON AVE
MCDONOUGH ST
MENDUM AVE
MERRIMAC ST
MIDDLE RD
MIDDLE ST
MILLER AVE
MONROE ST
OLD PARISH WAY
ORCHARD CT
ORCHARD ST
PARK ST
PARKER ST
PARROTT AVE
PEARL ST
RICHARDS AVE
ROCK ST
ROCKINGHAM ST
ROCKLAND ST
ROGERS ST
SALEM ST
SANDERSON DR
SEWALL RD
SOUTH ST
SPINNEY RD
SPRING ST
STATE ST
SUDBURY ST
SUMMER ST
SUNSET RD
TANNER CT
TANNER ST
THAXTER RD
U.S. ROUTE 1 BYP
UNION ST
WARD PL
WIBIRD ST
WILLARD AVE
WILLOW LN
WINTER ST

Appendix V: Ward Maps

Ward 3

- ✓ Parks and Facilities Map
- ✓ Street Listings
- ✓ Water and Sewer Facilities Map



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

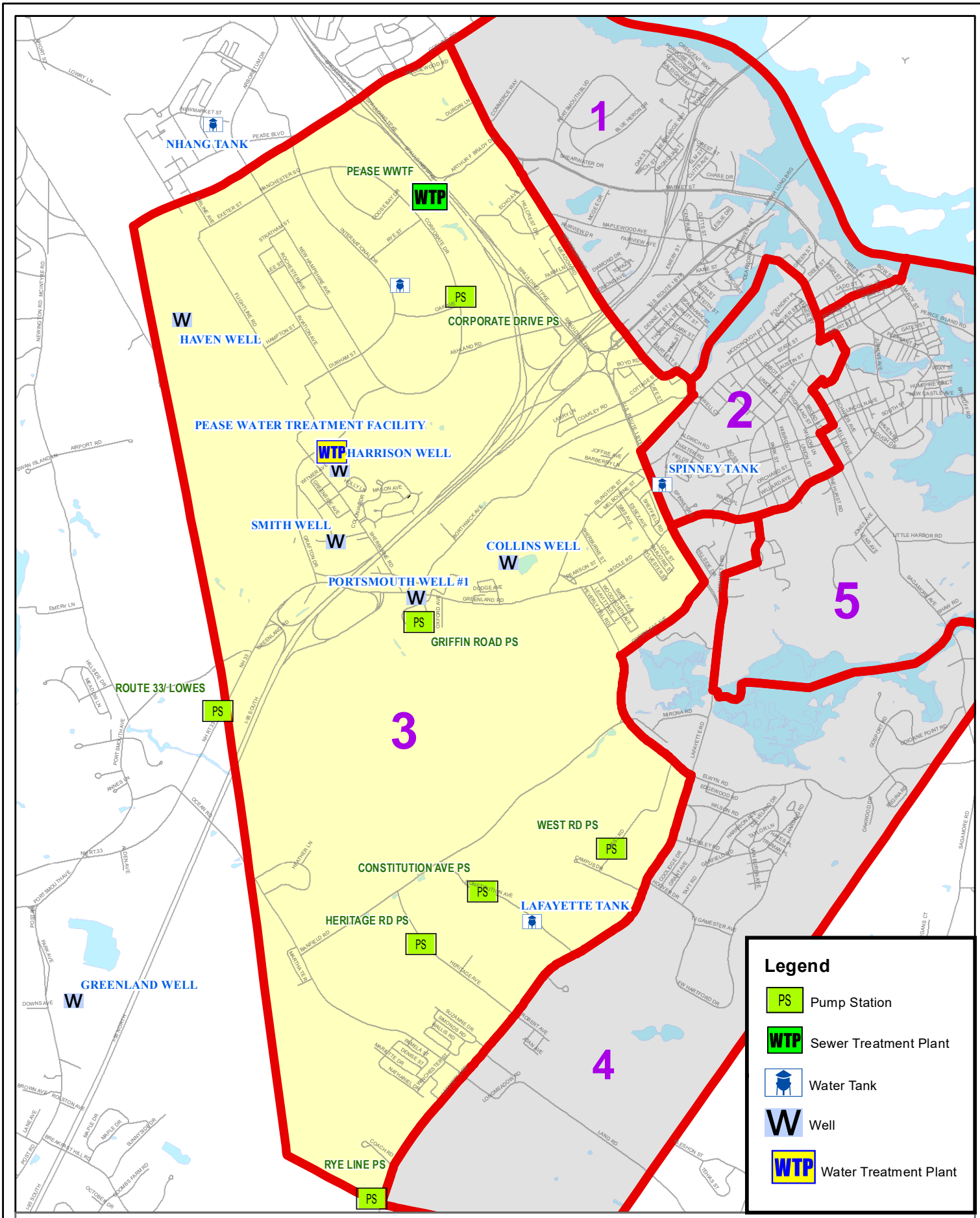
0 0.25 Miles

1 inch = 3,030 feet

Ward 3

Facilities and Parks Map

Map prepared by Portsmouth Department of Public Works 10/31/2022



0 0.25 Miles

1 inch = 3,037 feet

Ward 3

Sewer and Water Facilities Map

Map prepared by Portsmouth Department of Public Works 10/31/2022

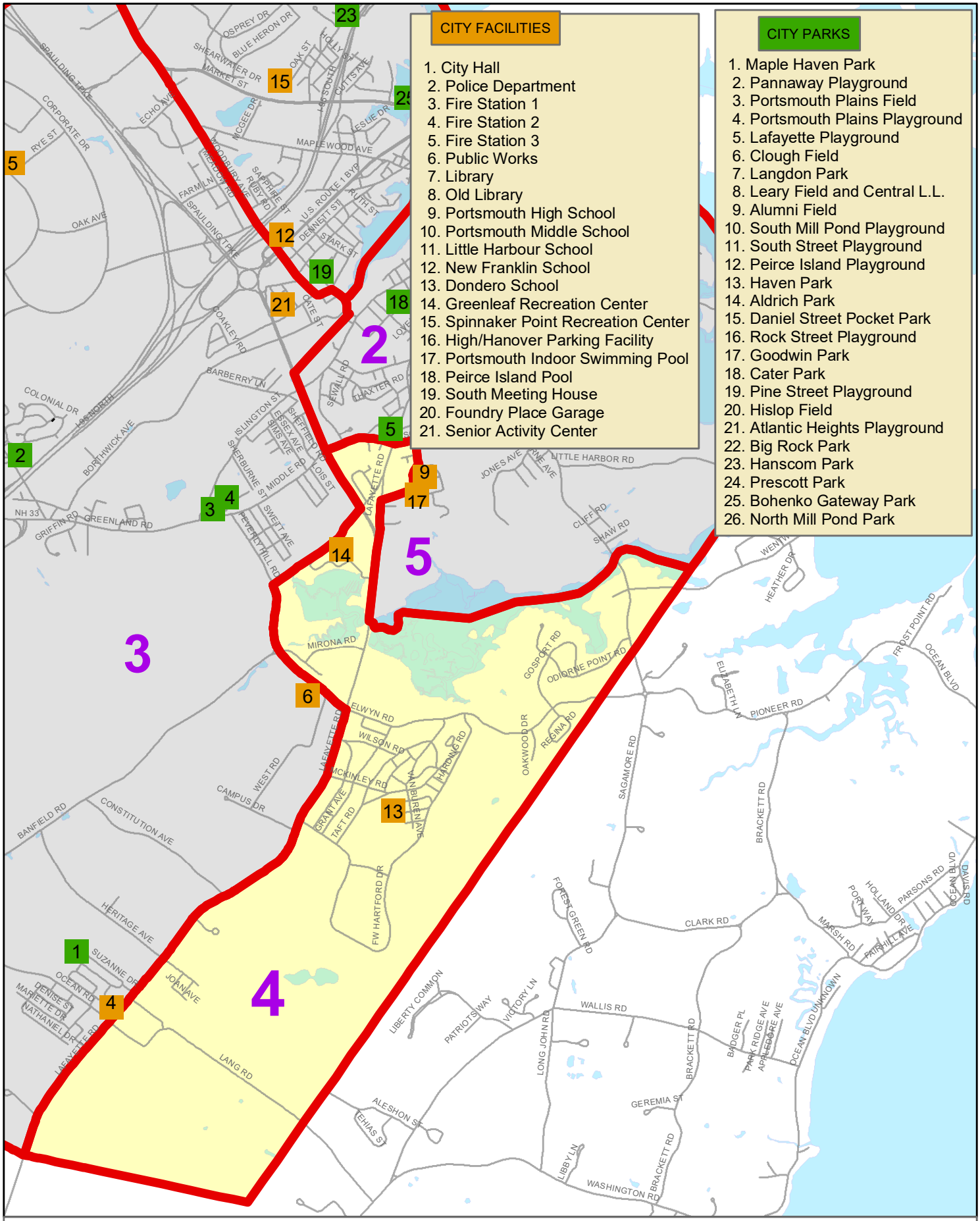
WARD 3 STREETS

AIRLINE AVE
ARTHUR F BRADY DR
ASHLAND RD
AVIATION AVE
BANFIELD RD
BARBERRY LN
BARTLETT ST
BENSON ST
BORTHWICK AVE
BOYD RD
BUCKMINSTER WAY
BURGHART ST
BUS TRANSPORTATION CTR
CAMPUS DR
CARDINAL LN
CATE ST
CENTRE ST
CLOVER LN
COACH RD
COAKLEY RD
COLONIAL DR
CONSTITUTION AVE
CORPORATE DR
COTTAGE ST
COUNTRY CLUB RD
DAVIS RD
DECATUR RD
DENISE ST
DODGE AVE
DORIS AVE
DURGIN LN
DURHAM ST
ECHO AVE
EILEEN DONDERO FOLEY AVE
ESSEX AVE
EXETER ST
FARM LN
FLETCHER ST
FOCH AVE
FREEDOM CIR
GARDEN ST
GEORGES TER
GOOSE BAY DR
GOSLING RD
GRAFTON DR
GREENLAND RD
GREENLEAF AVE
GREENSIDE AVE
GRIFFIN RD
HALL CT
HAMPSHIRE RD
HAMPTON ST
HARVARD ST
HEATHER LN
HERITAGE AVE
HIGHLINER AVE
HILLCREST DR
HODGDON WAY
HOLLY LN
I-95 NORTH
I-95 SOUTH
INTERNATIONAL DR
ISLINGTON ST
LAFAYETTE RD
LARRY LN
LEAVITT AVE
LEE ST
LOIS ST
LONGMEADOW LN
MANCHESTER SQ
MANOR DR
MAPLE ST
MARIETTE DR
MARJORIE ST
MARTHA TER
MASON AVE
MCCLINTOCK AVE
MEADOW RD
MELBOURNE ST
MIDDLE RD
MOFFAT ST
MORNING ST
NATHANIEL DR
NEW HAMPSHIRE AVE
NEWFIELDS ST
NH 33
OAK AVE
OCEAN RD
OXFORD AVE
PAMELA ST
PARK & RIDE
PATRICIA DR
PEARSON ST
PEASE BLVD
PEVERLY HILL RD
PLAINS AVE
PORTSMOUTH TRAFFIC CIR
POST RD
PRINCETON ST
ROCHESTER AVE
ROCKINGHAM AVE
RUTLAND ST
RYE ST
SCHURMAN AVE
SHEFFIELD RD
SHERBURNE RD
SIMONDS RD
SIMS AVE
SNUG HARBOR AVE
SOMERSWORTH ST
SPAULDING TPKE
STRATHAM ST
SUTTON AVE
SUZANNE DR
SWETT AVE
SYLVESTER ST
U.S. ROUTE 1 BYP
VICTORY RD
VINE ST
WALFORD LANE
WALLIS RD
WBBX RD
WEALD RD
WEATHERSTONE RD
WEDGEWOOD RD
WEST RD
WHIPPLE CT
WHOLEY WAY
WINCHESTER ST
WINSOR RD
WITMER AVE
WOODBURY AVE
WOODLAWN CIR
WOODWORTH AVE
WORTHEN RD

A en i V ar Ma s

ar 4

- ✓ Par s an aci ities Ma
- ✓ Street istin s
- ✓ ater an Sewer aci ities Ma

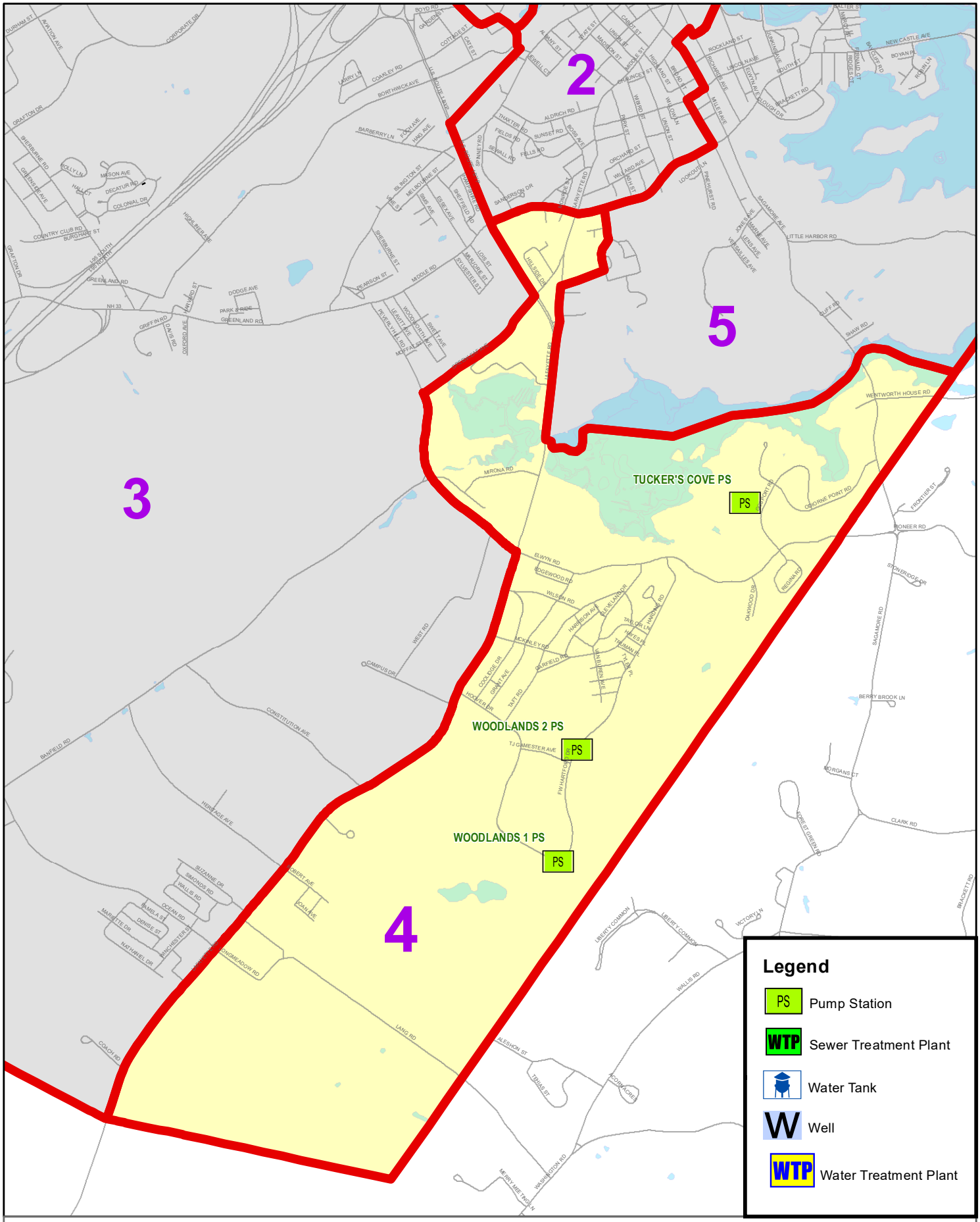


The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

Ward 4

Facilities and Parks Map

Map prepared by Portsmouth Department of Public Works 10/31/2022



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

0 0.25 Miles

1 inch = 2,332 feet

Ward 4

Sewer and Water Facilities Map

Map prepared by Portsmouth Department of Public Works 10/31/2022

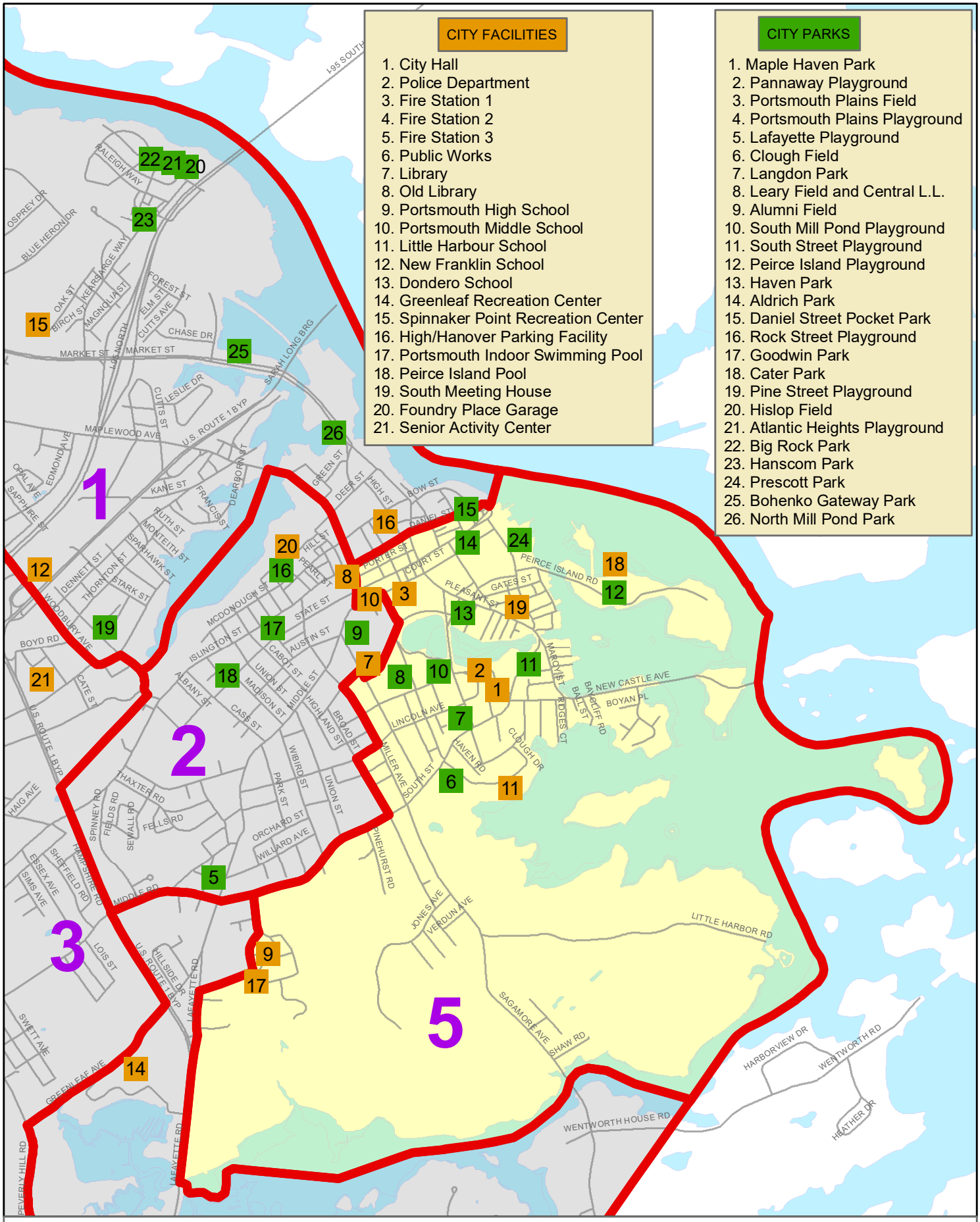
WARD 4 STREETS

ADAMS AVE
ANDREW JARVIS DR
ANNE AVE
ARTHUR RD
BEECHSTONE ST
BLUEFISH BLVD
CLEVELAND DR
CODFISH CORNER RD
COOLIDGE DR
DESFOSSES AVE
DOLPHIN DR
DWIGHT AVE
EASTWOOD DR
EDGEWOOD RD
ELWYN RD
ELWYN RD EXT
FILLMORE RD
FW HARTFORD DR
GARFIELD RD
GOSPORT RD
GRANT AVE
GRANT WAY
GREENLEAF AVE
GREENLEAF WOODS DR
HARDING RD
HARRISON AVE
HAYES PL
HILLSIDE DR
HOLIDAY DR
HOOVER DR
JENKINS AVE
JOAN AVE
LAFAYETTE RD
LANG RD
LONGMEADOW RD
MACKEREL AVE
MCKINLEY RD
MIDDLE RD
MIRONA RD
MONROE ST EXT
NIXON PARK
OAKWOOD DR
OCTOPUS AVE
ODIORNE POINT RD
PEVERLY HILL RD
PHEASANT LN
PIERCE PL
POLK AVE
REGINA RD
RICCI AVE
ROBERT AVE
ROCKAWAY ST
SAGAMORE AVE
SAGAMORE GRV
SALMON AVE
SHERIDAN AVE
SOUTH ST
SPRINGBROOK CIR
SQUID ST
STONECROFT RD
STRIPED BASS AVE
SUMMIT AVE
TAFT RD
TAYLOR LN
TJ GAMESTER AVE
TRUMAN PL
TUNA TER
TYLER PL
U.S. ROUTE 1 BYP
unnamed
URCHIN AVE
VAN BUREN AVE
WENTWORTH HOUSE RD
WHITE CEDAR BLVD
WILSON RD

Appendix V: Ward Maps

Ward 5

- ✓ Parks and Facilities Map
- ✓ Street Listings
- ✓ Water and Sewer Facilities Map



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

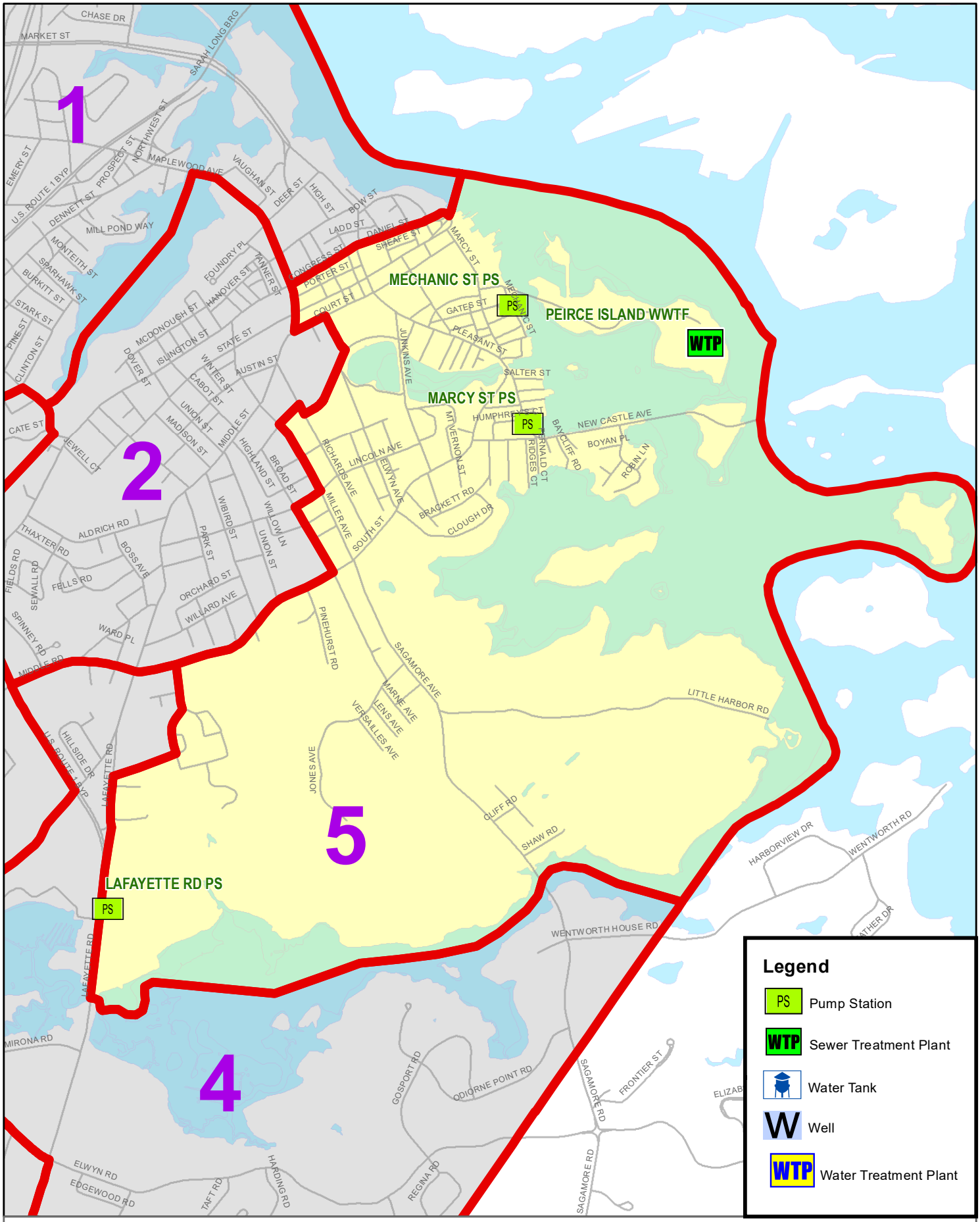
0 0.25 Miles

1 inch = 1,866 feet

Ward 5

Facilities and Parks Map

Map prepared by Portsmouth Department of Public Works 10/31/2022



The City of Portsmouth provides these Geographic Information System maps and data as a public information service. Every reasonable effort has been made to assure the accuracy of these maps and associated data. The maps and data being provided herein are intended for informational purposes only. No guarantee is made as to the accuracy of the maps and data and they should not be relied upon for any purpose other than general information.

0 0.25 Miles

1 inch = 1,615 feet

Ward 5

Sewer and Water Facilities Map

Map prepared by Portsmouth Department of Public Works 10/31/2022

WARD 5 STREETS

ANDREW JARVIS DR
ARTWILL AVE
ATKINSON ST
BALL ST
BAYCLIFF RD
BELLE ISLE RD
BERSUM LANE
BLOSSOM ST
BOYAN PL
BRACKETT LN
BRACKETT RD
BROAD ST
CHAPEL ST
CHESTNUT ST
CHURCH ST
CLIFF RD
CLOUGH DR
CONGRESS ST
COURT PL
COURT ST
CURRIER'S CV
CUSTOM HOUSE CT
DANIEL ST
DRIFTWOOD LN
DUTTON AVE
EDWARD ST
ELWYN AVE
FERNALD CT
FLEET ST
FRANKLIN ST
GARDNER ST
GATES ST
GRAY'S LN
HANCOCK ST
HAVEN RD
HOLMES CT
HOWARD ST
HUMPHREY'S CT
HUNKING ST
INCINERATOR RD
JOHNSON CT
JONES AVE
JUNKINS AVE
KENT ST
LAFAYETTE RD
LEDGEWOOD DR
LENS AVE
LINCOLN AVE
LITTLE HARBOR RD
LIVERMORE ST
LOOKOUT LN
MANNING ST
MARCY ST
MARKET SQ
MARNE AVE
MARTINE COTTAGE RD
MCNABB CT
MECHANIC ST
MEETING HOUSE HILL RD
MELCHER ST
MIDDLE ST
MILLER AVE
MOEBUS TER
MT VERNON ST
NEW CASTLE AVE
PARROTT AVE
PARTRIDGE ST
PEIRCE ISLAND RD
PENHALLOW ST
PICKERING AVE
PICKERING ST
PINEHURST RD
PLEASANT POINT DR
PLEASANT ST
PORTER ST
PRAY ST
RAND CT
RICHARDS AVE
RICHMOND ST
RIDGES CT
ROBIN LN
ROCKLAND ST
ROGERS ST
SAGAMORE AVE
SALTER ST
SCOTT AVE
SHAW RD
SHEAFE ST
SHERBURNE AVE
SOUTH MILL ST
SOUTH SCHOOL ST
SOUTH ST
SPRING STREET
STATE ST
SUMMIT AVE
VERDUN AVE
VERSAILLES AVE
WALDEN ST
WALKER BUNGALOW RD
WALTON ALY
WASHINGTON ST
WATER ST
WEBSTER WAY
WENTWORTH ST
WHIDDEN ST

REGULAR MEETING
PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

EILEEN DONDERO FOLEY COUNCIL CHAMBERS
CITY HALL, MUNICIPAL COMPLEX, 1 JUNKINS AVENUE

7:00 PM **November 17, 2022**

MINUTES

MEMBERS PRESENT:	Rick Chellman, Chairman; Corey Clark, Vice Chair; Karen Conard, City Manager; Joseph Almeida, Facilities Manager; Assistant City Engineer; Beth Moreau, City Councilor; Greg Mahanna; Peter Harris; James Hewitt; Jayne Begala; Andrew Samonas, Alternate
ALSO PRESENT:	Beverly M. Zendt, Planning Director; Stefanie Casella, Planner 1
MEMBERS ABSENT:	None

Items in brackets denote timestamp of recording []

REGULAR MEETING 7:00pm

[5:32] Chairman Chellman opened the meeting.

Chairman Chellman mentioned some small mistakes in the agenda. He noted that the public hearing would not start immediately at 7pm and that the board discussion of ongoing regulatory amendments was an ongoing matter and should really be included in Old Business.

[6:24] *The Board voted to recognize agenda item IV. B as unfinished business to be heard immediately following the approval of minutes.*

Motion: G. Mahanna, Second: J. Hewitt. Motion passed all in favor.

I. APPROVAL OF MINUTES

A. Approval of the October 20, 2022 meeting minutes.

[20:22] Chairman Chellman had one issue with the October minutes. On page 2 at timestamp 2:41 the discussion between him and Mr. Hewitt need to be clarified.

[21:10] *The Board voted to adopt the October 20, 2022 meeting minutes with the following amendment:*

1) An annual vote is required to seat a chair not to adopt the Planning Board Rules and Procedures.

Motion: G. Mahanna, Seconded: J. Almeida. Motion passed all in favor.

B. Approval of the August 8, 2022 work session minutes.

[19:52] Vice Chair Clark wanted to note that the minutes were incorrect as to his absence. He was in fact present for the work session in August.

[21:29] *The Board voted to adopt the August 8, 2022 work session minutes with the following amendments:*

1) Corey Clark was present at the August 8, 2022 work session.

Motion: G. Mahanna, Second: J. Almeida. Motion passed all in favor.

II. PUBLIC HEARINGS -- OLD BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

A. The request of **Blus O'Leary Family Living Trust (Owner)**, for property located at **225 Wibird Street** requesting Conditional Use Permit Approval as permitted under Section 10814.40 of the Zoning Ordinance to construct an attached Accessory Dwelling Unit. Said property is located on Assessor Map 133 Lot 54 and located within the General Residence A (GRA) district. (LU-22-174)

[21:51] Chairman Chellman introduced this topic.

SPEAKING TO THE APPLICATION

[22:22] Arilda Densch of Arilda Design presented on behalf of the applicant along with engineer Alex Ross. Mr. O'Leary was present for the meeting but was hard of hearing so would be listening on his phone. Changes made since the last submission included making the ADU smaller and into a one bedroom, decreasing the size of the connector and removing the handicap lift along the stair. These were included in the addendum drawings and new color renderings were made available. The new design for the attached ADU was reduced from 750 s.f. to 667 s.f. The connector was now 12 feet wide where previously it was 16 feet wide. Patio pavers were made to be pervious for water infiltration, the roofline was changed to be steeper for the connector and now matched the house, double windows were added to the house and dark sky friendly light fixtures were added to the rear of the house. A Massing Study was done which

revealed that the ADU façade was well under the max allowed 40% and was proposed to be only 28.6% of the total existing dwelling façade.

[32:42] Mr. Hewitt mentioned how he appreciated the architectural renderings, and they helped him gain a better understanding of the project. Mr. Harris asked how they researched how their ADU would not decline property values to which Ms. Densch responded that the addition will fit in nicely with the neighborhood and it really shouldn't have any impact on abutting property values.

[34:02] Alex Ross introduced the stormwater management plan that he prepared for this project. The existing house has gutters and downspouts but they concentrate the flow of stormwater which do not allow for great infiltration. They have proposed placing three different infiltration trenches for better volume control and infiltration into the soil. The patio area was changed to be pervious pavers for better infiltration and snow melt. An infiltration trench was also added to the ADU connector which will connect roof runoff. The rate of runoff after installing all the trenches will be lower than what currently exists.

[36:52] Mr. Almeida asked if other properties had stormwater mitigation in place or if this project would be a higher standard for properties within this neighborhood. Mr. Ross replied that this property would be setting a higher standard for the properties in this neighborhood.

[37:50] Vice Chair Clark asked where in the plans they lay out the length of the first three infiltration trenches. Mr. Ross responded that they could be found in drawing #2 in the detail for infiltration trenches which includes the five feet in length for each of those trenches.

[38:50] Chairman Chellman asked about the outlet from the addition that flows toward the shed and asked for greater detail. Mr. Ross responded that the natural flow of the site runs towards the northeast corner of the site so much of the stormwater is collected and infiltrated and then excess is directed towards an outlet in the northeast corner. This area includes a stone outlet protection area for daylighting the stormwater.

[41:19] Councilor Moreau mentioned that the board was sent many photos of a recent rain event that impacted the property and wanted to know if the proposed improvements would help the adjoining property owners. Mr. Ross said that it should improve properties near the northeast corner of the property due to the reduced rate of flow.

[42:00] Ms. Begala asked if the parking spaces were at a higher height than the rest of the ground or if they were pervious. Mr. Ross responded that the three parking spaces will be impervious, of which two are already existing impervious pavement.

[44:57] Mr. Samonas asked Mr. Ross if he could clarify whether the second and third parking spaces were at a higher elevation than the property owner's driveway. Mr. Ross responded that near the property line to the north it was relatively flat. Mr. Samonas asked why there was a reason the connector between the ADU and the home was 12 feet. Ms. Densch responded it was sized to be big enough to fit the staircase and for a wheelchair to be able to maneuver.

[50:08] Chairman Chellman asked if they were proposing to repave the existing driveway. Ms. Densch responded yes. Chairman Chellman then asked that since they are adding 118 square feet of new pavement and so in the repaving he would ask if they could potentially re-pitch the driveway to avoid needing another infiltration trench next to the driveway.

[51:03] Mr. Almeida mentioned that with all of the ground disturbance for the foundation it could be very simple to do a fine grading of the lawn area towards the driveway to potentially improve things.

[51:47] Ms. Densch mentioned that it could be possible to do a pervious driveway to alleviate runoff impacts.

[52:40] Chairman Chellman asked Mr. Ross if he felt that what he designed will not increase surface runoff beyond the boundaries of the site after the project. Mr. Ross responded that there will be a reduction in the rate of runoff leaving this property after the proposed improvements and there is no specific calculation they have made on the exact quantity leaving the property with the improvements.

[55:40] Ms. Begala asked if they had any idea on how long the ADU would take to build and if they had any hours of operations for consideration of abutters. City Manager Conard responded that it would all be dealt with within the building permit process.

PUBLIC HEARING

[57:31] Chairman Chellman opened the public hearing for this application.

[57:45] Mark Anderson and Robin Anderson of 25 Hawthorne Street spoke. They are direct abutters to the applicant. This is their third time speaking on the project during a public hearing. Previously, they argued the ADU would be too large and directly impact their home and that future owners of the property could use it as a rental or Airbnb property. They are currently neither speaking for or against the application but they appreciate the open space of their neighbor but they recognize the latest proposal has added many changes that seem practical such as a reduction in space but the introduction of potential rental properties into residential neighborhoods needs to be very carefully considered.

[1:01:00] Chairman Chellman closed the public hearing.

DISCUSSION AND DECISION OF THE BOARD

[1:05:25] *1) The Board voted to find that the Conditional Use Permit application meets the criteria set forth in Section 10.814.60 and to adopt the findings of fact as amended and read into the record.*

- *The applicant will use pervious pavement for during the reconstruction of the driveway.*

Motion: B. Moreau, Second: J. Begala. Motion passed all in favor.

[1:03:20] Councilor Moreau mentioned how she appreciated the extra work that was done in the stormwater management to address the site drainage issues. She also appreciated the reduced connector and ADU size. She understood the public's concerns with short term rentals but she mentioned that it is currently illegal to do so. She mentioned that this was a major improvement in the project previously presented. Mr. Hewitt and Mr. Mahanna agreed.

[1:04:50] Vice Chair Clark mentioned that he was not present for the last meeting where this project was discussed but he did read the previous transcript along with the packet for the presentation and intended to vote on the project this time around.

[1:05:42] *2) The Board voted to grant the Conditional Use Permit with the following stipulations:*

2.1) In accordance with [Sec. 10.814.70] of the Zoning Ordinance, the owner is required to obtain a certificate of use from the Planning Department verifying compliance with all standards of [Sec. 10.814], including the owner-occupancy requirement, and shall renew the certificate of use annually.

2.2) The applicant will use pervious pavement for the reconstruction of the driveway.

Motion: B. Moreau, Second: G. Mahanna. Motion passed all in favor.

III. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

A. The request of **Betty Ann Fraser Pettigrew Trust (Owner)**, for property located at **42 Harvard Street** requesting Conditional Use Permit Approval as permitted under Section 10814.40 of the Zoning Ordinance to construct an attached Accessory Dwelling Unit. Said property is located on Assessor Map 259 Lot 30 and lies within the Single Residence B (SRB) District. (LU-22-176)

[1:06:11] Chairman Chellman introduced this topic. Ms. Begala recused herself from discussion and voting on this application. Mr. Samonas stepped up as a full member of the Board for this application.

SPEAKING TO THE APPLICATION

[1:06:51] Seth Monkiewicz, the general contractor for this project, presented the application. The proposed ADU would increase the current footprint, give an overhang to the front entry door, create a 12 x 26' garage. There is currently also on-street parking to benefit this lot as well.

There will be a deck on the second level that will serve as an egress point for the ADU. The proposed roofline of the ADU would be slightly lower than the main ridgeline of the existing dwelling. All the water lines will be kept within the small footprint of the ADU space.

[1:15:29] Mr. Samonas asked if the garage would still be maintained as a garage space, to which Mr. Monkiewicz confirmed that it would be.

[1:15:37] Councilor Moreau asked how close the this ADU would be to the abutting property. Mr. Monkiewicz responded that on one side it would be 15 feet and the other side setback was 22 feet. The rear setback was about 77 feet.

[1:17:15] Vice Chair Clark asked what the layout would be around the laundry space as it did not appear to show any walls. Mr. Monkiewicz responded that it would be stackable and within the open area.

PUBLIC HEARING

[1:19:26] Chairman Chellman opened the public hearing. No one spoke. The public hearing was closed.

DISCUSSION AND DECISION OF THE BOARD

[1:20:02] *1) The Board voted to find that the Conditional Use Permit application meets the criteria set forth in Section 10.814.60 and to adopt the findings of fact as presented.*

Motion: C. Clark, Second: B. Moreau. Motion passed all in favor.

[1:21:53] *2) Board voted to grant the conditional use permit with a modification to the requirement set forth in section 10.814.41 to not require an interior door between the principal dwelling unit and the accessory dwelling, and to approve the Conditional Use Permit with the following stipulation:*

> *2.1) In accordance with [Sec. 10.814.70] of the Zoning Ordinance, the owner is required to obtain a certificate of use from the Planning Department verifying compliance with all standards of [Sec. 10.814], including the owner-occupancy requirement, and shall renew the certificate of use annually.*

Motion: C. Clark, Second: B. Moreau. Motion passed all in favor.

IV. OTHER BUSINESS

A. Capital Improvement Plan (CIP) Process Update

[1:22:42] Chairman Chellman introduced this topic that the Planning Director would present.

[1:23:14] Ms. Mesa-Zendt introduced the Capital Improvement Plan Process Update and presented an update for members of the Planning Board. Specifically, addressing what the CIP is, specifics on the CIP update for Fiscal Year 2024 and the process going forward for the Board. The CIP is needed to help identify needs for capital improvements, guiding the allocation of resources, planning for future expenditures, etc. This could include construction or expansion of a public facility, planning studies, land acquisition, vehicle replacements of a certain cost, etc. The City's annual goal for the Capital Outlay funding is no more than 2% of the prior year's budget, this helps prevent major tax rate spikes. The goal for Net Debt Service is to remain below 10% of the budget.

This year, there were 104 total requests from citizens with 83 being unique, 46 requests were CIP eligible, and 37 requests were deemed to be better served by a different process or board. Moving forward, future introductions of the CIP will include a list of prior projects that have been removed and the reasoning behind their removal.

[1:37:09] Mr. Mahanna asked if there was a master document of what has been dropped from the CIP. Ms. Mesa-Zendt responded that there would be a discussion of the changes that have occurred in the introduction as well as some more information in the explanatory notes.

[1:38:36] Councilor Moreau thanked all the staff for their work on CIP material and capturing those CIP items that are going into the new introduction.

[1:39:17] Mr. Hewitt asked why the CIP could not continue to move projects forward until they are completed. Particularly, if a project was able to stay on the CIP until it was built so that it would show as being active. Ms. Mesa-Zendt responded that they are trying to demonstrate funding limitations and to keep them in could be confusing. By accounting for the items that are migrating off the CIP or no longer being considered will not have any funding numbers attached to them that could be showcased in the CIP. It could be confusing to include things that are no longer being considered as they would not be included in the CIP budget tables. City Manager Conard mentioned that they could always do a better job of discerning the difference between items that need funding from the CIP and items that are in various stages of funding or in progress, but at this point in time there is a distinction. It was discussed further that more may need to be said in the CIP document on past projects that have received previous funding and where they are in the pipeline, this could include different approaches such as more visuals and graphics.

B. Board Discussion of Regulatory Amendments and Other Matters

[6:42] Chairman Chellman along with other members of the board brought up the importance of discussing ongoing matters towards the beginning of each meeting. It was also discussed that they likely will need a workshop to go over all the responsibilities and delegations such as the Master Plan Update to further discuss. This could include land use items that are not necessarily coming up through the land use committee such as site plan updates, rules and procedure updates, possible zoning changes, wetland buffers, EV chargers, etc. This could also include collaboration with the land use committee in terms of helping with research and development of potential regulation ideas and changes to be handed off to the committee to further explore.

[15:32] Councilor Moreau mentioned that the City Council recently voted to send the draft for ADUs back to the Planning Board for review. She feels that more should not be added to the plate of the Planning Board for land use issues until that goes back to City Council. The Land Use Committee's December meeting has been canceled to provide a break. They are in the process of hiring a Community Housing Navigator as well as a technical consultant will help to achieve Phase III of the Land Use Committee's plan.

Staff will send around a poll for potential workshop meeting dates.

C. Chairman's Updates and Discussion Items

No action taken by the Board

Meeting was adjourned at 8:47 PM.

Respectfully submitted,

Kate Homet,
Acting Secretary for the Planning Board

Findings of Fact | Accessory Dwelling Unit
City of Portsmouth Planning Board

Date: 12-15-2022
Property Address: 29 Versailles
Application #: LU-22-200
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Zoning Ordinance 10.815.40 Before granting a conditional use permit for a garden cottage, the Planning Board shall make the following findings:

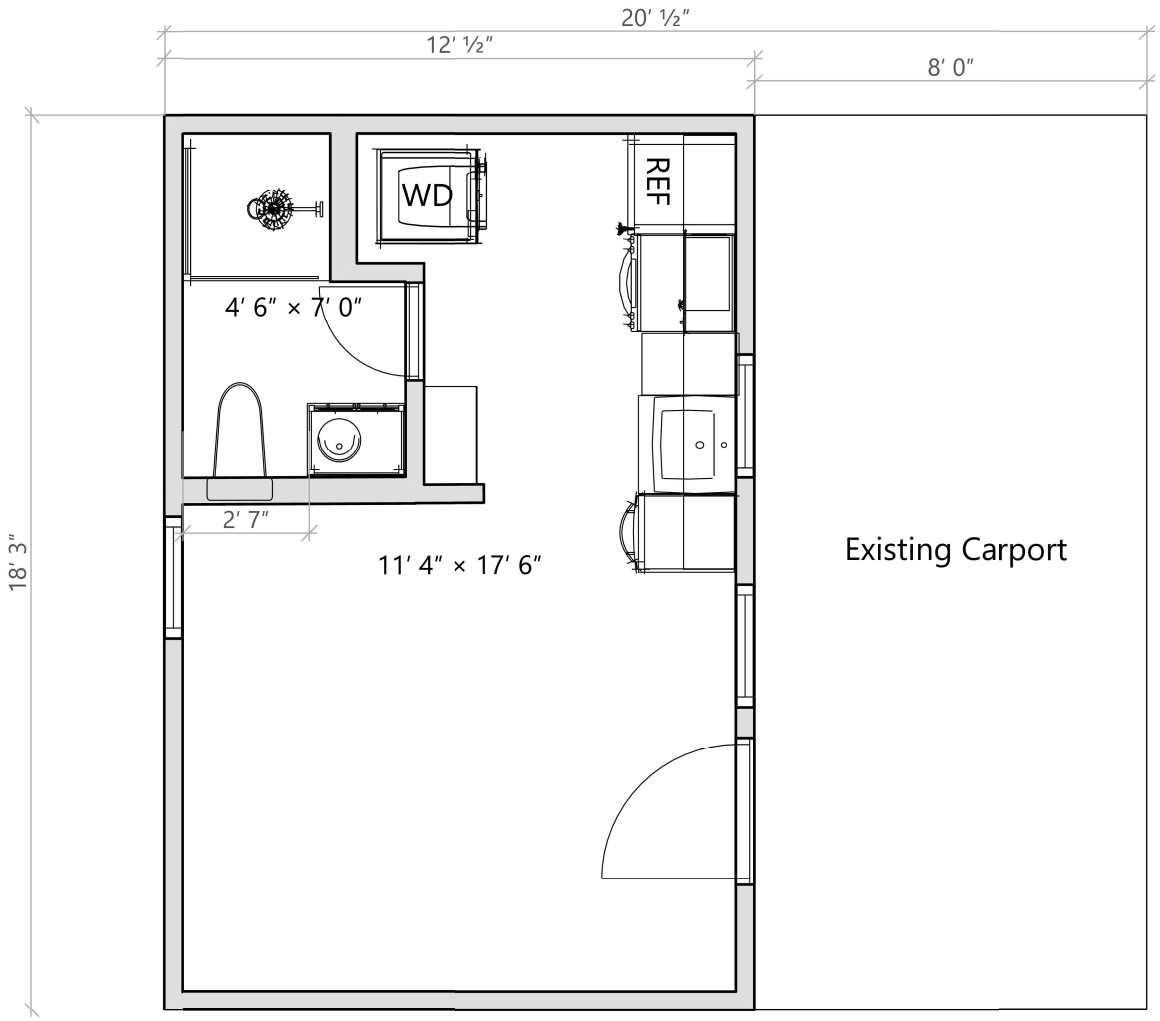
	Section 10.815.40	**Finding** (Meets Requirement/ Criteria)	**Supporting Information**
1	10.815.41 Exterior design of the garden cottage is consistent with the existing single-family dwelling on the lot.	**Meets** **Does Not Meet**	The current garage/proposed Garden Cottage is constructed with the same (or similar) clapboard siding. Trim details correspond to the primary structure. The roof pitch is similar to the primary structure.
2	10.815.42 The site plan provides adequate and appropriate open space, landscaping, and off-street parking for both the garden cottage and the primary dwelling.	**Meets** **Does Not Meet**	General Residence A requires a minimum of 30% open space. Development on the site provides a lot coverage of about 2,374 SF (excluding the driveway. The total lot is 14,810 SF resulting in 16% development and significant remaining open space. The lot is landscaped with a combination of maintained shrubs and trees.
3	10.815.43 The garden cottage will maintain a compatible relationship to adjacent properties in terms of location and design, and will not significantly reduce the privacy of adjacent properties.	**Meets** **Does Not Meet**	The proposed Garden Cottage is approximately 41 feet from the nearest neighbor to the east and is located within the rear setback. Approximately 58 feet from the nearest neighbor to the south and approximately 129 feet from the nearest neighbor to the north. The property is separated from the

	Section 10.815.40	Finding (Meets Requirement/ Criteria)	Supporting Information
			neighbor to the west by Versailles Avenue. There is a 75 foot driveway that can accommodate three cars off-site. Vehicles, however, would have to stack.
4	10.815.44 The garden cottage will not result in excessive noise, traffic or parking congestion.	**Meets** **Does Not Meet**	The applicant is proposing one new accessory dwelling unit for a resident currently residing on site.
5	**Other Board Findings:**		

Garden Cottage Conversion

At

29 Versailles Ave, Portsmouth



Garden Cottage
In Existing
Garage

29 Versailles Ave
7 Oct 2022

1/4" = 1'

ZONING DISTRICT – GRA
FRONT SETBACK – 15'
SIDE SETBACK – 10'
REAR SETBACK – 20'
WETLAND SETBACK – 100'

JONES AVE
VERSAILLES AVE
S 2" FORCEMAIN
6" CI WATERLINE
1" IRON ROD FOUND DOWN 6"
P.P EVERSOURCE #137–8, NET 8
HYDRANT
MAG NAIL FOUND
WATER SHUT–OFF
P.P PSNH 137–8 VZ 57 9
WATER SHUT–OFF
HOUSE
GARAGE
SEWER EASEMENT
SEPTIC TANK
SEPTIC TANK
N 32°20'43" E 0.51'
DETAIL N.T.S
N 31°30'44" W 0.71'
DETAIL N.T.S
1" REBAR FOUND UP 1"
N 53°15'06" E 49.85'
12" MAPLE TREE
CHAIN LINK FENCE
6" WOOD FENCE
ROW OF SHRUBS
S 18°24'25" E
2" I.P. FOUND UP 4" LEANING NORTH SHOT @ TOP
1" IRON ROD FOUND DOWN 5"
N 53°15'06" E 49.85'
1" IRON ROD FOUND DOWN 9"
15" MAPLE TREE
GATE
6' WOOD FENCE
8" CHERRY TREE
N 38°24'04" W
DECK
PUMP TANK
BRICK PATIO
SEPTIC TANK
BULKHEAD
EX. HOUSE FF EL.=43.6'
DECK
GARAGE EL.=39.1'
OVERHANG
A.C
100' WETLAND SETBACK
3/4" REBAR UP 5"
WETLAND BOUNDARY
1 1/2" IRON PIPE FOUND UP 6" WITH CRIMPED TOP
P.P PSNH 137–8A
BENCHMARK MAG NAIL SET ELEV. 39.09'
DECK
BRICK WALKWAY
12" CHERRY TREE
100' WETLAND SETBACK
4" PVC CONNECTION FROM ADU TO EXISTING SEPTIC TANK AND PUMP CHAMBER
GAS VALVE
BENCHMARK MAG NAIL SET ELEV. 39.09'
S 53°15'06" W 100.00'
CHAIN LINK FENCE
CONVERT GARAGE INTO AN ACCESSORY DWELLING UNIT
DETAIL N.T.S
N 51°35'55" E 0.39'
150.00'
CATCH BASIN
CATCH BASIN
P.P PSNH TRANS #245–1
3/4" REBAR BENT N.W SHOT AT BASE
CATCH BASIN
1" IRON ROD FOUND UP 1"
HOUSE
CATCH BASIN
MANHOLE
WETLAND BOUNDARY

REVISIONS

NO.	DATE	DESCRIPTION	BY

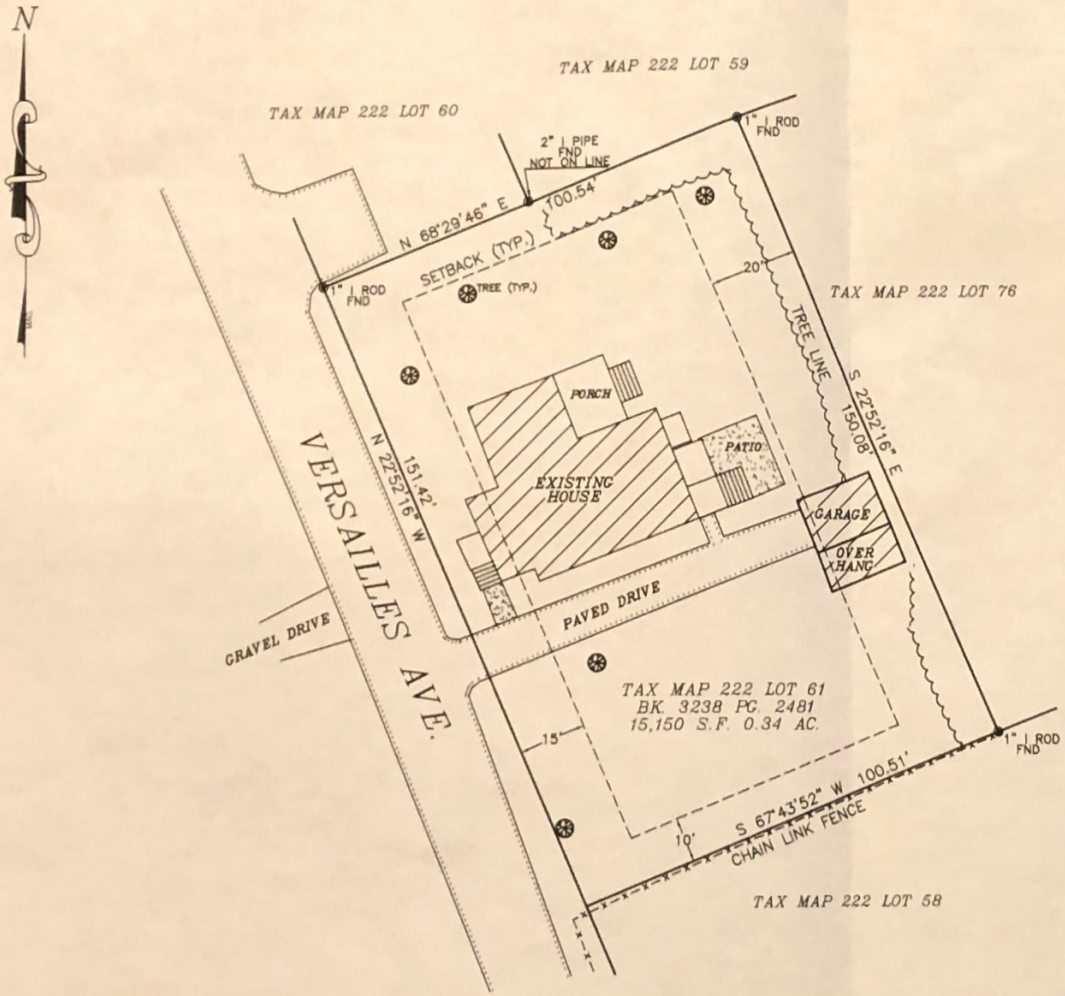
GRAPHIC SCALE
10 5 0 20
SCALE: 1"=20'

N.H. LAND Consultants
SURVEYING•LAND PLANNING•REAL ESTATE
A Veteran Owned Company
683C FIRST NH TURNPIKE, NORTHWOOD, NH 03261 PH. 603-942-9220 WEBSITE: NHLANDCONSULTANTS.COM

ACCESSORY DWELLING UNIT SEWER CONNECTION
TAX MAP 222 LOT 61
KRISTIN BRITT
29 VERSAILLES AVE. PORTSMOUTH, NH
BOOK 5669 PAGE 1125

ROCKINGHAM CO.
JOB NO: 490.01
DATE: JUNE 13, 2022

EC-1
SHT. 1 of 1



PLAN REFERENCE:

1. PLAN NAME, LIBERTY PLAINS PORTSMOUTH N.H. RECORDED AT R.C.R.D. PLAN# 0243. PLAN NAME, SUBDIVISION PLAN MAP 222–LOT 59 R.C.R.D. PLAN# 28637.

PLAN NOTES

1. OWNER OF RECORD, JOAN M. WALSH DEED REFERENCE: R.C.R.D. 3238/2481.
2. THE PURPOSE OF THIS PLAN IS TO SHOW THE BOUNDARY LINES OF THE SUBJECT PARCEL WITH ALL EXISTING STRUCTURES AND SETBACKS.
3. PROPERTY LOCATION: 29 VERSAILLES AVE. PORTSMOUTH, N.H. TAX MAP 222 LOT 61.
4. THIS PROPERTY IS ZONED GENERAL RESIDENCE A (GRA) DISTRICT.
   SETBACKS: FRONT 15'
   SIDE 10'
   REAR 20'
5. SEE PAGE 7 OF DEED 3238/2481 FOR SKETCH OF SEWER EASEMENT.

CERTIFIED MORTGAGE PLOT PLAN OF LAND IN PORTSMOUTH N.H.

TAX MAP 222 LOT 61
AS DRAWN FOR
KRISTIN BRITT

SCALE: 1"=30' DATE: OCTOBER 13, 2015

0' 30' 60' 90'

"I CERTIFY THAT THIS SURVEY AND PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. I CERTIFY THAT THE SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF."

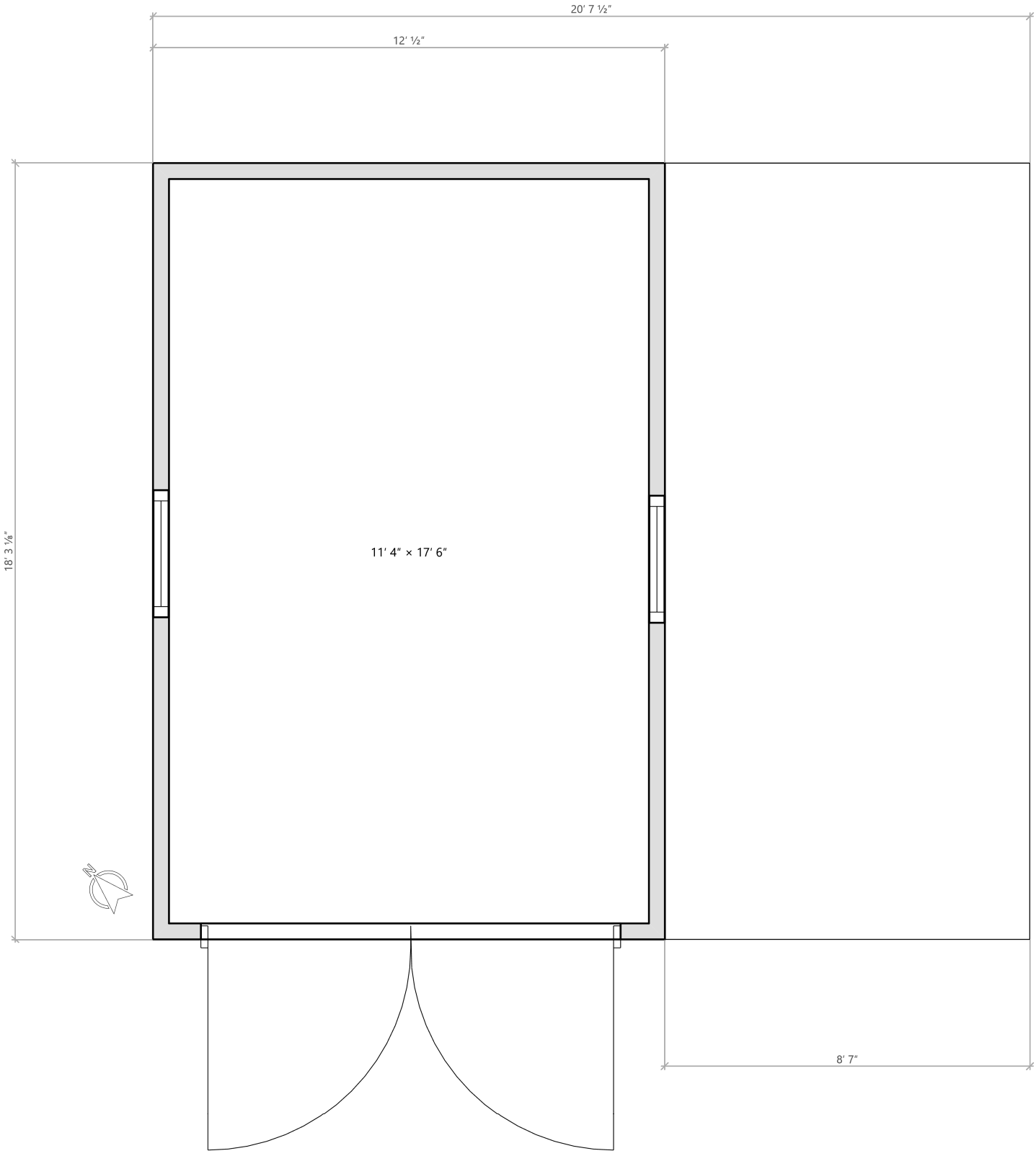
John F. Pohopek 10/13/2015

JOHN F. POHOPEK LLS 940 DATE

PREPARED BY:
JFP SURVEY & DESIGN LLC
13 KRISTY COURT
RAYMOND, NH 03077
(603) 895-3426
(603) 490-8308

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 940 JOHN F. POHOPEK SIGNATURE

FILE No. 11-10-15


20′ 7 ½″
12′ ½″
18′ 3 ⅛″
11′ 4″ × 17′ 6″
8′ 7″

10.815 Garden Cottage

Section 7 of Code

Scale Legend of Proposed Garden Cottage: 1/4" = 1'

Title: Convert One Car Garage to Garden Cottage

Address of Project: 29 Versailles Ave., Portsmouth, NH 03801

Current Date: June 29, 2022

Date of Proposed Conversion: ASAP

Source of Displayed Data: Drawing, Survey, and NH Land Consultant's Sewer Tie In Plan

Setbacks: front 15' side 10' rear 20'

Distance Between buildings: 15'

Lot Dimensions: 15,150 sq. feet

Abutting Streets: Versailles Ave. (front of property). Versailles Ave. dead end, Jones Ave. (to side and one house over), Lens Ave. (to back with one house in between)

Location and Dimensions of Driveways/Accessways: Driveway to right side of house (facing house from street). Driveway goes straight back from Versailles Ave. to one car garage/ proposed garden cottage. **Driveway length and width:** 10' wide x 90' long

Dimensions: Size and Height of Buildings: Proposed Garden Cottage: Existing 18 ' x 20 ' including overhang (which will become outside seating area), 12' x 18' dimensions of building for garden cottage, Height 12'

Dimensions, number and location of parking spaces both existing and proposed: 4 existing parking spaces in driveway, 10' x 20'

Location and description of open space and landscaping: Existing open space to each side of main house and back of main house. Open space to East is a large side lot of grass 45' x 100', open space in back of main house 40' x 80' mostly grass, some trees and shrubs, open space to West of main house 40' x 40' grass, shrubs, trees.

Labeled photo of existing buildings on property: See photos in PDF of Subject property: 29 Versailles Ave., House (backyard) to East: 8 Lens Ave, House (backyard) to West 179 Jones Ave.

Scaled Interior Floorplan, Gross Floor Area, Bedrooms: See floorplan in PDF, 199.4 square feet, studio with bathroom and kitchenette

Common Ownership: We will continue to maintain ownership of both the main house and the garden cottage in common ownership under one address.

Principle Place of Residence: This is our principle place of residence. See PDF page showing driver's licenses with address of subject property 29 Versailles Ave, Portsmouth and property tax bill.

Business Use: We do not have or plan to have a business with customers at the property.

Septic/City Sewer Hybrid: See PDF plan from NH Land Consultants with septic tie in plan. The current septic plan to the main house is a 1000 gallon tank, with a 500 gallon holding tank for effluent that is pumped across an easement to Jones Ave to the city sewer.

Noise, Traffic, Congestion: The garden cottage will be maintained, advertised, and enforced as a quiet space, parking will be contained on the property driveway.

Modification: No dimension or parking standard will need to be modified.

Neighbors: The project has been discussed with neighbors to the East and West.


29 Versailles Ave
(subject Property)

12 Lens Ave
(behind)

12 Lens Ave

29 Versailles Ave
(subject property)


179 Jones Ave
29 Versailles Ave
(subject property)

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 12-15-2022
Property Address: 2 Russell
Application #: LU-22-111
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding (Meets Standard/Criteria)**	**Supporting Information**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	Applicable standards: The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting.
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the erosion control and stormwater management practices and other mitigative measures for conformance with City design requirements. • A full drainage analysis report was submitted that included analysis of the predevelopment and post development drainage conditions. • Erosion control and stormwater management practices were reviewed by a third party engineer for conformance with City design requirements. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting.
4	Adequate protection for the quality of groundwater.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed stormwater management practices for conformance with City design requirements for the protection of the quality of groundwater. • A full drainage analysis report was submitted that included analysis of the predevelopment and post development drainage conditions. • Stormwater management practices were reviewed by a third party engineer for conformance with City design requirements. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			• TAC reviewed the water service design for conformance with City design requirements. • The site will be served by city water. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed sewage disposal facilities, lines, and connections for conformance with City design requirements. • The site will be served by municipal sewer. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations for fire safety, prevention and control. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • There are no on-site wetlands, and

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			no part of the development area is within a wetland buffer. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • There are no on-site historical features. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion. for conformance with City design requirements. • A full traffic impact study was submitted that included analysis of the no-build and build conditions. • The traffic impact study was reviewed by a third party engineer for conformance with City design requirements. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting.
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion. for

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			conformance with City design requirements. • A full traffic impact study was submitted that included analysis of the no-build and build conditions. • The traffic impact study was reviewed by a third party engineer for conformance with City design requirements. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting.
13	Adequate insulation from external noise sources.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed that police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project. • Project will not utilize municipal solid waste disposal. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the realignment of roadway intersection has created usable and functional open space. • Multiple community space areas are part of design plan

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • TAC reviewed the quantities, type or arrangement of landscaping and open space. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
	Other Board Findings:		

Findings of Fact | Subdivision Rules and Regulations
City of Portsmouth Planning Board

Date: 12-15-2022
Property Address: 2 Russell
Application #: LU-22-111
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

	Subdivision Review Criteria	Finding (Meets/Does Not Meet Criteria)	Supporting Information
1	Subdivision Rules and Regulations III. D. 1 The Board shall act to deny any application which is not in compliance with Section IV or V as appropriate. **SECTION IV - REQUIREMENTS FOR PRELIMINARY PLAT**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with these minimum requirements. The application was recommended as complete at the November 1, 2022 Technical Advisory Committee meeting.
2	**SECTION V - REQUIREMENTS FOR FINAL PLAT**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with these minimum requirements. The application was recommended as complete at the November 1, 2022 Technical Advisory Committee meeting.
3	**SECTION VI - GENERAL REQUIREMENTS**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee (TAC) for conformance with the General Requirements. • The TAC reviewed the street, drainage, and utility layout for conformance with city requirements.

	Subdivision Review Criteria	Finding (Meets/Does Not Meet Criteria)	Supporting Information
			• A Traffic Impact Study and Drainage Analysis have been prepared by a professional engineer and reviewed by a third party professionals. Comments have been addressed. • The site will be served by city water and sewer. The applicant has proposed utility, drainage, and access easements to ensure that all lots are adequately served The application was recommended for approval on November 1, 2022 at the Technical Advisory Committee Meeting.
4	**SECTION VII - DESIGN STANDARDS**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee (TAC) for conformance with these minimum requirements. • The TAC reviewed the street, drainage, and utility details for conformance with city design requirements. • The TAC reviewed and provided comments to ensure compliance with the Manual on Uniform Traffic Control Devices, ITE (speed humps) and NHDOT standards (street lights). The application was recommended for approval on November 1, 2022 at the Technical Advisory Committee Meeting.
5	**Other Board Findings**		

Findings of Fact | Parking Conditional Use Permit
City of Portsmouth Planning Board

Date: November 15, 2022
Property Address: 2 Russell Street
Application #: LU-22-111
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Parking Conditional Use Permit
10.1112.14 The Planning Board may grant a conditional use permit to allow a building or use to provide less than the minimum number of off-street parking spaces required by Section 10.1112.30, Section 10.1112.61, or Section 10.1115.20, as applicable, or to exceed the maximum number of off-street parking spaces allowed by Section 10.1112.51.

	Parking Conditional Use Permit 10.1112.62 Requirements	**Finding** (Meets Criteria/Requirement)	**Supporting Information** (provided by applicant)
1	10.1112.61 Developments that contain a mix of uses on the same parcel shall reduce the number of off-street parking spaces in accordance with the methodology in Section 10.1112.61 (1-3)	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • The project meets the city's parking requirements by sharing parking between the three (3) proposed redevelopment parcels and the existing Sheraton Hotel and Deer Street condos • The project is providing a total of 334 proposed parking spaces where 334 spaces are required. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
2	Shared parking arrangement	**Meets**	The application has been reviewed by

	Parking Conditional Use Permit 10.1112.62 Requirements	**Finding** **(Meets Criteria/Requirement)**	**Supporting Information (provided by applicant)**
	shall be secured by a covenant acceptable to the City and recorded in the Rockingham County Registry of Deeds	**Does Not Meet**	the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • The shared parking arrangement shall be secured by a covenant acceptable to the City and recorded at the Rockingham County Registry of Deeds. The applicant understands that should the Planning Board grant the shared parking CUP, as a condition of approval the applicant will be required to record the agreement. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting

Findings of Fact | Maximum Building Footprint Conditional Use Permit

City of Portsmouth Planning Board

Date: December 15, 2022
Property Address: 2 Russell Street
Application #: LU-22-111
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Maximum Building Footprint Conditional Use Permit
10.5A43.43 For a building that contains ground floor parking, a parking garage or underground parking levels, and is not subject to Section 10.5A43.42, the Planning Board may grant a conditional use permit to allow a building footprint of up to 30,000 sq. ft. in the CD4 or CD4-W districts, and up to 40,000 sq. ft. in the CD5 district, if all of the following criteria are met:

	Parking Conditional Use Permit 10.5A43.43 Requirements	**Finding** (Meets Criteria/Requirement)	**Supporting Information** (provided by the applicant)
1	No story above the ground floor parking shall be greater than 20,000 sq. ft. in the CD4 or CD4-W districts or 30,000 sq. ft. in the CD5 district.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • The site is located within the CD5 district. • The footprint of the building stories above the ground floor are 29,810 SF. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
2	All ground floor parking areas shall be separated from any public or private street by a liner building.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations.

	Parking Conditional Use Permit 10.5A43.43 Requirements	Finding (Meets Criteria/Requirement)	Supporting Information (provided by the applicant)
			• The ground floor parking areas are separated from the public street by a liner building. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
3	(c) At least 50% of the gross floor area of the ground floor shall be dedicated to parking.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • The total gross floor area of the ground floor dedicated to parking is 64.2%. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
4	(d) At least 30% of the property shall be assigned and improved as community space. Such community space shall count toward the required open space listed under Figures 10.5A41.10A-D (Development Standards) and community space required under Section 10.5A46.20. The size, location and type of the community space shall be determined by the Planning Board based on the size and location of the development, and the proposed and adjacent uses.	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee for conformance with the minimum requirements of the Site Plan Regulations. • The proposed lot area for Map 118, Lot 28 and Map 119 Lot 4 is 57,967 SF which requires 17,391 SF of community space to meet the 30% requirement. • Proposed community space areas on Map 118, Lot 28 and Map 119 Lot 4 totals 23,446 SF or 40.4%. • See Community Space Exhibit. The application was deemed complete at the November 1, 2022 Technical Advisory Committee meeting
5	(e)The development shall comply with all applicable standards of the ordinance and the City's land use regulations.	**Meets** **Does Not Meet**	The development has been reviewed by the Technical Advisory Committee for conformance with applicable standards of the ordinance and the City's land use regulations and has been recommended for approval.
5	**Other Board Findings:**		

T5037-002
November 23, 2022

Mr. Rick Chellman, Chairman
City of Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Site Review, Lot Line Revision & Conditional Use Permit Applications
Proposed Mixed Use Development, Russell & Deer Street, Portsmouth, NH

Dear Chairman Chellman,

On behalf of Port Harbor Land, LLC (owner/applicant), we are pleased to submit one (1) set of hard copies and one electronic file (.pdf) of the following information to support a request for a Site Review Permit, Lot Line Revision Permit, Conditional Use Permit for Shared Parking on Separate Lots, and a Conditional Use Permit for Increased Building Footprint the above referenced project:

- One (1) full & one (1) half size copy of the Site Plan Set, last revised November 23, 2022;
- TAC Stipulations Response Report, dated November 23, 2022;
- Drainage Analysis, last revised October 20, 2022;
- Drainage Peer Review Documents
    - CMA No Additional Comments Letter dated November 10, 2022
    - Drainage Peer Review Comment Response Letter 3, dated November 10, 2022;
    - Drainage Peer Review Comment Response Letter 2, dated September 22, 2022;
    - Drainage Peer Review Comment Response Letter 1, dated July 21, 2022;
- Operations and Maintenance Manual, dated May 24, 2022;
- Traffic Impact Study, dated May 24, 2022;
- Traffic Peer Review Documents
    - Traffic Peer Review Comment Response Letter 3, dated November 18, 2022;
    - Traffic Peer Review Comment Response Letter 2, dated September 22, 2022;
    - Traffic Peer Review Comment Response Letter 1, dated August 2, 2022;
- Grade Plane Exhibit, last revised November 23, 2022;
- Community Space Exhibit, last revised November 23, 2022;
- Fire Truck Turning Exhibits, last revised November 23, 2022;
- Tractor Trailer Turning Exhibit, last revised November 23, 2022;
- Passenger Vehicle Turning Exhibit, dated September 22, 2022
- Eversource Will Service Letter, dated May 23, 2022;
- Unitil Will Service Letter, dated April 19, 2022;
- Green Building Statement, dated May 23, 2022;
- Exterior Lighting Compliance Letter, dated August 23, 2022

PROJECT SUMMARY

Existing Conditions

The project is located at 2 Russell Street, Deer Street & 250 Market Street consisting of properties identified as Map 118 Lot 28, Map 119 Lot 1-1A, 1-1C & Lot 4, Map 124 Lot 12, and Map 125 Lot 21 on the City of Portsmouth Tax Maps which are located in the Character District 5 (CD5). The properties identified as Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21 (proposed redevelopment parcels) are the existing parcels proposed to be redeveloped are bound by Deer Street to the south, Maplewood Avenue to the west, the railroad to the north and Russell Street to the east. Map 119 Lot 4 will be developed into a park area as part of the community space for the proposed project, and Map 119 Lot 1-1A & 1-1C will be part of the lot line revision application.

The proposed redevelopment parcels lots currently consist of a large surface parking lot which is mainly used by the Sheraton Hotel. There are some small patches of gravel and grass where the site abuts the railroad property and a ledge outcropping to the north.

Proposed Redevelopment

The proposed project will include the construction of three buildings consisting of office, retail/commercial, and residential uses. Building 1 is a proposed 4-story office building at the corner of Deer Street and Maplewood Avenue, Building 2 is a proposed 5-story mixed-use residential building at the corner of Deer Street and Russell Street with below ground parking, first floor residential lobby, commercial space and parking and 56 upper floor residential units, and Building 3 is a proposed 5-story mixed-use residential building along Russell Street with first floor residential lobby and commercial space and 24 upper floor residential units.

The existing condition of the proposed redevelopment parcels does not provide any stormwater treatment. The proposed development will provide stormwater treatment to runoff from the new buildings and surface pedestrian ways via stormwater filtration treatment units. In addition, underground detention systems have been incorporated into the design to address peak runoff rates from the site. The stormwater management system is described in further detail in the enclosed Drainage Analysis.

The project also consists of significant on-site and off-site improvements including wide sidewalks, roadway improvements, community space, lighting, landscaping, and utilities. The proposed development will provide landscape improvements including an enhanced streetscape and plantings, plaza area at the redesigned intersection of Deer Street and Russell Street, and community space areas. The streetscape design includes a variety of vibrant site elements such as shade trees, public benches, and retail spill out zones. Combined, these site features will create a friendly, safe pedestrian experience and connect users with first floor programs and access to proposed on-site and off-site community space areas. In total the proposed project is providing 22,353 SF of off-site, pedestrian orientated and park space public improvements.

Community Space & Off-Site Improvements

The project is located in the North End Incentive Overlay District. The applicant will be providing 38,695 SF of community spaces. This Community Space is 39.8% of the total lot area which exceeds the 20% of total lot area required to receive the incentive bonus for one additional story (10 ft) above the maximum height requirement. The community space calculation is depicted in the enclosed Community Space Exhibit. Additionally, the project is required to provide 30% community space as part of a conditional use permit application discussed below for Map 118 Lot 28 to allow proposed Building 2 to have a maximum 40,000 SF building footprint. Overall, the project will be providing 31.2% open space on the development lot where only 5% is required by zoning.

LAND-USE PERMIT APPLICATIONS

Local Permitting Timeline

The proposed project will require the following site related approvals from the Planning Board:

- Site Plan Review Permit
- Lot Line Revision Permit
- Conditional Use Permit for Shared Parking on a Separate Lot
- Conditional Use Permit for Increased Building Footprint

To date the applicant has attended the following meetings with the local land-use boards related to the Site Plan:

- December 16, 2021 – Planning Board Conceptual Consultation
- January 11, 2022 – Technical Advisory Committee Work Session
- February 17, 2022 – Planning Board Design Review
- June 7, 2022 – Technical Advisory Committee Meeting
- August 2, 2022 - Technical Advisory Committee Meeting
- September 6, 2022 - Technical Advisory Committee Meeting
- October 4, 2022 - Technical Advisory Committee Meeting
- November 1, 2022 - Technical Advisory Committee Meeting

In addition, the project received a certificate of approval from the Historic District Commission (HDC) at their meeting on August 10, 2022.

Also, the project will also require the following approvals from the New Hampshire Department of Environmental Services (NHDES):

- Alteration of Terrain Permit
- Sewer Connection Permit

Site Plan Review Permit

The project will require a Site Plan Review Permit for the site improvements described above in the project summary. The project has previously been before the Planning Board for Conceptual Consultation and Preliminary Design Review. In addition, the project has previously been before the Technical Advisory Committee (TAC) for a work session and five (5) regular meetings.

Lot Line Revision Permit

The proposed redevelopment parcels located at the corner of Russell Street and Deer Street consist of properties identified as Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21. The existing internal lot lines separating these three lots, are proposed to be relocated to better align the parcels for the proposed building footprints.

Additionally, three land transfers are proposed to allow for the realignment of the Russell Street & Deer Street intersection and for the City's future construction of a roundabout at Russell Street and Market Street. Land transfer area 1 is proposed from Map 119, Lot 4 to

the City of Portsmouth. Land transfer area 2 is proposed from Map 119, Lot 1-1C to the City of Portsmouth. Lastly land transfer area 3 is proposed from Map 119 Lot 1-1A to the City of Portsmouth.

Conditional Use Permits

Shared Parking on Separate Lots

A Conditional Use Permit for parking on a separate lot as permitted under Section 10.1112.62 of the City of Portsmouth Zoning Ordinance is requested for the project. The project meets the parking requirements by sharing parking between the three (3) proposed redevelopment parcels and the existing Sheraton Hotel and Deer Street condos as shown on the enclosed Site Plans. A total of 334 parking spaces are required to meet the Zoning requirements.

The existing surface parking lot is used by the Sheraton Hotel for their valet and self-park operations. There are also an existing 82 deeded parking spaces for the Deer Street and Sheraton Condos that can be assigned to any space on either the Sheraton Lot or the redevelopment parcels. The table below identifies the required parking for the existing and proposed uses per the City of Portsmouth Ordinance. The project is providing 180 spaces within Building 2 and there are 154 existing spaces on the Sheraton lot, for a total of 334 proposed parking spaces where 334 spaces are required.

City of Portsmouth Downtown Overlay Parking Requirement	
North End Development, Portsmouth, NH	
Proposed Commercial Use Parking Requirements	No requirements 75,000 SF **0 Spaces**
Proposed Residential Use Parking Requirements	1.3 Spaces / Dwelling Unit 80 Dwelling Units **104 Spaces**
Proposed Residential Visitor Parking Requirements	1 Spaces / 5 Dwelling Unit 80 Dwelling Units **16 Spaces**
Sheraton Hotel Parking Requirements	0.75 Spaces / Hotel Room 181 Rooms **136 Spaces**
Sheraton Condo Parking Requirements	Deeded Easement for 24 Spaces 12 Dwelling Units **24 Spaces**
Deer Street Condo Parking Requirements	Deeded Easement for 58 Spaces 3-story mixed use Condos on Deer Street **58 Spaces**
Subtotal Required	**338 Spaces**
DOD Parking	**-4 Spaces**
Total Spaces Required	**334 Spaces**

Per Section 10.1112.62 (2) the shared parking arrangement shall be secured by a covenant acceptable to the City and recorded at the Rockingham County Registry of Deeds. The

applicant understands that should the Planning Board grant the shared parking CUP, as a condition of approval the applicant will be required to record the agreement. The applicant will manage the parking for hotel use with a valet parking operator that will operate and manage the parking 24/7/365 to optimize the use of the available parking.

Increased Building Footprint

A Conditional Use Permit to allow a building footprint of up to 40,000 SF as permitted under Section 10.5A43.43 of the City of Portsmouth Zoning Ordinance is being requested for the project. The Planning Board may grant a conditional use permit to allow a building footprint of up to 40,000 SF in the CD5 district, if all of the following criteria are met:

(a) No story above the ground floor parking shall be greater than 30,000 SF in the CD5 district.

The footprint of the building stories above the ground floor are 29,810 SF.

(b) All ground floor parking areas shall be separated from any public or private street by a liner building.

The ground floor parking areas are separated from the public street by a liner building.

(c) At least 50% of the gross floor area of the ground floor shall be dedicated to parking.

The total gross floor area of the ground floor dedicated to parking is 64.2%.

(d) At least 30% of the property shall be assigned and improved as community space.

The proposed lot area for Map 118, Lot 28 and Map 119 Lot 4 is 57,967 SF which requires 17,391 SF of community space to meet the 30% requirement. Map 124, Lot 12 and Map 125, Lot 21 also require 20% community space to be eligible for the North End Overlay Incentives. Proposed community space areas on Map 118, Lot 28 and Map 119 Lot 4 totals 23,446 SF or 40.4%. The total required community space for the project is 25,221 SF with the total proposed community space equaling 38,568 SF or 39.7%. This is shown on the enclosed Community Space Exhibit.

(e) The development shall comply with all applicable standards of the ordinance and the City's land use regulations.

The development complies with all applicable standards of the ordinance and the City's land use regulations.

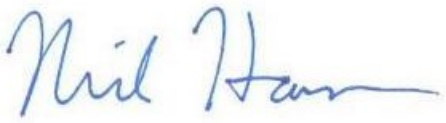
The enclosed plans and supplemental materials have been provided to address conditions of approval from the Technical Advisory Committee (TAC) in correspondence dated November 9, 2022 and at their meeting held on November 1, 2022. The enclosed TAC Stipulation Report addresses the status of each of the TAC Stipulation.

We respectfully request to be placed on the Planning Board agenda for the December 15, 2022 meeting.

If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.



Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

Cc: Port Harbor Land, LLC (via e-mail)

NORTH END MIXED USE DEVELOPMENT

RUSSELL STREET & DEER STREET

PORTSMOUTH, NEW HAMPSHIRE

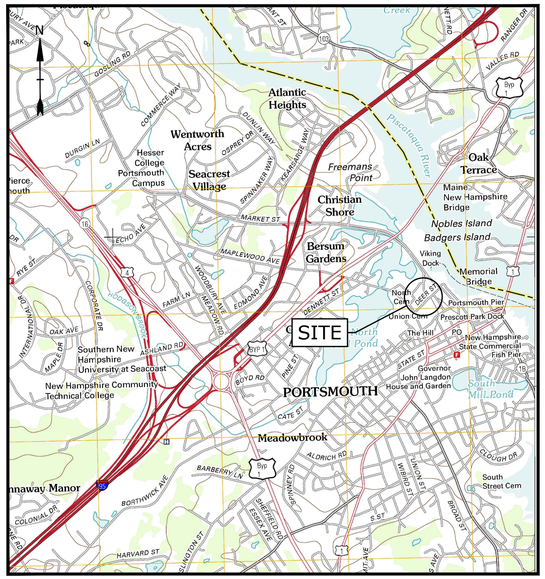
MAY 24, 2022

LAST REVISED NOVEMBER 23, 2022

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	11/23/2022
S-1	LOT LINE RELOCATION PLAN	11/23/2022
S-2	SURVEY NOTES	11/23/2022
S-3	ACCESS EASEMENT PLAN	11/23/2022
S-4	ACCESS EASEMENT PLAN	11/23/2022
S-5	UTILITIES EASEMENT PLAN	11/23/2022
S-6	COMMUNITY SPACE EASEMENT PLAN	11/23/2022
G-100	GENERAL NOTES AND LEGEND	11/23/2022
C-101	EXISTING CONDITIONS & DEMOLITION PLAN	11/23/2022
C-102	OVERALL SITE PLAN	11/23/2022
C-102.1	SITE PLAN	11/23/2022
C-103	GRADING & DRAINAGE PLAN	11/23/2022
C-104	UTILITIES PLAN	11/23/2022
C-501	EROSION CONTROL NOTES AND DETAILS SHEET	11/23/2022
C-502	DETAILS SHEET	11/23/2022
C-503	DETAILS SHEET	11/23/2022
C-504	DETAILS SHEET	11/23/2022
C-505	DETAILS SHEET	11/23/2022
C-506	DETAILS SHEET	11/23/2022
C-507	DETAILS SHEET	11/23/2022
C-508	DETAILS SHEET	11/23/2022
C-509	DETAILS SHEET	11/23/2022
C-510	DETAILS SHEET	11/23/2022
L-100	LANDSCAPE MATERIAL PLAN, LEGEND AND NOTES	11/23/2022
L-101	LANDSCAPE SITE PLAN	11/23/2022
L-102	LANDSCAPE DETAILS	11/23/2022
L-103	LANDSCAPE DETAILS	11/23/2022
E-001	LIGHTING COVER SHEET	11/23/2022
E-100	EXTERIOR LIGHTING PLAN AND CALCULATIONS	11/23/2022
E-101	EXTERIOR LIGHTING CUTSHEETS	11/23/2022
E-102	EXTERIOR LIGHTING CUTSHEETS	11/23/2022
E-103	EXTERIOR LIGHTING CUTSHEETS	11/23/2022
E-104	EXTERIOR LIGHTING CUTSHEETS	11/23/2022
A-101	BUILDING 1 AREA PLANS	5/24/2022
A-102	BUILDING 2 AREA PLANS	5/24/2022
A-103	BUILDING 3 AREA PLANS	5/24/2022
A-201	BUILDING 1 ELEVATION	5/24/2022
A-202	BUILDING 1 ELEVATION	5/24/2022
A-203	BUILDING 2 ELEVATION	5/24/2022
A-204	BUILDING 2 ELEVATION	5/24/2022
A-205	BUILDING 2 ELEVATION	5/24/2022
A-206	BUILDING 3 ELEVATION	5/24/2022
A-207	BUILDING 3 ELEVATION	5/24/2022
A-208	GLAZING STUDY	5/24/2022

T & B PROJECT NO: T-5037-002

LIST OF PERMITS		
LOCAL	STATUS	DATE
SITE PLAN REVIEW PERMIT	PENDING	
LOT LINE REVISION PERMIT	PENDING	
CONDITIONAL USE PERMIT	PENDING	
STATE		
NHDES - SEWER CONNECTION PERMIT	NOT SUBMITTED	
NHDES - ALTERATION OF TERRAIN PERMIT	NOT SUBMITTED	



LOCATION MAP
SCALE: 1" = 2,000'

PREPARED BY:
Tighe&Bond
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE 03801
603-433-8818

ARCHITECT:
SGA ARCHITECTURE
200 HIGH STREET, FLOOR 2
BOSTON MA, 02110
857-300-2610

OWNER/APPLICANT:
TAX MAP 118, LOT 28
TAX MAP 119, LOT 1-1A
TAX MAP 119, LOT 1-1C
TAX MAP 119, LOT 4
TAX MAP 124, LOT 12 &
TAX MAP 125, LOT 21

PORT HARBOR LAND, LLC
1000 MARKET STREET, BUILDING ONE
PORTSMOUTH, NEW HAMPSHIRE 03801

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 - LICENSED PROFESSIONAL ENGINEER - 11/23/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 - LICENSED PROFESSIONAL ENGINEER - 11/23/22

PB SUBMISSION

COMPLETE SET 44 SHEETS

Last Saved: 11/22/2022
Plotted: Nov 23, 2022 - 10:33am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002_C-COVER.dwg

NOTES:

1. THE PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 5 (CD5) & HISTORICAL DISTRICT (HD).
2. THE PARCELS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C.
3. THE PARCELS ARE LOCATED IN ZONE X, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 259 OF 681, MAP NUMBER 33015C0259F WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
4. SEE SECTION
5. OWNER OF RECORD:
   MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28
   PORT HARBOR LAND LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#14

   MAP 119 LOT 1-1A
   PH LOTS LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6130 PG#897

   MAP 119 LOT 1-1C
   PORT OWNER HARBOR LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#353
6. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
7. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED BOUNDARY LINES FOR LOT LINE RELOCATIONS FOR MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C .
8. FIELD SURVEY WAS COMPLETED BY TCE ON AUGUST 5 & 17, 2019, WITH A TOPCON DS103, A TOPCON HYPER-V GPS RECEIVER, AND A TOPCON FC-5000 DATA COLLECTOR.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
11. SEE SHEET S-2 FOR PLAN REFERENCES, EASEMENTS & RESTRICTIONS, ENCROACHMENTS AND LINE & CURVE TABLES.

EXISTING AREA TABLE

MAP	LOT	S.F.	ACRES
118	28	48,417	1.115
119	1-1C	86,031	1.975
119	1-1A	2,640	0.0610
119	4	9,765	0.22
124	12	19,055	0.4374
125	21	22,559	0.5179

PROPOSED AREA TABLE

MAP	LOT	S.F.	ACRES
118	28	50,875	1.1679
119	1-1C	84,604	1.9420
119	1-1C REMAINING	1,427	0.033
119	1-1A	2,640	0.0610
119	4	7,092	0.1600
119	4 REMAINING	2,673	0.0600
124	12	20,918	0.4802
125	21	18,237	0.4187

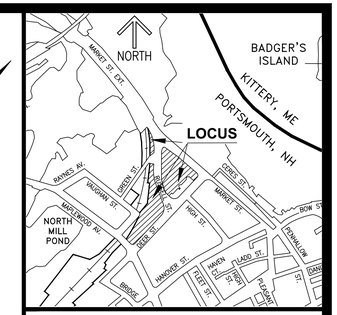
PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN AUGUST 2019. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

LICENSED LAND SURVEYOR _____ DATE _____

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



LOCATION PLAN

REFERENCE PLAN #XXX

MAP 124 LOT 1
N/F
CITY OF PORTSMOUTH
PO BOX 628
PORTSMOUTH, NH 03801
RCRD BK.# PG.#

MAP 164 LOT 4
N/F
BOSTON AND MAINE CORPORATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862
RCRD BK.#0 PG.#0

MAP 125 LOT 17-3
N/F
EIGHTKPH LLC
233 VAUGHN ST. UNIT 301
PORTSMOUTH, NH 03801
RCRD BK.#6348 PG.#2213

MAP 124 LOT 8
N/F
111 MAPLEWOOD AVENUE LLC
210 COMMERCE WAY SUITE
300 PORTSMOUTH, NH 03801
RCRD BK.#6026 PG.#2219

MAP 124 LOT 13
N/F
BOSTON AND MAINE CORPORATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862
RCRD BK.#0 PG.#0

MAP 124 LOT 14

MAP 124 LOT 12
EXISTING:
19,055 S.F.
(0.4374 ACRES)
PROPOSED:
20,918 S.F.
(0.4802 ACRES)

MAP 125 LOT 21
EXISTING:
22,559 S.F.
(0.5179 ACRES)
PROPOSED:
18,237 S.F.
(0.4187 ACRES)

MAP 118 LOT 28
EXISTING:
48,417 S.F.
(1.1115 ACRES)
PROPOSED:
50,875 S.F.
(1.1679 ACRES)

MAP 119 LOT 1-1A
2,640 S.F.
(0.061 ACRES)
TO BE CONVEYED TO THE CITY OF PORTSMOUTH

MAP 119 LOT 4
EXISTING:
9,765 S.F.
(0.22 ACRES)
PROPOSED:
7,092 S.F.
(0.16 ACRES)

MAP 119 LOT 3
N/F
CARTHARTES 53 STREET LLC
6 LIBERTY SQUARE PMB 90767
BOSTON, MA 02109
RCRD BK.#6309 PG.#2594

MAP 119 LOT 4
REMAINING:
2,673 S.F.
(0.06 ACRES)
TO BE CONVEYED TO THE CITY OF PORTSMOUTH

MAP 119 LOT 1-1C
REMAINING:
1,427 S.F.
(0.033 ACRES)
TO BE CONVEYED TO THE CITY OF PORTSMOUTH

MAP 119 LOT 1-1C
EXISTING:
86,031 S.F.
(1.975 ACRES)
PROPOSED:
84,604 S.F.
(1.942 ACRES)

MAP 119 LOT 6
N/F
227 MARKET STREET LLC
27 AUSTIN STREET
PORTSMOUTH, NH 03801
RCRD BK.#5986 PG.#658

GREEN STREET (PUBLIC RIGHT OF WAY)
VAUGHAN AVENUE (PUBLIC RIGHT OF WAY)
MAPLEWOOD AVENUE
DEER STREET (VARIABLE WIDTH PUBLIC RIGHT OF WAY)
RUSSELL STREET (VARIABLE WIDTH PUBLIC RIGHT OF WAY)
MARKET STREET (70' WIDE PUBLIC RIGHT OF WAY) (VARIABLE WIDTH PUBLIC RIGHT OF WAY)

CBA ZONE
CD5 ZONE
WFF ZONE

100' BUFFER FROM NORTH MILL POND

PROPOSED LOT LINE
LOT LINE TO BE RELOCATED
SEWER EASEMENT (TO BE RELEASED)
SEWER EASEMENT
10' ELECTRIC EASEMENT (TO BE RELEASED)
10' GAS EASEMENT (TO BE RELEASED)
ABANDONED 24" SEWER LINE

EXISTING BUILDING
EXISTING HOTEL BUILDING
CANOPY
OVERHANG
CONCRETE RAMP TO UNDERGROUND PARKING AREA
PAVED VEHICLE ACCESS
DRIVE UNDER SECOND FLOOR
COLUMN (TYP.)
3RD STORY DECK
AWNINGS
LOADING DOCK
STAIRS TO UNDERGROUND PARKING
EXISTING CONDOMINIUM BUILDING UNDERGROUND PARKING
UNDERGROUND PARKING
EXISTING CONDOMINIUM BUILDING
LIMITS OF UNDERGROUND PARKING
ABOVE GROUND CONDOMINIUM BUILDINGS
BUILDING CORNER IS ON PROPERTY LINE

FOUND CONCRETE BOUND (FLUSH) 04/04/03
FOUND CONCRETE BOUND 8/17/19
FOUND CONCRETE BOUND WITH DISK "PHA" 08/17/19
FOUND CONCRETE BOUND WITH LEAD PLUG 02/19/99 (SEE DETAIL)
FOUND IRON ROD WITH CAP "VERRA" 03/11/05
SET IRON ROD 04/22/05
IRON ROD SET W/CAP #844 (8/17/19)
IRON ROD SET W/ CAP #844 (8/17/19)
IRON ROD FOUND (8/16/19)
IRON ROD FOUND (8/17/19)
RAILROAD SPIKE SET (8/17/19)
DRILL HOLE SET 08/17/19
DRILL HOLE SET (8/17/19)
DRILL HOLE FOUND (8/17/19)
MAGNETIC NAIL SET (8/17/19)
FOUND CONCRETE BOUND (BROKEN, FLUSH) 8/17/03
FOUND CONCRETE BOUND (FLUSH) 8/17/19

DETAIL
R=1166.00
Δ=03°20'52"
TL14

40 20 0 40
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

LOT LINE RELOCATION PLAN
NORTH END MIXED USE
DEER ST., RUSSELL ST., MARKET ST.
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

MAP	&	LOT
118		28
119		1-1C, 1-1A, 4
124		12
125		21

SCALE: 1" = 40' (22x34)
1" = 80' (11x17)
NOVEMBER 23, 2022

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR		FB		
45354-12	CK	BMK	CADFILE	SEE MARGIN	S-1

Nov 23, 2022 - 10:05am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

EASEMENTS & RESTRICTIONS:

PARCEL I (MAP 119-1-1C/PARCEL 1C)

(10) ITEM #10 – RIGHTS, RESTRICTIONS AND EASEMENTS RESERVED BY BOSTON & MAINE RAILROAD AND WESTERN UNION TELEGRAPH COMPANY IN AN INDENTURE TO ROSE R. WOLFSON DATED JULY 20, 1954 AND RECORDED IN RCRD IN BOOK 1324 PAGE 40 AND DESCRIBED IN A DEED OF WOLFSON TO PORTSMOUTH HOUSING AUTHOURITY RECORDED IN RCRD IN BOOK 1936 PAGE 113. (TO ENTER, REPAIR, RENEW AND REMOVE A GATE BOX, ETC.). OFF-SITE

(11) ITEM #11 – RIGHTS, RESTRICTIONS AND EASEMENTS RESERVED BY ROBERT W. MESERVE AND BENJAMIN H. LACY, AS TRUSTEE OF BOSTON & MAINE CORPORATION IN A DEED TO PORTSMOUTH HOUSING AUTHORITY DATED JULY 15, 1975 AND RECORDED IN THE RCRD IN BOOK 2241 PAGE 836. (TO INSPECT, REPAIR, RENEW, MAINTAIN, RELAY AND REMOVE TRACTS AND SECTIONS OF SIDETRACK AND UNDERGROUND FACILITIES).

(12) ITEM #12 – TERMS AND CONDITIONS OF THE EASEMENT FROM SHELTER GROUP, INC. TO HARBORSIDE ASSOCIATES DATED AUGUST 30, 1985 AND RECORDED IN THE RCRD IN BOOK 2561 PAGE 487. THIS EASEMENT GRANTS THE RIGHT TO PASS & REPASS BY FOOT & VEHICLE, AND TO INSTALL IMPROVEMENTS ETC. EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED. (SEE PLAN REFERENCE 4)

(13) ITEM #13 – TERMS AND CONDITIONS OF THE PARKING ACCESS EASEMENT FROM HARBORPARK, INC. TO HARBORSIDE ASSOCIATES DATED AUGUST 30, 1985 AND RECORDED IN THE RCRD IN BOOK 2561 PAGE 505. THIS EASEMENT GRANTS CERTAIN RIGHTS TO PASS OVER PARCELS 2 & 2C. EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION AND THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN. (SEE PLAN REFERENCE 4 AND SHEET C-3)

(14) ITEM #14 – EASEMENTS GRANTED TO NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY 4 RECORDED IN THE RCRD AS FOLLOWS:
A. FROM HARBORSIDE ASSOCIATES DATED AUGUST 1, 1986 AND RECORDED IN BOOK 2630 PAGE 1041.
B. FROM SHELTER GROUP DATED AUGUST 15, 1986 AND RECORDED IN BOOK 2630 PAGE 1047; AND
C. FROM HARBORPARK, INC. DATED AUGUST 1, 1986 AND RECORDED IN BOOK 2630 PAGE 1052.
EASEMENT IS FOR THE "PURPOSE OF PROVIDING TELEPHONE SERVICE TO THE BUILDINGS WHICH ARE NOW OR HEREAFTER LOCATED ON SAID PARCELS OF LAND, AND THE LOCATION OF WHICH LINES, WIRES, CABLES, CONDUITS, PIPES AND DISTRIBUTING FACILITIES SHALL BE IN AN AREA WHICH SHALL BE MUTUALLY SATISFACTORY TO GRANTOR AND GRANTEE..." EASEMENT IS THEREFORE NOT PLOTTED.

(15) ITEM #15 – SUCH STATE OF FACTS AS SHOWN ON PLAN ENTITLED, "SUBDIVISION PLAN OF LOTS 1B &1A & 1C, PORTSMOUTH, NH." DATED OCTOBER 1, 1987 BY BRIGGS ASSOCIATES, INC. AND RECORDED IN THE RCRD AS PLAN NO. D-17149, AS AMENDED BY AN AFFIDAVIT FOR CORRECTION TO SUBDIVISION PLAN DATED DECEMBER 8, 1987 AND RECORDED IN THE RCRD IN BOOK 2719 PAGE 1953. CORRECTIONS SHOWN HEREON. (SEE PLAN REFERENCE 1 AND SHEET C-3)

(16) ITEM #16 – TERMS AND CONDITIONS OF THE ACCESS EASEMENT (HARBORSIDE) FROM HARBORPARK, INC. TO HARBORSIDE ASSOCIATES DATED NOVEMBER 30, 1987 AND RECORDED IN THE RCRD IN BOOK 2719 PAGE 1973. THIS EASEMENT GRANTS PEDESTRIAN & VEHICULAR ACCESS OVER LOTS 1B & 1C. EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION AND THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN. (SEE PLAN REFERENCE 5)

(17) ITEM #17 – TERMS AND CONDITIONS OF THE CONSTRUCTION, USE AND MAINTENANCE EASEMENT (HARBORSIDE) FROM HARBORPARK, INC. TO HARBORSIDE ASSOCIATES DATED NOVEMBER 30, 1987 AND RECORDED IN THE RCRD IN BOOK 2719 PAGE 1979. THIS EASEMENT GRANTS CERTAIN RIGHTS TO CONSTRUCT, USE & MAINTAIN THE UNDERGROUND PARKING FACILITY. EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED. (SEE PLAN REFERENCE 5)

(18) ITEM #18 – ACCESS EASEMENT (HARBORPARK) FROM HARBORSIDE ASSOCIATES TO HARBORPARK, INC. DATED DECEMBER 4, 1987 AND RECORDED IN THE RCRD IN BOOK 2719 PAGE 1986. THIS EASEMENT APPLIES TO PORTIONS OF THE PREMISES "AS MAY BE REASONABLY NECESSARY", EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION, THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN. (SEE PLAN REFERENCE 5)

(19) ITEM #19 – UTILITIES EASEMENT (HARBORPARK) FROM HARBORSIDE ASSOCIATES TO HARBORPARK, INC. DATED DECEMBER 4, 1987 AND RECORDED IN THE RCRD IN BOOK 2719 PAGE 1994. THIS EASEMENT GIVES THE OWNERS OF MAP 119 LOT 1B THE RIGHT "TO ENTER AT ANY AND ALL TIMES UPON THAT PORTION OF GRANTOR'S LAND AS MAY BE REASONABLY NECESSARY TO CONSTRUCT, INSTALL AND PERPETUALLY MAINTAIN, UNDER, OVER OR ACROSS GRANTOR'S LAND...", UNDERGROUND UTILITIES ARE NOT REQUIRED AS PART OF THIS SURVEY, EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION, THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN. (SEE PLAN REFERENCE 5)

(20) ITEM #20 – TERMS AND CONDITIONS OF A DEED FROM HARBORSIDE ASSOCIATES TO HARBORSIDE INN, INC. DATED JUNE 6, 1988 AND RECORDED IN THE RCRD IN BOOK 2744 PAGE 1257. THIS CONVEYS THE SPACE AND AREA SHOWN AS "MARKET WHARF II, A CONDOMINIUM" LOCATED WITHIN THE EXISTING HOTEL BUILDING. NOT DEFINED AS TO SPECIFIC LOCATION, THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN (SEE PLAN REFERENCE 3)

(21) ITEM #21 – TERMS AND CONDITIONS OF EASEMENT AND BUILDING OPERATING AGREEMENT BY AND BETWEEN HARBORSIDE INN, INC. AND HARBORSIDE ASSOCIATES DATED JUNE 6, 1988 AND RECORDED IN THE RCRD IN BOOK 2744 PAGE 1261. EASEMENTS ARE NOT DEFINED AS TO EXACT LOCATION, THEREFORE ARE NOT PLOTTED.

(22) ITEM #22 – PARKING EASEMENT (MARKET WHARF II) FROM HARBORSIDE ASSOCIATES TO HARBORSIDE INN, INC. DATED MAY 12, 1988 AND RECORDED IN THE RCRD IN BOOK 2744 PAGE 1307. SPACES ARE NOT ENUMERATED AND ARE SUBJECT TO CHANGE THEREFORE EASEMENT IS NOT PLOTTED.

(23) ITEM #23 – PARKING EASEMENT (MARKET WHARF II: SECOND) FROM HARBORSIDE ASSOCIATES TO HARBORSIDE INN, INC. DATED MAY 12, 1988 AND RECORDED IN THE RCRD IN BOOK 2744 PAGE 1317. SPACES ARE NOT ENUMERATED AND ARE SUBJECT TO CHANGE, THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN. (SEE SHEET C-3)

(24) ITEM #24 – CABLE TELEVISION INSTALLATION AND SERVICE AGREEMENT BY AND BETWEEN CONTINENTAL CABLEVISION OF NEW ENGLAND, INC., AND HARBORSIDE ASSOCIATES DATED DECEMBER 29, 1994 AND RECORDED IN THE RCRD IN BOOK 3096 PAGE 854. OWNER GRANTS TO OPERATOR THE RIGHT TO OWN, OPERATE AND MAINTAIN A CABLE TELEVISION DISTRIBUTION SYSTEM... EASEMENT IS NOT PLACEABLE AND THEREFORE NOT PLOTTED.

(25) ITEM #25 – PARKING EASEMENT RIGHTS RESERVED IN A DEED FROM HARBORSIDE ASSOCIATES TO SHELTER GROUP, INC., DATED MAY 6, 1988 AND RECORDED IN THE RCRD IN BOOK 2744 PAGE 1247. THIS EASEMENT GRANTS THE RIGHT TO USE PARKING SPACES ACROSS RUSSELL STREET. EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION, THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN (SEE PLAN REFERENCE 4 AND SHEET C-3).

(26) ITEM #26 – SUCH MATTERS AND STATE OF FACTS AS ARE SHOWN ON THE FOLLOWING PLANS RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS:
A. "SUBDIVISION PLAN OF PARCELS 1 & 2 IN PORTSMOUTH, NH" DATED JUNE 25, 1985, RECORDED AS PLAN NO. D-13798 (2 SHEETS) [SEE PLAN REFERENCE 2]
B. "THE HARBORSIDE PORTSMOUTH NEW HAMPSHIRE," DATED JULY 16, 1985, RECORDED AS PLAN NO. C-14042 (2 SHEETS) [SEE PLAN REFERENCE 6]
C. "SURVEY OF HARBORSIDE & HARBORPARK LAND IN PORTSMOUTH, N.H." DATED AUGUST 13, 1985 AND REVISED AUGUST 27, 1985, RECORDED AS PLAN NO. D-14043 (2 SHEETS) [SEE PLAN REFERENCE 4]
D. "SUBDIVISION PLAN OF LOTS 1B & 1C & 1A IN PORTSMOUTH, N.H." DATED OCTOBER 1, 1987, RECORDED AS PLAN NO. D-17149 (SEE PLAN REFERENCE 1)
E. "HARBORSIDE AND HARBORPARK – EASEMENT PLAN PARCEL 1" DATED OCTOBER 22, 1987, RECORDED AS PLAN NO. D-17413 (SEE PLAN REFERENCE 5)
F. "MARKET WHARF II A CONDOMINIUM SITE AND FLOOR PLANS" DATED APRIL 11, 1988, RECORDED AS PLAN NO. D-18097 (7 SHEETS) [SEE PLAN REFERENCE 3]

EASEMENTS & RESTRICTIONS CONTINUED:

PARCELS 2, 2A, 2B & 2C (MAP 119 LOT 4/PARCEL 2B, MAP 124 LOT 12/PARCEL 2A, MAP 118 LOT 28/PARCEL 2 & MAP 125 LOT 21/PARCEL 2C)

(27) ITEM #27 – RIGHTS AND EASEMENTS FROM THE BOSTON AND MAINE RAILROAD TO THE CITY OF PORTSMOUTH DATED JANUARY 31, 1936 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 917 PAGE 10. 10' SEWER EASEMENT ON PARCEL 2C AND SHOWN ON PLAN REFERENCES 18 & 19. PLOTTED HEREON.

(28) ITEM #28 – EASEMENT GRANTED TO THE CITY OF PORTSMOUTH, RECORDED IN SAID REGISTRY AT BOOK 2245 PAGE 328. SEWER EASEMENT ON PARCEL 2C (SEE PLAN REFERENCE 20). PLOTTED HEREON.

(29) ITEM #29 – RIGHTS, RESTRICTIONS AND EASEMENTS RESERVED BY BOSTON & MAINE RAILROAD AND WESTERN UNION TELEGRAPH COMPANY IN AN INDENTURE TO ROSE R. WOLFSON DATED JULY 20, 1954 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 1324 PAGE 40 AND DESCRIBED IN A DEED OF WOLFSON TO PORTSMOUTH HOUSING AUTHORITY RECORDED IN BOOK 1936 PAGE 113 TO ENTER, REPAIR, RENEW, AND REMOVE A GATE BOX, ETC. ON PARCEL 2B. EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED.

(30) ITEM #30 – RIGHTS AND EASEMENTS RESERVED IN A DEED FROM THE BOSTON AND MAINE RAILROAD TO ALL STATE REALTY CORPORATION DATED OCTOBER 16, 1961 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 1606 PAGE 198, AS AFFECTED BY RELEASES TO THE PORTSMOUTH HOUSING AUTHORITY DATED DECEMBER 19, 1972 AND RECORDED IN BOOK 2196 PAGE 1018, AND DATED JANUARY 5, 1973 AND RECORDED IN BOOK 2196 PAGE 1022 TO ENTER, MAINTAIN, REPAIR, RENEW , RELAY AND REMOVE AND USE SIGNAL FACILITIES, AUTOMATIC HIGHWAY CROSSING PROTECTION FACILITIES, PIPES, POLES, WIRES AND UNDERGROUND FACILITIES ON PARCEL 2C (SEE PLAN REFERENCE 18). EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED.

(31) ITEM #31 – RIGHTS AND EASEMENTS FROM PORTSMOUTH HOUSING AUTHORITY TO ALLIED GAS DIVISION OF NORTHERN UTILITIES, INC. AS SET FORTH IN AN INSTRUMENT DATED MARCH 8, 1974 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 2218 PAGE 306 ON PARCELS 2 AND 2C FOR TO INSTALL, REPAIR, MAINTAIN, ALTER AND OPERATE A GAS TRANSMISSION LINE, PLOTTED HEREON; AND SUBJECT TO AN EASEMENT GRANTED TO NEW ENGLAND TELEPHONE AND TELEGRAPH DATED MAY 19, 1974 AND RECORDED AT BOOK 2218 PAGE 957 ON PARCEL 2B. EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED.

(32) ITEM #32 – RIGHTS, RESTRICTIONS AND EASEMENTS RESERVED BY ROBERT W. MESERVE AND BENJAMIN H. LACY, AS TRUSTEE OF BOSTON & MAINE CORPORATION IN A DEED TO PORTSMOUTH HOUSING AUTHORITY DATED JULY 15, 1975 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 2241 PAGE 836 TO INSPECT, REPAIR, RENEW, MAINTAIN, RELAY AND REMOVED TRACKS AND SECTIONS OF SIDETRACK AND UNDERGROUND FACILITIES. EASEMENT NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED.

(33) ITEM #33 – SUCH STATE OF FACTS AS SHOWN ON PLAN ENTITLES "SUBDIVISION PLAN OF PARCELS 1 & 2 IN PORTSMOUTH, NH FOR THE CITY OF PORTSMOUTH" DATED AUGUST 1, 1984 AND REVISED JUNE 25, 1985, SHEETS 1 & 2 BY BRIGGS ASSOCIATES, INC. AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN NO. D-13798. SEWER, GAS & ELECTRIC EASEMENTS PLOTTED HEREON.

(34) ITEM #34 – SUCH STATE OF FACTS AS SHOWN ON PLAN ENTITLED "SHELTER GROUP HARBORSIDE AND HARBORPARK EASEMENT PLAN PARCEL TWO" BY LANE, FRENCHMAN AND ASSOCIATES, DATED JULY 16, 1986 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN NO. C-14042. NO EASEMENTS SHOWN THEREON.

(35) ITEM #35 – SUCH STATE OF FACTS AS SHOWN ON A PLAN ENTITLED "SURVEY OF HARBORSIDE AND HARBORPARK LAND IN PORTSMOUTH, N.H." DATED AUGUST 13, 1985, REVISED AUGUST 27, 1985 BY BRIGGS ASSOCIATES, INC. AND RECORDED IN THE ROCKINGHAM COUNTY REGISTER OF DEEDS AS PLAN NO. D-14043. SEWER, GAS & ELECTRIC EASEMENTS PLOTTED HEREON.

(36) ITEM #36 – SUBJECT TO AND WITH BENEFIT TO THE TERMS AND CONDITIONS OF A PARKING ACCESS EASEMENT BY AND BETWEEN HARBORPARK, INC. AND HARBORSIDE ASSOCIATES DATED AUGUST 30, 1985 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 2561 PAGE 505. THIS EASEMENT GRANTS CERTAIN RIGHTS TO PASS OVER PARCELS 2 & 2C (SEE PLAN REFERENCE 4). EASEMENT NOT DEFINED AS TO SPECIFIC LOCATION AND THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN.

(37) ITEM #37 – EASEMENTS GRANTED TO NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS FOLLOWS:
A. FROM HARBORSIDE ASSOCIATES DATED AUGUST 1, 1986 AND RECORDED IN BOOK 2630 PAGE 1041. (PARCELS 2 AND 2A)
B. FROM SHELTER GROUP DATED AUGUST 15, 1986 AND RECORDED IN BOOK 2630 PAGE 1047 (PARCEL 2B); AND
C. FROM HARBORPARK, INC. DATED AUGUST 1, 1986 AND RECORDED IN BOOK 2630 PAGE 1052. (PARCEL 2C)

EASEMENTS NOT DEFINED AS TO LOCATION AND THEREFORE NOT PLOTTED.

(38) ITEM #38 – PARKING EASEMENT RIGHTS RESERVED IN A DEED FROM HARBORSIDE ASSOCIATES TO SHELTER GROUP, INC. DATED MAY 6, 1988 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 2744 PAGE 1247 ON PARCELS 2 & 2A. EASEMENTS NOT DEFINED AS TO SPECIFIC LOCATION AND THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN.

(39) ITEM #39 – PARKING EASEMENT (MARKET II: SECOND) FROM HARBORSIDE ASSOCIATES TO HARBORSIDE INN, INC. DATED JUNE 6, 1988 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 2744 PAGE 1317 ON PARCELS 2 & 2A. EASEMENTS NOT DEFINED AS TO SPECIFIC LOCATION AND THEREFORE ONLY GENERAL LOCATIONS ARE SHOWN.

(40) ITEM #40 – SUCH STATE OF FACTS AS SHOWN ON A PLAN ENTITLED "LOT LINE RELOCATION PLAN, MAP 124, LOTS 12 & 13, MAP 118 LOT 28 PROPERTY OF HARBORCORP, LLC AND BOSTON AND MAINE CORPORATIONS" DATED MARCH 14, 2005 (MAY 5, 2005 REVISED) BY AMES MSC ARCHITECTS AND ENGINEERS AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PLAN NO. D-32675 (PLAN REFERENCE 16). GAS & ELECTRIC EASEMENTS SHOWN HEREON.

(41) ITEM #41 – TERMS AND CONDITIONS OF AN ASSUMPTION AGREEMENT BETWEEN INTREPID FINANCIAL GROUP, INC. HARBORCORP, LLC, LODGESYS INC. AND HARBORSIDE INN, INC. DATED APRIL 12, 1999 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 3383 PAGE 1579, AS AFFECTED BY A SUBORDINATION AGREEMENT DATED SEPTEMBER 23, 2013 AND RECORDED IN SAID REGISTRY IN BOOK 5484 PAGE 770 REGARDING PARCELS 2, 2A, 2B & 2C. NOT A SURVEY MATTER AND THEREFORE NOT PLOTTED.

(42) ITEM #42 – SUBORDINATION AND STANDSTILL AGREEMENT BY AND AMONG HARBORCORP LLC, HARBOSIDE ASSOCIATES LP AND CW CAPITAL LLC DATED NOVEMBER 30, 2005 AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 4588 PAGE 1774 REGARDING PARCELS 2 & 2A. NOT A SURVEY MATTER, THEREFORE NOT PLOTTED.

(43) ITEM #43 – TERMS, CONDITIONS, PROVISIONS, COVENANTS, RESTRICTIONS, PROHIBITED USES AND RIGHTS OF PARTIES UNDER LEASE BETWEEN HARBORCORP, LLC, A MAINE LIMITED LIABILITY COMPANY (LANDLORD) AND WHOLE FOODS MARKET GROUP, INC., A DELAWARE CORPORATION, DATED OCTOBER 30, 2013, AS EVIDENCED BY MEMORANDUM OF LEASE DATED OCTOBER 30, 2013, RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS IN BOOK 5494 PAGE 1401 (NOTE: EXHIBIT A MISSING). THIS MEMORANDUM RESTRICTS THE USES FOR WHICH THE LOTS CAN BE USED FOR, THEREFORE, IS NOT PLOTTABLE.

(44) ITEM #44 – SUCH STATE OF FACTS AS SHOWN ON A PLAN ENTITLED "LOT LINE RELOCATION PLAN, MAP 124, LOTS 12 & 13, MAP 11 LOT 28 PROPERTY OF HARBORCORP, LLC AND BOSTON AND MAINE CORPORATION" DATED APRIL 24, 2014 BY MSC CIVIL ENGINEERS & LAND SURVEYORS, INC. AND RECORDED JUNE 4, 2014 IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PLAN NO. D-38256 (REFERENCE PLAN 17). GAS & SEWER EASEMENT PLOTTED HEREON.

(45) ITEM #45 – TERMS, CONDITIONS, PROVISIONS, COVENANTS, RESTRICTIONS AND RIGHTS OF PARTIES UNDER THAT CERTAIN PARKING LOT LEASE DATED MAY 1, 2003 BETWEEN HARBORCORP LLC, AS LANDLORD, AND HARBORSIDE ASSOCIATES, LP, AS TENANT. NOT A SURVEY MATTER, THEREFORE NOT PLOTTED.

(46) ITEM #46 – SUCH STATE OF FACTS AS SHOWN ON PLAN ENTITLED "STATION MAP-LANDS BOSTON & MAINE R.R. OPERATED BY THE BOSTON AND MAINE R.R. STATION 2966+0V3NH/SL55" DATED JUNE 30, 1914. (RAILROAD PARCEL ONE AND TWO) [AFFECTS PARCEL II]

(47) ITEM #47 – TERMS AND CONDITIONS, RIGHTS AND EASEMENT SET FORTH IN A DEED FROM THE BOSTON AND MAINE CORPORATION TO HARBORCORP, LLC DATED APRIL 15, 2005 AND RECORDED AT BOOK 4486 PAGE 1583. (RAILROAD PARCEL ONE) RESERVATIONS, CONDITIONS, COVENANTS AND AGREEMENTS ARE NOT DEFINED AS TO LOCATION AND THEREFORE ARE NOT PLOTTED, EXCEPT #7 REGARDING THE MAINTENANCE OF FENCES ALONG COMMON BOUNDARIES WITH THE GRANTOR, WHERE ONLY GENERAL LOCATIONS ARE SHOWN.

(48) ITEM #48 – TERMS AND CONDITIONS, RIGHTS AND EASEMENT SET FORTH IN A DEED FROM THE BOSTON AND MAINE CORPORATION TO HARBORCORP, LLC DATED MAY 9, 2014 AND RECORDD AT BOOK 5536 PAGE 2828. (RAILROAD PARCEL TWO) RESERVATIONS, CONDITIONS, COVENANTS AND AGREEMENTS ARE NOT DEFINED AS TO LOCATION AND THEREFORE ARE NOT PLOTTED, EXCEPT #7 REGARDING THE MAINTENANCE OF FENCES ALONG COMMON BOUNDARIES WITH THE GRANTOR, WHERE ONLY GENERAL LOCATIONS ARE SHOWN.

(49) ITEM #49 – ELECTRIC UTILITY EASEMENT AND GAS MAIN EASEMENT AS SHOWN ON PLAN ENTITLED "ELECTRIC UTILITY EASEMENT PARCEL 2" DATED JANUARY 1974, BY ANDERSON – NICHOLS & CO., INC., AND RECORDED MARCH 18, 1974, 2014 IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PLAN NO. B-4337 (PLAN REFERENCE 8). PLOTTED HEREON.

(50) ITEM #50 – VARIATIONS BETWEEN THE DESCRIPTIONS CONTAINED BETWEEN THE DESCRIPTION OF RAILROAD PARCEL ONE AND TWO, AS SET FORTH IN BOOK 5569 PAGE 2553 AND THE DESCRIPTIONS OF SAID PARCELS IN PLAN NO. D-38256 (REFERENCE PLAN 17). RAILROAD PARCEL TWO NOT SHOWN ON SAID PLAN.

ENCROACHMENTS:

(E5) ON THE WEST, UTILITY TOWER OVER RECORD LINE;

(E6) ON THE EAST, ELECTRIC PEDESTAL OVER THE RECORD LINE, WITHOUT AN EASEMENT;

(E7) ON THE NORTHEAST, SEWER MANHOLE OVER RECORD LINE, WITHOUT AN EASEMENT;

(E8) ON THE SOUTHEAST, SIGNAL BOX OVER RECORD LINE, WITHOUT AN EASEMENT.

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	314.78'	37.73'	006°52'04"	N69°03'21"W	37.71'
C2	85.89'	19.43'	012°57'53"	N77°45'26"W	19.39'
C3	25.65'	37.98'	084°51'04"	S52°17'04"W	34.61'
C4	32.44'	9.97'	017°36'58"	N20°48'51"W	9.93'
C5	34.15'	12.97'	021°45'55"	N01°07'24"W	12.90'
C6	1597.18'	35.54'	001°16'29"	N10°23'48"E	35.54'
C7	81.65'	34.67'	024°19'36"	N03°28'19"W	34.41'
C8	946.81'	30.66'	001°51'18"	N19°05'26"W	30.65'
C9	199.38'	46.93'	013°29'06"	N09°32'02"W	46.82'
C10	200.00'	125.82'	036°02'43"	S16°17'04"E	123.76'
C11	913.00'	118.72'	007°27'01"	N20°09'36"E	118.63'
C12	130.50'	60.68'	026°38'29"	S31°07'41"E	60.13'
C13	20.00'	31.42'	090°00'42"	S89°27'17"E	28.29'
C14	466.04'	52.88'	006°30'04"	N21°03'29"W	52.85'
C15	22.00'	42.27'	110°04'43"	N79°25'08"W	36.06'
C16	478.00'	97.46'	011°40'56"	N10°28'31"E	97.29'
C17	21.96'	38.67'	100°53'46"	N84°03'49"W	33.86'
C18	155.00'	29.99'	011°05'14"	N06°01'30"E	29.95'
C19	92.00'	101.74'	063°21'37"	S13°52'16"W	96.63'
C20	12.01'	18.12'	086°29'05"	N85°30'22"E	16.45'
C21	577.73'	86.66'	008°35'41"	N34°24'34"E	86.58'
C22	554.00'	94.15'	009°44'14"	N38°29'03"W	94.04'
C23	534.00'	205.20'	022°01'03"	S06°48'01"E	203.94'
C24	1166.00'	102.56'	005°02'23"	S48°38'08"E	102.53'
C25	60.00'	39.79'	037°59'48"	N23°12'24"E	39.06'
C26	22.00'	35.33'	092°00'43"	N00°06'36"W	31.65'
C27	466.00'	179.07'	022°01'01"	N06°47'56"W	177.97'

LINE TABLE		
LINE #	BEARING	DISTANCE
L3	N30°06'43"E	29.46'
L4	N23°49'32"E	35.29'
L5	N49°22'32"E	14.99'
L6	N36°49'15"E	32.96'
L7	S76°41'17"E	45.40'
L8	S04°12'30"W	20.87'
L9	N38°50'13"E	16.55'
L10	S34°18'26"E	11.30'
L11	S57°39'20"W	26.00'
L12	S51°44'07"W	16.92'
L13	N90°00'00"W	3.94'
L14	N01°08'07"E	28.72'
L15	N64°03'45"E	4.11'
L16	S45°53'01"W	53.10'
L17	N45°26'23"W	65.85'
L18	S44°33'38"W	3.23'
L19	S84°58'06"W	23.59'
L20	S02°54'59"W	22.54'
L21	S46°27'39"W	68.16'
L22	N89°54'52"W	22.65'
L23	S00°09'11"W	23.20'
L24	S44°57'01"E	15.90'
L25	S45°28'33"W	12.57'
L26	N44°34'09"W	17.21'
L27	S45°48'55"W	74.29'
L28	N44°32'08"W	14.09'
L29	S45°27'52"W	34.90'
L30	S44°26'56"E	11.60'
L31	S44°26'56"E	60.82'
L32	S45°33'00"W	33.19'
L33	N24°18'31"W	77.63'
L34	S38°50'40"W	1.30'
L35	N86°45'30"W	2.15'

PLAN REFERENCES:

1. "SUBDIVISION PLAN OF LOTS 1B & 1C & 1A IN PORTSMOUTH, N.H." BY BRIGGS ASSOCIATES, INC., DATED OCTOBER 1, 1987. RCRD PLAN #D-17149.
2. "SUBDIVISION PLAN OF PARCELS 1 & 2 IN PORTSMOUTH, N.H." BY BRIGGS ASSOCIATES, INC., DATED AUGUST 1, 1984, REV. JUNE 25, 1985. RCRD PLAN #D-13798.
3. "MARKET WHARF II, A CONDOMINIUM SITE PLAN, PORTSMOUTH, N.H." BY BRIGGS ASSOCIATES, DATED APRIL 11, 1988. RCRD PLAN #D-18097.
4. "SURVEY OF HARBORSIDE & HARBORPARK LAND IN PORTSMOUTH, N.H." BY BRIGGS ASSOCIATES, INC., DATED AUGUST 13, 1985 REVISED AUGUST 27,1985. RCRD PLAN #D-14043.
5. "HARBORSIDE AND HARBORPARK-EASEMENT PLAN-PARCEL 1, PORTSMOUTH, NEW HAMPSHIRE" BY RAYMOND F. CORMIER, DATED OCTOBER 22, 1987. RCRD PLAN #D-17413.
6. "THE HARBORSIDE, PORTSMOUTH, NEW HAMPSHIRE-HARBORSIDE AND HARBORPARK-EASEMENT PLAN-PARCEL 1" BY SHELTER GROUP, INC., LANE FRENCHMAN & ASSOCIATES, INC., DATED 16 JULY 86. RCRD PLAN #C-14042.
7. "MARKET WHARF I, A CONDOMINIUM SITE PLAN, HARBORPARK INC., PORTSMOUTH, N.H." BY BRIGGS ASSOCIATES, DATED NOVEMBER 1987. RCRD PLAN #D-17417.
8. "VAUGHAN STREET URBAN RENEWAL PROJECT N.H. R-10, PORTSMOUTH, NEW HAMPSHIRE, ELECTRIC UTILITY EASEMENT, PARCEL 2" BY ANDERSON-NICHOLS & CO., INC., DATED JAN. 1974. RCRD PLAN #B-4337.
9. "PORTSMOUTH HOUSING AUTHORITY, PORTSMOUTH, NEW HAMPSHIRE, ROCKINGHAM COUNTY, VAUGHAN STREET PROJECT, PROJECT NO. N.H. R-10, FIRE ALARM SYSTEM AND ELECTRICAL DISTRIBUTION PLAN" BY METCALF & EDDY ENGINEERS-PLANNERS, DATED MAY 5, 1966. RCRD PLAN #D-2420.
10. "VAUGHAN STREET URBAN RENEWAL PROJECT N.H. R-10, PORTSMOUTH, NEW HAMPSHIRE, APPROVED AS SHOWING VAUGHAN STREET URBAN RENEWAL PROJECT BOUNDARIES AND AREA ONLY, CONDEMNATION MAP" BY ANDERSON-NICHOLS & CO., INC., DATED FEB. 1971. RCRD PLAN #D-2425.
11. "LAND IN PORTSMOUTH, N.H., BOSTON AND MAINE RAILROAD FOR ROSE R. WOLFSON" DATED JUNE 1954. RCRD BK. 1324 PG. 45.
12. "PORTSMOUTH HOUSING AUTHORITY, PORTSMOUTH, NEW HAMPSHIRE, ROCKINGHAM COUNTY, VAUGHAN STREET PROJECT, PROJECT NO. N.H. R-10, RIGHT OF WAY ADJUSTMENTS PLAN" BY METCALF & EDDY ENGINEERS-PLANNERS, DATED MAY 5, 1966. RCRD PLAN #D-2413.
13. "STATION MAP-LANDS, CONCORD AND PORTSMOUTH R.R. OPERATED BY THE BOSTON MAINE R.R., STATION 0+0 TO STATION 33+0" BY THE OFFICE OF VALUATION ENGINEER, DATED JUNE 30, 1914. NOT RECORDED.
14. "STATION MAP-LANDS, BOSTON AND MAINE R.R., OPERATED BY THE BOSTON MAINE R.R., STATION 2966+20 TO STATION 3019+0" BY THE OFFICE OF VALUATION ENGINEER, DATED JUNE 30, 1914. NOT RECORDED.
15. "ALTA/ACSM LAND TITLE SURVEY FOR HARBORSIDE ASSOCIATES, MARKET, DEER & RUSSEL STREETS, COUNTY OF ROCKINGHAM, PORTSMOUTH, NH" BY MILLETTE, SPRAGUE & COLWELL, INC., DATED FEBRUARY 24, 1999, LAST REVISED 04-09-99. NOT RECORDED.
16. "LOT LINE RELOCATION PLAN, MAP 124, LOTS 12 & 13, MAP 118 LOT 28 PROPERTY OF HARBORCORP, LLC AND BOSTON AND MAINE CORPORATIONS" BY AMES MSC ARCHITECTS AND ENGINEERS DATED MARCH 14, 2005 WITH REVISION DATE OF 05/03/05. RCRD PLAN #D-32675.
17. "LOT LINE RELOCATION PLAN, MAP 124, LOTS 12 & 13, MAP 118 LOT 28 PROPERTY OF HARBORCORP, LLC AND BOSTON AND MAINE CORPORATIONS" BY MSC CIVIL ENGINEERS AND LAND SURVEYORS, INC. DATED APRIL 24, 2014 WITH REVISION 2 DATED 05/19/14. RCRD PLAN #D-38256.
18. "LAND IN PORTSMOUTH, N.H. BOSTON AND MAINE RAILROAD TO RAYLEN REALTY COMPANY" BY ASST. CHIEF ENG'R, DATED APRIL, 1961. RCRD PLAN #03226.
19. "EASEMENT FOR SEWER PORTSMOUTH, N.H." BY ASST. CHIEF ENG'R, DATED DEC. 1936. RCRD #0802.
20. "VAUGHAN STREET URBAN RENEWAL PROJECT N.H. R-10 REVISED DISPOSITION PLAN PARCEL 2C" BY ANDERSON-NICHOLS & CO., INC., DATED JULY 1974. RCRD PLAN #C-4701.
21. "LAND IN PORTSMOUTH, N.H. BOSTON AND MAINE RAILROAD TO ROSE R. WOLFSON" BY ENGR. OF DESIGN, DATED JUNE 1954. RCRD PLAN #02282 (SEE ALSO RCRD BK.1324 PG.45).
22. "ALTA/NSPS LAND TITLE SURVEY SHERATON HOTEL 250 MARKET STREET PORTSMOUTH NEW HAMPSHIRE" BY TFMORAN, INC. DATED: AUGUST 19, 2019. PLAN NOT RECORDED.

PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN AUGUST 2019. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

LICENSED LAND SURVEYOR

DATE

REV.	DATE	DESCRIPTION	DR	CK

TAX MAPS 119, 124, 118, 125 LOTS 4, 12, 28 & 21

NOTES

NORTH END MIXED USE

DEET ST., RUSSELL ST., MARKET ST.

PORTSMOUTH, NEW HAMPSHIRE

COUNTY OF ROCKINGHAM

OWNED BY

PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

SCALE: NO SCALE

NOVEMBER 23, 2022

Seacoast Division
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	45354-11	DR	EJS	FB	559	S-2
		CK	JCC	CADFILE		

Nov 23, 2022 - 10:06am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

NOTES:

1. THE PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 5 (CD5) & HISTORICAL DISTRICT (HD).
2. THE PARCELS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C.
3. THE PARCELS ARE LOCATED IN ZONE X, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 259 OF 681, MAP NUMBER 33015C0259F WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
4. SEE SECTION
5. OWNER OF RECORD:
   MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28
   PORT HARBOR LAND LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#14

   MAP 119 LOT 1-1A
   PH LOTS LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6130 PG#897

   MAP 119 LOT 1-1C
   PORT OWNER HARBOR LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#353
6. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
7. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED EASEMENTS FOR MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C .
8. FIELD SURVEY WAS COMPLETED BY TCE ON AUGUST 5 & 17, 2019, WITH A TOPCON DS103, A TOPCON HYPER-V GPS RECEIVER, AND A TOPCON FC-5000 DATA COLLECTOR.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
11. SEE SHEET S-2 FOR PLAN REFERENCES, EASEMENTS & RESTRICTIONS, ENCROACHMENTS AND LINE & CURVE TABLES.

DIG SAFE
MA ME NH RI VT
CALL 811 TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN MONTH, YEAR. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

LICENSED LAND SURVEYOR _____ DATE _____

ACCESS EASEMENTS:

(1) ACCESS EASEMENT ON MAP 125, LOT 21 TO BENEFIT MAP 118, LOT 28 & MAP 124, LOT 12.

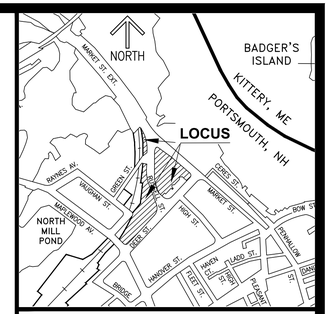
(2) ACCESS EASEMENT ON MAP 118, LOT 28 TO BENEFIT MAP 125, LOT 21 & MAP 124, LOT 12.

(3) ACCESS EASEMENT ON MAP 124, LOT 12 TO BENEFIT MAP 118, LOT 28 & MAP 125, LOT 21.

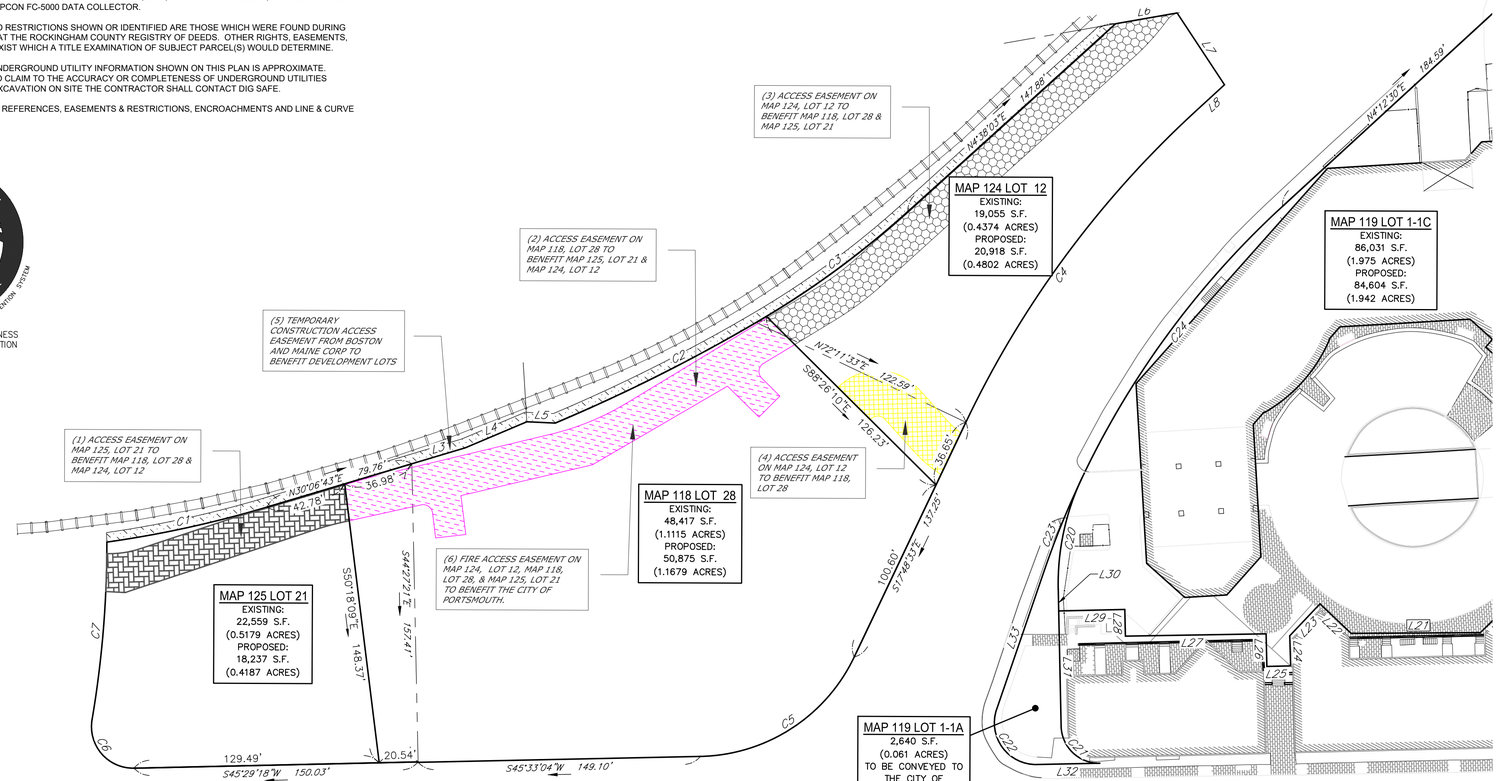
(4) ACCESS EASEMENT ON MAP 124, LOT 12 TO BENEFIT MAP 118, LOT 28.

(5) TEMPORARY CONSTRUCTION ACCESS EASEMENT FROM BOSTON AND MAINE CORP TO BENEFIT DEVELOPMENT LOTS.

(6) FIRE ACCESS EASEMENT ON MAP 124, LOT 12, MAP 118, LOT 28, & MAP 125, LOT 21 TO BENEFIT THE CITY OF PORTSMOUTH.



LOCATION PLAN



ACCESS EASEMENT PLAN	MAP	&	LOT
NORTH END MIXED USE	118		28
DEER ST., RUSSELL ST., MARKET ST.	119		1-1C, 1-1A, 4
PORTSMOUTH, NEW HAMPSHIRE	124		12
COUNTY OF ROCKINGHAM	125		21

OWNED BY

PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

SCALE: 1" = 40' (22x34)
1" = 80' (11x17)

NOVEMBER 23, 2022

40 20 0 40
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	45354-12	DR		FB		S-3
		CK	BMK	CADFILE	SEE MARGIN	

Nov 23, 2022 - 10:25am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

NOTES:

1. THE PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 5 (CD5) & HISTORICAL DISTRICT (HD).
2. THE PARCELS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C.
3. THE PARCELS ARE LOCATED IN ZONE X, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 259 OF 681, MAP NUMBER 33015C0259F WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
4. SEE SECTION
5. OWNER OF RECORD:
   MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28
   PORT HARBOR LAND LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#14

   MAP 119 LOT 1-1A
   PH LOTS LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6130 PG#897

   MAP 119 LOT 1-1C
   PORT OWNER HARBOR LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#353
6. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
7. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED EASEMENTS FOR MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C .
8. FIELD SURVEY WAS COMPLETED BY TCE ON AUGUST 5 & 17, 2019, WITH A TOPCON DS103, A TOPCON HYPER-V GPS RECEIVER, AND A TOPCON FC-5000 DATA COLLECTOR.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
11. SEE SHEET S-2 FOR PLAN REFERENCES, EASEMENTS & RESTRICTIONS, ENCROACHMENTS AND LINE & CURVE TABLES.

DIG SAFE
NH ME RI VT
CALL 811 TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

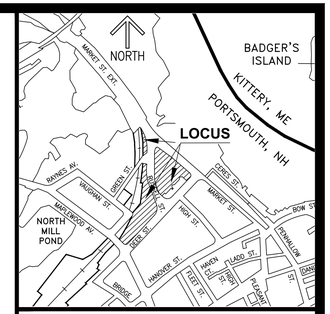
I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN MONTH, YEAR. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

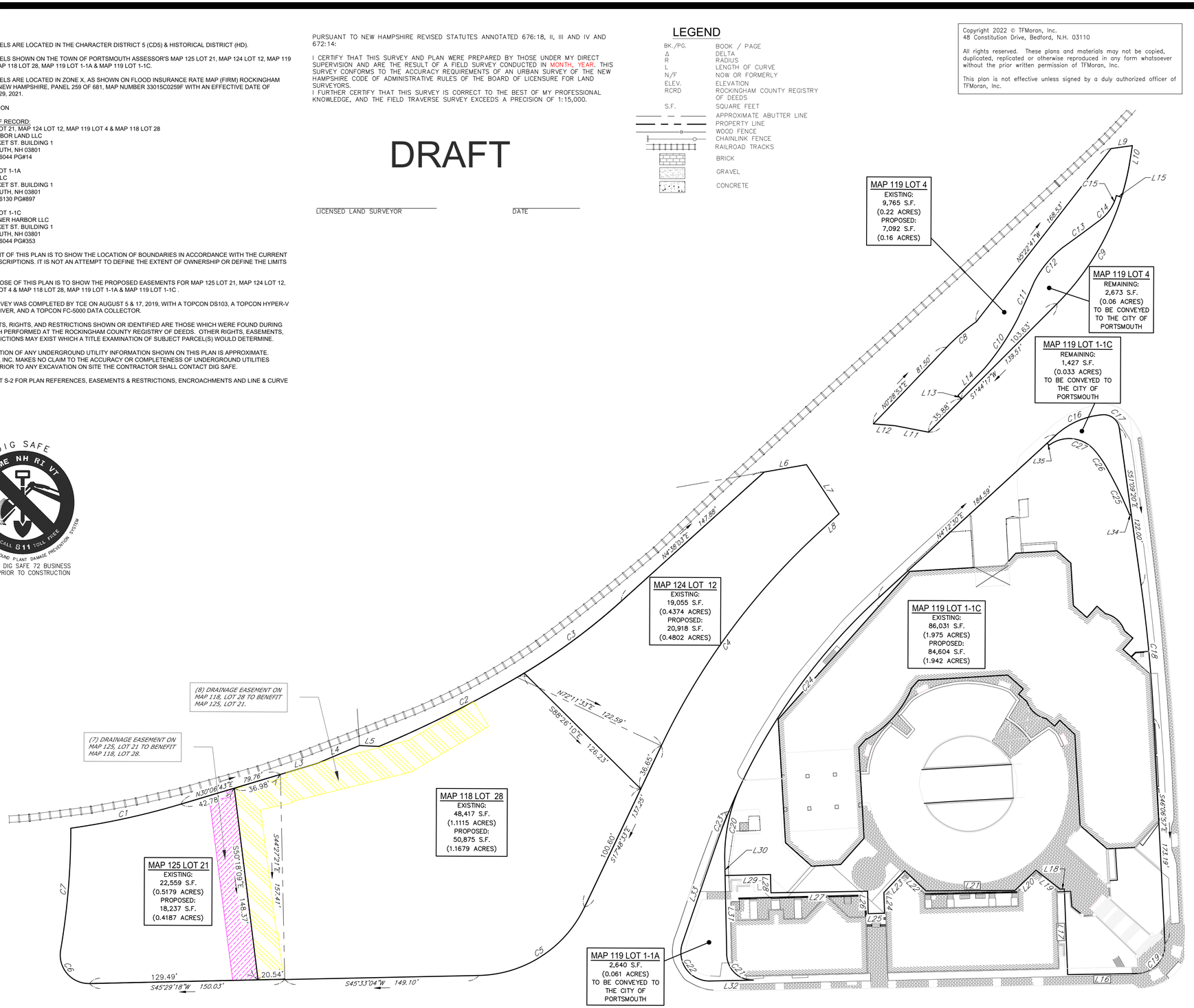
LICENSED LAND SURVEYOR _____ DATE _____

LEGEND

BK./PG.	BOOK / PAGE
Δ	DELTA
R	RADIUS
L	LENGTH OF CURVE
N/F	NOW OR FORMERLY
ELEV.	ELEVATION
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
	APPROXIMATE ABUTTER LINE
	PROPERTY LINE
	WOOD FENCE
	CHAINLINK FENCE
	RAILROAD TRACKS
	BRICK
	GRAVEL
	CONCRETE



LOCATION PLAN



DRAINAGE EASEMENTS:

(7) DRAINAGE EASEMENT ON MAP 125, LOT 21 TO BENEFIT MAP 118, LOT 28.

(8) DRAINAGE EASEMENT ON MAP 118, LOT 28 TO BENEFIT MAP 125, LOT 21.

40 20 0 40
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

ACCESS EASEMENT PLAN
NORTH END MIXED USE
DEER ST., RUSSELL ST., MARKET ST.
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

MAP	&	LOT
118		28
119		1-1C, 1-1A, 4
124		12
125		21

SCALE: 1" = 40' (22x34)
1" = 80' (11x17)
NOVEMBER 23, 2022

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR		FB		
45354-12	CK	BMK	CADFILE	SEE MARGIN	S-4

Nov 23, 2022 - 10:24am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

NOTES:

1. THE PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 5 (CD5) & HISTORICAL DISTRICT (HD).
2. THE PARCELS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C.
3. THE PARCELS ARE LOCATED IN ZONE X, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 259 OF 681, MAP NUMBER 33015C0259F WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
4. SEE SECTION
5. OWNER OF RECORD:
   MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28
   PORT HARBOR LAND LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#14

   MAP 119 LOT 1-1A
   PH LOTS LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6130 PG#897

   MAP 119 LOT 1-1C
   PORT OWNER HARBOR LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#353
6. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
7. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED EASEMENTS FOR MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C .
8. FIELD SURVEY WAS COMPLETED BY TCE ON AUGUST 5 & 17, 2019, WITH A TOPCON DS103, A TOPCON HYPER-V GPS RECEIVER, AND A TOPCON FC-5000 DATA COLLECTOR.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
11. SEE SHEET S-2 FOR PLAN REFERENCES, EASEMENTS & RESTRICTIONS, ENCROACHMENTS AND LINE & CURVE TABLES.

PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN MONTH, YEAR. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

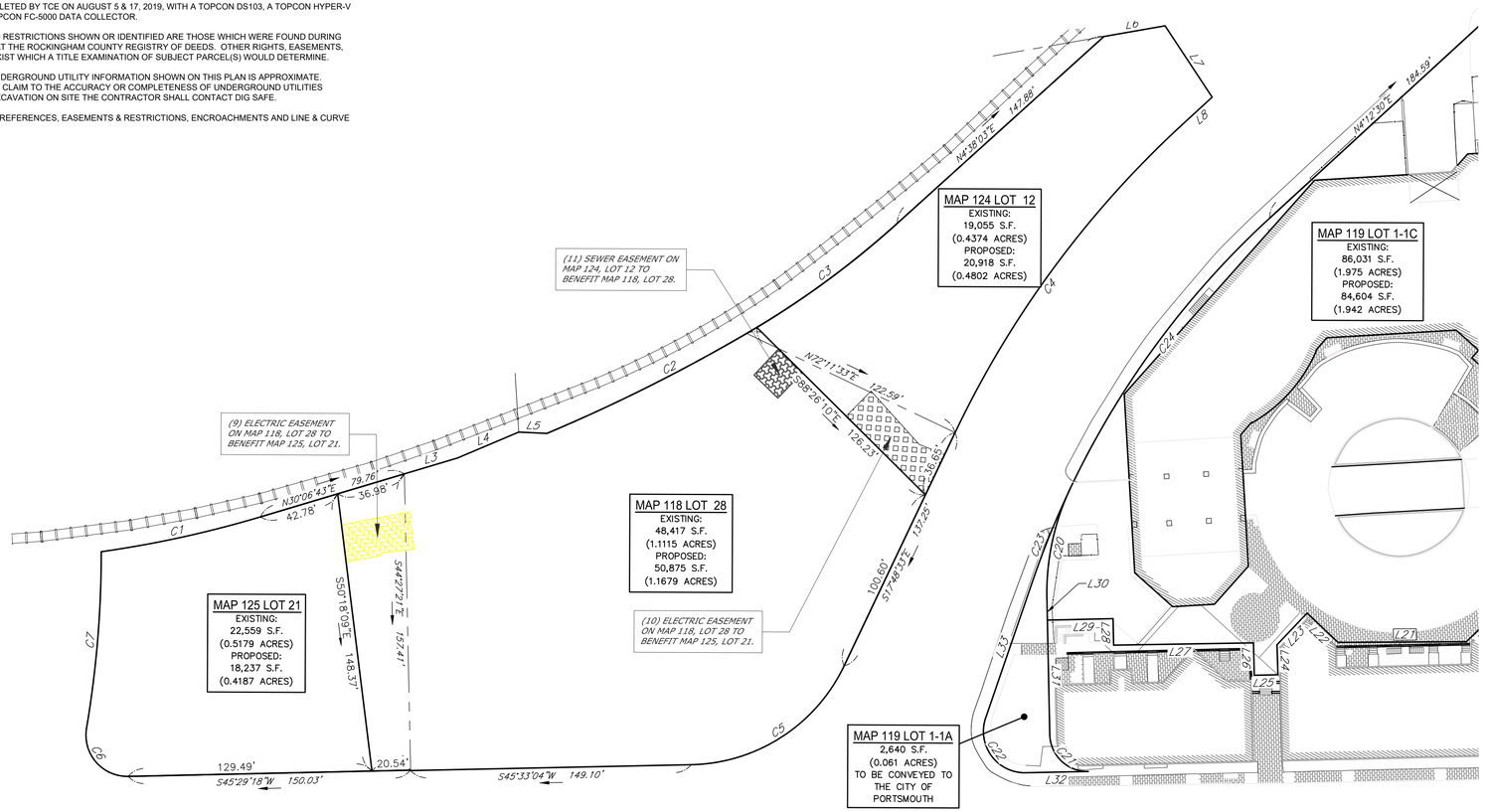
LICENSED LAND SURVEYOR _____ DATE _____

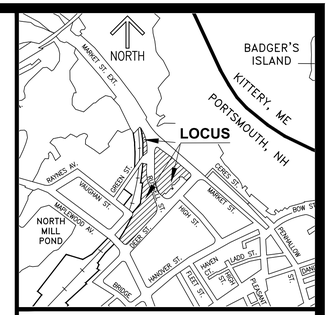
UTILITIES EASEMENTS:

(9) ELECTRIC EASEMENT ON MAP 118, LOT 28 TO BENEFIT MAP 125, LOT 21.

(10) ELECTRIC EASEMENT ON MAP 118, LOT 28 TO BENEFIT MAP 124, LOT 12.

(11) SEWER EASEMENT ON MAP 124, LOT 12 TO BENEFIT MAP 118, LOT 28.





LOCATION PLAN

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

UTILITIES EASEMENT PLAN
NORTH END MIXED USE
DEER ST., RUSSELL ST., MARKET ST.
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

MAP	&	LOT
118		28
119		1-1C, 1-1A, 4
124		12
125		21

SCALE: 1" = 40' (22x34)
1" = 80' (11x17)
NOVEMBER 23, 2022

40 20 0 40
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR		FB		
45354-12	CK	BMK	CADFILE	SEE MARGIN	S-5

Nov 23, 2022 - 10:23am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

NOTES:

1. THE PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 5 (CD5) & HISTORICAL DISTRICT (HD).
2. THE PARCELS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C.
3. THE PARCELS ARE LOCATED IN ZONE X, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 259 OF 681, MAP NUMBER 33015C0259F WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
4. SEE SECTION
5. OWNER OF RECORD:
   MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28
   PORT HARBOR LAND LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#14

   MAP 119 LOT 1-1A
   PH LOTS LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6130 PG#897

   MAP 119 LOT 1-1C
   PORT OWNER HARBOR LLC
   1000 MARKET ST. BUILDING 1
   PORTSMOUTH, NH 03801
   RCRD BK#6044 PG#353
6. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
7. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED EASEMENTS FOR MAP 125 LOT 21, MAP 124 LOT 12, MAP 119 LOT 4 & MAP 118 LOT 28, MAP 119 LOT 1-1A & MAP 119 LOT 1-1C .
8. FIELD SURVEY WAS COMPLETED BY TCE ON AUGUST 5 & 17, 2019, WITH A TOPCON DS103, A TOPCON HYPER-V GPS RECEIVER, AND A TOPCON FC-5000 DATA COLLECTOR.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
11. SEE SHEET S-2 FOR PLAN REFERENCES, EASEMENTS & RESTRICTIONS, ENCROACHMENTS AND LINE & CURVE TABLES.

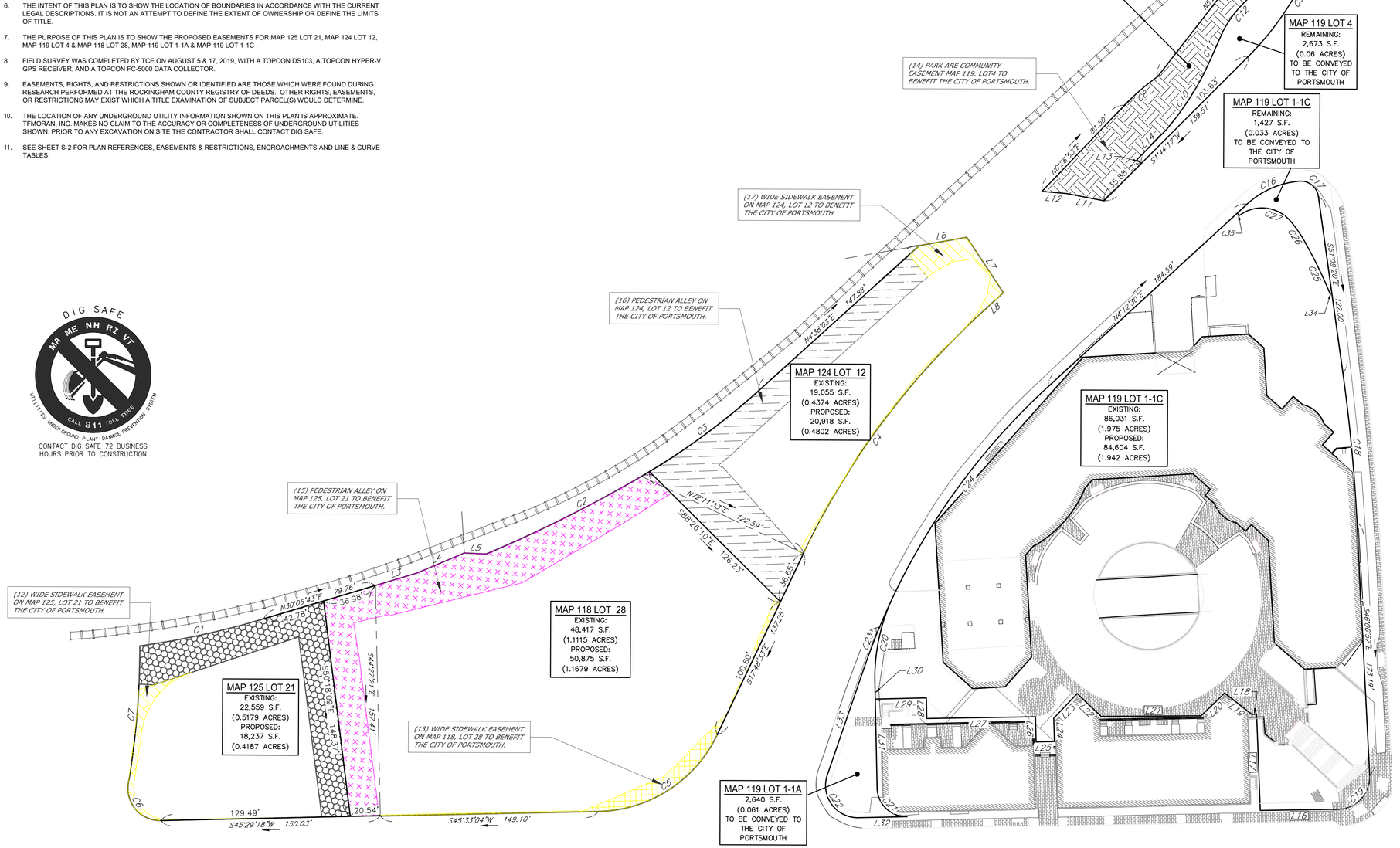
PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

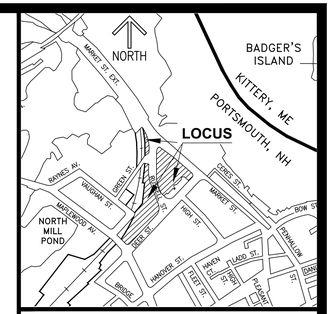
I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN MONTH, YEAR. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

DRAFT

LICENSED LAND SURVEYOR _____ DATE _____

DIG SAFE
MA ME NH RI VT
CALL 811 TOLL FREE
UTILITIES UNDER GROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION





LOCATION PLAN

COMMUNITY SPACE EASEMENTS:

(12) WIDE SIDEWALK EASEMENT ON MAP 125, LOT 21 TO BENEFIT THE CITY OF PORTSMOUTH.
(13) WIDE SIDEWALK EASEMENT ON MAP 118, LOT 28 TO BENEFIT THE CITY OF PORTSMOUTH.
(14) WIDE SIDEWALK EASEMENT ON MAP 124, LOT 12 TO BENEFIT THE CITY OF PORTSMOUTH.
(15) PEDESTRIAN ALLEY ON MAP 125, LOT 21 TO BENEFIT THE CITY OF PORTSMOUTH.
(16) PEDESTRIAN ALLEY ON MAP 118, LOT 28 TO BENEFIT THE CITY OF PORTSMOUTH.
(17) PEDESTRIAN ALLEY ON MAP 124, LOT 12 TO BENEFIT THE CITY OF PORTSMOUTH.
(18) PARK ARE COMMUNITY EASEMENT MAP 119, LOT 4 TO BENEFIT THE CITY OF PORTSMOUTH.

40 20 0 40
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

COMMUNITY SPACE EASEMENT PLAN
NORTH END MIXED USE
DEER ST., RUSSELL ST., MARKET ST.
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
PORT HARBOR LAND LLC, PH LOTS LLC & PORT OWNER HARBOR LLC

MAP	&	LOT
118		28
119		1-1C, 1-1A, 4
124		12
125		21

SCALE: 1" = 40' (22x34)
1" = 80' (11x17)
NOVEMBER 23, 2022

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	45354-12	DR		FB		S-6
		CK	BMK	CADFILE	SEE MARGIN	

Nov 23, 2022 - 10:23am
F:\MSC Projects\45354 - Market Street - Portsmouth\45354-12 Port Harbor Land, LLC - 250 Market St\Carlson Survey\Dwgs\45354-12 Lot Line Revision Easement Plans-R1.dwg

GENERAL NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH.
3. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
4. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES AND COMPLY WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR AND COMPLY WITH ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES AND SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
9. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
10. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
11. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.
13. APPLICANT SHALL SUBMIT, AS PART OF THE FINAL POST APPROVAL PROCEDURES, RELEVANT PTAP INFORMATION USING THE MOST RECENT ONLINE DATA PORTAL CURRENTLY MANAGED BY THE UNH STORMWATER CENTER. THE PLANNING DEPARTMENT SHALL BE NOTIFIED AND COPIED OF THE PTAP DATA SUBMITTAL.
14. A VIDEO INSPECTION OF THE EXISTING SEWER AND DRAIN LINES ON MAPLEWOOD AVENUE, DEER STREET AND RUSSELL STREET SHALL BE COMPLETED AND PROVIDED TO PORTSMOUTH DPW BOTH BEFORE AND AFTER CONSTRUCTION.
15. CONTRACTOR SHALL INSTALL INTERSECTION VIDEO DETECTION FOR MAPLEWOOD AVENUE AND DEER STREET INTERSECTION. COORDINATE WITH THE CITY OF PORTSMOUTH TRAFFIC DEPARTMENT.

DEMOLITION NOTES:

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
2. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
3. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
4. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
7. ALL UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY AND CITY OF PORTSMOUTH STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE, AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
9. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
10. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CURBS, LIGHTING, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, STAIRS, SIGNS, FENCES, RAMPS, WALLS, BOLLARDS, BUILDING SLABS, FOUNDATION, TREES AND LANDSCAPING.
11. REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
12. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
13. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS/CURB INLETS WITHIN CONSTRUCTION LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
14. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
15. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
16. THE CONTRACTOR SHALL REMOVE AND SALVAGE EXISTING GRANITE CURB FOR REUSE.

SITE NOTES:

1. PAVEMENT MARKINGS SHALL BE INSTALLED AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, ADA SYMBOLS, PAINTED ISLANDS, FIRE LANES, CROSS WALKS, ARROWS, LEGENDS AND CENTERLINES. ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE PAVEMENT MARKINGS. ALL THERMOPLASTIC PAVEMENT MARKINGS INCLUDING LEGENDS, ARROWS, CROSSWALKS AND STOP BARS SHALL MEET THE REQUIREMENTS OF AASHTO M249. ALL PAINTED PAVEMENT MARKINGS INCLUDING CENTERLINES, LANE LINES AND PAINTED MEDIANS SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F".
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PAVEMENT MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. STOP BARS SHALL BE EIGHTEEN (18) INCHES WIDE, WHITE THERMOPLASTIC AND CONFORM TO CURRENT MUTCD STANDARDS.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
9. ALL LIGHT POLE BASES NOT PROTECTED BY A RAISED CURB SHALL BE PAINTED YELLOW.
10. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
11. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
12. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
13. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
14. THE APPLICANT SHALL HAVE A SITE SURVEY CONDUCTED BY A RADIO COMMUNICATIONS CARRIER APPROVED BY THE CITY'S COMMUNICATIONS DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE POLICE AND RADIO CONFIGURATION. IF THE SITE SURVEY INDICATES IT IS NECESSARY TO INSTALL A SIGNAL REPEATER EITHER ON OR NEAR THE PROPOSED PROJECT, THOSE COSTS SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR THE CITY.
15. ALL TREES PLANTED ARE TO BE INSTALLED UNDER THE SUPERVISION OF THE CITY OF PORTSMOUTH DPW USING STANDARD INSTALLATION METHODS.
16. A TEMPORARY SUPPORT OF EXCAVATION (SOE) PLAN SHALL BE PREPARED BY THE APPLICANT'S CONTRACTOR TO CONFIRM ANY TEMPORARY ENCUMBRANCES OF THE CITY'S RIGHT-OF-WAY. IF LICENSES ARE REQUIRED FOR THE SOE, THE APPLICANT WILL BE REQUIRED TO OBTAIN THESE FROM THE CITY PRIOR TO CONSTRUCTION.
17. THE PROPERTY MANAGER WILL BE RESPONSIBLE FOR TIMELY SNOW REMOVAL FROM ALL PRIVATE SIDEWALKS, DRIVEWAYS, AND PARKING AREAS. ALL SNOW REMOVAL WILL BE HAULED OFF-SITE AND LEGALLY DISPOSED OF.
18. THE STREET LIGHTING TYPE TO BE HISTORIC STYLE FIXTURES AND POLE TO MATCH EXISTING LIGHTING ON SOUTH SIDE OF DEER STREET.
19. CONSTRUCTION SEQUENCING OF NORTH COMMUNITY PARK SHALL BE COORDINATED WITH MARKET STREET AND RUSSELL STREET INTERSECTION CONSTRUCTION. NORTH COMMUNITY PARK SHALL NOT BE CONSTRUCTED UNTIL THE INTERSECTION ROUNDABOUT HAS BEEN CONSTRUCTED.
20. THE PROPOSED LOADING ZONE SHALL BE REVIEWED BY THE PARKING & TRAFFIC SAFETY COMMITTEE FOR RECOMMENDATION TO CITY COUNCIL.
21. THE APPLICANTS CONTRACTOR SHALL PREPARE A CONSTRUCTION MANAGEMENT AND MITIGATION PLAN (CMMP) FOR REVIEW AND APPROVAL BY THE CITY'S LEGAL AND PLANNING DEPARTMENTS.
22. THE FINAL STYLE AND COLOR OF THE RRFB POLES SHALL BE APPROVED BY PORTSMOUTH DPW PRIOR TO CONSTRUCTION.
23. THE FINAL LOCATION OF THE RRFB SHALL BE DETERMINED IN FIELD.

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND LOADING DOCK AREAS ADJACENT TO THE BUILDING.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
6. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
7. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

EROSION CONTROL NOTES:

1. SEE SHEET C-501 FOR GENERAL EROSION CONTROL NOTES AND DETAILS.

UTILITY NOTES:

1. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - NATURAL GAS - UNITIL
   - WATER/SEWER - CITY OF PORTSMOUTH
   - ELECTRIC - EVERSOURCE
   - COMMUNICATIONS - COMCAST/CONSOLIDATED COMMUNICATIONS/FIRST LIGHT
2. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, CEMENT LINED DUCTILE IRON PIPE.
3. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF PORTSMOUTH WATER DEPARTMENT.
4. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
5. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
6. CONNECTION TO EXISTING WATER MAIN SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH STANDARDS.
7. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
8. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
9. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
10. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
12. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
13. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
14. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
15. HYDRANTS, GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
16. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
17. ALL SEWER PIPE WITH LESS THAN 6' OF COVER IN PAVED AREAS OR LESS THAT 4' OF COVER IN UNPAVED AREAS SHALL BE INSULATED.
18. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
19. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER.
20. CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
21. FINAL LOCATIONS OF ALL UTILITY LINES SHALL BE APPROVED BY THE CITY OF PORTSMOUTH DPW PRIOR TO CONSTRUCTION.
22. CONTRACTOR SHALL PERFORM TEST PITS TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IF LOCATIONS DIFFER FROM PLAN.
23. CONTRACTOR SHALL COMPLETE PRE AND POST BLAST SURVEY AND MONITORING OF THE EXISTING SEWER LINE ALONG DEER STREET.

LANDSCAPE NOTES:

1. SEE SHEET L-100 FOR LANDSCAPE NOTES.

EXISTING CONDITIONS PLAN NOTES:

1. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY PERFORMED BY MSC CIVIL ENGINEERS & LAND SURVEYORS, INC., SEE REFERENCE PLAN #1.

REFERENCE PLANS:

1. "EXISTING FEATURES PLAN MAP 118 LOT 28, MAP 119 LOT 4, MAP 124 LOT 12 AND MAP 125 LOT 21" PREPARED BY MSC CIVIL ENGINEERS AND LAND SURVYORS, INC., DATED JANUARY 16, 2015.

ABBREVIATIONS

TBR	TO BE REMOVED
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
30'R	CURB RADIUS
SSWL	SINGLE SOLID WHITE LINE
DSYL	DOUBLE SOLID YELLOW LINE
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
FGC	FLUSH GRANITE CURB
TC	TOP OF CURB
BC	BOTTOM OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STEP
BS	BOTTOM OF STEP
HDPE	HIGH-DENSITY POLYETHYLENE
FF	FINISH FLOOR
VIF	VERIFY IN FIELD

LEGEND

- PROPOSED SAWCUT
- LIMIT OF WORK
- PROPOSED SILT SOCK
- APPROXIMATE LIMIT OF PAVEMENT TO BE REMOVED
- PROPOSED CONSTRUCTION EXIT
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED CURB
- PROPOSED BUILDING
- PROPOSED PAVEMENT SECTION
- PROPOSED MILL AND OVERLAY SECTION
- PROPOSED CONCRETE SIDEWALK
- PROPOSED BRICK SIDEWALK
- PROPOSED BOLLARD
- PROPOSED MAJOR CONTOUR LINE (20)
- PROPOSED MINOR CONTOUR LINE (22)
- PROPOSED DRAIN LINE (TYP)
- INLET PROTECTION SILT SACK
- PROPOSED CATCHBASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED YARD DRAIN
- EXISTING STORM DRAIN (D)
- EXISTING SANITARY SEWER (S)
- EXISTING SANITARY SEWER TO BE REMOVED (S)
- EXISTING UNDERGROUND TELECOMMUNICATION (T)
- EXISTING WATER (W)
- EXISTING GAS (G)
- EXISTING UNDERGROUND ELECTRIC (E)
- EXISTING OVERHEAD UTILITY (OHW)
- PROPOSED SANITARY SEWER (PS)
- PROPOSED WATER (PW)
- PROPOSED GAS (G)
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND TELECOMMUNICATION (COM)
- EXISTING CATCHBASIN
- EXISTING DRAIN MANHOLE
- EXISTING SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING HYDRANT
- EXISTING ELECTRIC MANHOLE
- EXISTING TELEPHONE MANHOLE
- PROPOSED SEWER MANHOLE
- PROPOSED WATER VALVE
- PROPOSED HYDRANT
- PROPOSED GAS VALVE
- PROPOSED ELECTRIC MANHOLE
- PROPOSED LIGHT POLE BASE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED 11/23/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

GENERAL NOTES AND LEGEND

SCALE: AS SHOWN

G-100

Last Saved: 11/21/2022
Printed: Nov 21, 2022 - 10:03am By: CKrzsik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings. Figures\AutoCAD\T5037-002-C-DSGN.dwg

EXISTING DRAINAGE SCHEDULE

ECB1
RIM=15.36
INV. OUT=11.88 (ED1)

ECB2
RIM=15.31
INV. OUT= 12.11 (ED2)

ECB3
RIM=13.39
INV. OUT=8.69 (ED4)

ECB4
RIM=13.91
INV. OUT=9.59 (ED5)

ECB5
RIM=13.73
INV. OUT=10.42 (ED7)

ECB6
RIM=14.06
INV. OUT=9.42 (ED10)

ECB7
RIM=14.48
INV. OUT=10.26 (ED9)

ECB8
RIM=16.49
INV. OUT=12.74 (ED12)

ECB9
RIM=15.78
INV. OUT=13.15 (ED13)

ECB10
RIM=22.49
INV. OUT=19.39 (ED15)

ECB11
RIM=22.51
INV. OUT=19.46 (ED16)

ECB12
RIM=15.69
INV. OUT=12.39 (ED21)

ECB13
RIM=15.76
INV. OUT=12.52 (ED20)

ECB14
RIM=10.43
INV. OUT=6.97 (ED26)

ECB15
RIM=10.00
INV. OUT=6.74 (ED24)

ECB16
RIM=9.82
INV. OUT=6.80 (ED23)

ECB17
RIM=23.85
INV. OUT=20.21 (ED27)

EDMH1
RIM=15.59
INV. IN=11.17 (ED1)
INV. IN=11.33 (ED2)
INV. OUT=8.65 (ED3)

EDMH2
RIM=14.00
INV. IN=6.67 (ED3)
INV. IN=8.79 (ED5)
INV. IN=8.80 (ED4)
INV. OUT=6.64 (ED6)

EDMH3
RIM=13.91
INV. IN=6.41 (ED6)
INV. IN=10.43 (ED7)
INV. OUT=6.35 (ED8)

EDMH4
RIM=14.12
INV. IN=6.26 (ED8)
INV. IN=9.25 (ED10)
INV. IN=10.12 (ED9)
INV. OUT=6.24 (ED11)

EDMH5
RIM=16.60
INV. IN=12.98 (ED12)
INV. IN=12.50 (ED13)
INV. IN=5.74 (ED11)
INV. 12" OUT (SW)=5.64

EDMH6
RIM=25.21
INV. IN(SE)=19.93
INV. OUT=19.97 (ED14)

EDMH7
RIM=22.94
INV. IN=19.49 (ED16)
INV. IN=19.19 (ED15)
INV. IN=18.78 (ED17)
INV. IN=18.13 (ED14)
INV. OUT=18.18 (ED18)

EDMH8
RIM=15.58
INV. IN=12.26 (ED20)
INV. IN=12.28 (ED21)
INV. IN=9.80 (ED19)
INV. OUT=9.97 (ED22)

EDMH9
RIM=11.06
INV. IN=6.50 (ED26)
INV. IN=5.14 (ED25)
INV. IN=5.54
INV. OUT=3.70

EDMH10
RIM=16.89
INV. IN=10.43 (ED18)
INV. OUT=10.51 (ED19)

EDMH11
RIM=10.14
INV. IN=6.96 (ED23)
INV. IN(N)=6.74 (ED24)
INV. IN=5.94 (ED22)
INV. OUT=5.94(ED25)

EDMH12
RIM=11.55
INV. IN=3.81 (ED27)
INV. OUT=3.71(ED28)

EDMH13
RIM=11.45
INV. IN=2.37 (ED29)
INV. OUT=2.27 (ED30)

EXISTING DRAINAGE PIPE SCHEDULE			
LINES	LENGTH	TYPE	SLOPE
ED1	9'	12" CONC	S=0.078
ED2	38'	12" CONC	S=0.0205
ED3	62'	12" CONC	S=0.0319
ED4	10'	12" CONC	S=-0.011
ED5	39'	12" CONC	S=0.0205
ED6	45'	12" CONC	S=0.004
ED7	9'	12" CONC	S=-0.001
ED8	32'	12" CONC	S=0.0091
ED9	18'	12" PVC	S=0.0077
ED10	27'	12" CONC	S=0.0062
ED11	116'	12" CONC	S=0.0043
ED12	44'	12" CONC	S=-0.005
ED13	30'	12" CMP	S=0.0216
ED14	202'	12" CONC	S=0.0091
ED15	33'	12" CONC	S=0.006
ED16	32'	12" CONC	S=0.0009
ED17	186'	6" PVC	UNKNOWN
ED18	210'	12" CONC	S=0.0369
ED19	38'	12" CONC	S=0.0186
ED20	47'	12" CONC	S=0.0055
ED21	7'	12" CONC	S=0.0157
ED22	223'	12" CONC	S=0.0180
ED23	59'	12" CONC	S=0.0145
ED24	6'	12" CONC	S=0.0000
ED25	52'	12" CONC	S=0.0153
ED26	34'	12" CONC	S=0.0138
ED27	241'	12" CONC	S=0.0076
ED28	161'	48" CONC	S=0.0047
ED29	104'	48" CONC	S=0.0047
ED30	252'	48" CONC	S=0.0047

EXISTING SEWER SCHEDULE

ESMH1
RIM=16.09
INV. IN(NW)=1.18
INV. OUT=1.10 (ES1)

ESMH2
RIM=15.13
FROZEN

ESMH3
RIM=14.18
INV. IN=0.56 (ES1)
INV. OUT=0.34 (ES2)

ESMH4
RIM=14.16
INV. IN=0.19 (ES2)
INV. OUT=0.09 (ES3)

ESMH5
RIM=16.43
INV.(SW)=-1.00
INV. IN=-0.22 (ES3)
INV. OUT=-1.17 (ES4)

ESMH6
RIM=22.60
INV. IN(SE)=15.24
INV. IN(SW)=15.20
INV. OUT=15.20 (ES10)

ESMH7
RIM=14.05
INV. IN(E)=8.00
INV. IN=7.87 (ES10)
INV. OUT=7.92 (ES11)

ESMH8
RIM=10.96
INV. IN=3.82 (ES11)
INV. OUT=3.89 (ES12)

ESMH9
RIM=20.88
CHANNEL=-1.07
INV. IN 8"=13.60

ESMH10
RIM=24.86
INV.(E)=17.22
INV.(SE)=17.16
INV. OUT=17.03 (ES9)

ESMH11
RIM=24.39
INV. IN=16.27 (ES9)
INV. OUT=16.08 (ES8)

ESMH12
RIM=23.25
INV. IN=-0.89 (ES6)
INV. OUT(NE)=-0.97

ESMH13
RIM=19.42
INV.4"C(NW)=13.69
INV.6"(N)=7.87
INV.6"VC(NE)=12.25
INV.6"VC(E)=12.40
INV.IN=-1.20 (ES5)
INV.OUT=-1.44 (ES6)

ESMH14
RIM=18.09
INV. IN=-0.80 (ES7)
INV.6"VC(SE)=10.06
INV.6"VC(NW)=10.02
INV. OUT 8"VC=9.84 (ES7)

ESMH15
RIM=18.23
INV.8"VC=9.83 (ES8)
INV.6"VC(SE)=10.06
INV.6"VC(NW)=10.02
INV. OUT 8"VC=9.84 (ES7)

EXISTING SEWER PIPE SCHEDULE			
LINES	LENGTH	TYPE	SLOPE
ES1	153'	24" RCP	S=0.0035
ES2	66'	24" RCP	S=0.0022
ES3	116'	24" RC	S=0.0026
ES4	82'	48" BOX	S=0.0019
ES5	47'	48" BOX	UNKNOWN
ES6	109'	48" BOX	S=-0.005
ES7	7'	8" VC	S=0.0228
ES8	276'	8" VC	S=0.0226
ES9	33'	8" VC	S=0.0230
ES10	294'	8" AC	S=0.0249
ES11	170'	8" AC	S=0.0241
ES12	47'	8" AC	UNKNOWN

INSET PLAN

0 30' 60'
GRAPHIC SCALE

EXISTING TREE LINE TBR
EXISTING "STOP & GREEN STREET" SIGN TBR
CONSTRUCT INLET PROTECTION BARRIER (TYP)
SEE INSET PLAN
EXISTING "STOP & GREEN STREET" SIGN TBR
EXISTING CONCRETE RETAINING WALL TBR
EXISTING CATCHBASIN TO BE REMOVED
EXISTING DRAINLINE TO BE REMOVED
MARKET STREET IMPROVEMENTS (BY OTHERS)
RUSSELL STREET IMPROVEMENTS
BEGIN REMOVAL AND RESET OF EXISTING GRANT CURB
EXISTING UTILITY POLE AND UGU TBR
EXISTING ELECTRIC SERVICE PANEL TBR
MAP 124 LOT 12
AREA = 19,055 S.F.
(0.4374 ACRES)
EXISTING WATER LINE TBR
EXISTING PAVEMENT TO BE REMOVED (TYP)
EXISTING PLANTER BEDS TBR (TYP)
REMOVE AND RESET EXISTING GRANT CURB
MAP 119 LOT 1-1C
AREA = 86,031 S.F.
(1.975 ACRES)
EXISTING CONCRETE SIDEWALK TO BE REMOVED
LOCATION OF PROPOSED STRUCTURE (TYP)
CONSTRUCT SILT SOCK
EXISTING PROPERTY LINE TO BE RELOCATED
EXISTING ENTRANCE GATES TBR
APPROXIMATE LIMIT OF WORK (TYP)
EXISTING "SHERATON PORTSMOUTH" SIGN TBR
END REMOVAL AND RESET OF EXISTING GRANT CURB
EXISTING FENCE TBR
EXISTING JERSEY BARRIERS TBR
EXISTING 10' ELECTRIC EASEMENT TBR
CONSTRUCT INLET PROTECTION BARRIER (TYP)
EXISTING UNDERGROUND ELECTRIC TBR
UNDERGROUND ELECTRIC–EXACT LOCATION UNKNOWN
EXISTING DRAINLINE TO BE REMOVED
EXISTING CATCHBASIN TO BE REMOVED
EXISTING "LIMO PARKING ONLY" SIGN TBR
EXISTING SEWER EASEMENT TO REMAIN
MAP 118 LOT 28
AREA = 48,417 S.F.
(1.1115 ACRES)
EXISTING "DRIECTORY" SIGN TBR
EXISTING GAS LINE TBR
EXISTING PAVEMENT TO BE REMOVED (TYP)
SIDEWALK AND TIP DOWN RAMP TBR (TYP)
EXISTING CATCHBASIN TBR
MAP 125 LOT 21
AREA =22,559 S.F.
(0.5179 ACRES)
EXISTING PROPERTY LINE TO BE RELOCATED
EXISTING "STOP" SIGN TBR
EXISTING CATCHBASIN TO BE REMOVED
EXISTING BRICK SIDEWALK TO BE REMOVED
LIMIT OF EXISTING DRAINLINE TO BE REMOVED
EXISTING 10' GAS EASEMENT TBR
EXISTING "FOUNDRY PLACE GARAGE" SIGN TBR
EXISTING STUMP TBR (TYP)
EXISTING PROPERTY LINE TO BE ABANDONED
EXISTING CATCHBASIN TO BE REMOVED
EXISTING DIRECTORY SIGN TO BE RELOCATED
EXISTING UTILITY POLE TBR
EXISTING TREE TBR (TYP)
EXISTING SIGNAL POST TO REMAIN
EXISTING "LANE DIRECTORY" SIGN TBR
EXISTING GAS LINE AND VALVES TBR
EXISTING "SPEED LIMIT & KEEP RIGHT" SIGN TBR
EXISTING PAVEMENT TO BE REMOVED (TYP)
EXISTING PARKING METER TBR
APPROXIMATE LIMIT OF SAWCUT (TYP)
APPROXIMATE LIMIT OF SAWCUT
EXISTING "ONE WAY" & "PORTWALK PLACE" SIGNS TO BE RELOCATED
EXISTING BRICK SIDEWALK & GRANITE CURB TBR (BRICK TO BE SAVED FOR RECONSTRUCTION)
EXISTING BRICK SIDEWALK & GRANITE CURB TBR (BRICK TO BE SAVED FOR RECONSTRUCTION)
EXISTING CONCRETE TIP DOWN TBR

MAPLEWOOD AVENUE
DEER STREET
RINKLER STREET
CBA ZONE

124/1 N/F PORTSMOUTH BOX 628 UTH, NH 03802
1/4 /F MAINE CORP. SE PARK STREET MA 01862
125/17 N/F EET ASSOCIATES BOX 100 RBOR, ME 03911 3395-2669
125/1
125/22
118/26 N/F HILL CONDO UNIT OWNERS
118/27 N/F GREGORY E. & JENNIFER L. SANCOFF 120 MILL ROAD NORTH HAMPTON, NH
119/1-1A N/F HARBORSIDE INN INC. PO BOX 660 LEWISTON, ME 04243 RCRD 3133-2873

SEE SHEET G-100 FOR EXISTING CONDITIONS & DEMOLITION NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
11/23/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
11/23/22

0 30' 60'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

EXISTING CONDITIONS & DEMOLITION PLAN

SCALE: AS SHOWN

C-101

Last Saved: 11/21/2022 10:03am By: CKrzcuik
Printed: Nov 23, 2022 - 10:03am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg

SITE DATA:

LOCATION: TAX MAP 118 LOT 28, TAX MAP 119 LOT 1-1A, TAX MAP 119 LOT 1-1C, TAX MAP 119 LOT 4, TAX MAP 124 LOT 12, TAX MAP 125 LOT 21

OWNER: PORT HARBOR LAND LLC, 1000 MARKET ST, BUILDING ONE, PORTSMOUTH, NH 03801

ZONING DISTRICT: CHARACTER DISTRICT 5 (CD5), DOWNTOWN OVERLAY DISTRICT, NORTH END INCENTIVE OVERLAY DISTRICT, HISTORIC DISTRICT

PROPOSED USE: MIXED USE, RESIDENTIAL, RETAIL

DEVELOPMENT STANDARDS

BUILDING PLACEMENT (PRINCIPAL BUILDING):	REQUIRED	PROPOSED MAP 125 LOT 21	MAP 118 LOT 28	MAP 124 LOT 12
MAXIMUM PRINCIPAL FRONT YARD:	5 FT	6 FT(1)	9 FT(1)	10 FT(1)
SIDE YARD:	NR			
MINIMUM REAR YARD:	5 FT	20 FT	22 FT	20 FT
FRONT LOT LINE LENGTH:	NR			
MINIMUM FRONT LOT LINE BUILDOUT:	80%	81%	100%	84%

BUILDING AND LOT OCCUPATION:	REQUIRED	PROPOSED MAP 125 LOT 21	MAP 118 LOT 28	MAP 124 LOT 12
MAXIMUM BUILDING BLOCK LENGTH:	225 FT	107 FT	104 FT	225 FT
MAXIMUM FACADE MODULATION LENGTH:	100 FT	<100 FT	<100 FT	<100 FT
MAXIMUM ENTRANCE SPACING:	50 FT	<50 FT	<50 FT	<50 FT
MAXIMUM BUILDING COVERAGE:	95%	65%	74%	58%
MAXIMUM BUILDING FOOTPRINT:	40,000 SF(2)	11,950 SF	39,255 SF	11,210 SF
MINIMUM LOT AREA:	NR			
MINIMUM OPEN SPACE:	5%	33%	26%	42%
MAXIMUM GROUND FLOOR GFA PER USE:	15,000 SF	7,975 SF	10,419 SF	8,067 SF

BUILDING FORM (PRINCIPAL BUILDING):	REQUIRED	PROPOSED MAP 125 LOT 21	MAP 118 LOT 28	MAP 124 LOT 12
BUILDING HEIGHT:	2-4 STORIES 60 FT	4 STORIES 57 FT	5 STORIES(3) 60 FT	5 STORIES(3) 60 FT
MAXIMUM FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 IN	0 IN	0 IN	0 IN
MINIMUM GROUND STORY HEIGHT:	12 FT	16.5 FT	14.0 FT	13.0 FT
MINIMUM SECOND STORY HEIGHT:	10 FT	13 FT	10.5 FT	10.5 FT
FACADE GLAZING: SHOP FRONT	70% MIN.	75%	73%	71%
ALLOWED ROOF TYPES: FLAT, GABLE, HIP, GAMBREL, MANSARD		FLAT	FLAT	FLAT

OFF-STREET PARKING REQUIREMENTS

PARKING SPACES REQUIRED:		
COMMERCIAL: NO REQUIREMENT IN DOD		0 SPACES
DWELLING UNITS: OVER 750 SF, 1.3 SPACES PER UNIT	80 UNITS	104 SPACES
VISITOR SPACES: 1 SPACE PER 5 DWELLING UNITS	80 UNITS	16 SPACES
EXISTING HOTEL: 0.75 SPACES PER GUEST ROOM	181 ROOMS	136 SPACES
EXISTING DEEDED CONDO SPACES: SHERATON CONDOS		24 SPACES
DEER STREET CONDOS		58 SPACES
DOWNTOWN OVERLAY DISTRICT		-4 SPACES
TOTAL MINIMUM PARKING SPACES REQUIRED =		334 SPACES

TOTAL PARKING SPACES PROVIDED	
EXISTING SHERATON HOTEL PARKING	154 SPACES
ON SITE SURFACE PARKING	180 SPACES
TOTAL SPACES PROVIDED	334 SPACES

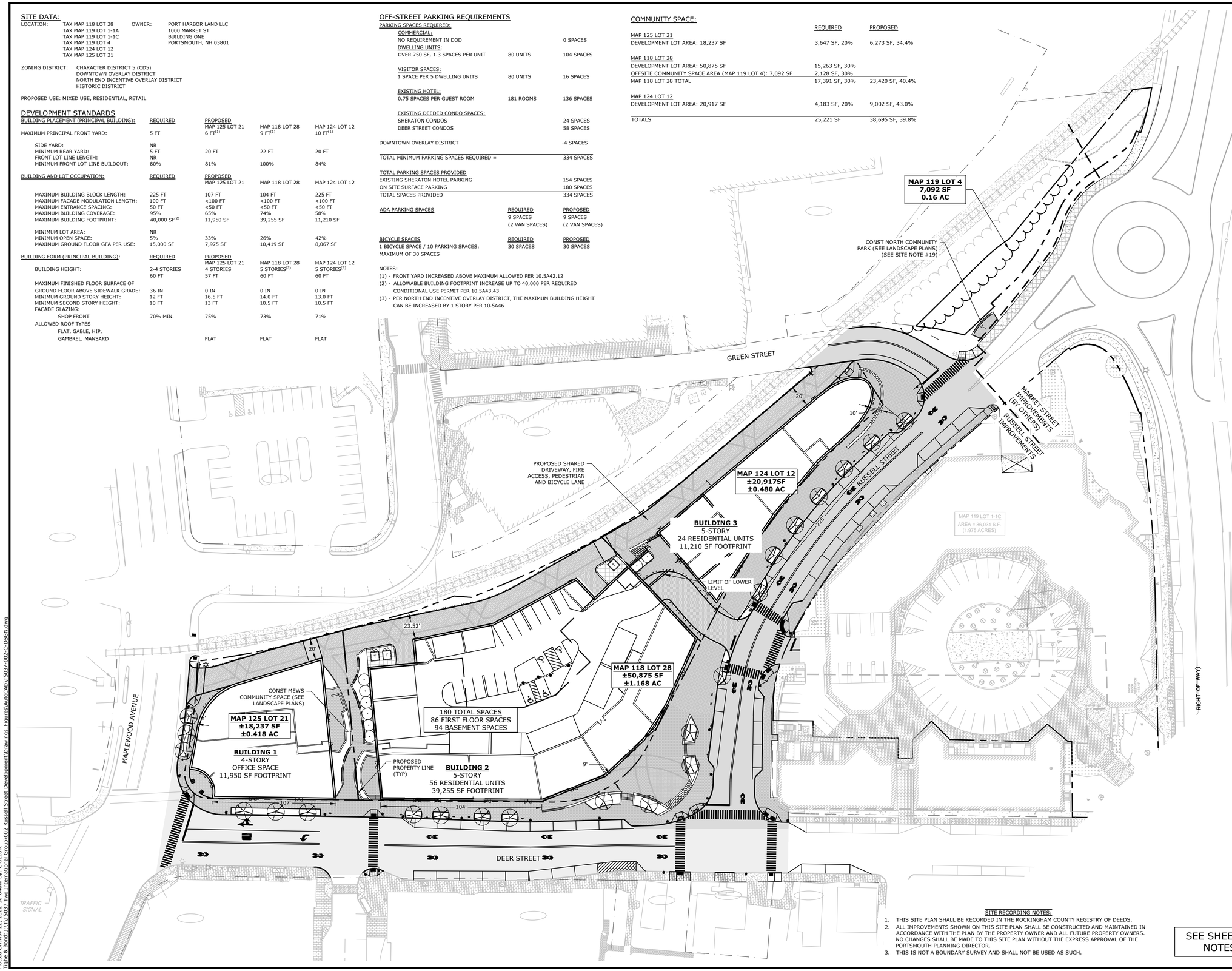
ADA PARKING SPACES	REQUIRED	PROPOSED
	9 SPACES (2 VAN SPACES)	9 SPACES (2 VAN SPACES)

BICYCLE SPACES	REQUIRED	PROPOSED
1 BICYCLE SPACE / 10 PARKING SPACES: MAXIMUM OF 30 SPACES	30 SPACES	30 SPACES

NOTES:
(1) - FRONT YARD INCREASED ABOVE MAXIMUM ALLOWED PER 10.5A42.12
(2) - ALLOWABLE BUILDING FOOTPRINT INCREASE UP TO 40,000 PER REQUIRED CONDITIONAL USE PERMIT PER 10.5A43.43
(3) - PER NORTH END INCENTIVE OVERLAY DISTRICT, THE MAXIMUM BUILDING HEIGHT CAN BE INCREASED BY 1 STORY PER 10.5A46

COMMUNITY SPACE:

	REQUIRED	PROPOSED
MAP 125 LOT 21		
DEVELOPMENT LOT AREA: 18,237 SF	3,647 SF, 20%	6,273 SF, 34.4%
MAP 118 LOT 28		
DEVELOPMENT LOT AREA: 50,875 SF	15,263 SF, 30%	
OFFSITE COMMUNITY SPACE AREA (MAP 119 LOT 4): 7,092 SF	2,128 SF, 30%	
MAP 118 LOT 28 TOTAL	17,391 SF, 30%	23,420 SF, 40.4%
MAP 124 LOT 12		
DEVELOPMENT LOT AREA: 20,917 SF	4,183 SF, 20%	9,002 SF, 43.0%
TOTALS	25,221 SF	38,695 SF, 39.8%



SITE RECORDING NOTES:
1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
3. THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH.

SEE SHEET G-100 FOR SITE NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 11/23/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

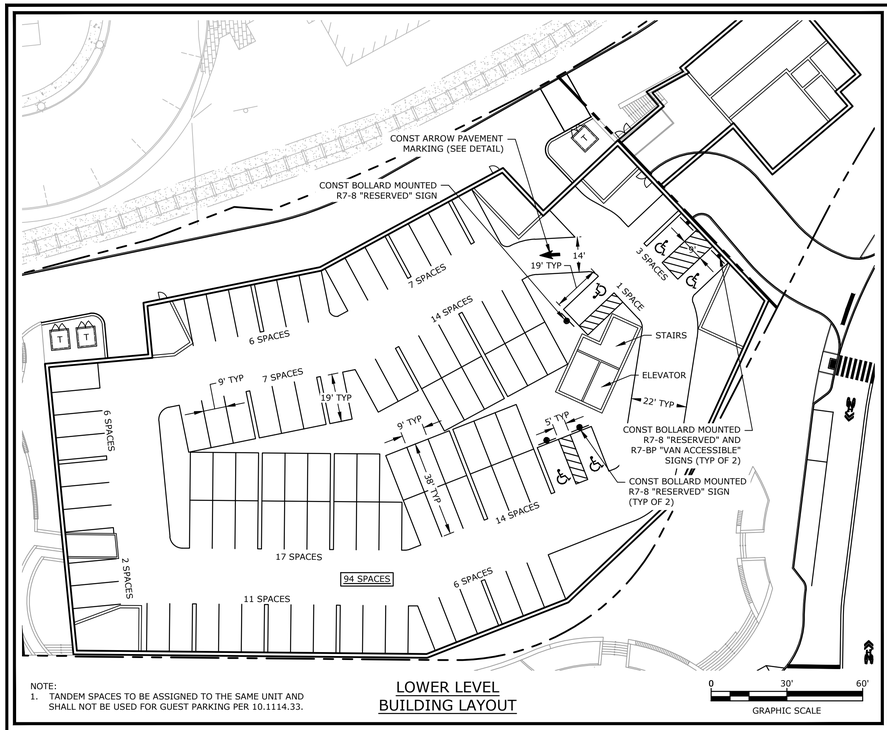
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

OVERALL SITE PLAN

SCALE: AS SHOWN

C-102

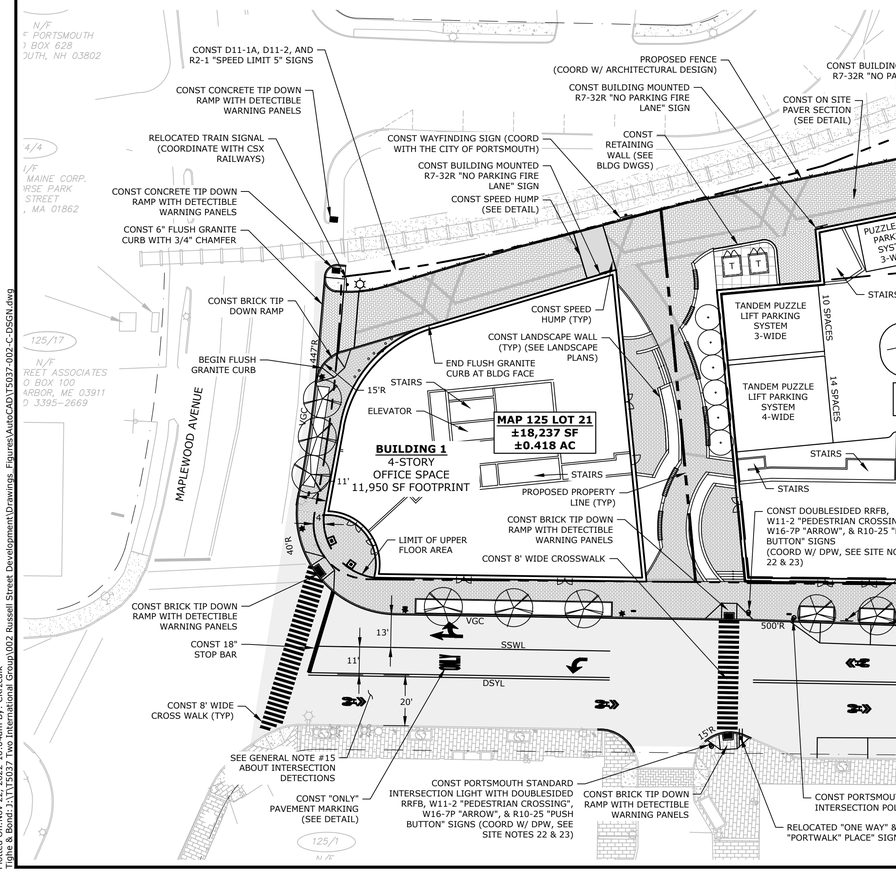
Last Saved 11/21/2022
Plotted on Nov 23, 2022 - 10:04am By: CKrzsik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg

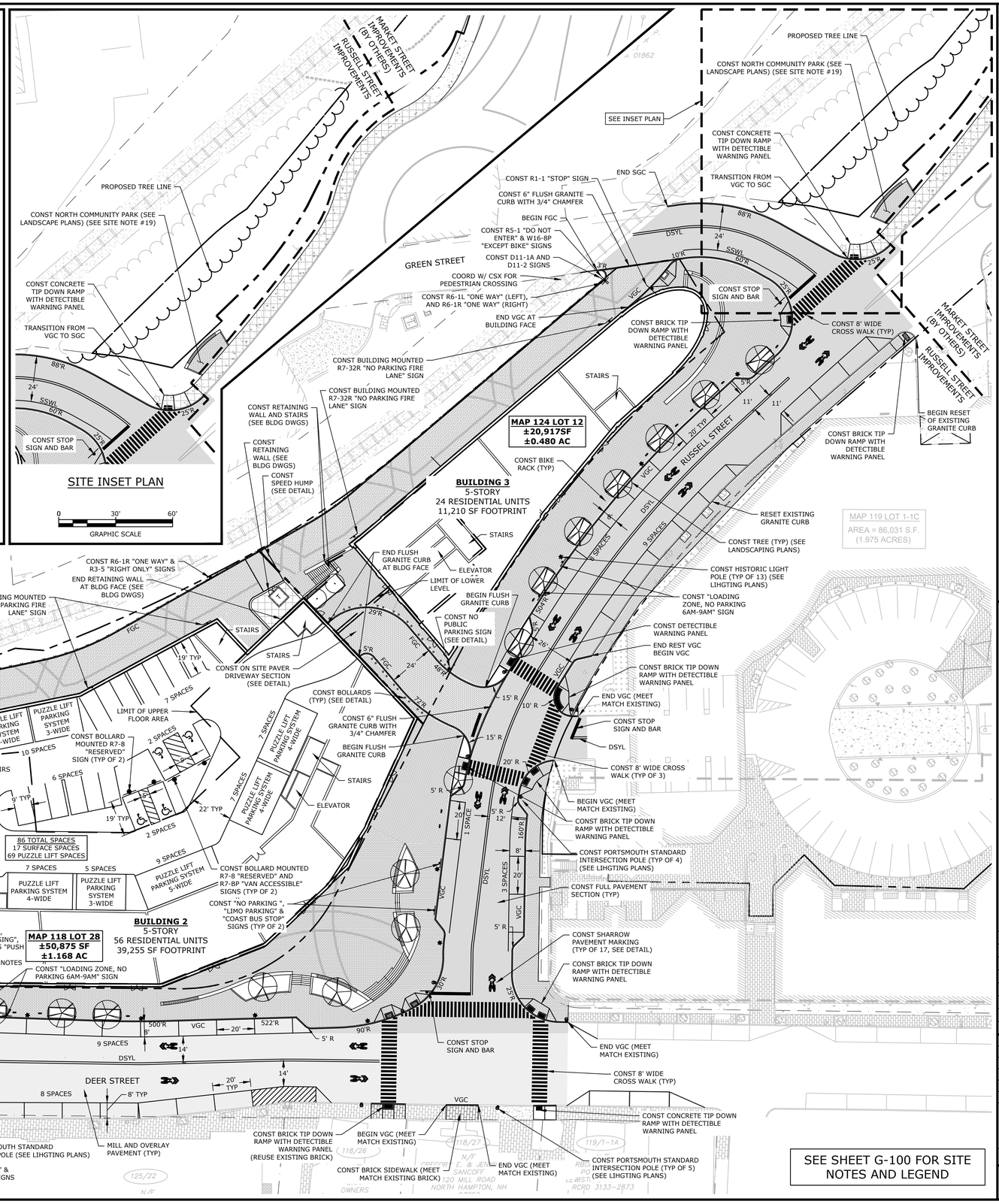


LOWER LEVEL
BUILDING LAYOUT

NOTE:
1. TANDEM SPACES TO BE ASSIGNED TO THE SAME UNIT AND SHALL NOT BE USED FOR GUEST PARKING PER 10.1114.33.

