T5037-002
September 28, 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: Supplemental Submission – Revised Site Plans
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 the following revised information to support a request for a Site Review Permit and Technical Advisory Committee Meeting, for the above referenced project originally submitted on September 22, 2022:

- One (1) full size & one (1) half size copy of the Site Plan Set, last revised September 28, 2022;
- TAC Comment Response Report, last revised September 28, 2022;
- Drainage Analysis, last revised September 28, 2022;
- Grade Plane Exhibit, last revised September 22, 2022;
- Community Space Exhibit, last revised September 22, 2022;
- Tractor Trailer Turning Exhibit, last revised September 28, 2022;

The enclosed revised information has been updated from the package submitted on September 22, 2022, as follows:

- Intersection of Deer Street and Russell Street has been revised and the curb radius increased to allow for larger truck traffic.
- The streetscape and corner plaza landscape plan has been revised to align with the revised intersection.
- Drainage structures near the intersection have been relocated due to the realignment.
- TAC Comment Response Report has been revised to account for revised intersection.
- Grade Plane, Community Space, and Tractor Trailer Turning Exhibits have been updated to show revised linework.

An updated submission package has been uploaded to the City's online permitting site and hard copy has been hand delivered to the Planning Department. We look forward to meeting with the Technical Advisory Committee on October 4, 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.

Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

Copy: Port Harbor Land, LLC (via email)

NORTH END MIXED USE DEVELOPMENT

RUSSELL STREET & DEER STREET

PORTSMOUTH, NEW HAMPSHIRE

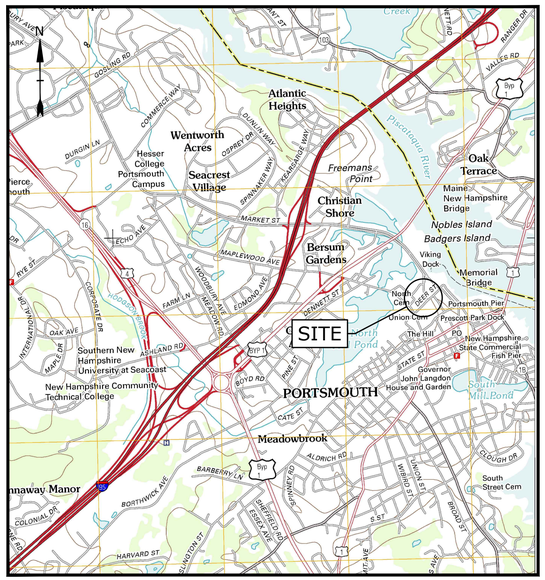
MAY 24, 2022

LAST REVISED SEPTEMBER 28, 2022

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	9/28/2022
G-100	GENERAL NOTES AND LEGEND	9/28/2022
C-101	EXISTING CONDITIONS & DEMOLITION PLAN	9/28/2022
C-102	OVERALL SITE PLAN	9/28/2022
C-102.1	SITE PLAN	9/28/2022
C-103	GRADING & DRAINAGE PLAN	9/28/2022
C-104	UTILITIES PLAN	9/28/2022
C-200	ACCESS EASEMENT PLAN	9/28/2022
C-201	DRAINAGE EASEMENT PLAN	9/28/2022
C-202	UTILITIES EASEMENT PLAN	9/28/2022
C-203	COMMUNITY SPACE EASEMENT PLAN	9/28/2022
C-204	LOT LINE REVISION PLAN	9/28/2022
C-501	EROSION CONTROL NOTES AND DETAILS SHEET	9/28/2022
C-502	DETAILS SHEET	9/28/2022
C-503	DETAILS SHEET	9/28/2022
C-504	DETAILS SHEET	9/28/2022
C-505	DETAILS SHEET	9/28/2022
C-506	DETAILS SHEET	9/28/2022
C-507	DETAILS SHEET	9/28/2022
C-508	DETAILS SHEET	9/28/2022
C-509	DETAILS SHEET	9/28/2022
L-100	LANDSCAPE MATERIAL PLAN, LEGEND AND NOTES	9/28/2022
L-101	LANDSCAPE SITE PLAN	9/28/2022
L-102	LANDSCAPE DETAILS	9/28/2022
L-103	LANDSCAPE DETAILS	9/28/2022
E-001	LIGHTING COVER SHEET	8/25/2022
E-100	EXTERIOR LIGHTING PLAN AND CALCULATIONS	8/25/2022
E-101	EXTERIOR LIGHTING CUTSHEETS	8/25/2022
E-102	EXTERIOR LIGHTING CUTSHEETS	8/25/2022
E-103	EXTERIOR LIGHTING CUTSHEETS	8/25/2022
E-104	EXTERIOR LIGHTING CUTSHEETS	8/25/2022
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
9/28/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN - No. 15227 - LICENSED PROFESSIONAL ENGINEER
9/28/22

TAC RESUBMISSION

COMPLETE SET 42 SHEETS

Last Saved: 9/28/2022
Printed: Sep 28, 2022 - 1:08pm By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002_C-COVER.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.

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 T 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

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS – No. 12378 – LICENSED PROFESSIONAL ENGINEER – 9/28/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN – No. 15227 – LICENSED PROFESSIONAL ENGINEERS – 9/28/22

Tighe&Bond

North End Mixed Use Development

Two International Group

Russell Street & Deer Street Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
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: 9/28/2022
Printed: Sep 28, 2022-9:44am By: CKrzcuk
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=0.0031
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)

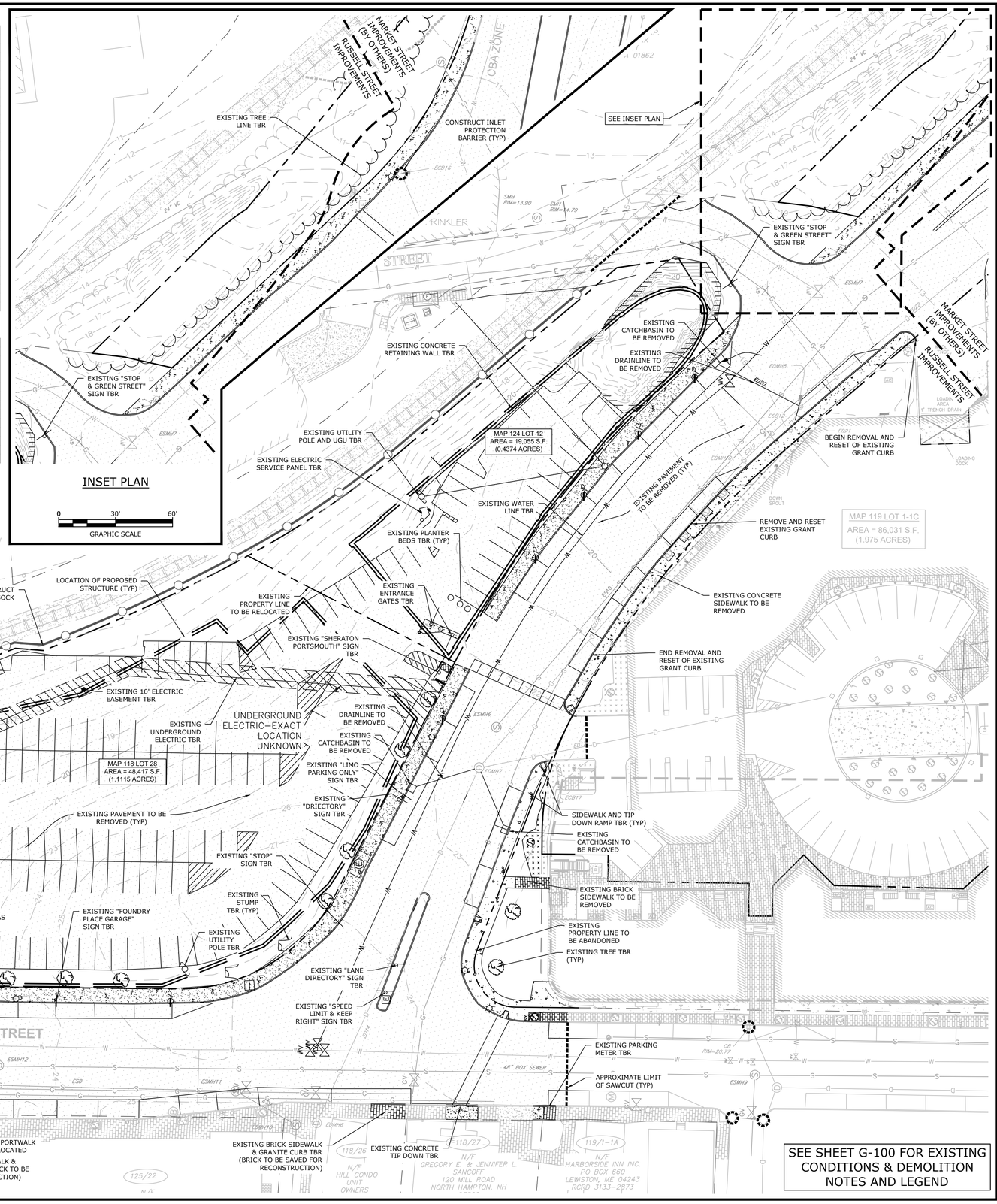
ESMH12
RIM=23.25
INV. IN=-0.89 (ES6)
INV. OUT(NE)=-0.97

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. 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 EXISTING CONDITIONS & DEMOLITION NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS – No. 12378 – LICENSED PROFESSIONAL ENGINEER
9/28/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN – No. 15227 – LICENSED PROFESSIONAL ENGINEER
9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
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: 9/28/2022
Plotted: 9/28/2022 9:45am By: CKrzcsiuk
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)	11,935 SF	39,255 SF	11,210 SF
MINIMUM LOT AREA:	NR			
MINIMUM OPEN SPACE:	5%	35%	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

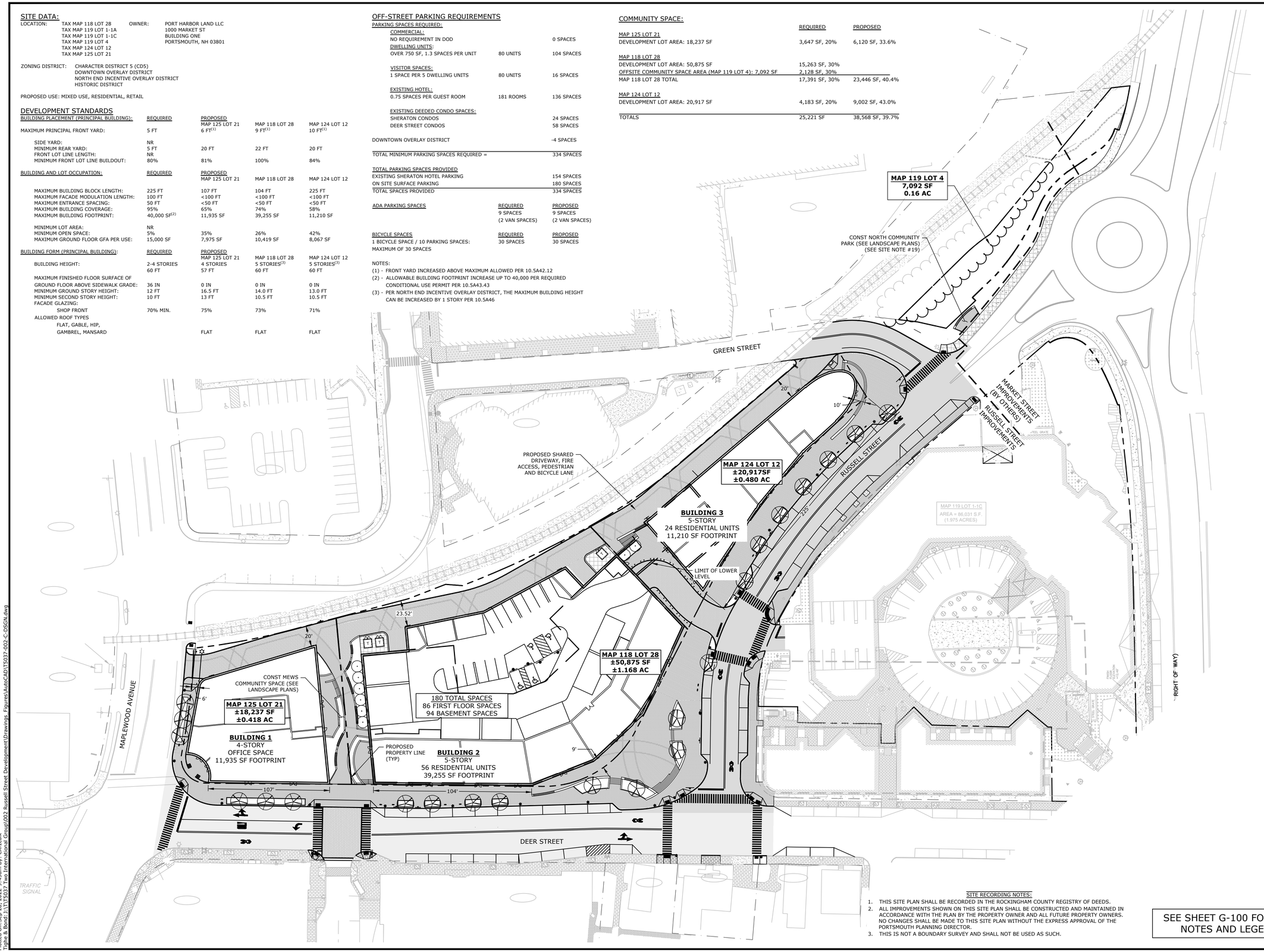
ADA PARKING SPACES	REQUIRED	PROPOSED
	9 SPACES (2 VAN SPACES)	9 SPACES (2 VAN SPACES)

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%	6,120 SF, 33.6%
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%	23,446 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	38,568 SF, 39.7%



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

PATRICK CRIMMINS — No. 12378 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE
9/28/22

NEIL A. HANSEN — No. 15227 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE
9/28/22

0 40' 80'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
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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: 9/28/2022
Plotted: Sep 28, 2022 - 9:45am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DSGN.dwg


Tighe&Bond
STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
9/28/22
STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
9/28/22
MAP 119 LOT 1-1C
AREA = 86,031 S.F.
(1.975 ACRES)
1RUWK (QG
0L[HG 8VH
'HYHORSPHQW
7ZR
,QWHUQDWLR
*URXS
5XVVHOO 6WUHHW
'HHU 6WUHHW
3RUWVPRXWK 1+
6,7(3/$1
6((,16(7 3/$1
/2:(5 /(9(/
%8,/',1* /$<287
6,7(,16(7 3/$1

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)

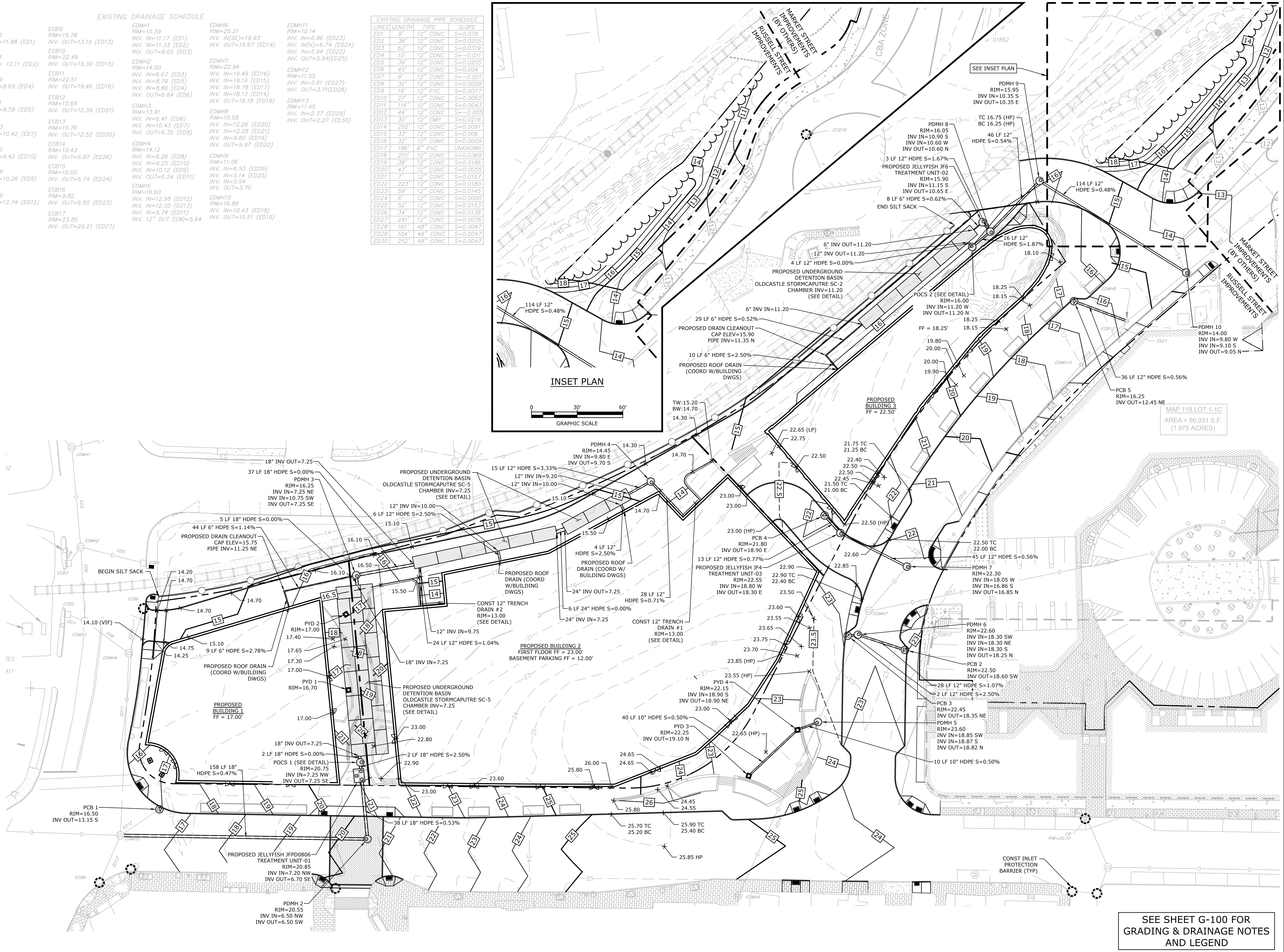
EDMH11
RIM=10.14
INV. IN=6.96 (ED23)
INV. IN(N)=6.74 (ED24)
INV. IN=5.94 (ED22)
INV. OUT=5.94(ED25)

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
GRAPHIC SCALE
MARKET STREET IMPROVEMENTS (BY OTHERS)
RUSSELL STREET IMPROVEMENTS
CBA ZONE
SEE INSET PLAN
114 LF 12" HDPE S=0.48%
PDMH 9 RIM=15.95 INV IN=10.35 S INV OUT=10.35 E
PDMH 8 RIM=16.05 INV IN=10.90 S INV IN=10.60 W INV OUT=10.60 N
TC 16.75 (HP) BC 16.25 (HP)
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
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)
16 LF 12" HDPE S=1.87%
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'
PDMH 4 RIM=14.45 INV IN=9.80 E INV OUT=9.70 S
15 LF 12" HDPE S=3.33%
12" INV IN=9.20
12" INV IN=10.00
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)
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
BEGIN SILT SACK
4 LF 12" HDPE S=2.50%
PROPOSED ROOF DRAIN (COORD W/ BUILDING DWGS)
PROPOSED ROOF DRAIN (COORD W/BUILDING DWGS)
24" INV OUT=7.25
6 LF 24" HDPE S=0.00%
24" INV IN=7.25
CONST 12" TRENCH DRAIN #2 RIM=13.00 (SEE DETAIL)
12" INV IN=9.75
24 LF 12" HDPE S=1.04%
18" INV IN=7.25
28 LF 12" HDPE S=0.71%
CONST 12" TRENCH DRAIN #1 RIM=13.00 (SEE DETAIL)
PROPOSED BUILDING 2 FIRST FLOOR FF = 23.00' BASEMENT PARKING FF = 12.00'
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
PDMH 7 RIM=22.30 INV IN=18.05 W INV IN=16.86 S INV OUT=16.85 N
45 LF 12" HDPE S=0.56%
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%
PYD 4 RIM=22.15 INV IN=18.90 S INV OUT=18.90 NE
40 LF 10" HDPE S=0.50%
PYD 3 RIM=22.25 INV OUT=19.10 N
9 LF 6" HDPE S=2.78%
PROPOSED ROOF DRAIN (COORD W/BUILDING DWGS)
PYD 2 RIM=17.00
PYD 1 RIM=16.70
PROPOSED UNDERGROUND DETENTION BASIN OLDCASTLE STORMCAPUTRE SC-5 CHAMBER INV=7.25 (SEE DETAIL)
PROPOSED BUILDING 1 FF = 17.00'
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
2 LF 18" HDPE S=2.50%
158 LF 18" HDPE S=0.47%
PCB 1 RIM=16.50 INV OUT=13.15 S
38 LF 18" HDPE S=0.53%
PROPOSED JELLYFISH JFPD0806 TREATMENT UNIT-01 RIM=20.85 INV IN=7.20 NW INV OUT=6.70 SE
PDMH 2 RIM=20.55 INV IN=6.50 NW INV OUT=6.50 SW
CONST INLET PROTECTION BARRIER (TYP)

SEE SHEET G-100 FOR GRADING & DRAINAGE NOTES AND LEGEND

Tighe&Bond

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 9/28/22

STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
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

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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)

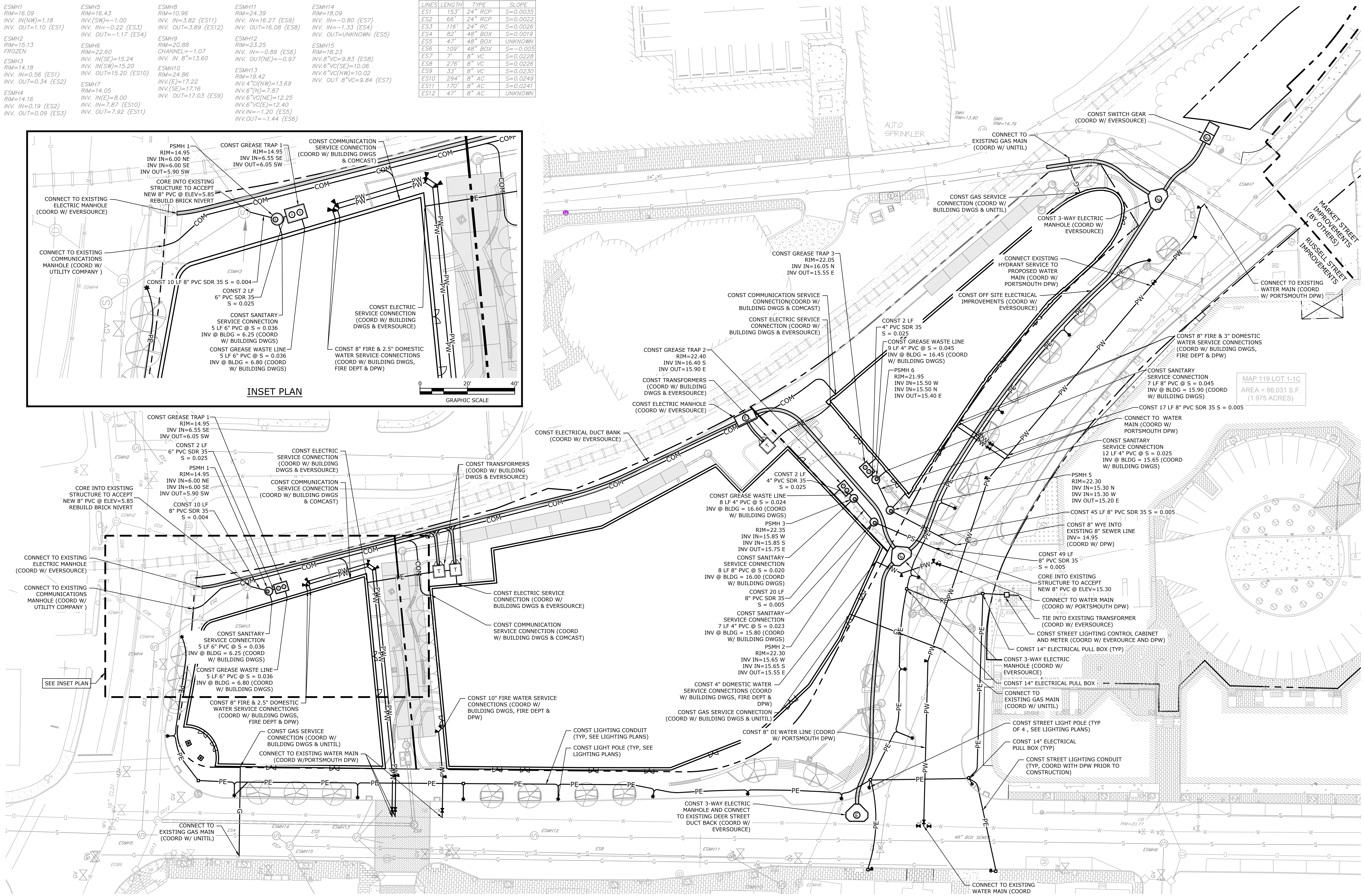
ESMH12
RIM=23.25
INV. IN=−0.89 (ES6)
INV. OUT(NE)=−0.97

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

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Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
9/28/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
9/28/22

GRAPHIC SCALE (0, 30', 60')

North End Mixed Use Development

Two International Group

Russell Street &
Deer Street
Portsmouth, NH

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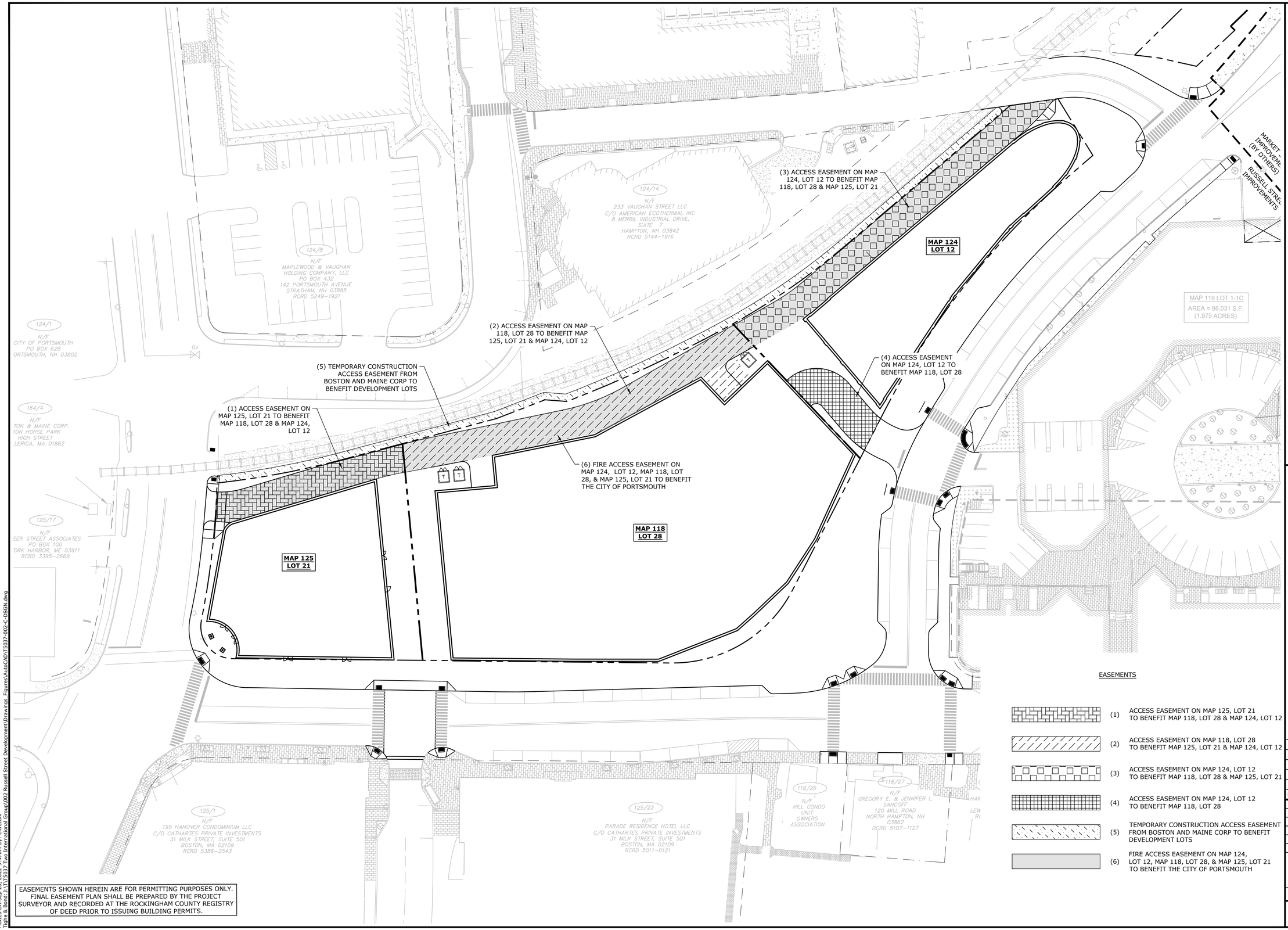
CHECKED:	NAH
APPROVED:	PMC

UTILITIES PLAN

SCALE: AS SHOWN

C-104



Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER
PATRICK CRIMMINS
No. 12378
LICENSED
9/28/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER
NEIL A. HANSEN
No. 15227
LICENSED
9/28/22

0 30' 60'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street Portsmouth, NH

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APPROVED:	PMC

ACCESS EASEMENT PLAN

SCALE: AS SHOWN

C-200

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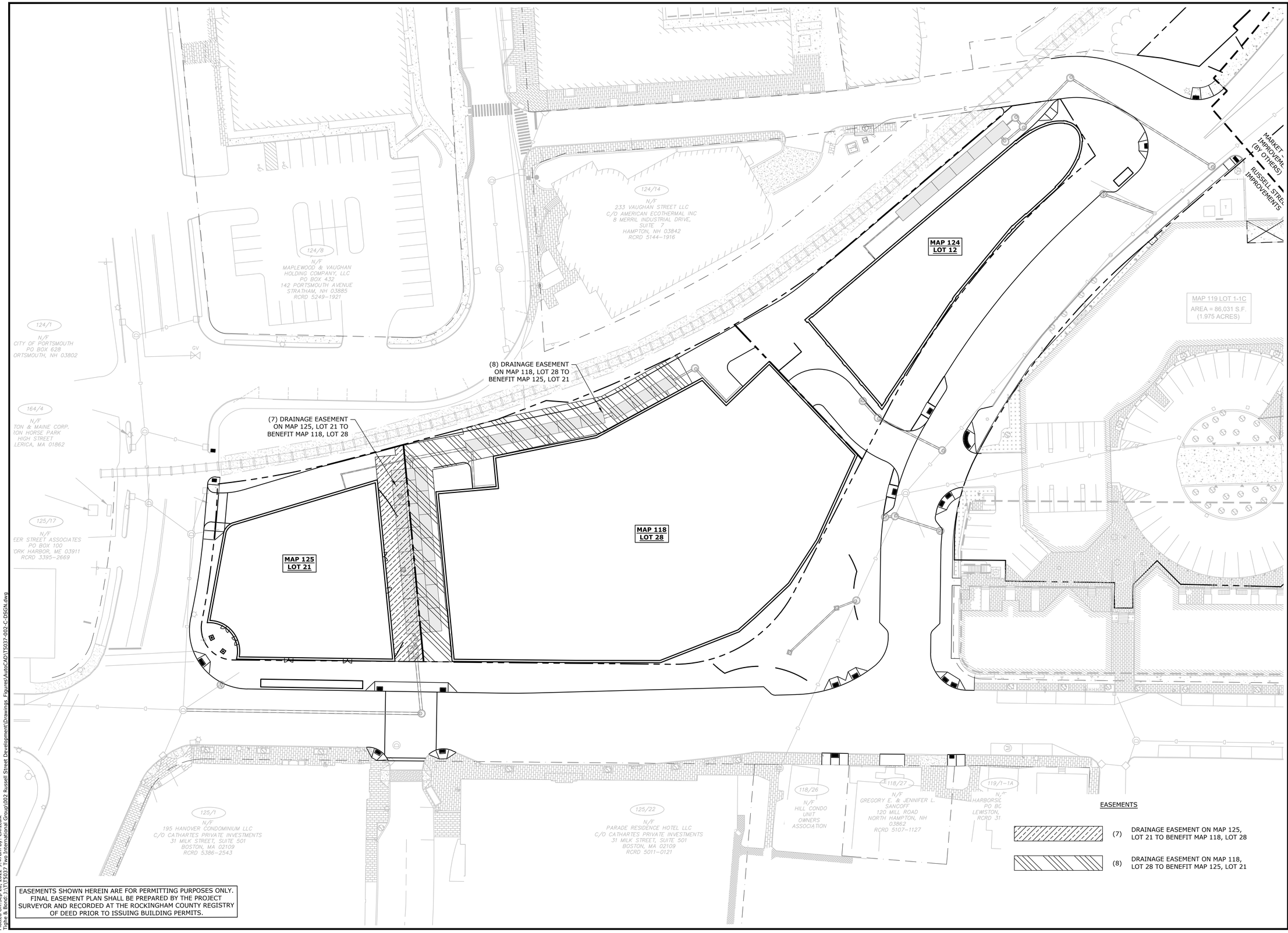

EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEED PRIOR TO ISSUING BUILDING PERMITS.

