REGULAR MEETING
CONSERVATION COMMISSION

1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE
EILEEN DONDERO FOLEY COUNCIL CHAMBERS

*Members of the public also have the option to join the meeting over Zoom (See below for more details)**

3:30 P.M. **June 08, 2022**

AGENDA

I. APPROVAL OF MINUTES

1. May 11, 2022

II. WETLAND CONDITIONAL USE PERMITS (NEW BUSINESS)

1. 2255 Lafayette Road
   Mastoran Restaurants, Inc., Owner
   Map 272, Lot 3
   (LU-22-13)

2. 70 Pleasant Point Drive
   Katara, LLC, Owner
   Map 207, Lot 15
   (LU-22-112)

3. 81 Taft Road
   Thomas J. and Angela M. Mita, Owners
   Map 247, Lot 87
   (LU-22-98)

4. 11 Fletcher Street
   Lancen and Sophie Lachance, Owners
   Map 233, Lot 76-1
   (LU-20-42)

5. 230 Commerce Way
   230 Commerce Way, LLC, Owner
   Map 216, Lot 1-5
   (LU-22-14)

III. OTHER BUSINESS

IV. LAND MANAGEMENT OUTREACH

V. ADJOURNMENT

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

https://us06web.zoom.us/webinar/register/WN_Tjkc8HwXStWYgcgBzkSrNQ

MINUTES
CONSERVATION COMMISSION

1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE
EILEEN DONDERO FOLEY COUNCIL CHAMBERS

3:30 P.M. **May 11, 2022**

MEMBERS PRESENT: Chair Barbara McMillan; Vice Chair Samantha Collins; Members; Allison Tanner, Andrew Samonas and Thaddeus Jankowski, Lynn Vaccaro, Abigail Gindele, Alternate and Mika Court, Alternate

MEMBERS ABSENT: Jessica Blasko

ALSO PRESENT: Peter Britz, Environmental Planner/Sustainability Coordinator

I. APPROVAL OF MINUTES

1. April 13, 2022

Chairman McMillan noted that they had a new member, Lynn Vaccaro, joining the Conservation Commission. Also, Henry Mellynchuk has resigned from the Commission due to scheduling conflicts. Ms. Vaccaro, Mr. Jankowski and Vice Chairman Collins were all attending via Zoom.

Mr. Jankowski moved to approve the minutes from the April 13, 2022, Conservation Commission Meeting, as amended, seconded by Ms. Gindele.

Mr. Jankowski noted that the second paragraph on page 8 should say "for the protection of natural and water resources" instead of "to protect City water."

The motion passed by a 5-0-2 vote. Ms. Tanner and Ms. Vaccaro abstained.

Chairman McMillan clarified that Ms. Vaccaro would not be voting today because it was her first meeting. That meant that both Alternate Members would be voting.

II. WETLAND CONDITIONAL USE PERMITS (OLD BUSINESS)

1. 333 Borthwick Avenue
HCA Health Services of NH, Inc. dba Portsmouth Regional Hospital, Owner
Assessor Map 240, Lot 2-1

Chris Acres, Matt Larkin, and Chris Dumont spoke to the application. The proposal is for a radiation oncology addition at Portsmouth Regional Hospital. It's a one-story

addition located on the southeast corner of the hospital. The addition will be in the 100-foot buffer and slightly encroaching in the wetlands themselves. The building is an irregular shape to avoid the Eversource easement. The disturbance includes a few slivers of the buildings and there will also be temporary impacts for construction. They will expand the pond to provide more wetland. The permanent impact is 200 sf. The temporary impact is 4,400 sf. They will be adding 1,150 sf of wetland area. They are adding in the pond to mitigate the impact. Staff recommended approval with two conditions. The first was to provide plantings, which can be added. They will coordinate with Gove Environmental on what plantings to add. The other condition was to add a maintenance plan, which they will include. There will be an erosion control plan to protect the area during construction.

Ms. Tanner questioned what time of year the construction would take place. Mr. Acres responded that they would like to start this summer. Ms. Tanner commented that there was a mallard nesting regularly in that area. It would be good to start after the babies are born.

Ms. Gindele questioned why they didn't add a floor to the recent addition. They could have built up instead of out. Mr. Acres responded that this addition will be next to the imaging center and the addition is for the radiation oncology center. It has an expensive piece of equipment that has to be located on the first floor. Mr. Larkin added that the foundation required for the radiation room is a large cement slab. The weight would not be able to be supported on an upper floor.

Ms. Court commented that the demolition plan shows shrubs and trees being removed. Ms. Court questioned what was going on post construction. Mr. Acres responded that was one of Staff's conditions. They will draft a plan to show plantings that will be added. Mr. Acres spoke with Gove Environmental, and they offered native planting suggestions. Mr. Dumont commented that when they designed the other addition, they had to add support to the first floor so they could add another story. It is not possible to add a third floor.

Ms. Gindele questioned why the fire hydrant was so far back from the sidewalk. Mr. Acres responded that the hydrant was in that location prior to the last addition. They are not proposing to modify anything along there. Mr. Britz commented that the location may have something to do with other utilities in the road.

Ms. Gindele requested clarification on where the wetland impact was. Mr. Acres responded that the only true permanent disturbance was the two slivers of the building.

Ms. Gindele questioned if the wetland stopped right at the wall of the building. Mr. Acres responded that the building would function as a retaining wall. The finished floor is at 27.8, so there will be a 5-foot retaining wall along there. They coordinated with structural engineers on that.

Vice Chairman Collins questioned if the foundation of the proposed expansion would be

able to support upper stories. Mr. Dumont responded that the front portion has been designed to take on additional floors. The area where the radiation equipment is located is not designed to take on additional floors.

Ms. Tanner questioned if they would be including a maintenance plan for the pond. Mr. Acres confirmed they would.

Ms. Court commented that a note on the plan says the value of the wetland is primarily for storm water retention, but it has other significant aspects too. Ms. Court questioned if this was the ideal spot for an expanding hospital. Mr. Acres responded that the red line is edge of the Eversource easement. It takes all the frontage away for buildable land. This corner is the only place to do the addition.

Chairman McMillan questioned if they would expand into the parking lot. Mr. Acres responded that the parking lot was in the easement, so they cannot put a building on the parking lot. Chairman McMillan questioned if they knew what plantings they would be adding. Mr. Acres responded that Gove Environmental had suggested some high bush blueberries and dogwood. Chairman McMillan questioned if they would have those details for the Planning Board. Mr. Acres confirmed that was correct. Chairman McMillan questioned what synthetic hay bales were. Mr. Acres responded that they were an erosion control measure. It has different material wrapped in filter fabric. They don't disintegrate as fast as hay. Mr. Britz questioned if they contained plastic or other harmful materials. Mr. Acres responded that he was not sure of the exact make and material but would follow up. Ms. Court commented that it was probably safe to assume that if they were designed for erosion control, then they were designed to protect the environment. Mr. Acres agreed but noted that he would verify.

Vice Chairman Collins questioned if the Staff stipulations were something that the applicants would work with Mr. Britz on. Mr. Britz confirmed that they would coordinate with him, but the Commission could provide direct input.

Ms. Vaccaro questioned if they still had trouble with flooding in that area. Mr. Larkin responded that they have not had any flooding in that area of the campus at all. Ms. Vaccaro questioned if they had flooding with any part of the campus. Mr. Larkin responded that they did not anymore.

Mr. Jankowski requested to add NOFA standards to the stipulations. They should use organic land management to maintain the property.

Ms. Tanner commented that she was concerned about what synthetic hay bales. Mr. Britz responded that they can add a stipulation that the hay bales should be natural material not synthetic. Mr. Jankowski questioned if they should just require hay bales. Mr. Britz noted that hay bales were not always the best option.

Vice Chairman Collins commented that the edge of the pond looked very manicured and questioned if it could be a more natural area that wasn't mowed with native shrubs.

Chairman McMillan commented that they can relay that to City Staff.

Ms. Gindele commented that there as quite a bit of litter around the pond, and they should add a stipulation to maintain the ponds to prevent that.

Ms. Tanner moved to recommend **approval** of the Wetland Conditional Use Permit to the Planning Board, seconded by Ms. Gindele with the following **stipulations:**

1. The applicant shall include a planting plan (to be approved by the Planning Department).
2. The applicant shall include a maintenance plan (to be approved by the Planning Department).
3. NOFA standards shall be followed and included in the maintenance plan.
4. All erosion control measures shall be made of natural materials.

Vice Chairman Collins commented that they may need to consider moving away from the main campus for future development at the hospital. It's surrounded by the easement and wetlands.

The motion passed by a 6-0-1 vote. Ms. Vaccaro abstained.

III. WETLAND CONDITIONAL USE PERMITS (NEW BUSINESS)

1. 329 Heritage Avenue
City of Portsmouth, Owner
Assessor Map 284, Lot 5

Tyler Reese and Zach Cronin from DPW and Mike Theriault and Jake Shactmen from Wright and Pearce spoke to the application. Mr. Shactmen commented that they were contracted by the City to complete the work for the pump station. There will be some impacts to the buffer. The pump station is on Heritage Ave., and it is necessary to convey the sewage in the system. The existing station is outdated and in need of replacement. The site currently has the pump station, generator, and a shed. Demolition is part of this project. There will not be any direct impacts to the prime wetland. They will be removing 220 sf of impervious surface. The pipe insulation and construction access will be temporary impacts. There will be a permanent impact with a new electrical control cabinet, a new pump station, generator, and driveway. There is also grading necessary for the project. They are proposing to put in wetland plantings where the existing station is to mitigate the impact. There will be a wetland seed mix and native shrubs along the fence line. They are shifting the new pump station over slightly. There will be some storm water improvements with crushed stone and a grass swale. That will help promote infiltration before runoff gets to the wetlands. The fence will shift 10-12 feet to left of the original site.

Ms. Tanner questioned if they were shifting everything further from the wetland. Mr. Shactmen confirmed that was correct.

Vice Chairman Collins questioned if there would be any tree removal. Mr. Shactmen responded that they would mostly be removing brush. There may some small trees but nothing of significance.

Chairman McMillan questioned if they had any invasive species out there. Mr. Theriault responded that an invasive species survey was not conducted as part of the wetland's delineation. Chairman McMillan questioned if they had seen any out there themselves. Mr. Cronin responded that they had not. Chairman McMillan questioned if this site was next to PULA land. Ms. Tanner confirmed it was.

Ms. Court questioned if the new structure was going to look significantly bigger. Mr. Cronin responded that the shed was being removed. There will only be an electrical control panel on a post with a roof.

Mr. Britz confirmed the Mark Jacobs from Gove Environmental did not mention invasive plants in his reports. Chairman McMillan questioned if there was a maintenance plan for the plantings. Mr. Cronin responded that there would be a 1-year maintenance plan to ensure the plants are established.

Ms. Tanner moved to recommend approval of the Wetland Conditional Use Permit to the Planning Board as presented, seconded by Ms. Gindele.

Ms. Tanner commented that she hoped if they found any invasive plants, then they would be removed appropriately.

The motion passed by a 6-0-1 vote. Ms. Vaccaro abstained.

2. 460 F.W Hartford Drive
Joan S. Rice Revocable Trust, Joan S. Rice Trustee, Owner
Assessor 249, Lot 17

John Rice spoke to the application. Mr. Rice adopted a rescue puppy last June and the puppy has already demonstrated that he can blast through an electric fence. The proposal is to put up a physical split rail fence with vinyl mesh in between, so the puppy can run around and remain contained. The wetland buffer runs through the house. Mr. Rice was here 2 years ago for an expansion of their deck. The Commission stipulated plantings with that approval and those are still growing.

Ms. Tanner questioned if a 4-foot fence would be tall enough. Mr. Rice responded that it should be.

Ms. Tanner commented that they should put up signage at the edge of buffer to let people know it's a wetland area. Mr. Britz confirmed he would coordinate with Mr. Rice on that.

Vice Chairman Collins questioned where the gates in the fence would be. Mr. Rice responded that there would be one on either side of the house and one at the back.

Chairman McMillan commented that the application said the fence is 3 feet from the actual wetland. Mr. Rice responded that was a guess because it was hard to determine the edge of the wetland. The fence is hugging the lawn. It should be at least 3 feet away from the edge of the wet.

Chairman McMillan questioned what the access at the back of the fence was for. Chairman McMillan questioned if they could move the fence a little further away from the wetland. Mr. Rice responded that they aligned the fence around a tree in the back and followed the lawn. Mr. Britz confirmed it was hard to tell where edge of the wet was. Chairman McMillan questioned what they would be doing on the other side of the fence. Mr. Rice responded that sometimes they go out to walk around woods, but they are not planning to use that area. Chairman McMillan questioned if there was enough room between the fence and wetland for a lawn mower to get in there. Mr. Rice responded that they aligned the fence the way it is to be able to cut the lawn. Beyond the fence there are ferns.

Ms. Court commented that the fence may provide more of a buffer than not adding one. It will keep the dog out of the wetland. Mr. Rice agreed.

Ms. Gindele moved to recommend approval of the Wetland Conditional Use Permit to the Planning Board as presented, seconded by Ms. Court.

The motion passed by a 6-0-1 vote. Ms. Vaccaro abstained.

IV. OTHER BUSINESS

1. Amendment to Conservation Commission Rules and Procedures:
   Section B. 2. Commission Membership and Officers

Chairman McMillan questioned if Mr. Jankowski wanted to provide more background. Mr. Jankowski commented that he would give more background after the motion.

Mr. Britz commented this change was proposed because when the Commission voted for Chairman and Vice Chairman it was brought to their attention that the rules say it should be conducted by a secret ballot. City Attorney Sullivan noted that was in violation with the right to know law. The proposal is to remove this from the Commission's Rules and Procedures. The only change proposed today is to remove that one section. The rules say that the Rules and Procedures may be amended by a majority vote after the change is publicly notice. They can talk about other changes, but it would need to be noticed before the Commission votes on them.

Ms. Court questioned if the Rules and Procedures document was on their iPad. Mr. Britz responded that it should be on the City's web site.

Chairman McMillan commented that there has been discussion about going through the whole document at some point.

Mr. Jankowski commented that the Commission should look at Chapter 9 1A Access to Government Records and Meetings. The first two sentences of the second paragraph is the whole point of this discussion. In 2021 when they elected the chairperson they specifically discussed if it should be a secret ballot or not. The Commission decided not to do one. This year the election was rushed through. Mr. Jankowski questioned City Attorney Sullivan on his interpretation of the rule. RSA 91A2 says no vote in open session may be taken in a secret ballot period except for town meetings, school district meetings, and elections. City Attorney Sullivan interpreted the elections to be for City Council level. Mr. Jankowski responded that he went to municipal lawyers and a city judge with this question. They explained election is open for interpretation. Mr. Jankowski did not think they had to change anything. They just need to discuss if they are going have a secret ballot or not next January. City Attorney Sullivan's interpretation is wrong.

Ms. Tanner commented that they have always had an open vote and should continue that. There is no reason to change it now. They should delete the line in the rules.

Ms. Court commented that she did not entirely understand the problem and questioned if the only thing they were discussing was the secret ballot issue. Ms. Court commented that it seemed like there was some contention around the election and she may be missing some history with the situation. Chairman McMillan commented that they have never held a secret ballot and the rule was not brought to their attention until after the election. Ms. Court questioned if the proposal was to change it. Chairman McMillan confirmed that the proposal was to remove the sentence referencing the secret ballot at the recommendation of the City Attorney. Chairman McMillan also talked to the Association Conservation Commission District's Director, and she made the recommendation to remove it as well. The public should know who is voting for who. There should be full disclosure.

Vice Chairman Collins agreed with removing it so there would not be any ambiguity around what the Commission was doing year to year. When it is time to elect officers, they should go through the procedure to make the steps clear before going straight to the motions and voting. They only do it once a year so it would be good to refresh everyone's memory.

Ms. Court questioned if there had ever been a secret ballot. Ms. Tanner responded that she had been on the Commission for 30 years. There has never been a secret ballot.

Mr. Jankowski commented that Ms. Court was not invited to the January meeting but was appointed as a member of the Conservation Commission in December. She should have been there. Mr. Britz responded that Ms. Court had not signed the book to be a member at that time. Ms. Tanner added that when a member is approved, they get a note in the mail telling them to come in and sign the book.

Ms. Gindele commented that she was proactive, so she could go to the December and January Ms. Gindele did not get a letter in the mail. Ms. Court noted that it seemed like they were talking about two different questions. Ms. Court did receive a letter, but could not comment on the timing. That is a separate question from the proposed edit.

Ms. Tanner commented that it may be an issue for new members to have a vote on officers. They have no idea what the Commission does or how it conducts business. Ms. Gindele commented that she abstained from every vote in the December meeting. Ms. Gindele did not have a strong opinion on the secret ballot edit. The election in January would have been clearer if they had all the choices presented and then decided. A motion was made immediately and then they voted. It was very fast, and Ms. Gindele felt blindsided. Ms. Tanner commented that this was the first time there have been people vying for the same position. Chairman McMillan added that she did not know there was additional interest until the night before.

Chairman McMillan commented that City Attorney Sullivan came in for a review and confirmed they did follow the procedure. There was a motion, and in the discussion, they talked about Mr. Jankowski's interest. Then the Commission voted. If that motion had failed, then another motion could have been made.

Ms. Court questioned if new members always joined in January. Ms. Tanner responded that was not the case. This year was a coincidence that there were new members and the election around the same time. Several members on the Commission renew their membership in April. It depends on when people leave and join. Mr. Britz commented that the rules say the election is in January.

Vice Chairman Collins questioned if the election happened annually. Mr. Britz confirmed that was correct.

Chairman McMillan commented that they should make a motion and then continue discussion

Ms. Court commented that she supported the change. A lack of transparency can create more of an opportunity for corruption.

Ms. Court moved to eliminate the language regarding secret ballots at the time of electing officers, seconded by Ms. Tanner.

The motion passed by a 5-1-1 vote. Ms. Vaccaro abstained, and Mr. Jankowski opposed.

Mr. Britz commented that he would send around the new flier from public works. It follows the information from Providence's lawn campaign.

Ms. Tanner commented that they have talked about putting up a sign at Home Depot and other places that sell pesticides and herbicides. There are towns that have instituted policies about not selling those products and retailers have been advertising that they don't sell products harmful to the environment.

Mr. Jankowski commented that one of the reasons he got on the Conservation Commission was to push an organic lawn care education program. City Council passed an initiative to do organic lawn care and asked the Commission to make a recommendation. Mr. Jankowski has been following up with Mr. Goetz this. They have not done enough to educate the public on the

dangers of this. They need to encourage people to use organic lawn care. Chairman McMillan commented that they emailed the draft of the flier. Mr. Jankowski commented that the successful part of the Providence program was for people to pledge following an organic land program and display a sign on their lawn. That pressures people to talk about it and start a movement. It would be good to educate people to hire landscapers who are accredited through NOFA. There are a number of accredited landscapers out there. Ms. Court agreed it would be good to educate people on land care management. Towns that take a leadership role in organic land management set a good example. Ms. Court was in a regenerative gardening group and they work to educate each other.

Mr. Britz commented that the Providence program was a grant program. They will send out the DPW flier that has the information from that program in it. They can look at a grant program, but after talking to Providence they found only a few people actually put signs up. They need neighborhoods to talk with each other. It is not fair to say the City is not doing its job. The City can't make people do organic land care unless they pass a law. They can only do so much as a City government. It is important to have groups in the community like the regenerative gardening group and other groups for people to participate in as a way to get things going. There needs to be meaningful work to encourage people to do things. It is important to look at ways to build support instead of pointing fingers of who is not doing enough. The Commission works to mitigate impacts and adapt to changes in the law and environment. They need to do a lot of work there.

Ms. Court commented that they should be working with the schools on education and programming. Ms. Tanner commented that the High School had an Eco Club she could connect with. Ms. Tanner was also part of the Portsmouth Climate Solutions Group and they meet every Wednesday at 7 p.m. If people were looking at other ways to get involved, then she could send them the meeting link. Ms. Gindele agreed connecting with the schools was a good idea. Mr. Britz commented that there were a lot of different efforts at the school already. Ms. Court would have to talk to the teachers and principals there to find out what they were doing.