SITE INSET PLAN





SEE SHEET G-100 FOR SITE NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
11/23/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
11/23/22

0 30' 60'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

SITE PLAN

SCALE: AS SHOWN

C-102.1

Last Saved: 11/21/2022
Plotted: Nov 23, 2022 - 10:04am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg

EXISTING DRAINAGE SCHEDULE

ECB1
RIM=15.36
INV. OUT=11.88 (ED1)

ECB2
RIM=15.31
INV. OUT= 12.11 (ED2)

ECB3
RIM=13.39
INV. OUT=8.69 (ED4)

ECB4
RIM=13.91
INV. OUT=9.59 (ED5)

ECB5
RIM=13.73
INV. OUT=10.42 (ED7)

ECB6
RIM=14.06
INV. OUT=9.42 (ED10)

ECB7
RIM=14.48
INV. OUT=10.26 (ED9)

ECB8
RIM=16.49
INV. OUT=12.74 (ED12)

ECB9
RIM=15.78
INV. OUT=13.15 (ED13)

ECB10
RIM=22.49
INV. OUT=19.39 (ED15)

ECB11
RIM=22.51
INV. OUT=19.46 (ED16)

ECB12
RIM=15.69
INV. OUT=12.39 (ED21)

ECB13
RIM=15.76
INV. OUT=12.52 (ED20)

ECB14
RIM=10.43
INV. OUT=6.97 (ED26)

ECB15
RIM=10.00
INV. OUT=6.74 (ED24)

ECB16
RIM=9.82
INV. OUT=6.80 (ED23)

ECB17
RIM=23.85
INV. OUT=20.21 (ED27)

EDMH1
RIM=15.59
INV. IN=11.17 (ED1)
INV. IN=11.33 (ED2)
INV. OUT=8.65 (ED3)

EDMH2
RIM=14.00
INV. IN=6.67 (ED3)
INV. IN=8.79 (ED5)
INV. IN=8.80 (ED4)
INV. OUT=6.64 (ED6)

EDMH3
RIM=13.91
INV. IN=6.41 (ED6)
INV. IN=10.43 (ED7)
INV. OUT=6.35 (ED8)

EDMH4
RIM=14.12
INV. IN=6.26 (ED8)
INV. IN=9.25 (ED10)
INV. IN=10.12 (ED9)
INV. OUT=6.24 (ED11)

EDMH5
RIM=16.60
INV. IN=12.98 (ED12)
INV. IN=12.50 (ED13)
INV. IN=5.74 (ED11)
INV. 12" OUT (SW)=5.64

EDMH6
RIM=25.21
INV. IN(SE)=19.93
INV. OUT=19.97 (ED14)

EDMH7
RIM=22.94
INV. IN=19.49 (ED16)
INV. IN=19.19 (ED15)
INV. IN=18.78 (ED17)
INV. IN=18.13 (ED14)
INV. OUT=18.18 (ED18)

EDMH8
RIM=15.58
INV. IN=12.26 (ED20)
INV. IN=12.28 (ED21)
INV. IN=9.80 (ED19)
INV. OUT=9.97 (ED22)

EDMH9
RIM=11.06
INV. IN=6.50 (ED26)
INV. IN=5.14 (ED25)
INV. IN=5.54
INV. OUT=3.70

EDMH10
RIM=16.89
INV. IN=10.43 (ED18)
INV. OUT=10.51 (ED19)

EDMH11
RIM=10.14
INV. IN=6.96 (ED23)
INV. IN(N)=6.74 (ED24)
INV. IN=5.94 (ED22)
INV. OUT=5.94(ED25)

EDMH12
RIM=11.55
INV. IN=3.81 (ED27)
INV. OUT=3.71(ED28)

EDMH13
RIM=11.45
INV. IN=2.37 (ED29)
INV. OUT=2.27 (ED30)

EXISTING DRAINAGE PIPE SCHEDULE			
LINES	LENGTH	TYPE	SLOPE
ED1	9'	12" CONC	S=0.078
ED2	38'	12" CONC	S=0.0205
ED3	62'	12" CONC	S=0.0319
ED4	10'	12" CONC	S=-0.011
ED5	39'	12" CONC	S=0.0205
ED6	45'	12" CONC	S=0.004
ED7	9'	12" CONC	S=-0.001
ED8	32'	12" CONC	S=0.0028
ED9	18'	12" PVC	S=0.0077
ED10	27'	12" CONC	S=0.0062
ED11	116'	12" CONC	S=0.0043
ED12	44'	12" CONC	S=-0.005
ED13	30'	12" CMP	S=0.0216
ED14	202'	12" CONC	S=0.0091
ED15	33'	12" CONC	S=0.006
ED16	32'	12" CONC	S=0.0009
ED17	186'	6" PVC	UNKNOWN
ED18	210'	12" CONC	S=0.0369
ED19	38'	12" CONC	S=0.0186
ED20	47'	12" CONC	S=0.0055
ED21	7'	12" CONC	S=0.0157
ED22	223'	12" CONC	S=0.0180
ED23	59'	12" CONC	S=0.0145
ED24	6'	12" CONC	S=0.0000
ED25	52'	12" CONC	S=0.0153
ED26	34'	12" CONC	S=0.0138
ED27	241'	12" CONC	S=0.0076
ED28	161'	48" CONC	S=0.0047
ED29	104'	48" CONC	S=0.0047
ED30	252'	48" CONC	S=0.0047

INSET PLAN

0 30' 60'
GRAPHIC SCALE

MARKET STREET IMPROVEMENTS (BY OTHERS)
RUSSELL STREET IMPROVEMENTS
CBA ZONE
01862
SEE INSET PLAN
PDMH 9
RIM=15.95
INV IN=10.35 S
INV OUT=10.35 E
TC 16.75 (HP)
BC 16.25 (HP)
PDMH 8
RIM=16.05
INV IN=10.90 S
INV IN=10.60 W
INV OUT=10.60 N
46 LF 12"
HDPE S=0.54%
3 LF 12" HDPE S=1.67%
PROPOSED JELLYFISH JF6
TREATMENT UNIT-02
RIM=15.90
INV IN=11.15 S
INV OUT=10.65 E
8 LF 6" HDPE S=0.62%
END SILT SACK
114 LF 12"
HDPE S=0.48%
16 LF 12"
HDPE S=1.87%
6" INV OUT=11.20
12" INV OUT=11.20
4 LF 12" HDPE S=0.00%
PROPOSED UNDERGROUND
DETENTION BASIN
OLDCASTLE STORMCAPUTRE SC-2
CHAMBER INV=11.20
(SEE DETAIL)
POCS 2 (SEE DETAIL)
RIM=16.00
INV IN=11.20 W
INV OUT=11.20 N
6" INV IN=11.20
29 LF 6" HDPE S=0.52%
PROPOSED DRAIN CLEANOUT
CAP ELEV=15.90
PIPE INV=11.35 N
10 LF 6" HDPE S=2.50%
PROPOSED ROOF DRAIN
(COORD W/BUILDING
DWGS)
FF = 18.25'
PDMH 10
RIM=14.00
INV IN=9.80 W
INV IN=9.10 S
INV OUT=9.05 N
36 LF 12" HDPE S=0.56%
PCB 5
RIM=16.25
INV OUT=12.45 NE
MAP 119 LOT 1-1C
AREA = 86,031 S.F.
(1.975 ACRES)
PROPOSED
BUILDING 3
FF = 22.50'
TW:15.20
BW:14.70
14.30
PDMH 4
RIM=14.45
INV IN=9.80 E
INV OUT=9.70 S
22.65 (LP)
22.75
22.50
21.75 TC
21.25 BC
22.40
22.50
22.50
22.45
21.50 TC
21.00 BC
18" INV OUT=7.25
37 LF 18" HDPE S=0.00%
PDMH 3
RIM=16.25
INV IN=7.25 NE
INV IN=10.75 SW
INV OUT=7.25 SE
PROPOSED UNDERGROUND
DETENTION BASIN
OLDCASTLE STORMCAPUTRE SC-5
CHAMBER INV=7.25
(SEE DETAIL)
15 LF 12" HDPE S=3.33%
12" INV IN=9.20
12" INV IN=10.00
15.10
14.70
23.00
23.00
12" INV IN=10.00
6 LF 12" HDPE S=2.50%
5 LF 18" HDPE S=0.00%
44 LF 6" HDPE S=1.14%
PROPOSED DRAIN CLEANOUT
CAP ELEV=15.75
PIPE INV=11.25 NE
16.10
15.50
4 LF 12"
HDPE S=2.50%
PROPOSED ROOF
DRAIN (COORD W/
BUILDING DWGS)
PROPOSED ROOF
DRAIN (COORD
W/BUILDING
DWGS)
23.00 (HP)
PCB 4
RIM=21.80
INV OUT=18.90 E
13 LF 12" HDPE S=0.77%
PROPOSED JELLYFISH JF4
TREATMENT UNIT-03
RIM=22.55
INV IN=18.80 W
INV OUT=18.30 E
22.90
22.90 TC
22.40 BC
22.50 (HP)
22.50 TC
22.00 BC
45 LF 12" HDPE S=0.56%
PDMH 7
RIM=22.30
INV IN=18.05 W
INV IN=16.86 S
INV OUT=16.85 N
BEGIN SILT SACK
14.20
14.70
14.70
14.70
16.10
16.50
16.5
15.50
CONST 12" TRENCH
DRAIN #2
RIM=13.00
(SEE DETAIL)
6 LF 24" HDPE S=0.00%
24" INV OUT=7.25
28 LF 12"
HDPE S=0.71%
CONST 12" TRENCH
DRAIN #1
RIM=13.00
(SEE DETAIL)
14.10 (VIF)
PYD 2
RIM=17.00
17.40
17.65
17.30
17.00
PYD 1
RIM=16.70
9 LF 6" HDPE S=2.78%
14.75
14.25
PROPOSED ROOF DRAIN
(COORD W/BUILDING
DWGS)
12" INV IN=9.75
24 LF 12" HDPE S=1.04%
18" INV IN=7.25
PROPOSED BUILDING 2
FIRST FLOOR FF = 23.00'
BASEMENT PARKING FF = 12.00'
PROPOSED UNDERGROUND
DETENTION BASIN
OLDCASTLE STORMCAPUTRE SC-5
CHAMBER INV=7.25
(SEE DETAIL)
PROPOSED
BUILDING 1
FF = 17.00'
17.00
23.60
23.55
23.65
23.75
23.70
23.85 (HP)
23.55 (HP)
PYD 4
RIM=22.15
INV IN=18.90 S
INV OUT=18.90 NE
23.00
40 LF 10" HDPE S=0.50%
PYD 3
RIM=22.25
INV OUT=19.10 N
22.65 (HP)
PDMH 6
RIM=22.60
INV IN=18.30 SW
INV IN=18.30 NE
INV IN=18.30 S
INV OUT=18.25 N
PCB 2
RIM=22.50
INV OUT=18.60 SW
28 LF 12" HDPE S=1.07%
2 LF 12" HDPE S=2.50%
PCB 3
RIM=22.45
INV OUT=18.35 NE
PDMH 5
RIM=23.60
INV IN=18.85 SW
INV IN=18.87 S
INV OUT=18.82 N
10 LF 10" HDPE S=0.50%
18" INV OUT=7.25
2 LF 18" HDPE S=0.00%
POCS 1 (SEE DETAIL)
RIM=20.75
INV IN=7.25 NW
INV OUT=7.25 SE
158 LF 18"
HDPE S=0.47%
22.80
2 LF 18" HDPE S=2.50%
22.90
42 LF 18" HDPE S=0.48%
23.00
24.65
24.65
26.00
25.80
24.45
24.55
25.80
25.70 TC
25.20 BC
25.90 TC
25.40 BC
25.85 HP
PCB 1
RIM=16.60
INV OUT=13.15 S
PROPOSED JELLYFISH JFPD0806
TREATMENT UNIT-01
RIM=20.85
INV IN=7.20 NW
INV OUT=6.70 SE
PDMH 2 (5' DIA)
RIM=20.85
INV IN=6.50 NW
INV OUT=6.50 SW
CONST INLET
PROTECTION
BARRIER (TYP)
RIM=20.77

SEE SHEET G-100 FOR GRADING & DRAINAGE NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
11/23/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
11/23/22

0 30' 60'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

C-103

Last Saved:11/21/2022
Plotted:Nov 23, 2022 - 10:05am By: CKrzoulk
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg

EXISTING SEWER SCHEDULE

ESMH1
RIM=16.09
INV. IN(NW)=1.18
INV. OUT=1.10 (ES1)

ESMH2
RIM=15.13
FROZEN

ESMH3
RIM=14.18
INV. IN=0.56 (ES1)
INV. OUT=0.34 (ES2)

ESMH4
RIM=14.16
INV. IN=0.19 (ES2)
INV. OUT=0.09 (ES3)

ESMH5
RIM=16.43
INV.(SW)=-1.00
INV. IN=-0.22 (ES3)
INV. OUT=-1.17 (ES4)

ESMH6
RIM=22.60
INV. IN(SE)=15.24
INV. IN(SW)=15.20
INV. OUT=15.20 (ES10)

ESMH7
RIM=14.05
INV. IN(E)=8.00
INV. IN=7.87 (ES10)
INV. OUT=7.92 (ES11)

ESMH8
RIM=10.96
INV. IN=3.82 (ES11)
INV. OUT=3.89 (ES12)

ESMH9
RIM=20.88
CHANNEL=-1.07
INV. IN 8"=13.60

ESMH10
RIM=24.86
INV.(E)=17.22
INV.(SE)=17.16
INV. OUT=17.03 (ES9)

ESMH11
RIM=24.39
INV. IN=16.27 (ES9)
INV. OUT=16.08 (ES8)

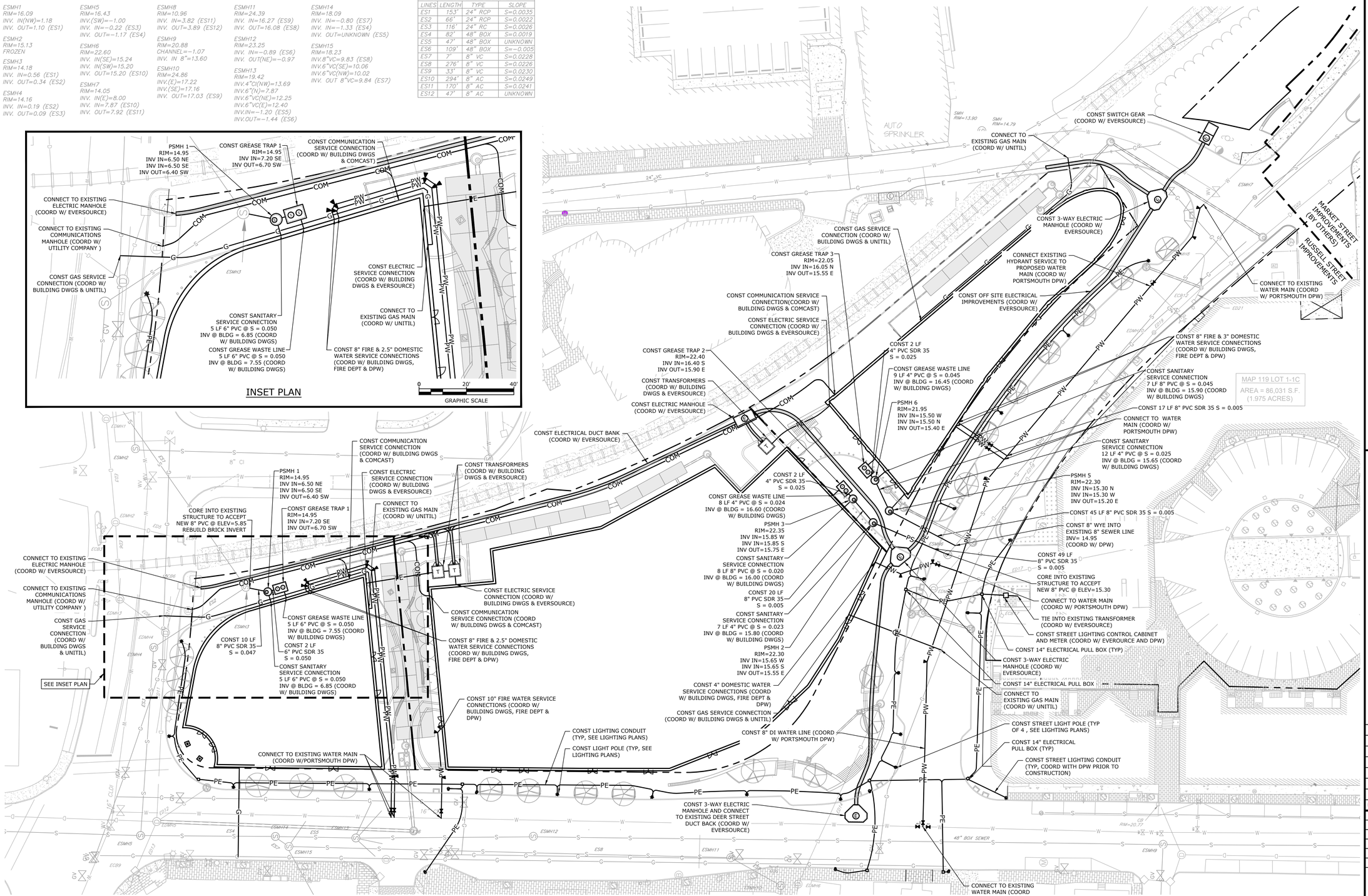
ESMH12
RIM=23.25
INV. IN=-0.89 (ES6)
INV. OUT(NE)=-0.97

ESMH13
RIM=19.42
INV.4"CI(NW)=13.69
INV.6"(N)=7.87
INV.6"VC(NE)=12.25
INV.6"VC(E)=12.40
INV.IN=-1.20 (ES5)
INV.OUT=-1.44 (ES6)

ESMH14
RIM=18.09
INV. IN=-0.80 (ES7)
INV. IN=-1.33 (ES4)
INV. OUT=UNKNOWN (ES5)

ESMH15
RIM=18.23
INV.8"VC=9.83 (ES8)
INV.6"VC(SE)=10.06
INV.6"VC(NW)=10.02
INV. OUT 8"VC=9.84 (ES7)

EXISTING SEWER PIPE SCHEDULE			
LINES	LENGTH	TYPE	SLOPE
ES1	153'	24" RCP	S=0.0035
ES2	66'	24" RCP	S=0.0022
ES3	116'	24" RC	S=0.0026
ES4	82'	48" BOX	S=0.0019
ES5	47'	48" BOX	UNKNOWN
ES6	109'	48" BOX	S=-0.005
ES7	7'	8" VC	S=0.0228
ES8	276'	8" VC	S=0.0226
ES9	33'	8" VC	S=0.0230
ES10	294'	8" AC	S=0.0249
ES11	170'	8" AC	S=0.0241
ES12	47'	8" AC	UNKNOWN



SEE SHEET G-100 FOR UTILITIES NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
11/23/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

UTILITIES PLAN

SCALE: AS SHOWN

C-104

Last Saved: 11/21/2022
Printed: Nov 23, 2022 - 10:05am By: CKrzsik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings. Figures\AutoCAD\T5037-002-C-DSGN.dwg

GENERAL PROJECT INFORMATION

PROJECT APPLICANT: PORT HARBOR LAND, LLC
1000 MARKET STREET, BUILDING ONE
PORTSMOUTH, NH 03801
PROJECT NAME: PROPOSED MIXED USE DEVELOPMENT
PROJECT MAP / LOT: MAP 118 / LOT 28
MAP 119 / LOT 1-1A
MAP 119 / LOT 1-1C
MAP 119 / LOT 4
MAP 124 / LOT 12
MAP 125 / LOT 21
PROJECT ADDRESS: RUSSELL STREET & DEER STREET
PORTSMOUTH, NH 03801
PROJECT LATITUDE: 43°-04'-43" N
PROJECT LONGITUDE: 70°-45'-41" W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF AN OFFICE BUILDING AND TWO MIXED USE RESIDENTIAL BUILDINGS WITH ASSOCIATED SITE IMPROVEMENTS.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 2.1 ACRES.

SOIL CHARACTERISTICS

BASED ON THE USCS WEB SOIL SURVEY THE SOILS ON SITE CONSIST OF URBAN LAND WHICH IS EXCESSIVELY DRAINED SOILS WITH A HYDROLOGIC SOIL GROUP RATING OF A.

NAME OF RECEIVING WATERS

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA A CLOSED DRAINAGE SYSTEM TO THE CITY OF PORTSMOUTH'S CLOSED DRAINAGE SYSTEM WHICH ULTIMATELY FLOWS TO NORTH MILL POND THEN TO THE PISCATAQUA RIVER OR DIRECTLY TO THE PISQUATAQUA RIVER.

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

1. CUT AND CLEAR TREES.
2. CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
   - NEW CONSTRUCTION
   - CONTROL OF DUST
   - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
3. ALL PERMANENT DITCHES, SWALES, DETENTION, RETENTION AND SEDIMENTATION BASINS TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPS PRIOR TO DIRECTING RUNOFF TO THEM.
4. CLEAR AND DISPOSE OF DEBRIS.
5. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
6. GRADE AND GRAVEL ROADWAYS AND PARKING AREAS - ALL ROADS AND PARKING AREA SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
7. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
8. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
9. SEDIMENT TRAPS AND/OR BASINS SHALL BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
10. FINISH PAVING ALL ROADWAYS AND PARKING LOTS.
11. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
12. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
13. REMOVE TRAPPED SEDIMENTS FROM COLLECTOR DEVICES AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

SPECIAL CONSTRUCTION NOTES:

1. THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
2. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
2. PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
3. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING HAY BALES, SILT FENCES, MULCH BERMS, SILT SACKS AND SILT SOCKS AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
4. SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AND BE MAINTAINED FOR THE DURATION OF THE PROJECT.
5. PERIMETER CONTROLS INCLUDING SILT FENCES, MULCH BERM, SILT SOCK, AND/OR HAY BALE BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL NON-PAVED AREAS HAVE BEEN STABILIZED.
6. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
7. ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED AND FERTILIZER.
8. INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
9. CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

STABILIZATION:

1. AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.;
   E. IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.
2. WINTER STABILIZATION PRACTICES:
   A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
   C. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
3. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
   A. TEMPORARY SEEDING;
   B. MULCHING.
4. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
5. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
6. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT FENCES, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

DUST CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
2. DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
3. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

STOCKPILES:

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING:

1. THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

VEGETATION:

1. TEMPORARY GRASS COVER:
   A. SEEDBED PREPARATION:
      a. APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE;
   B. SEEDING:
      a. UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE;
      b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED;
      c. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING;
   C. MAINTENANCE:
      a. TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
2. VEGETATIVE PRACTICE:
   A. FOR PERMANENT MEASURES AND PLANTINGS:
      a. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF THREE (3) TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5;
      b. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE OF 10-20-20 FERTILIZER;
      c. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH;
      d. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH;
      e. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE;
      f. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED;
      g. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED;
      h. A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE APPLIED AT THE INDICATED RATE:

SEED MIX	APPLICATION RATE
CREEPING RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
REDTOP	2 LBS/ACRE

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE (1) PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. SEEDING SHALL BE DONE NO LATER THAN SEPTEMBER 15. IN NO CASE SHALL SEEDING TAKE PLACE OVER SNOW.

3. DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL):
   A. FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

CONCRETE WASHOUT AREA:

1. THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE:
   A. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY;
   B. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
   C. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS;
   D. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON-STORMWATER DISCHARGES:

1. FIRE-FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
4. WATER USED TO CONTROL DUST;
5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
6. ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
7. PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
8. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
9. UNCONTAMINATED GROUND WATER OR SPRING WATER;
10. FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
11. UNCONTAMINATED EXCAVATION DEWATERING;
12. LANDSCAPE IRRIGATION.

WASTE DISPOSAL:

1. WASTE MATERIAL:
   A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
   B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE:
   A. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
   B. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE:
   A. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION:

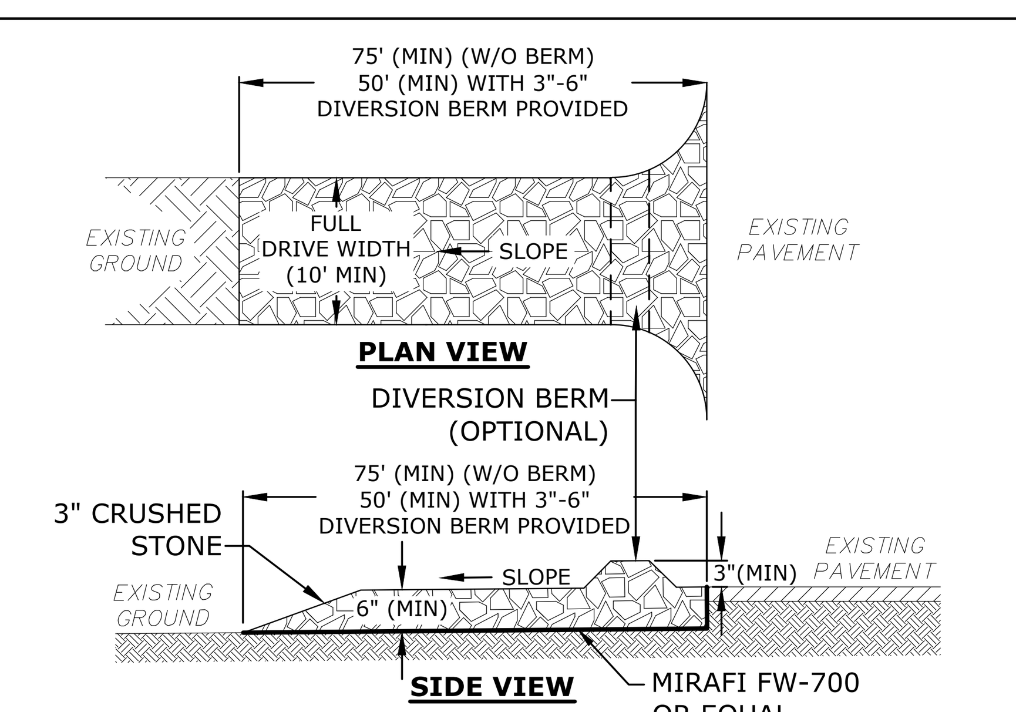
1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   A. GOOD HOUSEKEEPING - THE FOLLOWING GOOD HOUSEKEEPING PRACTICE SHALL BE FOLLOWED ON SITE DURING CONSTRUCTION:
      a. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE;
      b. ALL REGULATED MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE, ON AN IMPERVIOUS SURFACE;
      c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED;
      d. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS;
      e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
      f. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
      g. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
   B. HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
      a. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
      b. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
      c. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
   C. PRODUCT SPECIFIC PRACTICES - THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
      a. PETROLEUM PRODUCTS:
      i. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
      ii. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
      iii. SECURE FUEL STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
      iv. INSPECT FUEL STORAGE AREAS WEEKLY;
      v. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS;
      vi. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
      vii. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
      viii. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
         (1) EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;
         (2) PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
         (3) HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
         (4) USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES;
         (5) PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
      ix. FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT SHALL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT, OR ITS SUCCESSOR DOCUMENT.
      HTTPS://WWW.DES.NH.GOV/ORGANIZATION/COMMISSIONER/PIP/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF
      b. FERTILIZERS:
      i. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
      ii. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
      iii. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
      c. PAINTS:
      i. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
      ii. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
      iii. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   D. SPILL CONTROL PRACTICES - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
      a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES;
      b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE;
      c. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
      d. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE;
      e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED;
      f. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
   E. VEHICLE FUELING AND MAINTENANCE PRACTICE:
      a. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPMENT/VEHICLE FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY;
      b. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY;
      c. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED;
      d. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA;
      e. CONTRACTOR SHALL REGULARLY INSPECT VEHICLES FOR LEAKS AND DAMAGE;
      f. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

1. THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRES A SWPPP. THE SWPPP SHALL BE PREPARED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.
2. THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
   A. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
   B. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
   C. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
   D. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

BLASTING NOTES:

1. CONTRACTOR SHALL CONTACT THE NHDES PRIOR TO COMMENCING ANY BLASTING ACTIVITIES
2. FOR ANY PROJECT FOR WHICH BLASTING OF BEDROCK IS ANTICIPATED, THE APPLICANT SHALL SUBMIT:
   A. A BLASTING PLAN THAT IDENTIFIES:
      a. WHERE THE BLASTING ACTIVITIES ARE ANTICIPATED TO OCCUR;
      b. THE ESTIMATED QUANTITY OF BLAST ROCK IN CUBIC YARDS; AND
      c. SITE-SPECIFIC BLASTING BEST MANAGEMENT PRACTICES.
3. IF MORE THAN 5000 CUBIC YARDS OF BLAST ROCK WILL BE GENERATED AND THERE ARE ONE OR MORE PUBLIC DRINKING WATER WELLS WITHIN 2000 FEET OF THE BLASTING ACTIVITIES, A PLAN TO MONITOR GROUNDWATER TO DETECT ANY CONTAMINATION IN SUFFICIENT TIME TO PROTECT THE WATER SUPPLY WELLS SHALL BE PROVIDED TO THE NHDES. THE GROUNDWATER MONITORING PLAN SHALL INCLUDE:
   A. MONITORING FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA:
      a. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY THE NHDES.
   B. THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
      a. LOADING PRACTICES - THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
   - DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS;
   - EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL;
   - SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL;
   - LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED;
   - LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT;
   - EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
      b. EXPLOSIVE SELECTION - THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
   - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION;
   - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER
   - PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
   - MUCK PILES MANAGEMENT - MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
   - REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE;
   - MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
   C. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT DURING BLASTING OPERATIONS. THE MEASURES TO PREVENT SUCH RELEASES SHALL BE DETAILED IN THE GROUNDWATER MONITORING REPORT AND COMPLY WITH THE MEASURES AND BEST MANAGEMENT PRACTICES LISTED ON THIS SHEET.

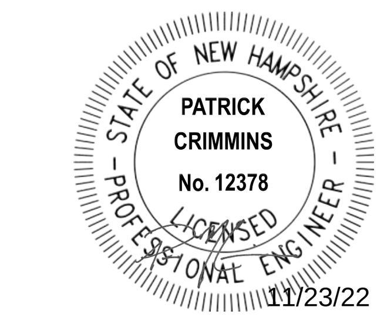


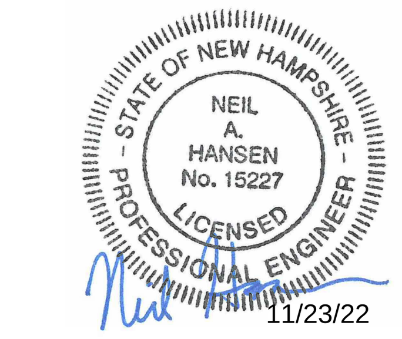
NOTE:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT

NO SCALE

Tighe&Bond





North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

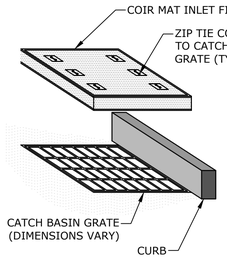
MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

EROSION CONTROL NOTES AND DETAILS SHEET

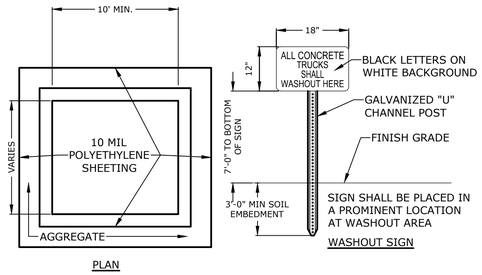
SCALE: AS SHOWN

C-501

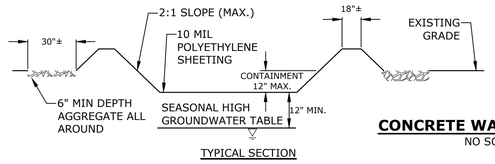


NOTES:
1. COIR MAT INLET FILTER SHALL BE STORM WATER INLET FILTER BY BLOCKSOM & CO. OR APPROVED EQUAL.
2. INSTALL AND MAINTAIN INLET PROTECTION IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

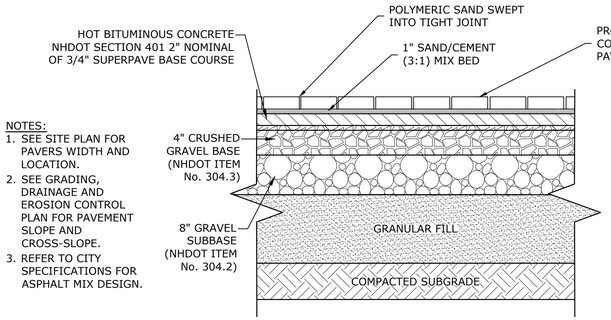
INLET PROTECTION
NO SCALE



NOTES:
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.



CONCRETE WASHOUT AREA
NO SCALE

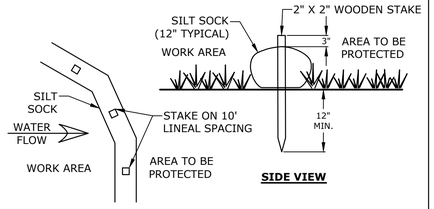


NOTES:
1. SEE SITE PLAN FOR PAVERS WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

NHDOT ITEM No. 304.2 (GRAVEL)	
SIEVE SIZE	% PASSING
6"	100
#4	25-70
#200	0-12

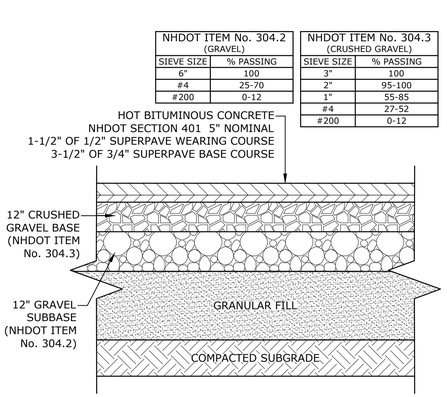
NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12

ON-SITE PAVERS SECTION
NO SCALE



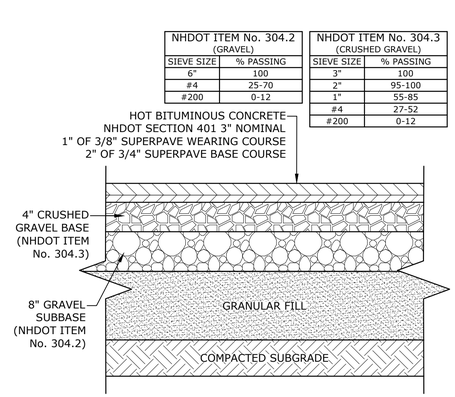
NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR APPROVED EQUAL.
2. INSTALL SILT SOCK IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SILT SOCK
NO SCALE



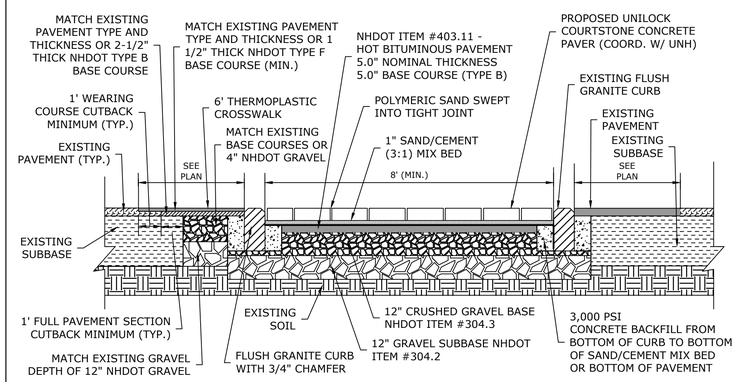
NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

CITY RIGHT-OF-WAY PAVEMENT SECTION
NO SCALE



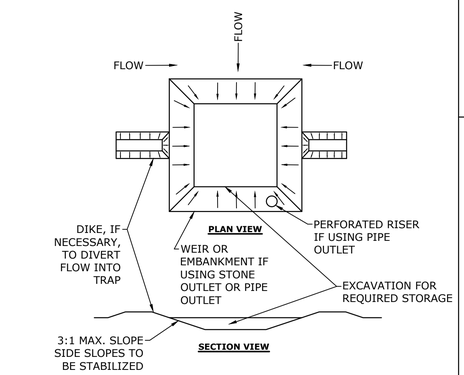
NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

ON-SITE PAVEMENT SECTION
NO SCALE



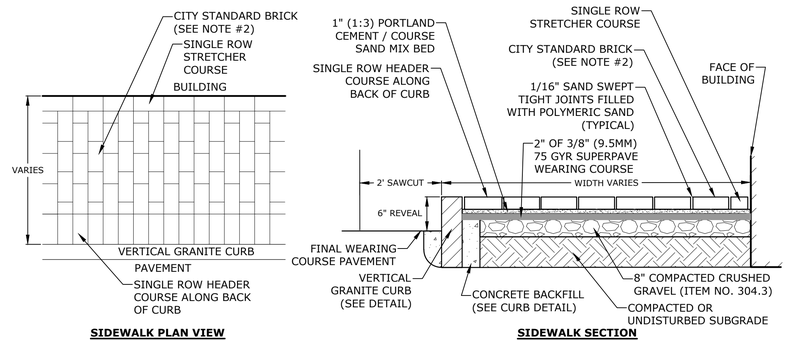
NOTES:
1. FINAL COLOR AND PATTERN OF **UNILOCK COURTSTONE** CONCRETE PAVERS TO BE COORDINATED WITH DPW. CONTRACTOR SHALL PROVIDE SAMPLES TO THE GROUP PRIOR TO ORDERING MATERIALS.
2. BEDDING MATERIAL SHALL BE A SAND/CEMENT MIX THAT IS 3 PARTS SAND AND 1 PART CEMENT. SAND SHALL CONFORM WITH ASTM C33 AND CEMENT SHALL BE PORTLAND CEMENT TYPE I/TYPE II.

DEER STREET PAVER CROSSWALK
NO SCALE



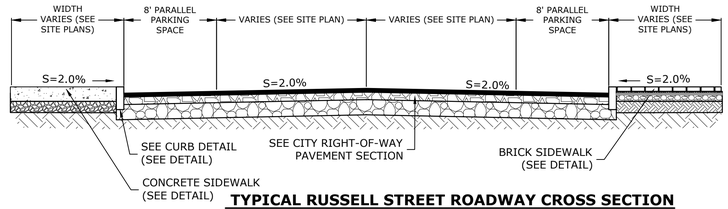
NOTES:
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING AREA TO A SINGLE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. TRAP OUTLET SHALL BE MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP.
5. TRAP SHALL DISCHARGE TO A STABILIZED AREA.
6. TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
8. SEDIMENT TRAPS MUST BE USED AS NEEDED TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.

SEDIMENT TRAP
NO SCALE

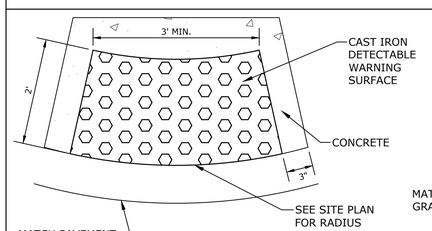


NOTES:
1. BRICK SIDEWALK SHALL BE INSTALLED AS DETAILED AND PER CITY OF PORTSMOUTH REQUIREMENTS/SPECIFICATIONS AND SHALL INCLUDE A CONTINUOUS APPROVED PAVER EDGE RESTRAINT SYSTEM AT ALL LOCATIONS NOT ADJACENT TO CURB OR BUILDINGS.
2. CITY STANDARD BRICK SHALL BE TRADITIONAL EDGE, PATHWAY, FULL RANGE 2.25"X4"X8" PAVER, BY PINE HALL BRICK, INC. BRICK MATERIAL SAMPLES SHALL BE PROVIDED TO DPW PRIOR TO INSTALLATION FOR REVIEW AND APPROVAL.
3. BEDDING MATERIAL SHALL BE A PORTLAND CEMENT / COURSE SAND MIX THAT IS 1 PART PORTLAND CEMENT AND 3 PARTS COURSE SAND. SAND SHALL CONFORM WITH ASTM C-33 AND CEMENT SHALL BE PORTLAND CEMENT TYPE I/TYPE II.

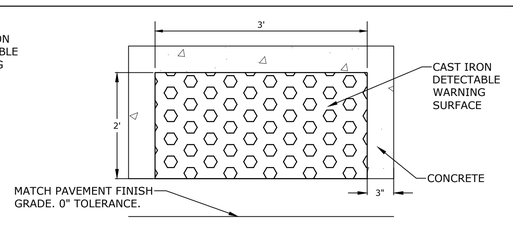
BRICK SIDEWALK
NO SCALE



TYPICAL RUSSELL STREET ROADWAY CROSS SECTION
NO SCALE



NOTES:
1. DETECTABLE WARNING SURFACE SHALL BE 2' X 3' CAST IRON PANEL SET IN CONCRETE.
2. DETECTABLE WARNING SURFACE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



CAST IRON DETECTABLE WARNING SURFACE
NO SCALE

Tighe&Bond

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 11/23/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

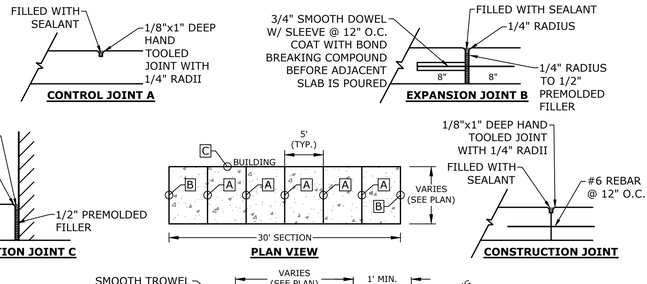
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

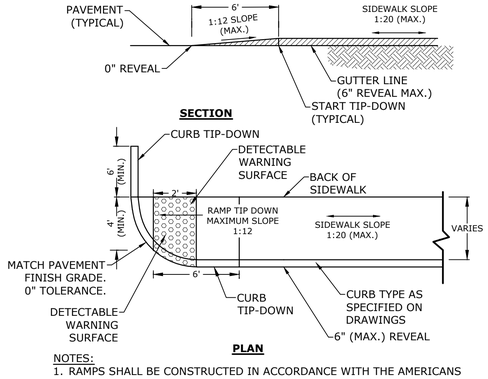
C-502

Last Saved: 11/18/2022
Plotted: Nov 23, 2022 - 10:27am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DTLS.dwg



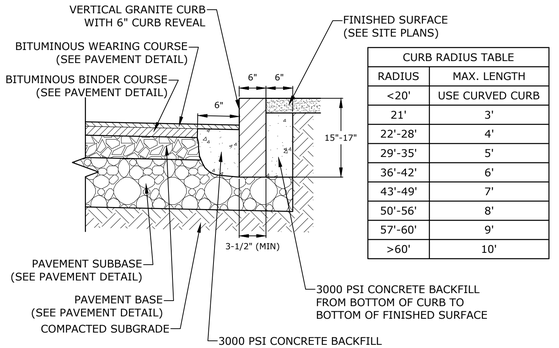
NOTES:
1. SEE SITE PLAN FOR SIDEWALK WIDTH AND LOCATIONS.
2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR WALK AND SIDE SLOPE GRADES.
3. ISOLATION JOINTS ADJACENT TO BUILDING SHALL BE COORDINATED WITH BUILDING DRAWINGS.

CONCRETE SIDEWALK WITH GRANITE CURB
NO SCALE



NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. PROVIDE 8" COMPACTED CRUSHED GRAVEL BASE BENEATH RAMPS.
3. DETECTABLE WARNING STRIP SHALL BE ADA SOLUTIONS, INC. CAST IN PLACE RAMP. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE SIDEWALK TIP-DOWN RAMP WITH DETECTABLE WARNING PANEL
NO SCALE

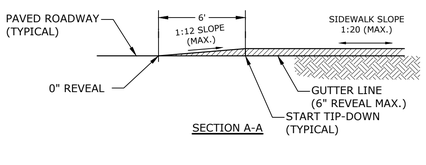


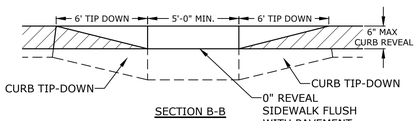
CURB RADIUS TABLE	
RADIUS	MAX. LENGTH
<20'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
>60'	10'

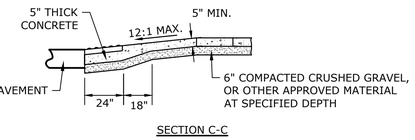
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).
6. ALL RADII 20 FEET AND SMALLER SHALL BE CONSTRUCTED USING CURVED SECTIONS.
7. JOINTS BETWEEN STONES SHALL HAVE A MAXIMUM SPACING OF 1/2" AND SHALL BE MORTARED.

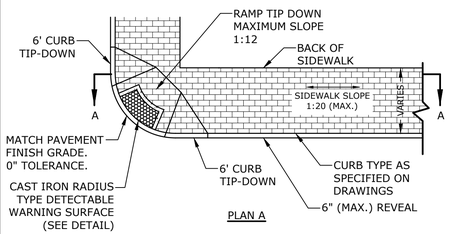
VERTICAL GRANITE CURB
NO SCALE

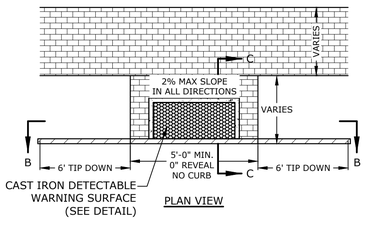
NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12





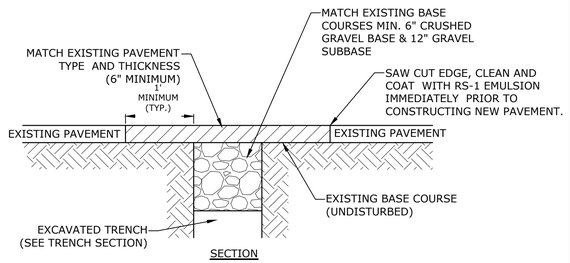


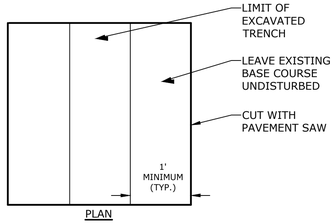




NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 6" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON SET IN CONCRETE (SEE DETAIL.)
4. PROVIDE DETECTABLE WARNING SURFACES ANYTIME THAT A CURB RAMP, BLENDED TRANSITION, OR LANDING CONNECTS TO A STREET.
5. LOCATE THE DETECTABLE WARNING SURFACES AT THE BACK OF THE CURB ALONG THE EDGE OF THE LANDING.
6. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
7. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURBLINE.
8. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
9. DETECTABLE WARNING PANELS SHALL BE A MINIMUM OF 2 FEET IN DEPTH. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP, BLENDED TRANSITION, OR LANDING AND THE STREET.
10. THE TEXTURE OF THE DETECTABLE WARNING FEATURE MUST CONTRAST VISUALLY WITH THE SURROUNDING SURFACES (EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT).

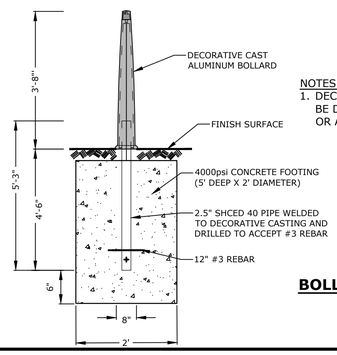
CONCRETE WHEELCHAIR ACCESSIBLE RAMP
NO SCALE





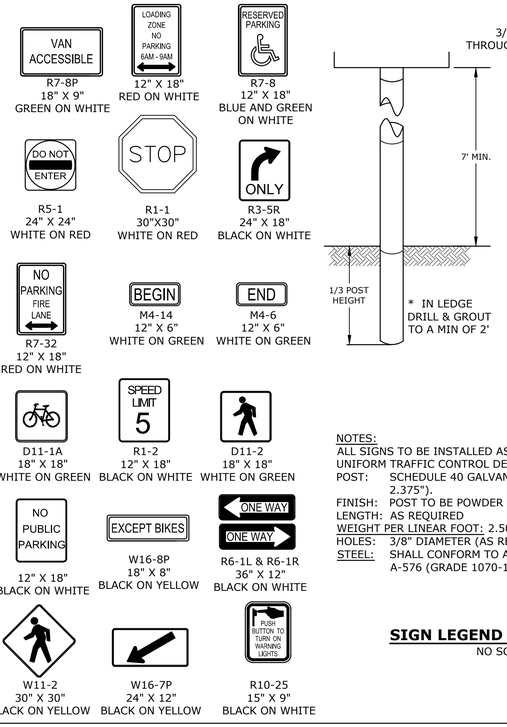
NOTE:
1. COORDINATE AND OBTAIN APPROVAL FOR ALL TRENCHING AND PATCHING WITHIN CITY RIGHT OF WAY WITH CITY OF PORTSMOUTH DPW PRIOR TO COMMENCING WORK.

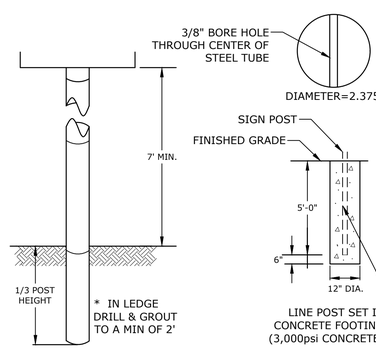
ROADWAY TRENCH PATCH
NO SCALE



NOTES:
1. DECORATIVE CAST BOLLARD TO BE DG4 BY URBAN ACCESSORIES OR APPROVED EQUAL

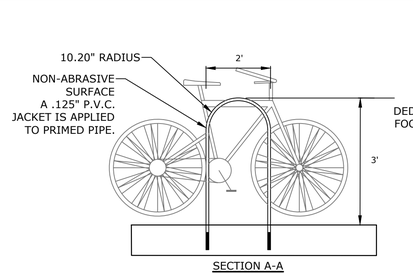
BOLLARD DETAIL
NO SCALE





NOTES:
ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
POST: SCHEDULE 40 GALVANIZED STEEL PIPE (OUTSIDE DIA. = 2.375").
FINISH: POST TO BE POWDER COATED GLOSS BLACK
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER (AS REQUIRED)
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080)

SIGN LEGEND & SIGN POST
NO SCALE



BIKE RACK
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 11/23/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

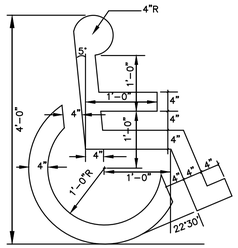
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-503

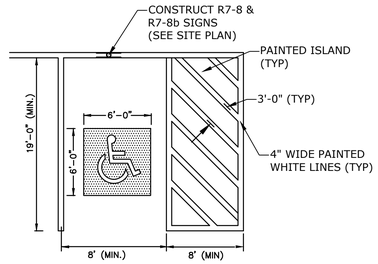
Last Saved: 11/18/2022 10:28am By: CKrzcuik
Plotted: May 24, 2022 10:28am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DTLS.dwg



NOTES:
1. SYMBOL SHALL BE CONSTRUCTED IN ALL ACCESSIBLE SPACES USING WHITE THERMOPLASTIC, REFLECTORIZED PAVEMENT PARKING MATERAL MEETING THE REQUIREMENTS OF ASTM D 4505.
2. SYMBOL SHALL BE CONSTRUCTED TO THE LATEST ADA, STATE AND LOCAL REQUIREMENTS.

ACCESSIBLE SYMBOL

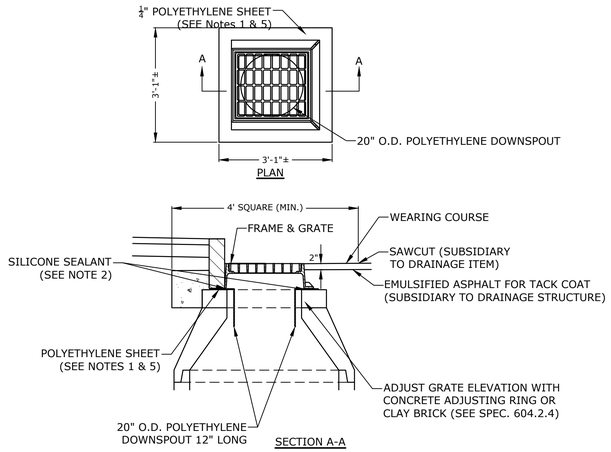
NO SCALE



NOTES:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN W/DISABILITIES ACT.

ACCESSIBLE PARKING STALL

NO SCALE



NOTES:
1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET.
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF THE GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
4. USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3-FLANGE FRAME AND CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
7. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.
8. SEE NHDOT DR-04, "DI-DB, UNDERDRAIN FLUSHING BASIN AND POLYETHYLENE LINER DETAILS", FOR ADDITIONAL INFORMATION.
9. CATCHBASINS WITHIN CITY RIGHT OF WAY SHALL HAVE A POLYETHYLENE LINER

POLYETHYLENE LINER

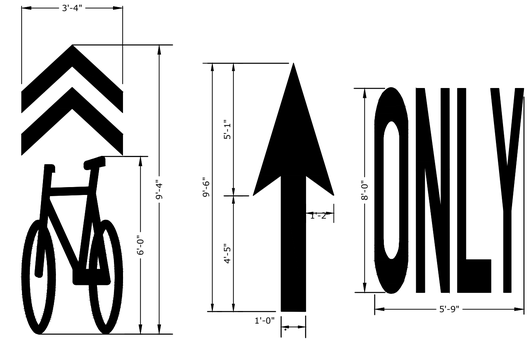
NO SCALE

Tighe&Bond

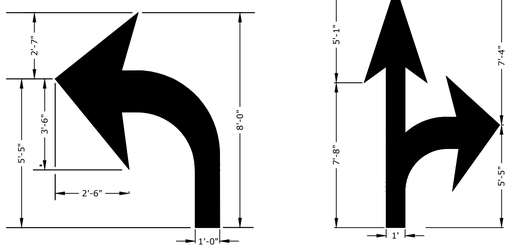
North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH



SHARROW **STRAIGHT ARROW** **ONLY**

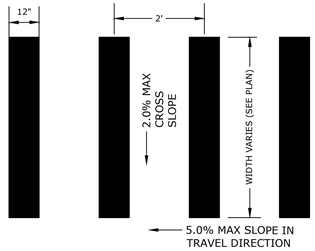


TURN ARROW **COMBINATION ARROW**

NOTES:
1. ALL WORDS AND SYMBOLS SHALL BE RETROREFLECTIVE WHITE AND SHALL CONFORM TO THE LATEST VERSION OF THE MUTCD.
2. MULTI-WORD MESSAGES SHALL READ "UP"; THAT IS, THE FIRST WORD SHALL BE NEAREST THE APPROACHING DRIVER.
3. THE WORD "ONLY" SHALL NOT BE USED WITH THROUGH OR COMBINATION ARROWS, AND SHALL NOT BE USED ADJACENT TO A BROKEN LANE LINE. A WORD/SYMBOL SHALL PRECEED THE WORD "ONLY".
4. COMBINATION ARROWS MAY BE COMPRISED OF 2 SINGLE ARROWS (e.g. TURN AND THROUGH ARROWS). HOWEVER, THE SHAFTS OF THE ARROWS SHALL COINCIDE AS SHOWN.
5. PREFORMED WORDS AND SYMBOLS SHALL BE PRE-CUT BY THE MANUFACTURER.
6. WRONG-WAY ARROWS SHALL NOT BE SUBSTITUTED FOR THROUGH ARROWS.
7. ALL STOP BARS, WORDS, SYMBOLS AND ARROW SHALL BE THERMOPLASTIC.

PAVEMENT MARKINGS

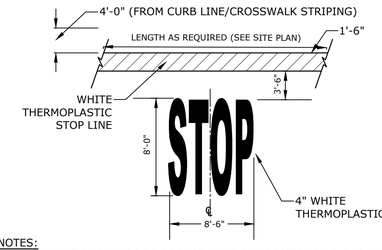
NO SCALE



NOTE:
1. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

CROSSWALK STRIPING

NO SCALE

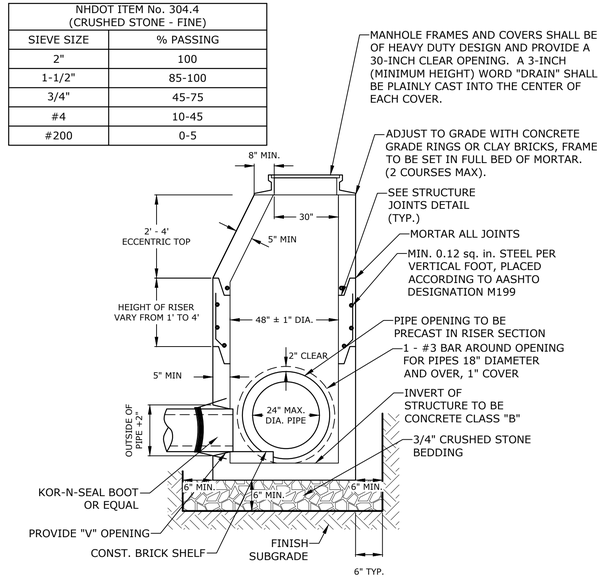


NOTES:
1. PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS AS SHOWN ON SITE PLAN.
2. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

STOP BAR AND LEGEND

NO SCALE

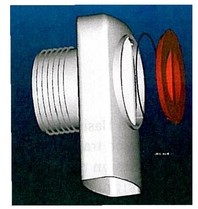
NHDOT ITEM No. 304.4 (CRUSHED STONE - FINE)	
SIEVE SIZE	% PASSING
2"	100
1-1/2"	85-100
3/4"	45-75
#4	10-45
#200	0-5



NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER (6" MINIMUM THICKNESS)
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
7. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
8. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
9. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
10. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZNTAL CROSS SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

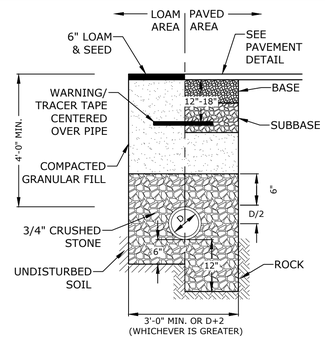
4' DIAMETER DRAIN MANHOLE

NO SCALE



NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)
2. INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.
3. 1/4" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP

"ELIMINATOR" OIL FLOATING DEBRIS TRAP



NOTES:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF PORTSMOUTH.

STORM DRAIN TRENCH

NO SCALE

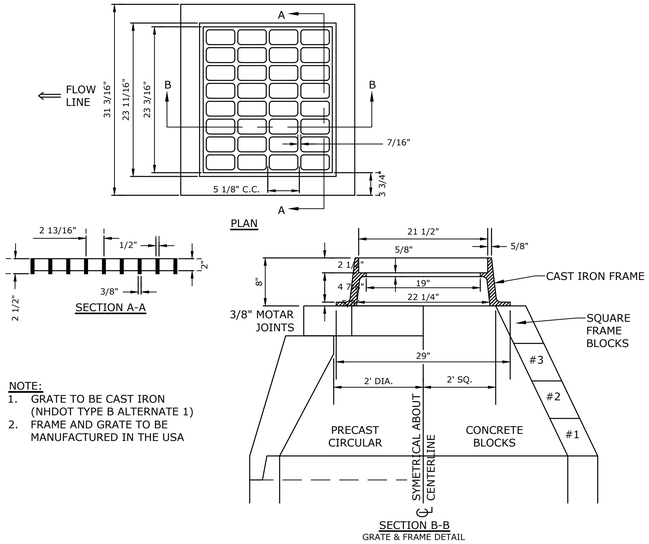
MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

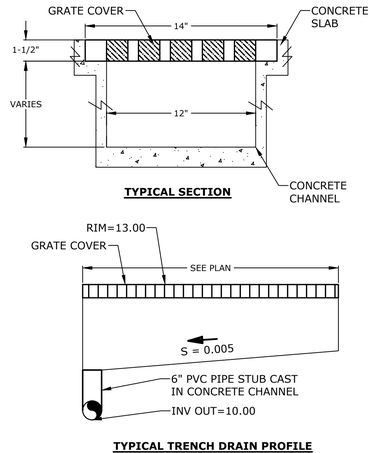
SCALE: AS SHOWN

C-504



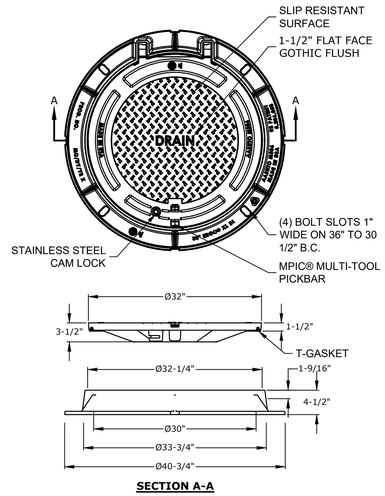
NOTE:
1. GRATE TO BE CAST IRON (NHDOT TYPE B ALTERNATE 1)
2. FRAME AND GRATE TO BE MANUFACTURED IN THE USA

CATCH BASIN FRAME & GRATE
NO SCALE



NOTES:
1. TRENCH DRAIN FRAME AND GRATE SHALL BE MULTIDRAIN ECONODRAIN SERIES #12 OR EQUAL.

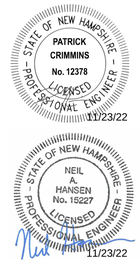
TRENCH DRAIN
NO SCALE

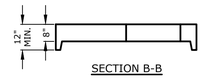


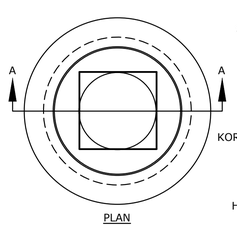
NOTES:
1. MANHOLE FRAME AND COVER SHALL BE 32" HINGED ERGO XL BY EJ CO.
2. ALL DIMENSIONS ARE NOMINAL.
3. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
4. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN HE CENTER OF THE COVER.

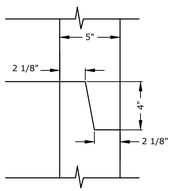
DRAIN MANHOLE FRAME & COVER
NO SCALE

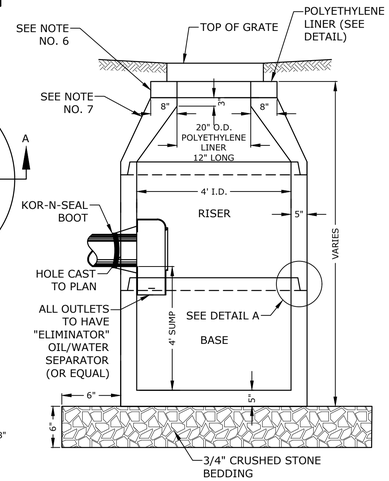
Tighe&Bond





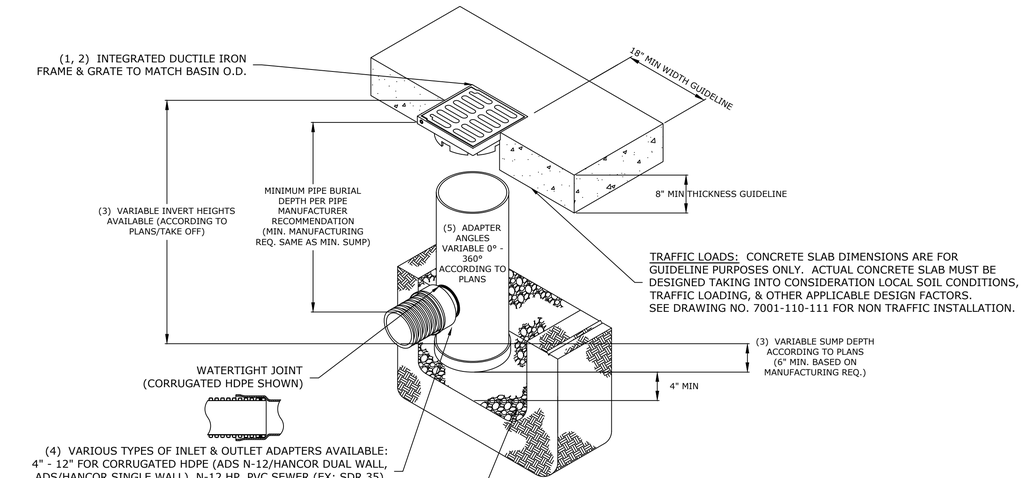






NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
6. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
7. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
8. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
11. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
12. "ELIMINATOR" OIL/WATER SEPARATOR SHALL BE INSTALLED TIGHT TO INSIDE OF CATCHBASIN.

4' DIAMETER CATCHBASIN
NO SCALE

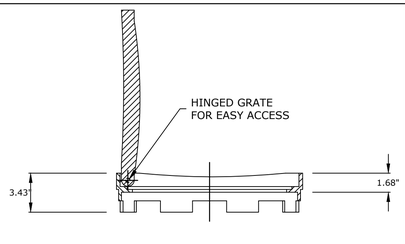


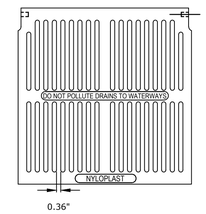
GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

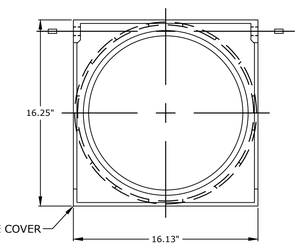
TYPICAL SECTION

NOTES:
1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

YARD DRAIN
NO SCALE







NOTES:
1. NYLOPLAST MODEL 1299CGPBL OR EQUAL.

YARD DRAIN FRAME AND GRATE
NO SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

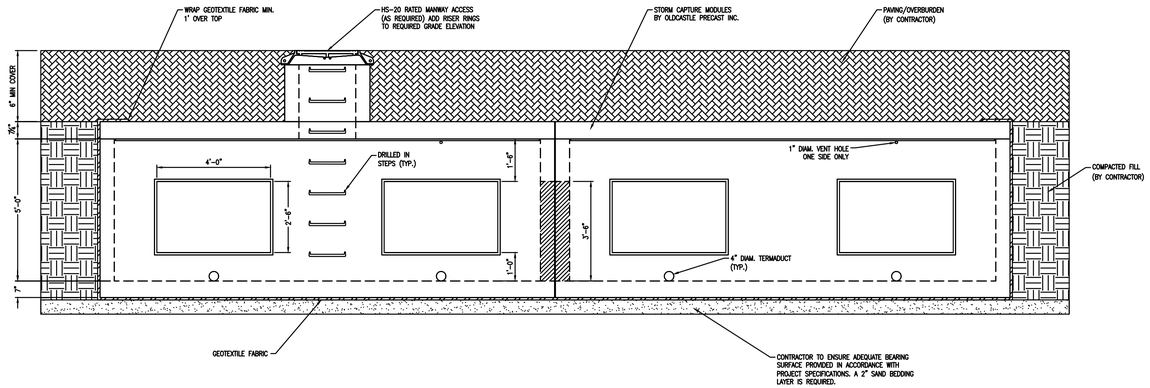
MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-505

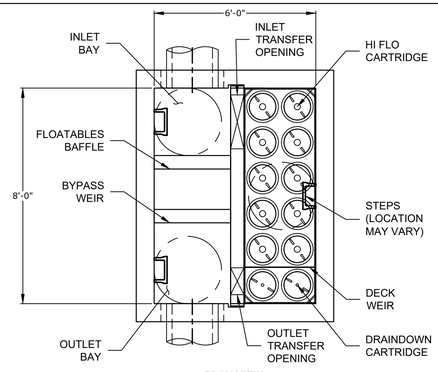


TYPICAL SECTION

NOTES:
1. UNDERGROUND DETENTION SYSTEM TO BE OLDCASTLE STORMCAPTURE SC-5 DESIGNED FOR H-20 LOADING. CONTRACTOR TO SUBMIT BASIN SPECIFICATIONS AND FINAL MANUFACTURES DESIGN TO ENGINEER FOR APPROVAL.
2. MANUFACTURER TO SUBMIT PLANS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
3. THE DESIGN ENGINEER SHALL PROVIDE SUFFICIENT INSPECTION TO CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED PER THE APPROVED DESIGN PLAN.

OLDCASTLE SC-5 DETAIL

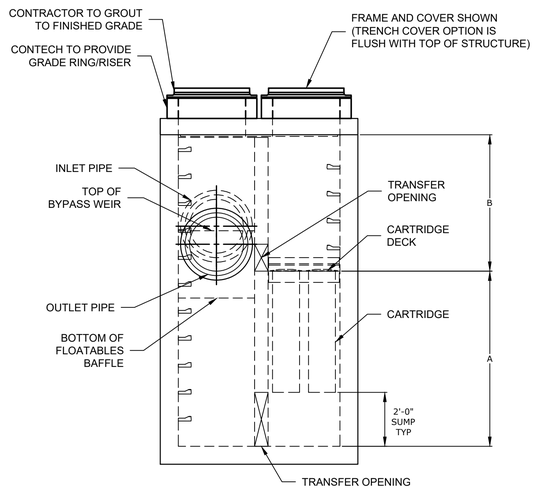
NO SCALE



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)

JELLYFISH JFPD0806 - DESIGN NOTES				
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD				
CARTRIDGE SELECTION				
CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	1.96	1.47	0.98	0.54
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00

SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	JF-1
MODEL SIZE	JFPD0808
WATER QUALITY FLOW RATE (cfs)	0.59
PEAK FLOW RATE (cfs)	1.45
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	3/1
CARTRIDGE SIZE	54"



ELEVATION VIEW

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

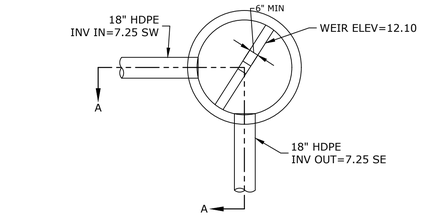
Jellyfish Filter

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,057,128; 8,221,618 & US 8,123,935. OTHER INTERNATIONAL PATENTS PENDING

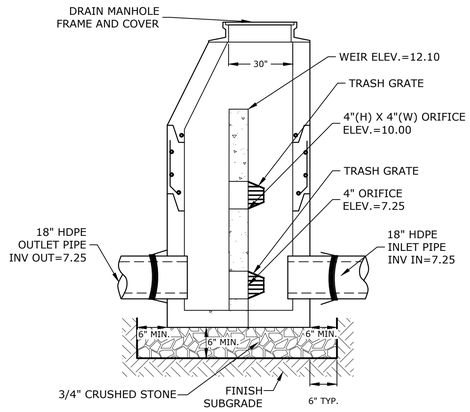
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH JELLYFISH STORMWATER FILTER (JFPD0806)

NO SCALE



PLAN VIEW



NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE THIRD WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.

POS-01
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 11/23/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

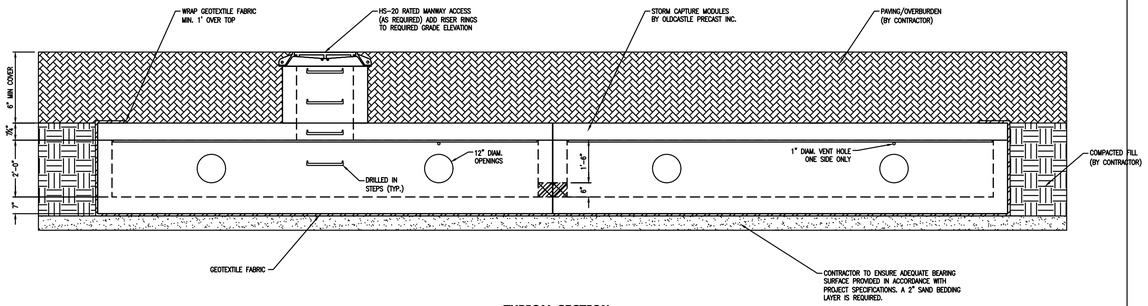
MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

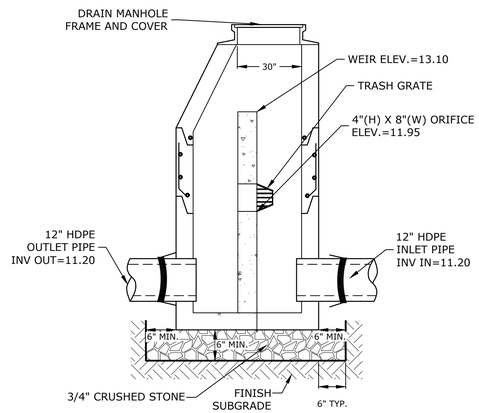
C-506

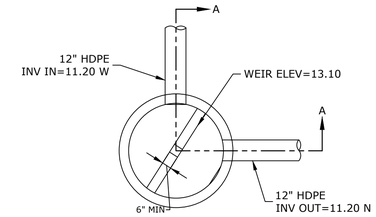


TYPICAL SECTION

NOTES:
1. UNDERGROUND DETENTION SYSTEM TO BE OLDCASTLE STORMCAPTURE SC-2 DESIGNED FOR H-20 LOADING. CONTRACTOR TO SUBMIT BASIN SPECIFICATIONS AND FINAL MANUFACTURES DESIGN TO ENGINEER FOR APPROVAL.
2. MANUFACTURER TO SUBMIT PLANS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
3. THE DESIGN ENGINEER SHALL PROVIDE SUFFICIENT INSPECTION TO CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED PER THE APPROVED DESIGN PLAN.

OLDCASTLE SC-2 DETAIL
NO SCALE

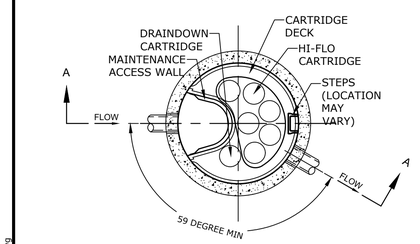


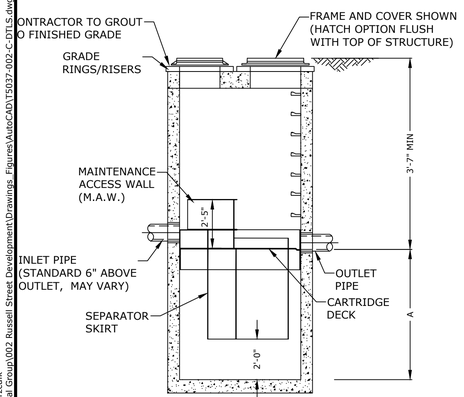


PLAN VIEW

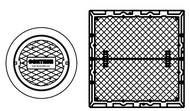
NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE THIRD WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.

POS-02
NO SCALE





JELLYFISH DESIGN NOTES				
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø72" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 1.16 CFS. IF THE SITE CONDITIONS EXCEED 1.16 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.				
CARTRIDGE SELECTION				
CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-3"	4'-2"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
MAX. CARTS HIGH-FLO / DRAINDOWN	6 / 1			

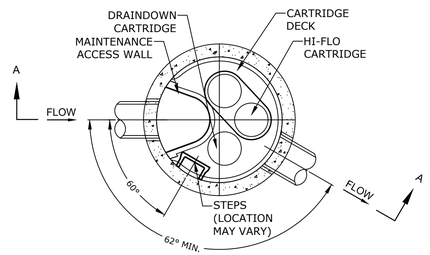


SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	2
WATER QUALITY FLOW RATE (cfs)	0.64
PEAK FLOW RATE (cfs)	0.94
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	4/1
CARTRIDGE SIZE	54"

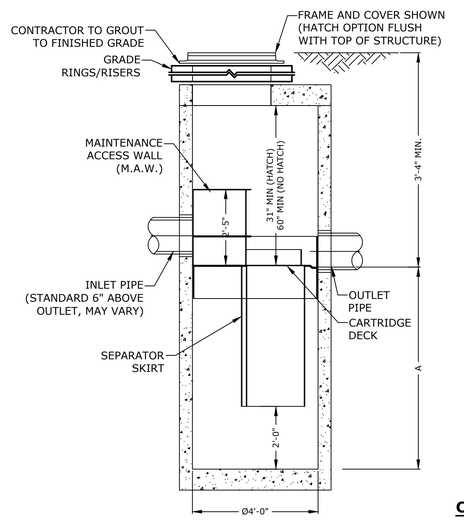
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

CONTECH JELLYFISH STORMWATER FILTER (JF6)
NO SCALE

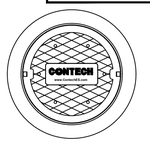


PLAN VIEW



SECTION A-A

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø48" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 0.45 CFS. IF THE SITE CONDITIONS EXCEED 0.45 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.	
CARTRIDGE SELECTION	
CARTRIDGE DEPTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09
MAX. CARTS HIGH-FLO / DRAINDOWN	2 / 1



SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	3
WATER QUALITY FLOW RATE (cfs)	0.05
# OF CARTRIDGES REQUIRED (HF / DD)	(1/1)
CARTRIDGE SIZE	54"

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

CONTECH JELLYFISH (JF4)
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 11/23/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

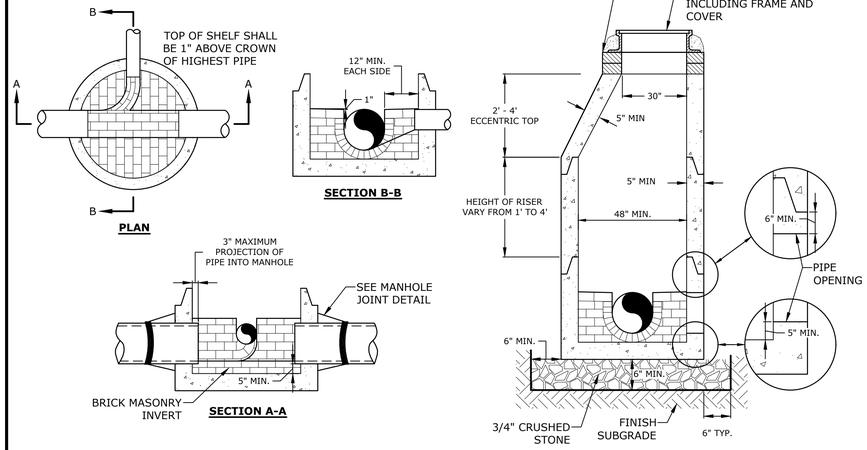
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

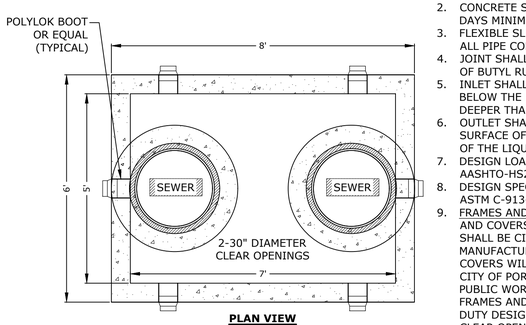
C-507

Last Saved: 11/18/2022
Plotted: 11/23/2022 10:28am By: CKrzoulk
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DTLS.dwg



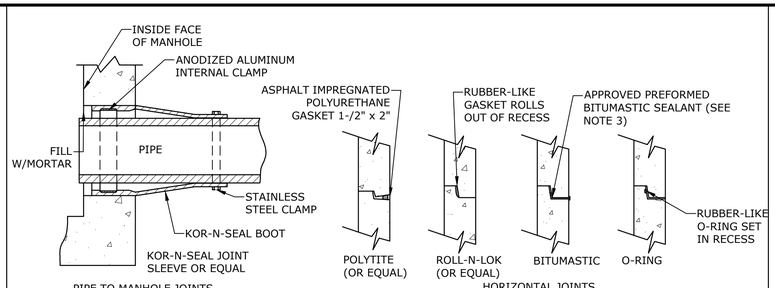
NOTES:
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
3. INVERT BRICKS SHALL BE LAID ON EDGE.
4. TWO (2) COATS OF BITUMINOUS WATERPROOF COATING SHALL BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS WITHIN CITY RIGHT OF WAY SHALL BE CITY STANDARD HINGE COVERS MANUFACTURED BY EJ. FRAMES AND COVERS WILL BE PURCHASED FROM THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS. ALL OTHER MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
6. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.
7. BARREL AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE DESIGNED FOR H20 LOADING, AND CONFORMING TO ASTM C478-06.

SEWER MANHOLE
NO SCALE



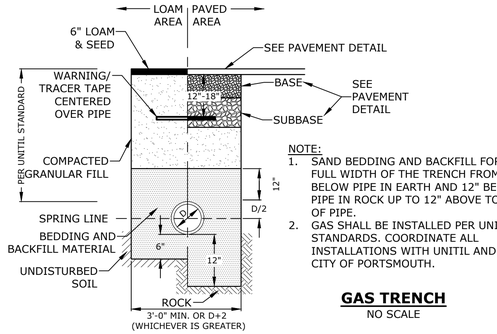
NOTES:
1. STEEL REINFORCEMENT SHALL CONFORM TO LATEST ASTM SPECIFICATIONS: ASTM-A615 GRADE 60 REBAR.
2. CONCRETE SHALL BE F_C=5,000 PSI @ 28 DAYS MINIMUM.
3. FLEXIBLE SLEEVES SHALL BE PROVIDED ON ALL PIPE CONNECTIONS.
4. JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
5. INLET SHALL PENETRATE AT LEAST 9" BELOW THE LIQUID LEVEL, BUT NOT DEEPER THAN THE OUTLET BAFFLE.
6. OUTLET SHALL EXTEND BELOW THE SURFACE OF THE LIQUID EQUAL TO 40% OF THE LIQUID DEPTH (19").
7. DESIGN LOADING SHALL BE: AASHTO-HS20-44, ASTM C-890-06.
8. DESIGN SPECIFIED AS: ASTM C-1227-08, ASTM C-913-08.
9. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS WITHIN CITY RIGHT OF WAY SHALL BE CITY STANDARD HINGE COVERS MANUFACTURED BY EJ. FRAMES AND COVERS WILL BE PURCHASED FROM THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS. ALL OTHER MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
10. GREASE TRAP SHALL BE PHOENIX PRECAST CONCRETE P/N: C-6420 OR EQUAL.
11. TANK SHALL BE PUMPED AS NEEDED.

1,000 GALLON GREASE TRAP
NO SCALE



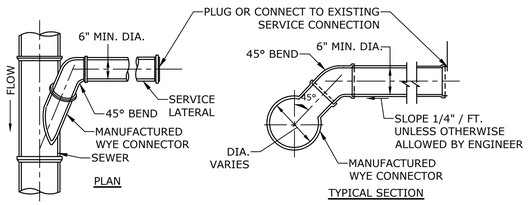
NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER CITY OF PORTSMOUTH DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER CITY OF PORTSMOUTH STANDARD.
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.
4. ALL GASKETS, SEALANTS, MORTAR, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

MANHOLE JOINTS
NO SCALE

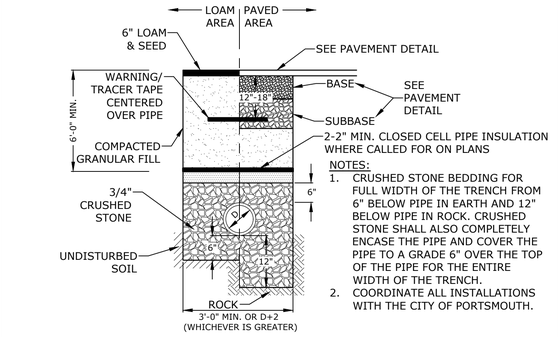


NOTE:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. GAS SHALL BE INSTALLED PER UNITIL STANDARDS. COORDINATE ALL INSTALLATIONS WITH UNITIL AND THE CITY OF PORTSMOUTH.

GAS TRENCH
NO SCALE

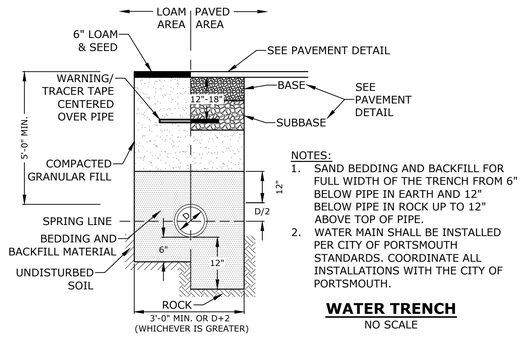


STANDARD SERVICE LATERAL CONNECTION
NO SCALE



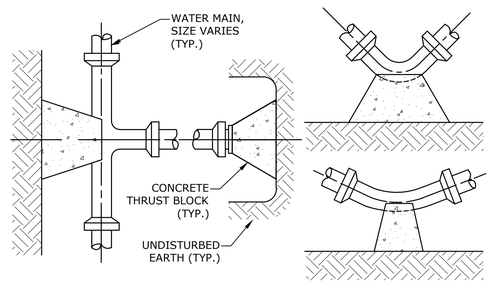
NOTES:
1. CRUSHED STONE BEDDING FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK. CRUSHED STONE SHALL ALSO COMPLETELY ENCASE THE PIPE AND COVER THE PIPE TO A GRADE 6" OVER THE TOP OF THE PIPE FOR THE ENTIRE WIDTH OF THE TRENCH.
2. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

SEWER SERVICE TRENCH
NO SCALE



NOTES:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. WATER MAIN SHALL BE INSTALLED PER CITY OF PORTSMOUTH STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

WATER TRENCH
NO SCALE



TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL				
REACTION TYPE	PIPE SIZE				
	4"	6"	8"	10"	12"
A 90°	0.89	2.19	3.82	11.14	17.24
B 180°	0.65	1.55	2.78	8.38	12.00
C 45°	0.48	1.19	2.12	6.02	9.32
D 22-1/2°	0.25	0.60	1.06	3.08	4.74
E 11-1/4°	0.13	0.30	0.54	1.54	2.38

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE WITH CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS.

THRUST BLOCKING DETAIL
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 11/23/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

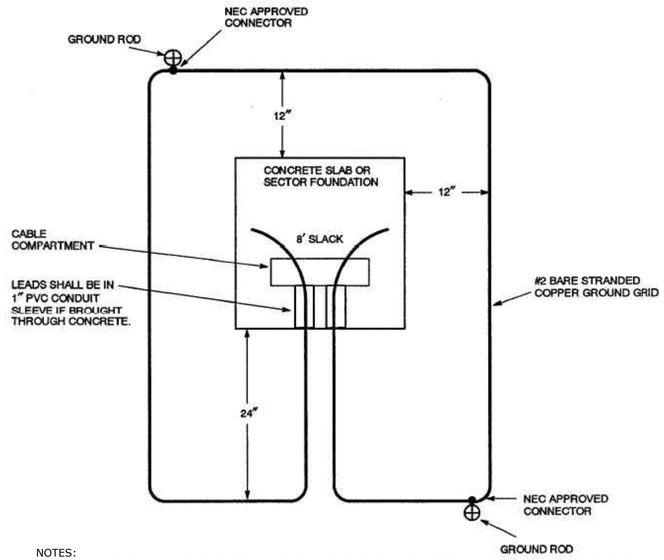
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

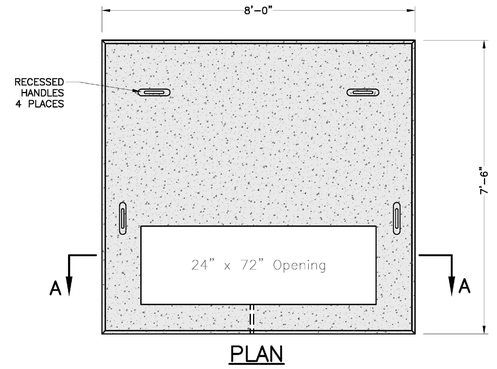
C-508

Last Saved: 11/18/2022
Plotted On: May 24, 2022 - 10:28am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DTLS.dwg



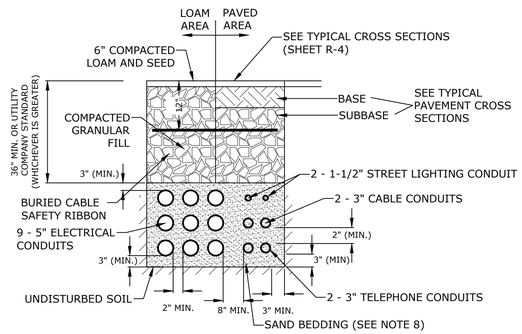
NOTES:
THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AND IS TO BE BURIED AT LEAST 12 INCHES BELOW GRADE. EIGHT FEET OF EXTRA WIRE FOR EACH GROUND GRID LEG SHALL BE LEFT EXPOSED IN THE CABLE COMPARTMENT TO ALLOW FOR THE CONNECTION TO THE TRANSFORMER. THE TWO 8-FOOT GROUND RODS MAY BE EITHER GALVANIZED STEEL OR COPPERWELD AND THEY SHALL BE CONNECTED TO THE GRID WITH NEC APPROVED CONNECTORS.

PAD-MOUNTED EQUIPMENT GROUNDING GRID DETAIL
NO SCALE



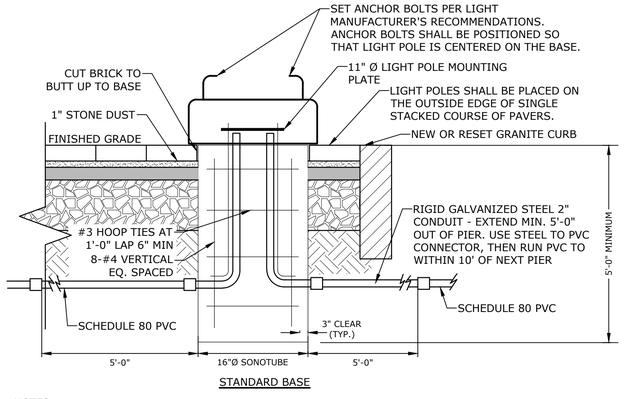
NOTES:
1. DIMENSIONS SHOWN REPRESENT TYPICAL REQUIREMENTS. MANHOLE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED WITH EVERSOURCE PRIOR TO CONSTRUCTION
2. CONCRETE MINIMUM STRENGTH - 4,000 PSI @ 28 DAYS
3. STEEL REINFORCEMENT - ASTM A615, GRADE 60
4. PAD MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS

3-PHASE TRANSFORMER PAD
NO SCALE



NOTES:
1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL UTILITY OR AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY TO BUILDING.
2. DIMENSIONS SHOWN REPRESENT OWNERS MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT SHALL NOT BE LESS THAN THOSE SHOWN.
3. NO CONDUIT RUN SHALL EXCEED 360 DEGREES IN TOTAL BENDS.
4. A SUITABLE PULLING STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE UTILITY COMPANY IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
5. UTILITY COMPANY MUST BE GIVEN THE OPPORTUNITY TO INSPECT THE CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD THE UTILITY COMPANY BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND, WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.
7. ALL 90° SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL. SWEEPS WITH A 36 TO 48 INCH RADIUS.
8. SAND BEDDING TO BE REPLACED WITH CONCRETE ENCASEMENT WHERE COVER IS LESS THAN 3 FEET, WHEN LOCATED BELOW PAVEMENT, OR WHERE SHOWN ON THE UTILITIES PLAN.

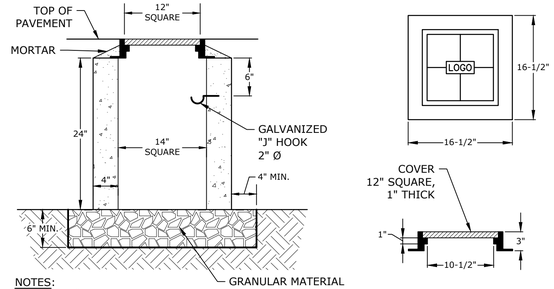
ELECTRICAL AND COMMUNICATION CONDUIT
NO SCALE



STANDARD BASE

NOTES:
1. REFER TO ELECTRICAL PLANS FOR WIRING DETAILS.
2. CONCRETE: 4000 PSI, AIR ENTRAINED STEEL: 60 KSI
3. LIGHT POLE FOUNDATIONS SHALL BE PLACED PRIOR TO INSTALLATION OF BRICK PAVERS.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, TO INCLUDE PERFORMANCE SPECIFICATIONS, CALCULATIONS AND NH LICENSED STRUCTURAL ENGINEER'S STAMP FOR LIGHT POLE FOUNDATION.
5. STANDARD BASE SHALL BE CONSTRUCTED UNLESS THERE IS CONFLICT WITH THE EXISTING DUCT BANK. SPREAD FOOTING BASE SHALL BE USED IN LIEU OF STANDARD BASE IN LOCATIONS WHERE TOP OF DUCT BANK ELEVATION WILL CONFLICT WITH STANDARD POLE BASE DEPTH. CONTRACTOR SHALL VERIFY LOCATIONS WHERE SPREAD FOOTINGS ARE REQUIRED PRIOR TO CONSTRUCTION. SEE NOTE#4 FOR SUBMITTAL REQUIREMENTS.

HISTORIC LIGHT FIXTURE BASE
NO SCALE



NOTES:
1. 14" X 14" CONCRETE PULL BOX, NHDOT ITEM 614.511

CONCRETE PULL BOX
NO SCALE

Tighe&Bond

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
11/23/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

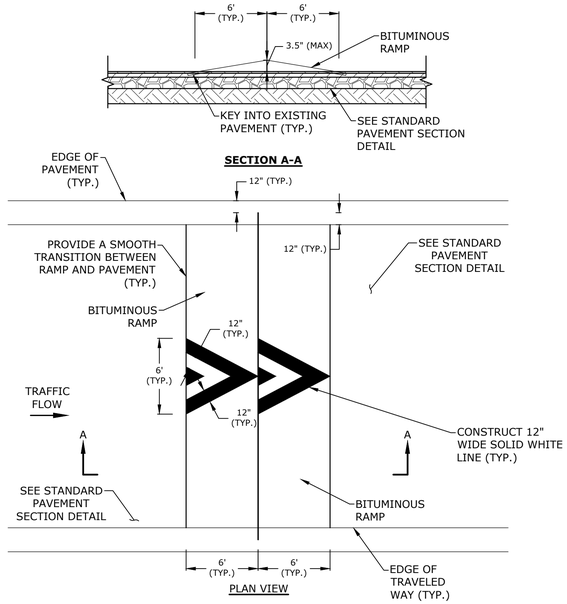
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

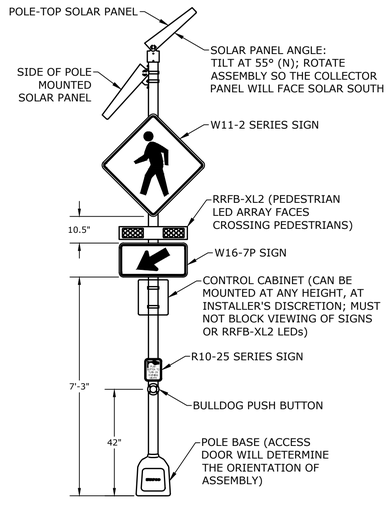
C-509

Last Saved: 11/18/2022
Plotted: Nov 22, 2022 - 10:29am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DTLS.dwg



NOTE:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER.

SPEED HUMP CROSS SECTION
NO SCALE



RAPID RECTANGULAR FLASHING BEACON (RRFB)
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED
11/23/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED
11/23/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
G	11/23/2022	PB Submission
F	11/18/2022	Traffic Peer Review
A	10/20/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-510

PLANT SCHEDULE

Symbol	Quantity	*Botanical Name*	Common Name	Size	Spacing	Notes
TREES						
AC BO	7	*Acer rubrum 'Bowhall'*	Bowhall Maple	4-5" Cal.		Single-stem, matched
CA CA	6	*Carpinus caroliniana*	American Hornbean	4-5" Cal.		Single-stem, matched
CO SP	2	*Cornus 'Rutgan' Stellar Pink*	Stellat Pink Dogwood	3-4" Cal.		B&B; matched
Gl Bl	4	*Ginkgo biloba 'Magyar'*	Magyar Ginkgo	5-6" Cal.		B&B; matched
Ll WO	5	*Liquidambar styraciflua 'Worplesdon'*	Worplesdon Sweetgum	4-5" Cal.		B&B; matched
QU RP	6	*Quercus x warei 'Long' Regal Prince*	Regal Prince Oak	4-5" Cal.		B&B; matched
SHRUBS						
Co Pe		*Comptonia peregrina*	Sweet Fern	#3 Container	36" O.C.	
Co Ra		*Cornus sericea 'Cardinal'*	Cardinal Red Twig Dogwood	#5 Container	36" O.C.	
De Gr		*Deutzia gracilis 'Nikko'*	Nikko Deutzia	#3 Container	30" O.C.	
Fo Ga		*Fothergilla gardenii 'Mount Airy'*	Mount Airy Fothergilla	#5 Container	36" O.C.	
Hy Qu		*Hydrangea quercifolia 'Pee Wee'*	Oakleaf Hydrangea	#5 Container	48" O.C	
Li Be		*Lindera Benzoin*	Spice Bush	#5 Container	36" O.C.	
Ix Gl		*Ilex glabra 'Shamrock'*	Shamrock Inkberry	#5 Container	36" O.C.	
Il Ji		*Ilex verticillata 'Jim Dandy'*	Jim Dandy Winterberry	#5 Container	48" O.C	
Il Ve		*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	#5 Container	48" O.C	
My Pe		*Myrica pensylvanica*	Northern Bayberry	#5 Container	48" O.C.	
Rh Gl		*Rhus aromatica 'Gro-Low'*	Fro-Low Fragrant Sumac	#3 Container	30" O.C.	
Rh Mh		*Rhododendron x 'Marie Hoffman'*	Mare Hoffman Azalea	#5 Container	48" O.C.	
Sp To		*Spiraea tomentosa*	Steeplebush	#3 Container	30" O.C.	
PERENNIALS						
am hu		*Amsonia x 'Blue Ice'*	Blue Star Flower	#2 Container	18" O.C.	
as ob		*Aster oblongifolius 'Raydon's Favorite'*	Raydon's Favorite Aster	#2 Container	24" O.C.	
ba bi		*Baptisia australis*	Blue False Indigo	#3 Container	30" O.C.	
ga od		*Galium odoratum*	Sweet Woodruff	#2 Container	12" O.C.	
ge ro		*Geranium x 'Rozanne'*	Rozanna Cranesbill	#2 Container	18" O.C.	
he vi		*Heuchera villosa 'Autumn Bride'*	Autumn Bride Coral Bells	#2 Container	18" O.C.	
he hr		*Hemerocallis 'Happy Returns'*	Happy Returns Daylily	#2 Container	24" O.C.	
li sp		*Liriope spicata*	Lilyturf	4" Container	10" O.C.	
os ci		*Osmundastrum cinnamomeum*	Cinnamon Fern	#2 Container	30" O.C.	
po od		*Polygonatum odoratum var. pluriflorum 'Variegatum*	Variegated Solomon's Seal	#2 Container	15" O.C.	
ti co		*Tiarella cordifolia*	Foamflower	#2 Container	15" O.C.	
va an		*Vaccinium angustifolium*	Lowbush Blueberry	#2 Container	15" O.C.	
ORNAMENTAL GRASSES						
bo cu		*Bouteloua curtipendula*	Side Oats Grama	#2 Container	30" O.C.	
ca pe		*Carex pennsylvania*	Pennsylvania Sedge	#2 Container	30" O.C.	
ca ac		*Calamagrostis acutiflora 'Karl Foerster'*	Feather Reed Grass	#3 Container	30" O.C.	
de ce		*Deschampsia cespitosa 'Pixie Fountain'*	Tufted Hair Grass	#2 Container	30" O.C.	
mi si		*Miscanthus sinensis 'Adagio'*	Dwarf Silver Grass	#2 Container	30" O.C.	
pe al		*Pennisetum alopecuroides 'Hamelin'*	Hameln Dwarf Fountain Grass	#2 Container	24" O.C.	
SEED MIXES						
Buffer Seed Mix		*Ernst Seed Fescue Mix composed of 45% Creeping Red Fescue/ 27.5% Hard Fescue 'Minimus' / 27.5% Hard Fescue 'Beacon'*				

PLANTING NOTES

1. LANDSCAPE ARCHITECT TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE.

2. PLANT MATERIAL SHALL CONFORM TO "THE AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

3. NO SUBSTITUTIONS OF PLANT SPECIES WITHOUT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.

4. SUBSTITUTIONS OF PLANT SPECIES SHALL BE A PLANT OF EQUIVALENT OVERALL FORM, HEIGHT AND BRANCHING HABIT, FLOWER, LEAF AND FRUIT, COLOR AND TIME OF BLOOM, AS APPROVED BY LANDSCAPE ARCHITECT.

5. LOCATE AND VERIFY UTILITY LINE LOCATIONS PRIOR TO STAKING AND REPORT CONFLICTS TO LANDSCAPE ARCHITECT.

6. PLANTING DEMOLITION DEBRIS, GARBAGE, LUMPS OF CONCRETE, STEEL AND OTHER MATERIALS DELETERIOUS TO PLANT'S HEALTH AS DETERMINED BY LANDSCAPE ARCHITECT SHALL BE REMOVED FROM ALL PLANTING AREAS.

7. NO PLANTING TO BE INSTALLED BEFORE ACCEPTANCE OF ROUGH GRADING.

8. ALL PROPOSED TREE LOCATIONS SHALL BE STAKED OR LAID OUT IN THEIR APPROXIMATE LOCATION BY THE CONTRACTOR. REFER TO LAYOUT AND PLANTING SHEETS FOR LAYOUT INFORMATION. THE CONTRACTOR SHALL ADJUST THE LOCATIONS AS REQUESTED BY THE LANDSCAPE ARCHITECT TO ACCOUNT FOR SUBSURFACE UTILITIES AND OTHER FIELD CONDITIONS. FINAL LOCATIONS OF ALL PLANTS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

9. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH FINISHED GRADE. IMMEDIATELY REPLANT PLANTS THAT SETTLE OUT OF PLUMB OR BELOW FINISHED GRADE.

10. PLANT UNDER FULL TIME SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT. PROVIDE WRITTEN VERIFICATION OF CERTIFICATION AND/OR LICENSE FOR LANDSCAPE ARCHITECT'S APPROVAL.

11. WATER PLANTS THOROUGHLY AFTER INSTALLATION, A MINIMUM OF TWICE WITHIN THE FIRST 24 HOURS.

12. REPAIR DAMAGE DUE TO OPERATIONS INSIDE AND OUTSIDE OF LIMIT OF WORK

13. SOAK ALL PERENNIALS FOR 24 HOURS PRIOR TO INSTALLATION

14. BUFFER SEED MIX AREA TO BE WATERED AND MONITORED DURING ESTABLISHMENT TO ENSURE SEED COVERAGE AND ESTABLISHMENT IS UNIFORM AND HEALTHY AND UNTIL ACCEPTANCE.

15. MOWING OF THE BUFFER SEED MIX AREA FOLLOWING ESTABLISHED AND ACCEPTANCE SHALL OCCUR TWICE A YEAR - IN SPRING PRIOR TO NEW GROWTH AND THE AUTUMN AFTER DORMANCY. MOWING IS NOT TO OCCUR IN THE HEAT OF SUMMER. MOWING ENCOURAGES ESTABLISHMENT VIA ROOT SYSTEM GROWTH AND MITIGATES GROWTH OF WEEDS, UNDESIRABLE AND INVASIVE SPECIES.

16. MOWING HEIGHT TO BE NOT LESS THAN 3".

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
F	11/23/2022	PB Submisison
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-L-DSGN-WORKING.DWG
DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

LANDSCAPE MATERIAL PLAN, LEGEND AND NOTES

SCALE: AS SHOWN

L-100

Last Saved: 11/21/2022
Printed: Nov 21, 2022 - 10:31am By: CKrzsik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-L-DSGN-Working.dwg

LEGEND

- PLANTING BED
- SEASONAL GRASSES & PERENNIALS
- EXISTING INVASIVES TO BE MITIGATED & REPLANTED WITH NATIVE MEADOWGRASS
- EXISTING VEGETATED BUFFER TO REMAIN
- DECIDUOUS TREE

MAP 119 LOT 4
AREA = 9,765 S.F.
(0.22 ACRES)

BUILDING 1

BUILDING 2

BUILDING 3

PROPERTY LINE
CONNECT TO EXISTING SIDEWALK
EXISTING VEGETATED BUFFER TO REMAIN
EXISTING INVASIVES TO BE MITIGATED, REGRADED AND REPLANTED WITH NATIVE MEADOWGRASS
SEASONAL GRASSES AND PERENNIALS
BRICK PAVING
WOOD MOUNTED BENCH
SHRUBS, PERENNIALS & ORNAMENTAL GRASS
CAST-IN-PLACE CONCRETE SIDEWALK
WELCOME GRANITE STAIRS & HANDRAILS
1 AC BO
5 LI WO
CITY STANDARD HISTORIC LIGHT FIXTURE & POLE
BIKE PARKING, TYP.
RAISED STREETSCAPE TREE PLANTER
CITY STANDARD BRICK PAVING
2 CO SP
SEATING AREA
BOLLARDS
RAISED PEDESTRIAN CROSSING WITH VEHICULAR UNIT PAVING
WOOD MOUNTED BENCH
GRANITE STAIRS WITH HANDRAILS
CITY STANDARD HISTORIC LIGHT FIXTURE & POLE
1 AC BO
CITY STANDARD BRICK PAVING
2 GI BI
PLANTER CURB
DECORATIVE PAVING BANDING
WOOD MOUNTED BENCH
PUBLIC GATHERING SPACE
GRANITE STAIRS WITH HANDRAILS
PROPERTY LINE
SHARED PATH WITH DECORATIVE PAVING BANDING & VEHICULAR UNIT PAVING
CITY STANDARD BRICK PAVING
AT GRADE STREETSCAPE TREE PLANT BED
3 QU RP
BIKE PARKING, TYP.
CITY STANDARD HISTORIC LIGHT FIXTURE & POLE
SHRUBS, PERENNIALS & ORNAMENTAL GRASS
SHRUBS, PERENNIALS & ORNAMENTAL GRASS SLOPED WALK & STEPS
CATENARY LIGHTING
SPILL OUT SEATING ZONE
WOOD MOUNTED BENCH, TYP.
6 CA CA
CITY STANDARD BRICK PAVING WOOD MOUNTED BENCH, TYP. PLANTER CURB
SPILL OUT SEATING ZONE
WALL WITH PLANT BED
GRANITE STAIRS WITH HANDRAILS
WOOD MOUNTED BENCH
3 QU RP
DECORATIVE PAVING BANDING
4 AC BO
RAISED STREETSCAPE TREE PLANTER
BIKE PARKING, TYP.
SEAT WALL
PLANTER CURB
2 GI BI
SHRUBS, PERENNIALS & ORNAMENTAL GRASS
GRANITE STAIRS WITH HANDRAILS
WOOD MOUNTED BENCH

0 40' 80'
GRAPHIC SCALE

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
F	11/23/2022	PB Submisison
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-L-DSGN-WORKING.DWG
DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

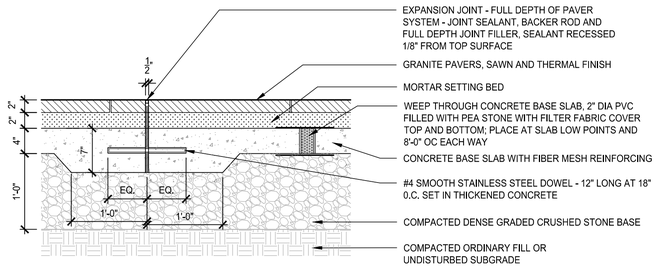
LANDSCAPE SITE PLAN

SCALE: AS SHOWN

L-101

Last Saved: 11/21/2022
Printed: Nov 21, 2022 - 10:32am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-L-DSGN-Working.dwg

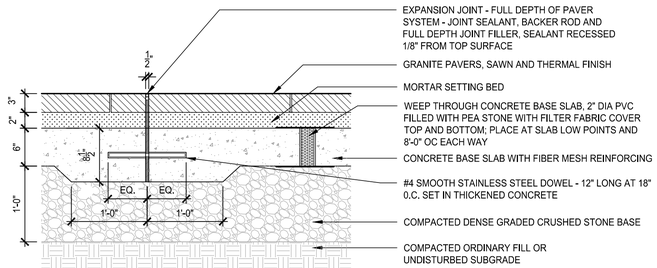
NOTE:
1. ALIGN EXPANSION JOINT WITH PAVER JOINT.
2. PROVIDE EXPANSION JOINTS AT 20' ON CENTER OR AS SHOWN ON DRAWINGS.
3. PROVIDE CAULKED CONSTRUCTION JOINT WHERE PAVING ABUTS VERTICAL SURFACE.
4.THE JOINTS BETWEEN GRANITE PAVER PIECES TO BE 1/4" MORTAR JOINTS.



1 GRANITE PAVERS ON CONCRETE BASE - PEDESTRIAN

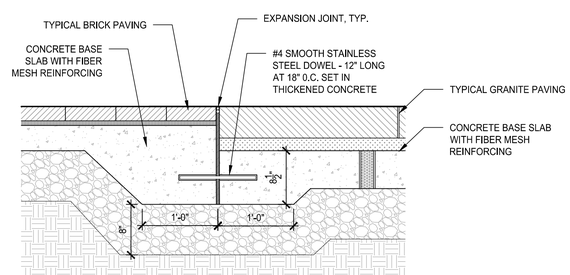
SCALE: 1"=1'-0"

NOTE:
1. ALIGN EXPANSION JOINT WITH PAVER JOINT.
2. PROVIDE EXPANSION JOINTS AT 20' ON CENTER OR AS SHOWN ON DRAWINGS.
3. PROVIDE CAULKED CONSTRUCTION JOINT WHERE PAVING ABUTS VERTICAL SURFACE.
4. THE JOINTS BETWEEN GRANITE PAVER PIECES TO BE 1/4"MORTAR JOINTS.



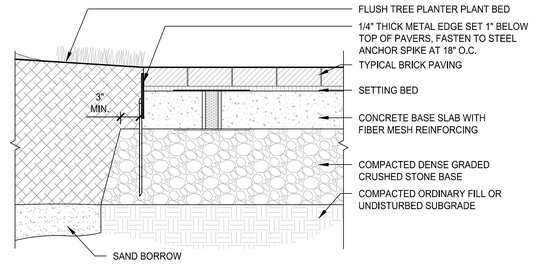
2 GRANITE PAVERS ON CONCRETE BASE - VEHICULAR

SCALE: 1"=1'-0"



3 GRANITE TO BRICK PAVING TRANSITION

SCALE: 1"=1'-0"



4 METAL EDGE AT BRICK PAVING ABUTTING PLANTING BED

SCALE: 1" = 1'-0"

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
F	11/23/2022	PB Submisison
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-L-DSGN-WORKING.DWG
DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

LANDSCAPE DETAILS

SCALE: AS SHOWN

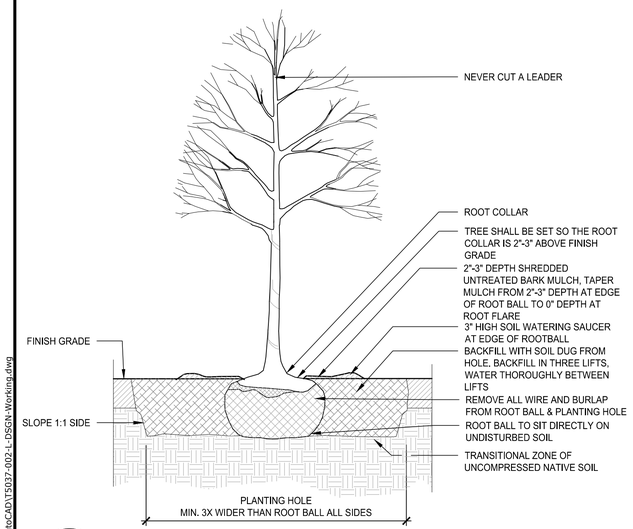
L-102

Last Saved: 11/21/2022
Printed: Nov 21, 2022 - 10:32am By: CKrzsik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-L-DSGN-Working.dwg

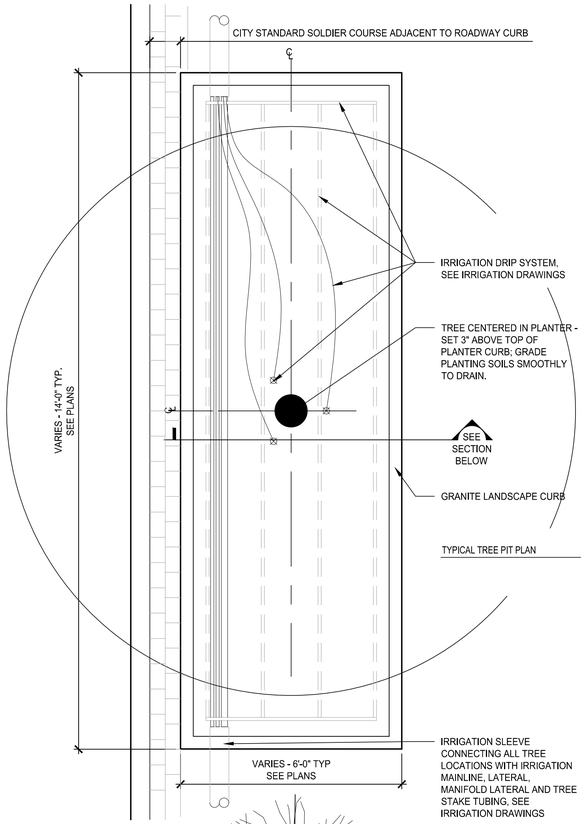
CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS

THE BASE OF THE CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS IS THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPLANTING. ANSI A300 PART 6 LAYS OUT TERMS AND BASIC STANDARDS AS SET FORTH BY INDUSTRY BUT IT IS NOT THE 'END ALL' FOR THE CITY OF PORTSMOUTH. THE FOLLOWING ARE THE CITY OF PORTSMOUTH, NH TREE PLANTING REQUIREMENTS THAT IN ADDITION TO OR THAT GO BEYOND THE ANSI A300 PART 6.

1. ALL PLANTING HOLES SHALL BE DUG BY HAND- NO MACHINES. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE NEW PLANTING PITS, PLANTING BEDS WITH GRANITE CURBING, AND PLANTING SITES WITH SILVA CELLS ARE BEING CREATED. IF A MACHINES USED TO DIG ANY OF THESE SITUATIONS AND PLANTING DEPTH NEEDS TO BE RAISED THE MATERIAL IN THE BOTTOM OF THE PLANTING HOLE MUST BE FIRMED WITH MACHINE TO PREVENT SINKING OF THE ROOT BALL.
2. ALL WIRE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL AND PLANTING HOLE.
3. THE ROOT BALL OF THE TREE SHALL BE WORKED SO THAT THE ROOT COLLAR OF THE TREE IS VISIBLE AND NO GIRDLING ROOTS ARE PRESENT.
4. THE ROOT COLLAR OF THE TREE SHALL BE 2"-3" ABOVE GRADE OF PLANTING HOLE FOR FINISHED DEPTH.
5. ALL PLANTINGS SHALL BE BACKFILLED WITH SOIL FROM THE SITE AND AMENDED NO MORE THAN 20% WITH ORGANIC COMPOST. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE ENGINEERED SOIL IS BEING USED IN CONJUNCTION WITH SILVA CELLS AND WHERE NEW PLANTING BEDS ARE BEING CREATED.
6. ALL PLANTINGS SHALL BE BACKFILLED IN THREE LIFTS AND ALL LIFTS SHALL BE WATERED SO THE PLANTING WILL BE SET AND FREE OF AIR POCKETS- NO EXCEPTIONS.
7. AN EARTH BERM SHALL BE PLACED AROUND THE PERIMETER OF THE PLANTING HOLE EXCEPT WHERE CURBED PLANTING BEDS OR PITS ARE BEING USED.
8. 2"-3" OF MULCH SHALL BE PLACED OVER THE PLANTING AREA.
9. AT THE TIME THE PLANTING IS COMPLETE THE PLANTING SHALL RECEIVE ADDITIONAL WATER TO ENSURE COMPLETE HYDRATION OF THE ROOTS, BACKFILL MATERIAL AND MULCH LAYER.



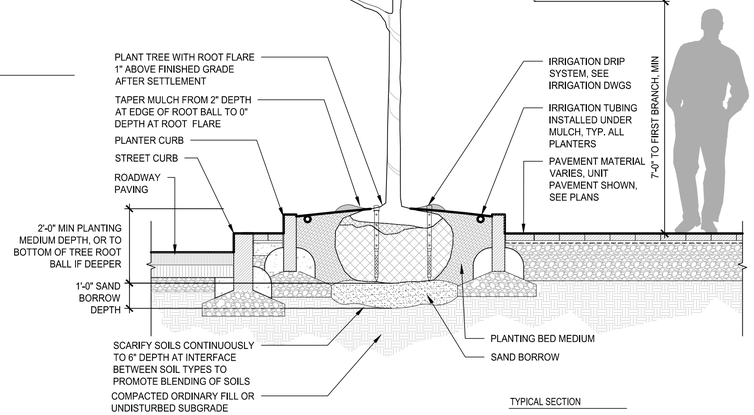
2 TREE PLANTING DETAIL
SCALE: 3/8"=1'-0"



TYPICAL TREE PIT PLAN

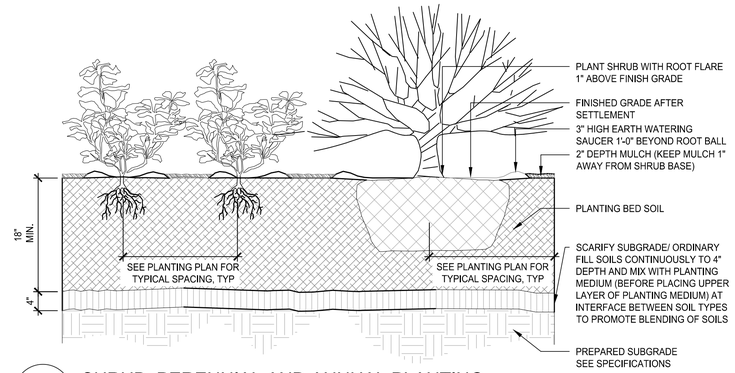
NOTES:

1. PLANTING DETAILS ARE INTENDED TO INDICATE CONSTRUCTION RELATED TO VARIOUS STREETSCAPE ELEMENTS. ACTUAL LOCATIONS OF STREETSCAPE ELEMENTS MAY VARY FROM THOSE SHOWN. SEE PLANS.
2. IRRIGATE EACH TREE EXTENDED FROM CENTRAL CONTROL SYSTEM. IRRIGATION SLEEVING TO CONNECT ALL TREE LOCATIONS BACK TO POINT OF CONNECTION.
3. SEE IRRIGATION PLANS AND DETAILS.



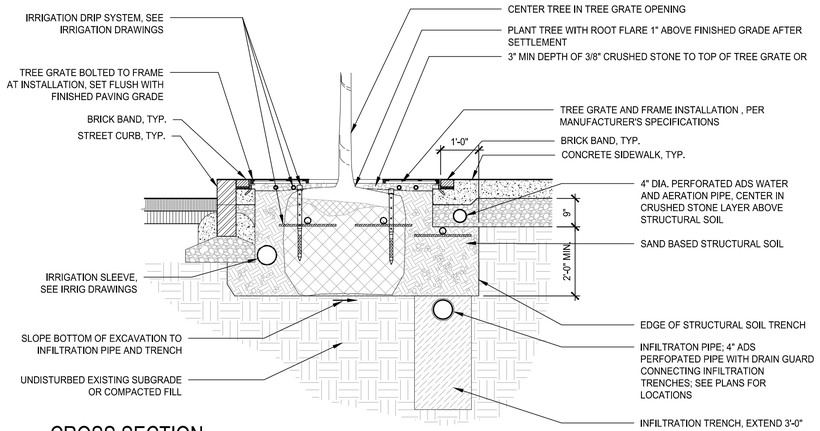
TYPICAL SECTION

3 TREE PLANTING IN RAISED LANDSCAPE CURB PLANTER
SCALE: 1/2" = 1'-0"



1 SHRUB, PERENNIAL AND ANNUAL PLANTING
SCALE: 3/4"=1'-0"

PLAN: WATER AND AERATION SYSTEM IN STREETSCAPE LAYOUT



CROSS SECTION

NOTES:

1. PLANTING DETAILS ARE INTENDED TO INDICATE CONSTRUCTION RELATED TO VARIOUS STREETSCAPE ELEMENTS. ACTUAL LOCATIONS OF STREETSCAPE ELEMENTS MAY VARY FROM THOSE SHOWN. SEE PLANS.
2. FINISHED GRADE OF TREE GRATES AND FRAMES SHALL BE FLUSH WITH SURROUNDING PAVEMENT.
3. PROVIDE AUTOMATIC IRRIGATION SYSTEM TO IRRIGATE EACH TREE EXTENDED FROM CENTRAL CONTROLS SYSTEM. IRRIGATION SLEEVING TO CONNECT ALL TREE LOCATIONS BACK TO POINT OF CONNECTION.
4. LIMB BRANCHES TO PROVIDE CLEAR PEDESTRIAN ZONE TO 7'-0" ABOVE FINISH GRADE.
5. SCARIFY ALL SOIL MARGINS TO DEPTH OF 6".
6. SEE IRRIGATION PLANS AND DETAILS.

4 TREE PLANTING IN TREE GRATE OVER SAND-BASED STRUCTURAL SOIL
SCALE: 1/2"=1'-0"

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
F	11/23/2022	PB Submisison
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-L-DSGN-WORKING.DWG
DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

LANDSCAPE DETAILS

SCALE: AS SHOWN

L-103

DRAWING INDEX

SHEET NUMBER	DRAWING NUMBER	SHEET TITLE	ISSUE DATE: TAC SUBMISSION 07.15.22	ISSUE DATE: TAC SUBMISSION #2 08.25.22	ISSUE DATE: PB SUBMISSION 11.23.22
1	L-001	LIGHTING COVER SHEET, FIXTURE SCHEDULE, AND DRAWING INDEX	•	•	•
2	L-100	EXTERIOR LIGHTING PLAN AND CALCULATIONS	•	•	•
3	L-101	EXTERIOR LIGHTING CUTSHEETS NO. 1	•	•	•
4	L-102	EXTERIOR LIGHTING CUTSHEETS NO. 2	•	•	•
5	L-103	EXTERIOR LIGHTING CUTSHEETS NO. 3	•	•	•
6	L-104	EXTERIOR LIGHTING CUTSHEETS NO. 4		•	•

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	FIXTURE DISTRIBUTION	LOCATION	QUANTITY	LAMPS: UNITS PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS	LAMPS: LUMENS	DRIVER/ BALLAST: VOLTS	DRIVER/ BALLAST: DIM TYPE	MAX TOTAL SYSTEM WATTS	SPECIFIED BY	MANUFACTURER/CATALOG NUMBER
P1		PORTSMOUTH STANDARD HISTORIC LED STREET POLES		STREET LIGHTING	16	2	EACH	12.2 W	2230	120V	NON DIM	25 W	LBX STUDIOS	POLE: NEW STAMP LIGHTING "RS-TUF" #RS-TUR-177 #PSHVC-16-10.17-2.88(3.5)-C8 LAMP: PHILIPS SIGNIFY #12.2A19/LED927/FR/PE26/NDIT20 6/1FB
P2		PORTSMOUTH STANDARD COBRA HEAD LED STREET POLES		CROSSWALK	6	1	EA	180 W	17400	120 - 277V	0-10V DIM	180 W	LBX STUDIOS	LEOTEK GREENCOBRA LED STREET LIGHT GLP-1-SM90 #GC1-90F-NV-WW-3-GY-700-HSS
X6		FLEXIBLE LED FIXTURE		CORNER COMMUNITY SPACE - BENCH	70	1	LF	1.5W	47	120 - 277V	0-10V	1.5W/LF	LBX STUDIOS	Q-TRAN "ANYBEND-SW" ANBD-SW-XX-WET-30-SO-ENC/TL
X7		LED STEP LIGHT		CORNER COMMUNITY SPACE - STAIRS	14	1	EACH	8W	166	120 - 277V	0-10V	7W	LBX STUDIOS	WE-EF "ST1134 LED" 199-9008
X8		LED TREE UPLIGHTS		CORNER COMMUNITY SPACE - PLANTERS	12	1	EACH	3W	180	120V	MLV	3W	LBX STUDIOS	HEVI LITE "HL-1380" HL-1380-XX-3LED-FL-X-LA-1
TOTAL LIGHTING LUMENS (OUTSIDE THE PROPERTY LINE)									54,934					

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	FIXTURE DISTRIBUTION	LOCATION	QUANTITY	LAMPS: UNITS PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS	LAMPS: LUMENS	DRIVER/ BALLAST: VOLTS	DRIVER/ BALLAST: DIM TYPE	MAX TOTAL SYSTEM WATTS	SPECIFIED BY	MANUFACTURER/CATALOG NUMBER
X1		LED CYLINDER SCONCE WITH FORWARD THROW DISTRIBUTION		BUILDING FACADE	102	1	EACH	20 W	425	120 - 277V	0-10V	20W	LBX STUDIOS	METEOR "LANCE 4" LA4-20-30B-UNV-STV-30-XX-FW-OUT MOD 450 LUMENS
X2		LINEAR LED FIXTURE RECESSED IN CANOPY		ENTRY CANOPIES	153	1	LF	4.9 W/ FT	65	120 - 277V	0-10V	4.9 W/ FT	LBX STUDIOS	Q-TRAN "VERS-LOUVER" VERS-07-SW-1.5-3-DMP-DF-SP-BWBW-X
X3		SURFACE MOUNTED LINEAR LED GRAZER		GARAGE SCREEN WALL	153	1	LF	18.5 W/FT	150	120 - 277V	3MX	18.5 W/FT	LBX STUDIOS	COLOR KINETICS "GRAZE COMPACT POWERCORE" 423-000920-01 MOD 150 LUMENS/FT
X4		3' DIAMETER VERTICAL LED CATENARY FING		COMMUNITY SPACE	16	1	EACH	18 W	250	24 VDC	0-10V	18 W	LBX STUDIOS	LUMINI "FLEXNEON CATENARY" PX-36-VR-1X90-SO-F-CAT-GC #SO10V-36-24-LN MOD 250 LUMENS
X5		BUILDING MOUNTED FLOOD LIGHT		GENERAL EXTERIOR	8	1	EACH	7.5W	519	120 - 277V	0-10V	8W	LBX STUDIOS	WE-EF "FLC201 LED" 139-2436
X6		FLEXIBLE LED FIXTURE		BENCH	66	1	LF	1.5W	47	120 - 277V	0-10V	1.5W/LF	LBX STUDIOS	Q-TRAN "ANYBEND-SW" ANBD-SW-XX-WET-30-SO-ENC/TL
X7		LED STEP LIGHT		STAIRS	10	1	EACH	8W	166	120 - 277V	0-10V	7W	LBX STUDIOS	WE-EF "ST1134 LED" 199-9008
X8		LED TREE UPLIGHTS		PLANTERS	4	1	EACH	3W	180	120V	MLV	3W	LBX STUDIOS	HEVI LITE "HL-1380" HL-1380-XX-3LED-FL-X-LA-1
X9		CATENARY MOUNTED LED DOWNLIGHT		COMMUNITY SPACE	6	1	EACH	9W	900	120V	0-10V	9W	LBX STUDIOS	"WE-EF "DAS120 LED" DAS12 LED - MOD 900 LUMENS
X10		LED SCONCE		BUILDING FACADE	100	2	EACH	3W	150	120V	0-10V	6W	LBX STUDIOS	METEOR "LANCE 4" LA4-20-30B-UNV-S"LA-15-15-XX-OUT MOD 150 LUMENS
TOTAL LIGHTING LUMENS (WITHIN PROPERTY LINE)									112764					
SITE AREA									2.07 ACRES					
TOTAL LUMEN/NET ACRE									54,753					
ZONING ORDINANCE MAXIMUM MEAN LUMENS PER NET ACRE ALLOWANCE									55,000					

CONTROL TYPE LEGEND

ND:	NON - DIN
0-10V:	0-10V
M.V:	MAGNETIC TRANSFORMER

SGA
54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2810 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP

1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686

ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS

104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER
TIGHE & BOND

177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON

25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

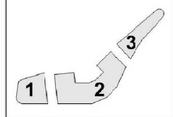
STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B

125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
07/15/2022	TAC SUBMISSION
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE **NONE**
DATE ISSUED **09/09/22**
PROJECT NO **27009.N.001**
DRAWN BY **JR**
CHECKED BY **MM**

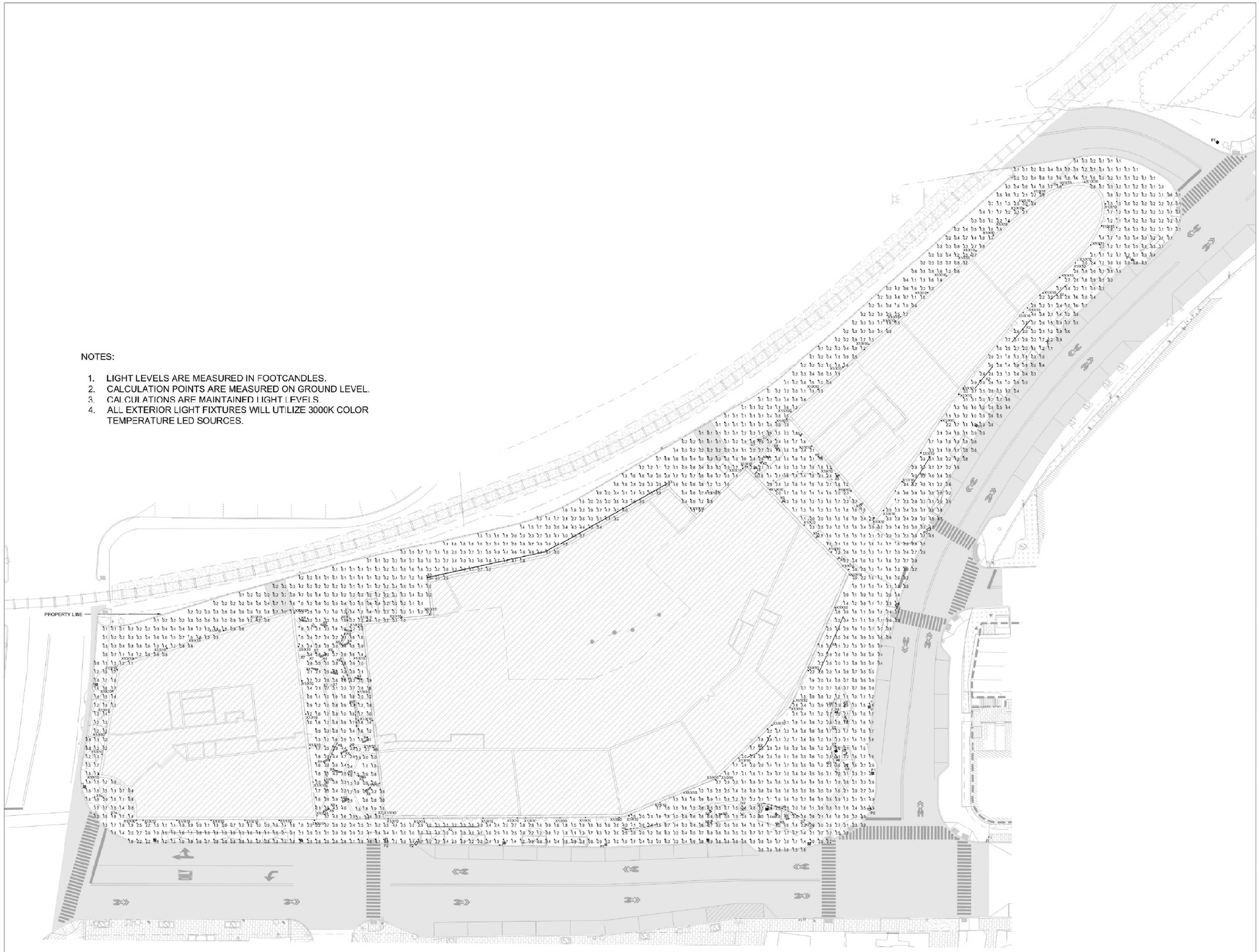
SHEET TITLE:

LIGHTING COVER SHEET, FIXTURE SCHEDULE, AND DRAWING INDEX

E-001

NOTES:

1. LIGHT LEVELS ARE MEASURED IN FOOTCANDLES.
2. CALCULATION POINTS ARE MEASURED ON GROUND LEVEL.
3. CALCULATIONS ARE MAINTAINED LIGHT LEVELS.
4. ALL EXTERIOR LIGHT FIXTURES WILL UTILIZE 3000K COLOR TEMPERATURE LED SOURCES.



SGA
54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP

1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686

ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS

104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER
TIGHE & BOND

177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON

25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

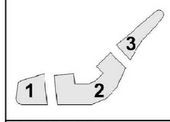
STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B

125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

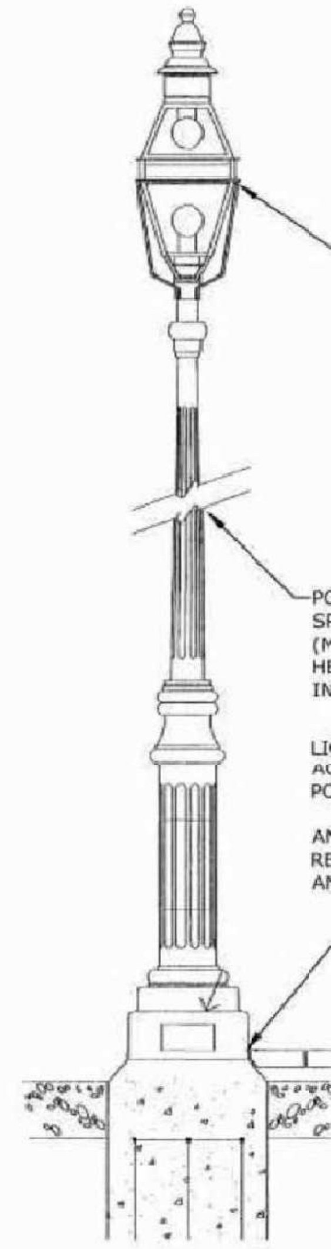
Date	Issued For:
07/15/2022	TAC SUBMISSION
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE	1" = 20'-0"
DATE ISSUED	09/09/22
PROJECT NO	21009.N.001
DRAWN BY	JR
CHECKED BY	MM

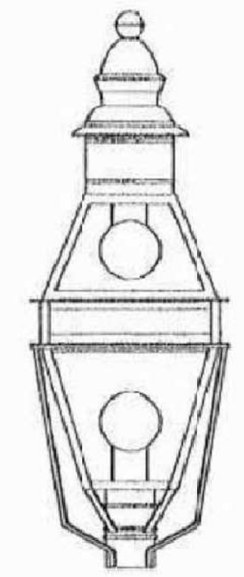
SHEET TITLE:

EXTERIOR LIGHTING PLAN AND CALCULATIONS

E-100



GENERAL NOTES:
1. STREET LIGHTING TYPE TO BE USED SHALL BE FINALIZED THROUGH CONSULTATION WITH THE PLANNING DEPARTMENT.
2. LED BULBS FOR FIXTURES SHALL BE 3000K COLOR TEMP.



NOTES:
1. LIGHT FIXTURE SHALL BE CITY OF PORTSMOUTH STANDARD BY NEWSTAMP LIGHTING COMPANY. FIXTURE SHALL INCLUDE DARK SKY FRIENDLY SHIELD AND SYLVANIA LED LIGHT BULB.
2. LIGHT FIXTURE TO BE USED FOR CITY STREET HISTORIC POLE.

FIXTURE DETAIL
NO SCALE

NOTES:
1. LIGHTING CONDUIT SHALL BE 2" PVC IN SAND AND 3'-0" BELOW FINISHED GRADE.
2. CITY OF PORTSMOUTH SHALL BE PROVIDED WITH THEIR OWN METER BOX AND KEY.
3. POWER SHALL BE PROVIDED PER CITY OF PORTSMOUTH REQUIREMENT.
4. POLE SHALL BE MADE FROM DUCTILE IRON.

POLE DETAIL
NO SCALE

NOTES:
1. REFER TO ELECTRICAL PLANS FOR WIRING DETAILS.
2. CONCRETE FOUNDATION: 4000 PSI, AIR ENTRAINED STEEL: 60 KSI
3. LIGHT POLE FOUNDATIONS SHALL BE PLACED PRIOR TO INSTALLATION OF BRICK PAVER AND STONE DUST.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, TO INCLUDE PERFORMANCE SPECIFICATIONS, CALCULATIONS AND ENGINEER'S STAMP FOR LIGHT POLE FOUNDATION.

LIGHT FIXTURE AND POLE
NO SCALE

FIXTURE TYPE 'P1'
STREET LIGHT ON 10FT POLE

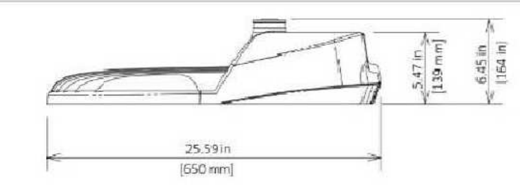
LEOTEK LITE-ON GROUP

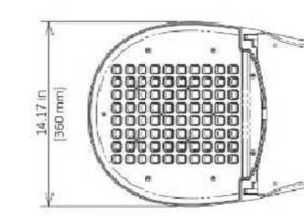
GreenCobra™ LED Street Light
GC1 F-Series Specification Data Sheet

Project
Type
Catalog No.

Luminaire Data

Weight 21 lbs [9.5 kg]
EPA 0.67 ft²





Ordering Information
Sample Catalog No. GC1-60F-MV-NW-2-GY-FDC350

Product	No. & Type of LEDs	Voltage	Color Temperature	Distribution	Finish[1]	Drive Current[2]	Options
GC1	20F 30F 40F 60F 80F	MV 120-277V HV 347-480V	WW 3000K NW 4000K CW 5000K	2 Type 2 3 Type 3	GY Gray DB Dark Bronze BK Black	350 350mA 530 530mA 700 700mA 1A[3] 1A	HSS[4] House Side Shield (Factory Installed) FDC[5] Fixed Drive Current FFA[6] Full Field Adjustability LPCR Less Photocontrol Receptacle PCR7 ANSI 7-wire Photocontrol Receptacle PCR7-CR[7] Control Ready 7-wire Photocontrol Receptacle SC PCR Shorting Cap WL Utility Wattage Label

Notes:
1 Gray, Black and Dark Bronze standard, consult factory for other finishes.
2 Specified drive current code is the factory set maximum drive current. Field adjustable current selector enables standard dimming to lower wattage drive currents only. Consult factory if wattage limits require a special drive current.
3 1A drive current only available with 40F. Specify 1A maximum at time of order.
4 Flush mounted house side shield factory installed. Shield cuts light off at 1/2 mounting height behind luminaire.
5 Non-field adjustable, fixed drive current. Specify required drive current. Not available with PCR7-CR option.
6 The FFA option enables full field adjustability from the specified drive current code to all drive currents available. This option is not DLC qualified.
7 Control-ready wired at factory for wireless node dimming. Supplied at maximum drive current. If lower drive current is required, consult factory.
8 Flush mounted house side shield. Shield cuts light off at 1/2 mounting height behind luminaire. Specify Model and Color.
9 Specify Color (GY, DB, BK)
10 Specify MV (120-277V) or HV (347V-480V)

Accessories*	
HSSGC1[8]	House Side Shield
SPB[9]	Square Pole Horizontal Arm Bracket
RPB[9]	Round Pole Horizontal Arm Bracket
PTB[9]	Pole Top Tenon Horizontal Arm Bracket
PTB2[9]	Pole Top Tenon Horizontal Arm Bracket (2@180°)
WB[9]	Wall Horizontal Arm Bracket
BSK	Bird Deterrent Spider Kit
LLPC[10]	Long-Life Twist Lock Photocontrol
SC	Twist Lock Shorting Cap

*Accessories are ordered separately and not to be included in the catalog number

FIXTURE TYPE 'P2'
STREET LIGHT ON 20FT POLE

LEOTEK LITE-ON GROUP

GreenCobra™ LED Street Light
GC1 F-Series Specification Data Sheet

Luminaire Specifications

Housing
Die cast aluminum housing with universal four-bolt slip fitter mounts to 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter mast arm. Aluminum housing provides passive heat-sinking of the LEDs and has upper surfaces that shed precipitation. Mounting provisions meet 3G vibration per ANSI C136.31-2010 Normal Application, Bridge & Overpass. Mounting has leveling adjustment from + 10° to -5° in 2.5° steps and integral bubble level standard. Electrical components are accessed without tools and are mounted on removable power door with stainless steel latches. Standard rubber wildlife guard conforms to mast arm with no gaps.

Light Emitting Diodes
Hi-flux/Hi-power white LEDs produce a minimum of 90% of initial intensity at 100,000 hours of life based on IES TM-21. LEDs are tested in accordance with IES LM-80 testing procedures. LEDs have correlated color temperature of 3000K (WW), 4000K (NW), or 5000K (CW) and 70 CRI minimum. LEDs are 100% mercury and lead free.

Field Adjustability
LED drive current can be changed in the field to adjust light output for local conditions (not available with PCR7-CR option). The specified drive current code will be the factory set maximum drive current and field adjustments can only be made to available lower wattage drive currents. Select the FFA option if full field adjustability to all available drive currents (700mA max or 1A max) is desired. The FFA option is not DLC qualified.

Quality Control
Every luminaire is performance tested before and after a 2-hour burn-in period. Assembled in the USA.

Optical Systems
Micro-lens optical systems produce IESNA Type 2 or Type 3 distributions and are fully sealed to maintain an IP66 rating. Luminaire produces 0% total lumens above 90° (BUG Rating, U=0). Optional house side shield cuts light off at 1/2 mounting height behind luminaire.

Electrical
Rated life of electrical components is 100,000 hours. Uses isolated power supply that is 1-10V dimmable. Power supply is wired with quick-disconnect terminals. Power supply features a minimum power factor of .90 and <20% Total Harmonic Distortion (THD). EMC meets or exceeds FCC CFR Part 15. Terminal block accommodates 6 to 14 gauge wire and is aligned for strait wire entry. Surge protection complies with IEEE/ANSI C62.41 Category C High, 20kV/10kA.

Controls
3-Wire photocontrol receptacle is standard. ANSI C136.41 7-wire (PCR7) photocontrol receptacles are available. All photocontrol receptacles have tool-less rotatable bases. Wireless control module is provided by others.

Finish
Housing receives a fade and abrasion resistant polyester powder coat finish. Finish tested to withstand 3000 hours in salt spray exposure per ASTM B117. Finish tested 500 hours in UV exposure per ASTM G154 and meets ASTM D523 gloss retention.

Listings/Ratings/Labels
Luminaires are UL listed for use in wet locations in the United States and Canada. DesignLights Consortium™ qualified 120-277V 4000K product. Refer to DLC web site for specific DLC listed models. International Dark Sky Association listed. Luminaire is qualified to operate at ambient temperatures of -40°C to 40°C.

Photometry
Luminaires photometrics are tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures. IES files for all CCTs are available at leotek.com.

Warranty
10-year limited warranty is standard on luminaire and components.

LEOTEK LITE-ON GROUP

GreenCobra™ LED Street Light
GC1 F-Series Specification Data Sheet

Performance Data
All data nominal. IES files for all CCTs are available at leotek.com.

No. of LEDs & Type	Drive Current (mA)	System Wattage (W)	Delivered lumens (Lm)[1]	Efficacy (Lm/W)	Type 2 BUG Rating	Type 3 BUG Rating
20F	350	25	2700	108	B1 U0 G1	B1 U0 G1
	530	35	3650	104	B1 U0 G1	B1 U0 G1
	700	47	4800	102	B1 U0 G1	B1 U0 G1
30F	350	35	3800	109	B1 U0 G1	B1 U0 G1
	530	53	5400	102	B1 U0 G1	B2 U0 G1
	700	70	7000	100	B2 U0 G2	B2 U0 G2
40F	350	45	5050	112	B1 U0 G1	B2 U0 G1
	530	70	7200	103	B2 U0 G2	B2 U0 G2
	700	92	9300	101	B2 U0 G2	B2 U0 G2
40F (1A Maximum)	530	70	7200	103	B2 U0 G2	B2 U0 G2
	700	92	9300	101	B2 U0 G2	B2 U0 G2
	1000	132	12300	93	B3 U0 G3	B3 U0 G3
60F	350	70	7600	109	B2 U0 G2	B2 U0 G2
	530	101	10400	103	B2 U0 G2	B2 U0 G2
	700	133	13400	101	B3 U0 G3	B3 U0 G3
80F	350	85	9500	112	B2 U0 G2	B2 U0 G2
	530	133	14200	107	B3 U0 G3	B3 U0 G3
	700	180	17700	98	B3 U0 G3	B3 U0 G3

Notes:
1 All data nominal lumens for 4000K (NW) and 5000K (CW). For 3000K (WW) apply a LLF of 0.93. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.

LANCE 4
ARCHITECTURAL GRADE
OUTDOOR WALL LUMINAIRE

SPECIFICATION SHEET
SINGLE SIDED

Housing
Diameter: Ø4" | Height: 9.5" | Weight: 9.2 lbs

Material
Housing: High Pressure Die-Cast Aluminum
Lens: Tempered Glass

Power Input
20W, 30W | 120, 277V

Lumen Output
1620 lm (20W)
2,400 lm (30W)

Dimming
Standard 0-10V: Dims to 10%
Superior 0-10V: Dims to 1%
TRC: Line-voltage phase control, dims to 1% (120V only)

Color Quality
CRI 85, CRI 93

Rated Life
> 60,000 Hours (L70)

Finish
Black White Gray Bronze

Color Temperature
2700K 3000K 3500K 4000K

Optics
30° 45° 60° Wide

Warranty
5 Year limited warranty

Listing
Intertek CE FC IP65

Designed for Timeless Exteriors

The Lance 4 is a high-performing range of architectural outdoor wall mounted luminaires, that delivers up to 2,160 lumens combined.

It's the perfect balance between decorative and functional, allowing you to graze brilliant surfaces and textures to make a bold after-dark statement.

METEOR

meteor-lighting.com

Page 1

SPECIFICATION SHEET / SINGLE SIDED
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

SPECIFICATION

PROJECT NAME
DATE
CATALOG #
LA4-D-20-308-UNV-STV-30-BLK-FW-OUT
QUANTITY

LA4	MODEL	LANCE 4		
D	DIRECTION	⊙ D Down	○ U Up	
20	WATTAGE	⊙ 20 20W	○ 30 30W	
308	CCT / CRI	○ 278 2700K / CRI 85 ○ 309 3000K / CRI 93 ○ 408 4000K / CRI 85	○ 279 2700K / CRI 93 ○ 358 3500K / CRI 85	⊙ 308 3000K / CRI 85 ○ 359 3500K / CRI 93
UNV	VOLTAGE	UNV 120 – 277V		
STV	DIMMING	○ NOD Non-Dimming ○ TRC TRIAC dims to 1% (120V Only)	⊙ STV Standard 0-10V dims to 10%	○ SPV Superior 0-10V dims to 1%
30	BEAM ANGLE	⊙ 30 30° ○ WD[1] Wide	○ 45 45°	○ 60 60°
BLK	COLOR	⊙ BLK Black ○ BRZ Bronze	○ WHT White	○ GRY Gray
FW	ACCESSORIES	⊙ FW[1] Forward Throw 20° ○ SL[3] Solite Lens	○ WW[2] Wall Wash 20°	○ LL[3] Linear Lens
OUT	FINISH	⊙ OUT[4] Outdoor	○ NAT[5] Natatorium Rated	○ MAR[6] Marine Finish

[1] Please factor in change in lumen output of -12%
[2] Option only available with 30° Beam Angle. Please factor in change in lumen output of -20%
[3] Please factor in change in lumen output of -12%
[4] Outdoor Rating: Coating and wiring will be changed to high UV resistant and corrosion resistant materials for long-term operation in outdoor environments.
[5] Natatorium Rating: Coating and sealant will be changed to high corrosion resistant materials to prevent damage from long-term exposure to chlorine vapors.
[6] Marine Rating: Uses high corrosion-resistant materials for the coating and sealant to prevent damage from long-term exposure to saltwater environment.

MOD 425 LUMENS DELIVERED

SPECIFICATION SHEET / SINGLE SIDED
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

TECHNICAL DETAILS

Electrical
- 1,620 lm (20W)
- 2,400 lm (30W)
- Power Input: Universal (120/277V)
- Operating Temperature: 14°F–104°F
- Surge Protection: Built-in is 2.5KV
- Power Factor Greater than 0.9

LED Features
- Color Temperature: 2700K, 3000K, 3500K, 4000K
- CRI 85, CRI 93
- Long lasting LED luminaire tested under TM21 lumen maintenance L70 @ 60,000 Hrs

Optics
- Precision molded high transmittance clear PC lens
- Beam Angle: 30°, 45°, 60°, Wide

Advanced Dimming
- Proprietary VX Driver™ is incorporated to all dimming options for video flicker-free lighting
- Standard 0-10V: Dims to 10%
- Superior 0-10V: Dims to 1%
- TRIAC: Line-voltage phase control, dims to 1% (120V only)

Housing
- Diameter: Ø4"
- Height: 9.5"
- Material: High Pressure Die-Cast Aluminum, Tempered Glass
- Weight: 9.2 lbs

Warranty
- 5-year limited warranty

Listing
- ETL Wet Location Listed
- CE
- FCC
- IP 65

PERFORMANCE SUMMARY*

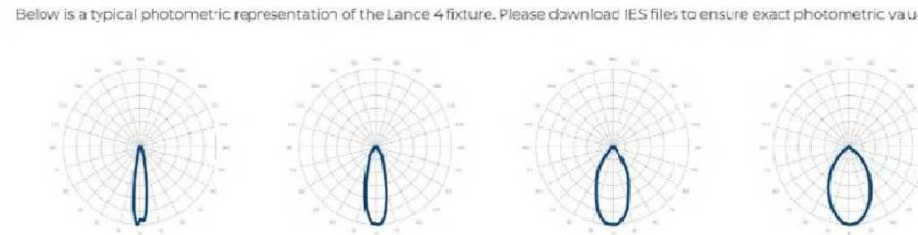
Delivered Lumens				
CCT/WATTAGE	2700K	3000K	3500K	4000K
20W	1,315lm	1,370lm	1,415lm	1,460lm
30W	1,945lm	2,035lm	2,100lm	2,160lm

Current Consumption		
WATTAGE / VOLT	120V	277V
20W	0.2A	0.09A
30W	0.3A	0.13A

* Tolerance ±6%

PHOTOMETRICS

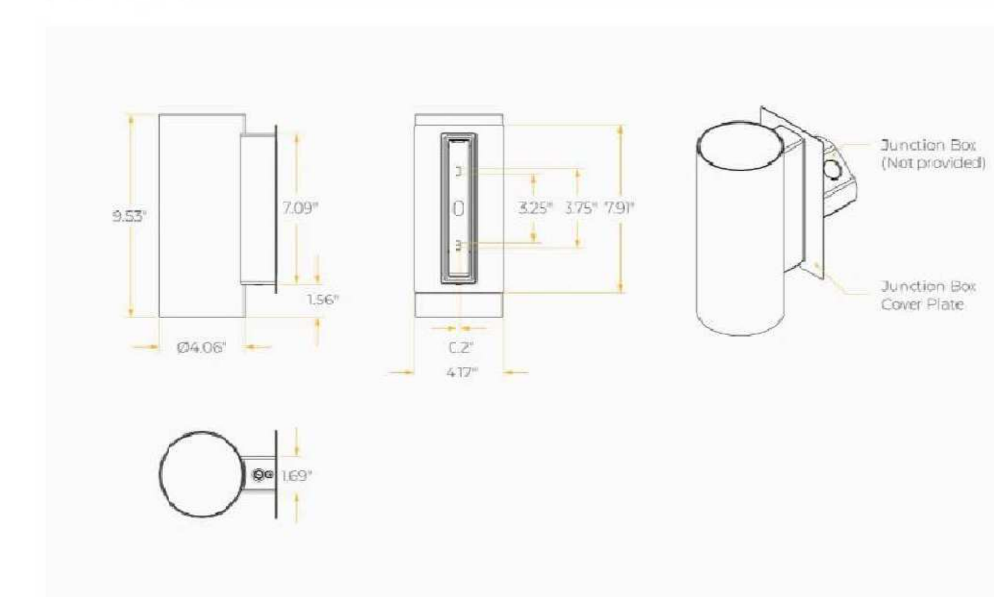
Below is a typical photometric representation of the Lance 4 fixture. Please download IES files to ensure exact photometric value.



SPECIFICATION SHEET / SINGLE SIDED
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

DIMENSIONS



FIXTURE TYPE 'X1'
BUILDING MOUNTED LIGHT FIXTURE

SGA
54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP
1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686

ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS
104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

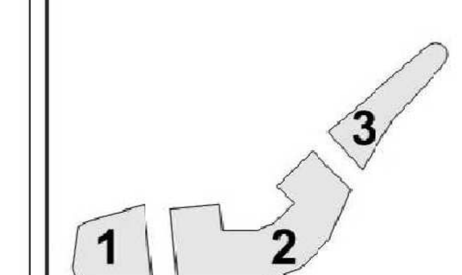
CIVIL ENGINEER
TIGHE & BOND
177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON
25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B
125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS
80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
07/15/2022	TAC SUBMISSION
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE	NONE
DATE ISSUED	09/09/22
PROJECT NO	27009.N.001
DRAWN BY	JR
CHECKED BY	MM

SHEET TITLE:

EXTERIOR LIGHTING CUTSHEETS NO. 1

E-101

VERS-LOUVER (07) Linear Fixtures - Surface

The VERS Louver is designed to eliminate glare, rendering more precise light distribution. A custom-sized black VERS louver fits snugly above a low-profile clear or diffused lens to mitigate diode imaging and glare issues. Metal endcaps combined with the flush louver and extruded aluminum VERS housing provide a sleek compact fixture.

Part Number Builder

Static White

Product	W/FT	CCT	Rated	Lens	Input/Output	Connector/Wire In	Connector/Wire Out	Wire Color	Wire Type	Mounting	Finish	Length* (in)
VERS-07-SW	1.5, 3.0, 4.0, 5.0, 6.0	20, 22, 24, 27, 30, 35, 40	DRY (IP20)	CL, DF	S1, S2 (Single, Closed exit)	BW, CON6, CON24	CLS	WH, BK	CL2, CL2P	CC, MG	ST, BK, BZ, WH	

Voltage: 24 VDC

Typical lumens at 5.0W/ft at 3000K with CL lens: 205 lm/ft

*Available in 1' increments for 1.5W/ft - 5.0W/ft and 2' increments for 6.0W/ft. Maximum fixture length of 98'. See fixture

Static White High Efficacy

VERS-LOUVER (07) Linear Fixtures - Surface

Technical Information

Static White

Dynamic White High Efficacy

Static Color

RGBW

RGBW High Efficacy

Temperature Ratings

Static White High Efficacy

Dynamic White

Warm Dim

RGB

VERS-LOUVER (07) Linear Fixtures - Surface

Lens

Beam Angle

Finish

Connector/Wire – In/Out

Input/Output

Dimensions

Mounting

End Caps

Light Engine Spacing Detail

FIXTURE TYPE 'X2'
ENTRY CANOPY FIXTURE

Graze Compact Powercore

Date:
Type:
Firm Name:
Project:

IntelliHue, 100 to 277 VAC, Low Power, 30° x 60°, 305 mm (1 ft)

Exterior compact linear grazing luminaire with intelligent white and color light

Graze Compact is a high-performance, exterior linear luminaire designed to highlight architectural features like molding details, archways and windows up to two stories high. Graze Compact IntelliHue utilizes Color Kinetics IntelliHue technology to produce millions of saturated colors, pastels, and high-quality white light, in the same precisely controllable luminaire. Multiple luminaire lengths and beam angles support a large range of façade or surface illumination applications. The brand new low-profile housing, connectorized cabling, a universal power input range, and direct line voltage make Graze Compact luminaires easy to install and operate.

- Tailor light output to specific applications—Available in two standard lengths (1 ft and 4 ft) and four standard 10° x 60°, 30° x 60°, 60° x 60°, and 100° x 100° beam angles.
- Ultra compact form factor—Graze Compact's ultra-low profile is half the size of Graze, allowing it to fit discretely into almost any layout from simple to elaborate.
- Integrates patented Powercore technology that controls power output to luminaires directly from line voltage – rapidly, efficiently, and accurately. The Color Kinetics Data Enabler Pro merges line voltage with control data and delivers them to luminaires over a single standard cable, dramatically simplifying installation and lowering total system cost.
- Graze Compact provides years of reliable use under rugged conditions.

COLORKINETICS

Specifications

Output

Electrical

Control

Control System

Lumen Maintenance

Physical

Temperature Ranges

Vibration Resistance

Corrosion Resistance

Thermal Protection enabled

Luminaire Run Lengths

Certification and Safety

FIXTURE TYPE 'X3'
SCREEN WALL GRAZER

iLight Plexineon Catenary Mount

Static White CQ, 1X, 2X | Colors

Features

- **Neon look** providing a crisp, clean line of light.
- Catenary cable mount designed to be suspended **outdoors**, but also can be used **indoors** to reduce suspension points
- Available in standard Plexineon **vertical** or **horizonal rings**, and **linear runs**. Custom designs may also be available.
- Package includes **luminaire**, **aluminum support structure**, and **necessary hardware**. Support poles, if needed and catenary cables are by others
- **Luminaires** have ruggedized plastic sidewalls that are standard in **metallic gray**.
- **Matte black, matte white or matte gray** sidewalls are also **available** with some colors
- Incredibly durable, featuring **IP68, IK10,& 3G ratings**
- Standard ring sizes are available up to **24 feet in dimeter** for **horizontal rings** and **6 feet in dimeter** for **vertical rings**. Other custom diameters may be available.
- Operating temperature: **-40°F to 140°F (-40°C to 60°C)**
- **Low voltage** 24VDC, Class 2
- **Warranty:** 5 years indoors, 3 years outdoors

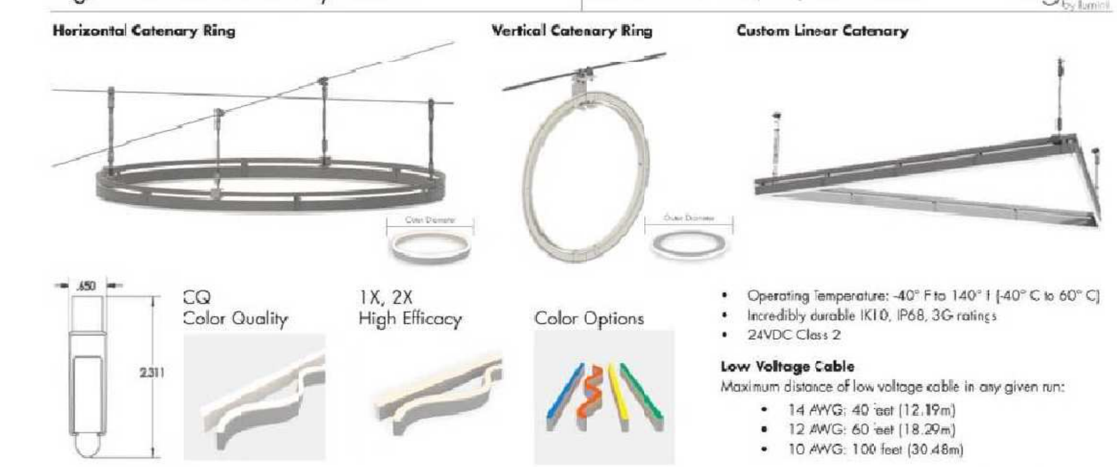
Common Applications

Patios | Outdoor Dining Areas | Roof Top Bars | Courtyards | Airports | Statement Pieces

REV1.1 03/2022 1 | 2 www.luminii.com T: 224-333-6033

iLight Plexineon Catenary Mount

Static White CQ, 1X, 2X | Colors



Technical Information

Ordering Code

FIXTURE TYPE 'X4'
COMMUNITY SPACE CATENARY FIXTURE

54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP

1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686

ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS

104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER
TIGHE & BOND

177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON

25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B

125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600

SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
07/15/2022	TAC SUBMISSION
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE NONE
DATE ISSUED 09/09/22
PROJECT NO 27009.N.001
DRAWN BY JR
CHECKED BY MM

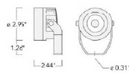
SHEET TITLE:

EXTERIOR LIGHTING CUTSHEETS NO. 2

E-102

FLC201 LED
Floodlights
1/8

we-ef



Description
IP66, Class III, IK07. Marine-grade, die-cast aluminum alloy SCE superior corrosion protection incuding PCS hardware. Silicone CCG® Controlled Compression Gasket. Safety glass lens. One factory installed flange plug M8 x 1.5. Cable length 4 ft. CNC-optimized optics for superior illumination and glare control. OLCI® Ore LED Concept. Factory-installed LED circuit board. REMOTE DRIVER OR SEPARATE DRIVER BUX (LONG RUN CURRENTS) PREWIRED, TO BE ORDERED SEPARATELY. Maximum one internal optical accessory possible, to be specified at time of ordering. Specify product with 7 Digit product code + Finish Color Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX – 9004 (Black) + XXX-XXXX (Accessory 1)

FLC201 LED
Floodlights
2/8

we-ef

Specifications

Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Lens:	Safety glass lens
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
Quick Ship	Quickship features a one week ship time for Stoplights and two week ship time for the rest of our Core products. All applicable information must be included for orders to be processed and colors must be in one of our 4 standard finishes. A maximum order quantity of 30 pieces applies.
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS Polymer Coated Stainless Steel Hardware
Ingress protection:	IP66
Impact protection:	IK07
Corrosion protection:	SCE
Windage EPA (ft²):	0.065

Electrical Specification

Power factor:	> 0.9
Driver / Ballast:	Remote 120-277 V , 0-10V (dimming to be ordered separately)
Lifetime	
70w@25° L90B10 > 50,000h	

FLC201 LED
Floodlights
3/8

we-ef

Choices

Light Distributions

- symmetric, wide beam [W]
- symmetric, medium beam [M]
- symmetric, narrow beam [N]
- symmetric, very narrow beam [VN]
- symmetric, very narrow beam, 'sharp cut-off' [VNS]

Nominal Lumen
615
665
679
729

Nominal Watt
6

Colour Temperatures

- 2700 K
- 3000 K
- 4000 K

Colours

- RAL9005 Black
- RAL9007 Grey Metallic
- RAL9016 White
- RAL8019 Dark Bronze

FLC201 LED
Floodlights
4/8

we-ef

Configurations

Light Distributions	Part IC	Light Source	Delivered Lumens	Rated Input Power	CRI	Weight	Link
symmetric, wide beam [W]	139-2405	LED-1.6W / 500 mA - 2700 K	518.4	7.5	80	1.10	
	139-2406	LED-1.6W / 500 mA - 3000 K	518.4	7.5	80	1.10	
	139-2407	LED-1.6W / 500 mA - 4000 K	557.1	7.5	80	1.10	
symmetric, medium beam [M]	139-2408	LED-1.6W / 500 mA - 2700 K	544.8	7.5	80	1.10	
	139-2409	LED-1.6W / 500 mA - 3000 K	544.8	7.5	80	1.10	
	139-2410	LED-1.6W / 500 mA - 4000 K	585.5	7.5	80	1.10	
symmetric, narrow beam [N]	139-2411	LED-1.6W / 500 mA - 2700 K	567.7	7.5	80	1.10	
	139-2412	LED-1.6W / 500 mA - 3000 K	567.7	7.5	80	1.10	
	139-2413	LED-1.6W / 500 mA - 4000 K	610.1	7.5	80	1.10	
symmetric, very narrow beam [VN]	139-2414	LED-1.6W / 500 mA - 2700 K	568.2	7.5	80	1.10	
	139-2415	LED-1.6W / 500 mA - 3000 K	568.2	7.5	80	1.10	
	139-2416	LED-1.6W / 500 mA - 4000 K	610.6	7.5	80	1.10	
symmetric, very narrow beam, 'sharp cut-off' [VNS]	139-2417	LED-1.6W / 500 mA - 2700 K	516.6	7.5	80	1.10	
	139-2418	LED-1.6W / 500 mA - 3000 K	516.6	7.5	80	1.10	
	139-2419	LED-1.6W / 500 mA - 4000 K	558.6	7.5	80	1.10	

Related Families / FLC200 LED

Family		Dimensions	Wattage	Nominal Lumen	Links: Links	Links: Download Data Sheet
FLC201 LED		2.95	6 W	615 -720		
FLC210 LED		5.90	12 W	1385 -1690		
FLC220 LED		7.48	12-26 W	1295-3453		
FLC230 LED		10.24	24-52 W	2989-6907		
FLC240 LED		12.99	48-104 W	5178-13813		
FLC250 LED		15.15	72-156 W	7767-20720		

FIXTURE TYPE 'X5'
BUILDING FLOODLIGHT

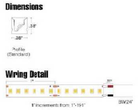
ANYBEND-SW Q-CAP Flexible Fixtures - MICRO 5 SERIES

ANYBEND-SW is a fully encapsulated flexible linear LED fixture suitable for use in a variety of applications. Because of its dry and wet rating, it is perfect for not only indoor use but also as outdoor accent lighting where the fixture is visible. ANYBEND-SW encapsulates our 24-volt static white LED strips in polyurethane. Offered in three different outputs: standard output (1.5W/ft), high output (2.5W/ft), and very high output (4.5W/ft). ANYBEND-SW has a unique up/down and side bend with a 3" bending radius and it is compatible with three different mounting hardware options to ensure our product fits any design need. Utilize clear endcaps for continuous runs with no light loss.

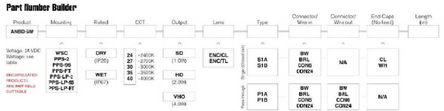
Output (Calculated L70 – 40000 hours) — Tested for ANSI/IESNA LM-79

	SO Standard Output 1.5W/ft				HO High Output 2.5W/ft				VHO Very High Output 4.5W/ft			
	ENCCL		ENCTL		ENCCL		ENCTL		ENCCL		ENCTL	
CCT	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI
1400K	44	90	49	90	120	93	131	92	265	93	253	93
1700K	48	96	52	96	133	97	85	96	292	97	195	96
2000K	52	93	47	96	140	96	157	97	308	96	217	97
3000K	51	96	48	96	137	96	189	96	298	97	247	96
4000K	46	97	53	96	122	97	135	96	275	96	304	97

Dimensions



Part Number Builder



- **BW** comes instandard 24"- request custom length (Max 120") by writing it in inches next to "BW" in the order code box (ex. BW-9)
- **Connector/Wire In or Out** not needec to specify product. Standard configuration is typo S1, ConnectorWire In: BW & Connector/Wire Out: N/A with white endcaps (WH)

Flexibility

- Field modifications are not covered under Q-Tran warranty
- 5 year warranty
- Up/Down, Side Bend
- Data subject to change, all data has +/- 5% tolerance
- **PPS-FT** and **PPS-LP-FT** is to be cut at Q-Tran to requested length

Specification subject to change. Rev-12-23-21

ANYBEND-SW C-CAP Flexible Fixtures - MICRO 5 SERIES

Mounting NOTE: 2 white snaps/clips provided per first 12", 1 for each additional 12". Other mounting styles incur additional charge, see price guide for details.

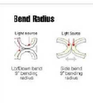
Ambient Temperature Limits

Wattage		Minimum °F	Maximum °F
60	Wetrack	-4	77
	Surface Mount	-4	50
30	Wetrack	-4	113
	Surface Mount	-4	122
15	Wetrack	-4	122
	Surface Mount	-4	122

End Caps (No Feed)

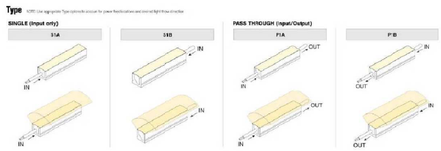
End Caps (With Feed)

Bend Radius



Type NOTE: Use appropriate Type options to account for power feed locations and desired light flow direction

SINGLE (Input only)



PASS THROUGH (Input/Output)

Connector/Wire – In/Out

Lens with LED visibility

Compatible Power Supplies
See website for additional power supply options

Specification subject to change. Rev-12-23-21

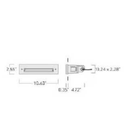
FIXTURE TYPE 'X6'
BENCH LIGHT

STI134 LED
190-9008 (previous product code: 815-7321 for reference only!)
1/3

we-ef

Description
Downward aimed shielded light source. ADA (American Disabilities Act) Compliant. IP66. Class I, IK13. Marine-grade, die-cas aluminum alloy. SCE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. Polycarbonate lens. Two mile service. 0-10% Dimming zones standard with luminaire. A zee-installation blockout is available and recommended for mounting in concrete walls; to be ordered separately. Specify product with 7 Digit product code – Finish Color Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	Floor wash
Light Source	LED-EW / 256 mA - 3000 K
CRI	80
Gear Type	electronic gear
Nominal Luminous Flux (lm)	
LED Lumens	1020 lm
LEDs	1
Total Lumens	1020 lm
ηj	25 °C
Delivered Lumens Flux (lm)	
LED Lumens	166 lm
Total Lumens	166 lm
ηa	25 °C
Rated Input Power	8 W



FIXTURE TYPE 'X7'
STEP LIGHT

SPECIFICATIONS

DESCRIPTION
Adjustable MR16 accent fixture with integral transformer. Suitable for wet/damp/dry location installations.

MATERIAL:
Standard overall material is 6061 aluminum.
HL-1380 - Machined Aluminum

FINISH
AA - Anodized Satin Aluminum
AP - Powder Coat Aluminum
BA - Powder Coat Black
BZ - Powder Coat Bronze
WT - Powder Coat White

HALOGEN LAMPING OPTION:
Lamp Type - 12V Halogen MR16 lamp, bi-pin GX5.3 base, 50W max, not included (standard).

LED OPTIONS
Integral high output LED, warm white 85 CRI (3000K CCT) standard, others available.
3LED - 3W LED - 180 lumens
8LED - 8W LED - 300 lumens
8LED-E - 8.4W LED - 565 lumens

OPTICS
3LED and 8LED:
SP - Spot, 6°
NF - Narrow Flood, 24°
FL - Flood, 36°
8LED-E:
SP - Spot 14°
NF - Narrow Flood, 25°
MF - Medium Flood, 30°
FL - Flood, 40°

VOLTAGE:
120 - 120/12 vAC integral potted magnetic transformer, LED halogen.
277 - 277/12 vAC integral potted magnetic transformer, LED halogen.

MOUNTING:
Fixture is designed with a 1/2-NPS adjustable mounting stem.

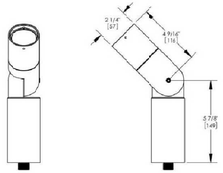
OPTIONS:
Glare shields
GL-12 - Short Angled, aluminum
GL-13 - Angled, aluminum
GL-13 - Straight, aluminum
Lenses/Louvers/Color Filters
LA-1 - Hexcel Louvre (**Black**)
LA-2 - Prismatic lens
LA-3 - Linear spread lens
LA-4 - Soft focus lens (diffused)
LA-5 - Moonlight lens
LA-6 - Blue lens
See fixture accessories for more information.

SAMPLE ORDER SPECIFICATION:
HL-1380-AA-123-GL-104-LA-2

RATING:
Wet/damp/dry location.

Intertek

MADE IN THE USA



ORDER SPECIFICATION: ____ - ____ - ____ - ____ - ____ - ____
(Fixture, Finish, Lamping, Voltage, Options/Access.)

PROJECT:	**HEVI LITE, INC.**
APPROVED:	9744 Variel Ave, Chatsworth, CA 91311 Tel., 818) 341-8091 - Fax (818) 998-1986 Web Site http://www.hevilite.com
NOTE:	CATALOG NUMBER:
TYPE:	**HL-1380-M**

FIXTURE TYPE 'X8'
TREE UPLIGHT

SGA
54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP

1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686
ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS

104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER
TIGHE & BOND

177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON

25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B

125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600

SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
07/15/2022	TAC SUBMISSION
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE	NONE
DATE ISSUED	09/09/22
PROJECT NO	27009.N.001
DRAWN BY	JR
CHECKED BY	MM

SHEET TITLE:

EXTERIOR LIGHTING CUTSHEETS NO. 3

E-103

DAS120 LED
134-2183

we-ef

1/4

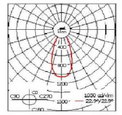
Description
IP66, Class I, IK07. Marine-grade, die-cast aluminium alloy. SCE superior corrosion protection including PCS hardware. Silicone CCS® Controlled Compression Gasket. Safety glass lens. One cable entry, second cable entry for through wiring with cable connector optional. Integral driver, thermally separated. CAD-optimised optics for luminaire illumination and glare control. DALI/DSI/Dim-to-Warm/1-10V/Casambi Factory installed LED circuit board. 1-10V Dimming comes standard with luminaire. The luminaire is factory-sealed and does not need to be opened during installation. Optional 230V version available, to be specified at time of ordering. Includes cable connector, for cable Ø 0.08-0.47 inch. +/- 0° adjustable to compensate for sloping catenary systems. Specify product with 2 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXXXXXX – 9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	symmetric, wide beam (W)
Light Source	LED-12/24W / 700 mA - 3000 K
CRI	80
Gear Type	electronic gear
Nominal Luminous Flux (lm)	
LED Lumens	745.9 lm
LEDs	12
Total Lumens	7551 lm
Tj	85 °C
Delivered Lumens Flux (lm)	
LED Lumens	180.8 lm
Total Lumens	2169.9 lm
Ta	25 °C
Rated Input Powe:	28 W

DAS120 LED
134-2183

we-ef

2/4



Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (lbs):	8.68
Lens:	Safety glass lens
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
Gasket:	Silicone CCS® Controlled Compression Gasket
Fasteners:	PCS Polymer Coated Stainless Steel Hardware
Ingress protection:	IP66
Impact protection:	IK07
Corrosion protection:	SCE
Mounting:	Includes cable connector, for cable 2-12 mm. +/- 10° adjustable
Listings:	Contact WE-EF USA for ETL/UL certification status
Windage (EPA):	0.0376 m²

Electrical Specification

Power factor:	>0.9
Driver / Ballast:	Standard, DALI on request
Cable:	One cable entry, optional 1-QPD connector for through wiring available on request

Lifetime
Ta=25°/40° L90B10 > 90000h

DAS120 LED
134-2183

we-ef

3/4

Optical Accessories

Honeycomb louvre
Honeycomb louvre, matt black Teflon® coated. For luminaires equipped with IB (M) light distribution. A maximum of one internal optical accessory.

IVP-DAC120-LED	
	C1
134-2062	4.05

Linear spread lens
Broadens light distribution in one plane only. Ideally suitable for (M) [EE] [EES]. Does not fit in combination with (B) lens. Internal component, factory installed.

DAS120 LED
134-2183

we-ef

4/4

IO-180-DAC120-LED	
	C1
134-2000	4.05

FIXTURE TYPE 'X9'
CATENARY DOWNLIGHT

LANCE 4
ARCHITECTURAL GRADE
OUTDOOR WALL LUMINAIRE

SPECIFICATION SHEET
WHITE UP / DOWN

Housing
Diameter: 4" | Height: 9.5" | Weight: 9.2 lbs

Material
Housing: High Pressure Die-Cast Aluminum
Lens: Tempered Glass

Power Input
20W, 30W | 120, 277V

Lumen Output
1,458 lm (20W) Uplight: 10W / Downlight: 10W
2,160 lm (30W) Uplight: 15W / Downlight: 15W

Dimming
Standard: 0-10V, Dims to 10%
Superior: 0-10V, Dims to 1%
TRIC: Line-voltage, phase control, dims to 1% (120V only)

Color Quality
CRI: 85, CRI: 93

Rated Life
> 60,000K Hours (L70)

Finish
Black, White, Grey, Bronze

Color Temperature
2700K, 3000K, 3500K, 4000K

Optics
10°, 30°, 45°, 60°, Wide

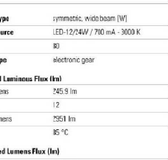
Warranty
5 Year limited warranty

Listing
ETL, CE, FC, IP65

Designed for Timeless Exteriors

The Lance 4 is a high-performing range of architectural outdoor wall-mounted luminaires, that deliver up to 2,160 lumens combined.

It's the perfect balance between decorative and functional, allowing you to grace brilliant surfaces and textures to make a bold after-dark statement.



meteor-lighting.com

SPECIFICATION SHEET / WHITE UP & DOWN
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

SPECIFICATION

PROJECT NAME | DATE

CATALOG # | QUANTITY

LA4-20-308-UNV-STV-15-15-BLK-SL-OUT

LA4	MODEL	LANCE 4			
20	WATTAGE	○ 20 Downlight: 10W Uplight: 10W	○ 30 Downlight: 15W Uplight: 15W		
308	CCT / CRI	○ 276 2700K / CRI 85	○ 279 2700K / CRI 93	○ 308 3000K / CRI 85	
		○ 369 3000K / CRI 93	○ 359 3500K / CRI 85	○ 359 3500K / CRI 93	
		○ 404 4000K / CRI 85			
UNV	VOLTAGE	UNV 120 - 277V			
STV	DIMMING	○ MOD Non-Dimming	○ ETV Standard 0-10V dims to 10%	○ SPV Superior 0-10V dims to 1%	
		○ TRC TRIAC dims to 5% (120V Only)			
15	BEAM ANGLE	Downlight			
		○ DL 15°	○ 30 30°	○ 45 45°	
		○ 60 60°	○ WDV Wide		
15		Uplight			
		○ UL 15°	○ 30 30°	○ 45 45°	
		○ UG 60°	○ WDV Wide		
BLK	COLOR	○ BLK Black	○ WHT White	○ GRY Gray	
		○ BRZ Bronze			
SL	ACCESSORIES	○ FWF Forward Throw 20°	○ WWT Wall Wash 20°	○ LL1 Linear Lens	
		○ SL1 Satilla Lens			
OUT	FINISH	○ OUT Outdoor	○ BAT Naturalium Rated	○ MAR Marine Finish	

[1] Please factor in change in Lumen output of -10%
[2] Option only available with 30° Beam Angle. Please factor in change in lumen output of -10%
[3] Please factor in change in lumen output of -10%
[4] Outdoor Rating: Cooking and refrigerant are changed to high UV resistant and corrosion resistant materials for long-term operation in outdoor environments
[5] Naturalium Rating: Coating and resistant will be changed to high corrosion resistant materials to prevent damage from long-term exposure to chlorine vapors
[6] Marine Rating: Use high corrosion resistant materials for the housing and backlit to prevent damage from long-term exposure to saltwater environment

MOD 150 LUMENS DELIVERED

SPECIFICATION SHEET / WHITE UP & DOWN
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

TECHNICAL DETAILS

Electrical
- 1,458 lm (20W) Uplight: 10W / Downlight: 10W
- 2,160 lm (30W) Uplight: 15W / Downlight: 15W
- Power Input: Universal (120/277V)
- Operating Temperature: 14°F-105°F
- Surge Protection: Built-in is 2.5kV
- Power Factor Greater than 0.9

Housing
- Diameter: 4"
- Height: 9.5"
- Material: High Pressure Die-Cast Aluminum, Tempered Glass
- Weight: 9.2 lbs

Warranty
- 5-year limited warranty

LED Features
- Color Temperature: 2700K, 3000K, 3500K, 4000K
- CRI: 85, CRI 93
- Long lasting LED luminaire tested under TM-21 lumen maintenance L70 @ 60,000 Hrs

Listing
- ETL Wet Location Listed
- CE
- FCC
- IP 65

Optics
- Precision molded high transmittance clear PC lens
- Beam Angle Up & Down 15°, 30°, 45°, 60° Wide

Advanced Dimming
- Proprietary VX Driver™ is incorporated to all dimming options for video flicker free lighting
- Standard 0-10V: Dims to 10%
- Superior 0-10V: Dim to 1%
- TRIC: Line-voltage (phase control, dims to 1% (120V only)

PERFORMANCE SUMMARY*

	Delivered Lumens			
CCT/WATTAGE	2700K	3000K	3500K	4000K
20W (1,458 Lumen Max)	650lm	685 lm	720lm	730lm
30W (2,160 Lumen Max)	970 lm	1,026lm	1,050 lm	1,090lm

	Current Consumption	
WATTAGE / VOLT	120V	277V
20W	0.2A	0.09A
30W	0.3A	0.13A

*Tolerance 5%

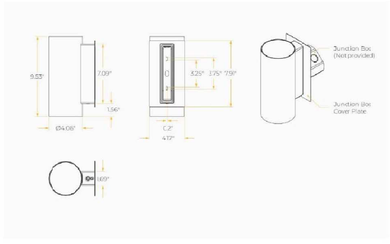
PHOTOMETRICS

Below is a typical photometric representation of the Lance 4 fixture. Please download IES files to ensure exact photometric value.