Tighe&Bond

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
9/28/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

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DRAINAGE EASEMENT PLAN

SCALE: AS SHOWN

C-201

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(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

(9) ELECTRIC EASEMENT ON MAP 118, LOT 28 TO BENEFIT MAP 125, LOT 21

MAP 124
LOT 12

MAP 119 LOT 1-1C
AREA = 86,031 S.F.
(1.975 ACRES)

MAP 118
LOT 28

MAP 125
LOT 21

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

EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEED PRIOR TO ISSUING BUILDING PERMITS.

Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED 9/28/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED 9/28/22

0 30' 60'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

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UTILITIES EASEMENT PLAN

SCALE: AS SHOWN

C-202

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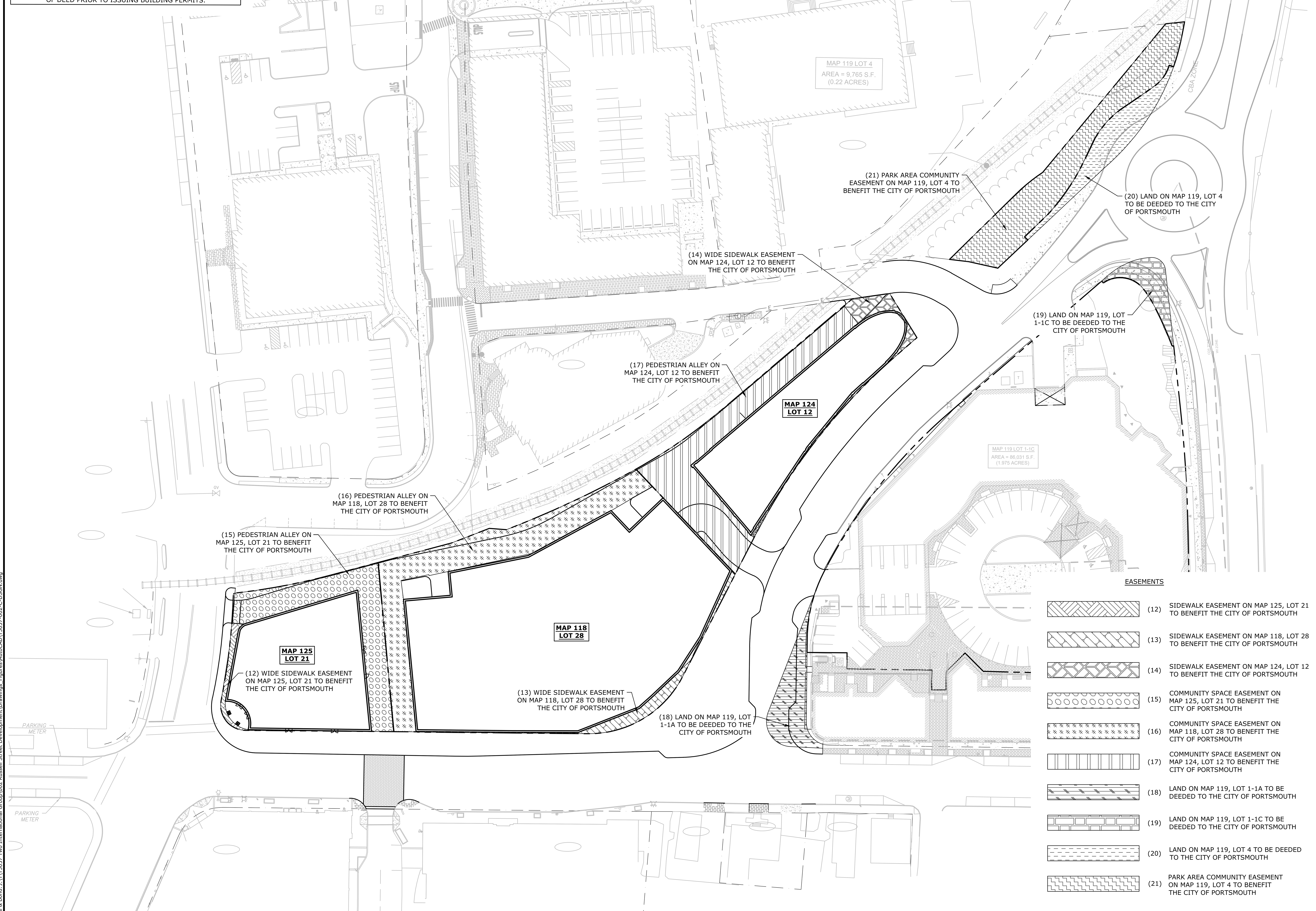
EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEED PRIOR TO ISSUING BUILDING PERMITS.



EASEMENTS

	(12)	SIDEWALK EASEMENT ON MAP 125, LOT 21 TO BENEFIT THE CITY OF PORTSMOUTH
	(13)	SIDEWALK EASEMENT ON MAP 118, LOT 28 TO BENEFIT THE CITY OF PORTSMOUTH
	(14)	SIDEWALK EASEMENT ON MAP 124, LOT 12 TO BENEFIT THE CITY OF PORTSMOUTH
	(15)	COMMUNITY SPACE EASEMENT ON MAP 125, LOT 21 TO BENEFIT THE CITY OF PORTSMOUTH
	(16)	COMMUNITY SPACE EASEMENT ON MAP 118, LOT 28 TO BENEFIT THE CITY OF PORTSMOUTH
	(17)	COMMUNITY SPACE EASEMENT ON MAP 124, LOT 12 TO BENEFIT THE CITY OF PORTSMOUTH
	(18)	LAND ON MAP 119, LOT 1-1A TO BE DEEDED TO THE CITY OF PORTSMOUTH
	(19)	LAND ON MAP 119, LOT 1-1C TO BE DEEDED TO THE CITY OF PORTSMOUTH
	(20)	LAND ON MAP 119, LOT 4 TO BE DEEDED TO THE CITY OF PORTSMOUTH
	(21)	PARK AREA COMMUNITY EASEMENT ON MAP 119, LOT 4 TO BENEFIT THE CITY OF PORTSMOUTH

Tighe&Bond

STATE OF NEW HAMPSHIRE — PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 9/28/22

STATE OF NEW HAMPSHIRE — NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

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APPROVED:	PMC

COMMUNITY SPACE EASEMENT PLAN

SCALE: AS SHOWN

C-203

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LOT LINE REVISIONS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL LOT LINE REVISION PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEED PRIOR TO ISSUING BUILDING PERMITS.

MAP 119 LOT 4
EXISTING LOT AREA = 9,765 SF
PROPOSED LOT AREA=7,092 SF

PROPOSED PROPERTY LINE

EXISTING PROPERTY LINE TO BE ABANDONED

EXISTING PROPERTY LINE TO BE ABANDONED

PROPOSED PROPERTY LINE

MAP 124 LOT 12
EXISTING LOT AREA = 19,055 SF
PROPOSED LOT AREA=20,917 SF

EXISTING PROPERTY LINE TO BE ABANDONED

MAP 119 LOT 1-1C
EXISTING LOT AREA = 86,031 SF
PROPOSED LOT AREA=84,604 SF

PROPOSED PROPERTY LINE

EXISTING PROPERTY LINE TO BE ABANDONED

PROPOSED PROPERTY LINE

MAP 118 LOT 28
EXISTING LOT AREA = 48,417 SF
PROPOSED LOT AREA=50,875 SF

MAP 125 LOT 21
EXISTING LOT AREA = 22,559 SF
PROPOSED LOT AREA=18,237 SF

MAP 119 LOT 1-1A
EXISTING LOT AREA = 2,647 SF
LOT TO BE FULLY ABANDONED

EXISTING PROPERTY LINE TO BE ABANDONED

Tighe&Bond

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
9/28/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
9/28/22

N

0 40' 80'
GRAPHIC SCALE

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

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CHECKED:	NAH
APPROVED:	PMC

LOT LINE REVISION PLAN

SCALE: AS SHOWN

C-204

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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

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9/28/22

NEIL A. HANSEN
No. 15227
9/28/22

North End Mixed Use Development

Two International Group

Russell Street &
Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

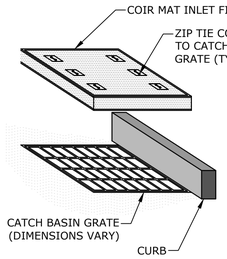
PROJECT NO: T5037-002
DATE: May 24, 2022
FILE: T5037-002-C-DTLS.DWG
DRAWN BY: CJK
CHECKED: NAH
APPROVED: PMC

EROSION CONTROL NOTES AND DETAILS SHEET

SCALE: AS SHOWN

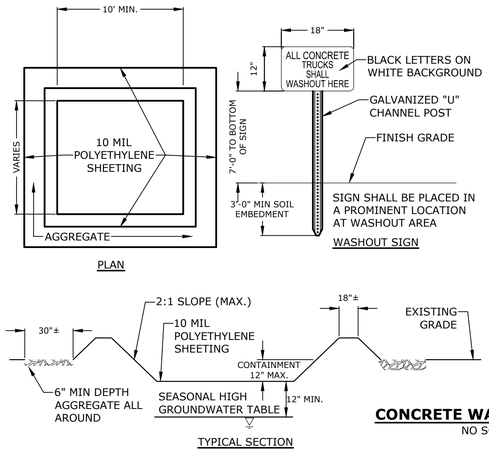
C-501

Last Saved: 9/22/2022
Plotted On:Sep 28, 2022-9:54am By: CKrzcuik
Tighe & Bond: J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DTLS.dwg



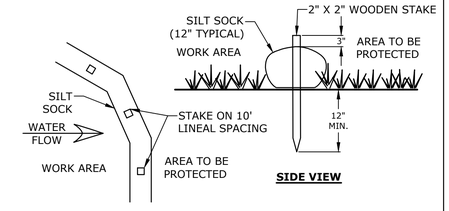
NOTES:
1. COIR MAT INLET FILTER SHALL BE STORM WATER INLET FILTER BY BLOCKSOM & CO. OR APPROVED EQUAL.
2. INSTALL AND MAINTAIN INLET PROTECTION IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

INLET PROTECTION
NO SCALE



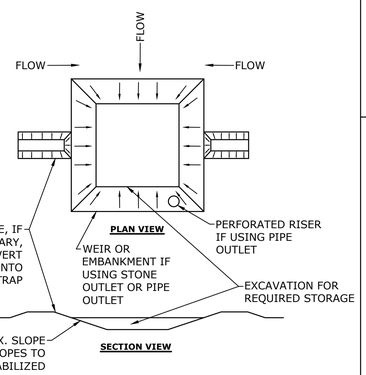
NOTES:
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% 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



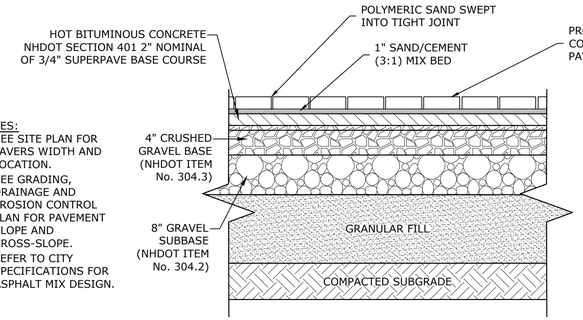
NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR APPROVED EQUAL.
2. INSTALL SILT SOCK IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SILT SOCK
NO SCALE



NOTES:
1. 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. 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

NHDOT ITEM No. 304.2 (GRAVEL)

SIEVE SIZE	% PASSING
6"	100
#4	25-70
#200	0-12

NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)

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#4	27-52
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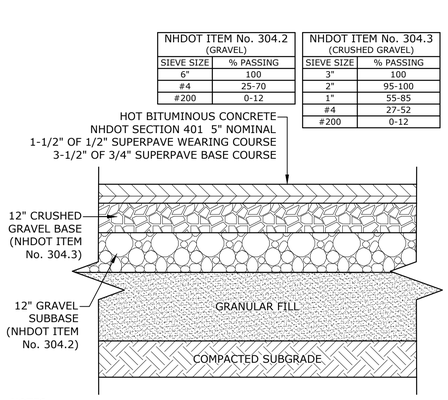

NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

CITY RIGHT-OF-WAY PAVEMENT SECTION
NO SCALE

NHDOT ITEM No. 304.2 (GRAVEL)

SIEVE SIZE	% PASSING
6"	100
#4	25-70
#200	0-12

NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)

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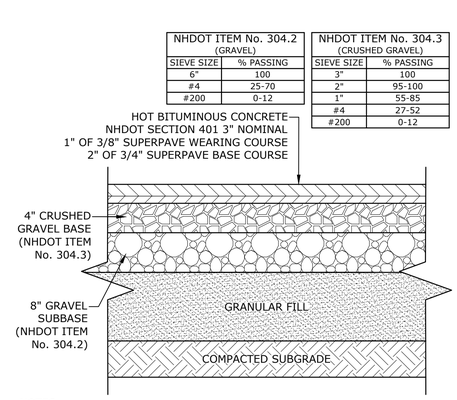
1"	55-85
#4	27-52
#200	0-12



NOTES:
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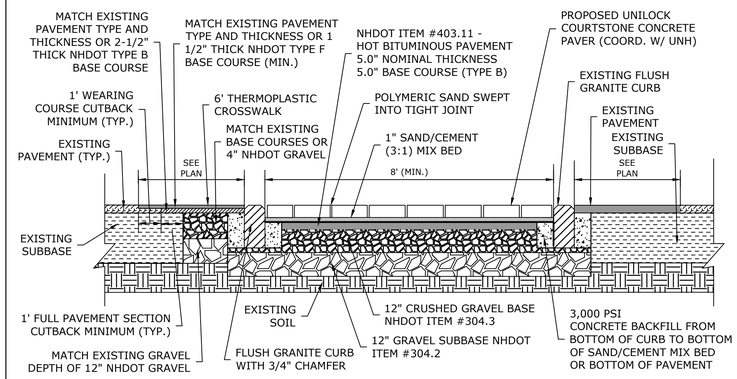
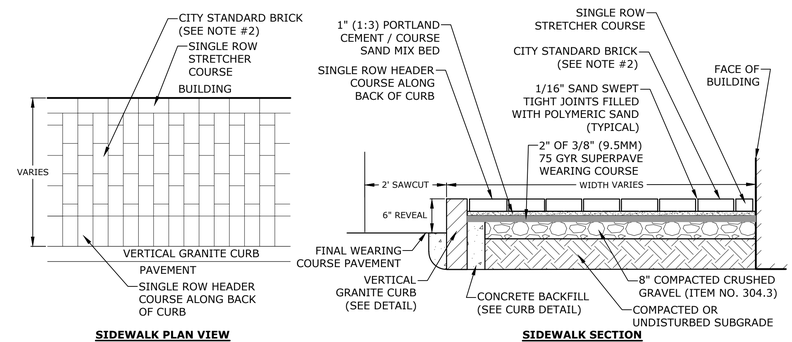
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

ON-SITE PAVEMENT SECTION
NO SCALE



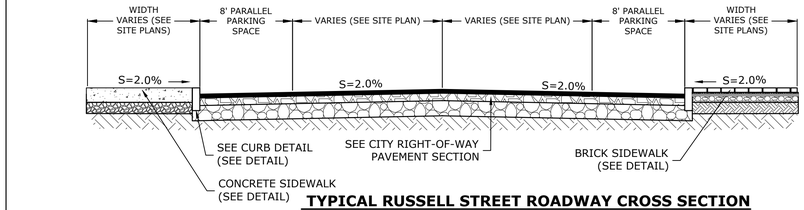
NOTES:
1. FINAL COLOR AND PATTERN OF **UNILOCK COURTSTONE** CONCRETE PAVERS TO BE COORDINATED WITH DPW. CONTRACTOR SHALL PROVIDE SAMPLES TO THE GROUP PRIOR TO ORDERING MATERIALS.
2. BEDDING MATERIAL SHALL BE A SAND/CEMENT MIX THAT IS 3 PARTS SAND AND 1 PART CEMENT. SAND SHALL CONFORM WITH ASTM C33 AND CEMENT SHALL BE PORTLAND CEMENT TYPE I/TYPE II.

DEER STREET PAVER CROSSWALK
NO SCALE

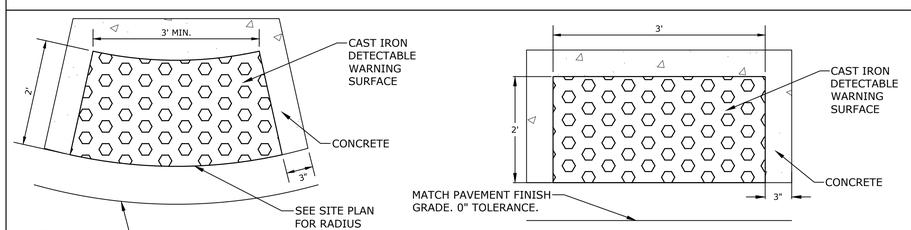


NOTES:
1. BRICK SIDEWALK SHALL BE INSTALLED AS DETAILED AND PER CITY OF PORTSMOUTH REQUIREMENTS/SPECIFICATIONS AND SHALL INCLUDE A CONTINUOUS APPROVED PAVER EDGE RESTRAINT SYSTEM AT ALL LOCATIONS NOT ADJACENT TO CURB OR BUILDINGS.
2. CITY STANDARD BRICK SHALL BE TRADITIONAL EDGE, PATHWAY, FULL RANGE 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
9/28/22

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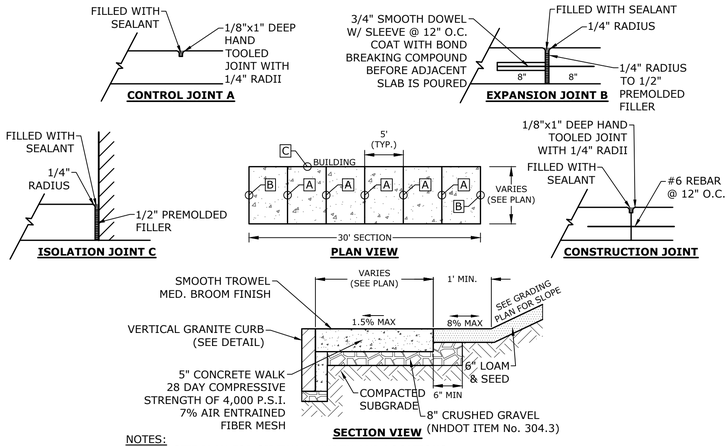
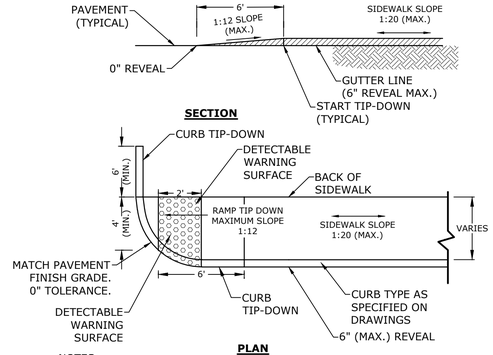


NOTES:
1. SEE SITE PLAN FOR SIDEWALK WIDTH AND LOCATIONS.
2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR WALK AND SIDE SLOPE GRADES.
3. ISOLATION JOINTS ADJACENT TO BUILDING SHALL BE COORDINATED WITH BUILDING DRAWINGS.

CONCRETE SIDEWALK WITH GRANITE CURB

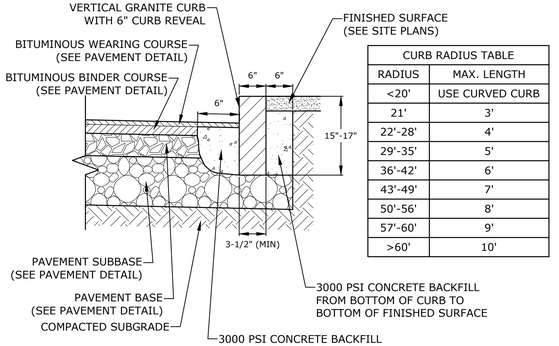
NO SCALE



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



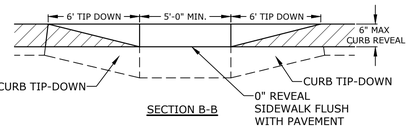
CURB RADIUS TABLE	
RADIUS	MAX. LENGTH
<20'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
>60'	10'

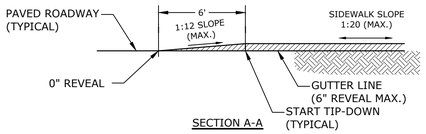
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE 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.

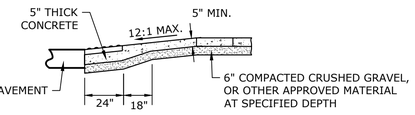
VERTICAL GRANITE CURB

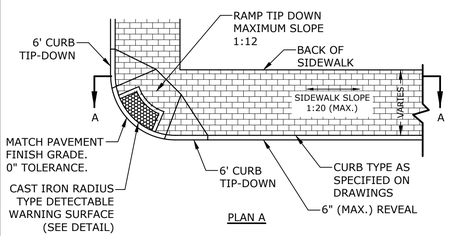
NO SCALE

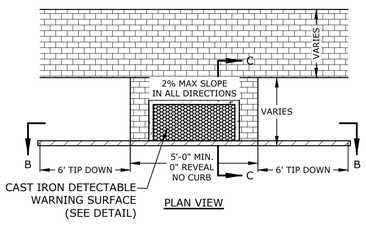
NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12







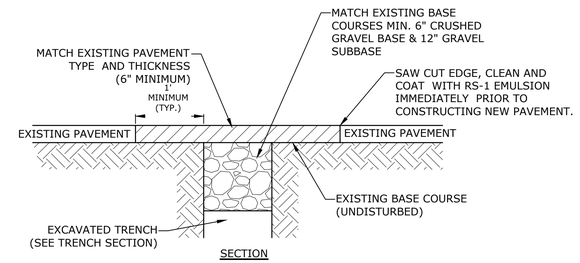


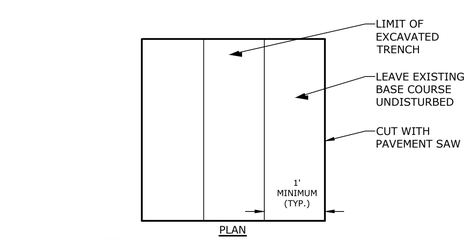


NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 6" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON SET IN CONCRETE (SEE DETAIL.)
4. PROVIDE 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

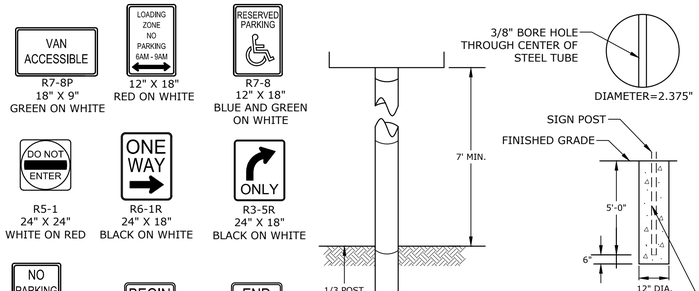




NOTE:
1. COORDINATE AND OBTAIN APPROVAL FOR ALL TRENCHING AND PATCHING WITHIN CITY RIGHT OF WAY WITH CITY OF PORTSMOUTH DPW PRIOR TO COMMENCING WORK.

ROADWAY TRENCH PATCH

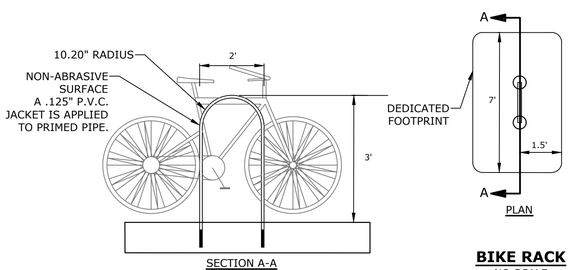
NO SCALE



NOTES:
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)

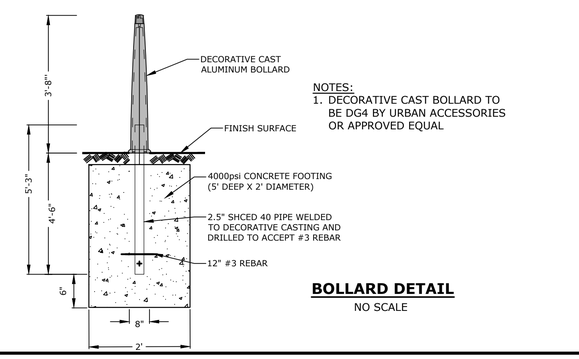
SIGN LEGEND & SIGN POST

NO SCALE



BIKE RACK

NO SCALE



NOTES:
1. DECORATIVE CAST BOLLARD TO BE DG4 BY URBAN ACCESSORIES OR APPROVED EQUAL

BOLLARD DETAIL

NO SCALE

Tighe&Bond

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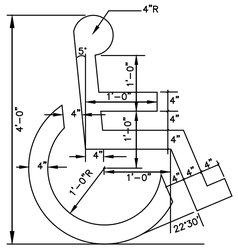
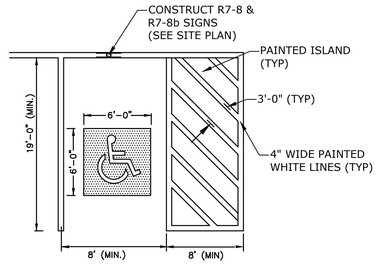


NOTES:
1. SYMBOL SHALL BE CONSTRUCTED IN ALL ACCESSIBLE SPACES USING WHITE THERMOPLASTIC, REFLECTORIZED PAVEMENT PARKING MATERAL MEETING THE REQUIREMENTS OF ASTM D 4505.
2. SYMBOL SHALL BE CONSTRUCTED TO THE LATEST ADA, STATE AND LOCAL REQUIREMENTS.

ACCESSIBLE SYMBOL

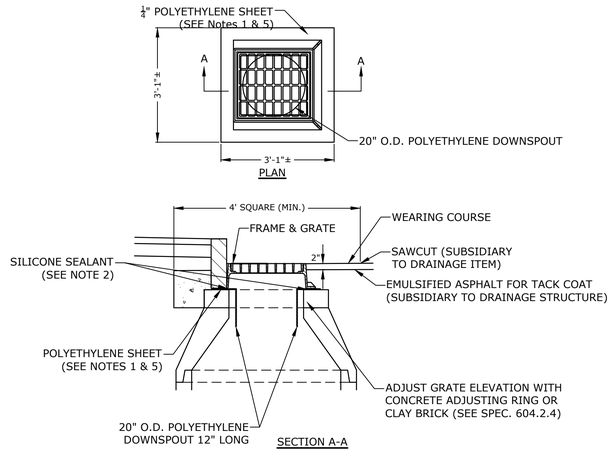
NO SCALE



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

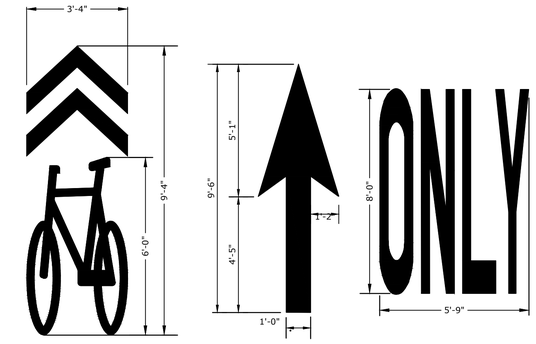
NO SCALE

Tighe&Bond

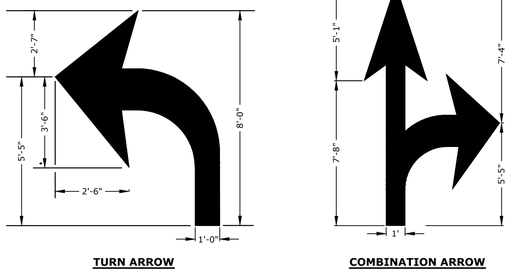
North End Mixed Use Development

Two International Group

Russell Street & Deer Street Portsmouth, NH



SHARROW **STRAIGHT ARROW** **ONLY**

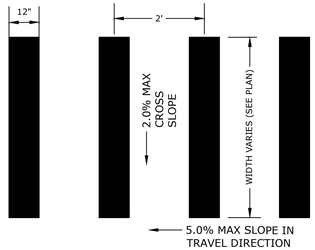


TURN ARROW **COMBINATION ARROW**

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

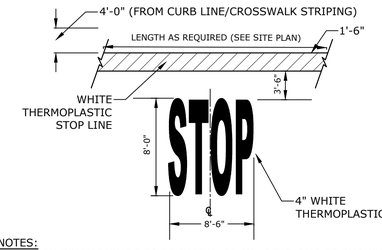
NO SCALE



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

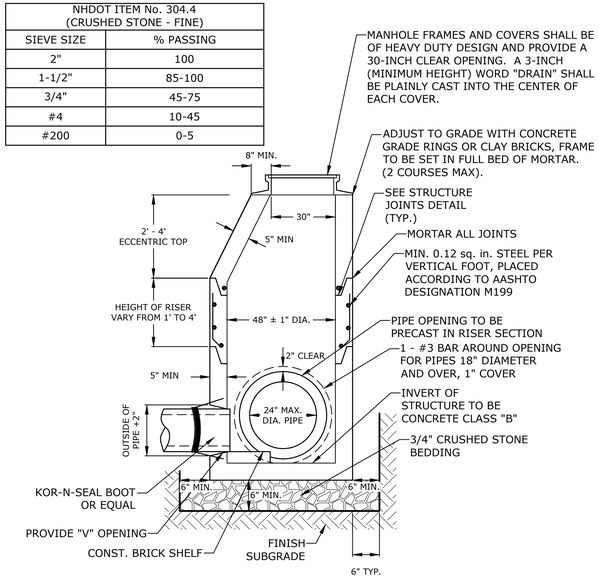


NOTES:
1. PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS AS SHOWN ON SITE PLAN.
2. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

STOP BAR AND LEGEND

NO SCALE

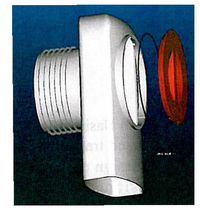
NHDOT ITEM No. 304.4 (CRUSHED STONE - FINE)	
SIEVE SIZE	% PASSING
2"	100
1-1/2"	85-100
3/4"	45-75
#4	10-45
#200	0-5



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.