Ms. Tanner commented that this all fell under the umbrella of how to build support on climate issues, and how to get people involved. Chairman McMillan commented that they could work further on this in a subcommittee. Mr. Britz noted that it doesn't' just have to be the City setting this up. Ms. Tanner agreed that it did not have to be only the Conservation Commission. There are plenty of other groups in the City as well. Chairman McMillan commented that Mr. Jankowski should check in with Mr. Goetz again and they can figure out a subcommittee or two.

Chairman McMillan commented that she and Mr. Britz were contacted by the UNH Cooperative Extension and CAWS. They are looking for towns to participate in a coastal flood risk guidance program. It's a grant project, and Chairman McMillan noted she would bring more information back to the Commission at a future meeting.

V. ADJOURNMENT

Ms. Tanner moved to adjourn at 5:39 p.m., seconded by Ms. Gindele. The motion passed unanimously.

Respectfully submitted,

Becky Frey,
Secretary for the Conservation Commission

February 14, 2022

Portsmouth Conservation Commission
1 Junkins Ave
Portsmouth, NH 03801

SUBJECT: Wetland Buffer Conditional Use Request
Granite State Convenience
Proposed Retail Motor Fuel Outlet
2255 Lafayette Road
Map 272 Lot 3

Dear Members of the Portsmouth Conservation Commission:

On behalf of Granite State Convenience **Greenman-Pedersen, Inc. (GPI)** is hereby requesting a Wetland Buffer Conditional Use Permit from the Portsmouth Conservation Commission for the following:

- **Article 10.1016** to allow development within the wetland buffer zone

The project site consists of one parcel identified as Map 272 Lot 3 which totals approximately 2.571 acres. The site is bordered by Lafayette Road (Route 1) to the northwest, commercial properties to the northeast and southwest and wooded areas containing wetlands to the south and southeast. The site is previously developed and contains a Burger King restaurant with drive-thru, which is currently not in use, and associated paved parking lot and driveways to Lafayette Road. The majority of the lot is paved and on-site drainage structures are limited to a single catch basin in the landscaped area northwest of the existing building which had no visible pipe outlet at the time of survey. Granite State Convenience is proposing to raze the existing restaurant and construct a retail motor fuel outlet consisting of a 5,555 sf convenience store/sandwich shop with drive-through service and a fueling canopy with 5 retail fuel dispenser islands (10 fueling locations), and associated paved driveways and parking.

This request is made in accordance with the provisions contained in Article 10.1017.50 of the City of Portsmouth Zoning Ordinance. GPI is providing the following information in support of the criteria listed in that Section:

Any proposed development, other than installation of utilities within a right-of-way, shall comply with all of the following criteria:

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

The land has previously been disturbed for a similar use.

The proposed development will consist of razing the existing fast food restaurant and removing 59,940 sf of impervious pavement and concrete, and constructing a development with a smaller development footprint. In addition, approximately 9,000 sf of current impervious area will be restored to its natural state with the proposed development.

The majority of the wetland buffer disturbance area is within the buffer to a swale between the site and the neighboring property to the east. This swale conveys water from the NH DOT drainage system.

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

The site has been designed in a way that minimizes activity in the wetland buffer area. The total impervious area within the wetland buffer will be decreased by over 9,000 sf between the existing and proposed use. The distance between the developed area will increase from 10 ft to the dumpster and 14 ft to paved surfaces in the existing condition to 25 ft in the proposed condition.

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

As stated in criterion 3, the proposed development will decrease impervious cover within the wetland buffer area and increase wetland buffer widths. The proposed development also includes a comprehensive stormwater management system which will decrease the pollutant load to the wetland by installing deep sump catch basins with "Eliminator" oil hoods, first defense hydrodynamic separator unit, and an oil/water separator tank.

(4) Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals; and

There will be no alteration to natural vegetative state in the wetland buffer as all work will occur in previously disturbed areas.

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

The proposed site work has been designed to have the least adverse impact to the wetland buffer. Per Conservation Commission comments on the Preliminary Site Plan, the underground storage tanks have been shifted to the west side of the lot furthest away from the wetland and outside the wetland buffer, the loading zone has been relocated to the westerly side of the property so the southern edge of the development can shift further out of the wetland buffer, and parking spaces have been eliminated on the eastern side of the development. In addition, as recommended by the Conservation Commission, a depressed area has been created along the northeast of the site to collect and filter snowmelt from snow storage to snowmelt from directly entering the wetland.

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

A portion of the previously disturbed area within the wetland buffer will be restored to a natural state as a part of this project.

If you have any questions or need additional information, please feel free to contact me directly at 603-374-7906 or by email at nduquette@gpinet.com

Sincerely,

Nicole Duquette

Nicole Duquette, LEED AP
Project Manager

enclosure(s)

cc: Brad Pernaw, Granite State Convenience

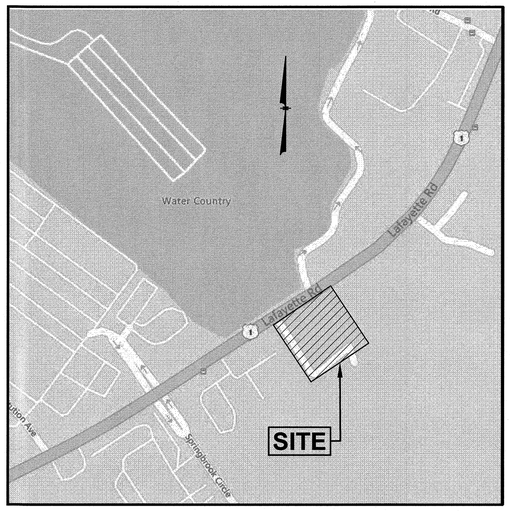
PROPOSED RETAIL MOTOR FUEL OUTLET
SITE REDEVELOPMENT PLANS

for

ASSESSORS MAP 272 LOT 3
2255 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

Prepared for:

GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH 03106



LOCATION MAP
(NOT TO SCALE)

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15. SIGN & GRAPHICS PLAN

1 OF 1. TRUCK TURN PLAN
1 OF 2. LIGHTING PLAN (RL-7838-S1)
2 OF 2. LIGHTING DETAILS (RL-7838-S1)
1 OF 2. EXTERIOR ELEVATIONS (P201)
2 OF 2. EXTERIOR ELEVATIONS (P202)
1 OF 1. PROPOSED CANOPY ELEVATIONS

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE
CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD
PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON
No. 17099
LICENSED
PROFESSIONAL ENGINEER
5/24/22

REVISIONS		
4	REV. SHEETS 4-8, TT	5/10/22
3	REV. SHEETS 4-8, 12, 14, TT, ADD SHEET 13	4/19/22
2	REV. SHEETS 2-9, 11, TT	3/22/22
1	REV. SHEET 4	2/9/22
NO.	REVISION	DATE

JANUARY 26, 2022

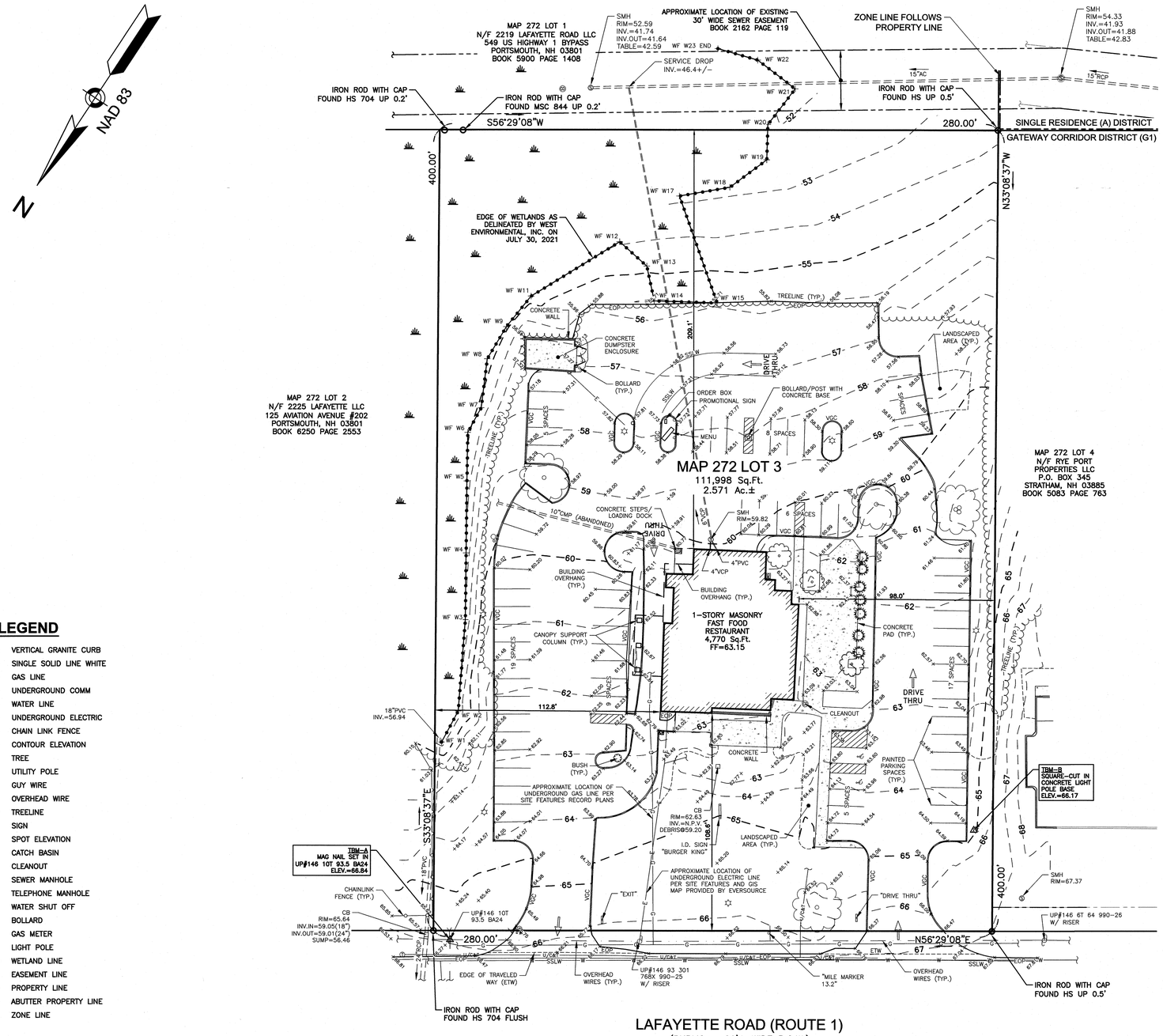
DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

TITLE SHEET

SCALE: NOT TO SCALE

PROJECT NO. NEX-2021163

F:\Projects\NEX-2021163 - Portsmouth, NH - CSC\CAD Files\21163_CVR.dwg CVR 5/24/22 4:56pm emason



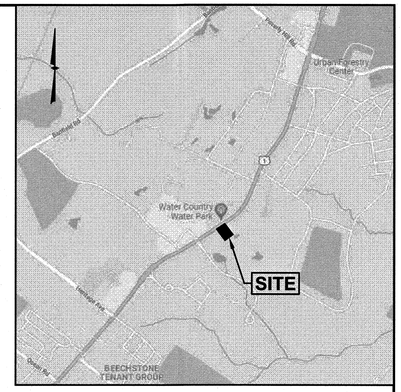
LEGEND

- VGC — VERTICAL GRANITE CURB
- SSLW — SINGLE SOLID LINE WHITE
- G — GAS LINE
- U/C&T — UNDERGROUND COMM
- W — WATER LINE
- E — UNDERGROUND ELECTRIC
- CHAIN LINK FENCE
- 90 — CONTOUR ELEVATION
- TREE
- UTILITY POLE
- GUY WIRE
- OVERHEAD WIRE
- TREELINE
- SIGN
- 68.69 — SPOT ELEVATION
- CATCH BASIN
- CLEANOUT
- SEWER MANHOLE
- TELEPHONE MANHOLE
- WATER SHUT OFF
- BOLLARD
- GM — GAS METER
- LIGHT POLE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- ABUTTER PROPERTY LINE
- ZONE LINE

PLAN REFERENCES:

ROCKINGHAM COUNTY REGISTRY OF DEEDS

1) R.C.R.D. PLAN D-33166
2) R.C.R.D. PLAN D-37134
3) R.C.R.D. PLAN D-20705
4) R.C.R.D. PLAN D-15321
5) R.C.R.D. PLAN C-3702
6) R.C.R.D. PLAN C-7649
7) R.C.R.D. PLAN D-41895



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) ZONE: GATEWAY CORRIDOR DISTRICT (G1)
   MIN. LOT SIZE: 1 ACRE
   SETBACKS:
   FRONT 70' TO 90' FROM CENTER OF LAFAYETTE RD
   SIDE 10 Ft.
   REAR 15 Ft.
   REFER TO THE CITY OF PORTSMOUTH ZONING ORDINANCE FOR VERIFICATION, ADDITIONAL RESTRICTIONS AND PERMITTED USES. THE ZONING INFORMATION SHOWN HEREON IS BASED ON A REVIEW OF THE PORTSMOUTH ZONING ORDINANCE.
2) THIS PLAN IS THE RESULT OF AN ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN AUGUST 10 AND NOVEMBER 3, 2021.
3) WETLAND FLAGS WERE DELINEATED BY WEST ENVIRONMENTAL, INC. ON JULY 30, 2021 AND LOCATED BY THIS OFFICE.
4) BEARINGS SHOWN HEREON ARE BASED ON NAD83 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON AUGUST 16, 2021.
5) ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON AUGUST 16, 2021.
6) LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE ONLY. ADDITIONAL UNDERGROUND UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED. INVERTS ARE LISTED IN A CLOCKWISE DIRECTION ENDING WITH THE INVERT OUT (UNLESS OTHERWISE NOTED).
7) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33015C0270F, WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.
8) A TOTAL OF 73 (71 REGULAR, 2 ACCESSIBLE) CLEARLY IDENTIFIABLE PARKING SPACES WERE OBSERVED IN CONDUCTING THIS SURVEY.

WETLAND NOTES

WETLANDS WERE DELINEATED BY WEST ENVIRONMENTAL, INC. ON JULY 30, 2021 UTILIZING THE FOLLOWING STANDARDS:

1) US ARMY CORPS OF ENGINEERS INTERIM REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, TECHNICAL REPORT ERDC/EL TR-09-19 (OCT 2009).
2) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 7.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2010).
3) NORTH AMERICAN DIGITAL FLORA: NATIONAL WETLAND PLANT LIST, VERSION 2.2.1 (2009).
4) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1979).

STATE OF NEW HAMPSHIRE MARK WEST 1-25-22 No. 010 CERTIFIED WETLAND SCIENTIST

OWNER OF RECORD:

MAP 272 LOT 3
MASTORAN RESTAURANTS, INC.
822 LEXINGTON STREET
WALTHAM, MA 02154
BOOK 3572 PAGE 199

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE No. 838 DAVID R. JORDAN LAND SURVEYOR SIGNATURE 4/19/22

REVISIONS		
1	REVISE SEWER	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
AKC	DRJ

EXISTING CONDITIONS PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2021163

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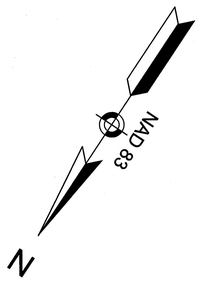

LEGEND

- VGC — VERTICAL GRANITE CURB
- SSLW — SINGLE SOLID LINE WHITE
- G — GAS LINE
- U/GRT — UNDERGROUND COMM
- W — WATER LINE
- E — UNDERGROUND ELECTRIC
- CHAIN LINK FENCE
- 90 — CONTOUR ELEVATION
- TREE
- UTILITY POLE
- GUY WIRE
- OVERHEAD WIRE
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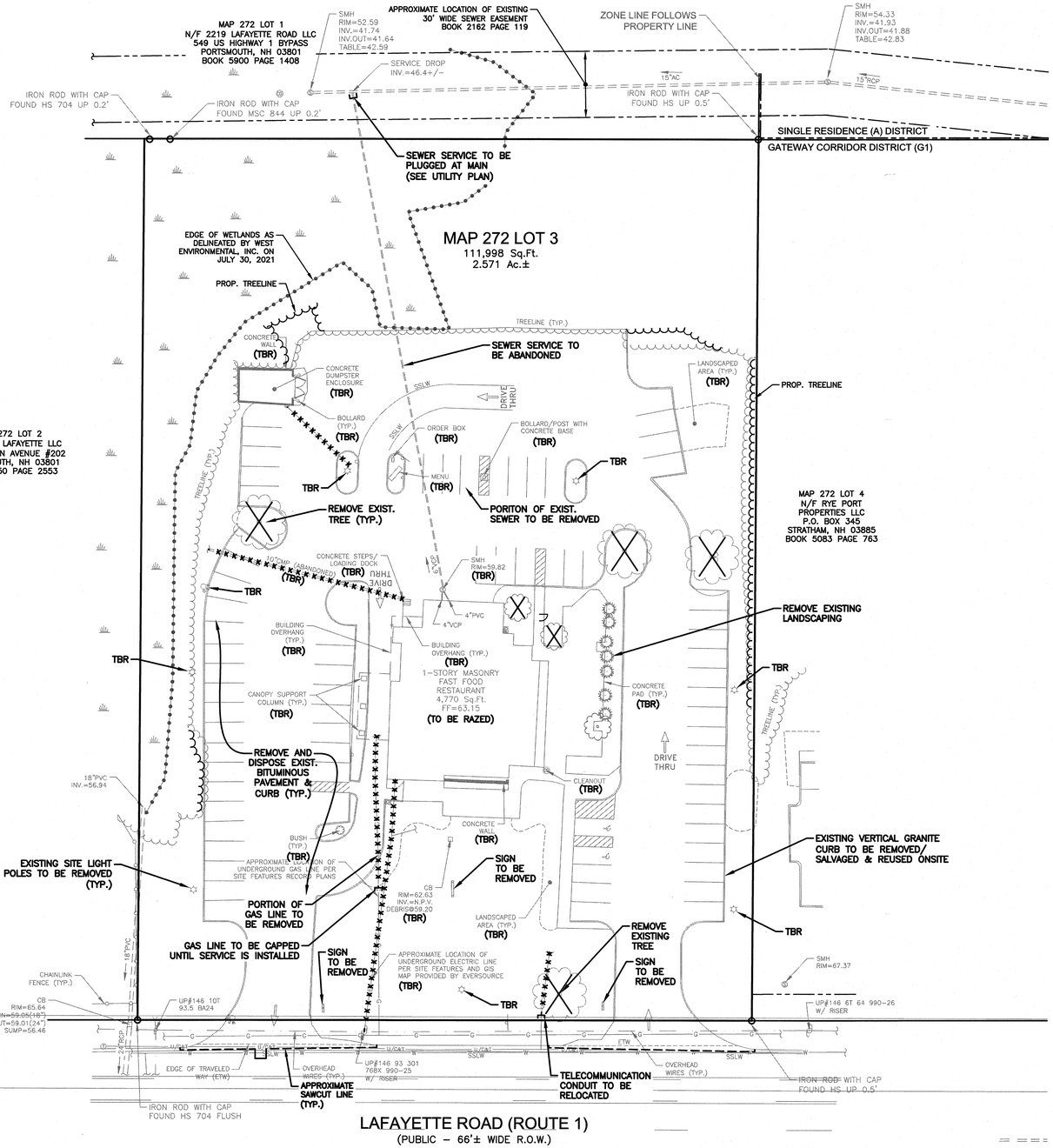
- +145.69 — SPOT ELEVATION
- CATCH BASIN
- CLEANOUT
- SEWER MANHOLE
- TELEPHONE MANHOLE
- WATER SHUT OFF
- BOLLARD
- GM — GAS METER
- LIGHT POLE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- ABUTTER PROPERTY LINE
- ZONE LINE
- TBR — TO BE REMOVED
- TBR — TO BE REMOVED



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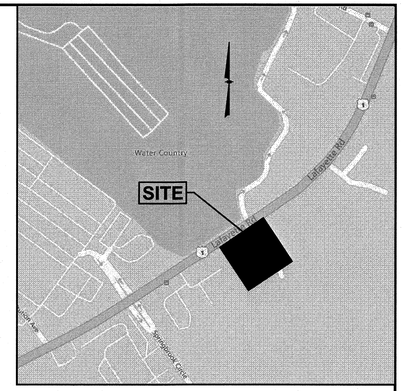
SCALE: 1" = 30'