SPECIFICATION SHEET / WHITE UP & DOWN
LANCE 4 ARCHITECTURAL GRADE OUTDOOR WALL LUMINAIRE

METEOR

DIMENSIONS



FIXTURE TYPE 'X10'
UPPER SCONCE

SGA
54 W 21st Street, Suite 1201
NEW YORK, NY 10010
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

CLIENT
TWO INTERNATIONAL GROUP

1 NEW HAMPSHIRE AVENUE, SUITE 101
PORTSMOUTH, NH 03801
(603) 436-8686

ARCHITECT OF RECORD
MARKET SQUARE ARCHITECTS

104 CONGRESS STREET
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER
TIGHE & BOND

177 Corporate Drive
PORTSMOUTH, NH 03801
(603) 433-8818

LANDSCAPE DESIGN
HALVORSON

25 KINGSTON STREET
BOSTON, MA 02111
(617) 536-0380

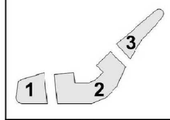
STRUCTURE DESIGN
DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B

125 HIGH STREET, SUITE 220
BOSTON, MA 02110
(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

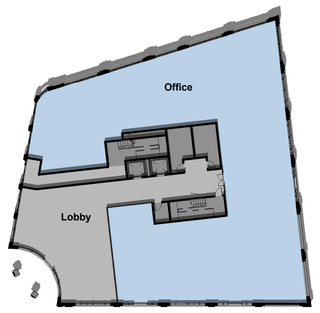
Date	Issued For:
08/25/2022	TAC SUBMISSION #3
11/23/2022	PB SUBMISSION

SCALE	NONE
DATE ISSUED	09/09/22
PROJECT NO	21009.N.001
DRAWN BY	JR
CHECKED BY	MM

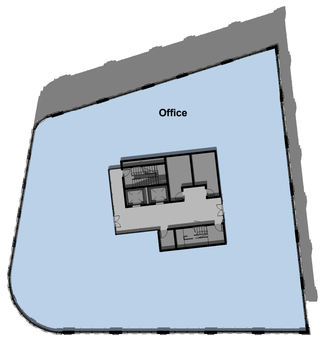
SHEET TITLE:

EXTERIOR LIGHTING CUTSHEETS NO. 4

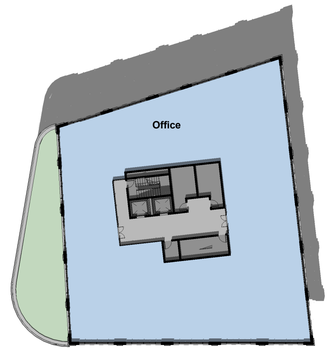
E-104



1 B1 - LEVEL 1
1/32" = 1'-0"



2 B1 - LEVEL 3
1/32" = 1'-0"



3 B1 - LEVEL 4
1/32" = 1'-0"

GROSS AREA CALCULATIONS

B1 - LEVEL 1	
Back of House	1,061 SF
Lobby	2,574 SF
Office	7,974 SF
	11,609 SF
B1 - LEVEL 2	
Back of House	956 SF
Lobby	663 SF
Office	10,312 SF
	11,932 SF
B1 - LEVEL 3	
Back of House	956 SF
Lobby	663 SF
Office	10,313 SF
	11,932 SF
B1 - LEVEL 4	
Back of House	956 SF
Lobby	663 SF
Office	8,851 SF
	10,471 SF
GRAND TOTAL	45,944 SF

AREA LEGEND

- OFFICE
- CONDO
- RETAIL
- PARKING
- LOBBY
- OUTDOOR SPACE
- BACK OF HOUSE

5/23/2022 9:25:21 PM

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

1

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

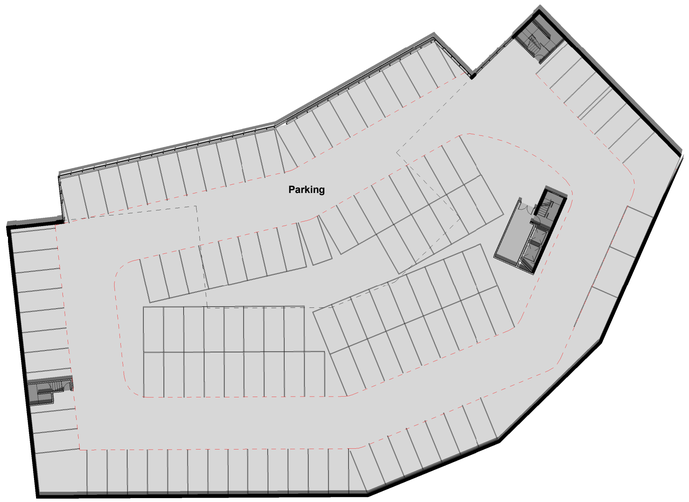
Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

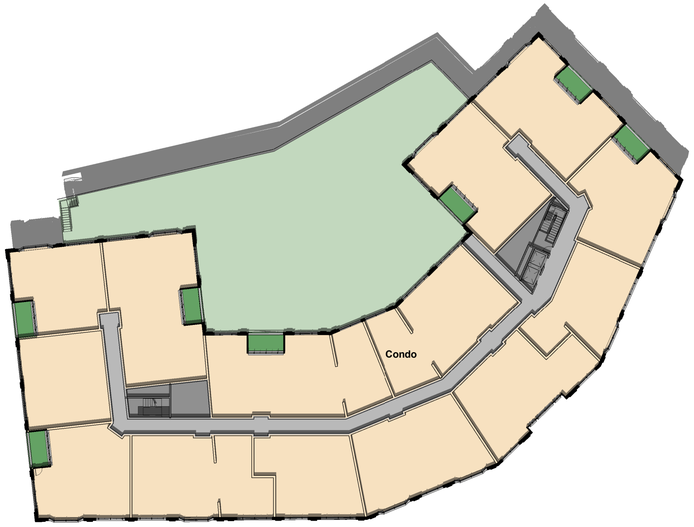
SHEET TITLE:

BUILDING 1 AREA PLANS

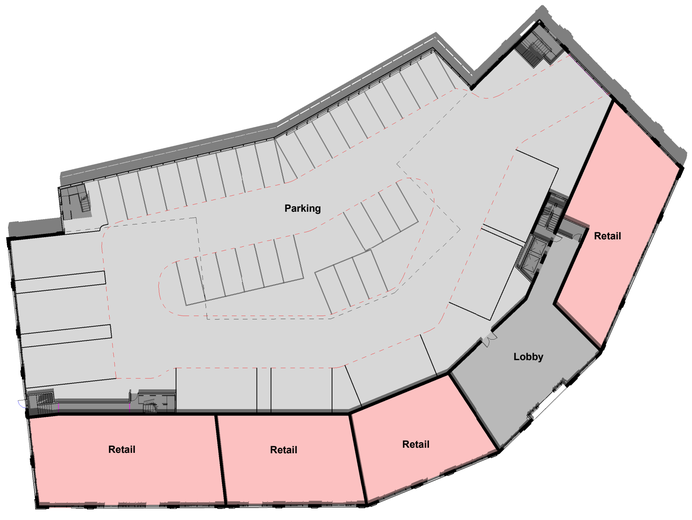
A - 101



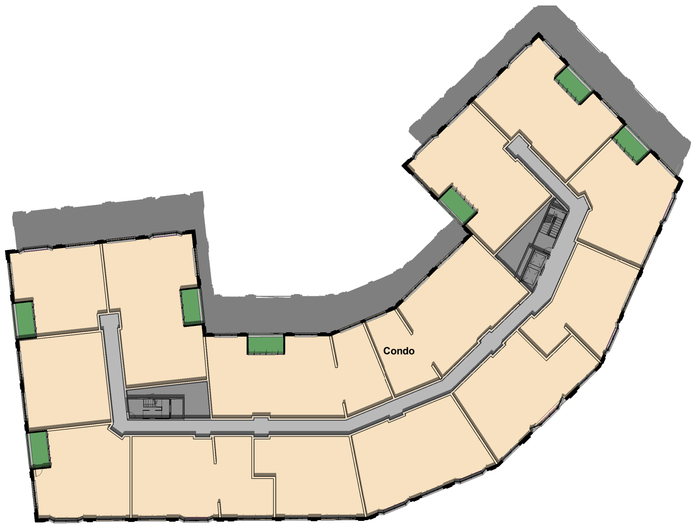
1 B2 - LEVEL 0
1/32" = 1'-0"



3 B2 - LEVEL 2
1/32" = 1'-0"



2 B2 - LEVEL 1
1/32" = 1'-0"



4 B2 - LEVEL 3-5
1/32" = 1'-0"

GROSS AREA CALCULATIONS

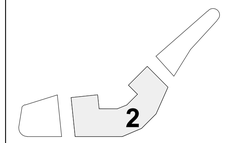
B2 - LEVEL 0	
Back of House	625 SF
Lobby	253 SF
Parking	38,270 SF
	39,148 SF
B2 - LEVEL 1	
Back of House	1,263 SF
Lobby	2,441 SF
Parking	25,590 SF
Retail	10,440 SF
	39,735 SF
B2 - LEVEL 2	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,109 SF
Lobby	2,619 SF
	29,754 SF
B2 - LEVEL 3	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
B2 - LEVEL 4	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
B2 - LEVEL 5	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
GRAND TOTAL	198,068 SF

AREA LEGEND

- OFFICE
- CONDO
- RETAIL
- PARKING
- LOBBY
- OUTDOOR SPACE
- BACK OF HOUSE

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:



SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

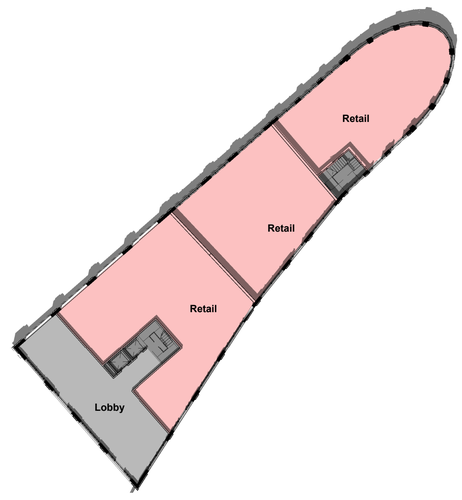
SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

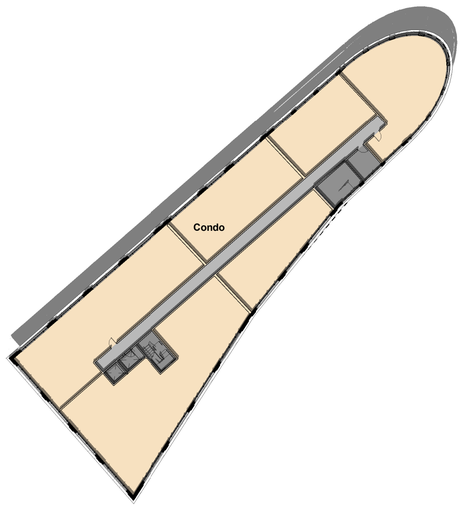
BUILDING 2 AREA PLANS

A - 102

5/23/2022 9:26:05 PM



1 B3 - LEVEL 1
1/32" = 1'-0"



2 B3 - LEVEL 2-5
1/32" = 1'-0"

GROSS AREA CALCULATIONS

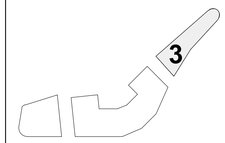
B3 - LEVEL 1	
Back of House	514 SF
Lobby	1,861 SF
Retail	8,829 SF
	11,203 SF
B3 - LEVEL 2	
Back of House	624 SF
Condo	9,675 SF
Lobby	904 SF
	11,203 SF
B3 - LEVEL 3	
Back of House	624 SF
Condo	9,675 SF
Lobby	904 SF
	11,203 SF
B3 - LEVEL 4	
Back of House	624 SF
Condo	9,675 SF
Lobby	904 SF
	11,203 SF
B3 - LEVEL 5	
Back of House	624 SF
Condo	9,675 SF
Lobby	904 SF
	11,203 SF
GRAND TOTAL	56,017 SF

AREA LEGEND

- OFFICE
- CONDO
- RETAIL
- PARKING
- LOBBY
- OUTDOOR SPACE
- BACK OF HOUSE

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:



SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

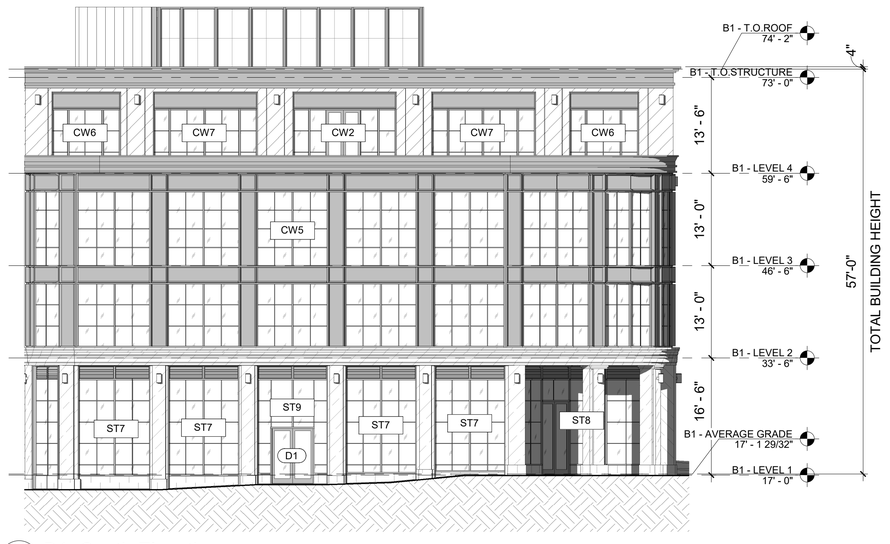
BUILDING 3 AREA PLANS

A - 103

5/23/2022 9:26:16 PM

MATERIAL LEGEND	
	BRICK
	LIMESTONE
	GRANITE
	METAL

1 B1 - East Elevation
3/32" = 1'-0"



2 B1- South Elevation
3/32" = 1'-0"

5/23/2022 9:26:35 PM

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

1

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

BUILDING 1 ELEVATION

A - 201

MATERIAL LEGEND	
	BRICK
	LIMESTONE
	GRANITE
	METAL

1 B1-West Elevation
3/32" = 1'-0"

2 B1- North Elevation
3/32" = 1'-0"

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

1

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

BUILDING 1 ELEVATION

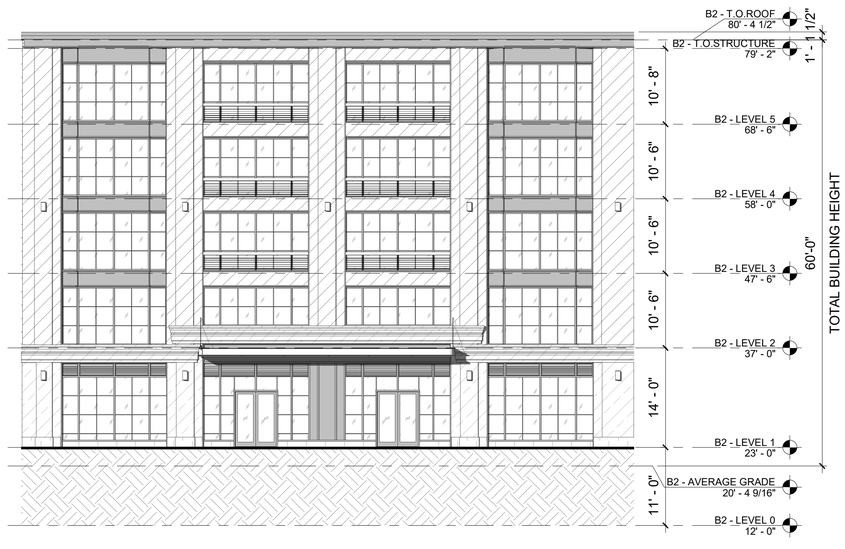
A - 202

5/23/2022 9:26:56 PM

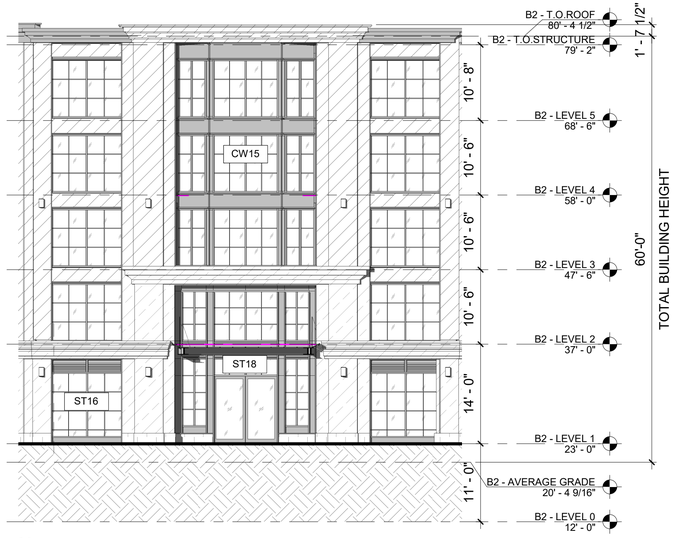
1 B2 - North Elevation
3/32" = 1'-0"

MATERIAL LEGEND

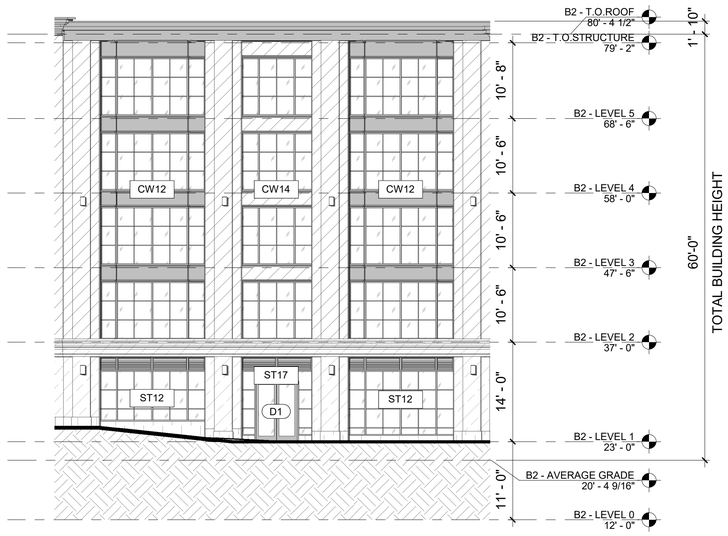
	BRICK
	LIMESTONE
	GRANITE
	METAL



2 B2 - East Elevation 1
3/32" = 1'-0"



3 B2 - East Elevation 2
3/32" = 1'-0"



4 B2 - South-East Elevation 1
3/32" = 1'-0"

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

2

SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

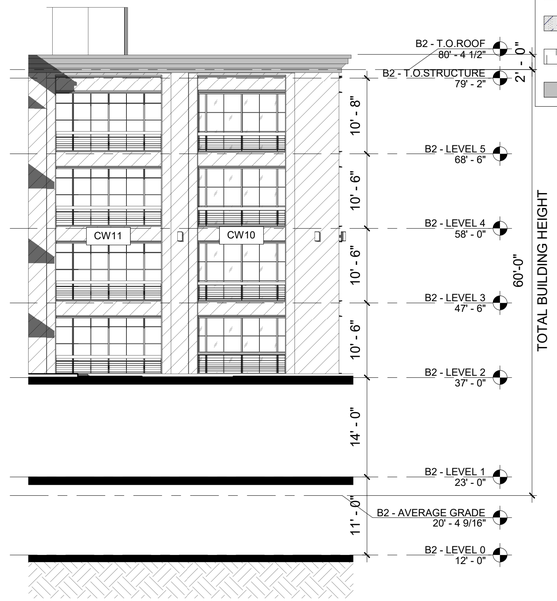
SHEET TITLE:

BUILDING 2 ELEVATION

A - 203

5/23/2022 9:27:29 PM

1 B2 - South-East Elevation 2
3/32" = 1'-0"

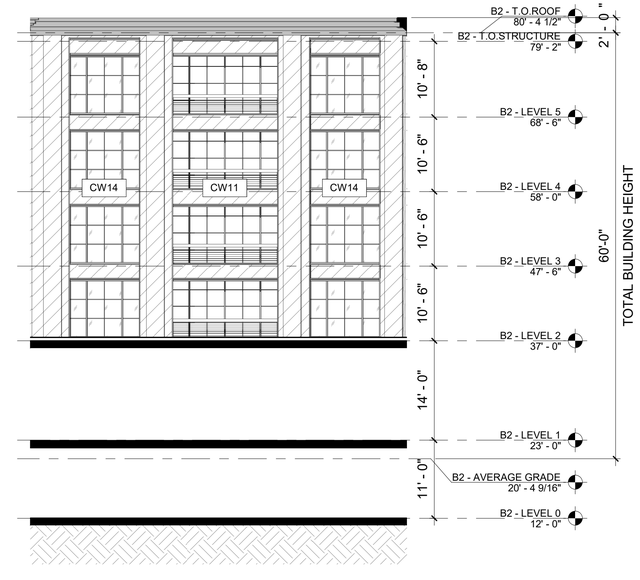


3 B2 - North Elevation 2
3/32" = 1'-0"

MATERIAL LEGEND

- BRICK
- LIMESTONE
- GRANITE
- METAL

2 B2- South Elevation
3/32" = 1'-0"



4 B2 - South-West Elevation 2
3/32" = 1'-0"

5/23/2022 9:27:52 PM

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

2

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

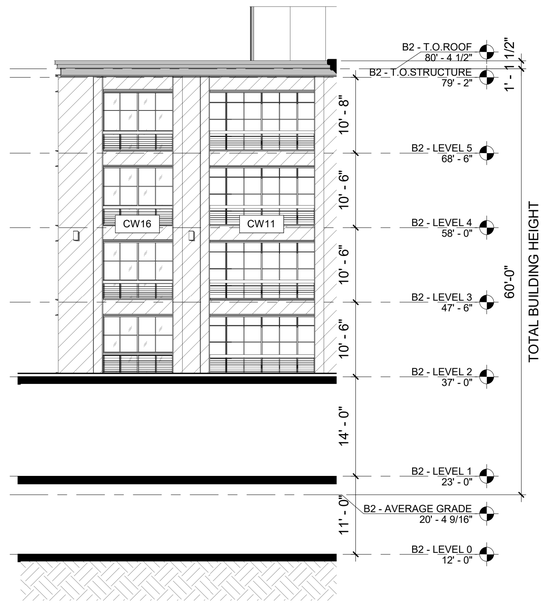
SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

BUILDING 2 ELEVATION

A - 204

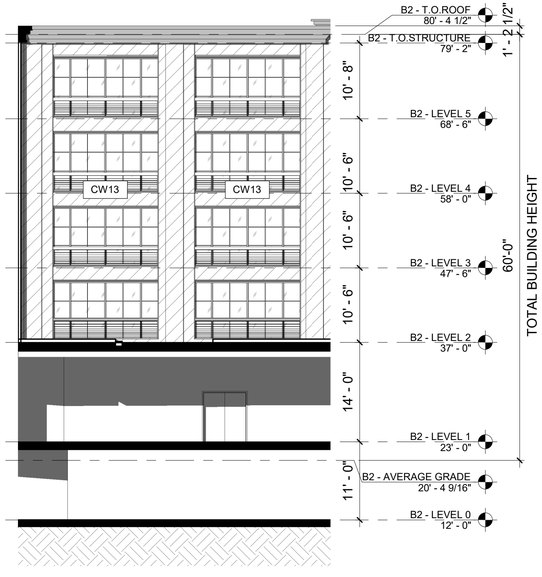
1 B2 - West Elevation 1
3/32" = 1'-0"



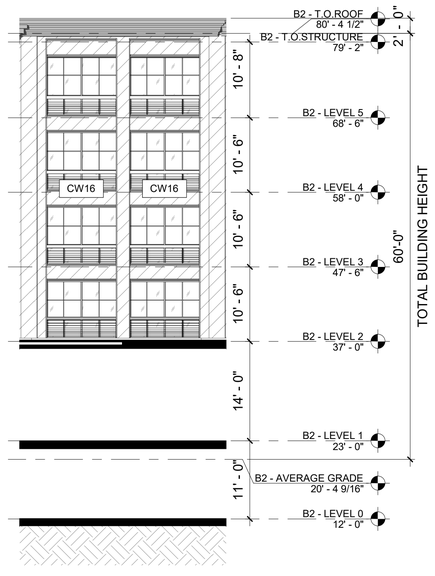
2 B2 - South Elevation 2
3/32" = 1'-0"

MATERIAL LEGEND

- BRICK
- LIMESTONE
- GRANITE
- METAL



3 B2 - West Elevation 2
3/32" = 1'-0"

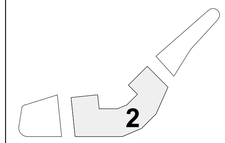


4 B2 - South West Elevation 1
3/32" = 1'-0"

5 B2 - North-West Elevation
3/32" = 1'-0"

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:



SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

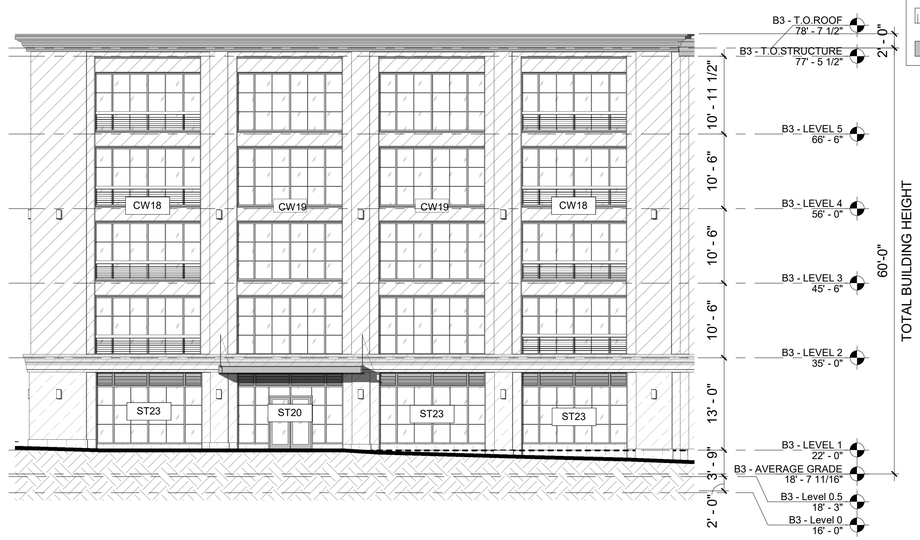
SHEET TITLE:

BUILDING 2 ELEVATION

A - 205

5/23/2022 9:28:17 PM

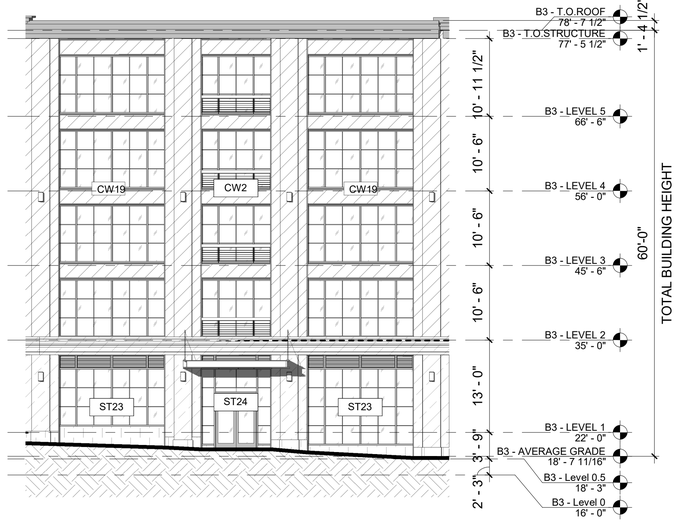
1 B3 - South Elevation
3/32" = 1'-0"



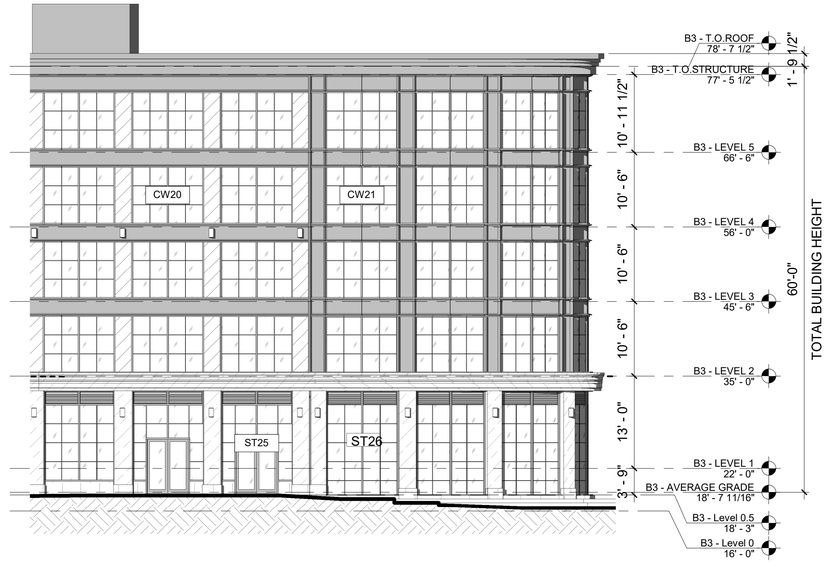
2 B3 -East Elevation 1
3/32" = 1'-0"

MATERIAL LEGEND

- BRICK
- LIMESTONE
- GRANITE
- METAL



3 B3- East Elevation 2
3/32" = 1'-0"



4 B3- East Elevation 3
3/32" = 1'-0"

5/23/2022 9:28:39 PM

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

3

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

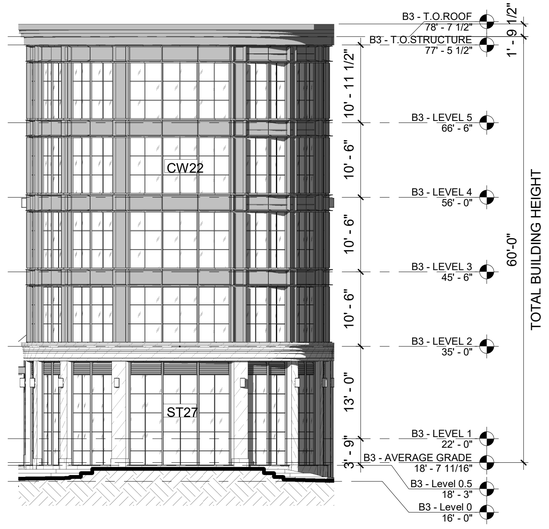
Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

BUILDING 3 ELEVATION

A - 206



1 B3 - North Elevation
3/32" = 1'-0"

2 B3 -West Elevation
3/32" = 1'-0"

MATERIAL LEGEND

	BRICK
	LIMESTONE
	GRANITE
	METAL

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:

3

SEAL / SIGNATURE

05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

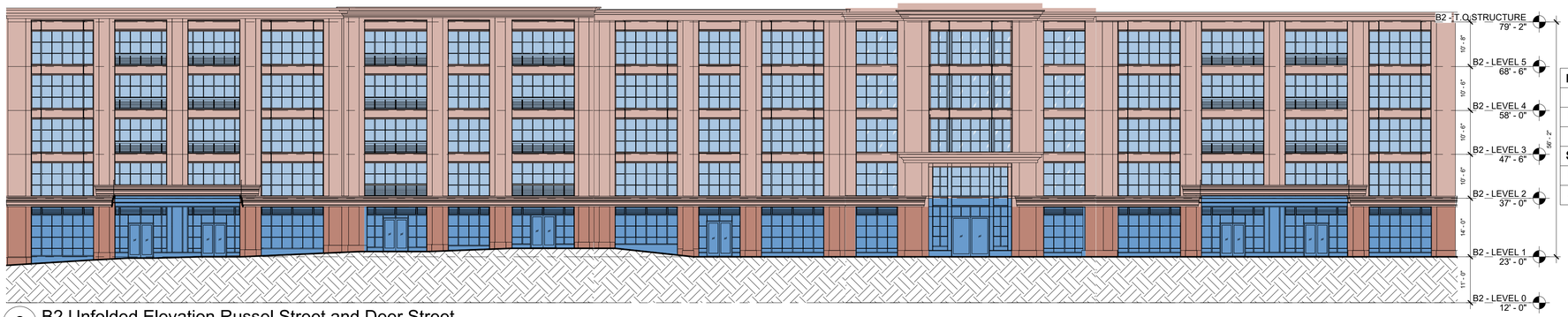
BUILDING 3 ELEVATION

A - 207

5/23/2022 9:29:06 PM

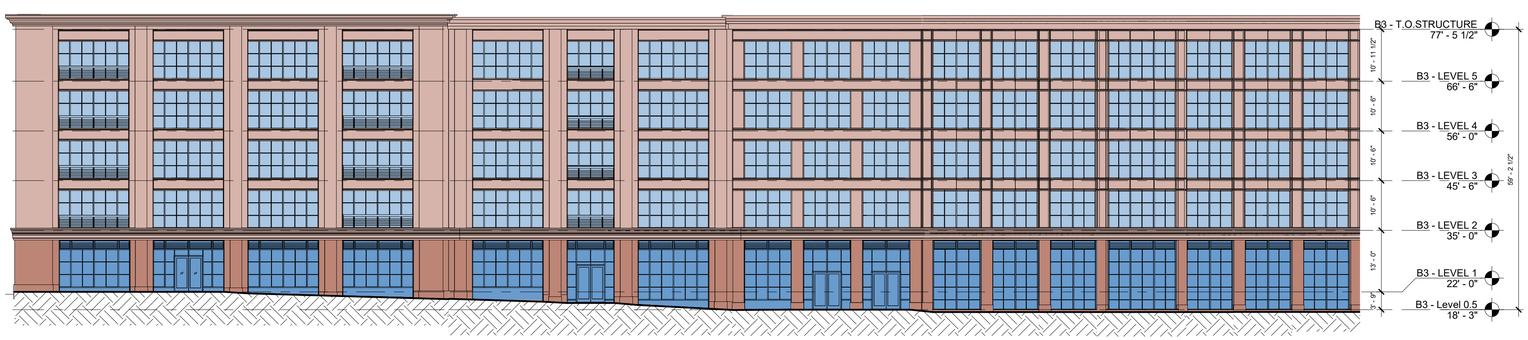
1 B1 Unfolded Elevation Deer Street And Maplewood Avenue
1/16" = 1'-0"

Facade Glazing		
Facade	Glazing	Percentage
8884.76 SF	4059.69 SF	45.69%
Shopfront Facade		
Facade	Glazing	Percentage
3228.43 SF	2411.33 SF	74.69%



2 B2 Unfolded Elevation Russel Street and Deer Street
1/16" = 1'-0"

Facade Glazing		
Facade	Glazing	Percentage
16269.4 SF	7016.41 SF	43.13%
Shopfront Facade		
Facade	Glazing	Percentage
4171.77 SF	3041.62 SF	72.91%



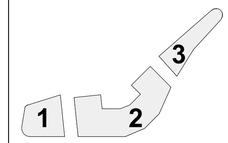
3 B3 Unfolded Elevation Russel Street And Green Street
1/16" = 1'-0"

Facade Glazing		
Facade	Glazing	Percentage
13590.1 SF	6313.03 SF	46.45%
Shopfront Facade		
Facade	Glazing	Percentage
3892.94 SF	2769.66 SF	71.15%

5/23/2022 9:29:20 PM

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/23/22	TAC Work Session

SCALE	**As indicated**
DATE ISSUED	**05/23/22**
PROJECT NO	**4979.00**
DRAWN BY	**Author**
CHECKED BY	**Checker**

SHEET TITLE:

GLAZING STUDY

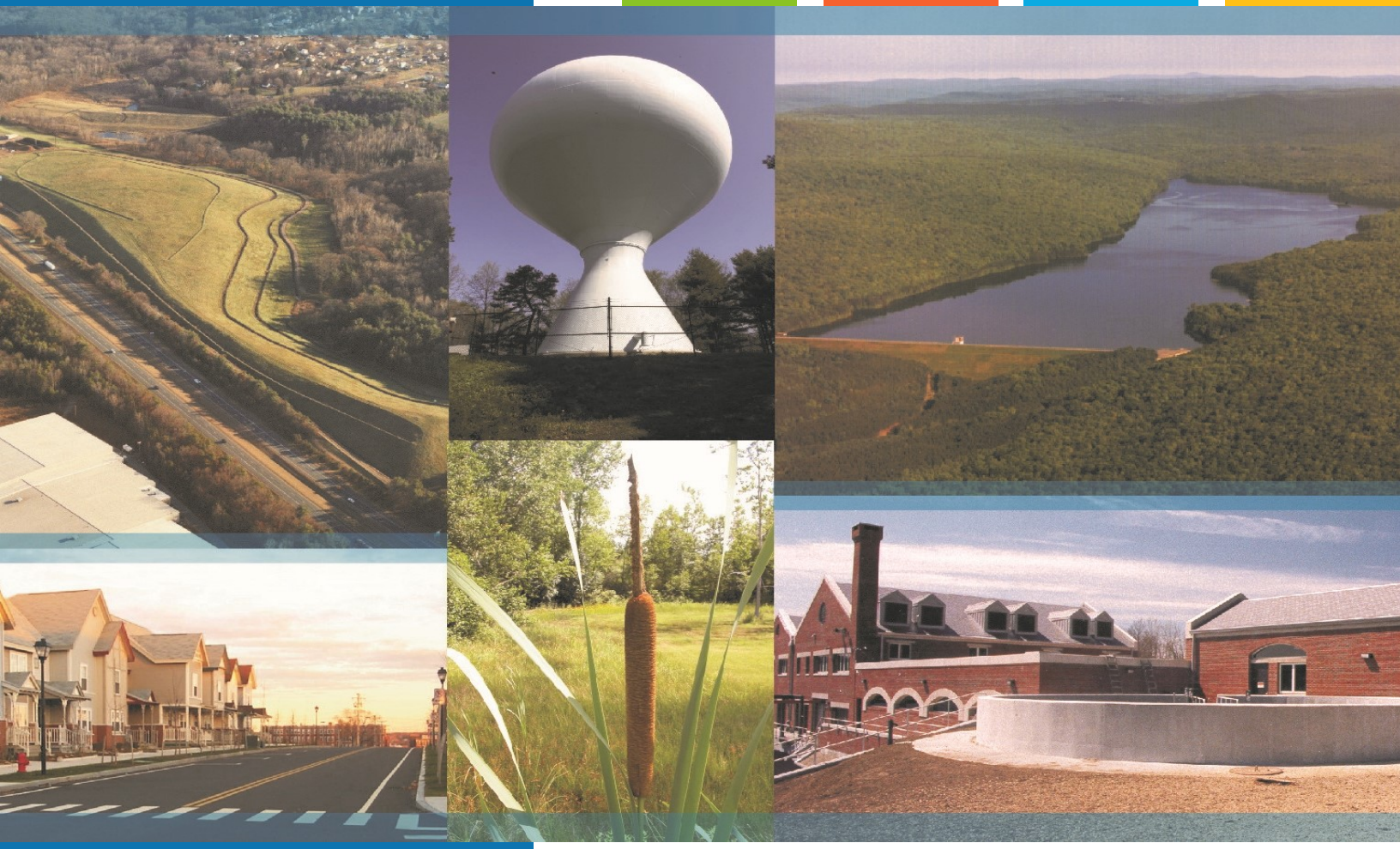
A - 208

Russell Street - City of Portsmouth TAC STIPULATIONS RESPONSE

Date: November 23, 2022

City of Portsmouth TAC, November 1, 2022:			
	TAC Stipulations	**Applicant Response**	**Sheet**
TAC Stipulations from 11/9 Correspondence:			
1	Applicant will replace the speed bump with a speed hump and will include construction details consistent with ITE standards.	The speed bump has been changed to a speed hump on the site plan and detail.	C-102, C-102.1, & C-510
2	The farthest east parking space on Deer Street next to the fire hydrant will be eliminated.	The parking space mentioned has been removed.	C-102 & C-102.1
3	The applicant will work with the Department of Public Works to coordinate the relocation of the Sewer Main.	The applicant has coordinated with the Department of Public Works. No portion of the building is located in the existing City sewer easement. The applicant has agreed to coordinate an agreement with the City that describes how the parties will cooperate at the applicant's driveway when the City relocates the sewer into Maplewood Avenue in the future.	C-101, C-102, C-102.1, C-103, & C-104
4	Applicants will update plans to include a high visibility at-grade crosswalk with striping and ADA compliant ramps and RRFB's to be reviewed and approved by the Department of Works.	The crosswalk has been updated to be an at-grade crosswalk with RRFBs on either side. Coordination and Agreement with DPW has been completed.	C-102 & C-102.1
5	Per NHDOT standards applicant will update plans to show all street lights on either end of crosswalks will be no less than 10 feet from the nearest edge of the crosswalk with luminaire centered over the travel lane of the street, and RRFB push buttons will be no more than 5 feet from the edge of crosswalks and no more than 10 inches from level landings.	Street lights have been added to the site plan no less than 10 feet from the crosswalk and are pointed at the travel lane centerline. RRFBs have also been added per the requirements of this stipulation.	C-102 & C-102.1
6	Applicant will update plans to provide sharrow markings every 100 feet.	Sharrow markings have been added every 100 feet.	C-102 & C-102.1
7	Per MUTCD requirements, applicants will update plans, related notes, and sign summary (sheet C-503) to include a ONE WAY sign at the intersection of Maplewood Ave and the rear shared roadway and a DO NOT ENTER sign at the end of the rear shared roadway at its intersection with Green St.	Per further coordination with City Staff, two "ONE WAY" & one "DO NOT ENTER" signs have been added to the intersection of Green Street and the rear access drive. Sign details have been provided on the detail sheet.	C-102, C-102.1, & C-503
8	Applicant will remove the left/through pavement arrow on Deer Street at Russell Street.	The left/through pavement arrow has been removed from this intersection.	C-102 & C-102.1
9	Applicant will provide borings data and other supporting information to demonstrate why on-site infiltration is not practical in this redevelopment. Data and supporting information to be submitted to CMA Engineers for reviewed. The Department of Public Works to review final comments by CMA.	Boring Data and Ledge Plan have been included in the Drainage Peer Review Response letter. This letter clarifies why on-site infiltration is not practical for this redevelopment. This Response Letter has been included in this submission.	Drainage Peer Review Response Letter
10	The applicant will update plans, related notes, and sign summary (sheet C-503) to include the installation of a MUTCD-compliant stop sign (R1-1) at the northerly end of the rear access aisle where it meets Green Street.	A stop sign has been added at the intersection of the rear access drive and Green Street. A detail has also been added.	C-102, C-102.1, & C-503
11	Applicant will update plans, related notes, and sign summary (sheet C-503) to provide clearly viable signed to indicate "No Public Parking" along both ends of the driveway northerly driveway to deter public parking and unnecessary on-site conflicts.	Per conversations with City Staff, one "No Public Parking" has been added to the site plan at the shared driveway between buildings 2 & 3. A detail for this sign has been added to the detail sheets.	C-102, C-102.1, & C-503
12	Applicant will provide a letter with their next submission addressing the changes that have been made to the plan set as a result of the TAC stipulations of approval or further project development.	This Stipulation Response Letter has been prepared to address any changes that have been made per the TAC Stipulations.	Stipulation Response Letter
13	Applicant will update the access easement plan to provide a temporary construction access easement across the entirety of map 119 lot 4.	A temporary construction access and grading easement has been added across the entirety of Map 119 Lot 4.	C-203

Prior to Building Permit Issuance:			
14	Proposed tree grates, planting details, and planting species will be require approval from the Trees and Greenery Committee.	Acknowledged.	
15	Proposed changes to on-street parking will require approval from the Trees and Greenery Committee and the City Council.	Acknowledged.	
16	Applicant will copy the City of Portsmouth DPW on all related correspondence because this infrastructure lies within the City's right-of-way and can affect traffic operations at the adjacent municipal intersections. The location of the proposed sign cluster at the northerly end of the rear access aisle will need to be coordinated with the ultimate location of the Green Street sidewalk/railroad crossing treatment.	Acknowledged.	
17	Fair share contribution for the roundabout at Market Street and Russell Street.	Acknowledged.	



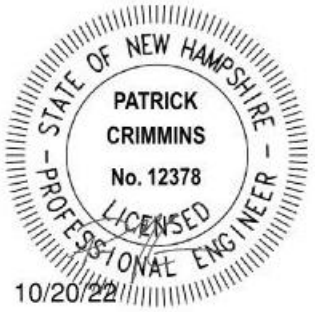
North End Mixed Use Development
Russell & Deer Street
Portsmouth, NH

Drainage Analysis

Port Harbor Land, LLC

May 24, 2022

Last Revised October 20, 2022



Tighe&Bond

100% Recyclable

Section 1
Project Description

The project is located at 2 Russell Street, Deer Street & 250 Market Street consisting of properties identified as Map 118 Lot 28, Map 119 Lot 1-1C & Lot 4, Map 124 Lot 12, and Map 125 Lot 21 on the City of Portsmouth Tax Maps. The properties identified as Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21 (proposed redevelopment parcels) are the existing parcels proposed to be redeveloped are bound by Deer Street to the south, Maplewood Avenue to the west, the railroad to the north and Russell Street to the east.

The proposed project will include the construction of three buildings consisting of office, retail/commercial, and residential uses. Building 1 is a proposed 4-story office building at the corner of Deer Street and Maplewood Avenue, Building 2 is a proposed 5-story mixed-use residential building at the corner of Deer Street and Russell Street with below ground parking, first floor residential lobby, commercial space and parking and 56 upper floor residential units, and Building 3 is a proposed 5-story mixed-use residential building along Russell Street with first floor residential lobby and commercial space and 24 upper floor residential units.

1.1 On-Site Soil Description

The proposed redevelopment parcels lots currently consist of a large surface parking lot which is mainly used by the Sheraton Hotel. There are some small patches of gravel and grass where the site abuts the railroad property and a ledge outcropping to the north.

A web soil survey was completed for the project and can be found in Appendix A of this report. Based on the soil survey, the runoff analyzed within these studies has been modeled using Hydrologic Soil Group D and Hydrologic Soil Group A soils.

1.2 Pre- and Post-Development Comparison

The pre-development and post-development watershed areas have been analyzed at three (3) point of analysis. While the points of analysis have remained unchanged, the contributing sub-catchment areas varied between pre-development and post-development conditions. These adjustments were made to reflect the differences in drainage patterns between the existing and proposed conditions. The overall area analyzed as part of this drainage analysis was held constant. PA-1 assesses flows that discharge to a closed drainage system on Maplewood Avenue, which flows to the North Mill Pond and ultimately to the Piscataqua River. PA-2 evaluates the flow the discharges surface water toward the existing railroad tracks to the west of the project. PA-3 assesses flows that discharge to a separate closed drainage system along Russell Street that ultimately discharges to the Piscataqua River.

The peak discharge rates at these points of analysis were determined by analyzing Type III, 24-hour storm events. The rainfall data for these storm events were obtained from the data published by the Northeast Regional Climate Center at Cornell University which can be found in Appendix B.

Additionally, the site is located within a Coastal and Great Bay Community, therefore an added factor of safety of 15% was included as required by Env-Wq 1503.08(l).

1.3 Calculation Methods

The design storms analyzed in this study are the 2-year, 10-year, 25-year and 50-year 24-hour duration storm events. The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. The peak discharge rates were determined by analyzing Type III 24-hour storm events. The rainfall data for these storm events were obtained from the data published by the Northeast Regional Climate Center at Cornell University, with an additional 15% added factor of safety as required by Env-Wq 1503.08(l).

The time of concentration was computed using the TR-55 Method, which provides a means of determining the time for an entire watershed to contribute runoff to a specific location via sheet flows, shallow concentrated flow, and channel flow. Runoff curve numbers were calculated by estimating the coverage areas and then summing the curve number for the coverage area as a percent of the entire watershed.

References:

1. HydroCAD Stormwater Modeling System, by HydroCAD Software Solutions LLC, Chocorua, New Hampshire.
2. New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Selection and Design, December 2008.
3. "Extreme Precipitation in New York & New England." Extreme Precipitation in New York & New England by Northeast Regional Climate Center (NRCC), 26 June 2012.

Section 2
Pre-Development Conditions

To analyze the pre-development condition, the site has been divided into three (3) distinct points of analysis (PA-1, PA-2, & PA-3). These points of analysis and watersheds are depicted on the plan entitled "Pre-Development Watershed Plan", Sheet C-801.

The point of analysis and its contributing watershed areas are described below:

Point of Analysis (PA-1)

Pre-development Watershed 1.0 (PRE 1.0) is comprised of mostly impervious surfaces from portions of the existing paved parking area, Deer Street, and concrete sidewalks, with pockets of grass. Runoff from this watershed area sheets via overland flow to either Deer Street or Maplewood Avenue and carried along the gutter line at the edge of the road to various catch basins connecting to a closed drainage system. This closed drainage system along Maplewood Avenue discharging to North Mill Pond and ultimately the Piscataqua River.

Point of Analysis (PA-2)

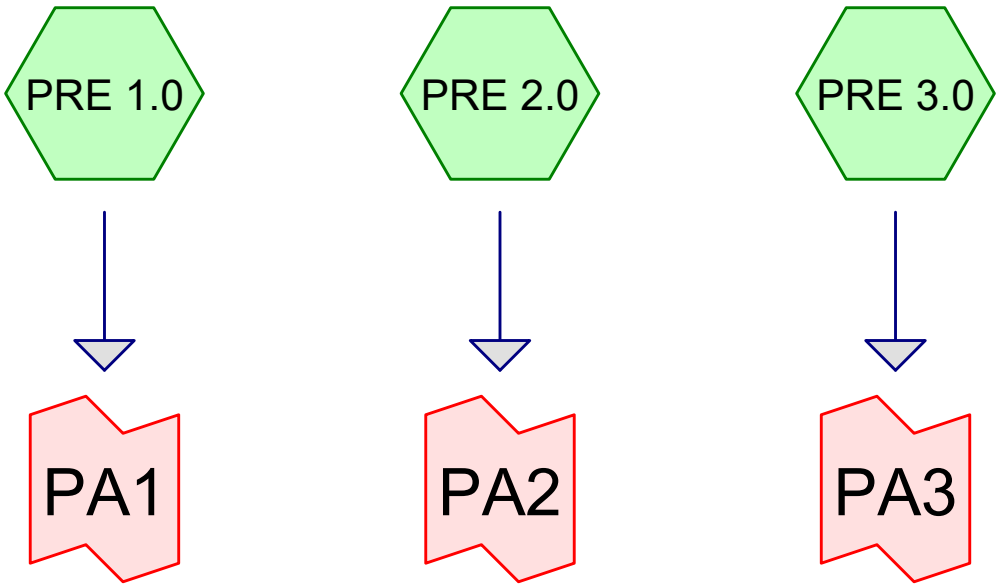
Pre-development Watershed 2.0 (PRE 2.0) is comprised of mainly impervious surfaces from the existing paved parking area with pockets of grass and gravel. Runoff from this watershed area sheets via overland flow to a gravel swale along the railroad tracks. Runoff directed toward the railroad tracks travels where it infiltrates.

Point of Analysis (PA-3)

Pre-development Watershed 3.0 (PRE 3.0) is comprised of mostly impervious surfaces including the existing Russell Street, paved parking, and concrete sidewalks. Additionally, there are some small portions of Ledge and grassed landscaped areas. Runoff from this watershed area travels via overland flow to a closed drainage system along Russell Street discharge to the Piscataqua River.

2.1 Pre-Development Calculations

2.2 Pre-Development Watershed Plan



Subcat Reach Pond Link

Routing Diagram for T-5037-002 PRE
Prepared by Tighe & Bond, Printed 7/20/2022

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
12,636	39	>75% Grass cover, Good, HSG A (PRE 2.0, PRE 3.0)
10,382	80	>75% Grass cover, Good, HSG D (PRE 1.0, PRE 2.0, PRE 3.0)
2,104	96	Gravel surface, HSG A (PRE 2.0)
5,270	96	Gravel surface, HSG D (PRE 2.0)
3,120	98	Ledge, HSG A (PRE 2.0, PRE 3.0)
62,458	98	Unconnected pavement, HSG A (PRE 2.0, PRE 3.0)
63,417	98	Unconnected pavement, HSG D (PRE 1.0, PRE 2.0, PRE 3.0)
6,029	30	Woods, Good, HSG A (PRE 3.0)
165,416	**90**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
86,347	HSG A	PRE 2.0, PRE 3.0
0	HSG B	
0	HSG C	
79,069	HSG D	PRE 1.0, PRE 2.0, PRE 3.0
0	Other	
165,416		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PRE 1.0: Runoff Area=14,937 sf 79.04% Impervious Runoff Depth>3.01"
Flow Length=290' Tc=5.0 min CN=94 Runoff=1.16 cfs 3,746 cf

Subcatchment PRE 2.0: Runoff Area=78,192 sf 76.16% Impervious Runoff Depth>2.91"
Flow Length=444' Tc=5.0 min CN=93 Runoff=5.91 cfs 18,945 cf

Subcatchment PRE 3.0: Runoff Area=72,287 sf 79.73% Impervious Runoff Depth>2.26"
Flow Length=470' Tc=5.0 min CN=86 Runoff=4.38 cfs 13,596 cf

Link PA1: Inflow=1.16 cfs 3,746 cf
Primary=1.16 cfs 3,746 cf

Link PA2: Inflow=5.91 cfs 18,945 cf
Primary=5.91 cfs 18,945 cf

Link PA3: Inflow=4.38 cfs 13,596 cf
Primary=4.38 cfs 13,596 cf

Total Runoff Area = 165,416 sf Runoff Volume = 36,287 cf Average Runoff Depth = 2.63"
22.02% Pervious = 36,421 sf 77.98% Impervious = 128,995 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PRE 1.0: Runoff Area=14,937 sf 79.04% Impervious Runoff Depth>4.89"
Flow Length=290' Tc=5.0 min CN=94 Runoff=1.83 cfs 6,085 cf

Subcatchment PRE 2.0: Runoff Area=78,192 sf 76.16% Impervious Runoff Depth>4.78"
Flow Length=444' Tc=5.0 min CN=93 Runoff=9.44 cfs 31,119 cf

Subcatchment PRE 3.0: Runoff Area=72,287 sf 79.73% Impervious Runoff Depth>4.02"
Flow Length=470' Tc=5.0 min CN=86 Runoff=7.71 cfs 24,208 cf

Link PA1: Inflow=1.83 cfs 6,085 cf
Primary=1.83 cfs 6,085 cf

Link PA2: Inflow=9.44 cfs 31,119 cf
Primary=9.44 cfs 31,119 cf

Link PA3: Inflow=7.71 cfs 24,208 cf
Primary=7.71 cfs 24,208 cf

Total Runoff Area = 165,416 sf Runoff Volume = 61,412 cf Average Runoff Depth = 4.46"
22.02% Pervious = 36,421 sf 77.98% Impervious = 128,995 sf

Summary for Subcatchment PRE 1.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.83 cfs @ 12.07 hrs, Volume= 6,085 cf, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

Area (sf)	CN	Description
3,131	80	>75% Grass cover, Good, HSG D
11,806	98	Unconnected pavement, HSG D
14,937	94	Weighted Average
3,131		20.96% Pervious Area
11,806		79.04% Impervious Area
11,806		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0750	2.50		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.2	47	0.0310	3.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	143	0.0053	3.30	2.59	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
1.6	290	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 2.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 9.44 cfs @ 12.07 hrs, Volume= 31,119 cf, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
*	1,504	98	Ledge, HSG A
	4,951	39	>75% Grass cover, Good, HSG A
	2,104	96	Gravel surface, HSG A
	12,416	98	Unconnected pavement, HSG A
	6,315	80	>75% Grass cover, Good, HSG D
	5,270	96	Gravel surface, HSG D
	45,632	98	Unconnected pavement, HSG D
	78,192	93	Weighted Average
	18,640		23.84% Pervious Area
	59,552		76.16% Impervious Area
	58,048		97.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0750	2.50		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
2.5	344	0.0129	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	444	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 3.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.71 cfs @ 12.07 hrs, Volume= 24,208 cf, Depth> 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
*	1,616	98	Ledge, HSG A
	7,685	39	>75% Grass cover, Good, HSG A
	6,029	30	Woods, Good, HSG A
	50,042	98	Unconnected pavement, HSG A
	936	80	>75% Grass cover, Good, HSG D
	5,979	98	Unconnected pavement, HSG D
	72,287	86	Weighted Average
	14,650		20.27% Pervious Area
	57,637		79.73% Impervious Area
	56,021		97.20% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0140	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.1	15	0.1670	2.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	140	0.0110	2.13		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	290	0.0300	7.86	6.17	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.2	470	Total, Increased to minimum Tc = 5.0 min			

Summary for Link PA1:

Inflow Area = 14,937 sf, 79.04% Impervious, Inflow Depth > 4.89" for 10-Yr event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 6,085 cf
Primary = 1.83 cfs @ 12.07 hrs, Volume= 6,085 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PA2:

Inflow Area = 78,192 sf, 76.16% Impervious, Inflow Depth > 4.78" for 10-Yr event
Inflow = 9.44 cfs @ 12.07 hrs, Volume= 31,119 cf
Primary = 9.44 cfs @ 12.07 hrs, Volume= 31,119 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PA3:

Inflow Area = 72,287 sf, 79.73% Impervious, Inflow Depth > 4.02" for 10-Yr event
Inflow = 7.71 cfs @ 12.07 hrs, Volume= 24,208 cf
Primary = 7.71 cfs @ 12.07 hrs, Volume= 24,208 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PRE 1.0: Runoff Area=14,937 sf 79.04% Impervious Runoff Depth>6.36"
Flow Length=290' Tc=5.0 min CN=94 Runoff=2.34 cfs 7,922 cf

Subcatchment PRE 2.0: Runoff Area=78,192 sf 76.16% Impervious Runoff Depth>6.25"
Flow Length=444' Tc=5.0 min CN=93 Runoff=12.16 cfs 40,708 cf

Subcatchment PRE 3.0: Runoff Area=72,287 sf 79.73% Impervious Runoff Depth>5.44"
Flow Length=470' Tc=5.0 min CN=86 Runoff=10.30 cfs 32,768 cf

Link PA1: Inflow=2.34 cfs 7,922 cf
Primary=2.34 cfs 7,922 cf

Link PA2: Inflow=12.16 cfs 40,708 cf
Primary=12.16 cfs 40,708 cf

Link PA3: Inflow=10.30 cfs 32,768 cf
Primary=10.30 cfs 32,768 cf

Total Runoff Area = 165,416 sf Runoff Volume = 81,398 cf Average Runoff Depth = 5.90"
22.02% Pervious = 36,421 sf 77.98% Impervious = 128,995 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PRE 1.0: Runoff Area=14,937 sf 79.04% Impervious Runoff Depth>7.76"
Flow Length=290' Tc=5.0 min CN=94 Runoff=2.83 cfs 9,654 cf

Subcatchment PRE 2.0: Runoff Area=78,192 sf 76.16% Impervious Runoff Depth>7.64"
Flow Length=444' Tc=5.0 min CN=93 Runoff=14.70 cfs 49,752 cf

Subcatchment PRE 3.0: Runoff Area=72,287 sf 79.73% Impervious Runoff Depth>6.79"
Flow Length=470' Tc=5.0 min CN=86 Runoff=12.71 cfs 40,925 cf

Link PA1: Inflow=2.83 cfs 9,654 cf
Primary=2.83 cfs 9,654 cf

Link PA2: Inflow=14.70 cfs 49,752 cf
Primary=14.70 cfs 49,752 cf

Link PA3: Inflow=12.71 cfs 40,925 cf
Primary=12.71 cfs 40,925 cf

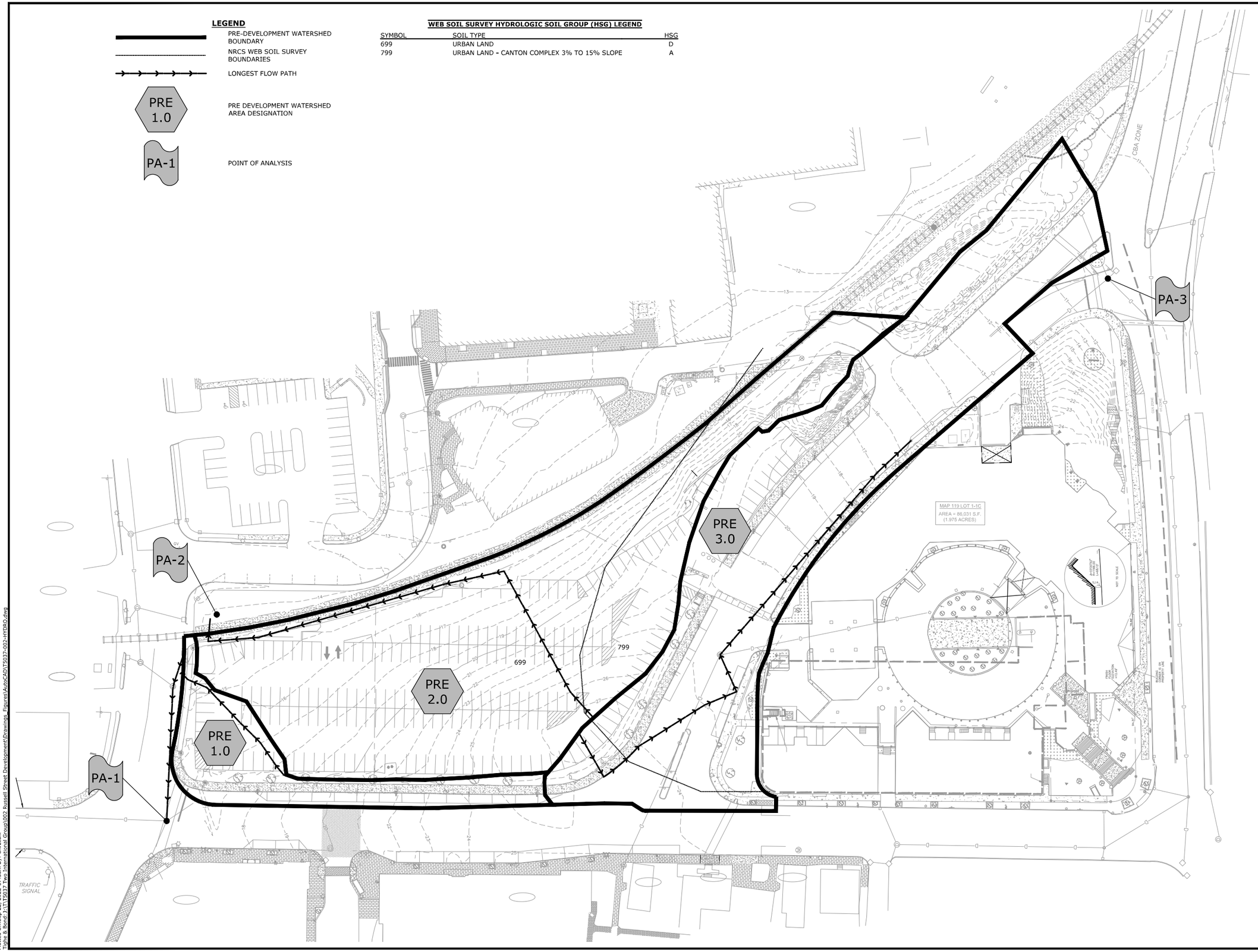
Total Runoff Area = 165,416 sf Runoff Volume = 100,331 cf Average Runoff Depth = 7.28"
22.02% Pervious = 36,421 sf 77.98% Impervious = 128,995 sf

LEGEND

- PRE-DEVELOPMENT WATERSHED BOUNDARY
- NRCS WEB SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- PRE 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- PA-1 — POINT OF ANALYSIS

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE	HSG
699	URBAN LAND	D
799	URBAN LAND - CANTON COMPLEX 3% TO 15% SLOPE	A



Tighe&Bond

0 40' 80'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D		
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-HYDRO.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

PRE-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-801

Last Saved: 9/30/2022
Plotted: Oct 03, 2022 - 8:45am By: CKrzcuik
Tighe & Bond J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-HYDRO.dwg

Section 3
Post-Development Conditions

The post-development condition was analyzed by dividing the watersheds into six (6) watershed areas. Stormwater runoff from these sub-catchment areas flow via subsurface drainage systems prior to discharging to the city's closed drainage system. Like the pre-development condition, flows from these sub-catchment areas are modeled at three point of analysis (PA-1, PA-2 & PA-3).

Two underground detention systems are included on the development site for the purpose of mitigating peak flowrates. Additionally, three Jellyfish Filter units are proposed for treatment purposes. The two treatment units located post detention, are designed that flows greater than the 2-year storm event bypass these units. The standalone treatment unit is designed to pass the larger storm events.

These points of analysis and their sub-catchment areas are depicted on the plan entitled "Post-Development Watershed Plan," Sheet C-802. The point of analysis and it's contributing watershed areas are described below:

Point of Analysis (PA-1)

Post-development Watershed 1.0 (POST 1.0) is comprised mostly of brick sidewalks and seating areas along Deer Street and Maplewood Avenue. Runoff from this sub-catchment travels via overland flow to the existing closed drainage system on Maplewood Avenue.

Post-development Watershed 1.1 (Post 1.1) is comprised of the majority of the development lot. This watershed contains proposed buildings 1 and 2 as well as portions of the mews community space. Runoff from this watershed is captured by various yard drains and roof leaders connecting to a proposed underground detention system (Pond 1.1). The detention system discharges to the treatment unit, a Contech Jellyfish Stormwater Filter (Pond PJFF 1). Flows exiting the Jellyfish Filter discharge to the closed drainage system along Maplewood Avenue (PA-1).

Point of Analysis (PA-2)

Post-development Watershed 2.0 (POST 2.0) is comprised mostly of the brick fire, pedestrian, and bicycle access drive. Additionally, this watershed has portions of gravel adjacent to the railroad tracks. Like the pre-development conditions, runoff from this watershed travels parallel to the railroad tracks prior to infiltrating into the ground.

Point of Analysis (PA-3)

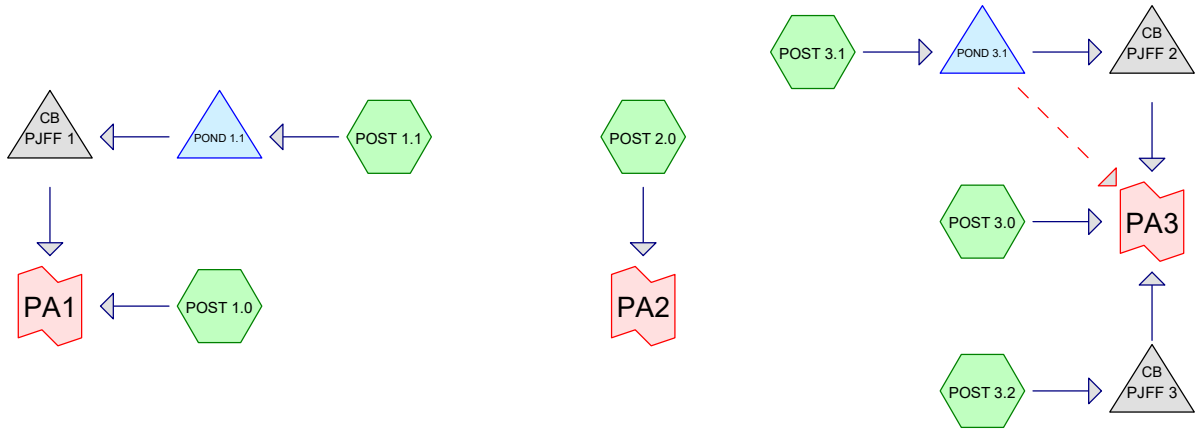
Post-development Watershed 3.0 (POST 3.0) is comprised of mostly impervious surfaces including the proposed realigned Russell Street and sidewalks adjacent to the proposed building. Additionally, there are some small portions of grassed landscaped areas along the street. Runoff from this watershed area travels via overland flow to a closed drainage system along Russell Street discharge to the Piscataqua River.

Post-development Watershed 3.1 (POST 3.1) is comprised of the proposed building 3 and the shared access driveway between buildings 2 and 3. Runoff from this watershed is captured by a catch basin and roof leader connecting to a proposed underground detention system (Pond 3.1). The detention system discharges to the treatment unit, a Contech Jellyfish Stormwater Filter (Pond PJFF 2). Flows exiting the Jellyfish Filter discharge to the closed drainage system along Russell Street (PA-3).

Post-development Watershed 3.2 (POST 3.2) is comprised of the shared access driveway between buildings 2 and 3. Runoff from this watershed is captured by a catch basin which discharges to the treatment unit, a Contech Jellyfish Stormwater Filter (Pond PJFF 3). Flows exiting the Jellyfish Filter discharge to the closed drainage system along Russell Street (PA-3).

3.1 Post-Development Calculations

3.2 Post-Development Watershed Plan



Subcat Reach Pond Link

Routing Diagram for T-5037-002 POST
Prepared by Tighe & Bond, Printed 9/28/2022

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
11,117	39	>75% Grass cover, Good, HSG A (POST 2.0, POST 3.0, POST 3.2)
2,460	80	>75% Grass cover, Good, HSG D (POST 1.0, POST 1.1, POST 3.0)
1,125	96	Gravel surface, HSG A (POST 2.0)
6,672	96	Gravel surface, HSG D (POST 2.0)
51,328	98	Paved parking, HSG A (POST 2.0, POST 3.0, POST 3.2)
26,589	98	Paved parking, HSG D (POST 1.0, POST 1.1, POST 2.0, POST 3.0, POST 3.2)
20,986	98	Roofs, HSG A (POST 1.1, POST 3.1)
43,348	98	Unconnected roofs, HSG D (POST 1.1)
1,791	30	Woods, Good, HSG A (POST 3.0)
165,416	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
86,347	HSG A	POST 1.1, POST 2.0, POST 3.0, POST 3.1, POST 3.2
0	HSG B	
0	HSG C	
79,069	HSG D	POST 1.0, POST 1.1, POST 2.0, POST 3.0, POST 3.2
0	Other	
165,416		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1.0: Runoff Area=8,504 sf 88.63% Impervious Runoff Depth>3.22"
Flow Length=336' Tc=5.0 min CN=96 Runoff=0.68 cfs 2,283 cf

Subcatchment POST 1.1: Runoff Area=56,100 sf 98.25% Impervious Runoff Depth>3.44"
Flow Length=158' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=4.64 cfs 16,102 cf

Subcatchment POST 2.0: Runoff Area=25,065 sf 68.10% Impervious Runoff Depth>3.33"
Flow Length=420' Slope=0.0193 '/' Tc=5.0 min CN=97 Runoff=2.05 cfs 6,959 cf

Subcatchment POST 3.0: Runoff Area=60,974 sf 78.54% Impervious Runoff Depth>2.17"
Flow Length=726' Tc=5.0 min CN=85 Runoff=3.56 cfs 11,039 cf

Subcatchment POST 3.1: Runoff Area=11,899 sf 100.00% Impervious Runoff Depth>3.44"
Flow Length=139' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=0.99 cfs 3,415 cf

Subcatchment POST 3.2: Runoff Area=2,874 sf 95.34% Impervious Runoff Depth>3.11"
Flow Length=82' Slope=0.0170 '/' Tc=5.0 min CN=95 Runoff=0.23 cfs 746 cf

Pond PJFF 1: Peak Elev=7.09' Inflow=0.59 cfs 15,602 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=0.59 cfs 15,602 cf

Pond PJFF 2: Peak Elev=11.12' Inflow=0.64 cfs 3,373 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0167 '/' Outflow=0.64 cfs 3,373 cf

Pond PJFF 3: Peak Elev=18.57' Inflow=0.23 cfs 746 cf
12.0" Round Culvert n=0.013 L=45.0' S=0.0056 '/' Outflow=0.23 cfs 746 cf

Pond POND 1.1: Peak Elev=9.39' Storage=6,990 cf Inflow=4.64 cfs 16,102 cf
Outflow=0.59 cfs 15,602 cf

Pond POND 3.1: Peak Elev=12.00' Storage=503 cf Inflow=0.99 cfs 3,415 cf
Primary=0.64 cfs 3,373 cf Secondary=0.00 cfs 0 cf Outflow=0.64 cfs 3,373 cf

Link PA1: Inflow=1.15 cfs 17,885 cf
Primary=1.15 cfs 17,885 cf

Link PA2: Inflow=2.05 cfs 6,959 cf
Primary=2.05 cfs 6,959 cf

Link PA3: Inflow=4.33 cfs 15,158 cf
Primary=4.33 cfs 15,158 cf

Total Runoff Area = 165,416 sf Runoff Volume = 40,544 cf Average Runoff Depth = 2.94"
14.00% Pervious = 23,165 sf 86.00% Impervious = 142,251 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1.0: Runoff Area=8,504 sf 88.63% Impervious Runoff Depth>5.12"
Flow Length=336' Tc=5.0 min CN=96 Runoff=1.06 cfs 3,626 cf

Subcatchment POST 1.1: Runoff Area=56,100 sf 98.25% Impervious Runoff Depth>5.35"
Flow Length=158' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=7.10 cfs 25,011 cf

Subcatchment POST 2.0: Runoff Area=25,065 sf 68.10% Impervious Runoff Depth>5.23"
Flow Length=420' Slope=0.0193 '/' Tc=5.0 min CN=97 Runoff=3.15 cfs 10,930 cf

Subcatchment POST 3.0: Runoff Area=60,974 sf 78.54% Impervious Runoff Depth>3.91"
Flow Length=726' Tc=5.0 min CN=85 Runoff=6.37 cfs 19,892 cf

Subcatchment POST 3.1: Runoff Area=11,899 sf 100.00% Impervious Runoff Depth>5.35"
Flow Length=139' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=1.51 cfs 5,305 cf

Subcatchment POST 3.2: Runoff Area=2,874 sf 95.34% Impervious Runoff Depth>5.00"
Flow Length=82' Slope=0.0170 '/' Tc=5.0 min CN=95 Runoff=0.36 cfs 1,198 cf

Pond PJFF 1: Peak Elev=7.24' Inflow=1.08 cfs 24,318 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=1.08 cfs 24,318 cf

Pond PJFF 2: Peak Elev=11.21' Inflow=0.85 cfs 5,074 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0167 '/' Outflow=0.85 cfs 5,074 cf

Pond PJFF 3: Peak Elev=18.64' Inflow=0.36 cfs 1,198 cf
12.0" Round Culvert n=0.013 L=45.0' S=0.0056 '/' Outflow=0.36 cfs 1,198 cf

Pond POND 1.1: Peak Elev=10.57' Storage=10,845 cf Inflow=7.10 cfs 25,011 cf
Outflow=1.08 cfs 24,318 cf

Pond POND 3.1: Peak Elev=12.27' Storage=675 cf Inflow=1.51 cfs 5,305 cf
Primary=0.85 cfs 5,074 cf Secondary=0.30 cfs 179 cf Outflow=1.15 cfs 5,253 cf

Link PA1: Inflow=1.65 cfs 27,944 cf
Primary=1.65 cfs 27,944 cf

Link PA2: Inflow=3.15 cfs 10,930 cf
Primary=3.15 cfs 10,930 cf

Link PA3: Inflow=7.64 cfs 26,342 cf
Primary=7.64 cfs 26,342 cf

Total Runoff Area = 165,416 sf Runoff Volume = 65,961 cf Average Runoff Depth = 4.79"
14.00% Pervious = 23,165 sf 86.00% Impervious = 142,251 sf

Summary for Subcatchment POST 1.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.06 cfs @ 12.07 hrs, Volume= 3,626 cf, Depth> 5.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

Area (sf)	CN	Description
0	98	Paved parking, HSG A
967	80	>75% Grass cover, Good, HSG D
7,537	98	Paved parking, HSG D
8,504	96	Weighted Average
967		11.37% Pervious Area
7,537		88.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0038	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.0	206	0.0310	3.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.0053	3.30	2.59	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.4	336	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 1.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.10 cfs @ 12.07 hrs, Volume= 25,011 cf, Depth> 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
	9,087	98	Roofs, HSG A
	0	39	>75% Grass cover, Good, HSG A
*	0	96	Gravel surface, HSG A
	0	98	Paved parking, HSG A
	43,348	98	Unconnected roofs, HSG D
	980	80	>75% Grass cover, Good, HSG D
*	0	96	Gravel surface, HSG D
	2,685	98	Paved parking, HSG D
	56,100	98	Weighted Average
	980		1.75% Pervious Area
	55,120		98.25% Impervious Area
	43,348		78.64% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0050	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.8	58	0.0050	1.14		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	158	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 2.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.15 cfs @ 12.07 hrs, Volume= 10,930 cf, Depth> 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
	0	98	Roofs, HSG A
	199	39	>75% Grass cover, Good, HSG A
*	1,125	96	Gravel surface, HSG A
	5,809	98	Paved parking, HSG A
	0	98	Unconnected roofs, HSG D
	0	80	>75% Grass cover, Good, HSG D
*	6,672	96	Gravel surface, HSG D
	11,260	98	Paved parking, HSG D
	25,065	97	Weighted Average
	7,996		31.90% Pervious Area
	17,069		68.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0193	1.45		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.9	320	0.0193	2.82		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.0	420	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 3.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.37 cfs @ 12.07 hrs, Volume= 19,892 cf, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
	1,791	30	Woods, Good, HSG A
	10,784	39	>75% Grass cover, Good, HSG A
*	0	96	Gravel surface, HSG A
	42,807	98	Paved parking, HSG A
	0	98	Unconnected roofs, HSG D
	513	80	>75% Grass cover, Good, HSG D
*	0	96	Gravel surface, HSG D
	5,079	98	Paved parking, HSG D
	60,974	85	Weighted Average
	13,088		21.46% Pervious Area
	47,886		78.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	89	0.0398	1.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.2	637	0.0387	8.92	7.01	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.0	726	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 3.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.51 cfs @ 12.07 hrs, Volume= 5,305 cf, Depth> 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
	11,899	98	Roofs, HSG A
	0	39	>75% Grass cover, Good, HSG A
*	0	96	Gravel surface, HSG A
	0	98	Paved parking, HSG A
	0	98	Unconnected roofs, HSG D
	0	98	Paved parking, HSG D
*	0	96	Gravel surface, HSG D
	11,899	98	Weighted Average
	11,899		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0050	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.6	39	0.0050	1.14		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.6	139	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 3.2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.36 cfs @ 12.07 hrs, Volume= 1,198 cf, Depth> 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.59"

	Area (sf)	CN	Description
	0	98	Roofs, HSG A
	134	39	>75% Grass cover, Good, HSG A
*	0	96	Gravel surface, HSG A
	2,712	98	Paved parking, HSG A
	0	98	Unconnected roofs, HSG D
	28	98	Paved parking, HSG D
*	0	96	Gravel surface, HSG D
	2,874	95	Weighted Average
	134		4.66% Pervious Area
	2,740		95.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	82	0.0170	1.33		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.0	82	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond PJFF 1:

Inflow Area = 56,100 sf, 98.25% Impervious, Inflow Depth > 5.20" for 10-Yr event
Inflow = 1.08 cfs @ 12.55 hrs, Volume= 24,318 cf
Outflow = 1.08 cfs @ 12.55 hrs, Volume= 24,318 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.55 hrs, Volume= 24,318 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 7.24' @ 12.55 hrs
Flood Elev= 22.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	6.70'	**18.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 6.70' / 6.50' S= 0.0053 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=1.08 cfs @ 12.55 hrs HW=7.24' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.08 cfs @ 2.79 fps)

Summary for Pond PJFF 2:

Inflow Area = 11,899 sf,100.00% Impervious, Inflow Depth > 5.12" for 10-Yr event
Inflow = 0.85 cfs @ 12.14 hrs, Volume= 5,074 cf
Outflow = 0.85 cfs @ 12.14 hrs, Volume= 5,074 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.14 hrs, Volume= 5,074 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 11.21' @ 12.14 hrs
Flood Elev= 15.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	10.65'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 10.65' / 10.60' S= 0.0167 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.14 hrs HW=11.20' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.85 cfs @ 2.74 fps)

Summary for Pond PJFF 3:

Inflow Area = 2,874 sf, 95.34% Impervious, Inflow Depth > 5.00" for 10-Yr event
Inflow = 0.36 cfs @ 12.07 hrs, Volume= 1,198 cf
Outflow = 0.36 cfs @ 12.07 hrs, Volume= 1,198 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.07 hrs, Volume= 1,198 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 18.64' @ 12.07 hrs
Flood Elev= 22.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.30'	**12.0" Round Culvert** L= 45.0' Ke= 0.500 Inlet / Outlet Invert= 18.30' / 18.05' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.34 cfs @ 12.07 hrs HW=18.63' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.34 cfs @ 2.22 fps)

Summary for Pond POND 1.1:

Inflow Area = 56,100 sf, 98.25% Impervious, Inflow Depth > 5.35" for 10-Yr event
Inflow = 7.10 cfs @ 12.07 hrs, Volume= 25,011 cf
Outflow = 1.08 cfs @ 12.55 hrs, Volume= 24,318 cf, Atten= 85%, Lag= 28.9 min
Primary = 1.08 cfs @ 12.55 hrs, Volume= 24,318 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 10.57' @ 12.55 hrs Surf.Area= 3,840 sf Storage= 10,845 cf
Flood Elev= 12.25' Surf.Area= 3,840 sf Storage= 16,330 cf

Plug-Flow detention time= 162.0 min calculated for 24,318 cf (97% of inflow)
Center-of-Mass det. time= 144.6 min (889.6 - 745.0)

Volume	Invert	Avail.Storage	Storage Description
#1E	6.25'	0 cf	**24.00'W x 128.00'L x 6.58'H Field E** 20,224 cf Overall - 17,152 cf Embedded = 3,072 cf x 0.0% Voids
#2E	7.25'	13,130 cf	**Oldcastle Storm Capture SC1 5'** x 24 Inside #1 Inside= 84.0"W x 60.0"H => 34.69 sf x 16.00'L = 555.0 cf Outside= 96.0"W x 67.0"H => 44.67 sf x 16.00'L = 714.7 cf 3 Rows adjusted for 190.0 cf perimeter wall
#3F	6.25'	0 cf	**8.00'W x 96.00'L x 6.58'H Field F** 5,056 cf Overall - 4,288 cf Embedded = 768 cf x 0.0% Voids
#4F	7.25'	3,200 cf	**Oldcastle Storm Capture SC1 5'** x 6 Inside #3 Inside= 84.0"W x 60.0"H => 34.69 sf x 16.00'L = 555.0 cf Outside= 96.0"W x 67.0"H => 44.67 sf x 16.00'L = 714.7 cf 1 Rows adjusted for 130.0 cf perimeter wall
		16,330 cf	Total Available Storage

Storage Group E created with Chamber Wizard
Storage Group F created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.25'	**18.0" Round Culvert** L= 2.0' Ke= 0.500 Inlet / Outlet Invert= 7.25' / 7.20' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	7.25'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	10.00'	**4.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	12.10'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.00 Width (feet) 4.00 4.00

Primary OutFlow Max=1.08 cfs @ 12.55 hrs HW=10.57' TW=7.24' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.08 cfs of 13.64 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.75 cfs @ 8.55 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.34 cfs @ 3.04 fps)
- **4=Custom Weir/Orifice** (Controls 0.00 cfs)

Summary for Pond POND 3.1:

Inflow Area = 11,899 sf,100.00% Impervious, Inflow Depth > 5.35" for 10-Yr event
Inflow = 1.51 cfs @ 12.07 hrs, Volume= 5,305 cf
Outflow = 1.15 cfs @ 12.14 hrs, Volume= 5,253 cf, Atten= 24%, Lag= 4.4 min
Primary = 0.85 cfs @ 12.14 hrs, Volume= 5,074 cf
Secondary = 0.30 cfs @ 12.14 hrs, Volume= 179 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 12.27' @ 12.14 hrs Surf.Area= 768 sf Storage= 675 cf
Flood Elev= 13.20' Surf.Area= 768 sf Storage= 1,260 cf

Plug-Flow detention time= 24.5 min calculated for 5,242 cf (99% of inflow)
Center-of-Mass det. time= 18.1 min (763.1 - 745.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	10.20'	0 cf	**8.00'W x 96.00'L x 3.58'H Field A** 2,752 cf Overall - 1,984 cf Embedded = 768 cf x 0.0% Voids
#2A	11.20'	1,260 cf	**Oldcastle Storm Capture SC1 2'** x 6 Inside #1 Inside= 84.0"W x 24.0"H => 13.13 sf x 16.00'L = 210.0 cf Outside= 96.0"W x 31.0"H => 20.67 sf x 16.00'L = 330.7 cf
		1,260 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	11.20'	**6.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 11.20' / 11.15' S= 0.0062 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Secondary	11.20'	**12.0" Round Culvert** L= 16.0' Ke= 0.500 Inlet / Outlet Invert= 11.20' / 10.90' S= 0.0187 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	12.00'	**8.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 2	13.10'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.50 Width (feet) 4.00 4.00

Primary OutFlow Max=0.85 cfs @ 12.14 hrs HW=12.27' TW=11.20' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.85 cfs @ 4.31 fps)

Secondary OutFlow Max=0.29 cfs @ 12.14 hrs HW=12.27' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.29 cfs of 2.85 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 0.29 cfs @ 1.66 fps)
  └─**4=Custom Weir/Orifice** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 64,604 sf, 96.99% Impervious, Inflow Depth > 5.19" for 10-Yr event
Inflow = 1.65 cfs @ 12.08 hrs, Volume= 27,944 cf
Primary = 1.65 cfs @ 12.08 hrs, Volume= 27,944 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PA2:

Inflow Area = 25,065 sf, 68.10% Impervious, Inflow Depth > 5.23" for 10-Yr event
Inflow = 3.15 cfs @ 12.07 hrs, Volume= 10,930 cf
Primary = 3.15 cfs @ 12.07 hrs, Volume= 10,930 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PA3:

Inflow Area = 75,747 sf, 82.54% Impervious, Inflow Depth > 4.17" for 10-Yr event
Inflow = 7.64 cfs @ 12.08 hrs, Volume= 26,342 cf
Primary = 7.64 cfs @ 12.08 hrs, Volume= 26,342 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1.0: Runoff Area=8,504 sf 88.63% Impervious Runoff Depth>6.60"
Flow Length=336' Tc=5.0 min CN=96 Runoff=1.35 cfs 4,677 cf

Subcatchment POST 1.1: Runoff Area=56,100 sf 98.25% Impervious Runoff Depth>6.84"
Flow Length=158' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=9.00 cfs 31,966 cf

Subcatchment POST 2.0: Runoff Area=25,065 sf 68.10% Impervious Runoff Depth>6.72"
Flow Length=420' Slope=0.0193 '/' Tc=5.0 min CN=97 Runoff=4.01 cfs 14,034 cf

Subcatchment POST 3.0: Runoff Area=60,974 sf 78.54% Impervious Runoff Depth>5.33"
Flow Length=726' Tc=5.0 min CN=85 Runoff=8.55 cfs 27,063 cf

Subcatchment POST 3.1: Runoff Area=11,899 sf 100.00% Impervious Runoff Depth>6.84"
Flow Length=139' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=1.91 cfs 6,780 cf

Subcatchment POST 3.2: Runoff Area=2,874 sf 95.34% Impervious Runoff Depth>6.48"
Flow Length=82' Slope=0.0170 '/' Tc=5.0 min CN=95 Runoff=0.45 cfs 1,552 cf

Pond PJFF 1: Peak Elev=7.34' Inflow=1.45 cfs 31,062 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=1.45 cfs 31,062 cf

Pond PJFF 2: Peak Elev=11.24' Inflow=0.94 cfs 6,283 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0167 '/' Outflow=0.94 cfs 6,283 cf

Pond PJFF 3: Peak Elev=18.69' Inflow=0.45 cfs 1,552 cf
12.0" Round Culvert n=0.013 L=45.0' S=0.0056 '/' Outflow=0.45 cfs 1,552 cf

Pond POND 1.1: Peak Elev=11.45' Storage=13,716 cf Inflow=9.00 cfs 31,966 cf
Outflow=1.45 cfs 31,062 cf

Pond POND 3.1: Peak Elev=12.45' Storage=785 cf Inflow=1.91 cfs 6,780 cf
Primary=0.94 cfs 6,283 cf Secondary=0.56 cfs 439 cf Outflow=1.50 cfs 6,722 cf

Link PA1: Inflow=2.21 cfs 35,740 cf
Primary=2.21 cfs 35,740 cf

Link PA2: Inflow=4.01 cfs 14,034 cf
Primary=4.01 cfs 14,034 cf

Link PA3: Inflow=10.27 cfs 35,337 cf
Primary=10.27 cfs 35,337 cf

Total Runoff Area = 165,416 sf Runoff Volume = 86,073 cf Average Runoff Depth = 6.24"
14.00% Pervious = 23,165 sf 86.00% Impervious = 142,251 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1.0: Runoff Area=8,504 sf 88.63% Impervious Runoff Depth>8.00"
Flow Length=336' Tc=5.0 min CN=96 Runoff=1.63 cfs 5,666 cf

Subcatchment POST 1.1: Runoff Area=56,100 sf 98.25% Impervious Runoff Depth>8.24"
Flow Length=158' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=10.80 cfs 38,504 cf

Subcatchment POST 2.0: Runoff Area=25,065 sf 68.10% Impervious Runoff Depth>8.12"
Flow Length=420' Slope=0.0193 '/' Tc=5.0 min CN=97 Runoff=4.81 cfs 16,952 cf

Subcatchment POST 3.0: Runoff Area=60,974 sf 78.54% Impervious Runoff Depth>6.67"
Flow Length=726' Tc=5.0 min CN=85 Runoff=10.59 cfs 33,909 cf

Subcatchment POST 3.1: Runoff Area=11,899 sf 100.00% Impervious Runoff Depth>8.24"
Flow Length=139' Slope=0.0050 '/' Tc=5.0 min CN=98 Runoff=2.29 cfs 8,167 cf

Subcatchment POST 3.2: Runoff Area=2,874 sf 95.34% Impervious Runoff Depth>7.88"
Flow Length=82' Slope=0.0170 '/' Tc=5.0 min CN=95 Runoff=0.55 cfs 1,886 cf

Pond PJFF 1: Peak Elev=7.54' Inflow=2.39 cfs 37,320 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=2.39 cfs 37,320 cf

Pond PJFF 2: Peak Elev=11.27' Inflow=1.03 cfs 7,383 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0167 '/' Outflow=1.03 cfs 7,383 cf

Pond PJFF 3: Peak Elev=18.73' Inflow=0.55 cfs 1,886 cf
12.0" Round Culvert n=0.013 L=45.0' S=0.0056 '/' Outflow=0.55 cfs 1,886 cf

Pond POND 1.1: Peak Elev=12.24' Storage=16,307 cf Inflow=10.80 cfs 38,504 cf
Outflow=2.39 cfs 37,320 cf

Pond POND 3.1: Peak Elev=12.63' Storage=902 cf Inflow=2.29 cfs 8,167 cf
Primary=1.03 cfs 7,383 cf Secondary=0.73 cfs 721 cf Outflow=1.75 cfs 8,103 cf

Link PA1: Inflow=2.83 cfs 42,987 cf
Primary=2.83 cfs 42,987 cf

Link PA2: Inflow=4.81 cfs 16,952 cf
Primary=4.81 cfs 16,952 cf

Link PA3: Inflow=12.63 cfs 43,899 cf
Primary=12.63 cfs 43,899 cf

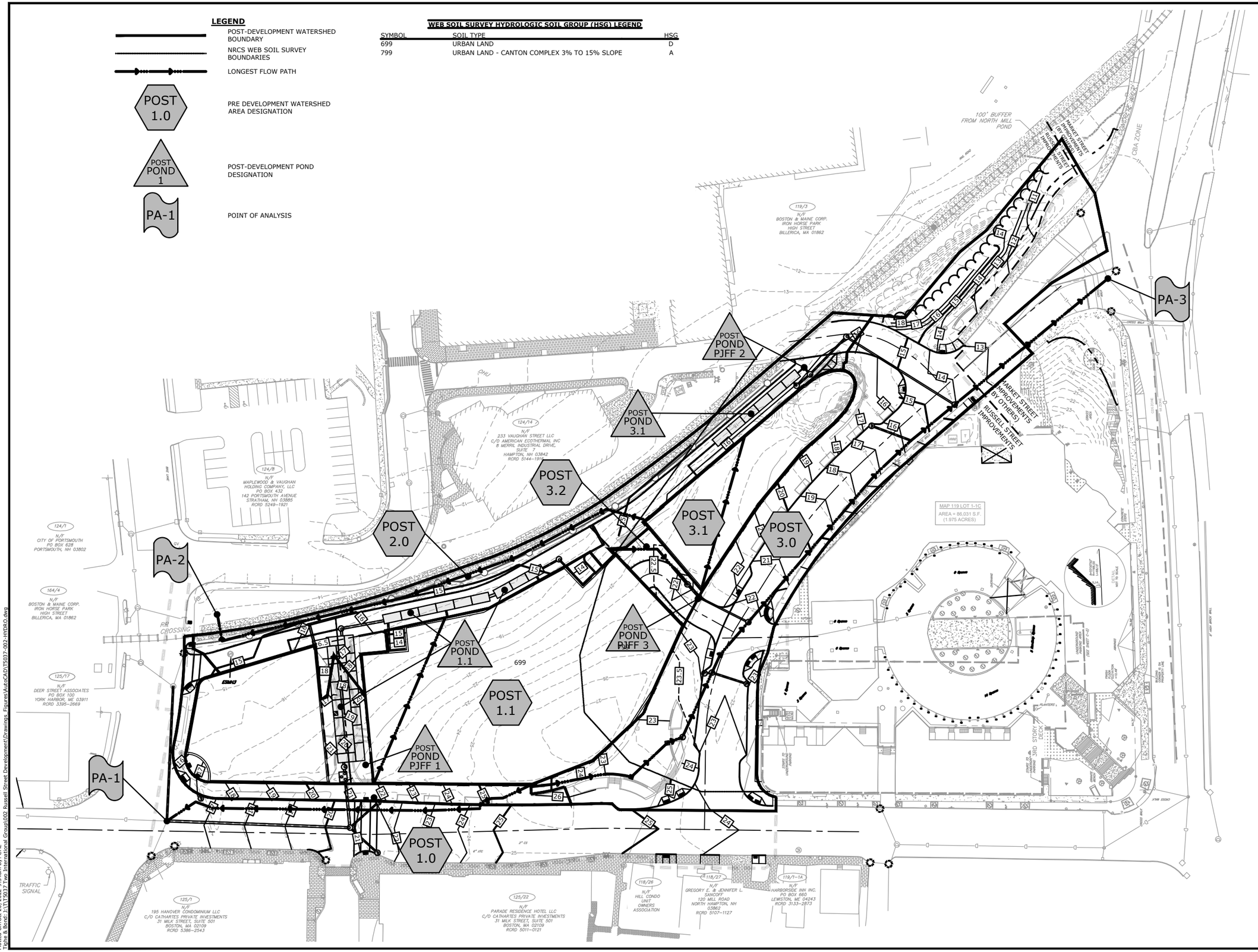
Total Runoff Area = 165,416 sf Runoff Volume = 105,085 cf Average Runoff Depth = 7.62"
14.00% Pervious = 23,165 sf 86.00% Impervious = 142,251 sf

LEGEND

- POST-DEVELOPMENT WATERSHED BOUNDARY
- NRCS WEB SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- POST 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- POST POND 1 — POST-DEVELOPMENT POND DESIGNATION
- PA-1 — POINT OF ANALYSIS

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE	HSG
699	URBAN LAND	D
799	URBAN LAND - CANTON COMPLEX 3% TO 15% SLOPE	A



Tighe&Bond

N

0 40' 80'

GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street Portsmouth, NH

MARK	DATE	DESCRIPTION
E	10/20/2022	TAC Resubmission
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-HYDRO.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

POST-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-802

Last Saved: 10/20/2022
Plotted: 10/20/2022 9:34am By: CML
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings - Figures\AutoCAD\T5037-002-HYDRO.dwg

Section 4
Peak Rate Comparison

The following table summarizes and compares the pre- and post-development peak runoff rates from the 2-year, 10-year, 25-year and 50-year storm events at the point of analysis.

Table 4.1
Comparison of Pre- and Post-Development Flows (CFS)

	2-Year Storm	10-Year Storm	25-Year Storm	50-Year Storm
Pre-Development Watershed				
PA-1	1.16	1.83	2.34	2.83
PA-2	5.91	9.44	12.16	14.70
PA-3	4.38	7.71	10.30	12.71
Post-Development Watershed				
PA-1	1.15	1.65	2.21	2.83
PA-2	2.05	3.15	4.01	4.81
PA-3	4.33	7.64	10.27	12.63

The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for all points of analysis. As shown in Table 1.2 the Post-development flows are decreased from the Pre-development flows for all points of analysis.

Section 5
Mitigation Description

The stormwater management system has been designed to provide stormwater treatment as required by the City of Portsmouth Site Review Regulations and NHDES AoT Regulations (Env-Wq 1500).

5.1 Pre-Treatment Methods for Protecting Water Quality

Pre-treatment for the stormwater filtration systems consist of deep sump catch basins.

5.2 Treatment Methods for Protecting Water Quality.

The existing 90,030 SF lot is comprised of 72,833 SF (80.90%) of impervious area. Per the City of Portsmouth's Site Plan regulations, Section 7.6.2.2, the proposed project qualifies as a redevelopment project being that greater than 40% of the developable land is existing impervious surface. The proposed development lot contains 88,455 SF of impervious surface and is proposed to treat 69,757 SF of this impervious surface. The project is required to treat at least 30% of the existing impervious surface and 100% of the additional impervious surfaces. The proposed stormwater management system treats 100% (15,622 SF) of the additional impervious surface and 74% (54,135 SF) of the existing impervious surface.

The runoff from the proposed impervious areas will be treated by two Contech Jellyfish stormwater filtration systems. The Jellyfish systems are sized to treat their respective Water Quality Flows of their sub-catchment areas. The first system is outfitted with an internal bypass that diverts peak flows away from treatment. The second system is designed to direct the WQF to the treatment unit and discharge the higher flows to a bypass outlet control unit. The BMP worksheet for these treatment practices has been included in Section 6 of this report.

The proposed stormwater management system is required to removal 80% of the annual Total Suspended Soils (TSS) loads and 50% of the annual Total Nitrogen (TN) loads per the City of Portsmouth's Site Plan regulations, Section 7.6.2.1.a.i. As shown in table 5.1 the pollutant removal efficiencies for the proposed treatment systems exceeds the City of Portsmouth's removal requirements.

Table 5.1 – Pollutant Removal Efficiencies

BMP	Total Suspended Solids	Total Nitrogen	Total Phosphorus
Jellyfish Filter w/Pretreatment[1]	91%	53%	61%

1. Pollutant removal calculations for Jellyfish Filter with deep sump catchbasin pretreatment are shown in Table 5.2.
2. Pollutant removal efficiencies from NH Stormwater Manual Volume 2, Appendix B.

Table 5.2 – Pollutant Removal Calculations				
Contech Jellyfish Filter				
BMP	TSS Removal Rate	Starting TSS Load	TSS Removed	Remaining TSS Load
Deep Sump Catchbasin w/Hood[1]	0.15	1.00	0.15	0.85
Jellyfish Filter[2]	0.89	0.85	0.76	0.09
	Total Suspended Solids Removed:			**91%**
	TN Removal Rate	Starting TN Load	TN Removed	Remaining TN Load
Deep Sump Catchbasin w/Hood[1]	0.05	1.00	0.05	0.95
Jellyfish Filter[2]	0.51	0.95	0.48	0.47
	Total Nitrogen Removed:			**53%**
	TP Removal Rate	Starting TP Load	TP Removed	Remaining TP Load
Deep Sump Catchbasin w/Hood[1]	0.05	1.00	0.05	0.95
Jellyfish Filter[2]	0.59	0.95	0.56	0.39
	Total Phosphorus Removed:			**61%**

1. Pollutant removal efficiencies from NH Stormwater Manual Volume 2, Appendix E.
2. Pollutant removal efficiencies from Contech Engineered Solutions, Jellyfish Filter Stormwater Treatment performance testing results.

Section 6
BMP Worksheet

General Calculations - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP that does not fit into one of the specific worksheets already provided (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

1.29	ac	A = Area draining to the practice
1.27	ac	A_I = Impervious area draining to the practice
0.98	decimal	I = percent impervious area draining to the practice, in decimal form
0.94	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
1.21	ac-in	WQV= 1" x Rv x A
4,383	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = amount of rainfall. For WQF in NH, P = 1".
0.94	inches	Q = water quality depth. Q = WQV/A
99	unitless	CN = unit peak discharge curve number. $CN = 1000/(10+5P+10Q-10*[Q^2 + 1.25*Q*P]^{0.5})$
0.1	inches	S = potential maximum retention. S = (1000/CN) - 10
0.011	inches	Ia = initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
640.0	$cfs/mi^2/in$	qu is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III
1.208	cfs	WQF = q_u x WQV. Conversion: to convert "$cfs/mi^2/in$ * ac-in" to "cfs" multiply by $1mi^2/640ac$

Designer's Notes: JELLYFISH FILTER 1

Pretreatment: Offline Deep Sump Catch Basins and Roof Runoff

Treatment: (1) Contech Jellyfish Model JFPD0806-3-1- design capacity of 0.62 cfs

Treatment structures located post-detention therefore the treatment unit is sized to treat the 2-year post detention flow rate of 0.59 cfs.

General Calculations - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP that does not fit into one of the specific worksheets already provided (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.27	ac	A = Area draining to the practice
0.27	ac	A_I = Impervious area draining to the practice
1.00	decimal	I = percent impervious area draining to the practice, in decimal form
0.95	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.26	ac-in	WQV= 1" x Rv x A
931	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = amount of rainfall. For WQF in NH, P = 1".
0.95	inches	Q = water quality depth. Q = WQV/A
100	unitless	CN = unit peak discharge curve number. $CN = 1000/(10+5P+10Q-10*[Q^2 + 1.25*Q*P]^{0.5})$
0.0	inches	S = potential maximum retention. S = (1000/CN) - 10
0.009	inches	Ia = initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
640.0	$cfs/mi^2/in$	qu is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III
0.257	cfs	WQF = q_u x WQV. Conversion: to convert "$cfs/mi^2/in$ * ac-in" to "cfs" multiply by $1mi^2/640ac$

Designer's Notes: JELLYFISH FILTER 2

Pretreatment: Roof Runoff

Treatment: (1) Contech Jellyfish Model JF6-4-1- design capacity of 0.80 cfs

Treatment structures located post-detention therefore the treatment unit is sized to treat the 2-year post detention flow rate of 0.65 cfs.

General Calculations - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP that does not fit into one of the specific worksheets already provided (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.07	ac	A = Area draining to the practice
0.06	ac	A_I = Impervious area draining to the practice
0.86	decimal	I = percent impervious area draining to the practice, in decimal form
0.82	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.06	ac-in	WQV= 1" x Rv x A
209	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = amount of rainfall. For WQF in NH, P = 1".
0.82	inches	Q = water quality depth. Q = WQV/A
98	unitless	CN = unit peak discharge curve number. $CN = 1000/(10+5P+10Q-10*[Q^2 + 1.25*Q*P]^{0.5})$
0.2	inches	S = potential maximum retention. S = (1000/CN) - 10
0.034	inches	Ia = initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
640.0	$cfs/mi^2/in$	qu is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III
0.058	cfs	WQF = q_u x WQV. Conversion: to convert "$cfs/mi^2/in$ * ac-in" to "cfs" multiply by $1mi^2/640ac$

Designer's Notes: JELLYFISH FILTER 3

Pretreatment: Offline Deep Sump Catch Basin

Treatment: (1) Contech Jellyfish Model JF4-1-1 design capacity of 0.27 cfs

Section 7
Contech Sizing Memos

CONTECH Stormwater Solutions Inc. Engineer: DRA
Date Prepared: **8/11/2022**

Site Information

Project Name	**North End Mixed Use Development**
Project State	**NH**
Project City	**Portsmouth**
Site Designation	**JF 1**

Total Drainage Area, Ad	**1.29**	ac
Post Development Impervious Area, Ai	**1.27**	ac
Pervious Area, Ap	**0.02**	ac
% Impervious	**98%**	
Runoff Coefficient, Rc	**0.94**	
Upstream pretreatment credit	**50%**	

Mass Loading Calculations

Mean Annual Rainfall, P	**50**	in
Agency Required % Removal	**80%**	
Percent Runoff Capture	**90%**	
Mean Annual Runoff, Vt	**197,245**	ft3
Event Mean Concentration of Pollutant, EMC	**70**	mg/l
Annual Mass Load, M total	**862**	lbs

Filter System

Filtration Brand	**Jelly Fish**
Cartridge Length	**54** in

Jelly Fish Sizing

Mass removed by pretreatment system	**431**	lbs
Mass load to filters after pretreatment	**431**	lbs
Mass to be Captured by System	**345**	lbs
Water Quality Flow	**0.59**	cfs

Method to Use **FLOW BASED**

Summary			
Flow	Required Size	**JFPD0806-3-1**	54
	Treatment Flow Rate provided:	0.62 cfs	

CONTECH Stormwater Solutions Inc. Engineer: DRA

Date Prepared: **8/11/2022**

Site Information

Project Name	**North End Mixed Use Development**
Project State	**NH**
Project City	**Portsmouth**
Site Designation	**JF 2**

Total Drainage Area, Ad	**0.34**	ac
Post Development Impervious Area, Ai	**0.34**	ac
Pervious Area, Ap	**0.00**	ac
% Impervious	**100%**	
Runoff Coefficient, Rc	**0.95**	

Mass Loading Calculations

Mean Annual Rainfall, P	**50**	in
Agency Required % Removal	**80%**	
Percent Runoff Capture	**90%**	
Mean Annual Runoff, Vt	**52,762**	ft3
Event Mean Concentration of Pollutant, EMC	**75**	mg/l
Annual Mass Load, M total	**247**	lbs

Filter System

Filtration Brand	**Jelly Fish**
Cartridge Length	**54** in

Jelly Fish Sizing

Mass to be Captured by System	**198**	lbs
Water Quality Flow	**0.65**	cfs

Method to Use **FLOW BASED**

Summary			
Flow	Required Size	**JF6-4-1**	54
	Treatment Flow Rate provided:	0.80 cfs	

CONTECH Stormwater Solutions Inc. Engineer: DRA

Date Prepared: **8/11/2022**

Site Information

Project Name	**North End Mixed Use Development**
Project State	**NH**
Project City	**Portsmouth**
Site Designation	**JF 3**

Total Drainage Area, Ad	**0.07**	ac
Post Development Impervious Area, Ai	**0.06**	ac
Pervious Area, Ap	**0.01**	ac
% Impervious	**86%**	
Runoff Coefficient, Rc	**0.82**	
Upstream pretreatment credit	**50%**	

Mass Loading Calculations

Mean Annual Rainfall, P	**50**	in
Agency Required % Removal	**80%**	
Percent Runoff Capture	**90%**	
Mean Annual Runoff, Vt	**9,393**	ft3
Event Mean Concentration of Pollutant, EMC	**70**	mg/l
Annual Mass Load, M total	**41**	lbs

Filter System

Filtration Brand	**Jelly Fish**
Cartridge Length	**54** in

Jelly Fish Sizing

Mass removed by pretreatment system	**21**	lbs
Mass load to filters after pretreatment	**21**	lbs
Mass to be Captured by System	**16**	lbs
Water Quality Flow	**0.05**	cfs

Method to Use **FLOW BASED**

Summary			
Flow	Required Size	**JF4-1-1**	54
	Treatment Flow Rate provided:	0.27 cfs	

Soil Map—Rockingham County, New Hampshire
(Russel Street Development)

Map Scale: 1:1,560 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	3.2	62.5%
799	Urban land-Canton complex, 3 to 15 percent slopes	1.9	37.5%
Totals for Area of Interest		**5.2**	**100.0%**

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.761 degrees West
Latitude	43.079 degrees North
Elevation	0 feet
Date/Time	Thu, 10 Mar 2022 09:15:04 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.62	4.73	6.16	7.09	**25yr**	5.45	6.81	7.78	9.00	10.03	**25yr**
50yr	0.53	0.86	1.10	1.53	2.07	2.75	**50yr**	1.78	2.52	3.28	4.31	5.65	7.37	8.57	**50yr**	6.53	8.24	9.40	10.79	11.95	**50yr**
100yr	0.59	0.96	1.24	1.76	2.41	3.25	**100yr**	2.08	2.97	3.90	5.15	6.75	8.83	10.36	**100yr**	7.82	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.42	2.04	2.82	3.82	**200yr**	2.43	3.51	4.60	6.11	8.06	10.58	12.52	**200yr**	9.37	12.04	13.71	15.50	16.98	**200yr**
500yr	0.80	1.31	1.71	2.48	3.47	4.75	**500yr**	2.99	4.37	5.75	7.68	10.19	13.45	16.11	**500yr**	11.90	15.49	17.61	19.72	21.44	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.92	1.33	1.68	2.23	2.48	**1yr**	1.97	2.39	2.86	3.18	3.88	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.45	**2yr**	2.70	3.31	3.82	4.54	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.18	**5yr**	3.34	4.02	4.71	5.52	6.23	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.85	**10yr**	3.86	4.66	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.34	1.86	2.10	2.76	3.54	4.70	5.87	**25yr**	4.16	5.64	6.62	7.76	8.65	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.34	3.07	3.93	5.31	6.77	**50yr**	4.70	6.51	7.68	9.00	9.98	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.42	4.35	5.96	7.81	**100yr**	5.28	7.51	8.92	10.45	11.52	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.79	4.79	6.68	9.01	**200yr**	5.91	8.66	10.34	12.15	13.31	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.32	5.46	7.76	10.87	**500yr**	6.87	10.45	12.58	14.86	16.11	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.21	2.98	3.16	**1yr**	2.64	3.04	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.03	3.56	4.08	4.83	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.97	**10yr**	1.39	1.93	2.28	3.11	3.95	5.33	6.20	**10yr**	4.72	5.96	6.82	7.83	8.74	**10yr**
25yr	0.57	0.87	1.09	1.55	2.04	2.57	**25yr**	1.76	2.51	2.95	4.07	5.15	7.77	8.34	**25yr**	6.88	8.02	9.15	10.33	11.40	**25yr**
50yr	0.67	1.02	1.27	1.82	2.46	3.12	**50yr**	2.12	3.05	3.59	5.00	6.32	9.73	10.46	**50yr**	8.62	10.06	11.45	12.71	13.95	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.80	**100yr**	2.55	3.72	4.37	6.15	7.76	12.18	13.11	**100yr**	10.78	12.61	14.32	15.68	17.08	**100yr**
200yr	0.92	1.39	1.76	2.54	3.55	4.64	**200yr**	3.06	4.54	5.33	7.58	9.53	15.29	16.45	**200yr**	13.53	15.82	17.94	19.34	20.91	**200yr**
500yr	1.14	1.70	2.19	3.18	4.52	6.02	**500yr**	3.90	5.89	6.92	10.01	12.54	20.67	22.22	**500yr**	18.29	21.37	24.18	25.50	27.33	**500yr**

Powered by ACIS Northeast Regional Climate Center

Coastal and Great Bay Region Precipitation Increase		
	24-hr Storm Event (in.)	24-hr Storm Event + 15% (in.)
1 Year	2.65	3.05
2 Year	3.20	3.68
10 Year	4.86	5.59
25 Year	6.16	7.08
50 Year	7.37	8.48

www.tighebond.com

100% Recyclable

CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street
Portsmouth
New Hampshire
03801-3819

P: 603|431|6196
www.cmaengineers.com

November 10, 2022

Beverly Mesa-Zendt, Planning Director
Portsmouth Planning Department
City Hall, 1 Junkins Ave.
Portsmouth, NH 03801

Re: Review of North End Mixed Use Development Stormwater and Drainage
Developer: Port Harbor Lane LLC
Design Engineer: Tighe & Bond
CMA #1134.42

Dear Ms. Mesa-Zendt:

At the City's request, CMA Engineers has reviewed the included plan and response letter dated November 10, 2022 supporting the design for the proposed "North End Mixed Use Development at Russell St & Deer St" including Tax Map 118 Lot 28, Tax Map 119 Lot 1-1C & Lot 4, Map 124 Lot 12, and Map 125 Lot 12 in Portsmouth. The previous submittals we have reviewed are summarized below:

- Tighe & Bond plans and stormwater report dated 5/24/22
  - CMA Engineers comment letter dated 6/24/22
- Tighe & Bond plans and stormwater report dated 8/25/22
  - CMA Engineers comments letter dated 9/1/22
- Tighe & Bond plans and stormwater report dated 10/22/22
- Tighe & Bond response letter dated 9/22/22
  - CMA Engineers comments letter dated 10/31/22

Based on our 10/31/22 comment letter, the applicant included subsurface exploration data and a response letter. These revisions addressed our comments.

Should you have any questions, please do not hesitate to contact us.

Very truly yours,

CMA ENGINEERS, INC.

Philip A. Corbett, P.E.
Project Manager

Chris Chiaramonte, EIT
Project Engineer

PAC/kao

P-1134-Portsmouth-DL-221110-2 Russel St Drainage Review-Rev4-CFC

T-5037-002
November 10, 2022

Ms. Beverly M. Zendt, Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Review of North End Mixed-Use Development Stormwater and Drainage**
Developer: Port Harbor Land LLC
Design Engineer: Tighe & Bond
CMA #1134.42

Dear Beverly:

On behalf of Port Harbor Land, LLC (applicant), we are pleased to submit this letter in response to peer review comments on the above referenced project received from CMA Engineers, Inc. (CMA) in a letter dated October 31, 2022.

Please find **in bold** below specific responses to the one (1) remaining comment received from CMA stated in the October 31st letter.

1. *Our previous review focused on the capacity of the existing downstream stormwater drainage system, and recommended that the applicant strive to improve upon the existing conditions by utilizing on-site infiltration. While it is understood that on-site infiltration may not be practical in this redevelopment project, the applicant should include subsurface exploration data demonstrating why it is not feasible.*

   As stated in previous response to Comments, the proposed site is comprised of urban land with shallow bedrock. The bedrock on site is exposed on the northern end of the site ~9 feet above the surrounding area. Towards the middle of the site in the location of proposed building 2, bedrock is at elevation ±18.5 feet, which is ~4-6 feet below grade. Enclosed is a plan showing ledge contours based prior borings performed on-site and their associated boring logs. The approximate building locations and underground detention units are also shown on the ledge plan. The bottom of the three (3) detention systems between and adjacent to buildings 1 & 2 are at elevation 7.25' and the bottom of the system furthest north is at elevation 11.20'. Based on this, ledge will need to be removed for the installation of all four (4) systems making infiltration not practical on this site.

   Also, as mentioned in previous responses, all of the stormwater systems on site are in close proximity to the buildings and other subsurface utilities given the tight urban environment. The proximity to building foundations and subsurface utilities also makes infiltration not practical on this redevelopment site. The advanced stormwater filtration systems proposed as part of this plan along with the onsite detention will provide a significant improvement in post development stormwater quality given the existing condition is a surface parking lot that currently enters the City's drainage system untreated.

   Due to these site constrictions, infiltration is not practical. Peak flows have been mitigated for the development site through the use of underground

detention chambers, and treatment standards of the City and NHDES are being met through the use of stormwater filtration units.

If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

Enclosures

Copy: Port Harbor Land, LLC (via email)

LEGEND

BOR-101
2.11
B101
GWE:/NO

ROCK REFUSAL ELEVATION & BORING LOG #/MONITORING WELL # & OBSERVED GROUNDWATER ELEVATION ±, OR (NO) NOT OBSERVED

APPROXIMATE ROCK REFUSAL SURFACE ELEVATION

APPROXIMATE EXISTING GRADE CONTOUR

REFERENCE:
GEOTECHNICAL REPORT BY RANSOM ENVIRONMENTAL CONSULTANTS FOR CLD CONSULTING ENGINEERS INC. JULY 2005. THIS INFORMATION IS CONSIDERED PRELIMINARY ONLY.

MATCHLINE - RUSSELL STREET

RUSSELL STREET
N.T.S.

GREEN STREET
(PUBLIC RIGHT OF WAY)

VAUGHAN STREET
(PUBLIC R.O.W.)

DEER STREET
(R.O.W. VARIES)

RUSSELL STREET
(R.O.W. VARIES)

MAPLEWOOD AVENUE
(VARIABLE WIDTH
PUBLIC R.O.W.)

PORTWALK PLACE

MAP 124 LOT 12
AREA = 16,008 S.F.
(0.37 ACRES)

MAP 125 LOT 3
AREA = 22,560 S.F.
(0.51 ACRES)

MAP 118 LOT 28
AREA = 47,082 S.F.
(1.08 ACRES)

124/14
N/F
233 VAUGHAN STREET LLC
C/O AMERICAN ECOTHERMAL INC
8 MERRIL INDUSTRIAL DRIVE, SUITE 7
HAMPTON, NH 03842
RCRD 5144-1916

124/8
N/F
MAPLEWOOD & VAUGHAN HOLDING COMPANY, LLC
PO BOX 432
142 PORTSMOUTH AVENUE
STRATHAM, NH 03885
RCRD 5249-1921

124/13
N/F
BOSTON & MAINE CORP.
IRON HORSE PARK
HIGH STREET
BILLERICA, MA 01862

BOSTON & MAINE TRACKS ROW
IRON HORSE PARK
HIGH STREET
BILLERICA, MA 01862

124/1
N/F
CITY OF PORTSMOUTH
PO BOX 628
PORTSMOUTH, NH 03802

164/4
N/F
BOSTON & MAINE CORP.
IRON HORSE PARK
HIGH STREET
BILLERICA, MA 01862

125/17
N/F
STREET ASSOCIATES
PO BOX 100
HARBOR, ME 03911
CRD 3395-2669

125/2
N/F
THIRTY MAPLEWOOD LLC
117 BOW STREET, SUITE 102
PORTSMOUTH, NH 03801
RCRD 5099-2424

125/1
N/F

125/22
N/F
PARADE RESIDENCE HOTEL LLC
C/O CATHARTES PRIVATE INVESTMENTS
31 MILK STREET, SUITE 501
BOSTON, MA 02109
RCRD 5011-0121

N/F
HARBORCORP, LLC
MAP 119, LOT 4

119/1-1C
N/F
HARBORSIDE ASSOC
PO BOX 660
LEWISTON, ME 04243
RCRD 3184-030

119/1-1A
N/F
HARBORSIDE INN INC.
PO BOX 660
LEWISTON, ME 04243

118/26
N/F

118/27
N/F

TBM
X-MARK
ON BASE
OF LIGHT
ELEV.=12.45

14.89
B112
(GWE: NO)

8.10
B111
(GWE: NO)

12.50
B117
(GWE: NO)

11.89
B107
(GWE: NO)

-1.41
B101/MW101
(GWE: 6.5')

-2.53
B104/MW102
(GWE: 3.9')

0.25
B102
(GWE: NO)

2.24
B105
(GWE: NO)

12.35
B103
(GWE: NO)

4.47
B106/MW103
(GWE: 6.9')

18.58
B108
(GWE: NO)

18.49
B109
(GWE: NO)

EX. HEDGE

EX. LANDSCAPE

EX. LANDSCAPING

FINISH FLOOR
ELEVATION=26.61

PAVED VEHICULAR ACCESS

CONCRETE RAMP TO
UNDERGROUND PARKING AREA

DRIVE UNDER
SECOND FLOOR
BUILDING

EXISTING
CONDOMINIUM
BUILDING

EXISTING
CONDOMINIUM
BUILDING

EXISTING HOTEL
BUILDING
34,437 S.F.
AT GROUND FLOOR LEVEL

1"x2' UNDERGROUND
CONTROL VALVES

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

PERMIT PLAN - NOT FOR CONSTRUCTION

P:\MES\144 Portsmouth - Commercial\Civil\Permit Set\PERMIT SET - 2014.06.05\dwg\144-PERTOPAL MAP.dwg, 6/7/2015 11:51 AM

RANSOM Environmental Consultants, Inc.

BORING LOG: B101/MW101

Ground Elevation:	See Plan	Total Depth:	16 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	15 Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 Inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 2" +/-								
	Black/brown, fine to medium SAND, some Silt, little gravel.			S1	3,3, 3,8	24/15	SM	6	
				S2	8,3, 1,1	24/10	SM	4	
5				S3	5,3, 1,2	24/18	SM	4	
	(Damp - Loose) Brown CLAY.			S4	4,5, 6,7	24/24	CL	11	
				S5	3,4, 7,6	24/24	CL	11	
10	(Moist - Medium)								
	Black/brown, fine to medium SAND, little Silt and rock fragments.								
15		Weathered rock		S6	19,19, 15/1"	13/9	SM	–	
	(Moist - Compact) End of Boring 16 Feet Refusal at 16 Feet.								

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) 2 inch PVC monitoring well MW101 installed to 15.5 feet, screened 4.4 to 14.4 feet bgs. 4) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B102

Ground Elevation:	See Plan	Total Depth:	15 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	15 Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 3" +/-								
	Black, fine to medium SAND, some Gravel, little coal/cinders.			S1	25,17, 8,8	24/11	SM	25	
	(Moist - Firm) Brown, fine to medium SAND, some Silt and Gravel.			S2	15,10, 8,4	24/15	SM	18	
5				S3	4,3, 2,1	24/12	SM - GM	5	
	becomes some rock fragments			S4	2,2, 11,7	24/19	SM - GM	13	
10				S5	11,11, 11,8	24/18	SM - GM	22	
15	(Moist - Loose to Firm) End of Boring 15 Feet. Drilling Refusal at 15 Feet.			–	–	10/0"	–	–	

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Sample 2-6 feet for VOC's, PAA, RCRA.
4) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B103

Ground Elevation:	See Plan	Total Depth:	4 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 3" +\-			S1	6,6, 25,14	24/15	SM - GM	31	
	Black, fine to medium SAND, some Gravel, little Silt, trace organics.			S2	10,10, 21, 10/1"	24/13	SM - GM	31	
	(Moist - Firm)								
5	End of Boring 4 Feet. Drilling Refusal 4 Feet.								
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Moved and attempted at 3 other locations due to refusal.
4) Sample 0-4 feet submitted for laboratory analysis.
5) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B104/MW102

Ground Elevation:	See Plan	Total Depth:	17.5 Feet	Logged By:	TRM/PDD
GW encountered:	15 Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 3" +/-								
	Black, fine to medium SAND, some Gravel, little silt, trace organics.			S1	14,5, 4,7	24/13	SM	9	
				S2	6,4, 3,6	24/14	SM	7	
5				S3	6,14, 5,7	24/19	SM	19	
	(Moist - Loose) Brown CLAY and SILT, little fine Sand.			S4	2,4, 7,7	24/21	CL	11	
	(Moist - Medium) Brown, fine to medium SAND and GRAVEL, rock fragments, little Silt.			S5	10,14, 16,24	24/21	SM - GM	30	
10									
15				S6	10,12, 24, 100/1"	19/12	SM	36	
	(Moist - Compact) End of Boring 17.5 Feet Drilling Refusal 17.5 Feet								

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) 2 inch monitoring well MW102 installed to 17.5 feet, screened 7.5 - 17.5 feet. 4) Sample 0-4 feet submitted for laboratory analysis. 5) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B105

Ground Elevation:	See Plan	Total Depth:	14 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Brown, fine SAND, some Gravel, little silt.	Possible boulder		S1	10,7, 15, 100/1"	19/12	SM	22	
	(Moist - Firm) Brown CLAY and SILT			S2	2,2, 4,5	24/24	CL	6	
5	becomes mottled			S3	2,5, 7,8	24/22	CL	12	
	becomes some fine Sand.			S4	7,7, 11,12	24/24	–	18	
10									
	(Moist - Medium to Stiff) End of Boring 14 Feet Drilling Refusal 14 Feet								
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B106/MW103

Ground Elevation:	See Plan	Total Depth:	14 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
0	Asphalt 2" +/-								
	Black/brown, fine to medium SAND, some Silt, trace organics and brick fragments.			S1	6,2, 2,10	24/1	SM	4	
				S2	10,9, 9,5	24/5	SM	18	
5				S3	6,4, 2,3	24/5	SM	6	
	(Moist - Loose)	Strong petroleum odor							
	Gray SILT and CLAY, some fine Sand.			S4	3,5, 5,6	24/21	CL	10	
				S5	2,4, 5,5	24/	CL	9	
10									
	(Moist - Medium)								
15	End of Boring 14 Feet Drilling Refusal at 14 Feet								

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Monitoring well MW102 installed to 14 feet, screened 3.1 to 13.1 feet. 4) Sample 0-6 feet submitted for environmental laboratory analysis. 5) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B107

Ground Elevation:	See Plan	Total Depth:	4.5 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 3" +/-								
	Brown, fine SAND, trace Silt. (Moist - Loose)			S1	15,5, 5,2	24/16	SM	10	
	Brown, SILT and fine SAND.			S2	2,1, 2,5	24/19	ML	3	
5	(Moist - Loose) End of Boring 4 Feet Drilling Refusal 4 Feet			S3	4, 100/3"	9/6	–	–	
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Sample 0-4 feet submitted for laboratory analsyis.
4) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B108

Ground Elevation:	See Plan	Total Depth:	4 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 2" +/-								
	Brown, fine SAND and SILT, little Gravel.			S1	5,7, 6,6	24/10	SM	13	
				S2	4,4, 5,11	24/14	SM	9	
	(Moist - Loose)								
5	End of Boring 4 Feet Drilling Refusat 4 Feet			–	100/2"	24/0"	–	–	
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Attempted another boring, refusal at 5 feet.
4) Sample 0-4 feet submitted for laboratory analysis.
5) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112

RANSOM Environmental Consultants, Inc.

BORING LOG: B109

Ground Elevation:	See Plan	Total Depth:	6.5 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/6/05 to 6/6/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 3" +/-								
	Brown, fine to medium SAND, little fine Gravel and Silt.			S1	10,6, 5,4	24/9	SM	11	
				S2	3,5, 3,3	24/9	SM	8	
	little organics								
5	becomes fine SAND and SILT, little Gravel			S3	2,10, 24,25	24/	SP	34	
	(Damp - Loose to Compact)			S4	24, 44/3"	9/7	–	–	
	End of Boring 6.5 Feet Drilling Refusal 6.5 Feet								
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B110

Ground Elevation:	See Plan	Total Depth:	13 Feet	Logged By:	TRM/PDD
GW encountered:	11 Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	--	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 2" +/-								
	Brown, fine to medium SAND, little Silt and Gravel, brick fragments.			S1	9,7, 5,3	24/11	--	12	
				S2	9,7, 6,9	24/20	--	13	
	(Moist - Firm)								
5	Brown, fine to medium SAND, some Silt and Gravel.			S3	6,5, 2,2	24/16	--	7	
				S4	14,24, 24,22	24/22	--	48	
		Till		S5	23,23, 17,14	24/21	--	40	
10				S6	14,20, 22,19	24/20	--	42	
	(Moist - Loose to Compact)								
	End of Boring 13 Feet Casing and Spoon Refusal								
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) Sample 0-4 feet submitted for environmental laboratory analsyis.
4) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B111

Ground Elevation:	See Plan	Total Depth:	3 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Brown, fine to medium SAND, little Gravel.			S1	NA	36/30	–	–	
	(Moist)								
	End of Boring 3 Feet Refusal at 3 Feet.								
5									
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Sample extracted with 36 inch sleeve.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112

RANSOM Environmental Consultants, Inc.

BORING LOG: B112

Ground Elevation:	See Plan	Total Depth:	6 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Brown, fine SAND, some Gravel, little silt.			S1	NA	60/52	–	–	
5				S2	NA	12/12	–	–	
	(Moist)								
	End of Boring 6 Feet Drilling Refusal at 6 Feet								
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Sample 0-5 feet submitted for environmental lab analysis.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112

RANSOM Environmental Consultants, Inc.

BORING LOG: B113

Ground Elevation:	See Plan	Total Depth:	2.5 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 Inches)	PENETRATION/ RECOVERY (In.)	USCS SYMBOL	N	WELL
	Topsoil 6" +/-								
	No sample								
	End of Boring 2.5 Feet Drilling Refusal at 2.5 Feet								
5									
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112

RANSOM Environmental Consultants, Inc.

BORING LOG: B114

Ground Elevation:	See Plan	Total Depth:	10.5 Feet	Logged By:	TRM/PDD
GW encountered:	5 Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	6 Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (In.)	USCS SYMBOL	N	WELL
	Topsoil 6" +/-			S1	7,10, 14,27	24/12	SM	24	
	Brown, fine to medium SAND, some Silt, little rock fragments.			S2	6,22, 19,20	24/10	SM	41	
	(Moist - Firm)								
5	Brown, fine to medium SAND and SILT, little Gravel.			S3	9,11, 36,13	24/10	SM	47	
				S4	4,4, 14,18	24/9	SM	18	
10	(Wet - Firm)								
	End of Boring 10.5 Feet Drilling Refusal 10.5 Feet								
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch I.D. split-spoon sampller driven with 140 lb. hammer falling 30 inches.
3) Sample 0-4 feet submitted for environmental lab analysis.
4) NO = Not Observed; NM = Not Measured

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B115

Ground Elevation:	See Plan	Total Depth:	12 Feet	Logged By:	TRM/PDD
GW encountered:	2 Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	2 Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Probe to refusal. No samples obtained (see Field Remarks)	Topsoil							
5		SAND and GRAVEL, some Silt							
		Weathered bedrock							
10		Refusal at 12 feet with casing							
	End of Boring 12 Feet Drilling Refusal 12 Feet								
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B116

Ground Elevation: See Plan	Total Depth: 5.6 Feet	Logged By: TRM/PDD	
GW encountered: -- Feet	Boring Diameter: 3 1/4 Inches	Date Drilled: 6/7/05 to 6/7/05	
GW @ completion -- Feet	Well Stickup: --	Driller: Soil Exporation	

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Topsoil 6" +/-								
	Brown, fine to medium SAND, little Gravel and Silt.			S1	4,5, 7,7	24/13	SM	12	
				S2	11,13, 16,14	24/19	SM	29	
5	becomes rock fragments			S3	26,29, 31, 100/2"	21/2	SM	60	
	(Moist to Dry - Firm to Very Compact)								
	End of Boring 5.6 Feet Spoon Refusal 5.6 Feet								
10									
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B117

Ground Elevation:	See Plan	Total Depth:	9.5 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	--	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Asphalt 2" +/-								
	Brown, fine to medium SAND, some Gravel, little silt.			S1	10,9, 4,3	24/12	SM	13	
				S2	33,21, 26,32	24/11	SM	47	
5				S3	26,19, 39,29	24/22	SM	58	
				S4	25,26, 31,29	24/20	SM	57	
				S5	27,33, 31, 100/1"	19/17	SM	64	
10	(Moist - Firm to Compact) End of Boring 9.5 Feet Spoon Refusal 9.5 Feet								
15									

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Soil Sampling: 1 3/8 inch split-spoon sampler driven with automatic 140 lb. hammer fallling 30 inches.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

RANSOM Environmental Consultants, Inc.

BORING LOG: B118

Ground Elevation:	See Plan	Total Depth:	14 Feet	Logged By:	TRM/PDD
GW encountered:	NO Feet	Boring Diameter:	3 1/4 Inches	Date Drilled:	6/7/05 to 6/7/05
GW @ completion	NO Feet	Well Stickup:	–	Driller:	Soil Exploration

DEPTH	DESCRIPTION	REMARKS	SAMPLE	SAMPLE NUMBER	BLOW COUNTS (per 6 inches)	PENETRATION/ RECOVERY (in.)	USCS SYMBOL	N	WELL
	Topsoil								
	Brown SILT and CLAY, little fine Sand and fine Gravel.			S1	–	60/58	–	–	
5	(Moist)								
	becomes little fractured rock			S2	–	60/58	–	–	
10	Brown, fine SAND, some fine Gravel, little silt.			S3	–	48/–	–	–	
	(Moist)								
15	End of Boring 14 Feet Drilling Refusal 14 Feet								

NOTES:
1) Drilling Method: Geoprobe with 3 inch I.D. steel casing.
2) Sample 0-5 feet submitted for environmental lab analysis.
3) NO = Not Observed; NM = Not Measured; NT = Not Tested

CLIENT:
CLD Consulting Engineers, Inc.

SITE:
Hotel Exp. / Public Parking Garage
Russell & Deer Street
Portsmouth, NH

Project No.: 045112 Page: 1

T-5037-002
September 22, 2022

Ms. Beverly M. Zendt, Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Review of North End Mixed-Use Development Stormwater and Drainage**
Developer: Port Harbor Land LLC
Design Engineer: Tighe & Bond
CMA #1134.4

Dear Beverly:

On behalf of Port Harbor Land, LLC (applicant), we are pleased to submit this letter in response to peer review comments on the above referenced project received from CMA Engineers, Inc. (CMA) in a letter dated September 1, 2022.

Please find **in bold** below specific responses to the two (2) remaining comments received from CMA stated in the September 1st letter.

1. *The plan includes no infiltration of groundwater recharge features. This redevelopment presents the opportunity to potentially improve upon the existing condition. The applicant should demonstrate why on-site infiltration is not achievable.*

   As stated in response to Site Plan Review Regulation, Comment #2 and General Comments, Comment #1 1n our response to the initial comments letter dated July 21, 2022, the proposed site is comprised of urban land with shallow bedrock. The bedrock on site is exposed on the northern end of the site ~9 feet above the surrounding area. Towards the middle of the site in the location of proposed building 2 bedrock is at elevation ±19 feet, which is ~4-6 feet below grade. Additionally, given the tight urban environment there is not an area on site that is a sufficient distance from the building foundation or other subsurface utilities suitable for infiltration. Due to these site constrictions, infiltration is not feasible. Peak flows have been mitigated for the development site through the use of underground detention chambers, and treatment standards of the City and NHDES are being met through the use of stormwater filtration units.

2. *The applicant should confirm the downstream existing stormwater drainage system has adequate capacity (functions well under existing conditions).*

   As stated in response to General Comments, Comment #2 1n our response to the initial comments letter dated July 21, 2022, per discussions with the City of Portsmouth DPW it is our understanding that the existing stormwater drainage system functions well in the existing conditions for both Russell Street and Maplewood Avenue. It is also our understanding that the City is currently in the design process to upgrade the drainage system and outfall to the Maplewood Avenue drainage system. The existing condition of the site was looked at closely to ensure that the pre-development condition was modelled accurately so that the proposed

development would not have an adverse impact to the City's closed drainage system. The proposed project results in reduced peak flow to the existing closed drainage systems therefore the proposed project would not have an adverse impact on the city's drainage system.

If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

Enclosures

Copy: Port Harbor Land, LLC (via email)

T-5037-002
July 21, 2022

Mr. Philip A. Corbett, PE, Project Manager
CMA Engineers, Inc.
35 Bow Street
Portsmouth, New Hampshire 03801

Re: **Review of North End Mixed-Use Development Stormwater and Drainage**
Developer: Port Harbor Land LLC
Design Engineer: Tighe & Bond
CMA #1134.4

Dear Philip:

On behalf of Port Harbor Land, LLC (applicant), we are pleased to submit the following revised items for the above referenced project. The enclosed items have been revised in response to the five (5) drainage review comments and two (2) general comments received from CMA in a letter dated June 24th, 2022.

- One (1) copy of the Site Plan Set, last revised July 21, 2022;
- One (1) copy of the Drainage Analysis, last revised July 21, 2022;
- One (1) copy of the Operations & Maintenance Plan, last revised July 21, 2022;

Please find **in bold** below specific responses to each comment stated in the June 24th letter.

Site Plan Review Regulations

1. *Section 7.1: Applicants shall incorporate Low Impact Development (LID) design practices and techniques in all aspects of the site's development.*

   The only proposed LID for the site is the structural BMP (Contech Jellyfish Filter). Most of the site flows to the Contech Jellyfish for treatment; however, there are portions of the driveways that discharge untreated onto the Greene Street ROW, and into the closed drainage system in Russell Street.

   The runoff from the proposed driveway in between buildings 2 & 3 has been redirected to discharge to an underground detention basin and jellyfish filter rather than discharging to Russell Street without being treated. The fire access road high point near Green Street has been shifted closer to Green Street to maximize the amount of runoff that is captured, detained, and treated.

2. *Section 7.4.2.6: Efforts shall be made to utilize methods that intercept, treat, and infiltrate runoff throughout the site including, but not limited to, infiltration trenches, drainfields, dry wells, bioretention areas, level spreaders, filter strips, wetlands, vegetated swales, gravel wetlands, rain gardens, and tree boxes.*

   The plan includes no infiltration of groundwater recharge features. Instead, the project includes a closed underground detention system with an outlet structure to mitigate the peak runoff flow. The report mentions there are excessively draining (Hydrologic Soil Group Type A) soils on site. No test pit report or boring logs were included; the applicant should demonstrate why on-site infiltration is not achievable.

The proposed site is comprised of urban land with shallow bedrock. Due to these site constrictions, infiltration is not feasible. Hydrologic Soil Group A soils were determined from the Web Soil Survey Report generated for this project, which does not take into account the shallow bedrock. Peak flows have been mitigated for the development site through the use of underground detention chambers, and treatment standards are being met through the use of stormwater filtration units.

3. *Section 7.4.2.7: Applicants shall demonstrate why on-site infiltration approaches are not possible or adequate before proposing the use of conventional systems that rely on collection and conveyance to remove runoff from the site.*

   See comments 1 and 2.

   See response to comment # 2.

4. *Section 7.4.3.1: All applications shall minimize the area of impervious surfaces and address the potential negative impact of impervious surfaces on surface and groundwater resources.*

   The proposed site is 92% impervious and adds 11% more impervious surfaces than the pre-development conditions. No pervious drive, parking or walkway areas are proposed.

   The proposed project has utilized alternative options to traditional site design to reduce the amount of impervious surfaces. These alternative options include having the parking for the development under building 2 and combining the use of the site driveway access as a pedestrian and bike connection and fire lane. Additionally, the proposed project site has shallow bedrock preventing the use of pervious drives, parking, or sidewalks, as previously mentioned in comment response # 2.

5. *Section 7.4.4.1: The applicant shall submit a Stormwater Management Plan and Erosion Control Plan.*

   No Stormwater Management Plan or Erosion Control Plan were submitted.

   Per City of Portsmouth Site Plan Review Regulations Section 7.4, there are 16 items required to be included as part of the Stormwater Management Plan. For ease of review, we have indicated where each of the 16 items are located on the submitted documents.

   1. **Section 1 of the drainage report and Sheet C-501.**
   2. **No on-site or adjacent wetlands, streams, or water bodies.**
   3. **Section 3 of the Drainage Report.**
   4. **Sheet C-103.**
   5. **Section 2 of the Drainage Report.**
   6. **Section 1.3 of the Drainage Report.**
   7. **Sheets G-100 and C-501.**
   8. **N/A**
   9. **Sections 4, 5, & 6 of the Drainage Report and the Operations & Maintenance Plan.**
   10. **No on-site infiltration**

11. N/A

12. Plan Set and Drainage Report have been completed by a licensed professional engineer certified in the State of New Hampshire.

13. Operations & Maintenance Plan

14. Operations & Maintenance Plan

15. Sheet C-501 and Operations & Maintenance Plan

16. Operations & Maintenance Plan

General Comments

1. The applicant should strive for greater treatment and infiltration of the sites' stormwater runoff or describe why such treatments are not viable. This redevelopment presents an opportunity to improve treatment and potentially infiltrate on site, utilizing tree box filters, rain gardens, or underground infiltration systems. However, it appears that limited means are proposed to achieve this improvement.

   The proposed project has treated all but a small portion of impervious surfaces that are unable to be captured due to their proximity to the railroad and existing roadways. Per the City of Portsmouth's Site Plan regulations, Section 7.6.2.2, the proposed project qualifies as a redevelopment project being that greater than 40% of the developable land is existing impervious surface. The project is required to treat at least 30% of the existing impervious surface and 100% of the additional impervious surfaces. Or at least 60% of the entire developed area using filtration and/or infiltration practices. The existing lot is comprised of 72,833 SF (80.90%) of impervious area. The proposed redevelopment lot contains 88,455 SF of impervious surface and is proposed to treat 69,757 SF of this impervious surface. The proposed stormwater management system treats 100% (15,622 SF) of the additional impervious surface and 74% (54,135 SF) of the existing impervious surface using a filtration system. As noted in comment response # 2, on-site infiltration is not feasible due to shallow bedrock conditions. As previously noted, the existing condition of the site is 80.90% impervious and has no existing stormwater treatment practices. The proposed treatment system for the site will provide a significant improvement to the quality of stormwater runoff leaving the site.

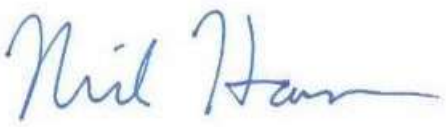
2. The applicant should confirm the downstream existing stormwater drainage system has adequate capacity (functions well under existing conditions).

   Per discussions with the City of Portsmouth DPW it is our understanding that the existing stormwater drainage system functions well in the existing conditions for both Russell Street and Maplewood Avenue. It is also our understanding that the City is currently in the design process to upgrade the drainage system and outfall to the Maplewood Avenue drainage system. The existing condition of the site was looked at closely to ensure that the pre-development condition was modelled accurately so that the proposed development would not have an adverse impact to the City's closed drainage system. The proposed project results in reduced peak flow to the existing closed drainage systems therefore the proposed project would not have an adverse impact on the city's drainage system.

If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

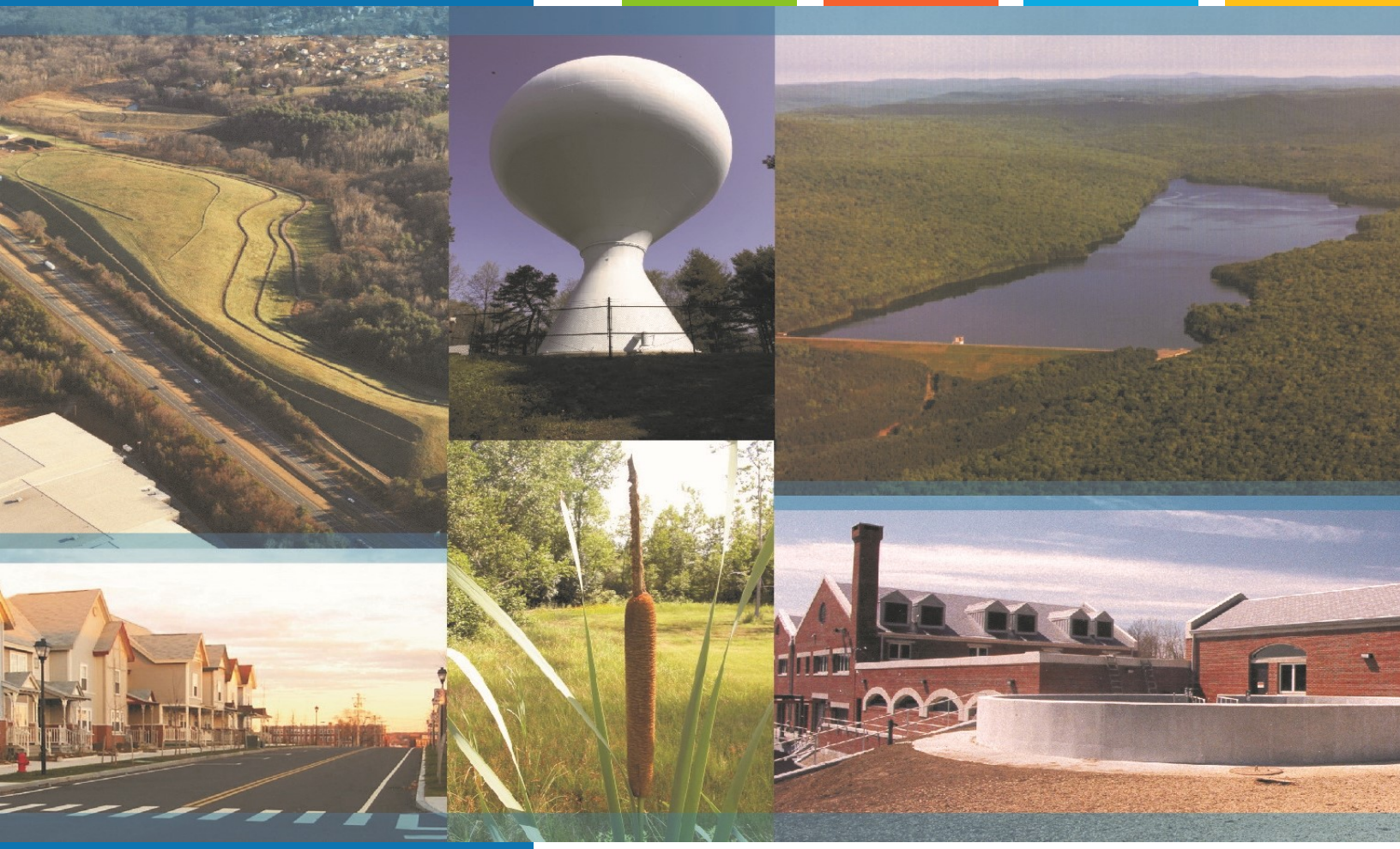


Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

Enclosures

Copy: Port Harbor Land, LLC (via email)
City of Portsmouth Planning Department



North End Mixed Use Development
Russell Street & Deer Street
Portsmouth, NH

Long-Term Operation & Maintenance Plan

Two International Group

May 24, 2022

Tighe&Bond

100% Recyclable

Section 1 Long-Term Operation & Maintenance Plan

Section 2 Invasive Species

Section 3 Annual Updates and Log Requirements

Section 1
Long-Term Operation & Maintenance Plan

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high-quality stormwater runoff.

1.1 Contact/Responsible Party

Port Harbor Land, LLC
1000 Market Street, 3rd Floor
Portsmouth, NH 03801

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

1.2 Maintenance Items

Maintenance of the following items shall be recorded:

- Litter/Debris Removal
- Landscaping
- Catchbasin Cleaning
- Pavement Sweeping
- Underground Detention System
- Contech Jellyfish Filtration System

The following maintenance items and schedule represent the minimum action required. Periodic site inspections shall be conducted, and all measures must be maintained in effective operating condition. The following items shall be observed during site inspection and maintenance:

- Inspect vegetated areas, particularly slopes and embankments for areas of erosion. Replant and restore as necessary
- Inspect catch basins for sediment buildup
- Inspect site for trash and debris

1.3 Overall Site Operation & Maintenance Schedule

Maintenance Item	Frequency of Maintenance
Litter/Debris Removal	Weekly
Pavement Sweeping - Sweep impervious areas to remove sand and litter.	Annually
Landscaping - Landscaped islands to be maintained and mulched.	Maintained as required and mulched each Spring
Catch Basin (CB) Cleaning - CB to be cleaned of solids and oils.	Annually
Contech Jelly Fish Units	In accordance with Manufacturer's Recommendations (See section 1.5)
Underground Detention Basin - Visual observation of sediment levels within system	Bi-Annually (See Section 1.4)

1.3.1 Disposal Requirements

Disposal of debris, trash, sediment and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

1.4 Underground Detention System Maintenance Requirements

Underground Detention System Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Monitor inlet and outlet structures for sediment accumulation	Two (2) times annually	- Trash, debris and sediment to be removed - Any required maintenance shall be addressed
Deep Sump Catchbasins	Two (2) times annually	- Removal of sediment as warranted by inspection - No less than once annually
Monitor detention system for sediment accumulation	Two (2) times annually	- Trash, debris and sediment to be removed - Any required maintenance shall be addressed

1.5 Contech Jellyfish Filter System Maintenance Requirements

Contech Jellyfish Filter System Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Inspect vault for sediment build up, static water, plugged media and bypass condition	Quarterly during the first year of operation, Minimum of annually in subsequent years	- See section 4 & 5 of Jellyfish Filter Owner's Manual
Replace Cartridges	As required by inspection, 1–5 years.	- See section 6 & 7 of Jellyfish Filter Owner's Manual

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter
Owner's Manual

Jellyfish® Filter

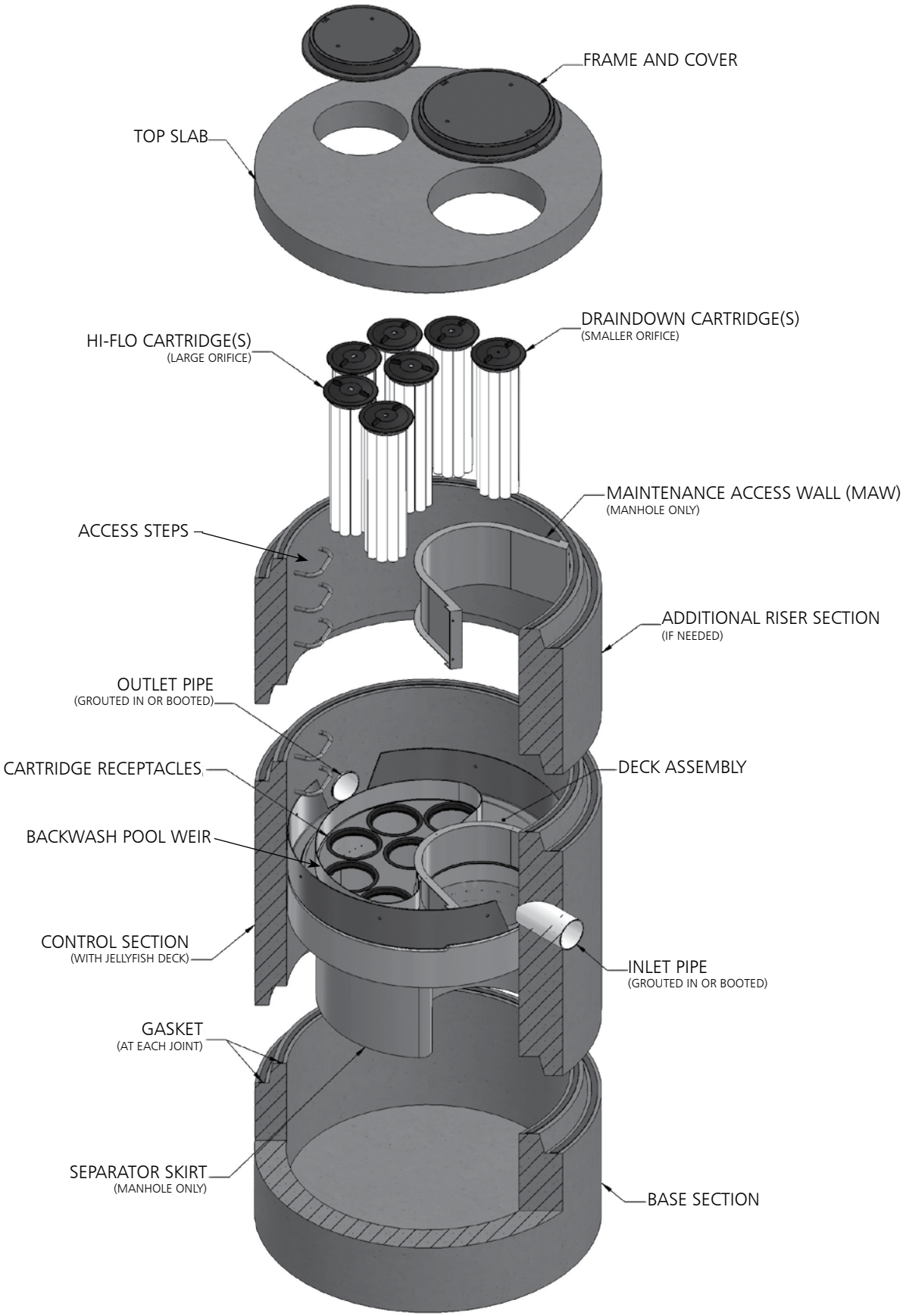
Table of Contents

THANK YOU FOR PURCHASING THE JELLYFISH® FILTER!

Contech Engineered Solutions would like to thank you for selecting the Jellyfish Filter to meet your project's stormwater treatment needs. With proper inspection and maintenance, the Jellyfish Filter is designed to deliver ongoing, high levels of stormwater pollutant removal.

If you have any questions, please feel free to call us or e-mail us:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 | West Chester, OH 45069
513-645-7000 | 800-338-1122
www.ContechES.com
info@conteches.com


FRAME AND COVER
TOP SLAB
DRAINDOWN CARTRIDGE(S)
(SMALLER ORIFICE)
HI-FLO CARTRIDGE(S)
(LARGE ORIFICE)
MAINTENANCE ACCESS WALL (MAW)
(MANHOLE ONLY)
ACCESS STEPS
ADDITIONAL RISER SECTION
(IF NEEDED)
OUTLET PIPE
(GROUTED IN OR BOOTED)
CARTRIDGE RECEPTACLES
DECK ASSEMBLY
BACKWASH POOL WEIR
CONTROL SECTION
(WITH JELLYFISH DECK)
INLET PIPE
(GROUTED IN OR BOOTED)
GASKET
(AT EACH JOINT)
SEPARATOR SKIRT
(MANHOLE ONLY)
BASE SECTION

WARNINGS / CAUTION

1. FALL PROTECTION may be required.
2. WATCH YOUR STEP if standing on the Jellyfish Filter Deck at any time; Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck. Attentive care must be taken while standing on the Jellyfish Filter Deck at all times to prevent stepping onto a lid, into or through a cartridge hole or slipping on the deck.
3. The Jellyfish Filter Deck can be SLIPPERY WHEN WET.
4. If the Top Slab, Covers or Hatches have not yet been installed, or are removed for any reason, great care must be taken to NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK. The Jellyfish Filter Deck and Cartridge Receptacle Rings can be damaged under high impact loads. This type of activity voids all warranties. All damaged items to be replaced at owner's expense.
5. Maximum deck load 2 persons, total weight 450 lbs.

Safety Notice

Jobsite safety is a topic and practice addressed comprehensively by others. The inclusions here are intended to be reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and perform all training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment as necessary. Make sure all equipment is staffed with trained and/or certified personnel, and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Eye protection
- Safety boots
- Ear protection
- Gloves
- Ventilation and respiratory protection
- Hard hat
- Maintenance and protection of traffic plan

Chapter 1

1.0 – Owner Specific Jellyfish Filter Product Information

Below you will find a reference page that can be filled out according to your Jellyfish Filter specification to help you easily inspect, maintain and order parts for your system.

Owner Name:	
Phone Number:	
Site Address:	
Site GPS Coordinates/unit location:	
Unit Location Description:	
Jellyfish Filter Model No.:	
Contech Project & Sequence Number	
No. of Hi-Flo Cartridges	
No. of Cartridges:	
Length of Draindown Cartridges:	
No. of Blank Cartridge Lids:	
Bypass Configuration (Online/Offline):	

Notes:

_____

_____

_____

_____

Chapter 2

2.0 – Jellyfish Filter System Operations and Functions

The Jellyfish Filter is an engineered stormwater quality treatment technology that removes a high level and wide variety of stormwater pollutants. Each Jellyfish Filter cartridge consists of eleven membrane - encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide a large filtration surface area, resulting in high flow and high pollutant removal capacity.

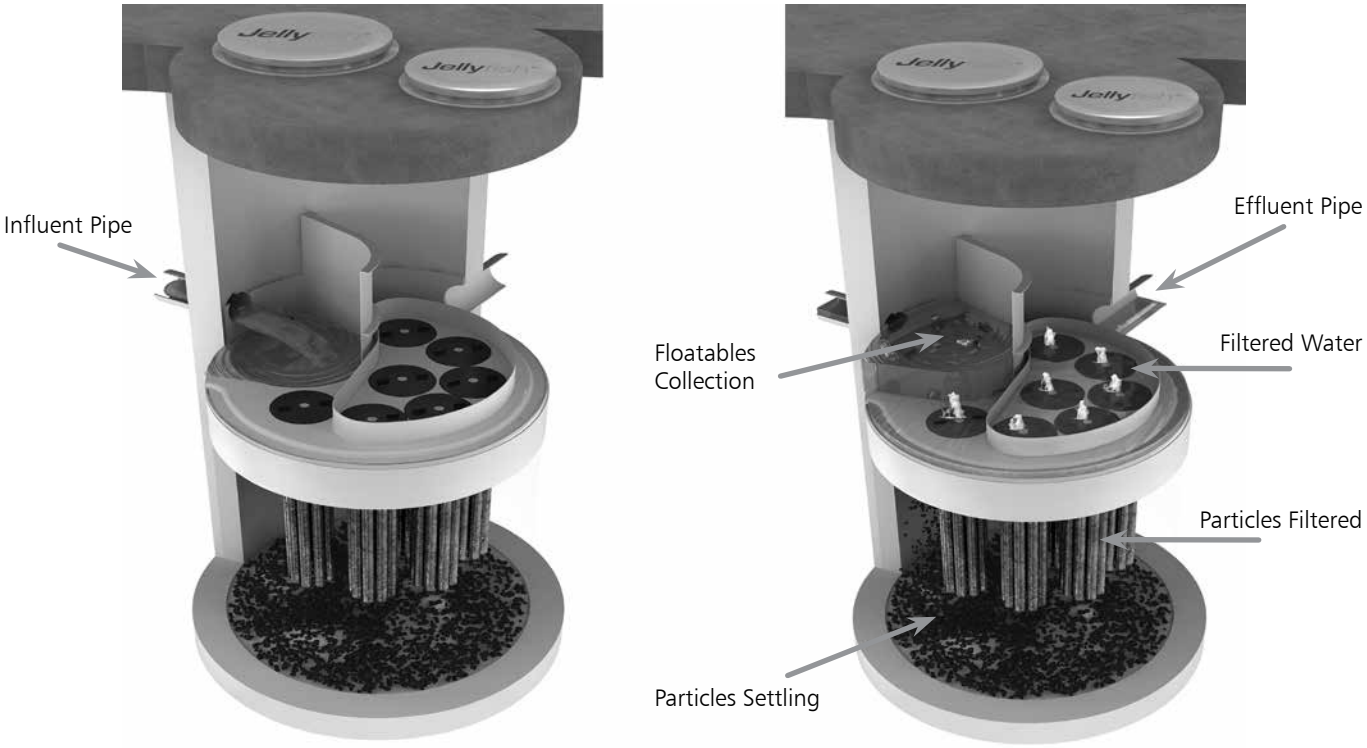
The Jellyfish Filter functions are depicted in Figure 1 below.

FIGURE 1

Jellyfish Filter Treatment Functions

Membrane Filtration

Section View with Maintenance Access Wall (MAW) Cutaway



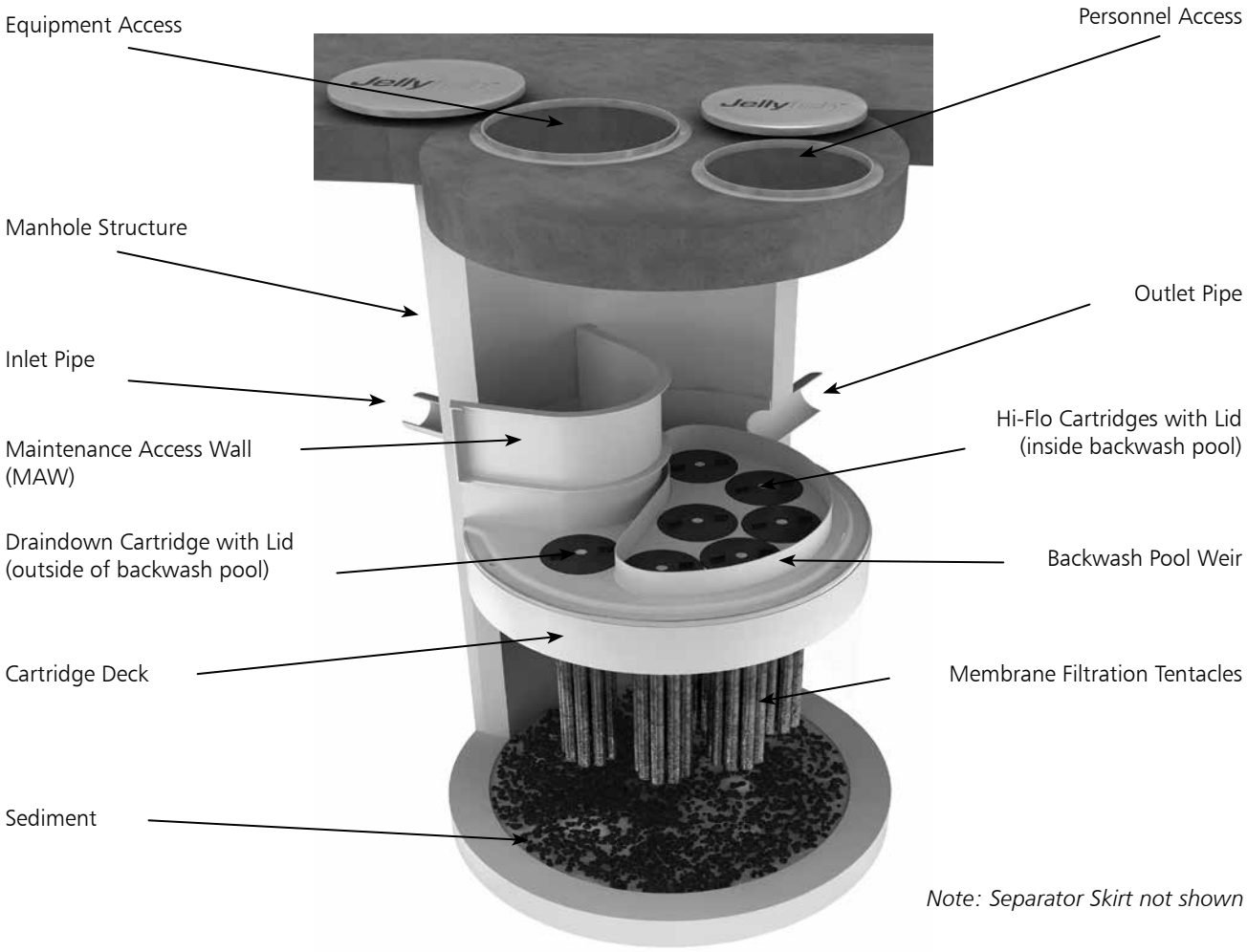
Jellyfish Filter cartridges are backwashed after each peak storm event, which removes accumulated sediment from the membranes. This backwash process extends the service life of the cartridges and increases the time between maintenance events.

For additional details on the operation and pollutant capabilities of the Jellyfish Filter please refer to additional details on our website at www.ContechES.com.

2.1 – Components and Cartridges

The Jellyfish Filter and components are depicted in Figure 2 below.

FIGURE 2 **Jellyfish Filter Components**



Tentacles are available in various lengths as depicted in Table 1 below.

Table 1 – Cartridge Lengths / Weights and Cartridge Lid Orifice Diameters

Cartridge Lengths	Dry Weight	Hi-Flo Orifice Diameter	Draindown Orifice Diameter
15 inches (381 mm)	10 lbs (4.5 kg)	35 mm	20 mm
27 inches (686 mm)	14.5 lbs (6.6 kg)	45 mm	25 mm
40 inches (1,016 mm)	19.5 lbs (8.9 kg)	55 mm	30 mm
54 inches (1,372 mm)	25 lbs (11.4 kg)	70 mm	35 mm

2.2 – Jellyfish Membrane Filtration Cartridge Assembly

The Jellyfish Filter utilizes multiple membrane filtration cartridges. Each cartridge consists of removable cylindrical filtration "tentacles" attached to a cartridge head plate. Each filtration tentacle has a threaded pipe nipple and o-ring. To attach, insert the top pipe nipples with the o-ring through the head plate holes and secure with locking nuts. Hex nuts to be hand tightened and checked with a wrench as shown below.

2.3 – Jellyfish Membrane Filtration Cartridge Installation

- Cartridge installation will be performed by trained individuals and coordinated with the installing site Contractor. Flow diversion devices are required to be in place until the site is stabilized (final paving and landscaping in place). Failure to address this step completely will reduce the time between required maintenance.
- Descend to the cartridge deck (see Safety Notice and page 3).
- Refer to Contech's submittal drawings to determine proper quantity and placement of Hi-Flo, Draindown and Blank cartridges with appropriate lids. Lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. It is possible that not all cartridge receptacles will be filled with a filter cartridge. In that case, a blank headplate and blank cartridge lid (no orifice) would be installed.

Cartridge Assembly

Do not force the tentacles down into the cartridge receptacle, as this may damage the membranes. Apply downward pressure on the cartridge head plate to seat the lubricated rim gasket (thick circular gasket surrounding the circumference of the head plate) into the cartridge receptacle. (See Figure 3 for details on approved lubricants for use with rim gasket.)

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice, and no orifice.
  - Lids with a small orifice are to be inserted into the Draindown cartridge receptacles, outside of the backwash pool weir.
  - Lids with a large orifice are to be inserted into the Hi-Flo cartridge receptacles within the backwash pool weir.
  - Lids with no orifice (blank cartridge lids) and a blank headplate are to be inserted into unoccupied cartridge receptacles.
- To install a cartridge lid, align both cartridge lid male threads with the cartridge receptacle female threads before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation.

3.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.
Inspection activities are typically conducted from surface observations and include:

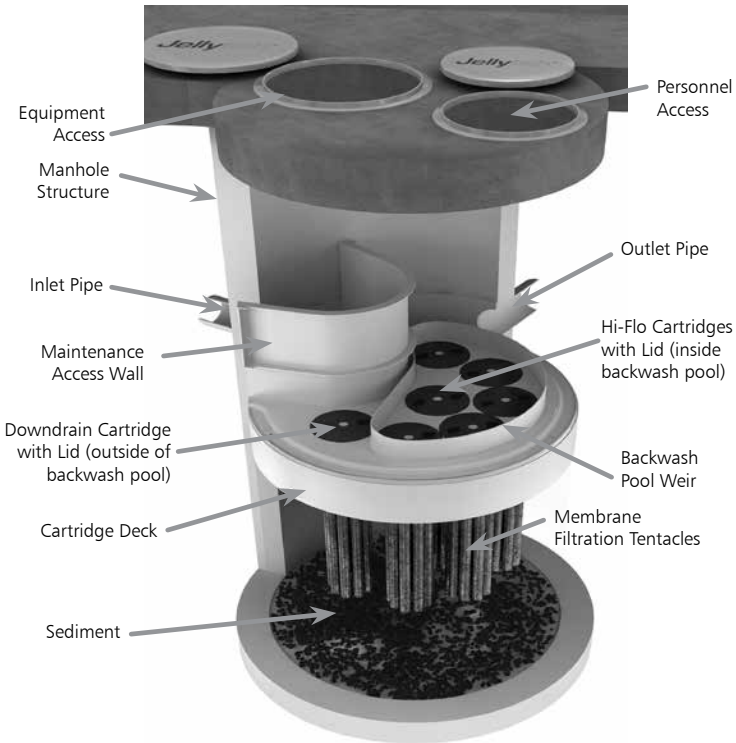
- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed

4.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.



Note: Separator Skirt not shown

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

5.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

5.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.

Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

5.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

6.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

7.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

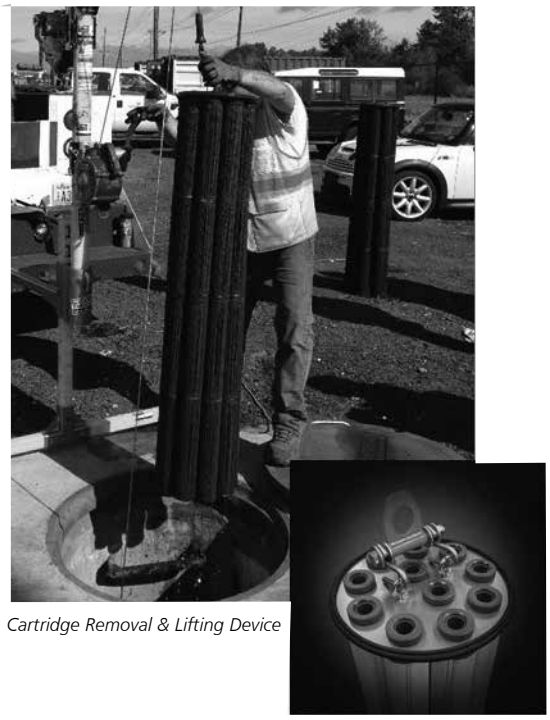
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

7.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. *Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

7.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.
2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.



Cartridge Removal & Lifting Device

3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.
4. Collected rinse water is typically removed by vacuum hose.

5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

7.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.
3. Pressure wash cartridge deck and receptacles to remove all

Rinsing Cartridge with Contech Rinse Tool

sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.

4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.
6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some

Vacuuming Sump Through MAW

vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

7.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. *Caution: Do not force the cartridge downward; damage may occur.*
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

7.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

7.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

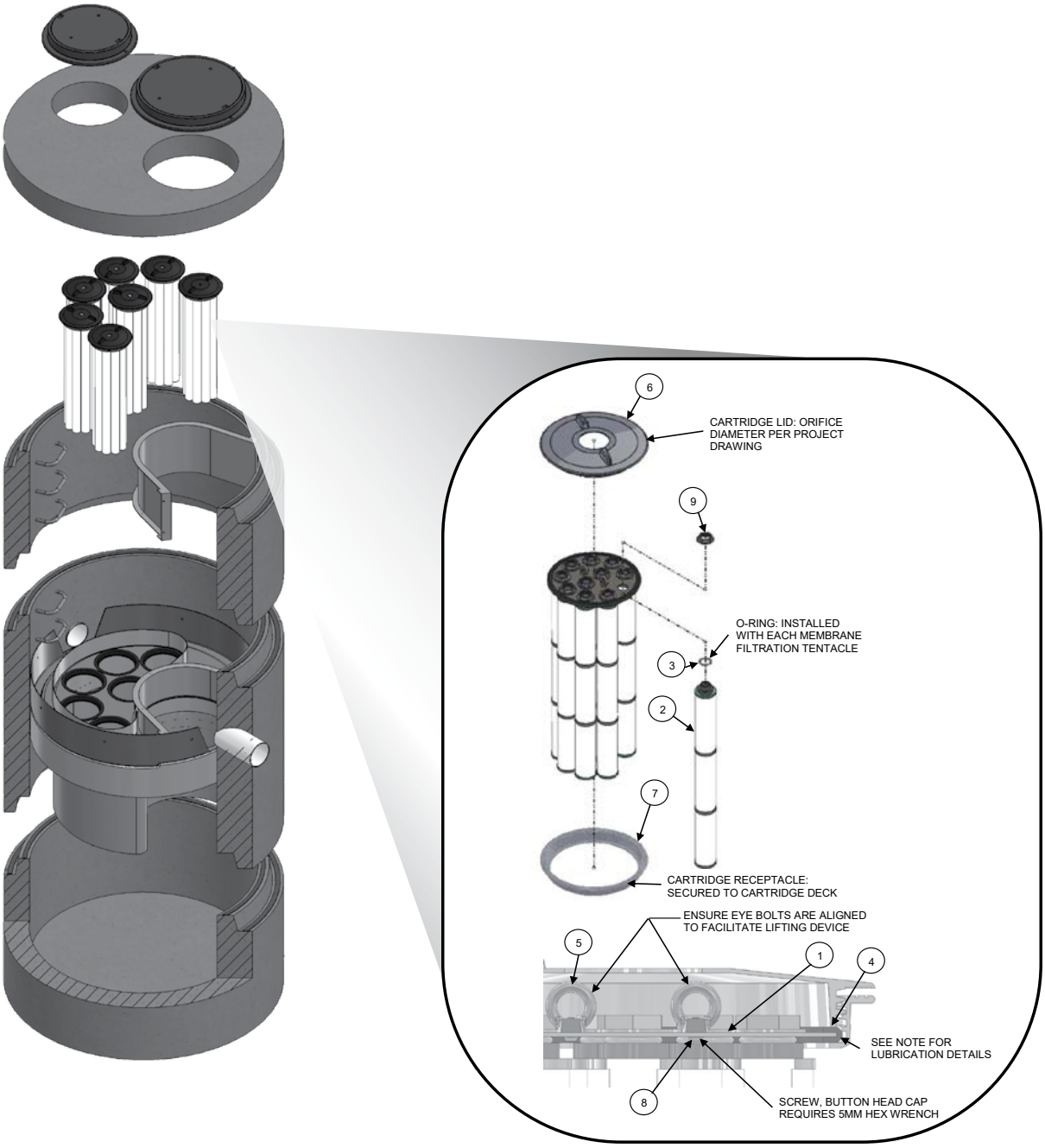


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lid (Item 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner: _____ Jellyfish Model No.:_____

Location: _____ GPS Coordinates: _____

Land Use: Commercial:_____ Industrial: _____ Service Station:_____

Road/Highway:____ Airport: _____ Residential: _____ Parking Lot:_____

Date/Time:					
Inspector:					
Maintenance Contractor:					
Visible Oil Present: (Y/N)					
Oil Quantity Removed					
Floatable Debris Present: (Y/N)					
Floatable Debris removed: (Y/N)					
Water Depth in Backwash Pool					
Cartridges externally rinsed/re-commissioned: (Y/N)					
New tentacles put on Cartridges: (Y/N)					
Sediment Depth Measured: (Y/N)					
Sediment Depth (inches or mm):					
Sediment Removed: (Y/N)					
Cartridge Lids intact: (Y/N)					
Observed Damage:					
Comments:					

1.6 Snow & Ice Management for Standard Asphalt and Walkways

There are no snow storage areas on site. The property manager will be responsible for timely snow removal from all private sidewalks, driveways, and parking areas. All snow removal will be hauled off-site and legally disposed of. Salt storage areas shall be covered or located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt and sand shall be used to the minimum extent practical (refer to the attached for de-icing application rate guideline from the New Hampshire Stormwater Management Manual, Volume 2,).

Deicing Application Rate Guidelines

24' of pavement (typcial two-lane road)

These rates are not fixed values, but rather the middle of a range to be selected and adjusted by an agency according to its local conditions and experience.

			Pounds per two-lane mile			
Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Salt Prewetted / Pretreated with Salt Brine	Salt Prewetted / Pretreated with Other Blends	Dry Salt*	Winter Sand (abrasives)
> 30° ↑	Snow	Plow, treat intersections only	80	70	100*	Not recommended
	Freezing Rain	Apply Chemical	80 - 160	70 - 140	100 - 200*	Not recommended
30° ↓	Snow	Plow and apply chemical	80 - 160	70 - 140	100 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↑	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↓	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↑	Snow or Freezing Rain	Plow and apply chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↓	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↑	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↓	Snow or Freezing Rain	Plow and apply chemical	240 - 320	210 - 280	300 - 400*	500 for freezing rain
0° - 15° ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	300 - 400	Not recommended	500 - 750 spot treatment as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	400 - 600**	Not recommended	500 - 750 spot treatment as needed

* Dry salt is not recommended. It is likely to blow off the road before it melts ice.

** A blend of 6 - 8 gal/ton $MgCl_2$ or $CaCl_2$ added to NaCl can melt ice as low as -10°.

Anti-icing Route Data Form				
Truck Station:				
Date:				
Air Temperature	Pavement Temperature	Relative Humidity	Dew Point	Sky
Reason for applying:				
Route:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				
Name:				

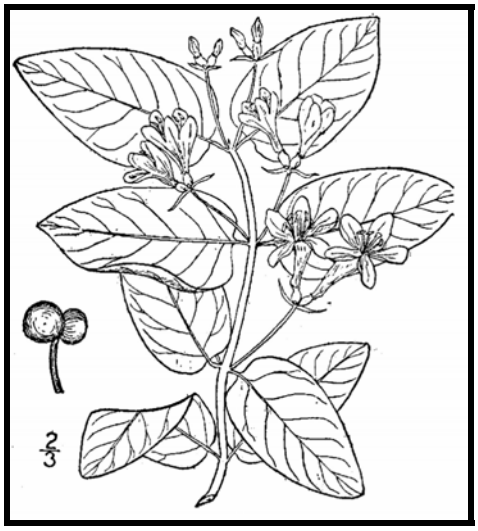
Section 2
Invasive Species

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem is classified as an invasive species. Refer to the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species.

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

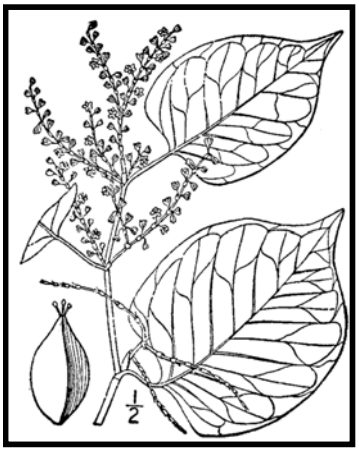
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

Managing Invasive Plants
Methods of Control

by Christopher Mattrick

They're out there. The problem of invasive plants is as close as your own backyard.

Maybe a favorite dogwood tree is struggling in the clutches of an Oriental bittersweet vine. Clawlike canes of multiflora rose are scratching at the side of your house. That handsome burning bush you planted few years ago has become a whole clump in practically no time … but what happened to the azalea that used to grow right next to it?

If you think controlling or managing invasive plants on your property is a daunting task, you're not alone. Though this topic is getting lots of attention from federal, state, and local government agencies, as well as the media, the basic question for most homeowners is simply, "How do I get rid of the invasive plants in my own landscape?" Fortunately, the best place to begin to tackle this complex issue is in our own backyards and on local conservation lands. We hope the information provided here will help you take back your yard. We won't kid you—there's some work involved, but the payoff in beauty, wildlife habitat, and peace of mind makes it all worthwhile.

PLAN OF ATTACK

Three broad categories cover most invasive plant control: mechanical, chemical, and biological. Mechanical control means physically removing plants from the environment through cutting or pulling. Chemical control uses herbicides to kill plants and inhibit regrowth. Techniques and chemicals used will vary depending on the species. Biological controls use plant diseases or insect predators, typically from the targeted species' home range. Several techniques may be effective in controlling a single species, but there is usually one preferred method—the one that is most resource efficient with minimal impact on non-target species and the environment.

Spraying chemicals to control invasive plants.

MECHANICAL CONTROL METHODS

Mechanical treatments are usually the first ones to look at when evaluating an invasive plant removal project. These procedures do not require special licensing or introduce chemicals into the environment. They do require permits in some situations, such as wetland zones. [See sidebar on page 23.] Mechanical removal is highly labor intensive and creates a significant amount of site disturbance, which can lead to rapid reinvasion if not handled properly.

Pulling and digging

Many herbaceous plants and some woody species (up to about one inch in diameter), if present in limited quantities, can be pulled out or dug up. It's important to remove as much of the root system as possible; even a small portion can restart the infestation. Pull plants by hand or use a digging fork, as shovels can shear off portions of the root system, allowing for regrowth. To remove larger woody stems (up to about three inches in diameter), use a Weed Wrench™, Root Jack, or Root Talon. These tools, available from several manufacturers, are designed to remove the aboveground portion of the plant as well as the entire root system. It's easiest to undertake this type of control in the spring or early summer when soils are moist and plants come out more easily.

Using tools to remove woody stems.

Volunteers hand pulling invasive plants.

Suffocation

Try suffocating small seedlings and herbaceous plants. Place double or triple layers of thick UV-stabilized plastic sheeting, either clear or black (personally I like clear), over the infestation and secure the plastic with stakes or weights. Make sure the plastic extends at least five feet past the edge of infestation on all sides. Leave the plastic in place for at least two years. This technique will kill everything beneath the plastic—invasive and non-invasive plants alike. Once the plastic is removed, sow a cover crop such as annual rye to prevent new invasions.

Cutting or mowing

This technique is best suited for locations you can visit and treat often. To be effective, you will need to mow or cut infested areas three or four times a year for up to five years. The goal is to interrupt the plant's ability to photosynthesize by removing as much leafy material as possible. Cut the plants at ground level and remove all resulting debris from the site. With this treatment, the infestation may actually appear to get worse at first, so you will need to be as persistent as the invasive plants themselves. Each time you cut the plants back, the root system gets slightly larger, but must also rely on its energy reserves to push up new growth. Eventually, you will exhaust these reserves and the plants will die. This may take many years, so you have to remain committed to this process once you start; otherwise the treatment can backfire, making the problem worse.

CHEMICAL CONTROL METHODS

Herbicides are among the most effective and resource-efficient tools to treat invasive species. Most of the commonly known invasive plants can be treated using only two herbicides—glyphosate (the active ingredient in Roundup™ and Rodeo™) and triclopyr (the active ingredient in Brush-B-Gone™ and Garlon™). Glyphosate is non-selective, meaning it kills everything it contacts. Triclopyr is selective and does not injure monocots (grasses, orchids, lilies, etc.). Please read labels and follow directions precisely for both environmental and personal safety. These are relatively benign herbicides, but improperly used they can still cause both short- and long-term health and environmental problems. Special aquatic formulations are required when working in wetland zones. You are required to have a state-issued pesticide applicator license when applying these chemicals on land you do not own. To learn more about the pesticide regulations in your state, visit or call your state's pesticide control division, usually part of the state's Department of Agriculture. In wetland areas, additional permits are usually required by the Wetlands Protection Act. [See sidebar on page 23.]

Foliar applications

When problems are on a small scale, this type of treatment is usually applied with a backpack sprayer or even a small handheld spray bottle. It is an excellent way to treat large monocultures of herbaceous plants, or to spot-treat individual plants that are difficult to remove mechanically, such as goutweed, swallowwort, or purple loosestrife. It is also an effective treatment for some woody species, such as Japanese barberry, multiflora rose, Japanese honeysuckle, and Oriental bittersweet that grow in dense masses or large numbers over many acres. The herbicide mixture should contain no more than five percent of the active ingredient, but it is important to follow the instructions on the product label. This treatment is most effective when the plants are actively growing, ideally when they are flowering or beginning to form fruit. It has been shown that plants are often more susceptible to this type of treatment if the existing stems are cut off and the regrowth is treated. This is especially true for Japanese knotweed. The target plants should be thoroughly wetted with the herbicide on a day when there is no rain in the forecast for the next 24 to 48 hours.

Cut stem treatments

There are several different types of cut stem treatments, but here we will review only the one most commonly used. All treatments of this type require a higher concentration of the active ingredient than is used in foliar applications. A 25 to 35 percent solution of the active ingredient should be used for cut stem treatments, but read and follow all label instructions. In most cases, the appropriate herbicide is glyphosate, except for Oriental bittersweet, on which triclopyr should be used. This treatment can be used on all woody stems, as well as phragmites and Japanese knotweed.

For woody stems, treatments are most effective when applied in the late summer and autumn—between late August and November. Stems should be cut close to the ground, but not so close that you will lose track of them. Apply herbicide directly to the cut surface as soon as possible after cutting. Delaying the application will reduce the effectiveness of the treatment. The herbicide can be applied with a sponge, paintbrush, or spray bottle.

Cut stem treatment tools.

For phragmites and Japanese knotweed, treatment is the same, but the timing and equipment are different. Plants should be treated anytime from mid-July through September, but the hottest, most humid days of the summer are best for this method. Cut the stems halfway between two leaf nodes at a comfortable height. Inject (or squirt) herbicide into the exposed hollow stem. All stems in an infestation should be treated. A wash bottle is the most effective application tool, but you can also use an eyedropper, spray bottle, or one of the recently developed high-tech injection systems.

It is helpful to mix a dye in with the herbicide solution. The dye will stain the treated surface and mark the areas that have been treated, preventing unnecessary reapplication. You can buy a specially formulated herbicide dye, or use food coloring or laundry dye.

There is not enough space in this article to describe all the possible ways to control invasive plants. You can find other treatments, along with more details on the above-described methods, and species-specific recommendations on The Nature Conservancy Web site (tncweeds.ucdavis.edu). An upcoming posting on the Invasive Plant Atlas of New England (www.ipane.org) and the New England Wild Flower Society (www.newfs.org) Web sites will also provide further details.

Hollow stem injection tools.

Biological controls—still on the horizon

Biological controls are moving into the forefront of control methodology, but currently the only widely available and applied biocontrol relates to purple loosestrife. More information on purple loosestrife and other biological control projects can be found at www.invasiveplants.net.

DISPOSAL OF INVASIVE PLANTS

Proper disposal of removed invasive plant material is critical to the control process. Leftover plant material can cause new infestations or reinfest the existing project area. There are many appropriate ways to dispose of invasive plant debris. I've listed them here in order of preference.

1. **Burn it**—Make a brush pile and burn the material following local safety regulations and restrictions, or haul it to your town's landfill and place it in their burn pile.

2. **Pile it**—Make a pile of the woody debris. This technique will provide shelter for wildlife as well.

3. **Compost it**—Place all your herbaceous invasive plant debris in a pile and process as compost. Watch the pile closely for resprouts and remove as necessary. Do not use the resulting compost in your garden. The pile is for invasive plants only.

Injecting herbicide into the hollow stem of phragmites.

4. **Dry it/cook it**—Place woody debris out on your driveway or any asphalt surface and let it dry out for a month. Place herbaceous material in a doubled-up black trash bag and let it cook in the sun for one month. At the end of the month, the material should be non-viable and you can dump it or dispose of it with the trash. The method assumes there is no viable seed mixed in with the removed material.

Care should be taken in the disposal of all invasive plants, but several species need extra attention. These are the ones that have the ability to sprout vigorously from plant fragments and should ideally be burned or dried prior to disposal: Oriental bittersweet, multiflora rose, Japanese honeysuckle, phragmites, and Japanese knotweed.

Christopher Mattrick is the former Senior Conservation Programs Manager for New England Wild Flower Society, where he managed conservation volunteer and invasive and rare plant management programs. Today, Chris and his family work and play in the White Mountains of New Hampshire, where he is the Forest Botanist and Invasive Species Coordinator for the White Mountain National Forest.

Controlling Invasive Plants in Wetlands

Special concerns; special precautions

Control of invasive plants in or around wetlands or bodies of water requires a unique set of considerations. Removal projects in wetland zones can be legal and effective if handled appropriately. In many cases, herbicides may be the least disruptive tools with which to remove invasive plants. You will need a state-issued pesticide license to apply herbicide on someone else's property, but all projects in wetland or aquatic systems fall under the jurisdiction of the Wetlands Protection Act and therefore require a permit. ***Yes, even hand-pulling that colony of glossy buckthorn plants from your own swampland requires a permit.*** Getting a permit for legal removal is fairly painless if you plan your project carefully.

1. Investigate and understand the required permits and learn how to obtain them. The entity charged with the enforcement of the Wetlands Protection Act varies from state to state. For more information in your state, contact:

   ME: Department of Environmental Protection
   www.state.me.us/dep/blwq/docstand/nrpapage.htm

   NH: Department of Environmental Services
   www.des.state.nh.us/wetlands/

   VT: Department of Environmental Conservation
   www.anr.state.vt.us/dec/waterq/permits/htm/pm_cud.htm

   MA: Consult your local town conservation commission

   RI: Department of Environmental Management
   www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm

   CT: Consult your local town Inland Wetland and Conservation Commission

2. Consult an individual or organization with experience in this area. Firsthand experience in conducting projects in wetland zones and navigating the permitting process is priceless. Most states have wetland scientist societies whose members are experienced in working in wetlands and navigating the regulations affecting them. A simple Web search will reveal the contact point for these societies. Additionally, most environmental consulting firms and some nonprofit organizations have skills in this area.

3. Develop a well-written and thorough project plan. You are more likely to be successful in obtaining a permit for your project if you submit a project plan along with your permit application. The plan should include the reasons for the project, your objectives in completing the project, how you plan to reach those objectives, and how you will monitor the outcome.

4. Ensure that the herbicides you plan to use are approved for aquatic use. Experts consider most herbicides harmful to water quality or aquatic organisms, but rate some formulations as safe for aquatic use. Do the research and select an approved herbicide, and then closely follow the instructions on the label.

5. If you are unsure—research, study, and most of all, ask for help. Follow the rules. The damage caused to aquatic systems by the use of an inappropriate herbicide or the misapplication of an appropriate herbicide not only damages the environment, but also may reduce public support for safe, well-planned projects.

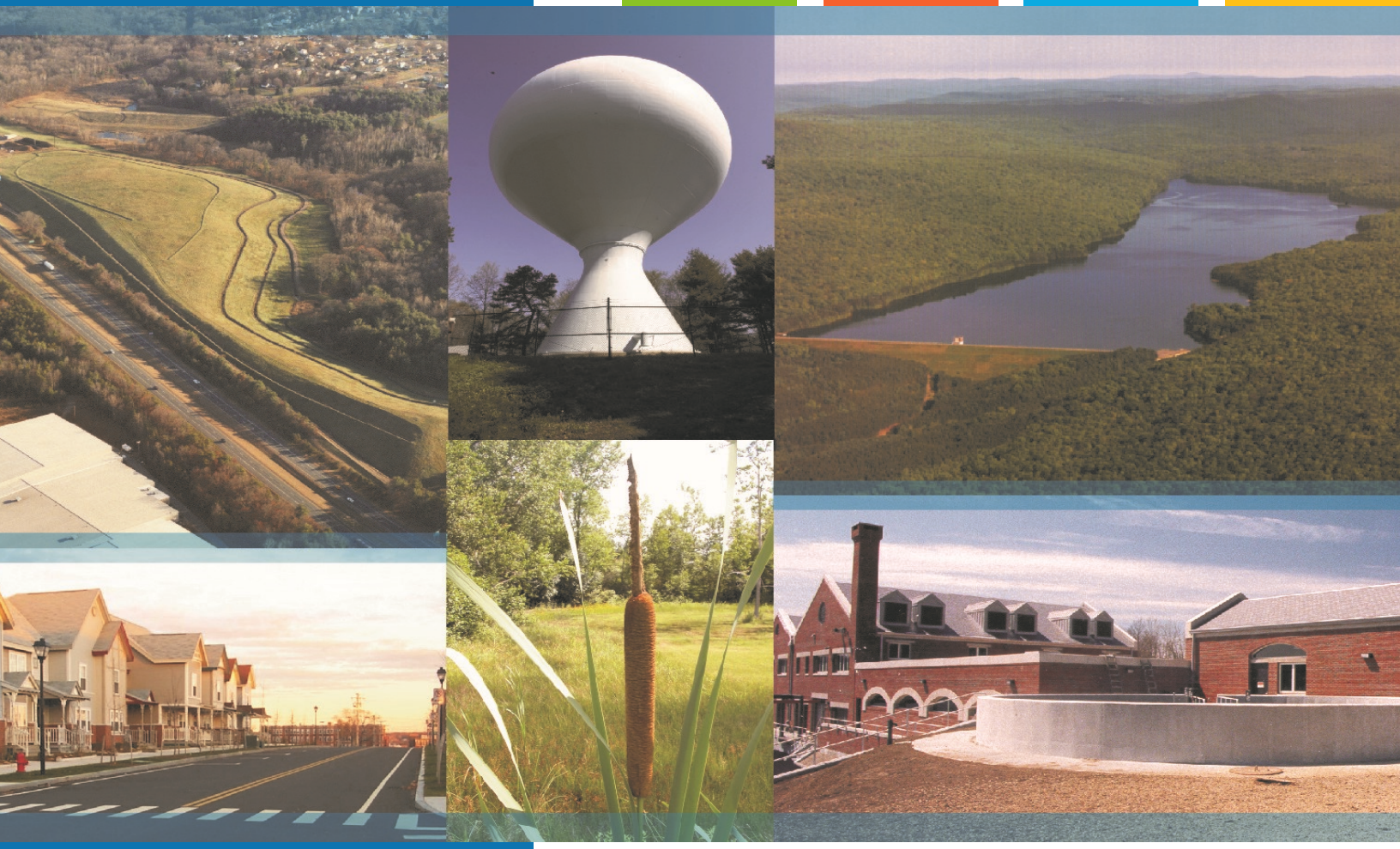
Section 3
Annual Updates and Log Requirements

The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site including NHDES.

Copies of the Stormwater Maintenance report shall be submitted to the City of Portsmouth on an annual basis.

Stormwater Management Report						
North End Mixed Use Development		**Russell Street – Map 118 Lot 28, Map 119 Lot 4, Map 124 Lot 12, Map 125 Lot 21**				
BMP Description	**Date of Inspection**	**Inspector**	**BMP Installed and Operating Properly?**	**Cleaning / Corrective Action Needed**	**Date of Cleaning / Repair**	**Performed By**
Deep Sump CB's			❑Yes ❑No			
Underground Detention			❑Yes ❑No			
Jellyfish Filter 1			❑Yes ❑No			



Russell Street Mixed Use Development
Portsmouth, New Hampshire

TRAFFIC IMPACT STUDY

Two International Group

May 24, 2022

Tighe&Bond

Section 1
Introduction & Summary

Tighe & Bond has prepared this *Traffic Impact Study* to summarize the potential changes in the traffic operations resulting from the proposed Russell Street Mixed Use Development which will include 80 residential units, 46,000 square feet (SF) of office space, and 18,500 SF of retail space, (the Project) located at Russell Street and Deer Street in Portsmouth, New Hampshire (the Site).

The Site is bounded by Russell Street to the northeast, Deer Street to the southeast, Maplewood Avenue to the southwest, and the Pan Am Railroad to the northwest. The Site is currently functioning as the Sheraton Portsmouth Harborside public parking lot. Vehicular access to the Site will be provided via a new driveway located just south of the existing parking lot driveway on Russell Street directly across from the existing Sheraton Hotel driveway. The Project includes approximately 189 parking spaces between the upper and lower parking levels beneath the building.

The trip generation analysis indicates that the Project can be expected to generate approximately 136 new vehicular trips during the weekday morning peak hour (91 entering trips, 45 exiting trips), and 177 new vehicular trips during the weekday afternoon peak hour (70 entering trips, 107 exiting trips).

A traffic operations analysis was conducted for the study intersections during the weekday morning and weekday afternoon peak hours. The analysis was conducted for the following four scenarios:

- 2025 No-Build Scenario – Future Projected Traffic Volumes without Site Generated Traffic
- 2025 Build Scenario – Future Projected Traffic Volumes with Site Generated Traffic
- 2035 No-Build Scenario – Future Projected Traffic Volumes without Site Generated Traffic (10-year Horizon)
- 2035 Build Scenario – Future Projected Traffic Volumes with Site Generated Traffic (10-year Horizon)

The Study builds off the previous Maplewood Avenue Traffic Evaluation conducted in 2019 and Raynes Avenue Traffic Impact Study conducted in 2021. Previously collected traffic volume data was utilized where possible. Additional traffic volume information was collected in February 2022 for study intersections where no previous and or recent data was available. The February 2022 traffic counts were validated by comparing 2022 traffic volumes to historical traffic volumes as further detailed in Section 2.3. The traffic counts were projected to and analyzed for the expected 2025 opening year and 10-year Horizon year of 2035 per NHDOT guidelines.

The remainder of the report summarizes the traffic evaluation which includes a description of the study area, traffic volumes during the weekday morning and weekday afternoon peak hours, trip generation estimates for the Project, estimated trip distribution patterns for the new site generated trips, traffic volume projections for the analysis scenarios, traffic operations analysis for the study area intersections, and a summary of the study findings and recommendations.

Based on the analyses conducted, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the Russell Street Mixed Use Development is not expected to have a significant impact to traffic operations on the surrounding roadway network.

Section 2
Existing Conditions

The following section includes a description of existing study area roadway geometry, intersection geometry, intersection traffic control, and data collection efforts within the study area. Figure 1 shows the location of the Site in relation to the surrounding roadway network and study area.

2.1 Roadway Descriptions

Russell Street is a two-lane roadway (one lane in each direction) that runs northeast-southwest between Deer Street and Market Street. On-street parallel parking and sidewalks are provided on both sides of Russell Street in the vicinity of the Project. The roadway has a posted speed limit of 25 miles per hour (mph) near the Site.

The other study area roadways (Maplewood Avenue, Deer Street, Russell Street, Green, Street, and Market Street) within the study area have similar urban characteristics: two-lane roadways, on-street parallel parking, sidewalks, and low speed limits (25 mph or less). Land uses near the Site are a mix of commercial businesses, restaurants, hotels and residential.

2.2 Study Area Intersections

Seven existing intersections were included for analysis in the study area. The study area was previously approved by the City of Portsmouth.

Maplewood Avenue at Deer Street

Deer Street intersects Maplewood Avenue from the east and west to form a four-way signalized intersection. Maplewood Avenue southbound approach consists of left turn only lane and a right/through shared lane. Maplewood Avenue northbound approach consists of an exclusive left turn lane, exclusive through lane and an exclusive right turn lane. Deer Street eastbound approach consists of a single lane. Deer Street westbound approach consists of an exclusive left turn lane and a right/through shared lane. The intersection is equipped with an exclusive actuated pedestrian phase. Each leg of the intersection has painted crosswalks.

Maplewood Avenue at Hanover Street

Hanover Street intersects Maplewood Avenue from the east and west to form a four-way signalized intersection. Maplewood Avenue southbound approach consists of left turn only lane and a right/through shared lane. Maplewood Avenue northbound approach consists of one left/through shared lane and one right/through shared lane. Hanover Street eastbound approach consists of an exclusive left turn lane and a right/through shared lane. Hanover Street westbound approach consists of an exclusive right turn lane and a left/through shared lane. The intersection is equipped with an exclusive actuated pedestrian phase. Each leg of the intersection has painted crosswalks.

Maplewood Avenue at U.S. Route 1 Bypass SB Ramps (Cutts Street) and Cutts Street

The U.S. Route 1 Bypass SB Ramps (Cutts Street) intersect Maplewood Avenue from the north and south to form a four-way unsignalized. Both roadways provide a single lane of travel in each direction. Vehicles exiting from the U.S. Route 1 Bypass SB Ramps (Cutts Street) and Cutts Street operate under stop control with a flashing beacon. Maplewood Avenue consists of 11-foot travel lanes and 4-foot shoulders. The U.S. Route 1 Bypass SB Ramps (Cutts Street) consist of 14-foot travel lanes and 1-foot shoulders.

Maplewood Avenue at U.S. Route 1 Bypass NB Ramps

The U.S. Route 1 Bypass NB Ramps intersect Maplewood Avenue from the south, forming a three-way unsignalized intersection. Both roadways provide a single lane of travel in each direction. Vehicles exiting from the U.S. Route 1 Bypass NB ramps operate under stop control. Maplewood Avenue consists of 11-foot travel lanes and 8-foot shoulders. The U.S. Route 1 Bypass NB Ramps consist of 12-foot travel lanes and 1-foot shoulders.

Deer Street at Russell Street

Russell Street intersects Deer Street from the north to form a three-way unsignalized intersection. The southbound approach on Russell Street provides a single lane that operates under a stop control. The westbound and eastbound approaches on Deer Street both provide a single lane. The intersection provides sidewalks on all sides of the intersection approaches. A crosswalk is available for pedestrians crossing Deer Street east of Russell Street.

Russell Street at Sheraton Driveway and Parking Lot Driveway

The Sheraton Harborside driveway and parking lot driveway intersect Russell Street from the east and west respectively, to form a four-way unsignalized intersection. All approaches provide a single lane of travel in each direction. Vehicles exiting from the Sheraton and parking lot driveways operate under stop control. Sidewalk is provided on both sides of Russell Street with a crosswalk and in-road pedestrian crossing sign provided at the intersection. On-street metered parking is provided on Russell Street north and south of the intersection.

Russell Street at Green Street

Green Street intersects Russell Street from the west, forming a three-way unsignalized intersection. All approaches provide a single travel lane. The Green Street approach is under stop control. Sidewalk is provided on both sides of Russell Street with a crosswalk provided across Green Street. On-street metered parking is provided on both sides of Russell Street south of the intersection.

Market Street at Russell Street

Russell Street intersects Market Street from the southwest, forming a three-way unsignalized intersection. Market Street southbound consists of a through lane and a channelized right turn lane that operates as free flow movements. The northbound approach consists of a single through lane. The intersection geometry is designed to prohibit northbound left turns from Market Street to Russell Street. The Russell Street approach is a single lane that is wide enough for right turning vehicles to bypass waiting left turning vehicles. The Russell Street approach operates under stop control. Pedestrian crosswalks are provided along Russell Street and the westbound Market Street approach

with sidewalks provided on all approaches. It is noted that the intersection is fully signalized with mast arms, vehicular and pedestrian signal heads, etc. However, the signal indications are in flashing mode, with yellow indications facing Market Street and red indication facing Russell Street.

2.3 Existing Traffic Data

Evaluation of the traffic impacts related to the Project requires the quantification of existing roadway and traffic conditions throughout the study area. Turning movement counts (TMC) from traffic studies collected prior to the start of the COVID-19 pandemic were used where possible. Because the study area includes three additional intersections not included in recent previous studies, additional turning movement counts were collected in February 2022. Automatic traffic recorder (ATR) data was collected concurrently to validate the turning movement counts.

Manual turning movement counts at the study area intersections for the previous study were collected in January 2019 during the weekday afternoon peak period (4:00 PM to 6:00 PM). Traffic counts for both the morning (7:00 AM to 9:00 AM) and afternoon peak periods (4:00 PM to 6:00 PM) were collected in February 2022 for the remaining intersections. The raw traffic counts are enclosed in Appendix A.

The February 2022 turning movement counts collected were validated by comparing the automatic traffic recorder (ATR) volumes collected concurrently to historical NHDOT volumes at the same location, on Maplewood Avenue approximately 100 feet southeast of Raynes Avenue. The ATR volumes during the peak hours were compared to the historical NHDOT volumes. The detailed comparison and 2019 NHDOT traffic volumes are included in Appendix C. Additionally, as shown in Table 1 below, average daily traffic volumes were observed to have been higher in 2022 than those collected prior to the start of the pandemic, further validating the volumes. The historical NHDOT average daily traffic volumes are also included in Appendix C.

TABLE 1

Maplewood Avenue Historical Average Annual Daily Traffic (ADT)

Year	ADT (vehicles per day)	Source
2017	6,474	NHDOT AADT (ID 82379035)
2018	6,603	NHDOT Growth Estimate
2019	6,682	NHDOT Growth Estimate
2020	5,727	NHDOT AADT (ID 82379035)
2022	7,596	Tighe & Bond February 2022 ATR

2.3.1 Seasonal Variation

The raw traffic counts were seasonally adjusted to peak month conditions based on the 2019 Urban Highway Group 4 Seasonal Adjustment Factors published by the New Hampshire Department of Transportation (NHDOT). Seasonal adjustment factors of 1.23 and 1.18 were applied to traffic volumes collected in January 2019 and February 2022, respectively. The NHDOT Group 4 Seasonal Adjustment Factor worksheet is enclosed in Appendix B.

Section 3
No-Build Conditions

The following section describes the estimation of traffic volumes in the study area for the No-Build Conditions. The 2025 and 2035 No-Build Conditions will serve as the baseline for comparison purposes to measure the impacts of the Project.

3.1 Planned Roadway and Intersection Projects

Information obtained from the City traffic department staff was used to identify planned roadway improvement and new development projects in the area that could affect future traffic conditions. One improvement was identified within the study area and considered when developing the No-Build conditions analysis.

Market Street and Russell Street Roundabout: The City is in the early planning stages of a proposed roundabout at the intersection of Market Street and Russell Street. Funding for the design of the project is included in the City's Capital Improvements Plan (CIP) for FY 2026. Potential funding sources for construction has not been identified. This improvement is modeled under the 2035 Future Build-Improved Conditions.

3.2 Traffic Growth

The 2025 No-Build Conditions traffic volumes were developed by growing the existing traffic volumes for the weekday morning and afternoon peak hours to the projected build year. Two components of traffic growth were incorporated. The first component was to estimate an annual average traffic growth rate. Based on a review of recent studies in the vicinity of the Project and NHDOT standards, a one percent per year background traffic growth rate was assumed in the analysis.

The second component to determining traffic growth was identifying any proposed development projects that are near or within the study area. Based on discussions with the City of Portsmouth staff during the previous study, it was determined that the following projects are approved or pending:

- *Deer Street Garage and Mixed-Use Development:* This project will be located in the northwest corner of the Maplewood Avenue/Deer Street intersection. The traffic study for the project indicates that the full build-out of the project consists of a 600-stall municipal public parking garage with 4,700 SF of integral retail; and four mixed-use buildings. The four mixed-use buildings include a combination of 80 residential apartments, 108 hotel rooms, 41,300 SF of office, 20,000 SF of retail, 9,900 SF of restaurants, a 4,700 SF bar, and a 2,700 SF bank. The project is currently approved with no imminent construction start date. The project traffic volumes were included in the 2035 No-Build conditions analyses.

- *Raynes Avenue Development:* This project located on Raynes Avenue includes the construction of a 128-room hotel, 60-unit residential building, 5,200 SF of retail space, and 4,400 SF of restaurant space. The project has been approved but is currently pending. The development traffic volumes are incorporated into the 2025 No-Build conditions analyses.

Traffic volumes related to these projects were obtained from record studies and assigned to the study area intersections to develop the 2025 and 2035 No-Build conditions traffic volumes. The traffic volumes from these other major developments are included in Appendix G. It is assumed that other smaller developments or small vacancies in existing developments are captured by the background traffic growth rate previously mentioned.

The 2025 and 2035 No-Build conditions volumes for the weekday morning and weekday afternoon peak hours are shown in Figures 2 and 3, respectively.

3.3 Traffic Operations Analysis – No-Build Conditions

Capacity and queue analyses were conducted for the 2025 and 2035 No-Build Conditions during the weekday morning and afternoon peak hours using Trafficware Synchro Studio 11 – Traffic Analysis Software. The software conducts the analysis based up on the methodology provided in the Highway Capacity Manual, 6th Edition, 2016. The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operation conditions based on the calculated average delay per vehicle. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix D. The queue analysis results are summarized in terms of the 50th percentile queue length, and the 95th percentile queue length. The 50th percentile queue length represents the approximate average queue length, and the 95th percentile queue length represents the design queue length under peak traffic conditions. Tables 2 and 3 summarize the capacity and queue analyses results, respectively. Capacity analyses worksheets with full inputs, settings, and results are provided in Appendix E.

During the weekday morning peak hour all movements at the Maplewood Avenue at Deer Street intersection experience LOS D or better during the weekday morning peak hour under 2025 and 2035 No-Build Conditions except the southbound shared through/ right movement which experiences LOS E under 2035 No-Build Conditions. Overall failing operations of LOS E and LOS F are experienced at the intersection during the weekday afternoon peak hour under 2025 No-Build Conditions and 2035 No-Build Conditions, respectively. Vehicular queues exceed available storage on the westbound left-turn lanes under 2025 and 2035 No-Build Conditions during both peak periods. Queues exceed the available storage on the northbound approach at the intersection under both 2025 and 2035 No-Build Conditions during the weekday afternoon peak hour.

Acceptable operations of LOS D or better are experienced on all approaches of the Maplewood Avenue at Hanover Street intersection except for the westbound shared through/ left movement which experiences LOS E under the 2035 No-Build Conditions during the weekday afternoon peak hour. Queues at the intersection are within available storage.

The unsignalized intersections experience operations of LOS D or better on all movements/approaches under 2025 No-Build Conditions during both peak hours. During the 2035 No-Build Conditions, LOS D or better operation is present for all movements/approaches during the weekday morning peak hour except for the Cutts Street southbound approach to Maplewood Avenue which operates at LOS E. Under the 2035 No-Build Conditions during the afternoon peak hour, the additional traffic volumes realized by the ambient background growth rate for the 10-year horizon to 2035 results in the following approaches/movements exceeding capacity and experiencing failing operations:

- Maplewood Avenue at Cutts Street (U.S. Route 1 SB Ramps) northbound and southbound approaches
- Maplewood Avenue at U.S. Route 1 Bypass NB Ramps northbound approach
- Market Street at Russell Street eastbound left movement

Significant queuing is experienced on the eastbound left movement at the intersection of Market Street at Russell Street under both 2025 and 2035 No-Build Conditions during the weekday afternoon peak hour. The remainder of the movements/approaches to the unsignalized intersections have queues that are within available storage lengths.

Section 4
Proposed Conditions

The proposed development includes three separate building units. The proposed 46,000 SF four-story office building is located on the west side of the Site. The center five-story building is comprised of 56 residential units with approximately 10,000 SF of retail space located on the ground floor. The final building, a five-story structure located on the northeast side of the Site includes 24 residential units with 8,500 SF of retail space on the ground floor as well. Approximately 189 parking spaces will be provided on Site for the proposed development on the lower and ground levels. The following sections describe the methodology to estimate the total number of site generated trips and their distribution within the study area roadway network.