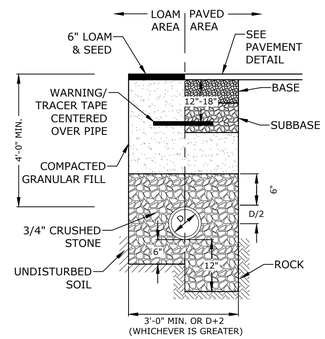
4' DIAMETER DRAIN MANHOLE

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

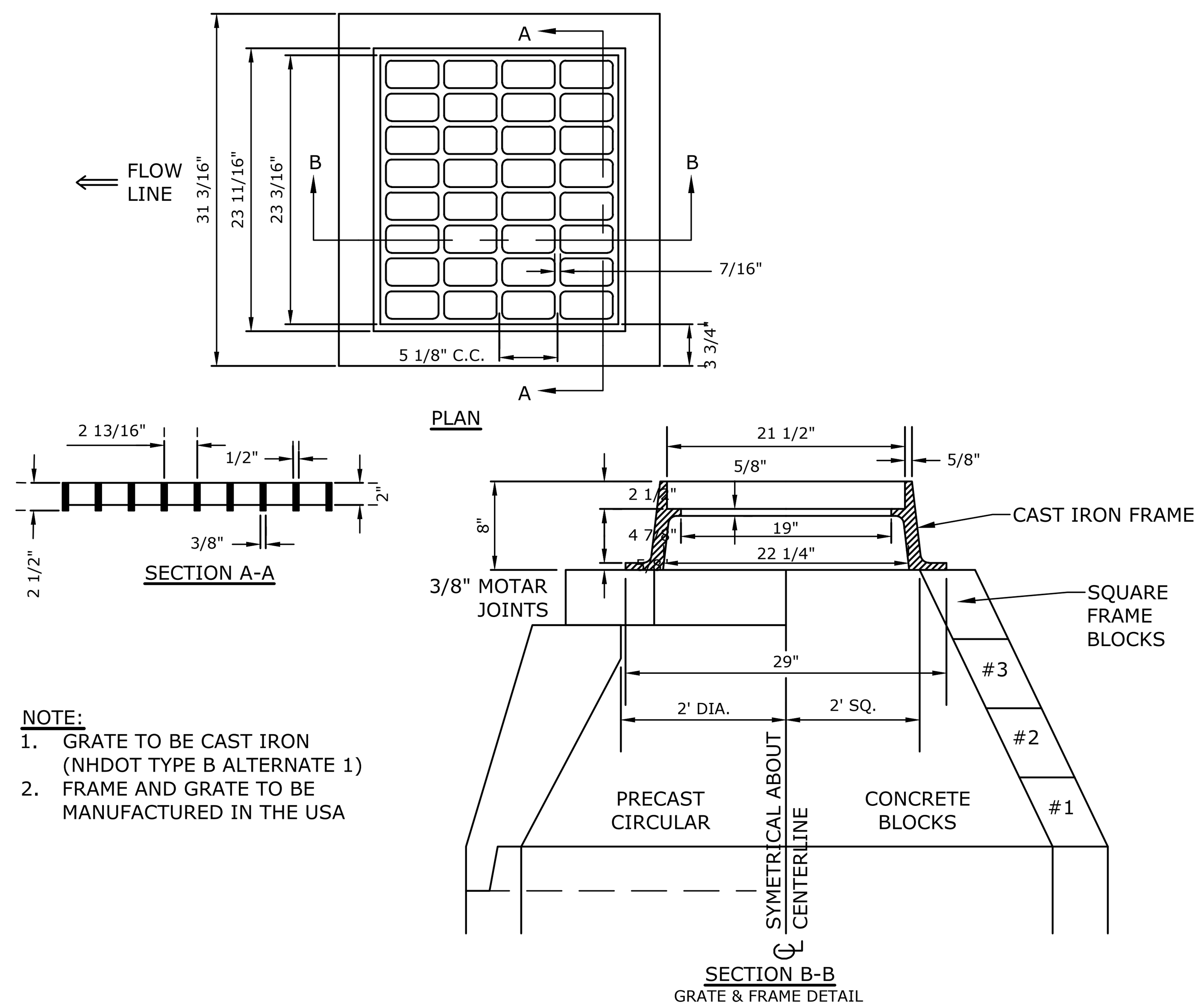
MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

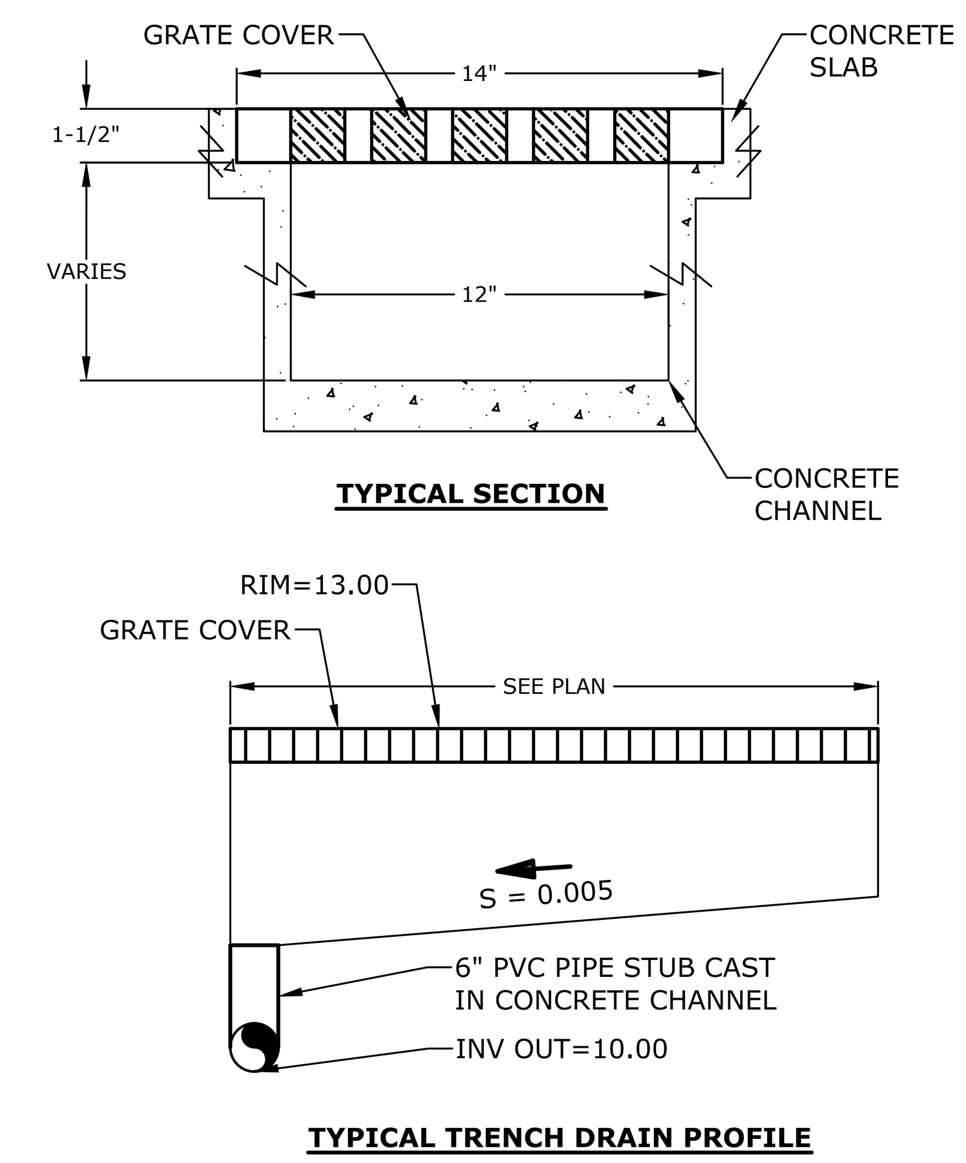
SCALE: AS SHOWN

C-504



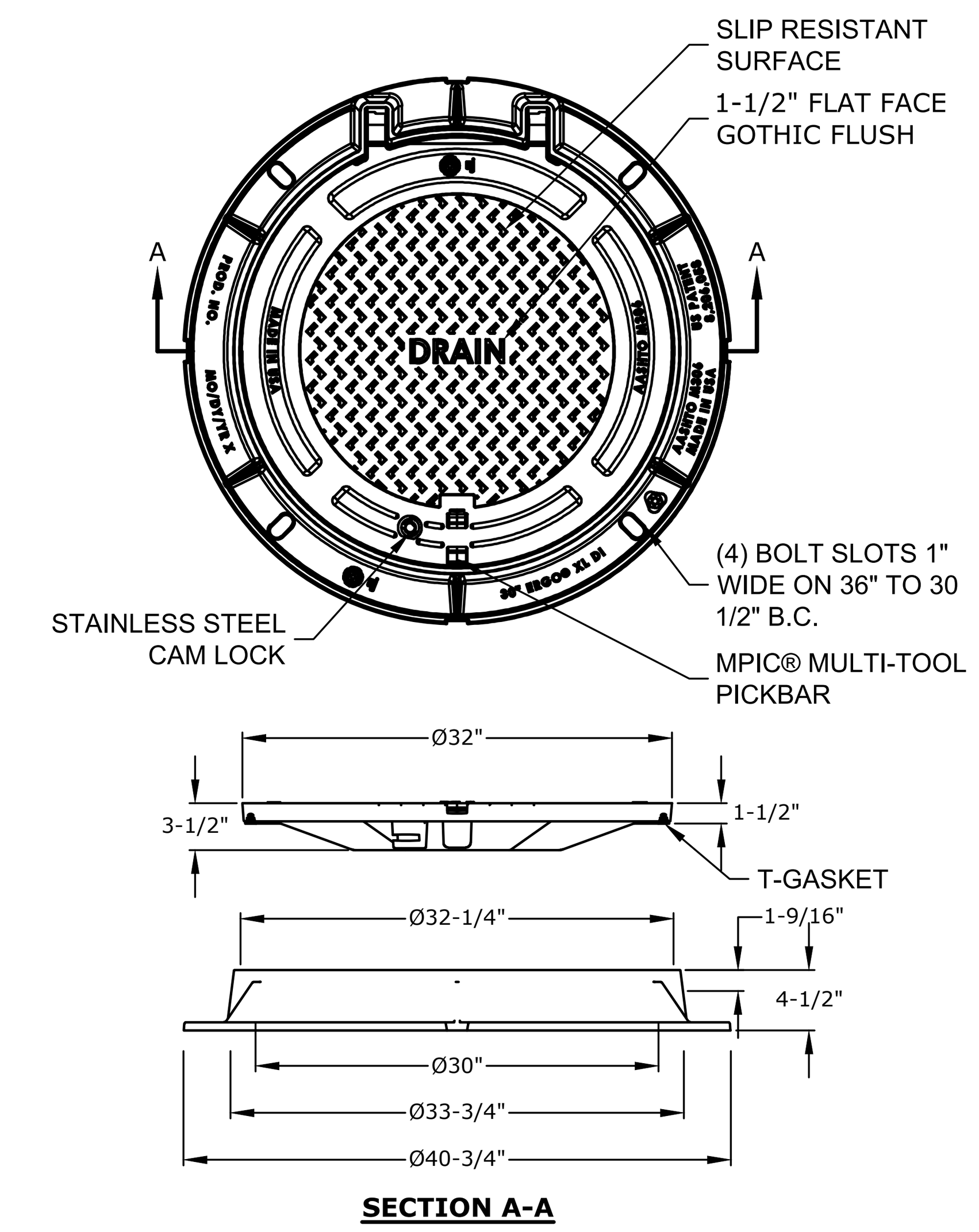
NOTE:
1. GRATE TO BE CAST IRON (NHDOT TYPE B ALTERNATE 1)
2. FRAME AND GRATE TO BE MANUFACTURED IN THE USA

CATCH BASIN FRAME & GRATE
NO SCALE



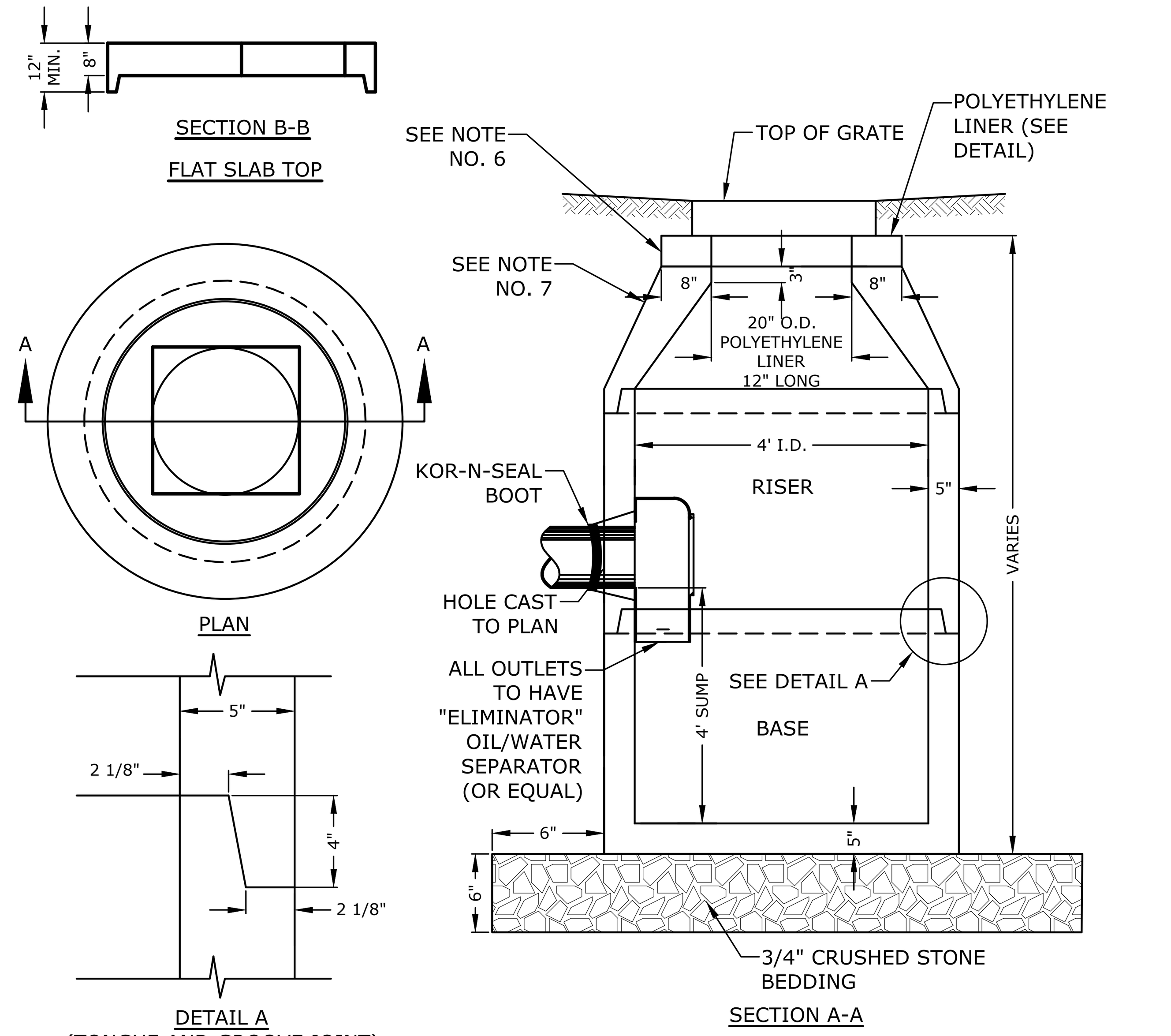
NOTES:
1. TRENCH DRAIN FRAME AND GRATE SHALL BE MULTIDRAIN ECONODRAIN SERIES #12 OR EQUAL.

TRENCH DRAIN
NO SCALE



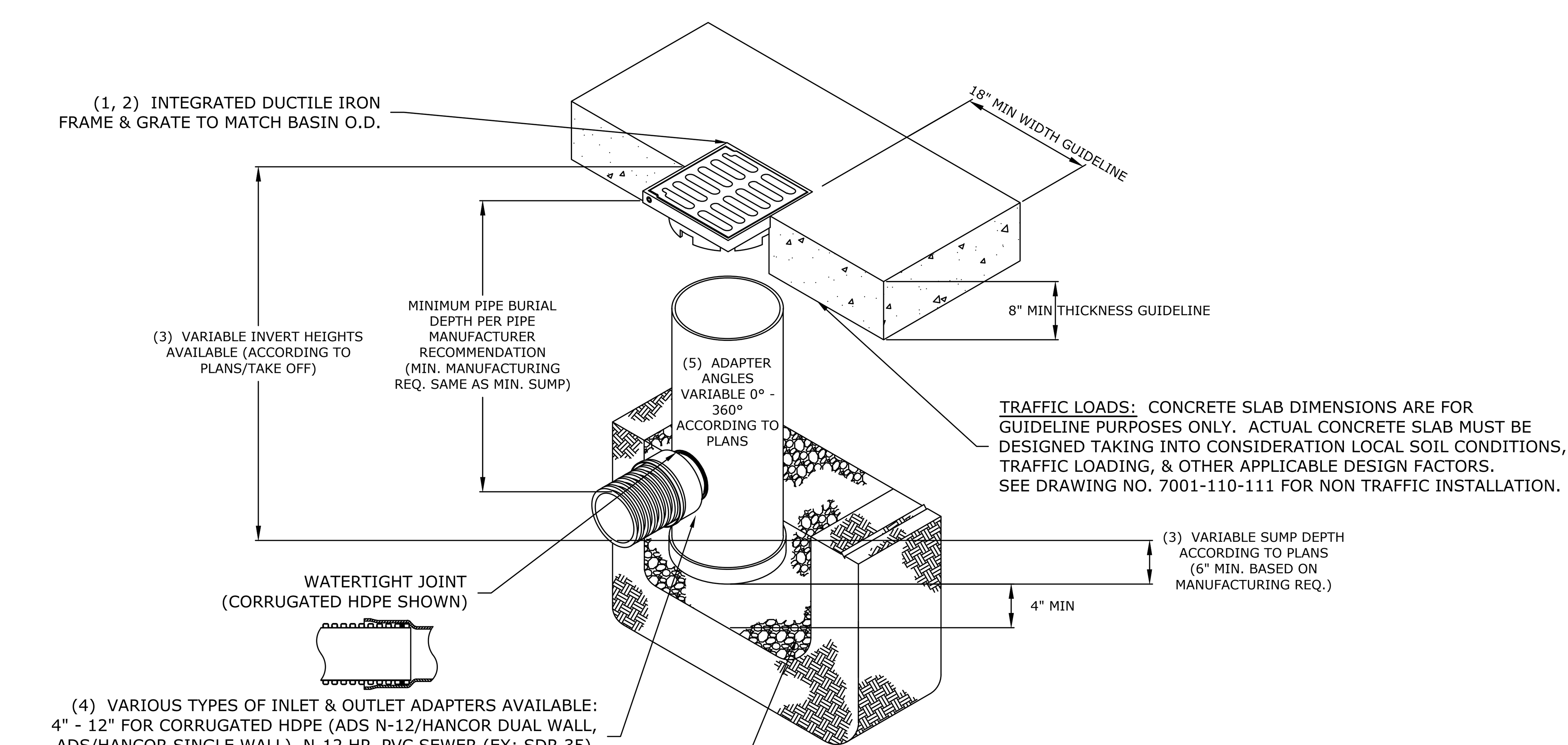
NOTES:
1. MANHOLE FRAME AND COVER SHALL BE 32" HINGED ERGO XL BY EJ CO.
2. ALL DIMENSIONS ARE NOMINAL.
3. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN 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



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



TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS. SEE DRAWING NO. 7001-110-111 FOR NON TRAFFIC INSTALLATION.

(4) VARIOUS TYPES OF INLET & OUTLET ADAPTERS AVAILABLE: 4" - 12" FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL, ADS/HANCOR SINGLE WALL), N-12 HP, PVC SEWER (EX: SDR 35), PVC DWV (EX: SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC

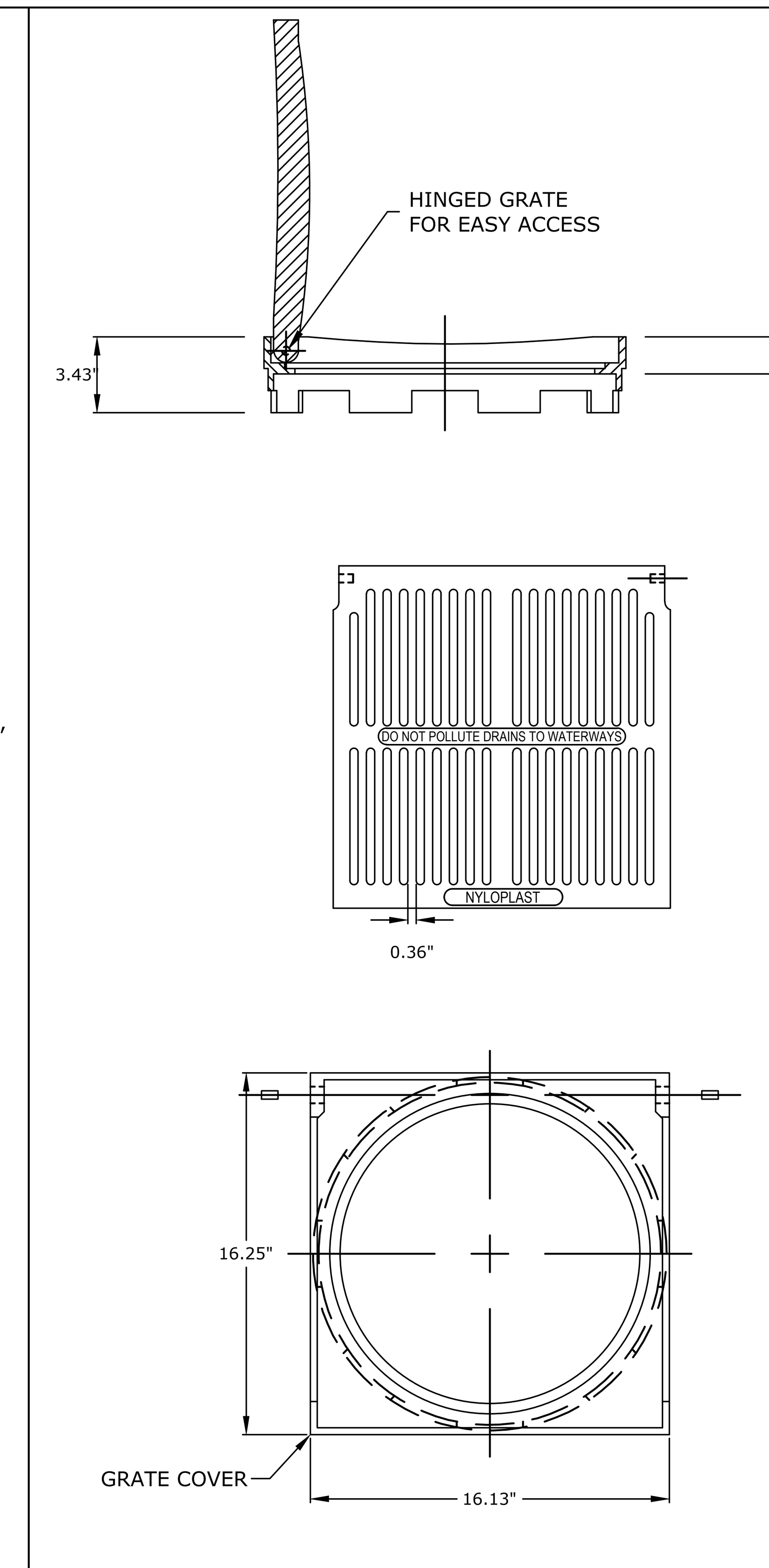
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

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.

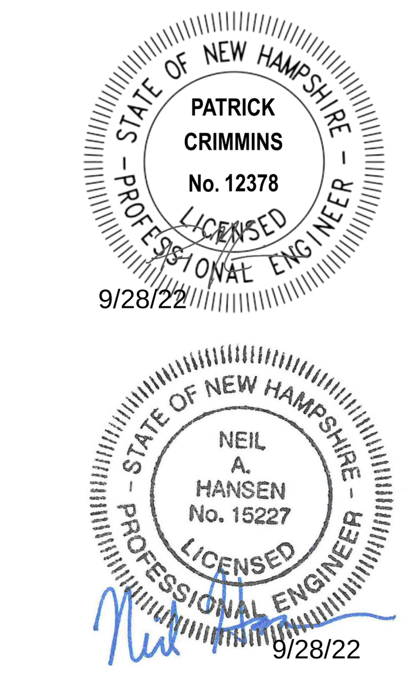
YARD DRAIN
NO SCALE



NOTES:
1. NYLOPLAST MODEL 1299CGPBL OR EQUAL.

YARD DRAIN FRAME AND GRATE
NO SCALE

Tighe&Bond



North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

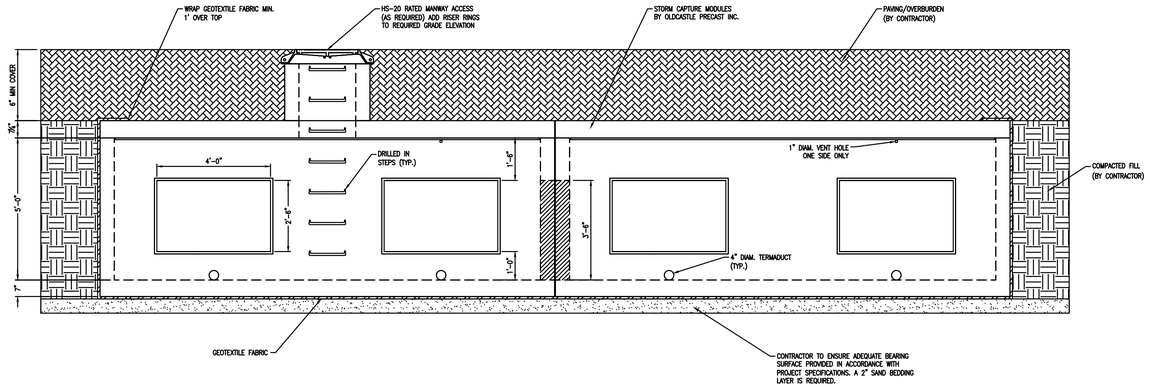
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-505

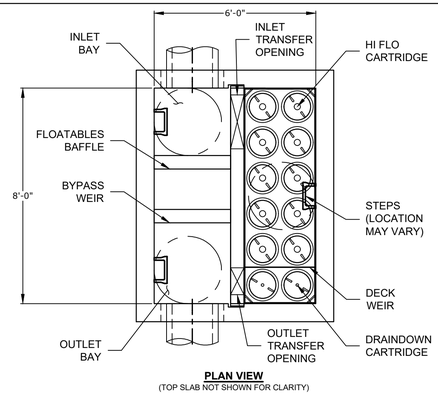
Last Saved: 9/22/2022
Plotted On:Sep 28, 2022-9:55am By: CKrzcuik
Tighe & Bond:J:\T\T5037 Two International Group\002 Russell Street Development\Drawings_Figures\AutoCAD\T5037-002-C-DTLS.dwg



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.

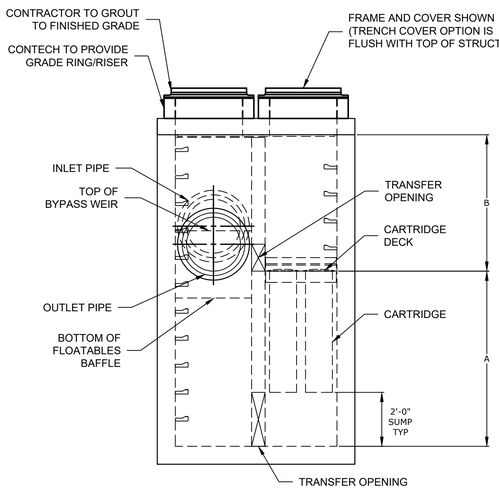
OLDCASTLE SC-5 DETAIL
NO SCALE



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

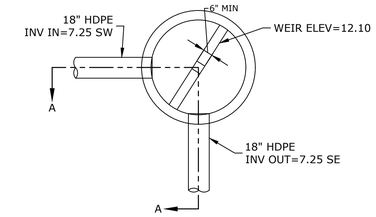
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL 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.