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) A DEMOLITION PERMIT MUST BE OBTAINED FROM THE CITY OF PORTSMOUTH PRIOR TO COMMENCEMENT OF WORK. ALL EXISTING UTILITY DISCONNECTIONS MUST BE COORDINATED WITH RESPECTIVE UTILITY COMPANIES.
2) ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN STRICT ADHERENCE TO ALL FEDERAL, STATE AND LOCAL REGULATIONS. CONTRACTOR TO INSTALL EROSION CONTROL DEVICES IN ACCORDANCE WITH EROSION AND SEDIMENT CONTROL PLAN PRIOR TO BEGINNING DEMOLITION ACTIVITIES.
3) PROCEED WITH DEMOLITION IN A SYSTEMATIC MANNER, FROM THE TOP OF THE STRUCTURE(S) TO THE GROUND.
4) DEMOLISH CONCRETE IN ALL SECTIONS
5) BREAK UP CONCRETE SLABS-ON-GRADE, UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER.
6) CONDUCT ALL DEMOLITION OPERATIONS IN A MANNER THAT WILL PREVENT INJURY, DAMAGE TO STRUCTURES, ADJACENT BUILDINGS AND ALL PERSONS.
7) REFRAIN FROM USING EXPLOSIVES WITHOUT PRIOR WRITTEN CONSENT OF THE DEVELOPER AND APPLICABLE GOVERNMENTAL AUTHORITIES.
8) CONDUCT DEMOLITION SERVICES IN SUCH A MANNER TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT PRIOR WRITTEN PERMISSION OF THE DEVELOPER AND APPLICABLE GOVERNMENTAL AUTHORITIES. PROVIDE ALTERNATIVE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY APPLICABLE GOVERNMENTAL REGULATIONS.
9) USE WATERING, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS, AS NECESSARY TO LIMIT THE AMOUNT OF DUST AND DIRT RISING AND SCATTERING IN THE AIR. CLEAN ADJACENT STRUCTURE AND IMPROVEMENTS OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. RETURN ALL ADJACENT AREAS TO THE CONDITIONS EXISTING PRIOR TO THE START OF WORK.
10) ACCOMPLISH AND PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
11) COMPLETELY FILL BELOW GRADE AREAS AND VOIDS RESULTING FROM THE DEMOLITION OF STRUCTURES AND FOUNDATIONS WITH SOIL MATERIALS CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS AND OTHER ORGANIC MATTER. STONES USED WILL NOT BE LARGER THAT 6 INCHES IN DIMENSION. MATERIAL FROM DEMOLITION MAY NOT BE USED AS FILL. PRIOR TO PLACEMENT OF FILL MATERIALS, UNDERTAKE ALL NECESSARY ACTION IN ORDER TO INSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROZEN MATERIAL, TRASH, DEBRIS. PLACE FILL MATERIALS LAYERS NOT EXCEEDING 6 INCHES IN LOOSE DEPTH AND COMPACT EACH LAYER AT PLACEMENT TO 95% OPTIMUM DENSITY, GRADE SURFACE TO MEET ADJACENT CONTOURS AND TO PROVIDE SURFACE DRAINAGE.
12) REMOVE FROM THE DESIGNATED SITE, AT THE EARLIEST POSSIBLE TIME, ALL DEBRIS RUBBISH, SALVAGEABLE ITEMS, HAZARDOUS AND COMBUSTIBLE SERVICES. REMOVED MATERIALS MAY NOT BE STORED, SOLD OR BURNED ON SITE. REMOVAL OF HAZARDOUS AND COMBUSTIBLE MATERIALS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PROCEDURES AS AUTHORIZED BY THE FIRE DEPARTMENT OR OTHER APPROPRIATE REGULATORY AGENCIES AND DEPARTMENTS.
13) DISCONNECT, SHUT OFF AND SEAL ALL UTILITIES SERVING THE STRUCTURE(S) TO BE DEMOLISHED BEFORE THE COMMENCEMENT OF THE DESIGNATED DEMOLITION. MARK FOR POSITION ALL UTILITY DRAINAGE AND SANITARY LINES AND PROTECT ALL ACTIVE LINES. CLEARLY IDENTIFY BEFORE THE COMMENCEMENT OF DEMOLITION SERVICES THE REQUIRED INTERRUPTION OF ACTIVE SYSTEMS THAT MAY AFFECT OTHER PARTIES, AND NOTIFY ALL APPLICABLE UTILITY COMPANIES TO INSURE THE CONTINUATION OF SERVICE.
14) PROTECT EXISTING DRAINAGE SYSTEM(S) AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING DURING CONSTRUCTION. SEE DETAIL SHEETS FOR EROSION CONTROL DEVICES.
15) ALL WORK WITHIN ROADWAY RIGHT-OF-WAYS TO CONFORM TO CITY STANDARDS.
16) THE LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION OR SITE CLEARING.
17) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY DIG SAFE (DIAL 811) 72 HOURS PRIOR TO ANY EXCAVATION ON THIS SITE. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER DEPARTMENT TO MARK OUT THEIR UTILITIES.
18) NOTES ON THIS PLAN THAT READ "TBR" REPRESENT FEATURES TO BE REMOVED. ANY FEATURES NOT LABELED "TBR" OR "TO BE REMOVED" SHALL BE CONSIDERED EXISTING TO REMAIN.
19) EXISTING WATER SERVICE LOCATION IS UNKNOWN. CONTRACTOR TO LOCATE AND DISCONTINUE SERVICE AT THE MAIN.

SEE EROSION & SEDIMENT CONTROL PLAN FOR CONSTRUCTION SEQUENCE, TEMPORARY EROSION CONTROL MEASURES, AND LOCATION OF EROSION CONTROL DEVICES. SEE LANDSCAPE PLAN FOR LIMITS OF CLEARING.

811 DigSafe MA-ME-NH-RI-VT

GPI Engineering Design Planning Construction Management
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Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON No.17099
LICENSED PROFESSIONAL ENGINEER
4/19/22

REVISIONS		
2	MISC. REVISIONS	4/19/22
1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

DEMOLITION PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2021163

3 OF 15

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SIGN KEY

SIGN I.D. NUMBER	TEXT/COLOR	SIZE/REMARKS
R1-1	STOP R/W	30" x 30" NEW SIGN WITH POST
R5-1	DO NOT ENTER R/W	30" x 30" NEW SIGN WITH POST
R7-8	RESERVED PARKING G/B/W	12" x 18" NEW SIGN WITH POST
R7-8A	VAN ACCESSIBLE G/W	6" X 12"

SITE COMPARISON TABLE

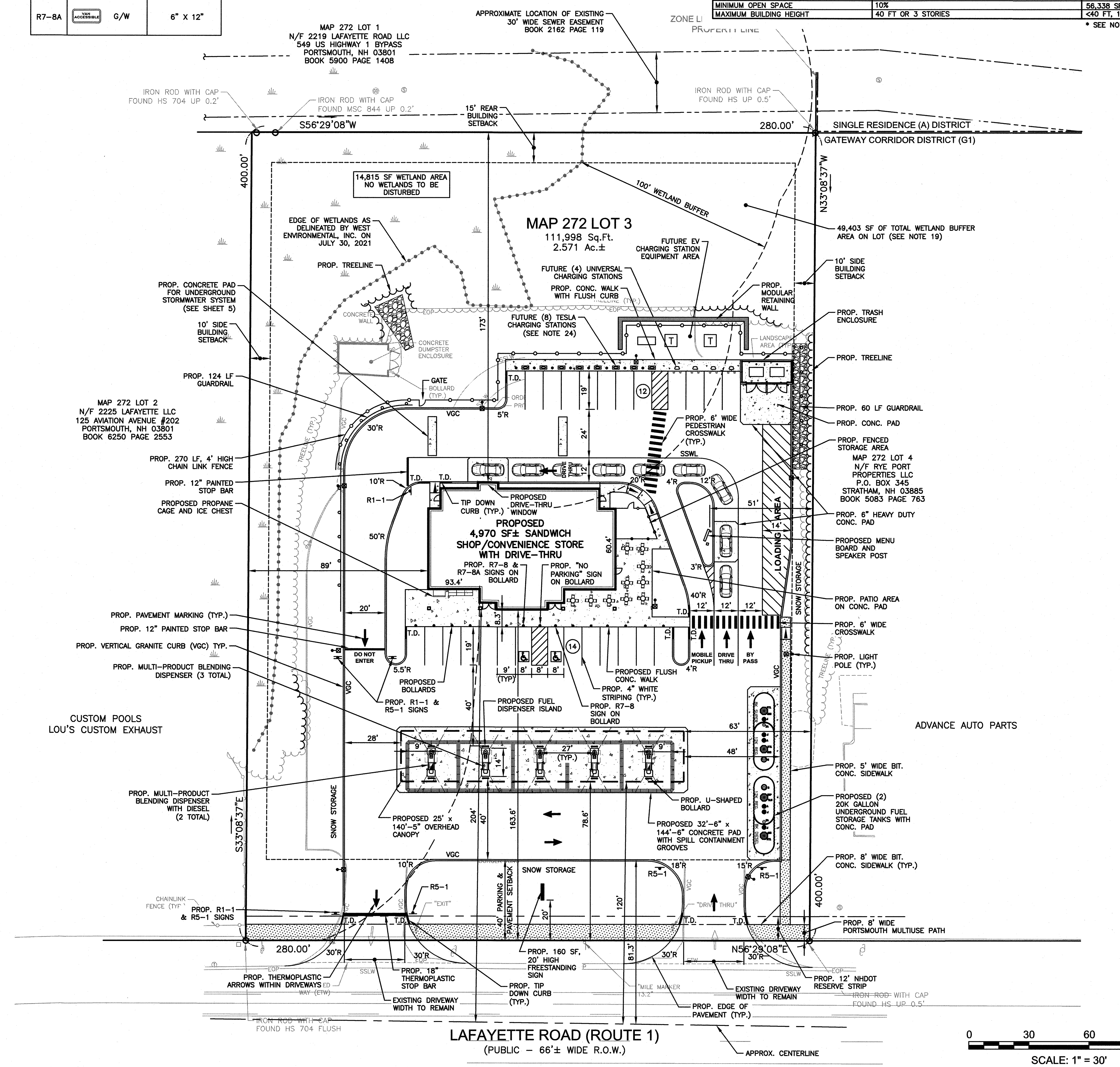
DESCRIPTION	EXISTING	PROPOSED
SURFACE PARKING & DRIVEWAY	59,940 SF	57,064 SF
OTHER IMPERVIOUS SURFACES	5,358 SF	5,750 SF
NUMBER OF PARKING SPACES	73	35
IMPERVIOUS AREA WITHIN WETLAND BUFFER	29,452 SF	20,328 SF

TABLE OF ZONING REGULATIONS - PORTSMOUTH, NH

ZONE: GATEWAY CORRIDOR (G1)

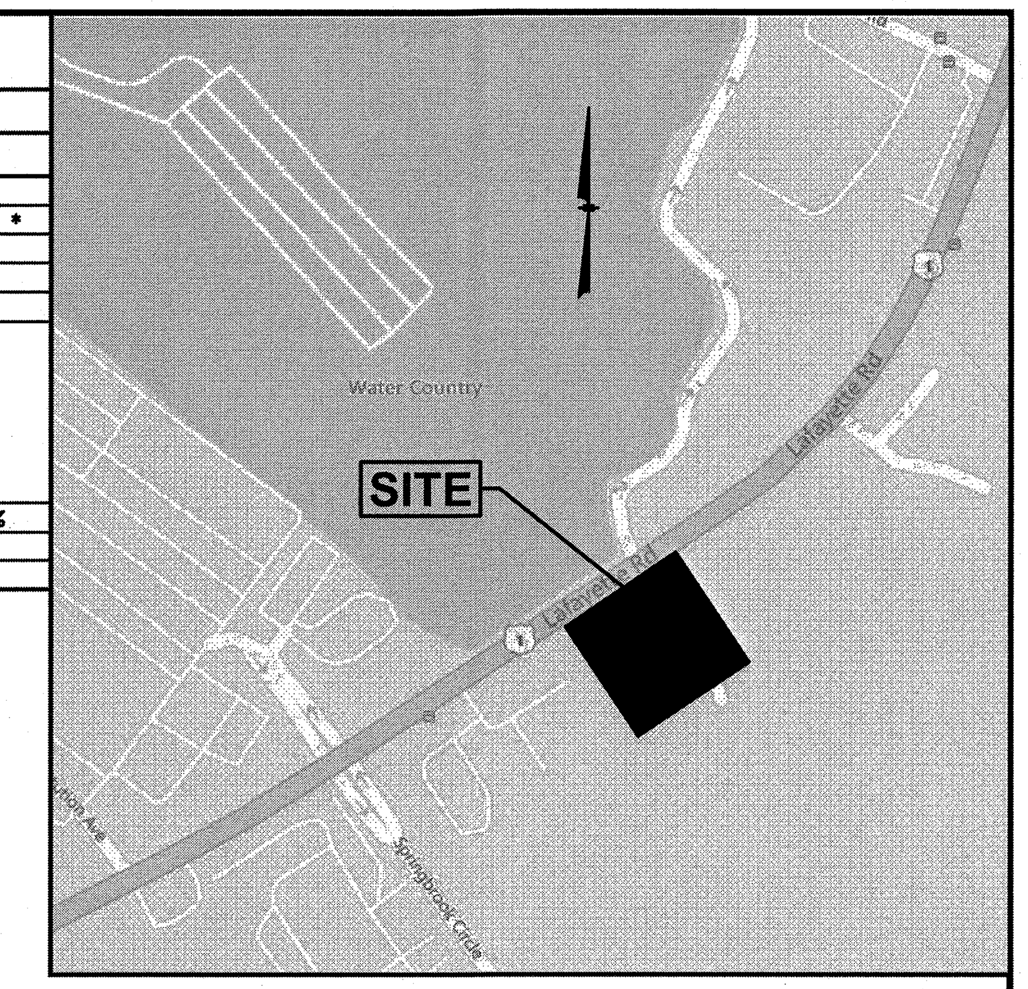
DESCRIPTION	REQUIRED	PROVIDED
MINIMUM LOT AREA	1 ACRE	2.57 ACRES
MINIMUM FRONT YARD BUILDING SETBACK	70' TO 90' FROM CENTER OF LAFAYETTE RD	120' (CANOPY), 204' (C-STORE) *
MINIMUM SIDE YARD BUILDING SETBACK	10'	63' (CANOPY), 89' (C-STORE)
MINIMUM REAR YARD BUILDING SETBACK	15'	173' (C-STORE)
PARKING DIMENSIONS	8.5'x19', 24' DRIVE AISLE	9'x19', 24' DRIVE AISLE
MINIMUM NUMBER PARKING SPACES	RETAIL = 4,555 SF x 1 SPACE/300 SF GFA = 15.18 SPACES RESTAURANT = 1,000 SF x 1 SPACE/100 SF = 10 SPACES RETAIL FUEL = 2 SPACES + 0 SF x 1 SPACE/400 SF GFA = 2 SPACES TOTAL SPACES REQUIRED = 28 SPACES	36 SPACES (14 PARKING SPACES + 12 PARKING SPACES/CHARGING STATION SPACES + 10 PARKING SPACES AT THE PUMPS) *
MAXIMUM COVERAGE	70%	555,660 SF/111,998 SF = 49.7%
MINIMUM OPEN SPACE	10%	56,338 SF/111,998 SF = 50.3%
MAXIMUM BUILDING HEIGHT	40 FT OR 3 STORIES	<40 FT, 1 STORY

* SEE NOTE 17



LEGEND

VGC	VERTICAL GRANITE CURB
SSLW	SINGLE SOLID LINE WHITE
G	GAS LINE
UGT/COMM	UNDERGROUND COMM
W	WATER LINE
E	UNDERGROUND ELECTRIC
	CHAIN LINK FENCE
90	CONTOUR ELEVATION
	TREE
	UTILITY POLE
	GUY WIRE
	OVERHEAD WIRE
	TREELINE
	SIGN
	SPOT ELEVATION
	CATCH BASIN
	CLEANOUT
	SEWER MANHOLE
	TELEPHONE MANHOLE
	WATER SHUT OFF
	BOLLARD
	GAS METER
	LIGHT POLE
	WETLAND LINE
	EASEMENT LINE
	PROPERTY LINE
	ABUTTER PROPERTY LINE
	ZONE LINE
1	NUMBER OF PARKING SPACES



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) TAX MAP 272 LOT 3

2) ZONING DISTRICT: GATEWAY CORRIDOR (G1)

3) LOT AREA = 111,988 Sq.Ft.
= 2.571 Ac.±

4) EXISTING USE: FAST FOOD RESTAURANT WITH DRIVE-THRU

PROPOSED USE: RETAIL MOTOR FUEL OUTLET WITH 5,555 SF CONVENIENCE STORE/SANDWICH SHOP WITH 6 SEATS INTERIOR & UP TO 40 EXTERIOR SEATS AND DRIVE-THRU AND 5 FUEL DISPENSER ISLANDS WITH OVERHEAD CANOPY.

5) ALL BUILDINGS AND SITE CONSTRUCTION SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AS REVISED IN 2010.

6) THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THIS PLAN WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.

7) WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR.

8) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 811 PRIOR TO ANY EXCAVATION.

9) ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH AND THE STATE OF NEW HAMPSHIRE.

10) THE SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33015C0270F, WITH AN EFFECTIVE DATE OF JANUARY 29, 2021.

11) ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE STANDARD CONSTRUCTION DRAWINGS AS SUPPLIED BY THE DEVELOPER.

12) A SIGN PERMIT SHALL BE OBTAINED PRIOR TO INSTALLATION.

13) PROPOSED SNOW STORAGE AREAS AS SHOWN. ANY EXCESS SNOW TO BE TRUCKED OFF-SITE.

14) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY GREENMAN-PEDERSEN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR AND/OR ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE AND/OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

15) ALL UNDERGROUND STORAGE TANKS, PRODUCT PIPING AND VENT LINES SHALL COMPLY WITH CURRENT STATE AND E.P.A. REGULATIONS.

16) SELF-SERVICE APPROVAL IS REQUIRED FROM THE OFFICE OF THE STATE FIRE MARSHAL. SEE APPROVED FIRE SUPPRESSION PLAN FOR LAYOUT OF SPILL CONTAINMENT GROOVES (POSITIVE LIMING BARRIER).

17) RELIEF WAS GRANTED BY THE ZONING BOARD OF ADJUSTMENT ON FEBRUARY 15, 2022 TO ALLOW THE FOLLOWING:
- PARKING SPACES BETWEEN PRINCIPAL BUILDING AND ROAD (ZONING 10.1113.20)
- GREATER THAN 90' BUILDING SETBACK FROM LAFAYETTE ROAD (ZONING 10.5.B.22.40)
- LESS THAN 75% FRONT LOT LINE BUILDOUT (SECTION 10.5.B.33.20)
- MORE THAN ONE DRIVEWAY PER LOT (SECTION 10.1114.31)
- TO ALLOW A 160 SF FREESTANDING SIGN (SECTION 10.1251.20)

18) RELIEF IS REQUESTED FROM THE PLANNING BOARD TO ALLOW THE FOLLOWING:
- GREATER THAN ONE DRIVEWAY PER LOT. (SITE PLAN 3.3.2). EXISTING SITE HAS TWO DRIVEWAYS

19) A CONDITIONAL USE PERMIT IS REQUIRED FROM THE PLANNING BOARD TO ALLOW THE FOLLOWING:
- A WETLAND BUFFER DISTURBANCE OF 33,555 SF PER SECTION 10.241.23. THIS TOTAL INCLUDES DISTURBANCE REQUIRED TO REMOVE EXISTING DISTURBANCES AND RETURN THEM TO A MORE NATURAL STATE.
- A DRIVE-THRU FACILITY PER SECTION 10.440

20) APPROPRIATE EROSION CONTROL MEASURES (HAY BALES, SILT FENCE) SHALL BE INSTALLED PRIOR TO INITIATION OF ANY SITE WORK & SHALL BE MAINTAINED BY THE DEVELOPER UNTIL ADEQUATE VEGETATIVE COVER IS ESTABLISHED ON ALL GRADED AREAS. SEE EROSION & SEDIMENT CONTROL PLAN.

21) ELECTRIC CONDUIT TO BE INSTALLED FOR FUTURE CHARGING STATIONS.

22) ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

23) PERMITS REQUIRED:
- NHDOT DRIVEWAY PERMIT
- USEPA NPDES CONSTRUCTION GENERAL PERMIT

24) PARKING AT CHARGING STATIONS SHALL NOT BE RESTRICTED TO ONLY ELECTRIC VEHICLES.

OWNER OF RECORD:

MAP 272 LOT 3
MASTORAN RESTAURANTS, INC.
822 LEXINGTON STREET
WALTHAM, MA 02154
BOOK 3572 PAGE 199

0 30 60 100
SCALE: 1" = 30'

GPI Engineering Design Planning Construction Management
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Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
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PREPARED FOR
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25 SPRINGER ROAD
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PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON
No.17099
LICENSED PROFESSIONAL ENGINEER
5/24/22

REVISIONS

NO.	REVISION	DATE
4	REV. PER TAC	5/10/22
3	MISC. REVISIONS	4/19/22
2	REV. PER CITY COMMENTS	3/22/22
1	REV. FOR SITE PLAN APPROVAL	2/9/22

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

SITE PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2021163

811 DigSafe MA-ME-NH-RI-VT

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NAD 83

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DRAINAGE PIPE SCHEDULE					
FROM: STRUCTURE NUMBER	PIPE SIZE (INCHES)	TYPE OF PIPE	APPROX. PIPE LENGTH (FEET)	SLOPE OF PIPE (FT./FT.)	TO: STRUCTURE NUMBER
CB-1	12	HDPE	51	0.011	DMH-1
CB-2	12	HDPE	139	0.005	CB-6
CB-3(FD)	12	HDPE	29	0.063	DET IN-1
CB-4(FD)	18	HDPE	81	0.005	DMH-2
CB-5	18	HDPE	70	0.005	CB-4(FD)
CB-6	15	HDPE	93	0.005	CB-5
DET OUT	24	HDPE	7	0.000	OCS-1
DMH-1	12	HDPE	66	0.014	CB-6
DMH-2	6	HDPE	10	0.010	OWS-IN
DMH-2	18	HDPE	29	0.032	DET IN-2
DMH-3	12	HDPE	30	0.010	CB-3(FD)
JELLYFISH OUT	18	HDPE	12	0.012	FES-1
OCS-1	18	HDPE	3	0.029	JELLYFISH IN
OWS-OUT	6	HDPE	7	0.013	DET IN-3

DRAINAGE STRUCTURES

CB-1
RIM=64.55
INV.OUT=61.05

CB-2
RIM=63.70
INV.OUT=60.10

CB-3(FD)
RIM=62.80
INV.IN=58.90(DMH-3)
INV.OUT=58.80

CB-4(FD)(DG)
RIM=61.70
INV.IN=58.05(CB-5)
INV.OUT=57.95

CB-5
RIM=63.05
INV.IN=58.65(CB-6)
INV.OUT=58.40

CB-6
RIM=63.90
INV.IN=59.40(CB-2)
INV.IN=59.50(DMH-1)
INV.OUT=59.15

DMH-1
RIM=65.30
INV.IN=60.50(CB-1)
INV.OUT=60.40

DMH-2
RIM=63.30
INV.IN=57.55(CB-4(FD))
INV.OUT=57.95 (18" BYPASS)
INV.OUT=57.45 (6" LOW FLOW)

DMH-3
RIM=64.00
INV.IN=59.25(RD)
INV.OUT=59.20

FES-1
INV.=56.25

4,000 GAL OIL/WATER SEPARATOR-1 (OWS-1)
RIM=63.75±
INV.IN=57.35
INV.OUT=57.10

UNDERGROUND DETENTION SYSTEM (UG DET)
36"ø SOLID (WT) PIPES
4 ROWS + 2 HEADERS
67.00'L x 19.25'W
S=0.000 FT/FT
INV.PIPE=57.00
INV'S.IN=57.00
INV.OUT=57.00
(SEE DETAIL)

OUTLET CONTROL STRUCTURE (OCS-1)
RIM=63.70
INV.IN=57.00
INV.OUT=57.00
(SEE DETAIL)

JELLYFISH FILTER
(CONTECH JFPD0806 OR APPROVED EQUAL)
RIM=62.00
INV.IN=56.90
INV.OUT=56.40
(SEE DETAIL)

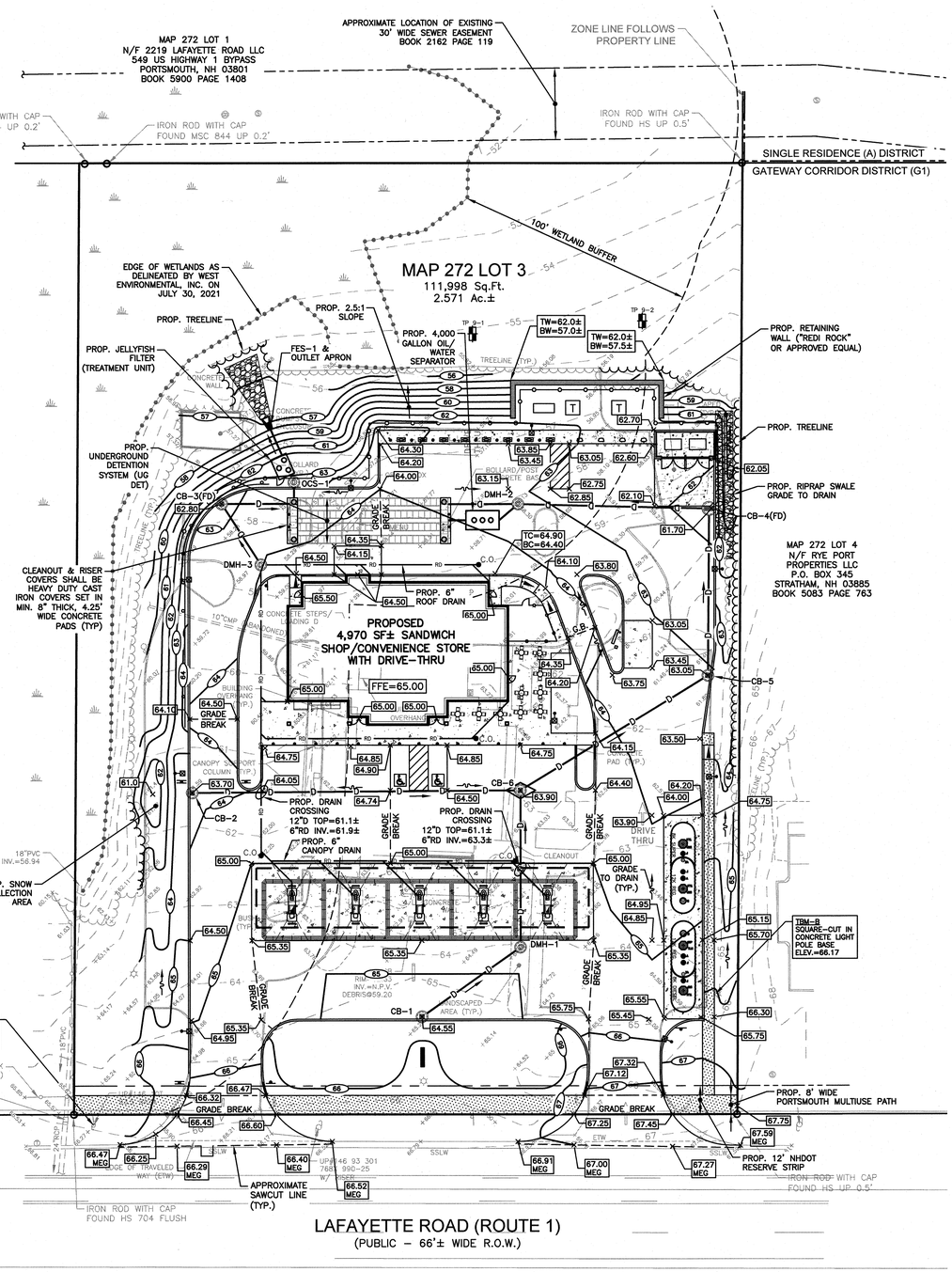
(FD) DENOTES FIRST DEFENSE FD-4HC HYRODYNAMIC PARTICLE SEPARATOR OR APPROVED EQUAL.

(WT) DENOTES WATERTIGHT PIPE JOINTS

(DG) DENOTES DOUBLE CATCH BASIN FRAME AND GRATE

LEGEND

- VGC — VERTICAL GRANITE CURB
- SSLW — SINGLE SOLID LINE WHITE
- G — GAS LINE
- U/GT — UNDERGROUND COMM
- W — WATER LINE
- E — UNDERGROUND ELECTRIC
- CHAIN LINK FENCE
- 90 — CONTOUR ELEVATION
- TREE
- UTILITY POLE
- GUY WIRE
- OVERHEAD WIRE
- TREELINE
- SIGN
- +98.69 — SPOT ELEVATION
- CATCH BASIN
- CLEANOUT
- SEWER MANHOLE
- TELEPHONE MANHOLE
- WATER SHUT OFF
- BOLLARD
- GM — GAS METER
- LIGHT POLE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- ABUTTER PROPERTY LINE
- ZONE LINE
- C.O. — PROP. CLEANOUT
- CB-1 — PROP. CATCH BASIN
- DMH-1 — PROP. DRAIN MANHOLE
- MEG — MEET EXISTING GRADE
- 331.25 — PROP. SPOT ELEVATION
- 65 — PROP. CONTOUR ELEVATION
- TW= — TOP OF WALL ELEV.
- BW= — BOTTOM OF WALL ELEV.
- G.B. — GRADE BREAK
- TP — TEST PIT



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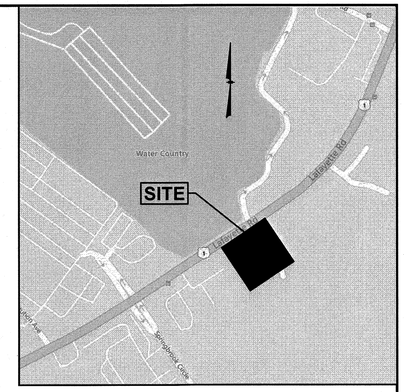
SCALE: 1" = 30'



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE WITH STANDARD JOINTS, DUAL-WALL, SMOOTH INTERIOR, AS MANUFACTURED BY ADS, INC., OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN. THE UNDERGROUND DETENTION SYSTEM SHALL HAVE WATER TIGHT JOINTS MEETING ASTM D3212 SPECIFICATIONS.
2) ALL ROOF AND CANOPY DRAIN PIPE SHALL BE 6" PVC (SDR-35).
3) ELEVATIONS ARE BASED ON NAVD88 DATUM.
4) ALL PROPOSED ELEVATIONS AS SHOWN ARE BOTTOM OF CURB ELEVATIONS, UNLESS OTHERWISE NOTED.
5) ANY UTILITY FIELD ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER OF RECORD AND COORDINATED WITH THE APPROPRIATE LOCAL UTILITY COMPANY.
6) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND INSTALLATIONS SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7) ALL CONSTRUCTION SHALL CONFORM TO MUNICIPAL DPW AND ALL APPLICABLE STATE AND FEDERAL STANDARDS.
8) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG-SAFE (DIAL 811) PRIOR TO COMMENCING ANY EXCAVATION.
9) THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE (ACTUAL DISTURBANCE = 75,000 SF±). THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
10) ANY UTILITIES TO BE TAKEN OUT OF SERVICE SHALL BE DISCONNECTED AS DIRECTED BY UTILITY COMPANY AND LOCAL DPW.
11) ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION SIGNAGE ARRANGEMENTS, ACCEPTABLE TO NHDOT AND THE CITY DEPARTMENT OF PUBLIC WORKS, SHALL BE EMPLOYED DURING OPERATIONS WITHIN THE PUBLIC RIGHT-OF-WAY.
12) ALL ADA ACCESSIBLE WALKWAYS CANNOT EXCEED 5% RUNNING SLOPE AND 2% CROSS SLOPE. RAMPS CANNOT EXCEED 8.33% RUNNING SLOPE AND 2% CROSS SLOPE, AND ACCESSIBLE PARKING STALLS AND ACCESS AISLES CANNOT EXCEED 2% SLOPE IN ANY DIRECTION. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
13) SEE UTILITY PLAN FOR DETAILED UTILITY LAYOUT.
14) ALL PROPOSED CATCH BASINS SHALL HAVE 4' SUMPS AND OUTLETS EQUIPPED WITH "ELIMINATOR" OIL HOODS OR APPROVED EQUAL.
15) ALL PIPE DATA IS CALCULATED TO CENTER OF STRUCTURE, TYP.
16) CONTRACTOR TO REFER TO THE INSPECTION & MAINTENANCE (I&M) MANUAL FOR STORMWATER MANAGEMENT SYSTEMS & SITE MAINTENANCE DURING AND AFTER CONSTRUCTION.
17) CONTRACTOR TO INSTALL RISER STRUCTURES AT EACH CORNER OF UNDERGROUND DETENTION SYSTEMS AND CLEANOUTS AT EACH END OF EACH ROW TO PROVIDE ACCESS POINTS FOR CLEANING AND MAINTENANCE.
    - TOTAL RISERS PROPOSED = 4
    - TOTAL CLEANOUTS PROPOSED = 4

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON No.17099 LICENSED PROFESSIONAL ENGINEER
5/24/22

REVISIONS		
3	REV. PER TAC	5/10/22
2	MISC. REVISIONS	4/19/22
1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

GRADING & DRAINAGE PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2021163

5 OF 15

811 DigSafe MA-ME-NH-RI-VT

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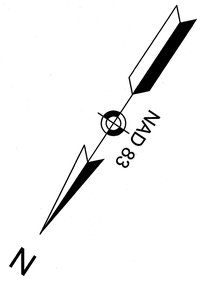

LEGEND

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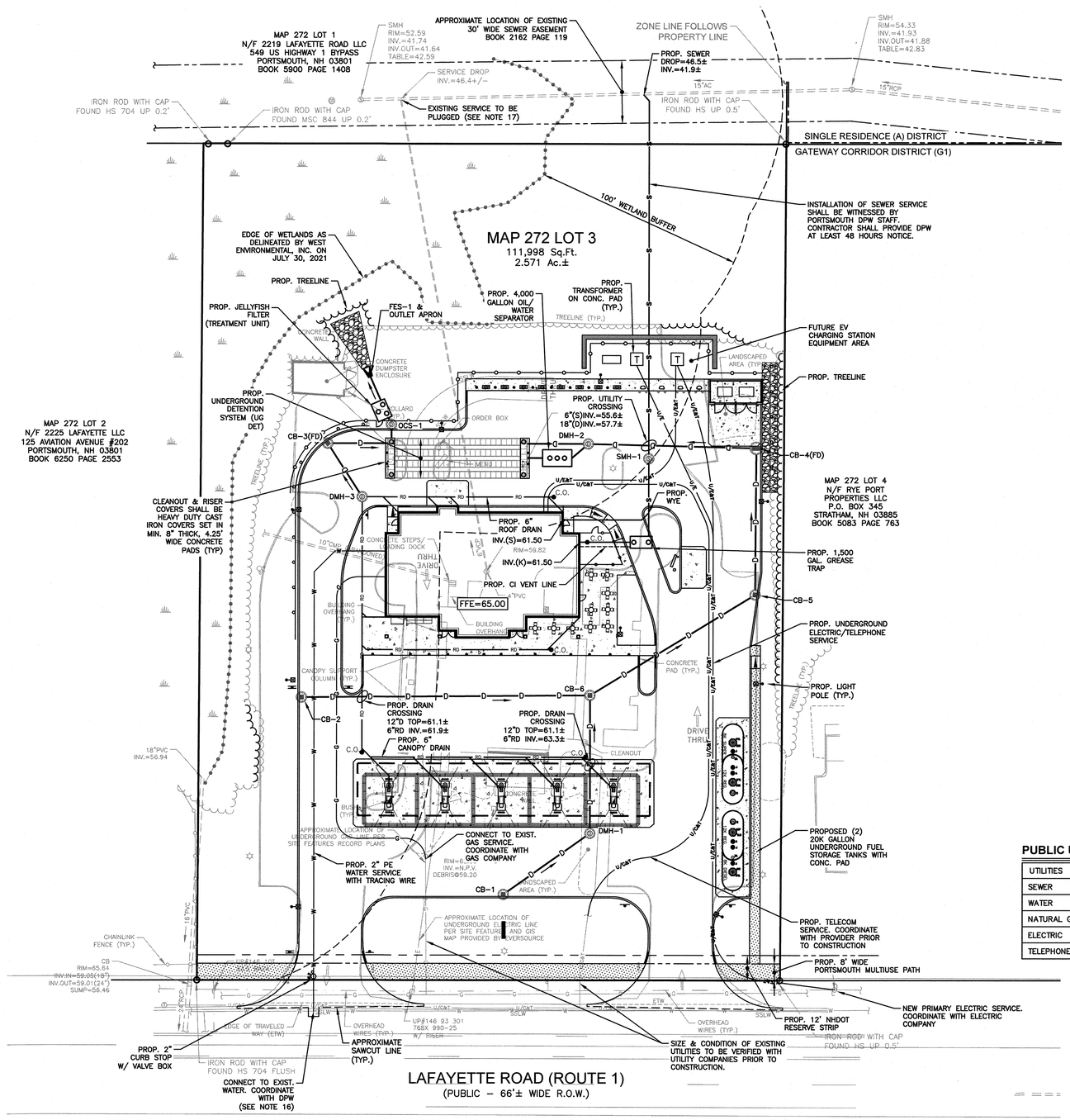
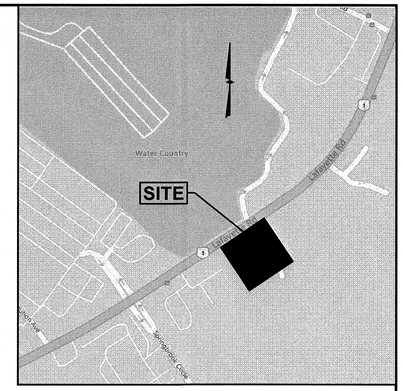
- CB–1 — PROP. CATCH BASIN
- DMH–1 — PROP. DRAIN MANHOLE
- SMH–1 — PROP. SEWER MANHOLE
- PROP. GATE VALVE





LOCATION MAP
(NOT TO SCALE)

NOTES:

1) ALL SANITARY SEWER PIPE SHALL BE PVC (SDR–35), UNLESS OTHERWISE NOTED.
2) ALL WATER PIPE SHALL BE POLYETHYLENE, UNLESS OTHERWISE NOTED.
3) ANY UTILITY FIELD ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER OF RECORD AND COORDINATED WITH THE APPROPRIATE LOCAL UTILITY COMPANY.
4) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES.
5) ALL CONSTRUCTION SHALL CONFORM TO MUNICIPAL DPW AND ALL APPLICABLE STATE AND FEDERAL STANDARDS.
6) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG–SAFE (1–888–344–7233) PRIOR TO COMMENCING ANY EXCAVATION.
7) ALL WATER AND SEWER CONSTRUCTION SHALL CONFORM TO DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS.
8) THIS SITE IS SERVED BY MUNICIPAL SEWER AND WATER.
9) ALL ELECTRIC, TELEPHONE AND CABLE TV LINES ARE TO BE UNDERGROUND AND INSTALLED IN CONFORMANCE WITH APPLICABLE UTILITY CO. SPECIFICATIONS.
10) ANY UTILITIES TO BE TAKEN OUT OF SERVICE SHALL BE DISCONNECTED AS DIRECTED BY UTILITY COMPANY AND LOCAL DPW.
11) ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION SIGNAGE ARRANGEMENTS, ACCEPTABLE TO NHDOT AND CITY DEPARTMENT OF PUBLIC WORKS, SHALL BE EMPLOYED DURING OPERATIONS WITHIN THE PUBLIC RIGHT–OF–WAY.
12) SEE GRADING & DRAINAGE PLAN FOR DETAILED DRAINAGE INFORMATION.
13) ELECTRICAL CONDUIT WITHIN 20' OF TANKS OR DISPENSERS MAY NEED TO BE RIGID METAL CONDUIT WITH CONCRETE ENCASEMENT. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY AND/OR TOWN ELECTRICAL INSPECTOR AS REQUIRED.
14) REFER TO DETAIL SHEETS FOR ALL UTILITY AND DRAINAGE STRUCTURE DETAILS AND ADDITIONAL INFORMATION.
15) ELECTRIC CONDUIT TO BE PROVIDED FOR FUTURE EV CHARGING STATIONS.
16) EXISTING WATER SERVICE LOCATION IS UNKNOWN. CONTRACTOR TO LOCATE AND DISCONTINUE SERVICE AT THE MAIN.
17) CONTRACTOR TO CONTACT EASTERN PIPE SERVICES TO PLUG THE SERVICE FROM THE MAIN WITHOUT DISTURBING THE WETLAND. AFTER PLUGGED, CONTRACTOR SHALL FILL THE EXISTING SERVICE WITH FLOWABLE FILL.
18) CONTRACTOR SHALL CONTACT PORTSMOUTH DPW AT LEAST 48 HOURS PRIOR TO SEWER CONSTRUCTION TO WITNESS SEWER SERVICE INSTALLATION.