4.1 Site Access

Three driveways are proposed to provide access to the upper level and lower-level parking areas. The upper-level parking access will be provided via one unsignalized full access driveway on Russell Street, directly across from the existing Sheraton Harborside driveway. The lower-level entrance is proposed on Maplewood Avenue, approximately 100 feet north of Deer Street. The lower-level exit is proposed 50 feet west of Russell Street and exit only on Green Street, west of Russell Street.

Intersection sight distance was reviewed at the proposed Site driveways on Russell Street and Green Street in accordance with criteria set forth in the AASHTO publication *A Policy on the Geometric Design of Highways and Streets*, 7th Edition, 2018. Available site distances were estimated based on the site layout plan and available aerial mapping. Based on AASHTO guidelines and the posted speed on Russell Street, the intersection sight distance requirement is 239 feet looking left to the north and 276 feet looking right to the south on Russell Street at the Site driveway. The available intersection sight distance is approximately 450 feet looking left to the north and 145 feet looking right to the south on Russell Street. While sight distance looking left to the north is in excess of the requirements, the sight distance looking right to the south is limited due to the termination of Russell Street. It is important to note that the proposed upper-level Site driveway will replace an existing parking lot driveway. Similar to the upper-level Site driveway, the required sight distance at the proposed lower-level Site driveway exit on Green Street is 239 feet looking left to the west and 276 feet looking right to the east based on the posted speed. The available sight distance looking left is approximately 330 feet, which is in excess of the requirement. While sight distance is not met looking right with only 75 feet of available sight distance due to the termination of Green Street, all site traffic is anticipated to exit to the right toward Russell Street which provides adequate sight distance as previously mentioned. Finally, it is important to note that meeting sight distance requirements is not always possible in dense urban environments due to closely spaced intersections and geometric limitations as is experienced at both site driveways.

The Project will include geometric roadway improvements to Deer Street, and Russell Street as shown on the proposed Site Plan (C-102.1), enclosed in Appendix F. The following improvements are proposed:

- Curb extensions and crosswalks on all approaches at the proposed Site driveway intersection and the Russell Street at Deer Street intersections
- Minor re-alignment of Russell Street and removal of the existing median island to eliminate the approach skew at the intersection with Deer Street
- Pavement marking improvements on Green Street at the intersection with Russell Street
- Pedestrian crosswalk across Deer Street at Portwalk Place
- Bi-directional bicycle lanes on Russell Street from Deer Street to Green Street
- Landscaping and streetscape improvements along Russell Street and Deer Street

In addition to the improvements listed above, the existing railroad crossing beacon located on the east side of Maplewood Avenue is proposed to be relocated to accommodate the proposed lower-level site entrance driveway on Maplewood Avenue. This work will be coordinated with the rail owner.

4.2 Trip Generation

Site generated traffic volumes for the Project were estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 11th edition, 2021. ITE provides data to estimate the total number of vehicular trips associated with a site based on the specific land uses. To estimate the trip generation for the Project, ITE Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise), LUC 710 – General Office Building, and LUC 822 – Strip Retail Plaza Center (<40,000 SF).

Mixed-use developments typically generate shared trips, also known as internal capture. The internal capture rate for the proposed development was determined using the *National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* by the Transportation Research Board, 2011. The internal capture rate is estimated to be 4% for entering vehicles and 8% for exiting vehicles during the weekday morning peak hour, and 23% for entering vehicles and 16% for exiting vehicles during the weekday afternoon peak hour. The detailed calculation spreadsheet is included in Appendix H.

Because the existing traffic volumes entering and exiting the existing Sheraton Public Parking Lot driveway from Russell Street were minimal, these traffic volumes were not deducted from the trip generation estimate. This results in a conservative existing traffic volume estimate as the parking lot is currently utilized and will be replaced with the proposed development.

Based on the ITE data and the calculated internal capture rates, the proposed development is expected to generate approximately 136 trips (91 entering, 45 exiting) during the weekday morning peak hour and 177 trips (70 entering, 107 exiting) during the weekday afternoon peak hour. The proposed trip generation for the weekday morning and afternoon peak hours is presented in Table 4.

4.3 Arrival and Departure Distribution

The trip distribution identifies the various travel paths for vehicles arriving and departing the Project site. Trip distribution patterns for the Project were based on a review of previous traffic studies conducted for nearby projects, observed travel patterns, and the proposed parking layout. Because the upper and lower parking levels are not interconnected, the trip distribution was based on the parking provided on each level. Trip distributions of 55% and 45% were applied to the lower-level and upper-level site driveways, respectively.

The following arrival/ departure distributions are anticipated for the residential trips:

Arrival
- 40% from the west via Maplewood Avenue
- 35% from the east via Maplewood Avenue
- 25% from the northwest via Market Street

Departure
- 5% to the west via Maplewood Avenue
- 35% to the east via Maplewood Avenue
- 60% to the northwest via Market Street

The following arrival/ departure distributions are anticipated for the office trips:

Arrival
- 50% from the west via Maplewood Avenue
- 20% from the east via Maplewood Avenue
- 30% from the northwest via Market Street

Departure
- 5% to the west via Maplewood Avenue
- 20% to the east via Maplewood Avenue
- 75% to the northwest via Market Street

The following arrival/ departure distributions are anticipated for the retail trips:

Arrival
- 30% from the west via Maplewood Avenue
- 55% from the east via Maplewood Avenue
- 15% from the northwest via Market Street

Departure
- 5% to the west via Maplewood Avenue
- 55% to the east via Maplewood Avenue
- 40% to the northwest via Market Street

The trip distribution patterns for the residential, office, and retail uses are shown in Figure 4. The vehicular trips associated with the Project were assigned to the study area and are shown in Figure 5 for the weekday morning and weekday afternoon peak hours.

Section 5
Build Conditions

The anticipated site generated traffic volumes associated with the proposed development were added to the 2025 and 2035 No-Build Conditions traffic volumes to develop the 2025 and 2035 Build Conditions traffic volumes for both peak periods. The 2025 and 2035 Build Conditions traffic volumes are presented in Figures 6 and 7, respectively.

5.1 Capacity and Queue Analyses – Build Conditions

Capacity and queue analyses were conducted for the 2025 and 2035 Build Conditions for the peak hours using the methodology described in Section 3.3. Tables 2 and 3 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

A majority of the study area intersections and movements will continue to operate with the same LOS under Build Conditions as No-Build Conditions during both peak hours.

Under 2025 Build Conditions, the movements/approaches to all intersections either operate at the same LOS under Build Conditions when compared to No-Build Conditions or operate at LOS D or better with one exception. During the weekday afternoon peak hour, the intersection of Maplewood Avenue at Deer Street continues to operate at overall LOS E under 2025 Build Conditions with timing optimization. The southbound left movement experiences degradation in LOS from C to D under 2025 Build Conditions but still experiences acceptable operations.

Under 2035 Build Conditions, the movements/approaches to all intersections operate at No-Build LOS or operate at LOS D or better with four exceptions. In the morning peak hour, the U.S. Route 1 northbound ramp approach to Maplewood Avenue operates at LOS E, though queues remain within available storage. Similar to 2035 No-Build Conditions, the Maplewood Avenue at Deer Street intersection eastbound approach continues to operate at LOS F during the afternoon peak hour with optimization. The eastbound approach does experience a degradation in LOS from E to F under 2035 Build Conditions, but remains below capacity (v/c = 0.98). The Site Driveway and Sheraton Harborside Driveway approaches to Russell Street operate at LOS E in the afternoon peak hour.

As mentioned in Section 3.1, a modern roundabout is planned for the Market Street and Russell Street intersection in FY 2026. Because the roundabout will not be constructed prior to the 2025 opening year, the improvement was analyzed under 2035 Build Conditions only. Under the improved condition the intersection experiences improved operations of overall LOS A during the weekday morning peak hour and LOS C during the weekday afternoon peak hour. Additionally, vehicular queues that exceed available storage under 2035 No-Build and 2035 Build Conditions with the existing configuration are now accommodated within available storage during the weekday afternoon peak hour.

Based on the capacity analysis results, the proposed development and its site generated traffic is not expected to have a significant detrimental effect on the intersection operations beyond what is already expected to be experienced under 2025 and 2035 No-Build Conditions.

Section 6
Conclusions and Recommendations

1. The proposed Russell Street Mixed Use development is proposing to replace the existing parking lot currently utilized by the Sheraton Hotel on Russell Street with a mixed-use development to include 80 residential units, 46,000 SF of office space, and 18,500 SF of retail space. Approximately 189 parking spaces will be provided as part of the development. The proposed development is estimated to be constructed and occupied in 2025.

2. The traffic volumes utilized in the study were a compilation of previous traffic counts collected in January 2019 and February 2022. The traffic counts were seasonally adjusted. The February 2022 traffic volumes were validated by comparing collected traffic volume data along Maplewood Avenue to historic NHDOT traffic volume data at the same location to confirm traffic volumes reflect typical conditions.

3. The proposed development is expected to generate approximately 136 vehicular trips during the weekday morning peak hour (91 entering trips, 45 exiting trips), and 177 new vehicular trips during the weekday afternoon peak hour (70 entering trips, 107 exiting trips). Due to the mixed-use nature of the development, an internal capture calculation was applied to the trip generation calculation. This methodology aligns with industry standard practices and was utilized for the previously approved studies in the area.

4. Proposed roadway, pavement marking, and signage improvements along Russell Street, Green Street, Maplewood Avenue, and Deer Street as discussed in Section 4.1 will improve safety for vehicles, pedestrians, and bicyclists.

5. As discussed in Section 3.1, the intersection of Market Street at Russell Street is currently programmed for design of a proposed roundabout in FY 2026. The roundabout aims to improve both existing and future deficiencies at the existing condition stop-controlled intersection. As mentioned in Section 5.1, acceptable traffic operations are experienced under 2035 Build Conditions during the weekday morning and afternoon peak hours with the improvement.

6. The traffic capacity and queue analyses results indicate that when potential future projects in the area are all constructed, substantial traffic volumes will be added to the study area network which will cause increases congestion at a number of intersections within the study area which will exacerbate existing capacity issues at select intersection approaches. Site generated traffic represents a relatively small percentage of the cumulative traffic volume expected to be generated by the potential future projects. Following optimization and installation of planed roadway improvements, the proposed development is not expected to have a significant detrimental effect on the intersection operations beyond what is already expected to be experienced under 2025 and 2035 No-Build Conditions.

7. While signal timing optimization is recommended at the intersection of Maplewood Avenue at Deer Street during the afternoon peak hour as mentioned in Section 5.1, signal timing optimization should also be reviewed regularly as other planned projects get implemented to improve intersection operations in the study area.

8. The existing railroad crossing beacon on the east side of Maplewood Avenue will be relocated in coordination with the rail owner to support the proposed lower-level site driveway entrance on Maplewood Avenue.

9. System-wide traffic improvement measures, such as promotion of reduced automobile usage, enhanced transit services to the area and promotion of remote/underutilized parking areas can also be considered by the City to reduce the volume of vehicular traffic generated within the downtown street network during peak times.

10. Based on the results of the analysis, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed Russell Street Mixed Use Development is not expected to have a significant impact to traffic operations on the surrounding roadway network.

Section 7
Additional Tables

TABLE 2
Intersection Operation Summary - Capacity

	Lane Use	Weekday Morning Peak Hour												Weekday Afternoon Peak Hour									
		2025 No Build			2025 Build			2035 No Build			2035 Build			2025 No Build			2025 Build			2035 No Build			2035 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Traffic Signal - Maplewood Avenue at Deer Street																							
Overall		**C**	**25.3**	**0.74**	**C**	**25.2**	**0.74**	**D**	**40.1**	**0.98**	**D**	**41.4**	**0.98**	**E**	**66.2**	**1.11**	**E**	**79.9**	**1.27**	**F**	**86.9**	**1.29**	**F**	**82.0**	**1.21**
	EB	C	20.9	0.10	C	20.9	0.10	C	26.0	0.31	C	26.0	0.31	F	87.1	0.99	F	87.0	0.96	E	74.4	0.97	F	84.7	0.98
Deer Street	WBL	C	28.3	0.32	C	28.9	0.36	C	29.7	0.38	C	30.6	0.42	F	120.1	1.10	F	177.3	1.27	D	43.9	0.71	D	54.8	0.83
	WBTR	C	20.2	0.13	B	19.9	0.13	C	23.5	0.19	C	23.4	0.20	C	30.8	0.39	C	29.5	0.39	C	24.7	0.32	C	24.6	0.33
	NBL	B	11.5	0.04	B	10.7	0.04	D	49.1	0.56	D	49.7	0.56	C	20.3	0.08	C	21.0	0.09	D	50.0	0.51	D	48.3	0.52
	NBT	C	21.6	0.54	C	22.2	0.58	C	23.7	0.60	C	26.0	0.64	F	98.9	1.11	F	108.8	1.14	F	175.6	1.29	F	139.8	1.21
Maplewood Avenue	NBR	A	3.5	0.21	A	3.6	0.23	A	3.1	0.23	A	3.4	0.25	A	4.0	0.39	A	3.9	0.41	A	6.9	0.45	A	6.2	0.44
	SBL	B	19.8	0.09	B	20.0	0.11	B	19.9	0.11	C	20.3	0.13	C	26.4	0.45	D	42.8	0.66	C	24.3	0.34	C	30.3	0.48
	SBTR	C	33.7	0.74	C	33.7	0.74	E	65.9	0.98	E	69.7	0.98	D	39.3	0.81	D	42.2	0.83	F	96.4	1.00	F	100.7	1.00
Traffic Signal - Maplewood Avenue at Hanover Street																							
Overall		**B**	**19.0**	**0.43**	**B**	**18.5**	**0.44**	**B**	**19.5**	**0.49**	**B**	**19.4**	**0.51**	**C**	**20.6**	**0.60**	**C**	**20.9**	**0.64**	**C**	**22.5**	**0.61**	**C**	**23.2**	**0.65**
	EBL	D	44.9	0.21	D	44.9	0.21	D	44.8	0.22	D	44.8	0.22	D	54.0	0.52	D	54.0	0.52	D	49.4	0.42	D	49.4	0.42
Hanover Street	EBTR	D	36.7	0.35	D	36.7	0.35	C	33.4	0.45	C	33.4	0.45	C	32.6	0.21	C	32.6	0.21	C	22.3	0.37	C	22.3	0.37
	WBLT	D	51.8	0.39	D	51.8	0.39	D	52.9	0.43	D	52.9	0.43	D	49.2	0.43	D	49.2	0.43	E	55.7	0.57	E	55.7	0.57
	WBR	A	8.4	0.17	A	8.4	0.17	A	7.8	0.18	A	7.8	0.18	A	6.2	0.28	A	6.2	0.28	A	6.0	0.35	A	6.0	0.35
	NB	B	19.1	0.26	B	19.4	0.28	C	21.1	0.35	C	21.5	0.37	C	26.7	0.49	C	27.5	0.51	C	27.8	0.59	C	28.6	0.62
Maplewood Avenue	SBL	B	13.5	0.14	B	12.3	0.14	B	11.9	0.17	B	11.4	0.17	A	9.3	0.33	A	8.3	0.35	B	11.7	0.38	B	11.3	0.40
	SBTR	B	15.2	0.43	B	14.1	0.44	B	14.7	0.49	B	14.4	0.51	B	12.0	0.60	B	12.5	0.64	B	16.0	0.61	B	17.0	0.65
Unsignalized TWSC - Maplewood Avenue at Cutts Street (U.S. Route 1 Bypass SB Ramps)/ Cutts Street																							
Maplewood Avenue	EBL	A	7.4	0.00	A	7.4	0.00	A	7.5	0.00	A	7.5	0.00	A	7.6	0.00	A	7.6	0.00	A	7.8	0.00	A	7.8	0.00
	WBL	A	8.2	0.19	A	8.2	0.19	A	8.5	0.25	A	8.6	0.25	A	9.0	0.35	A	9.0	0.36	B	10.9	0.55	B	11.0	0.55
Cutts Street (U.S. Route 1 Bypass SB Ramps)	NB	B	13.3	0.15	B	13.1	0.16	C	17.0	0.23	C	16.7	0.24	D	26.7	0.34	D	26.5	0.35	F	389.0	1.48	F	396.8	1.51
Cutts Street	SB	C	23.8	0.00	C	24.3	0.24	E	37.3	0.37	E	38.5	0.38	F	62	0.37	F	64.2	0.38	F	638.1	1.52	F	731.9	1.67
Unsignalized TWSC - Maplewood Avenue at U.S. Route 1 Bypass NB Ramps																							
Maplewood Avenue	WBL	A	7.8	0.01	A	7.8	0.01	A	7.9	0.01	A	7.9	0.01	A	8	0.02	A	7.7	0.02	A	8.0	0.03	A	8.0	0.03
U.S. Route 1 Bypass NB Ramps	NB	C	15.8	0.58	C	17.4	0.64	D	26.5	0.80	D	32.5	0.86	C	19.3	0.59	C	20.4	0.62	F	71.6	1.00	F	83.1	1.04
Unsignalized TWSC - Russell Street at Deer Street																							
Deer Street	EBL	A	7.6	0.08	A	7.6	0.09	A	7.6	0.10	A	7.7	0.12	A	8.2	0.24	A	8.3	0.25	A	8.7	0.29	A	8.8	0.31
Russel Street	SB	A	9.8	0.25	B	10.0	0.28	B	10.4	0.33	B	10.5	0.35	C	16	0.61	C	18.4	0.67	C	18.9	0.68	C	21.9	0.74
Unsignalized TWSC - Russell Street at Site Driveway (Upper Level)/ Sheratron Driveway																							
Site Driveway (Existing Parking Lot)	EB	B	12.0	0.02	B	12.2	0.11	B	13.3	0.02	B	13.5	0.13	C	15.5	0.09	C	23.9	0.43	C	18.5	0.14	E	38.0	0.63
Sheraton Harborside Dwy	WB	A	9.5	0.03	A	9.7	0.03	A	9.7	0.04	B	10.0	0.04	C	16.0	0.06	C	19.1	0.07	C	20.7	0.23	D	27.1	0.30
Russell Street	NBL	A	7.8	0.01	A	7.9	0.02	A	7.9	0.01	A	8.1	0.02	A	8.3	0.01	A	8.5	0.03	A	8.5	0.01	A	8.7	0.04
	SBL	A	7.5	0.01	A	7.5	0.01	A	7.5	0.01	A	7.5	0.01	A	8.0	0.01	A	8.0	0.01	A	8.2	0.01	A	8.2	0.01
Unsignalized TWSC - Russell Street at Green Street																							
Green Street	EB	B	10.2	0.03	B	10.8	0.08	B	10.8	0.04	B	11.6	0.09	C	16.8	0.16	C	19.6	0.34	C	20.4	0.22	D	25.3	0.42
Russell Street	NBL	A	7.8	0.00	A	7.8	0.00	A	8.0	0.00	A	8.0	0.00	A	8.4	0.01	A	8.4	0.01	A	8.6	0.01	A	8.7	0.01
Unsignalized TWSC - Maplewood Avenue at Site Entrance (Lower Level)																							
Maplewood Avenue	SBL	--	--	--	A	8.1	0.03	--	--	--	A	8.2	0.03	--	--	--	A	9.1	0.02	--	--	--	A	9.8	0.03
Unsignalized TWSC - Green Street at Site Exit (Lower Level)																							
Site Exit (Lower Level)	NB	--	--	--	A	8.5	0.03	--	--	--	A	8.5	0.03	--	--	--	A	8.8	0.06	--	--	--	A	8.8	0.06

TABLE 2 (CONTINUED)
Intersection Operation Summary - Capacity

	Lane Use	Weekday Morning Peak Hour															Weekday Afternoon Peak Hour											
		2025 No Build			2025 Build			2035 No Build			2035 Build			2025 Build-Improved			2025 No Build			2025 Build			2035 No Build			2035 Build			2025 Build-Improved		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Unsignalized TWSC - Market Street at Russell Street																														
Overall		--	--	--	--	--	--	--	--	--	--	--	--	**A**	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	**C**	**18.0**	--
Russell Street	EBL	B	14.4	0.26	C	15.1	0.32	C	16.5	0.36	C	17.6	0.42	--	--	--	F	454.5	1.89	F	598.9	2.22	F	549.5	2.12	F	684.9	2.42	--	--	--
	EBR	B	10.4	0.01	B	10.4	0.01	B	10.7	0.01	B	10.7	0.01	--	--	--	B	10.9	0.02	B	10.9	0.02	B	11.6	0.02	B	11.6	0.02	--	--	--
Market Street	EB	--	--	--	--	--	--	--	--	--	--	--	--	A	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	B	15.0	--
	NB	--	--	--	--	--	--	--	--	--	--	--	--	A	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	D	25.4	--
	SB	--	--	--	--	--	--	--	--	--	--	--	--	A	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	C	15.2	--

TABLE 3
Intersection Operation Summary - Queues

			Weekday Morning Peak Hour								Weekday Afternoon Peak Hour							
	Lane Use	Available Storage	2025 No Build		2025 Build		2035 No Build		2035 Build		2025 No Build		2025 Build		2035 No Build		2035 Build	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Traffic Signal - Maplewood Avenue at Deer Street																		
	EB	590	13	55	13	55	50	144	50	144	257	356	249	349	211	586	212	588
Deer Street	WBL	100	60	163	68	182	68	185	77	220	275	291	351	354	114	363	143	433
	WBTR	350	22	78	22	78	44	124	44	126	107	143	107	142	74	194	75	197
	NBL	100	3	5	2	4	25	81	22	82	2	6	2	6	10	47	10	22
	NBT	350	165	137	173	70	180	112	193	296	434	585	422	565	481	691	474	660
Maplewood Avenue	NBR	350	23	0	33	1	9	14	2	22	0	34	0	39	14	43	21	47
	SBL	150	11	29	13	33	12	30	14	34	41	47	44	51	27	57	29	59
	SBTR	>500	253	380	253	380	384	627	384	627	315	418	321	426	407	652	407	652
Traffic Signal - Maplewood Avenue at Hanover Street																		
	EBL	90	14	36	14	36	16	38	16	38	47	55	47	55	35	67	35	67
Hanover Street	EBTR	90	21	52	21	52	24	58	24	58	15	25	15	25	12	44	12	44
	WBLT	250	28	49	28	49	31	54	31	54	40	76	40	76	53	80	53	80
	WBR	75	0	19	0	19	0	20	0	20	0	37	0	37	0	23	0	23
	NB	325	98	141	108	154	132	185	143	199	185	261	199	278	263	353	281	381
Maplewood Avenue	SBL	175	29	24	27	24	32	22	31	22	14	31	12	29	46	34	48	32
	SBTR	350	218	277	213	281	260	251	263	266	128	287	183	304	290	325	320	415
Unsignalized TWSC - Maplewood Avenue at Cutts Street (U.S. Route 1 Bypass SB Ramps)/ Cutts Street																		
Maplewood Avenue	EBL	>500	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
	WBL	>500	--	18	--	18	--	25	--	25	--	40	--	40	--	88	--	88
Cutts Street (U.S. Route 1 Bypass SB Ramps)	NB	350	--	13	--	15	--	23	--	23	--	35	--	38	--	208	--	217
Cutts Street	SB	>500	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
Unsignalized TWSC - Maplewood Avenue at U.S. Route 1 Bypass NB Ramps																		
Maplewood Avenue	WBL	>500	--	0	--	0	--	0	--	0	--	3	--	3	--	3	--	3
U.S. Route 1 Bypass NB Ramps	NB	800	--	95	--	115	--	208	--	258	--	95	--	105	--	333	--	373
Unsignalized TWSC - Russell Street at Deer Street																		
Deer Street	EBL	390	--	8	--	8	--	8	--	10	--	23	--	25	--	30	--	33
Russell Street	SB	150	--	25	--	28	--	35	--	40	--	105	--	133	--	135	--	170
Unsignalized TWSC - Russell Street at Site Driveway (Upper Level)/ Sheratron Driveway																		
Site Driveway (Existing Parking Lot)	EB	300	--	0	--	10	--	3	--	10	--	8	--	53	--	13	--	98
Sheraton Harborside Dwy	WB	100	--	3	--	3	--	3	--	3	--	5	--	5	--	23	--	30
Russell Street	NBL	150	--	0	--	3	--	0	--	3	--	0	--	3	--	0	--	3
	SBL	200	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
Unsignalized TWSC - Russell Street at Green Street																		
Green Street	EB	75	--	3	--	5	--	3	--	8	--	15	--	35	--	20	--	50
Russell Street	NBL	225	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
Unsignalized TWSC - Maplewood Avenue at Site Entrance (Lower Level)																		
Maplewood Avenue	SBL	50	--	--	--	3	--	--	--	3	--	--	--	3	--	--	--	3
Unsignalized TWSC - Green Street at Site Exit (Lower Level)																		
Site Exit (Lower Level)	NB	225	--	--	--	3	--	--	--	3	--	--	--	5	--	--	--	5

TABLE 3 (CONTINUED)
Intersection Operation Summary - Queues

	Lane Use	Available Storage	Weekday Morning Peak Hour										Weekday Afternoon Peak Hour									
			2025 No Build		2025 Build		2035 No Build		2035 Build		2035 Build-Improved		2025 No Build		2025 Build		2035 No Build		2035 Build		2035 Build-Improved	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Unsignalized TWSC - Market Street at Russell Street																						
Russell Street	EBL	150	--	28	--	35	--	40	--	50	--	--	--	763	--	982	--	973	--	1198	--	--
	EBR	150	--	0	--	0	--	0	--	0	--	--	--	3	--	3	--	3	--	3	--	--
Market Street	EB	150	--	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	120
	NB	575	--	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--	--	208
	SB	400	--	--	--	--	--	--	--	--	--	80	--	--	--	--	--	--	--	--	--	208

TABLE 4
Site-Generated Traffic Summary

Proposed - 80 Residential Units **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	7	23	30
Weekday Afternoon	19	12	31

Proposed - 46,000 SF Office Space **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	62	8	70
Weekday Afternoon	11	55	66

Proposed - 18,500 SF Retail Space **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	26	18	44
Weekday Afternoon	61	61	122

Total Trips **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	95	49	144
Weekday Afternoon	91	128	219

Internal Capture[1] **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning[2]	4	4	8
Weekday Afternoon[3]	21	21	42

Net Vehicular Trips (Total minus Internal Capture) **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	**91**	**45**	**136**
Weekday Afternoon	**70**	**107**	**177**

Source: Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021.
Land Use - 221 Multifamily Housing (Mid-Rise)
Land Use - 710 General Office Building
Land Use - 822 Strip Retail Plaza (<40,000 SF)

[1]NCHRP Report 684-Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, Transportation Research Board, Washington, DC, 2011

[2]Based on NCHRP 8-51 Table 5-A Computations Summary (4% Entering, 8% Exiting)

[3]Based on NCHRP 8-51 Table 5-P Computations Summary (23% Entering, 16% Exiting)

Section 8
Figures

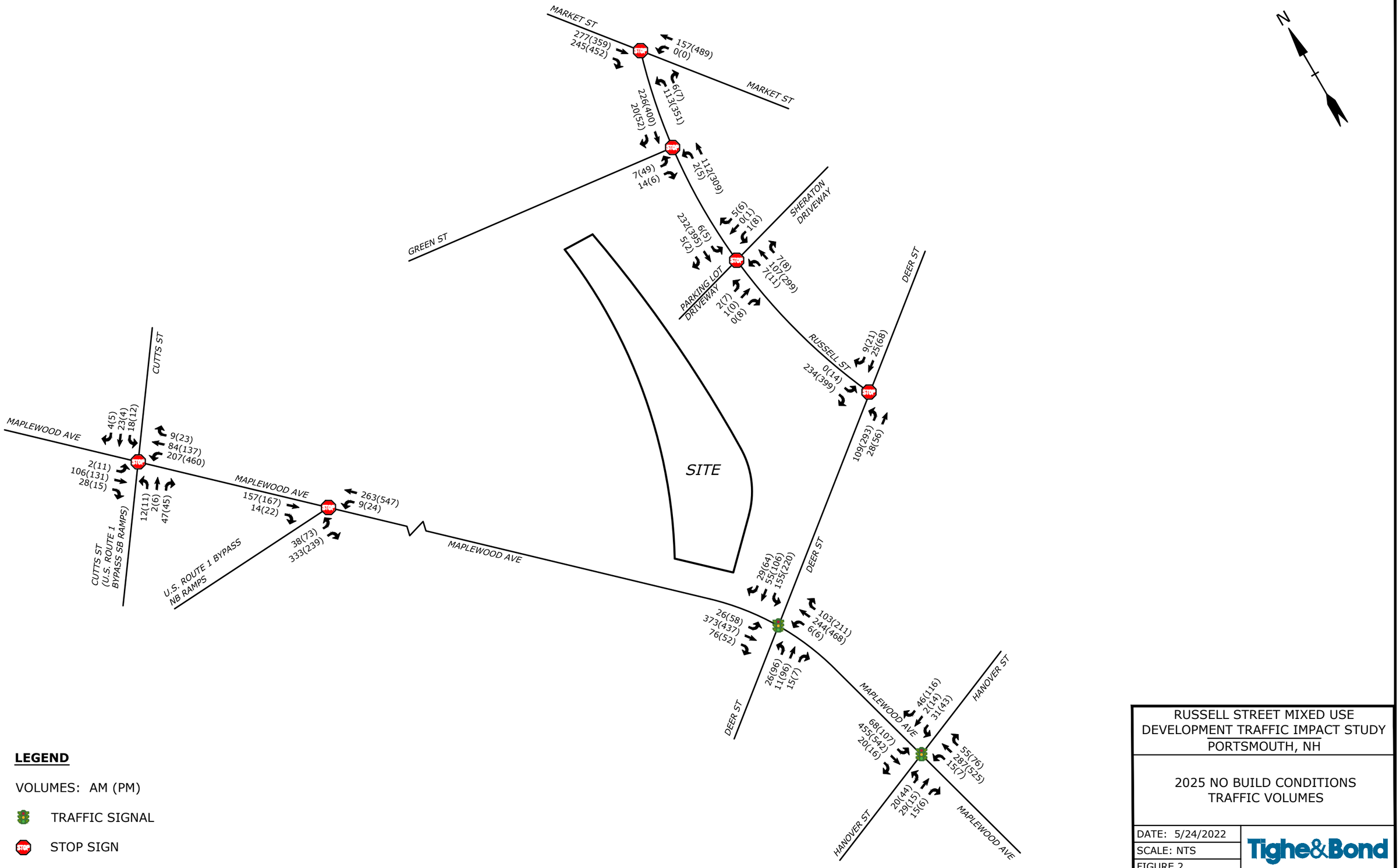
LEGEND

STUDY AREA INTERSECTION

RUSSELL STREET MIXED USE DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

TRAFFIC IMPACT STUDY AREA

DATE: 5/24/2022	Tighe&Bond
SCALE: 1" = 400'	
FIGURE 1	



LEGEND

VOLUMES: AM (PM)

TRAFFIC SIGNAL

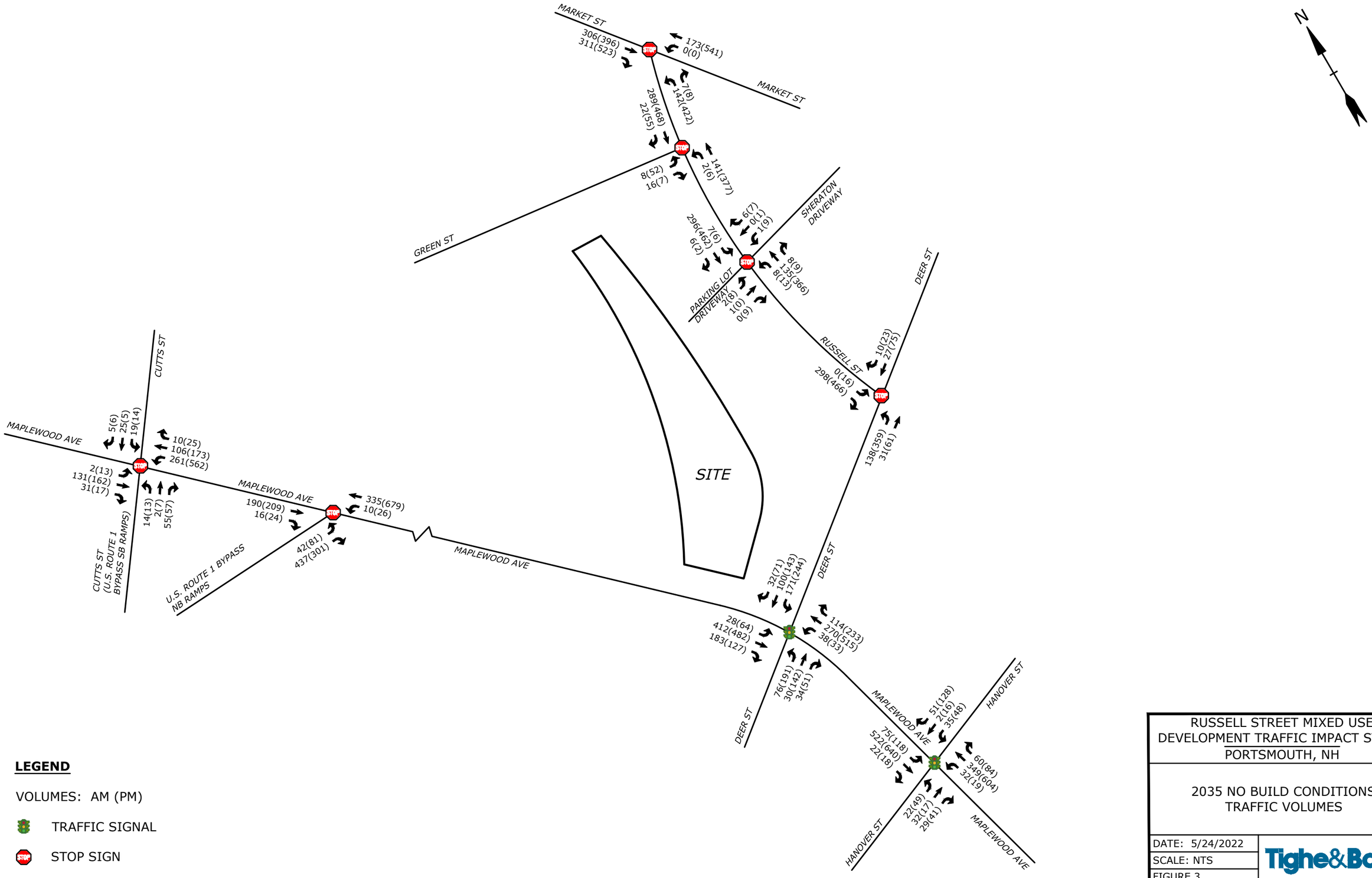
STOP SIGN

RUSSELL STREET MIXED USE DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

2025 NO BUILD CONDITIONS TRAFFIC VOLUMES

DATE: 5/24/2022
SCALE: NTS
FIGURE 2

Tighe&Bond



LEGEND

VOLUMES: AM (PM)

TRAFFIC SIGNAL

STOP SIGN

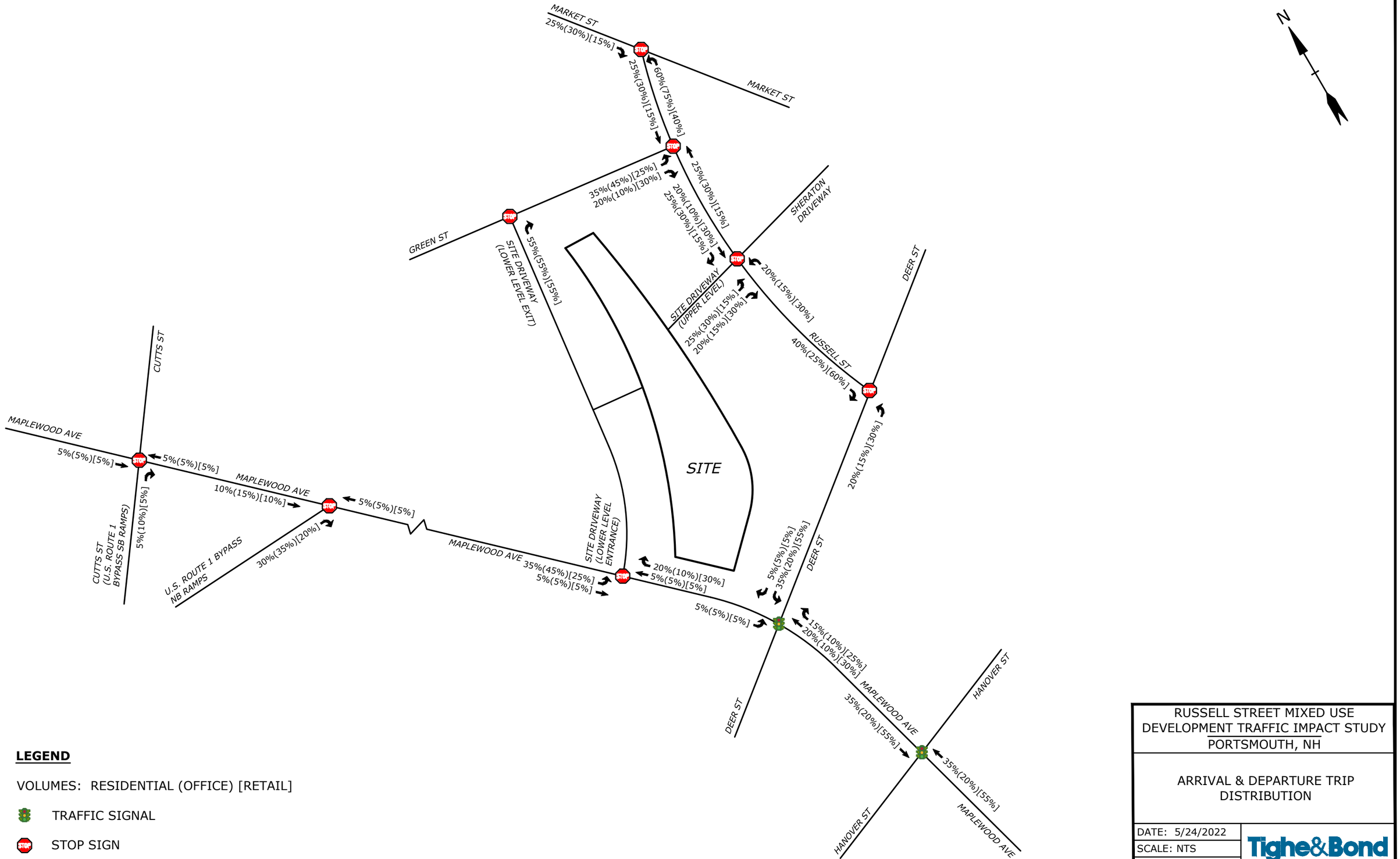
RUSSELL STREET MIXED USE DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

2035 NO BUILD CONDITIONS TRAFFIC VOLUMES

DATE: 5/24/2022
SCALE: NTS
FIGURE 3

Tighe&Bond

Plotted On:May 18, 2022-3:09pm By: MStoutz
Tighe & Bond:J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\Figures\T5037-002-TRAFFIC-VOLUME-FIGURES.dwg



LEGEND

VOLUMES: RESIDENTIAL (OFFICE) [RETAIL]

TRAFFIC SIGNAL

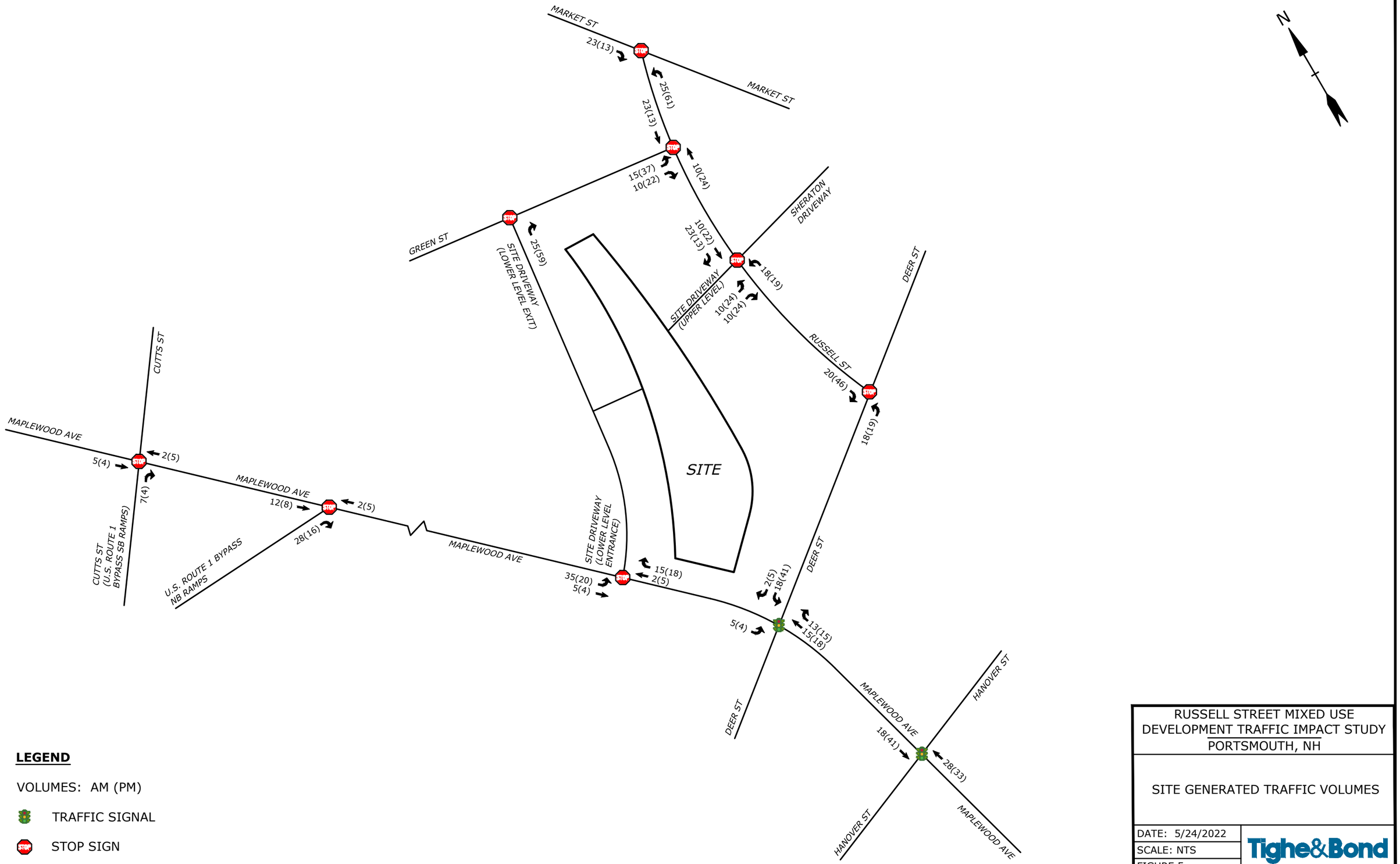
STOP SIGN

RUSSELL STREET MIXED USE DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

ARRIVAL & DEPARTURE TRIP DISTRIBUTION

DATE: 5/24/2022
SCALE: NTS
FIGURE 4

Tighe&Bond



LEGEND

VOLUMES: AM (PM)

TRAFFIC SIGNAL

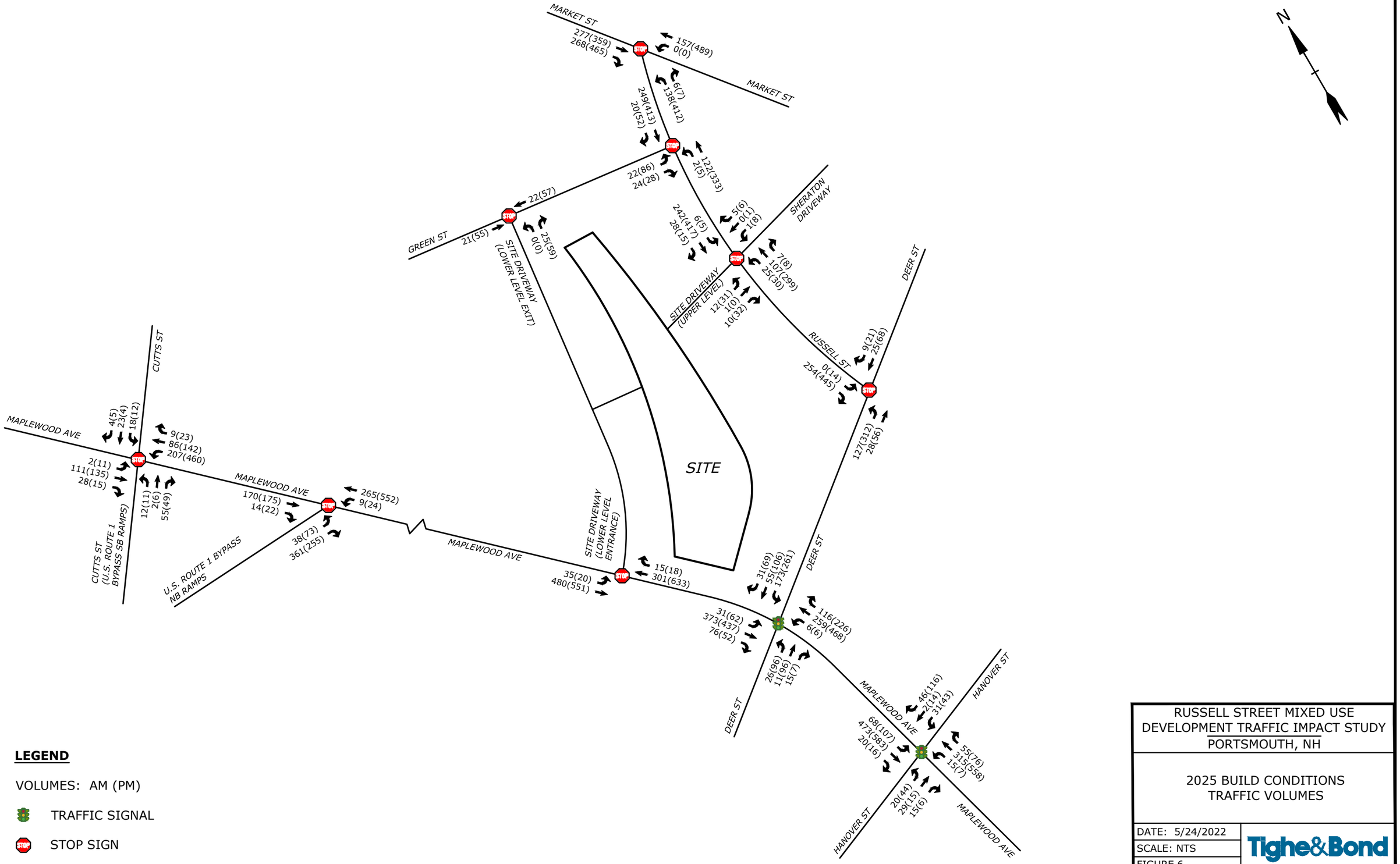
STOP SIGN

RUSSELL STREET MIXED USE DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

SITE GENERATED TRAFFIC VOLUMES

DATE: 5/24/2022
SCALE: NTS
FIGURE 5

Tighe&Bond



LEGEND

VOLUMES: AM (PM)

TRAFFIC SIGNAL

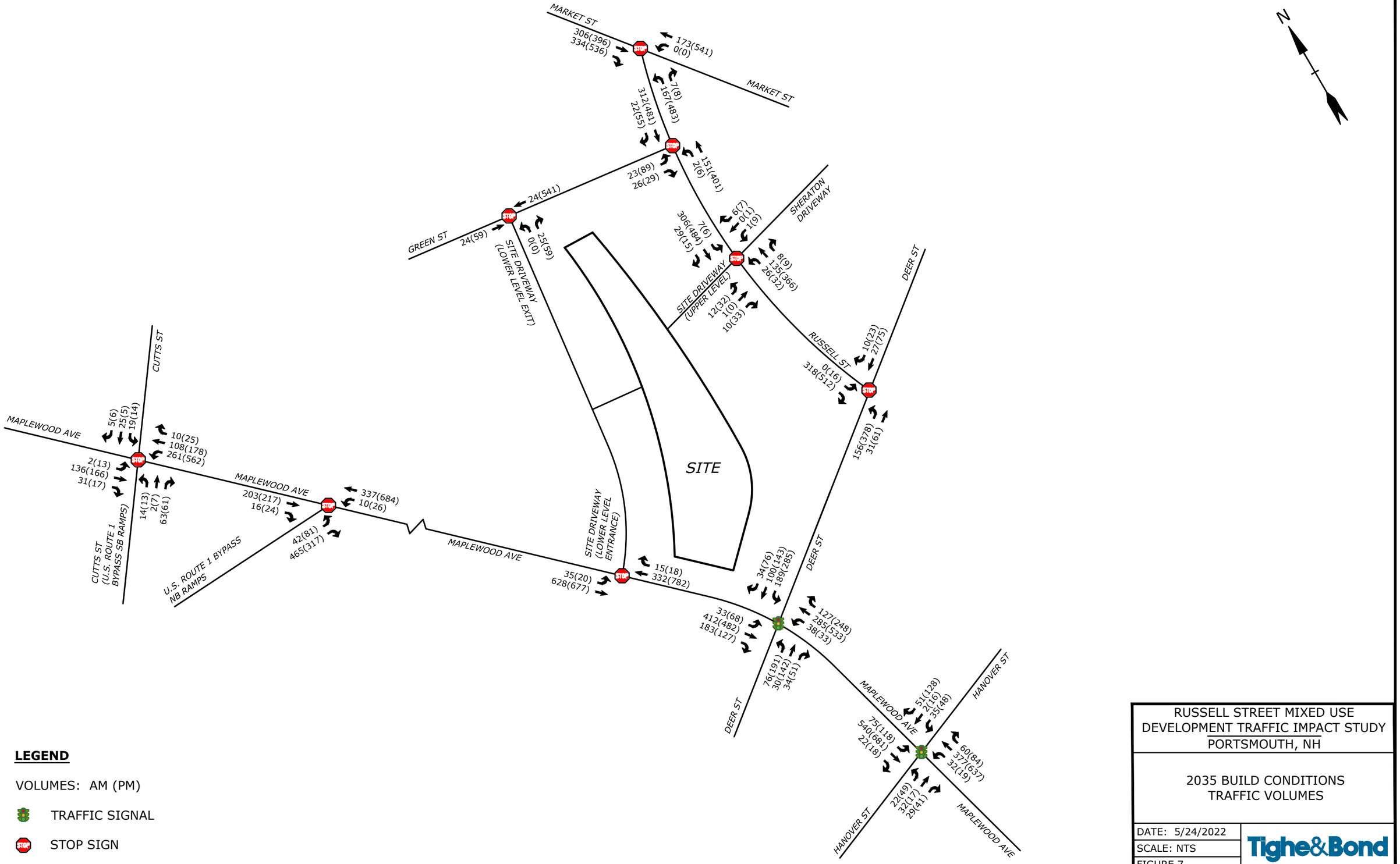
STOP SIGN

RUSSELL STREET MIXED USE
DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

2025 BUILD CONDITIONS
TRAFFIC VOLUMES

DATE: 5/24/2022
SCALE: NTS
FIGURE 6

Tighe&Bond



LEGEND

VOLUMES: AM (PM)

TRAFFIC SIGNAL

STOP SIGN

RUSSELL STREET MIXED USE
DEVELOPMENT TRAFFIC IMPACT STUDY
PORTSMOUTH, NH

2035 BUILD CONDITIONS
TRAFFIC VOLUMES

DATE: 5/24/2022
SCALE: NTS
FIGURE 7

Tighe&Bond

APPENDIX A
Traffic Count Data

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Deer Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	Ma ew N rth A en e n				Ma ew S th A en e n				eer Street East n				eer Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	1	10	0	4	33	3	0	4	1	0	0	1	4	6
1 AM	0	0	2	1	0		44	3	0	3	4	0	0	21	4	6
30 AM	0	0	44	20	0	8	3		0	3	2	0	0	24	10	1
4 AM	0	0	41	16	0		80	18	0		2	2	0	3	13	
8 00 AM	0	2	48	21	0	8	3	12	0	4	0		0	36	8	8
8 1 AM	0	3	3	24	0	3	83	1	0	6	3	3	0	34		
8 30 AM	0	0		24	0	3	1	14	0	4	4	1	0	22	1	6
8 4 AM	0	1	30	14	0		2	1	0			2	0	2	18	1

AM PEAK HOUR 7:45 AM to 8:45 AM	Ma ew N rth A en e n				Ma ew S th A en e n				eer Street East n				eer Street est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**5**	**201**	**85**	**0**	**21**	**307**	**63**	**0**	**21**	**9**	**13**	**0**	**127**	**45**	**24**
PHF	**0.88**				**0.93**				**0.90**				**0.92**			
HV %	**0.0%**	**20.0%**	**10.0%**	**4.7%**	**0.0%**	**0.0%**	**2.0%**	**6.3%**	**0.0%**	**9.5%**	**11.1%**	**7.7%**	**0.0%**	**5.5%**	**8.9%**	**4.2%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Deer Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	Ma ew N rth		A en e n		Ma ew S th		A en e n		eer Street East n				eer Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	2	1	0	0	3	0	0	1	0	0	0	2	0	0
1 AM	0	0	0	1	0	1		1	0	0	0	0	0	1	2	0
30 AM	0	0	3	1	0	0	2	0	0	0	0	0	0	1	0	0
4 AM	0	0	2	0	0	0	0	3	0	0	0	0	0	3	0	0
8 00 AM	0	1	1	0	0	0	4	0	0	0	0	1	0	2	3	1
8 1 AM	0	0	4	1	0	0	1	1	0	1	0	0	0	1	1	0
8 30 AM	0	0	13	3	0	0	1	0	0	1	1	0	0	1	0	0
8 4 AM	0	0	3	0	0	0	1	2	0	1	1	1	0	2	0	0

AM PEAK HOUR	Ma ew N rth		A en e n		Ma ew S th		A en e n		eer Street East n				eer Street est n			
8:00 AM																
to	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
9:00 AM	**0**	**1**	**21**	**4**	**0**	**0**	**7**	**3**	**0**	**3**	**2**	**2**	**0**	**6**	**4**	**1**
PHF	**0.41**				**0.63**				**0.58**				**0.46**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Deer Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	Ma ew N rth A en e n				Ma ew S th A en e n				eer Street East n				eer Street est n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1
30 AM	0	0	0		0	0	0	0	0	0	0	0	0	0	0	1
4 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
8 00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
8 1 AM	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0	1
8 30 AM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
8 4 AM	0	0	0	0	0	0	0		0	0	0	1	0	0	0	3

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Ma ew N rth A en e n				Ma ew S th A en e n				eer Street East n				eer Street est n			
	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
	0	0	0		1	0	0	3	0	0	0	3	0	0	0	1

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

PDI File #: **196718 D**
Location: **N: Maplewood Avenue S: Maplewood Avenue**
Location: **E: Deer Street W: Deer Street**
City, State: **Portsmouth, NH**
Client: **Tighe & Bond/ M. Santos**
Site Code: **200076019**
Count Date: **Thursday, January 31, 2019**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class: **Cars and Heavy Vehicles (Combined)**

	Maplewood Avenue from North					Deer Street from East					Maplewood Avenue from South					Deer Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	13	57	11	0	81	10	9	29	0	48	43	66	1	0	110	1	18	12	0	31	270
4:15 PM	14	57	12	0	83	11	13	25	0	49	39	78	3	0	120	2	14	17	0	33	285
4:30 PM	13	57	7	0	77	8	18	24	0	50	50	81	4	0	135	3	7	17	0	27	289
4:45 PM	11	70	12	0	93	8	12	43	0	63	31	76	3	0	110	3	14	16	0	33	299
Total	51	241	42	0	334	37	52	121	0	210	163	301	11	0	475	9	53	62	0	124	1143
5:00 PM	10	71	7	0	88	13	27	37	0	77	45	99	2	0	146	1	21	36	0	58	369
5:15 PM	11	77	8	0	96	15	14	34	0	63	39	79	1	0	119	1	21	12	0	34	312
5:30 PM	10	95	19	0	124	13	22	63	0	98	37	82	2	0	121	0	23	13	0	36	379
5:45 PM	9	81	10	0	100	8	18	35	0	61	41	83	0	0	124	4	8	12	0	24	309
Total	40	324	44	0	408	49	81	169	0	299	162	343	5	0	510	6	73	73	0	152	1369
Grand Total	91	565	86	0	742	86	133	290	0	509	325	644	16	0	985	15	126	135	0	276	2512
Approach %	12.3	76.1	11.6	0.0		16.9	26.1	57.0	0.0		33.0	65.4	1.6	0.0		5.4	45.7	48.9	0.0		
Total %	3.6	22.5	3.4	0.0	29.5	3.4	5.3	11.5	0.0	20.3	12.9	25.6	0.6	0.0	39.2	0.6	5.0	5.4	0.0	11.0	
Exiting Leg Total					865					537					870					240	2512
Cars	90	562	86	0	738	86	133	284	0	503	318	638	14	0	970	15	125	134	0	274	2485
% Cars	98.9	99.5	100.0	0.0	99.5	100.0	100.0	97.9	0.0	98.8	97.8	99.1	87.5	0.0	98.5	100.0	99.2	99.3	0.0	99.3	98.9
Exiting Leg Total					858					529					861					237	2485
Heavy Vehicles	1	3	0	0	4	0	0	6	0	6	7	6	2	0	15	0	1	1	0	2	27
% Heavy Vehicles	1.1	0.5	0.0	0.0	0.5	0.0	0.0	2.1	0.0	1.2	2.2	0.9	12.5	0.0	1.5	0.0	0.8	0.7	0.0	0.7	1.1
Exiting Leg Total					7					8					9					3	27

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Maplewood Avenue from North					Deer Street from East					Maplewood Avenue from South					Deer Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	10	71	7	0	88	13	27	37	0	77	45	99	2	0	146	1	21	36	0	58	369
5:15 PM	11	77	8	0	96	15	14	34	0	63	39	79	1	0	119	1	21	12	0	34	312
5:30 PM	10	95	19	0	124	13	22	63	0	98	37	82	2	0	121	0	23	13	0	36	379
5:45 PM	9	81	10	0	100	8	18	35	0	61	41	83	0	0	124	4	8	12	0	24	309
Total Volume	40	324	44	0	408	49	81	169	0	299	162	343	5	0	510	6	73	73	0	152	1369
% Approach Total	9.8	79.4	10.8	0.0		16.4	27.1	56.5	0.0		31.8	67.3	1.0	0.0		3.9	48.0	48.0	0.0		
PHF	0.909	0.853	0.579	0.000	0.823	0.817	0.750	0.671	0.000	0.763	0.900	0.866	0.625	0.000	0.873	0.375	0.793	0.507	0.000	0.655	0.903
Cars	40	324	44	0	408	49	81	166	0	296	158	341	5	0	504	6	73	73	0	152	1360
Cars %	100.0	100.0	100.0	0.0	100.0	100.0	100.0	98.2	0.0	99.0	97.5	99.4	100.0	0.0	98.8	100.0	100.0	100.0	0.0	100.0	99.3
Heavy Vehicles	0	0	0	0	0	0	0	3	0	3	4	2	0	0	6	0	0	0	0	0	9
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	1.0	2.5	0.6	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.7
Cars Enter Leg	40	324	44	0	408	49	81	166	0	296	158	341	5	0	504	6	73	73	0	152	1360
Heavy Enter Leg	0	0	0	0	0	0	0	3	0	3	4	2	0	0	6	0	0	0	0	0	9
Total Entering Leg	40	324	44	0	408	49	81	169	0	299	162	343	5	0	510	6	73	73	0	152	1369
Cars Exiting Leg					463					275					496					126	1360
Heavy Exiting Leg					2					4					3					0	9
Total Exiting Leg					465					279					499					126	1369

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Hanover Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	Ma ew N rth A en e n				Ma ew S th A en e n				Han er Street East n				Han er Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	2	24	3	0	4	4	0	0	2	4	1	0	2	0	
1 AM	0	0	38	3	0	4	6	3	0	3	0	2	0	4	3	3
30 AM	0	4	4	8	0	4	8	1	0		3	1	0		1	11
4 AM	0	1	4	11	0	16		1	0	0		3	0	12	1	
8 00 AM	0	2	1		0	13		3	0		4		0	6	0	
8 1 AM	0	4	68	10	0	1	10	3	0	3	6	4	0	3	0	10
8 30 AM	0	6	68	1	0	12	3		0	6		1	0	4	1	10
8 4 AM	0		36	6	0	22	1		0	1	4	0	0		3	6

	Ma ew N rth A en e n				Ma ew S th A en e n				Han er Street East n				Han er Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	0	82	11	0	12	8	3	0	2	1	0	0	4	3	14
4 1 PM	0	1	8	14	0	11	6	0	0		4	6	0	6	2	13
4 30 PM	0	1	2	16	0	16	6	2	0	20	1	1	0		1	21
4 4 PM	0	3	8	8	0	16	2	2	0		3	0	0		1	1
00 PM	0	1	10	1	0	14	4	4	0	6		1	0	1	4	16
1 PM	0	1	1	20	0	14	0	1	0	1	2	3	0		6	2
30 PM	0		81	18	0	21	8	2	0	4	8	4	0		4	24
4 PM	0	8	3	14	0	22	2	6	0	0	2	2	0	8		18

AM PEAK HOUR 7:45 AM to 8:45 AM	Ma ew N rth A en e n				Ma ew S th A en e n				Han er Street East n				Han er Street est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**13**	**236**	**45**	**0**	**56**	**374**	**16**	**0**	**16**	**24**	**13**	**0**	**25**	**2**	**38**
PHF	**0.83**				**0.91**				**0.83**				**0.74**			
HV %	**0.0%**	**23.1%**	**9.7%**	**2.2%**	**0.0%**	**10.7%**	**2.1%**	**0.0%**	**0.0%**	**6.3%**	**12.5%**	**38.5%**	**0.0%**	**4.0%**	**0.0%**	**2.6%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Ma ew N rth A en e n				Ma ew S th A en e n				Han er Street East n				Han er Street est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**6**	**377**	**63**	**0**	**60**	**303**	**9**	**0**	**32**	**13**	**5**	**0**	**36**	**12**	**83**
PHF	**0.89**				**0.85**				**0.57**				**0.86**			
HV %	**0.0%**	**0.0%**	**2.1%**	**0.0%**	**0.0%**	**6.7%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**23.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Hanover Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	Maplewood Avenue Northbound				Maplewood Avenue Southbound				Hanover Street Eastbound				Hanover Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
00 AM	0	1	2	1	0	2	3	0	0	0	0	0	0	0	0	1
1 AM	0	0	2	1	0	1		0	0	0	0	1	0	1	0	0
30 AM	0	1	3	0	0	1	2	0	0	0	1	0	0	0	0	0
4 AM	0	1	2	0	0	2	1	0	0	0	0	3	0	1	0	0
8 00 AM	0	0	2	1	0	1		0	0	0	1	2	0	0	0	0
8 1 AM	0	1	6	0	0	2	1	0	0	0	0	0	0	0	0	0
8 30 AM	0	1	13	0	0	1	1	0	0	1	2	0	0	0	0	1
8 4 AM	0	3	2	0	0	2	2	0	0	0	0	0	0	0	0	1

	Maplewood Avenue Northbound				Maplewood Avenue Southbound				Hanover Street Eastbound				Hanover Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4 00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4 1 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4 30 PM	0	0	3	0	0	2	0	0	0	0	1	0	0	0	0	0
4 4 PM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
00 PM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
1 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0
4 PM	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1

AM PEAK HOUR 7:45 AM to 8:45 AM	Maplewood Avenue Northbound				Maplewood Avenue Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**23**	**1**	**0**	**6**	**8**	**0**	**0**	**1**	**3**	**5**	**0**	**1**	**0**	**1**
PHF	**0.48**				**0.58**				**0.75**				**0.50**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Maplewood Avenue Northbound				Maplewood Avenue Southbound				Hanover Street Eastbound				Hanover Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**8**	**0**	**0**	**4**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.44**				**0.38**				**0.00**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Hanover Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	Maplewood Avenue Northern				Maplewood Avenue Southern				Hanover Street Eastern				Hanover Street Western			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
00 AM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
1 AM	0	0	0	4	0	0	0	2	0	0	0	1	0	0	0	2
30 AM	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0
4 AM	0	0	0	6	0	0	0	1	0	0	0	1	0	0	0	0
8 00 AM	0	0	0	6	0	0	0	2	0	0	0	1	0	0	0	0
8 1 AM	0	0	0		0	0	0	3	0	0	0	1	0	0	0	1
8 30 AM	0	0	0	2	0	0	0		0	0	0	1	0	0	0	0
8 4 AM	0	0	0		0	0	0	6	0	0	0	2	0	0	0	1

	Maplewood Avenue Northern				Maplewood Avenue Southern				Hanover Street Eastern				Hanover Street Western			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4 00 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	1
4 1 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	3
4 30 PM	0	0	0	13	0	1	0	3	0	0	0	6	0	0	0	0
4 4 PM	0	0	0		0	0	0	6	0	0	0	0	0	0	0	2
00 PM	0	0	0	14	0	0	0		0	0	0	2	0	0	0	1
1 PM	0	0	0	8	0	0	0	4	0	0	0	1	0	0	0	0
30 PM	0	0	0	8	0	0	0	8	0	0	0	2	0	0	0	2
4 PM	0	0	0		0	0	0	3	0	0	0	1	0	0	0	2

AM PEAK HOUR[1]	Maplewood Avenue Northern				Maplewood Avenue Southern				Hanover Street Eastern				Hanover Street Western			
7:45 AM																
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:45 AM	0	0	0	23	0	0	0	11	0	0	0	4	0	0	0	1

PM PEAK HOUR[1]	Maplewood Avenue Northern				Maplewood Avenue Southern				Hanover Street Eastern				Hanover Street Western			
4:30 PM																
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:30 PM	0	0	0	42	0	1	0	18	0	0	0		0	0	0	3

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass SB Ramp (Cutts St)
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	2	0	6	0	1	2	1	0	0	4	6	0	21	6	0
1 AM	0	1	0	4	0	1	4	0	0	0	1	11	0	3		1
30 AM	0	0	2	6	0	0	3	0	0	1	12	3	0	44	11	0
4 AM	0	1	0		0	4		1	0	0	2	6	0	46	12	3
8 00 AM	0	3	0	11	0	6	6	0	0	2	24	6	0	40	14	2
8 1 AM	0	3	1		0	3	2	1	0	0	20	8	0	3	13	1
8 30 AM	0	3	1	12	0	1	6	1	0	0	14	3	0	48	30	2
8 4 AM	0	0	0		0	0	1	0	0	0	13	4	0	31	10	1

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	3	0		0	0	3	2	0	4	1	4	0	81	26	4
4 1 PM	0	1	0		0	0	3	0	0	0	24	4	0	6	22	2
4 30 PM	0	1	1	6	0	2	0	1	0	1	1	3	0		31	4
4 4 PM	0	4	2	11	0	1	1	0	0	3	33	2	0	88	1	6
00 PM	0	2	1		0	2	1	1	0		24		0	102	26	
1 PM	0	2	1	10	0	4	1	2	0	0	26	1	0	83	3	3
30 PM	0	3	1	4	0	2	1	1	0	2	1	1	0	88	21	3
4 PM	0	1	1	2	0	1	2	0	0	1	22	3	0	4	1	2

AM PEAK HOUR 7:45 AM to 8:45 AM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**10**	**2**	**39**	**0**	**14**	**19**	**3**	**0**	**2**	**87**	**23**	**0**	**169**	**69**	**8**
PHF	**0.80**				**0.75**				**0.80**				**0.77**			
HV %	**0.0%**	**20.0%**	**0.0%**	**2.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.6%**	**13.0%**	**0.0%**	**4.1%**	**24.6%**	**0.0%**

PM PEAK HOUR 4:30 PM to 5:30 PM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**9**	**5**	**36**	**0**	**9**	**3**	**4**	**0**	**9**	**102**	**13**	**0**	**368**	**109**	**18**
PHF	**0.74**				**0.57**				**0.82**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.6%**	**3.7%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass SB Ramp (Cutts St)
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew A en e East n				Ma ew A en e est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	0
1 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	2	0	0
30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	1	1	0
4 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	0
8 00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0
8 1 AM	0	1	0	0	0	0	0	0	0	0	1	1	0	3	1	0
8 30 AM	0	1	0	1	0	0	0	0	0	0	1	0	0	2	13	0
8 4 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew A en e East n				Ma ew A en e est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	2	4	0
4 1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4 30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
4 4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew A en e East n				Ma ew A en e est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**3**	**0**	**7**	**17**	**0**
PHF	**0.38**				**0.00**				**0.88**				**0.40**			

PM PEAK HOUR 4:00 PM to 5:00 PM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew A en e East n				Ma ew A en e est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	**6**	**0**
PHF	**0.00**				**0.00**				**0.25**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass SB Ramp (Cutts St)
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East A en e n				Ma ew est A en e n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
8 1 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1
8 30 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0
8 4 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East A en e n				Ma ew est A en e n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
4 00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 1 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4 30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4 4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East A en e n				Ma ew est A en e n			
	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
	0	0	0	1	0	0	0	3	0	0	0	3	0	1	0	1

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	R te 1 Pass S Ra (tts Street) N rth n				tts Street S th n				Ma ew East A en e n				Ma ew est A en e n			
	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass NB Ramp
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0		0	33	0	0	0	0	0	0	8	3	0	2	23	0
1 AM	0		0	40	0	0	0	0	0	0	1	4	0	4	40	0
30 AM	0	6	0	3	0	0	0	0	0	0	14		0	2	4	0
4 AM	0		0		0	0	0	0	0	0	36	4	0	2	4	0
8 00 AM	0		0	4	0	0	0	0	0	0	3	4	0	2	48	0
8 1 AM	0		0	66	0	0	0	0	0	0	31	2	0	3	4	0
8 30 AM	0	10	0	84	0	0	0	0	0	0	24	2	0	1	6	0
8 4 AM	0	3	0	6	0	0	0	0	0	0	20	3	0	2	38	0

	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	1	0	40	0	0	0	0	0	0	24	2	0	8		0
4 1 PM	0	1	0	34	0	0	0	0	0	0	22	8	0	4	8	0
4 30 PM	0	11	0	3	0	0	0	0	0	0	22		0		11	0
4 4 PM	0	16	0	3	0	0	0	0	0	0	40		0	6	6	0
00 PM	0	1	0	4	0	0	0	0	0	0	30	4	0	3	118	0
1 PM	0	18	0	44	0	0	0	0	0	0	3	4	0		104	0
30 PM	0	16	0	48	0	0	0	0	0	0	18	4	0	8	2	0
4 PM	0	13	0	3	0	0	0	0	0	0	20		0	4		0

AM PEAK HOUR 7:45 AM to 8:45 AM	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**31**	**0**	**274**	**0**	**0**	**0**	**0**	**0**	**0**	**128**	**12**	**0**	**8**	**216**	**0**
PHF	**0.81**				**0.00**				**0.85**				**0.80**			
HV %	**0.0%**	**12.9%**	**0.0%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.9%**	**8.3%**	**0.0%**	**12.5%**	**10.2%**	**0.0%**

PM PEAK HOUR 4:30 PM to 5:30 PM	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**60**	**0**	**185**	**0**	**0**	**0**	**0**	**0**	**0**	**129**	**18**	**0**	**19**	**437**	**0**
PHF	**0.89**				**0.00**				**0.82**				**0.92**			
HV %	**0.0%**	**5.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**1.4%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass NB Ramp
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	0	3	0	0	0	0	0	0	1	0	0	0	2	0
1 AM	0	1	0	3	0	0	0	0	0	0	3	1	0	0	1	0
30 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0
4 AM	0	0	0	1	0	0	0	0	0	0	2	0	0	1	4	0
8 00 AM	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0
8 1 AM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	4	0
8 30 AM	0	2	0	1	0	0	0	0	0	0	1	1	0	0	14	0
8 4 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	1	4	0

	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4 1 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4 30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0
4 4 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0

AM PEAK HOUR 7:45 AM to 8:45 AM	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**4**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**1**	**22**	**0**
PHF	**0.75**				**0.00**				**0.75**				**0.41**			

PM PEAK HOUR 4:00 PM to 5:00 PM	R te 1 Pass N Ra N rth n				S th n				Ma ew East n				Ma ew est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**5**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**
PHF	**0.58**				**0.00**				**0.00**				**0.44**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Maplewood Avenue
Street 2:	Route 1 ByPass NB Ramp
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	Route 1 Bypass NB Ramp Northern				Maplewood Avenue Southern				Maplewood Avenue Eastern				Maplewood Avenue Western			
Start Time	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED
00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 1 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 4 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Route 1 Bypass NB Ramp Northern				Maplewood Avenue Southern				Maplewood Avenue Eastern				Maplewood Avenue Western			
Start Time	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED
4 00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Route 1 Bypass NB Ramp Northern				Maplewood Avenue Southern				Maplewood Avenue Eastern				Maplewood Avenue Western			
	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	Route 1 Bypass NB Ramp Northern				Maplewood Avenue Southern				Maplewood Avenue Eastern				Maplewood Avenue Western			
	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED	Left	Through	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 3
Location:	Portsmouth, NH
Street 1:	Deer Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

		N rth n				R sse Street S th n				eer Street East n				eer Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	0	0	0	0	0	2	0	12	2	0	0	0	3	2
1 AM	0	0	0	0	0	1	0	2	0	22		0	0	0	4	0
30 AM	0	0	0	0	0	0	0	3	0	2	4	0	0	0	4	0
4 AM	0	0	0	0	0	0	0	0	0	18	3	0	0	0	6	0
8 00 AM	0	0	0	0	0	0	0	0	0	1	6	0	0	0	8	
8 1 AM	0	0	0	0	0	0	0	4	0	23		0	0	0	2	2
8 30 AM	0	0	0	0	0	0	0	41	0	2	2	0	0	0	6	1
8 4 AM	0	0	0	0	0	0	0	2	0	1	6	0	0	0	4	0

AM PEAK HOUR		N rth n				R sse Street S th n				eer Street East n				eer Street est n			
8:00 AM																	
to	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
9:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**192**	**0**	**90**	**23**	**0**	**0**	**0**	**20**	**8**
PHF	**0.00**				**0.92**				**0.88**				**0.54**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**6.3%**	**0.0%**	**3.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.0%**	**37.5%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 3
Location:	Portsmouth, NH
Street 1:	Deer Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	N rth n				R sse S th Street n				eer East Street n				eer est Street n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	2
1 AM	0	0	0	0	0	0	0	2	0	1	1	0	0	0	1	0
30 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	3
8 1 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8 30 AM	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0
8 4 AM	0	0	0	0	0	0	0	3	0	1	0	0	0	0	1	0

AM PEAK HOUR	N rth n				R sse S th Street n				eer East Street n				eer est Street n			
7:15 AM																
to	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**3**
PHF	**0.00**				**0.50**				**0.38**				**0.33**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 3
Location:	Portsmouth, NH
Street 1:	Deer Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

		N rth n				R sse Street S th n				eer Street East n				eer Street est n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
1 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
4 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
8 1 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8 30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8 4 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1

AM PEAK HOUR[1]		N rth n				R sse Street S th n				eer Street East n				eer Street est n			
8:00 AM																	
to	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
9:00 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	1

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

PDI File #: **196718 H**
Location: **N: Russell Street**
Location: **E: Deer Street W: Deer Street**
City, State: **Portsmouth, NH**
Client: **Tighe & Bond/ M. Santos**
Site Code: **200076019**
Count Date: **Thursday, January 31, 2019**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Cars and Heavy Vehicles (Combined)

	Russell Street				Deer Street				Deer Street				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	48	2	0	50	4	8	0	12	5	55	0	60	122
4:15 PM	40	3	0	43	4	16	1	21	8	50	0	58	122
4:30 PM	51	7	0	58	5	9	0	14	9	50	0	59	131
4:45 PM	52	3	0	55	6	18	0	24	15	36	0	51	130
Total	191	15	0	206	19	51	1	71	37	191	0	228	505
5:00 PM	76	6	0	82	7	9	0	16	8	63	0	71	169
5:15 PM	65	0	1	66	3	16	0	19	10	51	0	61	146
5:30 PM	86	2	0	88	3	16	0	19	15	54	0	69	176
5:45 PM	79	2	0	81	2	11	0	13	9	46	1	56	150
Total	306	10	1	317	15	52	0	67	42	214	1	257	641
Grand Total	497	25	1	523	34	103	1	138	79	405	1	485	1146
Approach %	95.0	4.8	0.2		24.6	74.6	0.7		16.3	83.5	0.2		
Total %	43.4	2.2	0.1	45.6	3.0	9.0	0.1	12.0	6.9	35.3	0.1	42.3	
Exiting Leg Total				440				105				601	1146
Cars	488	25	1	514	34	103	1	138	79	398	1	478	1130
% Cars	98.2	100.0	100.0	98.3	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.6	98.6
Exiting Leg Total				433				105				592	1130
Heavy Vehicles	9	0	0	9	0	0	0	0	0	7	0	7	16
% Heavy Vehicles	1.8	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.4	1.4
Exiting Leg Total				7				0				9	16

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Russell Street				Deer Street				Deer Street				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
5:00 PM	76	6	0	82	7	9	0	16	8	63	0	71	169
5:15 PM	65	0	1	66	3	16	0	19	10	51	0	61	146
5:30 PM	86	2	0	88	3	16	0	19	15	54	0	69	176
5:45 PM	79	2	0	81	2	11	0	13	9	46	1	56	150
Total Volume	306	10	1	317	15	52	0	67	42	214	1	257	641
% Approach Total	96.5	3.2	0.3		22.4	77.6	0.0		16.3	83.3	0.4		
PHF	0.890	0.417	0.250	0.901	0.536	0.813	0.000	0.882	0.700	0.849	0.250	0.905	0.911
Cars	301	10	1	312	15	52	0	67	42	210	1	253	632
Cars %	98.4	100.0	100.0	98.4	100.0	100.0	0.0	100.0	100.0	98.1	100.0	98.4	98.6
Heavy Vehicles	5	0	0	5	0	0	0	0	0	4	0	4	9
Heavy Vehicles %	1.6	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.6	1.4
Cars Enter Leg	301	10	1	312	15	52	0	67	42	210	1	253	632
Heavy Enter Leg	5	0	0	5	0	0	0	0	0	4	0	4	9
Total Entering Leg	306	10	1	317	15	52	0	67	42	214	1	257	641
Cars Exiting Leg				226				52				354	632
Heavy Exiting Leg				4				0				5	9
Total Exiting Leg				230				52				359	641

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Russell Street
Street 2:	Sheraton Portsmouth Harborside Dr
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	1	12	1	0	0	21	2	0	0	2	2	0	1	0	2
1 AM	0	1	20	1	0	1	26	2	0	1	0	2	0	0	0	2
30 AM	0	4	20	1	0	0	36	1	0	0	0	2	0	0	0	1
4 AM	0	0	1	2	0	1	1	2	0	1	0	0	0	0	0	0
8 00 AM	0	4	21	1	0	1	0	0	0	1	0	0	0	0	0	0
8 1 AM	0	0	22	4	0	3	4	1	0	0	0	0	0	0	0	0
8 30 AM	0	1	2	0	0	0	40	0	0	1	1	0	0	1	0	4
8 4 AM	0	1	18	1	0	1	2	3	0	0	0	0	0	0	0	0

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	0	33	1	0	1	31	0	0	1	0	2	0	3	0	3
4 1 PM	0	1	38	2	0	2	46	0	0		0	0	0	2	0	1
4 30 PM	0	1	3	1	0	0	36	1	0	0	0	2	0	0	0	1
4 4 PM	0	2	31	0	0	2	38	0	0	0	0	1	0	1	0	2
00 PM	0	2	46	1	0	0	40	1	0	1	0	0	0	0	1	1
1 PM	0	1	44	1	0	0	3	2	0	3	0	2	0	0	0	2
30 PM	0	0	26	1	0	0	42	1	0	2	0	1	0	1	0	2
4 PM	0	3	1	0	0	0	3	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**6**	**88**	**6**	**0**	**5**	**191**	**4**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**4**
PHF	**0.89**				**0.89**				**0.38**				**0.25**			
HV %	**0.0%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**7.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**6**	**150**	**4**	**0**	**4**	**160**	**2**	**0**	**6**	**0**	**3**	**0**	**3**	**1**	**5**
PHF	**0.82**				**0.86**				**0.45**				**0.75**			
HV %	**0.0%**	**0.0%**	**2.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Russell Street
Street 2:	Sheraton Portsmouth Harborside Dr
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	0	3	0	0	0	2	0	0	0	1	0	0	0	0	0
1 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
8 00 AM	0	0	3	0	0	0		0	0	0	0	0	0	0	0	0
8 1 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8 30 AM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
8 4 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
4 00 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
4 1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 4 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
00 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
1 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**0**	**6**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.57**				**0.00**				**0.00**			

PM PEAK HOUR 5:00 PM to 6:00 PM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.42**				**0.42**				**0.00**				**0.00**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Russell Street
Street 2:	Sheraton Portsmouth Harborside Dr
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
00 AM	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
1 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
30 AM	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8 1 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
8 30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8 4 AM	0	0	0	0	0	0	0	10	0	0	0	1	0	0	0	0

	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
4 00 PM	0	0	0	1	0	0	0	6	0	0	0	1	0	0	0	0
4 1 PM	0	0	0	3	0	0	0		0	0	0	0	0	0	0	0
4 30 PM	0	0	0	0	0	0	0	6	0	0	0	2	0	0	0	0
4 4 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
00 PM	0	0	0	2	0	0	0		0	0	0	0	0	0	0	0
1 PM	0	0	0	1	0	0	0		0	0	0	0	0	0	0	0
30 PM	0	0	0	3	0	0	0	3	0	0	0	1	0	0	0	0
4 PM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
	0	0	0	0	0	0	0	18	0	0	0	2	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	R sse Street N rth n				R sse Street S th n				Sherat n P ic Par in ri e East n				Sherat n P rts th Har rsi e ri ewa est n			
	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
	0	0	0		0	0	0	20	0	0	0	3	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Market Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	14	0	2	0	0	0	0	0	0	1	24	0	0	1	0
1 AM	0	24	0	0	0	0	0	0	0	0	23	34	0	0	18	0
30 AM	0	23	0	1	0	0	0	0	0	0	4	40	0	0	1	0
4 AM	0	1	0	1	0	0	0	0	0	0	2	8	0	0	3	0
8 00 AM	0	23	0	2	0	0	0	0	0	0	0	4	0	0	28	0
8 1 AM	0	23	0	2	0	0	0	0	0	0	4	6	0	0	33	0
8 30 AM	0	30	0	0	0	0	0	0	0	0	2	3	0	0	33	0
8 4 AM	0	20	0	1	0	0	0	0	0	0	64	8	0	0	24	0

AM PEAK HOUR	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
7:45 AM																
to	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
8:45 AM	**0**	**93**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**228**	**202**	**0**	**0**	**129**	**0**
PHF	**0.82**				**0.00**				**0.83**				**0.92**			
HV %	**0.0%**	**5.4%**	**0.0%**	**20.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.5%**	**5.9%**	**0.0%**	**0.0%**	**7.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Market Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

HEAVY VEHICLES

	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
Start Ti e	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
00 AM	0	3	0	1	0	0	0	0	0	0	0	2	0	0	2	0
1 AM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1	0
30 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0
8 00 AM	0	2	0	1	0	0	0	0	0	0	2		0	0	2	0
8 1 AM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0
8 30 AM	0	3	0	0	0	0	0	0	0	0	3	1	0	0	2	0
8 4 AM	0	1	0	0	0	0	0	0	0	0	4	3	0	0	2	0

AM PEAK HOUR 8:00 AM to 9:00 AM	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht	U-T rn	e t	Thr	Ri ht
	0	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**12**	**0**	**0**	**9**	**0**
PHF	**0.58**				**0.00**				**0.67**				**0.75**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	857_002_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Market Street
Street 2:	Russell Street
Count Date:	2/1/2022
Day of Week:	Tuesday
Weather:	Clouds & Sun, 30°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
Start Ti e	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8 1 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 4 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	R sse Street N rth n				S th n				Mar et Street East n				Mar et Street est n			
7:45 AM																
to	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE	e t	Thr	Ri ht	PE
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

PDI File #: **196718 J**
Location: **S: Russell Street**
Location: **E: Market Street W: Market Street**
City, State: **Portsmouth, NH**
Client: **Tighe & Bond/ M. Santos**
Site Code: **200076019**
Count Date: **Thursday, January 31, 2019**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class: **Cars and Heavy Vehicles (Combined)**

	Market Street from East				Russell Street from South				Market Street from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
4:00 PM	72	0	0	72	2	62	0	64	48	39	0	87	223
4:15 PM	78	0	0	78	0	57	0	57	54	53	0	107	242
4:30 PM	88	0	0	88	4	54	0	58	62	60	1	123	269
4:45 PM	86	0	0	86	2	53	0	55	55	71	0	126	267
Total	324	0	0	324	8	226	0	234	219	223	1	443	1001
5:00 PM	132	0	0	132	3	78	0	81	81	63	0	144	357
5:15 PM	84	0	0	84	0	64	0	64	69	59	0	128	276
5:30 PM	78	0	0	78	3	54	0	57	95	84	0	179	314
5:45 PM	81	0	0	81	0	60	0	60	84	69	0	153	294
Total	375	0	0	375	6	256	0	262	329	275	0	604	1241
Grand Total	699	0	0	699	14	482	0	496	548	498	1	1047	2242
Approach %	100.0	0.0	0.0		2.8	97.2	0.0		52.3	47.6	0.1		
Total %	31.2	0.0	0.0	31.2	0.6	21.5	0.0	22.1	24.4	22.2	0.0	46.7	
Exiting Leg Total				512				548				1182	2242
Cars	697	0	0	697	14	475	0	489	539	495	1	1035	2221
% Cars	99.7	0.0	0.0	99.7	100.0	98.5	0.0	98.6	98.4	99.4	100.0	98.9	99.1
Exiting Leg Total				509				539				1173	2221
Heavy Vehicles	2	0	0	2	0	7	0	7	9	3	0	12	21
% Heavy Vehicles	0.3	0.0	0.0	0.3	0.0	1.5	0.0	1.4	1.6	0.6	0.0	1.1	0.9
Exiting Leg Total				3				9				9	21

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Market Street from East				Russell Street from South				Market Street from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
5:00 PM	132	0	0	132	3	78	0	81	81	63	0	144	357
5:15 PM	84	0	0	84	0	64	0	64	69	59	0	128	276
5:30 PM	78	0	0	78	3	54	0	57	95	84	0	179	314
5:45 PM	81	0	0	81	0	60	0	60	84	69	0	153	294
Total Volume	375	0	0	375	6	256	0	262	329	275	0	604	1241
% Approach Total	100.0	0.0	0.0		2.3	97.7	0.0		54.5	45.5	0.0		
PHF	0.710	0.000	0.000	0.710	0.500	0.821	0.000	0.809	0.866	0.818	0.000	0.844	0.869
Cars	375	0	0	375	6	252	0	258	324	273	0	597	1230
Cars %	100.0	0.0	0.0	100.0	100.0	98.4	0.0	98.5	98.5	99.3	0.0	98.8	99.1
Heavy Vehicles	0	0	0	0	0	4	0	4	5	2	0	7	11
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.5	1.5	0.7	0.0	1.2	0.9
Cars Enter Leg	375	0	0	375	6	252	0	258	324	273	0	597	1230
Heavy Enter Leg	0	0	0	0	0	4	0	4	5	2	0	7	11
Total Entering Leg	375	0	0	375	6	256	0	262	329	275	0	604	1241
Cars Exiting Leg				279				324				627	1230
Heavy Exiting Leg				2				5				4	11
Total Exiting Leg				281				329				631	1241

Volume Report

Job 857_002_TB_ATR
Area Portsmouth, NH
Location Maplewood Avenue, 100' east of Raynes Avenue

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Tuesday, February 1, 2022

Time	Total		EB		WB		Time	Total		EB		WB	
0000	10		1		9		1200	128		58		70	
0015	6		2		4		1215	125		58		67	
0030	1		0		1		1230	140		63		77	
0045	9	26	5	8	4	18	1245	120	513	57	236	63	277
0100	4		2		2		1300	117		55		62	
0115	5		0		5		1315	141		67		74	
0130	6		1		5		1330	121		67		54	
0145	3	18	1	4	2	14	1345	121	500	58	247	63	253
0200	4		2		2		1400	115		58		57	
0215	2		0		2		1415	151		79		72	
0230	4		3		1		1430	143		73		70	
0245	4	14	3	8	1	6	1445	153	562	72	282	81	280
0300	6		2		4		1500	155		74		81	
0315	2		0		2		1515	184		74		110	
0330	1		0		1		1530	162		72		90	
0345	1	10	1	3	0	7	1545	177	678	86	306	91	372
0400	1		1		0		1600	184		76		108	
0415	7		2		5		1615	146		70		76	
0430	4		2		2		1630	211		81		130	
0445	9	21	5	10	4	11	1645	192	733	86	313	106	420
0500	8		4		4		1700	200		83		117	
0515	13		6		7		1715	175		68		107	
0530	18		12		6		1730	165		68		97	
0545	29	68	21	43	8	25	1745	158	698	91	310	67	388
0600	28		20		8		1800	131		63		68	
0615	39		25		14		1815	139		64		75	
0630	56		35		21		1830	110		57		53	
0645	82	205	50	130	32	75	1845	106	486	49	233	57	253
0700	69		45		24		1900	93		40		53	
0715	91		57		34		1915	70		28		42	
0730	102		58		44		1930	68		23		45	
0745	184	446	131	291	53	155	1945	63	294	26	117	37	177
0800	143		94		49		2000	80		33		47	
0815	167		117		50		2015	62		24		38	
0830	176		104		72		2030	61		26		35	
0845	135	621	100	415	35	206	2045	34	237	14	97	20	140
0900	98		62		36		2100	39		16		23	
0915	98		57		41		2115	51		17		34	
0930	98		52		46		2130	45		11		34	
0945	101	395	73	244	28	151	2145	26	161	7	51	19	110
1000	100		63		37		2200	38		12		26	
1015	84		43		41		2215	1		1		0	
1030	104		50		54		2230	0		0		0	
1045	113	401	63	219	50	182	2245	0	39	0	13	0	26
1100	97		43		54		2300	0		0		0	
1115	110		55		55		2315	0		0		0	
1130	136		70		66		2330	0		0		0	
1145	127	470	67	235	60	235	2345	0	0	0	0	0	0
							Total	**7596**		**3815**		**3781**	

APPENDIX B

NHDOT Seasonal Adjustment Factors

Year 2019 Monthly Data

Group 4 Averages: Urban Highways

Month	ADT	Adjustment to Average	Adjustment to Peak
January	11,431	1.12	1.23
February	11,848	1.08	1.18
March	12,141	1.06	1.15
April	12,860	1.00	1.09
May	13,551	0.95	1.03
June	13,785	0.93	1.02
July	13,942	0.92	1.01
August	14,016	0.92	1.00
September	13,379	0.96	1.05
October	13,339	0.96	1.05
November	12,265	1.05	1.14
December	11,496	1.12	1.22

Average ADT: 12,838
Peak ADT: 14,016

GROUP	COUNTER	TOWN	LOCATION
04	02051003	BOW	NH 3A south of Robinson Rd
04	02089001	CHICHESTER	NH 28 (Suncook Valley Rd) north of Bear Hill Rd
04	02091001	CLAREMONT	NH 12/103 east of Vermont SL
04	62099056	CONCORD	NH 106 (Sheep Davis Rd) at Loudon TL (north of Ashby Rd)
04	72099278	CONCORD	US 3 (Fisherville Rd) north of Sewalls Falls Rd
04	02125001	DOVER	Dover Point Rd south of Thornwood Ln
04	02133021	DURHAM	US 4 east of NH 108
04	82197076	HAMPTON	US 1 (Lafayette Rd) south of Ramp to NH 101
04	*02229022*	*HUDSON**	*Circumferential Hwy east of Nashua TL*
04	02253025	LEBANON	NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
04	02255001	LEE	NH 125 (Calef Hwy) north of Pinkham Rd
04	02287001	MARLBOROUGH	NH 12 at Swanzey TL
04	02297001	MERRIMACK	US 3 (Daniel Webster Hwy) north of Hilton Dr
04	*02303001*	*MILFORD**	*NH 101A at Amherst TL (west of Overlook Dr)*
04	*02315051*	*NASHUA**	*NH 111 (Bridge / Ferry St) at Hudson TL*
04	02339001	NEWPORT	NH 10 1 mile south of Croydon TL (north of Corbin Rd)
04	02345001	NORTH HAMPTON	US 1 (Lafayette Rd) north of North Rd
04	*62387052*	*RINDGE**	*US 202 at Jaffrey TL (north of County Rd)*
04	02445001	TEMPLE	NH 101 at Wilton TL (west of Old County Farm Rd)
04	02489001	WINDHAM	NH 28 at Derry TL (north of Northland Rd)

** denotes counter that is not included in calculation*

APPENDIX C

Traffic Volume Adjustment Calculations

COVID-19 Pandemic Adjustment Factor Calculation

		February 2022 Traffic Counts		NHDOT Count Station Data (Loc ID 82379035)							
Peak Hour (Based on TMC)		February 2022 ATR	2022 ATR - Seasonally Adjusted[1]	Aug 2017	Grown to 2018[2]	Grown to 2019[3]	Grown to 2020[4]	Grown to 2021[4]	Grown to 2022[4]	Percent Change	Adjustment
AM Peak	8:00-9:00 am	621	733	596	608	614	620	626	633	-14%	None
PM Peak	5:00-6:00 pm	698	824	648	661	668	674	681	688	-16%	None

[1] 2019 NHDOT Group 4 February Seasonal Adjustment Factor to Peak (1.18)

[2] Maplewood Avenue annual growth rate from 2017 to 2018

[3] Maplewood Avenue annual growth rate from 2018 to 2019

[4] Estimated annual growth rate

Location Info	
Location ID	82379035
Type	I-SECTION
Functional Class	4
Located On	Maplewood Ave
Direction	2-WAY
Community	PORTSMOUTH
MPO_ID	
HPMS ID	
Agency	New Hampshire DOT

Count Data Info	
Start Date	8/30/2017
End Date	8/31/2017
Start Time	12:00 AM
End Time	12:00 AM
Direction	
Notes	nhdot
Count Source	8.2379E+11
File Name	823790350000.prn
Weather	
Study	
Owner	iwong
QC Status	Accepted

Interval: 60 mins	
Time	**Hourly Count**
00:00 - 01:00	30
01:00 - 02:00	13
02:00 - 03:00	8
03:00 - 04:00	4
04:00 - 05:00	42
05:00 - 06:00	91
06:00 - 07:00	202
07:00 - 08:00	416
08:00 - 09:00	596
09:00 - 10:00	452
10:00 - 11:00	392
11:00 - 12:00	435
12:00 - 13:00	523
13:00 - 14:00	525
14:00 - 15:00	523
15:00 - 16:00	549
16:00 - 17:00	596
17:00 - 18:00	648
18:00 - 19:00	472
19:00 - 20:00	361
20:00 - 21:00	276
21:00 - 22:00	220
22:00 - 23:00	114
23:00 - 24:00	72
TOTAL	7560

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	82379035	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID	L3790368__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Minor Arterial	Milepost	
Located On	Maplewood Ave		
Loc On Alias	MAPLEWOOD AVENUE EAST OF RAYNES AVENUE		

More Detail

STATION DATA

Directions: 2-WAY

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2020	5,727	580	10		5,213 (91%)	514 (9%)	
	2019	6,682[3]		10		6,121 (92%)	561 (8%)	Grown from 2018
	2018	6,603[3]		10		6,087 (92%)	516 (8%)	Grown from 2017
	2017	6,474	648	10		6,010 (93%)	464 (7%)	
	2016	7,564[3]				6,898 (91%)	666 (9%)	Grown from 2015

|<< < > >>| 1-5 of 13

Travel Demand Model

	Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

VOLUME COUNT

	Date	Int	Total
	Thu 8/13/2020	60	7,025
	Wed 8/12/2020	60	6,688
	Tue 8/11/2020	60	6,568
	Thu 8/31/2017	60	7,305
	Wed 8/30/2017	60	7,560
	Tue 8/29/2017	60	7,433
	Thu 8/7/2014	60	8,598
	Wed 8/6/2014	60	8,961
	Tue 8/5/2014	60	8,284
	Mon 8/4/2014	60	7,973

|<< < > >>| 1-10 of 67

mm/dd/yyyy To Date

VOLUME TREND

Year	Annual Growth
2020	-14%
2019	1%
2018	2%
2017	-14%
2016	2%
2015	3%
2014	-13%
2011	0%
2008	-1%
2002	0%

|<< < > >>| 1-10 of 12

SPEED

CLASSIFICATION

APPENDIX D

Capacity Analysis Methodology

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[1] The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

[1] *Highway Capacity Manual, 6TH Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the movement is fully utilized and indicates a capacity failure. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**V/C Ratio >1.00[a]**
A	≤10	≤10	F
B	>10 and ≤20	>10 and ≤15	F
C	>20 and ≤35	>15 and ≤25	F
D	>35 and ≤55	>25 and ≤35	F
E	>55 and ≤80	>35 and ≤50	F
F	>80	>50	F

Note: [a]For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *Highway Capacity Manual, 6th Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016. Exhibit 19-8, Pg. 19-16.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

APPENDIX E

Capacity Analysis Worksheets

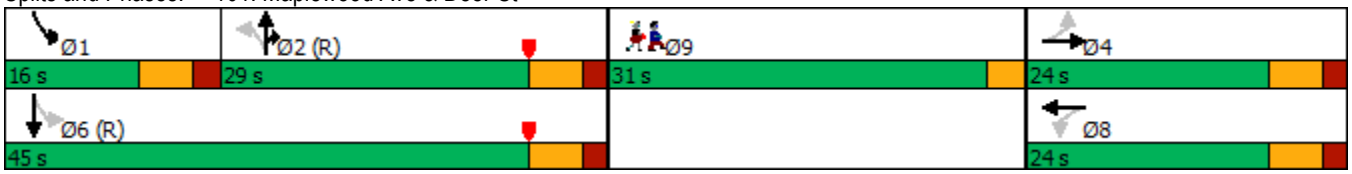
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	11	15	155	55	29	6	244	103	26	373	76
Future Volume (vph)	26	11	15	155	55	29	6	244	103	26	373	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.948				0.850		0.975	
Flt Protected		0.976		0.950			0.950			0.950		
Satd. Flow (prot)	0	1620	0	1805	1858	0	1586	1655	1545	1646	1656	0
Flt Permitted		0.860		0.719			0.367			0.350		
Satd. Flow (perm)	0	1428	0	1366	1858	0	613	1655	1545	606	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			23				131		12	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	29	12	17	168	60	32	7	277	117	28	401	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	168	92	0	7	277	117	28	483	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		31.0	31.0	31.0	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.31	0.31	0.31	0.39	0.39	
v/c Ratio		0.10		0.32	0.13		0.04	0.54	0.21	0.09	0.74	
Control Delay		20.9		28.3	20.2		11.5	21.6	3.5	19.8	33.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		20.9		28.3	20.2		11.5	21.6	3.5	19.8	33.7	
LOS		C		C	C		B	C	A	B	C	
Approach Delay		20.9			25.4			16.2			32.9	
Approach LOS		C			C			B			C	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		13		60	22		3	165	23	11	253	
Queue Length 95th (ft)		55		163	78		m5	137	0	29	380	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		561		527	731		190	513	569	340	653	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.10		0.32	0.13		0.04	0.54	0.21	0.08	0.74	

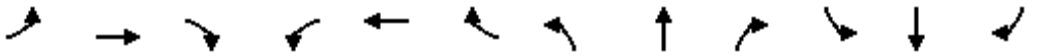
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 25.3		Intersection LOS: C	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	29	15	31	2	46	15	287	55	68	455	20
Future Volume (vph)	20	29	15	31	2	46	15	287	55	68	455	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.949				0.850		0.977			0.994	
Flt Protected	0.950				0.955			0.998		0.950		
Satd. Flow (prot)	1703	1492	0	0	1749	1568	0	3220	0	1626	1853	0
Flt Permitted	0.728				0.702			0.924		0.437		
Satd. Flow (perm)	1305	1492	0	0	1286	1568	0	2981	0	748	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62		21			3	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	24	35	18	42	3	62	18	346	66	75	500	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	53	0	0	45	62	0	430	0	75	522	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	9.0	9.0			9.0	20.4		54.3		64.5	65.7	
Actuated g/C Ratio	0.09	0.09			0.09	0.20		0.54		0.64	0.66	
v/c Ratio	0.21	0.35			0.39	0.17		0.26		0.14	0.43	
Control Delay	44.9	36.7			51.8	8.4		19.1		13.5	14.9	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.2	
Total Delay	44.9	36.7			51.8	8.4		19.1		13.5	15.2	
LOS	D	D			D	A		B		B	B	
Approach Delay		39.2			26.7			19.1			15.0	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	14	21			28	0		98		29	218	

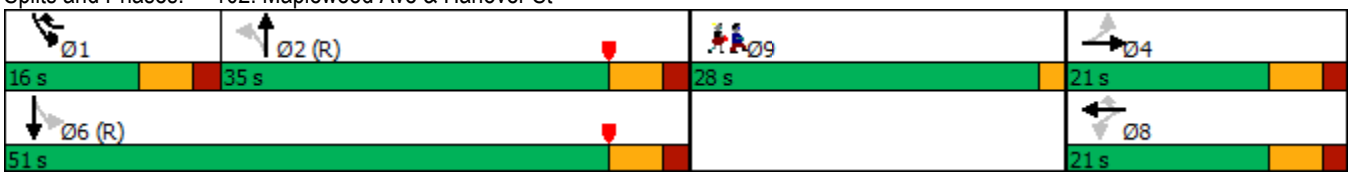
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	36	52			49	19		141		m24	277	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	195	239			192	404		1628		571	1218	
Starvation Cap Reductn	0	0			0	0		0		0	207	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.12	0.22			0.23	0.15		0.26		0.13	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 58.8%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	106	28	207	84	9	12	2	47	18	23	4
Future Vol, veh/h	2	106	28	207	84	9	12	2	47	18	23	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	3	133	35	269	109	12	15	3	59	24	31	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	168	0	0	828	816	151	841	827	115
Stage 1	-	-	-	-	-	-	157	157	-	653	653	-
Stage 2	-	-	-	-	-	-	671	659	-	188	174	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1479	-	-	1398	-	-	271	314	893	287	309	943
Stage 1	-	-	-	-	-	-	804	772	-	460	467	-
Stage 2	-	-	-	-	-	-	418	464	-	818	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1479	-	-	1398	-	-	205	248	893	223	244	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	248	-	223	244	-
Stage 1	-	-	-	-	-	-	802	770	-	459	370	-
Stage 2	-	-	-	-	-	-	302	368	-	760	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	13.3	23.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	512	1479	-	-	1398	-	-	251
HCM Lane V/C Ratio	0.149	0.002	-	-	0.192	-	-	0.239
HCM Control Delay (s)	13.3	7.4	0	-	8.2	0	-	23.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.7	-	-	0.9

Intersection	
Int Delay, s/veh	7.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	157	14	9	263	38	333
Future Vol, veh/h	157	14	9	263	38	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	185	16	11	329	47	411

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	201	0	544	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	351	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1313	-	482	849
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1313	-	477	849
Mov Cap-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	786	-	-	1313	-
HCM Lane V/C Ratio	0.583	-	-	0.009	-
HCM Control Delay (s)	15.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.8	-	-	0	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	28	25	9	0	234
Future Vol, veh/h	109	28	25	9	0	234
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	124	32	46	17	0	254

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	63	0	-	0	335	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	280	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1533	-	-	-	664	1001
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	772	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1533	-	-	-	610	1001
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	772	-

Approach	EB	WB	SB
HCM Control Delay, s	6	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1533	-	-	-	1001
HCM Lane V/C Ratio	0.081	-	-	-	0.254
HCM Control Delay (s)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	0	1	0	5	7	107	7	6	232	5
Future Vol, veh/h	2	1	0	1	0	5	7	107	7	6	232	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	5	3	0	4	0	20	8	120	8	7	261	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	428	422	264	420	421	124	267	0	0	128	0	0
Stage 1	278	278	-	140	140	-	-	-	-	-	-	-
Stage 2	150	144	-	280	281	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	541	526	780	547	527	932	1308	-	-	1470	-	-
Stage 1	733	684	-	868	785	-	-	-	-	-	-	-
Stage 2	857	782	-	731	682	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	524	519	780	539	520	932	1308	-	-	1470	-	-
Mov Cap-2 Maneuver	524	519	-	539	520	-	-	-	-	-	-	-
Stage 1	728	680	-	862	780	-	-	-	-	-	-	-
Stage 2	833	777	-	724	678	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	9.5	0.4	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1308	-	-	522	831	1470	-	-
HCM Lane V/C Ratio	0.006	-	-	0.015	0.029	0.005	-	-
HCM Control Delay (s)	7.8	0	-	12	9.5	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	14	2	112	226	20
Future Vol, veh/h	7	14	2	112	226	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	15	2	122	246	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	383	257	268	0	-	0
Stage 1	257	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	620	782	1296	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	619	782	1296	-	-	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1296	-	719	-	-
HCM Lane V/C Ratio	0.002	-	0.032	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

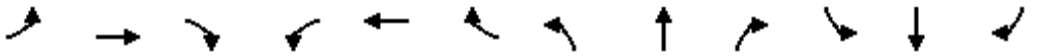
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	113	6	0	157	277	245
Future Vol, veh/h	113	6	0	157	277	245
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	138	7	0	171	334	295

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	505	334	-	0	-	0
Stage 1	334	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	522	668	0	-	-	0
Stage 1	719	-	0	-	-	0
Stage 2	852	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	522	668	-	-	-	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	522	668	-
HCM Lane V/C Ratio	-	0.264	0.011	-
HCM Control Delay (s)	-	14.4	10.4	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	1.1	0	-



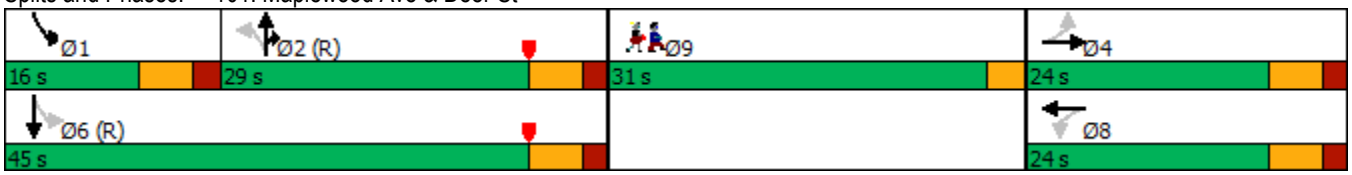
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	96	7	220	106	64	6	468	211	58	437	52
Future Volume (vph)	96	96	7	220	106	64	6	468	211	58	437	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.947				0.850		0.985	
Flt Protected		0.972		0.950			0.950			0.950		
Satd. Flow (prot)	0	1877	0	1770	1919	0	1558	1818	1636	1745	1807	0
Flt Permitted		0.606		0.568			0.284			0.129		
Satd. Flow (perm)	0	1170	0	1058	1919	0	466	1818	1636	237	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			24				224		7	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.51	0.79	0.38	0.67	0.75	0.82	0.63	0.87	0.90	0.58	0.85	0.91
Heavy Vehicles (%)	1%	1%	0%	2%	0%	0%	12%	1%	2%	0%	0%	1%
Adj. Flow (vph)	188	122	18	328	141	78	10	538	234	100	514	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	328	219	0	10	538	234	100	571	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		28.2		28.2	28.2		26.8	26.8	26.8	39.0	39.0	
Actuated g/C Ratio		0.28		0.28	0.28		0.27	0.27	0.27	0.39	0.39	
v/c Ratio		0.99		1.10	0.39		0.08	1.11	0.39	0.45	0.81	
Control Delay		87.1		120.1	30.8		20.3	98.9	4.0	26.4	37.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	2.0	
Total Delay		87.1		120.1	30.8		20.3	98.9	4.0	26.4	39.3	
LOS		F		F	C		C	F	A	C	D	
Approach Delay		87.1			84.4			69.5			37.4	
Approach LOS		F			F			E			D	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		~257		~275	107		2	~434	0	41	315	
Queue Length 95th (ft)		#356		#291	143		m6	#585	34	47	418	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		332		298	558		124	486	601	243	709	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	53	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.99		1.10	0.39		0.08	1.11	0.39	0.41	0.87	

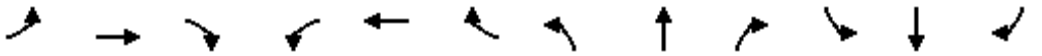
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 66.2		Intersection LOS: E	
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	15	6	43	14	116	7	525	76	107	542	16
Future Volume (vph)	44	15	6	43	14	116	7	525	76	107	542	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.955				0.850		0.981			0.996	
Flt Protected	0.950				0.964			0.999		0.950		
Satd. Flow (prot)	1805	1562	0	0	1832	1615	0	3478	0	1687	1874	0
Flt Permitted	0.714				0.754			0.947		0.268		
Satd. Flow (perm)	1357	1562	0	0	1433	1615	0	3297	0	476	1874	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				135		16			2	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.57	0.57	0.57	0.86	0.86	0.86	0.89	0.89	0.89	0.85	0.85	0.85
Heavy Vehicles (%)	0%	23%	0%	0%	0%	0%	0%	2%	0%	7%	1%	0%
Adj. Flow (vph)	77	26	11	50	16	135	8	590	85	126	638	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	37	0	0	66	135	0	683	0	126	657	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	10.8	10.8			10.7	23.3		42.3		57.2	58.4	
Actuated g/C Ratio	0.11	0.11			0.11	0.23		0.42		0.57	0.58	
v/c Ratio	0.52	0.21			0.43	0.28		0.49		0.33	0.60	
Control Delay	54.0	32.6			49.2	6.2		26.7		9.3	11.6	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.5	
Total Delay	54.0	32.6			49.2	6.2		26.7		9.3	12.0	
LOS	D	C			D	A		C		A	B	
Approach Delay		47.1			20.3			26.7			11.6	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	47	15			40	0		185		14	128	

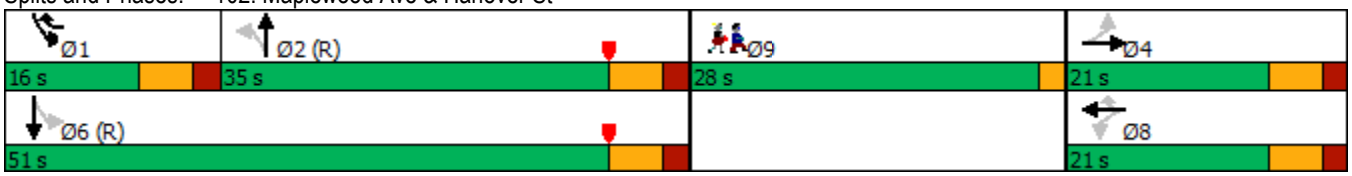
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	55	25			76	37		261		m31	m287	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	203	243			214	499		1404		395	1095	
Starvation Cap Reductn	0	0			0	0		0		0	132	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.38	0.15			0.31	0.27		0.49		0.32	0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	131	15	460	137	23	11	6	45	12	4	5
Future Vol, veh/h	11	131	15	460	137	23	11	6	45	12	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	93	93	93	74	74	74	57	57	57
Heavy Vehicles, %	0	0	0	2	4	0	0	0	0	0	0	0
Mvmt Flow	13	160	18	495	147	25	15	8	61	21	7	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	178	0	0	1353	1357	169	1380	1354	160
Stage 1	-	-	-	-	-	-	195	195	-	1150	1150	-
Stage 2	-	-	-	-	-	-	1158	1162	-	230	204	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1417	-	-	1398	-	-	128	150	880	123	151	890
Stage 1	-	-	-	-	-	-	811	743	-	243	275	-
Stage 2	-	-	-	-	-	-	241	272	-	777	737	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1417	-	-	1398	-	-	83	90	880	74	91	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	90	-	74	91	-
Stage 1	-	-	-	-	-	-	803	736	-	241	167	-
Stage 2	-	-	-	-	-	-	139	165	-	708	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	6.7	26.7	61.5
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	248	1417	-	-	1398	-	-	99
HCM Lane V/C Ratio	0.338	0.009	-	-	0.354	-	-	0.372
HCM Control Delay (s)	26.7	7.6	0	-	9	0	-	61.5
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.4	0	-	-	1.6	-	-	1.5

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	22	24	547	73	239
Future Vol, veh/h	167	22	24	547	73	239
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	89	89
Heavy Vehicles, %	1	0	0	1	5	0
Mvmt Flow	204	27	26	595	82	269

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	231	0	865	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	647	-
Critical Hdwy	-	-	4.1	-	6.45	6.2
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.2	-	3.545	3.3
Pot Cap-1 Maneuver	-	-	1349	-	320	827
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	311	827
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	501	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	596	-	-	1349	-
HCM Lane V/C Ratio	0.588	-	-	0.019	-
HCM Control Delay (s)	19.3	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	10.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	293	56	68	21	14	399
Future Vol, veh/h	293	56	68	21	14	399
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	70	81	54	42	89
Heavy Vehicles, %	2	0	0	0	0	2
Mvmt Flow	345	80	84	39	33	448

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	123	0	-	0	874	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	770	-
Critical Hdwy	4.12	-	-	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1464	-	-	-	323	951
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	460	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1464	-	-	-	243	951
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	460	-

Approach	EB	WB	SB
HCM Control Delay, s	6.7	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1464	-	-	-	791
HCM Lane V/C Ratio	0.235	-	-	-	0.609
HCM Control Delay (s)	8.2	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.9	-	-	-	4.2

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	8	8	1	6	11	299	8	5	395	2
Future Vol, veh/h	7	0	8	8	1	6	11	299	8	5	395	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	75	75	75	82	82	82	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	16	0	18	11	1	8	13	365	10	6	459	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	873	873	460	877	869	370	461	0	0	375	0	0
Stage 1	472	472	-	396	396	-	-	-	-	-	-	-
Stage 2	401	401	-	481	473	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	273	291	605	271	292	680	1111	-	-	1195	-	-
Stage 1	576	562	-	633	607	-	-	-	-	-	-	-
Stage 2	630	604	-	570	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	264	285	605	259	286	680	1111	-	-	1195	-	-
Mov Cap-2 Maneuver	264	285	-	259	286	-	-	-	-	-	-	-
Stage 1	567	558	-	624	598	-	-	-	-	-	-	-
Stage 2	612	595	-	549	558	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	16	0.3	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1111	-	-	377	347	1195	-	-
HCM Lane V/C Ratio	0.012	-	-	0.088	0.058	0.005	-	-
HCM Control Delay (s)	8.3	0	-	15.5	16	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	6	5	309	400	52
Future Vol, veh/h	49	6	5	309	400	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	7	5	336	435	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	810	464	492	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	349	598	1071	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	347	598	1071	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1071	-	364	-	-
HCM Lane V/C Ratio	0.005	-	0.164	-	-
HCM Control Delay (s)	8.4	0	16.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection	
Int Delay, s/veh	124.1

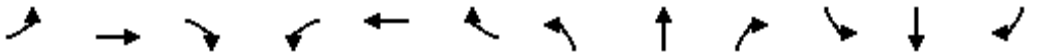
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	351	7	0	489	359	452
Future Vol, veh/h	351	7	0	489	359	452
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	50	25	71	82	87
Heavy Vehicles, %	2	0	0	0	1	2
Mvmt Flow	428	14	0	689	438	520

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1127	438	-	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 226	623	0	-	-	0
Stage 1	651	-	0	-	-	0
Stage 2	498	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 226	623	-	-	-	-
Mov Cap-2 Maneuver	~ 226	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	498	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 440.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	226	623	-
HCM Lane V/C Ratio	-	1.894	0.022	-
HCM Control Delay (s)	-	$ 454.5	10.9	-
HCM Lane LOS	-	F	B	-
HCM 95th %tile Q(veh)	-	30.5	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



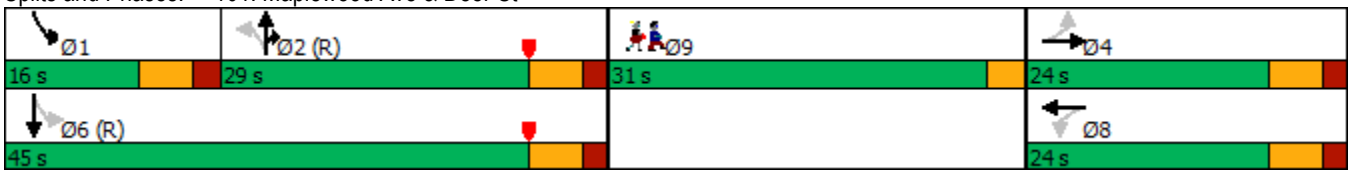
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	30	34	171	100	32	38	270	114	28	412	183
Future Volume (vph)	76	30	34	171	100	32	38	270	114	28	412	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967			0.964				0.850		0.954	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1619	0	1805	1897	0	1586	1655	1545	1646	1631	0
Flt Permitted		0.773		0.669			0.149			0.310		
Satd. Flow (perm)	0	1285	0	1271	1897	0	249	1655	1545	537	1631	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			14				131		26	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	84	33	38	186	109	35	43	307	130	30	443	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	186	144	0	43	307	130	30	640	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		31.0	31.0	31.0	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.31	0.31	0.31	0.39	0.39	
v/c Ratio		0.31		0.38	0.19		0.56	0.60	0.23	0.11	0.98	
Control Delay		26.0		29.7	23.5		49.1	23.7	3.1	19.9	61.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	4.1	
Total Delay		26.0		29.7	23.5		49.1	23.7	3.1	19.9	65.9	
LOS		C		C	C		D	C	A	B	E	
Approach Delay		26.0			27.0			20.4			63.8	
Approach LOS		C			C			C			E	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		50		68	44		25	180	9	12	384	
Queue Length 95th (ft)		144		185	124		#81	#112	14	30	#627	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		504		490	740		77	512	569	320	651	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	12	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.31		0.38	0.19		0.56	0.60	0.23	0.09	1.00	

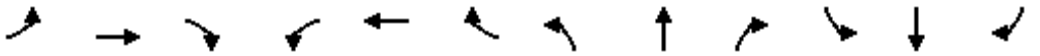
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 40.1		Intersection LOS: D	
Intersection Capacity Utilization 65.2%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	32	29	35	2	51	32	349	60	75	522	22
Future Volume (vph)	22	32	29	35	2	51	32	349	60	75	522	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.929				0.850		0.980			0.994	
Flt Protected	0.950				0.955			0.996		0.950		
Satd. Flow (prot)	1703	1420	0	0	1749	1568	0	3207	0	1626	1853	0
Flt Permitted	0.724				0.685			0.874		0.378		
Satd. Flow (perm)	1298	1420	0	0	1254	1568	0	2814	0	647	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				69		18			3	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	27	39	35	47	3	69	39	420	72	82	574	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	74	0	0	50	69	0	531	0	82	598	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	9.4	9.4			9.4	21.1		53.6		64.1	65.3	
Actuated g/C Ratio	0.09	0.09			0.09	0.21		0.54		0.64	0.65	
v/c Ratio	0.22	0.45			0.43	0.18		0.35		0.17	0.49	
Control Delay	44.8	33.4			52.9	7.8		21.1		11.9	14.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.4	
Total Delay	44.8	33.4			52.9	7.8		21.1		11.9	14.7	
LOS	D	C			D	A		C		B	B	
Approach Delay		36.5			26.7			21.1			14.4	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	16	24			31	0		132		32	260	

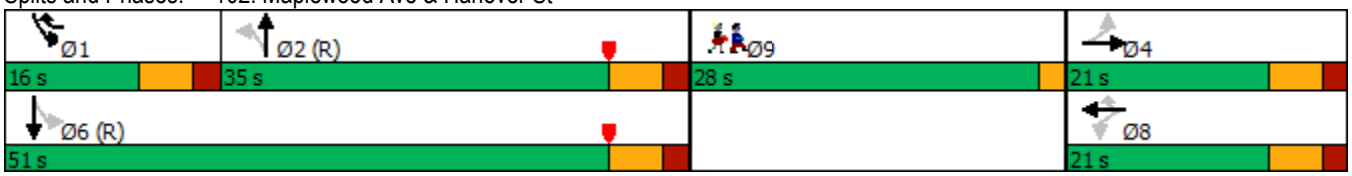
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	38	58			54	20		185		m22	m251	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	194	242			188	417		1517		514	1211	
Starvation Cap Reductn	0	0			0	0		0		0	213	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.14	0.31			0.27	0.17		0.35		0.16	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 19.5		Intersection LOS: B	
Intersection Capacity Utilization 65.0%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	131	31	261	106	10	14	2	55	19	25	5
Future Vol, veh/h	2	131	31	261	106	10	14	2	55	19	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	3	164	39	339	138	13	18	3	69	25	33	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	151	0	0	203	0	0	1033	1019	184	1049	1032	145
Stage 1	-	-	-	-	-	-	190	190	-	823	823	-
Stage 2	-	-	-	-	-	-	843	829	-	226	209	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1442	-	-	1357	-	-	195	239	856	207	235	908
Stage 1	-	-	-	-	-	-	772	747	-	371	391	-
Stage 2	-	-	-	-	-	-	334	388	-	781	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1357	-	-	131	174	856	148	171	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	174	-	148	171	-
Stage 1	-	-	-	-	-	-	770	746	-	370	284	-
Stage 2	-	-	-	-	-	-	213	282	-	714	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.9	17	37.3
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	389	1442	-	-	1357	-	-	175
HCM Lane V/C Ratio	0.228	0.002	-	-	0.25	-	-	0.373
HCM Control Delay (s)	17	7.5	0	-	8.5	0	-	37.3
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.9	0	-	-	1	-	-	1.6

Intersection	
Int Delay, s/veh	12.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	190	16	10	335	42	437
Future Vol, veh/h	190	16	10	335	42	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	224	19	13	419	52	540

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	243	0	679	234
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	445	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1267	-	401	805
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1267	-	396	805
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	738	-	-	1267	-
HCM Lane V/C Ratio	0.801	-	-	0.01	-
HCM Control Delay (s)	26.5	-	-	7.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	8.3	-	-	0	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	138	31	27	10	0	298
Future Vol, veh/h	138	31	27	10	0	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	157	35	50	19	0	324

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	409	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1526	-	-	-	602	994
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	539	994
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	994
HCM Lane V/C Ratio	0.103	-	-	-	0.326
HCM Control Delay (s)	7.6	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	0	1	0	6	8	135	8	7	296	6
Future Vol, veh/h	2	1	0	1	0	6	8	135	8	7	296	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	5	3	0	4	0	24	9	152	9	8	333	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	540	532	337	529	531	157	340	0	0	161	0	0
Stage 1	353	353	-	175	175	-	-	-	-	-	-	-
Stage 2	187	179	-	354	356	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	456	456	710	463	457	894	1230	-	-	1430	-	-
Stage 1	668	634	-	832	758	-	-	-	-	-	-	-
Stage 2	819	755	-	667	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	439	449	710	456	450	894	1230	-	-	1430	-	-
Mov Cap-2 Maneuver	439	449	-	456	450	-	-	-	-	-	-	-
Stage 1	663	630	-	825	752	-	-	-	-	-	-	-
Stage 2	791	749	-	660	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	9.7	0.4	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1230	-	-	442	786	1430	-	-
HCM Lane V/C Ratio	0.007	-	-	0.018	0.036	0.006	-	-
HCM Control Delay (s)	7.9	0	-	13.3	9.7	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	16	2	141	289	22
Future Vol, veh/h	8	16	2	141	289	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	17	2	153	314	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	483	326	338	0	-	0
Stage 1	326	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	542	715	1221	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	541	715	1221	-	-	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	730	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1221	-	646	-	-
HCM Lane V/C Ratio	0.002	-	0.04	-	-
HCM Control Delay (s)	8	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

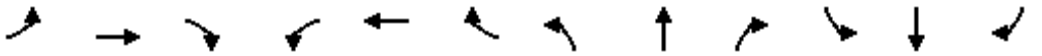
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	142	7	0	173	306	311
Future Vol, veh/h	142	7	0	173	306	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	173	9	0	188	369	375

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	557	369	-	0	-	0
Stage 1	369	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	486	638	0	-	-	0
Stage 1	693	-	0	-	-	0
Stage 2	837	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	486	638	-	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	837	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	486	638	-
HCM Lane V/C Ratio	-	0.356	0.013	-
HCM Control Delay (s)	-	16.5	10.7	-
HCM Lane LOS	-	C	B	-
HCM 95th %tile Q(veh)	-	1.6	0	-



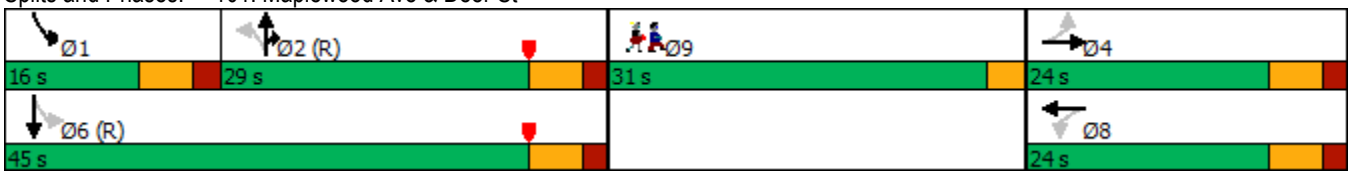
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	142	51	244	143	71	33	515	233	64	482	127
Future Volume (vph)	191	142	51	244	143	71	33	515	233	64	482	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.950				0.850		0.969	
Flt Protected		0.976		0.950			0.950			0.950		
Satd. Flow (prot)	0	1646	0	1805	1863	0	1586	1655	1545	1646	1649	0
Flt Permitted		0.669		0.509			0.165			0.132		
Satd. Flow (perm)	0	1128	0	967	1863	0	276	1655	1545	229	1649	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			22				233		16	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	212	158	57	265	155	77	38	585	265	69	518	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	427	0	265	232	0	38	585	265	69	655	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		27.3	27.3	27.3	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.27	0.27	0.27	0.39	0.39	
v/c Ratio		0.97		0.71	0.32		0.51	1.29	0.45	0.34	1.00	
Control Delay		70.6		43.6	24.7		50.0	175.6	6.9	24.3	67.5	
Queue Delay		3.8		0.3	0.0		0.0	0.0	0.0	0.0	28.9	
Total Delay		74.4		43.9	24.7		50.0	175.6	6.9	24.3	96.4	
LOS		E		D	C		D	F	A	C	F	
Approach Delay		74.4			34.9			119.9			89.6	
Approach LOS		E			C			F			F	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		211		114	74		10	~481	14	27	~407	
Queue Length 95th (ft)		#586		#363	194		m#47	#691	43	57	#652	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		439		373	732		75	452	591	231	652	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		8		7	0		0	0	0	0	51	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.99		0.72	0.32		0.51	1.29	0.45	0.30	1.09	

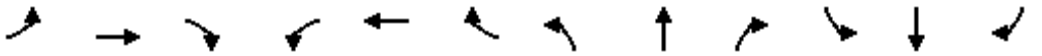
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 86.9		Intersection LOS: F	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	17	41	48	16	128	19	604	84	118	640	18
Future Volume (vph)	49	17	41	48	16	128	19	604	84	118	640	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.893				0.850		0.982			0.996	
Flt Protected	0.950				0.964			0.999		0.950		
Satd. Flow (prot)	1703	1301	0	0	1778	1568	0	3237	0	1626	1856	0
Flt Permitted	0.701				0.736			0.922		0.216		
Satd. Flow (perm)	1257	1301	0	0	1358	1568	0	2988	0	370	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				173		15			2	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	59	20	49	65	22	173	23	728	101	130	703	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	69	0	0	87	173	0	852	0	130	723	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	11.1	11.1			11.3	23.5		47.7		62.4	63.6	
Actuated g/C Ratio	0.11	0.11			0.11	0.24		0.48		0.62	0.64	
v/c Ratio	0.42	0.37			0.57	0.35		0.59		0.38	0.61	
Control Delay	49.4	22.3			55.7	6.0		27.8		11.7	15.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.5	
Total Delay	49.4	22.3			55.7	6.0		27.8		11.7	16.0	
LOS	D	C			E	A		C		B	B	
Approach Delay		34.8			22.7			27.8			15.3	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	35	12			53	0		263		46	290	

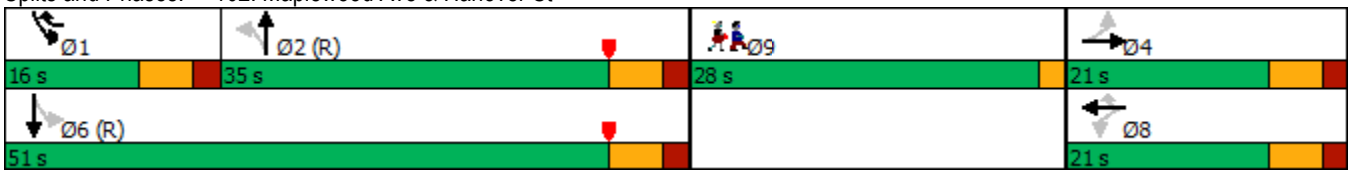
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	67	44			80	23		#353		m34	m325	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	188	236			203	522		1432		359	1180	
Starvation Cap Reductn	0	0			0	0		0		0	148	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.31	0.29			0.43	0.33		0.59		0.36	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	49.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	162	17	562	173	25	13	7	57	14	5	6
Future Vol, veh/h	13	162	17	562	173	25	13	7	57	14	5	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	16	203	21	730	225	32	16	9	71	19	7	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	257	0	0	224	0	0	1955	1963	214	1987	1957	241
Stage 1	-	-	-	-	-	-	246	246	-	1701	1701	-
Stage 2	-	-	-	-	-	-	1709	1717	-	286	256	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1320	-	-	1333	-	-	43	64	823	46	64	803
Stage 1	-	-	-	-	-	-	719	706	-	118	149	-
Stage 2	-	-	-	-	-	-	104	146	-	726	699	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1320	-	-	1333	-	-	~ 16	23	823	~ 15	23	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 16	23	-	~ 15	23	-
Stage 1	-	-	-	-	-	-	709	696	-	116	53	-
Stage 2	-	-	-	-	-	-	32	52	-	646	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	8.1	$ 389	$ 638.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	65	1320	-	-	1333	-	-	22
HCM Lane V/C Ratio	1.481	0.012	-	-	0.548	-	-	1.515
HCM Control Delay (s)	$ 389	7.8	0	-	10.9	0	-	$ 638.1
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	8.3	0	-	-	3.5	-	-	4.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	20.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	209	24	26	679	81	301
Future Vol, veh/h	209	24	26	679	81	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	246	28	33	849	100	372

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	274	0	1175	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	915	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1234	-	201	779
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	373	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1234	-	191	779
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	71.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	471	-	-	1234	-
HCM Lane V/C Ratio	1.001	-	-	0.026	-
HCM Control Delay (s)	71.6	-	-	8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	13.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	359	61	75	23	16	466
Future Vol, veh/h	359	61	75	23	16	466
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	408	69	139	43	17	507

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	182	0	-	0	1046	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	885	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1387	-	-	-	255	874
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	407	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	177	874
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	407	-

Approach	EB	WB	SB
HCM Control Delay, s	7.4	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	773
HCM Lane V/C Ratio	0.294	-	-	-	0.678
HCM Control Delay (s)	8.7	0	-	-	18.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	1.2	-	-	-	5.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	0	9	9	1	7	13	366	9	6	462	2
Future Vol, veh/h	8	0	9	9	1	7	13	366	9	6	462	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	21	0	24	36	4	28	15	411	10	7	519	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	996	985	520	992	981	416	521	0	0	421	0	0
Stage 1	534	534	-	446	446	-	-	-	-	-	-	-
Stage 2	462	451	-	546	535	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	225	250	560	227	251	641	1056	-	-	1149	-	-
Stage 1	534	528	-	595	577	-	-	-	-	-	-	-
Stage 2	584	574	-	526	527	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	243	560	213	244	641	1056	-	-	1149	-	-
Mov Cap-2 Maneuver	208	243	-	213	244	-	-	-	-	-	-	-
Stage 1	524	523	-	584	566	-	-	-	-	-	-	-
Stage 2	544	563	-	499	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	20.7	0.3	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	312	297	1149	-	-
HCM Lane V/C Ratio	0.014	-	-	0.143	0.229	0.006	-	-
HCM Control Delay (s)	8.5	0	-	18.5	20.7	8.2	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.9	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	7	6	377	468	55
Future Vol, veh/h	52	7	6	377	468	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	8	7	410	509	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	963	539	569	0	-	0
Stage 1	539	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	284	542	1003	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	281	542	1003	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1003	-	298	-	-
HCM Lane V/C Ratio	0.007	-	0.215	-	-
HCM Control Delay (s)	8.6	0	20.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	178

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	422	8	0	541	396	523
Future Vol, veh/h	422	8	0	541	396	523
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	515	10	0	588	477	630

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	477	-	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	~ 243	553	0	-	-	0
Stage 1	618	-	0	-	-	0
Stage 2	549	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 243	553	-	-	-	-
Mov Cap-2 Maneuver	~ 243	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	549	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 539.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	243	553	-
HCM Lane V/C Ratio	-	2.118	0.018	-
HCM Control Delay (s)	-	$ 549.5	11.6	-
HCM Lane LOS	-	F	B	-
HCM 95th %tile Q(veh)	-	38.9	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

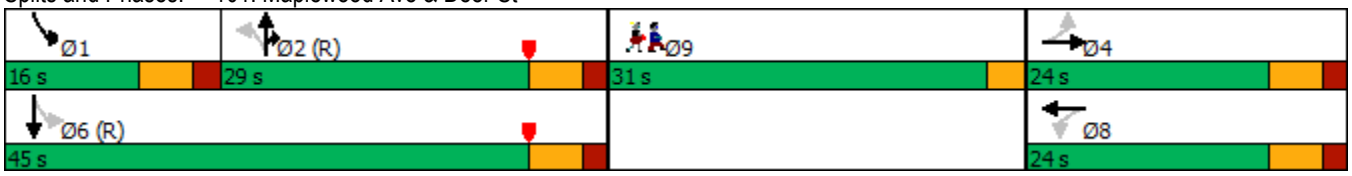
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	11	15	173	55	31	6	259	116	31	373	76
Future Volume (vph)	26	11	15	173	55	31	6	259	116	31	373	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.946				0.850		0.975	
Flt Protected		0.976		0.950			0.950			0.950		
Satd. Flow (prot)	0	1620	0	1805	1853	0	1586	1655	1545	1646	1656	0
Flt Permitted		0.859		0.719			0.368			0.326		
Satd. Flow (perm)	0	1426	0	1366	1853	0	614	1655	1545	565	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			25				132		12	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	29	12	17	188	60	34	7	294	132	33	401	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	188	94	0	7	294	132	33	483	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		30.9	30.9	30.9	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.31	0.31	0.31	0.39	0.39	
v/c Ratio		0.10		0.36	0.13		0.04	0.58	0.23	0.11	0.74	
Control Delay		20.9		28.9	19.9		10.7	22.2	3.6	20.0	33.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		20.9		28.9	19.9		10.7	22.2	3.6	20.0	33.7	
LOS		C		C	B		B	C	A	B	C	
Approach Delay		20.9			25.9			16.4			32.8	
Approach LOS		C			C			B			C	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		13		68	22		2	173	33	13	253	
Queue Length 95th (ft)		55		182	78		m4	#70	1	33	380	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		561		527	730		189	511	568	328	653	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.10		0.36	0.13		0.04	0.58	0.23	0.10	0.74	

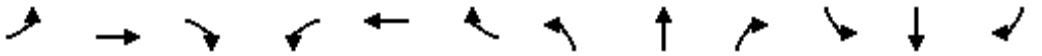
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 25.2		Intersection LOS: C	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	29	15	31	2	46	15	315	55	68	473	20
Future Volume (vph)	20	29	15	31	2	46	15	315	55	68	473	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.949				0.850		0.979			0.994	
Flt Protected	0.950				0.955			0.998		0.950		
Satd. Flow (prot)	1703	1492	0	0	1749	1568	0	3225	0	1626	1853	0
Flt Permitted	0.728				0.702			0.925		0.417		
Satd. Flow (perm)	1305	1492	0	0	1286	1568	0	2989	0	714	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62		19			3	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	24	35	18	42	3	62	18	380	66	75	520	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	53	0	0	45	62	0	464	0	75	542	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	9.0	9.0			9.0	20.4		54.3		64.5	65.7	
Actuated g/C Ratio	0.09	0.09			0.09	0.20		0.54		0.64	0.66	
v/c Ratio	0.21	0.35			0.39	0.17		0.28		0.14	0.44	
Control Delay	44.9	36.7			51.8	8.4		19.4		12.3	13.8	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.2	
Total Delay	44.9	36.7			51.8	8.4		19.4		12.3	14.1	
LOS	D	D			D	A		B		B	B	
Approach Delay		39.2			26.7			19.4			13.9	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	14	21			28	0		108		27	213	

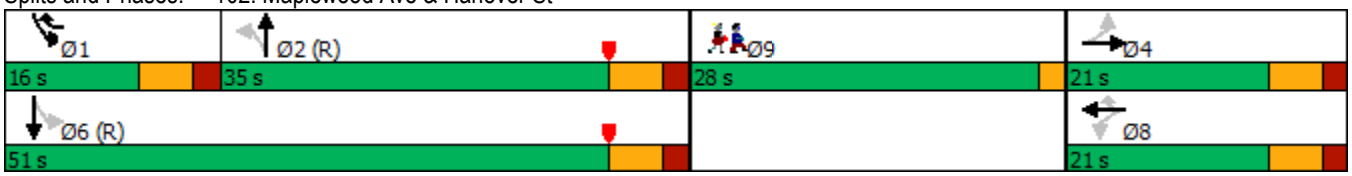
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	36	52			49	19		154		m24	281	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	195	239			192	404		1631		552	1218	
Starvation Cap Reductn	0	0			0	0		0		0	198	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.12	0.22			0.23	0.15		0.28		0.14	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	111	28	207	86	9	12	2	55	18	23	4
Future Vol, veh/h	2	111	28	207	86	9	12	2	55	18	23	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	3	139	35	269	112	12	15	3	69	24	31	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	174	0	0	837	825	157	855	836	118
Stage 1	-	-	-	-	-	-	163	163	-	656	656	-
Stage 2	-	-	-	-	-	-	674	662	-	199	180	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1475	-	-	1391	-	-	267	310	886	281	305	939
Stage 1	-	-	-	-	-	-	798	767	-	458	465	-
Stage 2	-	-	-	-	-	-	416	462	-	807	754	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1475	-	-	1391	-	-	202	245	886	216	241	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	202	245	-	216	241	-
Stage 1	-	-	-	-	-	-	796	765	-	457	368	-
Stage 2	-	-	-	-	-	-	300	366	-	740	752	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	13.1	24.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	532	1475	-	-	1391	-	-	246
HCM Lane V/C Ratio	0.162	0.002	-	-	0.193	-	-	0.244
HCM Control Delay (s)	13.1	7.4	0	-	8.2	0	-	24.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.7	-	-	0.9

Intersection	
Int Delay, s/veh	8.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	14	9	265	38	361
Future Vol, veh/h	170	14	9	265	38	361
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	200	16	11	331	47	446

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	561	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1297	-	471	832
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1297	-	466	832
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	680	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1297	-
HCM Lane V/C Ratio	0.636	-	-	0.009	-
HCM Control Delay (s)	17.4	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	4.6	-	-	0	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	127	28	25	9	0	254
Future Vol, veh/h	127	28	25	9	0	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	144	32	46	17	0	276

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	63	0	-	0	375	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1533	-	-	-	630	1001
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1533	-	-	-	570	1001
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	741	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1533	-	-	-	1001
HCM Lane V/C Ratio	0.094	-	-	-	0.276
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	1	10	1	0	5	25	107	7	6	242	28
Future Vol, veh/h	12	1	10	1	0	5	25	107	7	6	242	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	32	3	26	4	0	20	28	120	8	7	272	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	492	486	288	496	497	124	303	0	0	128	0	0
Stage 1	302	302	-	180	180	-	-	-	-	-	-	-
Stage 2	190	184	-	316	317	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	490	484	756	487	477	932	1269	-	-	1470	-	-
Stage 1	712	668	-	826	754	-	-	-	-	-	-	-
Stage 2	816	751	-	699	658	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	468	469	756	457	463	932	1269	-	-	1470	-	-
Mov Cap-2 Maneuver	468	469	-	457	463	-	-	-	-	-	-	-
Stage 1	695	664	-	806	736	-	-	-	-	-	-	-
Stage 2	779	733	-	668	654	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	9.7	1.4	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1269	-	-	561	794	1470	-	-
HCM Lane V/C Ratio	0.022	-	-	0.108	0.03	0.005	-	-
HCM Control Delay (s)	7.9	0	-	12.2	9.7	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	24	2	122	249	20
Future Vol, veh/h	22	24	2	122	249	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	26	2	133	271	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	419	282	293	0	-	0
Stage 1	282	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	591	757	1269	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	590	757	1269	-	-	-
Mov Cap-2 Maneuver	590	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1269	-	667	-	-
HCM Lane V/C Ratio	0.002	-	0.075	-	-
HCM Control Delay (s)	7.8	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	138	6	0	157	277	268
Future Vol, veh/h	138	6	0	157	277	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	168	7	0	171	334	323

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	505	334	-	0	-	0
Stage 1	334	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	522	668	0	-	-	0
Stage 1	719	-	0	-	-	0
Stage 2	852	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	522	668	-	-	-	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	522	668	-
HCM Lane V/C Ratio	-	0.322	0.011	-
HCM Control Delay (s)	-	15.1	10.4	-
HCM Lane LOS	-	C	B	-
HCM 95th %tile Q(veh)	-	1.4	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	301	15	35	480
Future Vol, veh/h	0	0	301	15	35	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	327	16	38	522

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	933	335	0	0	343	0
Stage 1	335	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	295	707	-	-	1216	-
Stage 1	725	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	282	707	-	-	1216	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1216	-
HCM Lane V/C Ratio	-	-	-	0.031	-
HCM Control Delay (s)	-	-	0	8.1	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	21	0	0	22	0	25
Future Vol, veh/h	21	0	0	22	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	0	24	0	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	47	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	963	1054
Stage 1	-	0	0	-	1000	-
Stage 2	-	0	0	-	999	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	963	1054
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	999	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1054	-	-
HCM Lane V/C Ratio	0.026	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

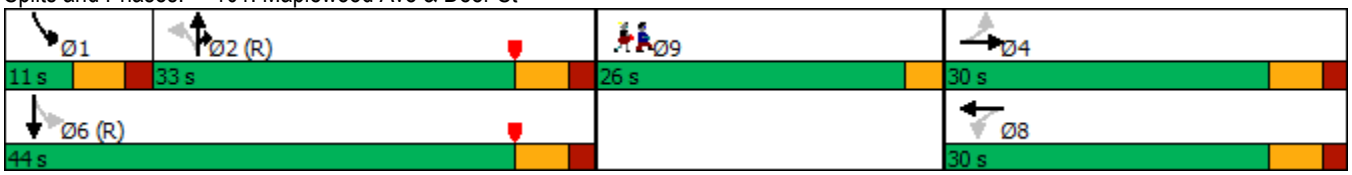
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	96	7	261	106	69	6	486	226	62	437	52
Future Volume (vph)	96	96	7	261	106	69	6	486	226	62	437	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.944				0.850		0.985	
Flt Protected		0.972		0.950			0.950			0.950		
Satd. Flow (prot)	0	1877	0	1770	1913	0	1558	1818	1636	1745	1807	0
Flt Permitted		0.603		0.568			0.244			0.123		
Satd. Flow (perm)	0	1165	0	1058	1913	0	400	1818	1636	226	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			28				244		6	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.51	0.79	0.38	0.67	0.75	0.82	0.63	0.87	0.90	0.58	0.85	0.91
Heavy Vehicles (%)	1%	1%	0%	2%	0%	0%	12%	1%	2%	0%	0%	1%
Adj. Flow (vph)	188	122	18	390	141	84	10	559	251	107	514	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	390	225	0	10	559	251	107	571	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	30.0	30.0		30.0	30.0		33.0	33.0	33.0	11.0	44.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		33.0%	33.0%	33.0%	11.0%	44.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		29.2		29.2	29.2		27.0	27.0	27.0	38.0	38.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.27	0.27	0.27	0.38	0.38	
v/c Ratio		0.96		1.27	0.39		0.09	1.14	0.41	0.66	0.83	
Control Delay		79.0		176.9	29.5		21.0	108.8	3.9	42.8	39.8	
Queue Delay		8.0		0.4	0.0		0.0	0.0	0.0	0.0	2.4	
Total Delay		87.0		177.3	29.5		21.0	108.8	3.9	42.8	42.2	
LOS		F		F	C		C	F	A	D	D	
Approach Delay		87.0			123.2			75.6			42.3	
Approach LOS		F			F			E			D	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	26%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		~249		~351	107		2	~422	0	44	321	
Queue Length 95th (ft)		#349		#354	142		m6	#565	39	51	426	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		342		308	578		108	490	619	161	690	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		13		11	0		0	0	0	0	48	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		1.00		1.31	0.39		0.09	1.14	0.41	0.66	0.89	

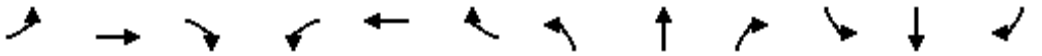
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay: 79.9		Intersection LOS: E	
Intersection Capacity Utilization 79.7%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	15	6	43	14	116	7	558	76	107	583	16
Future Volume (vph)	44	15	6	43	14	116	7	558	76	107	583	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.955				0.850		0.982			0.996	
Flt Protected	0.950				0.964			0.999		0.950		
Satd. Flow (prot)	1805	1562	0	0	1832	1615	0	3481	0	1687	1874	0
Flt Permitted	0.714				0.754			0.946		0.250		
Satd. Flow (perm)	1357	1562	0	0	1433	1615	0	3296	0	444	1874	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				135		15			2	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.57	0.57	0.57	0.86	0.86	0.86	0.89	0.89	0.89	0.85	0.85	0.85
Heavy Vehicles (%)	0%	23%	0%	0%	0%	0%	0%	2%	0%	7%	1%	0%
Adj. Flow (vph)	77	26	11	50	16	135	8	627	85	126	686	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	37	0	0	66	135	0	720	0	126	705	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	10.8	10.8			10.7	23.3		42.3		57.2	58.4	
Actuated g/C Ratio	0.11	0.11			0.11	0.23		0.42		0.57	0.58	
v/c Ratio	0.52	0.21			0.43	0.28		0.51		0.35	0.64	
Control Delay	54.0	32.6			49.2	6.2		27.3		8.3	11.8	
Queue Delay	0.0	0.0			0.0	0.0		0.2		0.0	0.6	
Total Delay	54.0	32.6			49.2	6.2		27.5		8.3	12.5	
LOS	D	C			D	A		C		A	B	
Approach Delay		47.1			20.3			27.5			11.8	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	47	15			40	0		199		12	183	

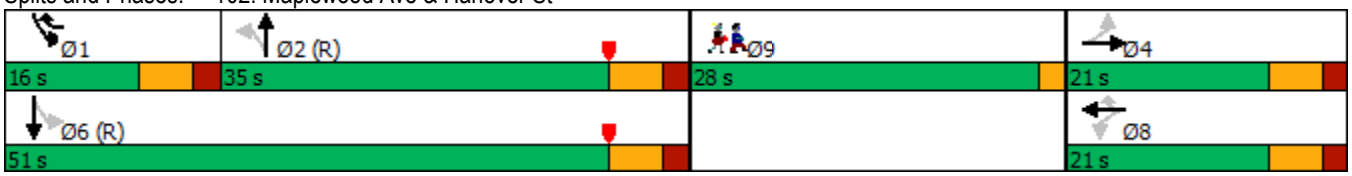
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	55	25			76	37		278		m29	m304	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	203	243			214	499		1403		380	1095	
Starvation Cap Reductn	0	0			0	0		0		0	133	
Spillback Cap Reductn	0	0			0	7		184		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.38	0.15			0.31	0.27		0.59		0.33	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 20.9		Intersection LOS: C	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	135	15	460	142	23	11	6	49	12	4	5
Future Vol, veh/h	11	135	15	460	142	23	11	6	49	12	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	93	93	93	74	74	74	57	57	57
Heavy Vehicles, %	0	0	0	2	4	0	0	0	0	0	0	0
Mvmt Flow	13	165	18	495	153	25	15	8	66	21	7	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	183	0	0	1364	1368	174	1393	1365	166
Stage 1	-	-	-	-	-	-	200	200	-	1156	1156	-
Stage 2	-	-	-	-	-	-	1164	1168	-	237	209	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1410	-	-	1392	-	-	126	148	875	120	149	884
Stage 1	-	-	-	-	-	-	806	739	-	242	273	-
Stage 2	-	-	-	-	-	-	239	270	-	771	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1410	-	-	1392	-	-	81	89	875	71	89	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	89	-	71	89	-
Stage 1	-	-	-	-	-	-	798	732	-	240	165	-
Stage 2	-	-	-	-	-	-	137	163	-	698	726	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	6.6	26.5	64.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	255	1410	-	-	1392	-	-	96
HCM Lane V/C Ratio	0.35	0.01	-	-	0.355	-	-	0.384
HCM Control Delay (s)	26.5	7.6	0	-	9	0	-	64.2
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.5	0	-	-	1.6	-	-	1.5

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	175	22	24	552	73	255
Future Vol, veh/h	175	22	24	552	73	255
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	89	89
Heavy Vehicles, %	1	0	0	1	5	0
Mvmt Flow	213	27	26	600	82	287

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	240	0	879	227
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	652	-
Critical Hdwy	-	-	4.1	-	6.45	6.2
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.2	-	3.545	3.3
Pot Cap-1 Maneuver	-	-	1339	-	314	817
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	513	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1339	-	305	817
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	498	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	595	-	-	1339	-
HCM Lane V/C Ratio	0.619	-	-	0.019	-
HCM Control Delay (s)	20.4	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	4.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	312	56	68	21	14	445
Future Vol, veh/h	312	56	68	21	14	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	70	81	54	42	89
Heavy Vehicles, %	2	0	0	0	0	2
Mvmt Flow	367	80	84	39	33	500

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	123	0	-	0	918	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	814	-
Critical Hdwy	4.12	-	-	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1464	-	-	-	304	951
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	439	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1464	-	-	-	224	951
Mov Cap-2 Maneuver	-	-	-	-	224	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	439	-

Approach	EB	WB	SB
HCM Control Delay, s	6.8	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1464	-	-	-	791
HCM Lane V/C Ratio	0.251	-	-	-	0.674
HCM Control Delay (s)	8.3	0	-	-	18.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	5.3

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	0	32	8	1	6	30	299	8	5	417	15
Future Vol, veh/h	31	0	32	8	1	6	30	299	8	5	417	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	75	75	75	82	82	82	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	69	0	71	11	1	8	37	365	10	6	485	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	955	955	494	985	958	370	502	0	0	375	0	0
Stage 1	506	506	-	444	444	-	-	-	-	-	-	-
Stage 2	449	449	-	541	514	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	240	260	579	229	259	680	1073	-	-	1195	-	-
Stage 1	552	543	-	597	579	-	-	-	-	-	-	-
Stage 2	593	576	-	529	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	227	247	579	193	246	680	1073	-	-	1195	-	-
Mov Cap-2 Maneuver	227	247	-	193	246	-	-	-	-	-	-	-
Stage 1	528	539	-	571	554	-	-	-	-	-	-	-
Stage 2	559	551	-	461	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.9	19.1	0.8	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1073	-	-	328	276	1195	-	-
HCM Lane V/C Ratio	0.034	-	-	0.427	0.072	0.005	-	-
HCM Control Delay (s)	8.5	0	-	23.9	19.1	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	28	5	333	413	52
Future Vol, veh/h	86	28	5	333	413	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	30	5	362	449	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	850	478	506	0	-	0
Stage 1	478	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	331	587	1059	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	329	587	1059	-	-	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	697	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1059	-	369	-	-
HCM Lane V/C Ratio	0.005	-	0.336	-	-
HCM Control Delay (s)	8.4	0	19.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection	
Int Delay, s/veh	183.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	412	7	0	489	359	465
Future Vol, veh/h	412	7	0	489	359	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	50	25	71	82	87
Heavy Vehicles, %	2	0	0	0	1	2
Mvmt Flow	502	14	0	689	438	534

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1127	438	-	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 226	623	0	-	-	0
Stage 1	651	-	0	-	-	0
Stage 2	~ 498	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 226	623	-	-	-	-
Mov Cap-2 Maneuver	~ 226	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	~ 498	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 583	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	226	623	-
HCM Lane V/C Ratio	-	2.223	0.022	-
HCM Control Delay (s)	-	$ 598.9	10.9	-
HCM Lane LOS	-	F	B	-
HCM 95th %tile Q(veh)	-	39.3	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	633	18	20	551
Future Vol, veh/h	0	0	633	18	20	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	688	20	22	599

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1341	698	0	0	708	0
Stage 1	698	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	168	440	-	-	891	-
Stage 1	494	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	162	440	-	-	891	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	891	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	-	-	0	9.1	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	0	0	57	0	59
Future Vol, veh/h	55	0	0	57	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	0	0	62	0	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	122	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	873	1005
Stage 1	-	0	0	-	963	-
Stage 2	-	0	0	-	961	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	873	1005
Mov Cap-2 Maneuver	-	-	-	-	873	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	961	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1005	-	-
HCM Lane V/C Ratio	0.064	-	-
HCM Control Delay (s)	8.8	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	136	31	261	108	10	14	2	63	19	25	5
Future Vol, veh/h	2	136	31	261	108	10	14	2	63	19	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	3	170	39	339	140	13	18	3	79	25	33	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	209	0	0	1041	1027	190	1062	1040	147
Stage 1	-	-	-	-	-	-	196	196	-	825	825	-
Stage 2	-	-	-	-	-	-	845	831	-	237	215	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1440	-	-	1350	-	-	193	236	849	203	232	905
Stage 1	-	-	-	-	-	-	766	742	-	370	390	-
Stage 2	-	-	-	-	-	-	333	387	-	771	729	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1350	-	-	129	171	849	143	168	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	171	-	143	168	-
Stage 1	-	-	-	-	-	-	764	741	-	369	283	-
Stage 2	-	-	-	-	-	-	211	281	-	696	728	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.9	16.7	38.5
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	406	1440	-	-	1350	-	-	171
HCM Lane V/C Ratio	0.243	0.002	-	-	0.251	-	-	0.382
HCM Control Delay (s)	16.7	7.5	0	-	8.6	0	-	38.5
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.9	0	-	-	1	-	-	1.6

Intersection	
Int Delay, s/veh	15.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	203	16	10	337	42	465
Future Vol, veh/h	203	16	10	337	42	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	239	19	13	421	52	574

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	258	0	696	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1251	-	391	790
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1251	-	386	790
Mov Cap-2 Maneuver	-	-	-	-	386	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	32.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	727	-	-	1251	-
HCM Lane V/C Ratio	0.861	-	-	0.01	-
HCM Control Delay (s)	32.5	-	-	7.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	10.3	-	-	0	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	156	31	27	10	0	318
Future Vol, veh/h	156	31	27	10	0	318
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	177	35	50	19	0	346

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	449	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1526	-	-	-	571	994
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	504	994
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	689	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	994
HCM Lane V/C Ratio	0.116	-	-	-	0.348
HCM Control Delay (s)	7.7	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.6

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	1	10	1	0	6	26	135	8	7	306	29
Future Vol, veh/h	12	1	10	1	0	6	26	135	8	7	306	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	32	3	26	4	0	24	29	152	9	8	344	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	604	596	361	606	608	157	377	0	0	161	0	0
Stage 1	377	377	-	215	215	-	-	-	-	-	-	-
Stage 2	227	219	-	391	393	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	413	420	688	412	413	894	1193	-	-	1430	-	-
Stage 1	649	619	-	792	729	-	-	-	-	-	-	-
Stage 2	780	726	-	637	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	392	406	688	384	399	894	1193	-	-	1430	-	-
Mov Cap-2 Maneuver	392	406	-	384	399	-	-	-	-	-	-	-
Stage 1	631	615	-	771	709	-	-	-	-	-	-	-
Stage 2	739	706	-	606	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	10	1.2	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1193	-	-	483	751	1430	-	-
HCM Lane V/C Ratio	0.024	-	-	0.125	0.037	0.006	-	-
HCM Control Delay (s)	8.1	0	-	13.5	10	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	26	2	151	312	22
Future Vol, veh/h	23	26	2	151	312	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	28	2	164	339	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	519	351	363	0	-	0
Stage 1	351	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	517	692	1196	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	516	692	1196	-	-	-
Mov Cap-2 Maneuver	516	-	-	-	-	-
Stage 1	712	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	596	-	-
HCM Lane V/C Ratio	0.002	-	0.089	-	-
HCM Control Delay (s)	8	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	167	7	0	173	306	334
Future Vol, veh/h	167	7	0	173	306	334
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	204	9	0	188	369	402

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	557	369	-	0	-	0
Stage 1	369	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	486	638	0	-	-	0
Stage 1	693	-	0	-	-	0
Stage 2	837	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	486	638	-	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	837	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	486	638	-
HCM Lane V/C Ratio	-	0.419	0.013	-
HCM Control Delay (s)	-	17.6	10.7	-
HCM Lane LOS	-	C	B	-
HCM 95th %tile Q(veh)	-	2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	332	15	35	628
Future Vol, veh/h	0	0	332	15	35	628
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	361	16	38	683

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1128	369	0	0	377	0
Stage 1	369	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	226	677	-	-	1181	-
Stage 1	699	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	214	677	-	-	1181	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1181	-
HCM Lane V/C Ratio	-	-	-	0.032	-
HCM Control Delay (s)	-	-	0	8.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

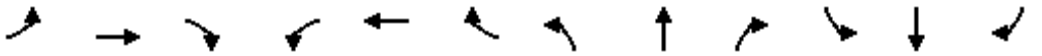
Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	24	0	0	24	0	25
Future Vol, veh/h	24	0	0	24	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	0	0	26	0	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	52	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	957	1050
Stage 1	-	0	0	-	997	-
Stage 2	-	0	0	-	997	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	957	1050
Mov Cap-2 Maneuver	-	-	-	-	957	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	997	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1050	-	-
HCM Lane V/C Ratio	0.026	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-



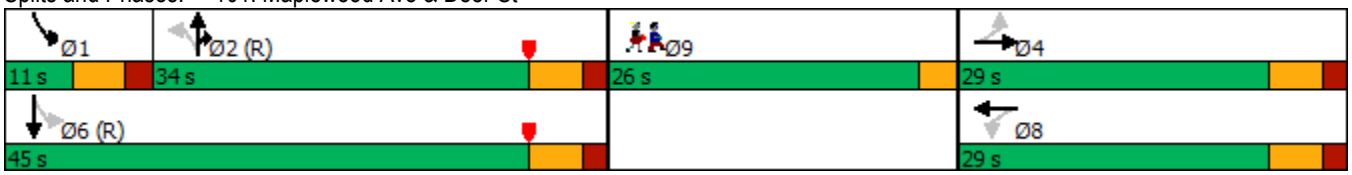
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	142	51	285	143	76	33	533	248	68	482	127
Future Volume (vph)	191	142	51	285	143	76	33	533	248	68	482	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.948				0.850		0.969	
Flt Protected		0.976		0.950			0.950			0.950		
Satd. Flow (prot)	0	1646	0	1805	1858	0	1586	1655	1545	1646	1649	0
Flt Permitted		0.661		0.509			0.147			0.120		
Satd. Flow (perm)	0	1115	0	967	1858	0	245	1655	1545	208	1649	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			25				256		16	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	212	158	57	310	155	83	38	606	282	73	518	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	427	0	310	238	0	38	606	282	73	655	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	29.0	29.0		29.0	29.0		34.0	34.0	34.0	11.0	45.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		34.0%	34.0%	34.0%	11.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		30.2	30.2	30.2	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.30	0.30	0.30	0.39	0.39	
v/c Ratio		0.98		0.83	0.33		0.52	1.21	0.44	0.48	1.00	
Control Delay		73.6		52.8	24.6		48.3	139.8	6.2	30.3	67.5	
Queue Delay		11.0		2.0	0.0		0.0	0.0	0.0	0.0	33.2	
Total Delay		84.7		54.8	24.6		48.3	139.8	6.2	30.3	100.7	
LOS		F		D	C		D	F	A	C	F	
Approach Delay		84.7			41.7			95.4			93.6	
Approach LOS		F			D			F			F	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	26%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		212		143	75		10	~474	21	29	~407	
Queue Length 95th (ft)		#588		#433	197		m22	#660	47	59	#652	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		434		373	732		73	499	644	153	652	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		18		15	0		0	0	0	0	74	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		1.03		0.87	0.33		0.52	1.21	0.44	0.48	1.13	

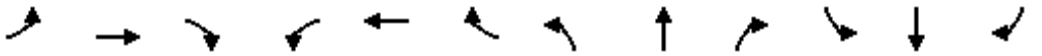
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.21			
Intersection Signal Delay: 82.0		Intersection LOS: F	
Intersection Capacity Utilization 98.4%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	17	41	48	16	128	19	637	84	118	681	18
Future Volume (vph)	49	17	41	48	16	128	19	637	84	118	681	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.893				0.850		0.983			0.996	
Flt Protected	0.950				0.964			0.999		0.950		
Satd. Flow (prot)	1703	1301	0	0	1778	1568	0	3240	0	1626	1856	0
Flt Permitted	0.701				0.736			0.921		0.201		
Satd. Flow (perm)	1257	1301	0	0	1358	1568	0	2987	0	344	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				173		14			2	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	59	20	49	65	22	173	23	767	101	130	748	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	69	0	0	87	173	0	891	0	130	768	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	11.1	11.1			11.3	23.5		47.7		62.4	63.6	
Actuated g/C Ratio	0.11	0.11			0.11	0.24		0.48		0.62	0.64	
v/c Ratio	0.42	0.37			0.57	0.35		0.62		0.40	0.65	
Control Delay	49.4	22.3			55.7	6.0		28.6		11.3	16.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.6	
Total Delay	49.4	22.3			55.7	6.0		28.6		11.3	17.0	
LOS	D	C			E	A		C		B	B	
Approach Delay		34.8			22.7			28.6			16.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	35	12			53	0		281		48	320	

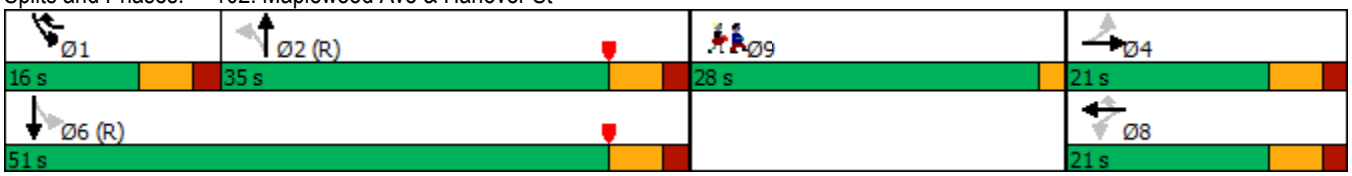
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	67	44			80	23		#381		m32	m415	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	188	236			203	522		1431		345	1180	
Starvation Cap Reductn	0	0			0	0		0		0	147	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.31	0.29			0.43	0.33		0.62		0.38	0.74	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 82.9%		ICU Level of Service E	
Analysis Period (min) 15			

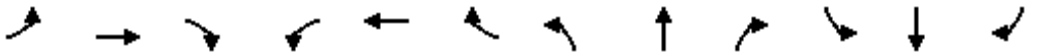
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	30	34	189	100	34	38	285	127	33	412	183
Future Volume (vph)	76	30	34	189	100	34	38	285	127	33	412	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	12	14	14	11	11	13	11	11	11
Storage Length (ft)	0		0	75		100	75		0	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			75			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967			0.962				0.850		0.954	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1619	0	1805	1893	0	1586	1655	1545	1646	1631	0
Flt Permitted		0.772		0.669			0.150			0.286		
Satd. Flow (perm)	0	1284	0	1271	1893	0	250	1655	1545	496	1631	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			15				144		26	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		305			453			435			141	
Travel Time (s)		8.3			12.4			11.9			3.2	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Heavy Vehicles (%)	20%	10%	5%	0%	2%	6%	10%	11%	8%	6%	9%	4%
Adj. Flow (vph)	84	33	38	205	109	37	43	324	144	35	443	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	205	146	0	43	324	144	35	640	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Prot	pm+pt	NA	
Protected Phases		4			8			2	2	1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0	16.0	11.0	16.0	
Total Split (s)	24.0	24.0		24.0	24.0		29.0	29.0	29.0	16.0	45.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		29.0%	29.0%	29.0%	16.0%	45.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	Max	Max		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		38.6		38.6	38.6		30.8	30.8	30.8	39.0	39.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.31	0.31	0.31	0.39	0.39	
v/c Ratio		0.31		0.42	0.20		0.56	0.64	0.25	0.13	0.98	
Control Delay		26.0		30.6	23.4		49.7	26.0	3.4	20.3	61.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	8.0	
Total Delay		26.0		30.6	23.4		49.7	26.0	3.4	20.3	69.7	
LOS		C		C	C		D	C	A	C	E	
Approach Delay		26.0			27.6			21.6			67.1	
Approach LOS		C			C			C			E	

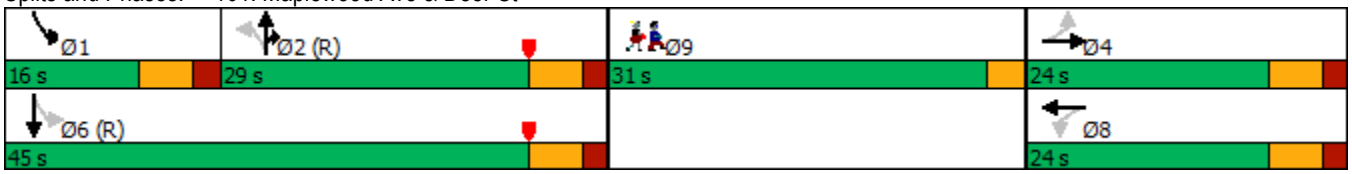
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	26.0
Total Split (s)	31.0
Total Split (%)	31%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		50		77	44		22	193	2	14	384	
Queue Length 95th (ft)		144		#220	126		#82	#296	22	34	#627	
Internal Link Dist (ft)		225			373			355			61	
Turn Bay Length (ft)				75			75			100		
Base Capacity (vph)		504		490	739		77	510	575	308	651	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	21	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.31		0.42	0.20		0.56	0.64	0.25	0.11	1.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 41.4		Intersection LOS: D	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

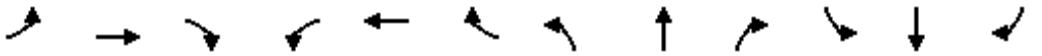
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Maplewood Ave & Deer St



Lane Group	Ø9
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	32	29	35	2	51	32	377	60	75	540	22
Future Volume (vph)	22	32	29	35	2	51	32	377	60	75	540	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	0		0	175		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.929				0.850		0.981			0.994	
Flt Protected	0.950				0.955			0.997		0.950		
Satd. Flow (prot)	1703	1420	0	0	1749	1568	0	3213	0	1626	1853	0
Flt Permitted	0.724				0.685			0.875		0.360		
Satd. Flow (perm)	1298	1420	0	0	1254	1568	0	2820	0	616	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				69		16			3	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		152			315			356			435	
Travel Time (s)		4.1			8.6			9.7			9.9	
Peak Hour Factor	0.83	0.83	0.83	0.74	0.74	0.74	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	6%	12%	38%	4%	0%	3%	23%	10%	2%	11%	2%	0%
Adj. Flow (vph)	27	39	35	47	3	69	39	454	72	82	593	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	74	0	0	50	69	0	565	0	82	617	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	16.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0		21.0	21.0	16.0	35.0	35.0		16.0	51.0	
Total Split (%)	21.0%	21.0%		21.0%	21.0%	16.0%	35.0%	35.0%		16.0%	51.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	
Act Effct Green (s)	9.4	9.4			9.4	21.1		53.6		64.1	65.3	
Actuated g/C Ratio	0.09	0.09			0.09	0.21		0.54		0.64	0.65	
v/c Ratio	0.22	0.45			0.43	0.18		0.37		0.17	0.51	
Control Delay	44.8	33.4			52.9	7.8		21.5		11.4	14.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.4	
Total Delay	44.8	33.4			52.9	7.8		21.5		11.4	14.4	
LOS	D	C			D	A		C		B	B	
Approach Delay		36.5			26.7			21.5			14.0	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	16	24			31	0		143		31	263	

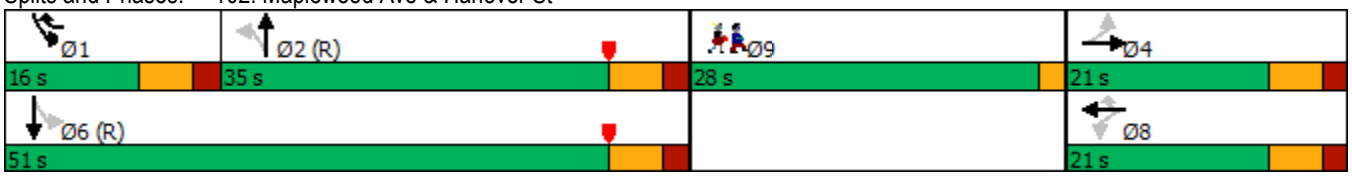
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	28%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	38	58			54	20		199		m22	m266	
Internal Link Dist (ft)		72			235			276			355	
Turn Bay Length (ft)						75				175		
Base Capacity (vph)	194	242			188	417		1520		498	1211	
Starvation Cap Reductn	0	0			0	0		0		0	201	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.14	0.31			0.27	0.17		0.37		0.16	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Maplewood Ave & Hanover St



Lane Group	Ø9
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	53

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	13	166	17	562	178	25	13	7	61	14	5	6
Future Vol, veh/h	13	166	17	562	178	25	13	7	61	14	5	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	77	77	77	80	80	80	75	75	75
Heavy Vehicles, %	0	5	13	4	25	0	20	0	3	0	0	0
Mvmt Flow	16	208	21	730	231	32	16	9	76	19	7	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	229	0	0	1966	1974	219	2000	1968	247
Stage 1	-	-	-	-	-	-	251	251	-	1707	1707	-
Stage 2	-	-	-	-	-	-	1715	1723	-	293	261	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.3	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.68	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1313	-	-	1327	-	-	42	63	818	45	63	797
Stage 1	-	-	-	-	-	-	715	703	-	117	148	-
Stage 2	-	-	-	-	-	-	103	145	-	719	696	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1313	-	-	1327	-	-	~ 16	22	818	~ 14	22	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 16	22	-	~ 14	22	-
Stage 1	-	-	-	-	-	-	705	693	-	115	52	-
Stage 2	-	-	-	-	-	-	31	51	-	635	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	8.1	$ 396.8	$ 731.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	67	1313	-	-	1327	-	-	20
HCM Lane V/C Ratio	1.511	0.012	-	-	0.55	-	-	1.667
HCM Control Delay (s)	$ 396.8	7.8	0	-	11	0	-	$ 731.9
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	8.7	0	-	-	3.5	-	-	4.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	24.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	217	24	26	684	81	317
Future Vol, veh/h	217	24	26	684	81	317
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	80	80	81	81
Heavy Vehicles, %	4	8	12	10	13	2
Mvmt Flow	255	28	33	855	100	391

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	283	0	1190	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	921	-
Critical Hdwy	-	-	4.22	-	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	-	-	2.308	-	3.617	3.318
Pot Cap-1 Maneuver	-	-	1224	-	197	770
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	371	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1224	-	187	770
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	352	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	83.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	471	-	-	1224	-
HCM Lane V/C Ratio	1.043	-	-	0.027	-
HCM Control Delay (s)	83.1	-	-	8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	14.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	13

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	378	61	75	23	16	512
Future Vol, veh/h	378	61	75	23	16	512
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	54	54	92	92
Heavy Vehicles, %	3	0	5	38	0	6
Mvmt Flow	430	69	139	43	17	557

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	182	0	-	0	1090	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	929	-
Critical Hdwy	4.13	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.227	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1387	-	-	-	240	874
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	388	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	163	874
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	388	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	772
HCM Lane V/C Ratio	0.31	-	-	-	0.743
HCM Control Delay (s)	8.8	0	-	-	21.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	1.3	-	-	-	6.8

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	0	33	9	1	7	32	366	9	6	484	15
Future Vol, veh/h	32	0	33	9	1	7	32	366	9	6	484	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	25	25	25	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	8	0	0	8	0
Mvmt Flow	84	0	87	36	4	28	36	411	10	7	544	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1071	1060	553	1098	1063	416	561	0	0	421	0	0
Stage 1	567	567	-	488	488	-	-	-	-	-	-	-
Stage 2	504	493	-	610	575	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	200	226	537	192	225	641	1020	-	-	1149	-	-
Stage 1	512	510	-	565	553	-	-	-	-	-	-	-
Stage 2	554	550	-	485	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	214	537	154	213	641	1020	-	-	1149	-	-
Mov Cap-2 Maneuver	181	214	-	154	213	-	-	-	-	-	-	-
Stage 1	488	505	-	539	528	-	-	-	-	-	-	-
Stage 2	502	525	-	403	501	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38	27.1	0.7	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1020	-	-	273	230	1149	-	-
HCM Lane V/C Ratio	0.035	-	-	0.627	0.296	0.006	-	-
HCM Control Delay (s)	8.7	0	-	38	27.1	8.2	0	-
HCM Lane LOS	A	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.9	1.2	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	29	6	401	481	55
Future Vol, veh/h	89	29	6	401	481	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	32	7	436	523	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1003	553	583	0	-	0
Stage 1	553	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	268	533	991	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	266	533	991	-	-	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.3	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	991	-	303	-	-
HCM Lane V/C Ratio	0.007	-	0.423	-	-
HCM Control Delay (s)	8.7	0	25.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	2	-	-

Intersection	
Int Delay, s/veh	242.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	483	8	0	541	396	536
Future Vol, veh/h	483	8	0	541	396	536
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	25	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	92	92	83	83
Heavy Vehicles, %	5	20	0	7	4	6
Mvmt Flow	589	10	0	588	477	646

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	477	-	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.48	-	-	-	-
Pot Cap-1 Maneuver	~ 243	553	0	-	-	0
Stage 1	618	-	0	-	-	0
Stage 2	~ 549	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 243	553	-	-	-	-
Mov Cap-2 Maneuver	~ 243	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	~ 549	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 673.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	243	553	-
HCM Lane V/C Ratio	-	2.424	0.018	-
HCM Control Delay (s)	-	$ 684.9	11.6	-
HCM Lane LOS	-	F	B	-
HCM 95th %tile Q(veh)	-	47.9	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	782	18	20	677
Future Vol, veh/h	0	0	782	18	20	677
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	850	20	22	736

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1640	860	0	0	870	0
Stage 1	860	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	110	356	-	-	775	-
Stage 1	414	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	105	356	-	-	775	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	414	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	775	-
HCM Lane V/C Ratio	-	-	-	0.028	-
HCM Control Delay (s)	-	-	0	9.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	59	0	0	61	0	59
Future Vol, veh/h	59	0	0	61	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	0	66	0	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	130	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	864	1000
Stage 1	-	0	0	-	959	-
Stage 2	-	0	0	-	957	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	864	1000
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1000	-	-
HCM Lane V/C Ratio	0.064	-	-
HCM Control Delay (s)	8.8	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-

HCS7 Roundabouts Report

General Information

Analyst	Tighe & Bond
Agency or Co.	
Date Performed	5/19/2022
Analysis Year	2035
Time Analyzed	Weekday AM Peak Hour
Project Description	Russell Street Development Build Conditi...

Site Information

Intersection	Market St at Russell St
E/W Street Name	Russell Street
N/S Street Name	Market Street
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Portsmouth

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0
Lane Assignment			LR								LT				TR	
Volume (V), veh/h	0	167		7					0	0	173		0		306	334
Percent Heavy Vehicles, %	0	5		20					0	0	7		0		4	6
Flow Rate (v_{PCE}), pc/h	0	191		9					0	0	201		0		346	385
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763						4.9763			4.9763	
Follow-Up Headway (s)		2.6087						2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		200.00						201.00			731.00	
Entry Volume veh/h		189.40						187.85			695.90	
Circulating Flow (v_c), pc/h	346			392			191			0		
Exiting Flow (v_{ex}), pc/h	0			385			392			355		
Capacity (c_{pce}), pc/h		969.64						1135.72			1380.00	
Capacity (c), veh/h		918.27						1061.42			1313.73	
v/c Ratio (x)		0.21						0.18			0.53	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.0						5.0			8.4	
Lane LOS		A						A			A	
95% Queue, veh		0.8						0.6			3.2	
Approach Delay, s/veh	6.0						5.0			8.4		
Approach LOS	A						A			A		
Intersection Delay, s/veh | LOS	7.4						A					

HCS7 Roundabouts Report

General Information

Analyst	Tighe & Bond
Agency or Co.	
Date Performed	5/19/2022
Analysis Year	2035
Time Analyzed	Weekday PM Peak Hour
Project Description	Russell Street Development Build Conditions

Site Information

Intersection	Market St at Russell St
E/W Street Name	Russell Street
N/S Street Name	Market Street
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Portsmouth

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0
Lane Assignment			LR								LT				TR	
Volume (V), veh/h	0	483		8					0	0	541		0		396	536
Percent Heavy Vehicles, %	0	5		20					0	0	7		0		4	6
Flow Rate (v_{PCE}), pc/h	0	551		10					0	0	629		0		448	618
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763						4.9763			4.9763	
Follow-Up Headway (s)		2.6087						2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		561.00						629.00			1066.00	
Entry Volume veh/h		533.10						587.85			1013.79	
Circulating Flow (v_c), pc/h	448			1180			551			0		
Exiting Flow (v_{ex}), pc/h	0			618			1180			458		
Capacity (c_{pce}), pc/h		873.83						786.68			1380.00	
Capacity (c), veh/h		830.36						735.22			1312.41	
v/c Ratio (x)		0.64						0.80			0.77	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		15.0						25.4			15.2	
Lane LOS		B						D			C	
95% Queue, veh		4.8						8.3			8.3	
Approach Delay, s/veh	15.0						25.4			15.2		
Approach LOS	B						D			C		
Intersection Delay, s/veh | LOS	18.0						C					

APPENDIX F

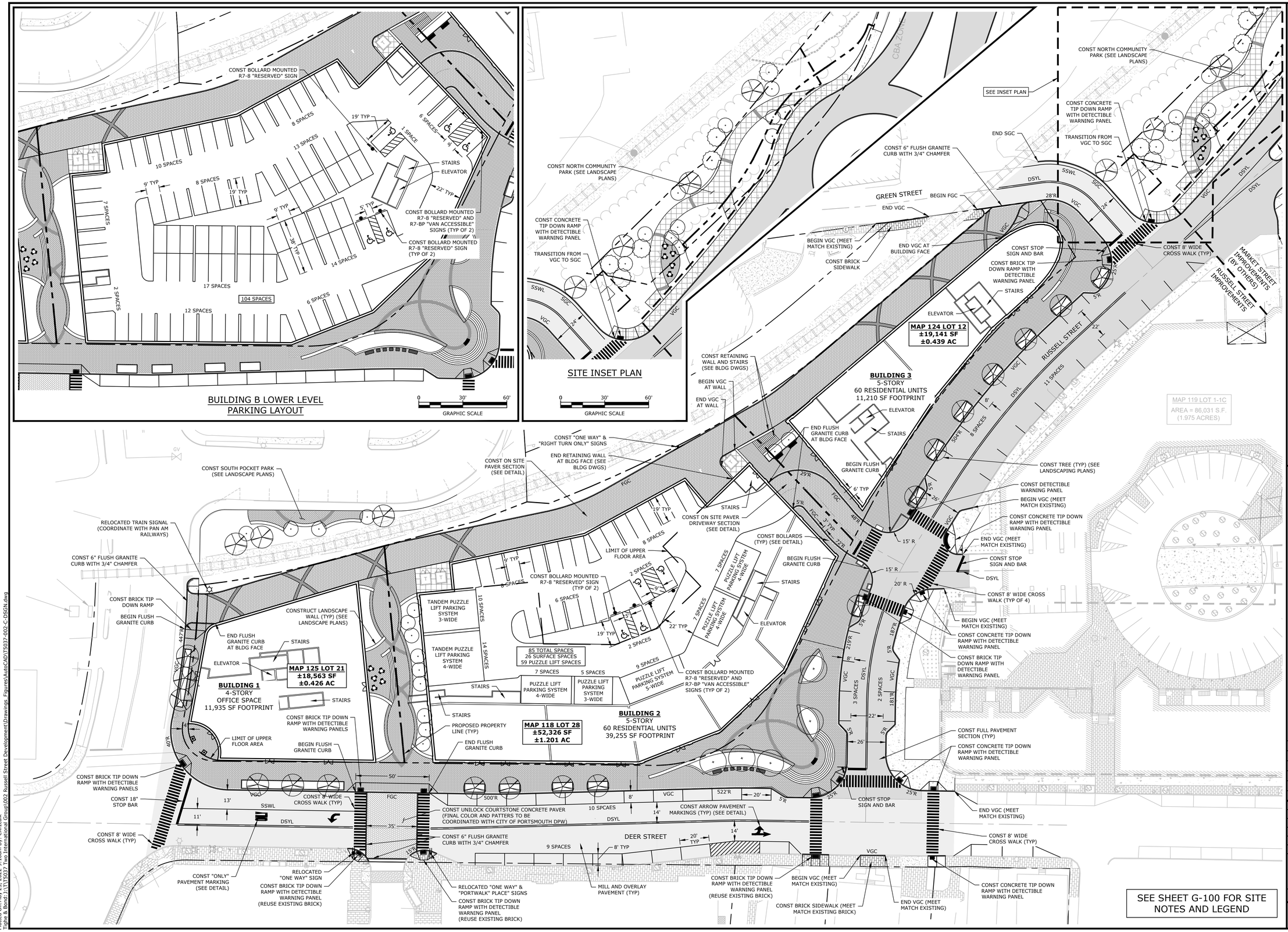
Site Development Plan

BUILDING B LOWER LEVEL
PARKING LAYOUT

0 30' 60'
GRAPHIC SCALE

SITE INSET PLAN

0 30' 60'
GRAPHIC SCALE



SEE SHEET G-100 FOR SITE NOTES AND LEGEND

0 40' 80'
GRAPHIC SCALE

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street &
Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D		
C		
B		
A	5/24/2022	TAC Submission

PROJECT NO:	T5037-002
DATE:	January 4, 2022
FILE:	T5037-002-C-DSGN.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

FIRST FLOOR
SITE PLAN

SCALE: AS SHOWN

C-102.1

Last Saved: 5/23/2022
Plotted: Jun 03, 2022 - 9:16am By: CKircuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg

APPENDIX G

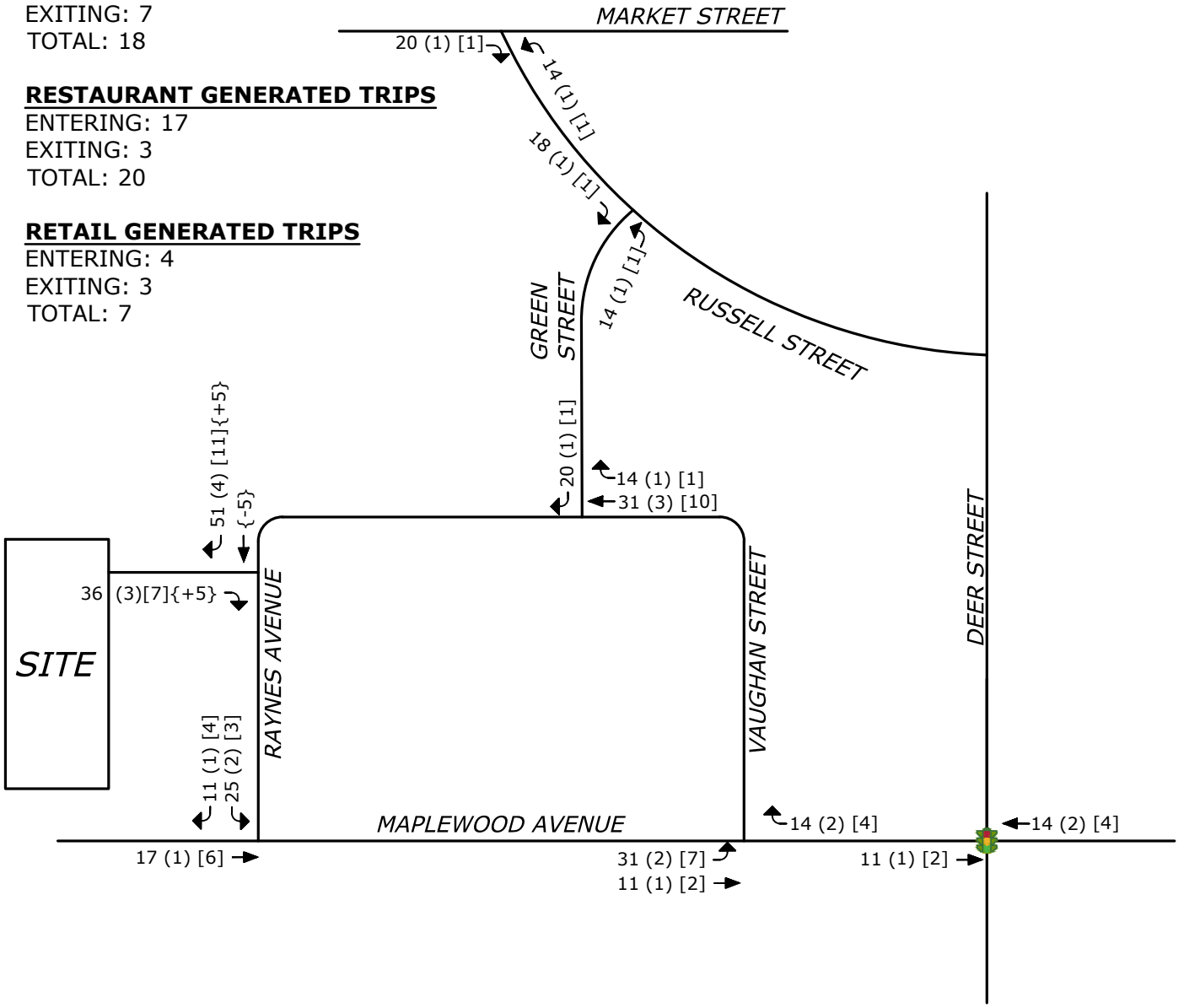
Other Development Traffic Volumes

HOTEL GENERATED TRIPS
ENTERING: 34
EXITING: 33
TOTAL: 67

RESIDENTIAL GENERATED TRIPS
ENTERING: 11
EXITING: 7
TOTAL: 18

RESTAURANT GENERATED TRIPS
ENTERING: 17
EXITING: 3
TOTAL: 20

RETAIL GENERATED TRIPS
ENTERING: 4
EXITING: 3
TOTAL: 7



LEGEND

TRAFFIC SIGNAL

XX HOTEL & RESTAURANT TRIPS
(XX) RETAIL TRIPS
[XX] RESIDENTIAL TRIPS
{XX} PASS-BY TRIPS

PROPOSED MIXED-USE DEVELOPMENT
RAYNES AVENUE, PORTSMOUTH, NH

WEEKDAY AFTERNOON PEAK HOUR SITE GENERATED TRIPS

DATE: 7/14/2021
SCALE: NO SCALE
FIGURE 13

Tighe&Bond
www.tighebond.com

NOT TO SCALE

XXX(XXX)[XXX] = Primary Entering(Primary Exiting)[Pass-by]

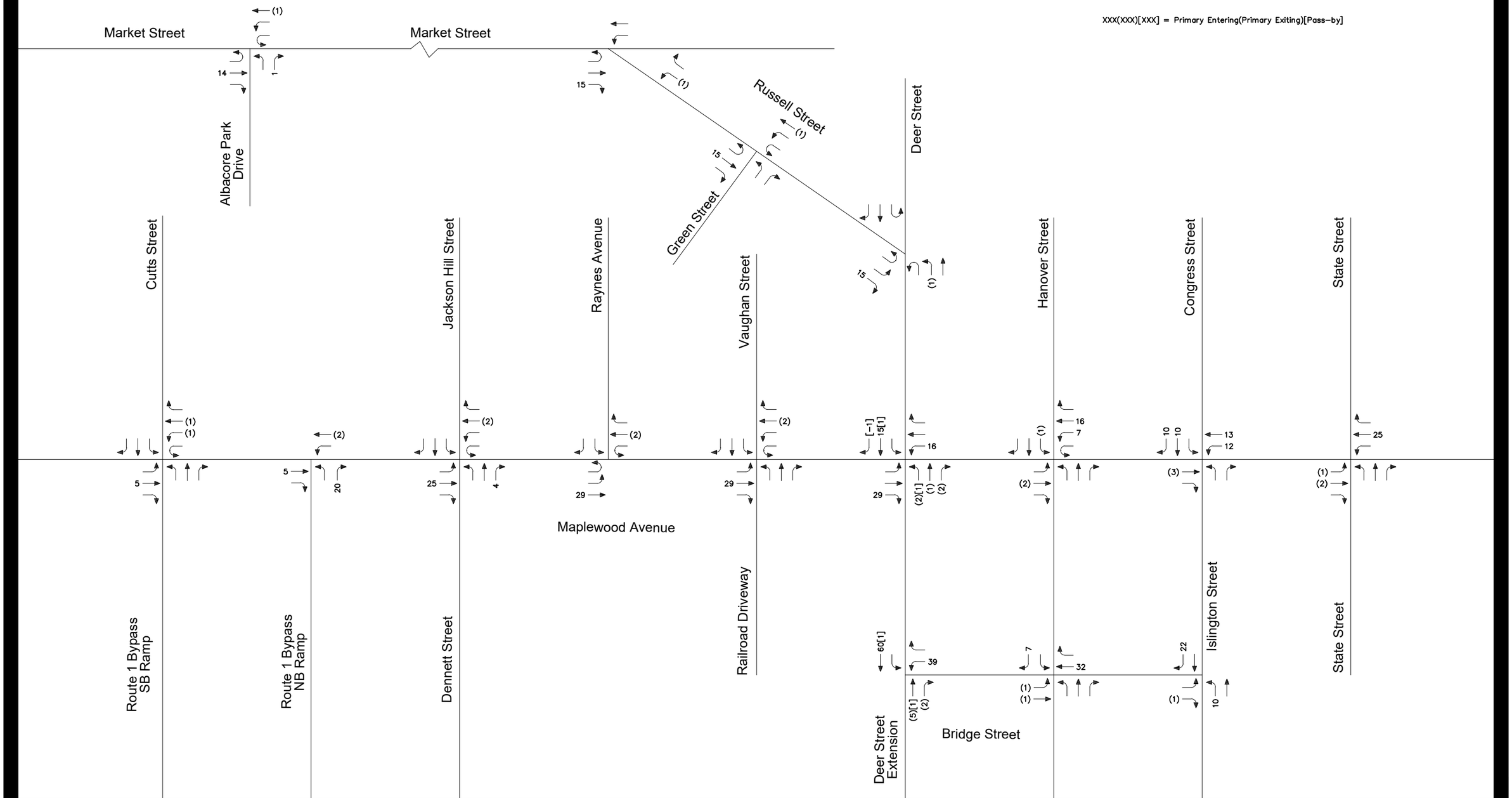


Figure 11A

Phase 1: Deer Street Parking Garage
Site Generated Trip Assignment
Weekday Morning
Peak Hour Traffic Volumes

TEC, Inc.
65 Glenn Street | 169 Ocean Blvd, Unit 101
Lawrence, MA 01843 | Hampton, NH 03842
(978) 794.1792 | (603) 601.8154
www.TheEngineeringCorp.com

NOT TO SCALE

Deer Street Parking Garage & Deer Street Development - Portsmouth, New Hampshire

Traffic Impact and Access Study

XXX(XXX)[XXX] = Primary Entering(Primary Exiting)[Pass-by]

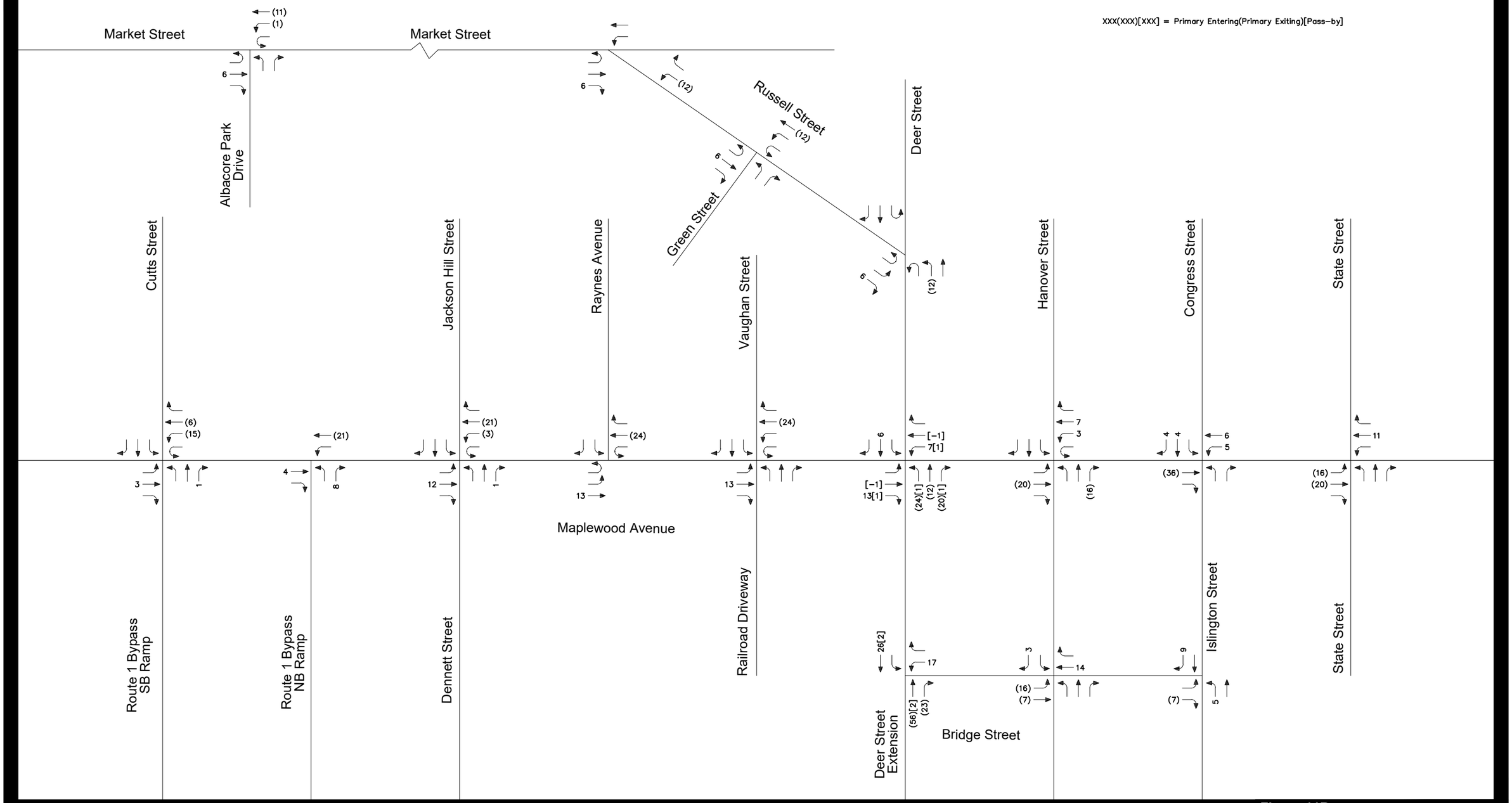


Figure 11B

Phase 1: Deer Street Parking Garage
Site Generated Trip Assignment
Weekday Evening
Peak Hour Traffic Volumes

TEC, Inc.
65 Glenn Street
Lawrence, MA 01843
(978) 794.1792
169 Ocean Blvd, Unit 101
Hampton, NH 03842
(603) 601.8154
www.TheEngineeringCorp.com

NOT TO SCALE

Deer Street Parking Garage & Deer Street Development - Portsmouth, New Hampshire

Traffic Impact and Access Study

XXX(XXX)[XXX] = Primary Entering(Primary Exiting)[Pass-by]

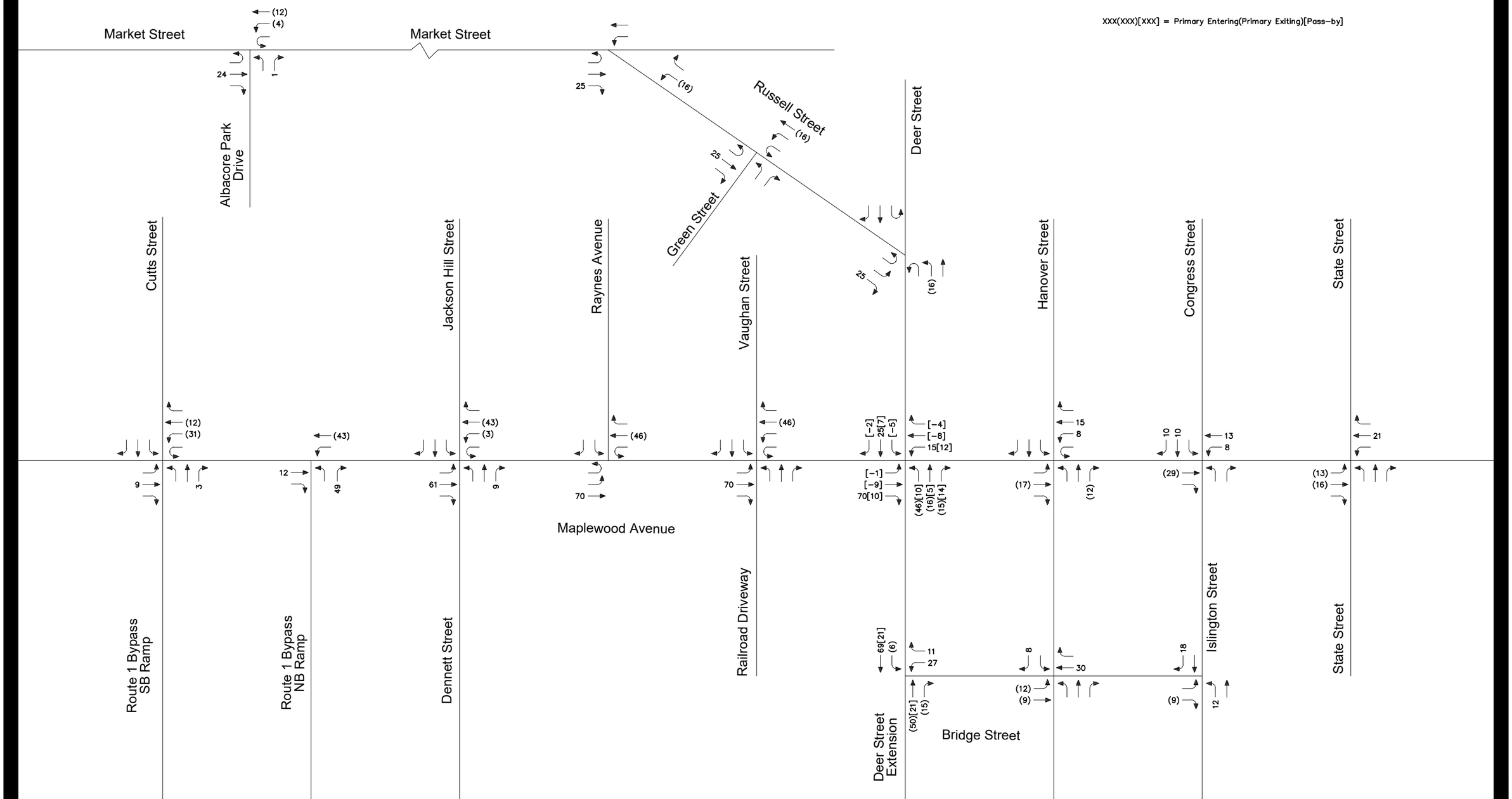


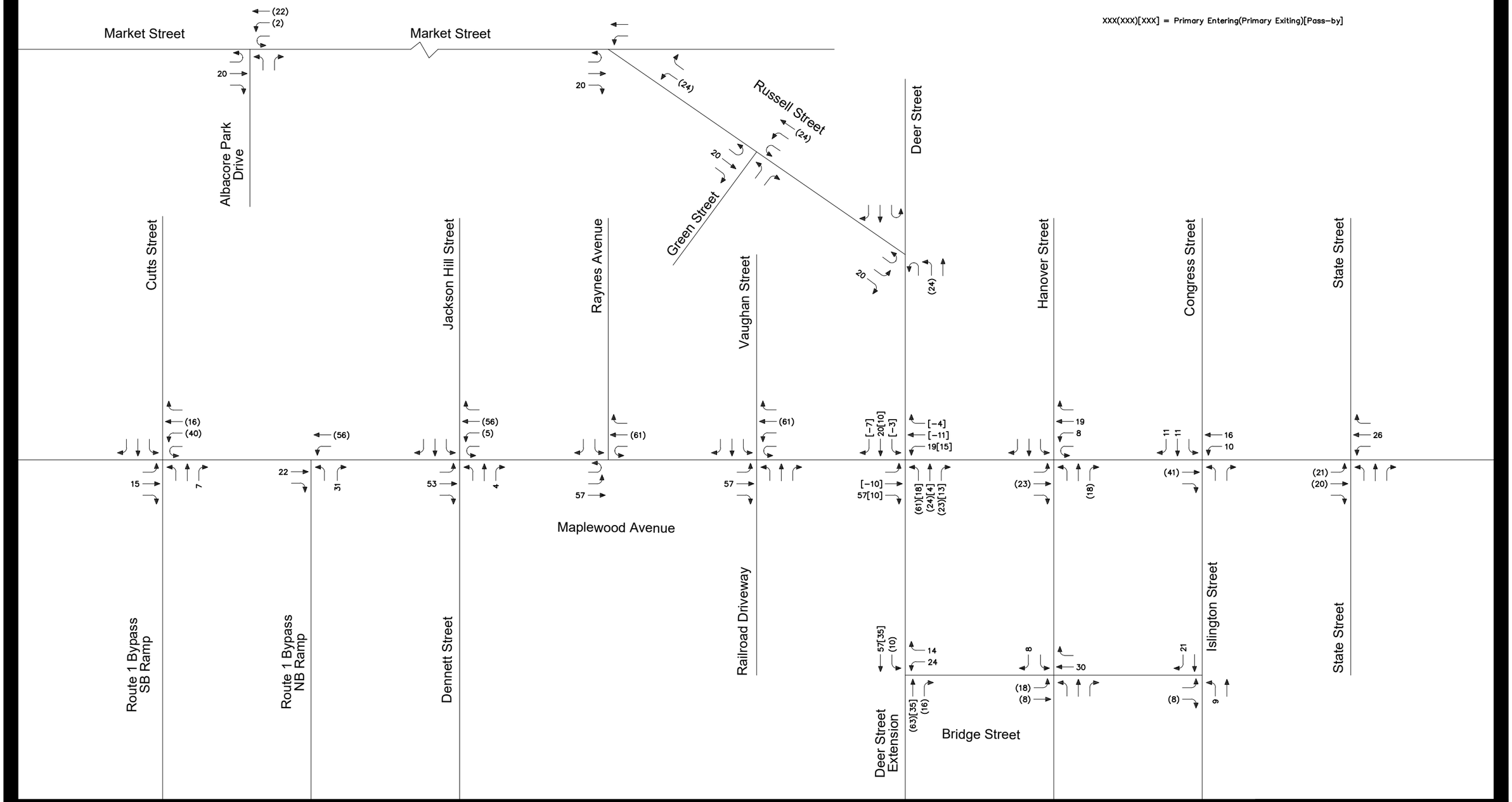
Figure 14A

Phases 2-4: Total Deer Street Development
Site Generated Trip Assignment
Weekday Morning
Peak Hour Traffic Volumes

TEC, Inc.
65 Glenn Street | 169 Ocean Blvd, Unit 101
Lawrence, MA 01843 | Hampton, NH 03842
(978) 794.1792 | (603) 601.8154
www.TheEngineeringCorp.com

NOT TO SCALE

XXX(XXX)[XXX] = Primary Entering(Primary Exiting)[Pass-by]



TEC, Inc.
65 Glenn Street
Lawrence, MA 01843
(978) 794.1792
169 Ocean Blvd, Unit 101
Hampton, NH 03842
(603) 601.8154
www.TheEngineeringCorp.com

Figure 14B

Phases 2-4: Total Deer Street Development
Site Generated Trip Assignment
Weekday Evening
Peak Hour Traffic Volumes

APPENDIX H
Internal Capture Calculation

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Russell Street Development	**Organization:**	Tighe & Bond
Project Location:	Portsmouth, NH	**Performed By:**	Ryan Case
Scenario Description:		**Date:**	2/22/2022
Analysis Year:	2022	**Checked By:**	Matt Stoutz
Analysis Period:	**AM Street Peak Hour**	**Date:**	3/2/2022

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				70	62	8
Retail				44	26	18
Restaurant				0		
Cinema/Entertainment				0		
Residential				30	7	23
Hotel				0		
All Other Land Uses[2]				0		
Total				144	95	49

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	0	0	0	0
Retail	2		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	144	95	49
Internal Capture Percentage	6%	4%	8%
External Vehicle-Trips[3]	136	91	45
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	3%	25%
Retail	8%	11%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	0%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Russell Street Development
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	62	62	1.00	8	8
Retail	1.00	26	26	1.00	18	18
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	7	7	1.00	23	23
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	5	0	0	0
Retail	5		2	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	5	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	0	0	0	0
Retail	2		0	0	0	0
Restaurant	9	2		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	4	0	0		0
Hotel	2	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	2	60	62	60	0	0
Retail	2	24	26	24	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	7	7	7	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	2	6	8	6	0	0
Retail	2	16	18	16	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	23	23	23	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Russell Street Development	**Organization:**	Tighe & Bond
Project Location:	Portsmouth, NH	**Performed By:**	Ryan Case
Scenario Description:		**Date:**	2/22/2022
Analysis Year:	2022	**Checked By:**	Matt Stoutz
Analysis Period:	**PM Street Peak Hour**	**Date:**	3/2/2022

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				66	11	55
Retail				122	61	61
Restaurant				0		
Cinema/Entertainment				0		
Residential				31	19	12
Hotel				0		
All Other Land Uses[2]				0		
Total				219	91	128

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	1	0
Retail	1		0	0	9	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	5	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	219	91	128
Internal Capture Percentage	19%	23%	16%
External Vehicle-Trips[3]	177	70	107
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	9%	11%
Retail	16%	16%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	53%	42%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Russell Street Development
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	11	11	1.00	55	55
Retail	1.00	61	61	1.00	61	61
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	19	19	1.00	12	12
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	2	0	1	0
Retail	1		18	2	16	3
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	5	3	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	1	0
Retail	3		0	0	9	0
Restaurant	3	31		0	3	0
Cinema/Entertainment	1	2	0		1	0
Residential	6	6	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	10	11	10	0	0
Retail	10	51	61	51	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	9	19	9	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	6	49	55	49	0	0
Retail	10	51	61	51	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	7	12	7	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

www.tighebond.com

100% Recyclable

29-5037-002
November 18, 2022

Peter Stith, AICP
Principal Planner
City of Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

Re: **Response to Traffic Peer Review Comments #3**
Proposed Mixed Use Development, Russell Street, Portsmouth, NH

Dear Mr. Stith:

Tighe & Bond has prepared this letter in response to peer review comments on the subject project received from TEC, Inc. (TEC) in a letter dated October 31, 2022. Since receiving a recommendation for approval from the Technical Advisory Committee (TAC) on November 1, 2022, Tighe & Bond has coordinated with Eric Eby, City Traffic Engineer, to address outstanding comments.