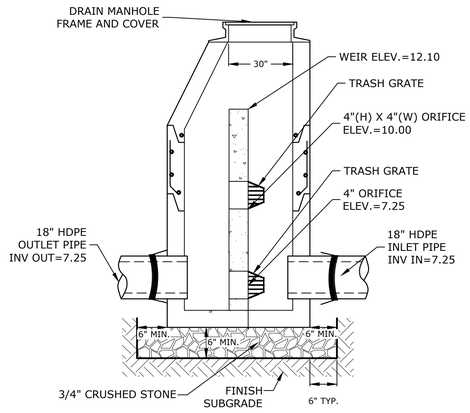
Jellyfish Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,057,128; 8,221,618 & US 8,123,935. OTHER INTERNATIONAL PATENTS PENDING

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

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
9/28/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

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DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-506

Last Saved: 9/22/2022
Plotted: Oct 06, 2022 - 9:55am By: CKrzcuik
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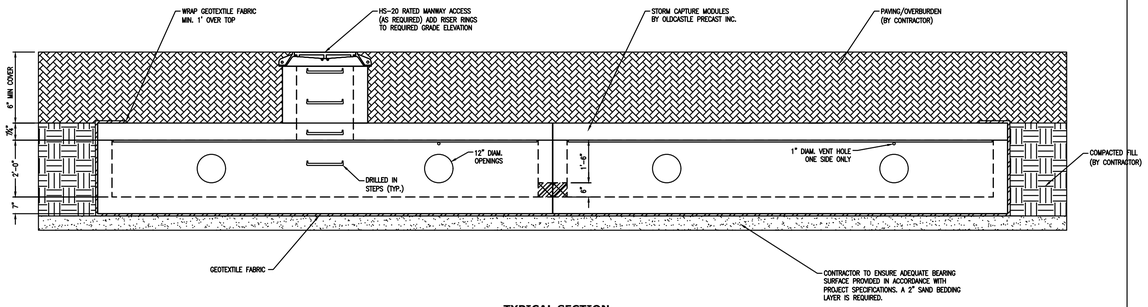
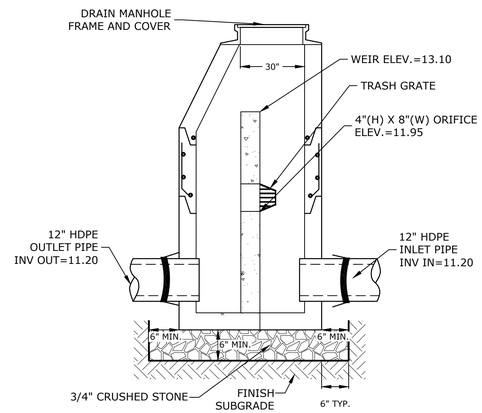
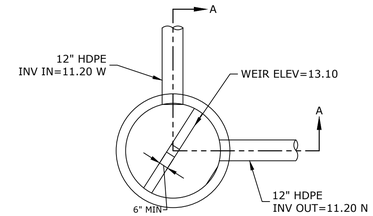


TYPICAL SECTION

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

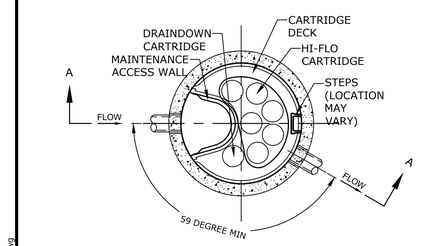




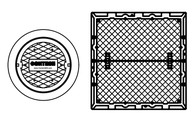
PLAN VIEW

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.

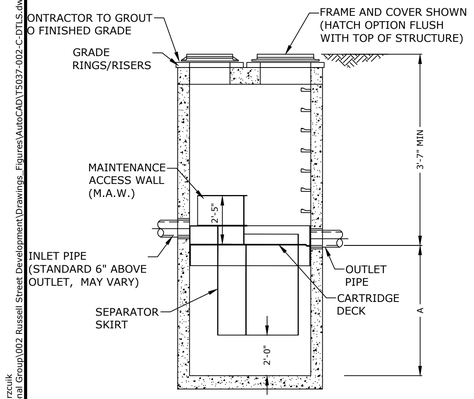
POS-02
NO SCALE



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			



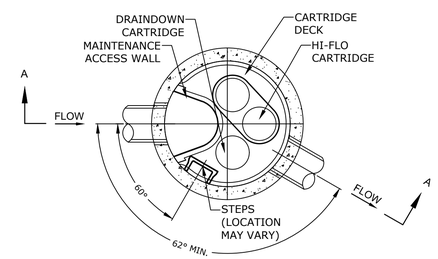
SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	2
WATER QUALITY FLOW RATE (cfs)	0.64
PEAK FLOW RATE (cfs)	0.94
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	4/1
CARTRIDGE SIZE	54"



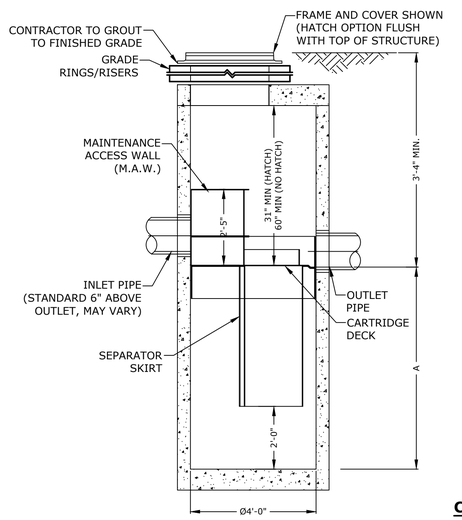
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL 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

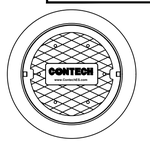


PLAN VIEW



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

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
9/28/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEERS – STATE OF NEW HAMPSHIRE
9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

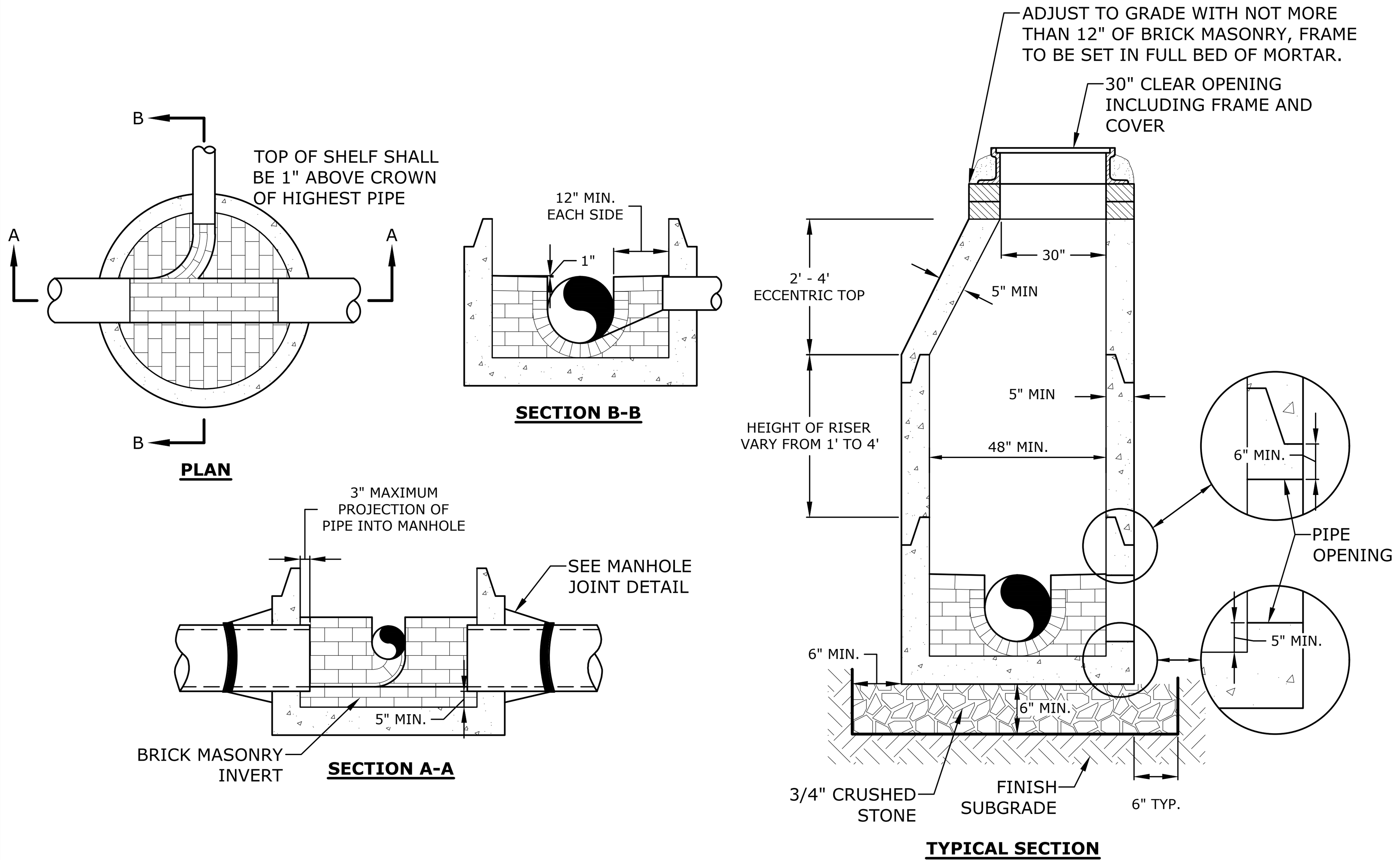
PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

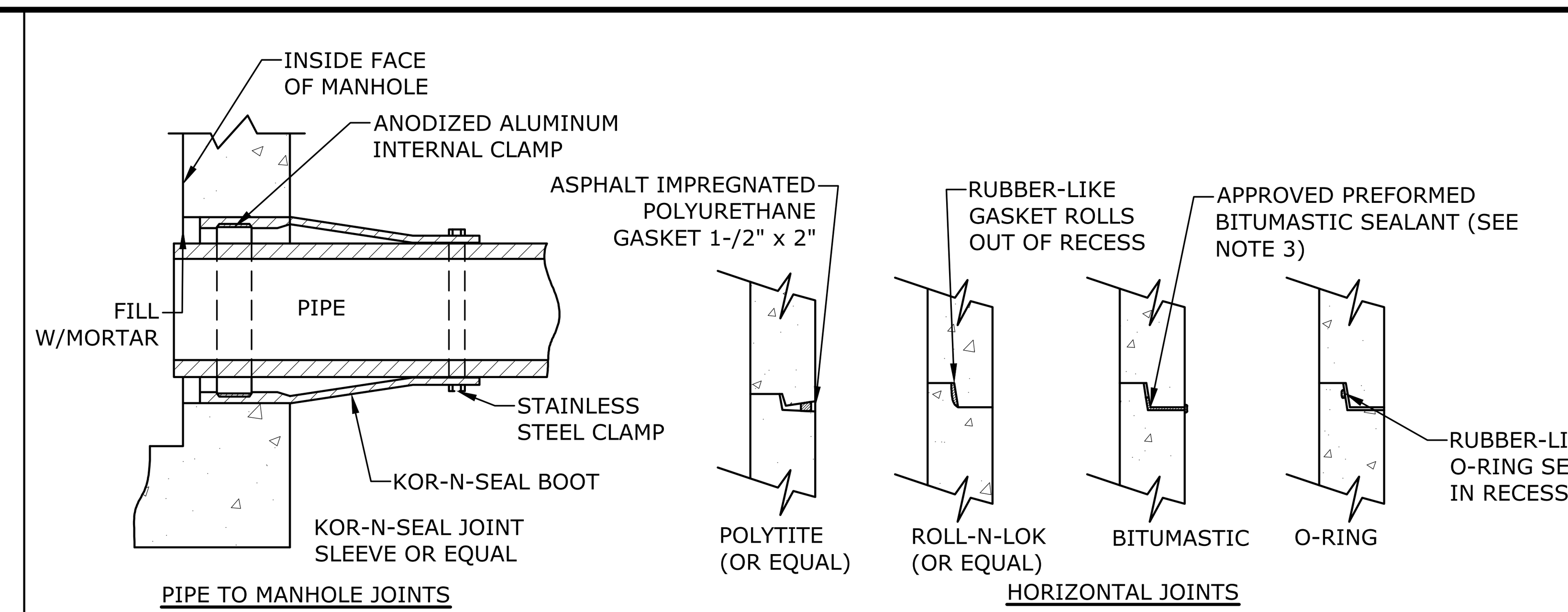
C-507

Last Saved: 9/22/2022
Printed: 09/28/2022 - 9:55am By: CKrzcuik
Tighe & Bond J:\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-C-DTLS.dwg



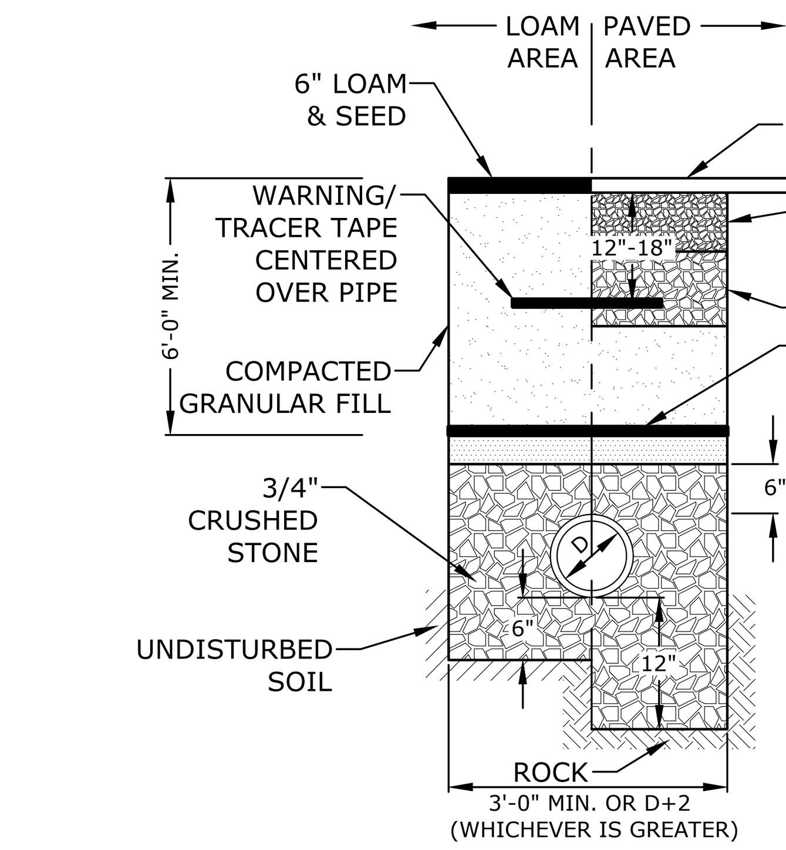
NOTES:
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
3. INVERT BRICKS SHALL BE LAID ON EDGE.
4. TWO (2) COATS OF BITUMINOUS WATERPROOF COATING SHALL BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
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



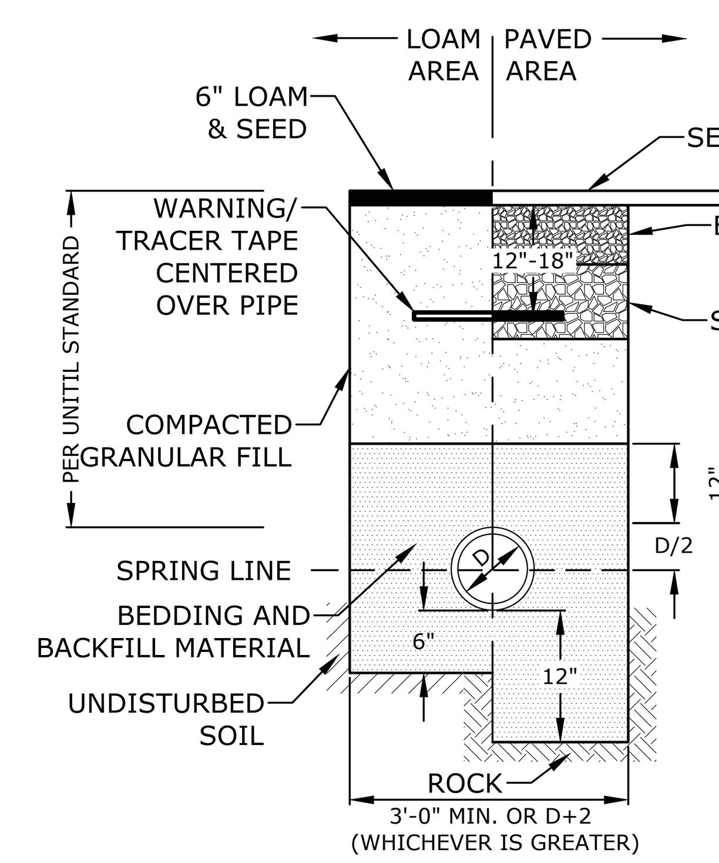
NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER CITY OF PORTSMOUTH DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER CITY OF PORTSMOUTH STANDARD.
3. FOR BITUMASTIC 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



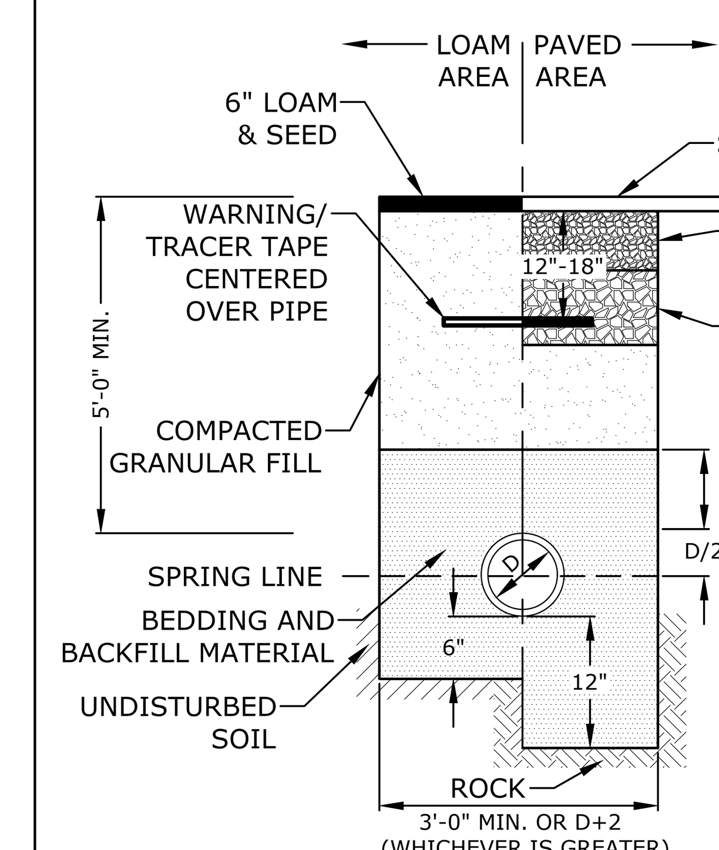
NOTES:
1. CRUSHED STONE BEDDING FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK. CRUSHED STONE SHALL ALSO COMPLETELY ENCASE THE PIPE AND COVER THE PIPE TO A GRADE 6" OVER THE TOP OF THE PIPE FOR THE ENTIRE WIDTH OF THE TRENCH.
2. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

SEWER SERVICE TRENCH
NO SCALE



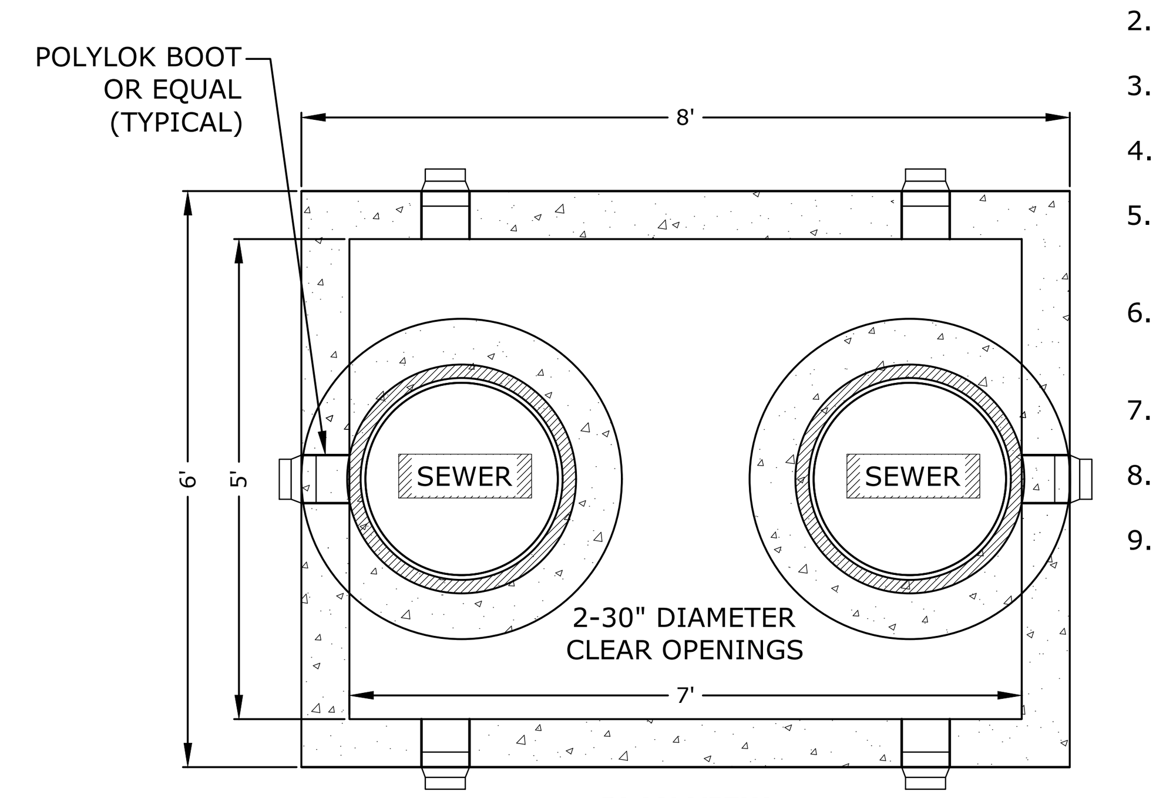
NOTE:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. GAS SHALL BE INSTALLED PER UNITIL STANDARDS. COORDINATE ALL INSTALLATIONS WITH UNITIL AND THE CITY OF PORTSMOUTH.

GAS TRENCH
NO SCALE

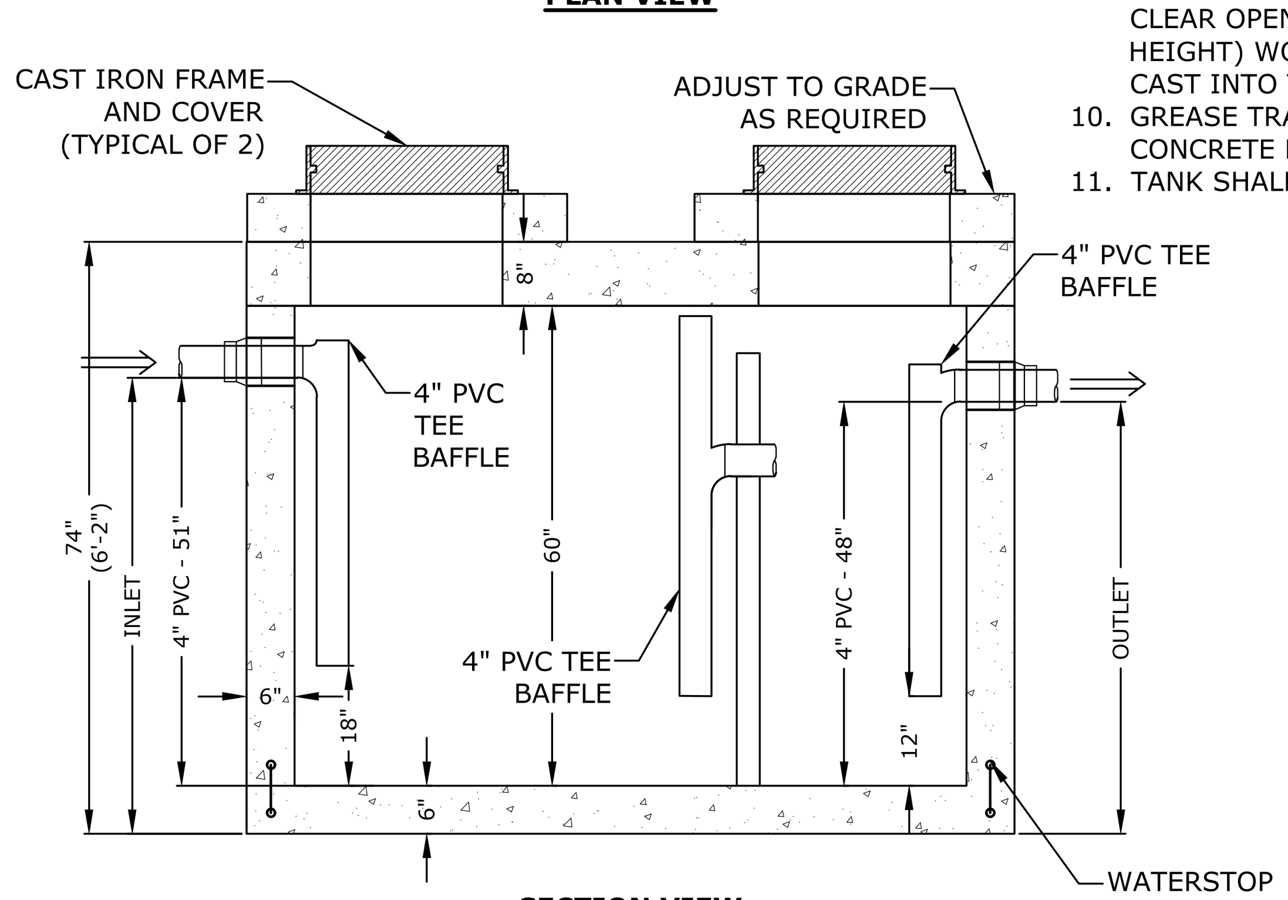


NOTES:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. WATER MAIN SHALL BE INSTALLED PER CITY OF PORTSMOUTH STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

WATER TRENCH
NO SCALE



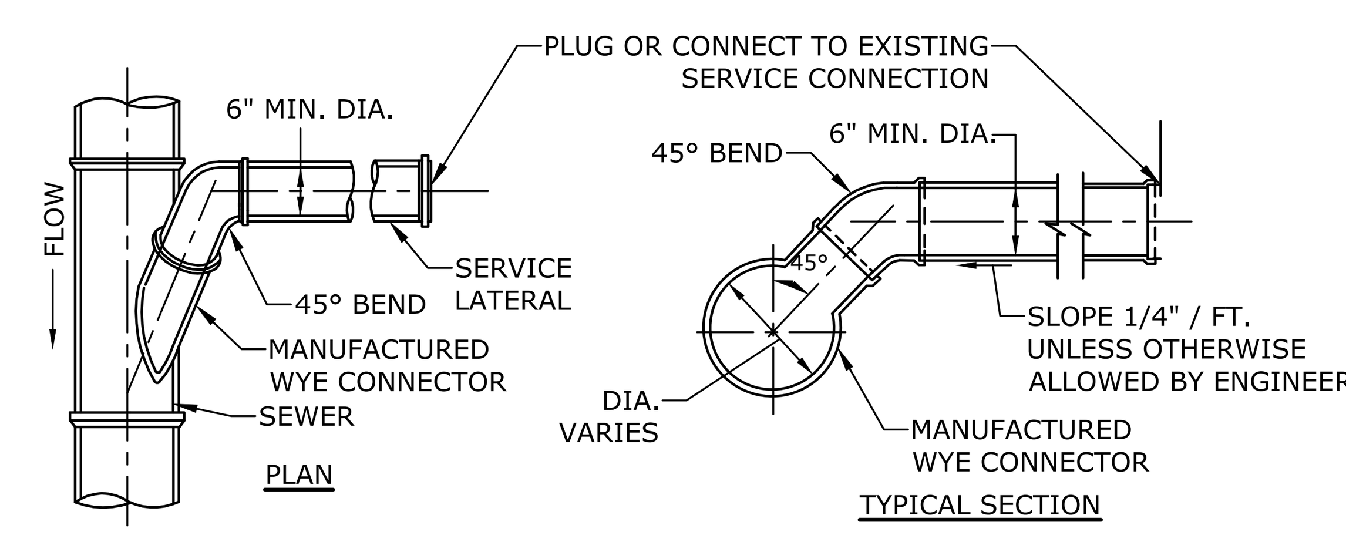
PLAN VIEW



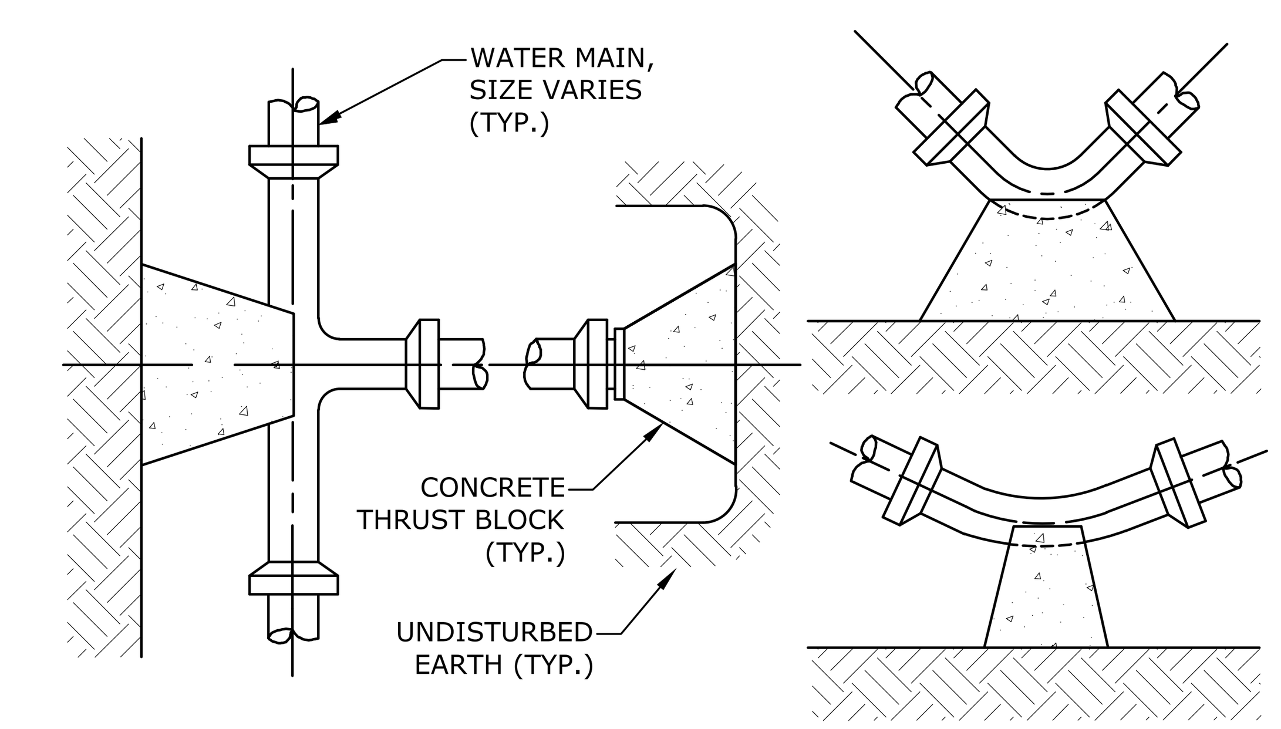
SECTION VIEW

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



STANDARD SERVICE LATERAL CONNECTION
NO SCALE

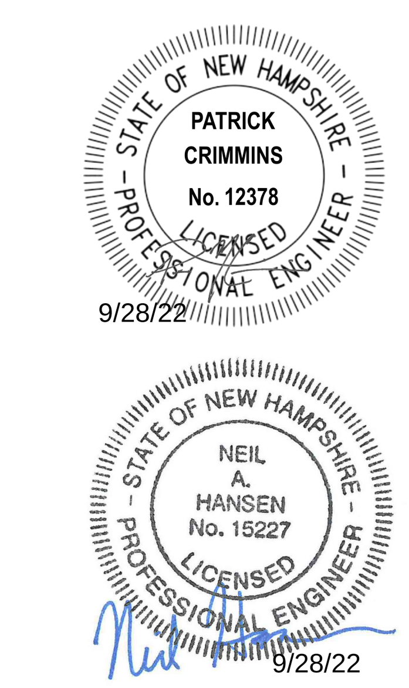


TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL				
REACTION TYPE	PIPE SIZE				
	4"	6"	8"	10"	12"
A 90°	0.89	2.19	3.82	11.14	17.24
B 180°	0.65	1.55	2.78	8.38	12.00
C 45°	0.48	1.19	2.12	6.02	9.32
D 22-1/2°	0.25	0.60	1.06	3.08	4.74
E 11-1/4°	0.13	0.30	0.54	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