PUBLIC UTILITIES

UTILITIES		AVAILABLE
SEWER	CITY OF PORTSMOUTH PUBLIC WORKS DEPT., PETER RICE 603–427–1530	YES
WATER	CITY OF PORTSMOUTH PUBLIC WORKS DEPT., PETER RICE 603–427–1530	YES
NATURAL GAS	UNITIL, DAVE MACLEAN 603–294–5261	YES
ELECTRIC	EVERSOURCE, CASEY MCDONALD 603–519–0924	YES
TELEPHONE	CONSOLIDATED COMMUNICATIONS	YES

SEWER PIPE SCHEDULE

FROM: STRUCTURE NUMBER	PIPE SIZE (inches)	TYPE OF PIPE	APPROX. PIPE LENGTH (feet)	SLOPE OF PIPE (ft./ft.)	TO: STRUCTURE NUMBER
BLDG.	6	CI	20	0.056	GR. TRAP
GR. TRAP	6	PVC	35	0.081	SMH–1
BLDG.	6	PVC	41	0.062	WYE
SMH–1	6	PVC	178	0.052	SEWER MAIN

SEWER STRUCTURES

1,500 GAL. GREASE TRAP
RIM=64.10
INV.IN=60.10
INV.OUT=59.85

SMH–1 (DROP)
RIM=63.00
INV.IN=57.00
INV.OUT=55.70

PROP. WYE
INV.=58.95±

GPI
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Design
Planning
Construction Management
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STATE OF NEW HAMPSHIRE
CORY N. MASON No.17099
LICENSED PROFESSIONAL ENGINEER
5/24/22

REVISIONS		
4	REV. PER TAC	5/10/22
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1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

UTILITY PLAN

SCALE: 1"=30'

PROJECT NO. NEX–2021163

6 OF 15

811 DigSafe MA-ME-NH-RI-VT

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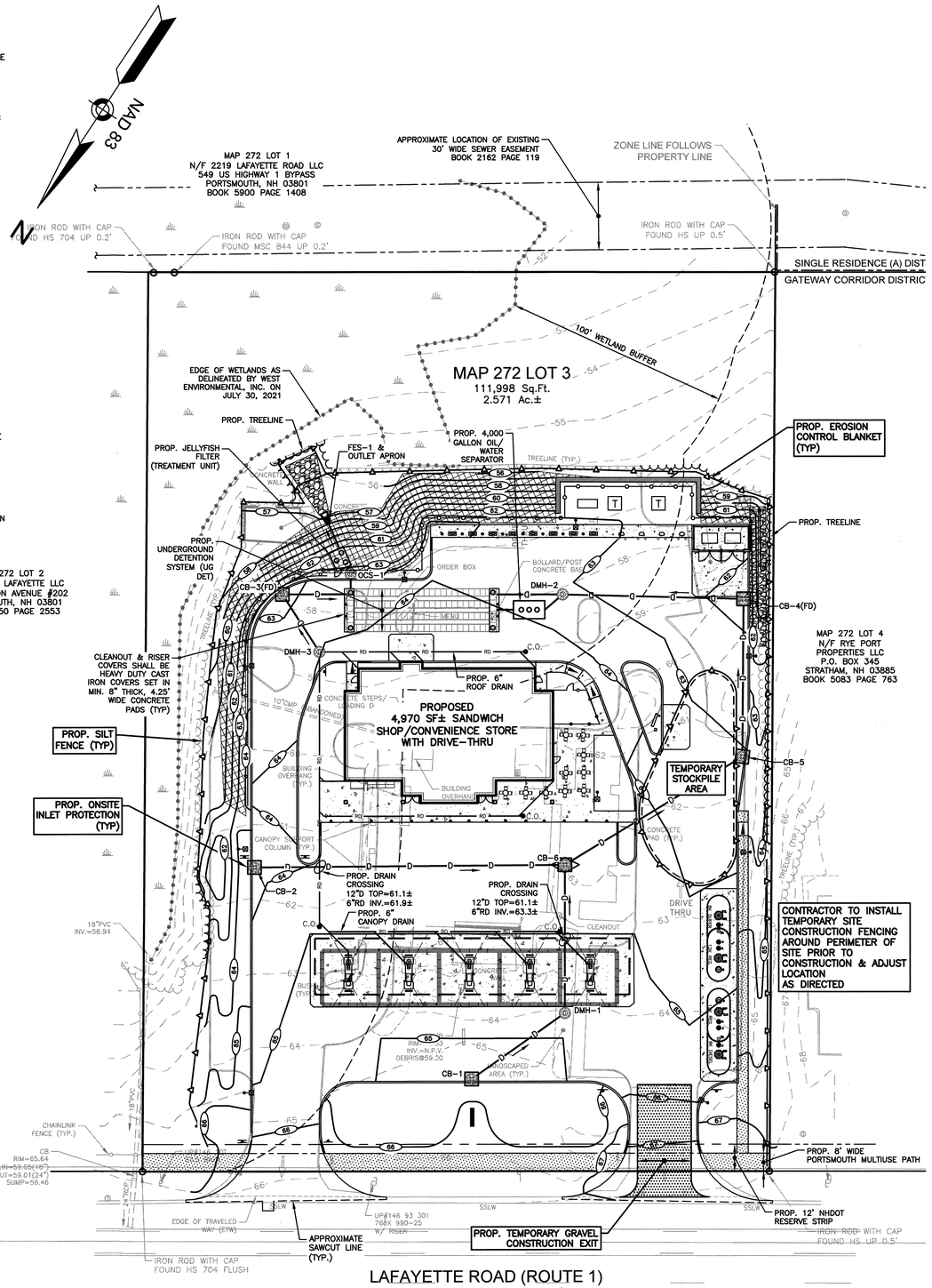
- PROP. SILT FENCE

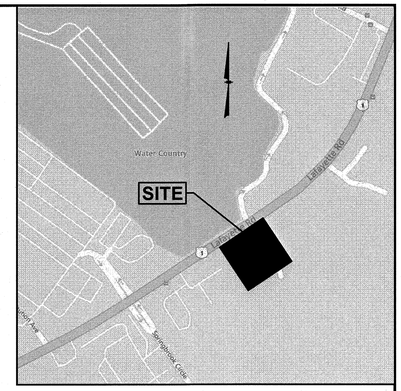


CONSTRUCTION SEQUENCE:

1) SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY ON–SITE CONSTRUCTION AS SHOWN. ADDITIONAL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICAL.
2) REMOVE AND STOCKPILE SOIL AS REQUIRED. STOCKPILE SHALL BE SURROUNDED WITH HAYBALES TO PREVENT EROSION.
3) CONSTRUCT DRIVEWAYS AND PERFORM SITE GRADING.
4) INSTALL UNDERGROUND UTILITIES & DRAINAGE.
5) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
6) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES, HAYBALES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
7) BEGIN EXCAVATION FOR AND CONSTRUCTION OF BUILDINGS.
8) FINISH PAVING ALL DRIVES AND PARKING AREAS. CLEAN ALL DRAINAGE STRUCTURES.
9) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
10) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

WINTER STABILIZATION NOTES:

MAINTENANCE REQUIREMENTS:
MAINTENANCE MEASURES SHOULD CONTINUE AS NEEDED THROUGHOUT CONSTRUCTION, INCLUDING THE OVER–WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHOULD CONDUCT AN INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUING FUNCTION. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF VEGETATION COVER, AND REPAIR ANY DAMAGE AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH).
SPECIFICATIONS:
TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING STABILIZATION TECHNIQUES SHOULD BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15TH THROUGH MAY 15TH.
1) THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO ONE ACRE AND SHOULD BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. SUBJECT TO APPLICABLE REGULATIONS, THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF ACTIVITIES ARE CONDUCTED ACCORDING TO A WINTER CONSTRUCTION PLAN, DEVELOPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW HAMPSHIRE OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC.
2) STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS:
A. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRED SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (SEE DESCRIPTION OF EROSION CONTROL MIX BERMS FOR MATERIAL SPECIFICATION).
B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER OOTHAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHOULD NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.
3) ALL STONE–COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
4) INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH.
5) ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED (E.G., BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
6) STOCKPILES OF SOIL MATERIALS SHOULD BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. MULCHING SHOULD BE DONE WITHIN 24 HOURS OF STOCKING, AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100 FEET FROM ANY WETLAND OR OTHER WATER RESOURCE AREA.
7) FROZEN MATERIALS, (E.G., FROST LAYER THAT IS REMOVED DURING WINTER CONSTRUCTION), SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION THAT IS AWAY FROM ANY AREA NEEDING TO BE PROTECTED. STOCKPILES OF FROZEN MATERIAL CAN MELT IN THE SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO THE HIGH MOISTURE CONTENT IN THE SOIL.
8) INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
9) ALL GRASS–LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY A QUALIFIED PROFESSIONAL ENGINEER OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC. IF A STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE–GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS–SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
10) ALL STONE–LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
11) 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.
12) SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SILT FENCES AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.



LOCATION MAP
(NOT TO SCALE)

EROSION CONTROL NOTES:

1) THE EROSION CONTROL PROCEDURES SHALL CONFORM TO THE NH STORMWATER MANUAL, VOLUME 3, EROSION & SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008, OR LATEST EDITION.
2) DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED: THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME AS APPROVED BY THE ENGINEER. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
3) LIMIT OF MAXIMUM AREA OF EXPOSED SOIL AT ANY ONE TIME TO LESS THAN 5 ACRES. THE EXPOSED AREA THAT IS BEING ACTIVELY WORKED DURING WINTER IS TO BE LESS THAN 3 ACRES DURING THE WINTER SEASON.
4) ALL PERMANENT STORM WATER STRUCTURES SHALL BE STABILIZED PRIOR TO DIRECTING FLOW INTO THEM. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURED:
A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
B) A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
C) A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIP–RAP HAS BEEN INSTALLED.
D) OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5) SILT FENCE SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE, NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE EXCESS SURFACE WATER. SILT FENCE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
6) ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISHED GRADED, WITH NO FURTHER CONSTRUCTION TO TAKE PLACE, SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS AFTER FINAL GRADING. A MINIMUM OF 4" OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. THE SEED MIX SHALL BE AS DESIGNATED BELOW.
7) ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION. THE MAXIMUM LENGTH OF TIME FOR THE EXPOSURE OF DISTURBED SOILS SHALL BE 45 DAYS. HAY OR STRAW MULCH SHALL BE APPLIED TO ALL FRESHLY SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE. BALES SHALL BE UNSPOILED, AIR DRIED, AND FREE FROM WEED, SEEDS AND ANY COARSE MATERIAL.
8) DURING GRADING OPERATIONS INSTALL HAY BALE BARRIERS ALONG TOE OF SLOPE OF FILL AREAS WHERE SHOWN. BARRIERS ARE TO BE MAINTAINED UNTIL DISTURBED AREAS ARE PAVED OR GRASSED.
9) THE FILL MATERIAL SHALL BE OF APPROVED SOIL TYPE FREE FROM STUMPS, ROOTS, WOOD, ETC. TO BE PLACED IN 12" LIFTS OR AS SPECIFIED. BULLDOZERS, TRUCKS, TRACTORS, OR ROLLERS MAY BE USED FOR COMPACTION BY ROUTING THE EQUIPMENT TO ALL AREAS OR EACH LAYER.
10) AVOID THE USE OF FUTURE OPEN SPACES (LOAM & SEED) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ROADS.

TEMPORARY EROSION CONTROL MEASURES:

1) THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2) HAY BALE BARRIERS AND SEDIMENT CONTROL FENCE SHALL BE INSTALLED AS REQUIRED. BARRIERS AND FENCE ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
3) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH; FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
4) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5) STOCKPILED MATERIALS SHALL BE PLACED ONLY IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY HAY BALE BARRIERS AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
6) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA.
7) SEED MIX SHALL BE EQUAL PARTS OF RED FESCUE (CREEPING), KENTUCKY BLUE GRASS, REDTOP, PERENNIAL RYEGRASS.
8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
9) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
10) ALL CATCH BASIN INLETS WILL BE PROTECTED WITH INLET PROTECTION.
11) ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
12) ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
13) TO PREVENT TRACKING OF SEDIMENT ONTO THE EXISTING ROADS, ALL CONSTRUCTION TRAFFIC CAN ONLY EXIT THE SITE OVER THE CONSTRUCTION ENTRANCES SHOWN ON THIS PLAN.

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25 SPRINGER ROAD
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PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON
No.17099
LICENSED PROFESSIONAL ENGINEER
5/24/22

REVISIONS		
3	REV. PER TAC	5/10/22
2	MISC. REVISIONS	4/19/22
1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

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EROSION & SEDIMENT CONTROL PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2021163

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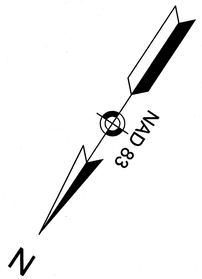
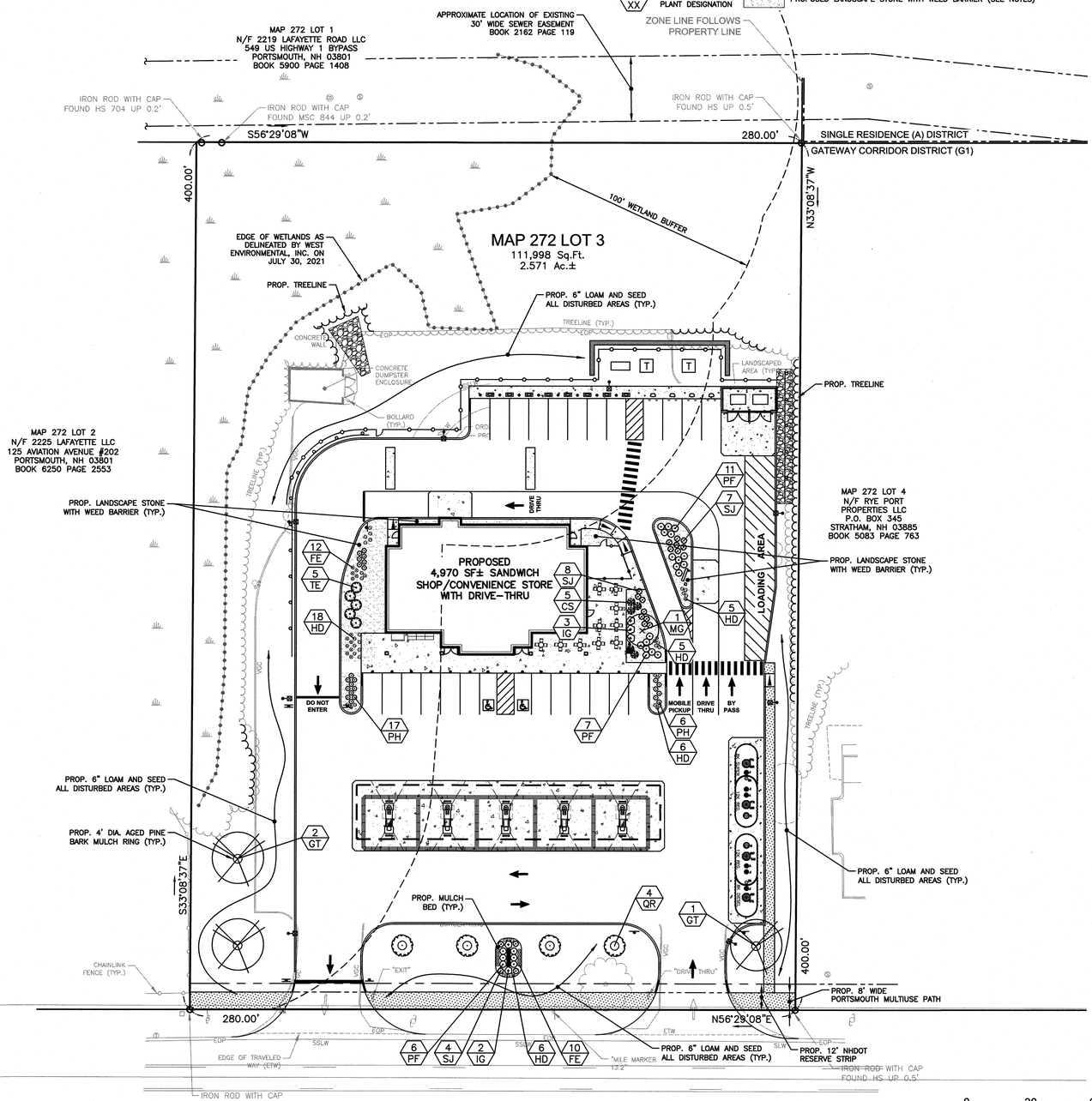
PLANTING SCHEDULE

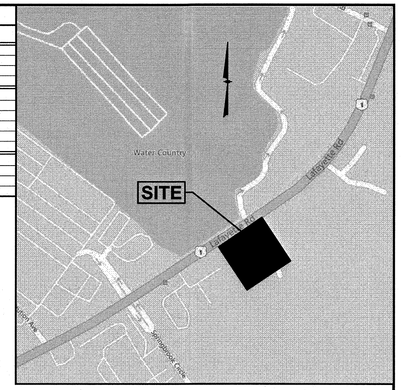
PLANT	QNTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALL SIZE	REMARKS
TREES					
GT	3	GLEDITSIA TRIACANTHOS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST	2"–2 1/2" CAL., B&B	THORNLESS VARIETY
MG	1	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	2"–2 1/2" CAL., B&B	
QR	4	QUERCUS ROBUR 'KINDRED SPIRIT'	KINDRED SPIRIT ENGLISH OAK	3"–3 1/2" CAL., B&B	
SHRUBS					
CS	5	CORNUS SERICEA 'ALLEMAN'S COMPACTA'	COMPACT REDTWIG DOGWOOD	18"–24"HT., 3 GAL.	
IG	5	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	2'–3' HT., 3 GAL.	
PF	24	POTENTILLA FRUTICOSA 'GOLDSTAR'	GOLDSTAR POTENTILLA	18"–24"HT., 3 GAL.	
SJ	19	SPIREA JAPONICA 'MAGIC CARPET'	MAGIC CARPET SPIREA	15"–18" SPR., 3 GAL.	
TE	5	TAXUS X MEDIA 'EVER–LOW'	EVER–LOW YEW	18"–24" SPR., B&B	
PERENNIALS & GRASSES					
HD	40	HEMEROCALLIS 'STELLA DE ORO'	DWARF YELLOW DAYLILY	1 GAL.	
FE	22	FESTUCA GLAUCA 'ELIJAH BLUE'	ELIJAH BLUE FESCUE GRASS	1 GAL.	
PH	23	PENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	1 GAL.	