For ease of review, the comments are repeated herein in *italics*, followed by our response for each. Comment responses are provided herein for comments on the Traffic Impact Study (TIS); responses to site plan comments will be provided under separate cover.

Comment 9: *TEC Follow-up Comment: TEC recommends the installation of a MUTCD-compliant stop sign (R1-1) at the northerly end of the rear access aisle where it meets Green Street. The stop sign and the crosswalk-related signs noted below should be updated in the sign summary on Sheet C-503.*

Response: A MUTCD-compliant stop sign (R1-1) at the northerly end of the rear access aisle where it meets Green Street has been added to the Site Plan Sheet C-102.1.

Comment 22: *TEC Follow-up Comment: Based on discission with the City, TEC understands that construction of a raised crosswalk is not desirable. The Tighe & Bond written response is consistent with the City's preferred designed that the Applicant and the City discussed. However, the October 20, 2022 revised site plans continue to show a raised crosswalk (speed table) treatment across Deer Street, north side of Portwalk Place. The site plan should be revised to reflect the City-preferred at-grade crosswalk with striping and ADA- compliant ramps accompanying the Rectangular Rapid Flashing Beacons (RRFBs) with standard W11-2 florescent yellow-green signs, W16-7p arrow placards, and R10-25 pushbutton signs. The Applicant should review the style and color of the RRFB poles with DPW and show the electrical service location and the conduits and pullboxes serving the poles. The pole on the west side of Deer Street should be shifted closer to the crosswalk opening. The Applicant should also present options to channelize pedestrians within the sidewalk area toward the identified crosswalk. Otherwise, it may encourage uncontrolled crossing between queued vehicles.*

Response: The site plan has been revised to reflect the City-preferred at-grade crosswalk with striping and ADA compliant ramps with Rectangular Rapid Flashing Beacons (RRFBs) with standard W11-2 yellow signs, W16-7p arrow placards, and R10-25 pushbutton signs. In addition, Note #22 has been added to the Site Notes indicating that the RRFB pole style and color shall be approved by DPW prior to construction. The electrical service location, conduits, and pullboxes serving the poles are shown on the Utilities Plan. In addition, a large planter, historic light fixture and bike rack are provided along the curbline in front of Building 1. These site features will discourage uncontrolled crossing to/from the sidewalk on the east side of Portwalk Place and will channelize pedestrians toward this new crosswalk that connects to the sidewalk on the west side of Portwalk Place.

Comment 23: *TEC Follow-up Comment: TEC recommends that the Applicant copy the DPW on all related correspondence because this infrastructure lies within the City's right-of-way and can affect traffic operations at the adjacent municipal intersections. The location of the proposed sign cluster at the northerly end of the rear access aisle will need to be coordinated with the ultimate location of the Green Street sidewalk / railroad crossing treatment.*

Response: The Applicant has agreed to copy the DPW on all related correspondence with the railroad. This was also added as a condition on the TAC approval letter to the Planning Board.

Comment 24: *TEC Follow-up Comment: This written response is inconsistent with the updated site plan, which depicts a newly proposed fence along the property line, as suggested. However, the installation of a fence in this location without other site changes does not provide a practical buffer for snow storage or removal operations and will require extensive diligence to maintain the full operational width of the proposed 20-foot aisle and the integrity of the proposed fence.*

Response: The applicant acknowledges, and it is noted in the plans, that all snow will need to be hauled off site. Additionally, the applicant acknowledges that care will need to be taken when removing snow to avoid damaging the fence, and that any damage would need to be repaired.

Comment 25: *TEC Follow-up Comment: If introduction of a gate is not preferred, TEC recommends providing clearly visible signage to indicate "No Public Parking" along both ends of the driveway northerly driveway to deter public parking and unnecessary on-site conflicts. This will require consistent on-site monitoring and self-enforcement of the proposed parking supply.*

Response: Per coordination with the City Traffic Engineer a "No Public Parking" sign has been added to the shared driveway between Buildings 2 and 3. A detail has been added to the detail sheet.

Please contact us if you have any questions or comments on the responses above.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

CC: Eric Eby, City Traffic Engineer
Two International Group, LLC

J:\T\T5037 Two International Group\002 Russell Street Development\Report_Evaluation\Traffic Impact Study\Peer Review Comment Response 3\2022-11-09 Traffic Peer Review Response.docx

29-5037-002
September 22, 2022

Peter Stith, AICP
Principal Planner
City of Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

Re: **Response to Traffic Peer Review Comments**
Proposed Mixed Use Development, Russell Street, Portsmouth, NH

Dear Mr. Stith:

Tighe & Bond has prepared this letter in response to peer review comments on the subject project received from TEC, Inc. (TEC) in a letter dated August 29, 2022. For ease of review, remaining TEC comments are repeated herein in *italics*, followed by our response for each. Comment responses are provided herein for comments on the Traffic Impact Study (TIS); responses to site plan comments will be provided under separate cover.

Comment 9: *TEC Follow-up Comment: Noted. A signage and wayfinding plan was included within the latest site plan revision (7/21/2022). Pavement markings should also be considered along Maplewood Avenue and along the rear driveway.*

Response: Site Plan Sheet C-102.1 details proposed signage for the site's rear access drive area, for both vehicles and pedestrians/bikes. A band of different color pavers has been added to the rear drive to designate separate areas for vehicular and pedestrian/bike traffic.

Comment 11: *TEC Follow-up Comment: The Applicant should remove the following language from their proposed improvements, "Bi-directional bicycle lanes on Russell Street from Deer Street to Green Street" from Site Access section (Page 4-1) of the TIA. In addition, the Applicant should consider painting shared-lane marking (Sharrow) on Russell Street and Deer Street to alert drivers about presence of bicyclists.*

The rear driveway is envisioned to operate as an alley with shared and undefined use for all modes of transportation. TEC recommends providing striping or different color pavers to designate separate areas for vehicular traffic and those that may walk or bike.

Response: As noted in our prior response, bike lanes have been removed from the site plan. Sharrows have been added to the plans on Russell and Deer Street.

A band of different color pavers has been added to the rear drive to designate separate areas for vehicular and pedestrian/bike traffic.

Comment 12: *TEC Follow-up Comment: TEC recommends that the Applicant collect updated 2022 turning movements counts during weekday morning (7:00 AM to 9:00 AM), weekday evening (4:00 PM to 6:00 PM), and Saturday*

midday (11:00 AM to 1: 1:00 PM) peak periods at the intersection of Market Street at Russell Street in order to assist the City to estimate a fair-share contribution based on a projected net traffic volume increase under a 2022 baseline condition.

Response: The applicant does not feel additional counts are necessary. The City of Portsmouth collects traffic counts along Market Street at Nobles Island. When comparing historic data provided by the City, volumes from February 2020 to February 2022 reduced by 5.8%.

To assist the City in estimating a fair share contribution, we have prepared the enclosed "Market Street at Russell Street Traffic Volume Calculation". This was prepared to show the impact the development will have on the Market and Russell Street intersection in the 2035 Build Condition when adjusting the baseline condition to align with the historic Market Street traffic volumes provided by the City. As shown in the enclosed, there will be a 4.8% increase in traffic during the weekday morning peak and 3.7% increase in traffic during under the 2035 Build Condition.

Comment 13: *TEC Follow-up Comment: The Planning Board should consider a condition of approval to require the Applicant to a) submit an architectural plan depicting the location of on-site secure bicycle parking prior to issuance of a Building Permit and b) submit an annual report to document the TDM program activities for at least the first five years following initial site occupancy.*

Response: a) Adequate bike racks are shown on the site plan to meet the required number of bike storage spaces per the City's Zoning Ordinance. Additional bike storage areas are planned within the Building 2 parking area, although the exact area has not yet been determined.

b) The applicant agreed in the previous response to a TDM program that would include a welcome package outlining various alternative transportation options will be provided to residents and posted in a central location in each building lobby. We understand that the prior approval on this site had significant TDM reporting requirements as a condition of approval, however the proposed uses of that project were significantly more traffic and pedestrian intense than the current proposal. The prior approval included a major supermarket, conference center, and large public parking garage, where the current proposal has no public parking and office and residential uses. An enhanced TDM plan and reporting requirements would not provide any benefit to the City given the proposed traffic impact of the development.

Comment 16: TEC notes that COAST bus stops (Routes 13 and 43) are provided on either side of Russell Street in the vicinity of the Sheraton Hotel / Parking Lot Driveway. No provision for maintaining these bus stops is shown on the site plan. The Applicant should provide information regarding any discussions with COAST for removal of these stops.

TEC Follow-up Comment: This should be confirmed to ensure the location and number of on-street parking stalls along Russell Street.

Response: The proposed plan is to maintain the existing bus stops as they exist today. The existing bus stop on the inbound side of Russell Street is adjacent to the limo parking zone. This condition is maintained in the proposed condition with the reinstallation of the limo park zone and the COAST bus stop signage. The bus will be able to utilize the limo loading area as they do in the existing condition. On the outbound side of Russell Street, the existing bus stop signage is mounted to a light pole adjacent to the Sheraton driveway, with no dedicated loading area. The proposed plan includes the reinstallation of the COAST bus signage in the same location. Both inbound and outbound bus stop locations are being maintained in the proposed condition to operate as they do in the existing condition.

Comment 20: *TEC Follow-up Comment: The Applicant should provide a written description of how they will manage the puzzle lift and other tandem stalls according to the proposed unit mix.*

Response: The puzzle lifts will be dedicated for use by the hotel valet. Unit owner parking will be in the basement level parking lot and tandem spaces will be assigned to specific units as required by the City's Zoning Ordinance.

Comment 22: *Many pedestrians currently travel between Vaughan Street, the current surface parking lot and Portwalk Place in an uncontrolled fashion. The project will introduce a centrally located and landscaped gathering space between the buildings that nicely aligns with Portwalk Place. The project will likely increase the pedestrian trips in this area. Although TEC generally agree with the proposed layout, we recommend the following design enhancements:*

- *Construct a raised crosswalk/intersection with flush granite curbing on both sides of each crosswalk with a moderate vertical transition to enhance motor vehicle awareness of pedestrian activities;*
- *Provide underground conduit and pull boxes in appropriate locations to provide flexibility for the future Rectangular Rapid Flashing Beacon (RRFB), if warranted;*
- *A "DO NOT BLOCK INTERSECTION" sign (MUTCD designation, R10-7) on the Deer Street southbound approach before the crosswalks;*
- *To be compatible with MUTCD standards, the parking stall on the east side of the subject crosswalk may need to be removed or shifted to provide the minimum requirement of 20-feet spacing and install "No Parking Between Signs" adjacent to the proposed crossing on both sides; and*
- *Install fixed and/or removable ornamental bollards in areas where the sidewalk may be flush with the sidewalk area. TEC recommends that the striped crosswalks on each edge of the intersection be the focused locations for pedestrian crossings and where the ADA detectable warning devices should be located as they will line up with the existing sidewalks along Portwalk Place.*

Response: The applicant does not agree with revising this intersection to be a raised condition. The proposed design mirrors the existing crosswalk at the intersection of Hanover Street and Portwalk Place as previously requested by staff during this Site Review Process. Adding a raised crosswalk in this location will require additional drainage structures and which will conflict with existing utilities in this area. In addition, the slope down from a proposed table to the existing crosswalk on Portwalk Place will be too steep

and it will also require work on private property that the applicant does not control.

If safety is a concern, the applicant takes no issue with revising the design back to a single striped crosswalk from east side of the Portwalk Place as we originally proposed prior to City Staff's request to mirror the Portwalk Place and Hanover Street intersection crosswalk. This would bring the crosswalk further from Maplewood and provide more time for drivers to see the crosswalk once they turn the corner.

Comment 23: *The Applicant should provide additional design details for the proposed train signal relocation on the east side of Maplewood Avenue. The City should require submission of a detailed off-site improvement plan for this area depicting the location of all existing and relocated equipment, signs, and pavement markings necessary to satisfy MUTCD requirements and guidance. This will require coordination with the railroad owner for the crossing requirements and because certain elements of work are proposed on their property and not within the existing City right-of-way. This design of the crossing upgrade should also consider accessibility requirements and a pedestrian gate to control pedestrian movements.*

Response: The applicant acknowledges that coordination with the railroad will be required prior to construction for the relocation of the signals and for the pedestrian crossing requested by the City on Green Street.

Comment 24: *TEC recommend that the Applicant provide an offset between the railroad property line and the proposed driveways and other site features because it does not provide a reasonable level of buffer for motor vehicle traffic and the potential for snowbanks. Furthermore, the Applicant should consider the installation of fencing along its westerly property boundary with the railroad to deter uncontrolled pedestrian movements across the rail corridor between the project site and Vaughan Street. This may require realignment and adjustment to the rear (westerly) driveway and coordination with railroad owner.*

Response: Adding a buffer along the railroad is not feasible due to the requirements of the fire department for a 20' wide access lane along the rear of the buildings. Fencing was considered along the railroad to deter pedestrian crossings, however it was not pursued at the direction of the Historic District Commission. Pedestrian wayfinding signage is proposed for the end of the Mews community space to direct pedestrians to the legal crossings.

Comment 25: *The Applicant should clarify where the visitor parking spaces are located and how they are going to be managed. Given the complexity of the parking operations within the first floor parking area, including its puzzle vehicle lift system, it may not be desirable for visitors or the general public to access the upper parking area from Russell Street unless controlled by a gate system or staff. The introduction of a gate would also control undesirable parking lot circulation for those unfamiliar with the property. The Applicant should provide details for the vehicle wayfinding, parking signs, and parking controls, including a plan to depict the specific location of any visitor stalls.*

Response: Visitor parking will be located in the non-puzzle lift spaces on the first floor parking area. Residents of the buildings will be responsible for providing access to the parking area for their visitors. There will be no public parking

on site. A gate is not preferred by the applicant as it will act as a visual deterrent to pedestrians passing through the site.

Comment 26: *The Applicant should coordinate with railroad owner for any permanent easements associated with the construction of the proposed sidewalk and railroad crossing along Green Street near the site's exit-only driveway. The proposed improvements appear to be located outside the City's right-of-way. This area is not currently compliant with accessibility guidelines.*

Response: The applicant acknowledges that coordination with the railroad will be required prior to construction.

Please contact us if you have any questions or comments on the responses above.

Sincerely,

TIGHE & BOND, INC.

Neil Hansen, PE
Project Manager

Enclosures: Market Street at Russell Street Traffic Volume Calculation

Copy: Two International Group, LLC

J:\T\T5037 Two International Group\002 Russell Street Development\Report_Evaluation\Traffic Impact Study\Peer Review Comment Response 2\2022-09-22 Traffic Peer Review Response.docx

Market Street at Russell Street Traffic Volume Calculation

Entering Intersection Traffic Volumes based on 2035 Future Condition Traffic Volumes

Weekday Morning Peak Hour						Weekday Afternoon Peak Hour					
2035 No Build	2035 Build	% Increase					2035 No Build	2035 Build	% Increase		
142	167					EBL	422	483			
7	7					EBR	8	8			
0	0					NBL	0	0			
173	173					NBT	541	541			
311	334					SBR	523	536			
306	306					SBT	396	396			
939	987	**5.1%**	increase of	48			1890	1964	**3.9%**	increase of	74

Traffic Volume Calculation based on Market St City Volumes Comparison

2020	10,780	Tues to Thurs Average Volume (Week of Feb 23) at Nobles Island
2022	10,187	Tues to Thurs Average Volume (Week of Feb 20) at Nobles Island
% Change	5.8%	

Increased No Build based on 5.5% avg daily volume increase					Increased No Build based on 5.5% avg daily volume increase				
993	1041	**4.8%**	increase of	48	2000	2074	**3.7%**	increase of	74

29-5037-002
August 2, 2022

Peter Stith, AICP
Principal Planner
City of Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

Re: **Response to Traffic Peer Review Comments**
Proposed Mixed Use Development, Russell Street, Portsmouth, NH

Dear Mr. Stith:

Tighe & Bond has prepared this letter in response to peer review comments on the subject project received from TEC, Inc. (TEC) in a letter dated July 8, 2022. For ease of review, TEC comments are repeated herein in *italics*, followed by our response for each. Comment responses are provided herein for comments on the Traffic Impact Study (TIS); responses to site plan comments will be provided under separate cover.

Comment 1: *The Traffic Impact Study (TIS) presents a study area including eight intersections in the vicinity of the site. Per City request, the scope of the study should be expanded to include the intersections of Maplewood Avenue / Vaughan Street and Maplewood Avenue / Raynes Avenue as traffic patterns will be changing to create one-way travel on these roadways.*

Response: Based on previous correspondence between Tighe & Bond and the City, a response to this comment is not required. The study area intersections were defined in coordination with the City and input from TEC prior to the start of the study. Additionally, the conversion of Vaughan Street and Raynes Avenue to one-way traffic flow was previously studied during the Raynes Avenue development traffic study. This analysis was considered conservative, as the background traffic volumes utilized included the previously approved Harbor Corp development traffic volumes, which were higher than the estimated Russell Street development traffic volumes.

Comment 2: *Traffic counts utilized within the TIS for the 2025 and 2035 No Build conditions were obtained from historic counts in January 2019 and additional new turning movement counts (TMCs) and automatic traffic recorder (ATR) data collected in February 2022. The January 2019 and February 2022 traffic volumes were increased 23.0 and 18.0 percent, respectively, to a seasonal peak-month condition. The 2022 counts were validated by comparing the new 2022 ATR counts conducted along Maplewood Avenue east of Raynes Avenue with historic counts conducted by the New Hampshire Department of Transportation (NHDOT) in 2017 in the same location. The comparison shows that the counted 2022 volumes are significantly higher (14% during weekday morning peak hour and 16 percent during weekday evening peak hour) than the projected 2022 volumes from the 2017 counts. TEC has no objection of using either 2019 or 2022 traffic volumes to project the 2025 and 2035 No Build conditions; however, the applicant should confirm that the 2019 turning movement*

count volumes were upwardly adjusted to a 2022 baseline condition prior to calculating the No Build volumes.

Response: The 2019 weekday afternoon turning movement counts were upwardly adjusted by a one percent annual growth rate from 2019 to 2022 and balanced as necessary to calculate the 2022 Existing traffic volumes.

Comment 3: *TEC requests that Tighe & Bond provide reference traffic data utilized for the intersection of Russell Street at Green Street.*

Response: The Russell Street at Green Street intersection was not initially included in the study area, but was added following a building layout revision that added a proposed site driveway exit on Green Street. To facilitate analysis of the intersection, 2019 turning movement count (TMC) data were utilized. 2019 data were collected during the weekday afternoon peak hour only; however, because there are no driveways located between Market Street and the Sheraton Driveway, mainline traffic volumes for the weekday morning peak hour were derived from the adjacent TMC. Side street traffic volumes were conservatively estimated based on the proportion of side street to mainline traffic volumes during the afternoon peak hour. Additionally, this intersection and the adjacent intersections experience acceptable traffic operations of LOS C or better on all approaches during the weekday morning peak hour. The weekday afternoon peak hour TMC are attached.

Comment 4: *NHDOT guidance requires the study of "Opening Year" and "Horizon" (Opening Year plus 10 years) conditions. The TIS utilizes 2025 as the Opening Year and 2035 as the Horizon Year conditions. The future year volume projections include an annual traffic volume growth adjustment factor of 1.0 percent per year, in addition to anticipated traffic volumes associated with two approved developments by others that are pending construction in the vicinity of the study area. TEC concurs with this methodology.*

Response: No response required.

Comment 5: *The TIS uses data published in the latest industry standard Institute of Transportation Engineers (ITE) publication, Trip Generation, 11th Edition to estimate the traffic generated by the proposed development. The TIS uses average rates found under Land Use Code (LUC) 221 – Multi-Family Housing (Mid-Rise) for the apartment units, LUC 710 – General Office Building, and LUC 822 – Strip Retail Plaza Center for the commercial areas of the site. The existing traffic volumes entering and exiting the existing Sheraton Public Parking Lot driveway from Russell Street were not deducted from the trip generation estimate due to their minimal impact. TEC concurs with this methodology.*

Response: No response required.

Comment 6: *An internal capture rate was applied between the land uses on the site. This accounts for shared trips within the site, such as hotel guests or residents patronizing the retail land uses. In accordance with the National Cooperative Highway Research Program (NCHRP) Report 684, an internal capture rate*

of 4% for the entering trips and 23% for the exiting vehicles was applied. TEC concurs that this is appropriate for this mixed-use development.

Response: No response required.

Comment 7: *The vehicular traffic generated by the proposed project was distributed onto the adjacent roadway system based upon prior traffic studies, observed travel patterns, and the proposed parking layout. TEC concurs with using nearby commercial travel patterns for retail use. Tighe & Bond should discuss how the projected distribution for the apartments and office building differs, if at all, from available Journey-to-Work and Journey-to-Home data published by the US Census Bureau for persons residing and working in the City of Portsmouth. This form of trip distribution is more consistent with industry standards for residential and office developments.*

Response: The proposed residential and office use trip distributions were generally based on the previously approved Raynes Avenue, 111 Maplewood Avenue, and Deer Street Garage developments. The trip distribution from the previous studies were based on U.S. Census Journey-to-Work and Journey-to-Home data. The trip distribution to and from I-95 and the U.S. Route 1 Bypass was adjusted from the previous studies based on the proposed parking level layout and proposed future one-way conversion of Raynes Avenue. Site traffic destined to and from I-95 and the U.S. Route 1 Bypass from the lower-level parking is expected to enter the site from the northwest via Maplewood Avenue and exit via Market Street to the northwest. This approach assumes a large proportion of site traffic travels to the Market Street at Russell Street intersection which provides a conservative analysis to fully assess potential project impacts at this intersection.

Comment 8: *TEC concurs with the use of the of the current industry standard Highway Capacity Manual 6th Edition methodology.*

Response: No response required.

Comment 9: *The proposed entrance driveway onto Maplewood Avenue is less than 100 feet from the intersection of Maplewood Avenue with Deer Street and approximately 60 feet from the intersection of Maplewood Avenue with Vaughan Street, introducing another conflict point in this congested area. The southbound approach of Maplewood Avenue at Deer Street is projected to have significant queue lengths, blocking the driveway access for significant portions of the day. TEC recommends considering restricting this driveway to emergency vehicles only and directing project traffic to the new one-way eastbound Vaughan Street and allowing full movement access to the site driveway onto Green Street.*

Response: The proposed site driveway on Maplewood Avenue provides entrance-only access to the lower-level parking deck. This proposed driveway location was approved by the Planning Board under a previous development approval. Additionally, providing a single full-access driveway on Green Street would require revisions to the emergency access driveway to accommodate two-way vehicular flow in an area where limited width is available due to the adjacent railroad tracks. Such revision would also degrade proposed

emergency access by eliminating the dedicated access along the northern edge of the parcel.

Comment 10: *The comments above may result in modifications to the results of the capacity and queue analysis and therefore TEC reserves the right to provide additional comments and improvement recommendations upon completion of the peer review comment responses.*

Response: Noted. No response required.

Comment 11: *The TIS indicates that several geometric roadway improvements to Deer Street and Russell Street, including curb extensions, sidewalk reconstruction, crosswalks, realignment of Russell Street at Deer Street, a pedestrian crosswalk at Portwalk Place and general streetscape improvements. TEC notes that bi-directional bicycle lanes on Russell Street from Deer Street to Green Street are mentioned in the TIS but are not shown on the site plans. The Applicant should discuss the viability of these bicycle lanes.*

Response: Bi-directional bicycle lanes are not viable due to available right-of-way constraints and will not be provided on Russell Street as part of the proposed roadway improvements.

Comment 12: *While the TIS indicates that the general impact of the project on the control delay, queue, and level of service at the study area intersections is anticipated to be nominal, the Applicant should commit to implement the following off-site mitigation:*

- *Coordinate with the City to modify the traffic signal timings at Maplewood Avenue / Deer Street and Maplewood Avenue / Hanover Street upon 80% occupation of the office and retail spaces.*
- *Provide contributory funds toward the design or construction of the Market Street / Russell Street intersection to function as a roundabout.*

Response: The Applicant will work with the City to implement traffic signal timing improvements if future traffic volumes are realized. Additionally, the Applicant will also work with the City to determine a "fair share" contribution for the advancement of the proposed Market Street at Russell Street roundabout.

Comment 13: *The Applicant should commit to implementation of a formal Transportation Demand Management (TDM) program that is inclusive of the following elements:*

- *A transportation coordinator should be assigned to coordinate the TDM program for residents and employees.*
- *Information regarding public transportation services, maps, schedules, and fare information should be posted in a central location and/or otherwise be made available to residents and employees.*
- *A "welcome packet" should be provided to new residents and employees detailing available public transportation services, bicycle and walking alternatives, and other commuting options.*

- *Work-at-home workspaces should be included within the residential areas of the project and may take the form of meeting space and a business office.*
- *Provide secure, weather protected, long-term bicycle parking at designated locations within the site.*

Response: The Applicant has committed to implementing a TDM program to include the following:

- A welcome package outlining various alternative transportation options will be provided to tenants and posted in a central location in each building lobby.
- Bicycle storage areas will be provided on site.

Work-at-home spaces such as meeting space or business office will not be provided as part of the development. The mixed-use nature of the development provides potential tenants an opportunity to live and work in close proximity which may limit vehicular trips. The various nearby mixed-use developments also provide live/ work arrangements for residents or office employees of the proposed development.

Please contact us if you have any questions or comments on the responses above.

Sincerely,

TIGHE & BOND, INC.

Neil Hansen, PE
Project Manager

Enclosures: 2019 Weekday Afternoon Turning Movement Counts

Copy: Two International Group, LLC

J:\T\T5037 Two International Group\002 Russell Street Development\Report_Evaluation\Traffic Impact Study\Peer Review Comment Response 1\2022-07-28 Traffic Peer Review Response.docx

PDI File #: **196718 I**
Location: **N: Russell Street S: Russell Street**
Location: **W: Green Street**
City, State: **Portsmouth, NH**
Client: **Tighe & Bond/ M. Santos**
Site Code: **200076019**
Count Date: **Thursday, January 31, 2019**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Cars and Heavy Vehicles (Combined)

	Russell Street				Russell Street				Green Street				
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
4:00 PM	2	46	0	48	59	2	0	61	1	9	0	10	119
4:15 PM	8	46	0	54	51	1	0	52	2	4	0	6	112
4:30 PM	4	55	0	59	51	1	0	52	3	9	0	12	123
4:45 PM	4	55	0	59	47	2	0	49	2	7	0	9	117
Total	18	202	0	220	208	6	0	214	8	29	0	37	471
5:00 PM	5	76	0	81	70	1	0	71	3	10	0	13	165
5:15 PM	2	64	0	66	58	1	0	59	0	5	0	5	130
5:30 PM	5	93	0	98	60	1	0	61	1	4	0	5	164
5:45 PM	11	73	0	84	48	1	0	49	1	6	0	7	140
Total	23	306	0	329	236	4	0	240	5	25	0	30	599
Grand Total	41	508	0	549	444	10	0	454	13	54	0	67	1070
Approach %	7.5	92.5	0.0		97.8	2.2	0.0		19.4	80.6	0.0		
Total %	3.8	47.5	0.0	51.3	41.5	0.9	0.0	42.4	1.2	5.0	0.0	6.3	
Exiting Leg Total				498				521				51	1070
Cars	41	499	0	540	437	10	0	447	13	54	0	67	1054
% Cars	100.0	98.2	0.0	98.4	98.4	100.0	0.0	98.5	100.0	100.0	0.0	100.0	98.5
Exiting Leg Total				491				512				51	1054
Heavy Vehicles	0	9	0	9	7	0	0	7	0	0	0	0	16
% Heavy Vehicles	0.0	1.8	0.0	1.6	1.6	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.5
Exiting Leg Total				7				9				0	16

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Russell Street				Russell Street				Green Street				
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
5:00 PM	5	76	0	81	70	1	0	71	3	10	0	13	165
5:15 PM	2	64	0	66	58	1	0	59	0	5	0	5	130
5:30 PM	5	93	0	98	60	1	0	61	1	4	0	5	164
5:45 PM	11	73	0	84	48	1	0	49	1	6	0	7	140
Total Volume	23	306	0	329	236	4	0	240	5	25	0	30	599
% Approach Total	7.0	93.0	0.0		98.3	1.7	0.0		16.7	83.3	0.0		
PHF	0.523	0.823	0.000	0.839	0.843	1.000	0.000	0.845	0.417	0.625	0.000	0.577	0.908
Cars	23	301	0	324	232	4	0	236	5	25	0	30	590
Cars %	100.0	98.4	0.0	98.5	98.3	100.0	0.0	98.3	100.0	100.0	0.0	100.0	98.5
Heavy Vehicles	0	5	0	5	4	0	0	4	0	0	0	0	9
Heavy Vehicles %	0.0	1.6	0.0	1.5	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.5
Cars Enter Leg	23	301	0	324	232	4	0	236	5	25	0	30	590
Heavy Enter Leg	0	5	0	5	4	0	0	4	0	0	0	0	9
Total Entering Leg	23	306	0	329	236	4	0	240	5	25	0	30	599
Cars Exiting Leg				257				306				27	590
Heavy Exiting Leg				4				5				0	9
Total Exiting Leg				261				311				27	599

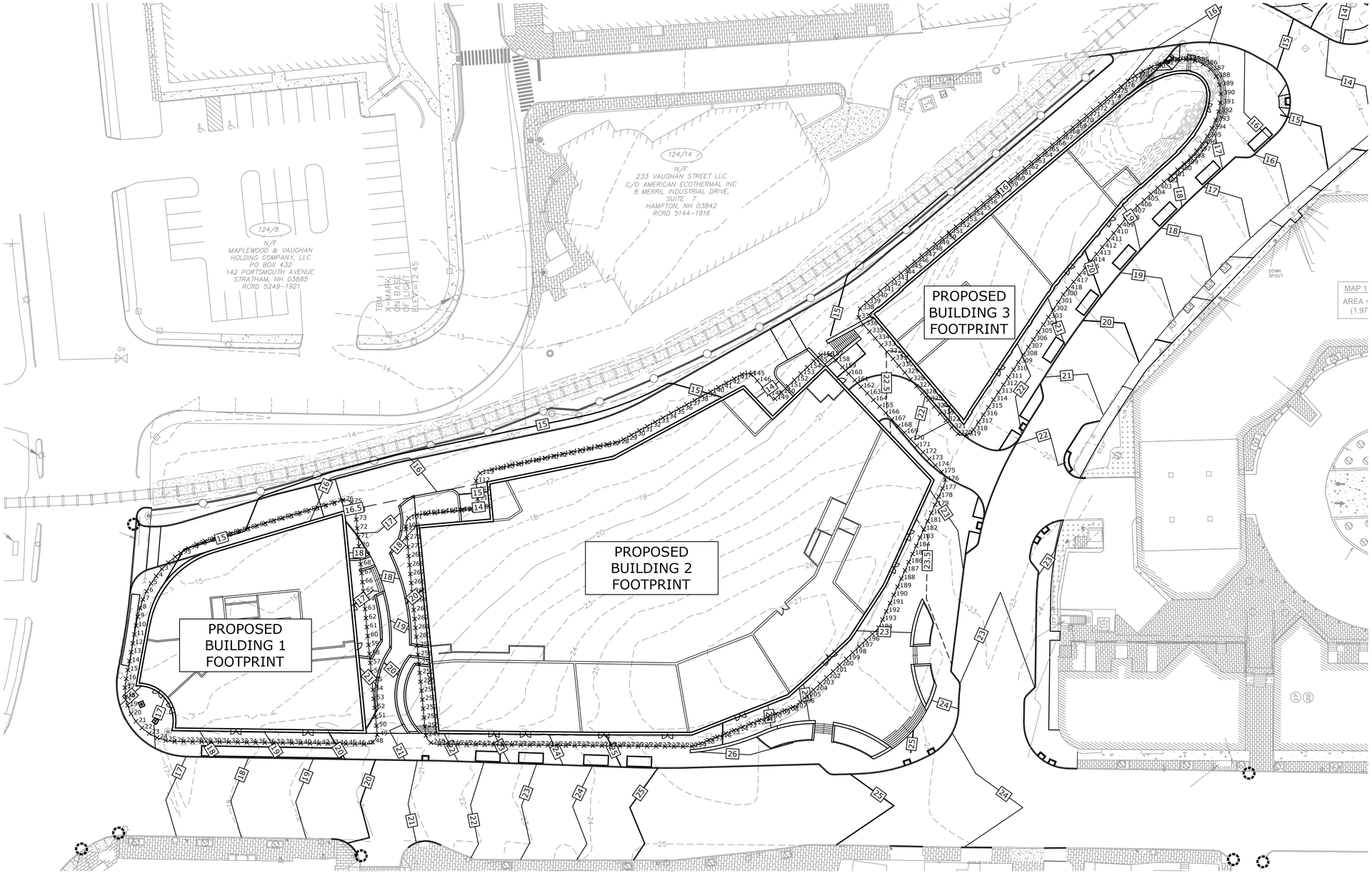
BUILDING 1 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
17.19'	77.19'	74.16'	60.00'	56.97'

BUILDING 2 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
20.38'	80.36'	80.38'	60.00'	60.00'

BUILDING 3 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
18.71'	78.71'	78.64'	60.00'	59.93'

NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

GRADE PLANE EXHIBIT



N

0 30' 60'

GRAPHIC SCALE

Tighe&Bond

November 23, 2022
T5037-002-C-DSGN.dwg

Last Save Date: November 21, 2022 4:08 PM By: CKRZCUIK
Plot Date: Tuesday, November 22, 2022 Plotted By: Colter Krzcuk
Plot File Location: J:\T\T5037 Pro International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DSGN.dwg Layout Tab: Grade Plane

NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

COMMUNITY SPACE EXHIBIT

PROPOSED COMMUNITY SPACE:

	REQUIRED	PROVIDED
WIDE SIDEWALK COMMUNITY SPACE		7,140 SF
PEDESTRIAN ALLEY COMMUNITY SPACE		21,691 SF
PARK AREA COMMUNITY SPACE		9,765 SF
TOTAL COMMUNITY SPACE AREA	25,221 SF	38,596 SF

CITY RIGHT OF WAY IMPROVEMENTS (NOT INCLUDED IN COMMUNITY SPACE CALCULATION):

PUBLIC REALM IMPROVEMENT WITHIN CITY R.O.W.	22,353 SF

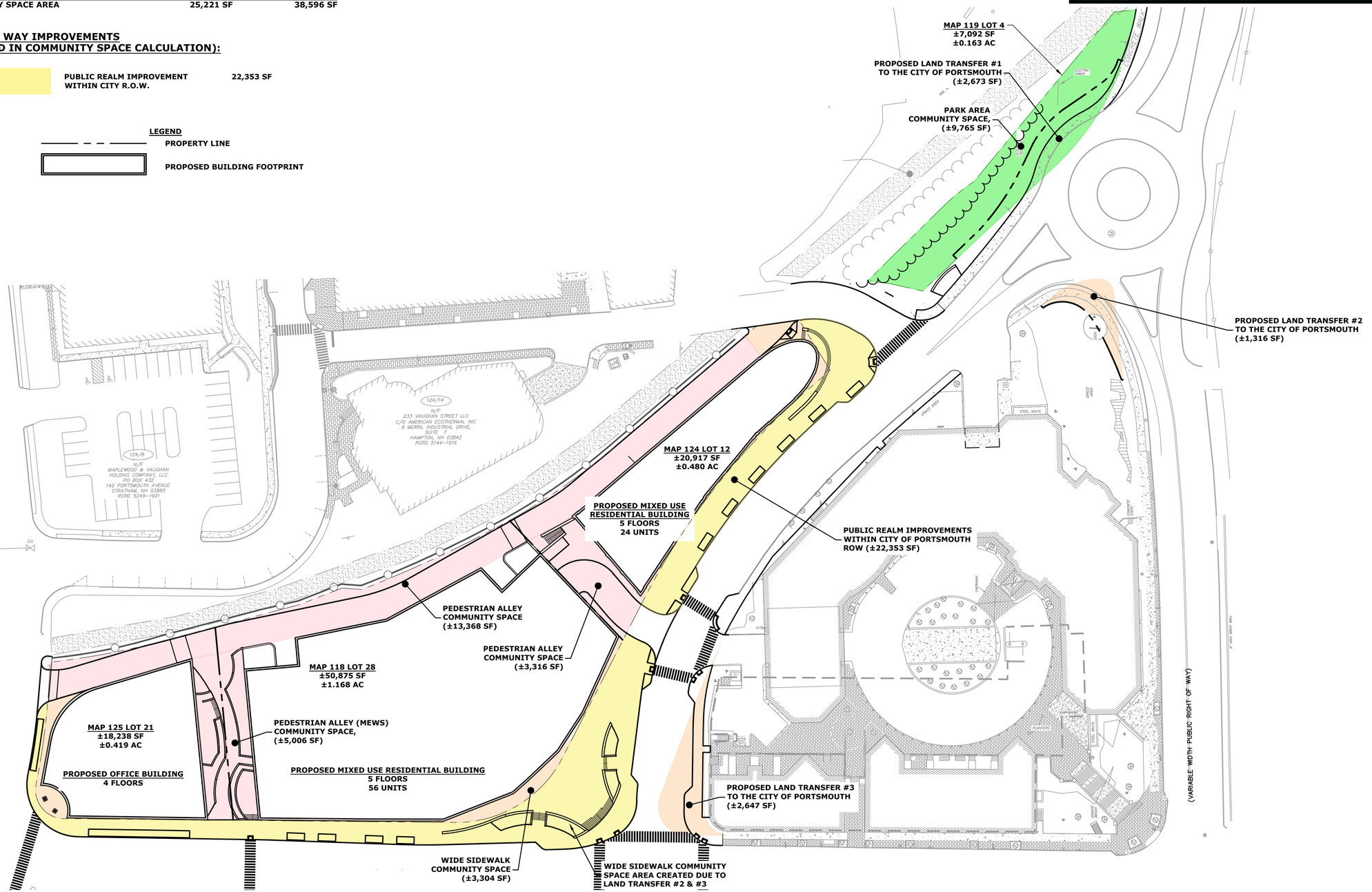
LEGEND

PROPERTY LINE

PROPOSED BUILDING FOOTPRINT

COMMUNITY SPACE:

	REQUIRED	PROPOSED
MAP 125 LOT 21		
DEVELOPMENT LOT AREA: 18,237 SF	3,647 SF, 20%	6,273 SF, 34.4%
MAP 118 LOT 28		
DEVELOPMENT LOT AREA: 50,875 SF	15,263 SF, 30%	
OFFSITE COMMUNITY SPACE AREA (MAP 119 LOT 4): 7,092 SF	2,128 SF, 30%	
MAP 118 LOT 28 TOTAL	17,391 SF, 30%	23,420 SF, 40.4%
MAP 124 LOT 12		
DEVELOPMENT LOT AREA: 20,917 SF	4,183 SF, 20%	9,002 SF, 43.0%
TOTALS	25,221 SF	38,695 SF, 39.8%



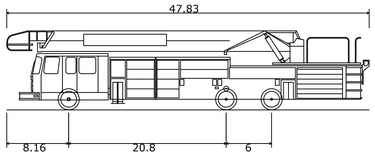
Tighe&Bond

November 23, 2022
T5037-002-C-DSGN.dwg

Last Save Date: November 21, 2022 4:08 PM By: CKRZCUIK
Plot Date: Tuesday, November 22, 2022 Plotted By: Colter Krzcuik
Plot File Location: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DSGN.dwg Layout Tab: COMM

NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

FIRE TRUCK TURNING EXHIBIT

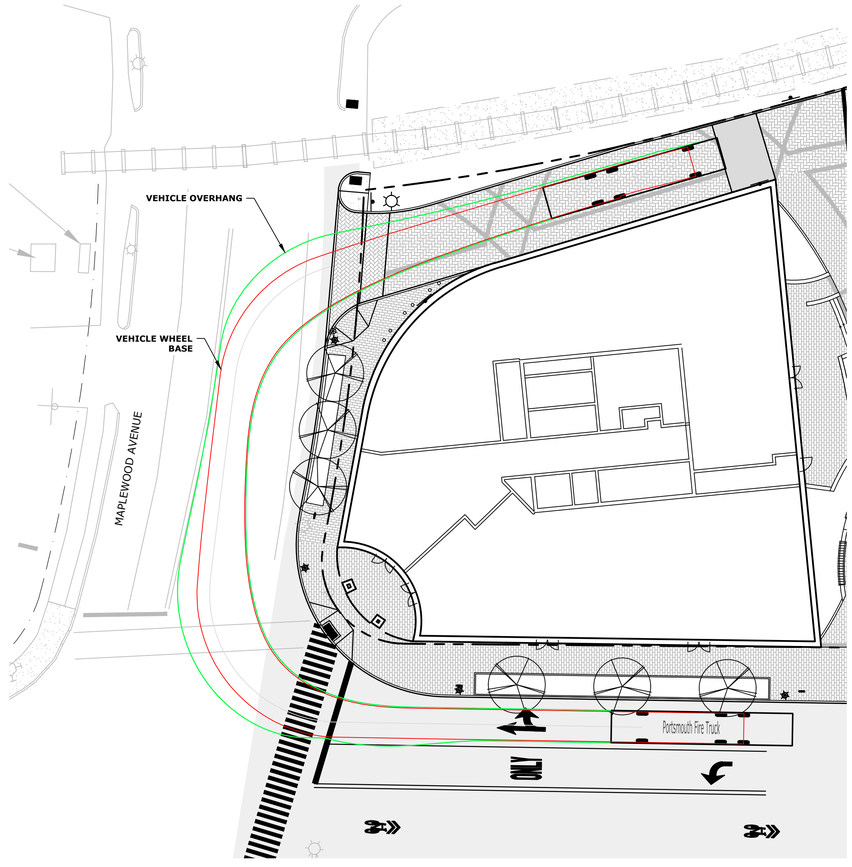


Portsmouth Fire Truck	
Overall Length	47.830ft
Overall Width	8.500ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	38.00°

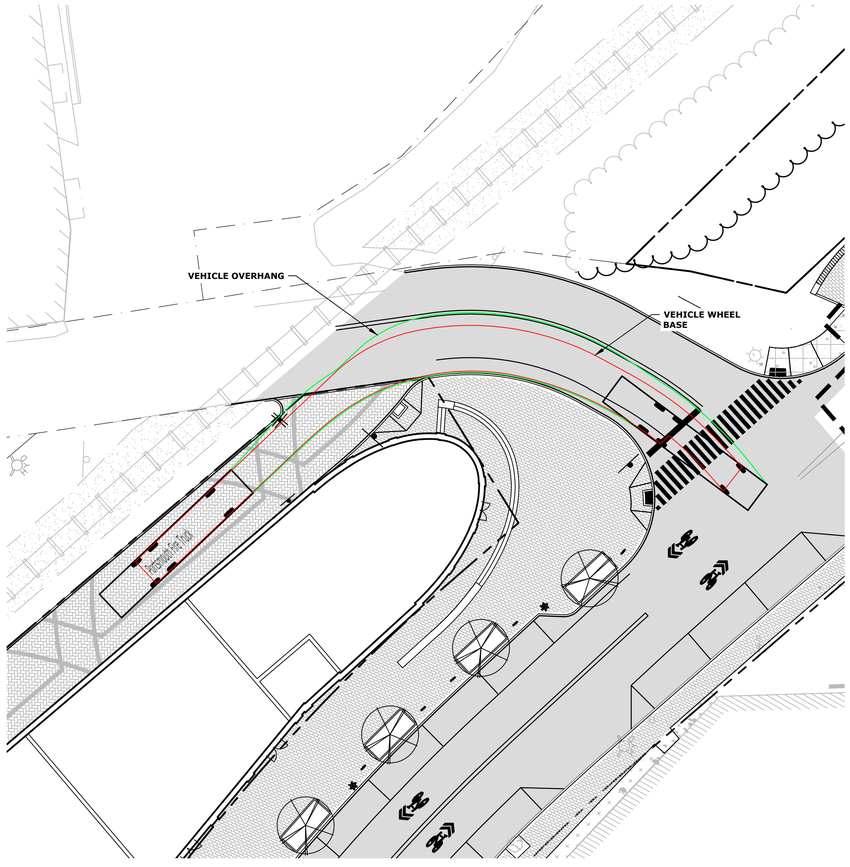
LEGEND

VEHICLE WHEEL BASE

VEHICLE OVERHANG



MAPLEWOOD AVENUE ENTRANCE



GREEN STREET EXIT

N

0 20' 40'

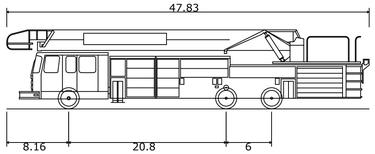
GRAPHIC SCALE

Tighe&Bond

November 23, 2022
T5037-002-C-DSGN.dwg

NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

FIRE TRUCK TURNING EXHIBIT

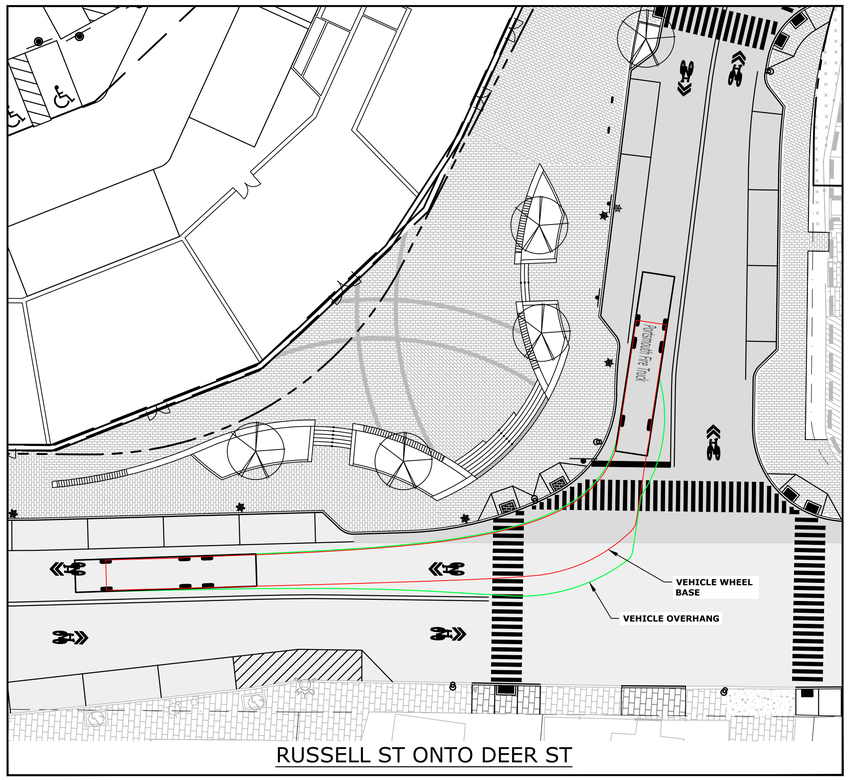


Portsmouth Fire Truck	
Overall Length	47.830ft
Overall Width	8.500ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	38.00°

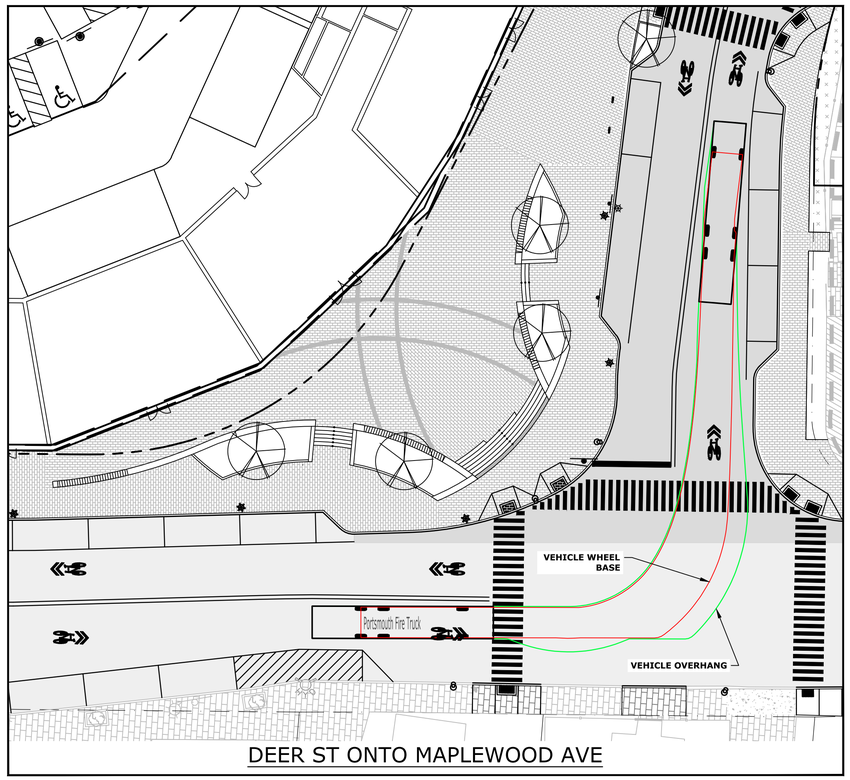
LEGEND

VEHICLE WHEEL BASE

VEHICLE OVERHANG



RUSSELL ST ONTO DEER ST



DEER ST ONTO MAPLEWOOD AVE

0 20' 40'

GRAPHIC SCALE

Tighe&Bond

November 23, 2022
T5037-002-C-DSGN.dwg

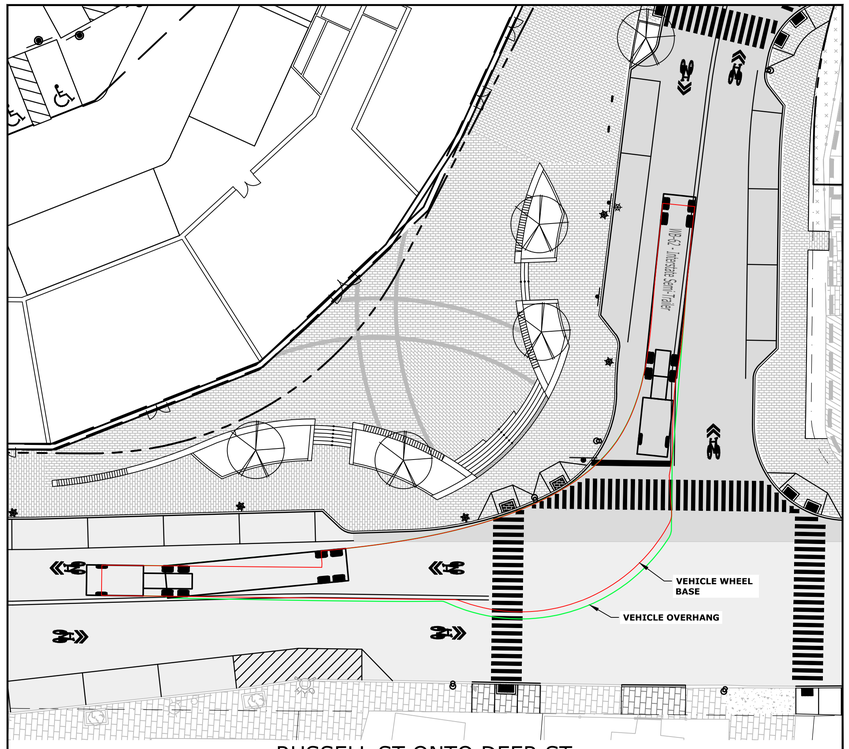
NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

TRACTOR TRAILER TURNING EXHIBIT

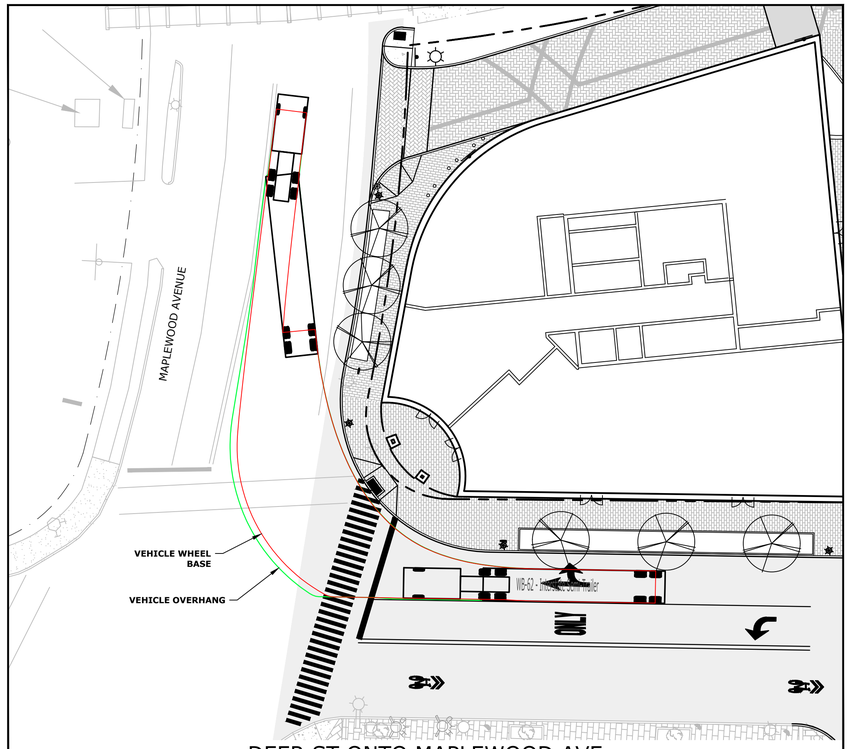
LEGEND

VEHICLE WHEEL BASE

VEHICLE OVERHANG



RUSSELL ST ONTO DEER ST



DEER ST ONTO MAPLEWOOD AVE

N

0 20' 40'

GRAPHIC SCALE

Tighe&Bond

November 23, 2022
T5037-002-C-DSGN.dwg

NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

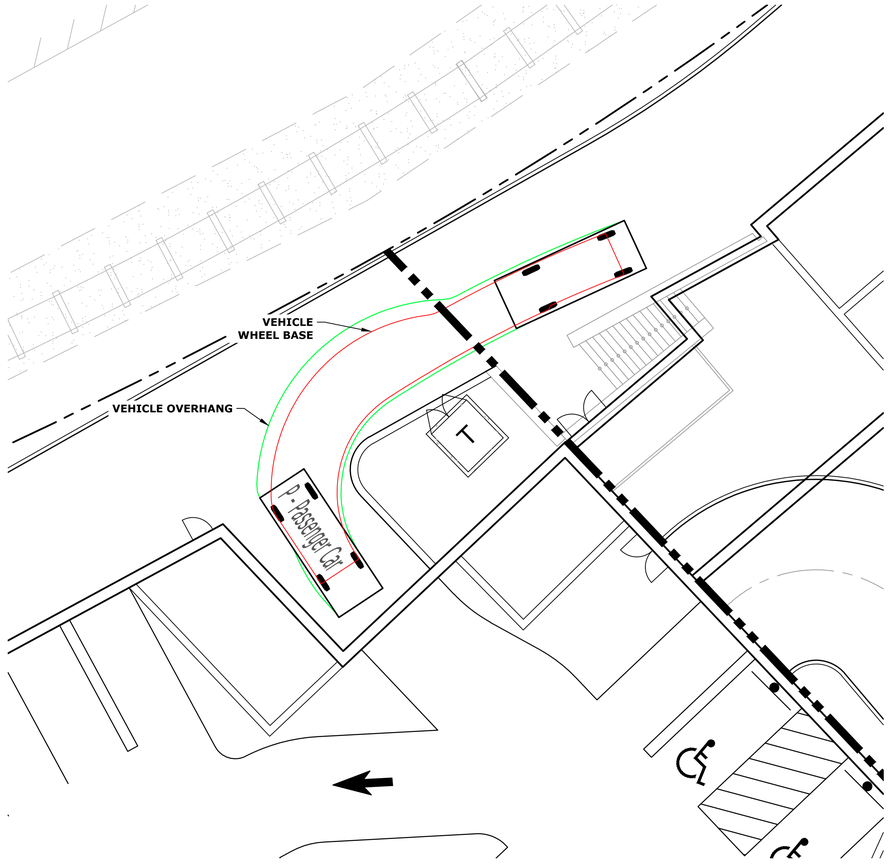
PASSENGER VEHICLE TURNING EXHIBIT

LEGEND

VEHICLE WHEEL BASE

VEHICLE OVERHANG

VEHICLE ENTRANCE



VEHICLE EXIT

N

0 10' 20'

GRAPHIC SCALE

Tighe&Bond

September 22, 2022
T5037-002-C-DSGN.dwg

Last Save Date: September 22, 2022 11:15 AM By: CKRZCUJK
Plot Date: Thursday, September 22, 2022 Plotted By: Colter Krzcuik
T&B File Location: J:\T\T5037 Two Internationl Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DSGN.dwg Layout Tab: Pedestrian Turning

EVERSOURCE ENERGY

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

May 23, 2022

Neil Hansen, PE
Tighe & Bond, Inc.
177 Corporate Drive
Portsmouth, NH 03801

Dear Neil:

I am responding to your request to confirm the availability of electric service for the proposed North End Mixed Use Development project being constructed for/by Port Harbor Land, LLC.

The proposed project consists of 3 separate buildings: a 4-story building with approximately 44,325 s/f of retail/office space, a 5-story building with 60 residential units approximately 10,500 s/f of retail/office space at the ground level and parking below grade, and a 5-story building with 24 residential units approximately 8,100 s/f of retail/office space at the ground level. The proposed development will be constructed at the corner of Russell Street and Deer Street in Portsmouth, NH.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new buildings. The proposed building services will be fed from three loop fed pad mounted transformers as depicted on utility plan C-104. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Utilities Plan C-104" dated 05/24/2022, shows transformers, manholes, and duct bank locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

Unitil
Northern Utilities, Inc.

April 19th, 2022

Neil Hansen, PE
Project Engineer
Tighe & Bond
177 Corporate Drive, Portsmouth, NH, 03801

Natural Gas to 2 Russell Street Project in Portsmouth, NH

Hi Neil,

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for natural gas service:

Unitil hereby confirms that natural gas is available for the proposed mixed-use development at 2 Russell Street in Portsmouth, NH.

If you have any questions, please contact me at 603-534-2379.

Sincerely,

Dave MacLean
Senior Business Development Rep
Unitil
T 603.294.5261 **M** 603.534.2379 **F** 603.294.5264
Email macleand@unitil.com

GREEN BUILDING STATEMENT

RUSSELL STREET
004979.00

RUSSELL STREET
DEVELOPMENT
PORTSMOUTH, NH
03801

05/23/22

ARCHITECTURE | PLANNING
INTERIOR DESIGN | VDC
BRANDED ENVIRONMENTS

NEW YORK
54 W 21ST ST, SUITE 1201
NEW YORK, NY 10010

BOSTON
200 HIGH ST, FLOOR 2
BOSTON, MA 02110

SGA-ARCH.COM
857.300.2610

GREEN BUILDING STATEMENT

2 RUSSELL STREET, PORTSMOUTH, NH

The development at 2 Russell Street is a combination of three buildings with varying uses. Building 1 will accommodate office use, while Building 2 and 3 will provide residential units with an active, ground floor retail component. Each building is being designed to meet or exceed the current energy code requirements. An energy model will be developed and a tabular analysis of the envelope thermal performance will be submitted along with the building permit application.

New Hampshire is currently operating under the 2015 International Energy Conservation Code with amendments. The design of each of the new buildings will be constructed with best practices and will be designed to meet or exceed these standards where possible.

- **Foundation System:** Below-grade foundation walls and/or slabs on grade will include continuous extruded polystyrene (XPS) insulation (R-5 per inch).
- **Exterior Walls:** Exterior opaque wall assemblies will consist of a back-up wall construction consisting of either concrete masonry units (CMU's) or exterior sheathing on cold formed metal framing, continuous waterproofing and air barrier membrane, continuous mineral wool (R-4.3 per inch) insulation, and rainscreen cladding or veneer (e.g., metal panel or brick).
- **Exterior Windows:** Exterior fenestration, including fixed and operable windows and storefronts, will consist of aluminum-framed, thermally-broken glazing systems with insulating glass unit (IGU) infill including low emissivity (low e) coating. Systems may either be unitized or stick-built or a combination of both.
- **Roofing system:** will include two primary assembly configurations: Protected membrane roofing (PMR) systems at occupied terraces and conventional (aka "built-up") roofing systems at unoccupied (e.g., mechanical roofs) and bulkheads. PMR consists of roofing membrane applied to structural concrete slabs, drainage board, minimum 60 psi extruded polystyrene (XPS) or other roofing insulation, with precast concrete pavers on pedestals or landscape overburden acting as ballast. Conventional roofing systems will consist of tapered insulation (either polyisocyanurate or expanded polystyrene), roofing cover board, and roofing membrane on cover board. For both systems, roofing membrane material to be 2-ply SBS modified bitumen (or equivalent) with cold, fluid-applied PMMA flashings.

GREEN BUILDING STATEMENT

RUSSELL STREET
004979.00

RUSSELL STREET
DEVELOPMENT
PORTSMOUTH, NH
03801

05/23/22

ARCHITECTURE | PLANNING
INTERIOR DESIGN | VDC
BRANDED ENVIRONMENTS

NEW YORK
54 W 21ST ST, SUITE 1201
NEW YORK, NY 10010

BOSTON
200 HIGH ST, FLOOR 2
BOSTON, MA 02110

SGA-ARCH.COM
857.300.2610

- **HVAC System**: Condominiums and Office spaces will be served by high-efficiency, air-cooled, variable refrigerant flow heat pump systems. Ventilation will be provided by high-efficiency, air-cooled DX, and dedicated outdoor air units with heat recovery wheels, which will provide outdoor air to Condominium Units, Office Floors, and common spaces. Toilet exhaust will be the medium for heat recovery.
- **Plumbing:** All fixtures will be low flow fixtures. The domestic hot water for the Condominium Buildings will be provided by central high-efficiency, gas-fired condensing hot water heaters for each building. The domestic hot water for the Office building will be provided by local electric storage-type domestic water heaters.
- **Lighting:** All lighting exterior lighting will be LED fixtures with dedicated controls to limit night time light pollution and unnecessary electrical expenditure while providing a safe and welcoming environment. All interior fixtures will be LED and provided with occupancy sensors where applicable.
- **Interior Appliances**: All residential appliances will be Energy Star certified.
- **Landscaping:** Local species that are drought tolerant will be incorporated into the plantings list.

Brooks Slocum, AIA

Principal, SGA

Michael W. Mehl, LC, LEED AP, IES
DIRECTOR

Exterior Lighting Compliance
Russell Street Mixed-Use Development
Portsmouth, NH
Project No. 27009.N.001

August 23, 2022

Mr. Ryan Plummer
Two International Group
1 New Hampshire Ave - Suite 123
Portsmouth, NH 03801

Dear Ryan:

In accordance with your inquiry, we herein confirm that the current exterior lighting design is compliant with Section 10.1140 of the Amended 2021, Portsmouth, NH Zoning Ordinance for the above project.

The exterior lighting as designed by our office, adheres to the ordinance requirements of minimizing light trespass, glare reduction, preserving the night sky and delivering an energy efficient lighting solution.

Specifically, project exterior lighting sources will utilize 3,000K LED sourced color temperature technology, have fixtures specified and designed within the maximum total outdoor lighting lumens/acre per Historic District requirements.

Lastly, all fixtures have been specified with ordinance-required maximum fixture lumens along with system controls calling for programming that operates the exterior lighting per the ordinance-required operational hour.

If you require further specifics, please do not hesitate to contact our office.

Very truly yours,

LightBox Studios

Michael W. Mehl , LC, LEED AP, IES
Director
MWM:jas
cc: (1) Mr. W. Shanklin
(1) Mr. P. Clark
(1) Mr. B Slocum
(1) Mr. N. Hansen
(1) Mr. R. Uhlig
(1) Mr. J. K. Lin
(1) Mr. R. T Stecher
(1) Ms. J. V. Reyes
v:\projects\27009.n.001-russell st development-mixed use development-portsmouth, nh\wp\letters\2022-08-23_exterior lighting compliance_plummer_mwm-jas.docx

HOEFLE, PHOENIX, GORMLEY & ROBERTS, PLLC
ATTORNEYS AT LAW

127 Parrott Avenue, P.O. Box 4480 | Portsmouth, NH, 03802-4480
Telephone: 603.436.0666 | Facsimile: 603.431.0879 | www.hpgrlaw.com

October 12, 2022

Rick Chellman, Chairman
Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, NH 03801

Re: Russell Street Development

Dear Mr. Chellman, et al.,

This firm represents the Market Wharf 1 Condominium Association ("MW") and we write regarding the pending application of Port Harbor Land ("PHL") for the so-called Russell Street Development. The lot proposed for development is the situs of a deeded parking easement owned by MW ("Easement") for 58 vehicles, and we write with concerns about the intersection between MW's parking rights and PHL's proposals before this Board.

More specifically, we write to identify an issue that we believe directly impacts PHL's application in a manner that obviates the general prohibition on the Planning Board's consideration of private disputes.

Pursuant to the Easement's terms, the underlying property owner has a limited right relocate it in conjunction with its development, and PHL has announced an intent to do just that. Unfortunately, PHL has repeatedly refused to provide MW with any substantive information as to how or where it intends to affect MW's parking rights. Left no other option, MW has filed an action for declaratory judgment in Rockingham County Superior Court, seeking a determination that, regardless of any relocation, PHL be required to observe certain obligations inherent in the ownership and use of the Easement, as well observing the terms of an agreement reached with the prior owner.

Most of those issues in that lawsuit are of no moment to this body, except for one limited area. MW's easement contains 58 single spots, which it has utilized without interruption for 35 years. PHL's proposal requires a total 345 parking spaces, and provides for 341, a cushion of only four spots per PHL's engineer's submission to the Technical Advisor Committee. (Attached, at pg. 4) However, depending on which drawing is referenced, 25 (A 102) or 20 (C-102.1) of those spots are so-called "stacked" parking, a decidedly less desirable parking arrangement, which is decidedly contrary to MW's history of usage. Therefore, a court order

prohibiting the use of stacked spots to satisfy PHL's obligation to provide for the Easement would render the available parking total significantly non-complaint with the Portsmouth Zoning Ordinance ("Ordinance)[1].

Due to PHL's consistent refusal to provide any details of the proposed relocation of MW's easement, it is presumed that it intends to relegate MW to the stacked spots. However, the express provisions of the Easement preclude that arrangement according to the Ordinance. The Easement's spaces are unassigned and includes commercial and guest parking, none of which are permitted to be stacked.

First, stacking is permitted only for residential units; they are expressly prohibited for commercial units. Ordinance, Art. 11, §10.1114.32. Eight of MW's units are commercial and, because each unit is entitled to two spots, 16 single spaces are unquestionably ineligible for stacked parking. Further, the Easement provides that that *any* open spots may be used by other owners' invitees, including contractors, deliveries and the like.

Second, as noted above, and per the Condominium Declaration, the parking spots are not assigned to a specific unit but are available on a first come/ first served basis. (Decl. 4.5.2). The Ordinance limits stacked spots to "one-family and "two-family dwellings" and requires that they be "assigned to the same dwelling unit". Ordinance, Art. 11, §10.1114.33- 10.1114.33 (a). However, the Easement permits an owner to park in *any* open easement spot, unrelated to their unit, rendering illegal the use of stacked spots for the Association's owners.

Finally, the Ordinance prohibits the use of stacked spots for guest parking, but the Easement expressly permits guest parking., i.e., it is dedicated to providing parking to the Association owners and "their employees, agents, customers, invitees, contractors and independent contractors". So, again, it would be improper to assign stacked spots to the Easement. Ordinance, Art. 11, §10.1114.33 (b).

MW's concern is that, by delaying disclosure of its intent to relegate MW to stacked spots, PHL's application will be approved, permitting it to sell the more desirable single spaces to its new commercial and residential tenants, thereby allowing it to assert that it would then be impossible to undo those sales to accommodate the Easement. This would create a situation wherein PHL would be unable to both observe the Ordinance and accommodate MW's perpetual and irrevocable parking rights.

---

[1] The engineering submission also erroneously notes, at page 3, that the Easement can be accommodated by "any space".

While private restrictions will generally not affect the public review of land use applications, (*Chasse v. Candia*, 132 N.H. 574 (1989)), a private restriction such as an easement may create a violation of land use controls that are significant to such a review. For example, an easement for a drainage ditch or high-tension utility lines may cause that portion of the property to be unbuildable. In such a case, the land use board would be required to include that fact in consideration of a related application. *See,* e.g. *Quality Discount Market Corp. v. Laconia*, 132 N.H. 734 (1990) (Fact that landowner was not entitled to claimed parking easement on abutting property, precluding compliance with town's parking requirements was relevant to site review process).

Based upon the foregoing, we respectfully submit that the omission of any specifics regarding PHL's intentions for honoring its legal obligation to provide for the Easement results in its inability to credibly represent the number of parking spots that its development will contain and, due to the very real possibility that the court will sustain MW's claims, this deficit must be considered in reviewing its application. It is also submitted that the court's order in this regard will have a substantive impact on PHL's application, requiring that it be resolved before approving same.

We thank-you for your consideration.

Very truly yours

Lawrence B. Gormley

Encl.

Tighe&Bond

T5037-002
May 24, 2022

Mr. Peter Stith, Principal Planner, Chair
Site Plan Review Technical Advisory Committee
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Site Review, Lot Line Revision & Conditional Use Permit Applications
Proposed Mixed Use Development, Russell & Deer Street, Portsmouth, NH

Dear Peter,

On behalf of Port Harbor Land, LLC (owner/applicant), we are pleased to submit one (1) set of hard copies and one electronic file (.pdf) of the following information to support a request for a Site Review Permit, Lot Line Revision Permit, Conditional Use Permit for Shared Parking on Separate Lots, and a Conditional Use Permit for Increased Building Footprint the above referenced project:

- One (1) full size & one (1) half size copy of the Site Plan Set, dated May 24, 2022;
- Owner/Applicant Authorization, dated January 4, 2022;
- Site Review Checklist, dated May 24, 2022;
- Drainage Analysis, dated May 24, 2022;
- Operations and Maintenance Manual, dated May 24, 2022;
- Grade Plane Exhibit, dated May 24, 2022;
- Community Space Exhibit, dated May 24, 2022;
- Landscape Presentation Plan Set, dated May 24, 2022;
- Lighting Graphical Design Package, dated May 24, 2022;
- Fire Truck Turning Exhibit, dated May 24, 2022;
- Traffic Impact Study, dated May 24, 2022;
- Eversource Will Service Letter, dated May 23, 2022;
- Unitil Will Service Letter, dated February 22, 2021;
- Green Building Statement, dated May 23, 2022;
- Application fee calculation form

PROJECT SUMMARY

Existing Conditions

The project is located at 2 Russell Street, Deer Street & 250 Market Street consisting of properties identified as Map 118 Lot 28, Map 119 Lot 1-1C & Lot 4, Map 124 Lot 12, and Map 125 Lot 21 on the City of Portsmouth Tax Maps which are located in the Character District 5 (CD5). The properties identified as Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21 (proposed redevelopment parcels) are the existing parcels proposed to be redeveloped are bound by Deer Street to the south, Maplewood Avenue to the west, the railroad to the north

and Russell Street to the east. Map 119 Lot 4 will be developed into a park area as part of the community space for the proposed project, and Map 119 Lot 1-1C will be part of the lot line revision application.

The proposed redevelopment parcels lots currently consist of a large surface parking lot which is mainly used by the Sheraton Hotel. There are some small patches of gravel and grass where the site abuts the railroad property and a ledge outcropping to the north.

Proposed Redevelopment

The proposed project will include the construction of three buildings consisting of office, retail/commercial, and residential uses. Building 1 is a proposed 4-story office building at the corner of Deer Street and Maplewood Avenue, Building 2 is a proposed 5-story mixed-use residential building at the corner of Deer Street and Russell Street with below ground parking, first floor residential lobby, commercial space and parking and 60 upper floor residential units, and Building 3 is a proposed 5-story mixed-use residential building along Russell Street with first floor residential lobby and commercial space and 24 upper floor residential units.

The existing condition of the proposed redevelopment parcels does not provide any stormwater treatment. The proposed development will provide stormwater treatment to runoff from the new buildings and surface pedestrian and vehicle access ways via stormwater treatment units. In addition, an underground detention system has been incorporated into the design to address peak runoff rates from the site. The stormwater management system is described in further detail in the enclosed Drainage Analysis.

The project also consists of significant on-site and off-site improvements including wide sidewalks, roadway improvements, community space, lighting, landscaping, and utilities. The proposed development will provide landscape improvements including an enhanced streetscape and plantings, plaza area at the redesigned intersection of Deer Street and Russell Street, and community space areas. The streetscape design includes a variety of vibrant site elements such as shade trees, public benches, and retail spill out zones. Combined, these site features will create a friendly, safe pedestrian experience and connect users with first floor programs and access to proposed on-site and off-site community space areas. In total the proposed project is providing 22,169 SF of off-site, pedestrian orientated and park space public improvements.

Community Space & Off-Site Improvements

The project is located in the North End Incentive Overlay District. The applicant will be providing 38,721 SF of community spaces. This Community Space is 38.8% of the total lot area which exceeds the 20% of total lot area required to receive the incentive bonus for one additional story (10 ft) above the maximum height requirement. The community space calculation is depicted in the enclosed Community Space Exhibit. Additionally, the project is required to provide 30% community space as part of a conditional use permit application discussed below for Map 118 Lot 28 to allow proposed Building 2 to have a maximum 40,000 SF building footprint. Overall, the project will be providing 31.2% open space on the development lot where only 5% is required by zoning.

LAND-USE PERMIT APPLICATIONS

Local Permitting Timeline

The proposed project will require the following site related approvals from the Planning Board:

- Site Plan Review Permit
- Lot Line Revision Permit

- Conditional Use Permit for Shared Parking on a Separate Lot
- Conditional Use Permit for Increased Building Footprint

Along with attending six (6) work sessions with the Historic District Commission (HDC), to date the applicant has attended the following meetings with the local land-use boards related to the Site Plan:

- December 16, 2021 – Planning Board Conceptual Consultation
- January 11, 2022 – Technical Advisory Committee Work Session
- February 17,2022 – Planning Board Design Review

In addition to the local land-use permits, the project will also require the following approvals from the New Hampshire Department of Environmental Services (NHDES):

- Alteration of Terrain Permit
- Sewer Connection Permit

Site Plan Review Permit

The project will require a Site Plan Review Permit for the site improvements described above in the project summary. The project has previously been before the Planning Board for Conceptual Consultation and Preliminary Design Review. In addition, the project has previously been before the Technical Advisory Committee (TAC) for a work session.

Lot Line Revision Permit

The proposed redevelopment parcels located at the corner of Russell Street and Deer Street consist of properties identified as Map 118 Lot 28, Map 124 Lot 12, and Map 125 Lot 21. The existing internal lot lines separating these three lots, are proposed to be relocated to better align the parcels for the proposed building footprints.

Additionally, three land transfers are proposed to allow for the realignment of the Russell Street & Deer Street intersection and for the City's future construction of a roundabout at Russell Street and Market Street. Land transfer area 1 is proposed from Map 119, Lot 4 to the City of Portsmouth. Land transfer areas 2 and 3 are from Map 119, Lot 1-1C to the City of Portsmouth.

Conditional Use Permits

Shared Parking on Separate Lots

A Conditional Use Permit for parking on a separate lot as permitted under Section 10.1112.62 of the City of Portsmouth Zoning Ordinance is requested for the project. The project meets the parking requirements by sharing parking between the three (3) proposed redevelopment parcels and the existing Sheraton Hotel and Deer Street condos as shown on the enclosed Site Plans. A total of 341 parking spaces are required to meet the Zoning requirements.

The existing surface parking lot is used by the Sheraton Hotel for their valet and self-park operations. There are also an existing 82 deeded parking spaces for the Deer Street and Sheraton Condos that can be assigned to any space on either the Sheraton Lot or the redevelopment parcels. The table below identifies the required parking for the existing and proposed uses per the City of Portsmouth Ordinance. The project is providing 189 spaces within Building 2 and there are 154 existing spaces on the Sheraton lot, for a total of 343 proposed parking spaces where 341 spaces are required.

City of Portsmouth Downtown Overlay Parking Requirement	
North End Development, Portsmouth, NH	
Proposed Commercial Use Parking Requirements	No requirements 75,000 SF **0 Spaces**
Proposed Residential Use Parking Requirements	1.3 Spaces / Dwelling Unit 84 Dwelling Units **110 Spaces**
Proposed Residential Visitor Parking Requirements	1 Spaces / 5 Dwelling Unit 84 Dwelling Units **17 Spaces**
Sheraton Hotel Parking Requirements	0.75 Spaces / Hotel Room 181 Rooms **136 Spaces**
Sheraton Condo Parking Requirements	Deeded Easement for 24 Spaces 12 Dwelling Units **24 Spaces**
Deer Street Condo Parking Requirements	Deeded Easement for 58 Spaces 3-story mixed use Condos on Deer Street **58 Spaces**
Subtotal Required	**345 Spaces**
DOD Parking	**-4 Spaces**
Total Spaces Required	**341 Spaces**

Per Section 10.1112.62 (2) the shared parking arrangement shall be secured by a covenant acceptable to the City and recorded at the Rockingham County Registry of Deeds. The applicant understands that should the Planning Board grant the shared parking CUP, as a condition of approval the applicant will be required to record the agreement. The applicant will manage the parking for hotel use with a valet parking operator that will operate and manage the parking 24/7/365 to optimize the use of the available parking.

Increased Building Footprint

A Conditional Use Permit to allow a building footprint of up to 40,000 SF as permitted under Section 10.5A43.43 of the City of Portsmouth Zoning Ordinance is being requested for the project. The Planning Board may grant a conditional use permit to allow a building footprint of up to 40,000 SF in the CD5 district, if all of the following criteria are met:

(a) No story above the ground floor parking shall be greater than 30,000 SF in the CD5 district.

The footprint of the building stories above the ground floor are 29,810 SF.

(b) All ground floor parking areas shall be separated from any public or private street by a liner building.

The ground floor parking areas are separated from the public street by a liner building.

(c) At least 50% of the gross floor area of the ground floor shall be dedicated to parking.

The total gross floor area of the ground floor dedicated to parking is 64.2%.

(d) At least 30% of the property shall be assigned and improved as community space.

The proposed lot area for Map 118, Lot 28 and Map 119 Lot 4 is 62,417 SF which requires 18,725 SF of community space to meet the 30% requirement. Map 124, Lot 12 and Map 125, Lot 21 also require 20% community space to be eligible for the North End Overlay Incentives. Proposed community space areas on Map 118, Lot 28 and Map 119 Lot 4 totals 25,352 SF or 40.6%. The total required community space for the project is 26,201 SF with the total proposed community space equaling 38,721 SF or 38.8%. This is shown on the enclosed Community Space Exhibit.

(e) The development shall comply with all applicable standards of the ordinance and the City's land use regulations.

The development complies with all applicable standards of the ordinance and the City's land use regulations.

Under separate cover, a Site Plan Review application fee in the amount of $6,497.94, a Conditional Use Permit for Shared Parking application fee in the amount of $200, and a Conditional Use Permit for Increased Building Footprint fee in the amount of $200 have been mailed to the Planning Department by the applicant. A copy of the application fee calculation form is enclosed.

We respectfully request to be placed on the TAC meeting agenda for June 7, 2022. If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

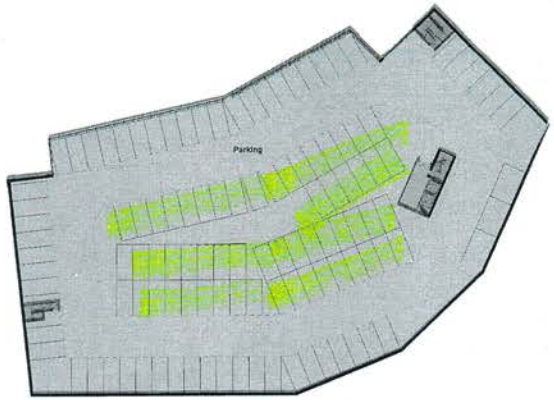
Sincerely,

TIGHE & BOND, INC.

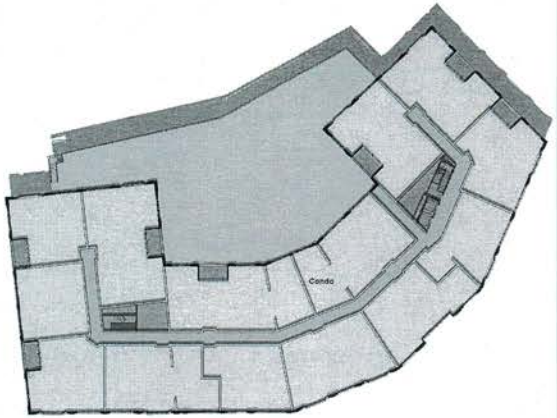
Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

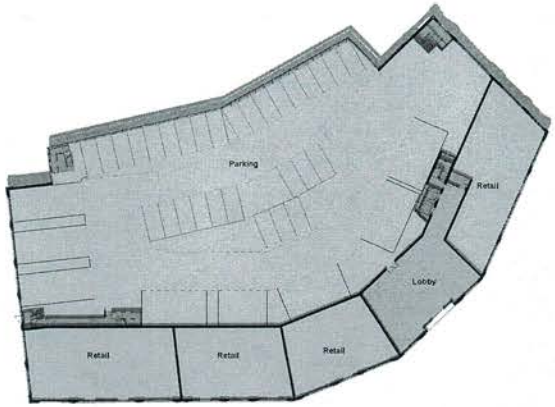
Cc: Port Harbor Land, LLC (via e-mail)



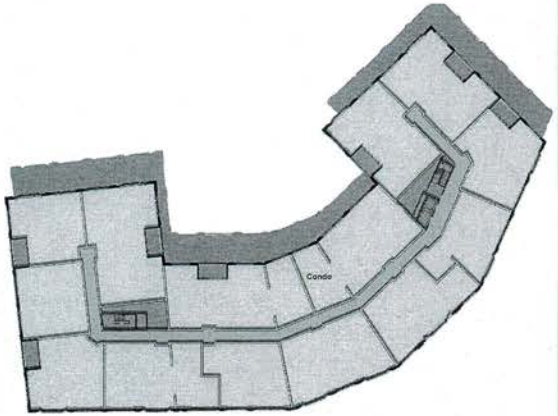
1 B2 - LEVEL 0
1/32" = 1'-0"



3 B2 - LEVEL 2
1/32" = 1'-0"



2 B2 - LEVEL 1
1/32" = 1'-0"



4 B2 - LEVEL 3-5
1/32" = 1'-0"

GROSS AREA CALCULATIONS

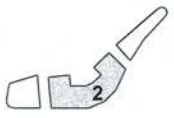
B2 - LEVEL 0	
Back of House	625 SF
Lobby	253 SF
Parking	38,270 SF
	39,148 SF
B2 - LEVEL 1	
Back of House	1,263 SF
Lobby	2,441 SF
Parking	25,590 SF
Retail	10,440 SF
	39,735 SF
B2 - LEVEL 2	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,109 SF
Lobby	2,619 SF
	29,754 SF
B2 - LEVEL 3	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
B2 - LEVEL 4	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
B2 - LEVEL 5	
Back of House	1,082 SF
Balcony	944 SF
Condo	25,395 SF
Lobby	2,391 SF
	29,810 SF
GRAND TOTAL	198,068 SF

AREA LEGEND

- OFFICE
- CONDO
- RETAIL
- PARKING
- LOBBY
- OUTDOOR SPACE
- BACK OF HOUSE

SGA
200 HIGH ST, BOSTON, MA 02110
857.300.2610 | SGA-ARCH.COM

PROJECT TEAM:



SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

SUBMISSIONS:

Date	Issued For:
05/20/22	TAC Work Session

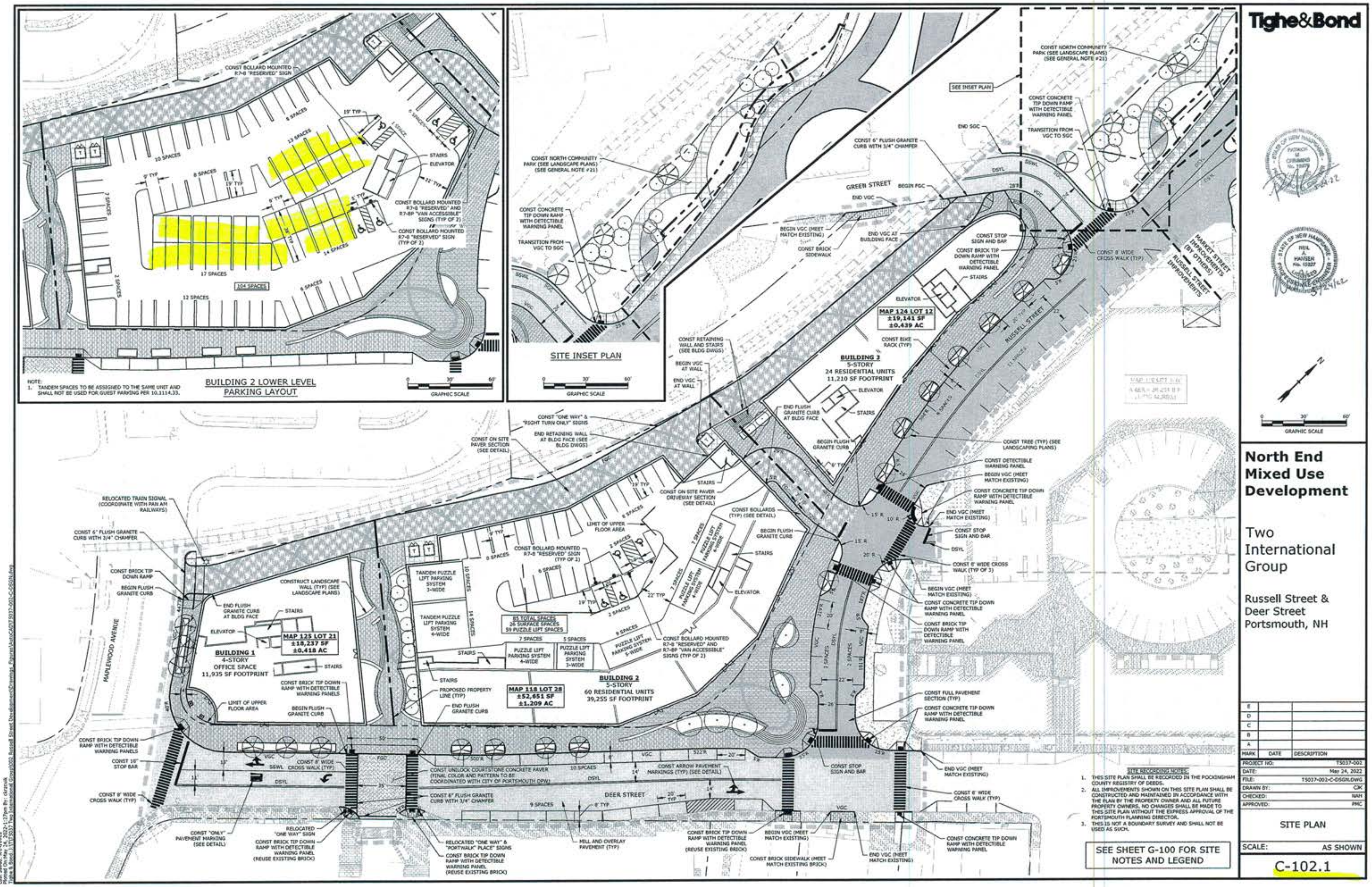
SCALE	As indicated
DATE ISSUED	05/23/22
PROJECT NO	4979.00
DRAWN BY	Author
CHECKED BY	Checker

SHEET TITLE:

BUILDING 2 AREA PLANS

A - 102

5/20/2022 9:26:05 PM



Tighe&Bond
North End Mixed Use Development
Two International Group
Russell Street & Deer Street Portsmouth, NH
SITE PLAN
SCALE: AS SHOWN
C-102.1
PROJECT NO: T5037-002
DATE: May 24, 2022
FILE: T5037-002-C-DSGN.DWG
DRAWN BY: CJK
CHECKED: NAH
APPROVED: PMC
MARK DATE DESCRIPTION
SEE SHEET G-100 FOR SITE NOTES AND LEGEND
SITE RECORDING NOTES:
1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
3. THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH.
BUILDING 2 LOWER LEVEL PARKING LAYOUT
NOTE: 1. TANDEM SPACES TO BE ASSIGNED TO THE SAME UNIT AND SHALL NOT BE USED FOR GUEST PARKING PER 10.1114.33.
104 SPACES
SITE INSET PLAN
GRAPHIC SCALE
BUILDING 1
4-STORY
OFFICE SPACE
11,935 SF FOOTPRINT
MAP 125 LOT 21
±18,237 SF
±0.418 AC
BUILDING 2
5-STORY
60 RESIDENTIAL UNITS
39,255 SF FOOTPRINT
MAP 118 LOT 28
±52,651 SF
±1.209 AC
85 TOTAL SPACES
26 SURFACE SPACES
59 PUZZLE LIFT SPACES
BUILDING 3
5-STORY
24 RESIDENTIAL UNITS
11,210 SF FOOTPRINT
MAP 124 LOT 12
±19,141 SF
±0.439 AC
GREEN STREET
RUSSELL STREET
DEER STREET
MAPLEWOOD AVENUE
MARKET STREET IMPROVEMENTS (BY OTHERS)
RUSSELL STREET IMPROVEMENTS
SEE INSET PLAN
CONST NORTH COMMUNITY PARK (SEE LANDSCAPE PLANS) (SEE GENERAL NOTE #21)

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 12-15-2022
Property Address: 161 Deer Street
Application #: LU-22-173
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Effective August 23, 2022, amended RSA 676:3, I now read as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding** **(Meets Standard/Criteria)**	**Supporting Information** **(Provided by applicant)**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	Applicable standards: No Variances Required. Project complies with all Ordinance requirements including parking; see Sheet C3 Table. Community space allows resulting height of Penthouse.
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	Developer also owns the adjacent parcel (Lot 4) which will facilitate construction crane and truck deliveries to minimize the traffic burden. TAC reviewed traffic and safety. Plans show all utility and drainage connections.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (Provided by applicant)
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	A complete drainage analysis has been prepared by a professional engineer and reviewed by staff. R-tank storage to minimize storm water peak discharge (Sheet C6 / D4) and – Stormwater Roof Drain treatment (Sheet D5). Erosion controls during construction as necessary (D1). Building has been designed to minimize excavation depth. Footing pilings to bedrock to minimize effects of future City excavation in the Sewer right of way.
4	Adequate protection for the quality of groundwater.	**Meets** **Does Not Meet**	Roof drains are filtered. Other runoff is captured in city collection system. No groundwater withdrawal (water supply is city). No nearby production wells.
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	Water supply is Public -City. Supply confirmed by TAC review. All plumbing fixtures will be low /water conserving.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	Sewer connection is Public - City. Connection(s) reviewed by TAC.
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	Property will not have any fuel consuming devises. No Natural Gas, No Home Heating Oil. Provisions for electric vehicle charging for all Units, Commercial and Residential. All appliances are Electric (induction cooktops). Hot water is Hybrid Electric. All air exchange via energy recovery ventilators. Filtered dryer vents are the only other exhaust points.
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	Full wet sprinkler system, Type IIb construction. Battery backup for regenerative traction elevator and parking ventilation with Solar on roof.
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	Urban site, no wetlands or buffers. All excavation materials will be environmentally tested prior to removal from site.
10	Adequate protection of historical features on the site.	**Meets**	No Historical features present. Existing building is non-contributing.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (Provided by applicant)
		Does Not Meet	
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	Meets Does Not Meet	Underground parking entrance has been placed between lots 4 and 5 giving both stacking and staging capacity off street and minimize traffic congestion on Deer Street. Adequate parking provided for the use.
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	Meets Does Not Meet	See traffic report and supplemental examination of reduced impact for this smaller 19-unit building.
13	Adequate insulation from external noise sources.	Meets Does Not Meet	Steel and concrete building with Brick façade, Commercial Grade Kolby Ultra high STC windows. Sound attenuating, fireproof, rock wool insulation. Additional "Acoustiblock.com" internal rubber wall material on the railroad facing facade.
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	Meets Does Not Meet	Trash collection will be privately contracted. TAC Review included Fire and Police Departments. All concerns addressed in design.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	Meets Does Not Meet	Dedicated Open Space including 12' wide sidewalks to facilitate trees, sidewalk use, and street activation. Pocket-park community space recreational area.
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	Meets Does Not Meet	Pocket-park community space connected to both Deer and Maplewood sidewalks. ADA accessibility on both ends. Exterior and interior bike racks. Wide sidewalks.
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	Meets Does Not Meet	Land is suitable for the intended purpose, Approved Subdivision Lot. Currently used as an urban building site. Plans follow ordinance and guidelines; see TAC approval.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (Provided by applicant)
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	Multiple street trees, with expanded root volumes for tree health; vertical visual and noise buffer. Building distance from Rail conforms to code. Wide sidewalks. Conformance to code heights.
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	See HDC approval. Building apparent height reduced by design of 4-story building w/ Penthouse set back in lieu of a 5-story building allowed. Historic inspiration drawn from the railroad. Providing the parking required by the Ordinance.
	Other Board Findings:		

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

23 November 2022

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Site Plan Approval at 161 Deer Street *to be known as* 70 Maplewood Avenue, Mixed Use Site Development

Dear Mr. Chellman and Planning Board Members:

On behalf of Tom Balon and EightKPH, LLC we are pleased to submit the attached plan set for **Site Plan Approval** for the above-mentioned project and request that we be placed on the agenda for your **December 15, 2022,** Technical Advisory Committee Meeting. The project consists of the replacement of the existing one-story commercial building at 161 Deer Street with a new 4 story with a Penthouse building with the associated and required site improvements. The new building is intended to be known as 70 Maplewood Avenue. The re-development will include parking below street level.

The site redevelopment consists of replacing the existing structure with a new structure. The site is known as DSA Lot 5; part of the Consolidation and Subdivision Approved by the Planning Board in 2016. The property was a part of the overall planning for development on the 5 lots and had a proposed building designed; however, that building did not go through and complete the permit process entirely. The property is located in the CD – 5, Downtown Overlay, North End Incentive, and Historic Districts. This application revises the previously proposed building, and this design received HDC Certificate of Approval on October 5, 2022.

The design package has been revised to address concerns expressed at the TAC Hearing on November 1, 2022. The project plans have been revised to reflect changes were noted below. The comments are listed below with our response in **bold text**:

1. Applicant will update plan set to reflect proposed 70 Maplewood address. **The plan set has been updated.**
2. Applicant will update landscaping plan to add additional tree to northern corner of the property as presented to TAC at the 11/1 meeting. **The plan set has been updated to show the additional tree along Maplewood Avenue.**
3. Applicant will update the demolition plan to show existing water and sewer service is terminated at the main. Updates to be reviewed by Department of Public Works. **The Sheet C2 of the plan set has been updated.**
4. New proposed location of wayfinding sign (Sheet C-3) will be reviewed and approved by Department of Public Works. **The wayfinding sign location has been updated on Sheet C3.**

5. New layout of the sprinkler room will be reviewed and approved by Department of Public Works. **The Sprinkler Room has been updated on Sheet C4. The entrance will be in an area of low clearance with a 90-degree bend to get to the full height room.**
6. Applicant will update street lighting circuit to originate from a streetlight or streetlight pull box for Department of Public Works review and approval. **The Sheet C5 plan has been updated.**
7. Updated language pertaining to extending existing water stubs to building (call out box in southern corner of proposed building, sheet C-5) will be reviewed and approved by DPW. **The note was revised on the plans for final review.**
8. Applicant will update standard light pole detail to be consistent with the City standard pole detail for Department of Public Works review and approval. **The Detail U / D4 has been updated.**
9. Applicant will work with Eric Eby to determine proper width of parking level entrance. **The building entrance has been set back 2 feet +/- to accommodate a larger specified vehicle, the door expanded, and the vehicle turning plan has been updated.**
10. Applicant will make a $50,000 contribution to the Maplewood Avenue corridor video detection signal system. **Agreed.**
11. Applicant will include all approvals from Trees and Greenery with the updated submission. **The Trees and Greenery Committee motion and approval is included in the submission package.**
12. Applicant will update plans to include revised existing easement and proposed easement(s) with Eversource and will coordinate with the Department of Public Works to create a new easement around the drain line to the west of the building if needed. Applicant will also confirm how access rights are being provided across adjacent lot and provide an access easement if needed. **Access across the adjacent lot has been approved by the city – see the attached Site Plan C 3.0 for the Foundry Place Lot 3 Site Development.** If total number of easements equals 3 or more, applicant will provide an easement plan with unique identifiers and corresponding table. **An Easement Plan has been added to the plan set. The plan shows the following:**
    a. **Adjusted Eversource Easement in the northeast corner of the property.**
    b. **Offsite Eversource Easement to accommodate future electrical circuit looping / connections. The subject lot is also owned by the applicant, EightKPH.**
    c. **Expanded Drainage Easement to the City of Portsmouth at the north end of the existing drainage easement.**
13. Applicant will update plans, related notes, and detail sheets to include a pedestrian and vehicle warning at the garage entrance to be reviewed and approved by Department of public works. **The plan set has been updated and specifications included in the submission.**
14. Applicant will present a redesign of the pocket park entrance at Maplewood Avenue to increase radii of walkway and encourage better pedestrian circulation to Nick Cracknell in the Planning Department. **The plan set has been updated; the team will reach out to Mr. Cracknell.**
15. Applicant will provide a letter with their next submission addressing the changes that have been made to the plan set as a result of the TAC stipulations of approval or further project development. **This letter is intended to address this stipulation.**

Also included in the plans and submission is a DRAFT of the vehicle warning system – see Sheet C4 and the supplemental information. This was discussed at the TAC Meeting and is needed to avoid conflicts as vehicles are entering and exiting the below grade parking level. The applicant and his team would like to work with the city to revise the installation to a simple warning light without audible warning, given the low pedestrian and traffic volumes expected at this location.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Subdivision Plan – This plan shows the plan which created the current property boundaries.
- Easement Plan – This plan shows proposed easements associated with the development.
- Existing Conditions Plan C1 – This plan shows the existing site conditions in detail.
- Demolition Plan C2 – This plan shows demolition of the existing building and associated site features.
- Site Plan C3 – This plan shows the site development in detail with the associated Zoning Development Standards and Floor Area calculations. Also shown are impervious surface calculations and the areas dedicated to Community Space. The plan proposes to dedicate 20% (Minimum) Community Space to gain building height.
- Architectural Renderings Floor Plans and Building Elevations.
- Landscape Plans – Site landscape features and specifications.
- Parking Level Plan C4 – This plan shows the lower-level parking layout.
- Utility Plan C5 – This plan shows proposed site utilities.
- Grading Plan C6 – This plan shows proposed site grading.
- Detail Sheets D1 to D5 – These plans show site details.

Supplemental Information Provided in the submission package includes:

TAC Approval
Trees and Greenery Approval
HDC Approval
Site Plan Checklist
Green Building Statement
Address Change Letter
Code Review
Drainage Analysis
Traffic Memorandum
Garage Exit Warning Light Specification
Vehicle Turning Movements
Average Grade Plane Calculation and Plan
Previously Approved Adjacent Site Development Plan
Development Plan Set

We look forward to the Planning Board review of this submission and look forward to an in-person presentation. We hereby request your approval of the project.

Sincerely,

John R. Chagnon

John R. Chagnon, PE
CC: Tom Balon, Carla Goodknight, Terrance Parker

CITY OF PORTSMOUTH

Planning Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801
(603) 610-7216

TECHNICAL ADVISORY COMMITTEE

November 8, 2022

Tom Balon
EIGHTKPH LLC
233 Vaughan Street
Portsmouth , New Hampshire 03801

RE: Site Plan Approval for property located at 161 Deer Street (LU-22-173)

Dear Property Owner:

The Technical Advisory Committee, at its regularly scheduled meeting of Tuesday, November 1, 2022, considered your application for Site Plan Review approval for the construction of a four (4) story building to include a penthouse, commercial space, 19 dwelling units, and associated site improvements. Said property is shown on Assessor Map 125 Lot 17-3 and lies within the Character District 5 (CD5), Downtown Overlay, North End Incentive, and Historic Districts. As a result of said consideration, the Committee voted to recommend **approval** to the Planning Board with the following **conditions**:

Conditions to be satisfied prior to the Planning Board Submittal date:

1. Applicant will update plan set to reflect proposed 70 Maplewood address.

2. Applicant will update landscaping plan to add additional tree to northern corner of the property as presented to TAC at the 11/1 meeting.

3. Applicant will update the demolition plan to show existing water and sewer service is terminated at the main. Updates to be reviewed by Department of Public Works.

4. New proposed location of wayfinding sign (Sheet C-3) will be reviewed and approved by Department of Public Works.

5. New layout of the sprinkler room will be reviewed and approved by Department of Public Works.

6. Applicant will updated street lighting circuit to originate from a streetlight or street light pull box for Department of Public Works review and approval.

7. Updated language pertaining to extending existing water stubs to building (call out box in southern corner of proposed building, sheet C-5) will be reviewed and approved by DPW.

8. Applicant will update standard light pole detail to be consistent with the City standard pole detail for Department of Public Works review and approval.

9. Applicant will work with Eric Eby to determine proper width of parking level entrance.

10. Applicant will make a $50,000 contribution to the Maplewood Avenue corridor video detection signal system.

11. Applicant will include all approvals from Trees and Greenery with the updated submission

12. Applicant will update plans to include revised existing easement and proposed easement(s) with Eversource, and will coordinate with the Department of Public Works to create a new easement around the drain line to the west of the building if needed. Applicant will also confirm how access rights are being provided across adjacent lot and provide an access easement if needed. If total number of easements equals 3 or more, applicant will provide an easement plan with unique identifiers and corresponding table.

13. Applicant will update plans, related notes, and detail sheets to include a pedestrian and vehicle warning at the garage entrance to be reviewed and approved by Department of public works.

14. Applicant will present a redesign of the pocket park entrance at Maplewood Avenue to increase radii of walkway and encourage better pedestrian circulation to Nick Cracknell in the Planning Department.

15. Applicant will provide a letter with their next submission addressing the changes that have been made to the plan set as a result of the TAC stipulations of approval or further project development.

This matter will be placed on the agenda for the Planning Board meeting scheduled for **Thursday, December 15, 2022**. One (1) hard copy of all plans and supporting reports and exhibits as well as an updated electronic file (in a PDF format) must be filed in the Planning Department and uploaded to the online permit system no later than **Wednesday, November 23, 2022**.

Per Section 2.5 of the Site Plan Regulations, a site plan review application to the Planning Board must include all applicable information and supporting materials including but not limited to the following items:

- *Full updated plan set*
- *Draft Easements*
- *Drainage Analysis*
- *Traffic Studies*
- *Etc.*

All comments, corrections, and conditions identified as "Items to be addressed before Planning Board submittal' must be resolved/corrected for the Planning Board application submittal to be deemed complete.

The minutes and audio recording of this meeting are available by contacting the Planning Department.

Very truly yours,

Beverly Mesa-Zendt

Beverly Mesa-Zendt,
Planning Director

cc:

John Chagnon, Ambit Engineering
Carla Goodknight, AIA, CJ Architects

the loss of the trees. Chairman Loughlin said he was contacted by the owner's representatives and that they wanted to donate as compensation; he said he checked with Mr. Baxter, who said it would cost about $1,000 per tree. Mr. Griffin asked if a traffic survey was done as to the volume of trucks. Mr. Coronati said there wasn't a survey done but there were a large number of trucks parked there currently. Mr. Rice said he didn't normally like removing streetscape trees for applications, but for this case he'd allow it to happen so that the business could function.

Mr. Rice moved to **recommend removal** of the trees with the $5,000 stipulated on that offer, seconded by Mr. Souto. The motion passed unanimously.

2. Terrence Parker with Terra Firma Land Architects presenting on the landscape plan for the future development of 88 Maplewood Avenue.

Mr. Parker distributed a handout to the committee and reviewed the landscape plan. He said there would be six street trees on Deer Street, three along Maplewood Avenue, and a series of trees in a green strip at the back of the building that was considered a pocket park. He said the park would have more human amenities but wasn't sure what they would be. He said there would be a handicap access that would go into the parking lot. He discussed the tree grate, noting that it was 50 feet long and four feet wide. He said there would be some vertical tree guards and all the trees would provide wildlife habitat food service.

Mr. Griffin asked if there would be adequate sun exposure on the northern sides. Mr. Parker agreed. He said a fence would separate the railroad and the pocket park. Mr. Rice said the sidewalk would be on the other side of the tracks and would go along the edge. Mr. Parker said there could be a stipulation that the property owner would maintain the sidewalk but it was a City sidewalk. He said there would be no silva cells, just contiguous soil. He said the wayfinding site would be moved. Ms. Bagley asked if the site was originally a DSA property, and Mr. Parker agreed. The grate and the tree species were further discussed. He said each cluster of trees was a different species – three maples, six carpinus, and eight oaks in the back – and had similar profiles in length and width.

Mr. Rice moved to **recommend approval**, seconded by Mr. Griffin. The motion passed unanimously.

3. Randi and Jeff Collins of 77 Meredith Way presenting about their need to remove the tree growth at the end of Meredith Way to extend the road and build their house.

Mr. Baxter explained that a new home was being built and that the road would be extended and that it made sense to remove the trees. He said shade trees would be planted in the future. The residents Randi and Jeff Collins stated that the Planning Board and TAC were also reviewing it.

Mr. Griffin moved to **recommend removal**, seconded by Mr. Souto. The motion passed unanimously.

4. Update from City Arborist Chuck Baxter

CITY OF PORTSMOUTH

Planning Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801
(603) 610-7216

HISTORIC DISTRICT COMMISSION

October 17, 2022

Tom Balon
EIGHTKPH LLC
233 Vaughan Street
Portsmouth , New Hampshire 03801

RE: **Certificate of Approval for property located at 161 Deer Street (LU-22-173)**

Dear Property Owner:

The Historic District Commission, at its regularly scheduled meeting of **Wednesday, October 05, 2022**, considered your application for the demolition of the existing structure and the new construction of a new mixed-use building as per plans on file in the Planning Department. Said property is shown on Assessor Map 125 Lot 17-3 and lies within the Character District 5 (CD5), Downtown Overlay, North End Incentive, and Historic Districts. As a result of said consideration, the Commission voted to **grant** the Certificate of Approval as presented.

Findings of Fact

A. Purpose and Intent

The proposed application meets the following objective(s) of the Historic District (as provided in Section 10.631.20 of the Zoning Ordinance):

-Conservation and enhancement of property values.

B. Review Criteria

The proposed application also meets the following review criteria of the Historic District (as provided in Section 10.635.70 of the Zoning Ordinance):

-Consistent with special and defining characters of the surrounding properties.

The Commission's decision may be appealed up to thirty (30) days after the vote. Any action taken by the applicant pursuant to the Commission's decision during this appeal period shall be at the applicant's risk. Please contact the Planning Department for more details about the appeals process.

Approvals may also be required from other City Committees or Boards. Once all required approvals have been received, applicant is responsible for applying for and securing a building permit from the Inspection Department prior to starting any project work.

This approval shall expire unless a building permit is issued within a period of one (1) year from the date granted by the Historic District Commission unless an extension is granted by the Commission in accordance with Section 10.636.70 of the Zoning Ordinance.

Please note that any changes or modifications to this application require review and

approval from the Commission prior to implementation and additional fees may apply.

The minutes and audio recording of this meeting are available by contacting the Planning Department.

Very truly yours,

Nicholas J. Cracknell, AICP, Principal Planner
for Jonathan Wyckoff, Chairman of the Historic District Commission

cc: Shanti Wolph, Chief Building Inspector
Rosann Maurice-Lentz, City Assessor

John Chagnon, Ambit Engineering
Carla Goodknight, AIA, CJ Architects

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. The checklist is required to be completed and uploaded to the Site Plan application in the City's online permitting system. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Applicant: EIGHT KPH Date Submitted: 8-23-2022

Application # (in City's online permitting): TBD

Site Address: 88 MAPLEWOOD AVENUE Map: 125 Lot: 17-3

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☐	Complete application form submitted via the City's web-based permitting program (2.5.2.1**(2.5.2.3A)**	ONLINE	N/A
☐	All application documents, plans, supporting documentation and other materials uploaded to the application form in viewpoint in digital Portable Document Format (PDF). One hard copy of all plans and materials shall be submitted to the Planning Department by the published deadline. **(2.5.2.8)**	ONLINE & DELIVERY	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Statement that lists and describes "green" building components and systems. **(2.5.3.1B)**	SUPPLEMENTAL	
☐	Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1C)**	A1.0-3.0	N/A
☐	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1D)**	COVER SHEET	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	COVER SHEET	N/A
☐	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1F)**	SHEET C1	N/A
☐	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**	COVER SHEET	N/A
☐	List of reference plans. **(2.5.3.1H)**	SHEET C1	N/A
☐	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1I)**	COVER SHEET	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. **(2.5.4.1A)**	Required on all plan sheets	N/A
☐	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☐	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	SHEET C1	N/A
☐	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☐	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	N/A	N/A
☐	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	COVER SHEET	N/A
☐	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	EACH SHEET	N/A
☐	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☐	Source and date of data displayed on the plan. **(2.5.4.2D)**	SHEET C1	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**1. Existing Conditions: (2.5.4.3A)** • Surveyed plan of site showing existing natural and built features; • Existing building footprints and gross floor area; • Existing parking areas and number of parking spaces provided; • Zoning district boundaries; • Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre; • Existing impervious and disturbed areas; • Limits and type of existing vegetation; • Wetland delineation, wetland function and value assessment (including vernal pools); • SFHA, 100-year flood elevation line and BFE data, as required.	SHEET C1	
☐	**2. Buildings and Structures: (2.5.4.3B)** • Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation; • Elevations: Height, massing, placement, materials, lighting, façade treatments; • Total Floor Area; • Number of Usable Floors; • Gross floor area by floor and use.	A1-A3	
☐	**3. Access and Circulation: (2.5.4.3C)** • Location/width of access ways within site; • Location of curbing, right of ways, edge of pavement and sidewalks; • Location, type, size and design of traffic signing (pavement markings); • Names/layout of existing abutting streets; • Driveway curb cuts for abutting prop. and public roads; • If subdivision; Names of all roads, right of way lines and easements noted; • AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	SHEET C3	
☐	**4. Parking and Loading: (2.5.4.3D)** • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided).	SHEET C3 & SHEET C4	
☐	**5. Water Infrastructure: (2.5.4.3E)** • Size, type and location of water mains, shut-offs, hydrants & Engineering data; • Location of wells and monitoring wells (include protective radii).	SHEET C5	
☐	**6. Sewer Infrastructure: (2.5.4.3F)** • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period.	SHEET C5	

☐	**7. Utilities: (2.5.4.3G)** • The size, type and location of all above & below ground utilities; • Size type and location of generator pads, transformers and other fixtures.	SHEET C5	
☐	**8. Solid Waste Facilities: (2.5.4.3H)**		
	• The size, type and location of solid waste facilities.	SHEET A2.0	
☐	**9. Storm water Management: (2.5.4.3I)** • The location, elevation and layout of all storm-water drainage. • The location of onsite snow storage areas and/or proposed off-site snow removal provisions. • Location and containment measures for any salt storage facilities • Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.	SHEET C6	
☐	**10. Outdoor Lighting: (2.5.4.3J)** • Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.	TBD	
☐	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	TBD	
☐	**12. Landscaping: (2.5.4.3K)** • Identify all undisturbed area, existing vegetation and that which is to be retained; • Location of any irrigation system and water source.	SHEET L1 SHEET C5	
☐	**13. Contours and Elevation: (2.5.4.3L)** • Existing/Proposed contours (2 foot minimum) and finished grade elevations.	SHEET C6	
☐	**14. Open Space: (2.5.4.3M)** • Type, extent and location of all existing/proposed open space.	SHEET C3	
☐	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	SHEET C1	
☐	**16. Character/Civic District (All following information shall be included): (2.5.4.3P)** • Applicable Building Height (10.5A21.20 & 10.5A43.30); • Applicable Special Requirements (10.5A21.30); • Proposed building form/type (10.5A43); • Proposed community space (10.5A46).	SHEET C3	
☐	**17. Special Flood Hazard Areas (2.5.4.3Q)** • The proposed development is consistent with the need to minimize flood damage; • All public utilities and facilities are located and construction to minimize or eliminate flood damage; • Adequate drainage is provided so as to reduce exposure to flood hazards.	NOT IN ZONE	

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Traffic Impact Study or Trip Generation Report, as required. **(3.2.1-2)**	ONLINE	
☐	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	SHEET C6	
☐	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	N/A	
☐	Stormwater Management and Erosion Control Plan. **(7.4)**	SHEET D1	
☐	Inspection and Maintenance Plan **(7.6.5)**	DRAINAGE REPORT	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	All local approvals, permits, easements and licenses required, including but not limited to: • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. **(2.5.3.2A)**	ONGOING	
☐	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: • Calculations relating to stormwater runoff; • Information on composition and quantity of water demand and wastewater generated; • Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; • Estimates of traffic generation and counts pre- and post-construction; • Estimates of noise generation; • A Stormwater Management and Erosion Control Plan; • Endangered species and archaeological / historical studies; • Wetland and water body (coastal and inland) delineations; • Environmental impact studies. **(2.5.3.2B)**	SUBMITTED	
☐	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	TO BE PROVIDED	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	COVER SHEET	
☐	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	COVER SHEET	N/A
☐	For site plans that involve land designated as "Special Flood Hazard Areas" (SFHA) by the National Flood Insurance Program (NFIP) confirmation that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. **(2.5.4.2F)**	N/A	
☐	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	SHEET C3	N/A

Applicant's Signature: John Chagnon **Date:** 8-23-2022

PROPOSED GREEN BUILDING COMPONENTS

LOCATION AND TRANSPORTATION

1. Public Transportation – This site is about three blocks from Coast Bus service at the Hanover Garage Location.

2. Walkable Amenities – This site is a short walking distance the Portsmouth downtown core and adjacent to the Foundry garage.

3. Bicycle Storage - Bicycle storage will be provided for building occupants inside the building parking garage with potential for exterior public temporary customer storage. Condo owners will also be able to charge electric bikes in the garage (see parking section also).

4. Increased Density - The project will provide increased residential density in a previously developed commercial location.

SITE

5. Adaptive Reuse – Redevelopment of (demo and replace) an existing single-story commercial building for multi-story infill development.

6. Reduce Impervious Surfaces - Impervious surfaces have been reduced slightly, with increased areas for landscaping and community green space along the rail corridor.

7. Stormwater Design - The stormwater system has been designed using Low Impact Design techniques, such as R-tank stormwater detention and more pervious community space surfaces (i.e. expanded tree boxes).

8. Parking - Parking calculations have been performed using the City's parking requirements and have been exceeded. All garage parking spaces will have a dedicated electrical feed for charging an electric vehicle connected to each individual condo owner's electric service. EV chargers to ultimately provided by condo owners. Goal of 100% EV condo owners to minimize need for garage ventilation.

WATER

9. Plumbing Fixtures - Dual flush or low-flow toilets and other low-flow fixtures will be provided where possible.

10. Domestic Hot Water - Will be designed to exceed code requirements, anticipated to be hybrid-hot water which provides supplemental HVAC cooling capacity in summer.

ENERGY

11. Building Envelope - The building envelope will be designed as a high-performance assembly to exceed minimum Energy Code requirements to minimize heating and cooling expenses. Design elements include inset balcony patios to shade the interiors of lower floor units and a 3' roof overhang on the penthouse for summer shading.

12. HVAC Units - High-efficiency Air Source Heat Pumps controlled by the condo tenant. An Energy Recovery Ventilation (ERV) type system is also anticipated to provide continuous fresh air ventilation.

13. High-Efficiency Lighting - Efficient LED lighting will be used for interior and exterior fixtures, occupancy sensors where required.

14. Energy Star Appliances - Appliances provided by Owner will be Energy Star rated where appropriate. All cooktops will be induction electric and ovens will be electric. The elevator will be electric traction regenerative (not electric-hydraulic) for energy efficiency and transport speed. Emergency power for the elevator is anticipated to be Tesla Power Wall Battery (no gas or diesel generator).

15. Roofing - Flat roofing will be of a light-colored, reflective membrane roofing to reduce the heat island effect. Darker roofing may be used if covered with solar panels. Solar panels will not be visible per code.

MATERIALS AND RESOURCES

16. Minimize Waste - Material waste will be minimized as much as possible during construction.

INDOOR ENVIRONMENTAL QUALITY

17. Low-VOC Materials - Building materials with low volatile organic compound levels will be specified where possible.

18. Indoor Air Quality - Residential dwelling units will have operable windows for access to fresh air and patios will have folding glass doors to open the units to the outdoors. Natural gas will be omitted (no gas stoves or fireplaces) from the building to reduce NOx, CO and methane emissions.

19. Daylight - Habitable spaces will have access to windows for daylight.

20. Thermal Comfort - Each residential unit will have a dedicated HVAC controlled by the condo owner.

21. Acoustic Comfort - Acoustic and vibration separations will be provided between dwelling units at demising walls, rock wool sound insulation in the ceiling assemblies and floors as well as "acoustiblok" within the exterior walls, because of proximity the Rail corridor. Windows will be the highest STC available, again because of proximity the Rail corridor.

Note: Green building components reflect proposed project features and are subject to feasibility of construction.

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

23 November 2022

James McCarty, GIS Manager
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801

RE: Request for New Address; Mixed Use Site Development - Site Plan Proposal
Formerly 161 Deer Street *request to revise to* 70 Maplewood Avenue,

Dear Mr. McCarty:

On behalf of Tom Balon and EightKPH, LLC we hereby request that the property known as **161 Deer Street** (Tax Map 125 Lot 17 – 3) be re-assigned as **70 Maplewood Avenue** as it is re-developed.

Let me know if you have any questions regarding this request.

Sincerely,

John R. Chagnon

John R. Chagnon, PE
CC: Tom Balon

PRELIMINARY CODE STUDY

APPLICABLE CODES

- Basic code and fire rating information per 2015 IBC and 2015 NFPA 101 (with New Hampshire modifications).
- Per New Hampshire law, the more restrictive of NFPA 101 and IBC Means of Egress is to be used.
- Accessibility regulations compliance with IBC Chapter 11 and ANSI NH RSA 155-A:5.

GENERAL PROJECT DESCRIPTION

This project consists of the construction of a new mixed-use building in Portsmouth, New Hampshire.

The building will be four stories in height with a fifth story penthouse and a basement below. The basement will be used for parking and mechanical space, the first floor will be commercial space, and the second, third, fourth, and fifth floors will be residential dwelling units.

The building will be protected throughout by an NFPA-13 automatic sprinkler system.

BUILDING DATA

Zoning District:	CD5 - Character District 5
Overlay Districts:	Downtown Overlay District, North End Incentive Overlay District, Historic District
Occupancies:	R2 Residential S2 Storage (parking garage) M Mercantile (assumed worst case at first floor commercial)
Building height:	62 feet
Number of stories above grade:	Five (note 1)
Number of Residential units:	19 (six per floor at 2nd, 3rd, and 4th plus 1 at penthouse)
Footprint area:	17,190 SF
Construction Type:	Type II-B (noncombustible, unprotected) (note 4)
Sprinkler system:	NFPA-13 automatic sprinkler system
Standby power (note 5):	Required by IBC for elevator as means of egress (5 stories) Required by City of Portsmouth for garage ventilation

HEIGHT AND AREA LIMITATIONS

Construction type:	Type II-B	IBC section 602
Height limitation:	R2: 75 feet (S sprinkler) S2: 75 feet (S sprinkler) M: 75 feet (S sprinkler)	IBC table 504.3
Story limitation	R2: 5 stories (S sprinkler) S2: 4 stories (S sprinkler) M: 3 stories (S sprinkler)	IBC table 504.4
Area limitation:	R2: 48,000 SF (SM sprinkler) S2: 78,000 SF (SM sprinkler M: 37,500 SF (SM sprinkler)	IBC table 506.2
Street frontage increase:	Not required for compliance	IBC table 506.3

FIRE RATINGS

IBC Type II-B Construction

Note: Some structural members in otherwise unrated assemblies may require fire protection when supporting fire rated assemblies above. Requirements are subject to local building officials.

Basic building elements	Fire rating	Code reference
Structural frame:	0 hour	IBC table 601
Exterior bearing walls:	0 hour	IBC table 601
Interior bearing walls (not acting as fire separation):	0 hour	IBC table 601
Interior non-bearing walls (not acting as fire separation):	0 hour	IBC table 601
Floor construction:	0 hour	IBC table 601
Roof construction:	0 hour	IBC table 601

Interior fire separations	Fire rating	Code reference
Separation between S2 and M:	2 hours (first floor assembly)	NFPA 88A
Separation between M and R2:	1 hour (second floor assembly)	IBC section 508.4
Stair (vertical enclosure) walls:	2 hour fire barrier (note 2)	IBC table 1023.2
Exit access corridor walls:	1/2 hour fire partition (note 3)	IBC table 1020.1
Elevator hoistway:	2 hour fire barrier	IBC section 713.4
Elevator machine room enclosure:	2 hour fire barrier	IBC section 3005.4
Dwelling unit separations (walls):	1/2 hour fire partition	IBC section 708.3 ex.2
Dwelling unit separations (floor/ceiling):	1/2 hour	IBC section 711.2.4.3 ex

(continued next page)

Interior fire separations	Fire rating	Code reference
Dwelling unit/corridor separations:	1/2 hour	IBC section 708.3 ex.1
Mechanical shafts:	2 hour fire barrier	IBC section 713.4
Electric room enclosure (>112-1/2 kVA):	1 hour fire barrier (if applicable)	NEC 450.21(B)
Trash collection rooms:	1 hour fire barrier	NFPA 101 30.3.2.1.1
Storage rooms outside of dwellings:	0 hours with sprinkler system	NFPA 101 30.3.2.1.1
Common mechanical rooms:	1 hour fire barrier	NFPA 101 8.7.1
Opening protectives		
Exit access (stair enclosure) doors:	1-1/2 hour (90 minute)	IBC table 716.4
Elevator hoistway doors:	1-1/2 hour (90 minute)	IBC table 716.4
Elevator machine room doors:	1-1/2 hour (90 minute)	IBC table 716.4
Dwelling unit entry & corridor doors:	1/3 hour (20 minute)	IBC table 716.4
Electric room doors:	3/4 hour (45 minute)	IBC table 716.4
Trash room doors:	3/4 hour (45 minute)	IBC table 716.4
Common mechanical room doors:	3/4 hour (45 minute)	IBC table 716.4

ACCESSIBILITY

1. Sixty percent of public building entrances must be accessible. — IBC section 1105.1
2. The main accessible entrance must be at or near the main ambulatory entrance.
3. All public areas of the building must be accessible including the corridor side of dwelling unit entrances. An accessible route must be provided throughout the building except within multi-level dwelling units and within mechanical areas.
4. No Type A accessible dwelling units are required because the site contains less than 20 dwelling units. — IBC section 1107.6.2.2.1
5. All dwelling units must conform to Fair Housing Act requirements due to new construction with more than four dwelling units and elevator access to all floors. All dwelling units must be at least Type B accessible per IBC. — IBC section 1107.6.2.2.2
6. At least one parking space shall be accessible in the lower level garage (2% of total 29 spaces = 0.58 spaces required). — IBC section 1106.2
7. At least one van accessible parking space is required at the lower level garage, since a van space is required for every six accessible parking spaces. The minimum vertical clearance at the van space is 7’-0” (note 6). — IBC section 1106.5 ex.
8. Each public bathroom shall be accessible. Where multiple single-user bathrooms are clustered at a single location, at least 50 percent but not less than one room at each cluster shall be accessible. — IBC section 1109.2

NOTES

1) Basement is not a story above grade per IBC definition (floor above is less than 6' above grade plane).

2) Walls denoted as fire barriers must be continuous from the top of slab below to the underside of roof deck above.

3) Walls denoted as fire partitions must be continuous from the top of slab or deck below to the fire rated membrane above.

4) Combustible materials are permitted in construction Type II-B under specific conditions as listed in IBC Section 603.1. Item 1 of this section permits fire-retardant-treated wood to be used in nonbearing partitions where the required fire rating is 2 hours or less. This means that the exterior wall system of the building must be constructed using either GWB sheathing (such as Densglass) or FRT plywood sheathing. A separate building wrap product (such as Blueskin) or a fluid applied barrier system may then be installed over this sheathing for a complete exterior assembly.
Because it is not fabricated using FRT wood, combined sheathing products such as ZIP sheathing cannot be used in Type II-B construction.

5) Owner has proposed using a battery system for standby power (such as Tesla Powerwall). This will require AHJ approval as a standby power source.

6) IBC Section 1106.5 allows an exception for van accessible parking spaces in private garages serving R2 residential occupancies, allowing the vertical clearance to be reduced to 7'-0" minimum, where the 2010 ADA Standards require 8'-2" clear height at van accessible spaces with no exceptions listed. Since this project is not subject to the requirements of the ADA Standards, and the lower level garage is a private garage serving the R2 residential occupancy, the clear height at the van space may be 7'-0" minimum.

END OF DOCUMENT

TABLE 1106.1
ACCESSIBLE PARKING SPACES

TOTAL PARKING SPACES PROVIDED IN PARKING FACILITIES	REQUIRED MINIMUM NUMBER OF ACCESSIBLE SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total
1,001 and over	20, plus one for each 100, or fraction thereof, over 1,000

❖ The required number of accessible parking spaces is based on the accessible parking requirements of the 2010 ADA Standard. It does not reflect the demographic statistics on wheelchair usage that were used to scope other requirements in Chapter 11, because the majority of disabled parking permit and license plate holders in most states are ambulatory, mobility-impaired persons. The required ratios are intended to be responsive to the anticipated demand for all facilities, such that accessible parking spaces will be reasonably available on demand. Section 1111.1 states that signage is not required on the one required accessible parking space when the total number of parking spaces provided is four or less. This could be burdensome for the building tenant in that the accessible parking space, which is restricted for use only by authorized vehicles, could constitute anywhere from 25 to 100 percent of the available parking. This may unduly restrict the availability of parking for all other vehicles and patrons of the facility. While not reserved by signage, the space must still be sized in accordance with a van-accessible space.

1106.2 Groups I-1, R-1, R-2, R-3 and R-4. *Accessible* parking spaces shall be provided in Group I-1, R-1, R-2, R-3 and R-4 occupancies in accordance with Items 1 through 4 as applicable.

1. In Group R-2, R-3 and R-4 occupancies that are required to have *Accessible*, *Type A* or *Type B dwelling units* or *sleeping units*, at least 2 percent, but not less than one, of each type of parking space provided shall be *accessible*.
2. In Group I-1 and R-1 occupancies, *accessible* parking shall be provided in accordance with Table 1106.1.
3. Where at least one parking space is provided for each *dwelling unit* or *sleeping unit*, at least one *accessible* parking space shall be provided for each *Accessible* and *Type A unit*.
4. Where parking is provided within or beneath a building, *accessible* parking spaces shall be provided within or beneath the building.

❖ This section provides a separate criterion for the required number of accessible parking spaces for occupancies in Groups I-1, R-1, R-2, R-3 and R-4 that include Accessible, Type A or Type B units.

The 2-percent requirement in Item 1 for R-2, R-3 and R-4 is based on HUD's FHAG. Section 1107.7 identifies buildings where Type A and Type B units may not be required. For example, a townhouse development may not have any Type A or Type B dwelling units required, therefore, no accessible parking spaces are required. Designers should keep in mind that asking for accessible parking spaces is a common accommodation asked for by residents in both townhouse and apartment developments. While not required, it would be good design practice to exceed code and at least have space on the parking lot to add accessible parking when requested.

Per Item 2, assisted living facilities (Group I-1) and hotels and motels (Group R-1) should use Table 1106.1 to determine the number of accessible parking spaces required.

Due to the higher anticipated need, per Item 3, when a residential parking lot provides one or more spaces for each dwelling or sleeping unit, there should be accessible parking spaces for each Accessible or Type A unit in the facility, in addition to the 2 percent required by Items 1 or 2. For example, a 100-unit hotel has 100 parking spaces for the guests. Four Accessible guestrooms are required. Table 1106.1 would require four accessible spaces. Item 3 would require an additional four accessible spaces. Therefore the hotel will have to provide eight accessible parking spaces, two sized for a van.

Per Item 4, where parking is provided within or beneath a building, accessible parking spaces also are to be provided within or beneath the building. If a combination of surface and covered parking is provided, accessible parking may be provided in both locations. This is intended to establish consistency in the type and location of parking spaces available to all people. If parking is provided in individual private parking garages, 2 percent of the parking garages would have to contain accessible parking spaces (see the exception to Section 1106.5).

In a development, typically parking for dwelling units is considered on a site basis rather than a building-by-building basis. Accessible parking should be dispersed throughout the development so as to provide the best access possible. It is not the intent to require accessible parking spaces at the entrance to every building, or within every strip of parking garages. For example, it would not be logical to ask for a surface space and a garage space for each building in developments with multiple four-unit buildings. See Section 1106.5 for a discussion of the distribution of van-accessible spaces.

DRAINAGE ANALYSIS

SITE DEVELOPMENT

88 MAPLEWOOD AVENUE
PORTSMOUTH, NH

PREPARED FOR
EIGHTKPH, LLC.

23 AUGUST 2022
AMENDED: 20 OCTOBER 2022

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED
PROFESSIONAL ENGINEER

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jrc@ambitengineering.com
(Ambit Job Number 2271.04)

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed building at 88 Maplewood Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 125 as Lot 17-3. The project proposes to replace the current building and associated parking lot. The total size of the lot together is 22,667 square-feet (0.520 acres). The size of the total drainage area is 41,807 square-feet (0.960 acres).

The site plans will provide for the future construction of a new building, with associated landscaping, utilities, and underground parking. The new building will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 125 as Lot 17-3. Bounding the site to north is a railroad and then a cemetery. Bounding the site to east is Maplewood Avenue. Bounding the site to south is Deer Street. Bounding the site to the west is an existing Banking facility with drive-up window. A vicinity map is included in the Appendix to this report. The existing building and associated parking lot will be demolished.

This report includes information about the existing site and the proposed construction necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for

the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire."

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

In addition, the City of Portsmouth produced the "Deer Street Outfall Drainage Evaluation," published October 17, 2018. This report was used to evaluate the future impacts of the proposed drainage network.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of two soil types:

Soil Symbol	Soil Name and Slopes
699	Urban land
799	Urban land – Canton Complex (3-15% slopes)

Canton complex is well drained with a stated depth to water table and restrictive feature of more than 80 inches. However, due to the primary urban fill component of the soil, as well as the proximity to North Mill Pond, the Hydrologic Soil Group will be assumed to be D.

The physical characteristics of the site consist of flat (0-15%) grades that generally slope from the northeast to the southwest. Elevations on the site range from 12 to 15 feet above sea level. The existing site is developed and includes an existing building located in the center of the lot, with an asphalt parking lot to the north. Vegetation around the developed portion of the lot consists of established grasses and some landscape areas.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259F (effective date January 29, 2021), the project site is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as two watershed basins (E1 and E2) based on localized topography and discharge location. Subcatchment E1 contains the southwesterly part of the lot, as well as part of the western adjacent lot and drains to a catch basin in the southwest. Subcatchment E2 contains a much smaller northeasterly part of the lot and drains to a catch basin to the north. Subcatchments E1 and E2 drain to discharge points DP1 and DP2, respectively. DP1 is located at a catch basin across the street from 'Statey Bar and Grill,' while DP2 is a catch basin near the north corner of the property. The "Deer Street Outfall Drainage Evaluation" raises concerns about the existing pipe to which both discharge points are currently connected. From the report: "Based on the evaluations described above, and in detail in the following report, we have concluded additional drainage capacity is needed now and in the future at the Deer Street Outfall." The report estimates that the pipe nearest the site (from DMH 4980) will flow at capacity during the 10-year storm event, and several of the surrounding pipes in the drainage network will be surcharged. The possibility was raised that part of this flow be diverted through an additional outlet pipe through Maplewood Avenue. However, stormwater design that diverts drainage toward the Maplewood Avenue drainage network is not feasible at this time.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	To Design Point
E1	38,820	5.0	95	7.03	10.80	DP1
E2	2,987	5.0	87	0.48	0.78	DP2

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as three subcatchment basins, (P1, P1a and P2). Subcatchments P1 and P1a are related to the area of subcatchment E1. Subcatchment P1a contains the roof of the proposed building, and drains through a roof filter and R-Tank storage system before discharging to an outfall pipe downstream from DP1. Subcatchment P2 is related to the area of subcatchment E2. Subcatchments P1 and P2 drain to Discharge Points DP1 and DP2, respectively. Note that Subcatchment P2 drains toward Maplewood Avenue.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
P1	19,402	5.0	95	3.51	5.40	DP1
P1a	16,944	5.0	98	3.13	4.76	DP1
P2	5,462	5.0	95	0.99	1.52	DP2

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 0.759 acres (79.12%) in the pre-development condition to 0.866 acres (90.19%) in the post-development condition. The project proposes the construction of a R-Tank storage system on site, reducing the peak flow discharge from the site, as well as a downspout filter, providing treatment.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the R-Tank. Note the inclusion of Discharge Point 3 (DP3), representative of the net flows from DP1 and DP2, located at the outfall pipe headed toward North Mill Pond.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	4.51	3.97	7.03	6.49	10.80	10.04	Statey Basin
DP2	0.28	0.63	0.48	0.99	0.78	1.52	North Corner
DP3	4.79	4.60	7.51	7.48	11.59	11.56	Combined Flow

Discharge Point 2 experiences a significant increase in peak discharge, however, the city infrastructure to be utilized by both discharge points are connected by the same drainage network, as shown by DP3. The net effect of both discharge points on the drainage network shows peak flows at or below existing levels. Discharge Point 2, if connected to a new drainage network, would lower the peak flow to Discharge Point 3.

The City of Portsmouth classifies any project that disturbs more than 15,000 square feet of area where over 40% of the existing area is already impervious as a redevelopment project. The City requires that such projects treat at least 30% of their existing impervious area and 100% of any additional impervious area using filtration or infiltration practices. This expectation is exceeded with the treatment of the proposed 16,944 sf rooftop.

(100%)(4,626 sf pervious) + (30%)(18,041 sf impervious) = 10,038 sf required treatment

OFFSITE INFRASTRUCTURE CAPACITY

Retention and routing of the stormwater to the City infrastructure is done on-site through the use of the R-Tank storage system, and has been designed as not to increase the peak flow rate to the local drainage system, therefore no impact to city infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of existing impervious surfaces. During construction, the major potential for erosion is wind and

stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Filter baskets in catch basins
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the R-Tank system, the post-development runoff rates are reduced to below the pre-development runoff rates. The proposed downspout filter will provide treatment to part of the runoff. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. Additionally, the diversion of some flow from Deer Street will be advantageous in the event the City pursues an additional outlet pipe to North Mill Pond through Maplewood Avenue.

REFERENCES

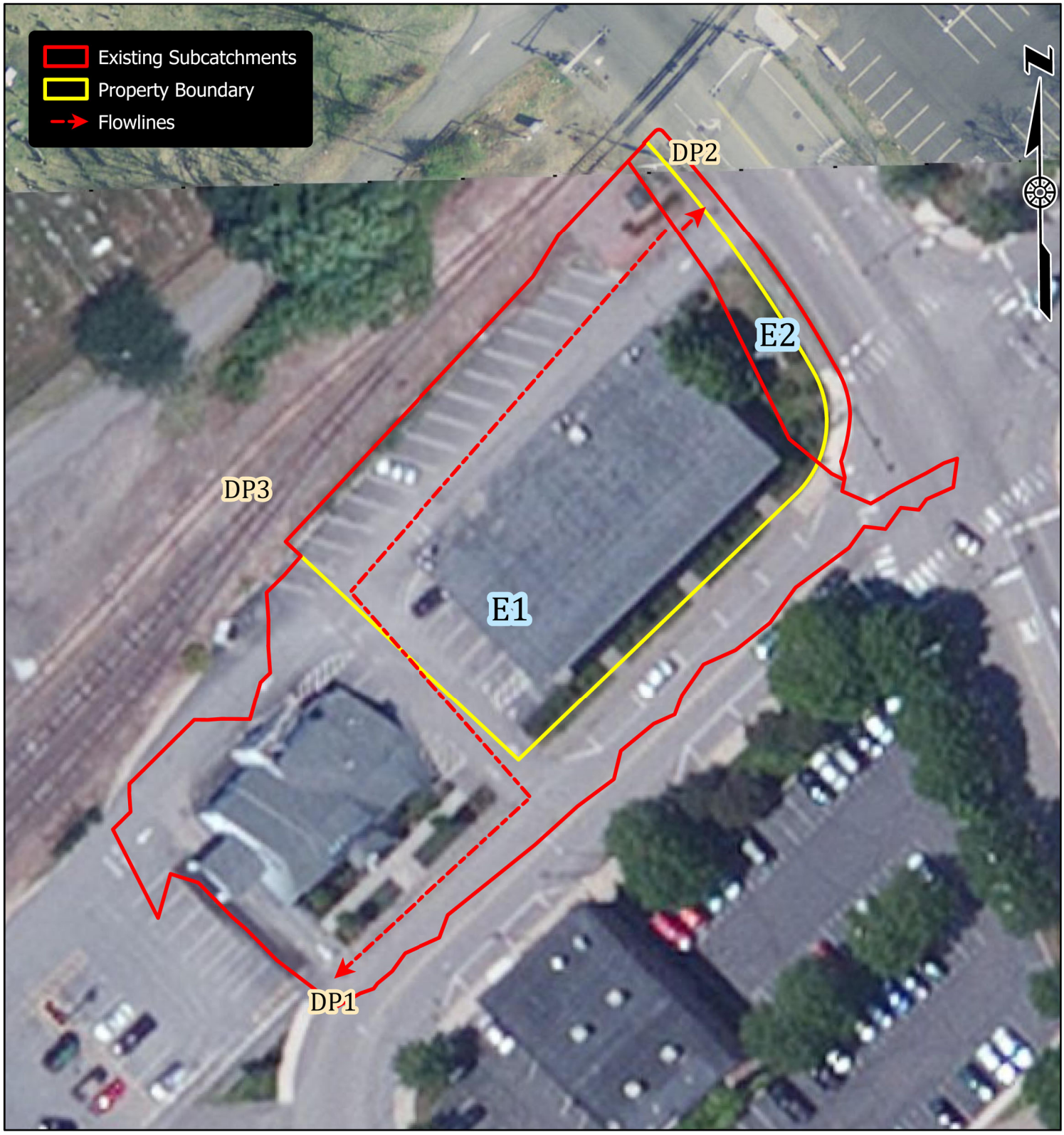
1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2013.
4. CMA Engineers. *Deer Street Outfall Drainage Evaluation*, October 2018.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Existing Subcatchments

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 50'
SUBMITTED: 10-20-2022

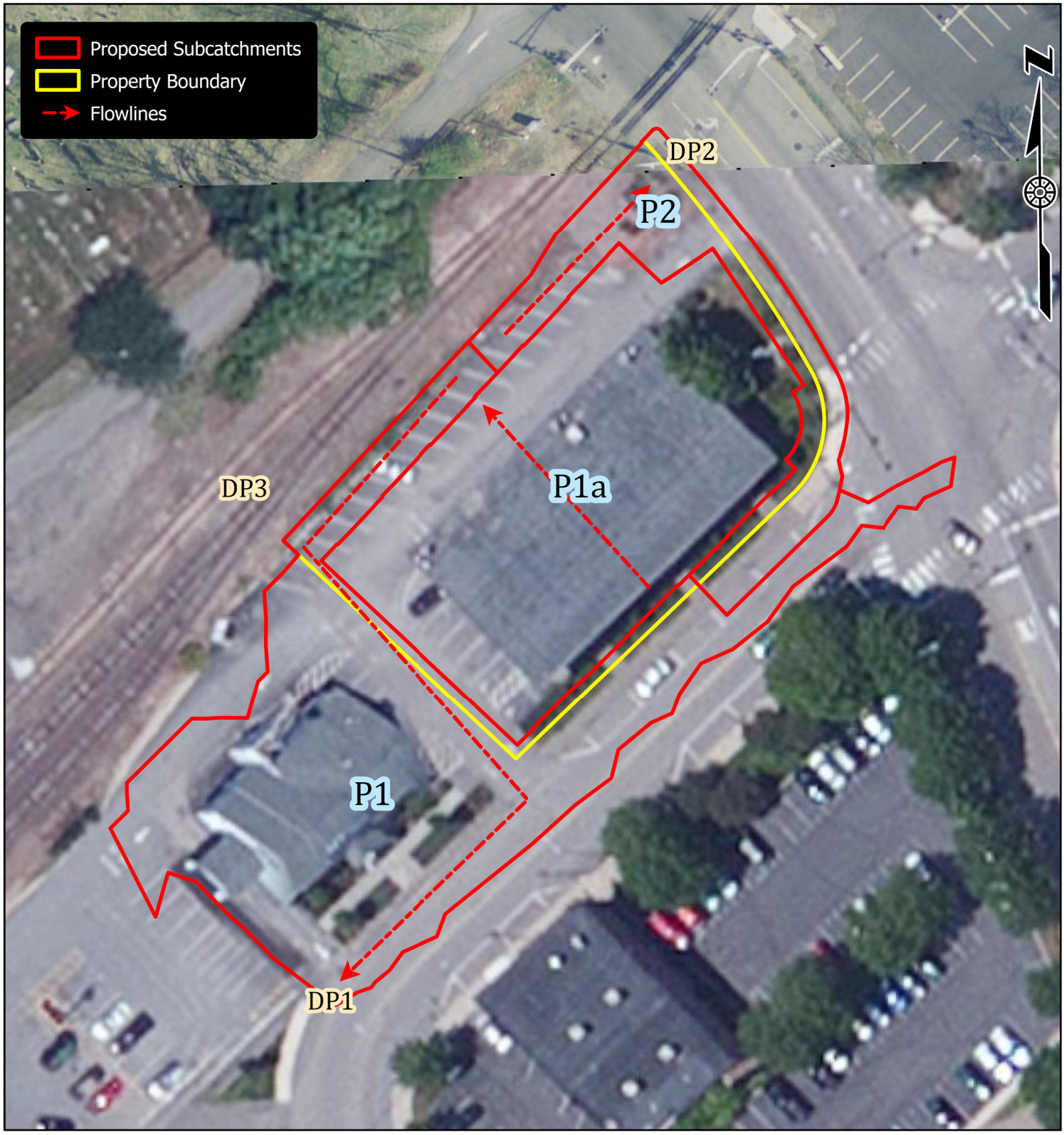


AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Proposed Drainage

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 50'
SUBMITTED: 10-20-2022



APPENDIX A

VICINITY (TAX) MAP

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Property Boundaries

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 60'
SUBMITTED: 08-04-2022

APPENDIX B

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.762 degrees West
Latitude	43.078 degrees North
Elevation	0 feet
Date/Time	Thu, 19 May 2022 11:11:02 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.62	4.73	6.16	7.09	**25yr**	5.45	6.81	7.78	9.00	10.03	**25yr**
50yr	0.53	0.86	1.10	1.53	2.07	2.75	**50yr**	1.78	2.52	3.28	4.31	5.65	7.37	8.57	**50yr**	6.53	8.24	9.40	10.79	11.95	**50yr**
100yr	0.59	0.96	1.24	1.76	2.41	3.25	**100yr**	2.08	2.97	3.90	5.15	6.75	8.83	10.36	**100yr**	7.82	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.42	2.04	2.82	3.82	**200yr**	2.43	3.51	4.60	6.11	8.06	10.58	12.52	**200yr**	9.37	12.04	13.71	15.50	16.98	**200yr**
500yr	0.80	1.31	1.71	2.48	3.47	4.75	**500yr**	2.99	4.37	5.75	7.68	10.19	13.45	16.11	**500yr**	11.90	15.49	17.61	19.72	21.44	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.92	1.33	1.68	2.23	2.48	**1yr**	1.97	2.39	2.86	3.18	3.88	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.45	**2yr**	2.70	3.31	3.82	4.54	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.18	**5yr**	3.34	4.02	4.71	5.52	6.23	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.85	**10yr**	3.86	4.66	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.34	1.86	2.10	2.76	3.54	4.70	5.87	**25yr**	4.16	5.64	6.62	7.76	8.65	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.34	3.07	3.93	5.31	6.77	**50yr**	4.70	6.51	7.68	9.00	9.98	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.42	4.35	5.96	7.81	**100yr**	5.28	7.51	8.92	10.45	11.52	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.79	4.79	6.68	9.01	**200yr**	5.91	8.66	10.34	12.15	13.31	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.32	5.46	7.76	10.87	**500yr**	6.87	10.45	12.58	14.86	16.11	**500yr**

Upper Confidence Limits

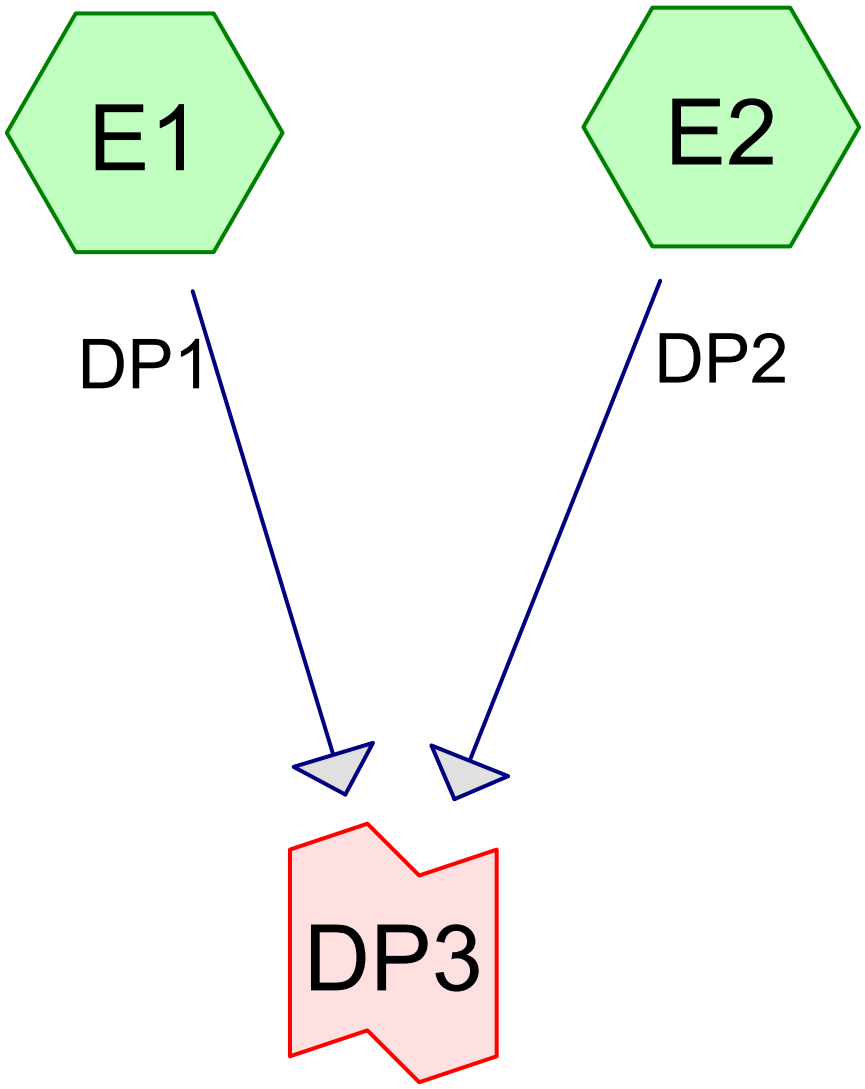
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.21	2.98	3.16	**1yr**	2.64	3.04	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.03	3.56	4.08	4.83	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.97	**10yr**	1.39	1.93	2.28	3.11	3.95	5.33	6.20	**10yr**	4.72	5.96	6.82	7.83	8.74	**10yr**
25yr	0.57	0.87	1.09	1.55	2.04	2.57	**25yr**	1.76	2.51	2.95	4.07	5.15	7.77	8.34	**25yr**	6.88	8.02	9.15	10.33	11.40	**25yr**
50yr	0.67	1.02	1.27	1.82	2.46	3.12	**50yr**	2.12	3.05	3.59	5.00	6.32	9.73	10.46	**50yr**	8.62	10.06	11.45	12.71	13.95	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.80	**100yr**	2.55	3.72	4.37	6.15	7.76	12.18	13.11	**100yr**	10.78	12.61	14.32	15.68	17.08	**100yr**
200yr	0.92	1.39	1.76	2.54	3.55	4.64	**200yr**	3.06	4.54	5.33	7.58	9.53	15.29	16.45	**200yr**	13.53	15.82	17.94	19.34	20.91	**200yr**
500yr	1.14	1.70	2.19	3.18	4.52	6.02	**500yr**	3.90	5.89	6.92	10.01	12.54	20.67	22.22	**500yr**	18.29	21.37	24.18	25.50	27.33	**500yr**

Powered by ACIS Northeast Regional Climate Center

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for Existing Conditions David T
Prepared by Ambit Engineering, Printed 2022-10-20

Project Notes

Defined 5 rainfall events from output (37) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.48	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.146	80	>75% Grass cover, Good, HSG D (E1, E2)
0.285	98	Paved parking, HSG D (E1, E2)
0.167	98	Roofs, HSG D (E1)
0.361	95	Urban commercial, 85% imp, HSG D (E1)
0.960	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.960	HSG D	E1, E2
0.000	Other	
0.960		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.146	0.000	0.146	>75% Grass cover, Good	E1, E2
0.000	0.000	0.000	0.285	0.000	0.285	Paved parking	E1, E2
0.000	0.000	0.000	0.167	0.000	0.167	Roofs	E1
0.000	0.000	0.000	0.361	0.000	0.361	Urban commercial, 85% imp	E1
0.000	**0.000**	**0.000**	**0.960**	**0.000**	**0.960**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=38,820 sf 82.21% Impervious Runoff Depth>2.92"
Tc=5.0 min CN=95 Runoff=4.51 cfs 0.217 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=87 Runoff=0.28 cfs 0.012 af

Link DP3: above 1,000.00 cfs Inflow=4.79 cfs 0.229 af
Primary=0.00 cfs 0.000 af Secondary=4.79 cfs 0.229 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.229 af Average Runoff Depth = 2.86"
20.88% Pervious = 0.200 ac 79.12% Impervious = 0.759 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.51 cfs @ 11.95 hrs, Volume= 0.217 af, Depth> 2.92"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
38,820	95	Weighted Average
6,904		17.79% Pervious Area
31,916		82.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.28 cfs @ 11.95 hrs, Volume= 0.012 af, Depth> 2.18"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.960 ac, 79.12% Impervious, Inflow Depth > 2.86" for 2-yr event
Inflow = 4.79 cfs @ 11.95 hrs, Volume= 0.229 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 4.79 cfs @ 11.95 hrs, Volume= 0.229 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=38,820 sf 82.21% Impervious Runoff Depth>4.66"
Tc=5.0 min CN=95 Runoff=7.03 cfs 0.346 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>3.87"
Tc=5.0 min CN=87 Runoff=0.48 cfs 0.022 af

Link DP3: above 1,000.00 cfs Inflow=7.51 cfs 0.368 af
Primary=0.00 cfs 0.000 af Secondary=7.51 cfs 0.368 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.368 af Average Runoff Depth = 4.60"
20.88% Pervious = 0.200 ac 79.12% Impervious = 0.759 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.03 cfs @ 11.95 hrs, Volume= 0.346 af, Depth> 4.66"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
38,820	95	Weighted Average
6,904		17.79% Pervious Area
31,916		82.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.48 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 3.87"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.960 ac, 79.12% Impervious, Inflow Depth > 4.60" for 10-yr event
Inflow = 7.51 cfs @ 11.95 hrs, Volume= 0.368 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 7.51 cfs @ 11.95 hrs, Volume= 0.368 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=38,820 sf 82.21% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=95 Runoff=8.98 cfs 0.447 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>5.21"
Tc=5.0 min CN=87 Runoff=0.64 cfs 0.030 af

Link DP3: above 1,000.00 cfs Inflow=9.62 cfs 0.477 af
Primary=0.00 cfs 0.000 af Secondary=9.62 cfs 0.477 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.477 af Average Runoff Depth = 5.96"
20.88% Pervious = 0.200 ac 79.12% Impervious = 0.759 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 8.98 cfs @ 11.95 hrs, Volume= 0.447 af, Depth> 6.02"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
38,820	95	Weighted Average
6,904		17.79% Pervious Area
31,916		82.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.64 cfs @ 11.95 hrs, Volume= 0.030 af, Depth> 5.21"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.960 ac, 79.12% Impervious, Inflow Depth > 5.96" for 25-yr event
Inflow = 9.62 cfs @ 11.95 hrs, Volume= 0.477 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 9.62 cfs @ 11.95 hrs, Volume= 0.477 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=38,820 sf 82.21% Impervious Runoff Depth>7.29"
Tc=5.0 min CN=95 Runoff=10.80 cfs 0.541 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>6.49"
Tc=5.0 min CN=87 Runoff=0.78 cfs 0.037 af

Link DP3: above 1,000.00 cfs Inflow=11.59 cfs 0.578 af
Primary=0.00 cfs 0.000 af Secondary=11.59 cfs 0.578 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.578 af Average Runoff Depth = 7.23"
20.88% Pervious = 0.200 ac 79.12% Impervious = 0.759 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.80 cfs @ 11.95 hrs, Volume= 0.541 af, Depth> 7.29"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
38,820	95	Weighted Average
6,904		17.79% Pervious Area
31,916		82.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.78 cfs @ 11.95 hrs, Volume= 0.037 af, Depth> 6.49"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

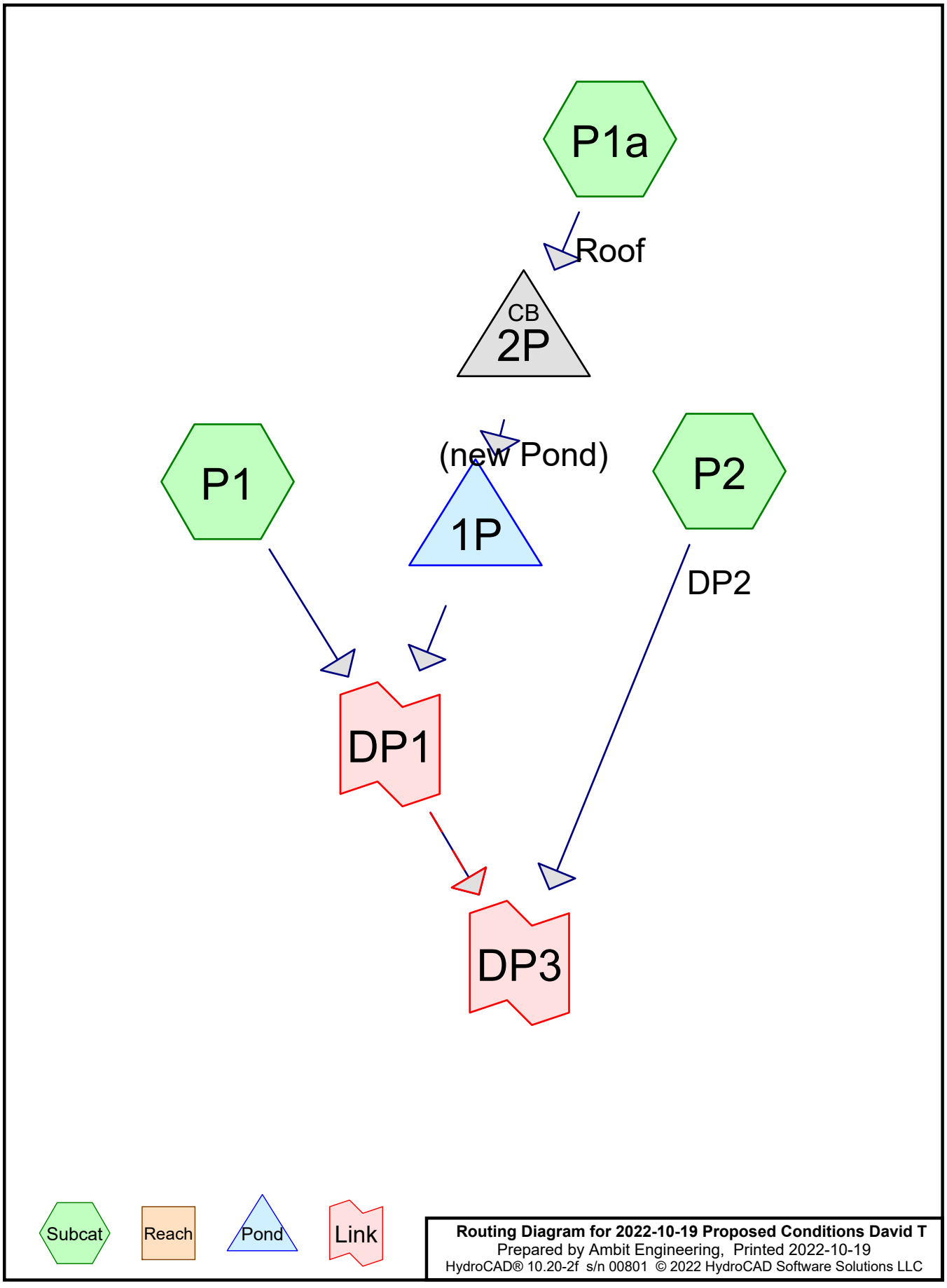
Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.960 ac, 79.12% Impervious, Inflow Depth > 7.23" for 50-yr event
Inflow = 11.59 cfs @ 11.95 hrs, Volume= 0.578 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 11.59 cfs @ 11.95 hrs, Volume= 0.578 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for 2022-10-19 Proposed Conditions David T
Prepared by Ambit Engineering, Printed 2022-10-19

Project Notes

Defined 5 rainfall events from output (37) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.48	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.040	80	>75% Grass cover, Good, HSG D (P1, P2)
0.170	98	Paved parking, HSG D (P1, P2)
0.389	98	Roofs, HSG D (P1a)
0.361	95	Urban commercial, 85% imp, HSG D (P1)
0.960	**96**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.960	HSG D	P1, P1a, P2
0.000	Other	
0.960		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.040	0.000	0.040	>75% Grass cover, Good	P1, P2
0.000	0.000	0.000	0.170	0.000	0.170	Paved parking	P1, P2
0.000	0.000	0.000	0.389	0.000	0.389	Roofs	P1a
0.000	0.000	0.000	0.361	0.000	0.361	Urban commercial, 85% imp	P1
0.000	**0.000**	**0.000**	**0.960**	**0.000**	**0.960**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	7.18	6.93	44.0	0.0057	0.013	0.0	12.0	0.0
2	2P	12.70	11.00	10.0	0.1700	0.013	0.0	12.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=19,402 sf 83.60% Impervious Runoff Depth>2.92"
Tc=5.0 min CN=95 Runoff=2.25 cfs 0.108 af

Subcatchment P1a: Roof Runoff Area=16,944 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=2.05 cfs 0.103 af

Subcatchment P2: DP2 Runoff Area=5,462 sf 83.16% Impervious Runoff Depth>2.92"
Tc=5.0 min CN=95 Runoff=0.63 cfs 0.030 af

Pond 1P: Peak Elev=10.59' Storage=0.010 af Inflow=2.05 cfs 0.103 af
Outflow=1.84 cfs 0.103 af

Pond 2P: (new Pond) Peak Elev=13.22' Inflow=2.05 cfs 0.103 af
12.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.1700 '/' Outflow=2.05 cfs 0.103 af

Link DP1: above 1,000.00 cfs Inflow=3.97 cfs 0.211 af
Primary=0.00 cfs 0.000 af Secondary=3.97 cfs 0.211 af

Link DP3: above 1,000.00 cfs Inflow=4.60 cfs 0.242 af
Primary=0.00 cfs 0.000 af Secondary=4.60 cfs 0.242 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.242 af Average Runoff Depth = 3.02"
9.81% Pervious = 0.094 ac 90.19% Impervious = 0.866 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.25 cfs @ 11.95 hrs, Volume= 0.108 af, Depth> 2.92"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
19,402	95	Weighted Average
3,181		16.40% Pervious Area
16,221		83.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.05 cfs @ 11.95 hrs, Volume= 0.103 af, Depth> 3.18"
Routed to Pond 2P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
9,126	98	Roofs, HSG D
7,818	98	Roofs, HSG D
16,944	98	Weighted Average
16,944		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.63 cfs @ 11.95 hrs, Volume= 0.030 af, Depth> 2.92"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
5,462	95	Weighted Average
920		16.84% Pervious Area
4,542		83.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 3.18" for 2-yr event
Inflow = 2.05 cfs @ 11.95 hrs, Volume= 0.103 af
Outflow = 1.84 cfs @ 11.99 hrs, Volume= 0.103 af, Atten= 10%, Lag= 2.4 min
Primary = 1.84 cfs @ 11.99 hrs, Volume= 0.103 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.59' @ 11.99 hrs Surf.Area= 0.006 ac Storage= 0.010 af

Plug-Flow detention time= 2.9 min calculated for 0.103 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (733.9 - 731.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	7.86'	0.006 af	**9.25'W x 27.46'L x 4.07'H Field A** 0.024 af Overall - 0.008 af Embedded = 0.016 af x 40.0% Voids
#2A	8.11'	0.008 af	**ACF R-Tank LD 2** x 40 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 40 Chambers in 4 Rows
		0.014 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.18'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.18' / 6.93' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	9.46'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	7.76'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.80 cfs @ 11.99 hrs HW=10.55' (Free Discharge)
└**1=Culvert** (Passes 1.80 cfs of 6.01 cfs potential flow)
  └**2=Custom Weir/Orifice** (Weir Controls 0.74 cfs @ 3.41 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.05 cfs @ 7.73 fps)

Summary for Pond 2P: (new Pond)

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 13.22' (Flood elevation advised)

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 3.18" for 2-yr event
Inflow = 2.05 cfs @ 11.95 hrs, Volume= 0.103 af
Outflow = 2.05 cfs @ 11.95 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 11.95 hrs, Volume= 0.103 af
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.22' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	12.70'	**12.0" Round Culvert X 2.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.70' / 11.00' S= 0.1700 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.05 cfs @ 11.95 hrs HW=13.22' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.05 cfs @ 2.46 fps)

Summary for Link DP1:

Inflow Area = 0.834 ac, 91.25% Impervious, Inflow Depth > 3.04" for 2-yr event
Inflow = 3.97 cfs @ 11.97 hrs, Volume= 0.211 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 3.97 cfs @ 11.97 hrs, Volume= 0.211 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.960 ac, 90.19% Impervious, Inflow Depth > 3.02" for 2-yr event
Inflow = 4.60 cfs @ 11.96 hrs, Volume= 0.242 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 4.60 cfs @ 11.96 hrs, Volume= 0.242 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=19,402 sf 83.60% Impervious Runoff Depth>4.66"
Tc=5.0 min CN=95 Runoff=3.51 cfs 0.173 af

Subcatchment P1a: Roof Runoff Area=16,944 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=3.13 cfs 0.159 af

Subcatchment P2: DP2 Runoff Area=5,462 sf 83.16% Impervious Runoff Depth>4.66"
Tc=5.0 min CN=95 Runoff=0.99 cfs 0.049 af

Pond 1P: Peak Elev=11.36' Storage=0.013 af Inflow=3.13 cfs 0.159 af
Outflow=3.01 cfs 0.159 af

Pond 2P: (new Pond) Peak Elev=13.37' Inflow=3.13 cfs 0.159 af
12.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.1700 '/' Outflow=3.13 cfs 0.159 af

Link DP1: above 1,000.00 cfs Inflow=6.49 cfs 0.332 af
Primary=0.00 cfs 0.000 af Secondary=6.49 cfs 0.332 af

Link DP3: above 1,000.00 cfs Inflow=7.48 cfs 0.380 af
Primary=0.00 cfs 0.000 af Secondary=7.48 cfs 0.380 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.381 af Average Runoff Depth = 4.76"
9.81% Pervious = 0.094 ac 90.19% Impervious = 0.866 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.51 cfs @ 11.95 hrs, Volume= 0.173 af, Depth> 4.66"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
19,402	95	Weighted Average
3,181		16.40% Pervious Area
16,221		83.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.13 cfs @ 11.95 hrs, Volume= 0.159 af, Depth> 4.90"
Routed to Pond 2P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
9,126	98	Roofs, HSG D
7,818	98	Roofs, HSG D
16,944	98	Weighted Average
16,944		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.99 cfs @ 11.95 hrs, Volume= 0.049 af, Depth> 4.66"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
5,462	95	Weighted Average
920		16.84% Pervious Area
4,542		83.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage
[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.30'

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 4.90" for 10-yr event
Inflow = 3.13 cfs @ 11.95 hrs, Volume= 0.159 af
Outflow = 3.01 cfs @ 11.97 hrs, Volume= 0.159 af, Atten= 4%, Lag= 1.1 min
Primary = 3.01 cfs @ 11.97 hrs, Volume= 0.159 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.36' @ 11.97 hrs Surf.Area= 0.006 ac Storage= 0.013 af

Plug-Flow detention time= 2.8 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (731.3 - 728.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	7.86'	0.006 af	**9.25'W x 27.46'L x 4.07'H Field A** 0.024 af Overall - 0.008 af Embedded = 0.016 af x 40.0% Voids
#2A	8.11'	0.008 af	**ACF R-Tank LD 2** x 40 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 40 Chambers in 4 Rows
		0.014 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.18'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.18' / 6.93' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	9.46'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	7.76'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.89 cfs @ 11.97 hrs HW=11.29' (Free Discharge)
└**1=Culvert** (Passes 2.89 cfs of 6.81 cfs potential flow)
  ├**2=Custom Weir/Orifice** (Weir Controls 1.69 cfs @ 3.49 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.20 cfs @ 8.78 fps)

Summary for Pond 2P: (new Pond)

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 13.37' (Flood elevation advised)

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 4.90" for 10-yr event
Inflow = 3.13 cfs @ 11.95 hrs, Volume= 0.159 af
Outflow = 3.13 cfs @ 11.95 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min
Primary = 3.13 cfs @ 11.95 hrs, Volume= 0.159 af
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.37' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	12.70'	**12.0" Round Culvert X 2.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.70' / 11.00' S= 0.1700 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.13 cfs @ 11.95 hrs HW=13.37' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.13 cfs @ 2.79 fps)

Summary for Link DP1:

Inflow Area = 0.834 ac, 91.25% Impervious, Inflow Depth > 4.77" for 10-yr event
Inflow = 6.49 cfs @ 11.96 hrs, Volume= 0.332 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 6.49 cfs @ 11.96 hrs, Volume= 0.332 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.960 ac, 90.19% Impervious, Inflow Depth > 4.76" for 10-yr event
Inflow = 7.48 cfs @ 11.96 hrs, Volume= 0.380 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 7.48 cfs @ 11.96 hrs, Volume= 0.380 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=19,402 sf 83.60% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=95 Runoff=4.49 cfs 0.223 af

Subcatchment P1a: Roof Runoff Area=16,944 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=3.97 cfs 0.202 af

Subcatchment P2: DP2 Runoff Area=5,462 sf 83.16% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=95 Runoff=1.26 cfs 0.063 af

Pond 1P: Peak Elev=11.46' Storage=0.013 af Inflow=3.97 cfs 0.202 af
Outflow=4.18 cfs 0.202 af

Pond 2P: (new Pond) Peak Elev=13.48' Inflow=3.97 cfs 0.202 af
12.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.1700 '/' Outflow=3.97 cfs 0.202 af

Link DP1: above 1,000.00 cfs Inflow=8.66 cfs 0.425 af
Primary=0.00 cfs 0.000 af Secondary=8.66 cfs 0.425 af

Link DP3: above 1,000.00 cfs Inflow=9.93 cfs 0.488 af
Primary=0.00 cfs 0.000 af Secondary=9.93 cfs 0.488 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.488 af Average Runoff Depth = 6.11"
9.81% Pervious = 0.094 ac 90.19% Impervious = 0.866 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.49 cfs @ 11.95 hrs, Volume= 0.223 af, Depth> 6.02"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
19,402	95	Weighted Average
3,181		16.40% Pervious Area
16,221		83.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.97 cfs @ 11.95 hrs, Volume= 0.202 af, Depth> 6.24"
Routed to Pond 2P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
9,126	98	Roofs, HSG D
7,818	98	Roofs, HSG D
16,944	98	Weighted Average
16,944		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.26 cfs @ 11.95 hrs, Volume= 0.063 af, Depth> 6.02"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
5,462	95	Weighted Average
920		16.84% Pervious Area
4,542		83.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.46'

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-yr event
Inflow = 3.97 cfs @ 11.95 hrs, Volume= 0.202 af
Outflow = 4.18 cfs @ 11.95 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.2 min
Primary = 4.18 cfs @ 11.95 hrs, Volume= 0.202 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.46' @ 11.95 hrs Surf.Area= 0.006 ac Storage= 0.013 af

Plug-Flow detention time= 2.7 min calculated for 0.201 af (100% of inflow)
Center-of-Mass det. time= 2.4 min (730.3 - 727.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	7.86'	0.006 af	**9.25'W x 27.46'L x 4.07'H Field A** 0.024 af Overall - 0.008 af Embedded = 0.016 af x 40.0% Voids
#2A	8.11'	0.008 af	**ACF R-Tank LD 2** x 40 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 40 Chambers in 4 Rows
		0.014 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.18'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.18' / 6.93' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	9.46'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	7.76'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.10 cfs @ 11.95 hrs HW=11.45' (Free Discharge)
└**1=Culvert** (Passes 4.10 cfs of 6.97 cfs potential flow)
  └**2=Custom Weir/Orifice** (Weir Controls 2.87 cfs @ 2.56 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.23 cfs @ 8.98 fps)

Summary for Pond 2P: (new Pond)

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 13.48' (Flood elevation advised)

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-yr event
Inflow = 3.97 cfs @ 11.95 hrs, Volume= 0.202 af
Outflow = 3.97 cfs @ 11.95 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 3.97 cfs @ 11.95 hrs, Volume= 0.202 af
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.48' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	12.70'	**12.0" Round Culvert X 2.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.70' / 11.00' S= 0.1700 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.97 cfs @ 11.95 hrs HW=13.48' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.97 cfs @ 3.01 fps)

Summary for Link DP1:

Inflow Area = 0.834 ac, 91.25% Impervious, Inflow Depth > 6.12" for 25-yr event
Inflow = 8.66 cfs @ 11.95 hrs, Volume= 0.425 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 8.66 cfs @ 11.95 hrs, Volume= 0.425 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.960 ac, 90.19% Impervious, Inflow Depth > 6.10" for 25-yr event
Inflow = 9.93 cfs @ 11.95 hrs, Volume= 0.488 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 9.93 cfs @ 11.95 hrs, Volume= 0.488 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=19,402 sf 83.60% Impervious Runoff Depth>7.29"
Tc=5.0 min CN=95 Runoff=5.40 cfs 0.270 af

Subcatchment P1a: Roof Runoff Area=16,944 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=4.76 cfs 0.243 af

Subcatchment P2: DP2 Runoff Area=5,462 sf 83.16% Impervious Runoff Depth>7.29"
Tc=5.0 min CN=95 Runoff=1.52 cfs 0.076 af

Pond 1P: Peak Elev=11.50' Storage=0.013 af Inflow=4.76 cfs 0.243 af
Outflow=4.64 cfs 0.243 af

Pond 2P: (new Pond) Peak Elev=13.59' Inflow=4.76 cfs 0.243 af
12.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.1700 '/' Outflow=4.76 cfs 0.243 af

Link DP1: above 1,000.00 cfs Inflow=10.04 cfs 0.513 af
Primary=0.00 cfs 0.000 af Secondary=10.04 cfs 0.513 af

Link DP3: above 1,000.00 cfs Inflow=11.56 cfs 0.589 af
Primary=0.00 cfs 0.000 af Secondary=11.56 cfs 0.589 af

Total Runoff Area = 0.960 ac Runoff Volume = 0.589 af Average Runoff Depth = 7.37"
9.81% Pervious = 0.094 ac 90.19% Impervious = 0.866 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.40 cfs @ 11.95 hrs, Volume= 0.270 af, Depth> 7.29"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
15,735	95	Urban commercial, 85% imp, HSG D
19,402	95	Weighted Average
3,181		16.40% Pervious Area
16,221		83.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.76 cfs @ 11.95 hrs, Volume= 0.243 af, Depth> 7.49"
Routed to Pond 2P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
9,126	98	Roofs, HSG D
7,818	98	Roofs, HSG D
16,944	98	Weighted Average
16,944		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.52 cfs @ 11.95 hrs, Volume= 0.076 af, Depth> 7.29"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
5,462	95	Weighted Average
920		16.84% Pervious Area
4,542		83.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage
[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.50'

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 7.49" for 50-yr event
Inflow = 4.76 cfs @ 11.95 hrs, Volume= 0.243 af
Outflow = 4.64 cfs @ 11.95 hrs, Volume= 0.243 af, Atten= 3%, Lag= 0.2 min
Primary = 4.64 cfs @ 11.95 hrs, Volume= 0.243 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.50' @ 11.95 hrs Surf.Area= 0.006 ac Storage= 0.013 af

Plug-Flow detention time= 2.7 min calculated for 0.243 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (729.7 - 727.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	7.86'	0.006 af	**9.25'W x 27.46'L x 4.07'H Field A** 0.024 af Overall - 0.008 af Embedded = 0.016 af x 40.0% Voids
#2A	8.11'	0.008 af	**ACF R-Tank LD 2** x 40 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 40 Chambers in 4 Rows
		0.014 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.18'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.18' / 6.93' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	9.46'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	7.76'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.61 cfs @ 11.95 hrs HW=11.50' (Free Discharge)
└**1=Culvert** (Passes 4.61 cfs of 7.02 cfs potential flow)
  └**2=Custom Weir/Orifice** (Weir Controls 3.38 cfs @ 2.55 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.23 cfs @ 9.05 fps)

Summary for Pond 2P: (new Pond)

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 13.59' (Flood elevation advised)

Inflow Area = 0.389 ac,100.00% Impervious, Inflow Depth > 7.49" for 50-yr event
Inflow = 4.76 cfs @ 11.95 hrs, Volume= 0.243 af
Outflow = 4.76 cfs @ 11.95 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
Primary = 4.76 cfs @ 11.95 hrs, Volume= 0.243 af
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.59' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	12.70'	**12.0" Round Culvert X 2.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.70' / 11.00' S= 0.1700 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.76 cfs @ 11.95 hrs HW=13.59' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.76 cfs @ 3.22 fps)

Summary for Link DP1:

Inflow Area = 0.834 ac, 91.25% Impervious, Inflow Depth > 7.38" for 50-yr event
Inflow = 10.04 cfs @ 11.95 hrs, Volume= 0.513 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 10.04 cfs @ 11.95 hrs, Volume= 0.513 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.960 ac, 90.19% Impervious, Inflow Depth > 7.37" for 50-yr event
Inflow = 11.56 cfs @ 11.95 hrs, Volume= 0.589 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 11.56 cfs @ 11.95 hrs, Volume= 0.589 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

May 19, 2022

Custom Soil Resource Report
Soil Map

Map Scale: 1:468 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2021—Nov 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	0.5	91.5%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.0	8.5%
Totals for Area of Interest		**0.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

Walpole

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Chatfield

Percent of map unit: 4 percent
Hydric soil rating: No

Scituate and newfields

Percent of map unit: 4 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent
Hydric soil rating: No

APPENDIX E

FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

70°46'3"W 43°4'55"N

70°45'26"W 43°4'29"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/19/2022 at 11:08 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
SITE DEVELOPMENT

88 MAPLEWOOD AVE.
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide EightKPH, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the Bio Clean downspout filter, R-Tank storage units and associated structures on the project site (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Code Enforcement Officer, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- ACF R-Tank stormwater storage system
- Bio Clean Downspout Filter
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year.

Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.

3. **Bio Clean Downspout Filter:** Refer to the manufacturer's Operation and Maintenance manual for guidance, included herewith.
4. **ACF R-Tank stormwater storage system:** Reference the attached operations and maintenance manual for proper maintenance of the system.
5. **Outlet Control Structures and Storm Drains:** Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all roadways and parking areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Snow & Ice Management for Standard Asphalt and Walkways

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension (or other source) or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.

Figure 2: Phragmites australis. Photo by Le Loup Gris

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

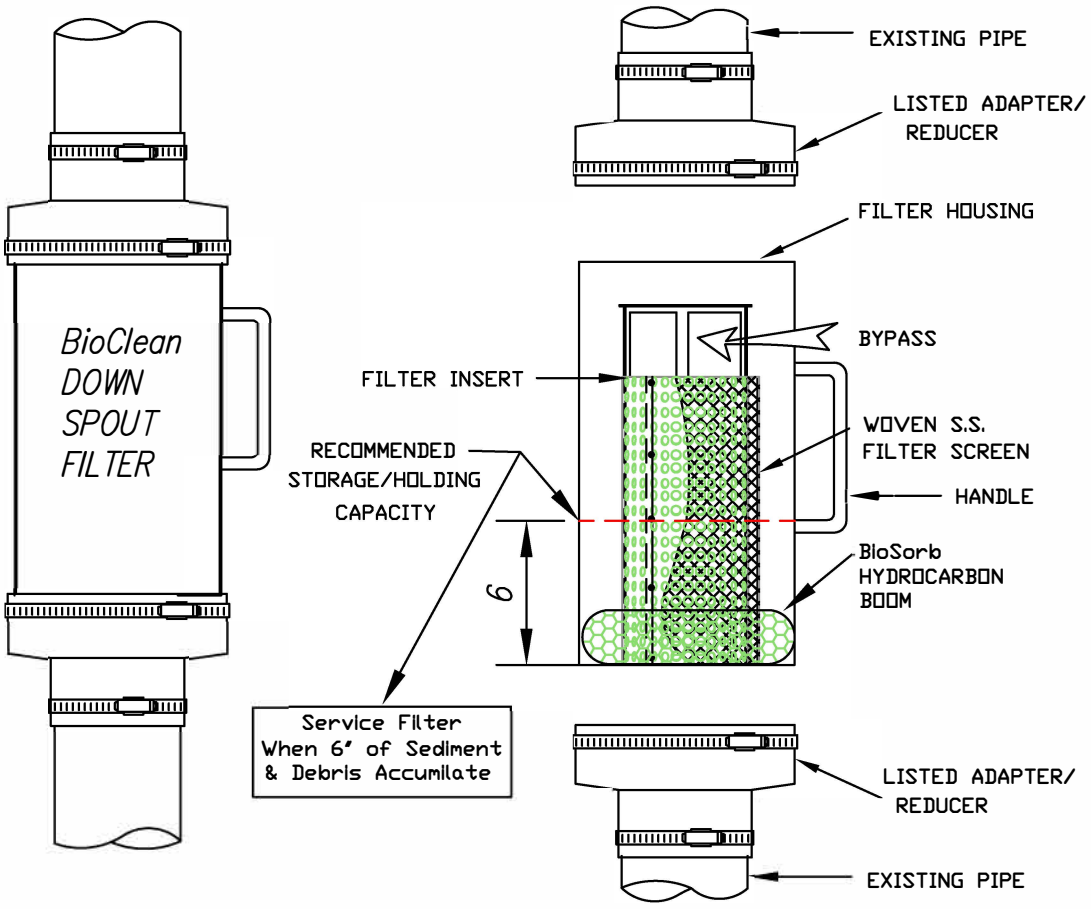
INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Outlet Control Structures *-Drain Manholes* *-Catch Basins*	Every other Month	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	1 time per 2 years	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

SERVICE MANUAL

(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

TOOLS AND EQUIPMENT NEEDED:

1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia.
   (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

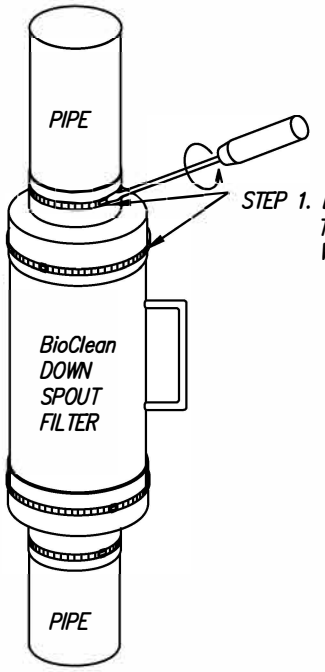
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

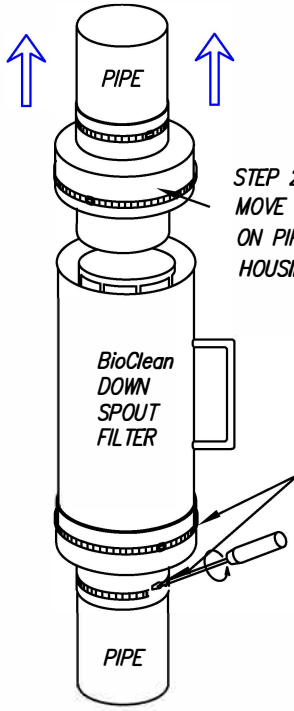
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.bioclean environmental.net

REMOVING FILTER



STEP 1. LOOSEN BOTH TOP CLAMPS WITH SCREW DRIVER.

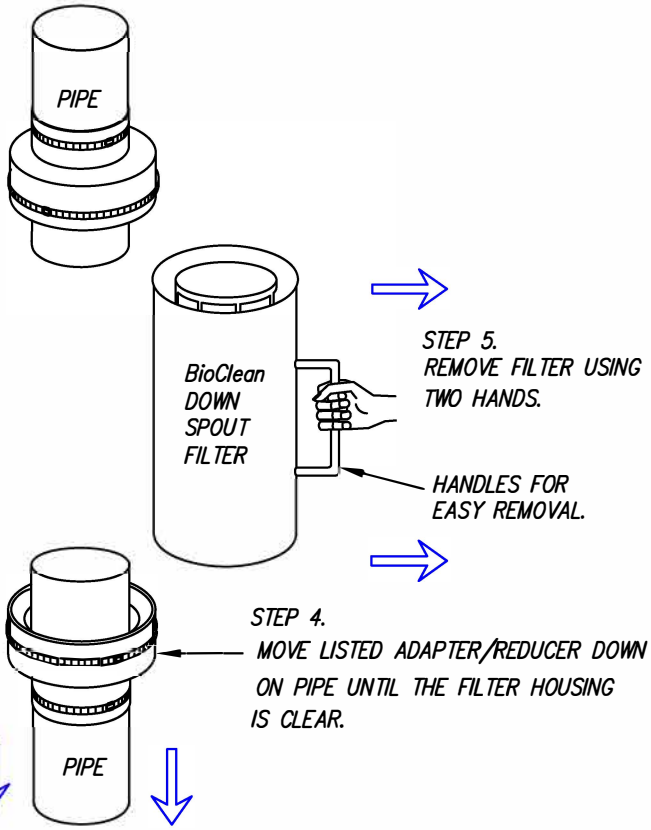


STEP 2.
MOVE LISTED ADAPTER/REDUCER UP ON PIPE UNTIL THE FILTER HOUSING IS CLEAR TO REMOVE.

STEP 3.
LOOSEN BOTH BOTTOM CLAMPS WITH SCREW DRIVER.

(STEP 4. AT BOTTOM LEFT OF PAGE)

CLEANING FILTER

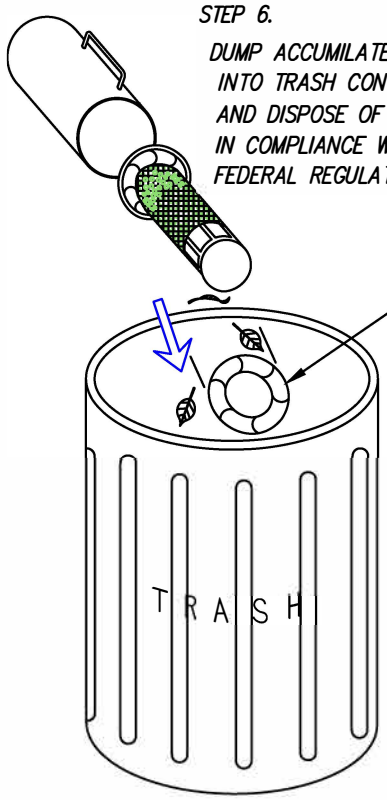


STEP 5.
REMOVE FILTER USING TWO HANDS.