North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

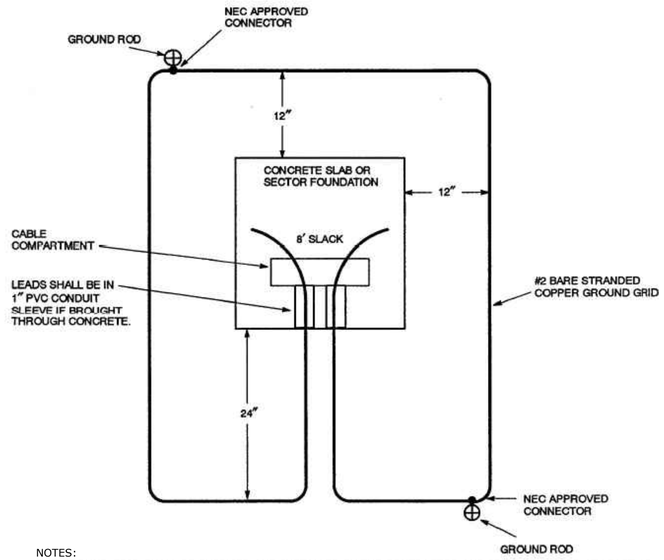
MARK	DATE	DESCRIPTION
E		
D	9/28/2022	Intersection Realignment
C	9/22/2022	TAC Resubmission
B	8/25/2022	TAC Resubmission
A	7/21/2022	TAC Resubmission

PROJECT NO:	T5037-002
DATE:	May 24, 2022
FILE:	T5037-002-C-DTLS.DWG
DRAWN BY:	CJK
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

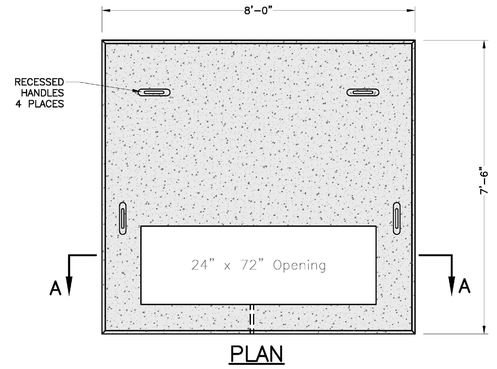
SCALE: AS SHOWN

C-508



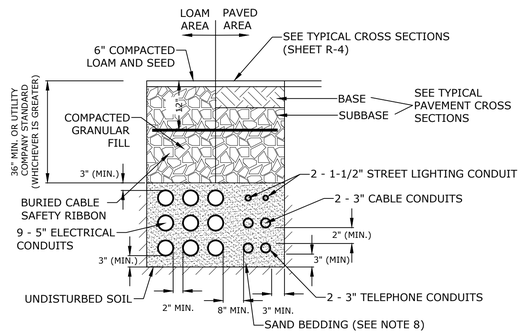
NOTES:
THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AND IS TO BE BURIED AT LEAST 12 INCHES BELOW GRADE. EIGHT FEET OF EXTRA WIRE FOR EACH GROUND GRID LEG SHALL BE LEFT EXPOSED IN THE CABLE COMPARTMENT TO ALLOW FOR THE CONNECTION TO THE TRANSFORMER. THE TWO 8-FOOT GROUND RODS MAY 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



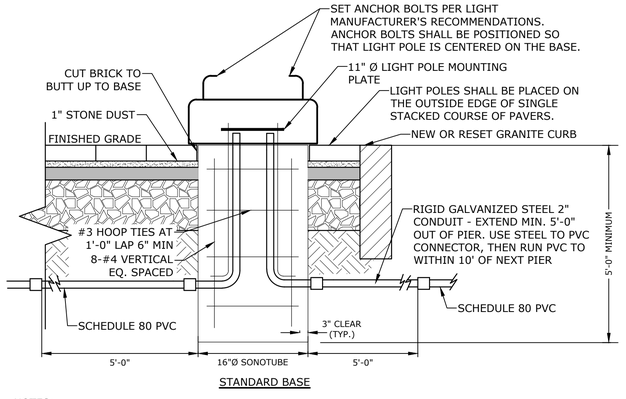
NOTES:
1. DIMENSIONS SHOWN REPRESENT TYPICAL REQUIREMENTS. MANHOLE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED WITH EVERSOURCE PRIOR TO CONSTRUCTION
2. CONCRETE MINIMUM STRENGTH - 4,000 PSI @ 28 DAYS
3. STEEL REINFORCEMENT - ASTM A615, GRADE 60
4. PAD MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS

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.

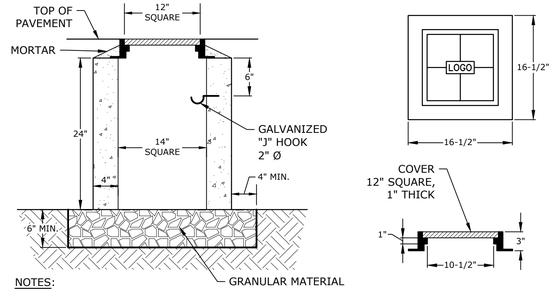
ELECTRICAL AND COMMUNICATION CONDUIT
NO SCALE



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
9/28/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
9/28/22

North End Mixed Use Development

Two International Group

Russell Street & Deer Street
Portsmouth, NH

MARK	DATE	DESCRIPTION
E		
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

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

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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

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)

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

BUILDING 3

2 CO SP
SEATING AREA
BOLLARDS
RAISED PEDESTRIAN CROSSING WITH VEHICULAR UNIT PAVING
1 AC BO

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
WOOD MOUNTED BENCH, TYP.
CATENARY LIGHTING
SPILL OUT SEATING ZONE
6 CA CA

BUILDING 1
BUILDING 2

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

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

3 QU RP
DECORATIVE PAVING BANDING
INTERSECTION IMPROVEMENTS AT PORTWALK & DEET INTERSECTION
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

MAPLEWOOD AVENUE
VAUGHAN STREET (PUBLIC RIGHT OF WAY)
GREEN STREET
RUSSELL STREET
DEER STREET
MARKET STREET (76' WIDE PUBLIC RIGHT OF WAY)

0 40' 80'
GRAPHIC SCALE

Tighe&Bond

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DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

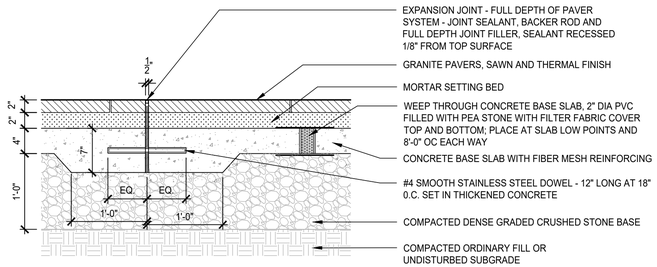
LANDSCAPE SITE PLAN

SCALE: AS SHOWN

L-101

Last Saved: 9/28/2022
Plotted: 9/28/2022 - 11:10am By: JCave
Tighe & Bond: \\tighebond.com\data\Data\Projects\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-L-DSGN-Working.dwg

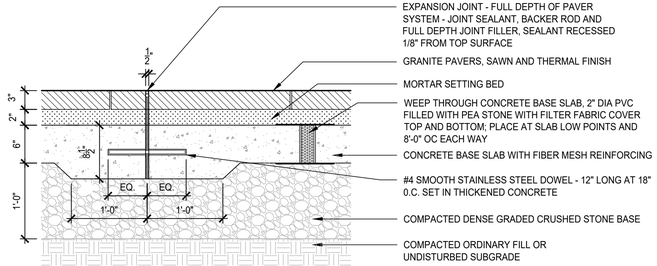
NOTE:
1. ALIGN EXPANSION JOINT WITH PAVER JOINT.
2. PROVIDE EXPANSION JOINTS AT 20' ON CENTER OR AS SHOWN ON DRAWINGS.
3. PROVIDE CAULKED CONSTRUCTION JOINT WHERE PAVING ABUTS VERTICAL SURFACE.
4.THE JOINTS BETWEEN GRANITE PAVER PIECES TO BE 1/4" MORTAR JOINTS.



1 GRANITE PAVERS ON CONCRETE BASE - PEDESTRIAN

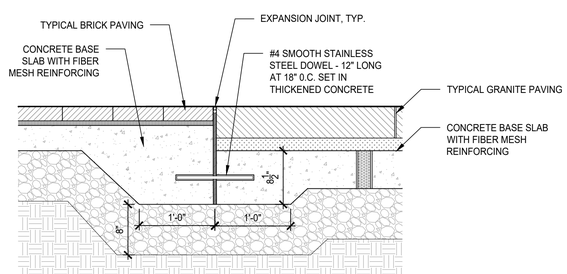
SCALE: 1"=1'-0"

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.



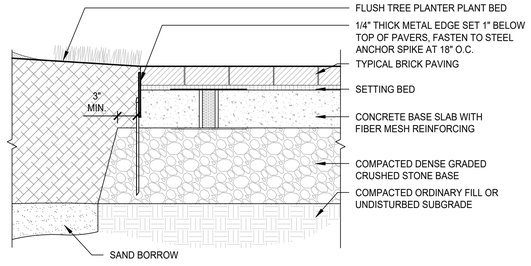
2 GRANITE PAVERS ON CONCRETE BASE - VEHICULAR

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"

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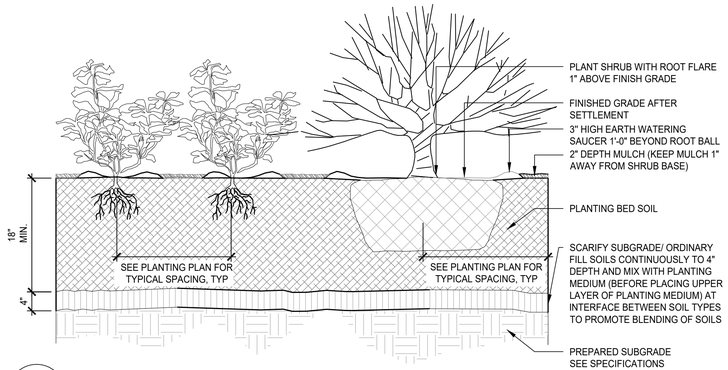
DRAWN BY:	OS
CHECKED:	RU
APPROVED:	RU

LANDSCAPE DETAILS

SCALE: AS SHOWN

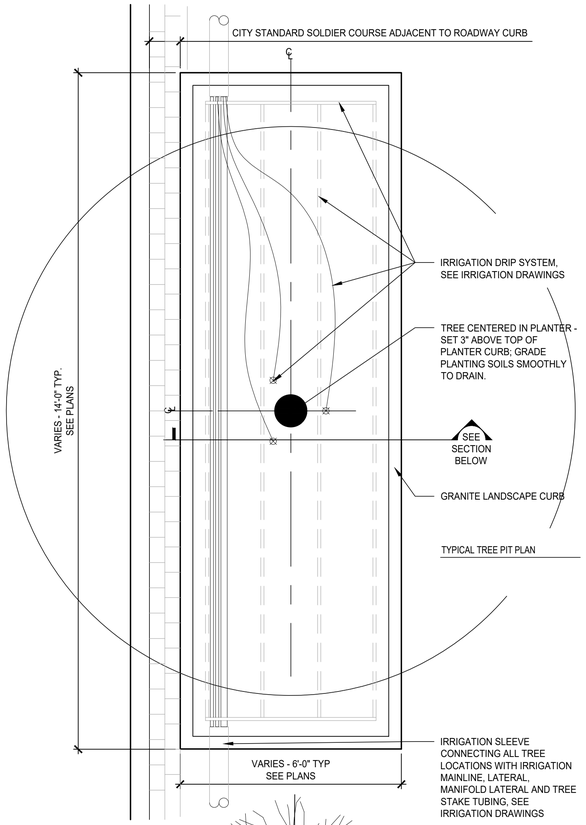
L-102

Last Saved: 9/28/2022
Printed: Wednesday, September 28, 2022 - 11:10am By: JCarle
Tighe & Bond: \\tighebond.com\data\Data\Projects\T\T5037 Two International Group\002 Russell Street Development\Drawings, Figures\AutoCAD\T5037-002-L-DSGN-Working.dwg



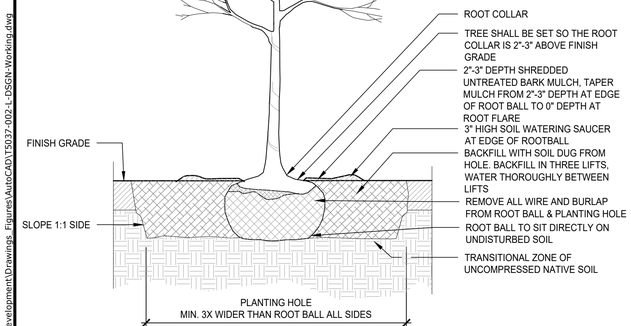
1 SHRUB, PERENNIAL AND ANNUAL PLANTING

SCALE: 3/4"=1'-0"



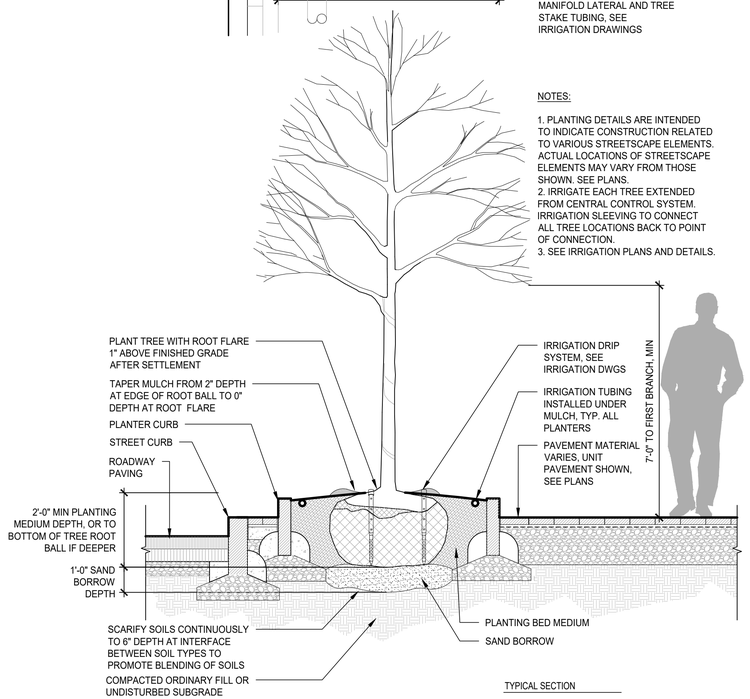
3 TREE PLANTING IN RAISED LANDSCAPE CURB PLANTER

SCALE: 1/2" = 1'-0"



2 TREE PLANTING DETAIL

SCALE: 3/8"=1'-0"



4 TREE PLANTING IN FLUSH PLANTER

SCALE: 1/2" = 1'-0"

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.

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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 #3 08.25.22
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: QNTY. PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS		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	19	2	EACH	12.2 W	2200	120V	NON DIM	29 W	LBX STUDIOS	POLE: NEVI STAMP LIGHTING "RS-TUR" #RS-TUR-177 #PSHNC-16-10.17-2.5B0.50-DB LAMP: PHILIPS SIGNIFY #12.2A19/LED927/FR/PE26/NDT20 6.1FB
P2	⬭	PORTSMOUTH STANDARD COBRA HEAD LED STREET POLES		CROSSWALK	3	1	EA	160 W	17700	120 - 277V	0-10V DIM	160 W	LBX STUDIOS	LEOTEK GREENCOBRA LED STREET LIGHT GC1 F-Series #GC1-80F-MV-WW-2-GY-700-HSS
X6	⌒	FLEXIBLE LED FIXTURE		CORNER COMMUNITY SPACE - BENCH	78	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	9	1	EACH	7W	275	120 - 277V	0-10V	7W	LBX STUDIOS	BEGA "24 063" 24 063 - K3
X8	⋖	LED TREE UPLIGHTS		CORNER COMMUNITY SPACE - PLANTERS	18	1	EACH	3W	156	120V	MLV	3W	LBX STUDIOS	BK LIGHTING "MINI-MICRO LED" S-MINI-LED-IE71-MLF-12-11
TOTAL LIGHTING LUMENS (OUTSIDE THE PROPERTY LINE)									56,059					

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	FIXTURE DISTRIBUTION	LOCATION	QUANTITY	LAMPS: QNTY. 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	98	1	EACH	30 W	448	120 - 277V	0-10V	30 W	LBX STUDIOS	WS-EF 131-0232
X2	———	LINEAR LED FIXTURE RECESSED IN CANOPY		ENTRY CANOPIES	134	1	LF	4.9 W/ FT	85	120 - 277V	0-10V	4.9 W/ FT	LBX STUDIOS	Q-TRAN "VERSA-LOUVER" VERS-07-SW-1.5-30-DMP-EF-S/P-BWBW-X
X3	———	SURFACE MOUNTED LINEAR LED GRAZER		GARAGE SCREEN WALL	153	1	LF	18.5 W/FT	150	120 - 277V	DMX	18.5 W/FT	LBX STUDIOS	COLOR KINETICS "GRAZE COMPACT POWERCORE" 423-000023-01 MOD 150 LUMENS/FT
X4	▭	3' DIAMETER VERTICAL LED CATENARY RING		COMMUNITY SPACE	16	1	EACH	18 W	250	24 VDC	0-10V	18 W	LBX STUDIOS	LUMINII "FLEXINEON CATENARY" PX-36-RI-1X30-SOF-CAT-SC PS010W-99-24-LIN MOD 250 LUMENS
X5	⋖	BUILDING MOUNTED FLOOD LIGHT		GENERAL EXTERIOR	8	1	EACH	26 W	652	120 - 277V	0-10V	26 W	LBX STUDIOS	BEGA "77 607" 77 607-K3-70 050
X6	⌒	FLEXIBLE LED FIXTURE		BENCH	37	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	14	1	EACH	7W	275	120 - 277V	0-10V	7W	LBX STUDIOS	BEGA "24 063" 24 063 - K3
X8	⋖	LED TREE UPLIGHTS		PLANTERS	4	1	EACH	3W	156	120V	MLV	3W	LBX STUDIOS	BK LIGHTING "MINI-MICRO LED" S-MINI-LED-IE71-MLF-12-11
X9	○	CATENARY MOUNTED LED DOWNLIGHT		COMMUNITY SPACE	6	1	EACH	9W	900	120V	0-10V	9W	LBX STUDIOS	WE-EF "DAS120 LED" DAS120 LED - MOD 900 LUMENS
X10	◊	LED SCONCE		BUILDING FACADE	98	2	EACH	3W	146	120V	0-10V	6W	LBX STUDIOS	BEGA 66 655 66 655-K3-MOD. DIRECT/INDIRECT, 146 LUMENS
TOTAL LIGHTING LUMENS (WITHIN PROPERTY LINE)										113,381				
SITE AREA										2.07 ACRES				
TOTAL LUMEN/NET ACRE										54,773				
ZONING ORDINANCE MAXIMUM MEAN LUMENS PER NET ACRE ALLOWANCE										55,000				

CONTROL TYPE LEGEND

ND:	NON - DIM
0-10V:	0-10V
MLV:	MAGNETIC TRANSFORMER

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DESIMONE CONSULTING ENGINEERS
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JB&B

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(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS

80 PINE STREET
NEW YORK, NY 10005
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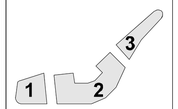


SEAL / SIGNATURE

08/10/22

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

SCALE **NONE**
DATE ISSUED **07/15/22**
PROJECT NO **27009.N.001**
DRAWN BY **JR**
CHECKED BY **MM**

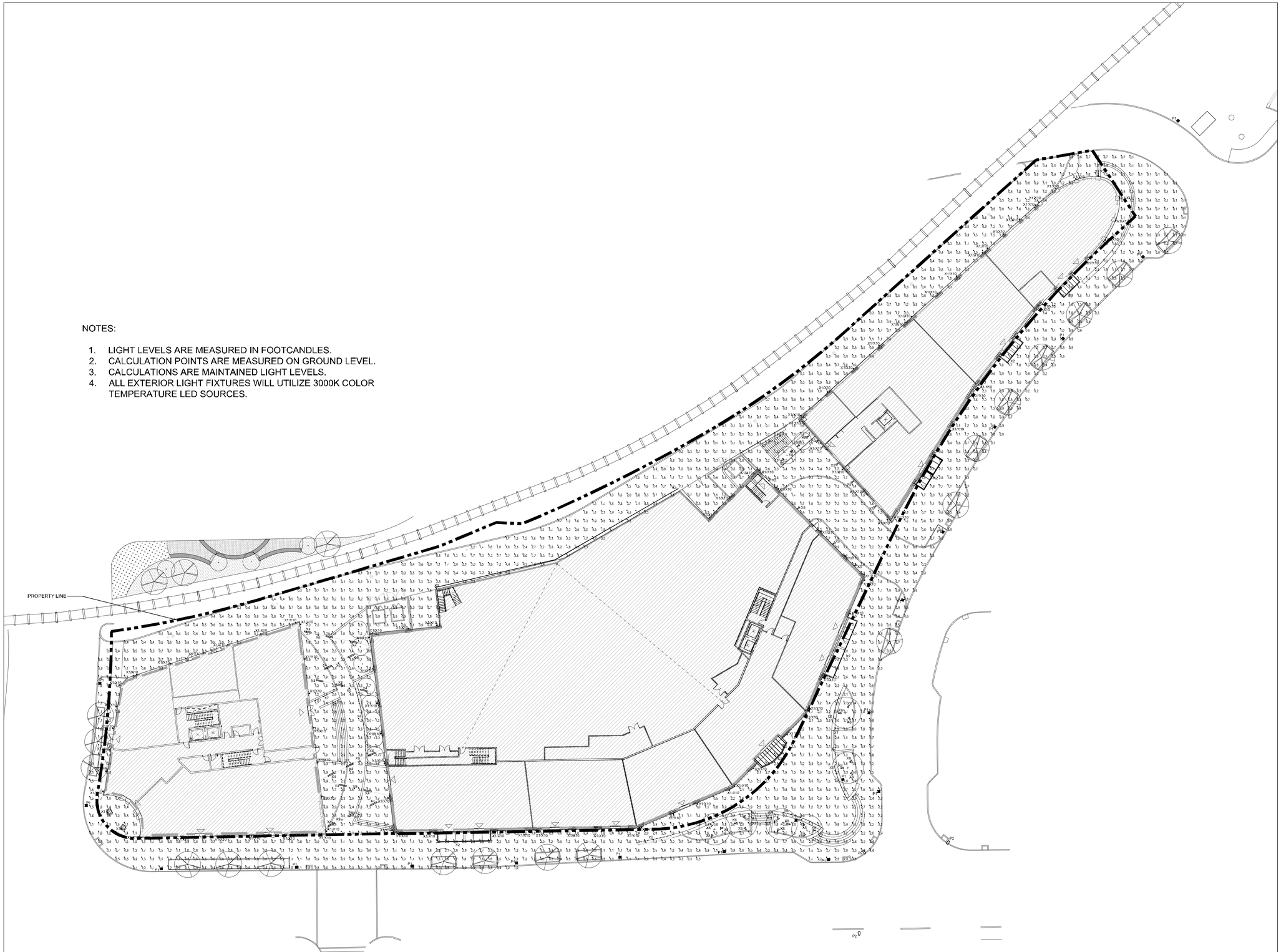
SHEET TITLE:

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.



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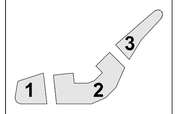


SEAL / SIGNATURE

06/10/22

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

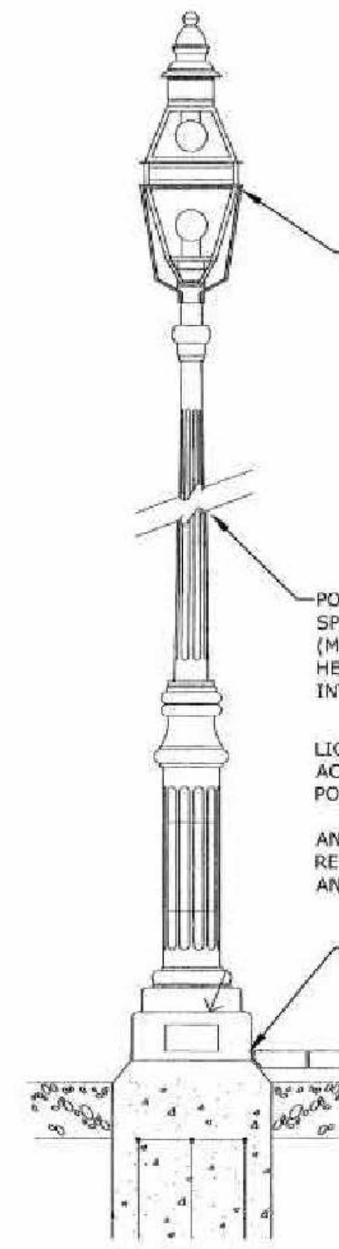
SCALE	1" = 20'-0"
DATE ISSUED	07/15/22
PROJECT NO	27009.N.001
DRAWN BY	JR
CHECKED BY	MM

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.



LANTERN:
NEWSTAMP LIGHTING CO.
(MODEL: RS-TUR-177) "PORTSMOUTH"
WITH MEDIUM BASE EDISON TYPE A LED LAMPS, 60 WATT EQUIVALENT

POLE:
SPRING CITY ELECTRICAL MFG. CO.
(MODEL: "HANCOCK" 10'-2")
HEAVY DUCTILE IRON WITH INTERIOR ANCHORS

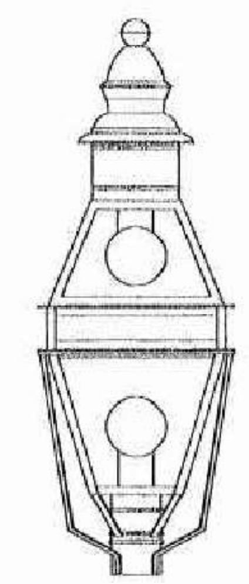
LIGHTS SHALL BE WIRED IN ACCORDANCE WITH NEC AND PORTSMOUTH ORDINANCE.

AN ELECTRICAL PERMIT IS REQUIRED FOR ALL CONDUIT AND ELECTRICAL WORK.

MOUNT POLE 1/2" ABOVE GRADE

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. 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. 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

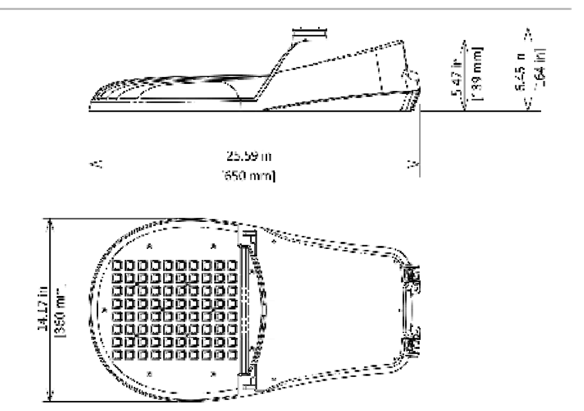
LEOTEK LITE-ON GROUP

Project
Type
Catalog No.

GreenCobra™ LED Street Light
GC1 F-Series Specification Data Sheet

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 Labe

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 Solder 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

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 LM-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.

FIXTURE TYPE 'P2'
STREET LIGHT ON 20FT POLE

SLS410 LED

we-ef

131-0232 (previous product code: 620-6216 for reference only!)
1/3

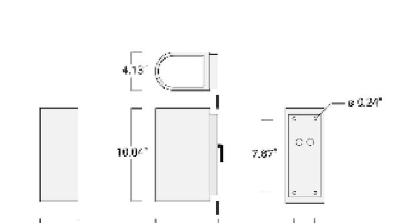
Description
Surface-mounted wall luminaire. IP66. Class I. IK07. Marine-grade, die-cast aluminum alloy. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. Safety glass lens. Two cable entries. CAD-optimized optics for superior illumination and glare control. Integral driver. OLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire. Suitable for Up, Down, or Up/Down light distribution. Supplied with wall plate to fit over 4" recessed junction box. 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)

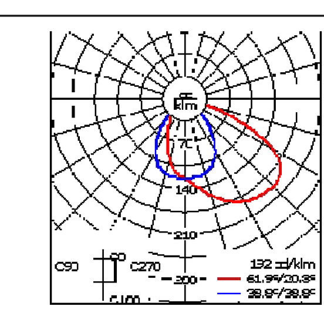
Beam Type	asymmetric, 'forward throw' [A60]
Light Source	LED-3/13W / 1400 mA - 3000 K
CRI	80
Gear Type	electronic gear
Nominal Luminous Flux (lm)	
LED Lumens	498.7 lm
LEDs	3
Total Lumens	1496 lm
Tj	85 °C
Delivered Lumens Flux (lm)	
LED Lumens	149.4 lm
Total Lumens	448.1 lm
Ta	25 °C
Rated Input Power	16 W

SLS410 LED

we-ef

131-0232 (previous product code: 620-6216 for reference only!)
2/3





Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (lbs):	7.70
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 Steplights and two week ship time for the rest of our Core products. All applicable information must be included for orders to be processed and colours must be in one of our 4 standard finishes. A maximum order quantity of 30 pieces applies.
Gasket:	Silicone rubber gasket
Fasteners:	PCS hardware
Ingress protection:	IP66
Impact protection:	IK07
Corrosion protection:	5CE
Listings:	ETL listed. Suitable for wet locations.

Electrical Specification

Power supply:	Integral [ECG] electronic 0-10 V dimmable driver in 120-277 universal voltage.
Driver / Ballast:	Integral EC electronic converter
Cable:	Two cable entries

Lifetime
Ta=25°/40° L90B10 > 90000h

BUG Rating:
B0 U0 G0

SLS410 LED

we-ef

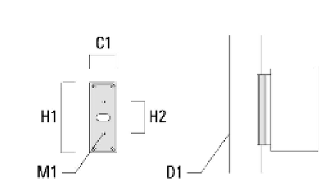
131-0232 (previous product code: 620-6216 for reference only!)
3/3

Mounting Accessories

Column fitter
Mounting plate for installing SLS400 series on columns.