LEGEND

- VGC — VERTICAL GRANITE CURB
- SSLW — SINGLE SOLID LINE WHITE
- G — GAS LINE
- U/GT — UNDERGROUND COMM
- W — WATER LINE
- E — UNDERGROUND ELECTRIC
- CHAIN LINK FENCE
- 90 — CONTOUR ELEVATION
- TREE
- UTILITY POLE
- GUY WIRE
- OVERHEAD WIRE
- TREELINE
- SIGN
- SPOT ELEVATION
- CATCH BASIN
- CLEANOUT
- SEWER MANHOLE
- TELEPHONE MANHOLE
- WATER SHUT OFF
- BOLLARD
- GM — GAS METER
- LIGHT POLE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- ABUTTER PROPERTY LINE
- ZONE LINE



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITION (AMERICAN ASSOCIATION OF NURSERYMEN, INC.).
2) A 4' DIA. TREE RING WITH 3" AGED PINE BARK MULCH TO BE INSTALLED AT BASE OF ALL TREES IN LAWN AREAS.
3) 3" AGED PINEBARK MULCH SHALL BE APPLIED TO ALL SHRUB AND GROUNDCOVER BEDS.
4) LANDSCAPE STONE SHALL BE TAN RIVERBED STONE. STONE SHALL BE (1½) INCHES IN DIAMETER AND APPLIED AT A THICKNESS OF (4) INCHES DEEP. ALL FINES SHALL BE SCREENED FROM THE AGGREGATE. THE MATERIAL SHALL BE FREE OF ORGANIC AND INORGANIC DEBRIS AND TRASH. SUBMIT SAMPLE IN A 5–GALLON BUCKET TO THE DEVELOPER FOR APPROVAL.
5) A WEED BARRIER (TY–PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUNDCOVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.
6) THE CONTRACTOR SHALL PROVIDE TESTING OF SOILS IN PLANTING LOCATIONS. THE CONTRACTOR SHALL PROVIDE TEST RESULTS AND RECOMMENDATIONS AS NECESSARY FOR SOIL AMENDMENT TO THE ENGINEER FOR THEIR APPROVAL. BACKFILL SHALL BE A BLEND OF ONE–PART LOAM BORROW, ONE PART ORGANIC MATERIAL AND TWO–PARTS EXISTING SUBSOIL.
7) ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED AS INDICATED ON PLANS.
8) ALL SEED, SHRUB AND TREE AREAS SHALL RECEIVE 6" PH CORRECTED TOPSOIL. AFTER TOPSOIL IS SPREAD EVENLY OVER ENTIRE AREA, ALL CLODS, LUMPS, STONES AND OTHER DELETERIOUS MATERIAL SHALL BE RAKED UP AND REMOVED.
9) APPLICATION OF GRASS SEED, FERTILIZERS AND STRAW MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

LIMESTONE: 100 LBS./1,000 SQUARE FEET.
FERTILIZER: 500 LBS/ACRE OF 10–20–20 OR 1000 LBS/ACRE OF 5–10–10.
STRAW MULCH: APPROXIMATELY 3 TONS/ACRE

SEED MIX (SLOPES LESS THAN 4:1)	LBS/ACRE
CREEPING RED FESCUE	20
TALL FESCUE	15
PERENNIAL RYEGRASS	5
REDTOP	2
	42

SLOPE MIX (SLOPES GREATER THAN 4:1)	LBS/ACRE
CREEPING RED FESCUE	20
TALL FESCUE	20
BIRDSFOOT TREEFOIL	8
	48

10) FOR TEMPORARY EROSION CONTROL NOTES, SEE DETAIL SHEET.
11) NEWLY GRADED AREAS REQUIRING SLOPE PROTECTION OUTSIDE OF NORMAL SEEDING SEASON SHALL RECEIVE STRAW MULCH AT THE APPROXIMATE RATE OF NO MORE THAN 3 TONS PER ACRE.
12) ANY CHANGES IN PLANT LOCATIONS OR TYPES SHALL BE APPROVED BY THE DEVELOPER, LANDOWNER AND CITY PRIOR TO INSTALLATION.
13) CLEAR AND GRUB (TO LIMITS REQUIRED ON GRADING PLAN) TO REMOVE VEGETATION, TREES, ROCKS, DEBRIS, ROOTS, ETC. STUMPS SHALL BE REMOVED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH STATE REGULATIONS. AFTER CLEARING, STRIP AND STOCKPILE ALL ON–SITE TOPSOIL FOR REUSE TO THE MAXIMUM EXTENT POSSIBLE.
14) FOR SEED AREAS USE EXISTING TOPSOIL, IF AVAILABLE, FOR A 4" DEPTH AND TOP DRESS WITH 2" OF SCREENED TOPSOIL, UNLESS OTHERWISE NOTED ON PLAN. ALL LOAM OR TOPSOIL IMPORTED OR RE–UTILIZED FROM ON SITE SHALL BE TESTED AND AMENDED AS DIRECTED BY DEVELOPER TO MEET MINIMUM REQUIREMENTS AND FREE FROM INVASIVE PLANTS.
15) PLANTINGS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER WRITTEN ACCEPTANCE BY THE DEVELOPER.
16) EXPOSED SOILS SHALL BE SEEDED OR STRAW MULCHED WITHIN 72 HOURS OF FINAL GRADING.
17) ALL WORK SHALL BE COORDINATED WITH APPLICABLE EPA NPDES/SWPPP PERMIT WORK AS REQUIRED.
18) THE CONTRACTOR SHALL INSTALL AN IRRIGATION SYSTEM TO PROVIDE COMPLETE COVERAGE OF ALL SEED AREAS AND SHRUB BEDS SHOWN ON THIS PLAN. THE SYSTEM SHALL INCLUDE A TIMER AND SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.

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LANDSCAPE PLAN

SCALE: 1"=30'
PROJECT NO. NEX-2021163

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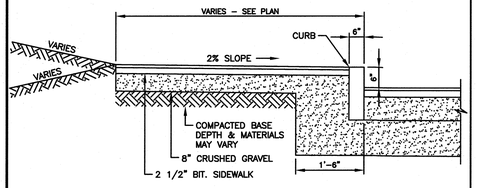
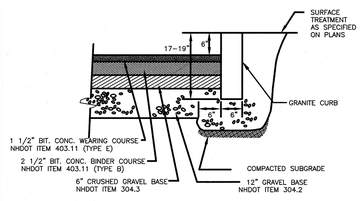
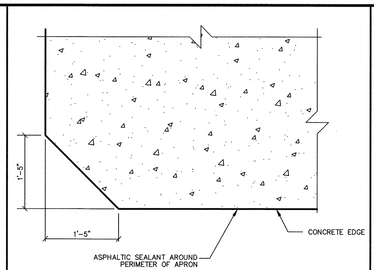


BITUMINOUS CONCRETE SIDEWALK
NOT TO SCALE



PAVEMENT AND VERTICAL GRANITE CURB SECTION ON-SITE
NOT TO SCALE



DISPENSER APRON CHAMFER DETAIL
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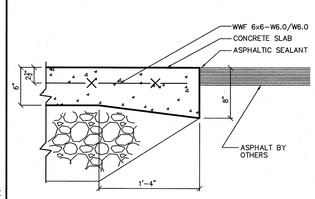

DISPENSER APRON EDGE DETAIL
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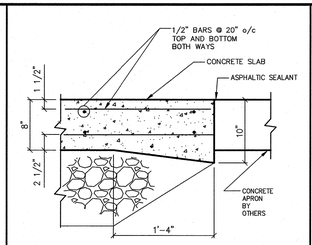

TANK APRON EDGE DETAIL
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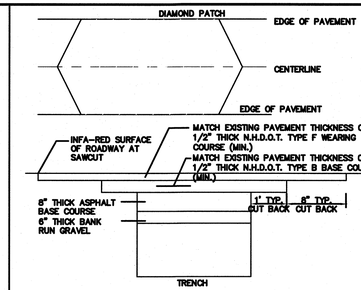


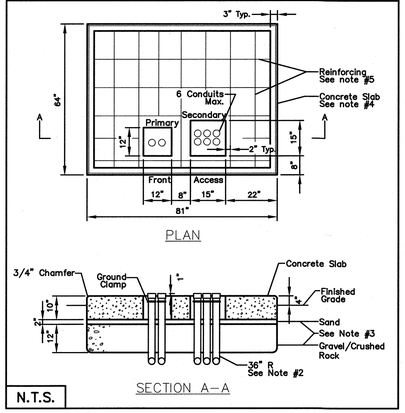
TYPICAL PAVEMENT REPAIR DETAIL
NOT TO SCALE

TRANSFORMER PAD NOTES

NOTES:

1) THIS STANDARD COVERS SPECIFICATIONS FOR THE CONSTRUCTION OF A CONCRETE FOUNDATION FOR PAD-MOUNTED TRANSFORMER.
2) INSTALL CONDUIT AS SHOWN BEFORE SLAB IS POURED. USE 36" RADIUS BENDS, WITH COUPLINGS, NIPPLES AND BUSHINGINGS AS REQUIRED. BENDS FOR PRIMARY CABLES SHALL BE GALVANIZED STEEL. TERMINATIONS OF CONDUITS SHALL BE LOCATED AS SHOWN IN SECTION A–A. THE NIPPLE AND BUSHING SHALL BE INSTALLED AFTER THE TRANSFORMER IS PLACED AND BEFORE THE CABLES ARE PULLED.
3) GRAVEL AND SAND SHALL BE PLACED AS SHOWN IN SECTION A–A; THE GRAVEL BEING COMPACTED AND THE SAND THOROUGHLY WETTED JUST BEFORE PLACING THE CONCRETE.
4) CONCRETE TO CONFORM TO GS 0211 OF LATEST DATE, (MIX M–4) FOR READY MIX CONCRETE. ALL EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5) REINFORCING TO BE #4 GRADE 60 BARS AND SHALL CONFORM TO ASTM STANDARD A–615 OF LATEST DATE. REINFORCING ROD TO BE LOCATED IN CENTER OF THE SLAB, WITH A MINIMUM OF 2" CLEARANCE FROM FACE OF CONCRETE.
6) GROUND GRID TO BE INSTALLED AS PER GS 2586.

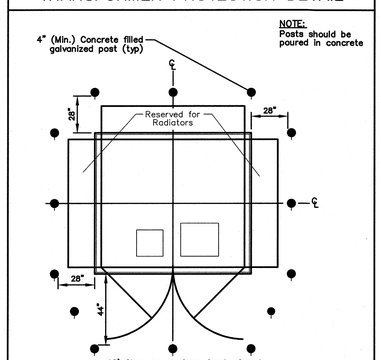
TRANSFORMER PAD DETAIL



N.T.S.

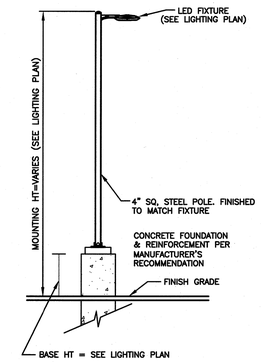
NOTE: REVISE TRANSFORMER PAD DETAILS AS DIRECTED BY LOCAL ELECTRIC COMPANY

TRANSFORMER PROTECTION DETAIL



N.T.S.

TRANSFORMER PAD DETAILS
NOT TO SCALE



LIGHT FIXTURE DETAIL
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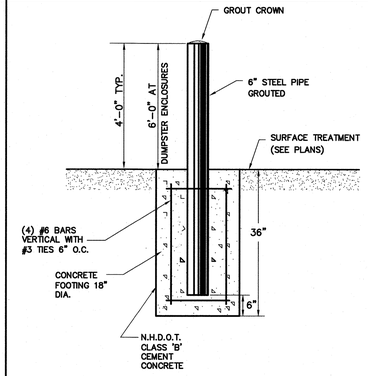

BOLLARD DETAIL
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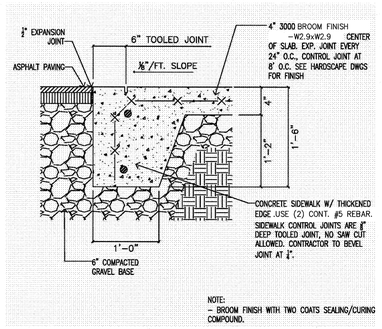
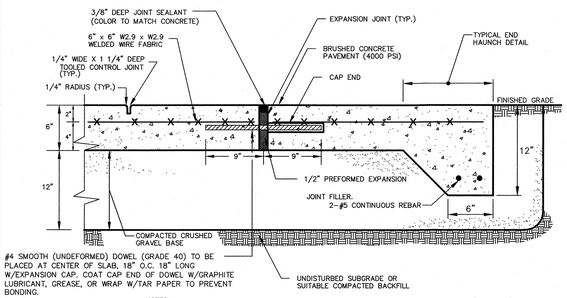
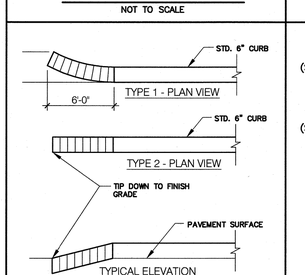


FLUSH CONCRETE SIDEWALK/PARKING DETAIL
NOT TO SCALE

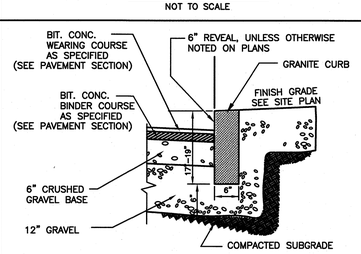


NOTES:
1. MAINTAIN 2" CLEARANCE (TYP) BETWEEN ALL CONCRETE EDGES AND WIRE FABRIC, DOWEL, OR REBAR.
2. CONTROL JOINTS TO BE LOCATED 5 FT. ON CENTER OR AS SHOWN ON ARCHITECTURAL PLANS.
3. EXPANSION JOINTS TO BE LOCATED 25 FT. ON CENTER.
4. WELDED WIRE FABRIC SHALL BE LAPSED A MINIMUM OF 2 WIRE SPACES.

6" HEAVY DUTY CONCRETE PAD DETAILS
NOT TO SCALE

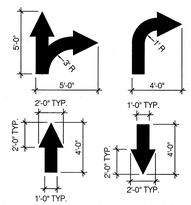


TYPICAL TIP DOWN CURB DETAIL
NOT TO SCALE



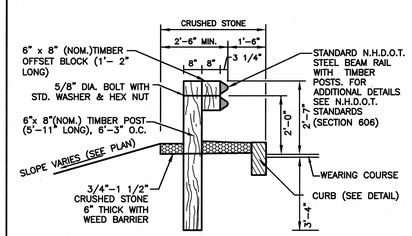
VERTICAL GRANITE CURB
NOT TO SCALE

NOTE: SAWCUT 1' OFF FACE OF CURB WHERE INSTALLED IN EXISTING PAVEMENT. PATCH PAVEMENT TO MATCH EXISTING THICKNESS.

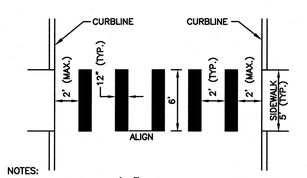


ALL PAVEMENT MARKINGS TO BE WHITE PAVEMENT PAINT, UNLESS STATED OTHERWISE.

ON-SITE PAVEMENT MARKING DETAILS
NOT TO SCALE

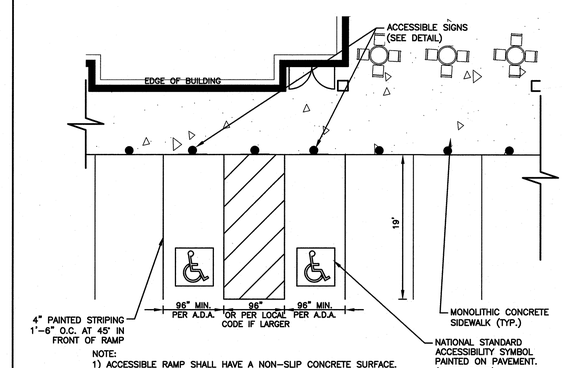


GUARD RAIL DETAIL
NOT TO SCALE



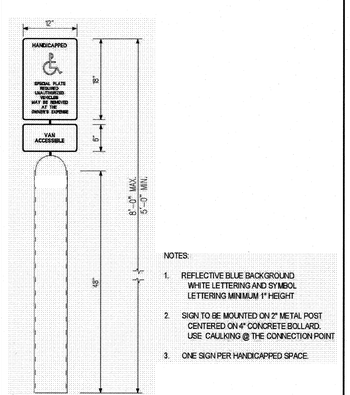
NOTES:
1. TWELVE INCH (12") WHITE THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION. NO COMBINATION OF LINES (TWO – 6 INCH LINES) WILL BE ACCEPTED.
2. LONGITUDINAL CROSSWALK LINES TO BE PARALLEL TO CURBLINE.
3. ALL LONGITUDINAL CROSSWALK LINES TO BE THE SAME LENGTH AND PROPERLY ALIGNED.

CROSSWALK
NOT TO SCALE



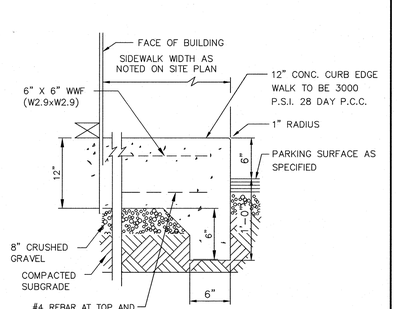
NOTE:
1) ACCESSIBLE RAMP SHALL HAVE A NON–SLIP CONCRETE SURFACE.

ACCESSIBLE PARKING STALLS
NOT TO SCALE

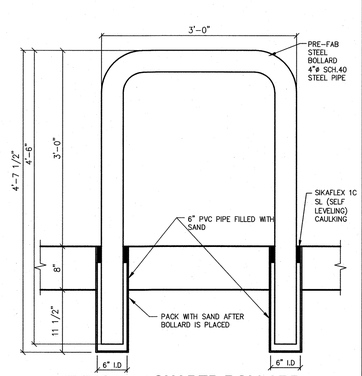


NOTES:
1. REFLECTIVE BLUE BACKGROUND WHITE LETTERING AND SYMBOL LETTERING MINIMUM 1" HEIGHT
2. SIGN TO BE MOUNTED ON 2" METAL POST CENTERED ON 4" CONCRETE BOLLARD. USE CAULKING @ THE CONNECTION POINT
3. ONE SIGN PER HANDICAPPED SPACE.

ACCESSIBLE SIGN DETAIL
NOT TO SCALE



CHARGING STATION SIDEWALK DETAIL
NOT TO SCALE



TYPICAL U-SHAPED BOLLARD
NOT TO SCALE

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Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE – CORY N. MASON No.17099 – LICENSED PROFESSIONAL ENGINEER – 4/19/22

REVISIONS		
1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

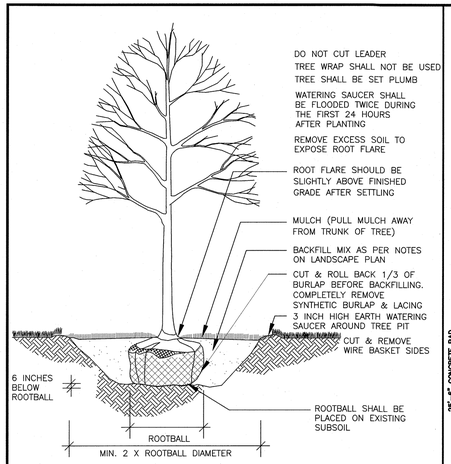
DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

DETAIL SHEET

SCALE: NOT TO SCALE

PROJECT NO. NEX-2021163

9 OF 15



TYPICAL TREE PLANTING

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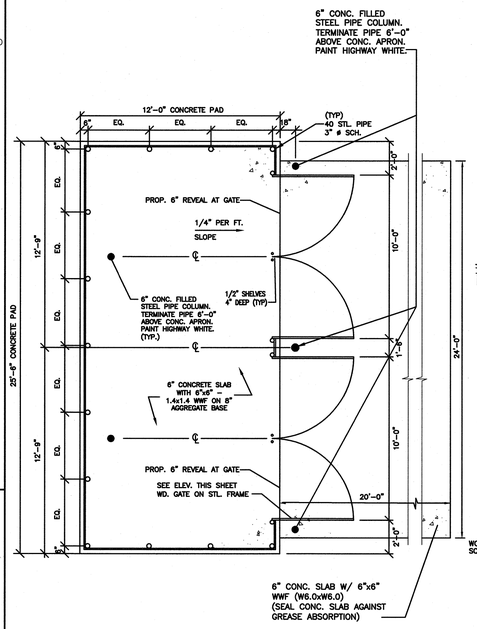

CHAINLINK TRASH ENCLOSURE

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TRASH ENCLOSURE FENCE DETAIL

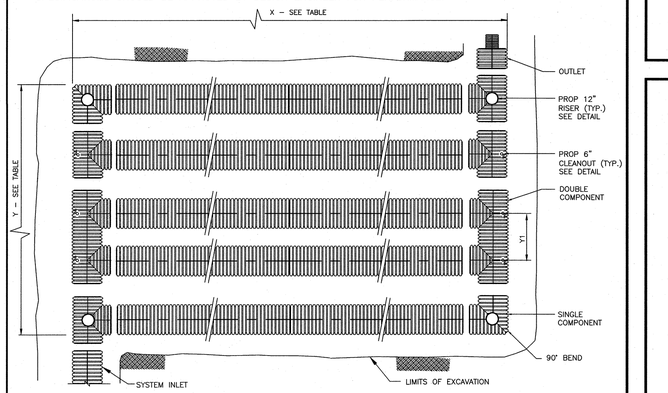
NOT TO SCALE

FENCE NOTES:

1) FENCE FABRIC SHALL BE STANDARD 2" CHAIN LINK GALVANIZED MESH WITH PRIVACY SLATS (FOREST GREEN).
2) ALL POSTS SHALL BE GALVANIZED SCHEDULE 40 STEEL PIPE
3) ALL LINE POSTS TO BE 2.375" O.D. PIPE. MAXIMUM SPACING TO BE 10' ON CENTER.
4) ALL END AND CORNER POSTS TO BE 2.875" O.D. PIPE.
5) ALL TOP AND MIDDLE RAILS TO BE 1.66" O.D. PIPE.
6) ALL FITTINGS AND ACCESSORIES SHALL BE GALVANIZED.