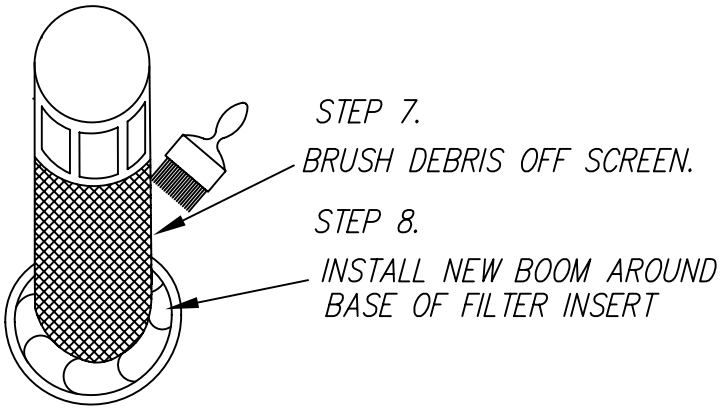
HANDLES FOR EASY REMOVAL.

STEP 4.
MOVE LISTED ADAPTER/REDUCER DOWN ON PIPE UNTIL THE FILTER HOUSING IS CLEAR.

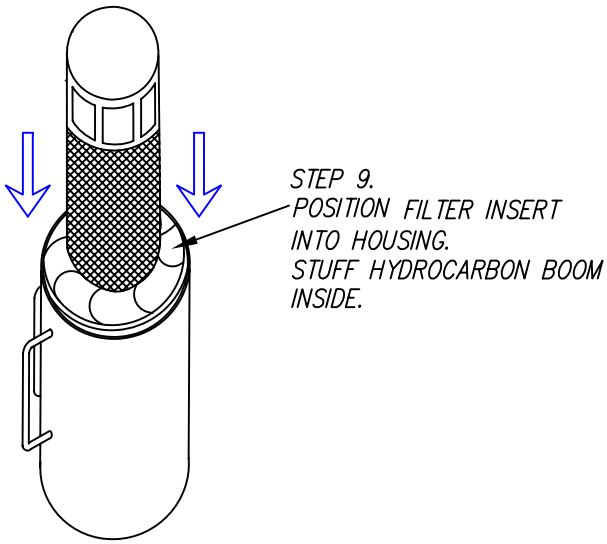
STEP 6.
DUMP ACCUMILATED DEBRIS OUT OF FILTER INTO TRASH CONTAINER. REMOVE FILTER INSERT AND DISPOSE OF HYDROCARBON BOOM IN COMPLIANCE WITH LOCAL STATE & FEDERAL REGULATIONS.

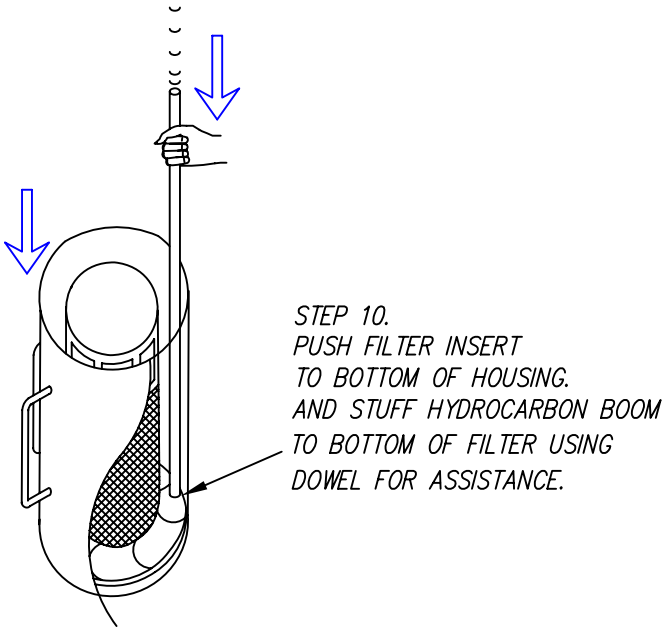


Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



REPLACING FILTER INSERT

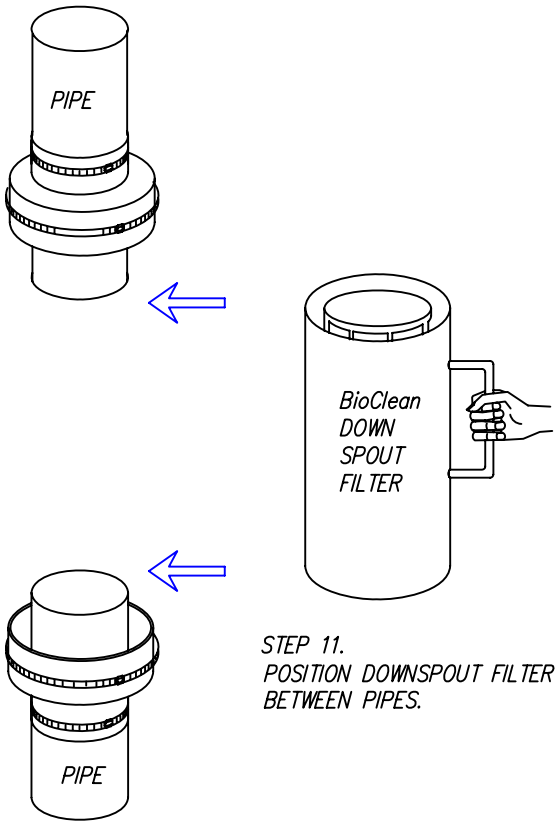




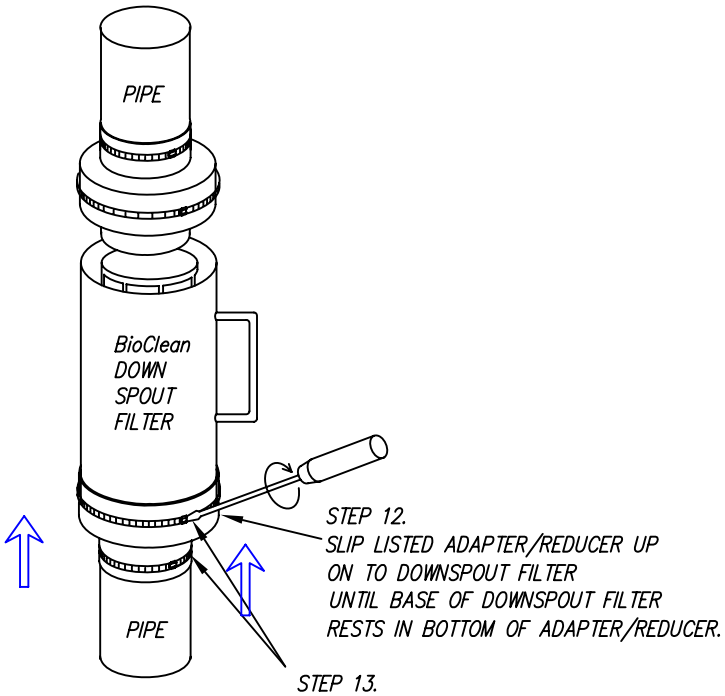
REPLACING FILTER

Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

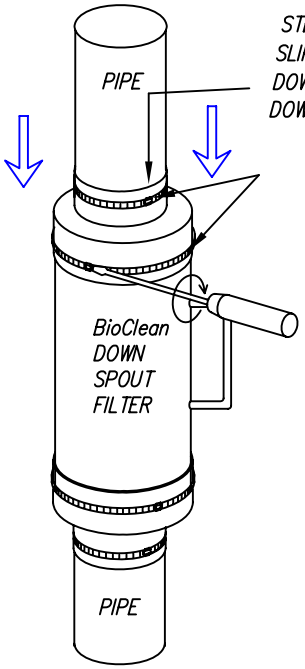


STEP 11.
POSITION DOWNSPOUT FILTER
BETWEEN PIPES.



STEP 12.
SLIP LISTED ADAPTER/REDUCER UP
ON TO DOWNSPOUT FILTER
UNTIL BASE OF DOWNSPOUT FILTER
RESTS IN BOTTOM OF ADAPTER/REDUCER.

STEP 13.
SECURE BY TIGHTENING
BOTH CLAMPS.



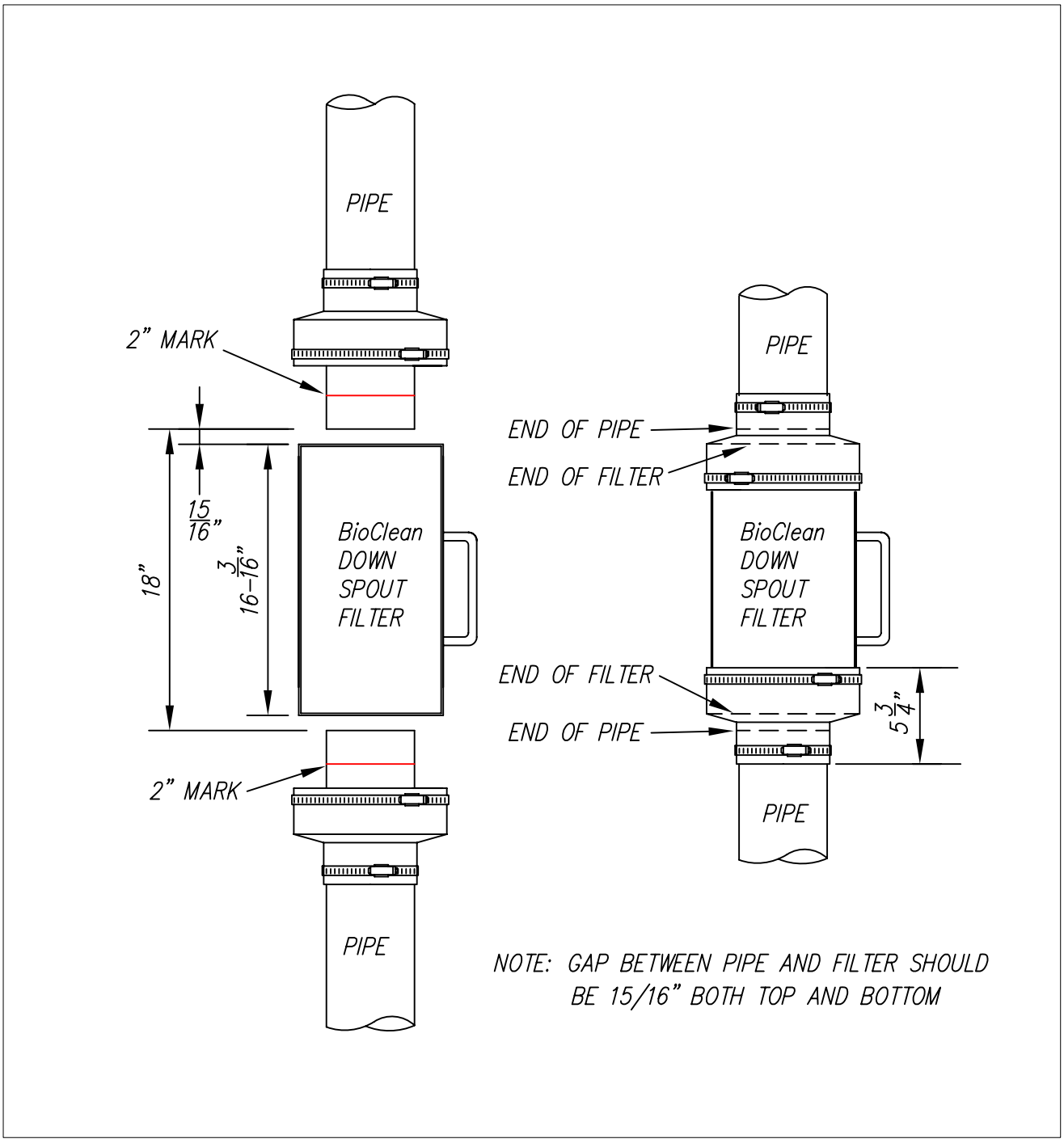
STEP 14.
SLIP LISTED ADAPTER/REDUCER
DOWNWARD ON TO
DOWNSPOUT FILTER.

STEP 15.
SECURE BY TIGHTENING
BOTH CLAMPS
WITH SCREWDRIVER.

ENSURE CLAMPS
ARE PROPERLY TIGHTENED.
SERVICE COMLPLETE.

APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



BioClean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

R-TANK OPERATION INSPECTION & MAINTENANCE

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

ACF ENVIRONMENTAL
LET'S GET IT DONE

2831 Cardwell Road
Richmond, Virginia, 23234
800.448.3636
FAX 804.743.7779
acfenvironmental.com

Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

Phone Number:_____

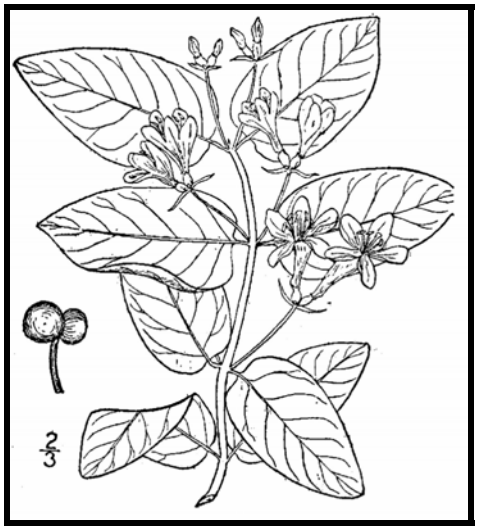
Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

For more information about our products, contact Inside Sales at 800.448.3636 or email at info@acfenv.com

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

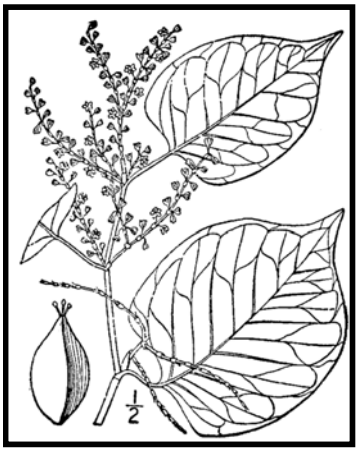
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

MEMORANDUM
TRAFFIC DUE DILIGENCE
Lot 5, Deer Street Development
Augusta 22, 2022

INTRODUCTION

Gorrill Palmer (GP) has been retained by Ambit Engineering to compare the approved trip generation for Lot 5 of the Deer Street Development as submitted by TEC, Inc. on December 19, 2016, to the currently proposed development for Lot 5.

It is our understanding from Eric Eby, City Traffic Engineer, that if the trip generation associated with the proposed uses of Lot 5 does not exceed the previously approved trip generation by more than 100 trips during a peak hour or 750 trips for the day, no additional traffic effort would be required other than submittal of that information with supporting memo and calculations. If the 100 hourly or 750 daily thresholds are exceeded, a discussion with the City would be needed at that time and potentially a larger traffic effort would be required.

Upon completion of our review, based on the calculations included in Attachment A, it was determined that the currently proposed uses in Lot 5 will generate less traffic than originally approved. This is primarily due to the decrease in building size. The original building was to include:

- 45 dwelling units
- 13,814 SF of retail space
- 17,274 SF of general office space
- 2,702 SF bank
- Parking for the building

The currently proposed building is to include:

- 19 dwelling units
- 6,615 SF of general office or retail space
- 4,954 SF restaurant
- 324 SF ATM space
- Parking for the building

Although a 4,954 SF restaurant has been added to the building uses, the proposed building has been reduced by 26 dwelling units, 24,473 SF of office or retail space, and the bank has been removed in favor of an ATM. This significant reduction in building size has caused an approximately 40% reduction in the trip generation associated with the building. More information on the trip generation calculations is provided in the following sections.

TRIP GENERATION AS APPROVED

The following excerpt is from GP's Peer Review of the traffic study submitted by TEC, Inc. on December 19, 2016, regarding the methodology used for calculating trip generation in the submittal. The Peer Review was dated March 8, 2017.

- *Lot 5:*
  - *GP concurs with the methodology used to forecast the trip generation for the office space and the residential units.*
  - *The methodology used to forecast the trip generation for the retail space appears to be reasonable. However, the retail space has been identified as a Pharmacy, so in the future LUC 880 – Pharmacy/Drugstore without Drive-Through should be considered.*
  - *Although Eastern Bank in Building 5 will have a drive-through associated with it, the drive-through is not in the same building as the rest of the bank. For this reason, the trip generation may be different than that of a typical bank with a drive-through. An alternative to LUC 912 for the entire bank would be utilizing LUC 911 – Walk-In Bank for the portion of the bank in Building 5 and using information from Eastern Bank for the drive-through ATM trip generation on Lot 4.*

Internal Trip Capture – GP concurs with the use of shared trip reduction for Lots 3-6. The ITE information for mixed-use trips appears to be reasonable and appropriate for this use. An alternative method for calculating an internal trip capture would be the use of the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture spreadsheet for the AM and PM peak hours. The NCHRP 684 spreadsheet is based on ITE information, so similar internal trip capture rates would be expected.

Transit Trips – The 1.5% reduction in trip generation for transit trips appears to be reasonable. It is our understanding that this reduction is based on the entire City of Portsmouth. The reduction may have been higher if data from only Downtown Portsmouth was utilized.

Walking and Bicycling Trips – The 8% reduction in trip generation for walking and bicycling trips appears to be reasonable. Similar to the transit trip reduction, the reduction may have been greater if only data from Downtown Portsmouth was utilized.

Pass-By Trips – GP concurs with the pass-by trips applied to the retail and restaurant uses. Not applying pass-by trips to office, hotel, and residential uses appears to be reasonable.

As identified above, the building as originally approved included:

- 45 dwelling units
- 13,814 SF of retail space
- 17,274 SF of general office space
- 2,702 SF bank
- Parking for the building

The Institute of Transportation Engineers' (ITE's) publication, *Trip Generation Handbook, 9th Edition* was used to calculate the trip generation for the site, as that was the most current edition available at the time of the original submittal. The trip generation calculations produced the following results as approved by the City:

Table 1: Approved Trip Generation for Lot 5

Time Period	Total Trips	Total Primary Trips
Weekday Daily	1502	1034
Weekday AM Peak Hour	94	72
Weekday PM Peak Hour	158	90
Saturday Daily	1144	828
Saturday Midday Peak Hour	170	105

As seen in Table 1 above, the originally approved development was forecast to generate 1034 primary trips on a weekday, 72 and 90 primary trips during weekday AM & PM peak hours respectively and 105 peak hour trips on Saturday. The difference between the "total trips" and "total primary trips" are a result of the the *Internal Trip Capture, Transit Trip, Walking and Bicycle Trip, and Pass-By Trip* reduction calculations discussed previously. The complete Trip generation calculations associated with Lot 5 in the original submittal – including the reduction calculations, are included in Attachment A.

TRIP GENERATION AS CURRENTLY PROPOSED

To be consistent with the trip generation calculations included with the approved submittal, GP used the 9th edition of the *Trip Generation Handbook* to calculate the trips associated with the proposed building. This was done to compare the approved building and the currently proposed building (i.e. "apples to apples"). Therefore, GP also used the same approach when calculating the reductions associated with the *Internal Trip Capture, Transit Trip, Walking and Bicycle Trip, and Pass-By Trip* reduction calculations discussed above. This means that the trip generation calculations associated with the currently proposed development were reduced by the same percentages for the same reductions as discussed in the prior section.

As was mentioned above, the currently proposed building is to include:

- 19 dwelling units
- 6,615 SF of general office or retail space
- 4,954 SF restaurant
- 324 SF ATM space
- Parking for the building

It should be noted that since the developer has not refined the final allotment or breakdown of the "6,615 SF of general office or retail space", the trip generation calculations were completed for three scenarios: 1) assuming that space would all be office space, 2) assuming it would be all retail space, and 3) assuming it would be split 50/50 between office and retail space. It was also assumed that no trips to the building would be made for the ATM space. The ATM space is intended for use by residents and patrons of the building, as well as pedestrians in the vicinity, and the use is not expected to generate significant vehicular traffic. No other bank-related services are being proposed at the updated building.

As identified, the Institute of Transportation Engineers' (ITE's) publication, *Trip Generation Handbook, 9th Edition* was used to calculate the trip generation for the site uses. The following tables present the trip generation for the whole building (all uses) with each of the three office/retail space scenarios outlined in the paragraph above:

Table 2: Updated Trip Generation for Lot 5 (using 50/50 Office/Retail)

Time Period	Total Trips	Total Primary Trips
Weekday Daily	938	542
Weekday AM Peak Hour	74	47
Weekday PM Peak Hour	72	40
Saturday Daily	1054	604
Saturday Midday Peak Hour	98	57

Table 3: Updated Trip Generation for Lot 5 (using all Office)

Time Period	Total Trips	Total Primary Trips
Weekday Daily	828	478
Weekday AM Peak Hour	74	49
Weekday PM Peak Hour	70	40
Saturday Daily	922	520
Saturday Midday Peak Hour	82	47

Table 4: Updated Trip Generation for Lot 5 (using all Retail)

Time Period	Total Trips	Total Primary Trips
Weekday Daily	1050	602
Weekday AM Peak Hour	70	43
Weekday PM Peak Hour	78	41
Saturday Daily	1184	686
Saturday Midday Peak Hour	112	66

As seen in the tables above, depending on the time period (weekday, AM or PM peak hour, or Saturday peak hour), the highest trip generation varies slightly. However, the general overall highest scenario appears to be when the office/retail space is considered all retail. In that scenario, the proposed building is forecast to generate 602 trips on a weekday, 43 and 41 trips ends during the AM & PM peak hours respectively, and 66 trip ends during the Saturday peak hour. It should be noted that the difference between the "total trips" and the "total primary trips" appears greater in the currently proposed building than the approved building because the percentage of the building area dedicated to residential and office space has decreased and trips associated with the residential and office spaces are not reduced in the same way as the restaurant and retail spaces. The complete Trip generation calculations associated with Lot 5 as currently proposed – including the reduction calculations, are included in Attachment B.

NET TRIP GENERATION SUMMARY

The net change in trips between the approved development and the currently proposed development is summarized in the following table:

Table 5: Trip Generation Comparison

Time Period	Total Trips	Total Primary Trips
Weekday Daily	-452	-432
Weekday AM Peak Hour	-24	-29
Weekday PM Peak Hour	-80	-49
Saturday Daily	+40	-142
Saturday Midday Peak Hour	-58	-39

There is an increase in total trips on Saturday, but given the changes in proposed uses, the number of primary trips decreased. The primary trips are the trips that are new to the adjacent roadway network. Because the currently proposed uses in Lot 5 do not exceed the previously approved uses of Lot 5 by more than 100 trips during a peak hour or 750 trips for the day, it is the understanding of GP that no additional traffic effort will be required other than submittal of this memo and supporting attachments.

CONCLUSION

Upon completion of our review, based on the calculations included in Attachments A & B, it was determined that the currently proposed uses in Lot 5 will generate less traffic than originally approved. This is primarily due to the proposed building being considerably smaller in size than the original approval.

ATTACHMENTS

A – As Submitted Trip Generation Spreadsheets
B – Currently Proposed Trip Generation Spreadsheets

u:\4012_deer street lot 5_portsmouth_nh\n traffic\draft traffic memo 08-22-22.doc

Attachment A

As Submitted Trip Generation Calculations

Lot 5

45-Unit Residential Apartments (ITE LUC 220)

Units: 45 Units — Residential

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	300		300	50%	50%	150	150	2	2	12	12	136	136	20	20	0	256	0	0	128	128
Weekday AM PH	22		22	20%	80%	4	18	0	0	0	1	4	17	0	2	0	20	0	0	4	16
Weekday PM PH	28		28	65%	35%	18	10	0	0	1	1	17	9	4	2	0	22	0	0	14	8
Saturday Daily	288		288	50%	50%	144	144	2	2	12	12	130	130	14	14	0	256	0	0	128	128
Saturday Midday PH	24		24	50%	50%	12	12	0	0	1	1	11	11	2	2	0	20	0	0	10	10

17,274 SF Office (ITE LUC 710)

Units: 17.27 KSF — Office

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	190		190	50%	50%	95	95	1	1	8	8	86	86	12	12	0	164	0	0	82	82
Weekday AM PH	26		26	88%	12%	23	3	0	0	2	0	21	3	2	0	0	24	0	0	21	3
Weekday PM PH	26		26	17%	83%	4	22	0	0	0	2	4	20	0	4	0	22	0	0	4	18
Saturday Daily	42		42	50%	50%	21	21	0	0	2	2	19	19	2	2	0	38	0	0	19	19
Saturday Midday PH	8		8	54%	46%	4	4	0	0	0	0	4	4	0	0	0	8	0	0	4	4

13,814 SF Retail (ITE LUC 826)

Units: 13.81 KSF — Retail

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	612		612	50%	50%	306	306	5	5	24	24	277	277	58	58	126	360	63	63	180	180
Weekday AM PH	14		14	62%	38%	9	5	0	0	1	0	8	5	2	4	2	6	1	1	6	0
Weekday PM PH	38		38	44%	56%	17	21	0	0	1	2	16	19	12	10	6	10	3	3	2	8
Saturday Daily	580		580	50%	50%	290	290	4	4	23	23	263	263	28	28	134	382	67	67	191	191
Saturday Midday PH	66		66	52%	48%	34	32	1	0	3	3	30	29	6	6	14	39	7	7	20	19

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820
Pass-by rate of 34% for Weekday PM PH, 26% for all other periods.

2,702 SF Drive-In Bank (ITE LUC 912)

Units: 2.70 KSF — Retail

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	400		400	50%	50%	200	200	3	3	16	16	181	181	26	26	88	254	44	44	127	127
Weekday AM PH	32		32	57%	43%	18	14	0	0	1	1	17	13	2	0	8	22	4	4	12	10
Weekday PM PH	66		66	50%	50%	33	33	0	0	3	3	30	30	6	6	18	36	9	9	18	18
Saturday Daily	234		234	50%	50%	117	117	2	2	9	9	106	106	12	12	54	152	27	27	76	76
Saturday Midday PH	72		72	51%	49%	37	35	1	1	3	3	33	31	4	4	24	38	12	12	20	18

Pass-by rate of 29% for Weekday AM PH, 35% for Weekday PM PH, and 38% for Saturday Midday PH. 26% pass-by rate assumed for Weekday Daily and Saturday Daily

LOT 5 TOTALS

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	1502	0	1502			751	751	11	11	60	60	680	680	116	116	214	**1034**	107	107	517	517
Weekday AM PH	94	0	94			54	40	0	0	4	2	50	38	6	6	10	**72**	5	5	43	29
Weekday PM PH	158	0	158			72	86	0	0	5	8	67	78	22	22	24	**90**	12	12	38	52
Saturday Daily	1144	0	1144			572	572	8	8	46	46	518	518	56	56	188	**828**	94	94	414	414
Saturday Midday PH	170	0	170			87	83	2	1	7	7	78	75	12	12	38	**105**	19	19	54	51

Lot 6, Lot 3, Lot 4, & Lot 5	*Total Trips*	*% In*	*% Out*	*Total New Trips*		*Total Transit Trips*		*tal Walk / Bicycle Tri*		*Total Autos Only Trip*		*Total Multi-Use Trips*		*Total New Pass-by Trips*	*Total New Primary Trips*	*Total Pass-by Trips*		*Total Primary Trips*	
				In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*			*In*	*Out*	*In*	*Out*
Weekday Daily	4706	50%	50%	2353	2353	34	34	189	189	2130	2130	296	296	998	3048	499	499	1524	1524
Weekday AM Peak Hour	320	58%	42%	185	135	2	1	14	9	169	125	8	8	58	243	29	29	146	97
Weekday PM Peak Hour	444	50%	50%	223	221	2	0	17	18	204	203	48	48	82	264	41	41	132	132
Saturday Daily	4726	50%	50%	2363	2363	36	36	189	189	2138	2138	196	196	1172	3090	586	586	1545	1545
Saturday Midday Peak Hour	510	53%	47%	268	242	5	3	21	19	242	220	26	26	126	324	63	63	174	150

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	November 17, 2016
Analyst:	Eric R. Paquette, E.I.T.
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 220 Apartment

Average Vehicle Trips Ends vs:	Dwelling Units
Independent Variable (X):	45
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 6.65 * (X)
T = 6.65 * 45.00
T = **300** vehicle trips
with 50% entering (150 vpd) and with 50% exiting (150 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 45.00
T = **22** vehicle trips
with 20% entering (4 vpd) and with 80% exiting (18 vpd)

WEEKDAY EVENING PEAK HOUR

T = 0.62 * (X)
T = 0.62 * 45.00
T = **28** vehicle trips
with 65% entering (18 vpd) and with 35% exiting (10 vpd)

AVERAGE SATURDAY DAILY

T = 6.39 * (X)
T = 6.39 * 45.00
T = **288** vehicle trips
with 50% entering (144 vpd) and with 50% exiting (144 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.52 * (X)
T = 0.52 * 45.00
T = **24** vehicle trips
with 50% entering (12 vpd) and with 50% exiting (12 vpd)

AVERAGE SUNDAY DAILY

T = 5.86 * (X)
T = 5.86 * 45.00
T = **264** vehicle trips
with 50% entering (132 vpd) and with 50% exiting (132 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 45.00
T = **22** vehicle trips
with 50% entering (11 vpd) and with 50% exiting (11 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	November 17, 2016
Analyst:	Eric R. Paquette, E.I.T.
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 710 General Office Building

Average Vehicle Trips Ends vs:	1000 SF Gross Floor Area
Independent Variable (X):	17.274
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 11.03 * (X)
T = 11.03 * 17.27
T = **190** vehicle trips
with 50% entering (95 vpd) and with 50% exiting (95 vpd)

WEEKDAY MORNING PEAK HOUR

T = 1.56 * (X)
T = 1.56 * 17.27
T = **26** vehicle trips
with 88% entering (23 vpd) and with 12% exiting (3 vpd)

WEEKDAY EVENING PEAK HOUR

T = 1.49 * (X)
T = 1.49 * 17.27
T = **26** vehicle trips
with 17% entering (4 vpd) and with 83% exiting (22 vpd)

AVERAGE SATURDAY DAILY

T = 2.46 * (X)
T = 2.46 * 17.27
T = **42** vehicle trips
with 50% entering (21 vpd) and with 50% exiting (21 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.43 * (X)
T = 0.43 * 17.27
T = **8** vehicle trips
with 54% entering (4 vpd) and with 46% exiting (4 vpd)

AVERAGE SUNDAY DAILY

T = 1.05 * (X)
T = 1.05 * 17.27
T = **18** vehicle trips
with 50% entering (9 vpd) and with 50% exiting (9 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.16 * (X)
T = 0.16 * 17.27
T = **2** vehicle trips
with 58% entering (1 vpd) and with 42% exiting (1 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	November 17, 2016
Analyst:	Eric R. Paquette, E.I.T.
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 820 Shopping Center

Average Vehicle Trips Ends vs: 1000 SF Gross Leasable Area
Independent Variable (X): 13.814
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 42.70 * (X)
T = 42.70 * 13.81
T = **590** vehicle trips
with 50% entering (295 vpd) and with 50% exiting (295 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.96 * (X)
T = 0.96 * 13.81
T = **14** vehicle trips
with 62% entering (9 vpd) and with 38% exiting (5 vpd)

WEEKDAY EVENING PEAK HOUR

T = 3.71 * (X)
T = 3.71 * 13.81
T = **52** vehicle trips
with 48% entering (25 vpd) and with 52% exiting (27 vpd)

AVERAGE SATURDAY DAILY

T = 49.97 * (X)
T = 49.97 * 13.81
T = **690** vehicle trips
with 50% entering (345 vpd) and with 50% exiting (345 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 4.82 * (X)
T = 4.82 * 13.81
T = **66** vehicle trips
with 52% entering (34 vpd) and with 48% exiting (32 vpd)

AVERAGE SUNDAY DAILY

T = 25.24 * (X)
T = 25.24 * 13.81
T = **348** vehicle trips
with 50% entering (174 vpd) and with 50% exiting (174 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 3.12 * (X)
T = 3.12 * 13.81
T = **44** vehicle trips
with 49% entering (22 vpd) and with 51% exiting (22 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	November 17, 2016
Analyst:	Eric R. Paquette, E.I.T.
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 826 Specialty Retail Center

Average Vehicle Trips Ends vs: 1000 SF Gross Leasable Area
Independent Variable (X): 13.814
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 44.32 * (X)
T = 44.32 * 13.81
T = **612** vehicle trips
with 50% entering (306 vpd) and with 50% exiting (306 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 13.81
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

WEEKDAY EVENING PEAK HOUR

T = 2.71 * (X)
T = 2.71 * 13.81
T = **38** vehicle trips
with 44% entering (17 vpd) and with 56% exiting (21 vpd)

AVERAGE SATURDAY DAILY

T = 42.04 * (X)
T = 42.04 * 13.81
T = **580** vehicle trips
with 50% entering (290 vpd) and with 50% exiting (290 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 13.81
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

AVERAGE SUNDAY DAILY

T = 20.43 * (X)
T = 20.43 * 13.81
T = **282** vehicle trips
with 50% entering (141 vpd) and with 50% exiting (141 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 13.81
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	November 17, 2016
Analyst:	Eric R. Paquette, E.I.T.
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 912 Drive-In Bank

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 2.702
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 148.15 * (X)
T = 148.15 * 2.70
T = **400** vehicle trips
with 50% entering (200 vpd) and with 50% exiting (200 vpd)

WEEKDAY MORNING PEAK HOUR

T = 12.08 * (X)
T = 12.08 * 2.70
T = **32** vehicle trips
with 57% entering (18 vpd) and with 43% exiting (14 vpd)

WEEKDAY EVENING PEAK HOUR

T = 24.30 * (X)
T = 24.30 * 2.70
T = **66** vehicle trips
with 50% entering (33 vpd) and with 50% exiting (33 vpd)

AVERAGE SATURDAY DAILY

T = 86.32 * (X)
T = 86.32 * 2.70
T = **234** vehicle trips
with 50% entering (117 vpd) and with 50% exiting (117 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 26.31 * (X)
T = 26.31 * 2.70
T = **72** vehicle trips
with 51% entering (37 vpd) and with 49% exiting (35 vpd)

AVERAGE SUNDAY DAILY

T = 31.90 * (X)
T = 31.90 * 2.70
T = **86** vehicle trips
with 50% entering (43 vpd) and with 50% exiting (43 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 4.78 * (X)
T = 4.78 * 2.70
T = **12** vehicle trips
with 50% entering (6 vpd) and with 50% exiting (6 vpd)

Attachment B

Currently Proposed Trip Generation Calculations

Lot 5 (Half Office / Half Retail)

19-Unit Residential Apartments (ITE LUC 220)

Units: 19 Units — Residential

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	126		126	50%	50%	63	63	1	1	5	5	57	57	8	8	0	108	0	0	54	54
Weekday AM PH	10		10	20%	80%	2	8	0	0	0	1	2	7	0	0	0	10	0	0	2	8
Weekday PM PH	12		12	65%	35%	8	4	0	0	1	0	7	4	2	0	0	10	0	0	6	4
Saturday Daily	122		122	50%	50%	61	61	1	1	5	5	55	55	6	6	0	108	0	0	54	54
Saturday Midday PH	10		10	50%	50%	5	5	0	0	0	0	5	5	0	0	0	10	0	0	5	5

3,308 SF Office (ITE LUC 710)

Units: 3.31 KSF — Office

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	36		36	50%	50%	18	18	0	0	1	1	17	17	2	2	0	32	0	0	16	16
Weekday AM PH	6		6	88%	12%	5	1	0	0	0	0	5	1	0	0	0	6	0	0	5	1
Weekday PM PH	4		4	17%	83%	1	3	0	0	0	0	1	3	0	0	0	4	0	0	1	3
Saturday Daily	8		8	50%	50%	4	4	0	0	0	0	4	4	0	0	0	8	0	0	4	4
Saturday Midday PH	2		2	54%	46%	1	1	0	0	0	0	1	1	0	0	0	2	0	0	1	1

3,308 SF Retail (ITE LUC 826)

Units: 3.31 KSF — Retail

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	146		146	50%	50%	73	73	1	1	6	6	66	66	9	9	32	94	16	16	47	47
Weekday AM PH	4		4	62%	38%	2	2	0	0	0	0	2	2	0	0	2	2	1	1	1	1
Weekday PM PH	8		8	44%	56%	4	4	0	0	0	0	4	4	1	1	2	4	1	1	2	2
Saturday Daily	140		140	50%	50%	70	70	1	1	6	6	63	63	7	7	32	92	16	16	46	46
Saturday Midday PH	16		16	52%	48%	8	8	0	0	1	1	7	7	1	1	4	10	2	2	5	5

Trip generation rates

Pass-by rate of 34% for Weekday PM PH, 26% for all other periods.

4,954 SF Restaurant (ITE LUC 932)

Units: 4.95 KSF — Restaurant

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	630		630	50%	50%	315	315	5	5	25	25	285	285	40	40	232	308	116	116	154	154
Weekday AM PH	54		54	55%	45%	30	24	0	0	2	2	28	22	2	1	22	29	11	11	17	12
Weekday PM PH	48		48	60%	40%	29	19	0	0	2	2	27	17	6	4	16	22	8	8	15	7
Saturday Daily	784		784	50%	50%	392	392	6	6	31	31	355	355	39	39	298	396	149	149	198	198
Saturday Midday PH	70		70	53%	47%	37	33	1	0	3	3	33	30	3	3	28	35	14	14	19	16

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820.

Pass-by rate of 43% for all periods.

LOT 5 TOTALS

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	938	0	938			469	469	7	7	37	37	425	425	59	59	264	**542**	132	132	271	271
Weekday AM PH	74	0	74			39	35	0	0	2	3	37	32	2	1	24	**47**	12	12	25	22
Weekday PM PH	72	0	72			42	30	0	0	3	2	39	28	9	5	18	**40**	9	9	24	16
Saturday Daily	1054	0	1054			527	527	8	8	42	42	477	477	52	52	330	**604**	165	165	302	302
Saturday Midday PH	98	0	98			51	47	1	0	4	4	46	43	4	4	32	**57**	16	16	30	27

Lot 6, Lot 3, Lot 4, & Lot 5	*Total Trips*	*% In*	*% Out*	*Total New Trips*		*Total Transit Trips*		*tal Walk / Bicycle Tri*		*otal Autos Only Trip*		*Total Multi-Use Trips*		*Total New Pass-by Trips*	*Total New Primary Trips*	*Total Pass-by Trips*		*Total Primary Trips*	
				In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*			*In*	*Out*	*In*	*Out*
Weekday Daily	4142	50%	50%	2071	2071	30	30	166	166	1875	1875	239	239	1048	2556	524	524	1278	1278
Weekday AM Peak Hour	300	57%	43%	170	130	2	1	12	10	156	119	4	3	72	218	36	36	128	90
Weekday PM Peak Hour	358	54%	46%	193	165	2	0	15	12	176	153	35	31	76	214	38	38	118	96
Saturday Daily	4636	50%	50%	2318	2318	36	36	185	185	2097	2097	192	192	1314	2866	657	657	1433	1433
Saturday Midday Peak Hour	438	53%	47%	232	206	4	2	18	16	210	188	18	18	120	276	60	60	150	126

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 220 Apartment

Average Vehicle Trips Ends vs:	Dwelling Units
Independent Variable (X):	19
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 6.65 * (X)
T = 6.65 * 19.00
T = **126** vehicle trips
with 50% entering (63 vpd) and with 50% exiting (63 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 20% entering (2 vpd) and with 80% exiting (8 vpd)

WEEKDAY EVENING PEAK HOUR

T = 0.62 * (X)
T = 0.62 * 19.00
T = **12** vehicle trips
with 65% entering (8 vpd) and with 35% exiting (4 vpd)

AVERAGE SATURDAY DAILY

T = 6.39 * (X)
T = 6.39 * 19.00
T = **122** vehicle trips
with 50% entering (61 vpd) and with 50% exiting (61 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.52 * (X)
T = 0.52 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

AVERAGE SUNDAY DAILY

T = 5.86 * (X)
T = 5.86 * 19.00
T = **112** vehicle trips
with 50% entering (56 vpd) and with 50% exiting (56 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 710 General Office Building

Average Vehicle Trips Ends vs:	1000 SF Gross Floor Area
Independent Variable (X):	3.308
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 11.03 * (X)
T = 11.03 * 3.31
T = **36** vehicle trips
with 50% entering (18 vpd) and with 50% exiting (18 vpd)

WEEKDAY MORNING PEAK HOUR

T = 1.56 * (X)
T = 1.56 * 3.31
T = **6** vehicle trips
with 88% entering (5 vpd) and with 12% exiting (1 vpd)

WEEKDAY EVENING PEAK HOUR

T = 1.49 * (X)
T = 1.49 * 3.31
T = **4** vehicle trips
with 17% entering (1 vpd) and with 83% exiting (3 vpd)

AVERAGE SATURDAY DAILY

T = 2.46 * (X)
T = 2.46 * 3.31
T = **8** vehicle trips
with 50% entering (4 vpd) and with 50% exiting (4 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.43 * (X)
T = 0.43 * 3.31
T = **2** vehicle trips
with 54% entering (1 vpd) and with 46% exiting (1 vpd)

AVERAGE SUNDAY DAILY

T = 1.05 * (X)
T = 1.05 * 3.31
T = **4** vehicle trips
with 50% entering (2 vpd) and with 50% exiting (2 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.16 * (X)
T = 0.16 * 3.31
T = **-** vehicle trips
with 58% entering (- vpd) and with 42% exiting (- vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 820 Shopping Center

Average Vehicle Trips Ends vs: 1000 SF Gross Leasable Area
Independent Variable (X): 3.308
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 42.70 * (X)
T = 42.70 * 3.31
T = **142** vehicle trips
with 50% entering (71 vpd) and with 50% exiting (71 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.96 * (X)
T = 0.96 * 3.31
T = **4** vehicle trips
with 62% entering (2 vpd) and with 38% exiting (2 vpd)

WEEKDAY EVENING PEAK HOUR

T = 3.71 * (X)
T = 3.71 * 3.31
T = **12** vehicle trips
with 48% entering (6 vpd) and with 52% exiting (6 vpd)

AVERAGE SATURDAY DAILY

T = 49.97 * (X)
T = 49.97 * 3.31
T = **166** vehicle trips
with 50% entering (83 vpd) and with 50% exiting (83 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 4.82 * (X)
T = 4.82 * 3.31
T = **16** vehicle trips
with 52% entering (8 vpd) and with 48% exiting (8 vpd)

AVERAGE SUNDAY DAILY

T = 25.24 * (X)
T = 25.24 * 3.31
T = **84** vehicle trips
with 50% entering (42 vpd) and with 50% exiting (42 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 3.12 * (X)
T = 3.12 * 3.31
T = **10** vehicle trips
with 49% entering (5 vpd) and with 51% exiting (5 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 826 Specialty Retail Center

Average Vehicle Trips Ends vs:	1000 SF Gross Leasable Area
Independent Variable (X):	3.308
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 44.32 * (X)
T = 44.32 * 3.31
T = **146** vehicle trips
with 50% entering (73 vpd) and with 50% exiting (73 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 3.31
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

WEEKDAY EVENING PEAK HOUR

T = 2.71 * (X)
T = 2.71 * 3.31
T = **8** vehicle trips
with 44% entering (4 vpd) and with 56% exiting (4 vpd)

AVERAGE SATURDAY DAILY

T = 42.04 * (X)
T = 42.04 * 3.31
T = **140** vehicle trips
with 50% entering (70 vpd) and with 50% exiting (70 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 3.31
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

AVERAGE SUNDAY DAILY

T = 20.43 * (X)
T = 20.43 * 3.31
T = **68** vehicle trips
with 50% entering (34 vpd) and with 50% exiting (34 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 3.31
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 932 High-Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 4.954
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 127.15 * (X)
T = 127.15 * 4.95
T = **630** vehicle trips
with 50% entering (315 vpd) and with 50% exiting (315 vpd)

WEEKDAY MORNING PEAK HOUR

T = 10.81 * (X)
T = 10.81 * 4.95
T = **54** vehicle trips
with 55% entering (30 vpd) and with 45% exiting (24 vpd)

WEEKDAY EVENING PEAK HOUR

T = 9.85 * (X)
T = 9.85 * 4.95
T = **48** vehicle trips
with 60% entering (29 vpd) and with 40% exiting (19 vpd)

AVERAGE SATURDAY DAILY

T = 158.37 * (X)
T = 158.37 * 4.95
T = **784** vehicle trips
with 50% entering (392 vpd) and with 50% exiting (392 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 14.07 * (X)
T = 14.07 * 4.95
T = **70** vehicle trips
with 53% entering (37 vpd) and with 47% exiting (33 vpd)

AVERAGE SUNDAY DAILY

T = 131.84 * (X)
T = 131.84 * 4.95
T = **654** vehicle trips
with 50% entering (327 vpd) and with 50% exiting (327 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 18.46 * (X)
T = 18.46 * 4.95
T = **92** vehicle trips
with 55% entering (51 vpd) and with 45% exiting (41 vpd)

Lot 5 All Office

19-Unit Residential Apartments (ITE LUC 220)

Units: 19 Units — Residential

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	126		126	50%	50%	63	63	1	1	5	5	57	57	8	8	0	108	0	0	54	54
Weekday AM PH	10		10	20%	80%	2	8	0	0	0	1	2	7	0	0	0	10	0	0	2	8
Weekday PM PH	12		12	65%	35%	8	4	0	0	1	0	7	4	2	0	0	10	0	0	6	4
Saturday Daily	122		122	50%	50%	61	61	1	1	5	5	55	55	6	6	0	108	0	0	54	54
Saturday Midday PH	10		10	50%	50%	5	5	0	0	0	0	5	5	0	0	0	10	0	0	5	5

6.615 SF Office (ITE LUC 710)

Units: 6.62 KSF — Office

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	72		72	50%	50%	36	36	1	1	3	3	32	32	4	4	0	62	0	0	31	31
Weekday AM PH	10		10	88%	12%	9	1	0	0	1	0	8	1	0	0	0	10	0	0	9	1
Weekday PM PH	10		10	17%	83%	2	8	0	0	0	1	2	7	0	2	0	8	0	0	2	6
Saturday Daily	16		16	50%	50%	8	8	0	0	1	1	7	7	0	0	0	16	0	0	8	8
Saturday Midday PH	2		2	54%	46%	1	1	0	0	0	0	1	1	0	0	0	2	0	0	1	1

0SF Retail (ITE LUC 826)

Units: 0.00 KSF — Retail

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	0		0	50%	50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday AM PH	0		0	62%	38%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday PM PH	0		0	44%	56%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday Daily	0		0	50%	50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday Midday PH	0		0	52%	48%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820.
Pass-by rate of 34% for Weekday PM PH, 26% for all other periods.

4.954 SF Restaurant (ITE LUC 932)

Units: 4.95 KSF — Restaurant

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	630		630	50%	50%	315	315	5	5	25	25	285	285	40	40	232	308	116	116	154	154
Weekday AM PH	54		54	55%	45%	30	24	0	0	2	2	28	22	2	1	22	29	11	11	17	12
Weekday PM PH	48		48	60%	40%	29	19	0	0	2	2	27	17	6	4	16	22	8	8	15	7
Saturday Daily	784		784	50%	50%	392	392	6	6	31	31	355	355	39	39	298	396	149	149	198	198
Saturday Midday PH	70		70	53%	47%	37	33	1	0	3	3	33	30	3	3	28	35	14	14	19	16

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820.
Pass-by rate of 43% for all periods.

LOT 5 TOTALS

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	828	0	828			414	414	7	7	33	33	374	374	52	52	232	**478**	116	116	239	239
Weekday AM PH	74	0	74			41	33	0	0	3	3	38	30	2	1	22	**49**	11	11	28	21
Weekday PM PH	70	0	70			39	31	0	0	3	3	36	28	8	6	16	**40**	8	8	23	17
Saturday Daily	922	0	922			461	461	7	7	37	37	417	417	45	45	298	**520**	149	149	260	260
Saturday Midday PH	82	0	82			43	39	1	0	3	3	39	36	3	3	28	**47**	14	14	25	22

Lot 6, Lot 3, Lot 4, & Lot 5	Total Trips	% In	% Out	Total New Trips		Total Transit Trips		tal Walk / Bicycle Trip		otal Autos Only Trip		Total Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	Total Pass-by Trips		Total Primary Trips	
				In	Out	In	Out	In	Out	In	Out	In	Out			In	Out	In	Out
Weekday Daily	4032	50%	50%	2016	2016	30	30	162	162	1824	1824	232	232	1016	2492	508	508	1246	1246
Weekday AM Peak Hour	300	57%	43%	172	128	2	1	13	10	157	117	4	3	70	220	35	35	131	89
Weekday PM Peak Hour	356	53%	47%	190	166	2	0	15	13	173	153	34	32	74	214	37	37	117	97
Saturday Daily	4504	50%	50%	2252	2252	35	35	180	180	2037	2037	185	185	1282	2782	641	641	1391	1391
Saturday Midday Peak Hour	422	53%	47%	224	198	4	2	17	15	203	181	17	17	116	266	58	58	145	121

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 220 Apartment

Average Vehicle Trips Ends vs:	Dwelling Units
Independent Variable (X):	19
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 6.65 * (X)
T = 6.65 * 19.00
T = **126** vehicle trips
with 50% entering (63 vpd) and with 50% exiting (63 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 20% entering (2 vpd) and with 80% exiting (8 vpd)

WEEKDAY EVENING PEAK HOUR

T = 0.62 * (X)
T = 0.62 * 19.00
T = **12** vehicle trips
with 65% entering (8 vpd) and with 35% exiting (4 vpd)

AVERAGE SATURDAY DAILY

T = 6.39 * (X)
T = 6.39 * 19.00
T = **122** vehicle trips
with 50% entering (61 vpd) and with 50% exiting (61 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.52 * (X)
T = 0.52 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

AVERAGE SUNDAY DAILY

T = 5.86 * (X)
T = 5.86 * 19.00
T = **112** vehicle trips
with 50% entering (56 vpd) and with 50% exiting (56 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 710 General Office Building

Average Vehicle Trips Ends vs:	1000 SF Gross Floor Area
Independent Variable (X):	6.615
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 11.03 * (X)
T = 11.03 * 6.62
T = **72** vehicle trips
with 50% entering (36 vpd) and with 50% exiting (36 vpd)

WEEKDAY MORNING PEAK HOUR

T = 1.56 * (X)
T = 1.56 * 6.62
T = **10** vehicle trips
with 88% entering (9 vpd) and with 12% exiting (1 vpd)

WEEKDAY EVENING PEAK HOUR

T = 1.49 * (X)
T = 1.49 * 6.62
T = **10** vehicle trips
with 17% entering (2 vpd) and with 83% exiting (8 vpd)

AVERAGE SATURDAY DAILY

T = 2.46 * (X)
T = 2.46 * 6.62
T = **16** vehicle trips
with 50% entering (8 vpd) and with 50% exiting (8 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.43 * (X)
T = 0.43 * 6.62
T = **2** vehicle trips
with 54% entering (1 vpd) and with 46% exiting (1 vpd)

AVERAGE SUNDAY DAILY

T = 1.05 * (X)
T = 1.05 * 6.62
T = **6** vehicle trips
with 50% entering (3 vpd) and with 50% exiting (3 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.16 * (X)
T = 0.16 * 6.62
T = **2** vehicle trips
with 58% entering (1 vpd) and with 42% exiting (1 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 932 High-Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 4.954
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 127.15 * (X)
T = 127.15 * 4.95
T = **630** vehicle trips
with 50% entering (315 vpd) and with 50% exiting (315 vpd)

WEEKDAY MORNING PEAK HOUR

T = 10.81 * (X)
T = 10.81 * 4.95
T = **54** vehicle trips
with 55% entering (30 vpd) and with 45% exiting (24 vpd)

WEEKDAY EVENING PEAK HOUR

T = 9.85 * (X)
T = 9.85 * 4.95
T = **48** vehicle trips
with 60% entering (29 vpd) and with 40% exiting (19 vpd)

AVERAGE SATURDAY DAILY

T = 158.37 * (X)
T = 158.37 * 4.95
T = **784** vehicle trips
with 50% entering (392 vpd) and with 50% exiting (392 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 14.07 * (X)
T = 14.07 * 4.95
T = **70** vehicle trips
with 53% entering (37 vpd) and with 47% exiting (33 vpd)

AVERAGE SUNDAY DAILY

T = 131.84 * (X)
T = 131.84 * 4.95
T = **654** vehicle trips
with 50% entering (327 vpd) and with 50% exiting (327 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 18.46 * (X)
T = 18.46 * 4.95
T = **92** vehicle trips
with 55% entering (51 vpd) and with 45% exiting (41 vpd)

Lot 5 All Retail

19-Unit Residential Apartments (ITE LUC 220)

Units: 19 Units — Residential

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	126		126	50%	50%	63	63	1	1	5	5	57	57	8	8	0	108	0	0	54	54
Weekday AM PH	10		10	20%	80%	2	8	0	0	0	1	2	7	0	0	0	10	0	0	2	8
Weekday PM PH	12		12	65%	35%	8	4	0	0	1	0	7	4	2	0	0	10	0	0	6	4
Saturday Daily	122		122	50%	50%	61	61	1	1	5	5	55	55	6	6	0	108	0	0	54	54
Saturday Midday PH	10		10	50%	50%	5	5	0	0	0	0	5	5	0	0	0	10	0	0	5	5

0 SF Office (ITE LUC 710)

Units: 0.00 KSF — Office

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	0		0	50%	50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday AM PH	0		0	88%	12%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday PM PH	0		0	17%	83%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday Daily	0		0	50%	50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday Midday PH	0		0	54%	46%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

6,615SF Retail (ITE LUC 826)

Units: 6.62 KSF — Retail

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	294		294	50%	50%	147	147	2	2	12	12	133	133	19	19	66	186	33	33	93	93
Weekday AM PH	6		6	62%	38%	4	2	0	0	0	0	4	2	0	0	2	4	1	1	3	1
Weekday PM PH	18		18	44%	56%	8	10	0	0	1	1	7	9	1	2	6	9	3	3	4	5
Saturday Daily	278		278	50%	50%	139	139	2	2	11	11	126	126	14	14	64	182	32	32	91	91
Saturday Midday PH	32		32	52%	48%	17	15	0	0	1	1	16	14	2	1	8	21	4	4	11	10

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820.
Pass-by rate of 34% for Weekday PM PH, 26% for all other periods.

4,954 SF Restaurant (ITE LUC 932)

Units: 4.95 KSF — Restaurant

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	630		630	50%	50%	315	315	5	5	25	25	285	285	40	40	232	308	116	116	154	154
Weekday AM PH	54		54	55%	45%	30	24	0	0	2	2	28	22	2	1	22	29	11	11	17	12
Weekday PM PH	48		48	60%	40%	29	19	0	0	2	2	27	17	6	4	16	22	8	8	15	7
Saturday Daily	784		784	50%	50%	392	392	6	6	31	31	355	355	39	39	298	396	149	149	198	198
Saturday Midday PH	70		70	53%	47%	37	33	1	0	3	3	33	30	3	3	28	35	14	14	19	16

Trip generation rates for Weekday AM PH and Saturday Midday PH sourced from ITE LUC 820.
Pass-by rate of 43% for all periods.

LOT 5 TOTALS

	Total Trips		Total	% Distribution		# New Trips		Transit Trips		Walk / Bicycle Trips		Autos Only		Multi-Use		Total New	Total New	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve	New Trips	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	Pass-by Trips	Primary Trips	IN	OUT	IN	OUT
Weekday Daily	1050	0	1050			525	525	8	8	42	42	475	475	67	67	298	**602**	149	149	301	301
Weekday AM PH	70	0	70			36	34	0	0	2	3	34	31	2	1	24	**43**	12	12	22	21
Weekday PM PH	78	0	78			45	33	0	0	4	3	41	30	9	6	22	**41**	11	11	25	16
Saturday Daily	1184	0	1184			592	592	9	9	47	47	536	536	59	59	362	**686**	181	181	343	343
Saturday Midday PH	112	0	112			59	53	1	0	4	4	54	49	5	4	36	**66**	18	18	35	31

Lot 6, Lot 3, Lot 4, & Lot 5	Total Trips	% In	% Out	Total New Trips		Total Transit Trips		tal Walk / Bicycle Tri		Total Autos Only Trip		Total Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	Total Pass-by Trips		Total Primary Trips	
				In	Out	In	Out	In	Out	In	Out	In	Out			In	Out	In	Out
Weekday Daily	4254	50%	50%	2127	2127	31	30	171	171	1925	1925	247	247	1082	2616	541	541	1308	1308
Weekday AM Peak Hour	296	56%	44%	167	129	2	1	12	10	153	118	4	3	72	214	36	36	125	89
Weekday PM Peak Hour	364	54%	46%	196	168	2	0	16	13	178	155	35	32	80	215	40	40	119	96
Saturday Daily	4766	50%	50%	2383	2383	37	37	190	190	2156	2156	199	199	1346	2948	673	673	1474	1474
Saturday Midday Peak Hour	452	53%	47%	240	212	4	2	18	16	218	194	19	18	124	285	62	62	155	130

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 220 Apartment

Average Vehicle Trips Ends vs:	Dwelling Units
Independent Variable (X):	19
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 6.65 * (X)
T = 6.65 * 19.00
T = **126** vehicle trips
with 50% entering (63 vpd) and with 50% exiting (63 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 20% entering (2 vpd) and with 80% exiting (8 vpd)

WEEKDAY EVENING PEAK HOUR

T = 0.62 * (X)
T = 0.62 * 19.00
T = **12** vehicle trips
with 65% entering (8 vpd) and with 35% exiting (4 vpd)

AVERAGE SATURDAY DAILY

T = 6.39 * (X)
T = 6.39 * 19.00
T = **122** vehicle trips
with 50% entering (61 vpd) and with 50% exiting (61 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.52 * (X)
T = 0.52 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

AVERAGE SUNDAY DAILY

T = 5.86 * (X)
T = 5.86 * 19.00
T = **112** vehicle trips
with 50% entering (56 vpd) and with 50% exiting (56 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.51 * (X)
T = 0.51 * 19.00
T = **10** vehicle trips
with 50% entering (5 vpd) and with 50% exiting (5 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 820 Shopping Center

Average Vehicle Trips Ends vs:	1000 SF Gross Leasable Area
Independent Variable (X):	6.615
Curve Method:	Average

AVERAGE WEEKDAY DAILY

T = 42.70 * (X)
T = 42.70 * 6.62
T = **282** vehicle trips
with 50% entering (141 vpd) and with 50% exiting (141 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.96 * (X)
T = 0.96 * 6.62
T = **6** vehicle trips
with 62% entering (4 vpd) and with 38% exiting (2 vpd)

WEEKDAY EVENING PEAK HOUR

T = 3.71 * (X)
T = 3.71 * 6.62
T = **24** vehicle trips
with 48% entering (12 vpd) and with 52% exiting (12 vpd)

AVERAGE SATURDAY DAILY

T = 49.97 * (X)
T = 49.97 * 6.62
T = **330** vehicle trips
with 50% entering (165 vpd) and with 50% exiting (165 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 4.82 * (X)
T = 4.82 * 6.62
T = **32** vehicle trips
with 52% entering (17 vpd) and with 48% exiting (15 vpd)

AVERAGE SUNDAY DAILY

T = 25.24 * (X)
T = 25.24 * 6.62
T = **166** vehicle trips
with 50% entering (83 vpd) and with 50% exiting (83 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 3.12 * (X)
T = 3.12 * 6.62
T = **20** vehicle trips
with 49% entering (10 vpd) and with 51% exiting (10 vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 826 Specialty Retail Center

Average Vehicle Trips Ends vs: 1000 SF Gross Leasable Area
Independent Variable (X): 6.615
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 44.32 * (X)
T = 44.32 * 6.62
T = **294** vehicle trips
with 50% entering (147 vpd) and with 50% exiting (147 vpd)

WEEKDAY MORNING PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 6.62
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

WEEKDAY EVENING PEAK HOUR

T = 2.71 * (X)
T = 2.71 * 6.62
T = **18** vehicle trips
with 44% entering (8 vpd) and with 56% exiting (10 vpd)

AVERAGE SATURDAY DAILY

T = 42.04 * (X)
T = 42.04 * 6.62
T = **278** vehicle trips
with 50% entering (139 vpd) and with 50% exiting (139 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 6.62
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

AVERAGE SUNDAY DAILY

T = 20.43 * (X)
T = 20.43 * 6.62
T = **136** vehicle trips
with 50% entering (68 vpd) and with 50% exiting (68 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 0.00 * (X)
T = 0.00 * 6.62
T = **-** vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

Trip Generation Estimate

Project:	Deer Street Garage and Deer Street Associates
Date:	11/17/2016 - Revised By GP 8/19/2022
Analyst:	Eric R. Paquette, E.I.T. Revised By Brad Pineau, EI
Source:	Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 932 High-Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 4.954
Curve Method: Average

AVERAGE WEEKDAY DAILY

T = 127.15 * (X)
T = 127.15 * 4.95
T = **630** vehicle trips
with 50% entering (315 vpd) and with 50% exiting (315 vpd)

WEEKDAY MORNING PEAK HOUR

T = 10.81 * (X)
T = 10.81 * 4.95
T = **54** vehicle trips
with 55% entering (30 vpd) and with 45% exiting (24 vpd)

WEEKDAY EVENING PEAK HOUR

T = 9.85 * (X)
T = 9.85 * 4.95
T = **48** vehicle trips
with 60% entering (29 vpd) and with 40% exiting (19 vpd)

AVERAGE SATURDAY DAILY

T = 158.37 * (X)
T = 158.37 * 4.95
T = **784** vehicle trips
with 50% entering (392 vpd) and with 50% exiting (392 vpd)

SATURDAY MIDDAY PEAK HOUR

T = 14.07 * (X)
T = 14.07 * 4.95
T = **70** vehicle trips
with 53% entering (37 vpd) and with 47% exiting (33 vpd)

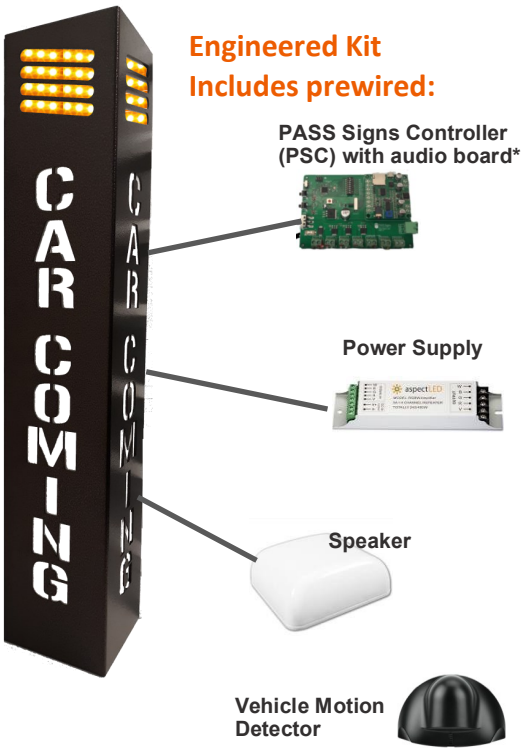
AVERAGE SUNDAY DAILY

T = 131.84 * (X)
T = 131.84 * 4.95
T = **654** vehicle trips
with 50% entering (327 vpd) and with 50% exiting (327 vpd)

SUNDAY MIDDAY PEAK HOUR

T = 18.46 * (X)
T = 18.46 * 4.95
T = **92** vehicle trips
with 55% entering (51 vpd) and with 45% exiting (41 vpd)

Minimize Your Liability!



Part name: Car Coming Wall Mounted 40x08
Part numbers: CCV4008W or CCV4008W-Kit
Mounting: Wall or Post, outdoor rated
Purpose: Provides pedestrians a visual and voice alert when vehicles exit a parking facility. Two sides flash "CAR COMING".
Engineered Kit Includes:
PASS Controller w/ Voice Module
Power supply
Speaker
Vehicle motion detector
Dimensions: 40"H x 10"W x 8" faces
Finish: Hammered copper powder coating

Solution

Warns pedestrians of a vehicle exiting a parking facility with Voice Alert and Flashing CAR COMING

CAR COMING Exit Warning Sign

INCLUDES EVERYTHING YOU NEED FOR A WORKING SYSTEM*

Parking Alert Signs
Engineered safety systems for you parking facilities

Have questions?
We make it easy for you.
480-689-1993
support@passsigns.com

PassSigns.com

Operations

How the System Operates

A TRIGGERING SENSOR detects a vehicle exiting a parking facility. It sends a signal to the PASS Controller (PSC) inside the System.

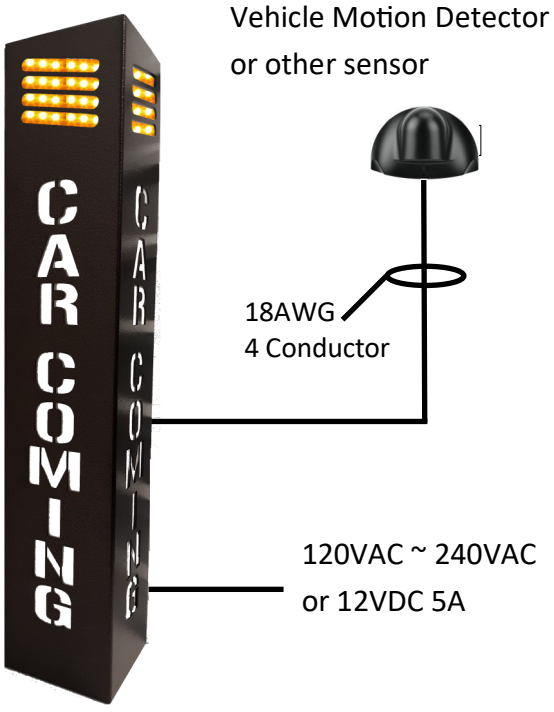
The PASS Controller (PSC) activates the system:

- Voice Alert—"Attention! Vehicles exiting watch for vehicles."
- Flashing text (2 sides) - CAR COMING
- Flashing amber signal

PASS Controller continues to activate the sign for 10 seconds (adjustable) or if a second vehicle activates the system it resets the 10 second timer.

NOTE— 40" CLEARANCE REQUIRED UNDER UNIT TO ALLOW FRONT COVER TO SLIDE DOWN

Typical Wiring



Triggering Sensors

- Vehicle motion detector (INCLUDED with Kit)
- Vehicle loop detector
- Parking gate open circuit
- Rollup door gate open circuit
- Beam detector
- Push button
- Any NORMALLY OPEN output

Options

- Audio cut off timer board. Turns off voice alert at designated times for nearby residential.
- Mounting post 72" x 4" x 4"
- 2nd Sign for exits wider than 2 lanes — Car Coming Sign Basic CCV4008-Basic

Detailed specifications

Part name: Car Coming Warning Sign 40x08
Part#: CCV4008W or CCV4008-Kit
Mounting: Wall or Post mounted
Dimensions: 48" x 10" x 8" face, Wall mounted
Material: 14AWG Steel
Finish: Hammered copper powder coating
Power In: 120VAC 1A or 12VDC 5A(Low voltage)

PASS Signs Controller (PSC)

12VDC Input Power
12VDC Output Power (for Trigger Sensor)
(2)Trigger Inputs - Normally open dry inputs only
(2) Test buttons
Output 1: Steady Output 12VDC
Output 2: Flashing 1 sec On/Off Output—12VDC
Activation Timer (5—35 seconds) - Dip switches

Voice Module

Volume control 0-90dB
15 Watt Speaker
Audio Message can be changed easily onsite with laptop and USB to Micro USB cable (android cable)

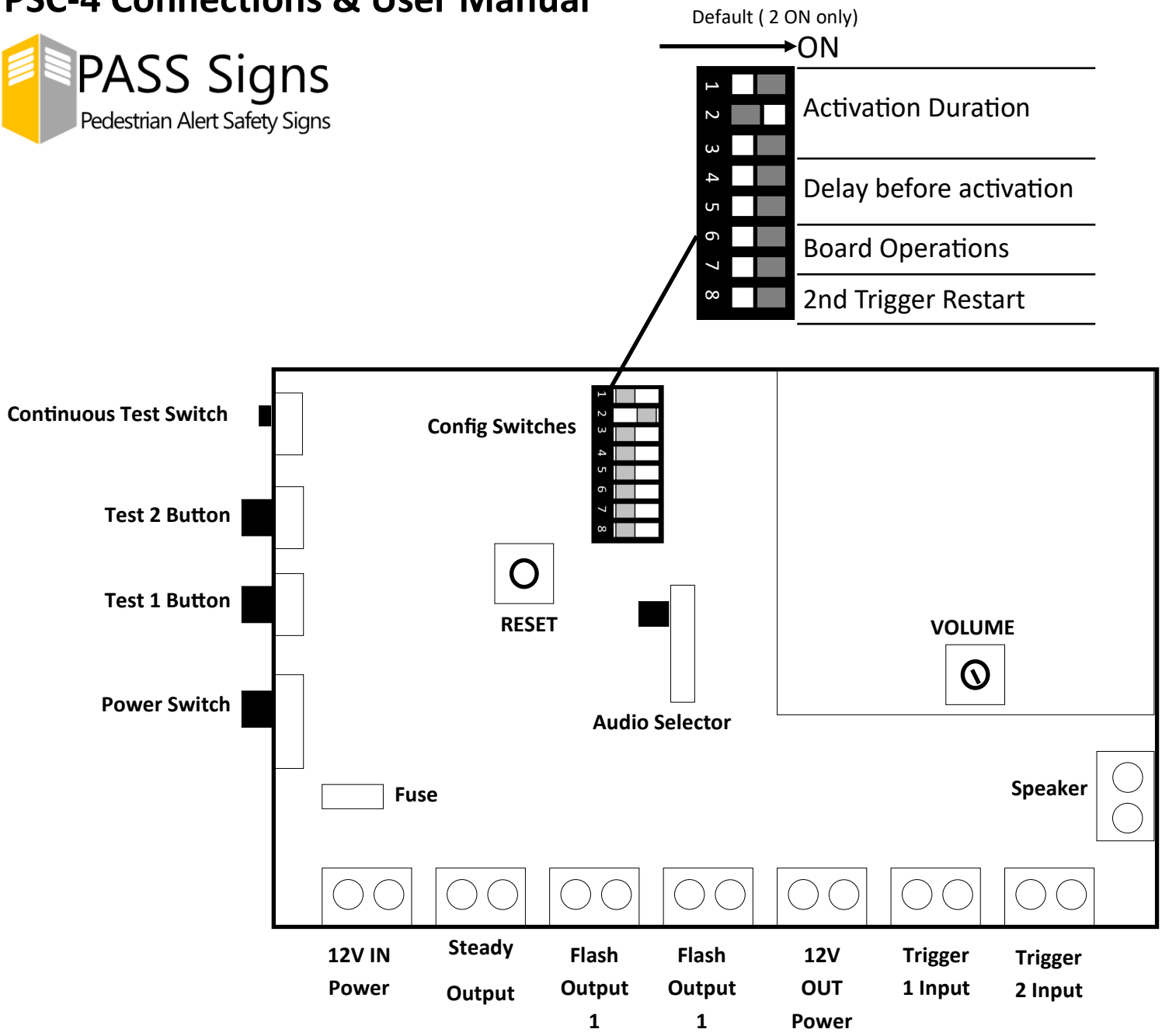
Vehicle Motion Detector with Kit

10'x10' detection zone
Power In: 12VDC from PASS Controller

**system does not include field wiring or mounting bolts*

PSC-4 Connections & User Manual

PASS Signs
Pedestrian Alert Safety Signs



Config Switches

Activation Duration - How long the sign activates when triggered. Typical is 10 seconds.

Switch	On	Switch	ON
1	5 secs	1, 3	25 secs
2	10 secs	2,3	30 secs
1,2	15 secs	1,2,3	35 secs
3	20 secs		

Delay Duration - Delay time before the Activation Duration starts. Default is 0 , SW 4&5 off

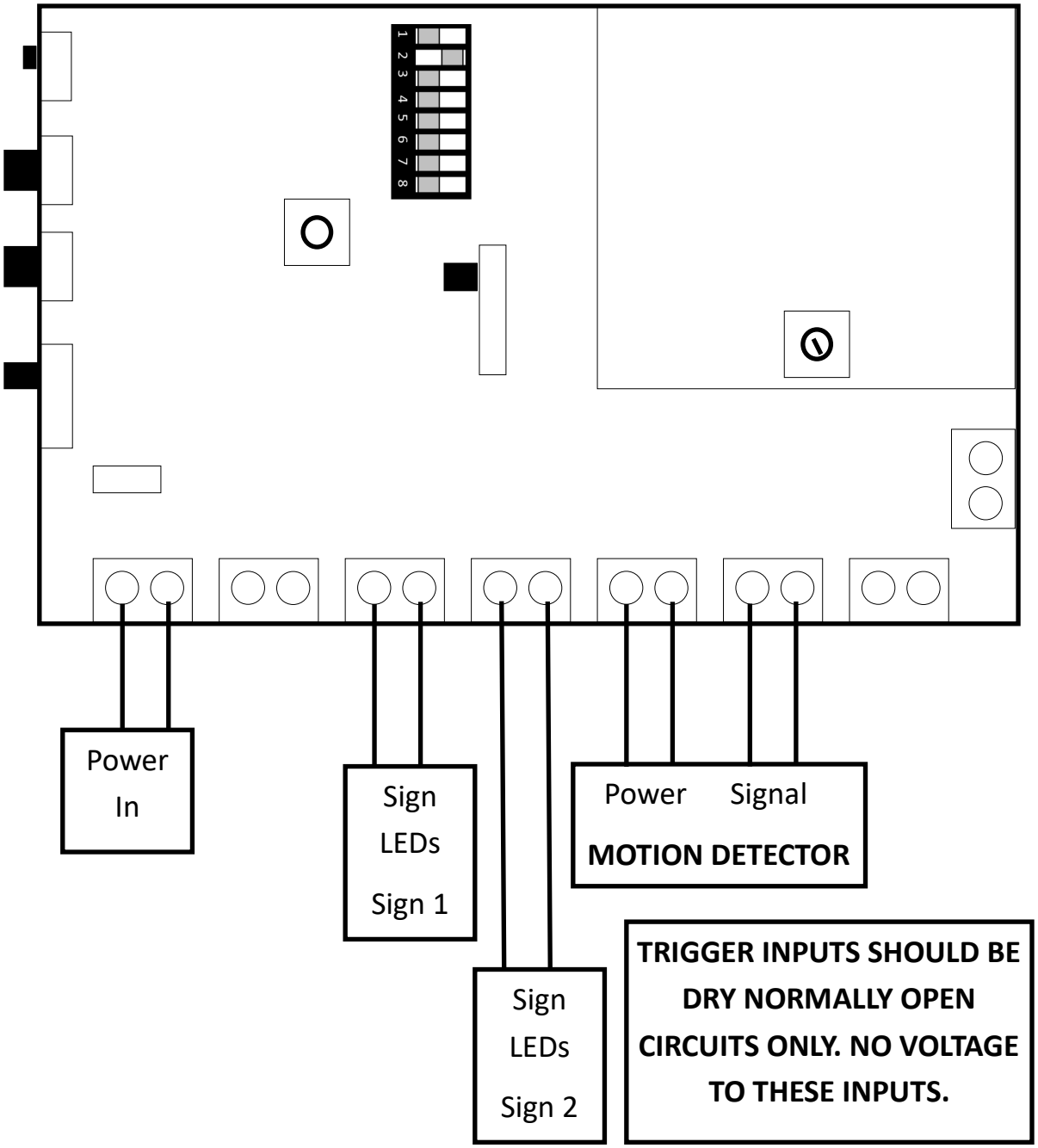
Switch	On	Switch	ON
	0 secs	5	10 secs
4	10 secs	4,5	15 secs

Board Operations - How the board functions. Default is Normal Operations, SW 6&7 off

Switch	On
	Normal Operations
6	Directional Logic Operations
7	2 Inputs - 2 Outputs
6,7	2-Way Traffic Controller

2nd Trigger Restart - How the board functions.

Switch	On
	Normal Operations
8	2nd Trigger will reset Activation Timer



PASS Signs
Pedestrian Alert Safety Signs

Parking Alert Signs
Engineered safety systems for you parking facilities

Manuals for 40x08 Prism Wall/Post Mounted Sign covering:

CAR COMING Sign

VEHICLE EXITING Sign

Custom Message 40x08 Sign

Dual - Sign Installations

Contents

Last updated – Feb 2021
ParkingAlertSigns.com
PASSsigns.com
support@PassSigns.com

Description

The CAR COMING Sign is a self-contained system that warns pedestrians of vehicles exiting parking garages or other blind spots. When a vehicle is detected, the CAR COMING SIGN activates a Visual Flashing Alert and a Voice Message stating “Attention, vehicles exiting. Watch for vehicles!”

How it works

The CAR COMING Sign has an internal PASS Controller Board, Speaker, and Power Supply pre-wired inside the sign.

THE ENGINEERING IS DONE

A sensor, outside the sign, such as a vehicle motion detector is connected to the sign. Once a vehicle is detected leaving the facility, the sensor sends a signal to the PASS Controller inside the sign. The PASS Controller activates the flashing lights, flashing text, and a voice or audio alert for 10 seconds (or desired other time). The activation can restart if the

The **PASS Controller** controls the following features: (see Installation Documents)

- Activation Timer – set by dip switches 5, 10, 15, 20, 25, 30, 35 seconds
- Delay before activation – set by dip switches 0, 5, 10, 15
    - Allows a timed delay after the car is detected, and before the sign activates
- Volume control of the Audio/Voice output
- Selected voice or audio output with 4 position selector switch
- (2) Flashing outputs when sign is activated
- (1) Steady output when sign activated
- 12VDC output power for activation trigger sensors
- Test buttons

Types of Sensors that can trigger activation of the system

- Any Normally Open (NO) Dry output closure – no voltage outputs
- Motion sensor or Vehicle motion sensor
- Vehicle loop detectors
- Beam detectors
- Push buttons.
- Gate or Roll up door outputs.

Applications

Primary Application

Vehicle Exiting Warning System – The CAR COMING Sign and VEHICLE EXITING signs are used to warn pedestrians and street traffic of cars exiting parking garages and blind spots.

Dual Tandem Signs - Wide Parking Garage Exit

For parking garage exits that are 2 lanes or wider, than it is recommended to place a sign on either side of the exit, if possible, if the area is noisy or if the exit and sidewalk areas are busy with traffic.

Secondary Application

Two-way ramps systems – The CAR COMING Sign can be used on two-way ramp systems to warn vehicles of cross-traffic dangers.

Specifications

Part Numbers of complete kits and Triggering Devices.

CC4008V-Kit	CAR COMING Sign – with Control board, Power supply, Speaker
CC4008-Kit-MO	CAR COMING Sign – Kit above and with Motion Detector
CC4008-Kit-DL	CAR COMING Sign – Kit above and with Direction Logic motion detector
CC4008-Kit-LD	CAR COMING Sign – Kit above and with Vehicle Loop Detector
CC4008-Tandem	CAR COMING Sign – Used as second sign in dual sign setup of a CC4008V – no Control Board or Power supply and must be use

VE4008V-Kit	VEHICLE EXITING Sign – with Control board, Power supply, Speaker
VE4008-Kit-MO	VEHICLE EXITING Sign – Kit above and with Motion Detector
VE4008-Kit-DL	VEHICLE EXITING Sign – Kit above and with Direction Logic motion detector
VE4008-Kit-LD	VEHICLE EXITING Sign – Kit above and with Vehicle Loop Detector
VE4008-Tandem	VEHICLE EXITING Sign – Used as second sign in dual sign setup of a VE4008V – no Control Board or Power supply

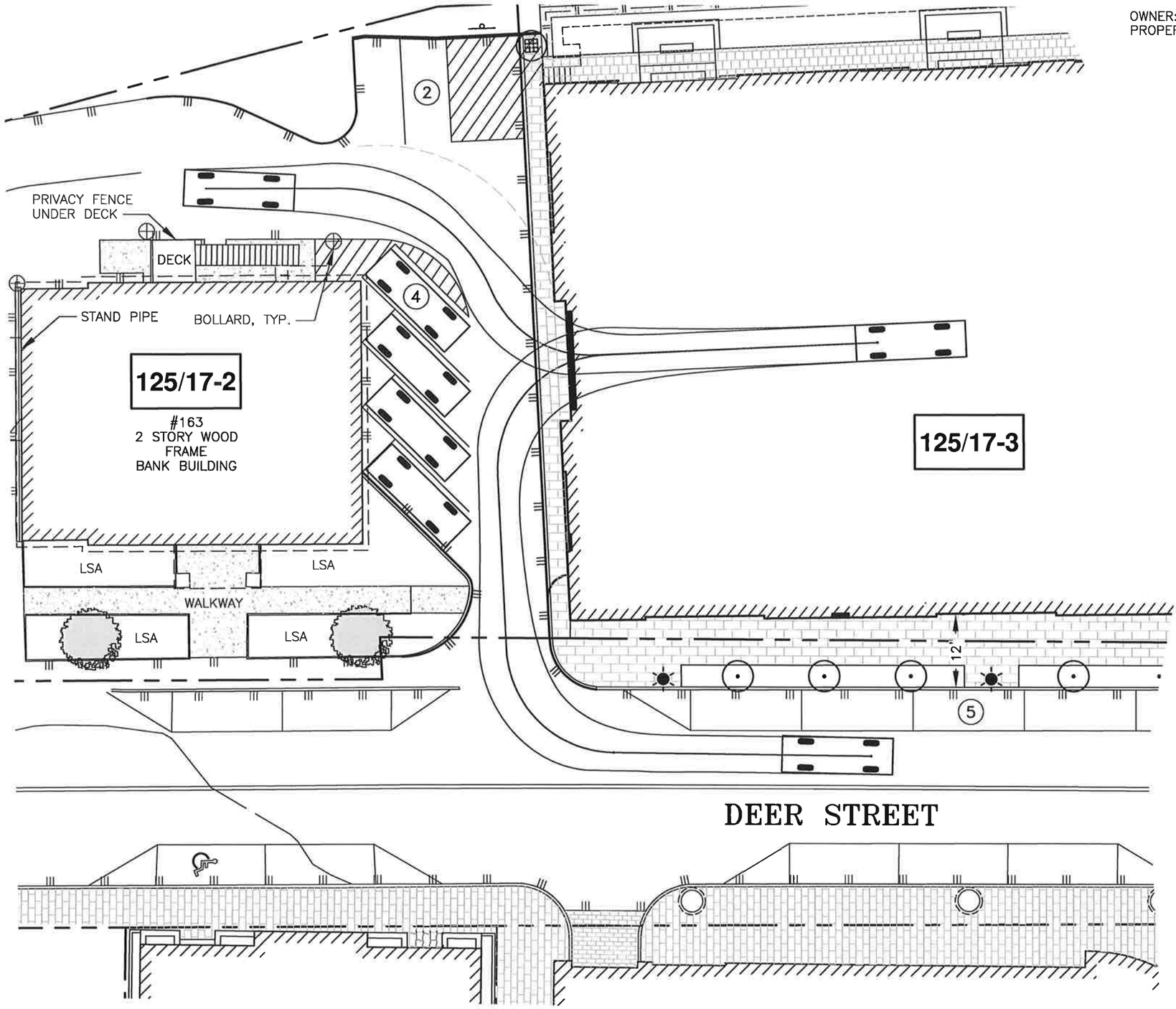
Specifications

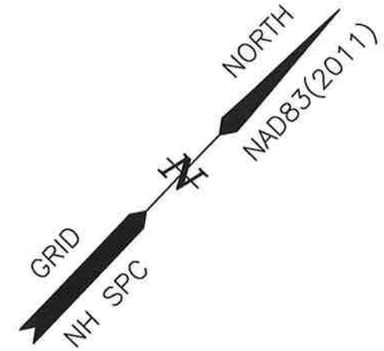
- Mounting: Wall or Post
- Mounting height – minimum bottom from ground is 42” UNLESS special adapters to mount lower
- Dimensions: 40” x 10”W back plate x 8” each face
- Weight: 37lbs
- Material: 14AWG Steel – hurricane wind strength
- Finish: Powder coating – Hammered copper textured or Black textured
- Power in: 100VAC to 277VAC or 12VDC 5Amps
- Backlight letters white LEDs – CAR COMING
- Flashing alert – Amber LEDs
- PASS Signs Controller Board
    - (2) Inputs – Trigger 1 & Trigger 2
    - (2) Outputs – *Flashing Output* – *Steady Continuous Output*
- Audio – 4 Channels selectable – Can be customized with any MP3 file
    - Voice audio - “Attention vehicles exiting. Watch for vehicles.”
    - Voice audio - “Watch for moving vehicles.”
    - Voice audio - “Vehicles moving.”
    - Audio only – *Ding ding*
- .

Finish – Hammered copper textured

VEHICLE TURNING TEMPLATE

OWNER: EIGHTKPH, LLC
PROPERTY LOCATION: 70 MAPLEWOOD AVENUE
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE





VEHICLE NOTES:

F-150 CREW CAB
WHEEL BASE: 144 IN.
OVERALL LENGTH: 244 IN.
WHEEL LOCK ANGLE: 33°

GRAPHIC SCALE

10 0 10 20 30 40 50 FEET
3 0 5 10 15 METERS

SCALE: 1"=20'

11/7/2022

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

FB 265 PG 18 2271.04

J:\JOBS2\JN2200s\JN2270s\JN2271\2022 Site Plan\Plans & Specs\Site\2271.04 TURNING TEMPLATE 2022.dwg, Tue Nov 8 08:22:37 2022, SHARP MX-3071 (0300380X00)

Average Grade WorkSheet						
Project	Foundry Place Lot 5				Calculated	
Address:	70 Maplewood Avenue, Portsmouth, NH				11/22/2022	
6' offset from Building; Prop Grades 10' OC						
SECTION	Elev	Elev	Elev	Elev	Total	
SOUTH	11.42	11.65	11.88	12.11	47.06	
	12.33	12.61	12.81	13.06	50.81	
	13.30	13.55	13.82	14.01	54.68	
	14.37	14.65	14.92	14.55	58.49	
	14.50				14.50	AVG PER SECTION
			#	17.0	225.54	13.27
WEST		11.60	11.74	11.89	35.23	
	12.03	12.27	12.51	12.75	49.56	
	12.60	12.44	12.29		37.33	
						AVG PER SECTION
			#	10.0	122.12	12.21
NORTH	12.10	13.03	13.65	13.81	52.59	
	13.96	14.08	14.20	14.33	56.57	
	14.46	14.46	14.46	14.46	57.84	
	14.46	14.20	14.08	13.92	56.66	
	13.80	13.68			27.48	AVG PER SECTION
			#	18.0	251.14	13.95
EAST	14.48	14.41	14.65	14.55	58.09	
	14.45	14.35	14.23	14.10	57.13	
	14.00	14.10	13.83	13.57	55.50	
	13.98				13.98	
						AVG PER SECTION
			#	13	184.70	14.21
Total	783.50	>	AVERAGE GRADE			
#	58		13.51			

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
CB 8168	EX	13.19	12" RCP	9.93	9.83	NE
DMH 3540	EX	10.81	48" RCP		1.56	NW
OCS 1	PROP	13.95	12"	10.9	7.92	
CB 1	PROP	12.10	12" HDPE	7.79	7.69	
CB 2	PROP	13.56	12" HDPE	10.22	10.12	

PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
P1	12"	13'	0.05
P2	12"	47'	0.004
P3	12"	5'	0.02
P4	12"	31'	0.004
P5	12"	8'	0.004
P6	TWIN 12"	17'	0.17

*ALL PIPE TO BE HDPE

PLACE SILT SOXX ALONG ENTIRE REAR PROPERTY LINE (A D1)

TBM 4 CHISELED SQUARE IN NE CORNER OF TRANSFORMER PAD EL.=14.77

TRANSFORMER & SWITCH BOX ON CONCRETE PADS, TYP.

CB 8168

DMH 8161

CATCH BASIN BASKET (L D1)

0" REVEAL

6" REVEAL

6" REVEAL TYP.

SLOPED GRANITE CURB

PROPOSED CB 1–RIM 12.10 (N D3, Q D4)

PROPOSED OCS STRUCTURE

PROPOSED R-TANK SYSTEM (S D4)

FF=12.30

P1 P2 P3 P4 P5 P6

ENTRANCE (B D1)

PROPOSED CB 2 (N D3, Q D4)

HIGH POINT

48" ø DRAIN LINE

POTENTIAL FOUNDATION DRAIN LOCATION– ADDITIONAL APPROVALS REQUIRED

FF=14.35

FF=11.83

FF=12.82

FF=14.0

FF=14.67

ADA

SLOPE CURB

2' WIDE WARNING STRIP

FLUSH CURB

TBM 5 CHISELED SQUARE IN NE QUADRANT OF MAST BASE EL.=15.20

DMH 3540

DMH 8160

DEER STREET

MAPLEWOOD AVE.

#70

PROPOSED 4 STORY WITH A PENTHOUSE BUILDING 17,093 S.F.

COMMERCIAL & RESIDENTIAL

LOWER LEVEL: FF=10.5
FIRST LEVEL:
FF=13.0
FF=14.0
FF=15.0
FF=19.5
SECOND, THIRD, & FOURTH LEVEL:
FF=30.5/42.0/53.5
PENTHOUSE: FF=65.0

125/17-3

GRAPHIC SCALE
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

NORTH NAD83(2011)
GRID NH SPC

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	GRADING–REAR	11/17/22
2	BUILDING FOOTPRINT	10/20/22
1	DRAIN PIPE SIZE	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

AVERAGE GRADE PLANE

SCALE: 1" = 10' AUGUST 2022

GRADING & DRAINAGE PLAN

C6

FB 265 PG 18

2271.04

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	S43°06'02"W	1.34'

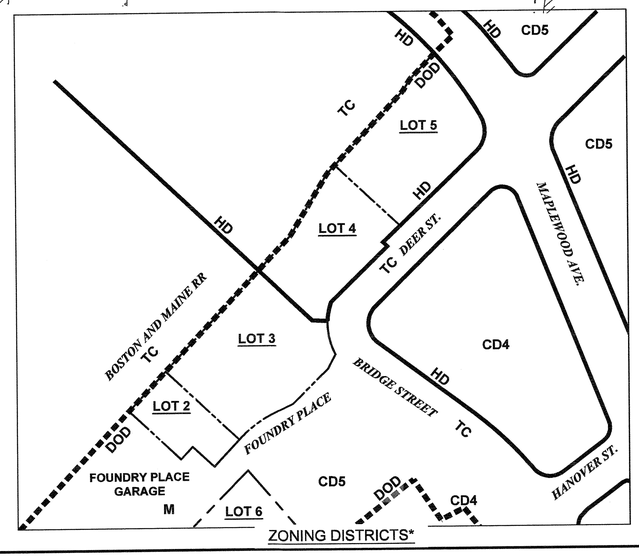
CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	155.00'	56.30'	55.99'	S53°24'20"W	20°48'45"
C2	86.00'	45.63'	45.10'	S13°00'13"E	30°24'08"

STATE PLANE 83 NAD NH

MAINTENANCE ACCESS GATES
10 FT WIDE ACCESS EASEMENT FOR CONSTRUCTION
PROPOSED FENCE
DUMPSTERS IN GARAGE. SEE ARCHITECTURAL SHEETS
LOT 4 LANDSCAPE IMPROVEMENTS
TRANSFORMERS FOR LOT 3 AND 4
STRIPE DRIVE-THROUGH AND BYPASS LANES
RECONSTRUCT EXISTING PAVEMENT
LIGHT POLE (ON-SITE)
LANDSCAPE ISLAND
BOSTON & MAINE RAILROAD
N43°06'02"E 180.84'
EXISTING PARKING
PROPOSED LOT 3 BUILDING
FIRST FLOOR FOOTPRINT: 21,977
STORIES: 5
HEIGHT: 61 FT - 9 IN
SF USES: HOTEL BAR
F.F.E.: 12.00
ENTRANCE PARKING GARAGE
BIKE RACKS
TEMPORARY ASPHALT EGRESS PATH
AT-GRADE PARKING GARAGE - VALET ONLY 78 PARKING SPACES
LOT 2
LOT 4
EXIST BANK
APPROXIMATE LOCATION OF ENTRANCE SIGN
LOT 5
EXISTING BUILDING
REVISE LOT 4 AND 5 PARKING
RE-STRIPE TO ENTRANCE ONLY
PROPOSED PLANTING IMPROVEMENTS (TYP.)
HOTEL LOADING ZONE
HOTEL MAIN ENTRANCE
CAFE MAIN ENTRANCE
SECONDARY ACCESSIBLE ENTRANCE
DECK TERRACE
BRICK SIDEWALK
SIDEWALK EASEMENT
DEER STREET (PUBLIC - WIDTH VARIES)
BRICK SIDEWALK
FOUNDRY PLACE (PUBLIC - WIDTH VARIES)
PROPOSED DRIVEWAY AND BRICK CROSSWALK
PROPOSED DEER STRIPING (BY OTHERS) PER TEC TRAFFIC STUDY
MAPLEWOOD AVENUE
LOT 6
STREET LIGHTS ALONG FOUNDRY PLACE INSTALLED BY CITY
CITY CONSTRUCTED ROADWAY
BRICK SIDEWALK AND LANDSCAPING
APPROXIMATE LOCATION OF CITY INSTALLED HYDRANT
BRIDGE STREET (PUBLIC - WIDTH VARIES)

30 0 15 30 60
1 inch = 30 ft.



ZONING DISTRICTS*

ZONING LEGEND*:

CD5	CHARACTER DISTRICT 5
CD4	CHARACTER DISTRICT 4
M	MUNICIPAL DISTRICT
DOD	DOWNTOWN OVERLAY DISTRICT
HD	HISTORIC DISTRICT
TC	TRANSPORTATION CORRIDOR

*ZONING IMAGE AND INFORMATION TAKEN FROM THE CITY OF PORTSMOUTH MAPGEO WEBSITE.

NOTES:

1. FOR DETAILED LAYOUT AND MATERIALS OF SITE PLAN SEE SHEETS C3.1-C3.3.
2. SEE ARCHITECTURE SHEET T.02T FOR FULL BUILDING AND SITE INFORMATION.
3. SEE ARCHITECTURAL SHEET A1.01T FOR PARKING AND FIRST FLOOR LAYOUT.
4. SOLID WASTE DUMPSTERS ARE LOCATED WITHIN GARAGE. SEE ARCHITECTURAL SHEETS FOR DETAILS.
5. SEE LANDSCAPE SHEET (L SERIES) FOR LANDSCAPE AND STREETSCAPE LAYOUT AND DETAILS.
6. SEE LIGHTING AND ELECTRICAL SHEETS FOR SITE LIGHTING DETAILS.
7. ALL CONDITIONS OF THE PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REGULATIONS.
8. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
9. BRICK COLOR IN VEHICULAR TRAVEL LANES AND PASSENGER LOADING AREAS SHALL BE SELECTED BY OWNER DURING SHOP DRAWINGS.
10. ALL SNOW REMOVED FOR LOTS 3 AND SHALL BE DISPOSED OF OFF SITE AND SHALL NOT BE STORED ON CITY PROPERTY.
11. BRICK DRIVEWAY CROSSWALK SHALL BE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND BE KEPT IN GOOD REPAIR AND SHALL BE REPAIRED WITHIN 90 DAYS OF THE DATE OF NOTICE FROM THE CITY. THE MAXIMUM ACCESSIBLE RUNNING SLOPE IS 1/20 OR 5.0% THE MAXIMUM ACCESSIBLE CROSS SLOPE SHALL BE 1/48 OR 2.08%
12. PARKING GARAGE SPRINKLERS SHALL BE PROVIDED TO PROVIDE ADEQUATE COVERAGE TO UPPER AND LOWER VEHICLE LIFTS.
13. THE SITE AND STORMWATER FACILITIES SHALL BE MAINTAINED (AT MINIMUM) PER THE LONG TERM OPERATIONS AND MAINTENANCE PLAN INCLUDED IN THE STORMWATER MANAGEMENT PLAN.
14. THE LANDSCAPE SHEETS (L-SERIES) ARE MADE PART OF THIS SITE PLAN.
15. A TEMPORARY DEWATERING PERMIT WILL BE REQUIRED FOR ANY TEMPORARY GROUNDWATER DISCHARGES INTO THE CITY STORM DRAIN.
16. THE CONSTRUCTION OF A DECK WITHIN THE PUBLIC ROW SHALL REQUIRE A LICENSE.
17. ENTRY SIGNS AND WAYFINDING SIGNS WILL REQUIRE A SEPARATE PERMIT.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

LEGEND:

- T — TRANSFORMER
- SITE BOUNDARY LINE
- ABUTTER LOT LINE
- PROPOSED BUILDING
- BUILDING/CANOPY OVERHANG
- 126/17 — ACCESSOR'S MAP#/ LOT#
- PROP BRICK SIDEWALK
- PROP VEHICULAR BRICK PAVEMENT
- NEW BITUMINOUS PAVEMENT SECTION
- PROP MILL AND OVERLAY
- LANDSCAPE (SEE ATTACHED LANDSCAPE PLANS FOR DETAILS)
- ⑤ — EXTERIOR PARKING
- PROP LIGHT POLE (CITY)
- PROP LIGHT POLE (ON-SITE)

STATE OF NEW HAMPSHIRE — DOUGLAS E. REYNOLDS — No. 12145 — 7-28-2020 — LICENSED PROFESSIONAL ENGINEER

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

LEGAL ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

Deer Street Associates

Hyatt Place - Foundry Place
165 Deer Street
Portsmouth, NH 03801

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook, Illinois 60523
P: 630.990.3535
F: 630.990.3541
www.legat.com

CIVIL ENGINEER / LANDSCAPE ARCHITECT
GORRILL PALMER
707 Sable Oaks Drive, Suite 30
South Portland, ME 04106
P: 207.772.2515
www.gorrillpalmer.com

STRUCTURAL ENGINEER
IMEG Corp
623 26th Avenue
Rock Island, Illinois 61201
P: 312.294.0501
F: 312.294.0003
www.imegcorp.com

MEP / FP ENGINEER
ADVANCED CONSULTING
300 W Adams Street, Suite 420
Chicago, Illinois 60606
Address Line 2
P: 312.557.1840
www.acgintl.com

INTERIORS
SHEEDY/ DELAROA
4045 N. Rockwell Avenue
Chicago, IL 60618
P: 312.286.5246
www.natalliesheedy.com

SURVEYOR
AMBIT ENGINEERING
200 Griffin Road, Unit 3
Portsmouth, NH 03801
P: 603.430.9282

OWNER OF RECORD
FOUNDRY PLACE LLC
157 Deer Street
Portsmouth NH 03801

STATE OF NEW HAMPSHIRE — No. 738 — JOHN R. CHAGNON — SIGNATURE — LICENSED LAND SURVEYOR

REVISIONS

NO.	DESCRIPTION	DATE
1	SCOPE REVISION	6/21/19
2	EXTENSION REQUEST	11/5/19
3	ADDED BIKE RACKS	12/10/19
4	RECORD DRAWING	2/19/20

PROJECT NUMBER	3256.13
DATE OF ISSUE	11.30.2018
DRAWN BY	CG
CHECKED BY	DER

OVERALL SITE PLAN

C3.0

RECORD DRAWING

2271

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE (FORMERLY 161 DEER STREET)
PORTSMOUTH, NEW HAMPSHIRE
PERMIT PLANS

OWNER/APPLICANT:
EIGHTKPH, LLC
233 VAUGHAN STREET, UNIT 301
PORTSMOUTH, N.H. 03801
Tel. (617) 901-7993

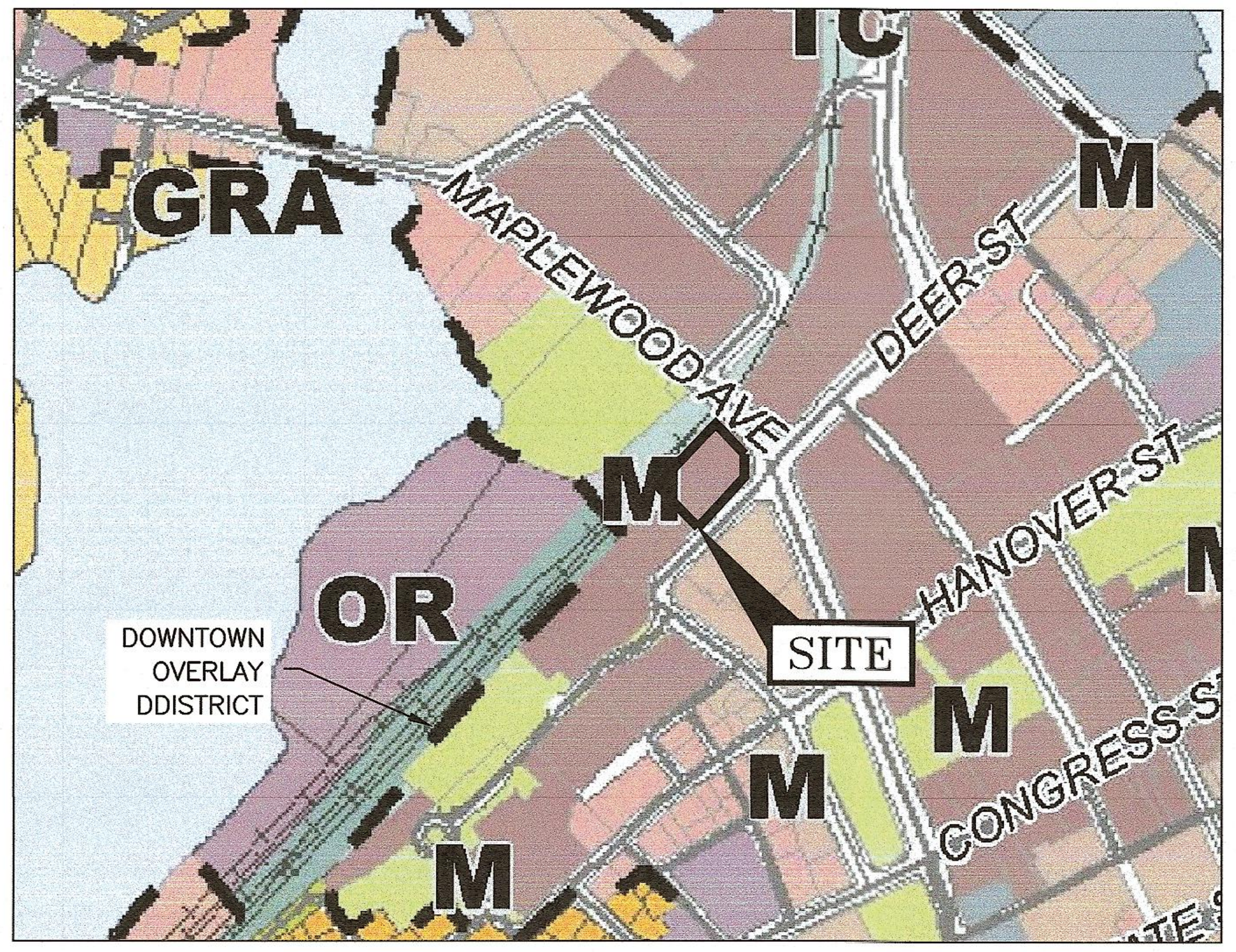
CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430-9282
Fax (603) 436-2315

ARCHITECT:
CJ ARCHITECTS
233 VAUGHAN STREET, SUITE 101
PORTSMOUTH, N.H. 03801
TEL. (603) 431-2808

LANDSCAPE ARCHITECT:
TERRA FIRMA LANDSCAPE ARCHITECTURE
163A COURT STREET
PORTSMOUTH, NH 03801
TEL. (603) 430-8388

TRAFFIC ENGINEER:
GORRILL PALMER
707 SABLE OAKS DRIVE, SUITE 30
SOUTH PORTLAND, ME 04106
TEL. (207) 772-2515

PERMIT LIST:
NHDES SEWER DISCHARGE PERMIT:
PORTSMOUTH HDC:
PORTSMOUTH SITE PLAN:



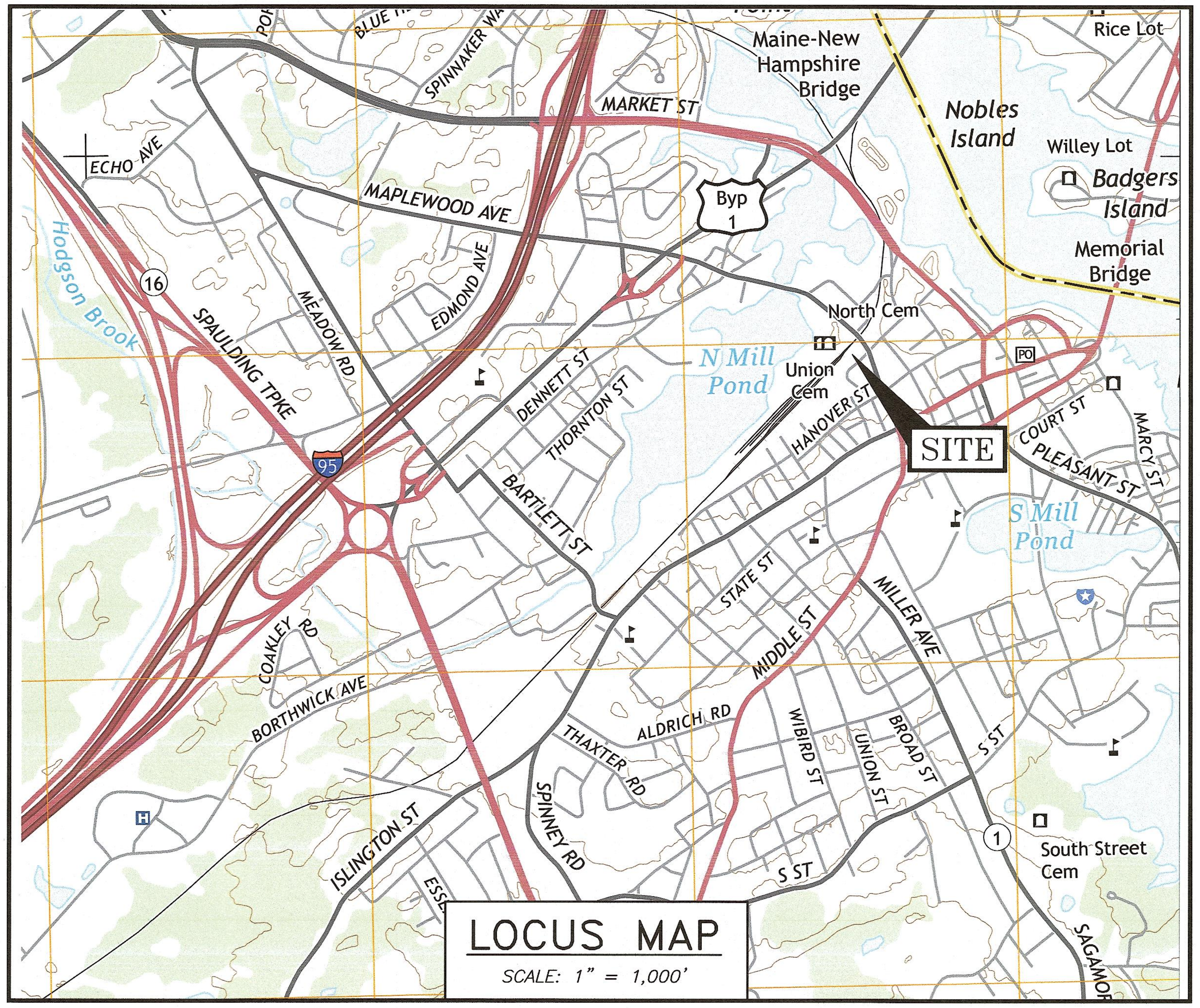
Map 10.5A21A
Character Districts and Civic Districts

Legend
Downtown Overlay District
Historic District

Character Districts
CD5 Character District 5
CD4 Character District 4
CD4-W Character District 4-W
CD4-L1 Character District 4-L1
CD4-L2 Character District 4-L2

Civic District
Civic District

Municipal District
Municipal District



LOCUS MAP
SCALE: 1" = 1,000'

LEGEND:

EXISTING	PROPOSED	
— — —		PROPERTY LINE
- - - - -		SETBACK
— S —	— S —	SEWER PIPE
— SL	— SL	SEWER LATERAL
— G —	— G —	GAS LINE
— D —	— D —	STORM DRAIN
— W —	— W —	WATER LINE
— WS —	— WS —	WATER SERVICE
— UGE —	— UGE —	UNDERGROUND ELECTRIC
— OHW —	— OHW —	OVERHEAD ELECTRIC/WIRES
	— UD —	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
— 100 —	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
WSO GSO	WSO GSO	SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
	SMH	SEWER MANHOLE
	DMH	DRAIN MANHOLE
	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

DIG SAFE
MA – ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE

INDEX OF SHEETS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436-7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294-5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679-5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427-1530
ATTN: JIM TOW

COMMUNICATIONS:
CONSOLIDATED COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427-5525

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN ____________ DATE ____________

SITE PERMIT PLANS
SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
FORMERLY 161 DEER STREET
PORTSMOUTH, N.H.

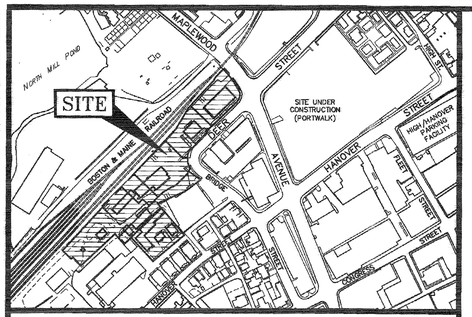
AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 17 NOVEMBER 2022

2271.04

C/H
L-CHIP
ROA338649

2016 SEP -9 PM 3:48 040324



LOCATION MAP SCALE: 1" = 300'

ABUTTERS LIST

125/1
N/F HANOVER APARTMENTS, LLC
c/o CATHARTES PRIVATE INVESTMENTS
11 BEACON STREET, SUITE 1120
BOSTON, MA 02108
5387/2814

125/16
N/F JOHN W. GRAY REVOCABLE TRUST
BRADFORD A. GRAY REVOCABLE TRUST
7 PATRIOTS WAY
RYE, N.H. 03870
3895/643

138/61
N/F PETER HAPPNY
66 ROCK STREET
PORTSMOUTH, N.H. 03801
2302/1079
D-31107

125/2
N/F THIRTY MAPLEWOOD, LLC
117 BOW STREET
PORTSMOUTH, N.H. 03801
5099/2424

125/21
N/F NORTH END MASTER DEVELOPMENT L.P.
501 DANFORTH STREET
PORTLAND, ME 04102
5569/2553

138/62
N/F DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME. 03911
5518/2744

125/3
N/F EMERSON HOVEY
POST 168 VFW
238 DEER STREET
PORTSMOUTH, N.H. 03801

126/29
N/F GOWEN G. EDWARD, Jr.
REVOCABLE LIVING TRUST
GOWEN G. EDWARD, Jr., TRUSTEE
355 GREAT BAY ROAD
GREENLAND, N.H. 03840
4327/2531

138/63
N/F KEARSARGE MILL CONDOMINIUM ASSOCIATION
191 HILL STREET
PORTSMOUTH, N.H. 03801
2596/1585
D-14855

125/11
N/F 136 HILL STREET CONDOMINIUM ASSOCIATION
136 HILL STREET
PORTSMOUTH, N.H. 03801
4823/873
C-34853

138/60
N/F CITY OF PORTSMOUTH
P.O. BOX 628
PORTSMOUTH, N.H. 03802

138/64
N/F HANOVER PLACE CONDOMINIUM ASSOCIATION
349 HANOVER STREET
PORTSMOUTH, N.H. 03801
4807/16
D-33379

125/14
N/F HILL HANOVER GROUP, LLC
c/o JPK PROPERTIES, LLC
1 NEW HAMPSHIRE AVENUE, #125
PORTSMOUTH, N.H. 03801
4356/10

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	486.00'	104.20'	104.00'	S35°55'41"E	12°17'05"
C2	37.00'	48.72'	45.28'	S07°56'11"W	75°26'43"
C3	155.00'	56.30'	55.99'	N53°24'20"E	20°48'45"
C4	86.00'	71.12'	69.11'	S04°30'52"E	47°22'49"
C5	86.00'	45.63'	45.10'	S13°00'13"E	30°24'08"
C6	86.00'	25.48'	25.39'	S10°41'12"W	16°58'41"

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N31°17'20"E	39.07'
L2	N31°26'32"E	17.92'
L3	N43°07'25"E	47.08'
L4	S46°46'25"E	7.89'
L5	S40°13'28"E	24.63'
L6	S47°00'33"W	38.74'
L7	N42°48'33"W	54.65'
L8	N43°03'00"W	46.10'
L9	S46°48'04"W	10.00'
L10	N48°09'30"W	48.26'
L11	N43°06'02"E	61.50'
L12	N30°51'54"E	56.64'
L13	N43°06'02"E	22.52'
L14	S46°53'58"E	38.87
L15	N43°06'02"E	49.82'
L16	N63°48'43"E	28.42'
L17	N45°20'34"E	64.73'
L18	N28°12'12"E	10.82'
L19	N28°12'12"E	10.70
L20	N55°38'43"W	57.54'
L21	N45°47'00"E	31.08'
L22	S87°48'09"E	20.15'
L23	N45°47'00"E	34.67'
L24	S40°13'28"E	20.31'
L25	S40°13'28"E	4.32'
L26	N39°12'52"E	42.20'
L27	S43°06'02"W	48.48'

PLAN REFERENCES:

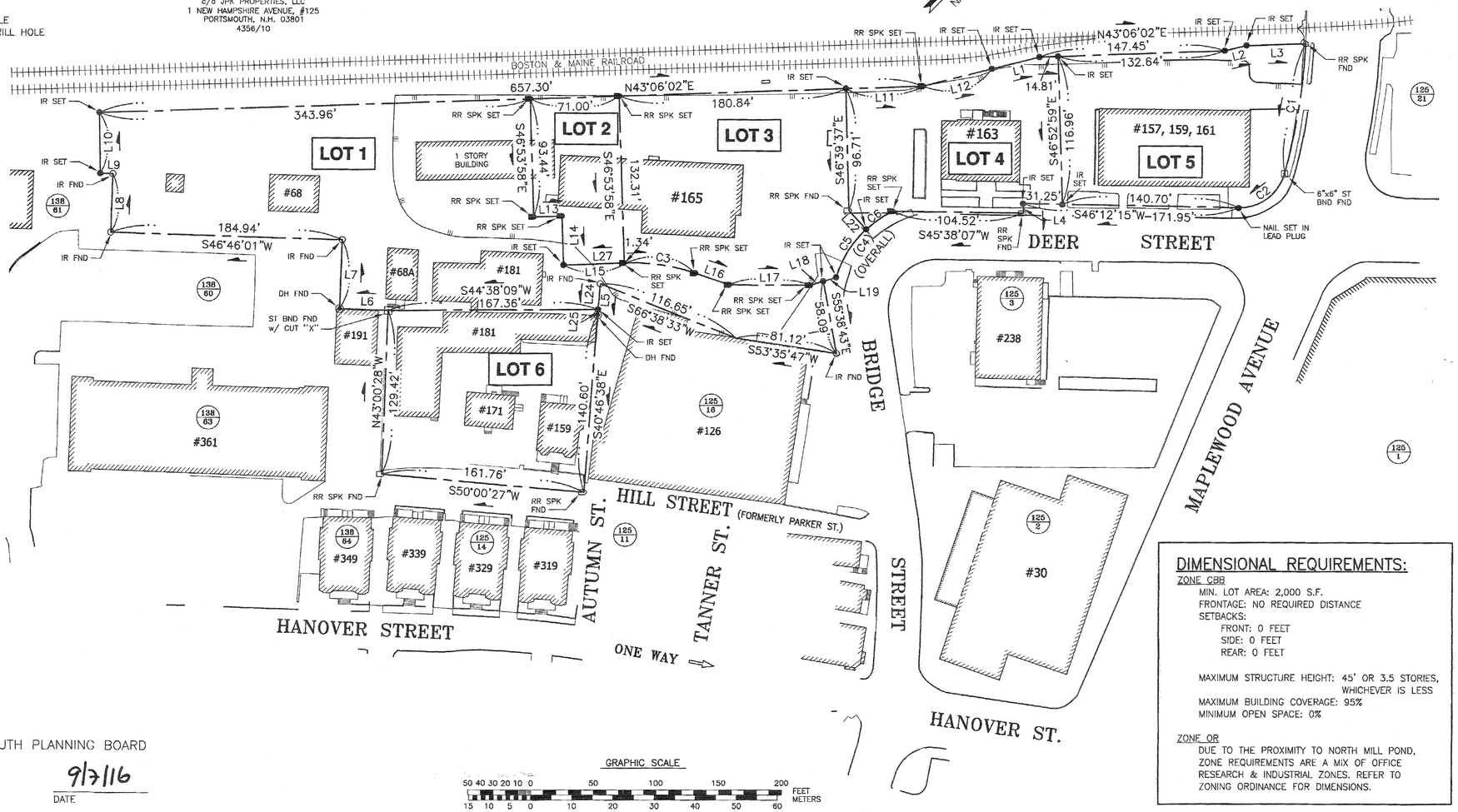
1. PLAN OF LAND FOR NETTY AND GERALD TAUBE, AUGUST 2004 BY MILLETTE, SPRAGUE & COLWELL. RCRD D-32051.
2. CONDOMINIUM SITE PLAN FOR HANOVER PLACE CONDOMINIUM, 349 HANOVER STREET, PORTSMOUTH NH. BY MILLETTE, SPRAGUE AND COLWELL, INC. DATED 12/20/05. RCRD D-33379.
3. KEARSARGE MILL CONDOMINIUMS, HANOVER STREET, PORTSMOUTH, NH. BY KIMBALL CHASE DATED 2/16/17. RCRD D-34716.
4. BOUNDARY LINE AGREEMENT PLAN, KEARSARGE MILL CONDOMINIUMS, PORTSMOUTH, NH. BY JONES & BEACH ENGINEERS, INC. DATED 4/10/97. RCRD D-25421.
5. KEARSARGE MILLS CONDOMINIUM PLANS FOR MAYFAIR REALTY TRUST, CAMBRIDGE PORT TRUST, PORTSMOUTH, NH. BY KIMBALL CHASE. RCRD D-14855.
6. EASEMENT PLAN, TAX MAP 164 – LOT 4, BOSTON & MAINE CORPORATION TO THE CITY OF PORTSMOUTH OFF BREWSTER STREET, PORTSMOUTH, NH. BY AMBIT ENGINEERING, INC. DATED 4/19/03. RCRD D-37720.
7. SUBDIVISION OF LAND OF PORTSMOUTH MFG. AND POWER CO., PORTSMOUTH, NH BY JOHN W. DURGIN DATED NOV. 1925. RCRD #0368.
8. LAND IN PORTSMOUTH, NH PORTS. MFG. & POWER CO. TO HAROLD S. WOODS. BY JOHN W. DURGIN DATED NOV. 1926. RCRD #00389.
9. TAX MAP 125 LOT 14 & MAP 138 LOT 62, PROPERTY OF HILL HANOVER GROUP, LLC, HILL, HANOVER & AUTUMN STREETS, PORTSMOUTH , NH. BY MSC, INC. DATED 10/10/2008. NOT RECORDED.
10. PLAN OF LAND IN PORTSMOUTH, NH, PORTSMOUTH MFG. & POWER CO. TO FRANK E. BROOKS BY JOHN W. DURGIN DATED FEB. 1918. RCRD #078.
11. CONDOMINIUM SITE PLAN, 136 HILL STREET CONDOMINIUM, PORTSMOUTH, NH, TAX MAP 125 LOT 11. BY ANDOVER CONSULTANTS, INC. DATED JULY 12, 2007. RCRD C-34853.
12. LAND IN PORTSMOUTH, NH, BOSTON & MAINE RAILROAD TO ROGER E. MOULTON AND CHESTER GOODWIN. DATED MARCH 1950. RCRD 01684.
13. PROPOSED PROPERTY TRANSFER, TAX MAP 125 – LOT 17, BOSTON & MAINE TO DEER STREET LIMITED PARTNERSHIP, 165 DEER STREET, PORTSMOUTH, NH BY AMBIT ENGINEERING, INC. DATED 6/13/13. RCRD D-37797.
14. PLAN OF LAND FOR DEER STREET ASSOCIATES, DEER & BRIDGE STREETS AND MAPLEWOOD AVENUE, PORTSMOUTH AVENUE BY AMBIT SURVEY DATED SEPTEMBER 1993. RCRD D-22543.
15. PROPOSED ROADWAY ALIGNMENT AND LAND TRANSFER PLAN, CITY OF PORTSMOUTH TO DEER STREET ASSOCIATES (TO BE RECORDED).

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/27	MAP 11/LOT 21
○ IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
◉ DH FND	DRILL HOLE FOUND
◎ DH SET	DRILL HOLE SET
⊡ NHHB	NHDOT BOUND FOUND
⊡ BND w/DH	BOUND WITH DRILL HOLE
⊡ ST BND w/DH	STONE BOUND WITH DRILL HOLE
⊐RR SPK	RAILROAD SPIKE
138-62-1	ASSESSOR'S MAP 138 LOT 62-1

ASSESSOR'S MAP/LOT NUMBER ASSIGNMENT

LOT 1	138-62-1
LOT 2	125-17-1
LOT 3	125-17
LOT 4	125-17-2
LOT 5	125-17-3
LOT 6	138-62



GRAPHIC SCALE
50 40 30 20 10 0 50 100 150 200 FEET
15 10 5 0 10 20 30 40 50 60 METERS

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE 9/7/16

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAPS AS MAP 125, LOT 17 & MAP 138, LOT 62.

2) OWNERS OF RECORD:
MAP 125, LOT 17
DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME 03911
3395/2669, 5534/2077, 5453/138

MAP 138, LOT 62
DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME 03911
5518/2744

3) PARCELS ARE NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E. MAY 17, 2005.

4) EXISTING LOT AREA:

LOT 17	LOT 62
109,987 S.F.	42,604 S.F.
2.5250 ACRES	0.9781 AC

PROPOSED LOT AREAS:

LOT 1	LOT 2	LOT 3
54,017 S.F.	8,519 S.F.	26,503 S.F.
1.2401 AC.	0.1956 AC.	0.6084 AC.
LOT 4	**LOT 5**	**LOT 6**
18,347 S.F.	22,667 S.F.	22,538 S.F.
0.4212 AC.	0.5204 AC.	0.5174 AC.

5) ZONING DISTRICTS:
CENTRAL BUSINESS B (CBB), HISTORIC OVERLAY DISTRICT (PARTIAL), & OFFICE RESEARCH (OR)

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE CONSOLIDATION OF TAX MAP 125 LOT 17 AND TAX MAP 138 LOT 62 AND THE SUBDIVISION OF THAT LOT INTO 6 LOTS.

7) LOT 2 TO BE A NON-BUILDABLE LOT UNTIL SUCH TIME AS FRONTAGE IS CREATED OR LOT 2 IS MERGED WITH AN ADJACENT PARCEL.

8) THE EXISTING SITE IMPROVEMENTS SHALL BE ALLOWED TO REMAIN. AT SUCH TIME AS THE LOTS ARE NOT UNDER COMMON OWNERSHIP, EASEMENTS SHALL BE CREATED TO ALLOW THE BUILDINGS ACROSS BOUNDARY LINES TO REMAIN OR THE BUILDINGS SHALL BE REMOVED. ANY EASEMENTS CREATED SHALL BE REVIEWED AND APPROVED BY THE CITY OF PORTSMOUTH.

9) FOR SITE EASEMENT RESTRICTIONS AND LOCATIONS SEE "PROPERTY EASEMENTS" PLAN DATED 12/15/14 BY AMBIT ENGINEERING.

DIMENSIONAL REQUIREMENTS:

ZONE CBB
MIN. LOT AREA: 2,000 S.F.
FRONTAGE: NO REQUIRED DISTANCE
SETBACKS:
FRONT: 0 FEET
SIDE: 0 FEET
REAR: 0 FEET
MAXIMUM STRUCTURE HEIGHT: 45' OR 3.5 STORIES, WHICHEVER IS LESS
MAXIMUM BUILDING COVERAGE: 95%
MINIMUM OPEN SPACE: 0%

ZONE OR
DUE TO THE PROXIMITY TO NORTH MILL POND, ZONE REQUIREMENTS ARE A MIX OF OFFICE RESEARCH & INDUSTRIAL ZONES. REFER TO ZONING ORDINANCE FOR DIMENSIONS.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NO.	DESCRIPTION	DATE
4	TAX MAP/LOT NUMBERS	5/18/16
3	ISSUED FOR RECORDING; MONUMENTS	3/24/16
2	REVISED LOTS 1, 2, AND 3	8/6/15
1	ISSUED FOR APPROVAL	7/31/15
0	ISSUED FOR COMMENT	7/28/15

REVISIONS

CONSOLIDATION & SUBDIVISION PLAN
TAX MAP 125, LOT 17
&
TAX MAP 138, LOT 62

DEER STREET ASSOCIATES

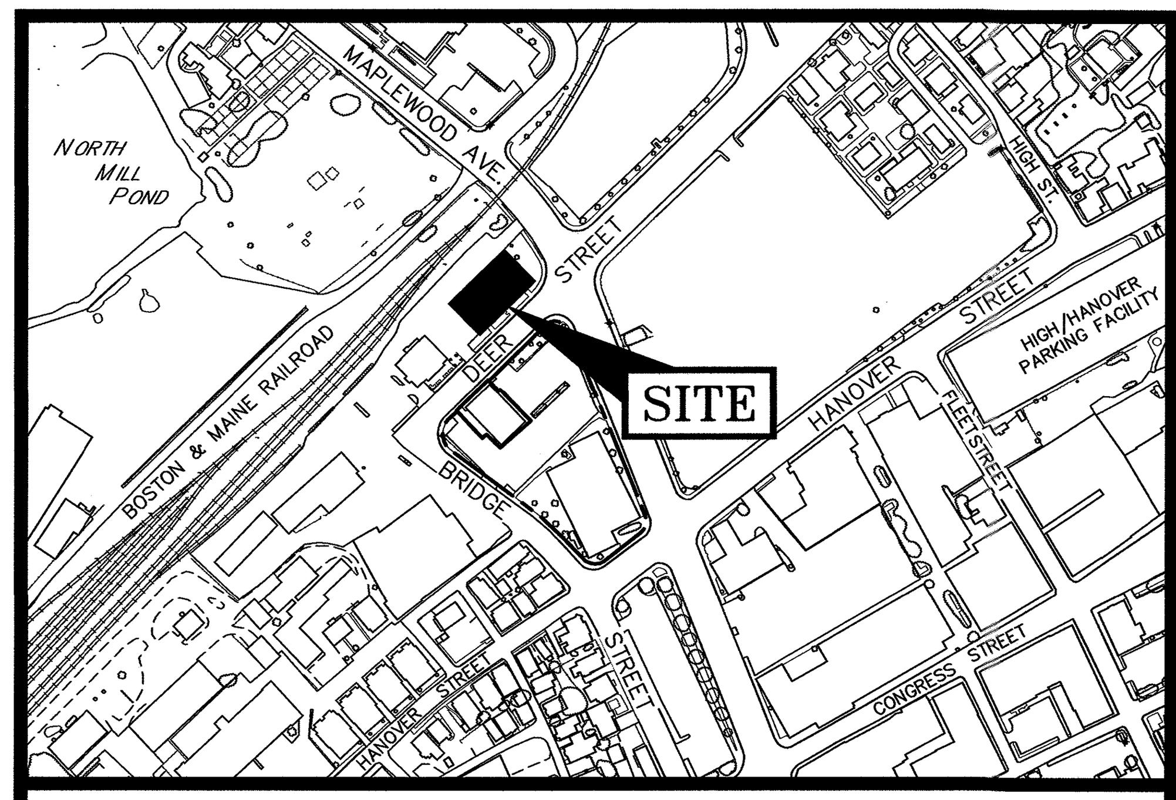
BRIDGE, DEER, & HILL STREETS
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 50' JULY 2015

FB 302, PG 1 2271.01

J:\JOBS2\JN2200s\JN2270s\JN2271\2015 Subdivision\Plans & Specs\Site\2271Subdivision Papersposs.DWG, CONSOLD_SUBDIV

D-39699



LOCATION MAP SCALE: 1" = 300'

LEGEND:

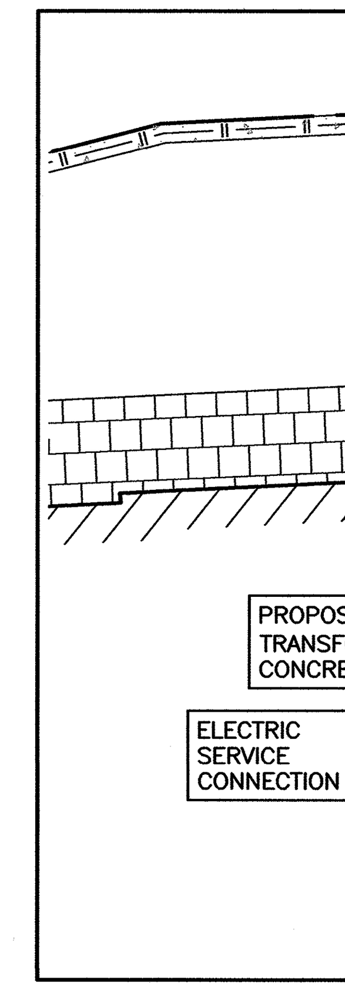
N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
NHHB	NHDOT BOUND FOUND
TB	TOWN BOUND
BND w/DH	BOUND WITH DRILL HOLE
ST BND w/DH	STONE BOUND WITH DRILL HOLE

PLAN REFERENCES:

1) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D-39699.

2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.

3) EASEMENT PLAN TAX MAP 125- LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.



EVERSOURCE EASEMENT REVISION

GRAPHIC SCALE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOTS 17-2 AND 17-3.

2) OWNER OF RECORD:
EIGHTKPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS (ALSO SEE ORDINANCE):
CHARACTER DISTRICT 5:

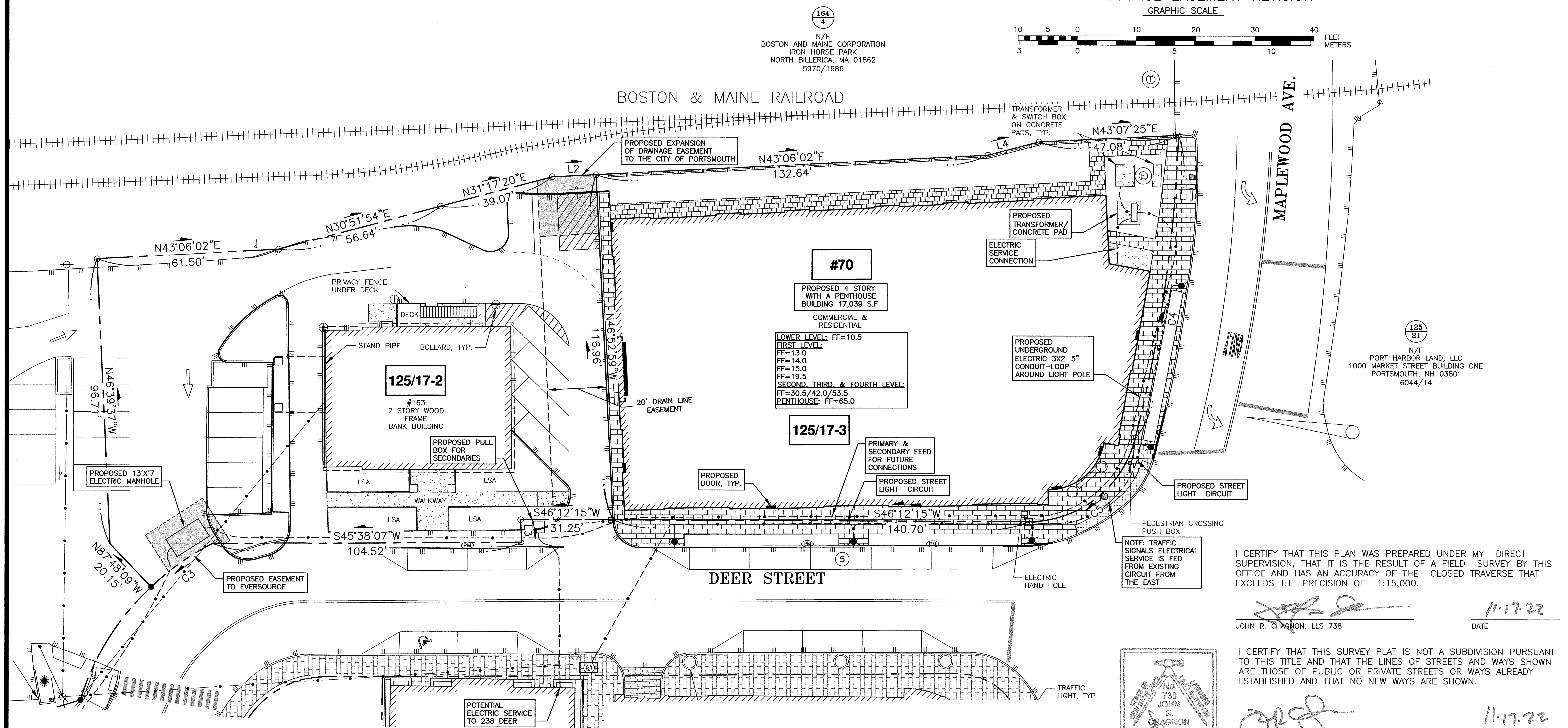
MIN. LOT AREA:	NO REQUIREMENT
FRONTAGE:	NO REQUIREMENT
SETBACKS:	
FRONT (MAX.)	5 FEET (PRIMARY)
FRONT (MAX.)	5 FEET (SECONDARY)
SIDE	NO REQUIREMENT
REAR	GREATER OF 5 FEET FROM REAR LOT LINE OR 10 FEET FROM CENTER OF ALLEY
MAXIMUM STRUCTURE HEIGHT:	SEE CITY PLAN
MAXIMUM STRUCTURE COVERAGE:	90%
MAXIMUM BUILDING FOOTPRINT:	20,000 S.F.
MINIMUM OPEN SPACE:	5%
MINIMUM FRONT LOT LINE BUILDOUT:	80%

5) LOT AREAS: 125/17-2
18,347 S.F.
0.4212 ACRES

125/17-3
22,667 S.F.
0.5204 ACRES

6) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED EASEMENTS ON TAX MAP 125, LOTS 17-2 AND 17-3 IN PORTSMOUTH, NH.



LENGTH TABLE-LOT 17-2

LINE	BEARING	DISTANCE
L2	N43°06'02"E	14.81'
L3	S46°46'25"E	7.69'

CURVE TABLE-LOT 17-2

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C3	86.00'	25.48'	25.39'	S10°41'12"W	16°58'41"

LENGTH TABLE-LOT 17-3

LINE	BEARING	DISTANCE
L4	N31°26'32"E	17.92'

CURVE TABLE-LOT 17-3

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C4	486.00'	104.20'	104.00'	S35°55'41"E	12°17'05"
C5	37.00'	48.72'	45.28'	S07°56'11"W	75°26'43"

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

JOHN R. CHAGNON, LLS 738 — 11.17.22 DATE

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

JOHN R. CHAGNON, LLS 738 — 11.17.22 DATE

STATE OF NEW HAMPSHIRE — JOHN R. CHAGNON — No 738 — LICENSED LAND SURVEYOR

GRAPHIC SCALE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	11/17/22

REVISIONS

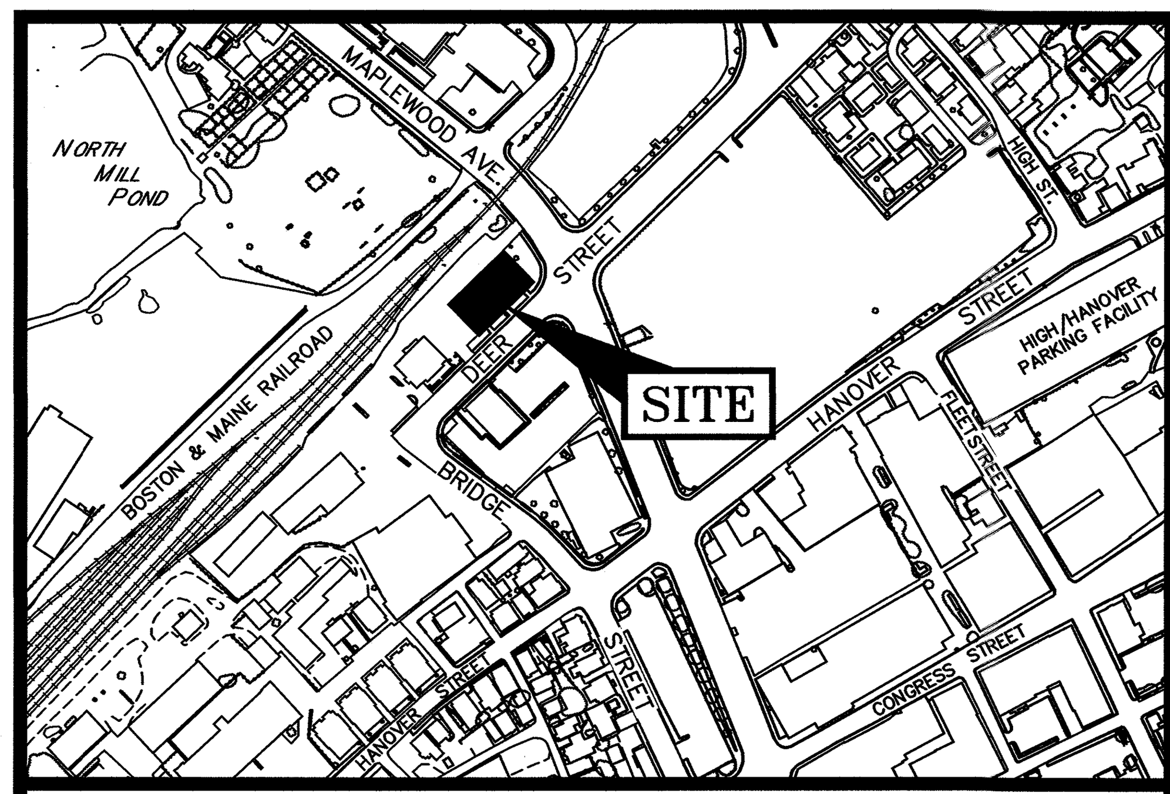
ELECTRICAL UTILITY & DRAINAGE EASEMENT PLAN
TAX MAP 125
LOTS 17-2 & 17-3

OWNER:
EIGHTKPH, LLC
TO BENEFIT: EVERSOURCE AND THE CITY OF PORTSMOUTH

PROPERTY LOCATED AT:
70 MAPLEWOOD AVENUE & 163 DEER STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1"=20' NOVEMBER 2022

FB 265 PG 18 2271.04



LOCATION MAP SCALE: 1" = 300'

LEGEND (SEE COVER SHEET)

DRAIN STRUCTURE TABLE

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE
CB 3522	10.12	–	–
		7.52±	12" RCP (NE)
CB 3523	9.52	–	–
		6.32	12" (NW)
DMH 3540	10.81	NA	18" RCP (NE) 36" (SW)
		1.56	48" RCP (NW)
DMH 3541	10.26	7.52± 7.52± 2.10	12" RCP (SW) 12" RCP (SE) 36" (S)
		1.96	36" (NE)
DMH 8159	15.96	12.36 11.81 8.78 5.06	12" RCP (NNE) 12" RCP (SSE) 18" CPP (ESE) 12" RCP (NW)
		4.96	18" RCP (SW)
DMH 8160	13.50	9.5 8.6 5.5	12" PVC (NNE) 12" RCP (NNW) 12" RCP (W)
		5.55	12" RCP (SE)
DMH 8161	13.20	9.75 5.72	12" RCP (WSW) 12" RCP (NW)
		5.68	12" RCP (ENE)
CB 8167	13.45	–	–
		8.95	12" RCP (SSE)
CB 8168	13.19	–	–
		9.83±	12" RCP (ENE)
CB 12480	15.46	–	–
		11.11	18" CPP (WNW)

SEWER STRUCTURE TABLE

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE
1499	15.80	–1.80	48" BRICK BOX
		–1.80	48" BRICK BOX
1501	13.58	–0.30	24" (NNE)
		–.032	24" (SE)
2305	10.90	–1.17	48" VC

PLAN REFERENCES:

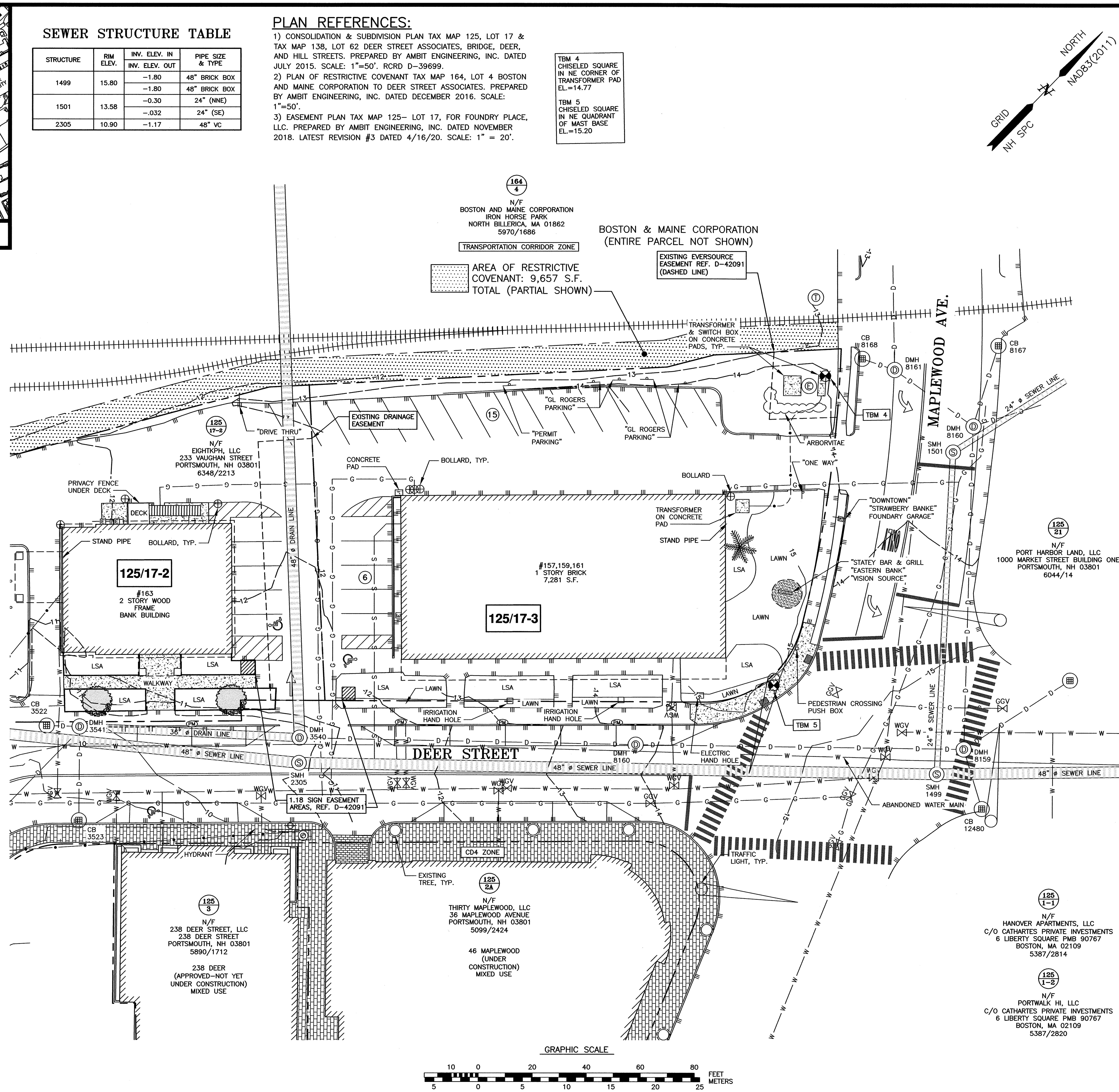
1) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D–39699.

2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.

3) EASEMENT PLAN TAX MAP 125– LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.

TBM 4
CHISELED SQUARE IN NE CORNER OF TRANSFORMER PAD
EL.=14.77

TBM 5
CHISELED SQUARE IN NE QUADRANT OF MAST BASE
EL.=15.20



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17–3.

2) OWNER OF RECORD:
EIGHTKPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS (ALSO SEE ORDINANCE):
CHARACTER DISTRICT 5:

MIN. LOT AREA:	NO REQUIREMENT
FRONTAGE:	NO REQUIREMENT
SETBACKS:	
FRONT (MAX.)	5 FEET (PRIMARY)
FRONT (MAX.)	5 FEET (SECONDARY)
SIDE	NO REQUIREMENT
REAR	GREATER OF 5 FEET FROM REAR LOT LINE OR 10 FEET FROM CENTER OF ALLEY
MAXIMUM STRUCTURE HEIGHT:	SEE CITY PLAN
MAXIMUM STRUCTURE COVERAGE:	90%
MAXIMUM BUILDING FOOTPRINT:	20,000 S.F.
MINIMUM OPEN SPACE:	5%
MINIMUM FRONT LOT LINE BUILDOUT:	80%

5) LOT AREA: 22,667 S.F.
0.5204 ACRES

6) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON TAX MAP 125, LOT 17–3 IN PORTSMOUTH, NH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

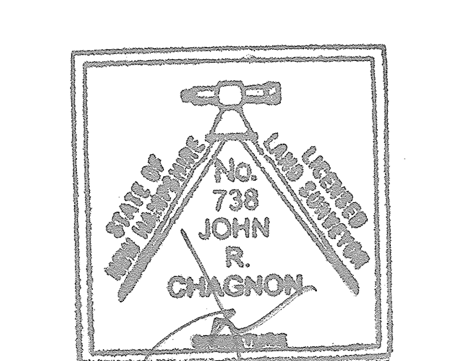
9) PARCEL MAY BE SUBJECT TO TEMPORARY CONSTRUCTION EASEMENTS AS SHOWN ON RCRD D–42091 SHEET 2.

10) PARCEL IS SUBJECT TO AGREEMENT REGARDING RELOCATION OF UNDERGROUND FACILITIES 5751/1504.

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	STREET NUMBERS	11/17/22
1	SEWER CONNECTION	10/20/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS



SCALE: 1" = 20' AUGUST 2022

EXISTING CONDITIONS PLAN

C1

FB 265 PG 18

2271.04

DEMOLITION NOTES

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE.

I) ALL WORK WITHIN THE CITY OF PORTSMOUTH RIGHT OF WAY SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS (DPW).

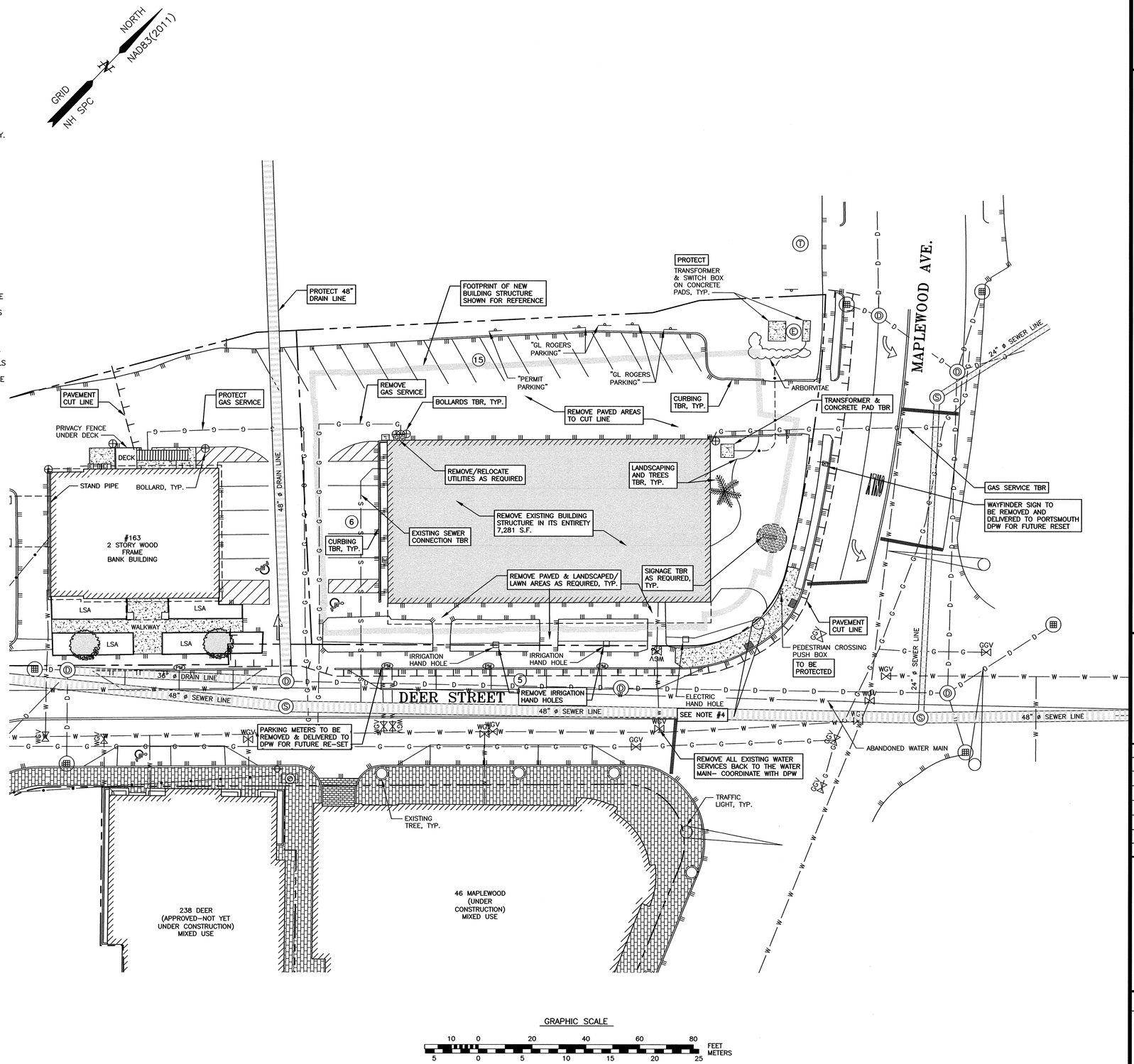
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A NH LICENSED LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH NHDES REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) CITY STREET LIGHTING CIRCUIT TO BE REVIEWED PRIOR TO CONSTRUCTION AND REPLACEMENT POWER SOURCE IDENTIFIED.

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	WATER SERVICE REMOVAL	11/17/22
2	WATER SERVICE REMOVAL NOTE	10/31/22
1	SEWER CONNECTION	10/22/20
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

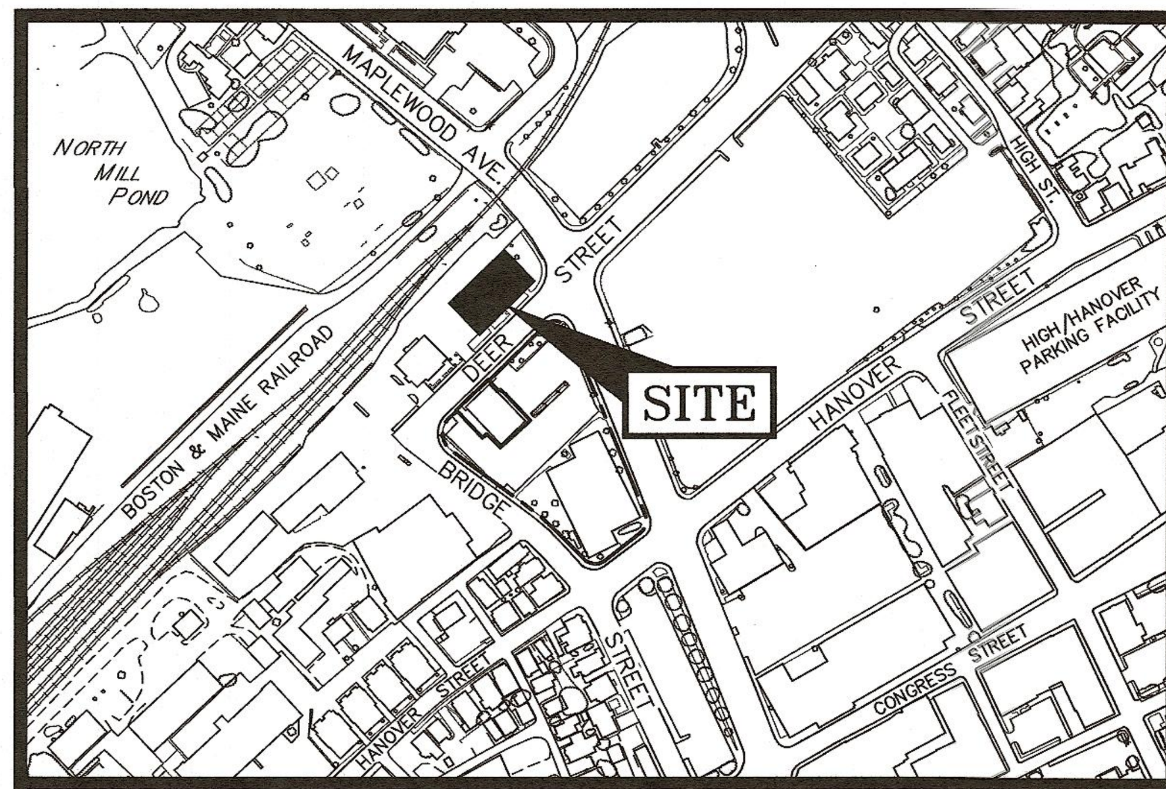
SCALE: 1" = 20' AUGUST 2022

DEMOLITION PLAN

C2

FB 265 PG 18

2271.04



LOCATION MAP SCALE: 1" = 300'

PLAN REFERENCES:

1) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D-39699.
2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.
3) EASEMENT PLAN TAX MAP 125– LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.

COMMUNITY SPACE:

TOTAL LOT AREA: 22,667 S.F.

PROPOSED COMMUNITY SPACE: 4,982 S.F. (22.0%)

12' WIDE PEDESTRIAN SIDEWALK: 1,730 S.F.

POCKET PARK: 3,252 S.F.

GFA	
Basement	17,189 SF
First Floor	17,189 SF
Second Floor	17,189 SF
Third Floor	17,189 SF
Fourth Floor	17,189 SF
Penthouse	7,344 SF

BUILDING DATA:

PROPOSED BUILDING:
17,093 S.F. FOOTPRINT

HEIGHT DATA:

LOT	REQUIRED HEIGHT & STORIES	PROPOSED HEIGHT & STORIES
17–3	4 STORIES AND PENTHOUSE	*62'

*SEE COMMUNITY SPACE

IMPERVIOUS SURFACE AREAS

(TO PROPERTY LINE)

STRUCTURE	EXISTING IMPERVIOUS (S.F.)	PROPOSED IMPERVIOUS (S.F.)
MAIN STRUCTURE	7281	17093
SIDEWALKS	0	3,332
PAVEMENT	9465	0
CONCRETE	98	216
RETAINING WALL	0	193
CURBING	123	56
STEPS	0	6
TOTAL	16,967	20,896
LOT SIZE	22,667	22,667
% LOT COVERAGE	74.9%	92.2%

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17–3.

2) OWNER OF RECORD:
EIGHTKPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS: SEE ZONING TABLE.

5) LOT AREA: 22,667 S.F.
0.5204 ACRES

6) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DEVELOPMENT ON TAX MAP 125, LOT 17–3 IN PORTSMOUTH, NH. PROPOSED USE: FIRST FLOOR COMMERCIAL AND 19 RESIDENTIAL UNITS ON UPPER FLOORS.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) PARCEL IS BENEFITTED BY A RESTRICTIVE COVENANT (NO BUILD EASEMENT) ON THE ADJACENT BOSTON AND MAINE PROPERTY.

10) REQUIRED PARKING:
125–17–2
COMMERCIAL BANKING: 4,500 S.F.
4,500 S.F. X 1/400 S.F. =12 SPACES REQUIRED
12 SPACES PROVIDED
125–17–3
FIRST FLOOR: EXEMPT
19 DWELLING UNITS: 1.3/UNIT X 19 UNITS = 25
VISITOR: 19/5 X 1 = 4
29 SPACES REQUIRED
29 SPACES PROVIDED

11) ALL WORK IN THE CITY R.O.W. SHALL MEET CITY STANDARDS. CITY WILL NEED TO REVIEW AND APPROVE FINAL DETAILS AND CUT SHEETS. CONSTRUCTION INSPECTION WILL BE REQUIRED.

ZONING DEVELOPMENT STANDARD

CD5: CHARACTER DISTRICT 5

BUILDING PLACEMENT (PRINCIPAL):

	REQUIRED	157–161 DEER EXISTING	88 MAPLEWOOD PROPOSED
MAX. PRINCIPLE FRONT YARD:	5 FEET	15'	5.0'
MAX. SECONDARY FRONT YARD:	5 FEET	24'	5.7'*
MIN. SIDE YARD:	NR	29'	4.0'
MIN. REAR YARD:	5 FEET	42'	15.2'
FRONT LOT LINE BUILDOUT:	80% MIN	75%	83%
ABUT RAILROAD:	15'	42'	15.2'

BUILDING TYPES:

PERMITTED BUILDING TYPES: LIVE/WORK BUILDING*, SMALL COMMERCIAL BUILDING, LARGE COMMERCIAL BUILDING, MIXED–USE BUILDING*, FLEX SPACE BUILDING, COMMUNITY BUILDING PROPOSED: MIXED–USE BUILDING

*RESIDENTIAL USES ARE NOT PERMITTED ON THE GROUND FLOOR IN THE DOWNTOWN OVERLAY DISTRICT.

PERMITTED FACADE TYPES: STOOP, STEP, SHOPFRONT, OFFICEFRONT, RECESSED ENTRY, GALLERY, ARCADE

BUILDING FORM:

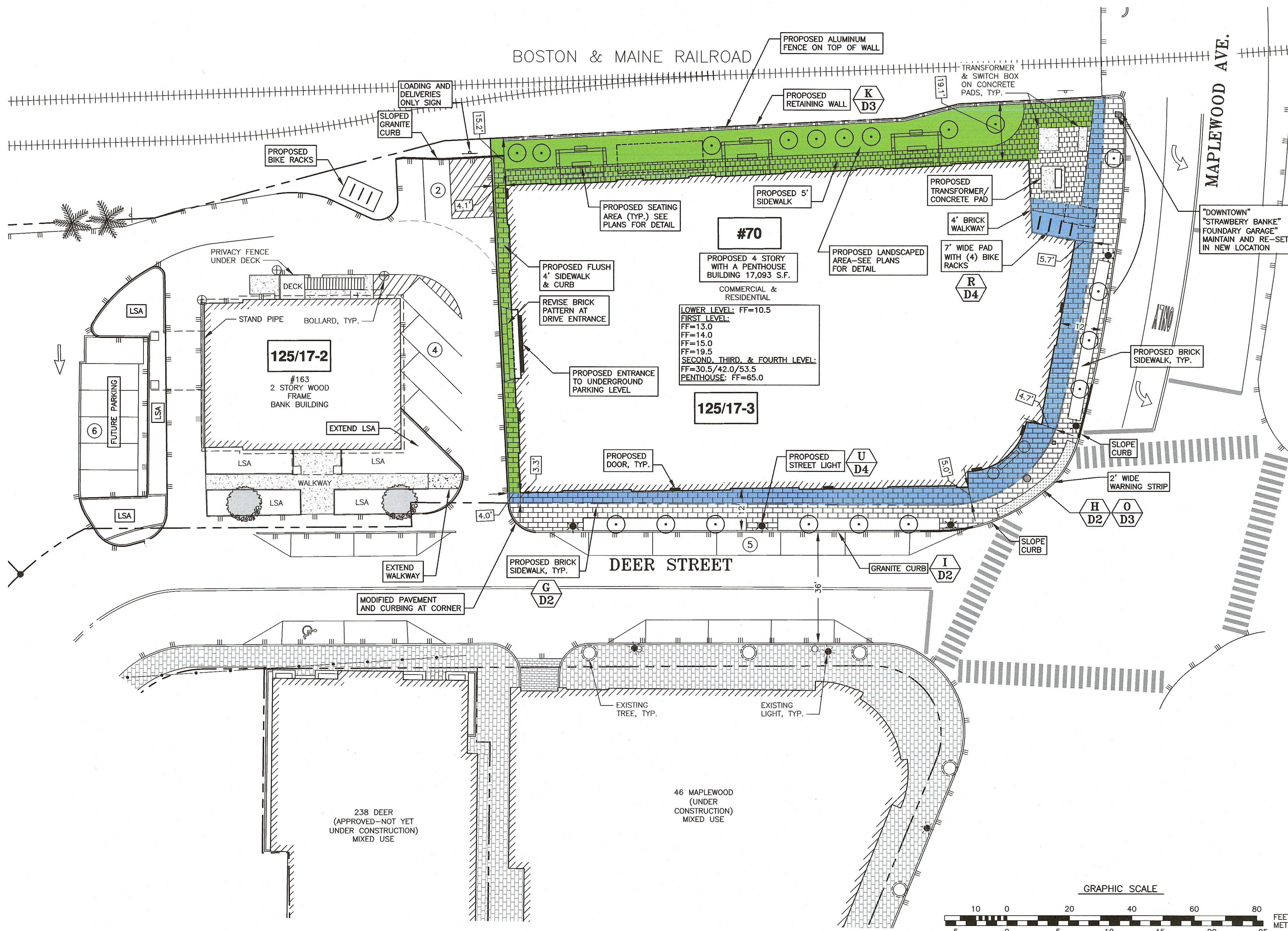
	REQUIRED	EXISTING	PROPOSED
MAX STRUCTURE HEIGHT:	62* FEET	<35'	62'
MAX. FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 INCHES	4"	18"
MIN. GROUND STORY HEIGHT:	12 FEET	–	17'
MIN. SECOND STORY HEIGHT:	10 FEET	–	11.5'
FACADE GLAZING (WINDOW/PERIMETER):	70% SHOP 20–50% OTHER	–	COMPLIES

ROOF TYPE ALLOWED: FLAT, GABLE, HIP

LOT OCCUPATION:

	REQUIRED	EXISTING	PROPOSED
MAX BUILDING BLOCK:	225 FEET	120'	180'
MAX FACADE MOD. LENGTH:	100 FEET	120'	60'
MIN. ENTRANCE SPACING:	50 FEET	40'+/–	50'
MAX BUILDING COVERAGE:	90%	32%	75.4%
MAX BUILDING FOOTPRINT:	20,000 SF	7,281 S.F.	17,093 S.F.
MIN. LOT AREA:	NR	22,667 S.F.	22,667 S.F.
MIN. LOT AREA/DWELLING (LOT AREA/# OF UNITS):	NR	–	–
MIN. OPEN SPACE :	5%	68%	24.6%

*WITH COMMUNITY SPACE AND PENTHOUSE



THIS SITE SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE ON THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

SITE DEVELOPMENT EIGHTKPH, LLC 70 MAPLEWOOD AVENUE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	BUILDING FOOTPRINT	11/17/22
3	WAYFINDING SIGN	10/31/22
2	DRIVEWAY LOCATION, BUILDING FOOTPRINT	10/20/22
1	LOADING AREA, NOTE 11	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 733 JOHN R. CHAGNON

SCALE: 1" = 20' AUGUST 2022

SITE PLAN C3

FB 265 PG 18 2271.04

NOT FOR CONSTRUCTION

REVISIONS:

EIGHT KPH, LLC

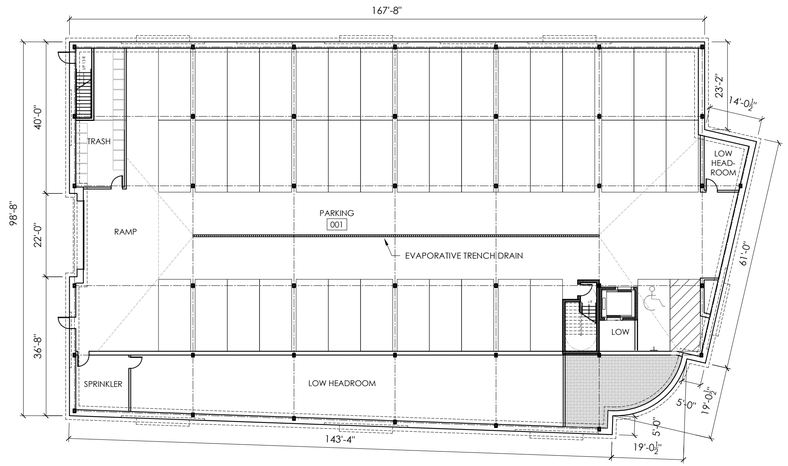
70 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN STREET
SUITE 101
PORTSMOUTH, NH 03801
(603) 431-2808
www.cjarchitects.net

RENDERING

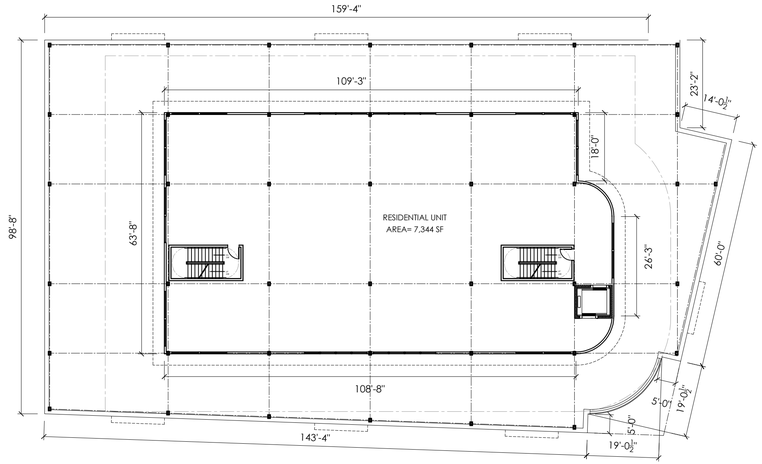
DATE:	11/17/2022
DRAWN BY:	SRT
APPROVED BY:	CJG
SCALE:	
JOB NUMBER:	2201

A1



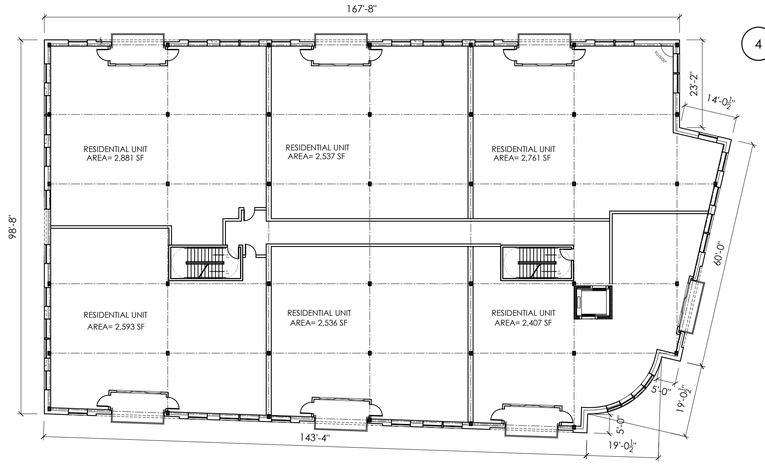
1 LOWER LEVEL PLAN

1"= 20'



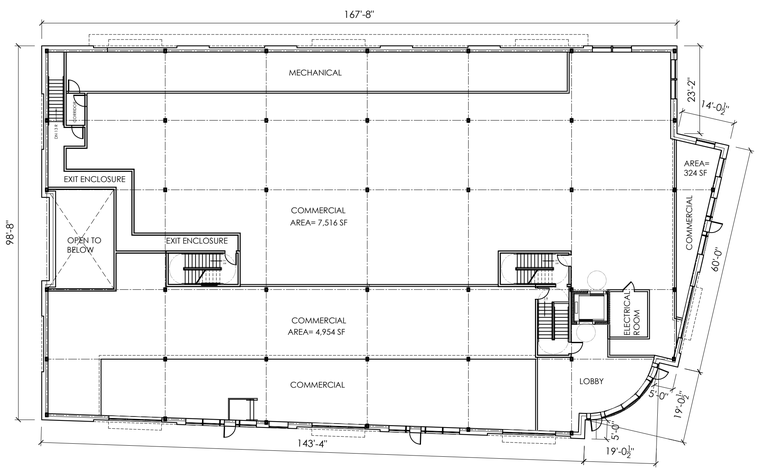
4 PENTHOUSE LEVEL PLAN

1"= 20'



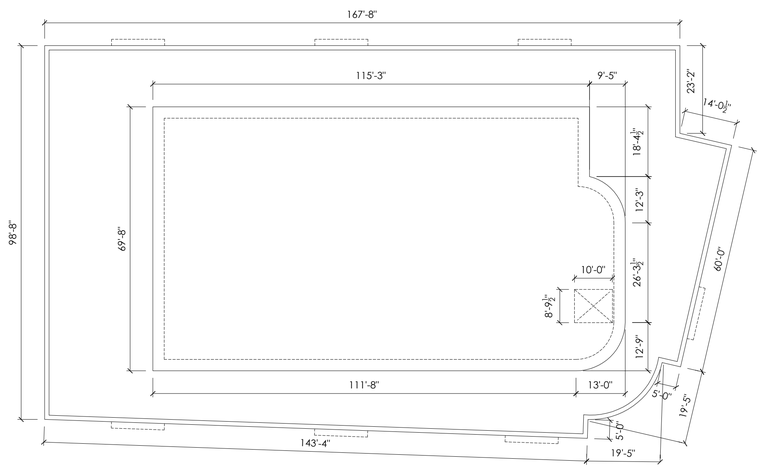
3 SECOND, THIRD, AND FOURTH LEVEL PLAN

1"= 20'



2 FIRST LEVEL PLAN

1"= 20'



5 ROOF PLAN

1"= 20'

NOT FOR CONSTRUCTION

REVISIONS:

EIGHT KPH, LLC

70 MAPLEWOOD AVENUE

PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS

233 VAUGHAN STREET
SUITE 101
PORTSMOUTH, NH 03801

(603) 431-2808
www.cjarchitects.net

PLANS

DATE:	11/17/2022
DRAWN BY:	SRT
APPROVED BY:	CJG
SCALE:	1" = 20'
JOB NUMBER:	2201

A2

1 DEER STREET ELEVATION
1" = 10'

2 MAPLEWOOD AVENUE ELEVATION
1" = 10'

3 RAILROAD ELEVATION
1" = 10'

4 SIDE ELEVATION
1" = 10'

NOT FOR CONSTRUCTION

REVISIONS:

EIGHT KPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN STREET
SUITE 101
PORTSMOUTH, NH 03801
(603) 431-2808
www.cjarchitects.net

ELEVATIONS

DATE:	11/17/2022
DRAWN BY:	SRT
APPROVED BY:	CJG
SCALE:	
JOB NUMBER:	2201

A3

BOSTON & MAINE RAILROAD

0 10 20 30 40 FT

PROPOSED RETAINING WALL

PROPOSED ALUMINUM FENCE ON TOP OF WALL

OUTLET CONTROL BASIN

TRANSFORMERS ON CONCRETE PADS (TYP.)

"DOWNTOWN" "STRAWBERY BANKE" FOUNDARY GARAGE

MAPLEWOOD AVE.

ONE WAY

8'-3"

7'-0"

4' BENCH (TYP.)

6' BENCH (TYP.)

10' BENCH (TYP.)

BOLLARD LIGHT (TYP.)

GRANITE PAVING (TYP.)

12" W. CRUSHED STONE (TYP.)

5' BRICK SIDEWALK

NATIVE GROUNDCOVER ON R-TANK SYSTEM

3' W. ARCHITECTURAL AWNING (CONTINUOUS)

(4) BIKE RACKS ON CONCRETE PAD (SEE CIVIL DOCUMENTS)

4' WIDE x 50'+/- LENGTH CONTINUOUS TREE GRATE

COLUMNAR TREE W/ TREE GUARD

PLANTED URNS TO RECEIVE DRIP WATER FROM BALCONIES (TYP.)

PROPOSED 4 STORY WITH A PENTHOUSE BUILDING 17,093 S.F.

125/17-3

PROPOSED DOOR (TYP.)

PROPOSED DOOR (TYP.)

PROPOSED BRICK SIDEWALK (TYP.)

COLUMNAR TREE W/ TREE GUARD

ADA TIP-DOWN

BACKLESS BENCH

TRAFFIC POLE

4'-0"

10'-0"

51'-9"

8" SPACE BETWEEN GRATE AND CURB

CONTINUOUS GRATE W/ 3 TREES (TYP.)

STREET LAMPS (TYP.)

DEER STREET

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street | portsmouth, nh 03801
office: 603.430.8588 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Date 8/23/2022
Revision Revision
Project ID 8 KPH
Drawing Code Drawing Code
CAD File 88MAPLEWOOD
Plot Date 00/00/00

Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm terra firma landscape architecture
163.a Court Street
Portsmouth, NH

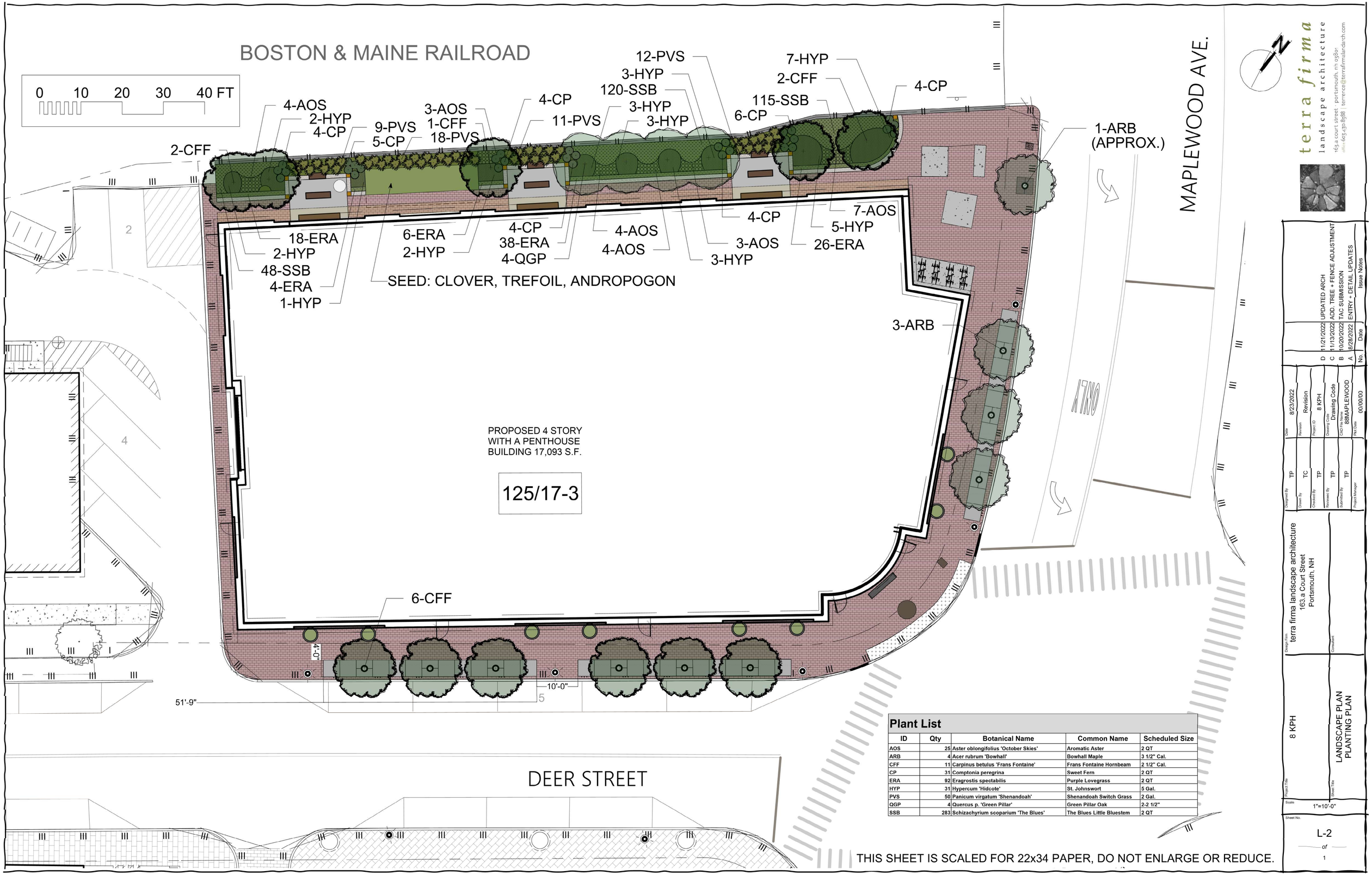
Consultant

Project Title 8 KPH

Sheet Title LANDSCAPE PLAN

Scale 1"=10'-0"

Sheet No. L-1 of 1



Plant List

ID	Qty	Botanical Name	Common Name	Scheduled Size
AOS	25	Aster oblongifolius 'October Skies'	Aromatic Aster	2 QT
ARB	4	Acer rubrum 'Bowhall'	Bowhall Maple	3 1/2" Cal.
CFF	11	Carpinus betulus 'Frans Fontaine'	Frans Fontaine Hornbeam	2 1/2" Cal.
CP	31	Comptonia peregrina	Sweet Fern	2 QT
ERA	92	Eragrostis spectabilis	Purple Lovegrass	2 QT
HYP	31	Hypercum 'Hidcote'	St. Johnswort	5 Gal.
PVS	50	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	2 Gal.
QGP	4	Quercus p. 'Green Pillar'	Green Pillar Oak	2-2 1/2"
SSB	283	Schizachyrium scoparium 'The Blues'	The Blues Little Bluestem	2 QT

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
office: 603.430.8588 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY - DETAIL UPDATES

Date 8/23/2022
Revision Revision
Project ID 8 KPH
Drawing Code Drawing Code
CAD File 88MAPLEWOOD
Plot Date 00/00/00

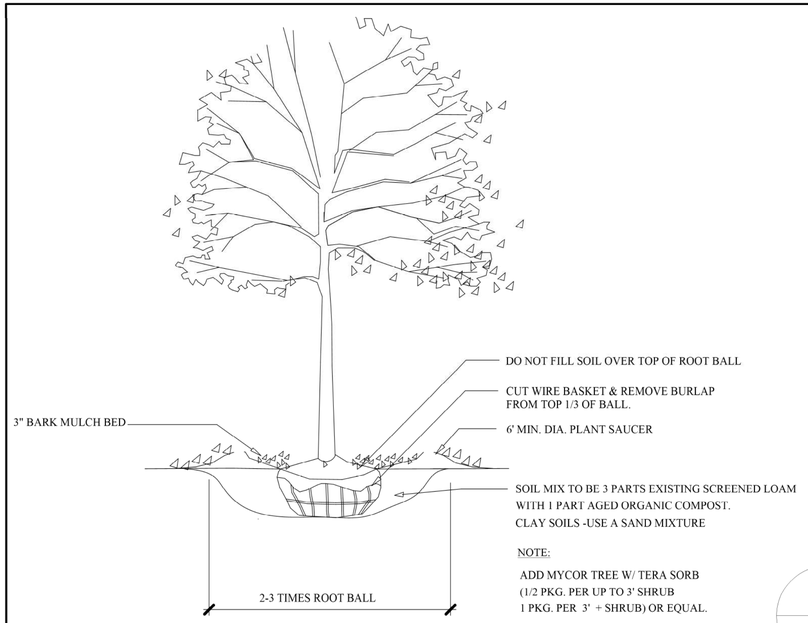
Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm terra firma landscape architecture
163.a Court Street
Portsmouth, NH
Consultant

Project Title 8 KPH
Sheet Title LANDSCAPE PLAN
PLANTING PLAN

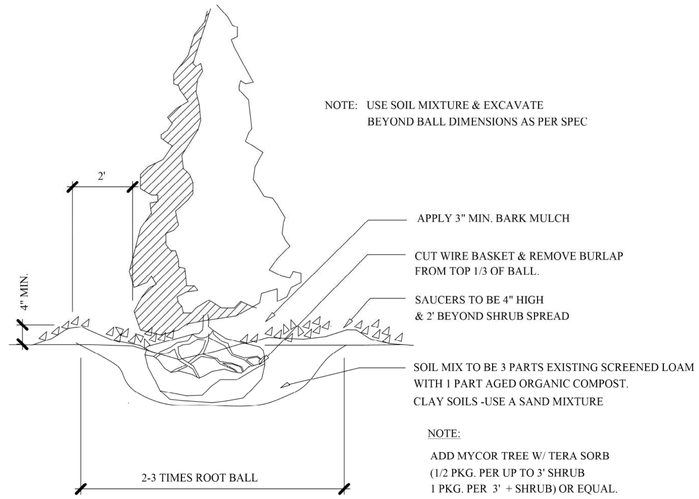
Scale 1"=10'-0"

Sheet No. L-2 of 1



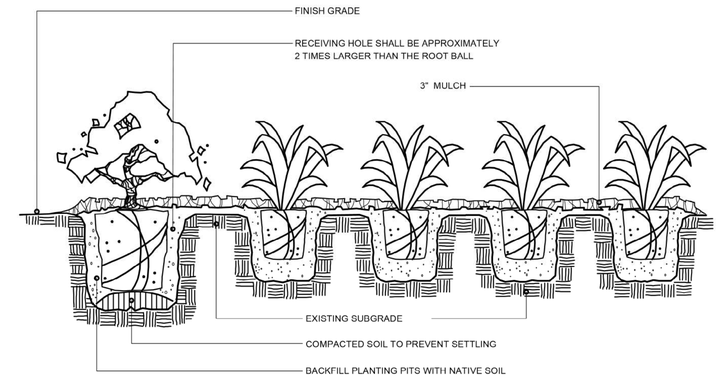
1 L-3

TREE PLANTING - 2"+ CAL.
SCALE: NTS



2 L-3

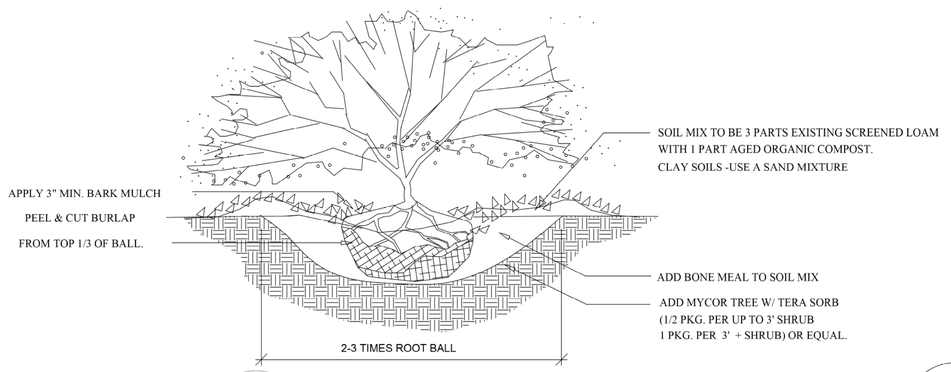
PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS



NOTE: SHRUBS SHALL BE PLANTED A MINIMUM OF 1" & NO MORE THAN 2" ABOVE FINISH GRADE, DEPENDING UPON SITE CONDITIONS.

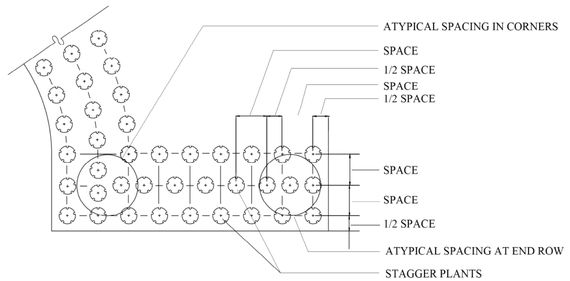
3 L-3

SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS



4 L-3

B&B SHRUB PLANTING
SCALE: NTS



NOTES:

1. PLACE PLANTS IN BED AS SHOWN, SPACING AS SPECIFIED IN PLANT SCHEDULE.
2. GROUNDCOVER SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO STRAIGHT EDGES AND SHALL BE EVENLY SPACED IN ROWS PARALLEL TO CURVE EDGES.

5 L-3

GROUND COVER SPACING DETAIL
SCALE: NTS

LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST TWOGROWING SEASONS.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street | portsmouth, nh 03801
office 603.431.8588 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Date 8/23/2022
Revision Revision
Project ID 8 KPH
Drawing Code Drawing Code
CAD File 88MAPLEWOOD
Plot Date 00/00/00

Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm terra firma landscape architecture
163.a Court Street
Portsmouth, NH

Consultant

Project Title 8 KPH

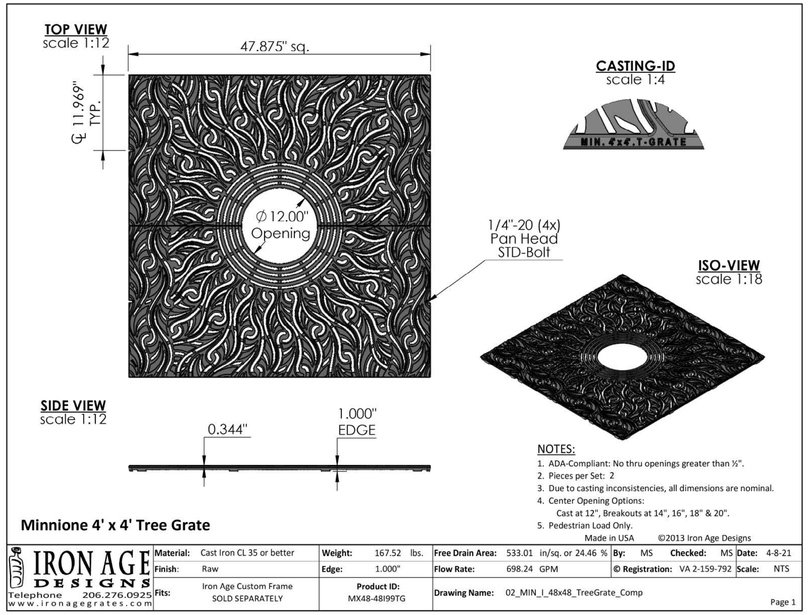
Sheet Title PLANTING DETAILS

Scale SEE DETAILS

Sheet No. L-3 of 1

IRON AGE DESIGNS
(877) 418-3568 or (206) 276-0925
2104 SW 152nd St. Suite #4
Burien, WA 98166
info@ironagegrates.com

OR EQUAL



NOTES:
1. ADA-Compliant: No thru openings greater than ½".
2. Pieces per Set: 2
3. Due to casting inconsistencies, all dimensions are nominal.
4. Center Opening Options:
   Cast at 12", Breakouts at 14", 16", 18" & 20".
5. Pedestrian Load Only.

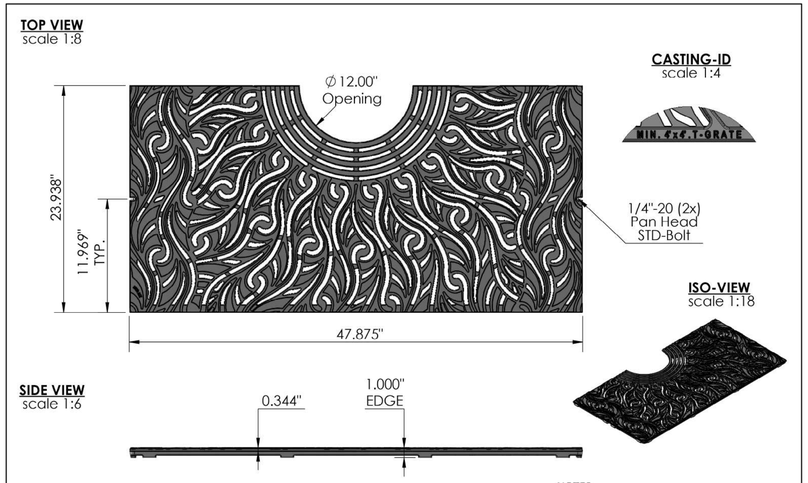
Made in USA ©2013 Iron Age Designs

Minnione 4' x 4' Tree Grate

IRON AGE DESIGNS
Telephone 206.276.0925
www.ironagegrates.com

Material:	Cast Iron CL 35 or better	**Weight:**	167.52 lbs.	**Free Drain Area:**	533.01 in/sq. or 24.46 %	**By:** MS **Checked:** MS	**Date:** 4-8-21
Finish:	Raw	**Edge:**	1.000"	**Flow Rate:**	698.24 GPM	**© Registration:** VA 2-159-792	**Scale:** NTS
Fits:	Iron Age Custom Frame SOLD SEPARATELY	**Product ID:**	MX48-48I99TG	**Drawing Name:**	02_MIN_I_48x48_TreeGrate_Comp		

Page 1



NOTES:
1. ADA-Compliant: No thru openings greater than ½".
2. Due to casting inconsistencies, all dimensions are nominal.
3. Pedestrian Load Only.

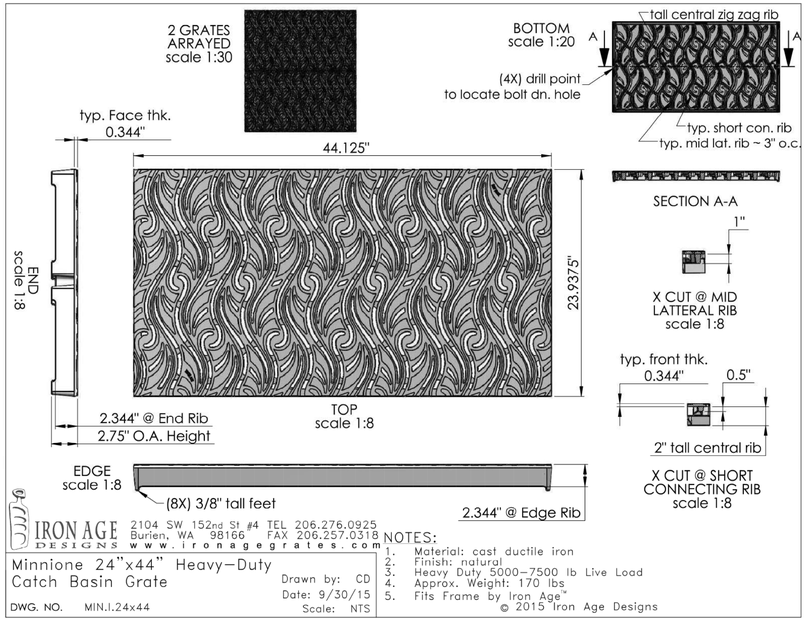
Made in USA ©2013 Iron Age Designs

Minnione 4' x 4' Tree Grate - Half Panel

IRON AGE DESIGNS
Telephone 206.276.0925
www.ironagegrates.com

Material:	Cast Iron CL 35 or better	**Weight:**	83.76 lbs.	**Free Drain Area:**	266.50 in/sq. or 24.46 %	**By:** MS **Checked:** MS	**Date:** 4-8-21
Finish:	Raw	**Edge:**	1.000"	**Flow Rate:**	349.12 GPM	**© Registration:** VA 2-159-792	**Scale:** NTS
Fits:	Iron Age Custom Frame SOLD SEPARATELY	**Product ID:**	MX48-48I99TG	**Drawing Name:**	02_MIN_I_48x48_TreeGrate		

Page 2



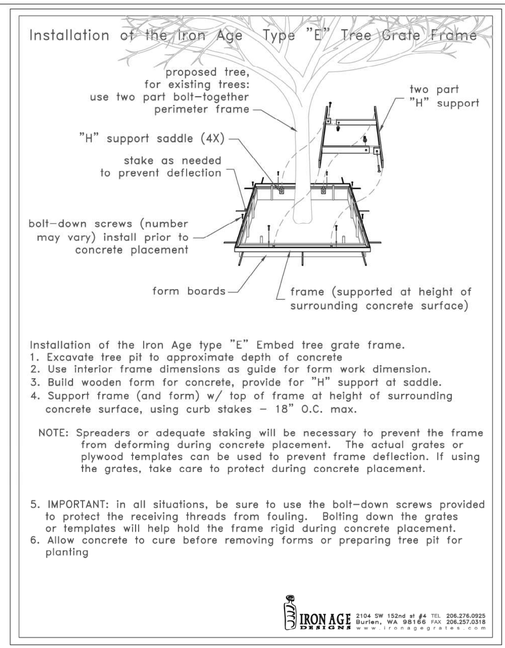
IRON AGE DESIGNS 2104 SW 152nd St #4 Burien, WA 98166 TEL 206.276.0925 FAX 206.257.0318 www.ironagegrates.com

Minnione 24"x44" Heavy-Duty Catch Basin Grate

Drawn by: CD
Date: 9/30/15
Scale: NTS

DWG. NO. MIN.I.24x44

NOTES:
1. Material: cast ductile iron
2. Finish: natural
3. Heavy Duty 5000-7500 lb Live Load
4. Approx. Weight: 170 lbs
5. Fits Frame by Iron Age™

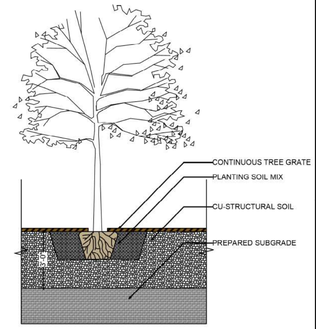


Installation of the Iron Age type "E" Embed tree grate frame.
1. Excavate tree pit to approximate depth of concrete
2. Use interior frame dimensions as guide for form work dimension.
3. Build wooden form for concrete, provide for "H" support at saddle.
4. Support frame (and form) w/ top of frame at height of surrounding concrete surface, using curb stakes – 18" O.C. max.

NOTE: Spreaders or adequate staking will be necessary to prevent the frame from deforming during concrete placement. The actual grates or plywood templates can be used to prevent frame deflection. If using the grates, take care to protect during concrete placement.

5. IMPORTANT: in all situations, be sure to use the bolt-down screws provided to protect the receiving threads from fouling. Bolting down the grates or templates will help hold the frame rigid during concrete placement.
6. Allow concrete to cure before removing forms or preparing tree pit for planting

IRON AGE DESIGNS 2104 SW 152nd st #4 Burien, WA 98166 TEL 206.276.0925 FAX 206.257.0318 www.ironagegrates.com



STRUCTURAL SOIL DETAIL

1 / L-4 CONTINUOUS TREE GRATE (4' WIDE x 50' LONG)
SCALE: NTS

MINNIONE 4' SQ. TREE GRATES ARRAYED WITH 2' x 4' EXTENSION PANELS. OR EQUAL.

MID-SUPPORTS TO BE SUPPLIED BY MANUFACTURER TO BE USED AS NEEDED.

CAST IRON WITH A BAKED-ON-OIL FINISH.

TREES PLANTED IN TREE GRATE SYSTEM TO BE PLANTED IN "CU-STRUCTURAL SOIL" TO 36" DEPTH, "CU-STRUCTURAL SOIL" OR EQUAL TO BE UNDER EXTENSION PANELS TO 36" DEEP. BACKFILL TREE PIT WITH TOPSOIL.