CF-410/420

	C1	D1	H1	H2	M1	Weight (lbs)
131-9140	3.27	5.51	8.66	3.94	0.24	1.32 lbs



FIXTURE TYPE 'X1'
BUILDING MOUNTED LIGHT FIXTURE

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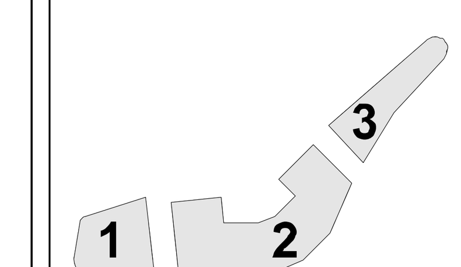


SEAL / SIGNATURE

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

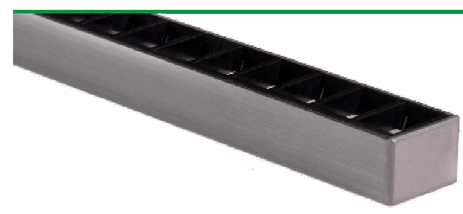
SCALE	**NONE**
DATE ISSUED	**07/15/22**
PROJECT NO	**27009.N.001**
DRAWN BY	**JR**
CHECKED BY	**MM**

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	WFT	CCT	Rated	Lens	Input/Output	Connector/Wire In	Connector/Wire Out	Wire Color	Wire Type	Mounting	Finish	Length* (in)
VERS-07-SW	1.5HE 3.0HE 6.0HE	20 22 24 27 30 35 40	DRY (IP20)	CL DF	S1 S2 (Single)	BW CON6 CON24	CLS	WH BK	CL2 CL2P	CC MG	ST BK BZ WH	
	1.5HE 3.0HE 6.0HE	24 27 30 35 40	DMP (IP64)		P1 P2 (Pass through)	BW CON6 CON24	BW CON6 CON24					

*Available in 2" increments, maximum fixture length of 96". See fixture detail on page 6. Minimum fixture length 6".

See VERS-07-SK for suspended version.

- **BW** comes in standard 36"- request custom length (Max 120") by writing it in inches next to "BW" in the order code box (ex. BW48)
- **Connector/Wire In or Out** not needed to specify product. Standard configuration is Type S1, Connector/Wire In: BW & Connector/Wire Out: CLS
- Specify **CL2P** for plenum rated wire
- **One Step, One Bin** based on 5W/ft

- 5 year warranty
- Field modifications void warranty
- Data subject to change, all data has +/- 5% tolerance
- Compatible for use with Q-Tran power supplies
- Suitable for installation in the storage area of a clothes closet when using wattage of 4.0W/ft or less

Specification subject to change. Rev-08-08-22

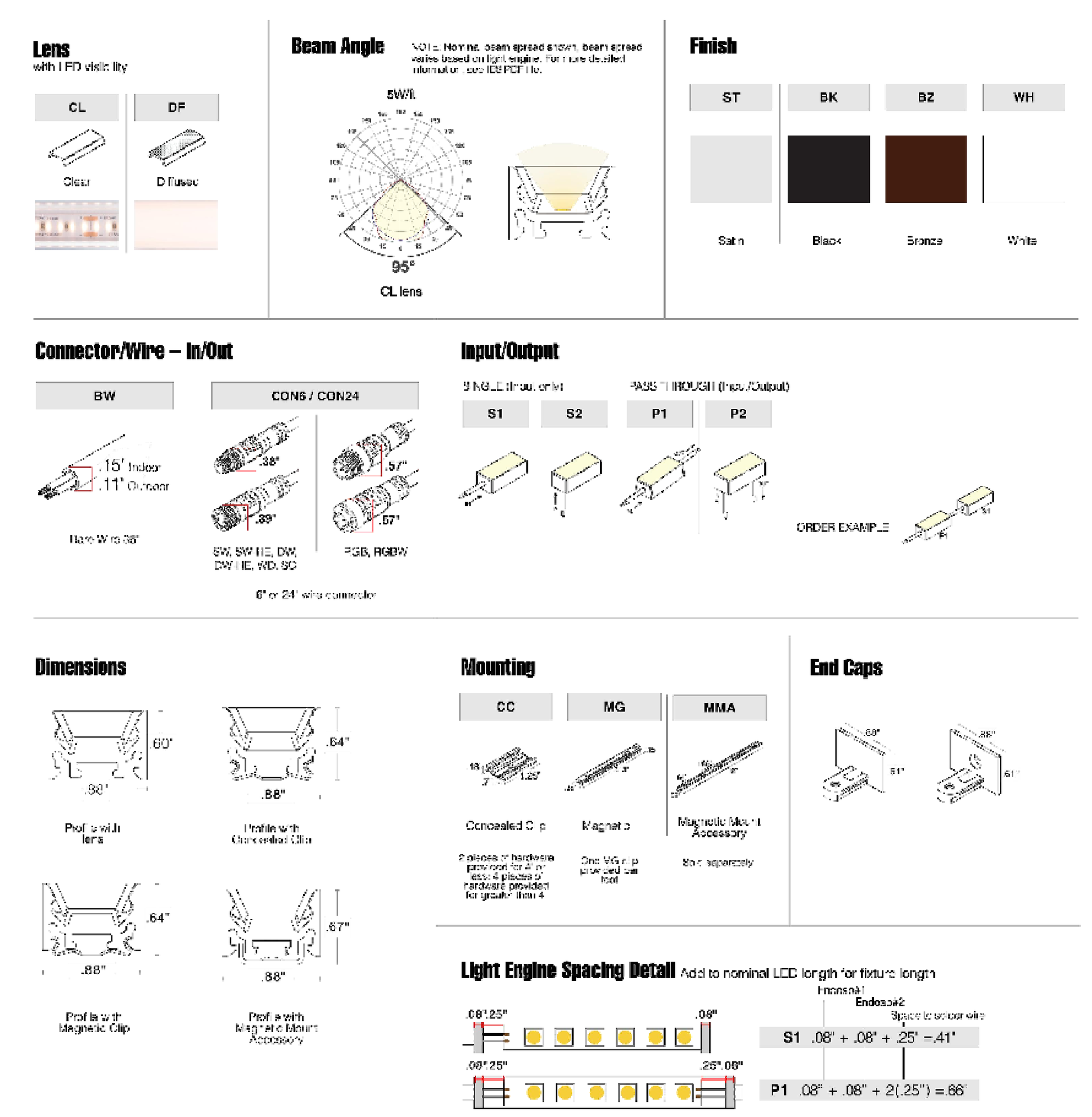
VERS-LOUVER (07) Linear Fixtures - Surface

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

Specification subject to change. Rev-08-08-22

VERS-LOUVER (07) Linear Fixtures - Surface



Specification subject to change. Rev-08-08-22

FIXTURE TYPE 'X2'
ENTRY CANOPY FIXTURE

Graze Compact Powercore

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.
- Innovative optical design features fully mixed light directly out of the luminaire. This allows for smaller setbacks than many other luminaires.
- Color-changing and high-quality white light from the same luminaire—IntelliHue is an advanced approach to color mixing that enables high-quality intelligent color and white light from a single luminaire. Multiple channels of LED light sources combine to produce a full spectrum of precisely controllable light, including millions of saturated colors, pastels, and uniform white light with CRI of greater than 80 in the 2700 K to 4000 K range.
- Improve color consistency between all LED luminaires in a family with Chromasync technology. During the manufacturing process a calibrated light measurement device creates an algorithm to define a common color gamut for an entire family of LED luminaires. When Chromasync is enabled, color consistency between luminaires is achieved without having to manually adjust color points on each luminaire.
- 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. Graze Compact raises reliability even further with more protection from corrosion by meeting ASTM B117 standard and ANSI C136.31-2010 standard with a 3G vibration rating.
- Works seamlessly with the Color Kinetics full range of controllers, including Light System Manager, Video System Manager Pro, iPlayer 3, Antumbra Color Keypad, and ColorDial Pro—as well as third-party controllers.
- Convenient push-and-click connectors let you easily and rapidly install Leader Cables and Jumper Cables. Constant torque locking hinges offer simple and consistent position control from various angles.
- Customizable accessories - Customize your Graze luminaire with a choice of accessories: mounting arm, masking shield, symmetric louver, and masking tray. Mounting arm available in three sizes.

For detailed product information, please refer to the Graze Compact Product Guide at www.colorkinetics.com/global/products/intellihue/graze-compact-powercore

COLORKINETICS

Specifications

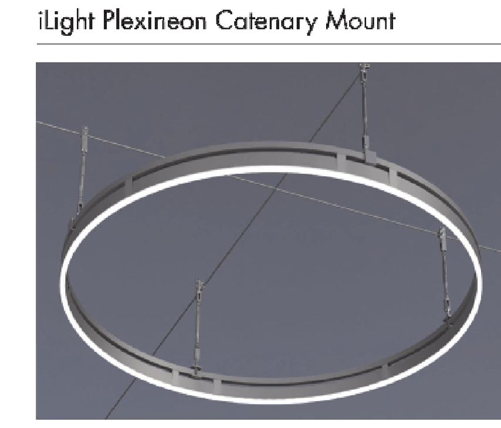
Output · Electrical · Control · Lumen Maintenance · Physical · Temperature Ranges · Vibration Resistance · Corrosion Resistance · Thermal Protection enabled · Luminaire Run Lengths · Certification and Safety

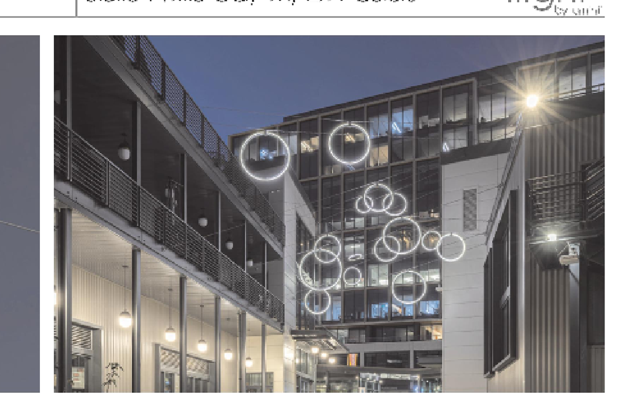
MOD 150 LUMENS/FT

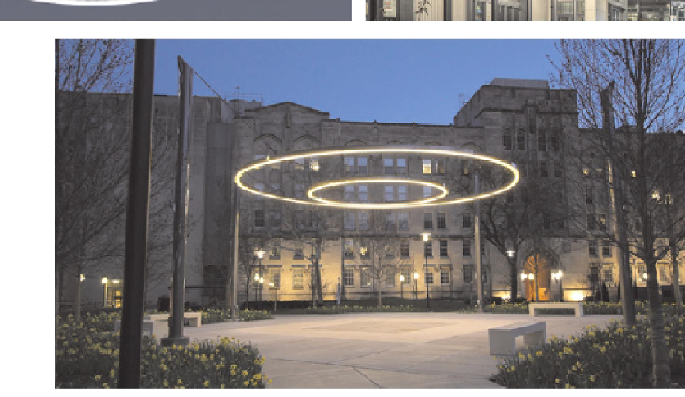
FIXTURE TYPE 'X3'
SCREEN WALL GRAZER

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

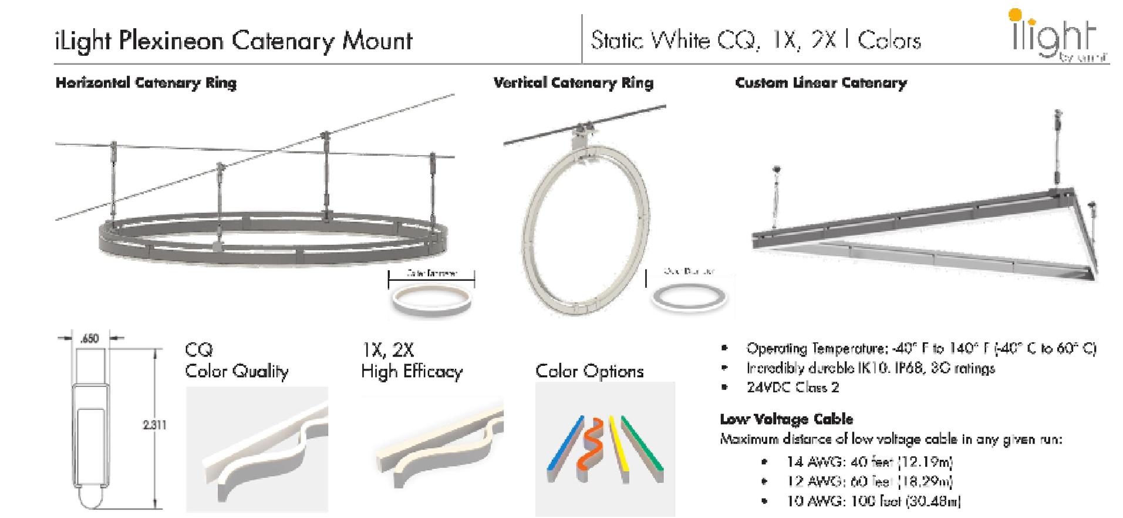
Common Applications

Patios | Outdoor Dining Areas | Roof Top Bars | Courtyards | Airports | Statement Pieces

REV1.1 03/2022 1 7 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
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DESIMONE CONSULTING ENGINEERS
31 MILK STREET
BOSTON, MA 02109
(617) 936-4492

MEP ENGINEER
JB&B
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(212) 530-9300

LIGHTING DESIGN
LIGHTBOX STUDIOS
80 PINE STREET
NEW YORK, NY 10005
(646) 810-2600

1 2 3

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

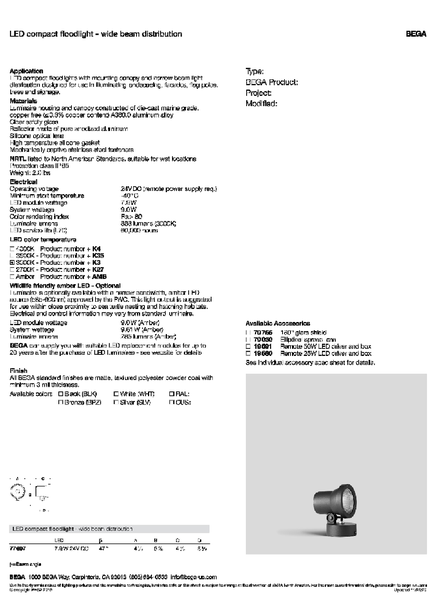
SCALE	NONE
DATE ISSUED	07/15/22
PROJECT NO	27009.N.001
DRAWN BY	JR
CHECKED BY	MM

SHEET TITLE:

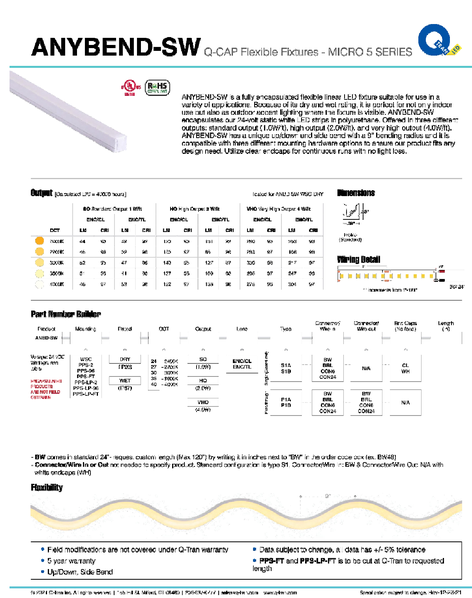
EXTERIOR LIGHTING CUTSHEETS NO. 2

E-102

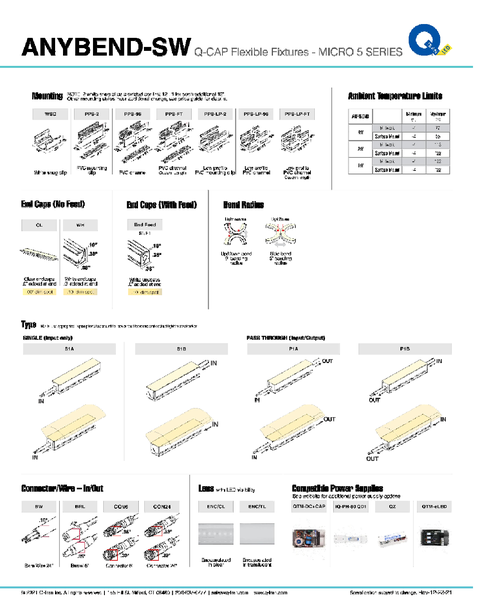
FIXTURE TYPE 'X5'
BUILDING FLOODLIGHT



FIXTURE TYPE 'X6'
BENCH LIGHT

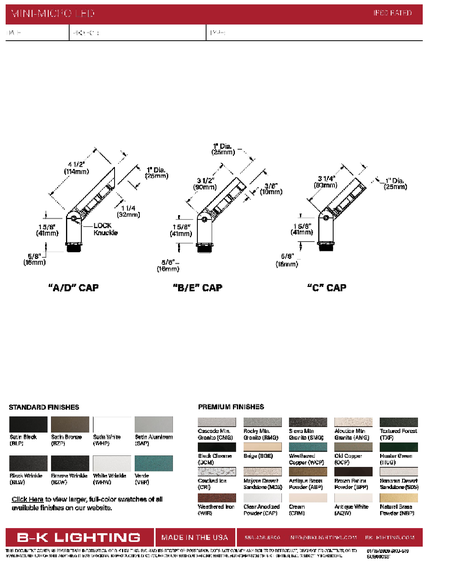


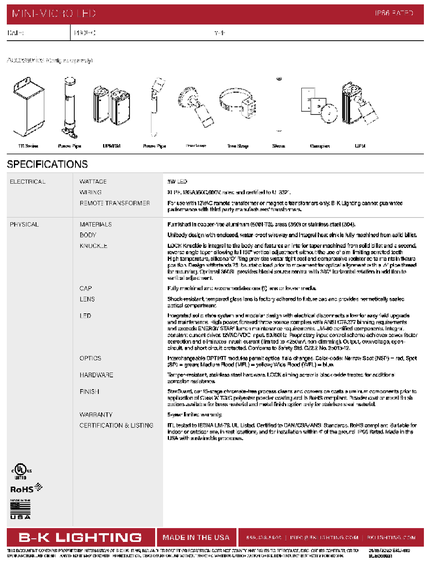
FIXTURE TYPE 'X7'
STEP LIGHT

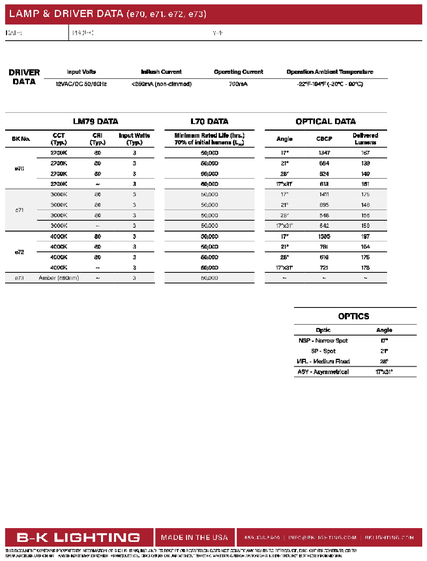


FIXTURE TYPE 'X8'
TREE UPLIGHT

FIXTURE TYPE 'X9'
LAMP & DRIVER DATA







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PROJECT TEAM:

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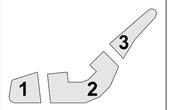


SEAL / SIGNATURE

06/10/22

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

SCALE	NONE
DATE ISSUED	07/15/22
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 aluminum alloy. 5CE superior corrosion protection including PCS hardware. Silicone CCD/® Controlled Compression Gasket. Safety glass lens. One cable entry, second cable entry for through wiring with cable connector optional. Integral driver, thermally separated. CAD-optimized optics for superior illumination and glare control. OLCB/ One LED Concept. Factory installed LED circuit board. 0-10V Dimming comes standard with luminaire. The luminaire is factory-sealed and does not need to be opened during installation. Optional 2200 K version available, to be specified at time of ordering. Includes cable connector, for cable 0.08-0.47 inch. +/- 10° adjustable to compensate for sloping catenary systems. 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	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	245.9 lm
LEDs	12
Total Lumens	2951 lm
Tj	85 °C

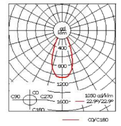
Delivered Lumens Flux (lm)

LED Lumens	180.8 lm
Total Lumens	2169.9 lm
Ta	25 °C
Rated Input Power	28 W

DAS120 LED
134-2183

we-ef

2/4



Material Specification

Body:	Marine-grade, die-cast aluminum alloy
Weight (lbs):	8.68
Lens:	Safety glass lens
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
Gasket:	Silicone CCD/® Controlled Compression Gasket
Fasteners:	PCS Polymer Coated Stainless Steel Hardware
Ingress protection:	IP66
Impact protection:	IK07
Corrosion protection:	5CE
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 T-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 [B] [M] light distribution. A maximum of one internal optical accessory.

IW-DAC120-LED	
	C1
134-2002	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

Wall luminiare - single-sided light output **BEGA**

Application
Wall luminaires with single-sided light output designed to provide up or down lighting effects for interior and exterior locations.
Materials
Luminaire housing and faceplate constructed of die-cast marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
High temperature silicone gasket
Mechanically captive stainless steel fasteners
NRTL listed to North American Standards, suitable for wet locations
Protection class IP65
Weight: 4.4 lbs
Electrical

Operating voltage	120-277VAC
Minimum start temperature	-30° C
LED module wattage	7.9W
System wattage	10.5W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	652 lumens (3000K)
LED service life (L70)	60,000 hours

LED color temperature
☐ 4000K - Product number + **K4 (*EXPRESS*)**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3 (*EXPRESS*)**
☐ 2700K - Product number + **K27**
☐ Amber - Product number + **AMB**
Wildlife friendly amber LED - Optional
Luminaire is optionally available with a narrow bandwidth, amber LED source (585-600nm) approved by the FWC. This light output is suggested for use within close proximity to sea turtle nesting and hatching habitats. Electrical and control information may vary from standard luminaire.

LED module wattage	9.0W (Amber)
System wattage	11.8W (Amber)
Luminaire lumens	220 lumens (Amber)

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.
Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

Type:
BEGA Product:
Project:
Modified:

Available Accessories
☐ **79547** Suface mounted wiring box
See individual accessory spec sheet for details.

Wall luminaire - single-sided output

	LED	β	A	B	C	D	Required wiring box
66 655	7.9W	19.5°	4¼	9	6⅝	1¼	**19 537**

β = Beam angle

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com
Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com
 Updated 03/19/19

FIXTURE TYPE 'X10'
UPPER SCONCE

SGA
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PROJECT TEAM:

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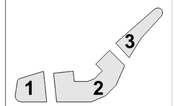


SEAL / SIGNATURE

PROJECT:

Russell Street Mixed Development

2 Russell Street, Portsmouth NH

Two International Group

REVISIONS:

No.	Date	Description

SUBMISSIONS:

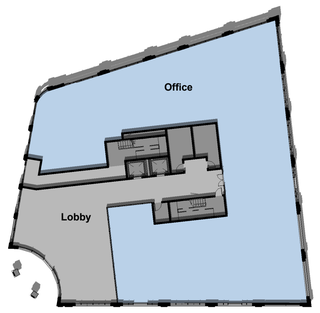
Date	Issued For:
08/25/2022	TAC SUBMISSION #3

SCALE	**NONE**
DATE ISSUED	**07/15/22**
PROJECT NO	**27009.N.001**
DRAWN BY	**JR**
CHECKED BY	**MM**

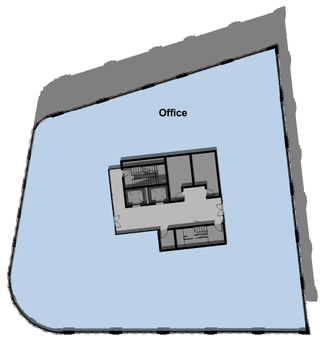
SHEET TITLE:

EXTERIOR LIGHTING CUTSHEETS NO. 4

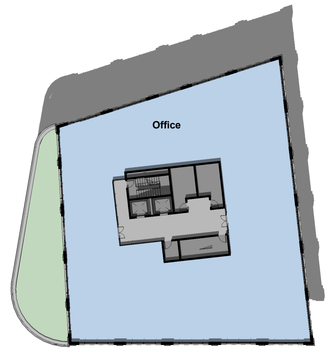
E-104



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:

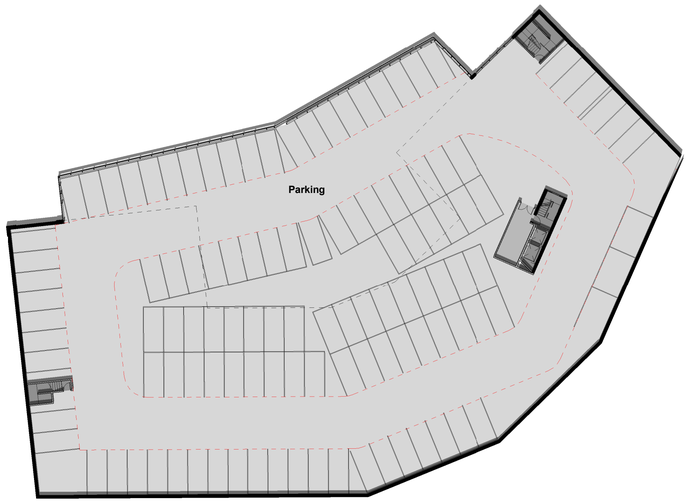
Date	Issued For:
05/23/22	TAC Work Session

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



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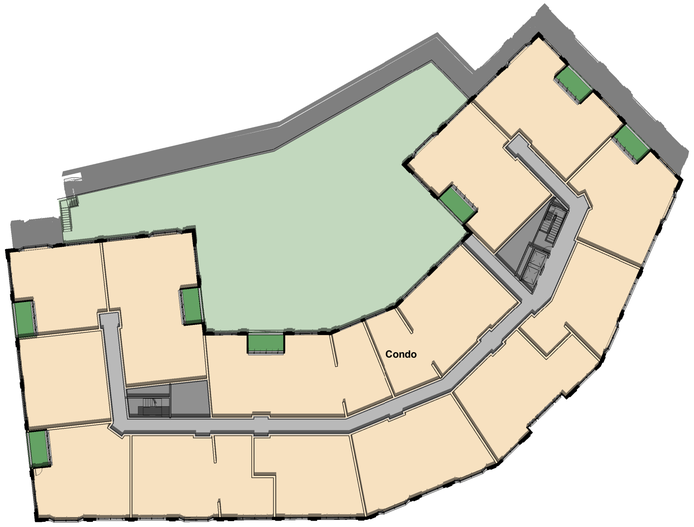

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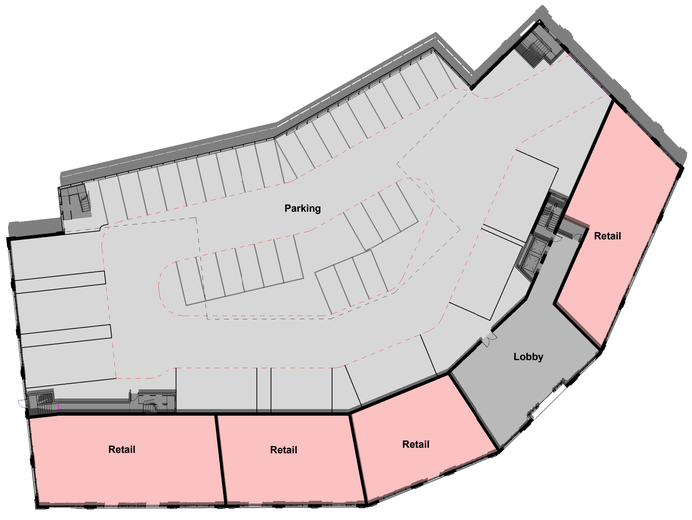
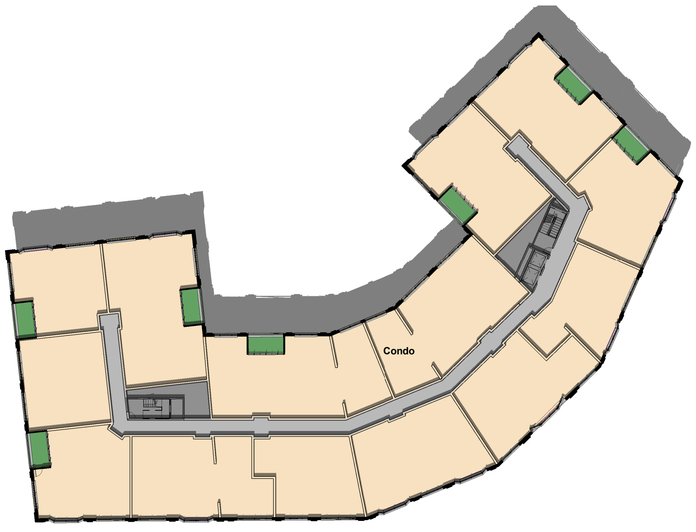


2 B2 - LEVEL 1
1/32" = 1'-0"



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

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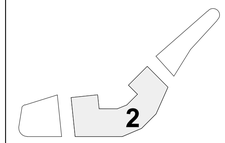

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05/23/22

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**
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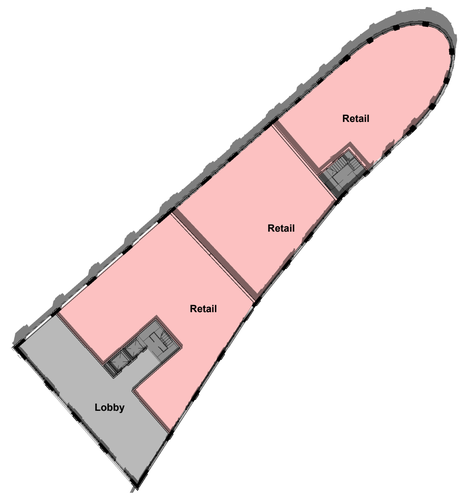
SHEET TITLE:

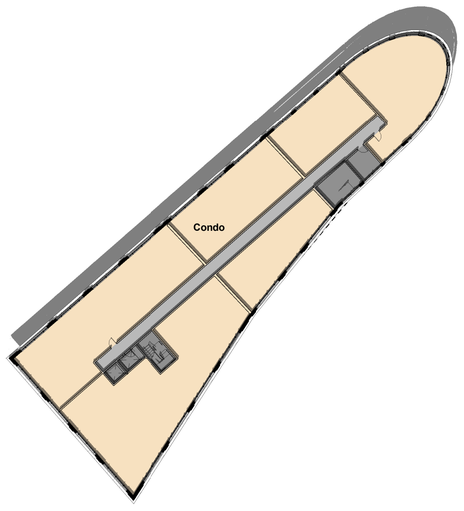
BUILDING 2 AREA PLANS

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

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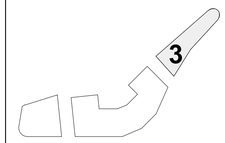

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05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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SHEET TITLE:

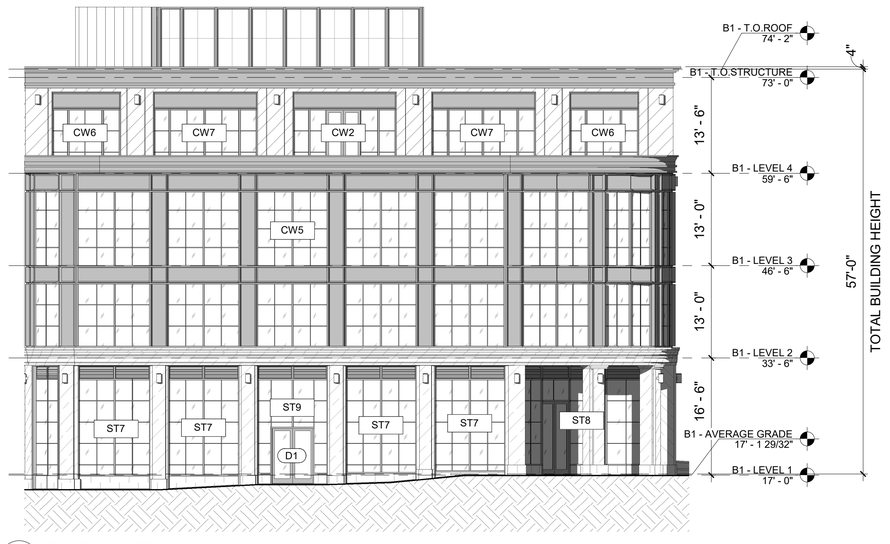
BUILDING 3 AREA PLANS

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"

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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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"

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PROJECT TEAM:

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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SHEET TITLE:

BUILDING 1 ELEVATION

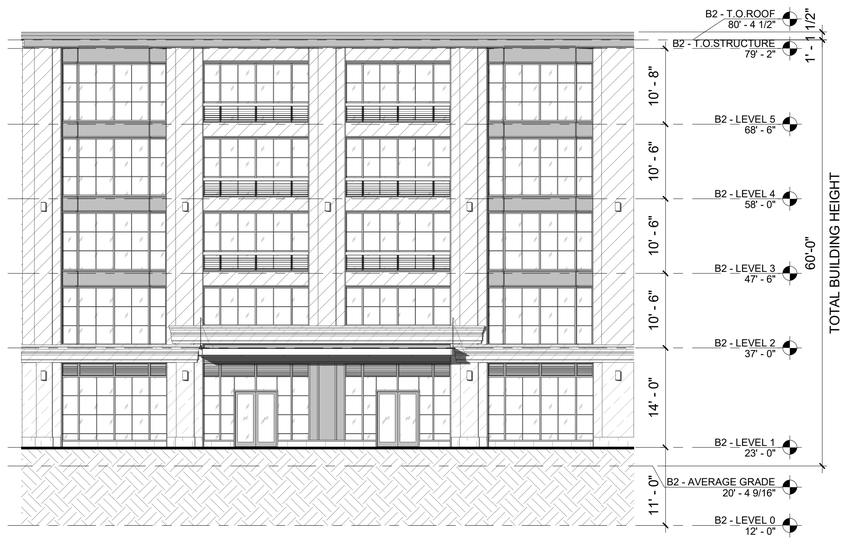
A - 202

5/23/2022 9:26:56 PM

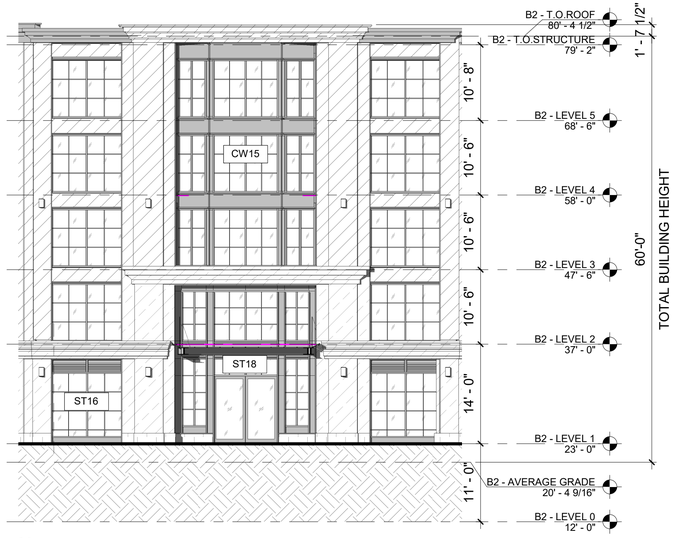
1 B2 - North Elevation
3/32" = 1'-0"

MATERIAL LEGEND

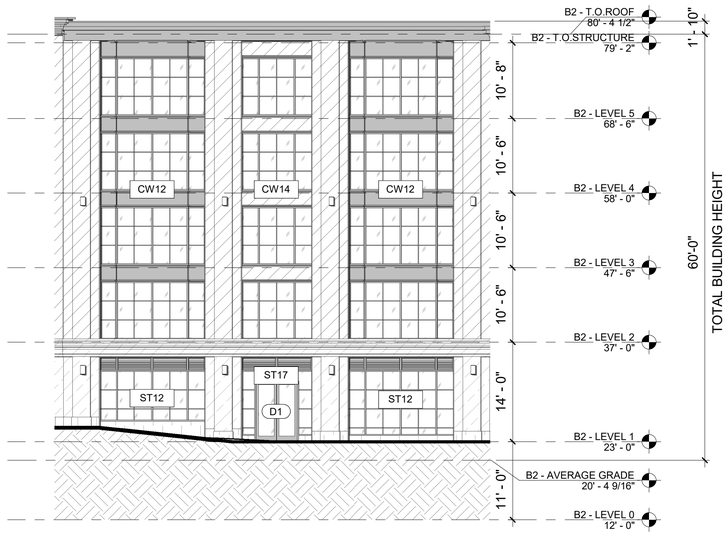
	BRICK
	LIMESTONE
	GRANITE
	METAL



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"

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PROJECT TEAM:

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

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SHEET TITLE:

BUILDING 2 ELEVATION

A - 203

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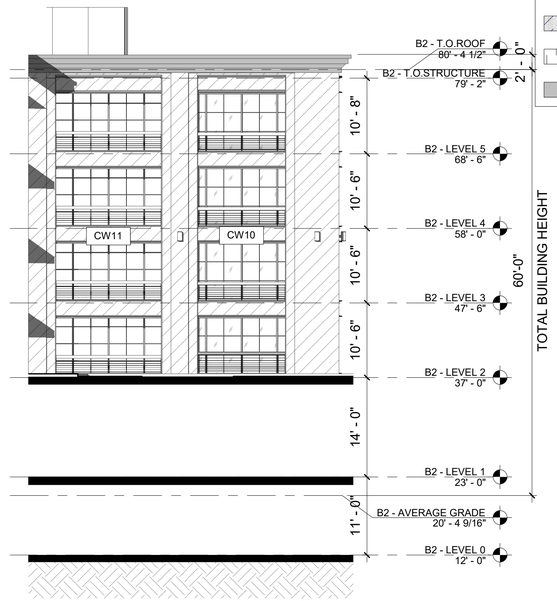
1 B2 - South-East Elevation 2
3/32" = 1'-0"

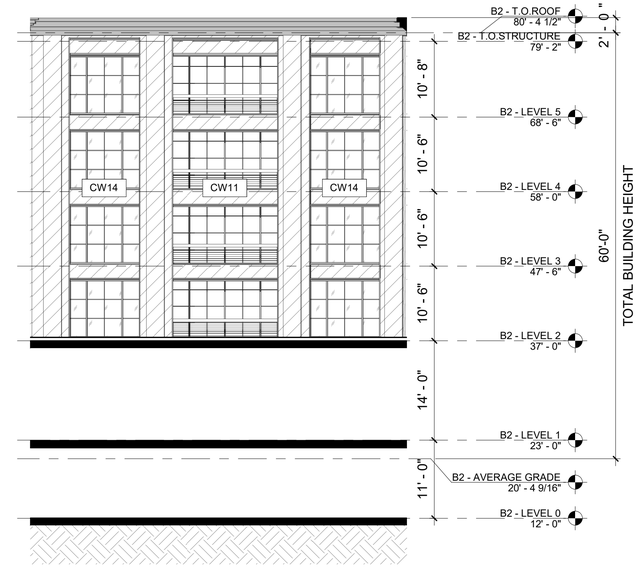


3 B2 - North Elevation 2
3/32" = 1'-0"

MATERIAL LEGEND

- BRICK
- LIMESTONE
- GRANITE
- METAL

2 B2- South Elevation
3/32" = 1'-0"



4 B2 - South-West Elevation 2
3/32" = 1'-0"

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PROJECT TEAM:

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05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

REVISIONS:

No.	Date	Description

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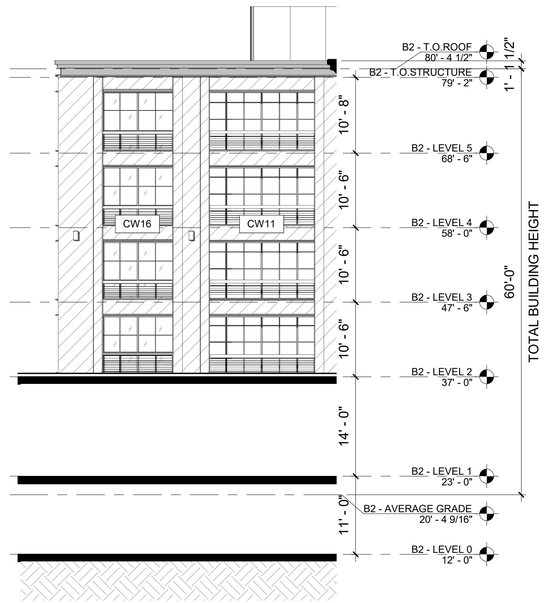
CHECKED BY	**Checker**

SHEET TITLE:

BUILDING 2 ELEVATION

A - 204

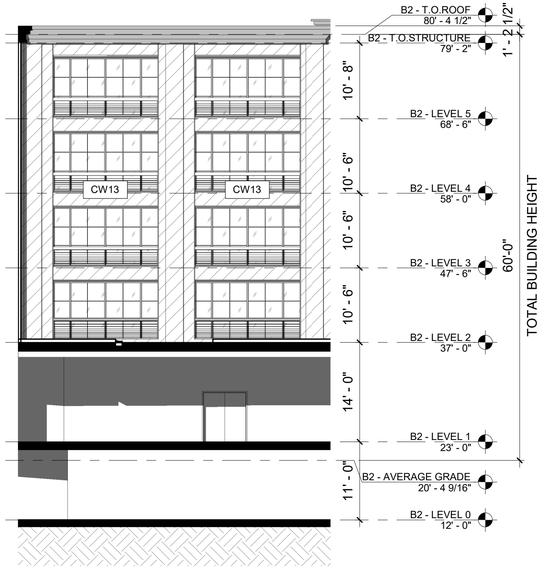
1 B2 - West Elevation 1
3/32" = 1'-0"



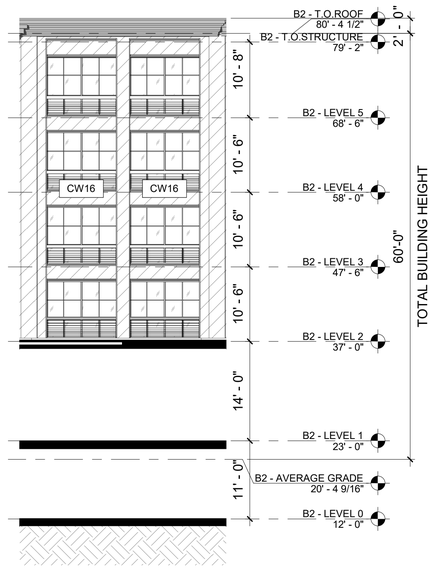
2 B2 - South Elevation 2
3/32" = 1'-0"

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"

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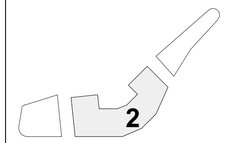

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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SHEET TITLE:

BUILDING 2 ELEVATION

A - 205

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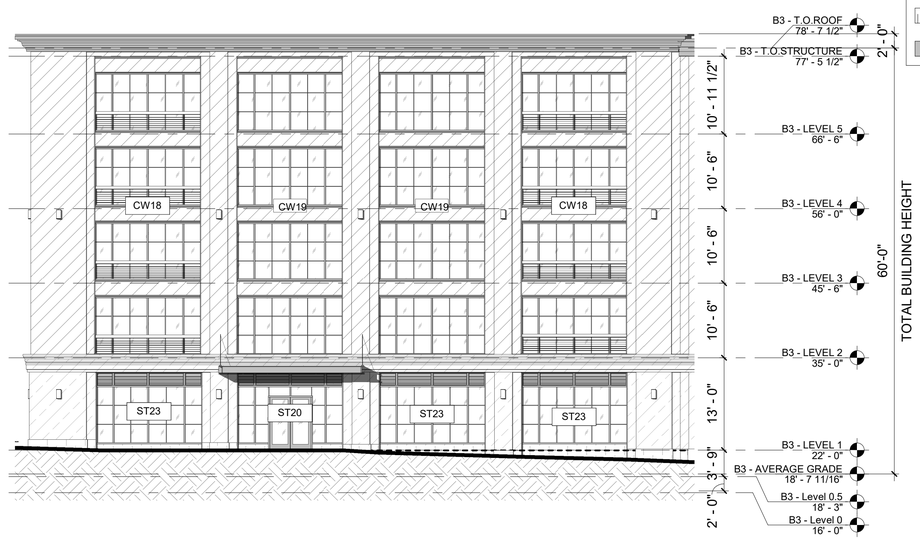
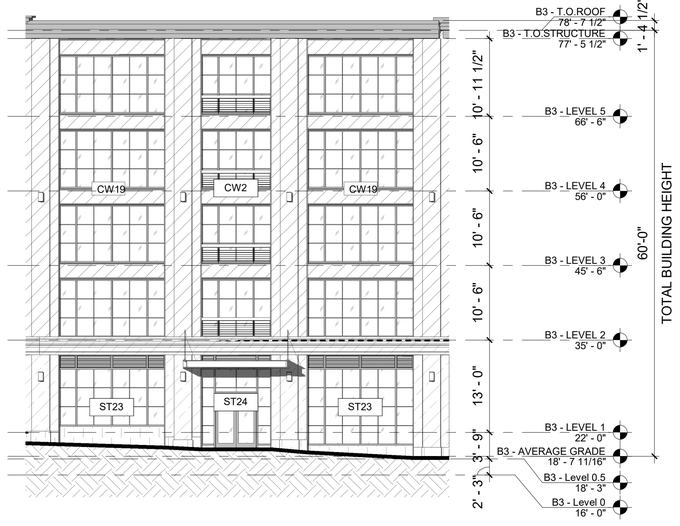
1 B3 - South Elevation
3/32" = 1'-0"



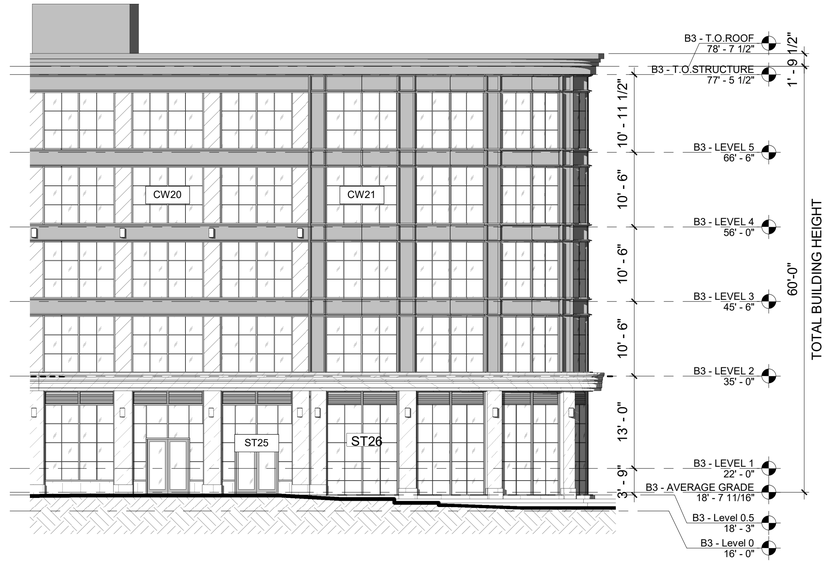
2 B3 -East Elevation 1
3/32" = 1'-0"

MATERIAL LEGEND

- BRICK
- LIMESTONE
- GRANITE
- METAL



3 B3- East Elevation 2
3/32" = 1'-0"



4 B3- East Elevation 3
3/32" = 1'-0"

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PROJECT TEAM:

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05/23/22

PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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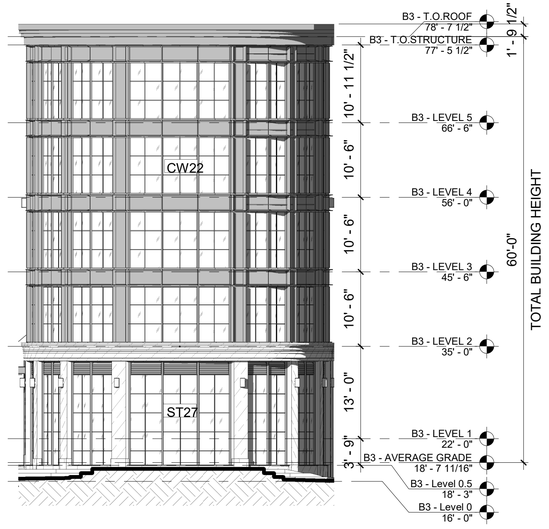
SHEET TITLE:

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

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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SHEET TITLE:

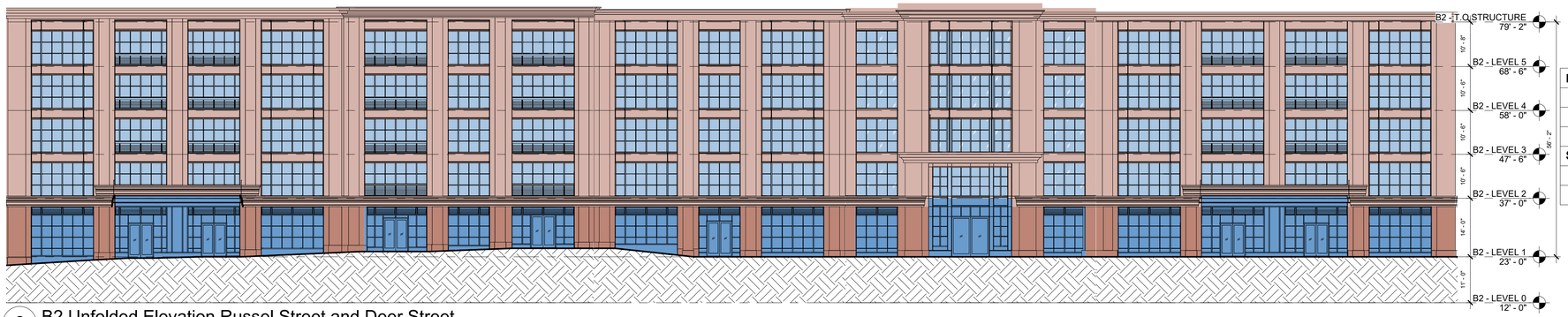
BUILDING 3 ELEVATION

A - 207

5/23/2022 9:29:06 PM

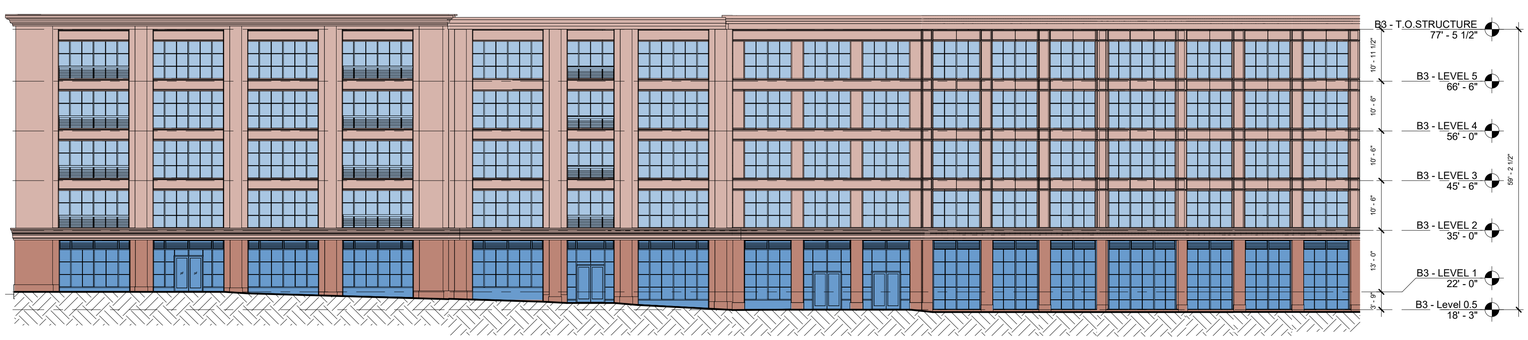
1 B1 Unfolded Elevation Deer Street And Maplewood Avenue
1/16" = 1'-0"

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%

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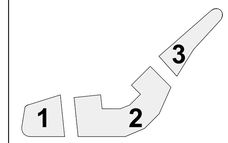

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PROJECT:

Russell Street Mixed Use Scheme

Russell Street, Portsmouth NH

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SHEET TITLE:

GLAZING STUDY

A - 208

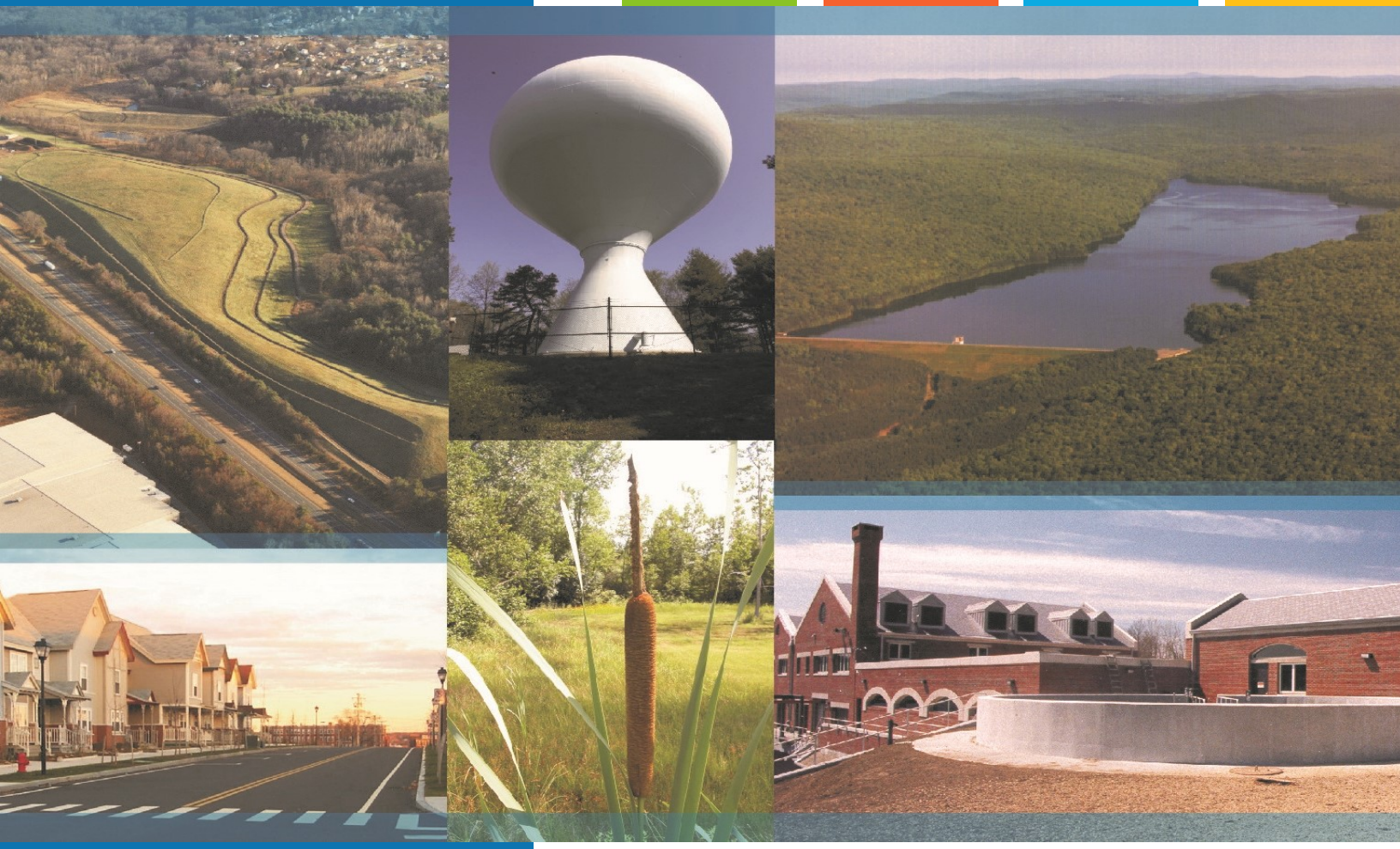
Russell Street - City of Portsmouth TAC COMMENT RESPONSE Date: September 28, 2022

City of Portsmouth TAC, September 6, 2022:			
	TAC Comment	**Applicant Response**	**Sheet**
TAC Comments from 9/2 Correspondence:			
1	Replace loading zone that is currently located between buildings to designated loading zone areas along Russell Street and Deer Street. It is suggested these new areas have time limit where they turn into regular parking spaces between the hours of 9 AM and 6 PM.	Two separate loading zone areas have been added to the plans. One is located along Deer Street at the two parking spaces closest to the Maplewood intersection and the other is located at the two parking spaces closest to the Building 2 and Building 3 shared access drive. Both will require PTS approval.	C-102.1
2	Provide clear signage for garage parking and access.	Drive is signed as private, and as the parking garage spaces are for residents only they will be familiar with the garage parking layout.	
3	Add cobblestone channeling at intersection of Green and Deer (Russell) Street.	As discussed with City staff at the September 6th TAC meeting, cobblestone channeling has not been added to the plans. The width is not sufficient to provide pedestrian refuge which we understand was the reason for this request.	
4	Sidewalk shown through the CSX property must have written approval to be shown on plans.	The sidewalk along the Green Street right of way has been removed until further coordination with CSX has been completed prior to construction. The sidewalk along Maplewood Avenue is within the city right of way therefore remains on the site plan. Coordination with CSX railway will be completed prior to construction.	C-102 & C-102.1
5	Please provide more detail for area around relocated train signal on Maplewood Ave.	Coordination with CSX railway will be completed prior to construction.	
6	Please adjust and recalculate community space to exclude the Sheraton sign.	The community space has been modifed to exclude the area of the Sharaton sign.	Community Space Exhibit
7	Please include a 5ft mountable sidewalk to the building side of the shared path (between buildings and railroad) for designated bike and pedestrian area.	The delineation of the sidewalk and the drive aisle is been done using pavers as disscussed in Comment 47.	
8	On site construction inspection required for everything in the ROW plus drainage.	Acknowledged.	
9	CMMP required	Acknowledged, Site note #21 states this requirement.	
10	Confirm building footing is lower than City sewer line near Maplewood	Building foundation design is still in progress by the project structural engineer.	
11	Construction CB inlet protection on opposite side of Maplewood not required	CB inlet protection on opposite side of Maplewood has been removed from the plans.	
12	Sidewalk crossings on train tracks need truncated domes. Provide dome panels for both sides of crossing and replace sidewalk up to sidewalk on Vaughn.	Detectable warning panels have been added to either side of rail roads. Coordination with CSX railway will be completed prior to construction.	C-102 & C-102.1
13	Both mid-block pedestrian crossings across Deer are shown with duel crosswalks. This reduces the amount of parking on Deer St and will require PTS approval.	Acknowledged. This plan does retain significantly more of the street parking than the prior site approval for this site. Currently, the design has 7 fewer on-street spaces than currently exist, mostly due to the realignment of the Deer/Russell intersection requested by the City.	
14	The brick sidewalk on Green St will require the addition to, or relocation of, the permitted Green St RR crossing. The sidewalk must continue across the tracks although this area can be asphalt.	See comment 4.	
15	City preferred length for on street parking is 22’ except for end spaces are usually 18’-20’	The existing spaces are ~20' in length. The applicant is matching the existing space sizes. Increasing the length would reduce the on street parking further.	
16	Work northeast of Russell is not to be completed until the roundabout is constructed. City to be granted a temporary construction easement in this park area.	Site note 19 States "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."	G-100

17	Deer St is being narrowed considerably. This change needs further review before comment can be made.	This configuration of Deer St has been unchanged since TAC work session in January. No comments have been provided by City. Traffic plan was also peer-reviewed by TEC and no comments have been made regarding the geometry of the street. The revised width is in line with the other portion of Deer Street toward Market and is in line with the City's Complete Streets guidlines. The design also provides wider lanes than much of downtown, including much busier streets.	
18	Do not plant trees over water lines. Move trees or water main	The water main in Russell Street has been relocated to avoid any tree conflicts.	C-104
19	The Deer St drainage system that is being added should be in the road and should enter EDMH5 directly.	The drain line has been moved into the road and directly enters EMDH5.	C-103
20	The communication conduit shown in the back alley near Maplewood should be at least 10’ from the sewer manhole. Run it on the building side.	Grease trap has been moved closer to the building to provide additional separation. Communication and electric duct bank run along property line.	C-104
21	The grease trap in this same location should be as close to the retaining wall as possible so vehicles can go around it during cleanings.	See comment 20. There is no retaining wall in the rear of the building.	
22	Do buildings 1 and 3 have basements or underground utility rooms?	Building 1 does not have a basement level. The utility rooms are on the first floor. Building 3 has a basement level with utility rooms on that level. Utility rooms for all three buildings have been added to the plans.	C-104
23	The proposed street light that is on Maplewood near the back driveway is a little too close. Move it up the street 5’ or so.	The light pole has been moved 5' closer to the Deer Street and Maplewood Avenue intersection.	C-102.1
24	Showing the rest of the conduit for the lighting.	The remaining lighting conduit has been shown on the utility plan.	C-104
25	Move PDMH6 to the curb line just before the crosswalk and change it to a CB, reuse existing penetration into EDMH7	PDMH 6 has been moved further south to accept outlets from PCB2 and PCB3.	C-103
26	Move PCB2 to the corner, eliminate PDMH14 and run new pipe to EDMH7	PCB2 has been moved and PDMH14 has been removed. PCB2 now enters directly into the new PDMH6.	C-103
27	Eliminate PDMH 11 and run new pipe from CB 5 to EDMH8	PDMH11 has been removed and PCB 5 enters directly into EDMH8.	C-103
28	Capture back driveway runoff as low as possible and direct into PDMH3	Runoff from rear driveway sheets off property, as it does in the existing condition. Drainage analysis has a detailed narrative on how the project is meeting the City’s treatment requirements for redevelopment.	
29	The back driveway nearest Green St is very flat. How is Storm water being captured?	See comment 28	
30	The grease traps in the driveway to the garage are not located well. They need to be on the sides so that the driveway can still be used during cleaning.	The grease traps have been moved as close to the edge of the driveway as much as feasible. The upper driveway will be used mostly by the hotel valet, who will be able to work around any restrictions.	C-104
31	The Russell St water main will need to be relocated out from under the plaza and proposed trees.	See comment 18.	C-104
32	Vertical curb shall be 6” width.	VGC detail is 6” wide.	C-503
33	Bricks shall be tight joints not ‘finger tight’.	All Paver details have been modified to call out tight joints rather than finger tight joints.	C-502
34	Cast iron HC panels shall be radiuses or rectangular as appropriate and determined by DPW.	Cast iron detectable warning panel detail has been modified to include radiuses panels.	C-502
35	Both sidewalks on Russell shall be brick	The sidewalk on the Sheraton side of Russell Street has been modified to include the demolition of the existing concrete sidewalk and the construction of a brick sidewalk.	C-102 & C-102.1
36	All City streets in the downtown are to be at least 5” of pavement (3.5” of ¾” fine binder 50 gyration, 1.5” of ½” top 50 gyration)	The City Right-of-Way pavement section detail has been modified to specify 5 inches total of pavement surface.	C-502
37	All materials in the ROW or in public easement areas shall be approved by the City prior to use.	Acknowledged.	
38	All new manholes in the ROW, etc. shall be hinged type ERGO XL or CITY approved equal	This is specified in the manhole cover detail on C-505.	C-505
39	All manholes will have brick inverts	Manhole details specify brick inverts.	C-504

40	All catch basins will have CB liners installed (this is currently not shown on the CB F&G blown up detail).	CB liner detail is on C-504 and note # 9 specifies CB's within ROW will have a liner	C-504
41	Stormwater maintenance plan required	Stormwater O&M was submitted as part of the full package	
42	Statement or narrative regarding how the project complies with the City's stormwater regulation	Drainage analysis describes how the project meets City's requirements. Drainage has been peer reviewed, with only 2 minor comments remaining. A reponse to the remaining stormwater peer review comments is included with this submission package.	
43	All trees in the ROW shall be approved by Trees and Greenery and confirm with City Arborist that correct planting details are shown. All plantings must conform to City planting details.	Acknowledged.	
44	All planted trees are to be watered for the first 2 full growing seasons	Acknowledged.	
45	Corner of building one is in City sewer easement. Realign sewer main into Maplewood under the train tracks or move building footprint.	It was our understanding that the realignment of the Sewer is already in the planning stages by the City and is planned to be constructed soon. Building 1 is planned to be the last building constructed.	
46	Fair share contribution to construct roundabout based on percentage increase in daily traffic at Market and Russell intersection due to development.	Acknowledged.	
47	Install pavers or striping to delineate pedestrian and bicycle walkway along back alley.	See comment 7.	
48	Include turning templates for tractor trailer trucks for Russell and Deer, and Maplewood and Deer.	Tractor Trail Truck turning templates have been included in this submission.	
49	Include close up detail of proposed driveway on Maplewood with all utilities	An inset has been included on the utility plan to show a blown-up view of the utilities in this area.	C-104
50	Include railroad crossing design and letter from rail road that they accept design. Provide all necessary railroad approvals.	See comment 5.	
51	Install video detection for traffic signal at Maplewood and Deer.	General note #15 has been added stating "CONTRACTOR SHALL INSTALL INTERSECTION VIDEO DETECTION FOR MAPLEWOOD AVENUE AND DEER STREET INTERSECTION. COORDINATE WITH THE CITY OF PORTSMOUTH TRAFFIC DEPARTMENT. "	
52	Per traffic peer review install raised intersection on Deer Street at Portwalk Place. Add drainage to accommodate.	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.	
53	Include comments and additions based on TEC's traffic memo.	Acknowledged. Responses to the latest TEC letter have been included as part of this submission package.	
54	Parking Traffic and Safety review and approval, as well as City Council approval, is needed for on-street parking changes.	Acknowledged. See responses to comments 13 & 17.	
55	Pre and post blast survey and monitoring needed for sewer line on Deer.	Utility note #23 has been added stating "CONTRACTOR SHALL COMPLETE PRE AND POST BLAST SURVEY AND MONITORING OF THE EXISTING SEWER LINE ALONG DEER STREET."	