DETENTION SYSTEM NOTES:

1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE, DUAL WALL, SMOOTH INTERIOR AS MANUFACTURED BY ADS, INC., OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN.
2) CONTRACTOR SHOULD CONFIRM SYSTEM PARTS AND OBTAIN SHOP DRAWINGS FROM MANUFACTURER. SUBSTITUTIONS AND SHOP DRAWINGS SHOULD BE APPROVED BY THE ENGINEER.
3) PARTS SPECIFICATIONS SHOWN ARE AS PROVIDED BY ADS, INC., OR APPROVED EQUAL. ANY CHANGES TO THESE SPECIFICATIONS SHOULD BE APPROVED BY DESIGN ENGINEER FOR PERFORMANCE.



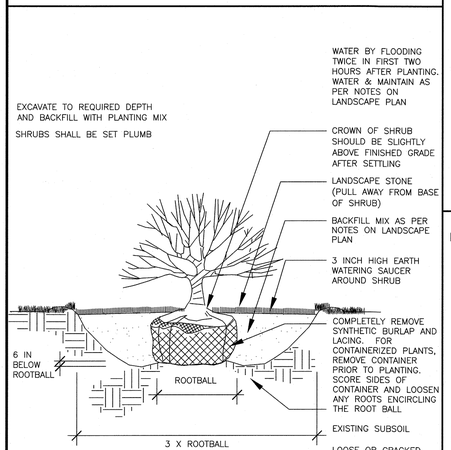
NOTE: FOR ADDITIONAL DETAILS, SEE ADS STD-702 & STD-703.

UNDERGROUND STORMWATER DETENTION SYSTEM TABLE						
UG DETENTION SYSTEM	LENGTH (X)	WIDTH (Y)	SPACING (Y1) (O.C. TYP.) *	PIPE SIZE (INCHES) SOLID	INV. PIPE ELEV. (A)	# PIPE ROWS
UG-DET	67'	19.25'	63"	36"SOLID(WT)	57.00	4

* SEE TYPICAL CROSS SECTIONS BELOW
WT = WATERTIGHT JOINTS

TYPICAL UNDERGROUND DETENTION SYSTEM LAYOUT

NOT TO SCALE



TYPICAL SHRUB PLANTING

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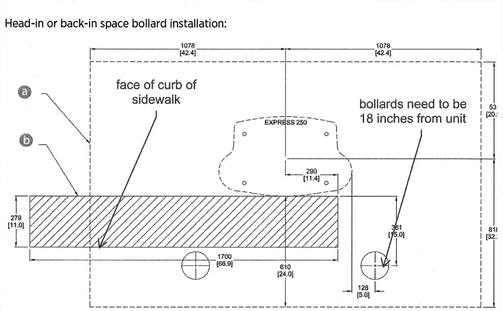
Head-in or back-in space bollard installation:



EV CHARGING STATION DETAIL

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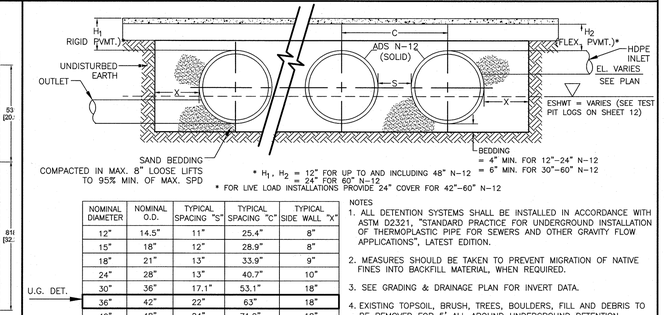


* H_1, H_2 = 12" FOR UP TO AND INCLUDING 48" N-12 = 24" FOR 60" N-12
* FOR LIVE LOAD INSTALLATIONS PROVIDE 24" COVER FOR 42"-60" N-12

NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "S"	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"
12"	14.5"	11"	25.4"	8"
15"	18"	12"	28.9"	8"
18"	21"	13"	33.9"	9"
24"	28"	13"	40.7"	10"
30"	36"	17.1"	53.1"	18"
36"	42"	22"	63"	18"
42"	48"	24"	71.9"	18"

U.G. DET.

NOTES
1. ALL DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. SEE GRADING & DRAINAGE PLAN FOR INVERT DATA.
4. EXISTING TOPSOIL, BRUSH, TREES, BOULDERS, FILL AND DEBRIS TO BE REMOVED FOR 5' ALL AROUND UNDERGROUND DETENTION SYSTEM DOWN TO NATIVE MATERIAL. BACKFILL WITH STONE BEDDING MATERIAL (CLASS 1A OR 1B).

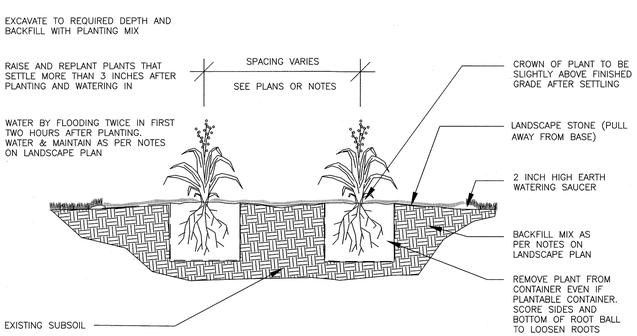
TYPICAL UNDERGROUND DETENTION SYSTEM CROSS SECTION

NOT TO SCALE

Table 5-2
Classes of Embedment and Backfill Materials

Class	ASTM D2321[1] Description	Notation	ASTM D2487 Description	AASHTO M43 Notation	Min. Compaction Required (Std Proctor Dens) %[2]	ASTM D2321[3] Percentage Passing Sieve Sizes			Atterberg Limits		Coefficients	
						1 ½ in. (40mm)	No. 4 (4.75mm)	No. 200 (0.075mm)	LL	PI	Uniformity Cu	Curvature Cc
IA[4]	Open-graded, clean manufactured aggregates	N/A	Angular crushed stone or rock, crushed gravel, crushed slag; large voids with little or no fines	6 or 68	Dumped to Slight	100%	≤10%	<5%	Non Plastic		N/A	
IB	Dense-graded clean manufactured, processed aggregates	N/A	Angular crushed stone or other Class IA material and stone/sand mixtures with gradations selected to minimize migration of adjacent soils; little or no fines			100%	≤50%	<5%	Non Plastic			
II	Clean, coarse-grained soils	GW	Well-graded gravel, gravel-sand mixtures; little or no fines	57 or 67	Moderate (85%)	100%	<50% of "Coarse Fraction"	<5%	Non Plastic		>4	1 to 3
		GP	Poorly-graded gravels, gravel-sand mixtures; little or no fines								<4	<1 or >3
		SW	Well-graded sands, gravelly sands; little or no fines				>50% of "Coarse Fraction"				>6	1 to 3
		SP	Poorly-graded sands, gravelly sands; little or no fines								<6	<1 or >3
	Coarse-Grained Soils, borderline clean to w/fines	GW-GC, SP-SM	Sands and gravels which are borderline between clean and with fines	N/A		100%	Varies	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
III	Coarse-grained soils with fines	GM	Silty gravels, gravel-sand-silt mixtures	Gravel & sand with >10% fines	Moderate to High (90%)	100%	<50% of "Coarse Fraction"	12% to 50%	N/A	<4 or "A" Line	N/A	
		GC	Clayey gravels, gravel-sand-clay mixtures							>7 & >"A" Line		
		SM	Silty sands, sand-silt mixtures				>50% of "Coarse Fraction"			<4 or "A" Line		
		SC	Clayey sands, sand-clay mixtures							>7 & >"A" Line		
IVA[5]	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity	N/A	N/R	100%	100%	>50%	<50	<4 or "A" Line	N/A	
		CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays; lean clays	N/A						>7 & >"A" Line		
IVB	Inorganic fine-grained soils	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	N/A	N/R	100%	100%	>50%	>50	<"A" Line	N/A	
		CH	Inorganic clays of high plasticity, fat clays	N/A						>"A" Line		
V	Organic soils or Highly organic soils	OL	Organic silts and organic silty clays of low plasticity	N/A	N/R	100%	100%	>50%	<50	<4 or "A" Line	N/A	
		OH	Organic clays of medium to high plasticity, organic silts	N/A					>50	>"A" Line		
		PT	Peat and other high organic soils	N/A								

Notes:
1) Refer to ASTM D2321 for more complete soil descriptions.
2) Class IVA material has limited applications and can be difficult to place and compact; use ONLY with the approval of a soil expert. Contact ADS for additional information regarding suitability of this backfill material.
3) N/R indicates that use of this material and/or compaction level is not recommended by ASTM D2321 for the backfill envelope.
4) When using open-graded material, additional precaution must be taken to reduce or eliminate the risk of migration of fines from adjacent material. Refer to ASTM D2321 for more complete information.

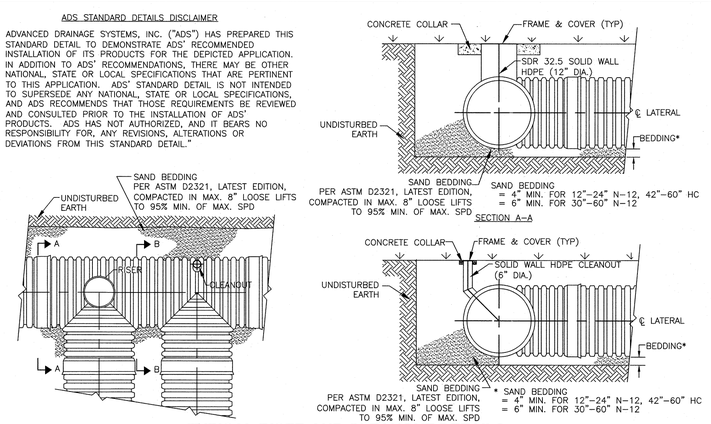


TYPICAL PERENNIAL PLANTING

NOT TO SCALE

ADS STANDARD DETAILS DISCLAIMER

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS STANDARD DETAIL TO DEMONSTRATE ADS' RECOMMENDED INSTALLATION OF ITS PRODUCTS FOR THE DEPICTED APPLICATION. IN ADDITION TO ADS' RECOMMENDATIONS, THERE MAY BE OTHER NATIONAL, STATE OR LOCAL SPECIFICATIONS THAT ARE PERTINENT TO THIS APPLICATION. ADS' STANDARD DETAIL IS NOT INTENDED TO SUPERSEDE ANY NATIONAL, STATE OR LOCAL SPECIFICATIONS, AND ADS RECOMMENDS THAT THOSE REQUIREMENTS BE REVIEWED AND CONSULTED PRIOR TO THE INSTALLATION OF ADS' PRODUCTS. ADS HAS NOT AUTHORIZED, AND IT BEARS NO RESPONSIBILITY FOR, ANY REVISIONS, ALTERATIONS OR DEVIATIONS FROM THIS STANDARD DETAIL."



TYPICAL RISER AND CLEANOUT DETAILS

NOT TO SCALE

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
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PREPARED FOR
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PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE — CORY N. MASON No.17099 — LICENSED PROFESSIONAL ENGINEER
4/19/22

REVISIONS		
NO.	REVISION	DATE
	JANUARY 26, 2022	
DRAWN/DESIGN BY	CHECKED BY	
CCC/NID	DRJ	

DETAIL SHEET

SCALE: NOT TO SCALE
PROJECT NO. NEX-2021163

10 OF 15

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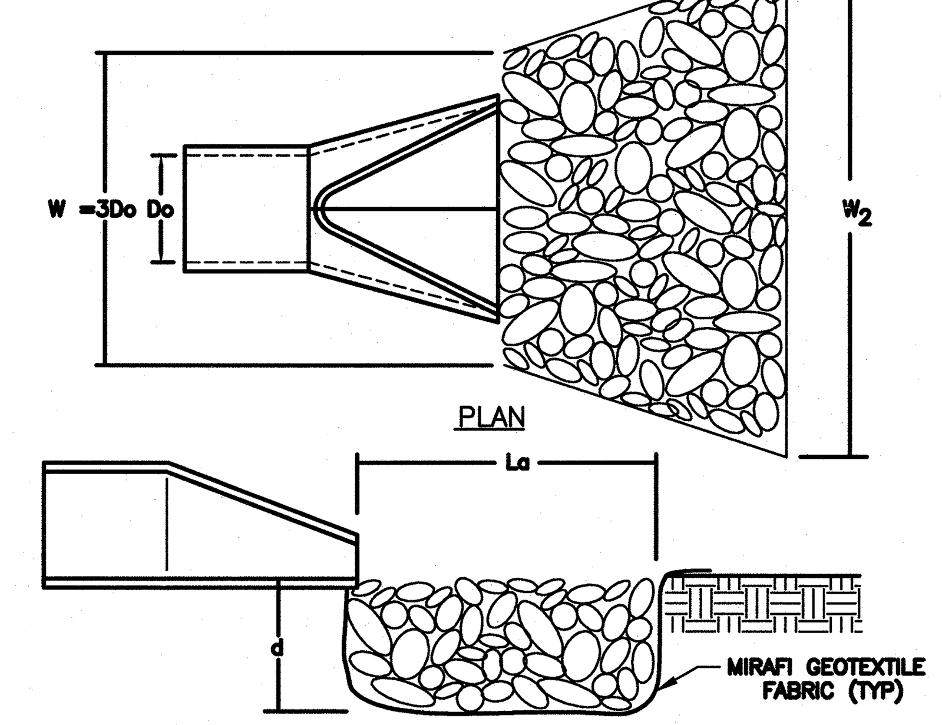


OUTLET	Do	La	W_1	W_2	d_{50}	d
FES-1	18"	26'	4.5'	15'	4"	10"

*PLACE OUTLET APRON STONE ON ENTIRE SEDIMENT FOREBAY BOTTOM. SEE GRADING & DRAINAGE PLAN.

ROCK RIP-RAP GRADATION

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE IN INCHES
100	4.5 TO 6.0
85	3.9 TO 5.4
50	3.0 TO 4.5
15	0.9 TO 1.5

FORMULAS USED (REFERENCE NHDES STORMWATER MANUAL, VOL. 2, PAGE 174)

CONSTRUCTION NOTES:

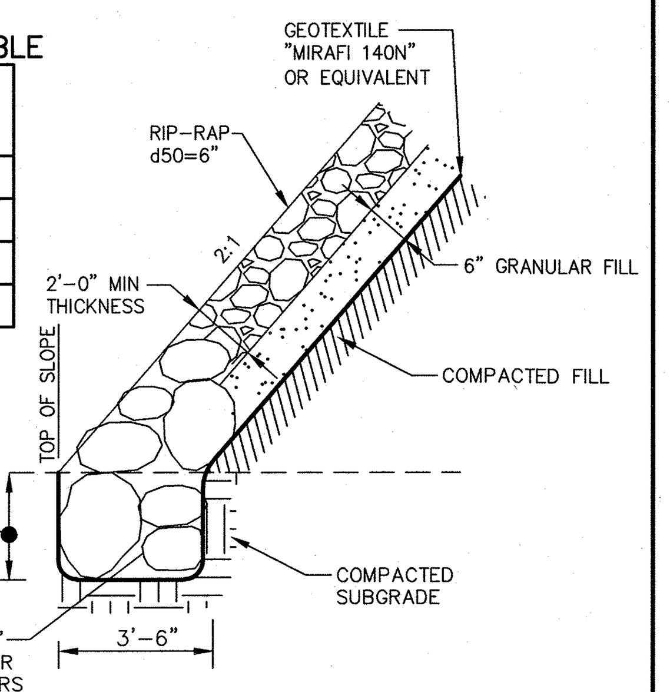
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACE,\MENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. THE MEDIAN STONE DIAMEMETER FOR THE RIP-RAP APRON IS d50. FIFTY PERCENT BY WEIGHT OF THE RIP-RAP MIXTURE SHALL BE SMALLER THAN THE MEDIAN STONE SIZE. THE LARGEST STONE SIZE IN THE MIXTURE SHALL BE 1.5 d50.

OUTLET PROTECTION-FLAT DETAIL

NOT TO SCALE

RIP RAP GRADATION TABLE

% OF WEIGHT SMALLER THAN GIVEN SIZE	FOR d50 = 6"
100	9.0 TO 12.0
85	7.8 TO 10.8
50	6.0 TO 9.0
15	1.8 TO 3.0



RIP RAP SLOPE DETAIL

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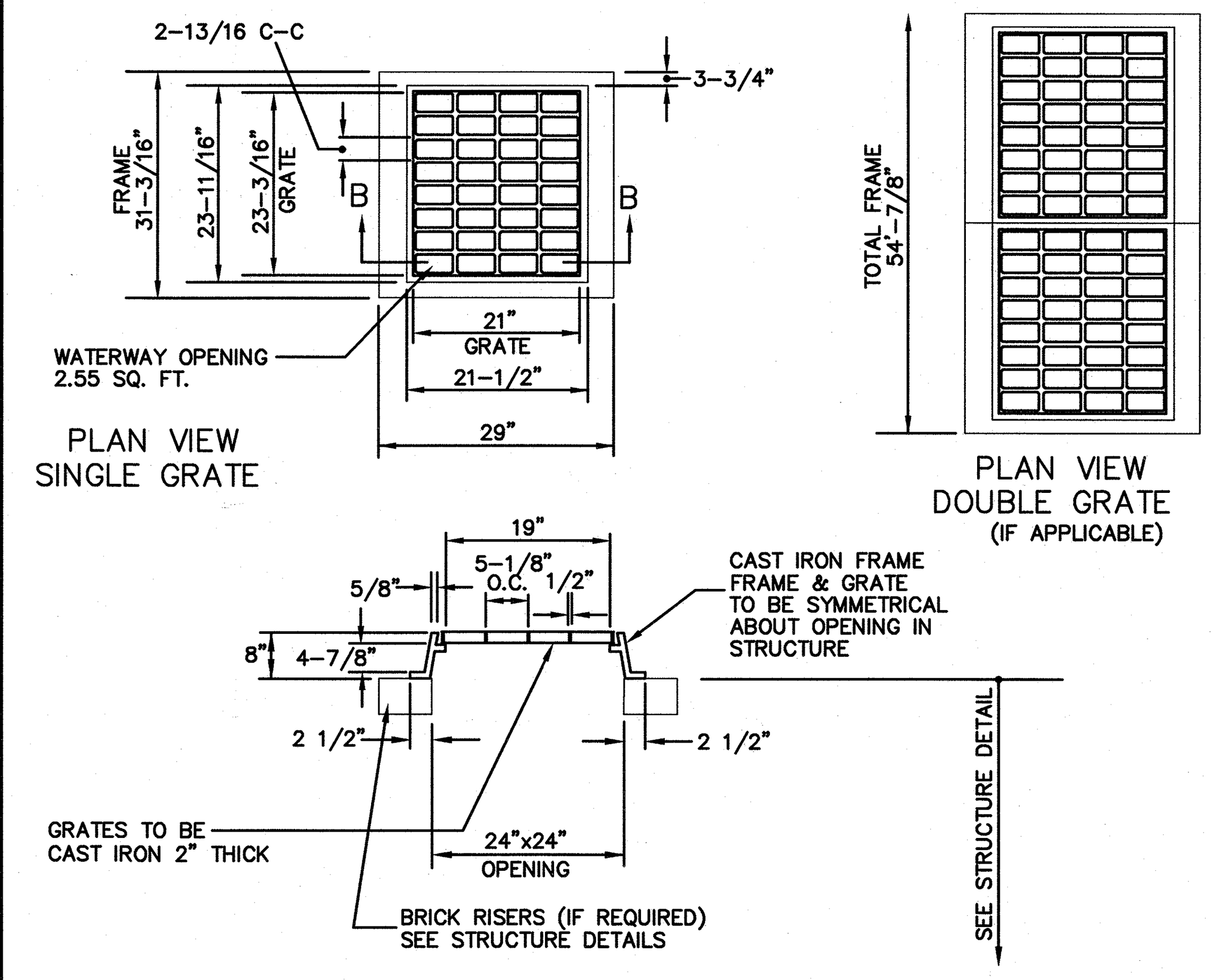