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street · portsmouth, nh 03801
office 603.430.8588 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD_TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Date 8/23/2022
Revision Revision
Project ID 8 KPH
Drawing Code Drawing Code
CAD File 88MAPLEWOOD
Plot Date 00/00/00

Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH

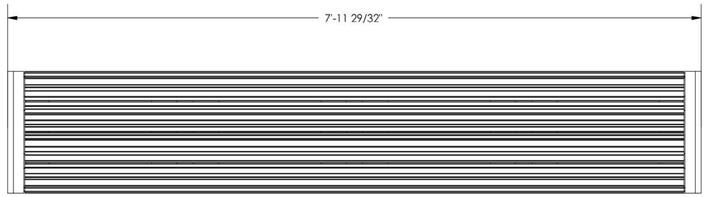
Consultant

Project Title 8 KPH

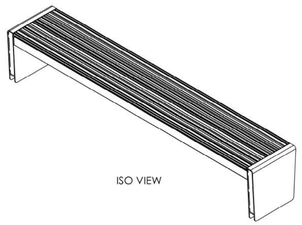
Sheet Title LANDSCAPE DETAILS

Scale SEE DETAILS

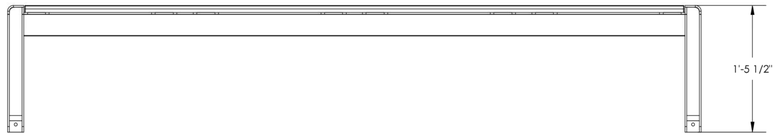
Sheet No. L-4 of 1



TOP VIEW



ISO VIEW



FRONT VIEW

SIDE VIEW

DARK GREY METALLIC TEXTURE

APPROVAL

APPROVED BY :_____

COMPANY :_____

DATE :_____

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES TOLERANCES (UNLESS OTHERWISE SPECIFIED): FRACTIONAL ± 1/32 ANGULAR/BEND: ± 1° TWO PLACE DECIMAL ± .010 THREE PLACE DECIMAL± .020	FORMS+SURFACES 30 Pine Street, Pittsburgh, PA 15223 Tel (412) 781-9003 Fax (412) 781-7840		
	NAME	DATE	DESCRIPTION:
	DWN	DWN_BY	DWN_DATE
MATERIAL: - _MATERIAL	CHK	CHK_BY	CHK_DATE
FINISH: - _FINISH	DO NOT SCALE DRAWING		8 FT, STANDALONE , AL, NO BACK RESTS
WEIGHT: - _WEIGHT	PROPRIETARY AND CONFIDENTIAL		3 ANGLED ARMRESTS
SOURCE: -	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FORMS + SURFACES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION IS PROHIBITED.		
SCALE: N.T.S	SIZE	DWG. NO.	REV SHEET OF X
	B	DWG_FILE_NAME	REV_SHEET_OF_X

VECTOR™ SEATING SYSTEM

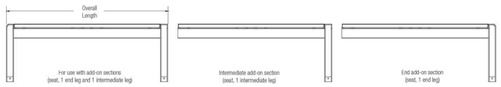
PRODUCT DATA

STANDALONE BENCH NOMINAL DIMENSIONS (CONTINUED)

MODEL	OVERALL LENGTH	OVERALL DEPTH	OVERALL HEIGHT*	SEAT HEIGHT	OVERALL WEIGHT**	
					WITHOUT SIDE PANELS	TWO STAINLESS STEEL SIDE PANELS
SBVTR-96C-2E-0B	95.9" (2436 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	111 lbs (50 kg)	169 lbs (77 kg)
SBVTR-96C-2E-4B	95.9" (2436 mm)	16.9" (429 mm)	29.5" (749 mm)	17.5" (445 mm)	171 lbs (78 kg)	229 lbs (104 kg)
SBVTR-96A-2E-0B	95.9" (2436 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	124 lbs (56 kg)	182 lbs (83 kg)
SBVTR-96A-2E-4B	95.9" (2436 mm)	16.9" (429 mm)	29.5" (749 mm)	17.5" (445 mm)	184 lbs (83 kg)	242 lbs (110 kg)

*Add 12" (305 mm) for optional seat back.
*Add 2.5" (64 mm) for optional end or intermediate seat divider.
**Add 15 lbs (7 kg) for each additional optional seat back.
**Add 2 lbs (1 kg) for each additional optional end or intermediate seat divider.

ADD-ON BENCH NOMINAL DIMENSIONS



MODEL	OVERALL LENGTH	OVERALL DEPTH	OVERALL HEIGHT*	SEAT HEIGHT	OVERALL WEIGHT**	
					WITHOUT SIDE PANELS	TWO STAINLESS STEEL SIDE PANELS
SBVTR-24C-1E1M-0B	25.7" (653 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	53 lbs (24 kg)	73 lbs (33 kg)
SBVTR-24C-1M-0B	23.4" (594 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	36 lbs (16 kg)	56 lbs (25 kg)
SBVTR-24C-1E-0B	23.4" (594 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	36 lbs (16 kg)	56 lbs (25 kg)
SBVTR-24A-1E1M-0B	25.7" (653 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	56 lbs (25 kg)	76 lbs (34 kg)
SBVTR-24A-1M-0B	23.4" (594 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	39 lbs (18 kg)	59 lbs (27 kg)
SBVTR-24A-1E-0B	23.4" (594 mm)	16.9" (429 mm)	17.5" (445 mm)	17.5" (445 mm)	39 lbs (18 kg)	59 lbs (27 kg)

*Add 12" (305 mm) for optional seat back.
*Add 2.5" (64 mm) for optional end or intermediate seat divider.
**Add 15 lbs (7 kg) for each additional optional seat back.
**Add 2 lbs (1 kg) for each additional optional end or intermediate seat divider.

T 800.451.0410 | www.forms-surfaces.com

FORMS+SURFACES®

1 L-5

ENTRY BENCH
SCALE: NTS

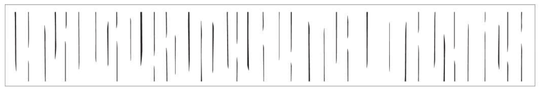
VECTOR™ SEATING SYSTEM

PRODUCT DATA

OPTIONAL STAINLESS STEEL SIDE PANELS

Seating components are available with or without side panels. Side panels can be specified with or without Rainfall Perforation and in one of three stainless steel finishes - Diamond, Sandstone, or Satin.

SIDE PANEL PERFORATION PATTERN: RAINFALL



VECTOR™ SEATING SYSTEM

PRODUCT DATA

The **Vector Seating System** is a modern, modular design that goes in whatever direction your seating needs take. This highly customizable line invites you to mix interchangeable bench and planter modules, choose materials and finishes to suit your design scheme, and personalize your layouts with optional seat backs and seat dividers, LED accent lighting below bench seats, and/or side panels in stainless steel. Coordinating Vector Table Ensembles expand the line's reach.

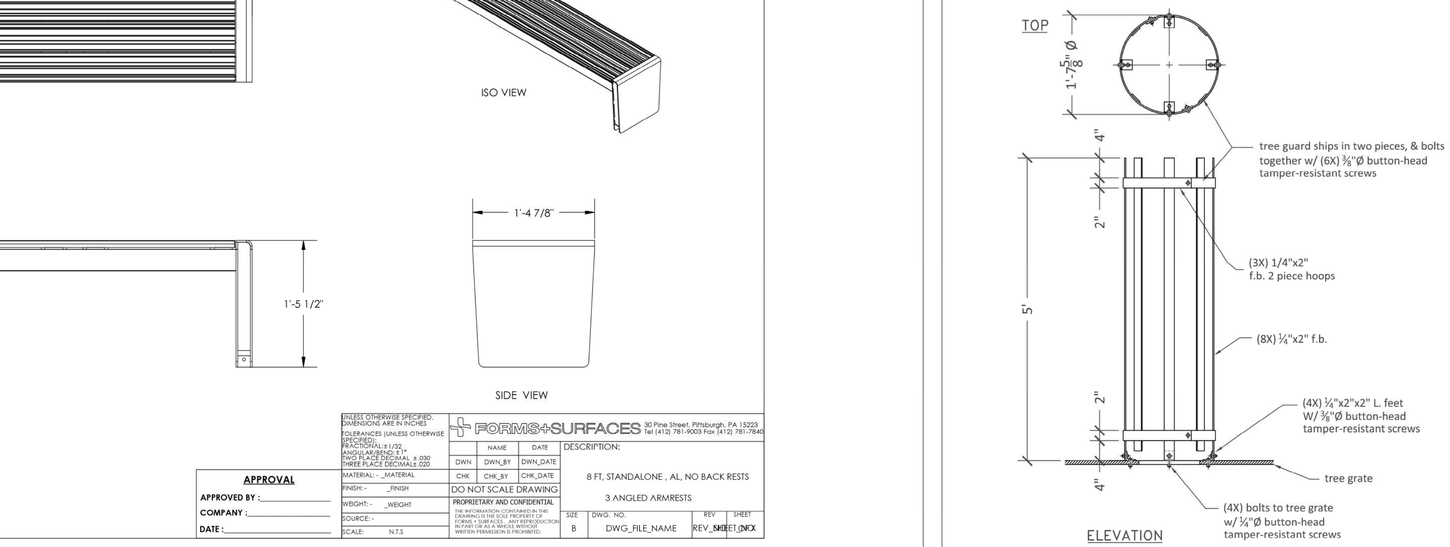
MATERIAL & CONSTRUCTION DETAILS

CONFIGURATIONS	SIDE PANEL OPTIONS	PLANTER MODULE
• There are seven basic components to the Vector Seating System: four linear benches (2-, 4-, 6-, and 8-foot lengths), a 2' planter module, and two 120° angle benches. The components can be specified to connect to each other in a linear fashion and/or branch off of the sides. • In addition to linear benches, standard configurations include Tri-Hub and Oblique. See page 7 for details. • All seating components are available with or without seat backs. Seat backs are not available at some connection points. • Wall-top configurations are also available. Please contact us to discuss your project's specific requirements.	• All seating components are available with or without side panels on one or both sides. • Stainless steel side panels are available in three stainless steel finishes or can be powdercoated. Side panels can be specified with Rainfall perforation or no pattern. See page 2 for details.	• Planter frame is aluminum with a powdercoat finish. • Planter capacity is 14 gallons. • Planter liner is molded polyethylene. Drainage holes are optional. • Stainless steel side panels are available in the same finishes and pattern as bench components. See page 2 for details.
FRAME AND SEAT OPTIONS	**OPTIONAL SEAT DIVIDERS**	**LED ACCENT LIGHTING**
• Frame is aluminum with a powdercoat finish. • Seats are available in two material options. • FSC® 100% Cumaru hardwood seat slats (6 slats per bench) have a natural oiled finish that enhances the wood's rich color (FSC License Code: FSC-C004453). • Extruded aluminum seat slats (4 slats per bench) feature a lightly grooved surface for enhanced appearance and a non-slip feel. Aluminum slats are powdercoated. See the Forms+Surfaces Powdercoat Chart for details. • Optional aluminum seat backs are powdercoated to match the bench frame.	• Cast aluminum end and intermediate seat dividers are available for all of the seating components. • Seat dividers are powdercoated to match the frame. • Due to the inherent nature of metal castings, gloss powdercoats are not offered for cast components.	• Optional LED accent lighting is available for all seating components. • Accent lighting attaches to the underside of the seating components. • Accent lighting is offered in 3000K warm white and 4000K cool white LEDs.

INSTALLATION & MAINTENANCE

INSTALLATION	MAINTENANCE
• The Vector Seating System can be freestanding or surface mounted. • Configurations with seat backs must be surface mounted. • Stainless steel anchors and mounting bolts are sold separately. • Wall-top mounting is customized per project. • Can be shipped flat packed.	• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners. • Cumaru hardwood slats can be maintained by re-oiling as needed with Penofin® hardwood finish or similar products.

FORMS + SURFACES BACKLESS ALUMINUM SLAT 8' STAND-ALONE VECTOR BENCH OR EQUAL
DARK GREY METALLIC TEXTURE POWDER COAT ON FRAME AND SEAT.
ADD-ON OF 2 SEAT DIVIDERS.



ELEVATION

Iron Age Approved PDF
Jonathan 12/05/2018

Notes:
1. Ships in 6 pieces; 2 fabricated pieces & 4 adjustable tabs
2. Fits Tree grates manufactured by: Iron Age™

Basic 60" Tree Guard

Made in USA ©2009 Iron Age Designs

IRON AGE DESIGNS
Telephone 206.276.0925
www.ironagegrates.com

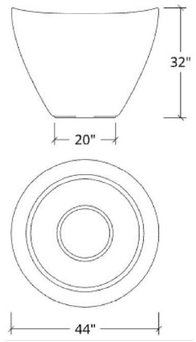
Material: Mild Steel
Standard Finish: Options: Powdercoat/Galvanized 'Cardinal Powdercoating Colors'
Fits: Iron Age™ Tree Grates w/ Typical Breakout Rings
Drawing Name: STD_TGUARD_60_Boulevard

By: JH Date:12/5/18
Scale:1:15
Job No:
©Registration: ...

2 L-5

TREE GUARD
SCALE: NTS

IRON AGE DESIGNS
(877) 418-3568 or (206) 276-0925
2104 SW 152nd St. Suite #4
Burien, WA 98166
info@ironagegrates.com
OR EQUAL



PRODUCT ID	HEIGHT	DIAMETER	BASE	WEIGHT
DS-32	32 "	44 "	20 "	1,020 lbs.

Kornegay Design
Dune Planter, 44" Diam, 32" Height.
IN GRAPHITE (IRON OXIDE).

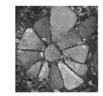
Kornegay Design, A Landscape Forms Company
212 South 18th Street
Phoenix, Arizona 85034
p: 800.430.6209
f: 269.381.3455
https://kornegaydesign.com/

3 L-5

URNS AT ENTRY
SCALE: NTS

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
cell:603.430.8598 | terrafirmalandarch.com



No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Date	8/23/2022
Revision	Revision
Project ID	8 KPH
Drawing Code	Drawing Code
CAD File	88MAPLEWOOD
Plot Date	00/00/00
Designed By	TP
Drawn By	TC
Checked By	TP
Reviewed By	TP
Submitted By	TP
Project Manager	

Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH

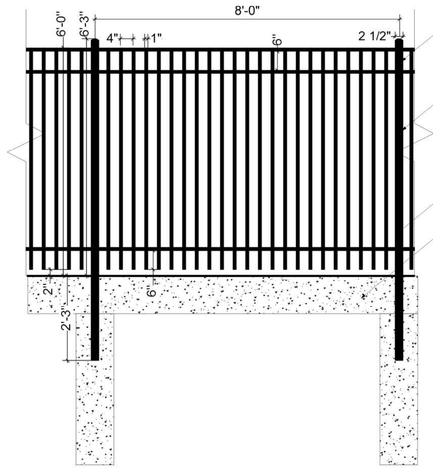
Consultant:

Project Title: 8 KPH

Sheet Title: LANDSCAPE DETAILS

Scale: SEE DETAILS

Sheet No.: L-5 of 1



CAST SAVANNAH DECK LIGHT OR EQUAL MOUNTED ON POSTS (8' OC)

POSTS SET IN CONCRETE FOOTING/RETAINING WALL BASE

ALUMINUM FENCE

CONCRETE WALL (SEE ENG. DETAILS)

WALPOLE THREE-RAIL ECHELON PLUS STYLE ALUMINUM FENCE OR EQUAL

Walpole Outdoors OR EQUAL
100 River Ridge Drive, Suite 302
Norwood, MA 02062
(866) 253-3108
https://walpoleoutdoors.com/

1 / L-6 FENCE WITH MOUNTED LIGHTS
SCALE: 1/2"=1'-0"

CAST LANDSCAPE® Old world craftsmanship. . .tomorrow's technology®

CAST Savannah Deck Light (CDL2CB) Product Information

CAST Solid Bronze Savannah Deck Light - Rugged and Stylish

Description:
This compact and stylish solid bronze deck light is a durable and reliable fixture for wall and post mounting.

Features:
- Solid bronze hood and base
- Glare-free illumination
- Pre-wired with 25′ tin-coated No-Ox® marine grade wire
- High-temp socket
- Spider Splice® ready

Uses:
Suitable for downlighting when mounted on retaining walls, structure surfaces, posts and pilings.

Construction:
Solid bronze hood and base; 25′ tin-coated #18-2 No-Ox® marine-grade wire.

Dimensions:
3.2″ wide x 3″ tall x 1.5″ deep

Specifications:
Lamp: Includes 2.5W, 9-15 volt operating range, T5 LED Lamp (SL921T5200L).
Halogen Option: 12 volt, 10W, T3 wedge-based - 18W max. (CWB1210X).

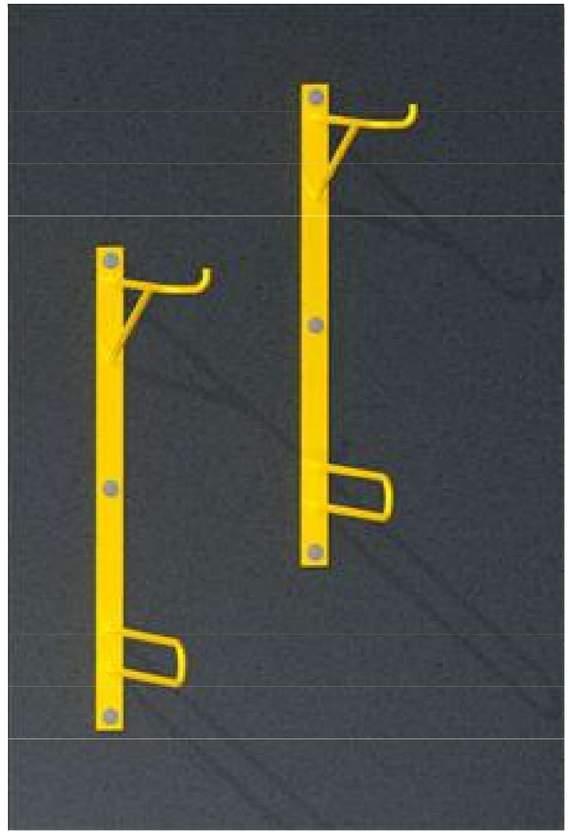
Listing:
U.L 1838 Listed Low Voltage Luminaire for wet locations

CDL2CB

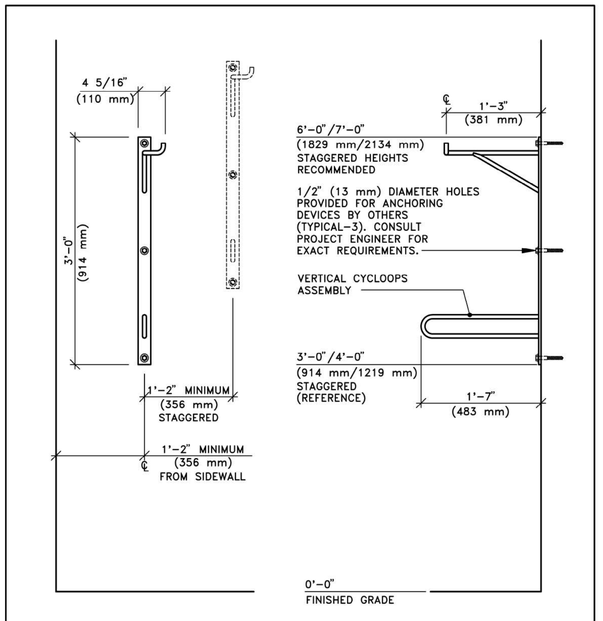
www.cast-lighting.com 800.914.CAST

Revised December 2019

2 / L-6 DECK LIGHTS FOR FENCE
SCALE: NTS



No. 2174 Wall *CycLoops* Bicycle Rack



ELEVATION – FRONT VIEW

ELEVATION – END VIEW

Scale 1"=1'-0" Drawn by: AT Ck'd by: 07-04-10

COLUMBIA CASCADE COMPANY
Makers of TimberForm®, PipeLine®, ReplayTimberForm®-2, interPlay®, CycLoops® and CycLocker® Products.
1300 S.W. Sixth Avenue, Suite 310 Telephone 503/223-1157 Portland, Oregon 97201-3464 Facsimile 503/223-4530 U.S.A.
WWW.TIMBERFORM.COM

File: TIMBERFORM CYCLOOPS MODEL NO. 2174-01 VERTICAL CYCLOOPS
Drawing No. W-2174-01 Sheet 1 of 1

TimberForm® WALL CYCLOOPS 2174-01 VERTICAL HANGING BIKE RACK OR EQUAL

3 / L-6 GARAGE VERTICAL BIKE RACK DETAIL
SCALE: NTS

No. 2174 Wall *CycLoops* Bicycle Rack

Bicycle Rack shall be TimberForm® Wall *CycLoops*™ model No. 2174, to accommodate one bicycle, in color or finish selected by the owner's representative and in the quantity shown on the bill of materials or the project drawings. Manufacturer, Columbia Cascade Company, 1300 SW Sixth Avenue, Suite 310, Portland OR 97201-3464 U.S.A.

1. Materials

Bicycle Rack shall be single loop of 1 inch i.d. schedule 40 mild steel seamless pipe with a minimum wall thickness of .133 inch. *Easily vandalized thin wall tubing is not allowed.* Loop shall include a pre-drilled flange permanently welded to ends which will accommodate two half inch diameter wall anchor bolts (contractor supplied).

2. Construction

Bicycle Rack shall be a single unit. Bicycle Rack shall be deburred and ground smooth after fabrication.

3. Finishes

Steel and cast iron parts shall be coated with CASPAX-7, a tough, opaque, UV resistant exterior grade polyester powder coating applied to a minimum thickness of 6 mils. *Liquid, epoxy or lead-containing powder coatings are not acceptable.*

Preparation of the mild steel substrate shall incorporate the phosphate system. Substrate preparation shall consist first of mechanical cleaning to remove heavy mill scale, rust, varnish, grease, etc., with surfaces uniformly abraded to promote quality of finish coating. Chemical cleaning in accordance with TT-C-490C, Methods I and III shall remove impurities from the surfaces.

After the two-step cleaning process, the metal substrate shall receive a corrosion-inhibiting iron phosphate pre-coating in accordance with TT-C-490C, Type II, prior to the application of the powder color coat. The color coating shall be applied by the electrostatic method and then oven-cured at 400 degrees Fahrenheit to chemically bond the coating to the substrate and to render the coated metal resistant to abrasion, impact, chipping, weathering, and rusting.

-or-

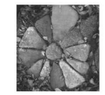
Mild steel (-G) bicycle rack shall be hot-dipped galvanized per ASTM 123 after complete fabrication.

-or-

Stainless steel (-S) bicycle rack shall have No. 4 polish finish.

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163 a court street · portsmouth, nh 03801
office 603.430.8388 · terrence@terrafirmalandarch.com



No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Designed By	TP
Drawn By	TC
Checked By	TP
Reviewed By	TP
Submitted By	TP
Project Manager	TP
Date	8/23/2022
Revision	Revision
Project ID	8 KPH
Drawing Code	Drawing Code
CAD File	88MAPLEWOOD
Plot Date	00/00/00

Design Firm: terra firma landscape architecture
163 a Court Street
Portsmouth, NH

Consultant

Project Title: 8 KPH

Sheet Title: LANDSCAPE DETAILS

Scale: SEE DETAILS

Sheet No. L-6 of 1

HELIO™ BOLLARD, SERIES 600

PRODUCT DATA

FORMS+SURFACES®

HELIO™ BOLLARD, SERIES 600

PRODUCT DATA

Helio Bollards, Series 600 bring an elegant simplicity to public spaces of all kinds. Constructed of stainless steel, fixtures 6" in diameter are available in illuminated and non-illuminated variations with or without a security core option. Illuminated bollards feature a frosted acrylic lens, 180° or 360° light distribution, and Cree® LEDs in 3000K warm white and 4000K neutral white. Helio Bollards with 3000K LEDs are approved by the International Dark-Sky Association to minimize light pollution. For expanded performance, the Helio family also includes Helio M40/K8 and M50/K12 Security Bollards 11.5" in diameter (Series 1200) and Helio M30/K4 Security Bollards 9.25" in diameter (Series 900), all in illuminated and non-illuminated designs.

MATERIAL & CONSTRUCTION DETAILS

CONFIGURATIONS

- Series 600 Helio Bollards are 40" high x 6" in diameter.
- Illuminated bollards are available with 180° and 360° light distribution options.
- Non-illuminated versions are also available.
- Series 600 Helio Bollards are available with an optional S10-P1 rated security core (illuminated or non-illuminated).

MATERIALS & FINISHES

- Illuminated bollards have a tubular stainless steel column, frosted acrylic lens, and a stainless steel head cap.
- Non-illuminated bollards are tubular stainless steel with welded stainless steel cap.
- Stainless steel is standardwith a Satin finish and Ceramiloc treatment. See below for details.
- For optional powdercoat colors see the Forms+Surfaces Powdercoat Chart. Custom RAL colors are available for an upcharge.

LED LAMPS & DRIVER

- Custom LED light engine with Cree® LEDs.
- 3000K warm white and 4000K neutural white color temperatures.
- 424 lumen output.
- Less than 5% upward lumen output.
- LED driver input voltage is 120-277VAC, -30°C minimum starting temperature.
- Driver has reverse-phase, forward-phase, and 0-10V dimming capabilities.
- LED driver certifications include: IP66 (waterproof) enclosure, and Class 2 rated output (UL8750).

INSTALLATION

- Standard mounting is surface mount.
- Security bollards have an embedded security core.
- Installation of a surge protector as part of each unit's wiring is recommended.
- Stainless steel mounting hardware sold separately. Templates are available upon request.

MAINTENANCE

- Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

CERAMILOC TREATMENT

Ceramiloc is an invisible surface treatment that offers significantly enhanced protection from weather and graffiti and increases the maintenance ease of stainless steel. Ceramiloc combines ceramic durability with an unparalleled ability to lock out water spots, fingerprints, graffiti and more. Patented technology bonds nano-silica particles to the surface of the stainless steel. The treatment minimally alters the surface appearance of the stainless and offers numerous benefits:

- Easily Cleaned: The Ceramiloc treatment creates a surface that simultaneously resists fingerprints and is easy to clean. Water spots, grease marks and more can be quickly wiped away. It also creates an "anti-graffiti" surface – even permanent marker is easily removed with a clean microfiber towel and water.
- Durable: Ceramiloc-treated materials are corrosion- abrasion- and scratch-resistant. The treatment is permanent, UV stable, and will not degrade or discolor over time. Salt spray testing per ASTM B117 showed no change after 240 hours.
- Environmentally Sound: The Ceramiloc treatment is a no-VOC, water-based process. Because Ceramiloc surfaces are so easily maintained, cleaning solutions and maintenance are kept to a minimum.

LIGHT ENGINE DESCRIPTIONS

LED ENGINE	LIGHT DISTRIBUTION	DRIVER	LUMINAIRE LUMENS*	B.U.G. RATINGS
3000K LED	360°	40W	424	B0-U1-G0
4000K LED	360°	40W	424	B0-U1-G0
3000K LED	180°	20W	158	B0-U1-G0
4000K LED	180°	20W	158	B0-U1-G0

*Luminaire lumens represents the absolute photometry for the luminaire, and indicates the lumens out of the entire fixture.

NOTE: Polar candela and isofootcandle plots can be found on the Helio Bollard, Series 600 product page on our website.

FORMS+SURFACES®

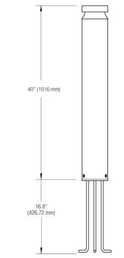
HELIO™ BOLLARD, SERIES 600

PRODUCT DATA

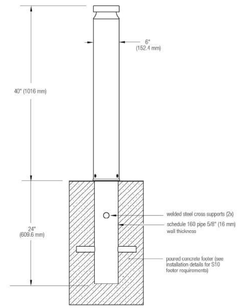
ILLUMINATED BOLLARDS

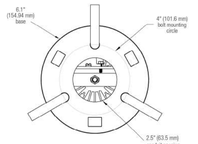
NOMINAL DIMENSIONS

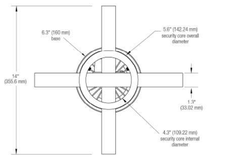
SURFACE MOUNT WITH J-BOLTS



EMBEDDED SECURITY CORE







FORMS+SURFACES®

1
L-7

LIGHT BOLLARD
SCALE: NTS

HELIO™ BOLLARD, SERIES 600

PRODUCT DATA

OPTIONAL SECURITY CORE

Site security is a major concern in today's unpredictable world. Public and private buildings, government facilities, campuses and public parks are all susceptible to accidental, as well as deliberate, vehicle infringement. Design professionals, city planners, facilities managers and engineers must now be increasingly sensitive to the safety and security requirements of public and private spaces. Security bollards placed at ingress points are an excellent way to guard against vehicle infringement while allowing pedestrian access.

Most security bollards have taken the form of generic pipes and cylinders that offered little in the way of design or lighting functionality. An integral security solution is available as an optional enhancement to Forms+Surfaces' Helio lighting bollards. By adding a pre-engineered and fully-tested security core to the existing Helio design, we can offer a beautiful and efficient lighting bollard that also meets the stringent hi-impact crash requirements normally attained only with unattractive pipe barriers.

Helio S10-P1 security bollards have been tested using a Finite Element Analysis (FEA) by a professional engineering consultant. FEA is a software-based tool commonly used in the automotive industry and used extensively for crash test simulations. Tests were performed using our bollard set in permanent concrete footings and struck by a vehicle at a 90 degree impact. The impact simulation found the bollards to be successful in stopping a 5,000 lb. small passenger vehicle going 10 mph with less than one meter penetration.

Our permanently embedded security cores are available for both illuminated and non-illuminated bollards. Please contact us to discuss design and installation considerations for Helio bollards with security cores.

CERTIFICATION

- ETL and C-ETL listed for wet locations.
- Helio Bollard 3000K is International DarkSky Approved

ENVIRONMENTAL CONSIDERATIONS

- Please refer to the Helio Bollard, Series 600 Environmental Data Sheets for detailed environmental impact information.
- Metal components have a long life cycle and are 100% recyclable.
- Standard powdercoat finishes are no-VOC; non-standard powdercoat finishes are no- or low-VOC, depending on color.
- Low maintenance.

MODEL NUMBERS AND DESCRIPTIONS

MODEL	DESCRIPTION
LBHLO-603	Helio Bollard, Series 600, illuminated
LBHLO-603-N	Helio Bollard, Series 600, non-illuminated

PRODUCT OPTIONS

The following options are available for an upcharge

Add powdercoat color from Forms+Surfaces Powdercoat Chart	Upgrade to embedded security core
Custom RAL powdercoat color	Add stainless steel mounting hardware

FORMS+SURFACES®

POWDERCOAT CHART

PRODUCT DATA

All Forms+Surfaces powdercoat colors have been formulated to be ultra-durable for improved long-term wear and resistance to weathering. Our powdercoat colors are also anti-graffiti, allowing marks from paint, permanent markers, and dirt to be easily removed. All standard powdercoat finishes are no-VOC.

DARK BRONZE METALLIC TEXTURE

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163.a court street | portsmouth, nh 03801
direct 603.430.8588 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Date 8/23/2022
Revision Revision
Project ID 8 KPH
Drawing Code Drawing Code
CAD File 88MAPLEWOOD
Plot Date 00/00/00

Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH

Consultant

Project Title
8 KPH

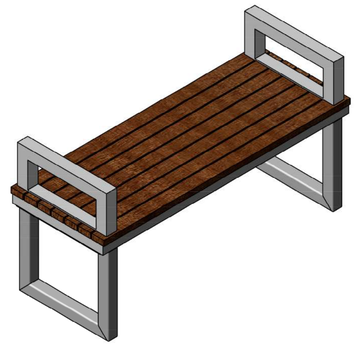
Sheet Title
LANDSCAPE DETAILS

Scale
SEE DETAILS

Sheet No.
L-7
of
1

ITEM	QTY	DESCRIPTION	MODELNUMBER
1	1	OGDEN, STRAIGHT, WLRLR-48 IN	OGM1900-SS4-WLR
2	2	OGDEN, SQUARE LEG	OGM1900-MS1
3	2	OGDEN, CENTER ARM, STYLE 1	OGM1900-CA1

APPROVED BY:
DATE:



MAGLIN
MAGLIN SITE FURNITURE
WWW.MAGLIN.COM
TEL.: 800-716-5506
FAX: 877-260-9393

TITLE: OGDEN, STRAIGHT, IPE, SQUARE LEG
MODEL NO: OGM1900-190667
DATE: 10/20/2022
SHEET: 1 OF 3

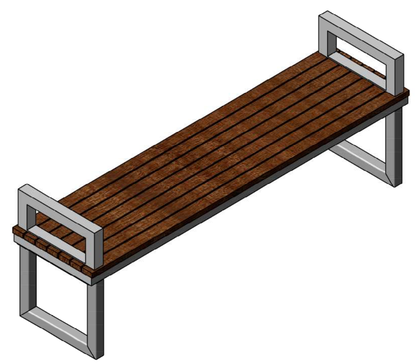
MAGLIN BACKLESS, 4' STRAIGHT OGDEN BENCH OR EQUAL.

1
L-8

POCKET PARK 4' BENCH
SCALE: NTS

ITEM	QTY	DESCRIPTION	MODELNUMBER
1	1	OGDEN, STRAIGHT, WLRLR-72 IN	OGM1900-SS6-WLR
2	2	OGDEN, SQUARE LEG	OGM1900-MS1
3	2	OGDEN, CENTER ARM, STYLE 1	OGM1900-CA1

APPROVED BY:
DATE:



MAGLIN
MAGLIN SITE FURNITURE
WWW.MAGLIN.COM
TEL.: 800-716-5506
FAX: 877-260-9393

TITLE: OGDEN, STRAIGHT, IPE, SQUARE LEG
MODEL NO: OGM1900-190668
DATE: 10/20/2022
SHEET: 1 OF 3

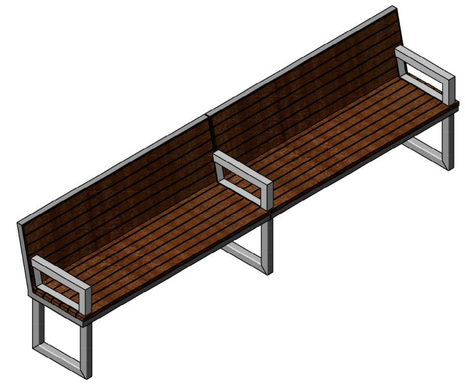
MAGLIN BACKLESS, 6' STRAIGHT OGDEN BENCH OR EQUAL.

2
L-8

POCKET PARK 6' BENCH
SCALE: NTS

ITEM	QTY	DESCRIPTION	MODELNUMBER
1	2	BACKED OGDEN, STRAIGHT, WLRLR-60 IN	OGM1900-B1-SS5-WLRLR
2	3	OGDEN, SQUARE LEG	OGM1900-MS1
3	3	BACKED OGDEN, CENTER ARM, STYLE 1	OGM1900-BCA1

APPROVED BY:
DATE:



MAGLIN
MAGLIN SITE FURNITURE
WWW.MAGLIN.COM
TEL.: 800-716-5506
FAX: 877-260-9393

TITLE: BACKED OGDEN, STRAIGHT, IPE, SQUARE LEG
MODEL NO: OGM1900-190665
DATE: 10/20/2022
SHEET: 1 OF 3

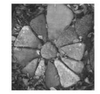
MAGLIN BACKED, 10' STRAIGHT OGDEN BENCH OR EQUAL.

3
L-8

POCKET PARK 10' BENCH
SCALE: NTS

THIS SHEET IS SCALED FOR 22x34 PAPER, DO NOT ENLARGE OR REDUCE.

terra firma
landscape architecture
163 a court street · portsmouth, nh 03801
office 603.430.6588 | terrence@terrafirmalandarch.com



No.	Date	Issue Notes
D	11/21/2022	UPDATED ARCH
C	11/13/2022	ADD. TREE + FENCE ADJUSTMENT
B	10/20/2022	TAC SUBMISSION
A	8/28/2022	ENTRY + DETAIL UPDATES

Designed By: TP
Drawn By: TC
Checked By: TP
Reviewed By: TP
Submitted By: TP
Project Manager:

Date: 8/23/2022
Revision: Revision
Project ID: 8 KPH
Drawing Code: Drawing Code
CAD File: 88MAPLEWOOD
Plot Date: 00/00/00

Design Firm: terra firma landscape architecture
163 a Court Street
Portsmouth, NH

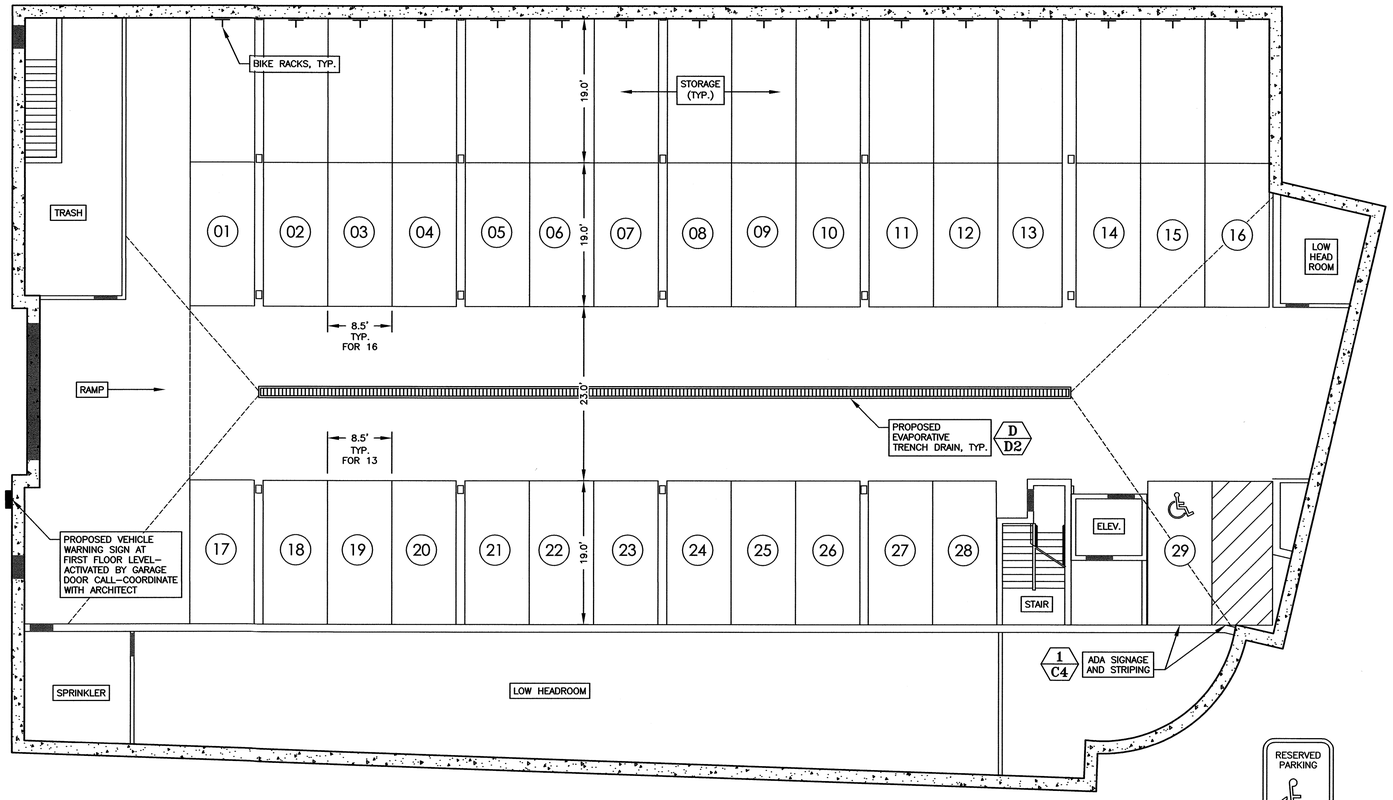
Consultant:

Project Title: 8 KPH

Sheet Title: LANDSCAPE DETAILS

Scale: SEE DETAILS

Sheet No.: L-8
of 1



GRAPHIC SCALE

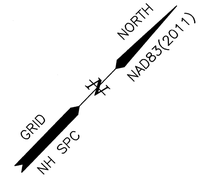
10 5 0 10 20 30 40 FEET

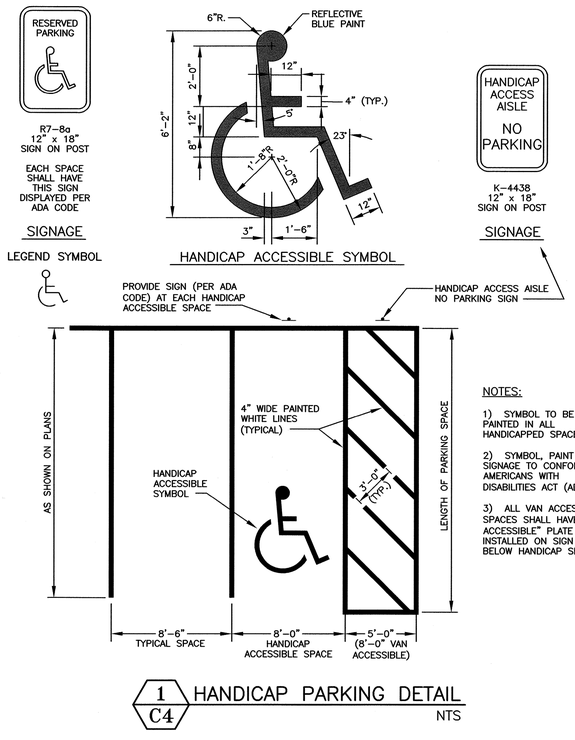
3 0 5 10 METERS

Residential Units Area	
Unit 201	2,407 SF
Unit 202	2,761 SF
Unit 203	2,536 SF
Unit 204	2,537 SF
Unit 205	2,593 SF
Unit 206	2,881 SF
Unit 301	2,407 SF
Unit 302	2,761 SF
Unit 303	2,536 SF
Unit 304	2,537 SF
Unit 305	2,593 SF
Unit 306	2,881 SF
Unit 401	2,407 SF
Unit 402	2,761 SF
Unit 403	2,536 SF
Unit 404	2,537 SF
Unit 405	2,593 SF
Unit 406	2,881 SF
Penthouse Unit	7,344 SF

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____





NOTES:

1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.

2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).

3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

1/C4 HANDICAP PARKING DETAIL
NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17-3.

2) OWNER OF RECORD:
EIGHTKPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PARKING FOR THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 125 LOT 17-3 IN THE CITY OF PORTSMOUTH.

4) REQUIRED PARKING:
FIRST FLOOR: EXEMPT
19 DWELLING UNITS: 1.3/UNIT X 19 UNITS = 25
VISITOR: 19/5 X 1 = 4
TOTAL REQUIRED: 29
TOTAL PROVIDED: 29

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	INTERIOR LAYOUT	11/17/22
2	SPRINKLER ROOM	10/31/22
1	BUILDING FOOTPRINT	10/20/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

SCALE: 1" = 10' AUGUST 2022

PARKING LEVEL PLAN

C4

FB 265 PG 18

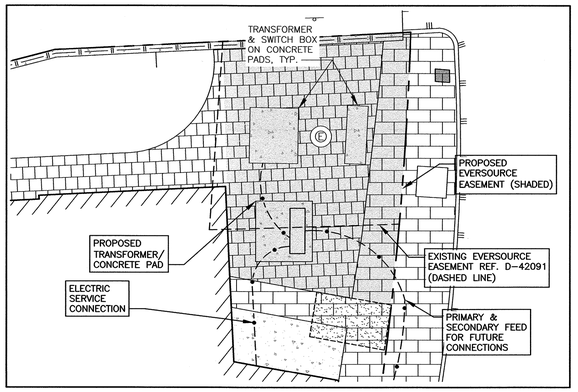
2271.04

UTILITY NOTES:

1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
3) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
4) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
5) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
6) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
7) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH
8) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
9) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
10) EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
11) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
12) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
13) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
14) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
15) THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
16) THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
17) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
18) A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.
19) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
20) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
21) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
22) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
23) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
24) CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH UTILITY COMPANY AND AFFECTED ABUTTER.

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 1499	EX	15.80	48" BRICK BOX	-1.80	-1.80	
SMH 1501	EX	13.58	24"	-0.30	-0.32	
SMH 2305	EX	10.90	48" VC	-1.17		
6" COMM.	PROP		6"	-0.35 @ PIPE	12.0 @ BLDG.	
6" RES.	PROP		6"	-0.64 @ PIPE	12.0 @BLDG.	

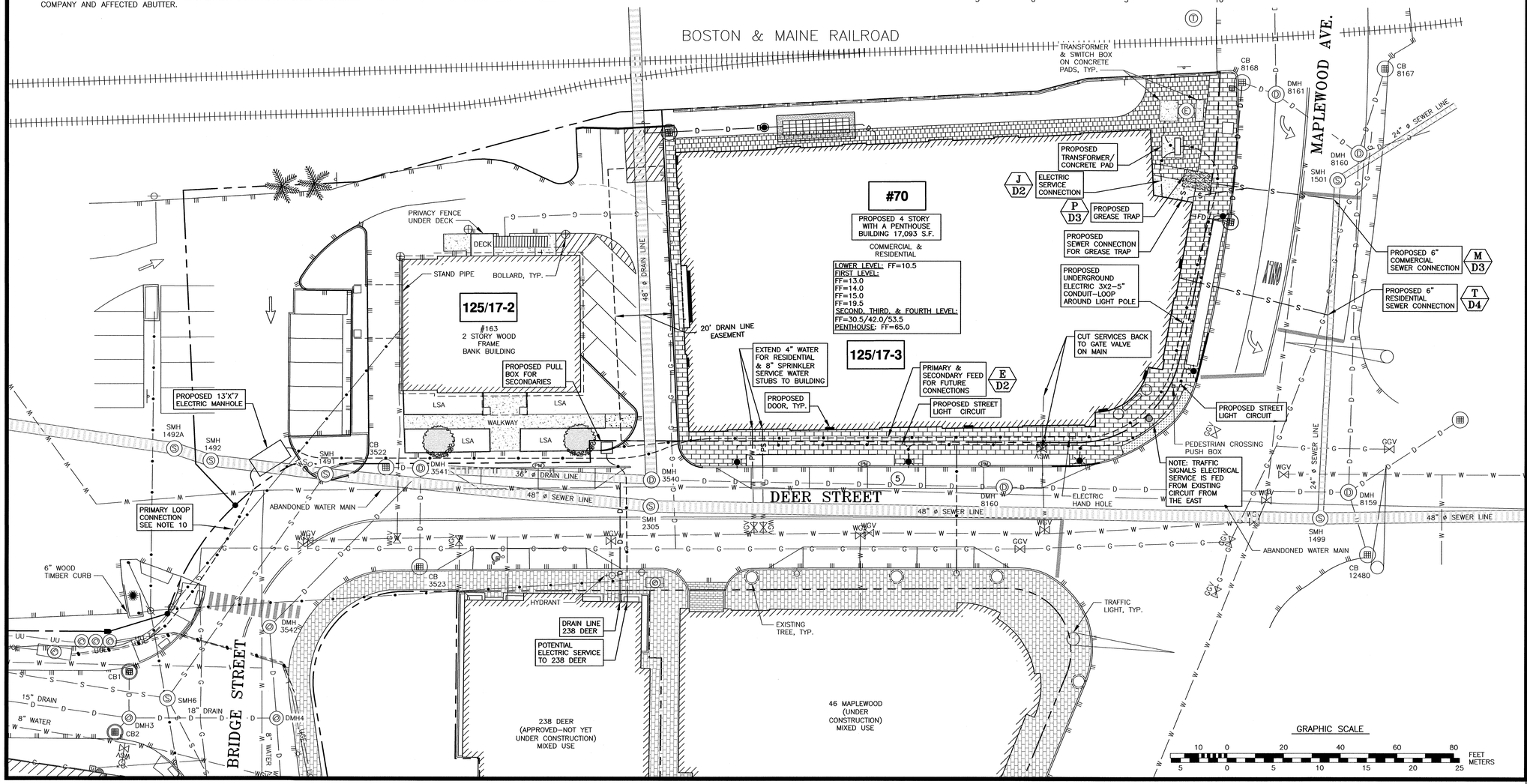


EVERSOURCE EASEMENT REVISION

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

NORTH NAD83(2011)
GRID NH SPC



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

5) ALL WATER MAIN AND SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE NEW HAMPSHIRE STATE PLUMBING CODE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

6) UTILITY AS-BUILTS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE PROJECT.

7) EVERSOURCE WORK ORDER #10272179.

8) PROPOSED SEWER FLOW:
15,263 S.F. COMMERCIAL
15,263 X (2.5 GPD/100 S.F.)=382 GALLONS PER DAY.
(POSSIBLE RESTAURANT) (4,000 GPD)
19 UNITS X 210 GPD=3,990 GPD
TOTAL FLOW: 4,372 GPD TO 7,990 GPD

9) CUT AND CAP THE EXISTING BUILDING SEWER CONNECTIONS AT THE SEWER MAINS.

10) THIS PROJECT WILL PROVIDE PRIMARY & SECONDARY CONDUIT TO THE PROPOSED PULL BOX. PRIMARY LOOP CONNECTION FROM PULL BOX TO 13X17 MANHOLE WILL BE BY OTHERS. EASEMENT ON LOT 17-2 TO BE PROVIDED. ALL CONDUIT FROM TRANSFORMER TO PULL BOX AND TO 238 DEER STREET WILL BE BY AND FOR 238 DEER STREET AND NOT COMPLETED UNLESS FUNDED BY 238 DEER STREET.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
5	WATER & SPRINKLER SERVICE	11/17/22
4	WATER SERVICE NOTE	10/31/22
3	ELECTRIC MANHOLE ON LOT 17-2	10/28/22
2	EVERSOURCE EASEMENT LAYOUT	10/20/22
1	COMMUNITY SPACE ELECTRICAL CIRCUITS, NOTE 9	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

JOHN R. CRIGNON, NO. 7857 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1" = 20' AUGUST 2022

UTILITY PLAN

C5

FB 265 PG 18

2271.04

J:\JOBS\2271\2022\2271DWG\2271-2022 Site Plan\Plans & Sheets\Dwg\2271_C5 Site 2022.dwg, C5 UTILITY, 11/22/2022 1:04:53 PM

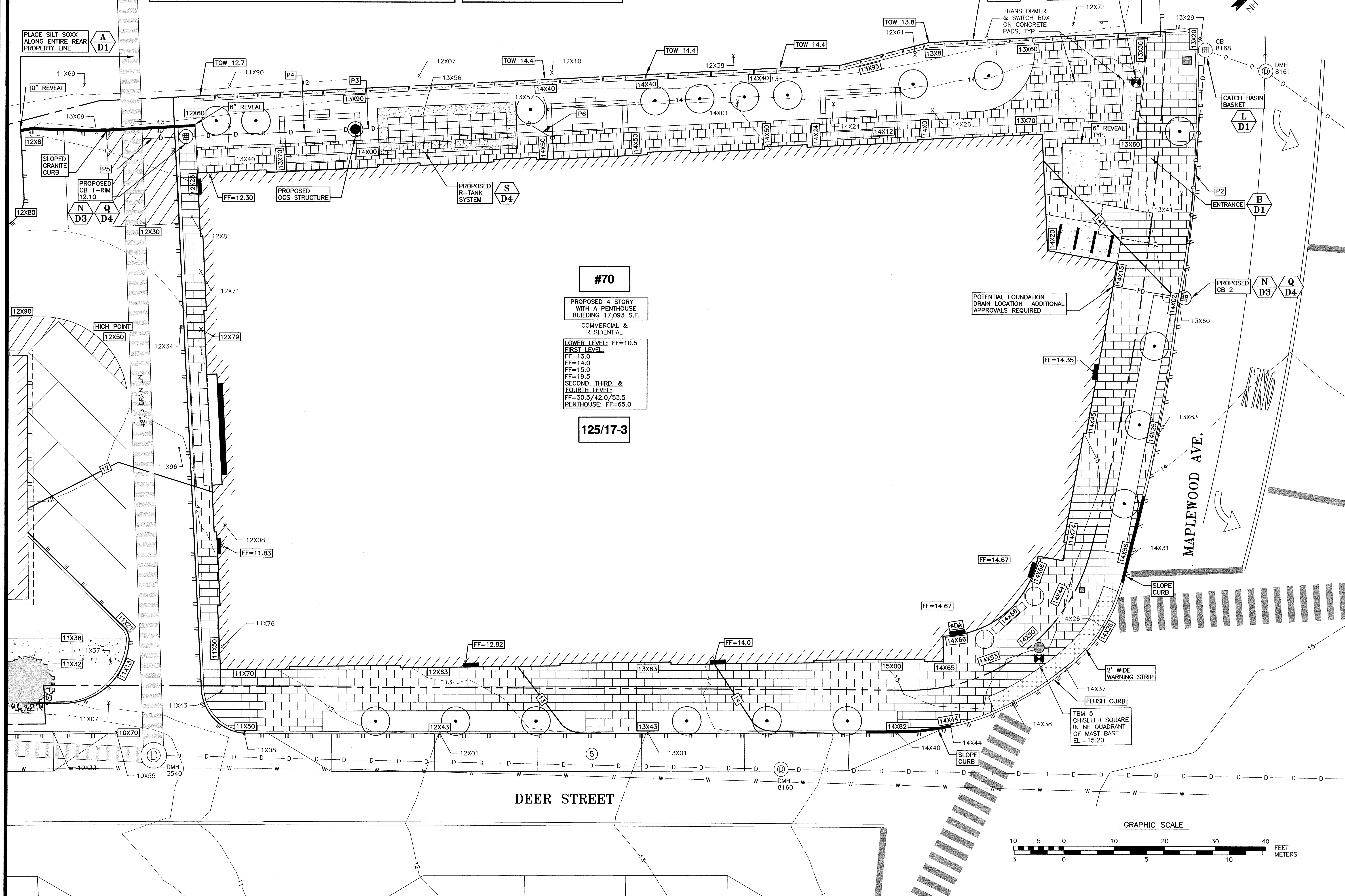
DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
CB 8168	EX	13.19	12" RCP	9.93	9.83	NE
DMH 3540	EX	10.81	48" RCP		1.56	NW
OCS 1	PROP	13.95	12"	10.9	7.92	
CB 1	PROP	12.10	12" HDPE	7.79	7.69	
CB 2	PROP	13.56	12" HDPE	10.22	10.12	

PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
P1	12"	13'	0.05
P2	12"	47'	0.004
P3	12"	5'	0.02
P4	12"	31'	0.004
P5	12"	8'	0.004
P6	TWIN 12"	17'	0.17

*ALL PIPE TO BE HDPE



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	GRADING-REAR	11/17/22
2	BUILDING FOOTPRINT	10/20/22
1	DRAIN PIPE SIZE	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7961
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 10'
AUGUST 2022

GRADING & DRAINAGE PLAN

C6

FB 265 PG 18

2271.04

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

IF REQUIRED THE CONTRACTOR SHALL OBTAIN AN **NPDES** PHASE II STORMWATER PERMIT AND SUBMIT A NOTICE OF INTENT (N.O.I) BEFORE BEGINNING CONSTRUCTION AND SHALL HAVE ON SITE A STORMWATER POLLUTION PREVENTION PLAN (**S.W.P.P.P.**) AVAILABLE FOR INSPECTION BY THE PERMITTING AUTHORITY DURING THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THE **S.W.P.P.P.** AND INSPECTING AND MAINTAINING ALL BMP'S CALLED FOR BY THE PLAN. THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (**N.O.T.**) FORM TO THE REGIONAL EPA OFFICE WITHIN 30 DAYS OF FINAL STABILIZATION OF THE ENTIRE SITE OR TURNING OVER CONTROL OF THE SITE TO ANOTHER OPERATOR.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AND CATCH BASIN PROTECTION AROUND THE LIMITS OF DISTURBANCE AND OFF SITE AREAS AS NEEDED BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

PLACE FODS OR OTHER SITE ENTRANCE AS NEEDED.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED. DEMOLISH BUILDINGS AND FENCES AS NEEDED.

ROUGH GRADE SITE: CONSTRUCT RETAINING WALL

CONSTRUCT BUILDING FOUNDATION.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

COMPLETE BUILDING.

CONNECT UTILITIES.

PLACE BINDER LAYER OF PAVEMENT FOR SIDEWALKS.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.

AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT SIDEWALKS.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS--CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

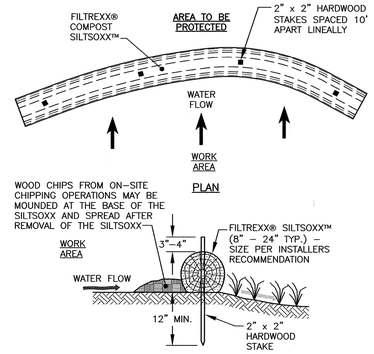
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A / C6 FILTREXX® SILTSOXX™ FILTRATION SYSTEM (AS NEEDED) NTS

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:
- Temporary and Permanent mulching and grass cover
- Trees, Shrubs and ground covers and landscape plantings
- Dust control
- Sediment barriers; Catch basin bags
- Stabilized construction entrance

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:
- ACF R-Tank stormwater storage system
- Bio Clean Downspout Filter
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs that may be found on this project.

Grassed areas (until established): After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.

Plantings: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.

Bio Clean Downspout Filter: Refer to the manufacturer's Operation and Maintenance manual for guidance, included herewith.

ACF R-Tank stormwater storage system: Reference the attached operations and maintenance manual for proper maintenance of the system.

Outlet Control Structures and Storm Drains: Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all roadways and parking areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

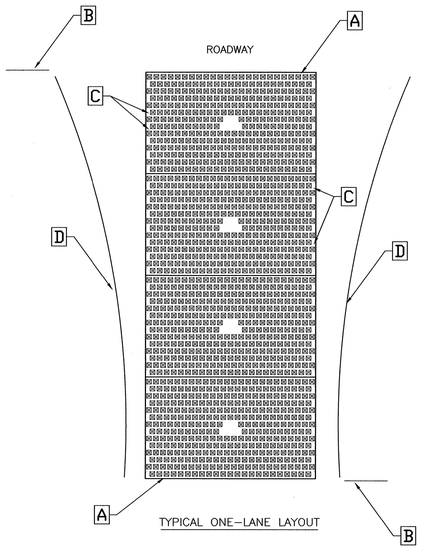
FODS TRACKOUT CONTROL SYSTEM

INSTALLATION:

THE PURPOSE AND DESIGN OF THE FODS TRACKOUT CONTROL SYSTEM IS TO EFFECTIVELY REMOVE MOST SEDIMENT FROM VEHICLE TIRES AS THEY EXIT A DISTURBED LAND AREA ONTO A PAVED STREET. THIS MANUAL IS A PLATFORM FROM WHICH TO INSTALL A FODS TRACKOUT CONTROL SYSTEM. (NOTE: THIS IS NOT A ONE SIZE FITS ALL GUIDE.) THE INSTALLATION MAY NEED TO BE MODIFIED TO MEET THE EXISTING CONDITIONS, EXPECTATIONS, OR DEMANDS OF A PARTICULAR SITE. THIS IS A GUIDELINE. ULTIMATELY THE FODS TRACKOUT CONTROL SYSTEM SHOULD BE INSTALLED SAFELY WITH PROPER ANCHORING AND SIGNS PLACED AT THE ENTRANCE AND EXIT TO CAUTION USERS AND OTHERS.

KEY NOTES:

A. FODS TRACKOUT CONTROL SYSTEM MAT.
B. FODS SAFETY SIGN.
C. ANCHOR POINT.
D. SILT OR ORANGE CONSTRUCTION FENCE.



INSTALLATION:
1. THE SITE WHERE THE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED SHOULD CORRESPOND TO BEST MANAGEMENT PRACTICES AS MUCH AS POSSIBLE. THE SITE WHERE FODS TRACKOUT CONTROL SYSTEM IS PLACED SHOULD ALSO MEET OR EXCEED THE LOCAL JURISDICTION OR STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.
2. CALL FOR UTILITY LOCATES 3 BUSINESS DAYS IN ADVANCE OF THE OF FODS TRACKOUT CONTROL SYSTEM INSTALLATION FOR THE MARKING OF UNDERGROUND UTILITIES. CALL THE UTILITY NOTIFICATION CENTER AT 811.
3. ONCE THE SITE IS ESTABLISHED WHERE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED, ANY EXCESSIVE UNEVEN TERRAIN SHOULD BE LEVELED OUT OR REMOVED SUCH AS LARGE ROCKS, LANDSCAPING MATERIALS, OR SUDDEN ABRUPT CHANGES IN ELEVATION.
4. THE INDIVIDUAL MATS CAN START TO BE PLACED INTO POSITION. THE FIRST MAT SHOULD BE PLACED NEXT TO THE CLOSEST POINT OF EGRESS. THIS WILL ENSURE THAT THE VEHICLE WILL EXIT STRAIGHT FROM THE SITE ONTO THE PAVED SURFACE.
8. AFTER THE FIRST MAT IS PLACED DOWN IN THE PROPER LOCATION, MATS SHOULD BE ANCHORED TO PREVENT THE POTENTIAL MOVEMENT WHILE THE ADJOINING MATS ARE INSTALLED. ANCHORS SHOULD BE PLACED AT EVERY ANCHOR POINT (IF FEASIBLE) TO HELP MAINTAIN THE MAT IN ITS CURRENT POSITION.
9. AFTER THE FIRST MAT IS ANCHORED IN ITS PROPER PLACE, AN H BRACKET SHOULD BE PLACED AT THE END OF THE FIRST MAT BEFORE ANOTHER MAT IS PLACED ADJACENT TO THE FIRST MAT.
10. ONCE THE SECOND MAT IS PLACED ADJACENT TO THE FIRST MAT, MAKE SURE THE H BRACKET IS CORRECTLY SITUATED BETWEEN THE TWO MATS, AND SLIDE MATS TOGETHER.
11. NEXT THE CONNECTOR STRAPS SHOULD BE INSTALLED TO CONNECT THE TWO MATS TOGETHER.
12. UPON PLACEMENT OF EACH NEW MAT IN THE SYSTEM, THAT MAT SHOULD BE ANCHORED AT EVERY ANCHOR POINT TO HELP STABILIZE THE MAT AND ENSURE THE SYSTEM IS CONTINUOUS WITH NO GAPS IN BETWEEN THE MATS.
13. SUCCESSIVE MATS CAN THEN BE PLACED TO CREATE THE FODS TRACKOUT CONTROL SYSTEM REPEATING THE ABOVE STEPS.

USE AND MAINTENANCE
1. VEHICLES SHOULD TRAVEL DOWN THE LENGTH OF THE TRACKOUT CONTROL SYSTEM AND NOT CUT ACROSS THE MATS.
2. DRIVERS SHOULD TURN THE WHEEL OF THEIR VEHICLES SUCH THAT THE VEHICLE WILL MAKE A SHALLOW S-TURN ROUTE DOWN THE LENGTH OF THE FODS TRACKOUT CONTROL SYSTEM.
3. MATS SHOULD BE CLEANED ONCE THE VOIDS BETWEEN THE PYRAMIDS BECOME FULL OF SEDIMENT. TYPICALLY THIS WILL NEED TO BE PERFORMED WITHIN TWO WEEKS AFTER A STORM EVENT. BRUSHING IS THE PREFERRED METHOD OF CLEANING, EITHER MANUALLY OR MECHANICALLY.
4. THE USE OF ICE MELT, ROCK SALT, SNOW MELT, DE-ICER, ETC. SHOULD BE UTILIZED AS NECESSARY DURING THE WINTER MONTHS AND AFTER A SNOW EVENT TO PREVENT ICE BUILDUP.

REMOVAL
1. REMOVAL OF FODS TRACKOUT CONTROL SYSTEM IS REVERSE ORDER OF INSTALLATION.
2. STARTING WITH THE LAST MAT, THE MAT THAT IS PLACED AT THE INNERMOST POINT OF THE SITE OR THE MAT FURTHEST FROM THE EXIT OR PAVED SURFACE SHOULD BE REMOVED FIRST.
3. THE ANCHORS SHOULD BE REMOVED.
4. THE CONNECTOR STRAPS SHOULD BE UNBOLTED AT ALL LOCATIONS IN THE FODS TRACKOUT CONTROL SYSTEM.
5. STARTING WITH THE LAST MAT IN THE SYSTEM, EACH SUCCESSIVE MAT SHOULD THEN BE MOVED AND STACKED FOR LOADING BY FORKLIFT OR EXCAVATOR ONTO A TRUCK FOR REMOVAL FROM THE SITE.

B / C6 FODS (USE AS REQUIRED) MAY SUBSTITUTE ROCK CONSTRUCTION ENTRANCE NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) DEER STREET SHALL BE SWEEPED DAILY DURING THE ENTIRE CONSTRUCTION DURATION.

5) PROJECT CMMP WILL BE REQUIRED. CONSTRUCTION TEAM TO COORDINATE WITH CITY OF PORTSMOUTH.

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

JOHN A. CHAGNON NO. 7951 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

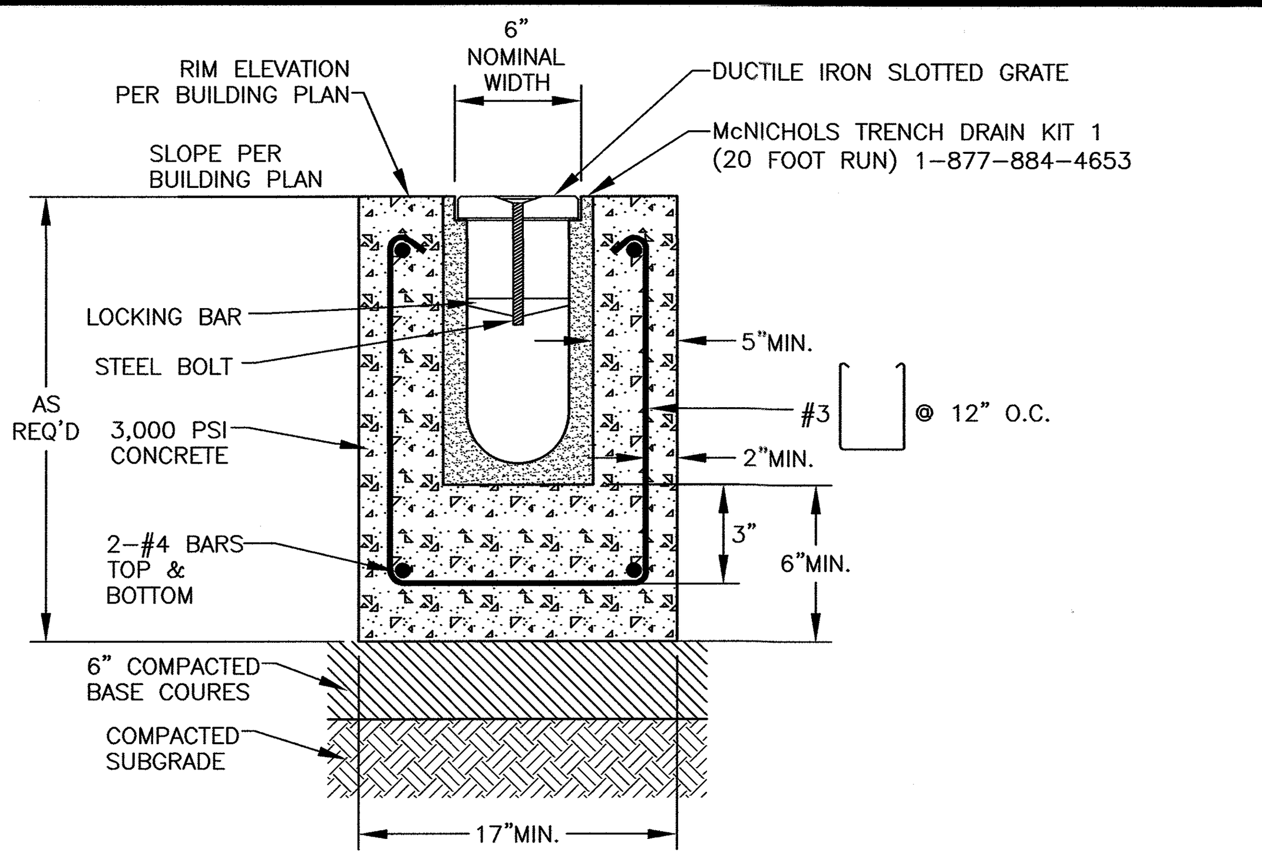
SCALE: AS SHOWN AUGUST 2022

EROSION PROTECTION NOTES AND DETAILS

D1

FB 265 PG 18

2271.04



D / C4 — TRENCH DRAIN DETAIL
EVAPORATIVE — NTS

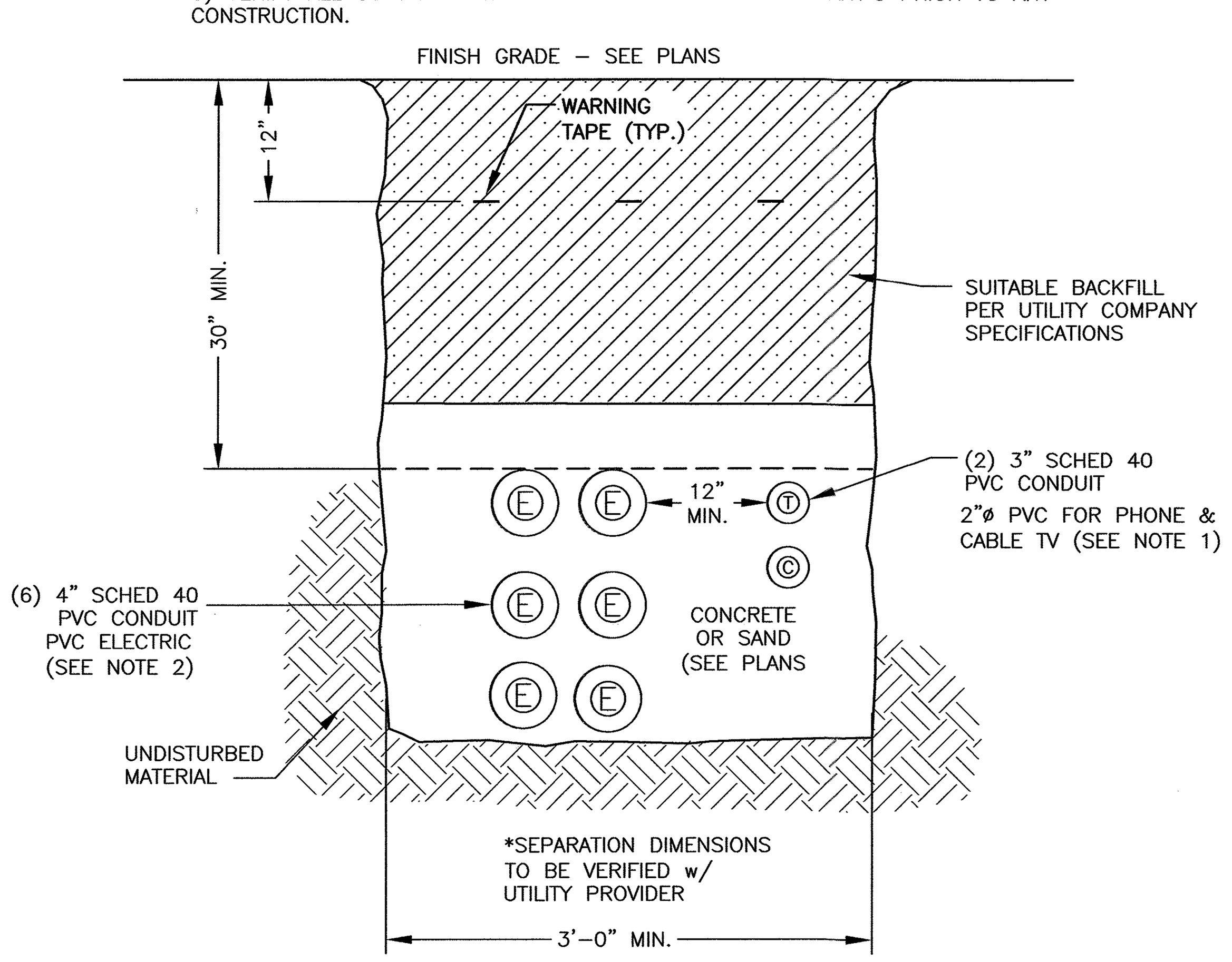
NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.

2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.

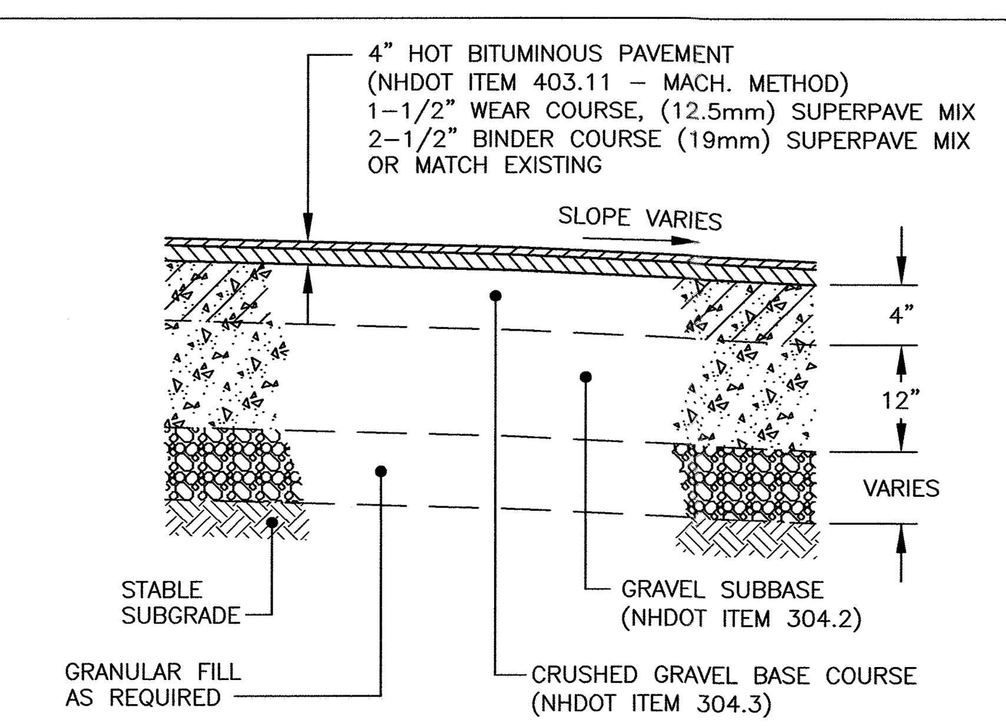
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)

4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT

5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANY'S PRIOR TO ANY CONSTRUCTION.

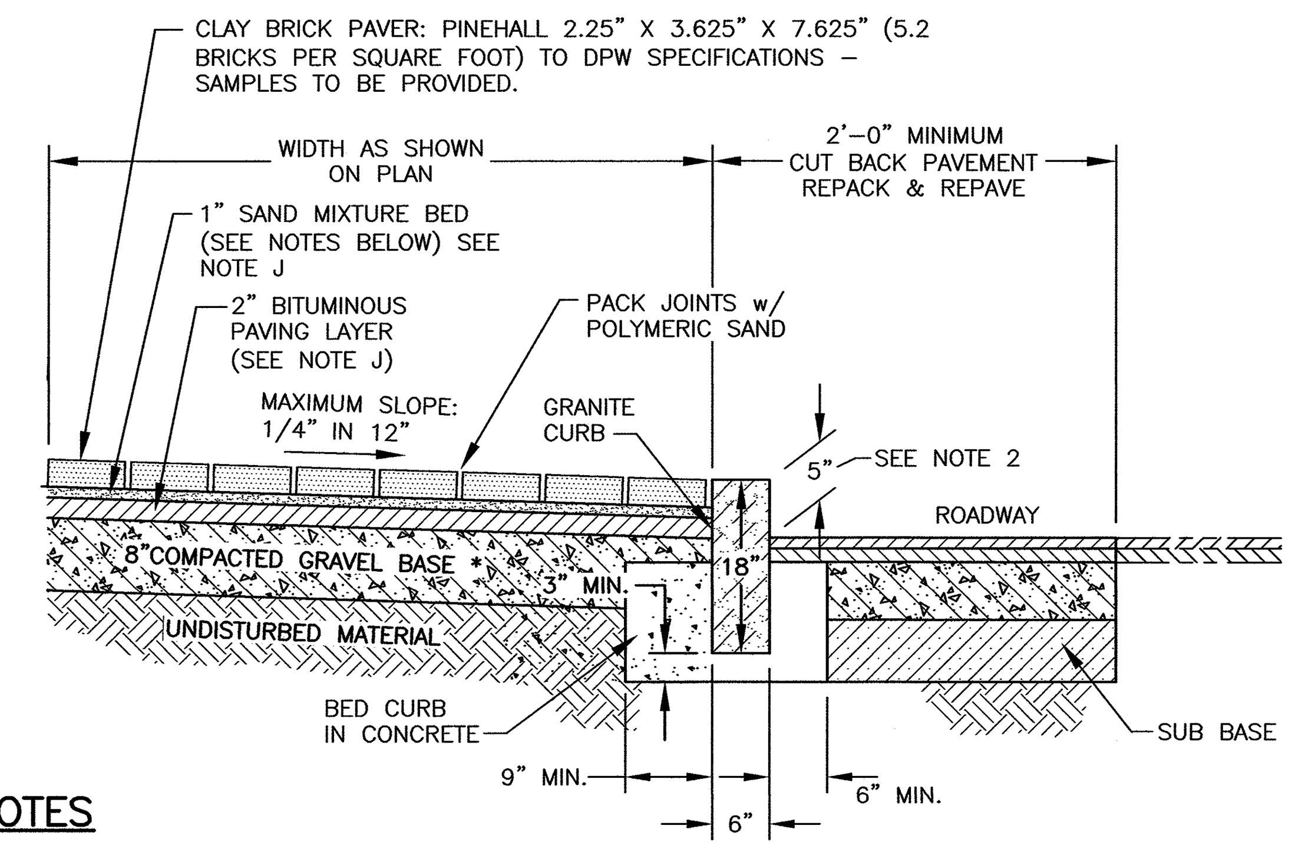


E / C5 — BURIED ELEC/COMM CABLE
(MAY NOT BE IN SAME TRENCH SEE PLANS) — NTS



F / C3 — TYPICAL PAVEMENT CROSS-SECTION
ON SITE PROPERTY ONLY — NTS

CONSTRUCTION NOTE:
EXISTING GRANITE CURB DISTURBED BY CONSTRUCTION SHALL BE REUSED AND ANY MISSING CURB SHALL BE REPLACED WITH NEW CURB MATCHING EXISTING CURB SIZE. NO CURB LESS THAN 3' IN LENGTH WILL BE ALLOWED.



BRICK PAVEMENT NOTES

SCOPE OF WORK:

1) THE WORK SHALL CONSIST OF CONSTRUCTING/RECONSTRUCTING THE SUB-BASE AND CONSTRUCTING A NEW BRICK SIDEWALK AS DIRECTED IN THE FIELD BY THE ENGINEER.
2) REVEAL SHALL BE 5" (COORDINATE WITH PORTSMOUTH DPW).

METHODS OF CONSTRUCTION:
A) ALL LABOR AND MATERIALS SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 608, AND CITY OF PORTSMOUTH SPECIFICATIONS FOR NEW BRICK SIDEWALK, SECTION 6.

B) ALL BRICKS SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD SPECIFICATIONS FOR BUILDING BRICKS: CLASS SX, TYPE 1, APPLICATION PX. THE BRICKS SHALL BE NO. 1, WIRE CUT TYPE FOR PAVING, WITH A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 POUNDS PER SQUARE INCH. THE BRICKS SHALL NOT BE CORED OR HAVE FROGS AND SHALL BE OF A STANDARD SIZE (2.25" X 4 X 8").

C) EXCAVATION FOR SIDEWALKS SHALL BE AT A DEPTH OF 10 INCHES BELOW FINISH GRADE. IN AREAS NOT BUTTING CURBING OR BUILDINGS, THE EXCAVATION SHALL BE 6 INCHES WIDER THAN THE FINISHED SIDEWALK WIDTH. AT ALL DRIVE CROSSINGS, THE DEPTH OF EXCAVATION SHALL BE INCREASED ACCORDINGLY. THE CONTRACTOR SHALL PROVIDE NEAT AND SQUARE CUTTING OF EXISTING ASPHALT ROAD SURFACE AS NEEDED. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT THE CONTRACTOR'S OWN EXPENSE.

D) THE BASE MATERIAL SHALL CONSIST OF A MIXTURE OF STONES OR ROCK FRAGMENTS AND PARTICLES WITH 100% PASSING THE 3 INCH SIEVE, 95% TO 100% PASSING THE 2 INCH SIEVE, 55% TO 85% PASSING THE 1 INCH SIEVE, AND 27% TO 52% PASSING THE NO. 4 SIEVE. AT LEAST 50% OF THE MATERIALS RETAINED ON THE 1 INCH SIEVE SHALL HAVE A FRACTURED FACE. THE BASE MATERIAL SHALL BE THOROUGHLY COMPACTED TO THE DEPTH SPECIFIED OR DIRECTED. IN THE WAY OF ALL DRIVE CROSSINGS THE BASE WILL BE INCREASED TO A COMPACTED DEPTH OF 12 INCHES. GRAVEL REQUIREMENTS FOR RECONSTRUCTION WILL BE AS DIRECTED, BASED ON SITE CONDITIONS. THE WORK INCLUDES BACKING UP ANY AND ALL CURB BEING INSTALLED BY OTHERS ON BOTH SIDES.

E) THE CLAY BRICK PAVERS SHALL BE LAID IN A 1 INCH BED OF A SAND MIXTURE COMPRISED OF: 3 PARTS SAND MIXED WITH 1 PART PORTLAND CEMENT.

F) THE CONTRACTOR SHALL LAY THE BRICKS SO THAT APPROXIMATELY 5.2 BRICKS SHALL COVER ONE SQUARE FOOT.

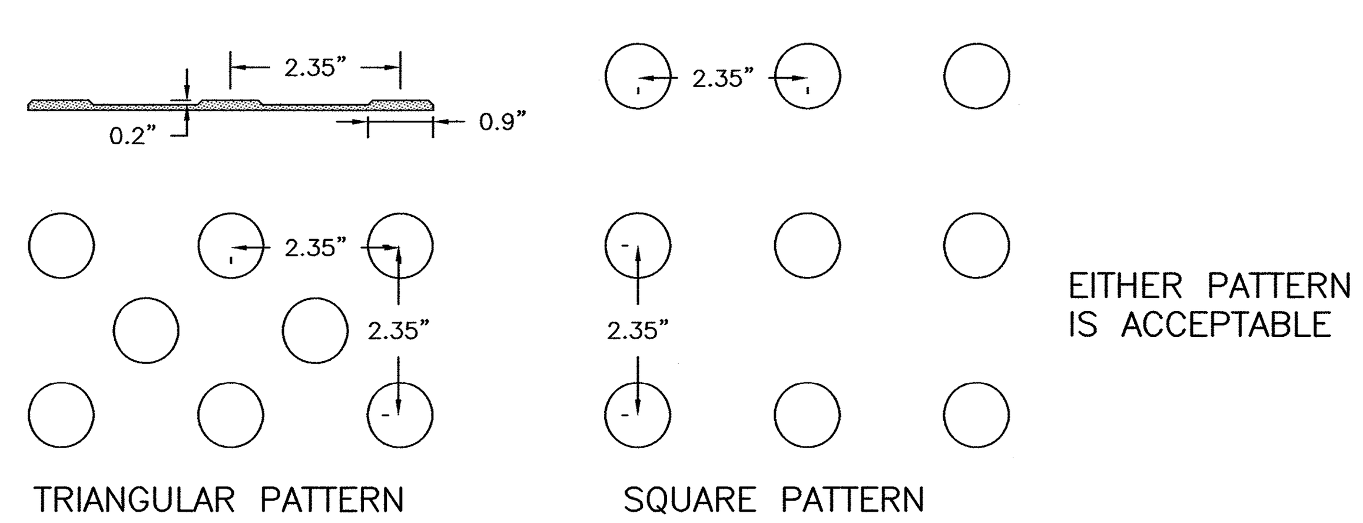
G) THE SIDEWALK SHALL PITCH TOWARDS THE STREET AS SHOWN ON THE GRADING PLAN.

H) IN AREAS WHERE THE FRONT OF THE BRICK SIDEWALK IS NOT ADJACENT TO GRANITE CURBING, THE CONTRACTOR SHALL INSTALL EDGING TO HOLD THE BRICKS IN PLACE. SUCH EDGING SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

I) THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE BRICKS FOR APPROVAL BY THE CITY BEFORE BRICKS ARE INSTALLED.

J) 2" BITUMINOUS PAVING LAYER MAY BE SUBSTITUTED WITH 2" COMPACTED GRAVEL ON SITE AREAS THAT ARE PRIVATE PROPERTY AND NOT IN PUBLIC EASEMENT AREAS INCLUDING COMMUNITY SPACE.

G / C3 — BRICK SIDEWALK w/ VERTICAL GRANITE CURB
(STONE DUST BEDDING OVER BITUMINOUS PAVING) — NTS



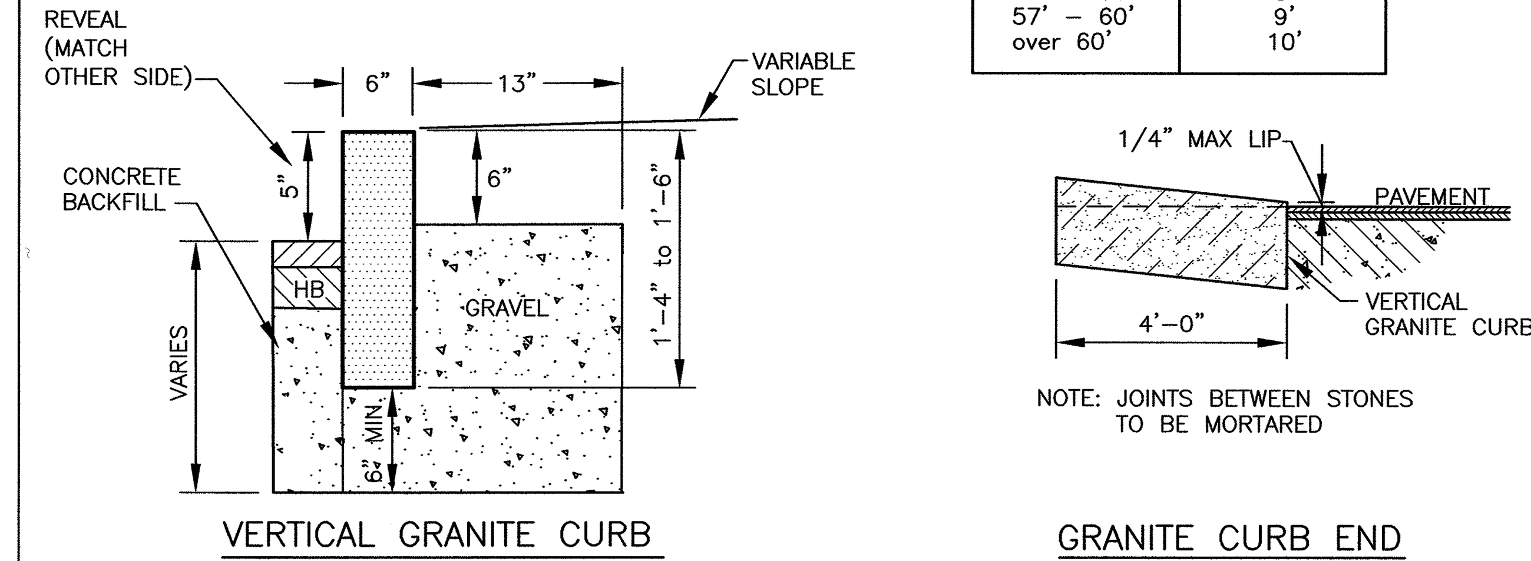
NOTE:
1. CURB RAMPS MUST HAVE A DETECTABLE WARNING FEATURE EXTENDING THE FULL WIDTH OF THE RAMP, A HEIGHT OF NOMINAL 0.2", THE DETECTABLE SURFACE MUST CONSIST OF RAISED TRUNCATED SPACING OF NOMINAL 2.35". THE TEXTURE OF THE DETECTABLE WARNING FEATURE MUST CONTRAST VISUALLY WITH THE SURROUNDING SURFACES (LIGHT-ON-DARK OR DARK-ON-LIGHT).
2. DETECTABLE WARNING SURFACE SHALL BE IRON PANEL TO FILL THE SPACE SHOWN ON THE SITE PLAN.

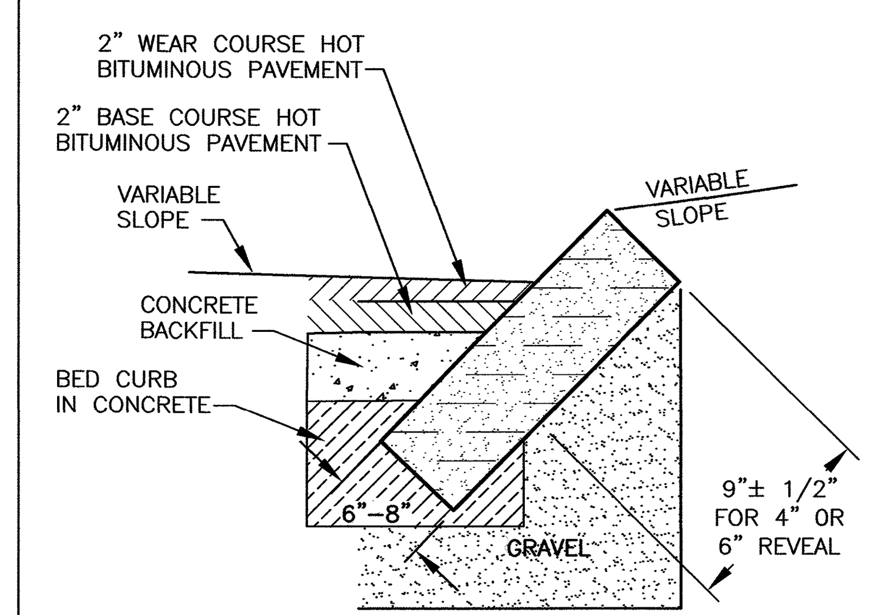
H / C3 — DETECTABLE WARNING SURFACE
24" WIDE — NTS

MIN. LENGTH OF CURB STONES 3FT.
MAX. LENGTH OF CURB STONES 10FT.
MAX. LENGTH OF STRAIGHT CURB STONES LAID ON CURVES SEE CHART

NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

Radius	Max. length
21'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
over 60'	10'



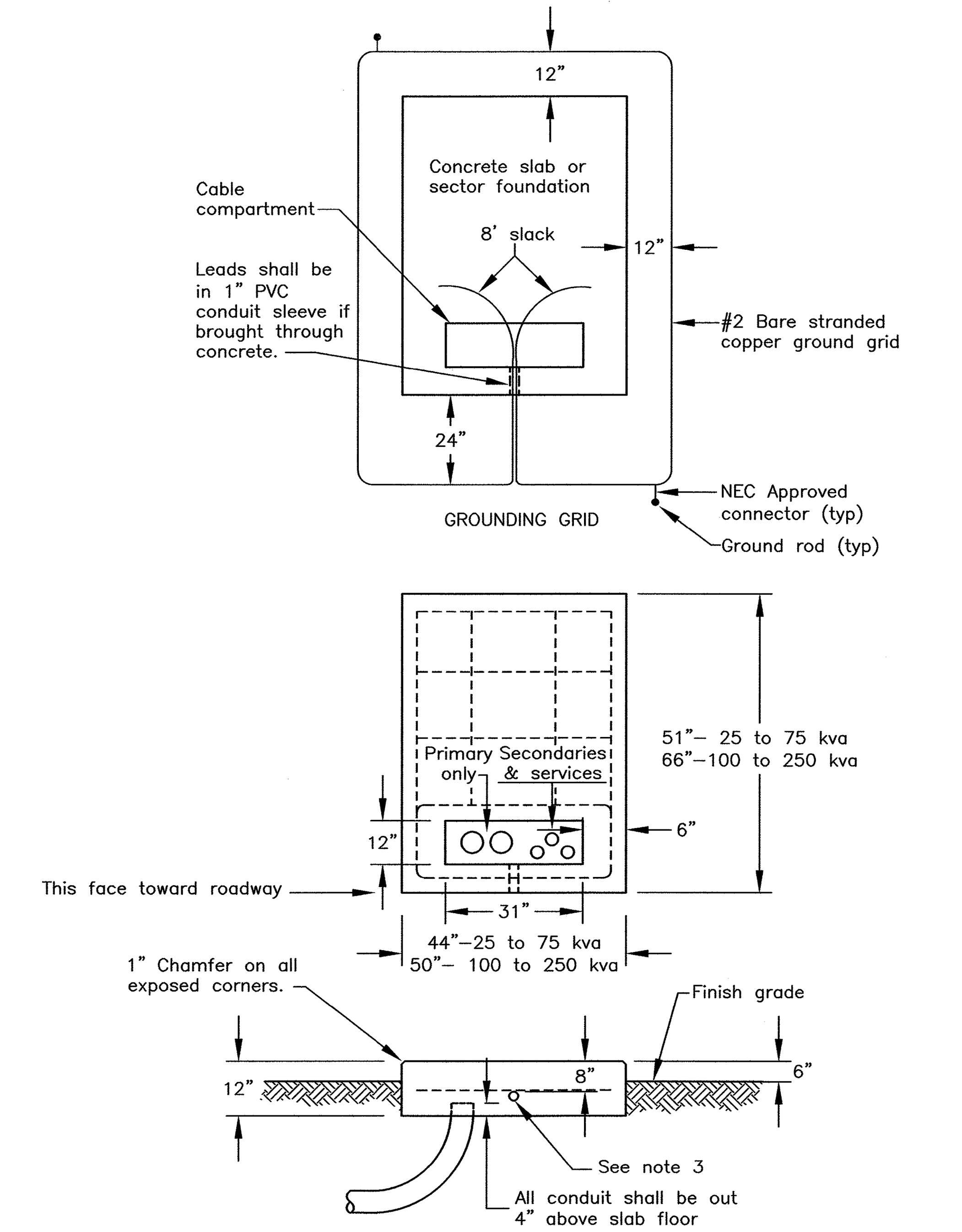


MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT.
MAX. LENGTH OF STRAIGHT STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

Radius for stones with square joints	Maximum length
16' - 28'	6" - 1'
29' - 41'	2'
42' - 55'	3'
56' - 68'	4'
69' - 82'	5'
83' - 96'	6'
97' - 110'	7'
over 110'	8'

TIP GRANITE CURB

I / C3 — GRANITE CURBING DETAILS
WHERE AND IF SPECIFIED — NTS



NOTES
1. See sheet "Requirements for Padmounted Transformer Slab Details".
2. All reinforcing to be #6 bars.
3. 1" PVC conduit sleeve for ground grid leads.
4. The ground grid shall be supplied and installed by the customer and is to be buried at least 12" below grade. Eight feet of extra wire for each ground grid leg shall be left exposed in the cable compartment to allow for the connection to the transfomer. the two 8' ground rods may be either galvanized steel or copperweld and they shall be connected to the grid with NEC approved connectors.

J / C5 — TRANSFORMER PAD
EVERSOURCE — NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:
1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

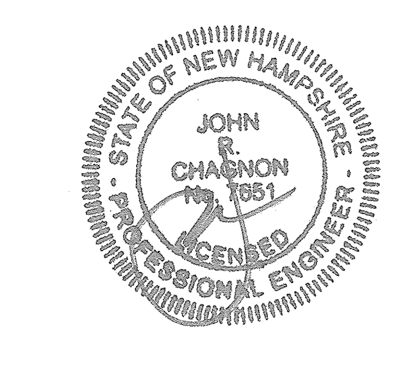
2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	DETAIL G	9/6/22
0	ISSUED FOR COMMENT	8/23/22

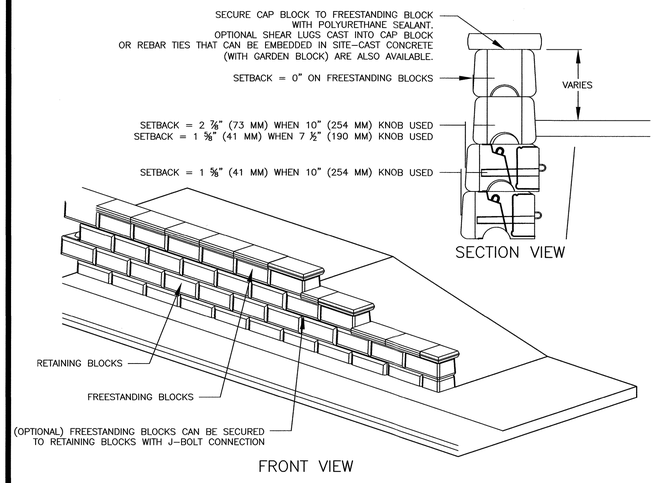
REVISIONS



SCALE: AS SHOWN — AUGUST 2022

DETAILS — D2

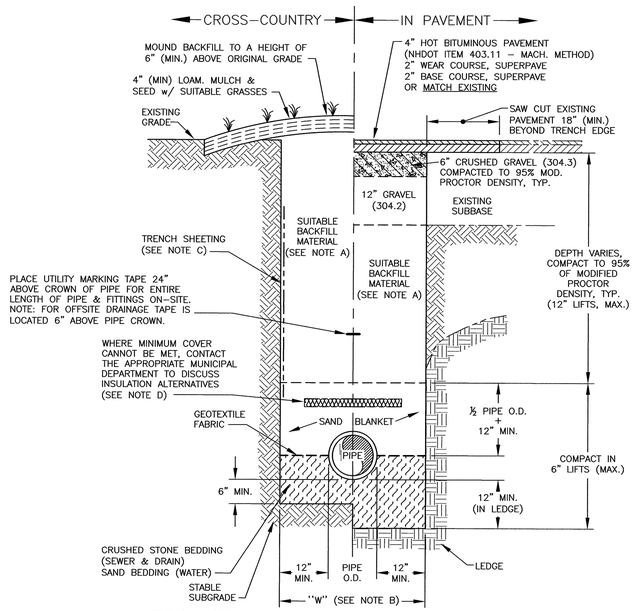
FB 265 PG 18 — 2271.04



K / C3 SMALL BLOCK RETAINING WALL

GENEST – BRUSSELS – UNILOCK WALL
COORDINATE COLOR WITH OWNER

NTS



TRENCH NOTES:

A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

– IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

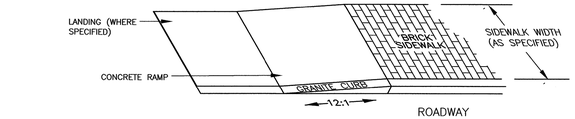
C) TRENCH SHEETING:
THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFE EXCAVATION PRACTICES.

D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
5' MINIMUM FOR SEWER (IN PAVEMENT)
4' MINIMUM FOR SEWER (CROSS COUNTRY)
3' MINIMUM FOR STORMWATER DRAINS
5' MINIMUM FOR WATER MAINS

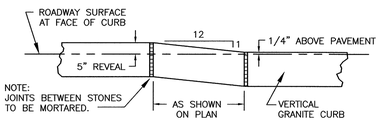
E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

M / C5 TYPICAL PIPE TRENCH

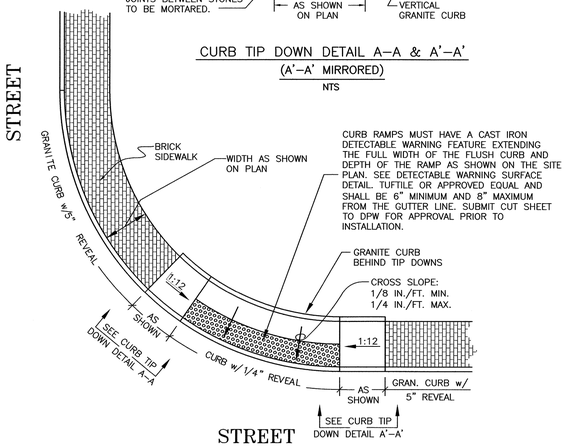
NTS



SIDEWALK TIP DOWN
(NON INTERSECTION) NTS

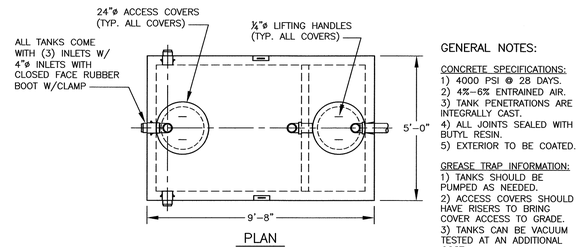


CURB TIP DOWN DETAIL A–A & A'–A'
(A'–A' MIRRORED)
NTS



STREET
SIDEWALK TIP DOWN AT INTERSECTION
NTS

0 / C3 TYPICAL SIDEWALK TIP DOWNS

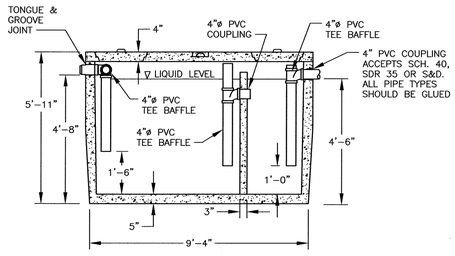


PLAN

GENERAL NOTES:

CONCRETE SPECIFICATIONS:
1) 4000 PSI @ 28 DAYS.
2) 4%–6% ENTRAINED AIR.
3) TANK PENETRATIONS ARE INTEGRALLY CAST.
4) ALL JOINTS SEALED WITH BUTYL RESIN.
5) EXTERIOR TO BE COATED.

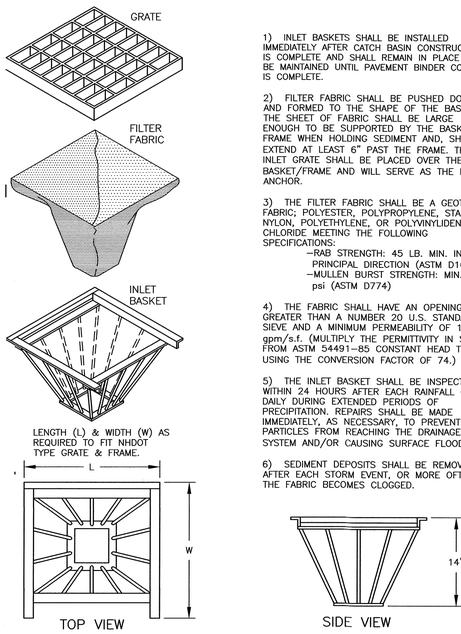
GREASE TRAP INFORMATION:
1) TANKS SHOULD BE PUMPED AS NEEDED.
2) ACCESS COVERS SHOULD HAVE RISERS TO BRING COVER ACCESS TO GRADE.
3) TANKS CAN BE VACUUM TESTED AT AN ADDITIONAL COST.



SECTION

P / C5 SHEA CONCRETE
1000 GALLON 2 COMP. GREASE TRAP
14,825 Lbs
ITEM # M1000H
H20 LOAD RATED

NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
– RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
– MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

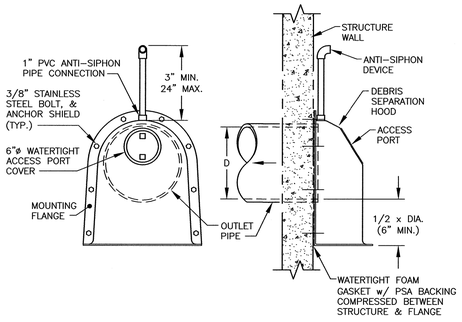
4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.–1 FROM ASTM 54491–85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

L / C6 CATCH BASIN INLET BASKET

NTS



FRONT VIEW SIDE VIEW

N / C6 CATCH BASIN OUTLET HOOD
THE "SNOUT"

NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SITE DEVELOPMENT EIGHTKPH, LLC 70 MAPLEWOOD AVENUE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	DETAIL K	10/20/22
1	DETAIL O & P	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

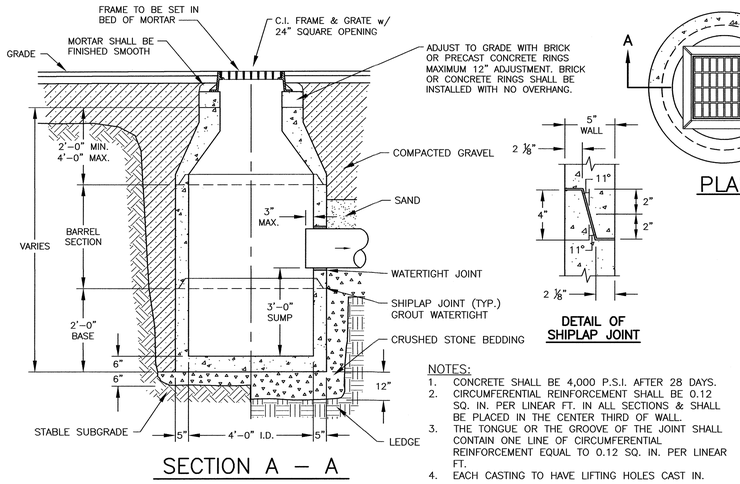
SCALE: AS SHOWN AUGUST 2022

DETAILS

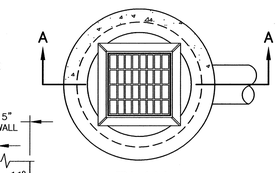
D3

FB 265 PG 18

2271.04



SECTION A – A

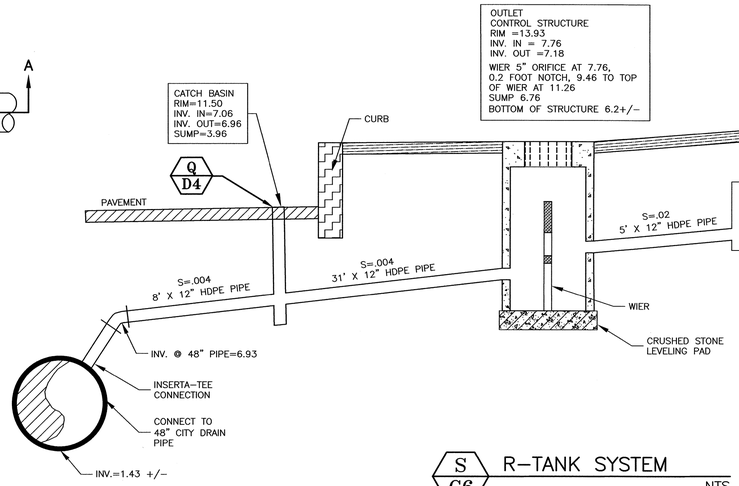


DETAIL OF SHIPLAP JOINT

NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

Q / C6 CATCH BASIN DETAIL

NTS

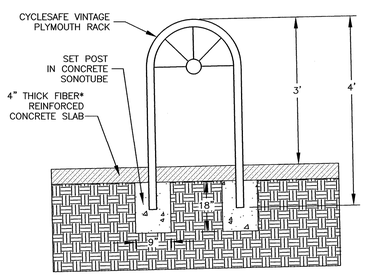


S / C6 R–TANK SYSTEM

NTS

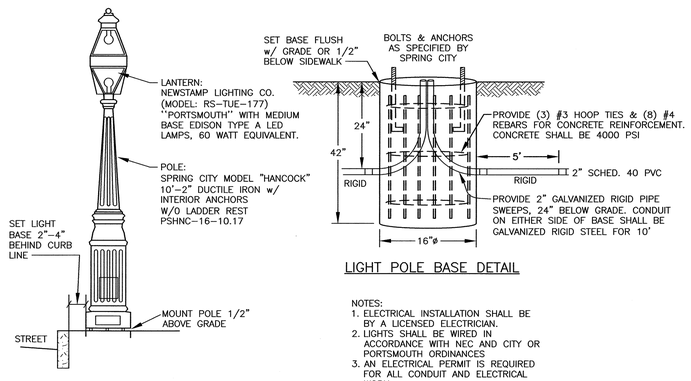
R-TANK SYSTEM	
1. BASE STONE STORAGE NOT INCLUDED IN VOLUMES.	
2. COVER STONE STORAGE NOT INCLUDED IN VOLUMES.	
R-TANK MODULE TYPE	DOUBLE
TRAFFIC LOAD	PEDESTRIAN
# OF DOUBLE R-TANKS	40
TOTAL SYSTEM STORAGE	604.7 CF
R-TANK STORAGE VOLUME	330.1 CF
STONE STORAGE VOLUME (40% VOID RATIO)	274.6 CF
TOP OF COVER STONE ELEV. (12")	11.93
ACF BX-12 GEOGRID ELEV.	11.93
TOP OF R-TANK ELEV.	10.93
TANK INVERT IN	10.16
INVERT OF STONE BASE (3") OUT	7.86
MIN. STONE PERIMETER WIDTH 2.0 FT	2.0 FT
SYSTEM IS 27.46 FT LONG BY 9.25 FT WIDE, INCLUDING APRON	

*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C1116, TYPE 111, PAR.4.1.3 OR EQUAL. APPLIED @ 1 LB. PER C.Y.



R / C3 BIKE RACK

NTS



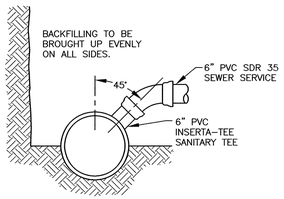
LIGHT POLE BASE DETAIL

LIGHT POLE DETAIL

NOTES:
1. ELECTRICAL INSTALLATION SHALL BE BY A LICENSED ELECTRICIAN.
2. LIGHTS SHALL BE WIRED IN ACCORDANCE WITH NEC AND CITY OR PORTSMOUTH ORDINANCES
3. AN ELECTRICAL PERMIT IS REQUIRED FOR ALL CONDUIT AND ELECTRICAL WORK.

U / C3 LIGHT POLE & BASE DETAILS

CITY STANDARD NTS



SECTION

T / C5 SEWER SERVICE CONNECTION DETAIL

NTS

NOTE: COORDINATE DESIGN OF SEWER CONNECTION WITH CITY OF PORTSMOUTH DPW. PROVIDE SHOP DRAWINGS FOR REVIEW.

GENERAL NOTES:

1) MINIMUM PIPE SIZE FOR HOME SERVICES SHALL BE SIX INCHES.

2) PIPE AND JOINT MATERIALS:
A. PLASTIC SEWER PIPE
1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T–1 & T–2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T–1 To T–3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
AWWA C900	PVC (SOLID WALL)	8" THROUGH 18"

*PVC: POLYVINYL CHLORIDE

2. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D–3212 AND SHALL BE PUSH–ON BELL AND SPIGOT TYPE.

B. DUCTILE IRON PIPE, FITTINGS AND JOINTS.
1. DUCTILE IRON PIPE AND FITTINGS FOR SEWERS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A–536 DUCTILE IRON CASTINGS.
A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOULDS OR SAND LINED MOULDS FOR SEWER APPLICATIONS.
2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE DEPENDING ON THE PIPE ENCOUNTERED, FOR PVC PIPE, USE PVC SADDLES OR INSERT–A–TEE, OR CUT IN A SANITARY TEE. FOR CLAY PIPE, USE INSERT–A–TEE OR CUT IN A SANITARY TEE. ALL WORK TO BE APPROVED BY GOVERNING BODY.

6) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND REFILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.
THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: WHEN REQUIRED BY THE GOVERNING AUTHORITY, TESTING SHALL CONFORM TO ENV–WQ 704.07.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM DWELLING TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE, UNLESS IT IS ON A SHELF 12" HIGHER, AND 18" APART.

GENERAL NOTES– CONT'D:

10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE, FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90%– 100% PASSING	3/4 INCH SCREEN
20%– 55% PASSING	3/8 INCH SCREEN
0%– 10% PASSING	#4 SIEVE
0%– 5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1–1/2 INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.
12) CAST–IN–PLACE CONCRETE: SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:
CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG OF CEMENT
MAXIMUM AGGREGATE SIZE: 3/4 INCH

13) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION OR MAIN. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

14) BACKFILL UP TO SUBBASE GRAVEL SHALL BE WITH EXCAVATED SOIL FROM TRENCHING OPERATIONS. COMPACT IN 8" LIFTS WITH VIBRATORY PLATE COMPACTORS TO 90% OF MODIFIED PROCTOR DENSITY. IF FINE–GRAINED, COMPACT WITH POGO STICKS OR SHEEPSFOOT ROLLERS. PLACE NO LARGE ROCKS WITHIN 24" OF PIPE. TRENCHES THAT ARE NOT ADEQUATELY COMPACTED SHALL BE RE–EXCAVATED AND BACKFILLED UNDER THE SUPERVISION OF THE DESIGN ENGINEER OR GOVERNING BODY. UNSUITABLE BACKFILL MATERIAL INCLUDES CHUNKS OF PAVEMENT, TOPSOIL, ROCKS OVER 6" IN SIZE, MUCK, PEAT OR PIECES OF PAVEMENT.

15) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB–SITE SAFETY AND COMPLIANCE WITH GOVERNING REGULATIONS.

16) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE TRENCH DETAIL.
17) SAND BLANKET: CLEAN SAND, FREE FROM ORGANIC MATTER, SO GRADED THAT 90% – 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.

18) BASE COURSE GRAVEL, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.

19) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

20) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.

21) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

22) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION.

23) THE PURPOSE OF THESE NOTES IS TO DETAIL STANDARDS FOR SEWER CONSTRUCTION.

24) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV–WQ 704 DESIGN OF SEWERS.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	DETAIL U	11/17/22
2	DETAIL R & S	10/20/22
1	PIPE SIZES; DETAIL T	9/6/22
0	ISSUED FOR COMMENT	8/23/22

REVISIONS

JOHN R. CHAGNON NO. 7861 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: AS SHOWN AUGUST 2022

DETAILS

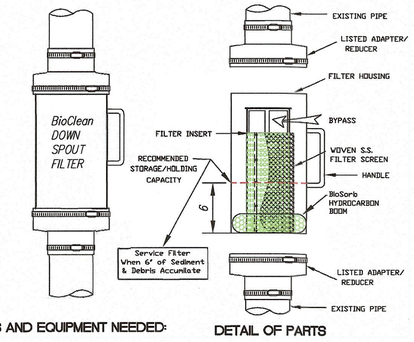
D4

FB 265 PG 18

2271.04

SERVICE MANUAL
(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

TOOLS AND EQUIPMENT NEEDED:

1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia. (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

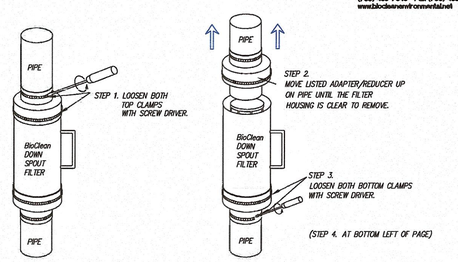
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

REMOVING FILTER

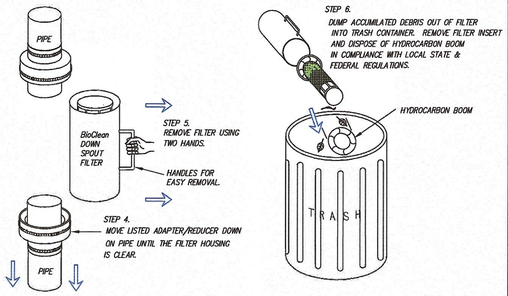
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



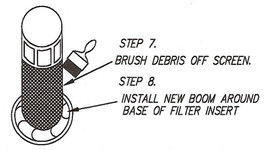
(STEP 4. AT BOTTOM LEFT OF PAGE)

CLEANING FILTER

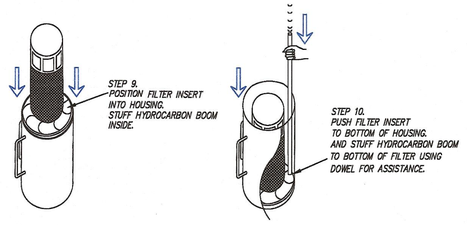


Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



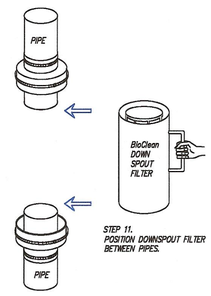
REPLACING FILTER INSERT

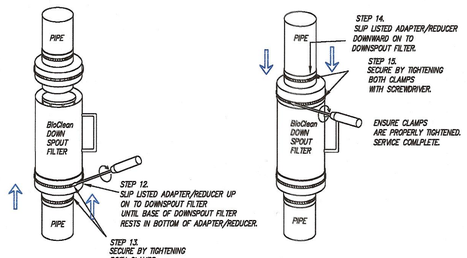


REPLACING FILTER

Bio Clean
A Forterra Company

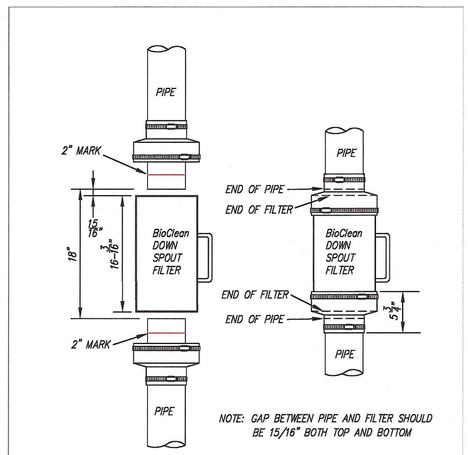
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net





APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

R-TANK SYSTEM

STEP-BY-STEP INSPECTION & MAINTENANCE ROUTINE

1) INSPECTION
   - A. INSPECTION PORT
     1. REMOVE CAP
     2. USE FLASHLIGHT TO DETECT SEDIMENT DEPOSITS
     3. IF PRESENT, MEASURE SEDIMENT DEPTH WITH STADIA ROD
     4. RECORD RESULTS ON MAINTENANCE LOG
     5. REPLACE CAP
   - B. MAINTENANCE PORT/S
     1. REMOVE CAP
     2. USE FLASHLIGHT TO DETECT SEDIMENT DEPOSITS
     3. IF PRESENT, MEASURE SEDIMENT DEPTH WITH STADIA ROD
     4. RECORD RESULTS ON MAINTENANCE LOG
     5. REPLACE CAP
     6. REPEAT FOR ALL MAINTENANCE PORTS
   - C. ADJACENT MANHOLES
     1. REMOVE COVER
     2. USE FLASHLIGHT TO DETECT SEDIMENT DEPOSITS
     3. IF PRESENT, MEASURE SEDIMENT DEPTH WITH STADIA ROD, ACCOUNTING FOR DEPTH OF SUMP (IF PRESENT)
     4. INSPECT PIPES CONNECTING TO R-TANK
     5. RECORD RESULTS ON MAINTENANCE LOG
     6. REPLACE COVER
     7. REPEAT FOR ALL MANHOLES THAT CONNECT TO THE R-TANK
2) MAINTENANCE
   - A. PLUG SYSTEM OUTLET TO PREVENT DISCHARGE OF BACK-FLUSH WATER
   - B. DETERMINE BEST LOCATION TO PUMP OUT BACK-FLUSH WATER
   - C. REMOVE CAP FROM MAINTENANCE PORT
   - D. PUMP WATER AS RAPIDLY AS POSSIBLE (WITHOUT OVER-TOPPING PORT) INTO SYSTEM UNTIL AT LEAST 1" OF WATER COVERS SYSTEM BOTTOM.
   - E. REPLACE CAP
   - F. REPEAT AT ALL MAINTENANCE PORTS
   - G. PUMP OUT BACK-FLUSH WATER TO COMPLETE BACK-FLUSHING
   - H. VACUUM ALL ADJACENT STRUCTURES AND ANY OTHER STRUCTURES OR STORMWATER PRE-TREATMENT SYSTEMS THAT REQUIRE ATTENTION.
   - I. SEDIMENT-LADEN WATER MAY BE CAPTURED FOR DISPOSAL OR PUMPED THROUGH A DIRTBAG™.
   - J. REPLACE ANY REMAINING CAPS OR COVERS
   - K. RECORD THE BACK-FLUSHING EVENT IN YOUR MAINTENANCE LOG WITH ANY RELEVANT SPECIFICS

STORMWATER SYSTEM MAINTENANCE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMPS THAT MAY BE FOUND ON THIS PROJECT.

GRASSED AREAS (UNTIL ESTABLISHED): AFTER EACH RAIN EVENT OF 0.5" OR MORE DURING A 24-HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDE WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE THE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF THE VEGETATED COVERS, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

BIO CLEAN DOWNSPOUT FILTER: REFER TO THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUAL FOR GUIDANCE, INCLUDED HEREWITH.

ACF R-TANK STORMWATER STORAGE SYSTEM: REFERENCE THE ATTACHED OPERATIONS AND MAINTENANCE MANUAL FOR PROPER MAINTENANCE OF THE SYSTEM.

OUTLET CONTROL STRUCTURES AND STORM DRAINS: MONITOR ACCUMULATION OF DEBRIS IN OUTLET CONTROL STRUCTURES MONTHLY OR AFTER SIGNIFICANT RAIN EVENTS. REMOVE SEDIMENTS WHEN THEY ACCUMULATE WITHIN THE OUTLET PIPE. DURING CONSTRUCTION, MAINTAIN INLET PROTECTION UNTIL ALL ROADWAYS AND PARKING AREAS HAVE BEEN STABILIZED. PRIOR TO THE END OF CONSTRUCTION, INSPECT THE DRAINS AND BASINS FOR ACCUMULATIONS AND REMOVE AND CLEAN BY JET-VACUUMING.

SITE DEVELOPMENT
EIGHTKPH, LLC
70 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

0	ISSUED FOR COMMENT	10/20/22
NO.	DESCRIPTION	DATE

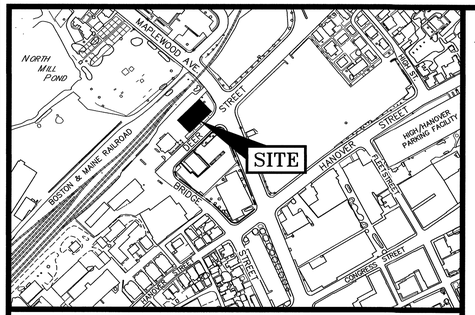
REVISIONS

SCALE: AS SHOWN AUGUST 2022

DETAILS D5

FB 265 PG 18

2271.04



LOCATION MAP SCALE: 1" = 300'

LEGEND:

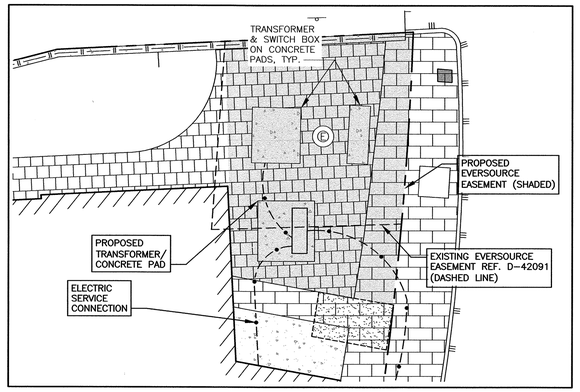
N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
(11/21)	MAP 11/LOT 21
○ IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
◉ DH FND	DRILL HOLE FOUND
◉ DH SET	DRILL HOLE SET
▪ NHHB	NHDOT BOUND FOUND
▪ TB	TOWN BOUND
▪ BND w/DH	BOUND WITH DRILL HOLE
▪ ST BND w/DH	STONE BOUND WITH DRILL HOLE

PLAN REFERENCES:

1) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D-39699.

2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.

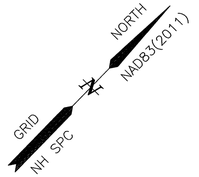
3) EASEMENT PLAN TAX MAP 125– LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.



EVERSOURCE EASEMENT REVISION

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS



(164/4)
N/F
BOSTON AND MAINE CORPORATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862
5970/1686

BOSTON & MAINE RAILROAD

MAPLEWOOD AVE.

ACCESS EASEMENT RCRD D-42091 6348/2213 (18&19) 6347/1862 (1.20)

PROPOSED EXPANSION OF DRAINAGE EASEMENT TO THE CITY OF PORTSMOUTH

N43°06'02"E 132.64'

N31°17'20"E 39.07'

N30°51'54"E 56.64'

N43°06'02"E 61.50'

L2

L4

N31°26'32"E 17.92'

N43°07'25"E 47.08'

TRANSFORMER & SWITCH BOX ON CONCRETE PADS, TYP.

PROPOSED TRANSFORMER/ CONCRETE PAD

ELECTRIC SERVICE CONNECTION

PRIVACY FENCE UNDER DECK

DECK

STAND PIPE

BOLLARD, TYP.

125/17-2

#163
2 STORY WOOD FRAME BANK BUILDING

#70

PROPOSED 4 STORY WITH A PENTHOUSE BUILDING 17,093 S.F.

COMMERCIAL & RESIDENTIAL

LOWER LEVEL: FF=10.5
FIRST LEVEL:
FF=13.0
FF=14.0
FF=15.0
FF=19.5
SECOND, THIRD, & FOURTH LEVEL:
FF=30.5/42.0/53.5
PENTHOUSE: FF=65.0

125/17-3

PROPOSED UNDERGROUND ELECTRIC 3X2-5" CONDUIT-LOOP AROUND LIGHT POLE

N46°52'59"W 116.96'

20' DRAIN LINE EASEMENT

N46°39'37"W 96.71'

PROPOSED 13'X7' ELECTRIC MANHOLE

PROPOSED PULL BOX FOR SECONDARIES

LSA LSA LSA LSA

WALKWAY

PROPOSED DOOR, TYP.

PRIMARY & SECONDARY FEED FOR FUTURE CONNECTIONS

PROPOSED STREET LIGHT CIRCUIT

PROPOSED STREET LIGHT CIRCUIT

S46°12'15"W 31.25'

S46°12'15"W 140.70'

S45°38'07"W 104.52'

N87°45'09"W 20.15'

C3

C4

C5

PROPOSED EASEMENT TO EVERSOURCE

PEDESTRIAN CROSSING PUSH BOX

NOTE: TRAFFIC SIGNALS ELECTRICAL SERVICE IS FED FROM EXISTING CIRCUIT FROM THE EAST

ELECTRIC HAND HOLE

DEER STREET

(125/21)
N/F
PORT HARBOR LAND, LLC
1000 MARKET STREET BUILDING ONE
PORTSMOUTH, NH 03801
6044/14

POTENTIAL ELECTRIC SERVICE TO 238 DEER

TRAFFIC LIGHT, TYP.

LENGTH TABLE–LOT 17–2

LINE	BEARING	DISTANCE
L2	N43°06'02"E	14.81'
L3	S46°46'25"E	7.69'

CURVE TABLE–LOT 17–2

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C3	86.00'	25.48'	25.39'	S10°41'12"W	16°58'41"

LENGTH TABLE–LOT 17–3

LINE	BEARING	DISTANCE
L4	N31°26'32"E	17.92'

CURVE TABLE–LOT 17–3

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C4	486.00'	104.20'	104.00'	S35°55'41"E	12°17'05"
C5	37.00'	48.72'	45.28'	S07°56'11"W	75°26'43"

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

JOHN R. CHAGNON, LLS 738 — DATE 12.1.22

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

JOHN R. CHAGNON, LLS #738 — DATE 12.1.22

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 738 JOHN R. CHAGNON

GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOTS 17–2 AND 17–3.

2) OWNER OF RECORD:
EIGHTKPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS (ALSO SEE ORDINANCE):
CHARACTER DISTRICT 5:

MIN. LOT AREA:	NO REQUIREMENT
FRONTAGE:	NO REQUIREMENT
SETBACKS:	
FRONT (MAX.)	5 FEET (PRIMARY)
FRONT (MAX.)	5 FEET (SECONDARY)
SIDE	NO REQUIREMENT
REAR	GREATER OF 5 FEET FROM REAR LOT LINE OR 10 FEET FROM CENTER OF ALLEY
MAXIMUM STRUCTURE HEIGHT:	SEE CITY PLAN
MAXIMUM STRUCTURE COVERAGE:	90%
MAXIMUM BUILDING FOOTPRINT:	20,000 S.F.
MINIMUM OPEN SPACE:	5%
MINIMUM FRONT LOT LINE BUILDOUT:	80%

5) LOT AREAS: 125/17–2
18,347 S.F.
0.4212 ACRES

125/17–3
22,667 S.F.
0.5204 ACRES

6) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED EASEMENTS ON TAX MAP 125, LOTS 17–2 AND 17–3 IN PORTSMOUTH, NH.

NO.	DESCRIPTION	DATE
1	ADD ACCESS EASEMENT	12/1/22
0	ISSUED FOR COMMENT	11/17/22

REVISIONS

ELECTRICAL UTILITY & DRAINAGE EASEMENT PLAN
TAX MAP 125
LOTS 17–2 & 17–3

OWNER:

EIGHTKPH, LLC

TO BENEFIT: EVERSOURCE AND THE CITY OF PORTSMOUTH

PROPERTY LOCATED AT:
70 MAPLEWOOD AVENUE & 163 DEER STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1"=20' NOVEMBER 2022

FB 265 PG 18 — 2271.04

DRAINAGE ANALYSIS

SITE DEVELOPMENT

88 MAPLEWOOD AVE.
PORTSMOUTH, NH

PREPARED FOR
EIGHTKPH, LLC.

23 AUGUST 2022

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED
PROFESSIONAL ENGINEER

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jrc@ambitengineering.com
(Ambit Job Number 2271.04)

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed building at 88 Maplewood Ave in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 125 as Lot 17-3. The project proposes to replace the current building and associated parking lot. The total size of the lot together is 22,667 square-feet (0.520 acres). The size of the total drainage area is 26,073 square-feet (0.599 acres).

The site plans will provide for the future construction of a new building, with associated landscaping, utilities, and underground parking. The new building will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 125 as Lot 17-3. Bounding the site to north is a railroad and then a cemetery. Bounding the site to east is Maplewood Ave. Bounding the site to south is Deer Street. Bounding the site to the west is an existing Banking facility with drive-up window. A vicinity map is included in the Appendix to this report. The existing building and associated parking lot will be demolished.

This report includes information about the existing site and the proposed construction necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for

the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire."

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of two soil types:

Soil Symbol	Soil Name and Slopes
699	Urban land
799	Urban land – Canton Complex (3-15% slopes)

Canton complex is well drained with a stated depth to water table and restrictive feature of more than 80 inches. However, due to the primary urban fill component of the soil, as well as the proximity to North Mill Pond, the Hydrologic Soil Group will be assumed to be D.

The physical characteristics of the site consist of flat (0-15%) grades that generally slope from the northeast to the southwest. Elevations on the site range from 12 to 15 feet above sea level. The existing site is developed and includes an existing building located in the center of the lot, with an asphalt parking lot to the north. Vegetation around the developed portion of the lot consists of established grasses.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259F (effective date January 29, 2021), the project site is

located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as two watershed basins (E1 and E2) based on localized topography and discharge location. Subcatchment E1 contains the southwesterly part of the lot and drains to the southwest. Subcatchment E2 contains a much smaller northeasterly part of the lot and drains north. Subcatchments E1 and E2 drain to discharge points DP1 and DP2, respectively.

The "Deer Street Outfall Drainage Evaluation" published October 17, 2018, raises concerns about the existing pipe to which both discharge points are currently connected. From the report: "Based on the evaluations described above, and in detail in the following report, we have concluded additional drainage capacity is needed now and in the future at the Deer Street Outfall." The report estimates that the pipe nearest the site (from DMH 4980) will flow at capacity during the 10-year storm event, and several of the surrounding pipes in the drainage network will be surcharged. The possibility was raised that part of this flow be diverted through an additional outlet pipe through Maplewood Ave. Therefore, a stormwater design that diverts drainage toward the Maplewood Ave. drainage network would be advantageous toward such an outlet pipe, by easing the peak flow off of the existing infrastructure.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	To Design Point
E1	23,085	5.0	94	4.14	6.39	DP1
E2	2,987	5.0	87	0.48	0.78	DP2

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as three subcatchment basins, (P1, P1a and P2). Subcatchments P1 and P1a are related to the area of subcatchment E1, but are much smaller. Subcatchment P1a contains half the roof of the proposed building. Subcatchment P2 is related to the area of subcatchment E2, but now takes up about half the drainage area. Subcatchments P1 and P2 drain to Discharge Points DP1 and DP2, respectively. Note that Subcatchment P2 drains toward Maplewood Ave., allowing for the easing of peak flow on the existing outlet pipe in the event of a new outlet pipe development, as discussed in the previous section.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
P1	3,667	5.0	94	0.66	1.02	DP1
P1a	9,126	5.0	98	1.69	2.56	DP1
P2	13,280	5.0	97	2.44	3.72	DP2

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 0.452 acres (75.58%) in the pre-development condition to 0.525 acres (87.77%) in the post-development condition. The project proposes the construction of a R-Tank storage system on site, reducing the peak flow discharge from the site, as well as a downspout filter, providing treatment.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the R-Tank. Note the inclusion of Discharge Point 3 (DP3), representative of the net flows from DP1 and DP2.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	2.63	1.30	4.14	2.20	6.39	3.44	West lot
DP2	0.28	1.59	0.48	2.44	0.78	3.72	East lot
DP3	2.91	2.82	4.62	4.62	7.18	7.15	Combined Flow

Discharge Point 2 experiences a significant increase in peak discharge, however, the city infrastructure to be utilized by both discharge points are connected by the same drainage network, as shown by DP3. The net effect of both discharge points on the drainage network shows peak flows at or below existing levels.

OFFSITE INFRASTRUCTURE CAPACITY

Retention and routing of the stormwater to the City infrastructure is done on-site through the use of the R-Tank storage system, and has been designed as not to increase the peak flow rate to the local drainage system, therefore no impact to city infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is high due to the presence of loam areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to “The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.” Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Filter baskets in catch basins

- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the R-Tank system, the post-development runoff rates are reduced to below the pre-development runoff rates. The proposed downspout filter will provide treatment to part of the runoff. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. Additionally, the separation of flows from the site will be advantageous in the event the City pursues an additional outlet pipe to North Mill Pond through Maplewood Ave.

REFERENCES

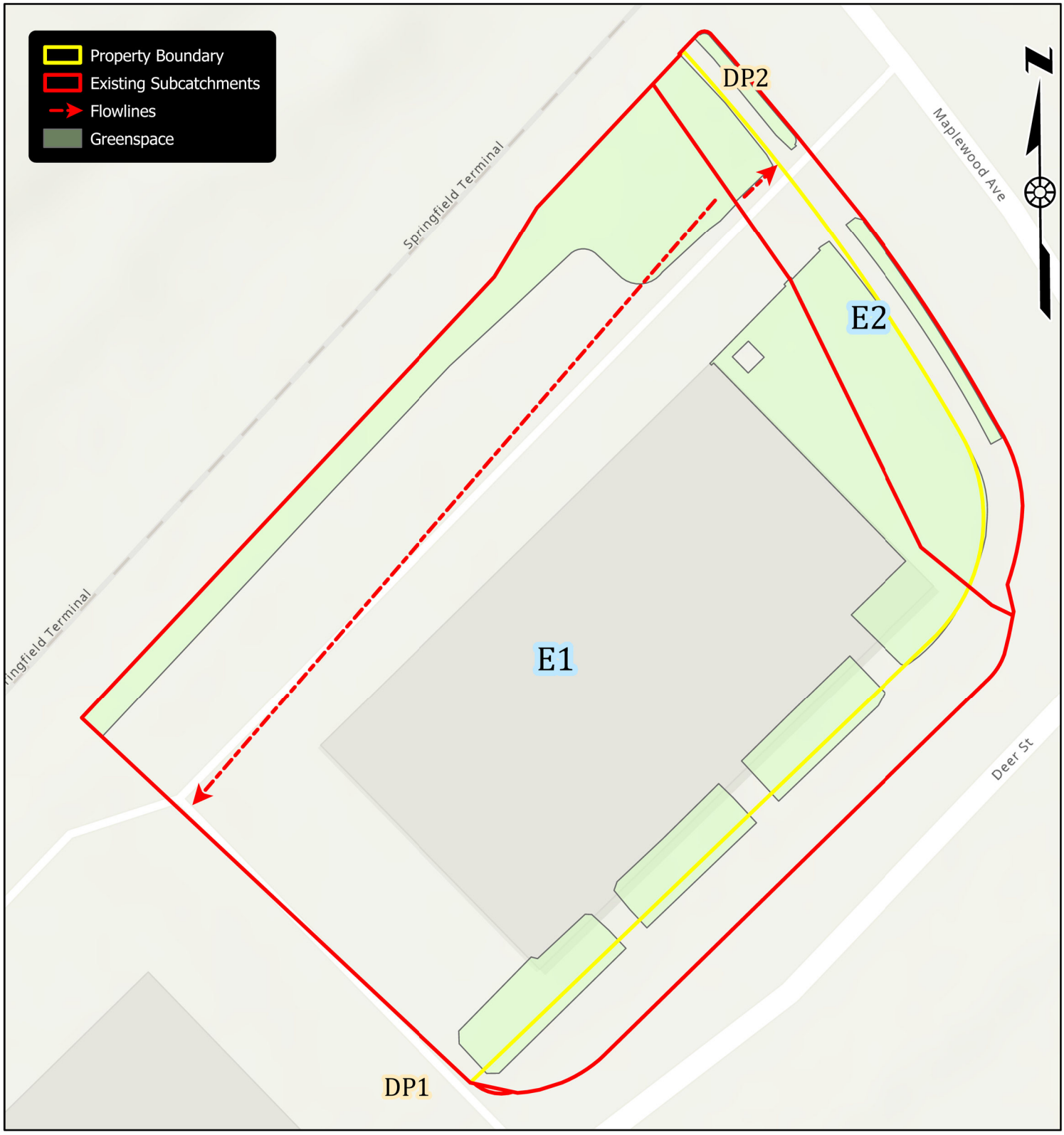
1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2013.
4. CMA Engineers. *Deer Street Outfall Drainage Evaluation*, October 2018.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Existing Subcatchments

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 30'
SUBMITTED: 08-04-2022



20 10 0 20 40 60 80 Feet

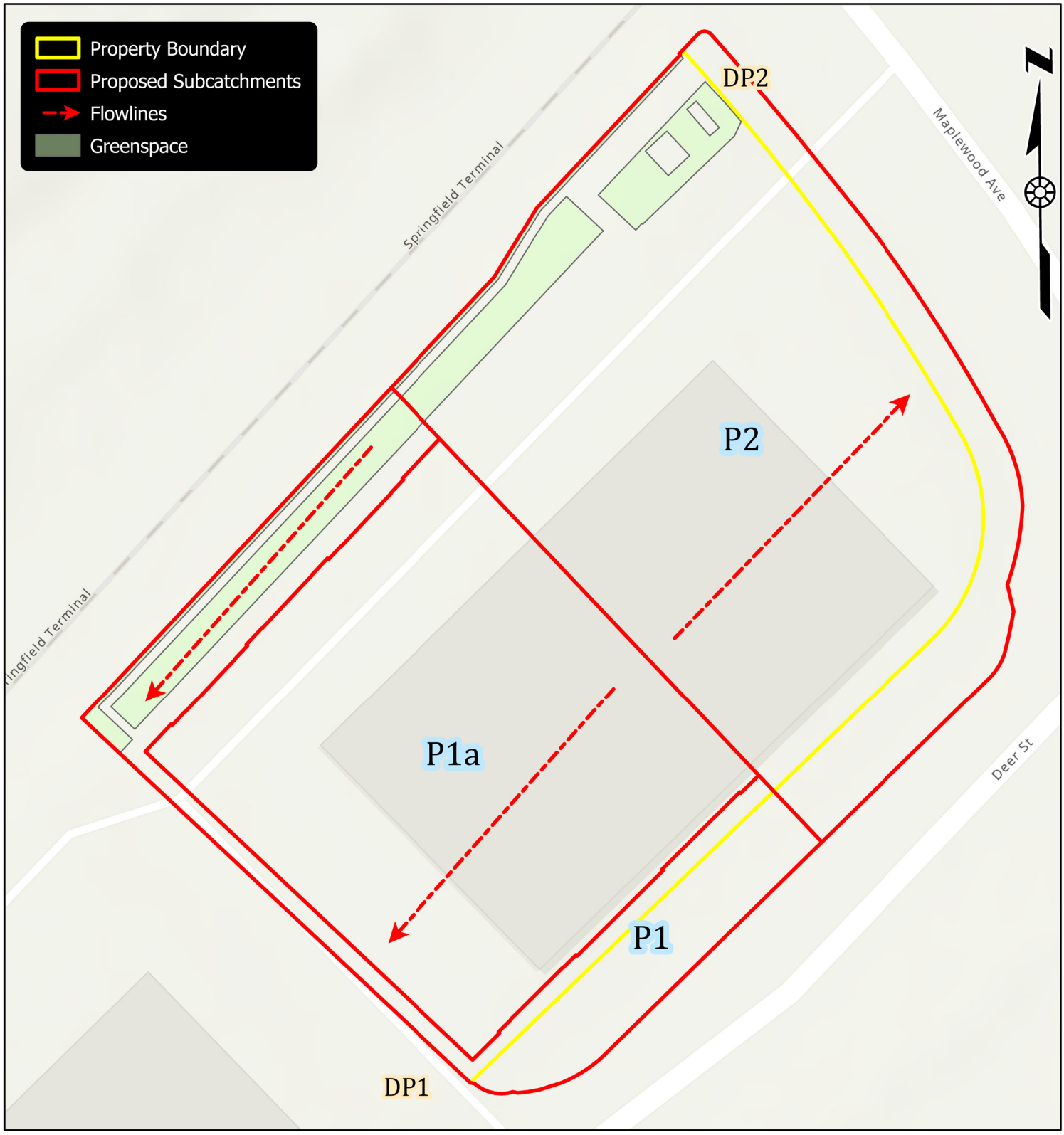
Greenspace = 6367 sf
Net = -3179 sf

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Proposed Subcatchments

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 30'
SUBMITTED: 08-18-2022



APPENDIX A

VICINITY (TAX) MAP

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Property Boundaries

SITE DEVELOPMENT
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 2271
SCALE: 1" = 60'
SUBMITTED: 08-04-2022

APPENDIX B

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.762 degrees West
Latitude	43.078 degrees North
Elevation	0 feet
Date/Time	Thu, 19 May 2022 11:11:02 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.62	4.73	6.16	7.09	**25yr**	5.45	6.81	7.78	9.00	10.03	**25yr**
50yr	0.53	0.86	1.10	1.53	2.07	2.75	**50yr**	1.78	2.52	3.28	4.31	5.65	7.37	8.57	**50yr**	6.53	8.24	9.40	10.79	11.95	**50yr**
100yr	0.59	0.96	1.24	1.76	2.41	3.25	**100yr**	2.08	2.97	3.90	5.15	6.75	8.83	10.36	**100yr**	7.82	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.42	2.04	2.82	3.82	**200yr**	2.43	3.51	4.60	6.11	8.06	10.58	12.52	**200yr**	9.37	12.04	13.71	15.50	16.98	**200yr**
500yr	0.80	1.31	1.71	2.48	3.47	4.75	**500yr**	2.99	4.37	5.75	7.68	10.19	13.45	16.11	**500yr**	11.90	15.49	17.61	19.72	21.44	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.92	1.33	1.68	2.23	2.48	**1yr**	1.97	2.39	2.86	3.18	3.88	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.45	**2yr**	2.70	3.31	3.82	4.54	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.18	**5yr**	3.34	4.02	4.71	5.52	6.23	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.85	**10yr**	3.86	4.66	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.34	1.86	2.10	2.76	3.54	4.70	5.87	**25yr**	4.16	5.64	6.62	7.76	8.65	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.34	3.07	3.93	5.31	6.77	**50yr**	4.70	6.51	7.68	9.00	9.98	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.42	4.35	5.96	7.81	**100yr**	5.28	7.51	8.92	10.45	11.52	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.79	4.79	6.68	9.01	**200yr**	5.91	8.66	10.34	12.15	13.31	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.32	5.46	7.76	10.87	**500yr**	6.87	10.45	12.58	14.86	16.11	**500yr**

Upper Confidence Limits

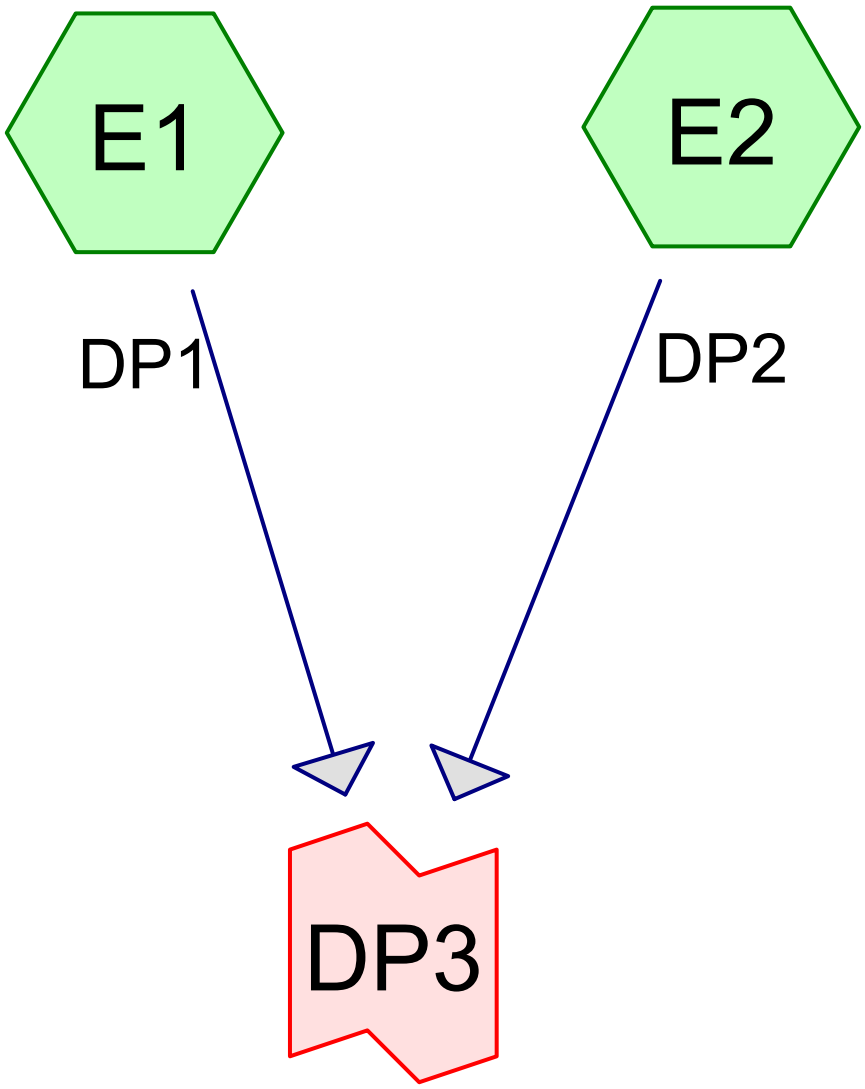
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.21	2.98	3.16	**1yr**	2.64	3.04	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.03	3.56	4.08	4.83	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.97	**10yr**	1.39	1.93	2.28	3.11	3.95	5.33	6.20	**10yr**	4.72	5.96	6.82	7.83	8.74	**10yr**
25yr	0.57	0.87	1.09	1.55	2.04	2.57	**25yr**	1.76	2.51	2.95	4.07	5.15	7.77	8.34	**25yr**	6.88	8.02	9.15	10.33	11.40	**25yr**
50yr	0.67	1.02	1.27	1.82	2.46	3.12	**50yr**	2.12	3.05	3.59	5.00	6.32	9.73	10.46	**50yr**	8.62	10.06	11.45	12.71	13.95	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.80	**100yr**	2.55	3.72	4.37	6.15	7.76	12.18	13.11	**100yr**	10.78	12.61	14.32	15.68	17.08	**100yr**
200yr	0.92	1.39	1.76	2.54	3.55	4.64	**200yr**	3.06	4.54	5.33	7.58	9.53	15.29	16.45	**200yr**	13.53	15.82	17.94	19.34	20.91	**200yr**
500yr	1.14	1.70	2.19	3.18	4.52	6.02	**500yr**	3.90	5.89	6.92	10.01	12.54	20.67	22.22	**500yr**	18.29	21.37	24.18	25.50	27.33	**500yr**

Powered by ACIS Northeast Regional Climate Center

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for Existing Conditions David T
Prepared by Ambit Engineering, Printed 2022-08-18

Project Notes

Defined 5 rainfall events from output (37) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.48	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.146	80	>75% Grass cover, Good, HSG D (E1, E2)
0.285	98	Paved parking, HSG D (E1, E2)
0.167	98	Roofs, HSG D (E1)
0.599	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.599	HSG D	E1, E2
0.000	Other	
0.599		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.146	0.000	0.146	>75% Grass cover, Good	E1, E2
0.000	0.000	0.000	0.285	0.000	0.285	Paved parking	E1, E2
0.000	0.000	0.000	0.167	0.000	0.167	Roofs	E1
0.000	**0.000**	**0.000**	**0.599**	**0.000**	**0.599**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=23,085 sf 80.32% Impervious Runoff Depth>2.82"
Tc=5.0 min CN=94 Runoff=2.63 cfs 0.125 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=87 Runoff=0.28 cfs 0.012 af

Link DP3: above 1,000.00 cfs Inflow=2.91 cfs 0.137 af
Primary=0.00 cfs 0.000 af Secondary=2.91 cfs 0.137 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.137 af Average Runoff Depth = 2.75"
24.42% Pervious = 0.146 ac 75.58% Impervious = 0.452 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.63 cfs @ 11.95 hrs, Volume= 0.125 af, Depth> 2.82"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
23,085	94	Weighted Average
4,544		19.68% Pervious Area
18,541		80.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.28 cfs @ 11.95 hrs, Volume= 0.012 af, Depth> 2.18"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.599 ac, 75.58% Impervious, Inflow Depth > 2.75" for 2-yr event
Inflow = 2.91 cfs @ 11.95 hrs, Volume= 0.137 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 2.91 cfs @ 11.95 hrs, Volume= 0.137 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=23,085 sf 80.32% Impervious Runoff Depth>4.57"
Tc=5.0 min CN=94 Runoff=4.14 cfs 0.202 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>3.87"
Tc=5.0 min CN=87 Runoff=0.48 cfs 0.022 af

Link DP3: above 1,000.00 cfs Inflow=4.62 cfs 0.224 af
Primary=0.00 cfs 0.000 af Secondary=4.62 cfs 0.224 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.224 af Average Runoff Depth = 4.49"
24.42% Pervious = 0.146 ac 75.58% Impervious = 0.452 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.14 cfs @ 11.95 hrs, Volume= 0.202 af, Depth> 4.57"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
23,085	94	Weighted Average
4,544		19.68% Pervious Area
18,541		80.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.48 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 3.87"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.599 ac, 75.58% Impervious, Inflow Depth > 4.49" for 10-yr event
Inflow = 4.62 cfs @ 11.95 hrs, Volume= 0.224 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 4.62 cfs @ 11.95 hrs, Volume= 0.224 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=23,085 sf 80.32% Impervious Runoff Depth>5.93"
Tc=5.0 min CN=94 Runoff=5.30 cfs 0.262 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>5.21"
Tc=5.0 min CN=87 Runoff=0.64 cfs 0.030 af

Link DP3: above 1,000.00 cfs Inflow=5.94 cfs 0.291 af
Primary=0.00 cfs 0.000 af Secondary=5.94 cfs 0.291 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.291 af Average Runoff Depth = 5.84"
24.42% Pervious = 0.146 ac 75.58% Impervious = 0.452 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.30 cfs @ 11.95 hrs, Volume= 0.262 af, Depth> 5.93"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
23,085	94	Weighted Average
4,544		19.68% Pervious Area
18,541		80.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.64 cfs @ 11.95 hrs, Volume= 0.030 af, Depth> 5.21"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.599 ac, 75.58% Impervious, Inflow Depth > 5.84" for 25-yr event
Inflow = 5.94 cfs @ 11.95 hrs, Volume= 0.291 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 5.94 cfs @ 11.95 hrs, Volume= 0.291 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DP1 Runoff Area=23,085 sf 80.32% Impervious Runoff Depth>7.20"
Tc=5.0 min CN=94 Runoff=6.39 cfs 0.318 af

Subcatchment E2: DP2 Runoff Area=2,987 sf 38.97% Impervious Runoff Depth>6.49"
Tc=5.0 min CN=87 Runoff=0.78 cfs 0.037 af

Link DP3: above 1,000.00 cfs Inflow=7.18 cfs 0.355 af
Primary=0.00 cfs 0.000 af Secondary=7.18 cfs 0.355 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.355 af Average Runoff Depth = 7.12"
24.42% Pervious = 0.146 ac 75.58% Impervious = 0.452 ac

Summary for Subcatchment E1: DP1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.39 cfs @ 11.95 hrs, Volume= 0.318 af, Depth> 7.20"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
11,260	98	Paved parking, HSG D
7,281	98	Roofs, HSG D
4,544	80	>75% Grass cover, Good, HSG D
23,085	94	Weighted Average
4,544		19.68% Pervious Area
18,541		80.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment E2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.78 cfs @ 11.95 hrs, Volume= 0.037 af, Depth> 6.49"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

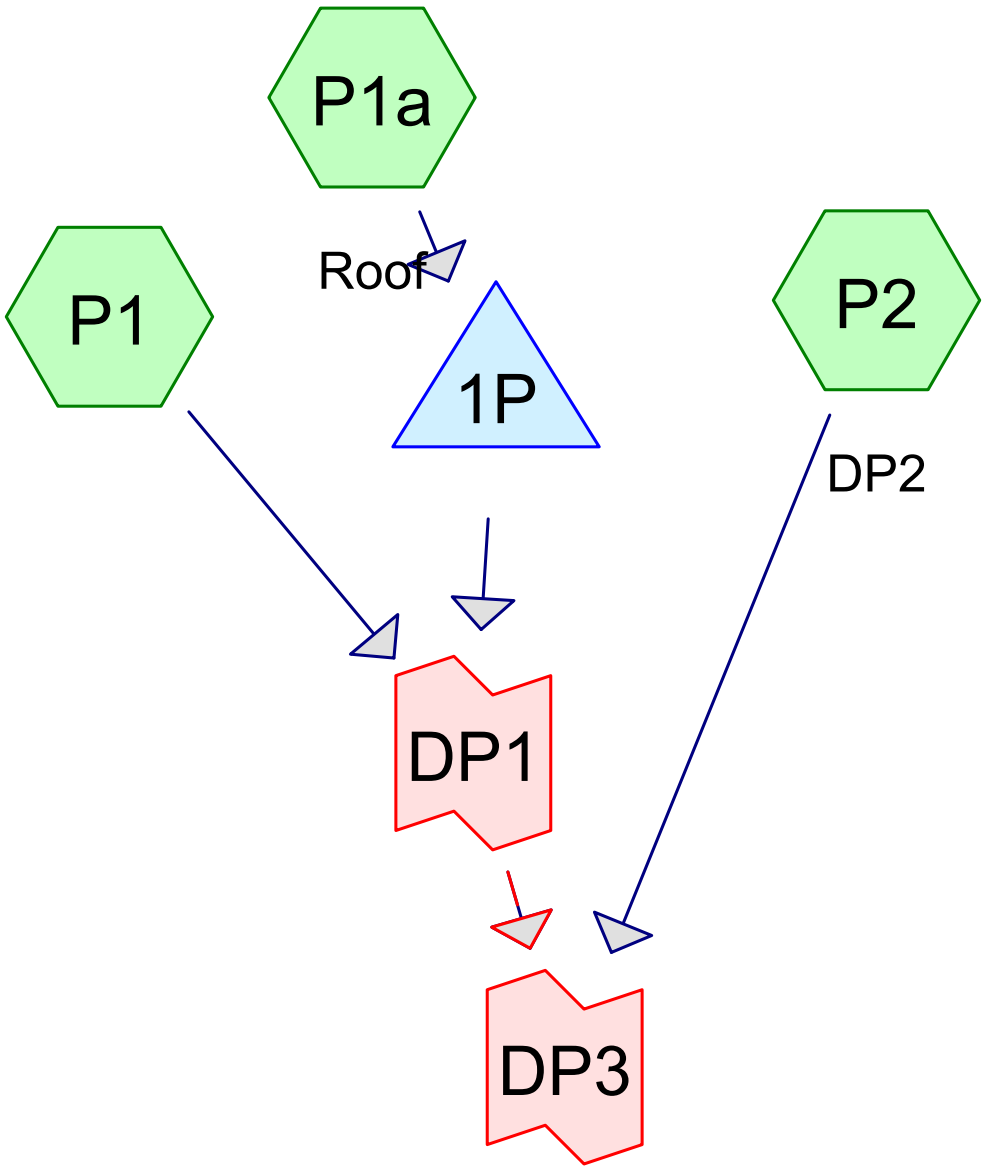
Area (sf)	CN	Description
1,164	98	Paved parking, HSG D
1,823	80	>75% Grass cover, Good, HSG D
2,987	87	Weighted Average
1,823		61.03% Pervious Area
1,164		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP3:

Inflow Area = 0.599 ac, 75.58% Impervious, Inflow Depth > 7.12" for 50-yr event
Inflow = 7.18 cfs @ 11.95 hrs, Volume= 0.355 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 7.18 cfs @ 11.95 hrs, Volume= 0.355 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for Proposed Conditions David T
Prepared by Ambit Engineering, Printed 2022-08-18

Project Notes

Defined 5 rainfall events from output (37) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.48	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.210	98	(P1a)
0.040	80	>75% Grass cover, Good, HSG D (P1, P2)
0.170	98	Paved parking, HSG D (P1, P2)
0.179	98	Roofs, HSG D (P2)
0.599	**97**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.389	HSG D	P1, P2
0.210	Other	P1a
0.599		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.210	0.210		P1a
0.000	0.000	0.000	0.040	0.000	0.040	>75% Grass cover, Good	P1, P2
0.000	0.000	0.000	0.170	0.000	0.170	Paved parking	P1, P2
0.000	0.000	0.000	0.179	0.000	0.179	Roofs	P2
0.000	**0.000**	**0.000**	**0.389**	**0.210**	**0.599**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	0.00	-0.17	44.0	0.0039	0.013	0.0	12.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=3,667 sf 77.61% Impervious Runoff Depth>2.82"
Tc=5.0 min CN=94 Runoff=0.42 cfs 0.020 af

Subcatchment P1a: Roof Runoff Area=9,126 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=1.10 cfs 0.056 af

Subcatchment P2: DP2 Runoff Area=13,280 sf 93.07% Impervious Runoff Depth>3.10"
Tc=5.0 min CN=97 Runoff=1.59 cfs 0.079 af

Pond 1P: Peak Elev=1.93' Storage=0.005 af Inflow=1.10 cfs 0.056 af
Outflow=0.93 cfs 0.055 af

Link DP1: above 1,000.00 cfs Inflow=1.30 cfs 0.075 af
Primary=0.00 cfs 0.000 af Secondary=1.30 cfs 0.075 af

Link DP3: above 1,000.00 cfs Inflow=2.82 cfs 0.154 af
Primary=0.00 cfs 0.000 af Secondary=2.82 cfs 0.154 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.154 af Average Runoff Depth = 3.09"
6.68% Pervious = 0.040 ac 93.32% Impervious = 0.559 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.42 cfs @ 11.95 hrs, Volume= 0.020 af, Depth> 2.82"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
3,667	94	Weighted Average
821		22.39% Pervious Area
2,846		77.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.10 cfs @ 11.95 hrs, Volume= 0.056 af, Depth> 3.18"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	9,126	98	
	9,126		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.59 cfs @ 11.95 hrs, Volume= 0.079 af, Depth> 3.10"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
7,818	98	Roofs, HSG D
13,280	97	Weighted Average
920		6.93% Pervious Area
12,360		93.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.210 ac,100.00% Impervious, Inflow Depth > 3.18" for 2-yr event
Inflow = 1.10 cfs @ 11.95 hrs, Volume= 0.056 af
Outflow = 0.93 cfs @ 12.00 hrs, Volume= 0.055 af, Atten= 16%, Lag= 3.0 min
Primary = 0.93 cfs @ 12.00 hrs, Volume= 0.055 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.93' @ 12.00 hrs Surf.Area= 0.004 ac Storage= 0.005 af

Plug-Flow detention time= 3.8 min calculated for 0.055 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (734.1 - 731.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.004 af	**9.25'W x 18.07'L x 4.07'H Field A** 0.016 af Overall - 0.005 af Embedded = 0.011 af x 40.0% Voids
#2A	0.25'	0.005 af	**ACF R-Tank LD 2** x 24 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 24 Chambers in 4 Rows
		0.009 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.17' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	0.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.93 cfs @ 12.00 hrs HW=1.92' (Free Discharge)
└**1=Culvert** (Passes 0.93 cfs of 3.88 cfs potential flow)
└**2=Custom Weir/Orifice** (Weir Controls 0.07 cfs @ 1.55 fps)
└**3=Orifice/Grate** (Orifice Controls 0.86 cfs @ 6.31 fps)

Summary for Link DP1:

[79] Warning: Submerged Pond 1P Primary device # 1 OUTLET by 0.17'

Inflow Area = 0.294 ac, 93.58% Impervious, Inflow Depth > 3.07" for 2-yr event
Inflow = 1.30 cfs @ 11.98 hrs, Volume= 0.075 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 1.30 cfs @ 11.98 hrs, Volume= 0.075 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.599 ac, 93.32% Impervious, Inflow Depth > 3.09" for 2-yr event
Inflow = 2.82 cfs @ 11.96 hrs, Volume= 0.154 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 2.82 cfs @ 11.96 hrs, Volume= 0.154 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=3,667 sf 77.61% Impervious Runoff Depth>4.57"
Tc=5.0 min CN=94 Runoff=0.66 cfs 0.032 af

Subcatchment P1a: Roof Runoff Area=9,126 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=1.69 cfs 0.086 af

Subcatchment P2: DP2 Runoff Area=13,280 sf 93.07% Impervious Runoff Depth>4.83"
Tc=5.0 min CN=97 Runoff=2.44 cfs 0.123 af

Pond 1P: Peak Elev=2.61' Storage=0.006 af Inflow=1.69 cfs 0.086 af
Outflow=1.58 cfs 0.085 af

Link DP1: above 1,000.00 cfs Inflow=2.20 cfs 0.117 af
Primary=0.00 cfs 0.000 af Secondary=2.20 cfs 0.117 af

Link DP3: above 1,000.00 cfs Inflow=4.62 cfs 0.240 af
Primary=0.00 cfs 0.000 af Secondary=4.62 cfs 0.240 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.240 af Average Runoff Depth = 4.82"
6.68% Pervious = 0.040 ac 93.32% Impervious = 0.559 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.66 cfs @ 11.95 hrs, Volume= 0.032 af, Depth> 4.57"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
3,667	94	Weighted Average
821		22.39% Pervious Area
2,846		77.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.69 cfs @ 11.95 hrs, Volume= 0.086 af, Depth> 4.90"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	9,126	98	
	9,126		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.44 cfs @ 11.95 hrs, Volume= 0.123 af, Depth> 4.83"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
7,818	98	Roofs, HSG D
13,280	97	Weighted Average
920		6.93% Pervious Area
12,360		93.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.210 ac,100.00% Impervious, Inflow Depth > 4.90" for 10-yr event
Inflow = 1.69 cfs @ 11.95 hrs, Volume= 0.086 af
Outflow = 1.58 cfs @ 11.98 hrs, Volume= 0.085 af, Atten= 6%, Lag= 1.8 min
Primary = 1.58 cfs @ 11.98 hrs, Volume= 0.085 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 2.61' @ 11.98 hrs Surf.Area= 0.004 ac Storage= 0.006 af

Plug-Flow detention time= 3.4 min calculated for 0.085 af (99% of inflow)
Center-of-Mass det. time= 2.5 min (731.3 - 728.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.004 af	**9.25'W x 18.07'L x 4.07'H Field A** 0.016 af Overall - 0.005 af Embedded = 0.011 af x 40.0% Voids
#2A	0.25'	0.005 af	**ACF R-Tank LD 2** x 24 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 24 Chambers in 4 Rows
		0.009 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.17' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	0.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.52 cfs @ 11.98 hrs HW=2.55' (Free Discharge)
└**1=Culvert** (Passes 1.52 cfs of 4.88 cfs potential flow)
  └**2=Custom Weir/Orifice** (Weir Controls 0.52 cfs @ 3.03 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.01 cfs @ 7.38 fps)

Summary for Link DP1:

[79] Warning: Submerged Pond 1P Primary device # 1 OUTLET by 0.17'

Inflow Area = 0.294 ac, 93.58% Impervious, Inflow Depth > 4.80" for 10-yr event
Inflow = 2.20 cfs @ 11.97 hrs, Volume= 0.117 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 2.20 cfs @ 11.97 hrs, Volume= 0.117 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.599 ac, 93.32% Impervious, Inflow Depth > 4.82" for 10-yr event
Inflow = 4.62 cfs @ 11.96 hrs, Volume= 0.240 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 4.62 cfs @ 11.96 hrs, Volume= 0.240 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=3,667 sf 77.61% Impervious Runoff Depth>5.93"
Tc=5.0 min CN=94 Runoff=0.84 cfs 0.042 af

Subcatchment P1a: Roof Runoff Area=9,126 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=2.14 cfs 0.109 af

Subcatchment P2: DP2 Runoff Area=13,280 sf 93.07% Impervious Runoff Depth>6.17"
Tc=5.0 min CN=97 Runoff=3.10 cfs 0.157 af

Pond 1P: Peak Elev=2.97' Storage=0.007 af Inflow=2.14 cfs 0.109 af
Outflow=2.02 cfs 0.109 af

Link DP1: above 1,000.00 cfs Inflow=2.84 cfs 0.150 af
Primary=0.00 cfs 0.000 af Secondary=2.84 cfs 0.150 af

Link DP3: above 1,000.00 cfs Inflow=5.92 cfs 0.307 af
Primary=0.00 cfs 0.000 af Secondary=5.92 cfs 0.307 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.307 af Average Runoff Depth = 6.16"
6.68% Pervious = 0.040 ac 93.32% Impervious = 0.559 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.84 cfs @ 11.95 hrs, Volume= 0.042 af, Depth> 5.93"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
3,667	94	Weighted Average
821		22.39% Pervious Area
2,846		77.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.14 cfs @ 11.95 hrs, Volume= 0.109 af, Depth> 6.24"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	9,126	98	
	9,126		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.10 cfs @ 11.95 hrs, Volume= 0.157 af, Depth> 6.17"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
7,818	98	Roofs, HSG D
13,280	97	Weighted Average
920		6.93% Pervious Area
12,360		93.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.210 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-yr event
Inflow = 2.14 cfs @ 11.95 hrs, Volume= 0.109 af
Outflow = 2.02 cfs @ 11.97 hrs, Volume= 0.109 af, Atten= 6%, Lag= 1.5 min
Primary = 2.02 cfs @ 11.97 hrs, Volume= 0.109 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 2.97' @ 11.97 hrs Surf.Area= 0.004 ac Storage= 0.007 af

Plug-Flow detention time= 3.2 min calculated for 0.109 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (730.2 - 727.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.004 af	**9.25'W x 18.07'L x 4.07'H Field A** 0.016 af Overall - 0.005 af Embedded = 0.011 af x 40.0% Voids
#2A	0.25'	0.005 af	**ACF R-Tank LD 2** x 24 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 24 Chambers in 4 Rows
		0.009 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.17' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	0.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.96 cfs @ 11.97 hrs HW=2.92' (Free Discharge)
└**1=Culvert** (Passes 1.96 cfs of 5.37 cfs potential flow)
  └**2=Custom Weir/Orifice** (Weir Controls 0.88 cfs @ 3.61 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.08 cfs @ 7.93 fps)

Summary for Link DP1:

[79] Warning: Submerged Pond 1P Primary device # 1 OUTLET by 0.17'

Inflow Area = 0.294 ac, 93.58% Impervious, Inflow Depth > 6.14" for 25-yr event
Inflow = 2.84 cfs @ 11.97 hrs, Volume= 0.150 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 2.84 cfs @ 11.97 hrs, Volume= 0.150 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.599 ac, 93.32% Impervious, Inflow Depth > 6.16" for 25-yr event
Inflow = 5.92 cfs @ 11.96 hrs, Volume= 0.307 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 5.92 cfs @ 11.96 hrs, Volume= 0.307 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Runoff Area=3,667 sf 77.61% Impervious Runoff Depth>7.20"
Tc=5.0 min CN=94 Runoff=1.02 cfs 0.051 af

Subcatchment P1a: Roof Runoff Area=9,126 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=2.56 cfs 0.131 af

Subcatchment P2: DP2 Runoff Area=13,280 sf 93.07% Impervious Runoff Depth>7.43"
Tc=5.0 min CN=97 Runoff=3.72 cfs 0.189 af

Pond 1P: Peak Elev=3.29' Storage=0.008 af Inflow=2.56 cfs 0.131 af
Outflow=2.47 cfs 0.131 af

Link DP1: above 1,000.00 cfs Inflow=3.47 cfs 0.181 af
Primary=0.00 cfs 0.000 af Secondary=3.47 cfs 0.181 af

Link DP3: above 1,000.00 cfs Inflow=7.18 cfs 0.370 af
Primary=0.00 cfs 0.000 af Secondary=7.18 cfs 0.370 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.370 af Average Runoff Depth = 7.42"
6.68% Pervious = 0.040 ac 93.32% Impervious = 0.559 ac

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.02 cfs @ 11.95 hrs, Volume= 0.051 af, Depth> 7.20"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
821	80	>75% Grass cover, Good, HSG D
2,846	98	Paved parking, HSG D
3,667	94	Weighted Average
821		22.39% Pervious Area
2,846		77.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P1a: Roof

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.56 cfs @ 11.95 hrs, Volume= 0.131 af, Depth> 7.49"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	9,126	98	
	9,126		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment P2: DP2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.72 cfs @ 11.95 hrs, Volume= 0.189 af, Depth> 7.43"
Routed to Link DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

Area (sf)	CN	Description
920	80	>75% Grass cover, Good, HSG D
4,542	98	Paved parking, HSG D
7,818	98	Roofs, HSG D
13,280	97	Weighted Average
920		6.93% Pervious Area
12,360		93.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P:

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.210 ac,100.00% Impervious, Inflow Depth > 7.49" for 50-yr event
Inflow = 2.56 cfs @ 11.95 hrs, Volume= 0.131 af
Outflow = 2.47 cfs @ 11.97 hrs, Volume= 0.131 af, Atten= 4%, Lag= 1.1 min
Primary = 2.47 cfs @ 11.97 hrs, Volume= 0.131 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 3.29' @ 11.97 hrs Surf.Area= 0.004 ac Storage= 0.008 af

Plug-Flow detention time= 3.1 min calculated for 0.130 af (100% of inflow)
Center-of-Mass det. time= 2.2 min (729.6 - 727.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.004 af	**9.25'W x 18.07'L x 4.07'H Field A** 0.016 af Overall - 0.005 af Embedded = 0.011 af x 40.0% Voids
#2A	0.25'	0.005 af	**ACF R-Tank LD 2** x 24 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 24 Chambers in 4 Rows
		0.009 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.17' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 1.70 3.50 3.50 4.00 Width (feet) 0.20 0.20 4.00 4.00
#3	Device 1	0.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.39 cfs @ 11.97 hrs HW=3.24' (Free Discharge)
└**1=Culvert** (Passes 2.39 cfs of 5.76 cfs potential flow)
└**2=Custom Weir/Orifice** (Weir Controls 1.25 cfs @ 4.06 fps)
└**3=Orifice/Grate** (Orifice Controls 1.14 cfs @ 8.38 fps)

Summary for Link DP1:

[79] Warning: Submerged Pond 1P Primary device # 1 OUTLET by 0.17'

Inflow Area = 0.294 ac, 93.58% Impervious, Inflow Depth > 7.40" for 50-yr event
Inflow = 3.47 cfs @ 11.96 hrs, Volume= 0.181 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Routed to Link DP3 :
Secondary = 3.47 cfs @ 11.96 hrs, Volume= 0.181 af
Routed to Link DP3 :

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link DP3:

Inflow Area = 0.599 ac, 93.32% Impervious, Inflow Depth > 7.42" for 50-yr event
Inflow = 7.18 cfs @ 11.96 hrs, Volume= 0.370 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 7.18 cfs @ 11.96 hrs, Volume= 0.370 af

Primary outflow = Inflow above 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

May 19, 2022

Custom Soil Resource Report
Soil Map

Map Scale: 1:468 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2021—Nov 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	0.5	91.5%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.0	8.5%
Totals for Area of Interest		**0.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

Walpole

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Chatfield

Percent of map unit: 4 percent
Hydric soil rating: No

Scituate and newfields

Percent of map unit: 4 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent
Hydric soil rating: No

APPENDIX E

FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

70°46'3"W 43°4'55"N

70°45'26"W 43°4'29"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/19/2022 at 11:08 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
SITE DEVELOPMENT

88 MAPLEWOOD AVE.
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide EightKPH, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the Bio Clean downspout filter, R-Tank storage units and associated structures on the project site (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Code Enforcement Officer, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- ACF R-Tank stormwater storage system
- Bio Clean Downspout Filter
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year.

Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.

3. **Bio Clean Downspout Filter:** Refer to the manufacturer's Operation and Maintenance manual for guidance, included herewith.
4. **ACF R-Tank stormwater storage system:** Reference the attached operations and maintenance manual for proper maintenance of the system.
5. **Outlet Control Structures and Storm Drains:** Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all roadways and parking areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Snow & Ice Management for Standard Asphalt and Walkways

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension (or other source) or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

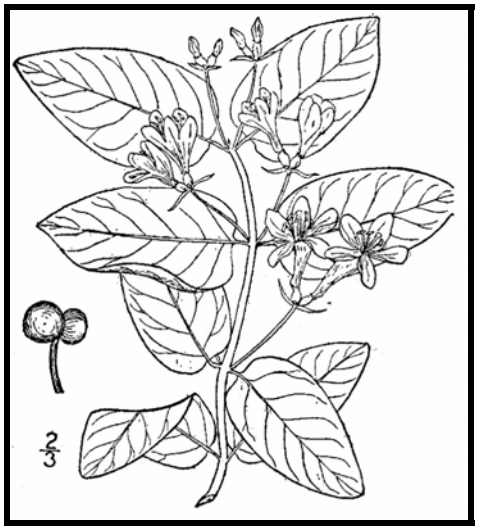
Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.

Figure 2: Phragmites australis. Photo by Le Loup Gris

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

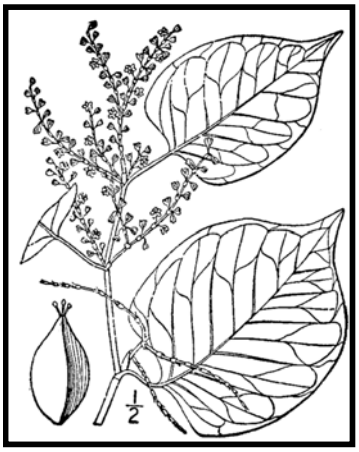
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

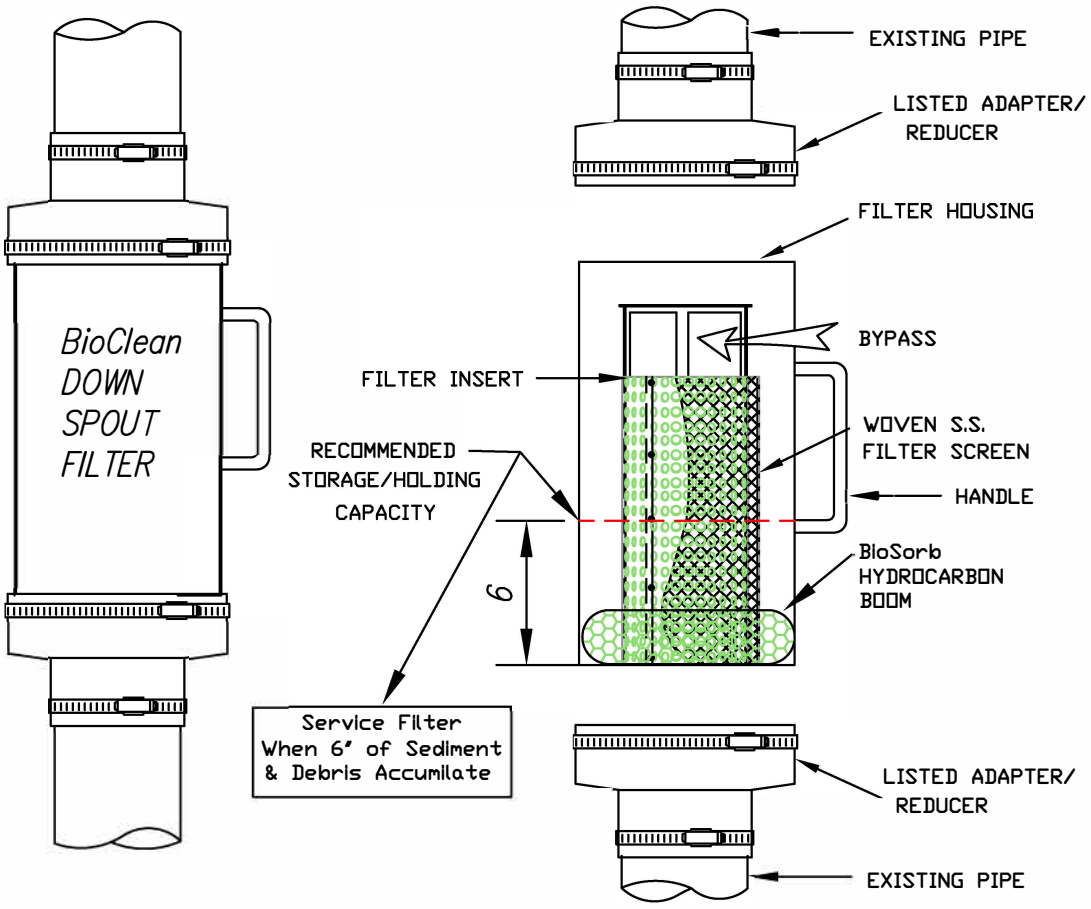
INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Outlet Control Structures *-Drain Manholes* *-Catch Basins*	Every other Month	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	1 time per 2 years	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

SERVICE MANUAL

(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

TOOLS AND EQUIPMENT NEEDED:

1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia.
   (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

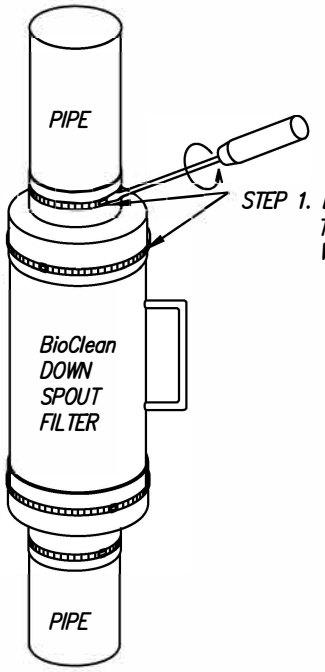
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

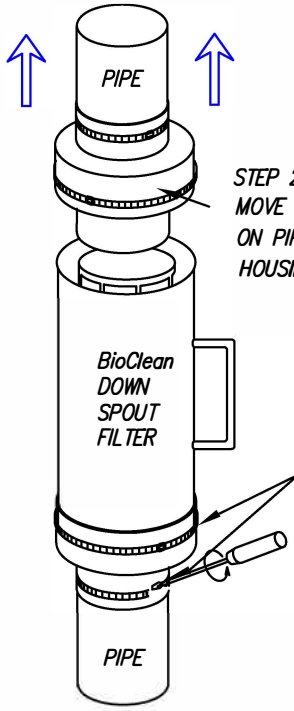
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.bioclean environmental.net

REMOVING FILTER



STEP 1. LOOSEN BOTH TOP CLAMPS WITH SCREW DRIVER.

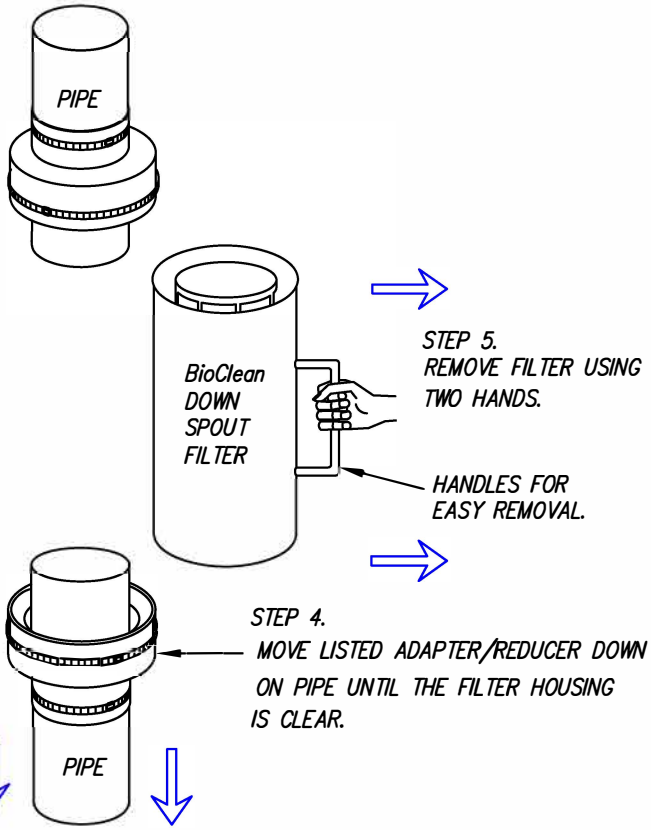


STEP 2.
MOVE LISTED ADAPTER/REDUCER UP ON PIPE UNTIL THE FILTER HOUSING IS CLEAR TO REMOVE.

STEP 3.
LOOSEN BOTH BOTTOM CLAMPS WITH SCREW DRIVER.

(STEP 4. AT BOTTOM LEFT OF PAGE)

CLEANING FILTER

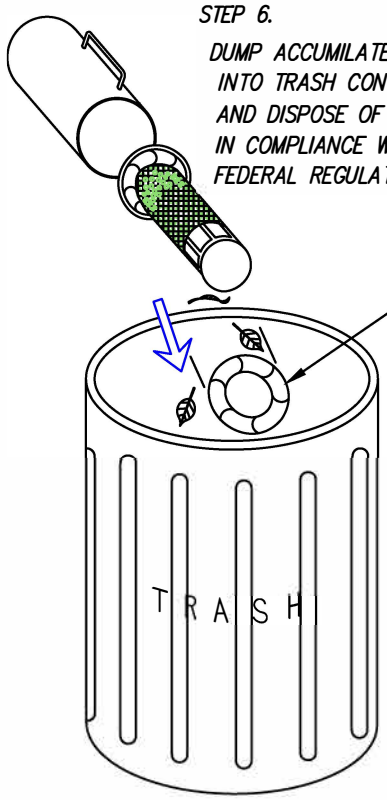


STEP 5.
REMOVE FILTER USING TWO HANDS.

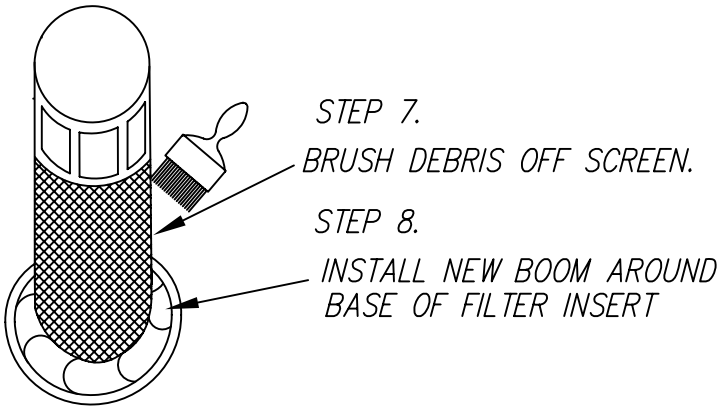
HANDLES FOR EASY REMOVAL.

STEP 4.
MOVE LISTED ADAPTER/REDUCER DOWN ON PIPE UNTIL THE FILTER HOUSING IS CLEAR.

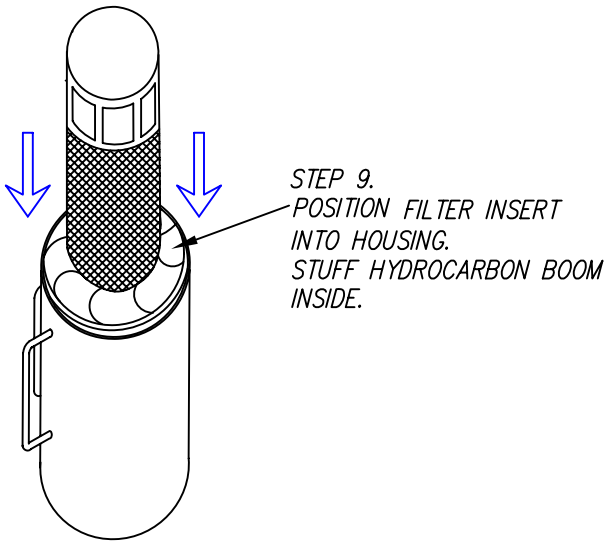
STEP 6.
DUMP ACCUMILATED DEBRIS OUT OF FILTER INTO TRASH CONTAINER. REMOVE FILTER INSERT AND DISPOSE OF HYDROCARBON BOOM IN COMPLIANCE WITH LOCAL STATE & FEDERAL REGULATIONS.

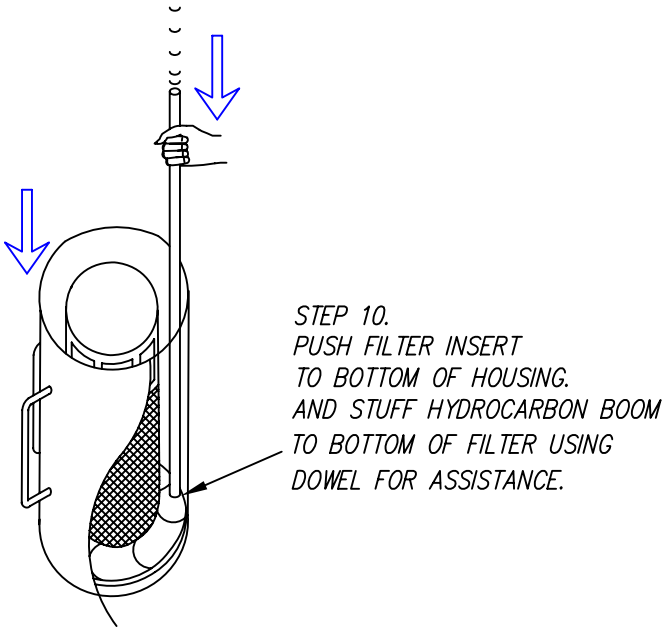


Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



REPLACING FILTER INSERT

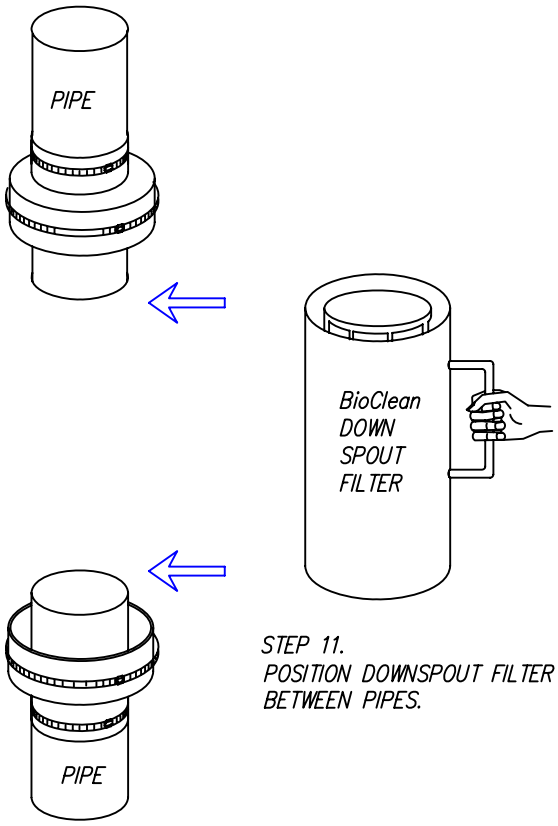




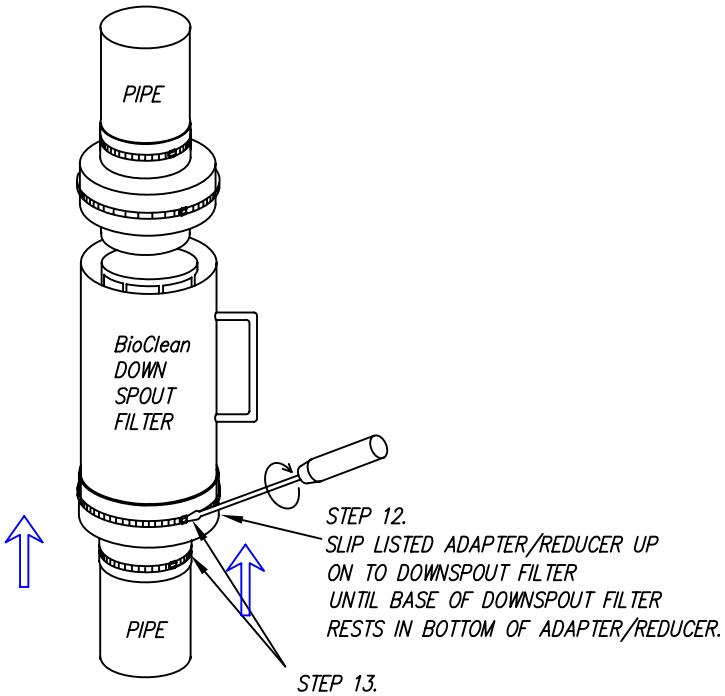
REPLACING FILTER

Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

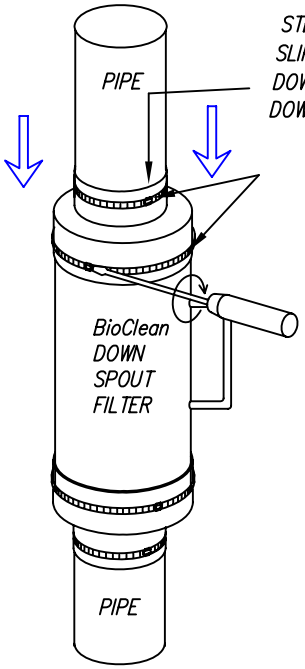


STEP 11.
POSITION DOWNSPOUT FILTER
BETWEEN PIPES.



STEP 12.
SLIP LISTED ADAPTER/REDUCER UP
ON TO DOWNSPOUT FILTER
UNTIL BASE OF DOWNSPOUT FILTER
RESTS IN BOTTOM OF ADAPTER/REDUCER.

STEP 13.
SECURE BY TIGHTENING
BOTH CLAMPS.



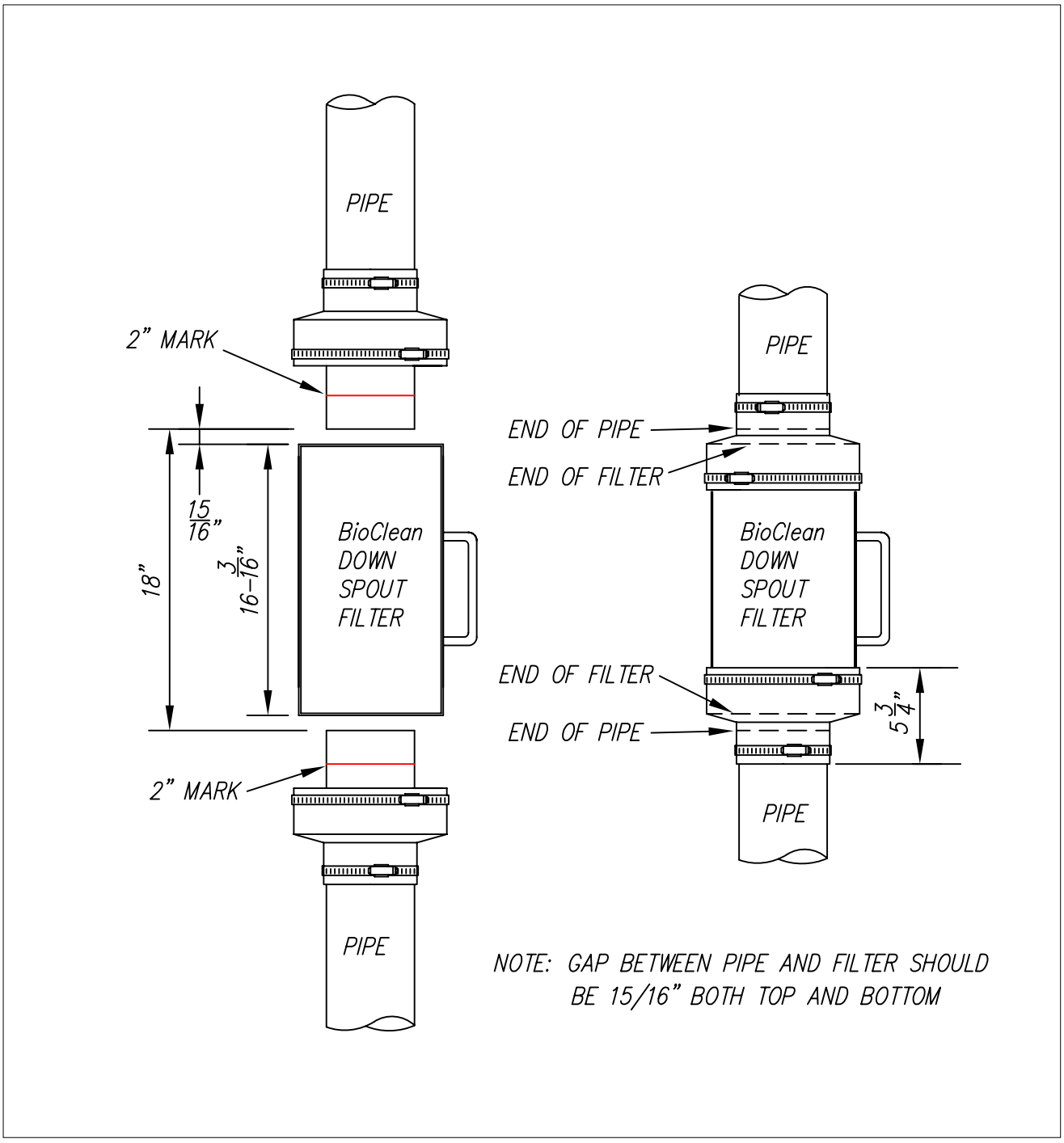
STEP 14.
SLIP LISTED ADAPTER/REDUCER
DOWNWARD ON TO
DOWNSPOUT FILTER.

STEP 15.
SECURE BY TIGHTENING
BOTH CLAMPS
WITH SCREWDRIVER.

ENSURE CLAMPS
ARE PROPERLY TIGHTENED.
SERVICE COMLPLETE.

APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



BioClean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

R-TANK OPERATION INSPECTION & MAINTENANCE

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

ACF ENVIRONMENTAL
LET'S GET IT DONE

2831 Cardwell Road
Richmond, Virginia, 23234
800.448.3636
FAX 804.743.7779
acfenvironmental.com

Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

Phone Number:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

For more information about our products, contact Inside Sales at 800.448.3636 or email at info@acfenv.com

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 12/15/2022
Property Address: 85 Daniel Street
Application #: LU-22-75
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding** **(Meets Standard/Criteria)**	**Supporting Information** **(provided by the applicant)**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	Applicable standards: - Project complies with the City of Portsmouth Zoning Ordinance, - Project will abide by all requirements from the IBC and NFPA per discussions with the City Building Inspector and Fire Chief through TAC
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	TAC reviewed traffic and safety; no issues. Plans show all utility and drainage connections.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), project site is currently 73.0% impervious and have been decreased to 69% impervious, pervious pavers are located at two surface parking spaces

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (provided by the applicant)
4	Adequate protection for the quality of groundwater.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), pervious pavers are located at the two surface parking spaces
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), Connecting to existing City water, reviewed by TAC
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), Connecting to existing City sewer, reviewed by TAC
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), means of heating has not been decided will be properly exhausted per code, mini-split condensers will provide cooling with potential heating, two natural gas fire places will be properly exhausted per code vertically at the two chimneys
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	Project will abide by all requirements from the IBC and NFPA per discussions with the City Building Inspector and Fire Chief through TAC, sprinkler system will be installed
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	N/A – urban site, all excavation materials will be environmentally tested prior to removal from site.
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	Project has received a Historic District Commission Approval where these features have been addressed
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	Proposed residential use is less intense than existing mixed-use, parking is accessed from rear dead-end street, parking meets zoning requirements for 4 units
12	Adequate traffic controls and traffic management measures to prevent an unacceptable	**Meets** **Does Not**	Proposed residential use is less intense than existing mixed-use, parking is accessed from rear dead-end street, parking meets

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (provided by the applicant)
	increase in safety hazards and traffic congestion off-site.	**Meet**	zoning requirements for 4 units
13	Adequate insulation from external noise sources.	**Meets** **Does Not Meet**	Project will be provided with exterior wall insulation to meet code standards, windows are being replaced to have higher acoustic qualities (approved by HDC)
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	Site Plan (Sheet 2) and Notes (Sheet 3), Project has been through TAC where all TAC Board Members concerns have been addressed.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	See Plans (A-1 – A-3), two 3' side yard setbacks remain where 0' is the minimum, top floor units are provided with deck space
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	Site Plan (Sheet 2), there are no changes to the existing sidewalk/Daniel Street side
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	Site Plan (Sheet 2), Currently used as an urban building site. Plans follow ordinance and guidelines; see TAC approval.
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	No landscaping, planters will be on deck spaces, refer to sheets A-2 – A-7
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	Project has received a Historic District Commission Approval, abides by Character District standards as an existing building
	Other Board Findings:		

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information (provided by the applicant)

N e er 23, 2022

Mr. Ric he an, hair
P annin ar
1 n ins A e.
P rts th, NH 03801

Re 8 anie St
U-22-

ear Mr. he an

On eha Sea rt Rea t , , ease in enc se r a icati n r site an a r a .
Inc e are site an r ans with e teri r e e ati ns r the a e-re erence site an site an chec ist.