56	All previous TAC comments must still be addressed.	We have submitted a response to all previously received comments. Please let us know if there is a specific comment we need to elaborate on.	
57	Bump outs on other side of Russell are proposed for current bus stop location. Confirm with COAST that this will still work for them, or whether a new bus stop location is needed.	The existing condition has a COAST sign but no formal pull off or shelter. The addition of one would further reduce on street parking.	
58	Is limo parking desired for this project? If not, propose to remove it. Loading zone on Russell is only 20 feet long. It should be at least 60'. Parking, loading and bus stop changes will need approval from PTS and Council.	Limo parking is an existing condition that we a retaining in the proposed condition. We have included two separte areas to be signed for loading only from 6AM-9AM as have been approved on prior devolopments in the City.	
59	Loading may be more useful closer to the hotel on Russell, and on Deer near Portwalk Place	See comment 1.	
60	An R5-1 Do Not Enter sign, an R6-1 ONE WAY sign and an EXCEPT BIKES plaque must be on right hand side of road facing Green Street at end of shared rear travelway.	Sign has been relocated to the righ side of the driveway. We already have a R5-1 and Bike and Pedestrian access signs. EXCEPT BIKES plaque will be added to the Do Not Enter sign. As discussed at the Septemter 6th TAC meeting the R6-1 sign will not be added.	
61	An EXCEPT BIKES plaque must be added below the ONE WAY sign facing the rear garage entrance.	An EXCEPT BIKES plaque will be added below the ONE WAY sign facing the rear garage entrance.	



North End Mixed Use Development
Russell & Deer Street
Portsmouth, NH

Drainage Analysis

Port Harbor Land, LLC

May 24, 2022

Last Revised September 28, 2022

STATE OF NEW HAMPSHIRE
PATRICK
CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
9/28/22

Tighe&Bond

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)

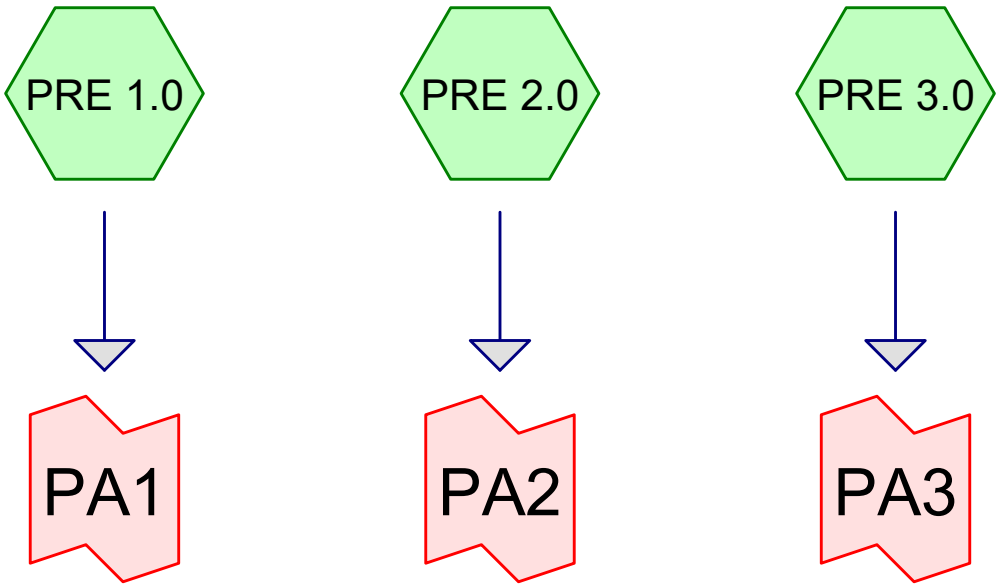
Pre-development Watershed 2.0 (PRE 2.0) is comprised of mainly impervious surfaces from the existing paved parking area with pockets of grass and gravel. Runoff from this watershed area sheets via overland flow to a gravel swale along the railroad tracks. Runoff directed toward the railroad tracks travels 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

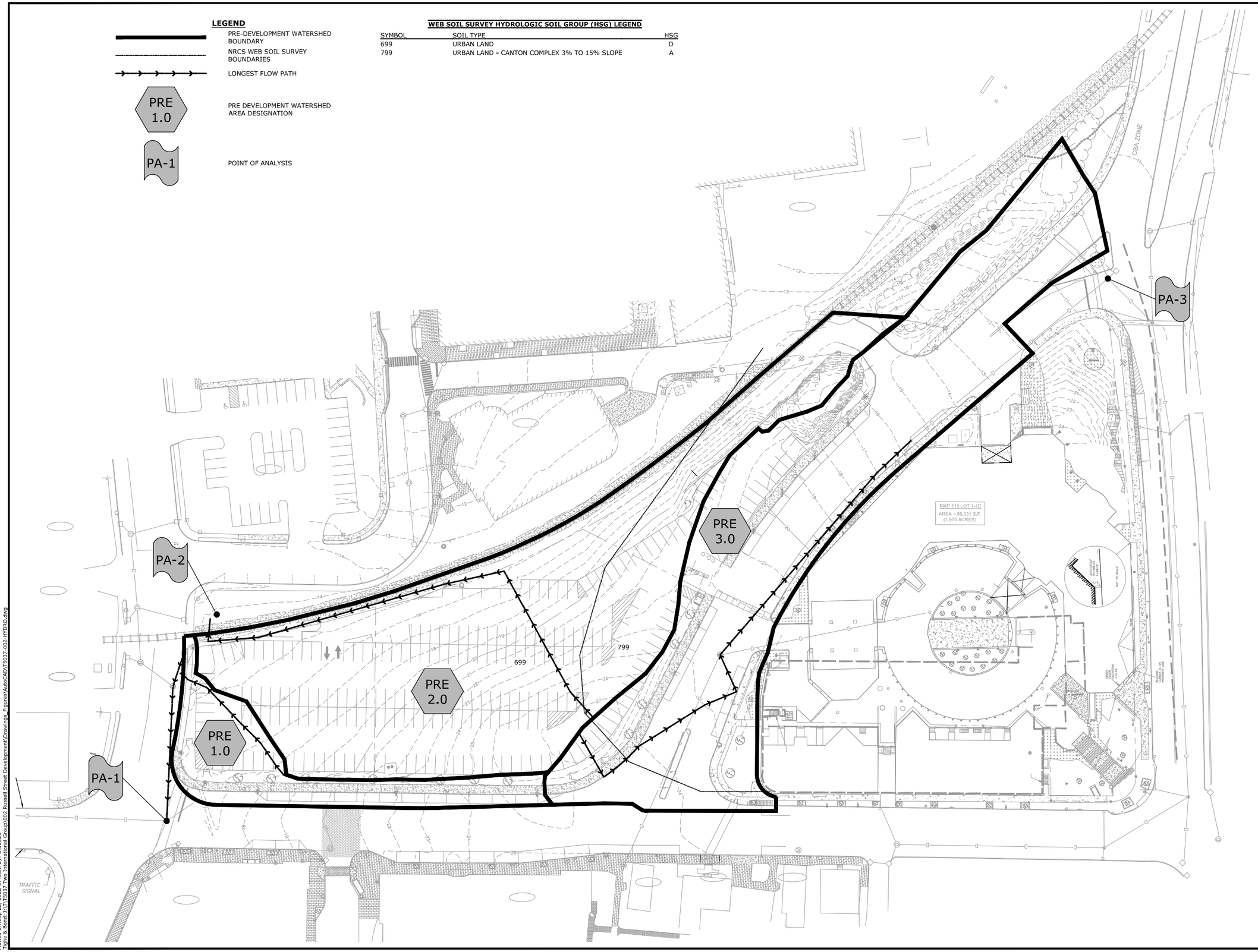
Total Runoff Area = 165,416 sf Runoff Volume = 100,331 cf Average Runoff Depth = 7.28"
22.02% Pervious = 36,421 sf 77.98% Impervious = 128,995 sf

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)

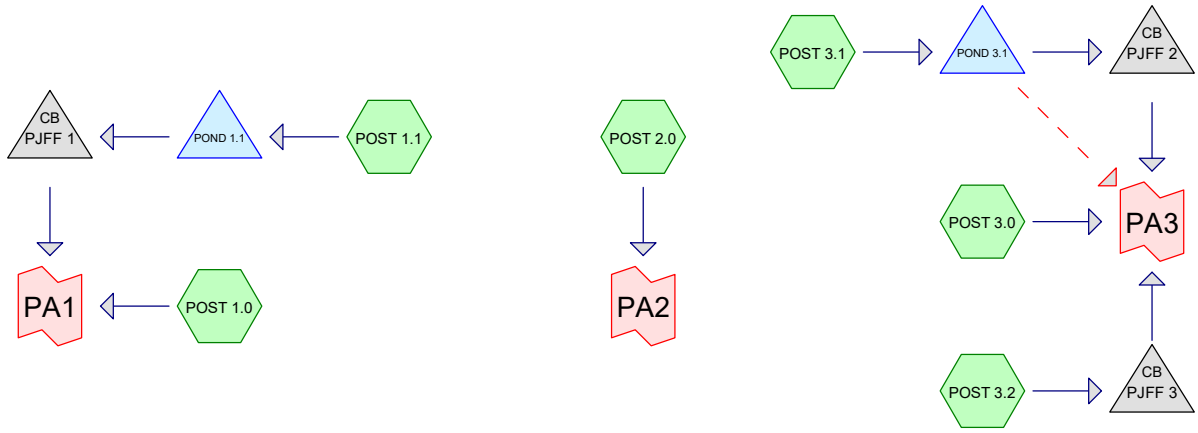
Post-development Watershed 3.0 (POST 3.0) is comprised of mostly impervious surfaces including the proposed realigned Russell Street and sidewalks adjacent to the proposed building. Additionally, there are some small portions of grassed landscaped areas along the street. Runoff from this watershed area 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

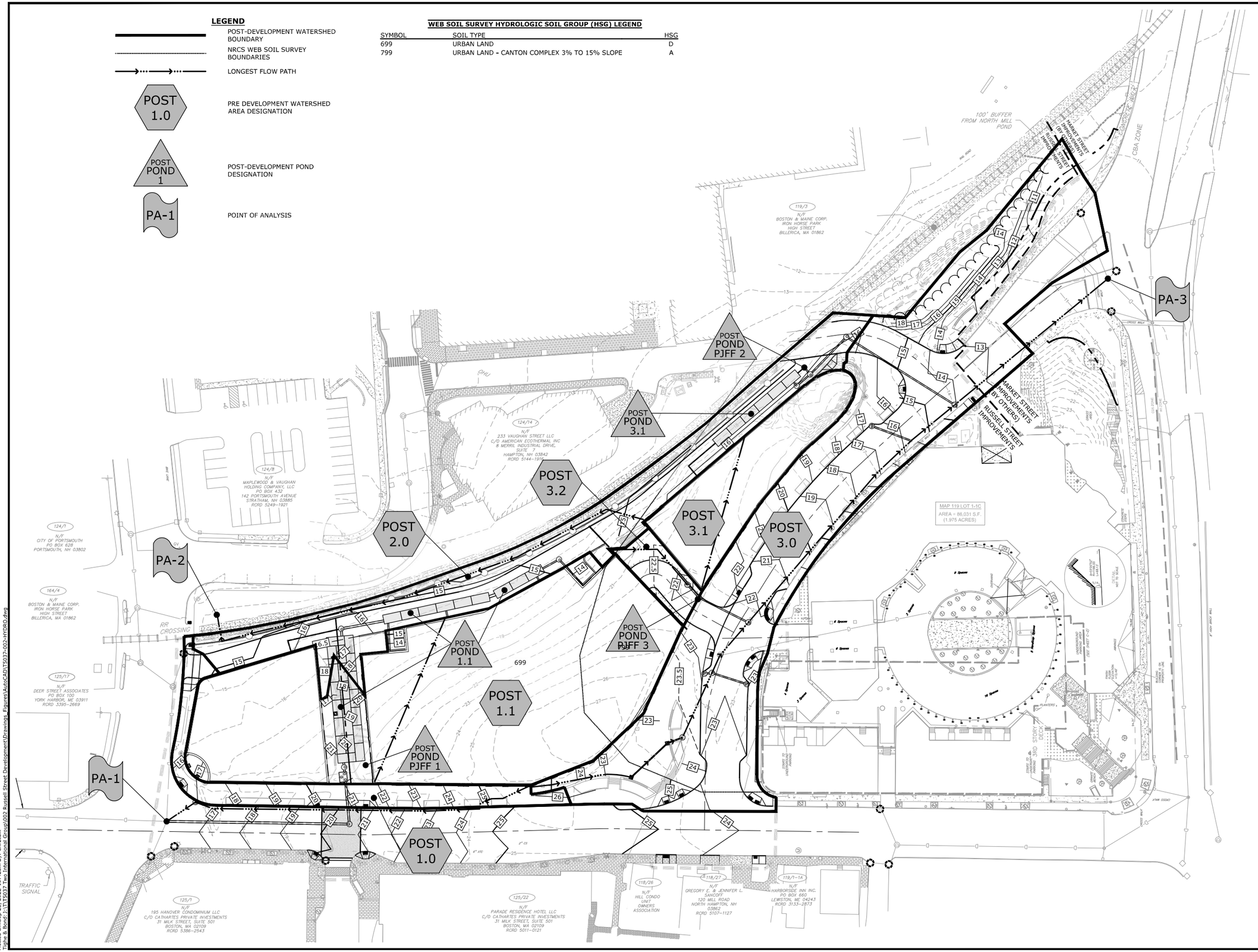
Total Runoff Area = 165,416 sf Runoff Volume = 105,085 cf Average Runoff Depth = 7.62"
14.00% Pervious = 23,165 sf 86.00% Impervious = 142,251 sf

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		
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: 9/22/2022
Plotted: Sep 22, 2022 - 10:43am By: CKrzcuik
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

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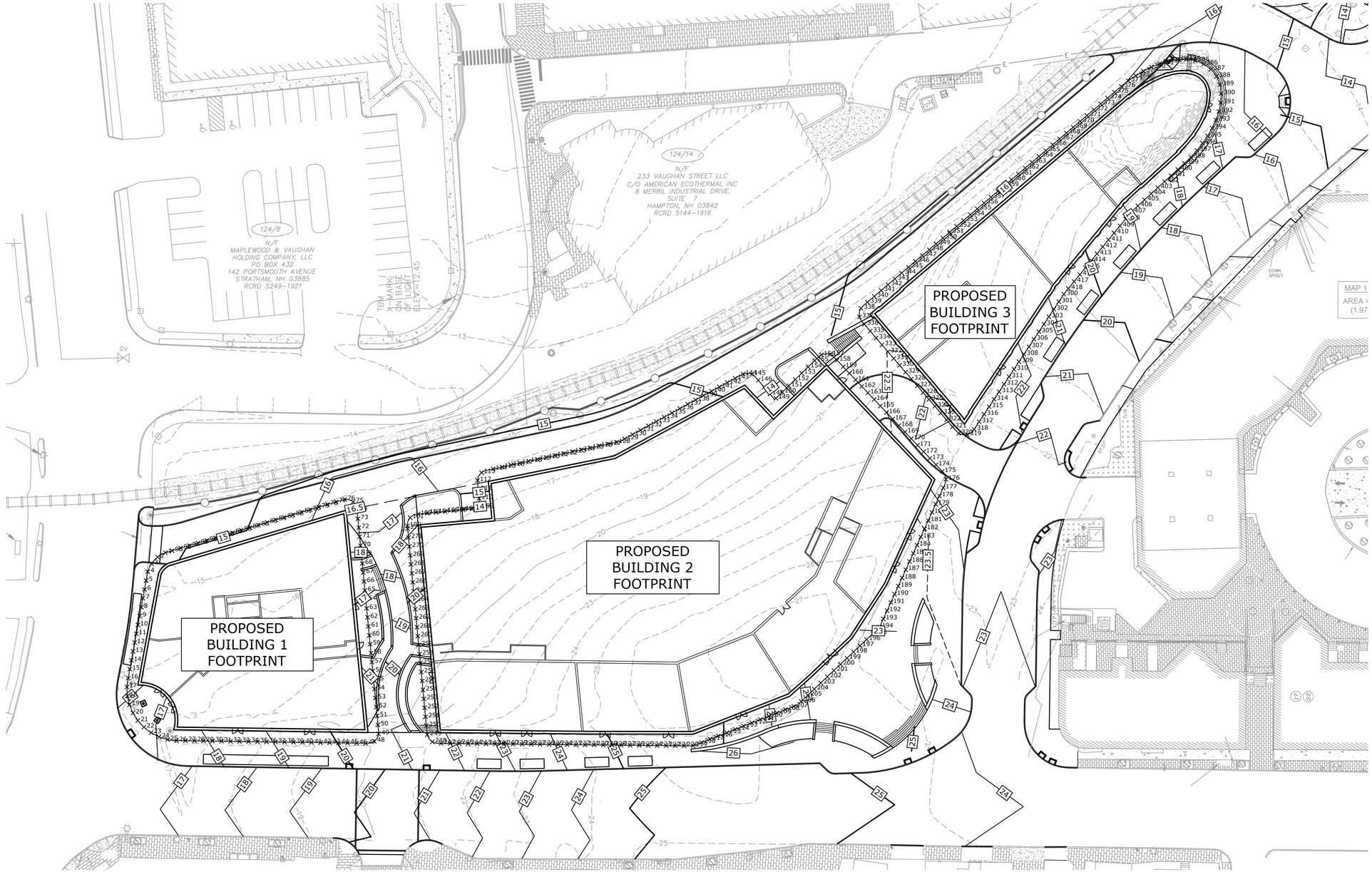
BUILDING 1 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
17.18'	77.18'	74.16'	60.00'	56.98'

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



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September 28, 2022
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Plot Date: Wednesday, September 28, 2022 Plotted By: Colter Krzcuik
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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		21,663 SF
PARK AREA COMMUNITY SPACE		9,765 SF
TOTAL COMMUNITY SPACE AREA	25,221 SF	38,568 SF

CITY RIGHT OF WAY IMPROVEMENTS (NOT INCLUDED IN COMMUNITY SPACE CALCULATION):

PUBLIC REALM IMPROVEMENT WITHIN CITY R.O.W.	23,520 SF

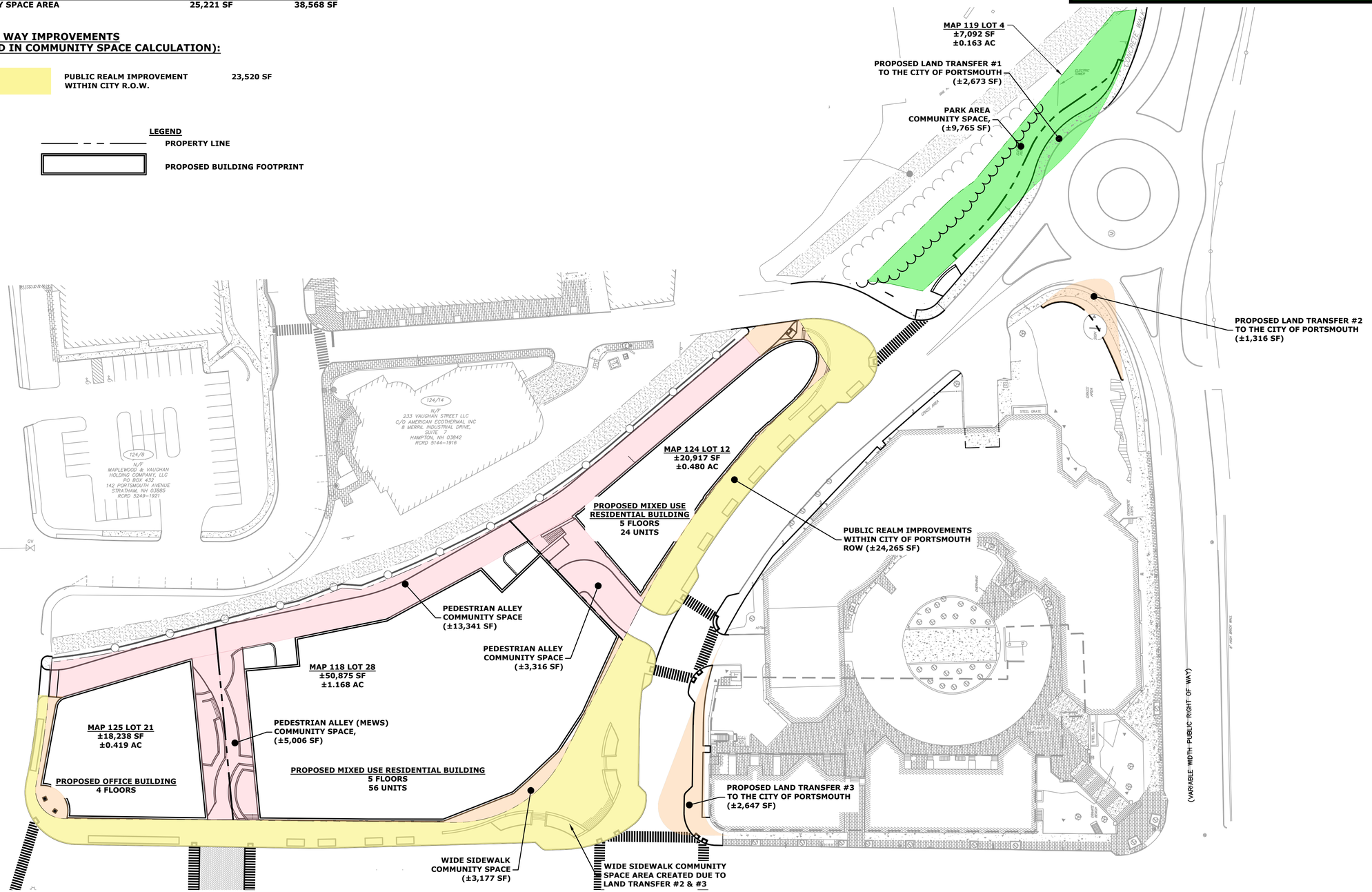
LEGEND

PROPERTY LINE

PROPOSED BUILDING FOOTPRINT

COMMUNITY SPACE:

	REQUIRED	PROPOSED
MAP 125 LOT 21		
DEVELOPMENT LOT AREA: 18,237 SF	3,647 SF, 20%	6,120 SF, 33.6%
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%	23,446 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	38,568 SF, 39.7%



N

0 40' 80'

GRAPHIC SCALE

Tighe&Bond

September 28, 2022
T5037-002-C-DSGN.dwg

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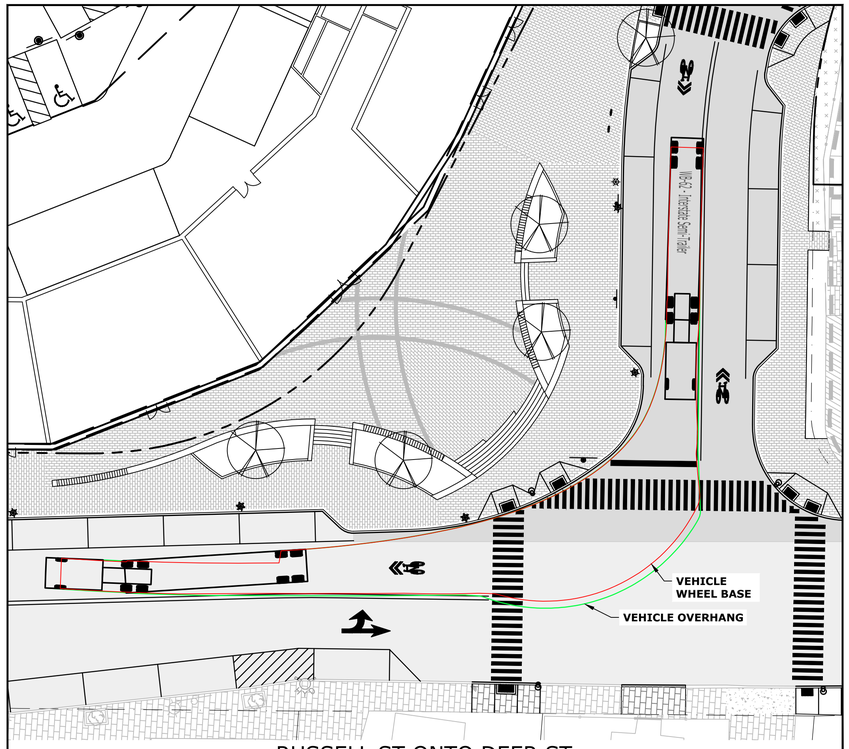
NORTH END MIXED USE DEVELOPMENT
RUSSELL STREET & DEER STREET
PORTSMOUTH, NEW HAMPSHIRE

TRACTOR TRAILER TURNING EXHIBIT

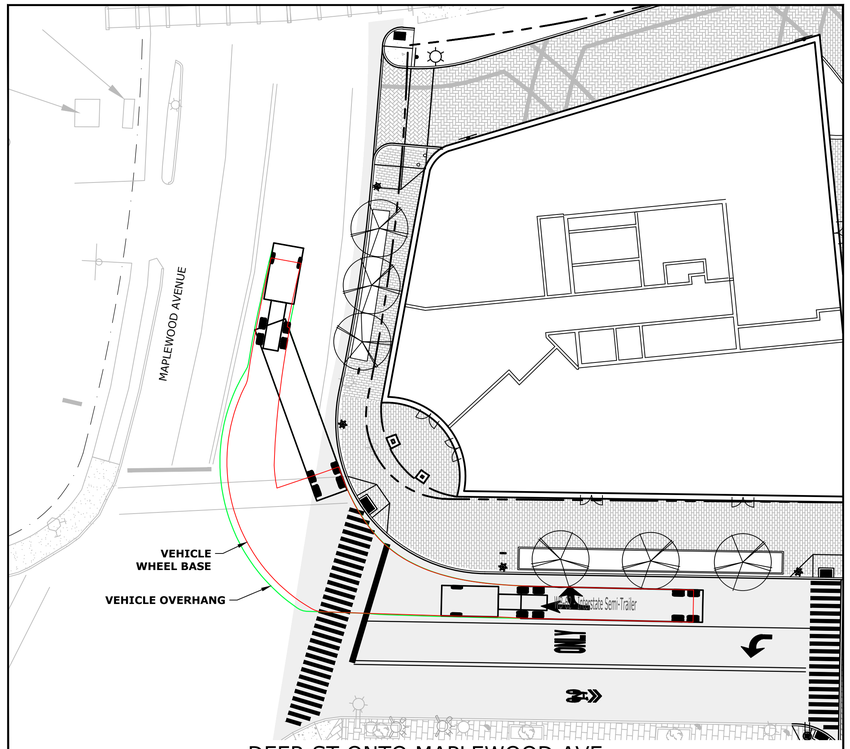
LEGEND

VEHICLE WHEEL BASE

VEHICLE OVERHANG



RUSSELL ST ONTO DEER ST



DEER ST ONTO MAPLEWOOD AVE

N

0 20' 40'

GRAPHIC SCALE

Tighe&Bond

September 28, 2022
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