At the N e er 1 Technica A is r ittee eetin , the c ittee te t rec en a r a t the P annin ar with the win c n iti n

To be satisfied prior to the Planning Board submittal date:

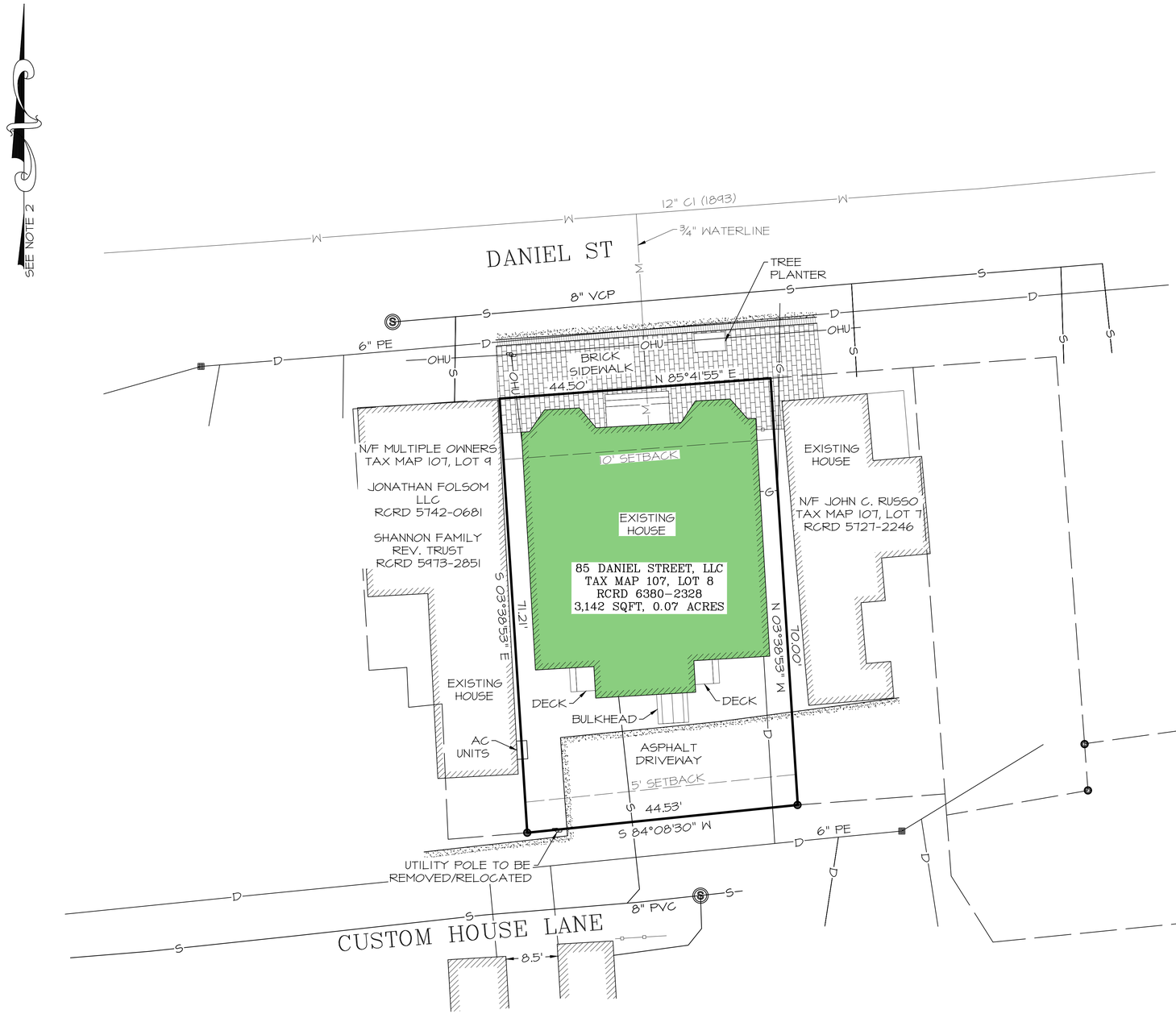
1. Applicant will work with Fire and Building department to confirm proposed lift system is compliant with building and life safety codes or will request a parking Conditional Use Permit.

O r ice et with chie i in ins ect r, Shanti h n 11 3 22 an 11 4 22 t re iew the ar in i t in r ati n an it was eter ine that the r se e i t an a t w e c iant with a ica e c es.

e rwar t eetin with at the ece er 1 th P annin ar eetin .

Re ar s,

Mar Giannin , AIA
Seni r Ass ciate



LEGEND

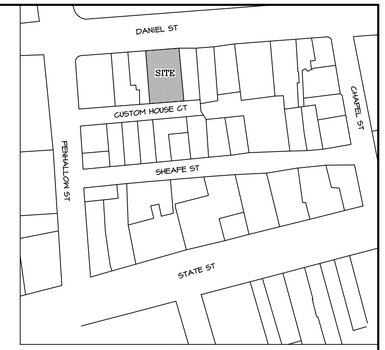
- SEWER MANHOLE
- MONUMENT TO BE SET
- MONUMENT FOUND
- UTILITY POLE
- FENCE
- VERTICAL GRANITE CURB
- SEWER LINE
- OVERHEAD UTILITIES
- WATER LINE
- DRAIN LINE
- GAS LINE
- CATCH BASIN

REFERENCE PLANS

1) "STANDARD PROPERTY SURVEY LAND OF EMILIO V. & LINDA MADDALONI" BY EGKMAN ENGINEERING, LLC. DATED JUNE 10, 2019.

2) "LOT LINE REVISION PLAN FOR PROPERTY AT 99 DANIEL STREET & 49 SHEAFE STREET" BY EASTERLY SURVEYING. DATED AUGUST 27, 2006. RCRD D-34170

3) "79 DANIEL STREET CONDOMINIUM ASSESSOR'S PARCEL NUMBER: 107-009" BY JAMES VERRA AND ASSOCIATES, INC. DATED JULY 16, 2004. RCRD D-33772



LOCUS PLAN
N.T.S.

NOTES

1) OWNER OF RECORD:
85 DANIEL STREET, LLC
46 MANGROVE STREET,
PORTSMOUTH, NH 03801

LOT INFORMATION
TAX MAP 107, LOT 8
RCRD: 6380-2328
AREA: 3,142 SF, 0.07 ACRES

2) BASIS OF BEARING HELD FROM PLAN REFERENCE #1.

3) PARCEL IS IN CHARACTER DISTRICT 4 (CD4) AND HISTORIC DISTRICT:
SETBACKS:
FRONT.....10 FT
SIDE.....0 FT
REAR.....5 FT
MAXIMUM BUILDING HEIGHT.....40 FT
MAXIMUM BUILDING COVERAGE.....90%
MINIMUM OPEN SPACE.....10%

4) THE PARCEL IS NOT WITHIN A FEMA FLOOD ZONE, AS PER FLOOD INSURANCE RATE MAP #33015C0259F, PANEL 259 OF 681, DATED JANUARY 29, 2021. VERTICAL DATUM IS NAVD 1988.

ISS.	DATE	DESCRIPTION OF ISSUE
9	11/23/2022	PRELIMINARY
8	10/19/2022	PRELIMINARY
7	10/4/2022	PRELIMINARY
6	9/23/2022	PRELIMINARY
5	9/20/2022	PRELIMINARY
4	9/9/2022	PRELIMINARY
3	9/2/2022	PRELIMINARY
2	8/18/2022	FOR RECORDING
1	3/2/2022	PRELIMINARY

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

I ALEX ROSS, HEREBY CERTIFY:

A) THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION.

B) THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY DDD, & ICA DURING MARCH OF 2022. THE ERROR OF CLOSURE IS BETTER THAN 1/15,000. SURVEY PER NHLSA STANDARDS; CATEGORY 1, CONDITION 1.

C) "I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUB-DIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN."

R. ALEX ROSS DATE

GRAPHIC SCALE
20 0 5 10 20 40
(IN FEET)
SCALE: 1" = 10'

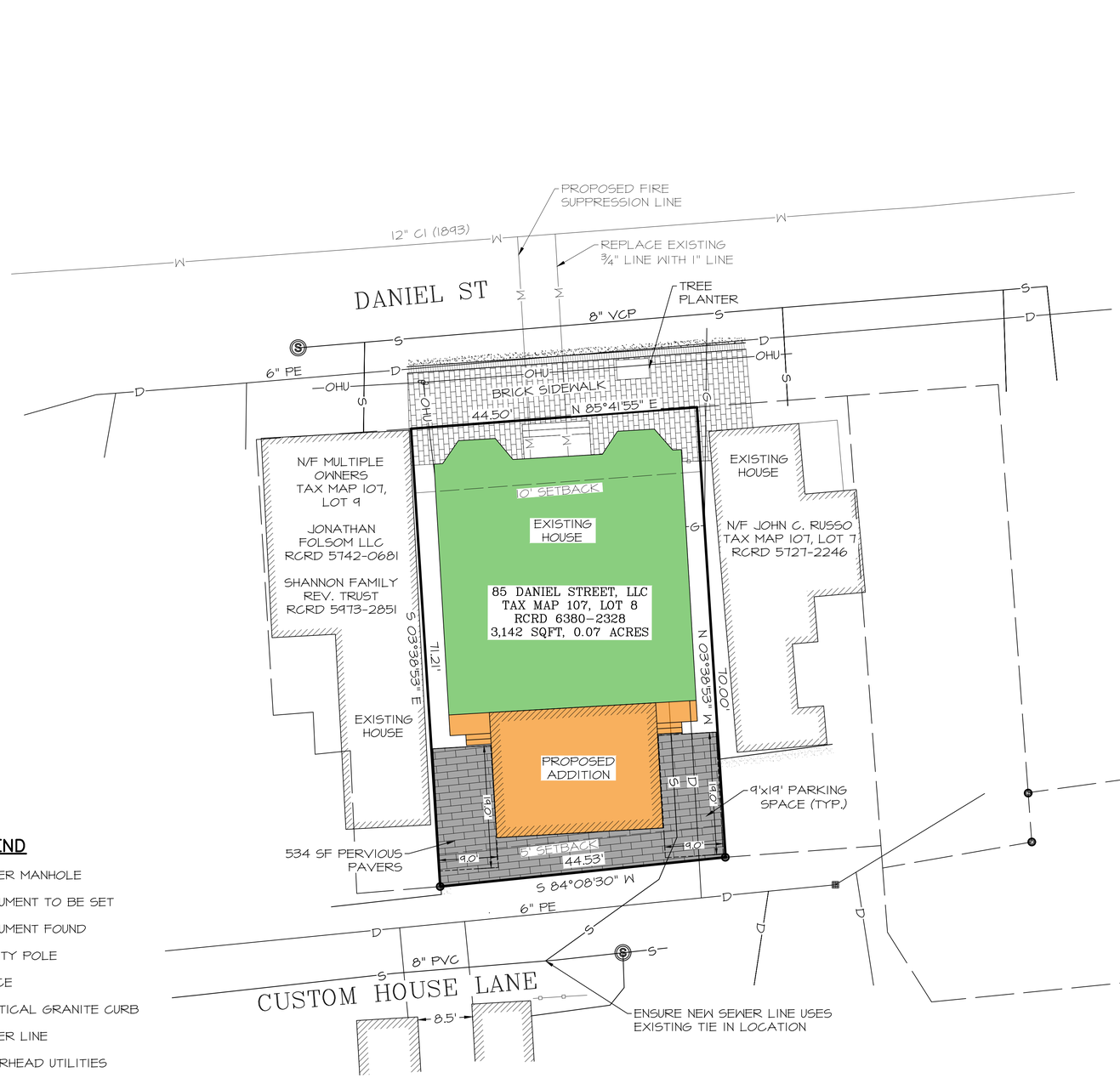
STATE OF NEW HAMPSHIRE
R. ALEX ROSS No. 9400 LICENSED
PROFESSIONAL ENGINEER

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
SEAPORT REALTY, LLC
76 EXETER RD.
NEWMARKET, NH 03857

TITLE
BOUNDARY SURVEY
for
85 DANIEL STREET, LLC
85 DANIEL ST
PORTSMOUTH, NH 03801
TAX MAP 107, LOT 8

JOB NUMBER	DWG. NO.	ISSUE
22-029	1 OF 3	9



LEGEND

- SEWER MANHOLE
- MONUMENT TO BE SET
- MONUMENT FOUND
- UTILITY POLE
- FENCE
- VERTICAL GRANITE CURB
- SEWER LINE
- OVERHEAD UTILITIES
- WATER LINE
- DRAIN LINE
- GAS LINE
- EXISTING HOUSE
- PROPOSED STRUCTURE
- CATCH BASIN

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
SCALE: 1" = 10'

NOTES

1) OWNER OF RECORD:
85 DANIEL STREET, LLC
46 MANGROVE STREET,
PORTSMOUTH, NH 03801

LOT INFORMATION
TAX MAP 107, LOT 8
RCRD: 6380-2328
AREA: 3,142 SF, 0.07 ACRES

2) PARCEL IS IN CHARACTER DISTRICT 4 (CD4) AND HISTORIC DISTRICT SETBACKS:
FRONT.....10 FT
SIDE.....0 FT
REAR.....5 FT
MAXIMUM BUILDING HEIGHT.....40 FT
MAXIMUM BUILDING COVERAGE.....90%
MINIMUM OPEN SPACE.....10%

3) PARKING SPACE CALCULATIONS
FIRST FLOOR UNITS
UNIT A: 550 SF ; UNIT B: 623 SF
500 SF-750 SF/1 SPACE PER UNIT= 2 SPACE
SECOND & THIRD FLOOR UNITS
UNIT C: 1,478 SF; UNIT D: 1,416 SF
OVER 750 SF/1.3 SPACES PER UNIT = 2.6 SPACES
TOTAL REQUIRED = 4.6 SPACES
TOTAL PROVIDED = 6 SPACES

INSTALLATION OF PARKING LIFTS IN THE GARAGE; RESULTING IN A TOTAL OF 6 OFF STREET PARKING SPACES (4 IN GARAGE, 2 OUTSIDE)

4) COVERAGES:
BUILDING COVERAGE
EXISTING BUILDING COVERAGE
HOUSE 1,641 SF
EXISTING STRUCTURE 1,641 SF
BUILDING COVERAGE 1,641 / 3,142 = 52.2%

PROPOSED BUILDING COVERAGE
HOUSE.....1,556 SF
PROPOSED ADDITION 504 SF
PROPOSED STRUCTURE 2,060 SF
BUILDING COVERAGE 2,060 / 3,142 = 65.6%

OPEN SPACE
EXISTING OPEN SPACE
BUILDING COVERAGE.....1,641 SF
PLATFORM & STEPS.....87 SF
BULKHEAD.....24 SF
ASPHALT 569 SF
TOTAL COVERAGE 2,321 SF
EXISTING OPEN SPACE = 3,142 - 2,321= 821 SF
EXISTING OPEN SPACE = 821 / 3,142 = 26.1%

PROPOSED OPEN SPACE
BUILDING COVERAGE.....2,060 SF
(2)9'x19' PARKING SPACES.....342 SF
PLATFORM & STEPS 109 SF
TOTAL COVERAGE 2,511 SF
PROPOSED OPEN SPACE = 3,142-2,511 = 631 SF
PROPOSED OPEN SPACE = 631 / 3,142 = 20.1%

*IMPERVIOUS COVERAGE DECREASE FROM 73.9% TO 69.0%

5) SNOW TO BE COLLECTED AND DISPOSED OF OFF-SITE.

6) UTILITIES:
WATER
- EXISTING ¾" DOMESTIC WATER LINE TO BE CUT AND CAPPED. NEW 1" LINE TO BE INSTALLED.
- FIRE SUPPRESION ; INSTALL NEW CAST IRON LINE, SIZE TO BE DETERMINED.

SEWER
- NEW SEWER LINE TO BE INSTALLED, ENSURE NEW LINE USES EXISTING TIE IN LOCATION

ALL WORK TO BE COORDINATED & APPROVED BY CITY DPW. DPW TO WITNESS INSTALLATION & CONNECTION TO MAIN.

ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON DATE

R. ALEX ROSS No. 9409 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

ISS.	DATE	DESCRIPTION OF ISSUE
9	11/23/2022	PRELIMINARY
8	10/19/2022	PRELIMINARY
7	10/4/2022	PRELIMINARY
6	9/23/2022	PRELIMINARY
5	9/20/2022	PRELIMINARY
4	9/9/2022	PRELIMINARY
3	9/2/2022	PRELIMINARY
2	8/18/2022	FOR RECORDING
1	3/2/2022	PRELIMINARY

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
SEAPORT REALTY, LLC
76 EXETER RD.
NEWMARKET, NH 03857

TITLE
SITE PLAN
for
85 DANIEL STREET, LLC
85 DANIEL ST
PORTSMOUTH, NH 03801
TAX MAP 107, LOT 8

JOB NUMBER	DWG. NO.	ISSUE
22-029	2 OF 3	9

TECHO-BLOC & PERVIOUS PAVER INSTALLATION
GENERAL NOTES

DATA COLLECTION

1. DETERMINE THE SIZE, SHAPE AND INTENDED USE OF FINISHED AREAS.
2. CLASSIFY SUB-GRADE SOILS.
3. DOCUMENT ALL EXISTING CONDITIONS. (FIXED POINTS, EXISTING GRADES, SITE CONTOURS, ETC)
4. DOCUMENT SOIL TYPE, LOCATION, AND ELEVATION OF BELOW GRADE AND OVERHEAD UTILITIES BOTH PUBLIC AND PRIVATE.
5. ENSURE PUBLIC UTILITIES ARE MARKED THROUGH THE USE OF LOCATING SERVICE.
6. DETERMINE THE CROSS SECTION DESIGN OF THE SYSTEM BASED ON SOIL TYPE AND APPLICATION, SHOWING PROPOSED SUB-GRADE AND FINISHED GRADE ELEVATIONS AND ALL GEOTEXTILES AND DRAINAGE DRAINAGE PIPES NEEDED FOR CONSTRUCTION.
7. ESTABLISH THE TYPE, LOCATION, AND ELEVATION OF RELIEF STRUCTURES IF REQUIRED (OVERFLOW PIPE DISCHARGING TO RAIN GARDEN, ETC).
8. DETERMINE CURB OR EDGE RESTRAINT TYPE, ELEVATION, AND LOCATION.
9. CHOOSE PATTERN APPROPRIATE TO THE APPLICATION (TRAFFIC TYPE AND LOAD).

EXCAVATION

1. BEFORE EXCAVATING, CALL ALL LOCAL UTILITY COMPANIES (E.G., PHONE, GAS, ELECTRICAL) TO ENSURE THAT THE AREA IN WHICH YOU PLAN TO DIG IS CLEAR OF UNDERGROUND CABLES OR WIRES. IF ANY ARE FOUND, PLEASE NOTIFY THE APPROPRIATE COMPANIES BEFORE YOU BEGIN.
2. EXCAVATION DEPTH IS DETERMINE FROM THE FOUNDATION THICKNESS ACCORDING TO THE PROJECT SPECIFICATIONS (FOUNDATION THICKNESS IS DETERMINED BY QUALIFIED ENGINEER BASED ON STRUCTURAL AND HYDROLOGIC ANALYSIS.)
3. THE SLOPE OF THE SUB-GRADE WILL DEPEND ON DRAINAGE DESIGN AND INFILTRATION TYPE, A MINIMUM SLOPE OF .5% (1/16" PER FOOT) IS REQUIRED.
4. THE DISTANCE THAT THE EXCAVATED AREA SHOULD EXTEND BEYOND THE AREA TO BE PAVED SHALL BE ONE TO 1.5 TIMES THE THICKNESS OF THE FOUNDATION. EXTRA SPACE ENSURE STABILITY OF PAVERS NEAR EDGE AND EDGE RESTRAINTS.
5. LEVEL THE BOTTOM OF THE EXCAVATED AREA WITH A RAKE.
6. COMPACTION WILL REDUCE THE PERMEABILITY OF THE SUB-GRADE. CARE SHOULD BE TAKEN TO MAINTAIN UNDISTURBED SOIL INFILTRATION DURING EXCAVATION AND CONSTRUCTION. STABILIZATION OF SUB-GRADE MAY BE REQUIRED WITH WEAK, OR CONTINUOUSLY SATURATED SOILS. REDUCED INFILTRATION MAY REQUIRE DRAINAGE PIPES WITHIN THE SUB-BASE TO CONFORM TO STORMWATER DRAINAGE REQUIREMENTS.

GEOTEXTILES, IMPERMEABLE LINERS, AND DRAIN PIPES.

1. USE A WOVEN GEOTEXTILE WITH HIGH BI-AXEL STRENGTH.
2. PLACE THE GEOTEXTILE ON THE BOTTOM AND SIDES OF THE SOIL SUB-GRADE. ELIMINATE WRINKLES IN THE GEOTEXTILE AND ENSURE IT IS NOT DAMAGED DURING CONSTRUCTION.
3. OVERLAP OF GEOTEXTILE SHALL BE A MINIMUM 2'-0" IN THE DIRECTION OF DRAINAGE. OVERLAPPING SHOULD BE "SHINGLE" STYLE WITH RESPECT TO ANY SLOPE DIRECTION AND BASE STONE DISTRIBUTION DIRECTION. KEEP PROPERLY TENSIONED, ELIMINATE WRINKLES, AND AVOID DAMAGING FABRIC (NO SPIKES).

SUB-BASE

1. USE SUB-BASE ASTM NO. 2 OR NO. 3 MEETING THE FOLLOWING REQUIREMENTS:
   - A. 90% FRACTURED SYMMETRICAL PARTICALS
   - B. LESS THAN 5% PASSING 200 SIEVE
   - C. INDUSTRY HARDNESS TESTED
2. MOISTEN SPREAD AND COMPACT ASTM NO. 2 AGGREGATE SUB-BASE IN MINIMUM 6" LIFTS (WITHOUT DAMAGING OR DISTORTING THE GEOTEXTILE).
3. MAKE AT LEAST TWO PASSES IN VIBRATORY MODE FOLLOWED BY AT LEAST TWO PASSES IN STATIC MODE WITH A MINIMUM 10 TON VIBRATORY ROLLER, UNTIL THERE IS NOT VISIBLE MOVEMENT OF THE AGGREGATE.
4. DO NOT ALLOW COMPACTOR TO CRUSH AGGREGATE.
5. SURFACE TOLERANCE OF THE ASTM NO. 2 SUB-BASE SHOULD BE ±2½" OVER 10'.

EDGE RESTRAINT

1. INSTALL AVIGNON, BELGIK, PIETRA, TUNDRA, OR UNIVERSAL EDGE CUT UNITS. CAST-IN-PLACE CONCRETE OR PRECAST CONCRETE CURBS SHALL BE UTILIZED IN VEHICULAR APPLICATIONS.
2. EDGE RESTRAINT MAY REST ON AN OPEN-GRADED OR DENSE-GRADED AGGREGATE BASE.

BASE

1. MOISTEN, SPREAD AND COMPACT THE ASTM NO. 57 AGGREGATE BASE LAYER IN ONE 4" THICK LIFT.
2. MAKE A MINIMUM OF TWO PASSES IN VIBRATORY MODE FOLLOWED BY AT LEAST TWO STATIC MODE WITH A MINIMUM 10 TON ROLLER, UNTIL NO VISIBLE MOVEMENT OF THE AGGREGATE. ALTERNATIVELY, A 13,500 LB PLATE COMPACTOR CAN BE USED TO COMPACTER ASTM NO. 57 AGGREGATE BASE.
3. DO NOT ALLOW COMPACTOR TO CRUSH AGGREGATE.
4. SURFACE TOLERANCE OF THE ASTM NO. 57 BASE SHOULD BE ±1" OVER 10'.

BEDDING COURSE

1. MOISTEN, SPREAD AND SCREED ASTM NO 8. AGGREGATE BEDDING LAYER IN ONE 2" THICK LIFT
2. SURFACE TOLERANCE OF THE ASTM NO 8. BEDDING COURSE ±⅜" OVER 10'
3. CONSTRUCTION EQUIPMENT AND PEDESTRIAN TRAVEL ON SCREEDED BEDDING COARSE IS PROHIBITED.

PAVER

1. PAVERS SHOULD BE PLACED IN PATTERN SHOWN ON DRAWINGS. LAY UNITS TIGHT TO DESIGNATED LAYING PATTERNS, UNITS HAVE LUGS TO MAINTAIN CONSISTENT JOINT WIDTH.
2. IN SLOPED CONDITIONS START LAYING FROM THE BOTTOM IN AN UPHILL DIRECTION.
3. THE MINIMUM SLOPE FOR PERMEABLE PAVEMENT SURFACE IS 1%.
4. INFLO PAVERS CAN BE INSTALLED WITH TBI00SI (TECHO-BLOC MECHANICAL TOOL) TO EXPEDITE INSTALLATION.
5. WHEN SUBJECT IT VEHICULAR TRAFFIC, CUT UNITS SHOULD NOT BE SMALLER THEN ⅓ THE WHOLE PAVER. WHEN USING CUT PAVERS MAINTAIN JOINT.
6. IN VEHICULAR APPLICATION LAY PATTERN PERPENDICULAR TO TRAFFIC FLOW.

JOINT FILL

1. FILL PAVER JOINT OPENINGS WITH ASTM NO. 8 AGGREGATE. SWEEP STONE TO FILL JOINTS. SURFACE MUST BE SWEPT CLEAN PRIOR TO COMPACTION
2. COMPACT WITH 5,000 LB PLATE COMPACTOR (TWO PASSES MINIMUM). INSTALL OF NEOPRENE PAD TO PROTECT THE TEXTURE OF THE PAVING UNITS.
3. DO NOT COMPACT WITHIN 6' OF UNRESTRAINED EDGES OF PAVERS.
4. APPLY ADDITIONAL AGGREGATE TO FILL THE JOINT OPENINGS IF NEEDED AND COMPACT.
5. SURFACE TOLERANCE OF COMPACTED PAVERS SHOULD BE ±⅜" OVER 10'.

POST INSTALLATION PROTECTION

1. MAINTAIN EROSION AND SEDIMENT MEASURES AT PERIMETER TO PREVENT CONTAMINATION OF POROUS PAVEMENT SYSTEM.

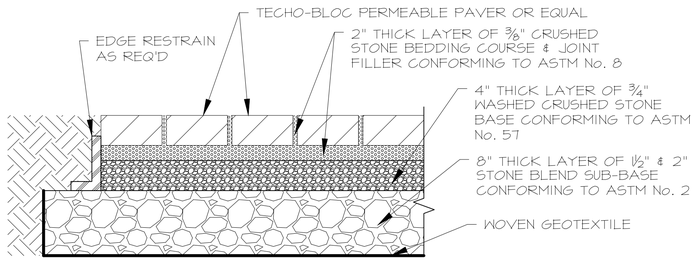
MAINTENANCE NOTES

A. Maintenance of Common Facilities or Property

1. Future owners or assigns are responsible for maintenance of all stormwater infrastructure associated with the facility and the property. This includes the roof drainage system, stone infiltration beds, gravel areas, and the pervious pavers.

B. General Inspection and Maintenance Requirements

1. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include but are not limited to the following:
   a. Pervious Pavers
2. Maintenance of permanent measures shall follow the following schedule:
   a. The following requirements will help assure that the pervious pavers system is maintained to preserve its effectiveness:
      i. Inspection of site shall occur monthly for the first few months after construction. Then inspections can occur on an annual basis, preferably after rain events when clogging can occur and be obvious. Permeable pavers require minimal maintenance; however maintenance is absolutely necessary to ensure a proper working system.
      ii. Asphalt seal coating is absolutely forbidden. Surface seal coating is not reversible.
      iii. Street sweepers with vacuums, water, and brushes can be used to restore permeability. Follow sweeping with high-pressure hosing of the surface pores. Surface should be vacuumed 4 times per year, and at any additional times sediment is spilled, eroded, or tracked onto the surface.
      iv. Planted areas adjacent to pervious pavers should be well maintained to prevent soil washout onto the pavement. If any bare spots or eroded areas are observed within the planted areas, they should be replanted and/or stabilized at once.
      v. Immediately clean any soil deposited on pavers. Superficial dirt does not necessarily clog the voids. However, dirt that is ground in repeatedly by tires can lead to clogging. Therefore, trucks or other heavy vehicles should be prevented from tracking or spilling dirt onto the pavement. Replace any damaged paving blocks.
      vi. Do not allow construction staging, soil/mulch storage, etc. on unprotected pavers surface.
      vii. No winter sanding. Mechanical snow and ice removal preferred.
      viii. Written and verbal communication to the porous paver's future owner should make clear the special purpose and special maintenance requirements such as those listed here.



PERVIOUS PAVERS DETAIL
N.T.S.

ANNUAL OPERATIONS & MAINTENANCE REPORT

ACTIVITY	DATE OF INSPECTION	WHO INSPECTED	SATISFACTORY: YES, NO, N/A	MAINTENANCE NEEDED	IMPLEMENTED DATE OF CORRECTIVE ACTION	FINDINGS OF INSPECTOR
PARKING LOT SWEEPING PERVIOUS PAVEMENT						

STATE OF NEW HAMPSHIRE
R. ALEX ROSS
No. 9409
LICENSED
PROFESSIONAL ENGINEER

ISS.	DATE	DESCRIPTION OF ISSUE
9	11/23/2022	PRELIMINARY
8	10/19/2022	PRELIMINARY
7	10/4/2022	PRELIMINARY
6	9/23/2022	PRELIMINARY
5	9/20/2022	PRELIMINARY
4	9/9/2022	PRELIMINARY
3	9/2/2022	PRELIMINARY
2	8/18/2022	FOR RECORDING
1	3/2/2022	PRELIMINARY

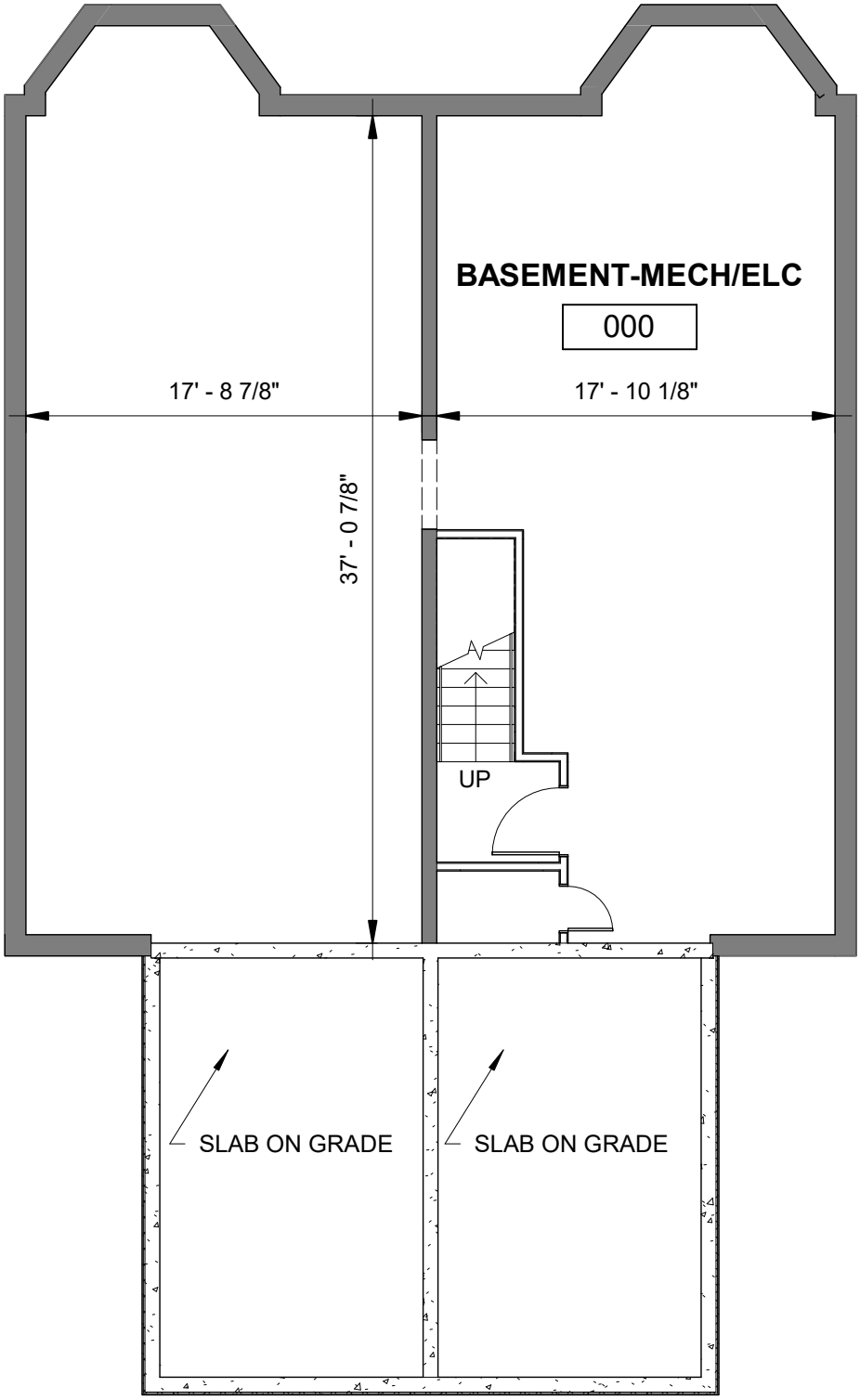
SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
SEAPORT REALTY, LLC
76 EXETER RD.
NEWMARKET, NH 03857

TITLE
NOTES
for
85 DANIEL STREET, LLC
85 DANIEL ST
PORTSMOUTH, NH 03801
TAX MAP 107, LOT 8

JOB NUMBER 22-029 | DWG. NO. 3 OF 3 | ISSUE 9



85 DANIEL STREET
PORTSMOUTH, NH 03801

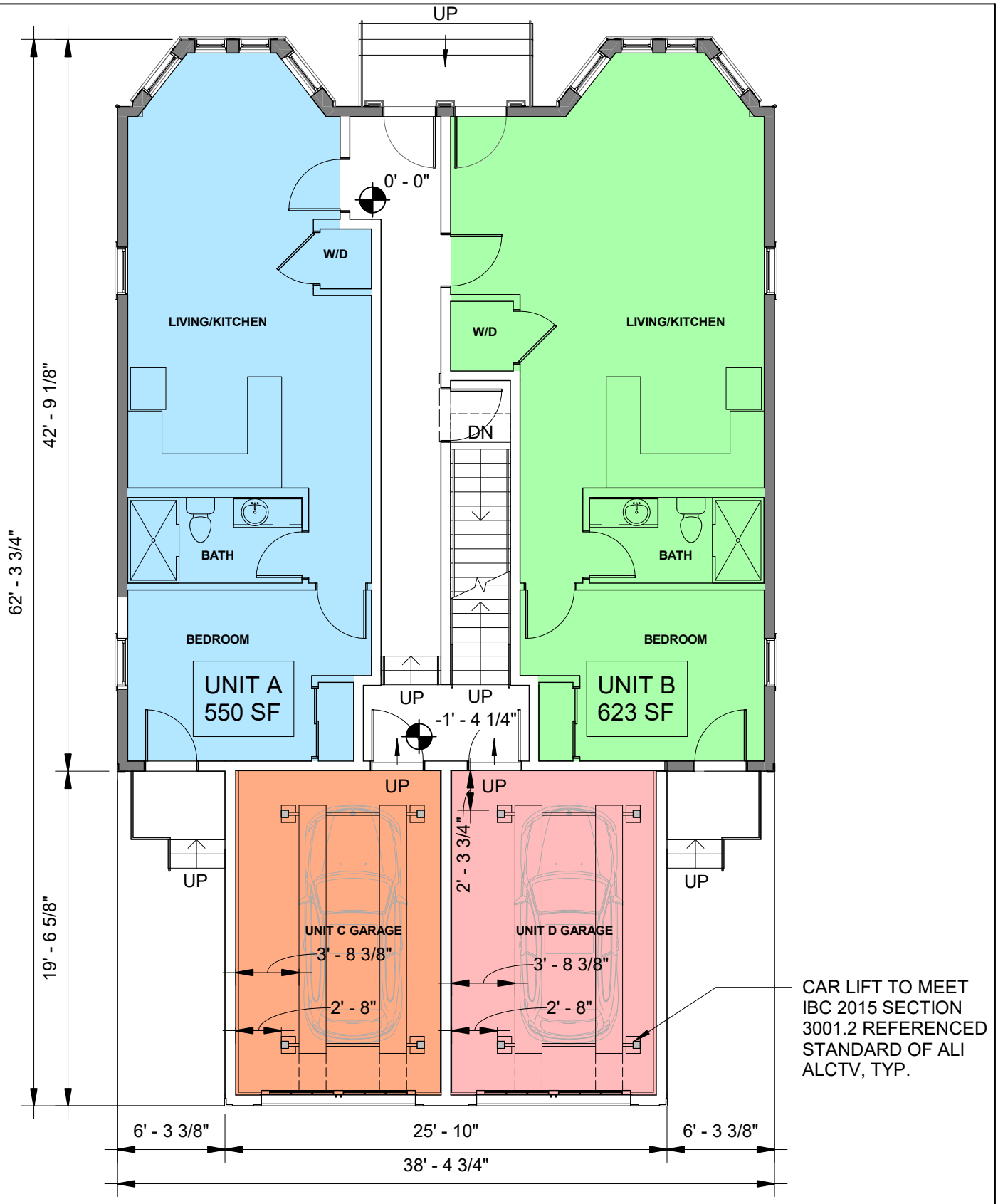
BASEMENT PLAN
PLANNING BOARD - DECEMBER 2022

McHENRY ARCHITECTURE

Project Number:	22081
Date:	11/23/2022
Drawn By:	RD
Checked By:	MG

A-0

Scale 1/8" = 1'-0"



85 DANIEL STREET
PORTSMOUTH, NH 03801

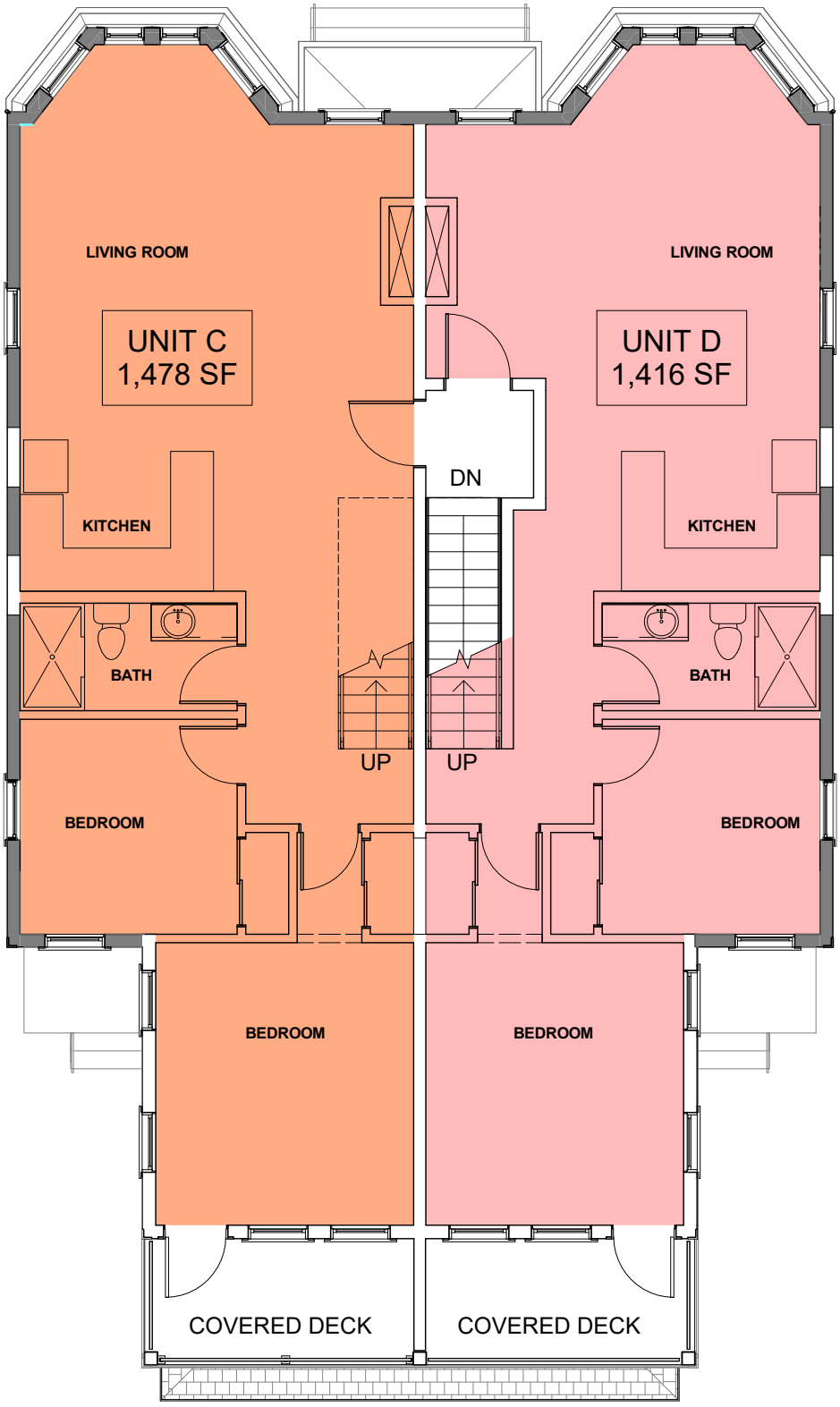
FIRST FLOOR PLAN
PLANNING BOARD - DECEMBER 2022

McHENRY ARCHITECTURE

Project Number:	22081
Date:	11/23/2022
Drawn By:	RD
Checked By:	MG

A-1

Scale 1/8" = 1'-0"



85 DANIEL STREET
PORTSMOUTH, NH 03801

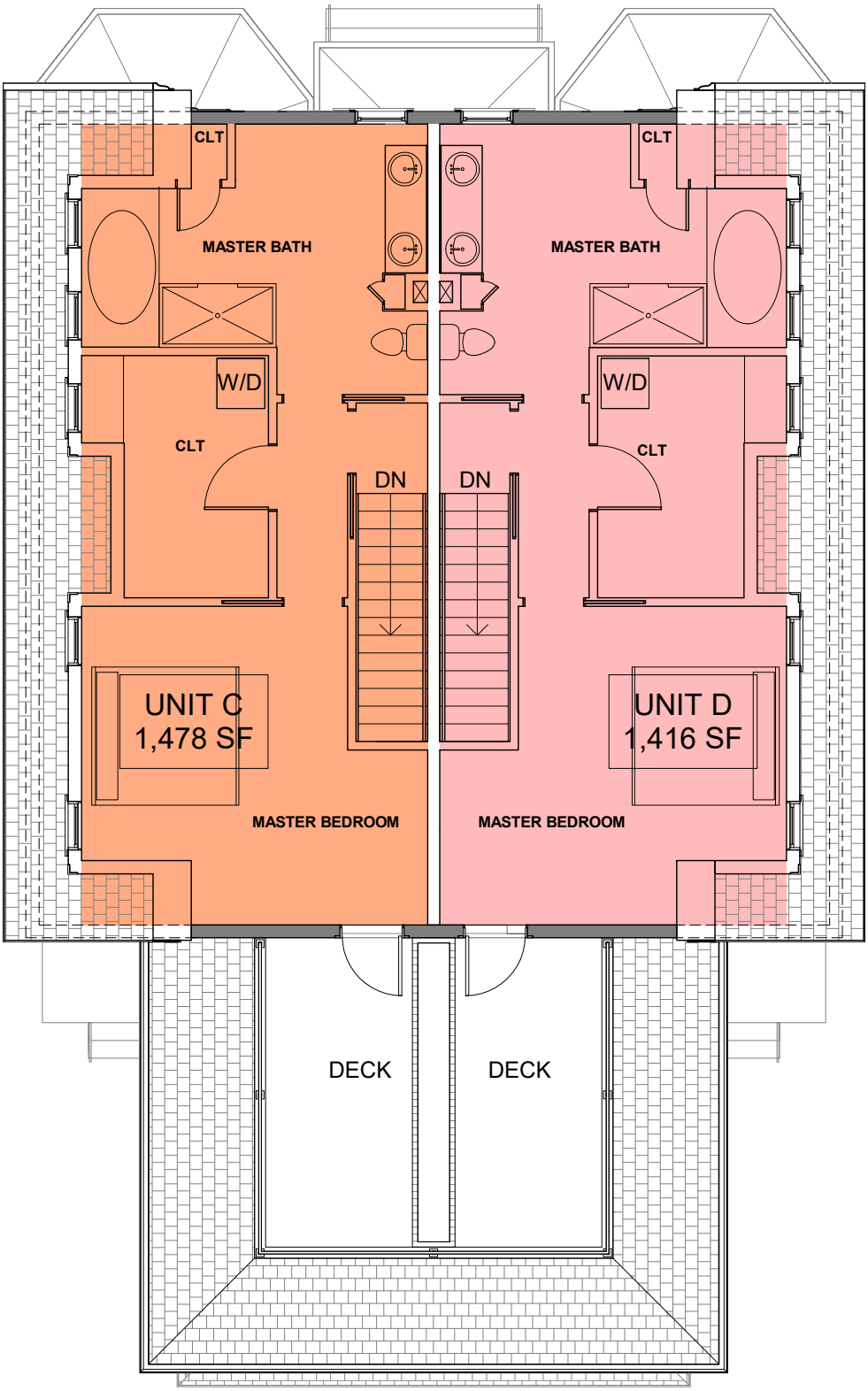
SECOND FLOOR
PLANNING BOARD - DECEMBER 2022

McHENRY ARCHITECTURE

Project Number:	22081
Date:	11/23/2022
Drawn By:	RD
Checked By:	MG

A-2

Scale 1/8" = 1'-0"



85 DANIEL STREET
PORTSMOUTH, NH 03801

THIRD FLOOR
PLANNING BOARD - DECEMBER 2022

McHENRY ARCHITECTURE

Project Number:	22081
Date:	11/23/2022
Drawn By:	RD
Checked By:	MG

A-3

Scale 1/8" = 1'-0"

Z:\Active Project Files\22081-85 DANIEL ST - LC\Dwgs\3-DD\85 DANIEL ST - LC - DD.rvt 11/21/2022 3:37:29 PM

STREET TREE IS OMITEON DANIEL STREET TO REMAIN. IT IS OMITTED FOR GRAPHIC PURPOSES ONLY.

MARKETING PACKAGE

85 DANIEL STREET
PORTSMOUTH, NH 03801

VIEW FROM DANIEL STREET

McHENRY ARCHITECTURE
4 Market Street
Portsmouth, New Hampshire

A-4

06/17/2022
McHA: JD / RD / MG
NOT TO SCALE

MARKETING PACKAGE

85 DANIEL STREET
PORTSMOUTH, NH 03801

VIEW FROM DANIEL STREET

McHENRY ARCHITECTURE
4 Market Street
Portsmouth, New Hampshire

A-5

06/17/2022
McHA: JD / RD / MG
NOT TO SCALE

Z:\Active Project Files\21122-85 DANIEL ST\Models\85 DANIEL ST - Rendering.rvt

MARKETING PACKAGE

85 DANIEL STREET
PORTSMOUTH, NH 03801

VIEW FROM REAR ALLEY

McHENRY ARCHITECTURE
4 Market Street
Portsmouth, New Hampshire

A-6

06/17/2022
McHA: JD / RD / MG
NOT TO SCALE

Z:\Active Project Files\21122-85 DANIEL ST\Models\85 DANIEL ST - Rendering.rvt

MARKETING PACKAGE

85 DANIEL STREET
PORTSMOUTH, NH 03801

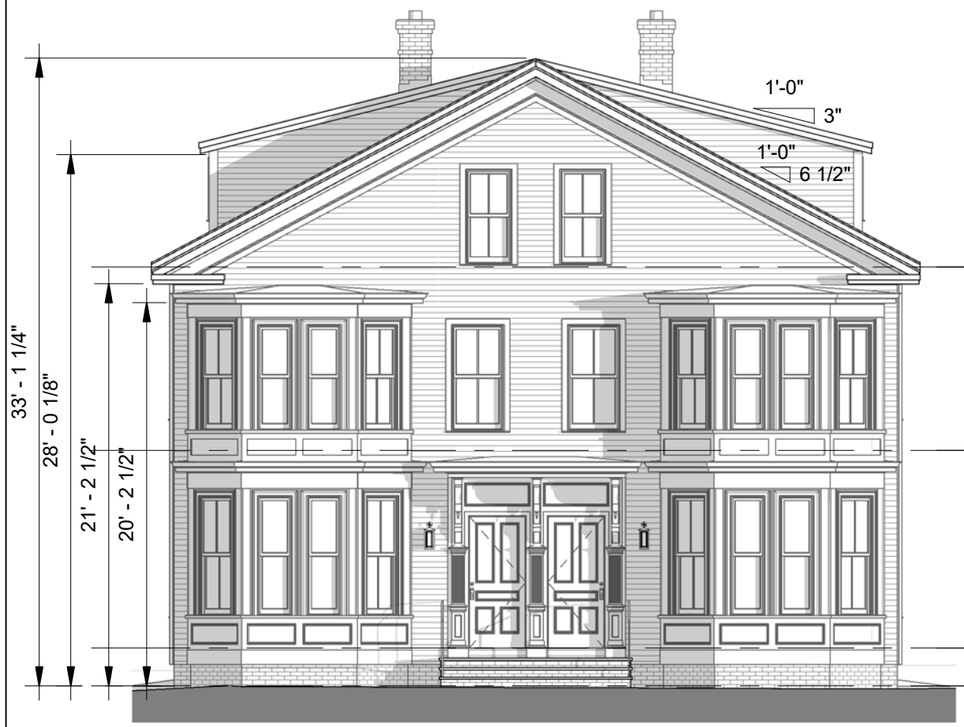
VIEW FROM REAR ALLEY

McHENRY ARCHITECTURE
4 Market Street
Portsmouth, New Hampshire

A-7

06/17/2022
McHA: JD / RD / MG
NOT TO SCALE

Z:\Active Project Files\21122-85 DANIEL ST\Models\85 DANIEL ST - Rendering.rvt



1 NORTH ELEVATION (DANIEL STREET)
1/8" = 1'-0"

2 EAST ELEVATION (LEFT SIDE YARD)
1/8" = 1'-0"

85 DANIEL STREET PORTSMOUTH, NH 03801	ELEVATIONS PLANNING BOARD - DECEMBER 2022	McHENRY ARCHITECTURE 4 Market Street Portsmouth, New Hampshire	A-8	11/23/2022 McHA: RD / MG AS INDICATED

Z:\Active Project Files\22081-85 DANIEL ST - LC\Dwgs\3-DD\85 DANIEL ST - LC - DD.rvt

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. The checklist is required to be completed and uploaded to the Site Plan application in the City's online permitting system. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Applicant: SEAPORT REALTY, LLC Date Submitted: 9-23-2022

Application # (in City's online permitting): LU-22-

Site Address: 85 Daniel St Map: 107 Lot: 8

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☑	Complete application form submitted via the City's web-based permitting program (2.5.2.1**(2.5.2.3A)**		N/A
☑	All application documents, plans, supporting documentation and other materials uploaded to the application form in viewpoint in digital Portable Document Format (PDF). One hard copy of all plans and materials shall be submitted to the Planning Department by the published deadline. **(2.5.2.8)**		N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Statement that lists and describes "green" building components and systems. **(2.5.3.1B)**		
☑	Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1C)**	A-1, A-2, A-3	N/A
☑	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1D)**	Sheet 1	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	Sheet 1	N/A
☑	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1F)**	Sheets 1 & 2	N/A
☑	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**		N/A
☑	List of reference plans. **(2.5.3.1H)**	Sheet 1	N/A
☑	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1I)**		N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. **(2.5.4.1A)**	Required on all plan sheets	N/A
☑	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☑	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	Sheets 1 & 2	N/A
☑	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☑	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	N/A No Wetlands	N/A
☑	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Sheet 2	N/A
☑	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Sheet 1 & 2	N/A
☑	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☑	Source and date of data displayed on the plan. **(2.5.4.2D)**	Sheet 1	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	**1. Existing Conditions: (2.5.4.3A)** • Surveyed plan of site showing existing natural and built features; • Existing building footprints and gross floor area; • Existing parking areas and number of parking spaces provided; • Zoning district boundaries; • Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre; • Existing impervious and disturbed areas; • Limits and type of existing vegetation; • Wetland delineation, wetland function and value assessment (including vernal pools); • SFHA, 100-year flood elevation line and BFE data, as required.	Sheet 1	
☑	**2. Buildings and Structures: (2.5.4.3B)** • Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation; • Elevations: Height, massing, placement, materials, lighting, façade treatments; • Total Floor Area; • Number of Usable Floors; • Gross floor area by floor and use.	A-1, A-2, A-3	
☑	**3. Access and Circulation: (2.5.4.3C)** • Location/width of access ways within site; • Location of curbing, right of ways, edge of pavement and sidewalks; • Location, type, size and design of traffic signing (pavement markings); • Names/layout of existing abutting streets; • Driveway curb cuts for abutting prop. and public roads; • If subdivision; Names of all roads, right of way lines and easements noted; • AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	Sheet 2	
☑	**4. Parking and Loading: (2.5.4.3D)** • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided).	Sheet 2	
☑	**5. Water Infrastructure: (2.5.4.3E)** • Size, type and location of water mains, shut-offs, hydrants & Engineering data; • Location of wells and monitoring wells (include protective radii).	Sheet 2	
☑	**6. Sewer Infrastructure: (2.5.4.3F)** • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period.	Sheet 2	

☑	**7. Utilities: (2.5.4.3G)** • The size, type and location of all above & below ground utilities; • Size type and location of generator pads, transformers and other fixtures.	Sheet 2	
☑	**8. Solid Waste Facilities: (2.5.4.3H)**	N/A	
	• The size, type and location of solid waste facilities.	N/A	
☑	**9. Storm water Management: (2.5.4.3I)** • The location, elevation and layout of all storm-water drainage. • The location of onsite snow storage areas and/or proposed off-site snow removal provisions. • Location and containment measures for any salt storage facilities • Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.	N/A Due to reduction in Impervious Surface	
☑	**10. Outdoor Lighting: (2.5.4.3J)** • Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.	N/A Lighting Exists	
☑	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	N/A	
☑	**12. Landscaping: (2.5.4.3K)** • Identify all undisturbed area, existing vegetation and that which is to be retained; • Location of any irrigation system and water source.	N/A	
☑	**13. Contours and Elevation: (2.5.4.3L)** • Existing/Proposed contours (2 foot minimum) and finished grade elevations.	N/A	
☑	**14. Open Space: (2.5.4.3M)** • Type, extent and location of all existing/proposed open space.	Sheet 2	
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	N/A	
☑	**16. Character/Civic District (All following information shall be included): (2.5.4.3P)** • Applicable Building Height (10.5A21.20 & 10.5A43.30); • Applicable Special Requirements (10.5A21.30); • Proposed building form/type (10.5A43); • Proposed community space (10.5A46).	Sheet 2	
☑	**17. Special Flood Hazard Areas (2.5.4.3Q)** • The proposed development is consistent with the need to minimize flood damage; • All public utilities and facilities are located and construction to minimize or eliminate flood damage; • Adequate drainage is provided so as to reduce exposure to flood hazards.	Sheet 1, Note 4	

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Traffic Impact Study or Trip Generation Report, as required. **(3.2.1-2)**	N/A	
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	N/A	
☑	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	N/A	
☑	Stormwater Management and Erosion Control Plan. **(7.4)**	N/A	
☑	Inspection and Maintenance Plan **(7.6.5)**	N/A	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	All local approvals, permits, easements and licenses required, including but not limited to: • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. **(2.5.3.2A)**	N/A	
☑	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: • Calculations relating to stormwater runoff; • Information on composition and quantity of water demand and wastewater generated; • Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; • Estimates of traffic generation and counts pre- and post-construction; • Estimates of noise generation; • A Stormwater Management and Erosion Control Plan; • Endangered species and archaeological / historical studies; • Wetland and water body (coastal and inland) delineations; • Environmental impact studies. **(2.5.3.2B)**	N/A	
☑	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	To Be Submitted	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	No state or federal permits required	
☑	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Sheet 2	N/A
☑	For site plans that involve land designated as "Special Flood Hazard Areas" (SFHA) by the National Flood Insurance Program (NFIP) confirmation that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. **(2.5.4.2F)**	N/A	
☑	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	Sheet 2	N/A

Applicant's Signature: _____ **Date:** _____

MEMORANDUM

Date:	Se te er 22, 2022
Project:	8 anie St.
Subject:	Green i in c nents

The sc e the r ject i ies an e istin i in cate n the site 8 anie St. whi e inc r ratin reen i in ateria s an s ste s int the ren ati n an a iti n. As art the site an re iew a icati n, secti n 2. .3.1 , the r ject has inc r rate reen c nents int the r ject as iste e w.

- Increase r an wa ins ati n t r i e c e ini .
- Re se e istin str ct re an c a in .
- Ener e icient a in an ra es r re ace ent an new win ws.
- w w in i t res.
- E ener e icient i htin .
- Rec c e c ntent r an i in c nents inc in interi r inishes.

Richard Desjardins

From: Kosko, Nickolai E <nickolai.kosko@eversource.com>
Sent: Tuesday, October 18, 2022 6:57 AM
To: Lane Cheney
Cc: david@lemieuxbuildersllc.com
Subject: RE: Custom House Court Pole Relocation

Good Morning Mr Cheney:

Eversource will indeed help you relocate the pole to a more suitable position for your construction. This may include putting facilities underground in order to make this happen. However in any circumstance Eversource will help with a solution to get you access to your parking location.

Sincerely,

Thanks
Nickolai Kosko
Nick Kosko
Field Supervisor Electrical Design
Eastern Region
Phone: 603-332-7565
Cell: 603-842-0416
Email: nickolai.kosko@eversource.com
EVERSOURCE

From: Lane Cheney <lane@cheneyco.com>
Sent: Monday, October 17, 2022 3:24 PM
To: Kosko, Nickolai E <nickolai.kosko@eversource.com>
Cc: david@lemieuxbuildersllc.com
Subject: Custom House Court Pole Relocation

Hello Mr. Kosko,

I am writing as a follow up to our meeting a few weeks back. As discussed, we hope to work with Eversource to have a utility pole relocated a few feet in order to allow access to a proposed parking space at our property, located on Custom House Court. Alternatively, converting the roadway to underground power would also work and in fact would be preferred, but we get that that is a very involved project.

We don't expect guarantees and are aware that there will be costs to us. That being said, we are looking for some sort of acknowledgement from you folks that we will work together in good faith to allow access to the parking spot. We would share this acknowledgement with the city, so that they are aware that access to the parking spot is feasible. This spot has a significant impact on the project, regarding the number of units allowed.

Thanks for your attention to this matter. We look forward to working with you.

Thanks, Lane

Lane Cheney 603-502-8232
Dave Lemieux 603-235-4370

1 SOUTH ELEVATION (CUSTOM HOUSE LANE)
1/8" = 1'-0"

2 WEST ELEVATION (RIGHT SIDE YARD)
1/8" = 1'-0"

85 DANIEL STREET PORTSMOUTH, NH 03801	ELEVATIONS PLANNING BOARD - DECEMBER 2022	McHENRY ARCHITECTURE 4 Market Street Portsmouth, New Hampshire	A-9	11/23/2022 McHA: RD / MG AS INDICATED

Z:\Active Project Files\22081-85 DANIEL ST - LC\Dwgs\3-DD\85 DANIEL ST - LC - DD.rvt

Findings of Fact | Subdivision Rules and Regulations
City of Portsmouth Planning Board

Date: December 15, 2022
Property Address: 49 Sheafe Street
Application #: LU-22-179
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

	Subdivision Review Criteria	**Finding** (Meets Standards/ Requirements)	**Supporting Information**
1	Subdivision Rules and Regulations III. D. 1 The Board shall act to deny any application which is not in compliance with Section IV or V as appropriate. **SECTION IV - REQUIREMENTS FOR PRELIMINARY PLAT**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee (TAC) for conformance with the General Requirements. The application was recommended for approval on December 6, 2022 at the Technical Advisory Committee Meeting.
2	**SECTION V - REQUIREMENTS FOR FINAL PLAT**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee (TAC) for conformance with the General Requirements. The application was recommended for approval on December 6, 2022 at the Technical Advisory Committee Meeting.
3	**SECTION VI - GENERAL REQUIREMENTS**	**Meets**	The application has been reviewed by the Technical Advisory Committee (TAC) for

	Subdivision Review Criteria	Finding (Meets Standards/ Requirements)	Supporting Information
		Does Not Meet	conformance with the General Requirements. • No improvements proposed with except new water line for Lot 1. The application was recommended for approval on December 6, 2022 at the Technical Advisory Committee Meeting.
4	**SECTION VII - DESIGN STANDARDS**	**Meets** **Does Not Meet**	The application has been reviewed by the Technical Advisory Committee (TAC) for conformance with these minimum requirements. • New water line service will be installed for Lot 1. • Easements provided for utilities, access and maintenance for a no build area between Lot 1 and Lot 2. The application was recommended for approval on December 6, 2022 at the Technical Advisory Committee Meeting.
5	**<u>Other Board Findings:</u>**		
6	**<u>Additional Conditions of Approval:</u>**		

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

30 November 2022

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Application for Subdivision Approval, Tax Map 107, Lot 21, 49 Sheafe Street

Dear Chair Chellman and Planning Board members:

On behalf of the Jonathan Watson Sobel Revocable Trust, we submit herewith the attached package for the subdivision of one lot into two lots at the above-mentioned site. In support thereof, we are submitting a subdivision plan and associated materials for review and approval. The property is located at 49 Sheafe Street and is depicted on Portsmouth Tax Map 107 as Lot 21. The lot is in the CD 4 District and is also within the Historic District. The lot is developed with three separate buildings.

The proposal is to divide the property into two lots for estate planning purposes. Proposed Lot 1 will contain one of the existing buildings and will be 1,855 square feet in lot size. Pedestrian access from Sheafe Street is preserved with the conveyance of a walkway extending from Sheafe Street to the front door of the premises. This area also provides access to proposed Lot 2 which will continue. Parking for Lot 1 is in a garage accessed from Custom House Court. Proposed Lot 2 will be 3,548 square feet in lot size. The lot will contain two existing buildings, one building along Sheafe Street and a second detached building in the rear. Pedestrian and vehicle access is from Sheafe Street; with off street parking provided.

The Technical Advisory Committee has considered the merits of this subdivision application. As a result of the deliberations easements were created and shown on the attached Easement Plan, with proposed deeds included in the submission. The easements cover access, utilities, and building proximity restrictions. The existing water service for # 49 Sheafe (Rear) currently runs through the 49 Sheafe Street building, which is okay under single ownership, but the subdivision creates the need to have a water service for Lot 1 on Lot 1. Note 12 was added to the subdivision plan, and a proposed Water Service Plan created for permit acquisition. The city wanted to review the address assigned as # 49 Sheafe (Rear); it was determined that the # 49 Sheafe (Rear) address was appropriate. That determination (email response) is included in the submission.

The following plans are included in our submission:

- Subdivision Plan – This shows the existing as well as subdivided boundaries of the parcel. The plan shows the relevant zoning data, abutter references, and site features.
- Easement Plan – This plan shows two important easements for this subdivision. There is a proposed easement in the rear of Lot 2, adjacent to the building known as # 49 Sheafe (Rear). The easement is that portion of a 5-foot setback from the building edge which is over on to Lot 2. The 5-foot setback will provide two things: the easement will allow the # 49 Sheafe (Rear) building to maintain existing window placements in accordance with the IBC and preclude any future construction on Lot 2 in that area. The easement also allows the future owner of Lot 1 space to maintain the building, as needed. The second easement is along the existing walkway in the front of Lot 1 which will allow Lot 2 the use of the area for building maintenance, access, and utilities as needed.

We request that this application be placed on the agenda for the December 15th Planning Board Meeting.

We look forward to your review of this submission and our in-person presentation at the December Planning Board meeting. We respectfully request the Planning Board approve the proposed subdivision. Thank you for your time and attention to this proposal.

Sincerely,

John R. Chagnon

John R. Chagnon, PE
CC: Jonathan Sobel, Attorney John Bosen

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: Jonathan W. Sobel Revocable Trust Date Submitted: 8-30-22

Applicant: Jonathan W. Sobel Revocable Trust

Phone Number: 603-703-3979 E-mail: jwsobel@gmail.com

Site Address 1: 49 Sheafe Street Map: 107 Lot: 21

Site Address 2: _____ Map: _____ Lot: 21

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☐	Completed Application form. **(III.C.2-3)**	Online	N/A
☐	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(III.C.4)**	Online	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
☐	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
☐	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	
☐	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	
☐	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	N/A	☑ Preliminary Plat ☑ Final Plat	
☐	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	N/A	☑ Preliminary Plat ☑ Final Plat	
☐	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	N/A	☑ Preliminary Plat ☑ Final Plat	
☐	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	N/A	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	N/A	☐ Preliminary Plat ☑ Final Plat	
☐	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A	☐ Preliminary Plat ☑ Final Plat	
☐	Location of all permanent monuments. **(Section V.12)**	Subdivision Plan	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**1. Basic Requirements: (VI.1)** a. Conformity to Official Plan or Map b. Hazards c. Relation to Topography d. Planned Unit Development		
☐	**2. Lots: (VI.2)** a. Lot Arrangement b. Lot sizes c. Commercial and Industrial Lots		
☐	**3. Streets: (VI.3)** a. Relation to adjoining Street System b. Street Rights-of-Way c. Access d. Parallel Service Roads e. Street Intersection Angles f. Merging Streets g. Street Deflections and Vertical Alignment h. Marginal Access Streets i. Cul-de-Sacs j. Rounding Street Corners k. Street Name Signs l. Street Names m. Block Lengths n. Block Widths o. Grade of Streets p. Grass Strips		
☐	**4. Curbing: (VI.4)**		
☐	**5. Driveways: (VI.5)**		
☐	**6. Drainage Improvements: (VI.6)**		
☐	**7. Municipal Water Service: (VI.7)**		
☐	**8. Municipal Sewer Service: (VI.8)**		
☐	**9. Installation of Utilities: (VI.9)** a. All Districts b. Indicator Tape		
☐	**10. On-Site Water Supply: (VI.10)**		
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**		
☐	**12. Open Space: (VI.12)** a. Natural Features b. Buffer Strips c. Parks d. Tree Planting		
☐	**13. Flood Hazard Areas: (VI.13)** a. Permits b. Minimization of Flood Damage c. Elevation and Flood-Proofing Records d. Alteration of Watercourses		
☐	**14. Erosion and Sedimentation Control (VI.14)**		

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☐	**15. Easements (VI.15)** a. Utilities b. Drainage		
☐	**16. Monuments: (VI.16)**	Subdivision Plan	
☐	**17. Benchmarks: (VI.17)**		
☐	**18. House Numbers (VI.18)**		

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☐	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods		
☐	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction		
☐	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards		
☐	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction		

Applicant's/Representative's Signature:_____ **Date:** 8-30-22

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

Lot 1 Proposed Deed

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that **Jonathan W. Sobel, Trustee of the Jonathan Watson Sobel Revocable Trust**, having an address of 49 Sheafe Street, Portsmouth, New Hampshire 03801, grants to _____, having an address of _____, all right, title and interest in and to the following property:

A certain tract or parcel of land in Portsmouth, Rockingham County, New Hampshire, depicted as Lot 1 on a plan entitled "Subdivision Plan, Tax Map 107 – Lot 21, Land Of: The Jonathan Watson Sobel Revocable Trust, Property Located At: 49 Sheafe Street, City of Portsmouth, County of Rockingham, State of New Hampshire" prepared by Ambit Engineering, Inc., dated July 2022, and recorded at the Rockingham County Registry of Deeds as Plan D- _____ (the "Plan"). The said Lot 1 is more particularly bounded and described on the Plan as follows:

Beginning at a point along the brick sidewalk running along the northerly sideline of Sheafe Street at the easterly corner of land now or formerly of Thomas M. Bertrand;
Thence running North 24°22'58" West a distance of 49.15 feet to a point at the northerly corner of land now or formerly of Thomas M. Bertrand;
Thence turning and running South 68°17'52" West a distance of 49.75 feet to an iron rod with "Easterly" cap found, up 5";
Thence turning and running North 47°40'34" West a distance of 12.95 feet to an iron rod with cap found, flush;
Thence turning and running North 20°27'33" West a distance of 9.98 feet to an iron rod with cap found, flush;
Thence turning and running North 63°48'07" East a distance of 23.44 feet to an iron rod with "Easterly" cap found, up 2";
Thence turning and running North 20°41'15" West a distance of 7.62 feet to an iron rod with "Easterly" cap found, up 5";
Thence turning and running North 66°15'33" East along land now or formerly of Karen P. Wiese a distance of 30.40 feet to a point;
Thence turning and running South 23°57'53" East along land now or formerly of JTM Realty LLC a distance of 11.70 feet to a point;

Thence turning and running North 66°40’36” East along land now or formerly of JTM Realty LLC, a distance of 6.75 feet to a point;
Thence turning and running South 23°28’10” East along Lot 2 as shown on the Plan a distance of 19.34 feet to a point;
Thence turning and running South 19°51’30” East along Lot 2 as shown on the Plan a distance of 20.92 feet to a point;
Thence turning and running South 21°44’25” East along Lot 2 as shown on the Plan a distance of 29.73 feet to a point;
Thence turning and running South 71°49’01” West a distance of 3.54 feet to the easterly corner of land now or formerly of Thomas M. Bertrand and the point and place of beginning.

Conveyed TOGETHER WITH a Building Maintenance Easement as shown on the Plan. The easement area is depicted as “Proposed Building Maintenance Easement – 77 S.F.” on a plan entitled “Easement Plan, Tax Map 107 – Lot 21, Land Of: The Jonathan Watson Sobel Revocable Trust, Property Located At: 49 Sheafe Street, City of Portsmouth, County of Rockingham, State of New Hampshire” prepared by Ambit Engineering, Inc., dated September 2022, and recorded at the Rockingham County Registry of Deeds as Plan D-_____ (the “Easement Plan”). The easement area is more particularly bounded and described on the Easement Plan as follows:

Beginning at the northwesterly corner of Lot 2 as shown on the Easement Plan;
Thence turning and running North 66°40’36” East a distance of 3.15 feet to a point;
Thence turning and running South 23°28’10” East a distance of 24.30 feet to a point;
Thence turning and running South 0°08’30” West a distance of 3.46 feet to a point;
Thence turning and running North 19°51’30” West a distance of 4.76 feet to a point;
Thence turning and running North 23°28’10” West a distance of 19.34 feet to the northwesterly corner of Lot 2 and the point and place of beginning.

Conveyed SUBJECT TO that certain Building Maintenance, Access & Utility Easement depicted as “Proposed Building Maintenance, Access & Utility Easement – 161 S.F.” on the Easement Plan. The easement area is more particularly bounded and described on the Easement Plan as follows:

Beginning at a point at the southerly corner of Lot 2 as shown on the Easement Plan;
Thence running South 71°49’01” West a distance of 3.54 feet to a point;
Thence turning dan running North 24°22’58” West a distance of 36.33 feet to a point;
Thence turning and running North 63°24’58” East a distance of 5.47 feet to a point;
Thence turning and running South 19°51’30” East a distance of 7.25 feet to a point;
Thence turning and running South 21°44’25” East a distance of 29.73 feet to the southerly corner of Lot 2 and the point and place of beginning.

Meaning and intending to describe and convey (i) a portion only of the property conveyed to Jonathan W. Sobel, Trustee of The Jonathan Watson Sobel Revocable Trust by Fiduciary Deed of Bernard W. Pelech and Robert W. Brewster, co-Executors of the Estate of Jay M. Smith, dated March 14, 2003, and recorded at the Rockingham County Registry of

Deeds at Book 3947, Page 2066; and (ii) all and the same property conveyed to Jonathan W. Sobel, Trustee of The Jonathan Watson Sobel Revocable Trust by Quitclaim Deed of John C. Russo, dated August 11, 2006, and recorded at the Rockingham County Registry of Deeds at Book 4712, Page 398.

HOMESTEAD PROPERTY?

TRUSTEE CERTIFICATE

The undersigned, Jonathan W. Sobel, in his capacity as Trustee of The Jonathan Watson Sobel Revocable Trust, established by Agreement dated _____, has full and absolute power under said Trust Agreement to convey any interest in real estate and improvements thereon held in said Trust and no purchaser or third party shall be bound to inquire whether the Trustee has said power or is properly exercising said power or to see to the application of any Trust asset paid to the Trustee for a conveyance thereof.

Witness my hand this _____ day of _____ 2022.

The Jonathan Watson Sobel Revocable Trust

By: _____
Jonathan W. Sobel, Trustee

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

The foregoing instrument was acknowledged before me on _____, 2022, by Jonathan W. Sobel, Trustee of The Jonathan Watson Sobel Revocable Trust.

_____
NOTARY PUBLIC
My Commission Expires:

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that **Jonathan W. Sobel, Trustee of the Jonathan Watson Sobel Revocable Trust**, having an address of 49 Sheafe Street, Portsmouth, New Hampshire 03801, grants to _____, having an address of _____, all right, title and interest in and to the following property:

A certain tract or parcel of land in Portsmouth, Rockingham County, New Hampshire, depicted as Lot 2 on a plan entitled "Subdivision Plan, Tax Map 107 – Lot 21, Land Of: The Jonathan Watson Sobel Revocable Trust, Property Located At: 49 Sheafe Street, City of Portsmouth, County of Rockingham, State of New Hampshire" prepared by Ambit Engineering, Inc., dated July 2022, and recorded at the Rockingham County Registry of Deeds as Plan D- _____ (the "Plan"). The said Lot 2 is more particularly bounded and described on the Plan as follows:

Beginning at a point along the brick sidewalk running along the northerly sideline of Sheafe Street at the southerly corner of the said Lot 2;
Thence running North 21°44'25" West a distance of 29.73 feet to a point;
Thence turning and running North 19°51'30" West a distance of 20.92 feet to a point;
Thence turning and running North 23°28'10" West a distance of 19.34 feet to a point;
Thence turning and running North 66°40'36" East along land now or formerly of JTM Realty LLC, a distance of 37.51 feet to a point;
Thence turning and running North 70°52'21" East along land now or formerly of 117-123 Daniel Street Condominium, a distance of 11.58 feet to a drill hole found in a concrete wall;
Thence turning and running South 20°09'47" East a distance of 17.51 feet to a point;
Thence turning and running South 23°32'21" East a distance of 56.14 feet to a point;
Thence turning and running South 71°49'01" West along a brick sidewalk running along the northerly sideline of Sheafe Street to the point and place of beginning.

SUBJECT TO a Building Maintenance Easement for the benefit of Lot 1 as shown on the Plan. The easement area is depicted as "Proposed Building Maintenance Easement – 77 S.F." on a plan entitled "Easement Plan, Tax Map 107 – Lot 21, Land Of: The Jonathan Watson Sobel Revocable Trust, Property Located At: 49 Sheafe Street, City of Portsmouth, County of Rockingham, State of New Hampshire" prepared by Ambit Engineering, Inc.,

dated September 2022, and recorded at the Rockingham County Registry of Deeds as Plan D- _____ (the "Easement Plan"). This easement is a no-build easement and the owner of the property conveyed herein shall not build any structures within the easement area. The easement area is more particularly bounded and described on the Easement Plan as follows:

Beginning at the northwesterly corner of Lot 2 as shown on the Easement Plan;
Thence turning and running North 66°40'36" East a distance of 3.15 feet to a point;
Thence turning and running South 23°28'10" East a distance of 24.30 feet to a point;
Thence turning and running South 0°08'30" West a distance of 3.46 feet to a point;
Thence turning and running North 19°51'30" West a distance of 4.76 feet to a point;
Thence turning and running North 23°28'10" West a distance of 19.34 feet to the northwesterly corner of Lot 2 and the point and place of beginning.

Also conveyed TOGETHER WITH that certain Building Maintenance, Access & Utility Easement depicted as "Proposed Building Maintenance, Access & Utility Easement – 161 S.F." on the Easement Plan. The easement area is more particularly bounded and described on the Easement Plan as follows:

Beginning at a point at the southerly corner of Lot 2 as shown on the Easement Plan;
Thence running South 71°49'01" West a distance of 3.54 feet to a point;
Thence turning dan running North 24°22'58" West a distance of 36.33 feet to a point;
Thence turning and running North 63°24'58" East a distance of 5.47 feet to a point;
Thence turning and running South 19°51'30" East a distance of 7.25 feet to a point;
Thence turning and running South 21°44'25" East a distance of 29.73 feet to the southerly corner of Lot 2 and the point and place of beginning.

Meaning and intending to describe and convey a portion only of the property conveyed to Jonathan W. Sobel, Trustee of The Jonathan Watson Sobel Revocable Trust by Fiduciary Deed of Bernard W. Pelech and Robert W. Brewster, co-Executors of the Estate of Jay M. Smith, dated March 14, 2003, and recorded at the Rockingham County Registry of Deeds at Book 3947, Page 2066.

HOMESTEAD PROPERTY?

TRUSTEE CERTIFICATE

The undersigned, Jonathan W. Sobel, in his capacity as Trustee of The Jonathan Watson Sobel Revocable Trust, established by Agreement dated _____, has full and absolute power under said Trust Agreement to convey any interest in real estate and improvements thereon held in said Trust and no purchaser or third party shall be bound to inquire whether the Trustee has said power or is properly exercising said power or to see to the application of any Trust asset paid to the Trustee for a conveyance thereof.

Witness my hand this _____ day of _____ 2022.

The Jonathan Watson Sobel Revocable Trust

By: _____
Jonathan W. Sobel, Trustee

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

The foregoing instrument was acknowledged before me on _____, 2022, by Jonathan W. Sobel, Trustee of The Jonathan Watson Sobel Revocable Trust.

_____
NOTARY PUBLIC
My Commission Expires:

John Chagnon

From: Patrick R. Howe <prhowe@cityofportsmouth.com>
Sent: Monday, November 21, 2022 9:54 AM
To: John Chagnon; Fire Prevention
Cc: Peter M. Stith; Beverly M. Zendt; jwsobel@gmail.com
Subject: RE: Site Visit 49 Sheafe Street

That is correct. After visiting the property with Mr. Sobel and observing the interior layout, I agree that the building in question should have a Sheafe St address. Proper marking of the address will be important.

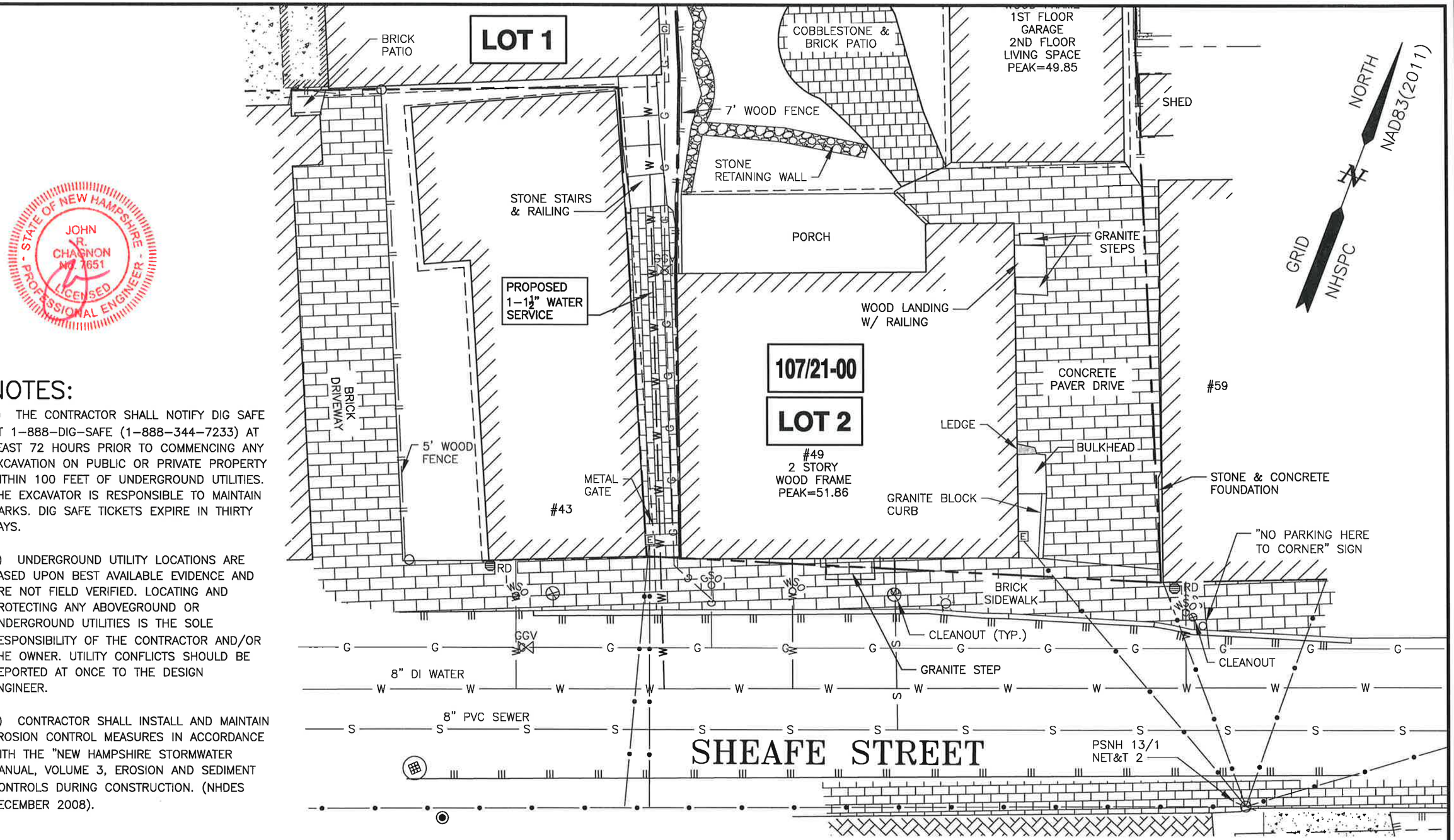
Patrick R. Howe
Deputy Fire Chief
Portsmouth Fire Department
170 Court St.
Portsmouth, NH 03801
603.610.7350
prhowe@cityofportsmouth.com

-----Original Message-----
From: John Chagnon [mailto:jrc@ambitengineering.com]
Sent: Monday, November 21, 2022 9:17 AM
To: Fire Prevention <FirePrevention@cityofportsmouth.com>
Cc: Peter M. Stith <pmstith@cityofportsmouth.com>; Beverly M. Zendt <bmzendt@cityofportsmouth.com>; jwsobel@gmail.com
Subject: Site Visit 49 Sheafe Street

Patrick;
I understand that you met with Jonathan Sobel last Thursday at his Sheafe Street property. Jonathan told me that as a result of that meeting the address for the lot to be created will be a Sheafe Street address. Can you please confirm this via a letter or email in advance of our November 28th submission deadline? Thank you.

Sincerely,

John Chagnon, PE, LLS
Ambit Engineering
200 Griffin Road
Unit 3
Portsmouth, NH 03801
603-430-9282 (308)
FAX 603-436-2315
jrc@ambitengineering.com



- STATE OF NEW HAMPSHIRE -
JOHN R. CHAGNON
No. 7651
LICENSED
PROFESSIONAL ENGINEER

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

WATER SERVICE PLAN

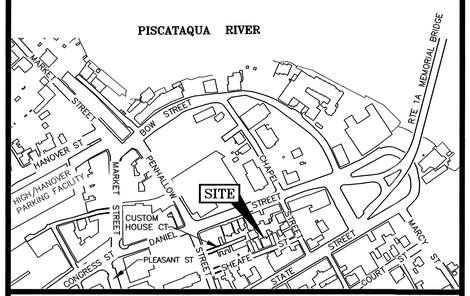
SCALE: 1"=10'

27 OCTOBER 2022

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

FB 411 PG 6

3480

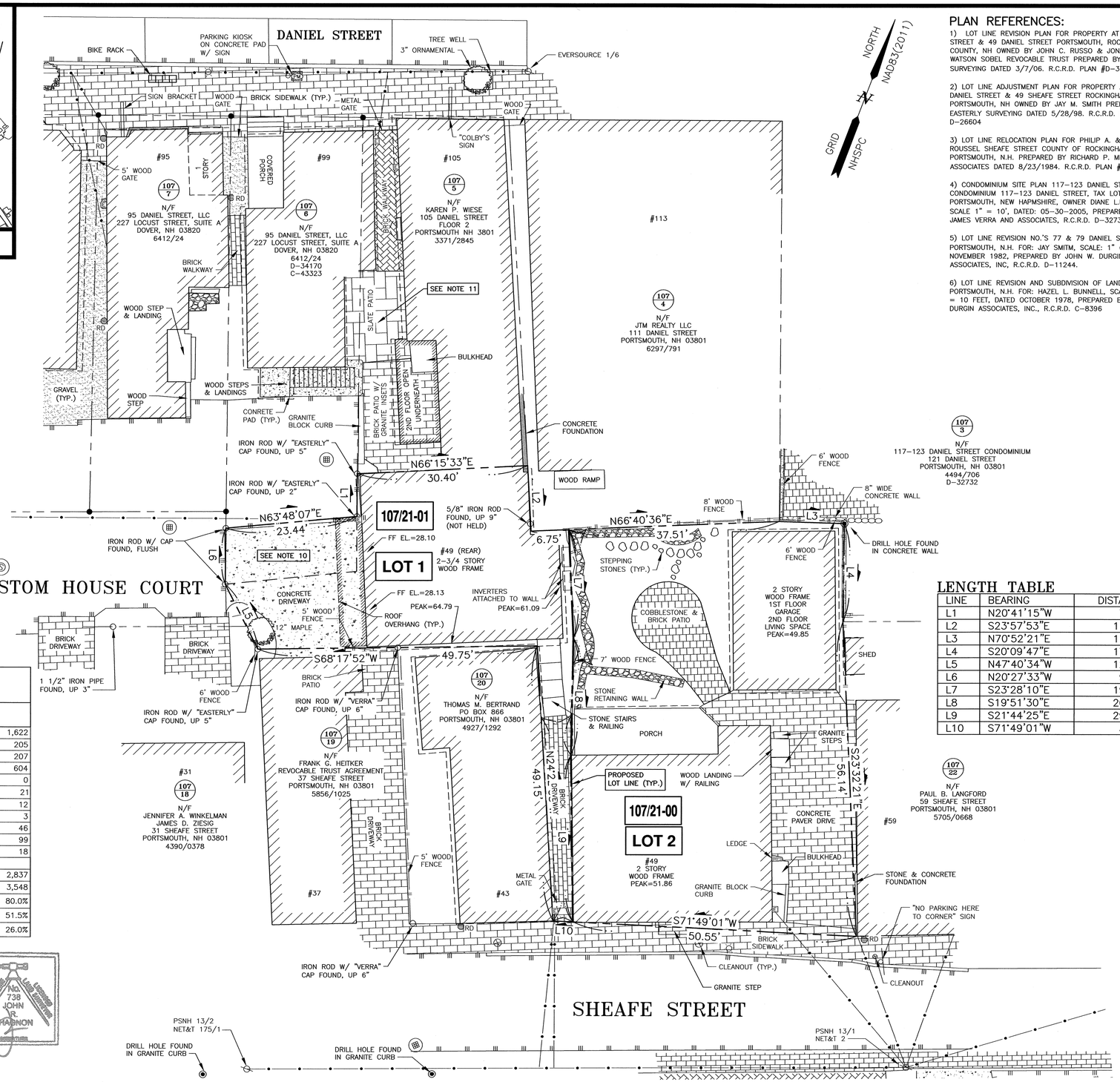


LOCATION MAP

SCALE: 1" = 300'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/21	MAP 11 / LOT 21
	BOUNDARY
	SETBACK
○	IRON ROD/PIPE FOUND
◉	DRILL HOLE FOUND
	OVERHEAD ELECTRIC/WIRES
	EDGE OF PAVEMENT (EP)
RD	ROOF DRAIN
	UTILITY POLE
GSO	GAS SHUT OFF
WSO	WATER SHUT OFF/CURB STOP
GGV	GAS GATE VALVE
G E	METER (GAS, ELECTRIC)
	CATCH BASIN
S	SEWER MANHOLE
	SIGNS
EL.	ELEVATION
FF	FINISHED FLOOR
TBM	TEMPORARY BENCHMARK
TYP.	TYPICAL
VGC	VERTICAL GRANITE CURB



PLAN REFERENCES:

1) LOT LINE REVISION PLAN FOR PROPERTY AT 99 DANIEL STREET & 49 DANIEL STREET PORTSMOUTH, ROCKHINGHAM COUNTY, NH OWNED BY JOHN C. RUSSO & JONATHAN WATSON SOBEL REVOCABLE TRUST PREPARED BY EASTERLY SURVEYING DATED 3/7/06. R.C.R.D. PLAN #D-34170

2) LOT LINE ADJUSTMENT PLAN FOR PROPERTY AT 105 DANIEL STREET & 49 SHEAFE STREET ROCKINGHAM COUNTY PORTSMOUTH, NH OWNED BY JAY M. SMITH PREPARED BY EASTERLY SURVEYING DATED 5/28/98. R.C.R.D. PLAN D-26604

3) LOT LINE RELOCATION PLAN FOR PHILIP A. & DIANE E. ROUSSEL SHEAFE STREET COUNTY OF ROCKINGHAM PORTSMOUTH, N.H. PREPARED BY RICHARD P. MILLETTE AND ASSOCIATES DATED 8/23/1984. R.C.R.D. PLAN #C-12851.

4) CONDOMINIUM SITE PLAN 117-123 DANIEL STREET CONDOMINIUM 117-123 DANIEL STREET, TAX LOT 107-3 PORTSMOUTH, NEW HAPMSHIRE, OWNER DIANE L.R.GIESE, SCALE 1" = 10', DATED: 05-30-2005, PREPARED BY JAMES VERRA AND ASSOCIATES, R.C.R.D. D-32732

5) LOT LINE REVISION NO.'S 77 & 79 DANIEL STREET PORTSMOUTH, N.H. FOR: JAY SMITH, SCALE: 1" = 5', DATED NOVEMBER 1982, PREPARED BY JOHN W. DURGIN ASSOCIATES, INC, R.C.R.D. D-11244.

6) LOT LINE REVISION AND SUBDIVISION OF LAND PORTSMOUTH, N.H. FOR: HAZEL L. BUNNELL, SCALE: 1 IN. = 10 FEET, DATED OCTOBER 1978, PREPARED BY JOHN W. DURGIN ASSOCIATES, INC., R.C.R.D. C-8396

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N20°41'15"W	7.62'
L2	S23°57'53"E	11.70'
L3	N70°52'21"E	11.58'
L4	S20°09'47"E	17.51'
L5	N47°40'34"W	12.95'
L6	N20°27'33"W	9.98'
L7	S23°28'10"E	19.34'
L8	S19°51'30"E	20.92'
L9	S21°44'25"E	29.73'
L10	S71°49'01"W	3.54'

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)

STRUCTURE	LOT 1	LOT 2
MAIN STRUCTURES	1,020	1,622
PORCH	0	205
PATIO	0	207
DRIVEWAY	482	604
PAVEMENT	15	0
STEPS/LANDINGS	55	21
BULKHEAD	0	12
CURB	0	3
BRICK SIDEWALK	159	46
STONE RETAINING WALL	0	99
STEPPING STONES WALK	0	18
TOTAL	1,731	2,837
LOT SIZE	1,855	3,548
% LOT COVERAGE	93.3%	80.0%
% BUILDING COVERAGE	55.0%	51.5%
% OPEN SPACE	11.5%	26.0%

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

11.1.22

JOHN R. CHAGNON, LLS #738 DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 738 JOHN R. CHAGNON SURVEYOR

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 107 AS LOT 21.

2) OWNERS OF RECORD:
JONATHAN WATSON SOBEL REVOCABLE TRUST
JONATHAN W. SOBEL TRUSTEE
49 SHEAFE STREET
PORTSMOUTH, NH 03801
4712/0398 & 3947/2066
D-34170

3) PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE DATE 1/29/2021.

4) EXISTING LOT AREA:
5,402 S.F.
0.1240 ACRES

5) PROPOSED LOT AREAS:

LOT 1:	LOT 2:
1,855 S.F.	3,548 S.F.
0.0426 ACRES	0.0814 ACRES

6) PARCEL IS LOCATED IN (CD4) CHARACTER DISTRICT 4.

7) DIMENSIONAL REQUIREMENTS:
LOT AREA: NR
OPEN SPACE: 10%
MAXIMUM FRONT YARD: 10'
SIDE YARD: NR
REAR YARD: 5'
BUILDING COVERAGE: 90%
FRONTAGE: NOT LISTED
(NR = NOT REQUIRED)
SEE CITY OF PORTSMOUTH ZONING ORDINANCE FOR ADDITIONAL REQUIREMENTS.

8) THE PURPOSE OF THIS PLAN IS TO SHOW THE SUBDIVISION OF ASSESSORS MAP 107 LOT 21 INTO TWO LOTS.

9) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

10) PARCEL IS SUBJECT TO A RIGHT OF WAY OVER A PORTION OF THE NORTH WESTERLY CORNER ADJACENT TO CUSTOM HOUSE COURT. SEE RCRD 4712-399 & D-34170.

11) PARCEL IS BENEFITED BE AN EASEMENT TO USE A CERTAIN WALKWAY ALONG THE WESTERLY SIDE OF ASSESSOR'S MAP 107 LOT 5, EXTENDING FROM DANIEL STREET TO THE SUBJECT PARCEL. SEE RCRD 2006/183 (2362/1669) & D-26604.

12) LOT 1 WILL BE SERVED BY A NEW WATER SERVICE (CONSTRUCTION REQUIRED), PLAN ON FILE WITH CITY. EXISTING LOT 1 WATER SERVICE SHALL BE ABANDONED.

NO.	DESCRIPTION	DATE
2	NOTES #7 & #12	11/1/22
1	TAX MAP & LOT#'S; NOTE #12	9/26/22
0	ISSUED FOR COMMENT	8/30/22

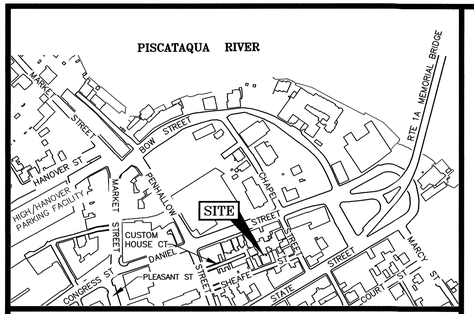
REVISIONS

SUBDIVISION PLAN
TAX MAP 107 – LOT 21

LAND OF:
THE JONATHAN WATSON SOBEL REVOCABLE TRUST
PROPERTY LOCATED AT:
49 SHEAFE STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 10' JULY 2022

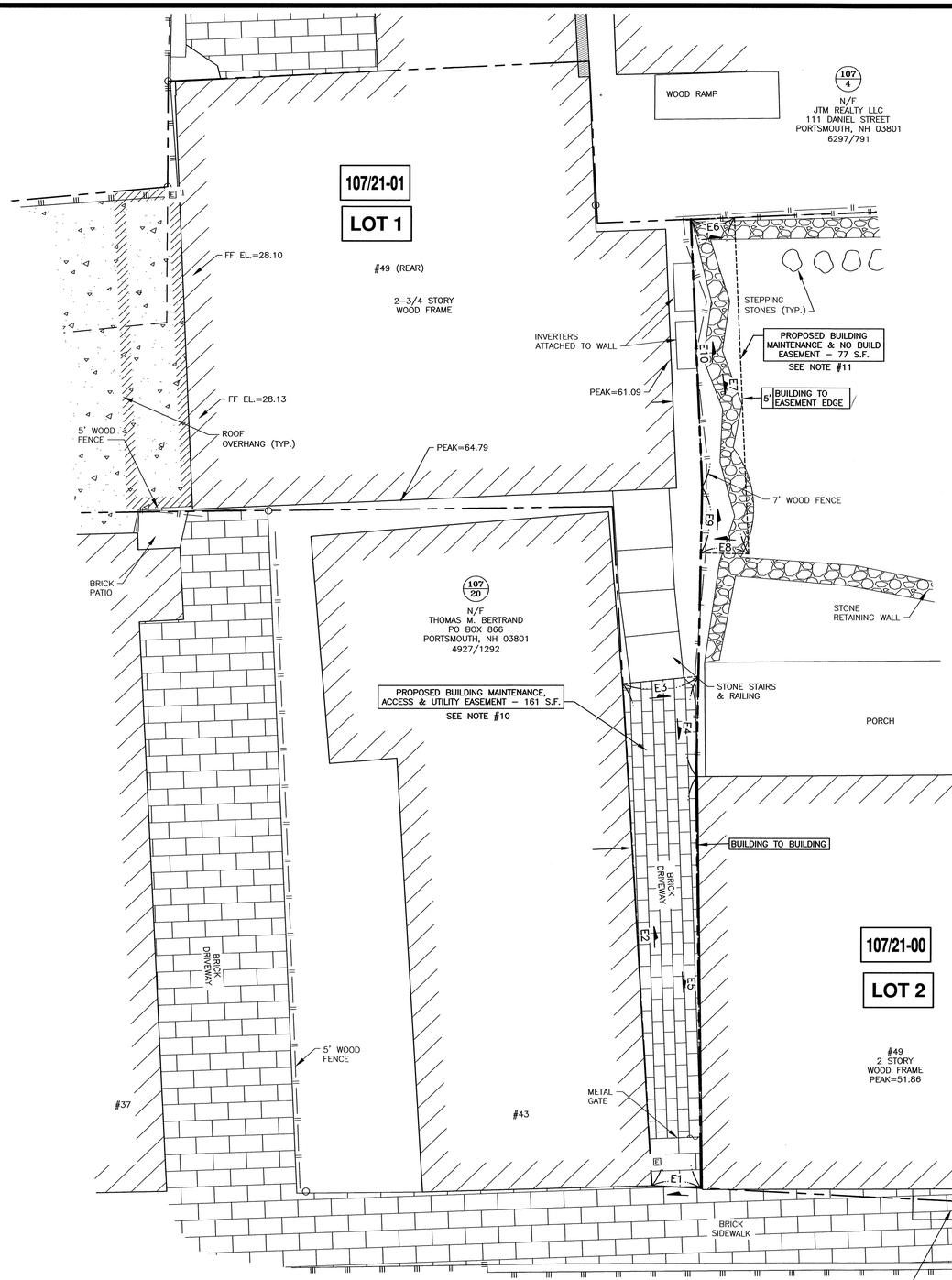
FB 411 PG 6 3480



LOCATION MAP SCALE: 1" = 300'

EASEMENT LENGTH TABLE

LINE	BEARING	DISTANCE
E1	S71°49'01"W	3.54'
E2	N24°22'58"W	36.33'
E3	N63°24'58"E	5.47'
E4	S19°51'30"E	7.25'
E5	S21°44'25"E	29.73'
E6	N66°40'36"E	3.15'
E7	S23°28'10"E	24.30'
E8	S70°08'30"W	3.46'
E9	N19°51'30"W	4.76'
E10	N23°28'10"W	19.34'

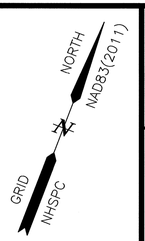


SHEAFE STREET

GRAPHIC SCALE

5 4 3 2 1 0 5 10 15 20 FEET

1.5 1 0.5 0 1 2 3 4 5 6 METERS



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 107 AS LOT 21.

2) OWNERS OF RECORD:
JONATHAN WATSON SOBEL REVOCABLE TRUST
JONATHAN W. SOBEL TRUSTEE
49 SHEAFE STREET
PORTSMOUTH, NH 03801
4712/0398 & 3947/2066
D-34170

3) PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE DATE 1/29/2021.

4) EXISTING LOT AREA:
5,402 S.F.
0.1240 ACRES

5) PROPOSED LOT AREAS:

LOT 1:	LOT 2:
1,855 S.F.	3,548 S.F.
0.0426 ACRES	0.0814 ACRES

6) PARCEL IS LOCATED IN (CD4) CHARACTER DISTRICT 4.

7) DIMENSIONAL REQUIREMENTS:
SEE CITY OF PORTSMOUTH ZONING ORDINANCE

8) THE PURPOSE OF THIS PLAN IS TO SHOW THE LOCATION OF PROPOSED BUILDING MAINTENANCE, ACCESS & UTILITY EASEMENTS ON ASSESSORS MAP 107 LOT 21 AS SUBDIVIDED.

10) BUILDING MAINTENANCE, ACCESS & UTILITY EASEMENT OVER ASSESSOR'S MAP 107 LOT 21-01 TO BENEFIT ASSESSOR'S MAP 107 LOT 21-00.

11) BUILDING MAINTENANCE EASEMENT OVER ASSESSOR'S MAP 107 LOT 21-00 TO BENEFIT ASSESSOR'S MAP 107 LOT 21-01.

NO.	DESCRIPTION	DATE
1	ABUTTERS, NOTES	10/28/22
0	ISSUED FOR COMMENT	9/26/22

REVISIONS

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

10.28.22

JOHN R. CHAGNON, LLS #738 DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

EASEMENT PLAN
TAX MAP 107 - LOT 21

LAND OF:

THE JONATHAN WATSON SOBEL REVOCABLE TRUST

PROPERTY LOCATED AT:
49 SHEAFE STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 5' SEPTEMBER 2022

FB 411 PG 6 3480

J:\JOBS\JN 3480's\3480\2022 Subdivision\Plans & Docs\DWG\3480 subdivision 2022.dwg, SAGENDY, 10/28/2022 9:07:57 AM

Findings of Fact | Wetland Conditional Use Permit
City of Portsmouth Planning Board

Date: 12-15-22
Property Address: 800 Mcgee Drive
Application #: LU-22-208
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

In order to grant Wetland Conditional Use permit approval the Planning Board shall find the application satisfies criteria set forth in the Section 10.1017.50 (Criteria for Approval) of the Zoning Ordinance.

	Zoning Ordinance Sector 10.1017.50 Criteria for Approval	**Finding**	**Supporting Information**
1	*1. The land is reasonably suited to the use activity or alteration.*	**Meets** **Does Not Meet**	Applicant is proposing to construct a new shed in an area of lawn just beyond the driveway. The shed itself will be 10x12 in size and will be placed on a crushed stone area 12x14 in size. The size of the stone area will allow for infiltration of stormwater from the shed below the footprint area of the shed. Given that this will be located approximately 75 feet from the edge of the wetland, the proposal is within the 100' wetland buffer where grass currently exists.
2	2. *There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.*	**Meets** **Does Not Meet**	Given the side yard setback, the shed is being placed 10 feet from the property line and cannot be placed in front of the principal structure. The entire backyard of the property is within the 100' wetland buffer therefore the location is as far from the resource as practicable.

	Zoning Ordinance Sector 10.1017.50 Criteria for Approval	Finding	Supporting Information
3	*3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.*	**Meets** **Does Not Meet**	The small size of the shed, distance from the wetland and the infiltration proposed with the crushed stone will reduce any impacts due to the new impervious surface area of 120square feet.
4	*4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.*	**Meets** **Does Not Meet**	The shed is proposed to be located over an existing lawn area. Given the lawn area will be replaced with crushed stone and the shed there is some lawn area being removed. This work will amount to 168 square feet of new crushed stone in an area of lawn. The applicant has been removing invasive species from the wetland buffer. A planting plan for the buffer would be appropriate in order to establish a more effective buffer along the shoreline of the pond.
5	*5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.*	**Meets** **Does Not Meet**	Given the small size of the project there significant impacts are not expected. A plan for replanting the 25' vegetated buffer would easily offset any impacts from the proposed shed.
6	*6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.*	**Meets** **Does Not Meet**	The applicant has been removing a well established area of Asian bittersweet. The shoreline would benefit from the planting of native plants in this location.
7	**<u>Other Board Findings:</u>**		

October 26, 2022

Dear Ms. McMillan,

My name is Darren Kenney. My wife Jessica, and I are the owners of the property located at 800 McGee Drive, here in Portsmouth. I am writing you today to ask for your approval of our wetland conditional use permit. The purpose of the permit is to allow us to place a shed in our back yard. As you will notice from the attached map, much of our property lies within the wetland barrier. The location we would like to place the shed is 10' from the adjacent property, ~75' from the water's edge and entirely within the barrier space. Currently this space is part of our yard and contains no wild vegetation. The shed would be 10'x12" (120 sq ft) and would be place on a crushed rock base that is 12'x14' (168 sq ft).

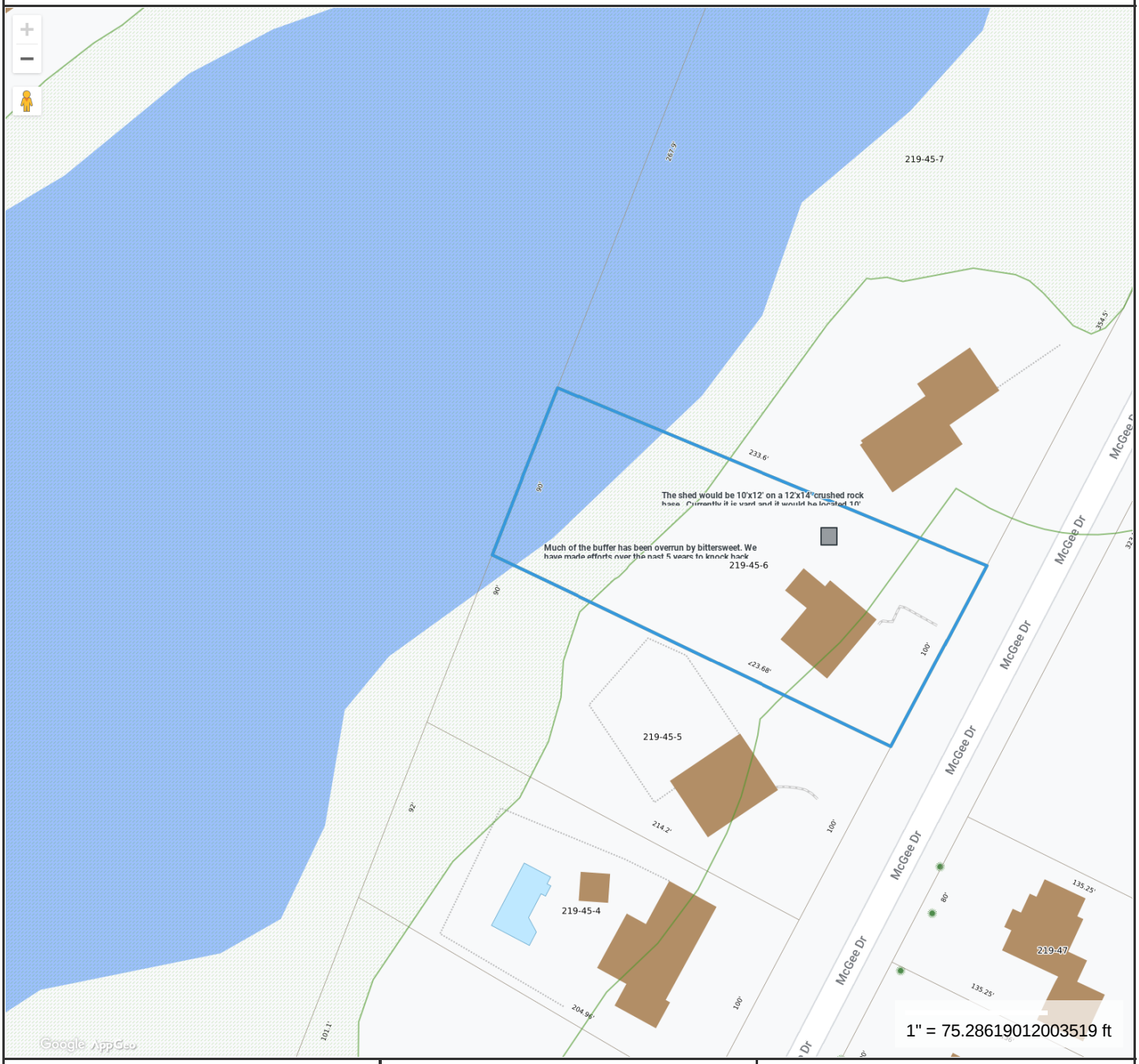
We feel as though this location would have the least impact on the pond and surrounding area. Over the past 5 years of owning this home, we have taken great pleasure in having the pond in our back yard and have made efforts to reduce the impact of the invasive species, bittersweet, that has been plaguing its shorelines. Our intent is to continue to support a healthy, thriving environment for all the amazing wildlife that makes "our" pond its home. Based on this information, we respectfully ask that you approve this conditional use permit and allow us to move forward with this project.

Thank you for your consideration.

Best,

Darren Kenney

800 McGee Dr Shed Location (approx.)



Property Information

Property ID	0219-0045-0006
Location	800 MCGEE DR
Owner	KENNEY DARREN

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 09/21/2022
Data updated 3/9/2022

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

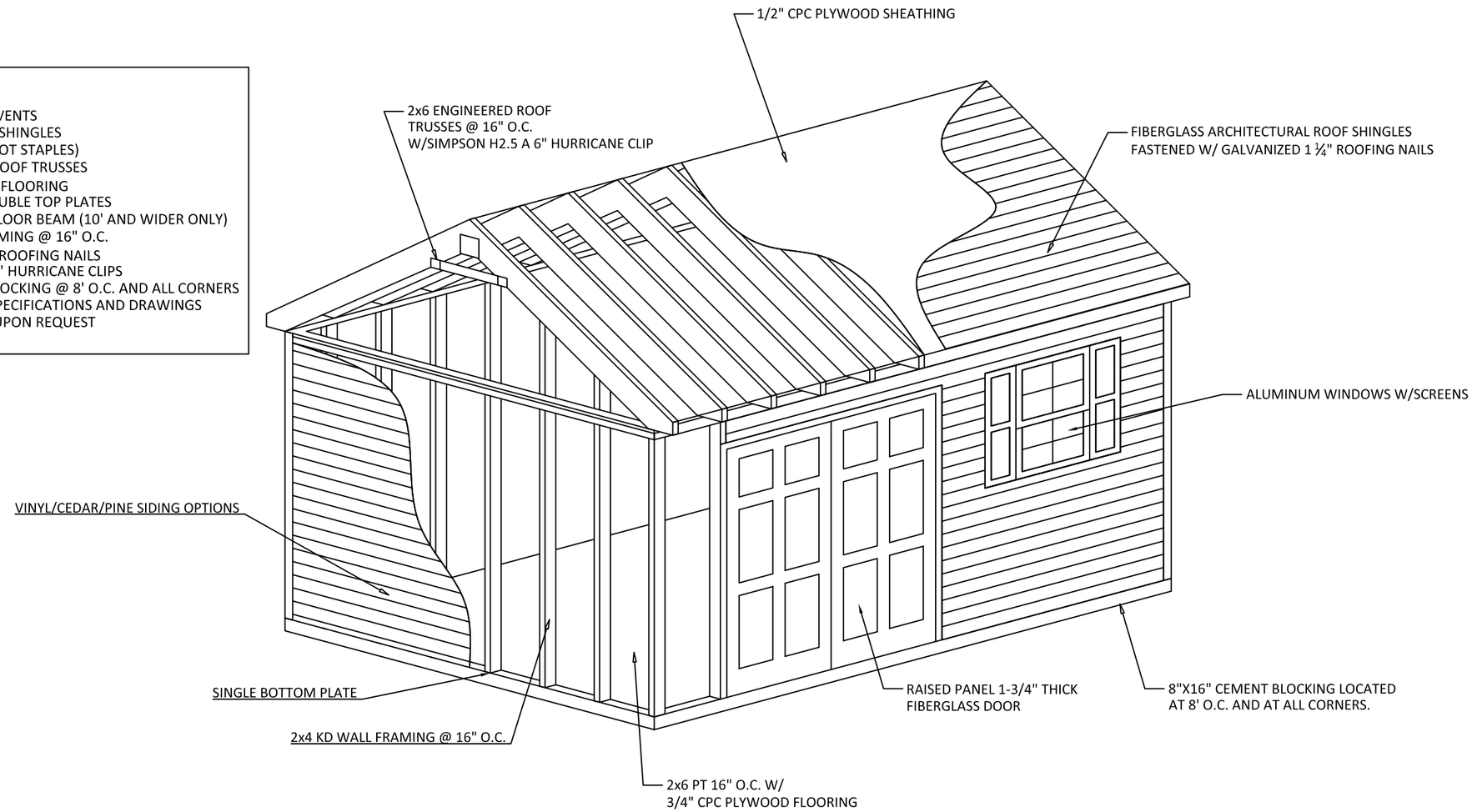
Map Theme Legends

Wetlands

City of Portsmouth

STANDARD FEATURES

VINYL/CEDAR/PINE SIDING OPTIONS
ALUMINUM WINDOWS W/SCREENS
ALUMINUM DRIP EDGE ON ALL SIDES
LOCKING DOOR HANDLE
FULL 1-3/4" THICK FIBERGLASS DOORS
DOUBLE 2x DOOR HEADERS W/ JACK STUDS
ALL PVC TRIM (VINYL SIDED ONLY)
6' 4 ½" STANDARD WALL HEIGHT
ALL FLOORS 10' IN WIDTH (10'x12', 10'x14') HAVE RIM JOIST AT 6'/4' SEAM
ALL FLOORS 12' IN WIDTH WITH A DOUBLE JOIST AT THE 6' SEAM
ALL FLOORS WIDER WILL BE SEAMED AT 8'
SCREENED GABLE VENTS
FIBERGLASS ROOF SHINGLES
ROOFING NAILS (NOT STAPLES)
2x6 LOAD RATED ROOF TRUSSES
¾" CPC PLYWOOD FLOORING
INTERLOCKING DOUBLE TOP PLATES
DOUBLE CENTER FLOOR BEAM (10' AND WIDER ONLY)
2x6 PT FLOOR FRAMING @ 16" O.C.
GALVANIZED 1 ¼" ROOFING NAILS
SIMPSON H2.5 A 6" HURRICANE CLIPS
8"x16" CEMENT BLOCKING @ 8' O.C. AND ALL CORNERS
TRUSS LOADING SPECIFICATIONS AND DRAWINGS AVAILABLE UPON REQUEST



GREGSAK ENGINEERING, INC.
CIVIL AND STRUCTURAL ENGINEERS
P.O. BOX 271
CHESTER, NEW HAMPSHIRE 03036
PH: (603) 887-6979
FAX: (603) 887-6636
www.gregsak.com

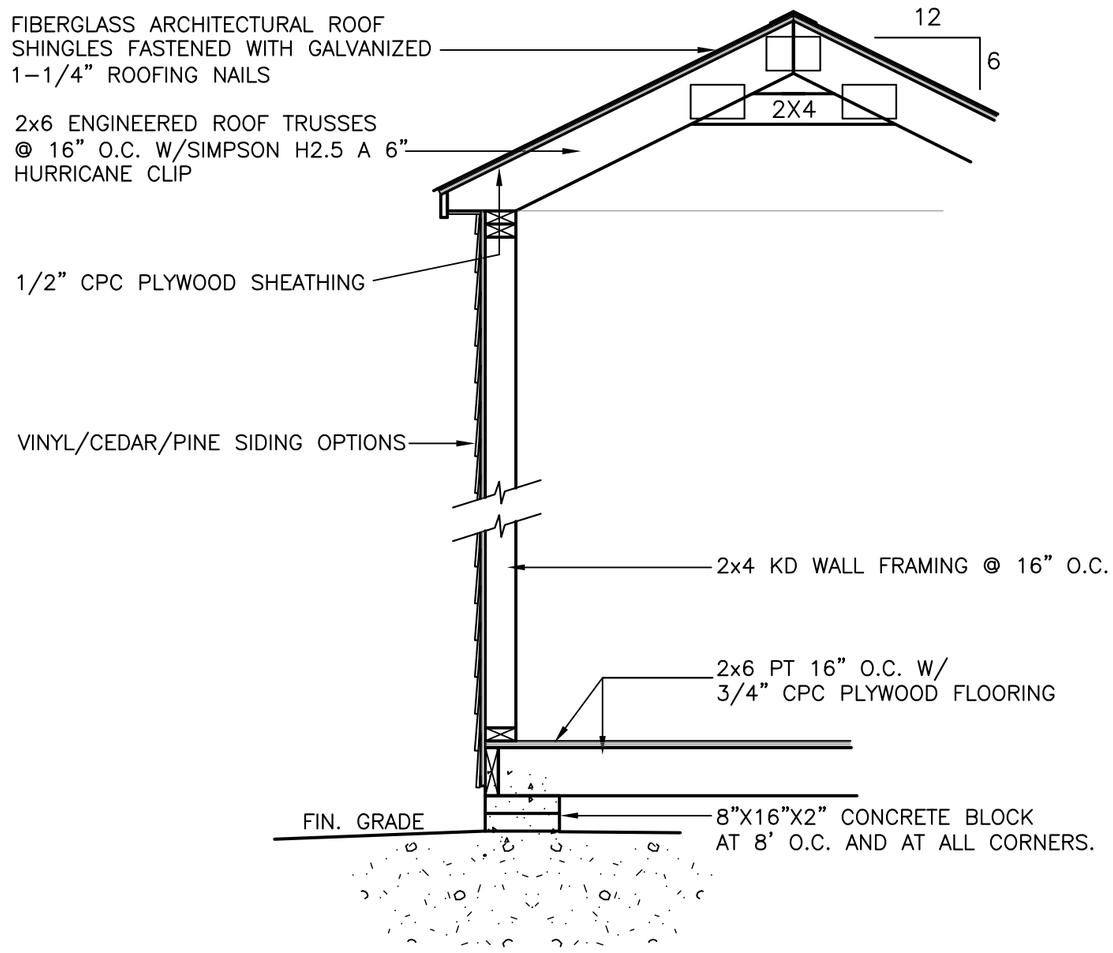
ISOMETRIC VIEW
POST WOODWORKING TYPICAL SHED DESIGN
163 KINGSTON ROAD
DANVILLE NH

PREPARED FOR:
POST WOODWORKING, INC.
163 KINGSTON ROAD
DANVILLE, NH 03819
(866) 794-7433

Scale: NTS

APRIL 18, 2016

JOB # 2430



GREGSAK ENGINEERING, INC.
CIVIL AND STRUCTURAL ENGINEERS
P.O. BOX 271
CHESTER, NEW HAMPSHIRE 03036
PH: (603) 887–6979
FAX: (603) 887–6636
www.gregsak.com

WALL SECTION
POST WOODWORKING TYPICAL SHED DESIGN
163 KINGSTON ROAD
DANVILLE NH

PREPARED FOR:
POST WOODWORKING, INC.
163 KINGSTON ROAD
DANVILLE, NH 03819
(866) 794–7433

Scale: 3/4"=1'-0"

0 1 FT 2 FT

APRIL 18, 2016

JOB # 2430

Findings of Fact | Accessory Dwelling Unit

City of Portsmouth Planning Board

Date: December 15, 2022

Property Address: 653 Greenland Road

Application #: LU-22-228

Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Effective August 23, 2022, amended RSA 676:3, I now reads as follows: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Zoning Ordinance -10.814.60: Before granting a conditional use permit for an attached or detached ADU, the Planning Board shall make the following findings:

	Section 10.814.60	Finding (Meets Requirement / Criteria)	Supporting Information
1	10.814.61 Exterior design of the ADU is consistent with the existing principal dwelling on the lot.	**Meets** **Does Not Meet**	The current garage/proposed DADU is constructed with the same (or similar) siding material and color. Trim details correspond to the primary structure. The roof pitch, presence of dormers, and roof material are similar to the primary structure.
2	10.814.62 The site plan provides adequate and appropriate open space, landscaping and off-street	**Meets**	SRB requires 40% open space. The lot is 22,215.6 with 2,805 SF of development on site providing 12.6% of lot coverage – not counting the driveway. The lot has mature trees and vegetation that will not be

	Section 10.814.60	Finding (Meets Requirement / Criteria)	Supporting Information
	parking for both the ADU and the primary dwelling.	**Does Not Meet**	removed as a result of the proposed conversion of the existing structure. Adequate off-street parking exists on site for the primary residence and the DADU.
3	10.814.63 The ADU will maintain a compatible relationship to adjacent properties in terms of location, design, and off-street parking layout, and will not significantly reduce the privacy of adjacent properties.	**Meets** **Does Not Meet**	• A variety of residential forms and site layouts are evidenced in the surrounding properties. • The proposed DADU is separated from the nearest neighbor to the north (garage) by a distance of approximately 57 feet. • The proposed DADU is separated by a road from the nearest neighbor to the west across Harvard by a distance of 74 feet. • Greenland Road is the south. • The nearest neighbor to the east is 173 feet from the proposed DADU with significant vegetative buffer between the lots.
4	10.814.64 The ADU will not result in excessive noise, traffic or parking congestion.	**Meets** **Does Not Meet**	The applicant is proposing one new accessory dwelling unit for a resident currently residing on site.
5	**<u>Other Board Findings</u>**:		

Conditional Use Permit Materials to Supplement Online Land Use Application Form

Luke J. Brindamour, MD
653 Greenland Rd
Portsmouth, NH, 03801

Table Of Contents:

Attachements:

1. Survey: Provided by Ross Engineering
2. 2 pages of exterior detail of existing DADU
3. 2 pages:
    a. Existing Interior DADU
    b. Conditional Future Plan for occupied DADU if appropriate permits approved
4. 4 pages exterior and interior detail of primary residence at 653 Greenland Road
5. 1 page of labeled exterior photos (5)

Conditional Use Cover Letter

To those of the Planning Board:

This letter is intended to describe the needs related to the request for a conditional use permit for the existing detached garage and recreation space as well as specifically address items from Zoning Ordinance 10.814.

My wife, Sara, and I have recently moved to 653 Greenland Road in Portsmouth as of 8/3/2022. Sara's family has lived in this area for over 40 years. As we look to start our family, we moved to co-locate and took jobs as a practicing internal medicine physician and a pharmacist at Exeter Hospital. We chose this particular property because of the existing detached space. It is our hope that my parents who currently live in Florida in the winter and southeastern Connecticut in the summer could have a place to stay and help with our future children during the summer months. Eventually, my parents who are in their mid 70s will need to stop traveling to Florida and potentially permanently co-locate with us in New Hampshire related to their eventual health care needs. It is their desire to not live in assisted living, rather get assistance at home with family. We wish to oblige this request after all they gave done for us. This existing space would serve their needs perfectly.

As it relates to any new projects, at this time we would make no changes to the existing space as it stands. It is an open space with closed permits for plumbing, heat and electricity. This was confirmed this past September. In the future, there may be the desire to change interior structures only such as enlarging the potential bedroom space by shifting the wall two to three feet and making the shower ADA complaint for my mother's myriad orthopedic issues.

Lastly on a personal note, to be able to eventually use this space to be close to my parents as they approach their 80s is incredibly important to me. They gave up so much for me for me to go to college, then helped during my transition period between college and medical school and beyond. The sacrifices that come with pursuing a career in medicine are significant. The biggest toll it takes is on your personal relationships. Between college, the transition period between then and med school, residency and our first jobs prior to moving to New Hampshire it feels I have not spent any significant time with them since 2008. Fourteen years. I am hoping to truly reconnect with them and raise our children with their help so they may influence them in the same positive ways that I know they influenced me. They continue to do so to this day.

Please see below for specific questions as they relate to Section 10.814 of Zoning Ordinance Analysis.

Gratefully,

Luke J. Brindamour

As it relates to Section 10.814 of Zoning Ordinance Analysis please see responses in bold:

10.814.30 All accessory dwelling units shall comply with the following standards:

10.814.31 The principal dwelling unit and the accessory dwelling unit shall not be separated in ownership (including by condominium ownership).

--It is not separated in ownership. Owned by the Trusts of Luke and Sara Brindamour

10.814.32 Either the principal dwelling unit or the accessory dwelling unit shall be occupied by the owner of the dwelling as his or her principal place of residence. The owner shall provide documentation demonstrating to the satisfaction of the City that one of the units is his or her principal place of residence.

10.814.321 When the property is owned by one or more trusts, one of the dwelling units shall be the principal place of residence of the beneficiary(ies) of the trust(s).

-My wife, Sara and I, will continue to reside in the Principle Dwelling Unit and serves as our Principle Residence at 653 Greenland Rd.

10.814.33 Neither the principal dwelling unit nor the accessory dwelling unit shall be used for any business, except that the property owner may have a home occupation use in the unit that he or she occupies as allowed or permitted elsewhere in this Ordinance.

-This is understood. The intention is solely for the purpose of future application for Certificate of Occupancy for the parents of Luke J. Brindamour, Paul and Sandra Brindamour, to occupy the Accessory Dwelling Unit while Luke and Sara Brindamour raise their family in the Principle Dwelling Unit.

10.814.34 Where municipal sewer service is not provided, the septic system shall meet NH Water Supply and Pollution Control Division requirements for the combined system demand for total occupancy of the premises.

-There will be no changes to the existing, permitting, plumbing that would necessitate changes to septic. There is one shower, toilet and sink in the existing bathroom in the recreational space and a modular sink in the open "kitchen" space.

Continued below

10.814.50 A detached accessory dwelling unit (DADU) shall comply with the following additional standards:

10.814.51 In a General Residence district, the combination of the principal dwelling and the DADU shall comply with the minimum lot area per dwelling unit specified for the district. (For example, the required lot area for a single family dwelling with a DADU in the GRA district is 7,500 sq. ft. per dwelling unit multiplied by 2 dwelling units, or 15,000 sq. ft.) In a Single Residence or Rural district, a lot with a DADU shall comply with the minimum lot area for the district, but need not comply with the minimum lot area per dwelling unit.

Lot Area of Existing DADU: 750sq ft

Lot Area for Property: 0.50 acres = 21763 sq ff

10.814.52 The DADU shall not have more than two bedrooms and shall not be larger than 750 sq. ft. gross floor area; except that the maximum gross floor area shall be 1,000 sq. ft. if the lot area is 2 acres or more.

1 Bedroom Space

Gross floor area est. 660 sq ft

10.814.53 The DADU shall be clearly subordinate to the principal single-family dwelling in scale, height and appearance.

> *10.814.531 The façade area of the DADU that faces a street on which the lot has frontage shall be no more than 40 percent of the combined visible façade areas of the principal singlefamily dwelling and the DADU facing the same street.*
>
> **Compliant with this requirement**
>
> *10.814.532 The building height of the DADU shall be less than the building height of the principal single-family dwelling.*
>
> **Compliant with this requirement**
>
> *10.814.533 The DADU shall be architecturally consistent with the principal dwelling through the use of similar materials, detailing, and other building design elements.*
>
> **Compliant with this requirement**

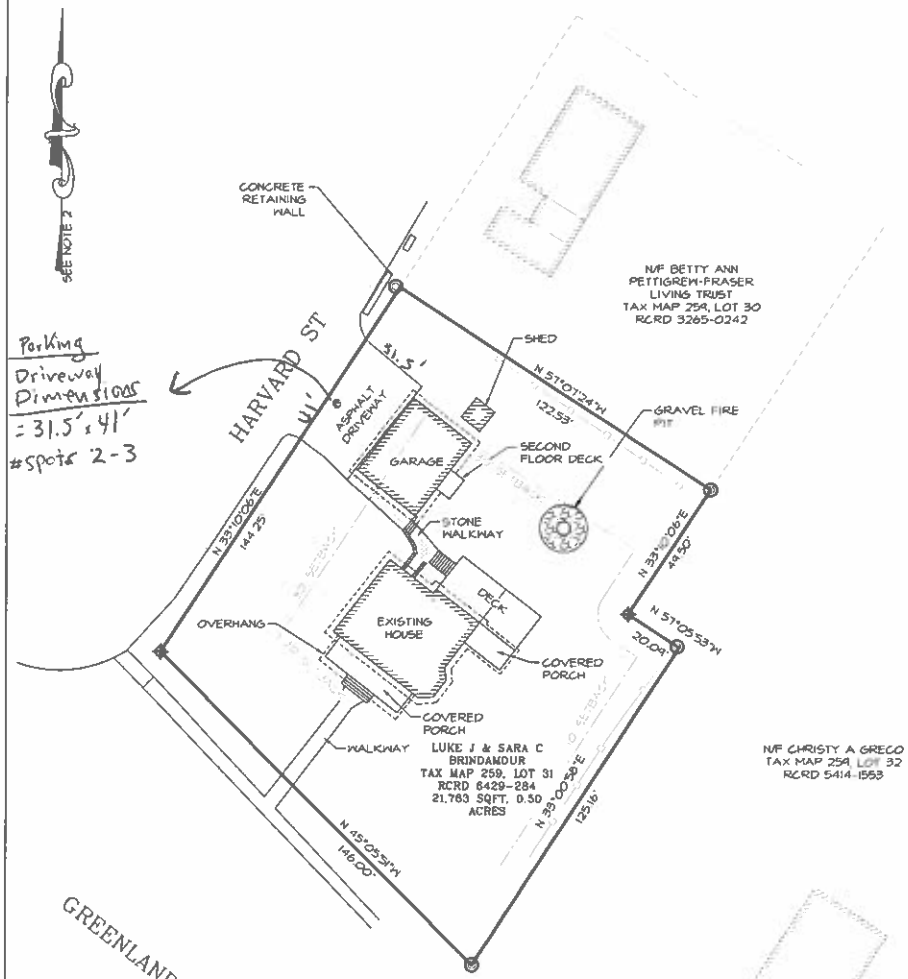
It is the obligation of the applicant to submit adequate plans and exhibits to demonstrate compliance with Sections 10.814 & 10.815 of the Zoning Ordinance. At a minimum, the following information shall be provided:

- Scaled Site Plan(s) showing **existing and proposed** conditions including:
    - Scale legend, title, address of project, date, source of displayed data [x]
    - Front, side and rear setback / yard dimensions (this is the distance from a building to the lot line) and distance between buildings [x] **survey attached**
    - Lot dimensions [x] **survey**
    - Abutting street(s) and street names [x] **survey**
    - Location and description of open space and landscaping [x] **survey**
    - Dimensions (size and height) of buildings
        - [x] DADU/Garage Dimensions **Attached**
        - [x] Primary residence sq footage – **2994sq ft, perimeter** dimensions of main home attached, survey with scale of sun room and deck attached.
            - [x] **height of primary residence – 35ft in front 40 feet in rear; see inspector email for reference**
    - Location and dimensions of driveways / access ways [x] **see survey annotation; 31.5' x 41' driveway.**
        - Dimensions, number, and location of parking spaces both existing and proposed [x] **No new, see annotated survey. Existing space for 2-3 cars.**
- Labeled photo(s) of existing structures/buildings on property. [x] **survey plus photos**
- Labeled photo(s) of adjacent properties. [x] **photos attached**
- Scaled interior floor plans of the proposed dwelling unit including total gross floor area and total number of bedrooms. [x]
- Scaled building plans and elevations of any proposed new construction or renovations of existing buildings including any proposed exterior lighting.
    - [x] included, no intention to execute this plan *presently*, but prepared to do so if occupancy permit granted in future. *No exterior or vertical work planned. ONLY interior redesign.*

- A detailed statement explaining how the proposed project will support the following findings:
    - The principal and accessory dwelling units will remain under common ownership (including by condominium ownership). [x] see cover letter
    - The principal or accessory dwelling shall be occupied by the owner of the dwelling as his/her principal place of residence. The owner shall provide documentation demonstrating to the satisfaction of the City that one of the units is his/her principal place of residence. [x] see cover letter
    - Neither the principal nor accessory dwelling shall be used for any business, except that the owner may have a home occupation use in the unit that he or she occupies. [x] see cover letter
- Where municipal sewer service is not provided, the septic system shall meet NH Water Supply & Pollution Control Division requirements for the demand for total occupancy of the premises.
- The accessory dwelling will not result in excessive noise, traffic, or parking congestion. [x]
    - It will not. Single use intention during summer months for Luke Brindamour's parents consistent with cover letter
- If applicable, a detailed explanation for any requests to the Planning Board to modify a specific dimension and/or parking standard [N/A]

The Applicant is encouraged to consider the following when completing the application:

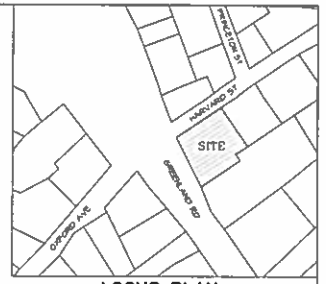
- Provide neat and clearly legible plans and copies
- Use of color or highlights is encouraged in order to identify pertinent areas on plans
- Applicants are encouraged to review the application with a member of the Planning Department staff prior to submittal
- All applicants are encouraged to discuss the project with impacted neighbors



LEGEND

- MONUMENT FOUND
- STOCKADE FENCE
- MONUMENT SET

Scale: on Civil Plan is 1" = 20ft
on 8.5 x 11" (half)
1/4" = 20ft



LOCUS PLAN
N.T.S.

NOTES

1) OWNER OF RECORD:
LUKE J & SARA C BRIDAMOUR
TAX MAP 259, LOT 31
653 GREENLAND RD
PORTSMOUTH, NH 03801
RCRD: 6429/284
AREA: 21,763 SQFT, 0.50 ACRES

2) BASIS OF BEARING HELD FROM PLAN REFERENCE #2.

3) PARCEL IS IN SINGLE RESIDENCE B ZONE (SRB).

MINIMUM LOT AREA	15,000 SF
MIN. LOT AREA PER DWELLING UNIT	15,000 SF
MINIMUM FRONTAGE	100 FT
MINIMUM DEPTH	100 FT
SETBACKS:	
FRONT	30 FT
SIDE	10 FT
REAR	30 FT
MAXIMUM BUILDING HEIGHT:	
SLOPED ROOF	35 FT
FLAT ROOF	30 FT
MAXIMUM BUILDING COVERAGE	20%
MINIMUM OPEN SPACE	40%

4) THE PARCEL IS NOT WITHIN A FEMA FLOOD ZONE, AS PER FLOOD INSURANCE RATE MAP #33015C0270F, PANEL 270 OF 681, DATED JANUARY 29, 2021. VERTICAL DATUM IS NAVD 1988.

REFERENCE PLANS

1) "PLAN OF LAND FOR ESTATE OF EUNICE M. OSBORN" BY RICHARD P. MILLETTE AND ASSOCIATES DATED JULY 19, 1987. RCRD C-16862

2) "LOT LINE REVISION PLAN MAP 259 - LOTS 26 &32" BY AMBIT ENGINEERING, INC. DATED SEPTEMBER 27, 2000. RCRD D-28383

3) STATE PLAN OF ROUTE 101 AT RCRD D-2228-11

NO.	DATE	DESCRIPTION OF ISSUE
3	11/2/2022	MONUMENT SET
2	8/28/2022	FOR REVIEW
1	8/15/2022	PRELIMINARY

SCALE: 1" = 20'
DRAWN: A.ROSS
DESIGN: S.R.O
CHECKED:

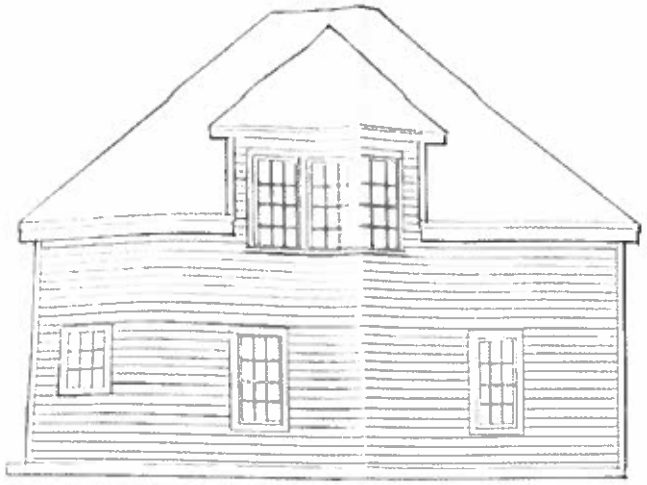
ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
Portsmouth, NH 03801

CLIENT
LUKE BRINDAMOUR
653 GREENLAND RD
PORTSMOUTH, NH, 03801

TITLE
EXISTING CONDITIONS PLAN

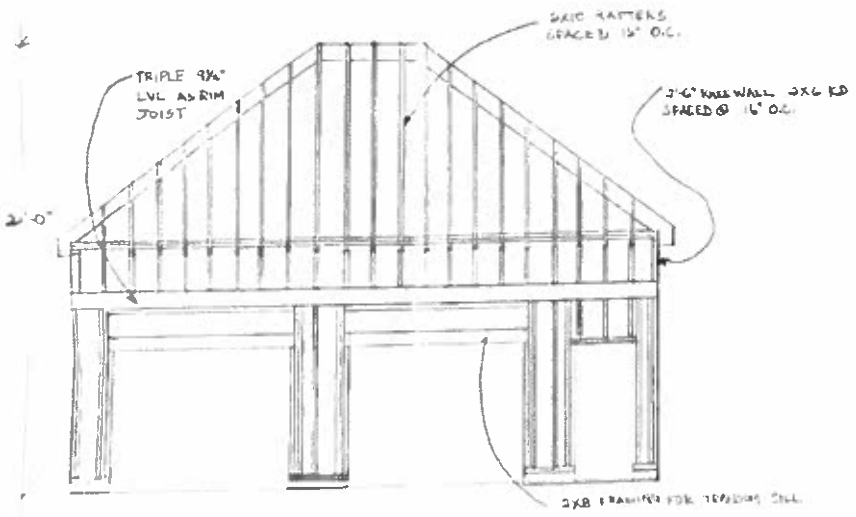
653 GREENLAND RD
PORTSMOUTH, NH 03801
TAX MAP 259, LOT 31

JOB NUMBER	DWG NO	ISSUE
22-078	1 OF 1	3

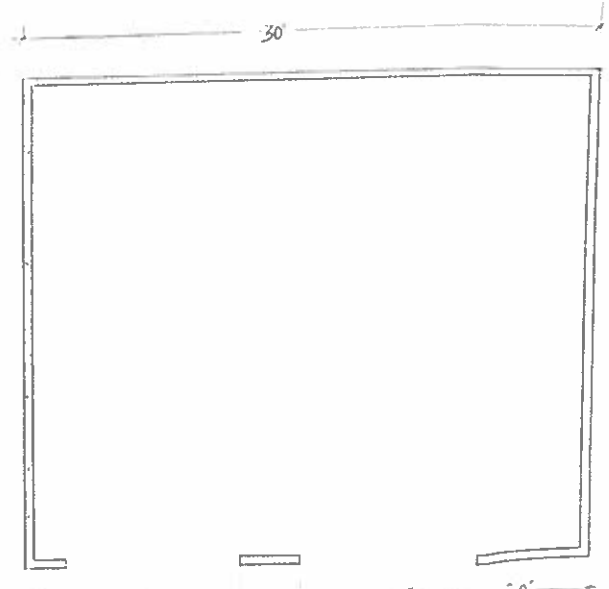


(A) REAR (EAST) ELEVATION

(B) SIDE (SOUTH) ELEVATION



(C) FRAMING @ FRONT (WEST) OF BUILDING

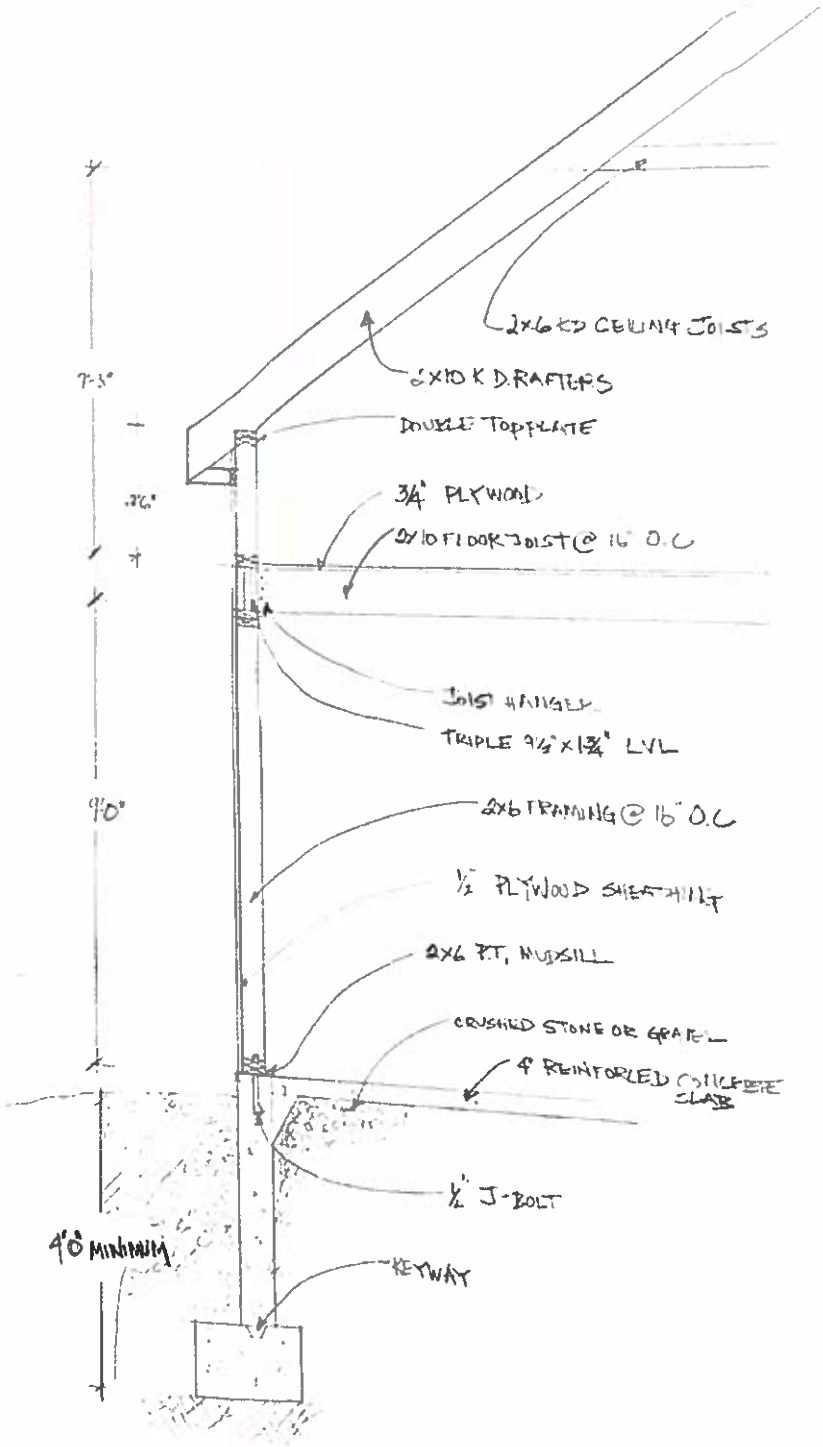


(D) FOUNDATION PLAN

LHH #4
6/29/09
¼" = 1'-0"

GARAGE 653 GREENLAND RD

LHDB



TYPICAL WALL SECTION

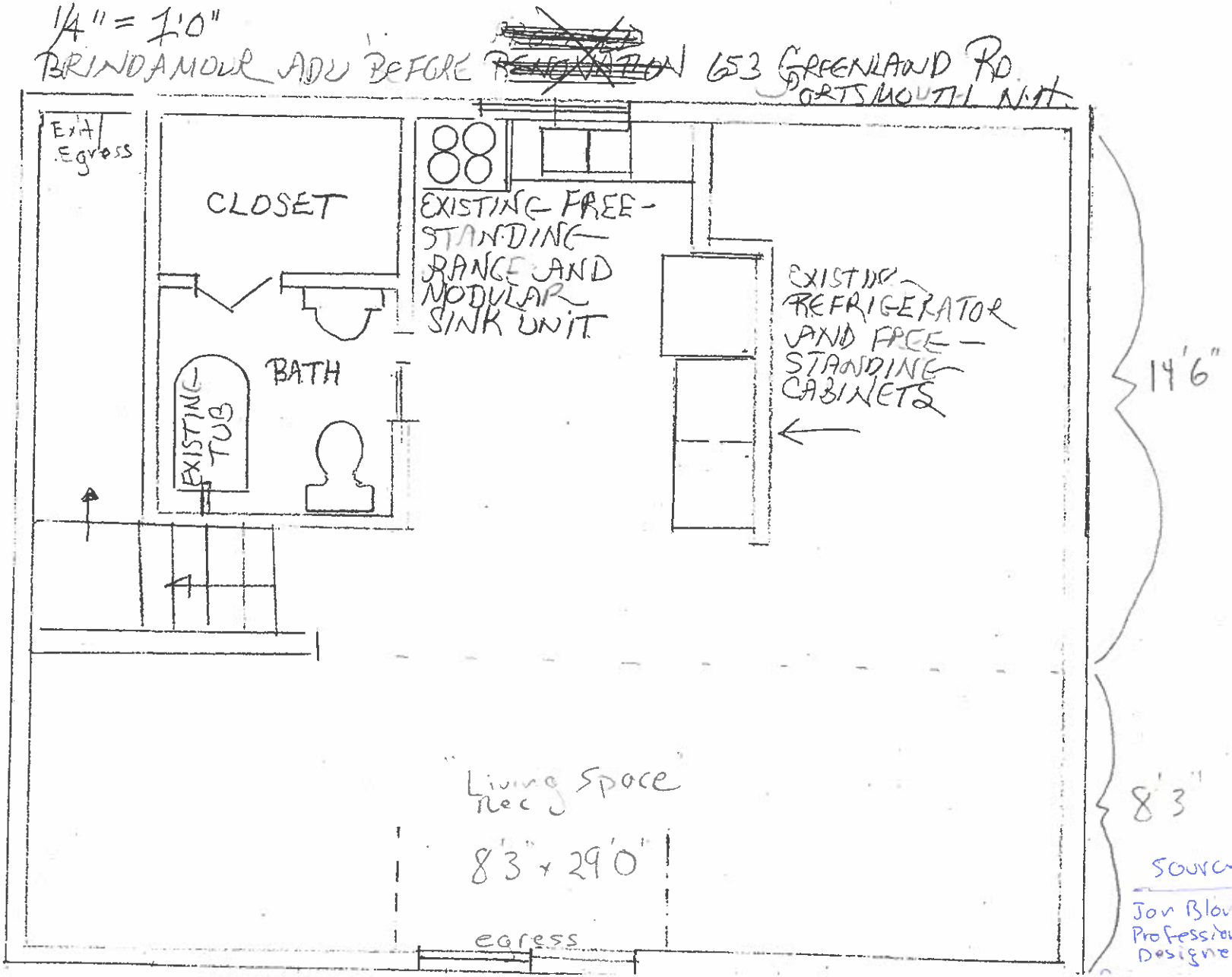
1/2" = 1'0"

Existing Rec Space

DADU - 653 Greenland Rd
Portsmouth, NH
03801

1/4" = 1'0"

BRINDAMOUR ADU BEFORE ~~RENOVATION~~ 653 GREENLAND RD PORTSMOUTH N.H.



Source:

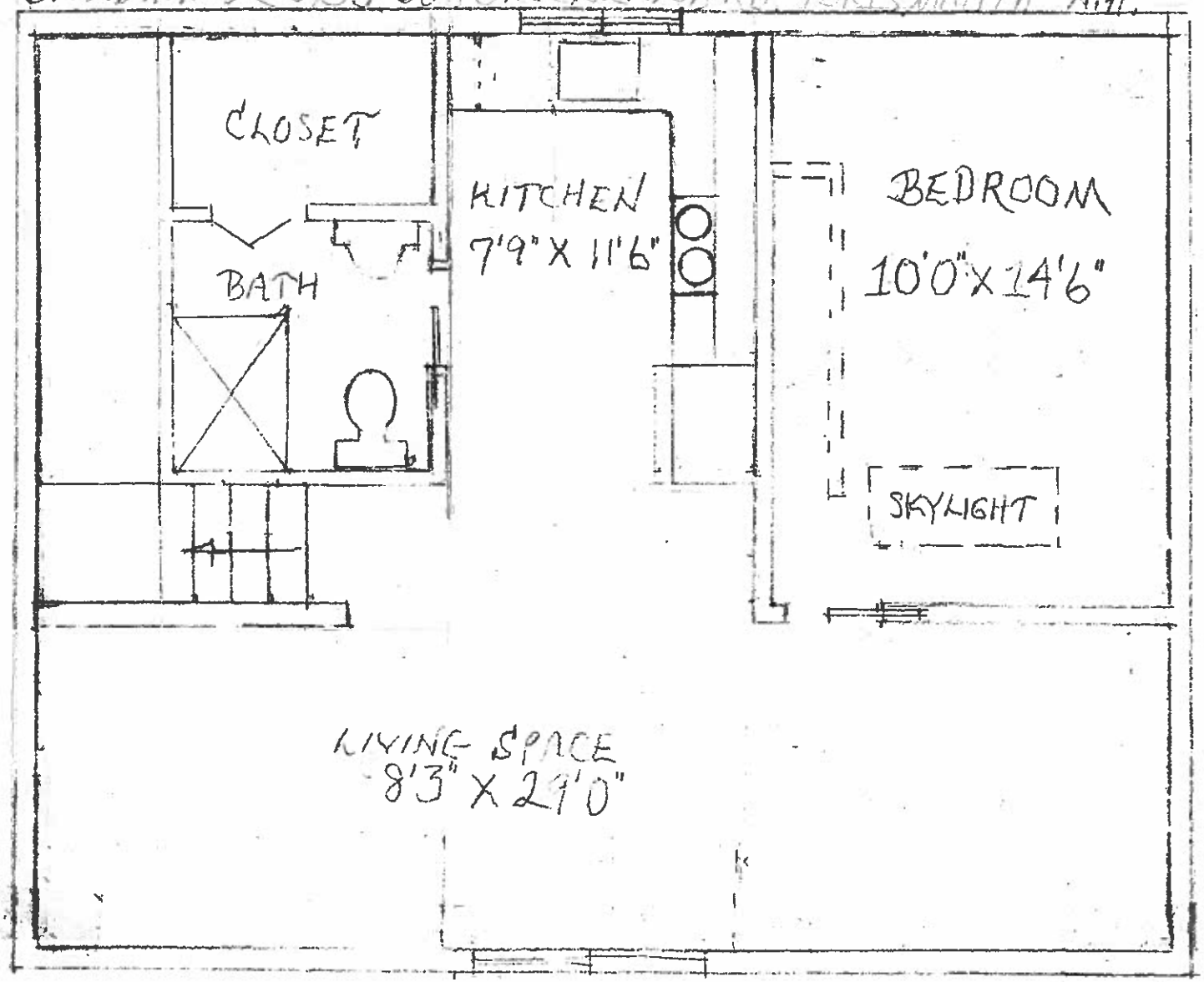
Jon Blonder
Professional Interior Designer

Proposed
Jv redesign – only hypothetical

1/4" = 1'0"

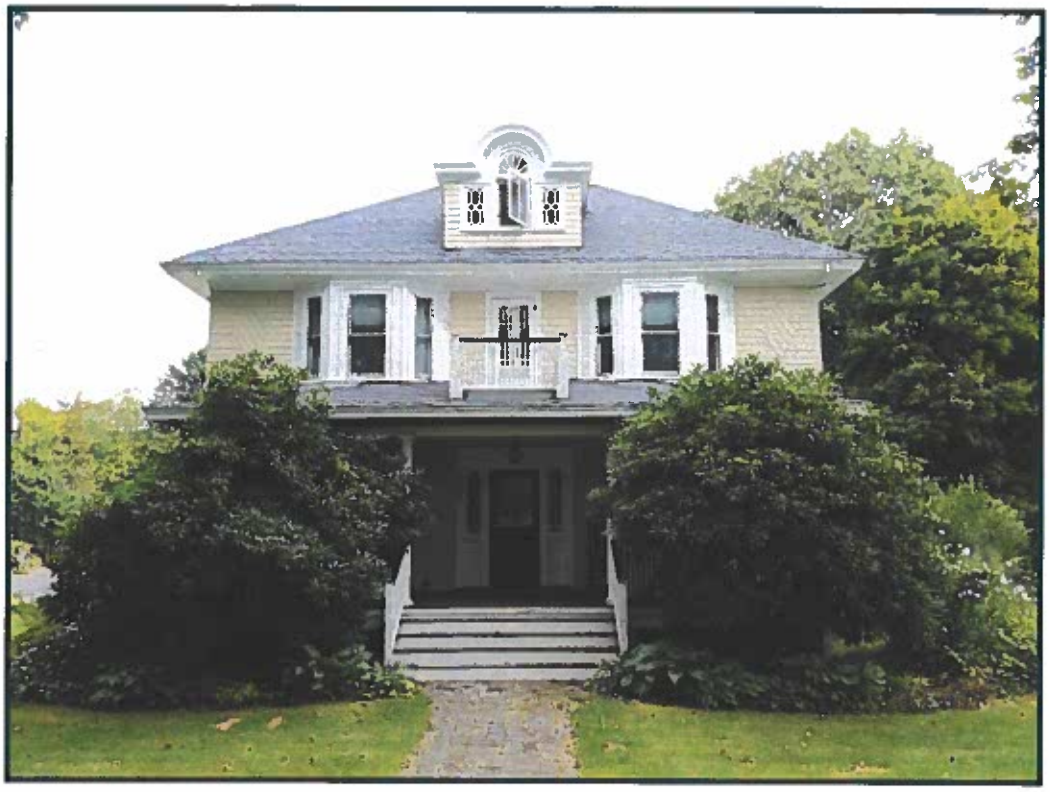
BRINDAMOUR JOU 652 GREENLEAF RD KEENE NH.

Jon Blader
– Design Essence
same contact



Alpha Home & Commercial Building Inspections

Property Inspection Report



653 Greenland Rd, Portsmouth, NH 03801
Inspection prepared for: Luke and Sara Brindamour
Real Estate Agent: -

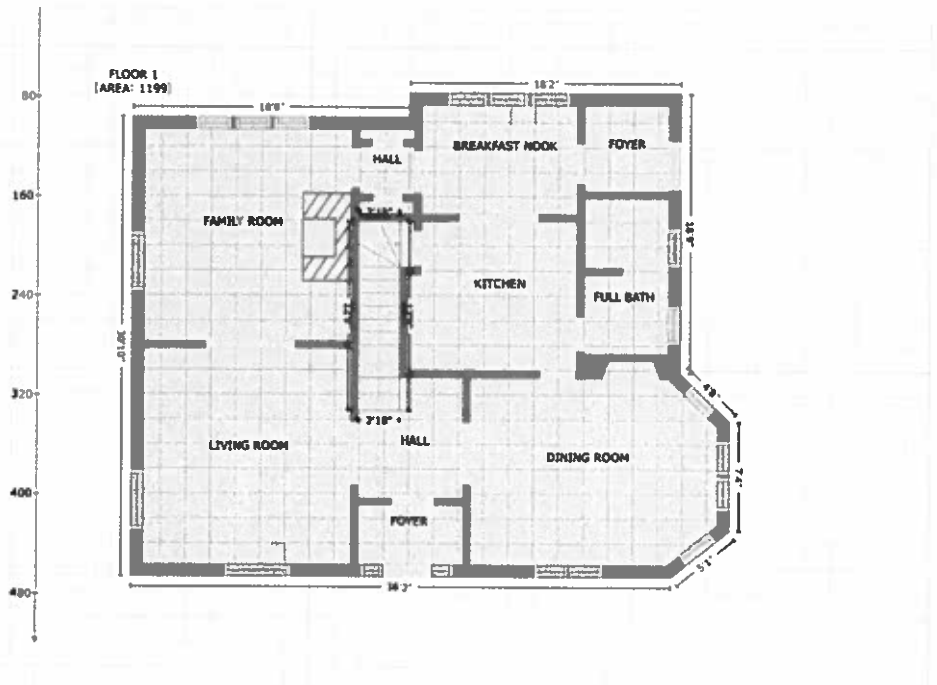
Date of Inspection: 9/19/2022 Time: 1:00 PM
Age of Home: 1900 Size: 2994 Sq ft
Order ID: 14906

Inspector: Luke Harrington

Email: Luke@alphabuildinginspections.com

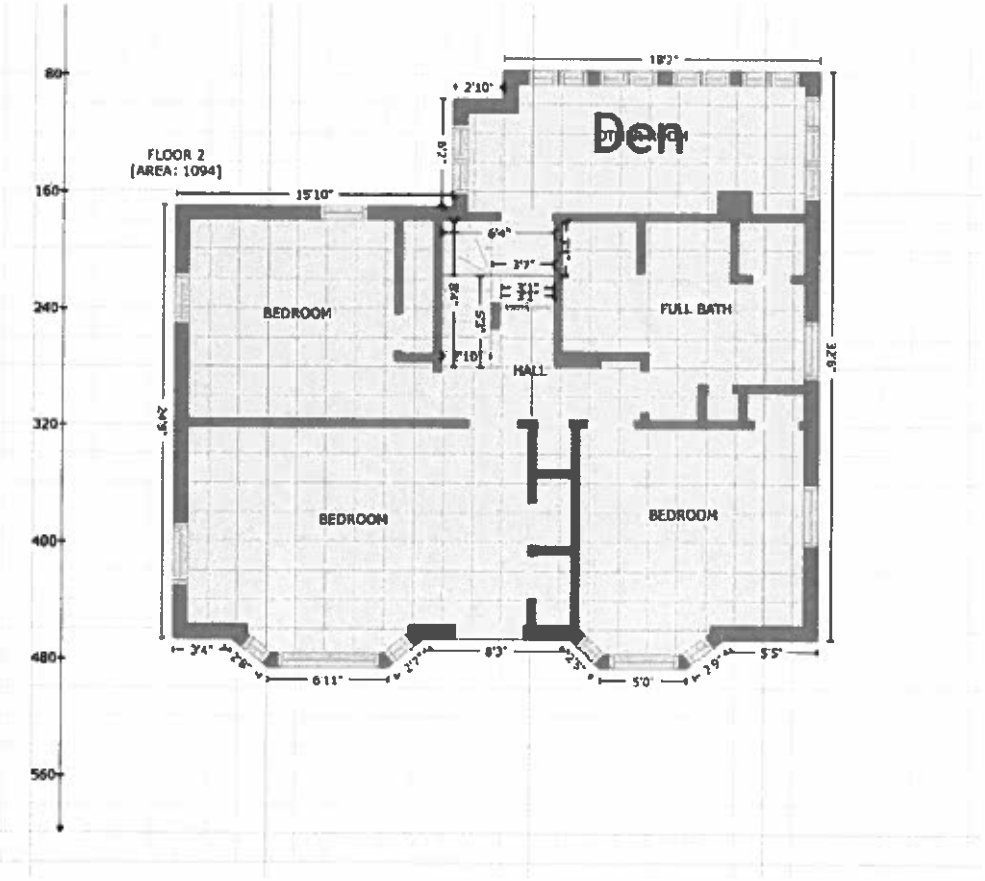
LICENSED HOME INSPECTOR
LUKE A. HARRINGTON
License #00403
STATE OF NEW HAMPSHIRE

Sketch Floor 1



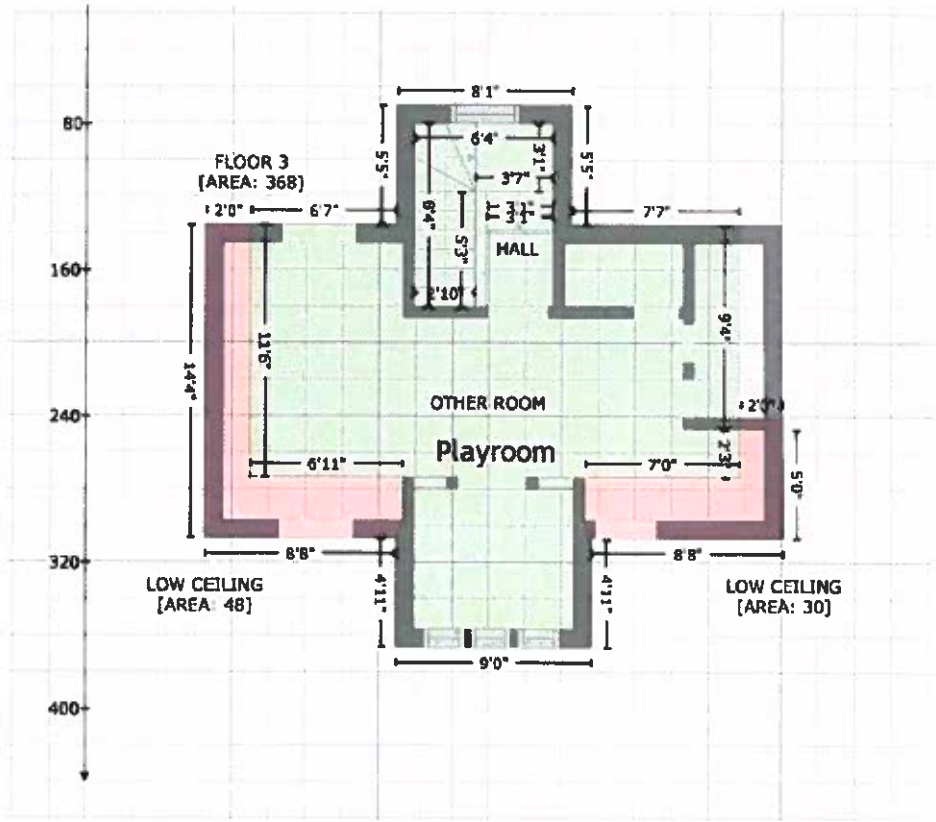
Space	Area (sq. ft)	Calculation Coordinate Polygon Area Algorithm using inches
FLOOR 1 (Living area)	1199	-((517.6 + 517.6) * (76.7 - 302) + (517.6 + 557.6) * (302 - 340.8) + (557.6 + 557.6) * (340.8 - 428.8) + (557.6 + 510) * (428.8 - 466.5) + (510 + 75.9) * (466.5 - 466.5) + (75.9 + 75.9) * (466.5 - 96.4) + (75.9 + 299.4) * (96.4 - 96.4) + (299.4 + 299.4) * (96.4 - 76.7) + (299.4 + 517.6) * (76.7 - 76.7)) * 0.5 * 0.00694

Sketch Floor 2



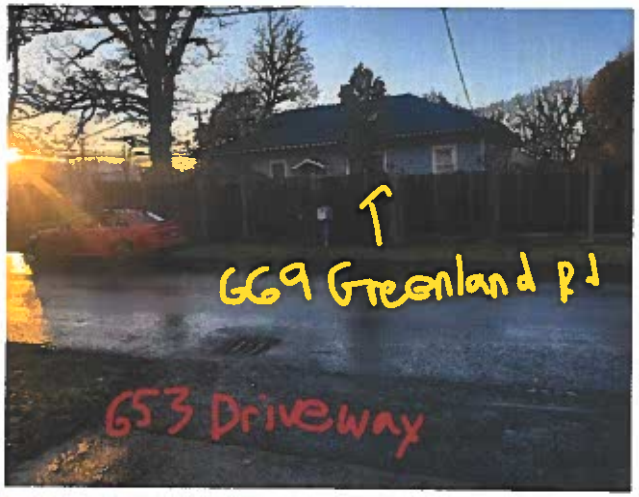
Space	Area (sq. ft)	Calculation Coordinate Polygon Area Algorithm using vectors
FLOOR 2 (Living area)	1094	((517.6 + 517.6) * (76.7 - 466.5) + (517.6 + 453) * (466.5 - 466.5) + (453 + 426.9) * (466.5 - 486.5) + (426.9 + 367.2) * (486.5 - 486.5) + (367.2 + 346.5) * (486.5 - 466.5) + (346.5 + 247.3) * (466.5 - 466.5) + (247.3 + 223.5) * (466.5 - 486.5) + (223.5 + 140.8) * (486.5 - 486.5) + (140.8 + 115.8) * (486.5 - 466.5) + (115.8 + 75.9) * (466.5 - 466.5) + (75.9 + 75.9) * (466.5 - 170) + (75.9 + 265.7) * (170 - 170) + (265.7 + 265.7) * (170 - 96.4) + (265.7 + 299.4) * (96.4 - 96.4) + (299.4 + 299.4) * (96.4 - 76.7) + (299.4 + 517.6) * (76.7 - 76.7)) * 0.5 * 0.00694

Sketch Floor 3



Space	Area (sq. ft)	Calculation Coordinate Polygon Area Algorithm using inches
FLOOR 3 (Living area)	368	-((265.4 + 265.4) * (70 - 135.4) + (265.4 + 356.6) * (135.4 - 135.4) + (356.6 + 356.6) * (135.4 - 247) + (356.6 + 356.7) * (247 - 247) + (356.7 + 356.7) * (247 - 273.7) + (356.7 + 272.5) * (273.7 - 273.7) + (272.5 + 272.5) * (273.7 - 297.2) + (272.5 + 276.6) * (297.2 - 307.2) + (276.6 + 276.6) * (307.2 - 366.5) + (276.6 + 168.9) * (366.5 - 366.5) + (168.9 + 168.9) * (366.5 - 307.2) + (168.9 + 173) * (307.2 - 297.2) + (173 + 173) * (297.2 - 273.7) + (173 + 89.6) * (273.7 - 273.7) + (89.6 + 89.6) * (273.7 - 135.4) + (89.6 + 168.9) * (135.4 - 135.4) + (168.9 + 168.9) * (135.4 - 70) + (168.9 + 265.4) * (70 - 70)) * 0.5 * 0.00694


ADU
Garage
Back Yard


669 Greenland Rd
653 Driveway


ADU
Garage
31.5


42 HARVARD ST

Section 10.440 Table of Uses – Residential, Mixed Residential, Business and Industrial Districts

The proposed Zoning Ordinance amendments set forth in this document are intended to achieve three broad policy **objectives**:

(1) to remove barriers and provide more flexibility for the creation of accessory dwelling units (ADUs);

(2) to strengthen provisions for ensuring that ADUs fit into established neighborhood patterns and minimize any adverse impacts on abutting properties; and

(3) to simplify the ordinance and make it easier for users to understand and navigate

Before beginning the zoning revision project, the Planning Department reached out to stakeholders via a series of small group meetings and a survey of abutters to ADUs. This public involvement process revealed six broad **themes** that helped guide the zoning revision process:

(1) Process navigational support is needed.

(2) Dimensional relief is both an obstacle and a protection.

(3) There is considerable cost and risk in the process and this is a deterrent.

(4) Regulations for ADUs need to be clear and implementable.

(5) Foremost among abutters' concerns are: parking, short term rentals, neighborhood character, and buffering and separation.

(6) Abutters were generally positive about ADUs.

The revisions to the Table of Uses below result in a table that is more detailed than the existing table, with two categories of attached ADUs and four categories of detached ADUs. This additional complexity reflects two proposed policy changes in support of the above objectives: (1) to allow ADUs with the least potential neighborhood impact as of right ("P") instead of requiring a conditional use permit ("CU") as currently; and (2) to fold the existing Garden Cottage use into the broader Detached Accessory Dwelling Unit (DADU) use.

Use	R	SRA SRB	GRA GRB	GRC (A)	GA/ MH	MRO CD4-L1	CD4-L2	MRB	CD5 CD4	GB	G1	G2	B CD4-W	WB	…
1. Residential Uses															
1.10 **Single family dwelling**	P	P	P	P	N	P	P	P	~~P~~N	N	P	P	N	N	…
1.20 **Accessory dwelling unit**															
~~1.21 **Attached**~~	~~CU~~	~~CU~~	~~CU~~	~~CU~~	~~N~~	~~CU~~	~~CU~~	~~CU~~	~~CU~~	~~N~~	~~CU~~	~~CU~~	~~N~~	~~N~~	~~…~~
1.21 **Attached accessory dwelling unit (AADU)**															
1.211 Up to 750 sq. ft. GFA and entirely within an existing **single-family dwelling**	P	P	P	P	N	P	P	P	N	N	CU	CU	N	N	…
1.212 More than 750 sq. ft. GFA, or in an addition to or expansion of an existing **single-family dwelling**	CU	CU	CU	CU	N	CU	CU	CU	N	N	CU	CU	N	N	…
~~1.22 **Detached**~~	~~CU~~	~~CU~~	~~CU~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~…~~

Use	R	SRA SRB	GRA GRB	GRC (A)	GA/ MH	MRO CD4-L1	CD4-L2	MRB	CD5 CD4	GB	G1	G2	B CD4-W	WB	…
1.22 **Detached accessory dwelling unit (DADU)**															
1.221 Up to 600 sq. ft. GFA and entirely within an existing **accessory building** that complies with all dimensional standards for **accessory building**s	P	P	P	P	N	P	P	P	N	N	N	N	N	N	…
1.222 Up to 600 sq. ft. GFA in an existing **accessory building** where any of the following apply: (a) the existing **building** does not comply with a dimensional standard for an **accessory building**, or (b) the **DADU** requires any modification of a standard in Section 10.814, or any variance; or (c) the **DADU** includes any expansion of the existing **accessory building**	CU	CU	CU	CU	N	CU	CU	CU	N	N	N	N	N	N	…

Use	R	SRA SRB	GRA GRB	GRC (A)	GA/ MH	MRO CD4-L1	CD4-L2	MRB	CD5 CD4	GB	G1	G2	B CD4-W	WB	…
1.223 Up to 750 sq. ft. GFA in a new **building** that complies with all **lot** and **building** dimensional standards for a **single-family dwelling**	CU	CU	CU	CU	N	CU	CU	CU	N	N	N	N	N	N	…
1.224 Up to 1,000 sq. ft. GFA in a new **building** that does not comply with a dimensional standard for a **single-family dwelling**, or that requires any variance to construct the **DADU**	CU	CU	CU	N	N	N	N	N	N	N	N	N	N	N	…
~~1.25 **Garden Cottage**~~	~~CU~~	~~CU~~	~~CU~~	~~CU~~	~~N~~	~~CU~~	~~CU~~	~~CU~~	~~CU~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~	~~…~~
1.30 **Two-family dwelling**	N	N	P	P	P	P	P	P	P	N	P	P	N	N	…
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…

NOTES:
(1) DADU uses no. 1.221 and 1.222 replace use no. 1.25 – Garden Cottages.
(2) In the "Supplemental Regulations" column, insert the following reference for uses 1.211 and 1.221:
"10.814.61 (administrative approval)".

Article 8 Supplemental Use Standards

10.814 Accessory Dwelling Units

This revision reorganizes the provisions of Section 10.814 into a more logical sequence and adds subsection headings to make it easier for users to navigate the ordinance.

10.814.10 Purpose and Eligibility

10.814.11 The purpose of this section is to provide for additional **dwelling unit**s within single-family neighborhoods in order to: increase the supply of smaller, more affordable housing units without the need for more infrastructure or further land development; meet local housing needs; and provide opportunities for adapted reuse of existing **accessory structure**s. The standards in this section are intended to integrate more housing options into the community with minimal negative impact on the surrounding neighborhood.

New purpose statement – balancing affordable housing with neighborhood quality of life.

10.814.~~10~~12 ~~One, and only one,~~ Only one **accessory dwelling unit (ADU)** shall be allowed on any **lot** containing a **single-family dwelling**. An **accessory dwelling unit** shall not be allowed under this Section 10.814 on a **lot** that contains more than one **dwelling unit**.

10.814.~~20~~13 Except as provided elsewhere in this Section 10.814, in order for a **lot** to be eligible for an **accessory dwelling unit**, the **lot** and all proposed **structure**s and additions to existing **structure**s shall conform to all zoning regulations as follows:

10.814.~~21~~131 Any municipal regulation applicable to **single-family dwelling**s shall also apply to the combination of a principal **dwelling unit** and an **accessory dwelling unit** including, but not limited to, ~~**lot area, yard**s, **open space, off-street parking, building coverage**, and **building height**.~~ the dimensional standards set forth in Sec. 10.521 and the **off-street parking** requirements set forth in Sec. 10.1110.

These changes are meant to clarify that ADUs are subject to all applicable regulations, not just the ones that are itemized in the current ordinance.
(But see next sentence.)

Notwithstanding the above, the combination of a principal **dwelling unit** and an **accessory dwelling unit** does not need to comply with the minimum **lot area** per **dwelling unit** for the zoning district.

This change allows an ADU to be created on a lot meeting the area requirement for a single-family dwelling.

10.814.~~22~~132 An **attached accessory dwelling unit** is permitted on an existing **nonconforming lot**~~**s**~~ and within an existing **nonconforming building**~~**s**~~ as long as there is ~~no increase in **building height** or **building footprint** for any portion of the existing **building** and~~ no increase to or extension of ~~the~~ any existing nonconformity and no new nonconformity is created.

This simplifies the language of no increase in any nonconformity.

10.814.~~23~~133 A **detached accessory dwelling unit** that is not created within an existing **accessory building** is not an **accessory building** ~~or **structure**~~ for the purposes of this Ordinance, and therefore shall be governed by the applicable minimum **yard** dimensions in Section 10.521 for a **principal building** ~~or **structure**~~ and not by the **side yard** and **rear yard** standards applicable to an **accessory building**.

The inserted phrase reflects the merging of the Garden Cottage use into the broader Detached ADU use. An existing accessory building converted to a DADU continues to be governed by the yard standards for accessory buildings.

10.814.14 Notwithstanding all of the above provisions, an **accessory building** existing on the effective date of this ordinance may be converted to a **detached accessory dwelling unit** as provided in Section 10.440, uses 1.221 and 1.222, and as further provided in this Section 10.814.

This is the key provision that folds the Garden Cottages use into the Detached ADU section.

10.814.20 Standards for All Accessory Dwelling Units

~~10.814.30~~ All **accessory dwelling unit**s shall comply with the following standards:

10.814.~~31~~21 The principal **dwelling unit** and the **accessory dwelling unit** shall not be separated in ownership (including by condominium ownership).

10.814.~~32~~22 Either the principal **dwelling unit** or the **accessory dwelling unit** shall be occupied by the owner of the **dwelling** as his or her principal place of residence. The owner shall provide documentation demonstrating to the satisfaction of the City that one of the units is his or her principal place of residence. Furthermore, an affidavit of this restriction shall be recorded at the Rockingham County Registry of Deeds.

10.814.~~321~~221 When the property is owned by one or more trusts, one of the **dwelling unit**s shall be the principal place of residence of the beneficiary(ies) of the trust(s).

10.814.23 The **accessory dwelling unit** shall not have more than two bedrooms.

10.814.~~33~~24 Neither the **principal dwelling unit** nor the **accessory dwelling unit** shall be used for any business, except that the property owner may have a **home occupation** use in the unit that he or she occupies as allowed or permitted elsewhere in this Ordinance.

10.814.~~34~~25 Where municipal sewer service is not provided, the septic system shall meet NH Water Supply and Pollution Control Division requirements for the combined system demand for total occupancy of the premises.

10.814.26 At least 1 **off-street parking** space shall be provided for an **ADU** with up to 750 sq. ft. GFA, and at least 2 spaces shall be provided for an **ADU** with more than 750 sq. ft. GFA, in addition to the 2 spaces that are required for the principal **single-family dwelling**.

10.814.30 Additional Standards for Attached Accessory Dwelling Units

~~10.814.40~~ An **attached accessory dwelling unit** (**AADU**) shall comply with the following additional standards:

10.814.~~41~~31 An interior door shall be provided between the **principal dwelling unit** and the **accessory dwelling unit**.

10.814.~~42~~32 The ~~**accessory dwelling unit**~~**AADU** ~~shall not have more than two bedrooms and~~ shall not be larger than 750 sq. ft. **gross floor area** except as permitted through a conditional use permit as provided in Section 10.440. In no case shall the **AADU** be larger than 1,000 sq. ft. **gross floor area**. For the purpose of this provision, the **gross floor area** of the **AADU** shall not include existing storage space, shared entries, or other spaces not exclusive to the ~~**accessory dwelling unit**~~**AADU**.

10.814.33 The **AADU** shall be subordinate to the principal **dwelling unit** in scale, height and appearance, as follows:

10.814.~~43~~331 ~~Any exterior changes to the single-family dwelling shall maintain the appearance of a single-family dwelling.~~ If there are two or more doors in the front of the principal **dwelling unit**, one door shall be designed as the principal entrance and the other doors shall be designed to appear to be secondary.

~~10.814.44 No portion of the AADU shall be closer to the front lot line than the existing front wall of the principal dwelling unit.~~

~~10.814.45 An AADU that is attached to the single-family dwelling (i.e., created by an expansion of the existing structure) shall comply with the following:~~

~~10.814.451 An exterior wall of the AADU that faces a street on which the lot has frontage shall comprise no more than 40 percent of the total visible façade area of the dwelling as seen from that street.~~

10.814.332 An addition to or expansion of an existing **building** for the purpose of creating an **AADU** shall be recessed or projected at least 18 inches from the existing front wall of the principal **dwelling unit**. Where the addition includes the construction of an attached, street-facing garage, it shall be set back at

Section 10.81.32 coordinates with the proposed changes to the table of uses:

- An AADU up to 750 sq. ft. is a permitted use (use 1.211).
- An AADU up to 1,000 sq. ft. may be allowed by a conditional use permit from the Planning Board (use 1.212).
- An AADU more than 1,000 sq. ft. is not allowed anywhere (this provision).

The standards for subordination of the AADU to the principal dwelling unit (Section 10.814.33) are refined based on experience with ADUs that have been created since the adoption of the ordinance, and on comments from residents.

least 10 feet from the front wall of the principal **dwelling unit**.

~~10.814.452 The addition to or expansion of the existing single-family dwelling may include an increase in building height only as an upward expansion of the existing principal building with no increase in building footprint.~~

10.814.~~453~~333 The **building height** of any addition or expansion that includes an increase in **building footprint** shall be ~~less than the building height of the existing principal building~~ no greater than 75% of the height of the existing **building**. In the case of a single-story **building**, an addition or expansion may include an additional story to the existing **building** or a single-story addition at the same height as the existing **building**.

~~10.814.454 The **AADU** shall be architecturally consistent with the principal **dwelling**~~

10.814.40 Additional Standards for Detached Accessory Dwelling Units

~~10.814.50~~ A **detached accessory dwelling unit** (**DADU**) shall comply with the following additional standards:

~~10.814.51 In a General Residence district, the combination of the **principal dwelling** and the **DADU** shall comply with the minimum **lot area** per **dwelling unit** specified for the district. (For example, the required **lot area** for a **single-family dwelling** with a **DADU** in the GRA district is 7,500 sq. ft. per **dwelling unit** multiplied by 2 **dwelling unit**s, or 15,000 sq. ft.) In a Single Residence or Rural district, a lot with a **DADU** shall comply with the minimum **lot area** for the district, but need not comply with the minimum **lot area** per **dwelling unit**.~~

10.814.~~52~~41 The **DADU** ~~shall not have more than two bedrooms and~~ shall not be larger than 750 sq. ft. gross floor area~~; except that the maximum **gross floor area** shall be 1,000 sq. ft. if the **lot area** is 2 acres or more.~~ except as permitted through a conditional use permit as provided in Section 10.440, use no. 1.224.

10.814.411 In no case shall a **DADU** be larger than 1,000 sq. ft. **gross floor area**.

10.814.412 In no case shall a **DADU** that is created from an existing **accessory building** that does not comply with the minimum **yard** requirements for a **principal structure** be larger than 600 sq. ft. **gross floor area**.

These two provisions limit a DADU to 1,000 sq. ft. if it complies with all zoning setbacks, and to 600 sq. ft. if it is created from an existing accessory building that does not comply with the yard requirements for a principal structure. (Note that these size limits are reinforced in Section 10.814.63 below.)

10.814.42 A **DADU** that is created from an existing **accessory building** that does not comply with the minimum **yard** requirements for a **principal structure** shall comply with the following additional requirements:

10.815.421 The existing **accessory building** shall not be expanded either vertically or horizontally, other than through the addition of a front entry not to exceed 50 sq. ft., or a side or rear deck not to exceed 300 sq. ft.; except that the Planning Board may grant a conditional use permit to allow the **gross floor area** of the **accessory building** to be expanded up to a total of 600 sq. ft. as provided in Section 10.440.

10.815.422 A **DADU** that is within a required **side yard** or **rear yard** setback for the zoning district shall not have any windows or doors higher than eight feet above grade facing the adjacent property.

The provisions in Section 10.814.42 are carried over from the existing Garden Cottages section of the ordinance and apply to any detached ADU that is created by converting an existing garage or other accessory building that does not comply with the yard requirements for a principal structure.

10.814.~~53~~43 The DADU shall be ~~clearly~~ subordinate to the principal **single-family dwelling** in scale, height and appearance~~.~~, as follows:

10.814.~~55~~431 The front wall of ~~the~~a **DADU** that is not created within an existing **accessory building** shall be set back at least 10 feet further from the **front lot line** than the existing front wall of the ~~single-family~~ principal **dwelling unit**.

~~10.814.531 The façade area of the DADU that faces a street on which the lot has frontage shall be no more than 40 percent of the combined visible façade areas of the principal single-family dwelling and the DADU facing the same street.~~

10.814.~~532~~432 The **building height** of the entire **building** containing the **DADU** shall be ~~less than the building height of the principal single-family dwelling~~no greater than 22 feet.

10.814.433 When the **building** containing the **DADU** is taller than the **principal building**, its required setback from all property lines shall be increased by the difference in **building height** between the **DADU** and the **principal building**.

10.814.434 The **building footprint** of the entire **building** containing the **DADU** shall be no greater than 750 sq. ft.

10.814.435 The **gross floor area** of the entire **building** containing the **DADU** shall be no greater than 1,600 sq. ft. GFA or 75 percent of the **gross floor area** of the principal **dwelling unit**, whichever is less.

10.814.436 The **DADU** may include roof dormers provided they are located outside the required setbacks from property lines and occupy no greater than 33% of any individual roof plane.

10.814.437 The **DADU** shall comply with the drainage requirements listed under Section 10.1320.

10.814.438 The **DADU** shall comply with the lighting requirements listed under Section 10.1140.

The addition of "that is not created within an existing accessory building" is due to merging the Garden Cottage use into the DADU use and reflects the possibility that an existing garage or other accessory building may not be 10 feet back from the front line of the house.

In response to concerns raised by residents about the scale of DADUs (including some units that have been created under the current ordinance), Sections 10.814.432 through 10.814.436 establish upper limits on the absolute and relative size and scale of the building containing a DADU (as opposed to the size of the DADU itself).

Regardless of the size of the DADU that it contains, the detached building cannot have a footprint of more than 750 sq. ft. nor a gross floor area of more than 1,600 sq. ft. This would permit a 1,000 sq. ft. DADU (the maximum allowed with a conditional use permit) over a two-car garage.

~~10.814.533 The **DADU** shall be architecturally consistent with the principal **dwelling** through the use of similar materials, detailing, and other **building** design elements.~~

This architectural consistency provision is replaced by more detailed requirements in Section 10.814.50 below.

10.814.~~54~~44 The **DADU** shall ~~be separated from the single-family dwelling by at least 20 feet~~ comply with the minimum separation requirements established by the Building Code.

~~10.814.56 No portion of the DADU shall be located in any required front yard, regardless of the location of the single-family dwelling.~~

10.814.50 Architectural Design Standards

Where the creation of an **accessory dwelling unit** involves the construction of a new **building** or an addition to or expansion of an existing **building**, the exterior design shall be architecturally consistent with the **principal building** using the following design standards:

This new section establishes detailed standards for architectural consistency of an ADU with the principal single-family dwelling.

Note that these standards are requirements ("shall"), not guidelines ("should"). Section 10.814.612 provides that if the Planning Director determines that an ADU that is otherwise permitted ("P") does not comply with any of these standards (or any other standard in Section 10.814), then the proposed use will require a conditional use permit, including a public hearing by the Planning Board.

10.814.51 The new **building**, addition or expansion shall be the same as or similar to the existing **principal building** with respect to the following elements:

- Massing, including the shape and form of the **building footprint**, roof or any projecting elements;
- Architectural style, design, quality and character;
- Roof forms, slopes, and shingling materials;
- Siding material, texture, and profile;
- Window spacing, shapes, proportions, style and detailing;
- Door style, material and detailing;
- Trim details, including window and door casings, cornices, soffits, eaves, dormers, shutters, railings and other similar design elements;
- Exposed foundation materials and profiles.

10.814.52 If provided, the following elements shall be the same as or similar to the corresponding elements on the **principal building** in terms of proportions, materials, style and trim:

- Projections such as dormers, porticos, bays, porches and door canopies;
- Chimneys, balconies, railings, gutters, shutters and other similar design elements.

10.814.53 If provided, garage doors shall be limited to 9 feet in width.

10.814.60 Review and Approval Process

10.814.61 When Section 10.440 indicates that an **attached** or **detached ADU** is permitted ("P"), the following shall apply:

10.814.611 For a period of at least 30 days from the date of application to the City, the property owner shall post a notice, provided by the city, that describes the proposed **ADU** application. Such notice shall be located on the perimeter of the site where it can easily be viewed and readable from all abutting public ways. Prior to approval of the application for a **building permit** the applicant shall be provide a written statement, including photographic evidence, confirming that the notice requirement has been met. Furthermore, the sign notice information will be mailed to the direct abutters of the **lot**.

This requirement for posting and mailing a notice of the application is in response to resident concerns about lack of notification without a public hearing requirement.

10.814.612 The determination as to whether the **ADU** complies with all requirements shall be by administrative approval by the Planning Director. If the Planning Director determines that the application does not comply with any standard in this Section 10.814, the proposed **ADU** shall require a conditional use permit.

10.814.~~60~~62 ~~Before granting~~ When Section 10.440 requires a conditional use permit for an **attached** or **detached ADU**, the Planning Board shall make the following findings before granting approval:

10.814.621 The **ADU** complies with all applicable standards of this Section 10.814.

10.814.~~61~~622 The ~~E~~exterior design of the **ADU** is consistent with the existing principal **dwelling** on the **lot**.

10.814.~~62~~623 The site plan provides adequate and appropriate **open space**~~,~~ and **landscaping** ~~and **off-street parking**~~ for both the **ADU** and the ~~primary **dwelling**~~ principal **dwelling unit**, and complies with the **off-street parking** requirements of Section 10.1110.

This change replaces a general determination of "adequate and appropriate" parking with a specific finding that the plan complies with the off-street parking standards of the ordinance.

10.814.~~63~~624 The **ADU** will maintain a compatible relationship to **adjacent** properties in terms of location, design, and **off-street parking** layout, and will not significantly reduce the privacy of **adjacent** properties.

~~10.814.64 The **ADU** will not result in excessive noise, traffic or parking congestion.~~

10.814.~~70~~63 In granting a conditional use permit for an **accessory dwelling unit**, the Planning Board may modify a specific standard set forth in Sections 10.814.~~40~~30 ~~or 10.814.52~~ through 10.814.~~56~~50 (excepting Section 10.814.41), including requiring additional or reconfigured **off-street parking** spaces, provided that the **Board** finds such modification will be consistent with the required findings in Section 10.814.~~60~~62.

The phrase "excepting Section 10.814.41" means that (1) no detached accessory dwelling unit may exceed 1,000 sf in area, and (2) no DADU created in an existing accessory building may exceed 600 sf in area unless it complies with the required setbacks for a principal structure.

10.814.70 Post-Approval Requirements

10.814.~~80~~71 Documentation of the conditional use permit approval shall be recorded at the Rockingham County Registry of Deeds.

10.814.~~90~~72 A certificate of use issued by the Planning Department is required to verify compliance with the standards of this Section, including the owner-occupancy and principal residency requirements. Said certificate shall be issued by the Planning Department upon issuance of a certificate of occupancy by the Inspection Department and shall be renewed annually upon submission of such documentation as the Planning Department may require to verify compliance. A certificate of use shall not be issued prior to recording of documentation as required by ~~this~~ section 10.814.~~80~~71.

~~10.815 Garden Cottages~~

~~10.815.10 One **garden cottage**, and only one, shall be allowed on any **lot** containing a **single family dwelling**.~~

~~10.815.20 Relationship to other provisions of this Ordinance:~~

~~10.815.21 No **garden cottage** shall be allowed on the same **lot** as an **accessory dwelling unit** authorized under this Ordinance.~~

~~10.815.22 The establishment of a **garden cottage** results in two **dwelling unit**s on the property and thus makes the property ineligible to establish an **accessory dwelling unit** under RSA 674:72-73 and this Ordinance. As a condition of receiving a conditional use permit for a **garden cottage**, the property owner shall waive all rights under RSA 674:72 and RSA 674:73.~~

~~10.815.23 A **garden cottage** that complies with the standards of this section is exempt from the residential density standards of the Zoning Ordinance. A second **dwelling unit** on a **lot** that does not comply with the standards of this section shall be considered to be either a second primary **dwelling** or an **accessory dwelling unit** and shall comply with the applicable standards and provisions of the Ordinance.~~

The entire Garden Cottages section is deleted because the GC use is being folded into the broader category of Detached Accessory Dwelling Unit (DADU).

10.815.30 **Garden cottage**s shall comply with the following standards:

10.815.31 The existing **accessory building** shall not be expanded either vertically or horizontally, other than through the addition of a front entry not to exceed 50 sq. ft., or a side or rear deck not to exceed 300 sq. ft.

10.815.32 A **garden cottage** shall not be larger than 600 sq. ft. **gross floor area**.

10.815.33 A **garden cottage** that is within a required **yard** for the zoning district shall not have any windows or doors higher than eight feet above grade facing the **adjacent** property.

10.815.34 The **principal dwelling unit** and the **garden cottage** shall not be separated in ownership (including by condominium ownership); and either the **principal dwelling unit** or the **garden cottage** shall be occupied by the owner of the property. The owner shall provide documentation demonstrating to the satisfaction of the City that one of the units is his or her principal place of residence.

10.815.341 When the property is owned by one or more trusts, one of the **dwelling unit**s shall be the principal place of residence of the beneficiary(ies) of the trust(s).

10.815.35 Where municipal sewer service is not provided, the septic system shall meet NH Water Supply and Pollution Control Division requirements for the combined system demand for total occupancy of the premises.

10.815.40 Before granting a conditional use permit for a **garden cottage**, the Planning Board shall make the following findings:

10.815.41 Exterior design of the **garden cottage** is consistent with the existing **single family dwelling** on the **lot**.

10.815.42 The site plan provides adequate and appropriate **open space**, **landscaping**, and **off-street parking** for both the **garden cottage** and the primary **dwelling**.

10.815.43 The **garden cottage** will maintain a compatible relationship to **adjacent** properties in terms of location and design, and will not significantly reduce the privacy of **adjacent** properties.

10.815.44 The **garden cottage** will not result in excessive noise, traffic or parking congestion.

10.815.50 In granting a conditional use permit for a **garden cottage**, the Planning Board may modify a specific dimensional or parking standard set forth in Section 10.815.30, including requiring additional or reconfigured **off-street parking** spaces, provided that the Board finds such modification will be consistent with the required findings in Section 10.815.40.

10.815.60 Documentation of the conditional use permit approval shall be recorded at the Rockingham County Registry of Deeds.

10.815.70 A certificate of use issued by the Planning Department is required to verify compliance with the standards of this Section, including the owner-occupancy and principal residency requirements. Said certificate shall be issued by the Planning Department upon issuance of a certificate of occupancy by the Inspection Department and shall be renewed annually upon submission of such documentation as the Planning Department may require to verify compliance. A certificate of use shall not be issued prior to recording of documentation as required by 10.815.60.

Article 11 Site Development Standards

Section 10.1110 Off-Street Parking

10.1113 Location of Vehicular Use Facilities

.

10.1113.20 Location of Parking Facilities on a Lot

Required **off-street parking** spaces shall not be located in any required **front yard**, or between a **principal building** and a **street** (including on a **corner lot**). This restriction shall not apply to required **off-street parking** for a **single-family dwelling** (including the combination of a **single-family dwelling** and an **accessory dwelling unit**) or **two-family dwelling**.

Currently, one- and two-family dwellings are exempted from the prohibition on providing required parking spaces in the front yard. This change extends the exemption to lots containing a single-family dwelling and an ADU, since an ADU is typically smaller than a unit in a two-family dwelling.

Article 15 Definitions

Section 10.1530 Terms of General Applicability

A

Accessory building or **structure**

A subordinate **building** located on the same **lot** with the principal **building**, occupied by or devoted to an **accessory use**. Where an **accessory building** is attached to the main **building** in a substantial manner, as by a wall or roof, such **accessory building** shall be considered part of the main **building**. For the purpose of this Ordinance, a **detached accessory dwelling unit** that is not created within an existing **accessory building** is not an **accessory building** or **structure**.

The inserted phrase is needed because the Garden Cottage use (which by definition is in an accessory building) is being folded into the Detached ADU use.

Accessory dwelling unit (**ADU**)

A **dwelling unit** that is constructed on the same **lot** as a **single-family dwelling** and complies with the standards for **accessory dwelling unit**s set forth in this Ordinance.

Attached accessory dwelling unit (AADU)

An **accessory dwelling unit** that is constructed within or attached to a **single-family dwelling**. For the purpose of this definition, "attached" means:

(a) located within the **dwelling** and separated from the **principal dwelling unit** either horizontally or vertically, or

(b) sharing a common wall for at least 25 percent of the length of the side of the **single-family dwelling**.

"Attached" does not include connection to the **single-family dwelling** solely by an unenclosed **structure** (such as a breezeway) or by an enclosed but unconditioned space.

Detached accessory dwelling unit (DADU)

An **accessory dwelling unit** that is constructed within ~~an accessory~~ a detached **building** on a **lot** containing one **single-family dwelling**. A **detached accessory dwelling unit** may be connected to the **single-family dwelling** by an unenclosed **structure** (such as a breezeway) or by an unconditioned space.

Accessory use

A **use** that is incidental and subordinate to the **principal use** and located on the same **lot** with such **principal use** or **building**.

G

~~**Garden cottage**~~

~~A **dwelling unit** that is constructed through conversion of an **accessory building** on the same **lot** as a **single-family dwelling** and complies with the standards for **garden cottage**s set forth in the Ordinance.~~

This definition is being deleted because the Garden Cottage use is being merged into the Detached ADU use.

Gross floor area (**GFA**)

The sum of the areas of the several floors of a **building** or **building**s as measured by the exterior faces of the walls, but excluding the areas of fire escapes, unroofed porches or terraces, and areas such as basements and **attic**s exclusively devoted to **use**s accessory to the operation of the **building**. If the exterior walls are greater than 6 inches thick, then the **gross floor area** shall be adjusted to a maximum of a 6-inch thick wall.

DARbuilders

722 EAST INDUSTRIAL PARK DRIVE
UNIT 17
MANCHESTER, NH 03109

11/21/2022

City of Portsmouth Planning Board
1 Junkins Avenue
Porstmouth, NH 03801

Re: Conditional Use Permit LU-20-222, one year extension request

To Whom It May Concern,

Please find this letter as a request for a one year extension to the above mentioned Condition Use Permit as we continue to await approval and Permits from the State of NH for the proposed work to be done at our Northwest Street property previously owned by Amanda & Gregory Morneault.

DAR Builders, LLC

Reginald Moreau
Manager
603-235-3575

T5047-001
November 18, 2022

Ms. Beverly Zendt
Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Site Plan Review & Conditional Use Approval Extension Request (LU-21-192)**
Proposed Multifamily Development, 2454 Lafayette Road, Portsmouth, NH

Dear Beverly,

On behalf of 2422 Lafayette Road Associates, LLC (owner), and Torrington Properties Inc (applicant), we respectfully request to extend the approvals granted on 30th December 2021, by the Planning Board for an additional one (1) year.

If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 433-8818 or by email at pmcrimmins@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

Cc: Peter Stith, City of Portsmouth (via e-mail)
2422 Lafayette Road Associates, LLC (via e-mail)
Torrington Properties Inc (via e-mail)
Gregg Mikolaities, August Consulting, PLLC (via e-mail)
John Bosen, Bosen & Associates, PLLC (via e-mail)