FRAME AND GRATE - TYPE B

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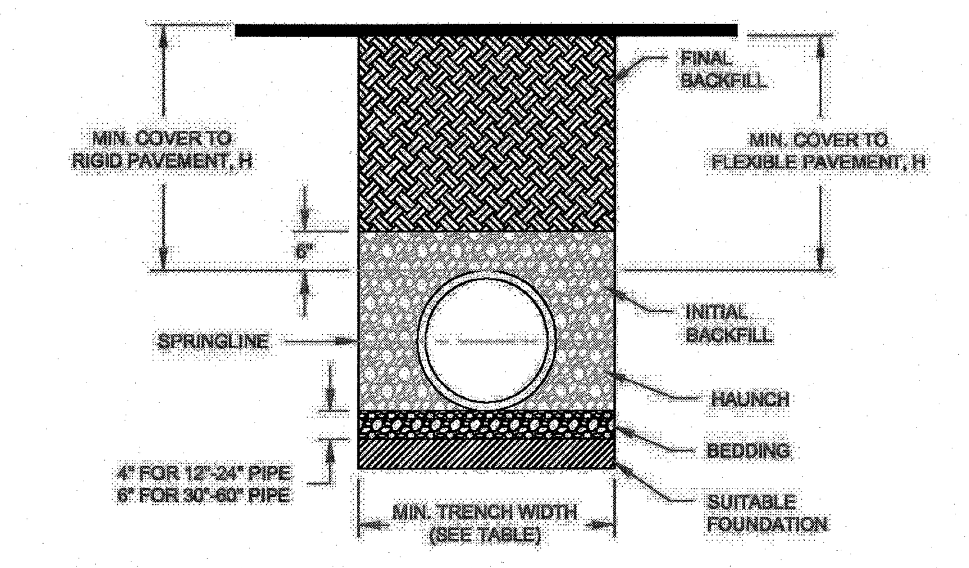


RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

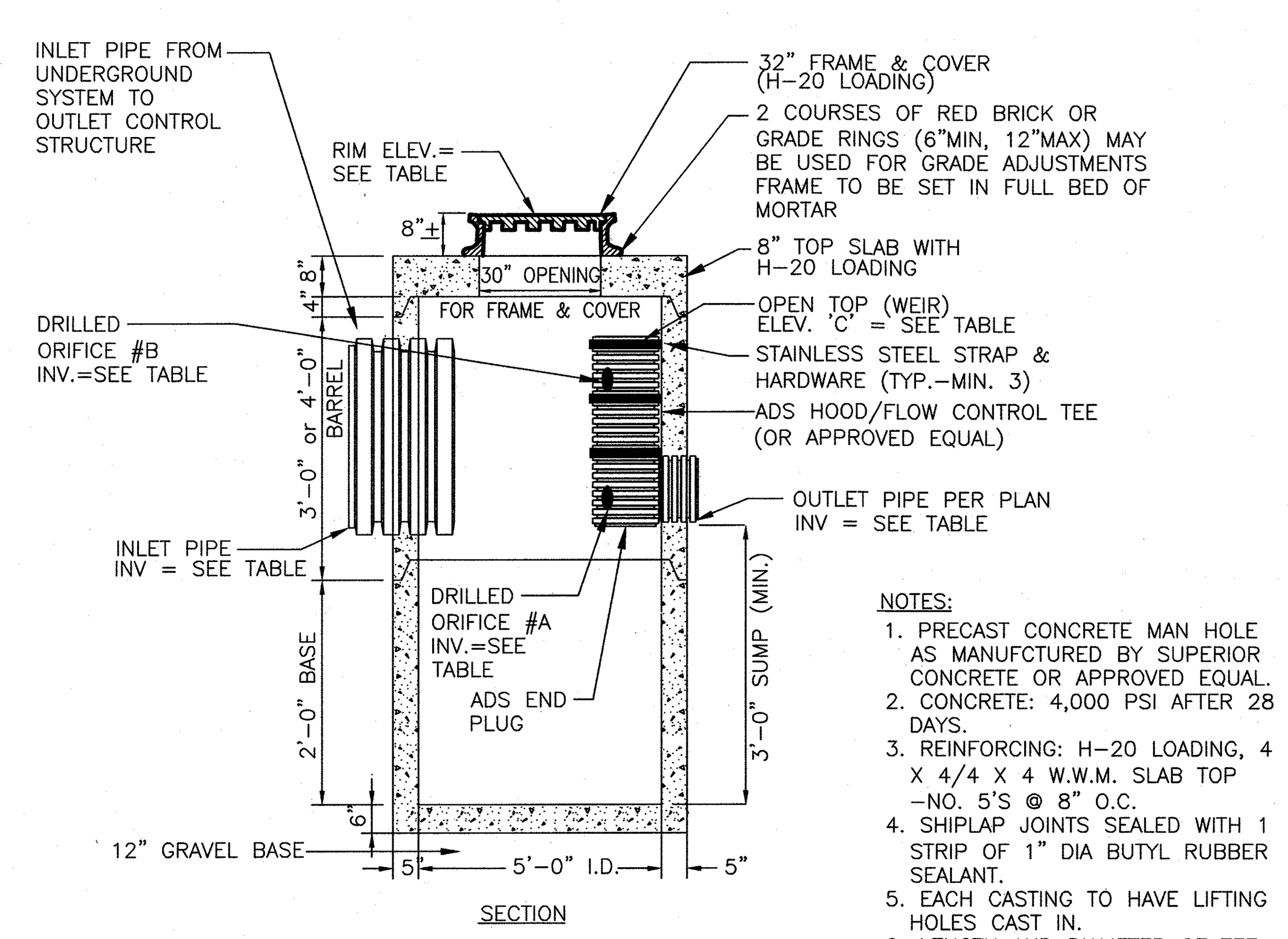
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
2	ADDED E-80 INFORMATION	TJR	08/20/07	

TYPICAL TRENCH DETAIL — DRAWING NUMBER: STD-101 — ADS, 4640 TRUEMAN BLVD, HILLIARD, OHIO 43026 — CKS — 10/18/06 — NTS — 1 OF 1

HDPE PIPE TRENCH

NOT TO SCALE



NOTES:

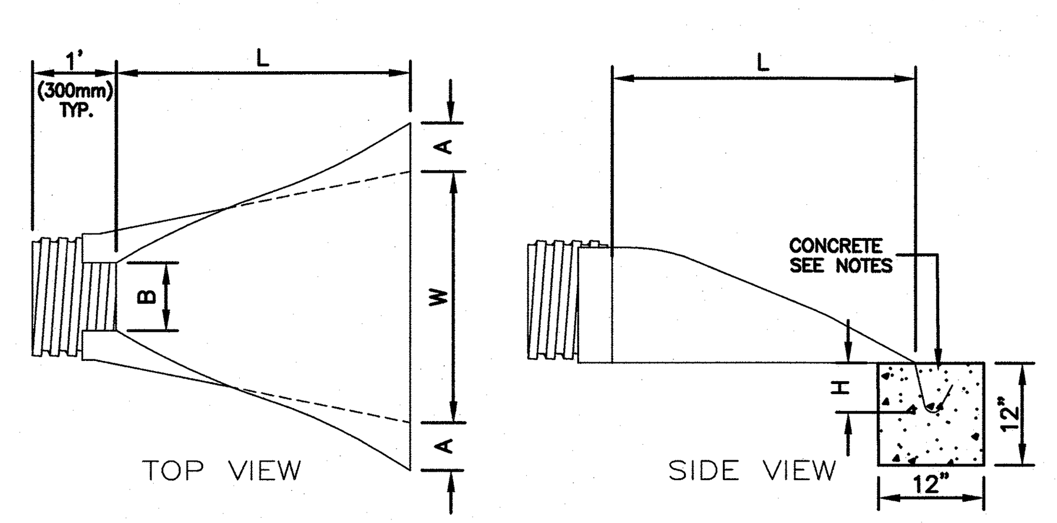
1. PRECAST CONCRETE MAN HOLE AS MANUFCTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H-20 LOADING, 4 X 4/4 X 4 W.W.M. SLAB TOP -NO. 5'S @ 8" O.C.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF 1" DIA BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
6. LENGTH AND DIAMETER OF TEE VARIES WITH PIPE.

OUTLET CONTROL STRUCTURE TABLE

OCS	RIM	ORIFICE	SIZE (IN.)	ELEV.	INV.IN (SIZE)	INV.IN (ELEV)	INV.OUT (SIZE)	INV.OUT (ELEV)
#1	63.70	A	5" DIA. x3	57.00	24"	57.00	18"	57.00
		B	5" DIA. x2	57.50				
		C	18" DIA.	59.00				

PRECAST CONCRETE OUTLET CONTROL STRUCTURE (OCS) FOR UNDERGROUND SYSTEMS

NOT TO SCALE



PIPE DIAMETER	PART NO.	DIMENSIONS, INCHES (mm): A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

CONSTRUCTION SPECIFICATIONS:

PREPARE BEDDING:

BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:

OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:

SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:

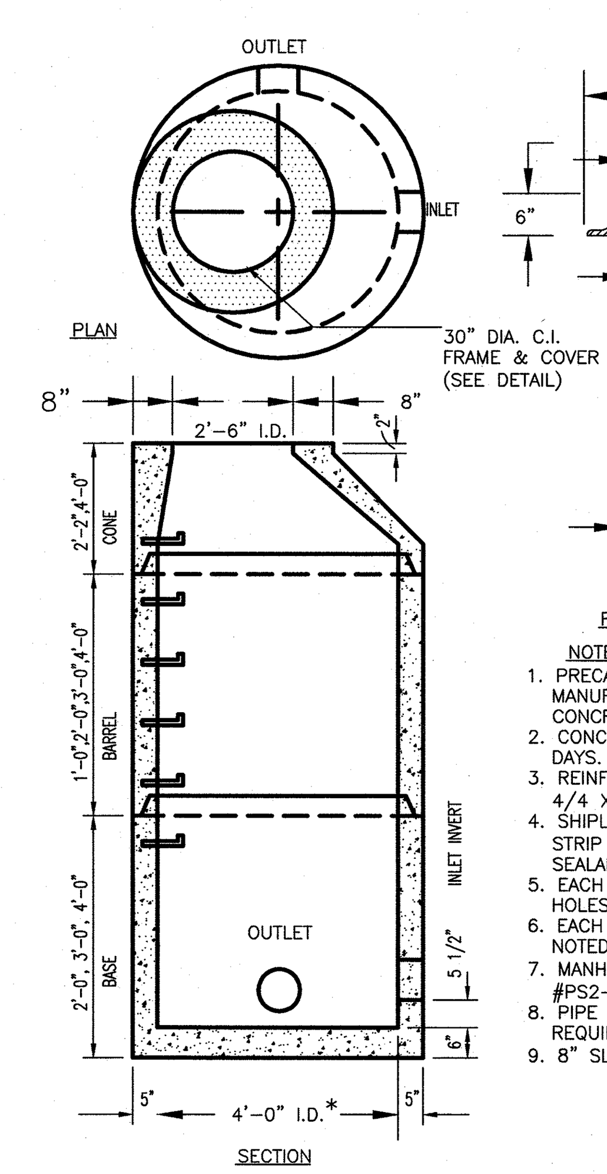
TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:

SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

FLARED END SECTION HIGH DENSITY POLYETHYLENE (HDPE)

NOT TO SCALE

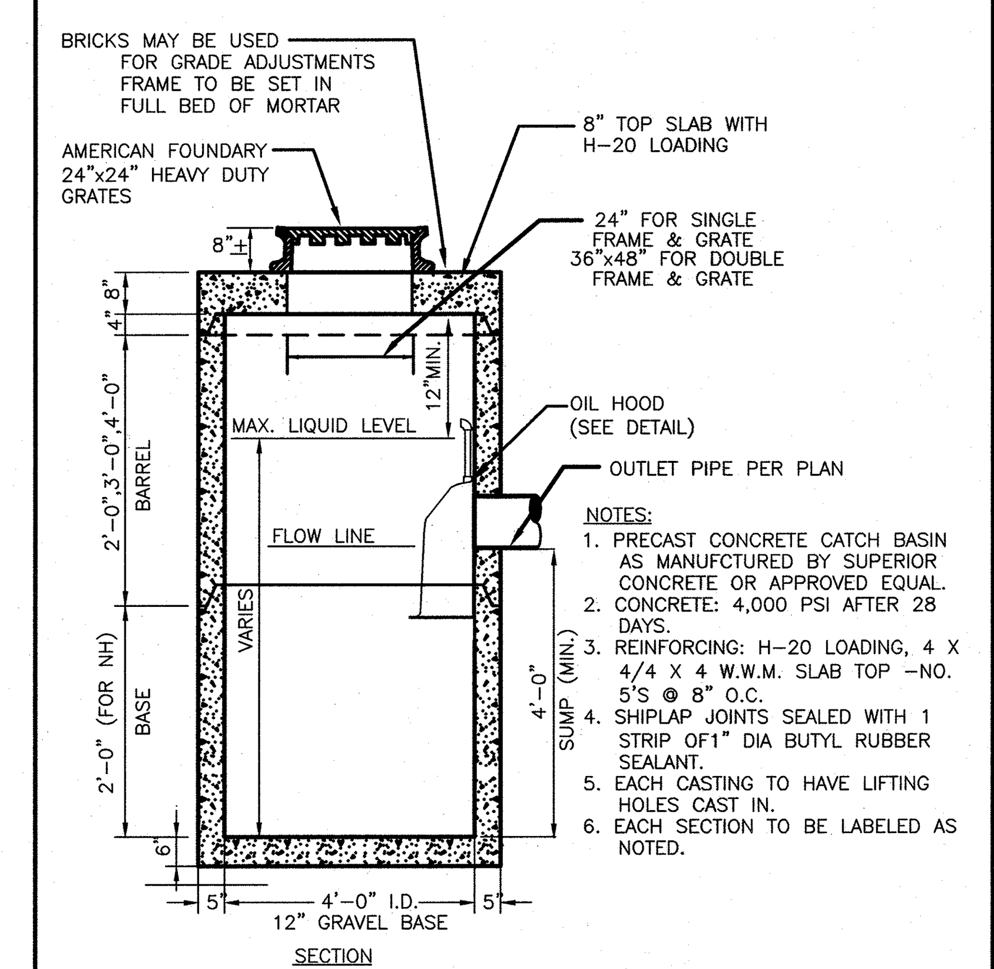


NOTES:

1. PRECAST CONCRETE MANHOLE AS MANUFACTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H-20 LOADING 4 X 4/4 X 4 W.W.M.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF 1" DIA. BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
6. EACH SECTION TO BE LABELED AS NOTED.
7. MANHOLE STEPS @ 12" O.C. #PS2-PF-SL.
8. PIPE OPENINGS CAST IN AS REQUIRED.
9. 8" SLAB TOP AVAILABLE.

PRECAST CONCRETE DRAIN MANHOLE

MAXIMUM PIPE DIAMETER 30"
NOT TO SCALE

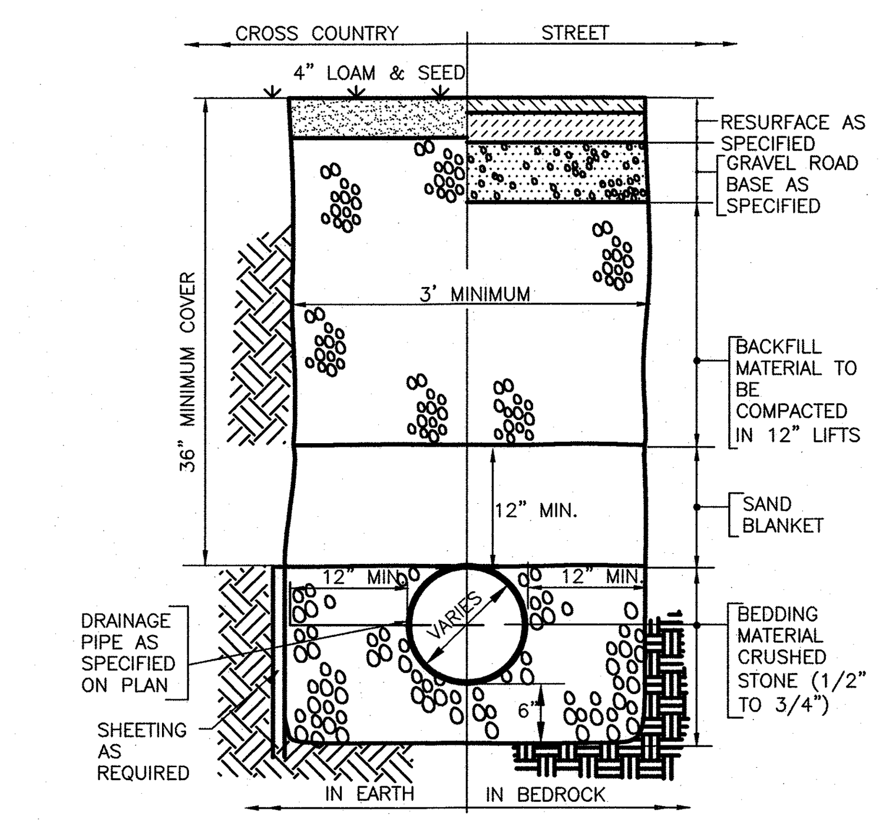


NOTES:

1. PRECAST CONCRETE CATCH BASIN AS MANUFCTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H-20 LOADING, 4 X 4/4 X 4 W.W.M. SLAB TOP -NO. 5'S @ 8" O.C.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF1" DIA BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
6. EACH SECTION TO BE LABELED AS NOTED.

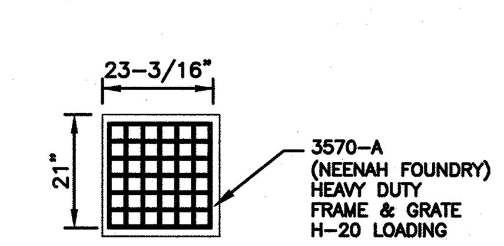
PRECAST CONCRETE CATCH BASIN WITH HOOD

NOT TO SCALE



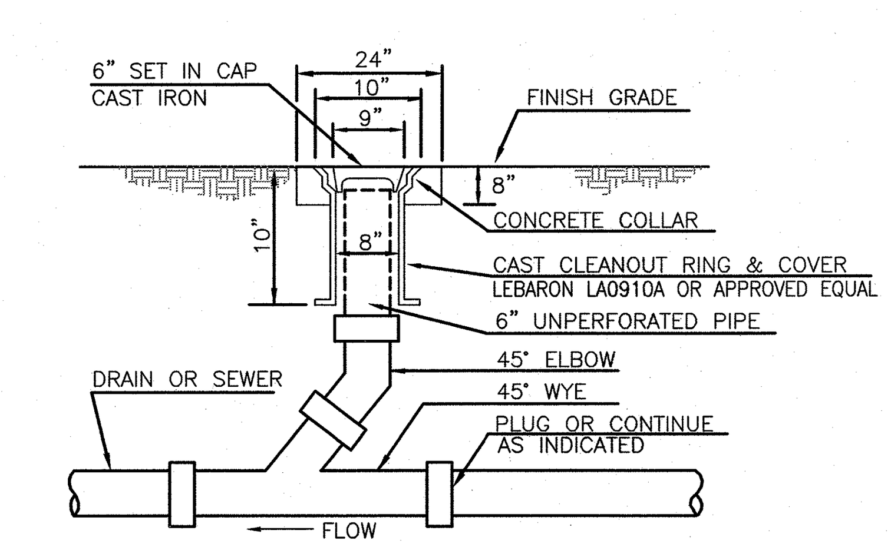
TYPICAL TRENCH SECTION FOR STORM DRAIN

NOT TO SCALE



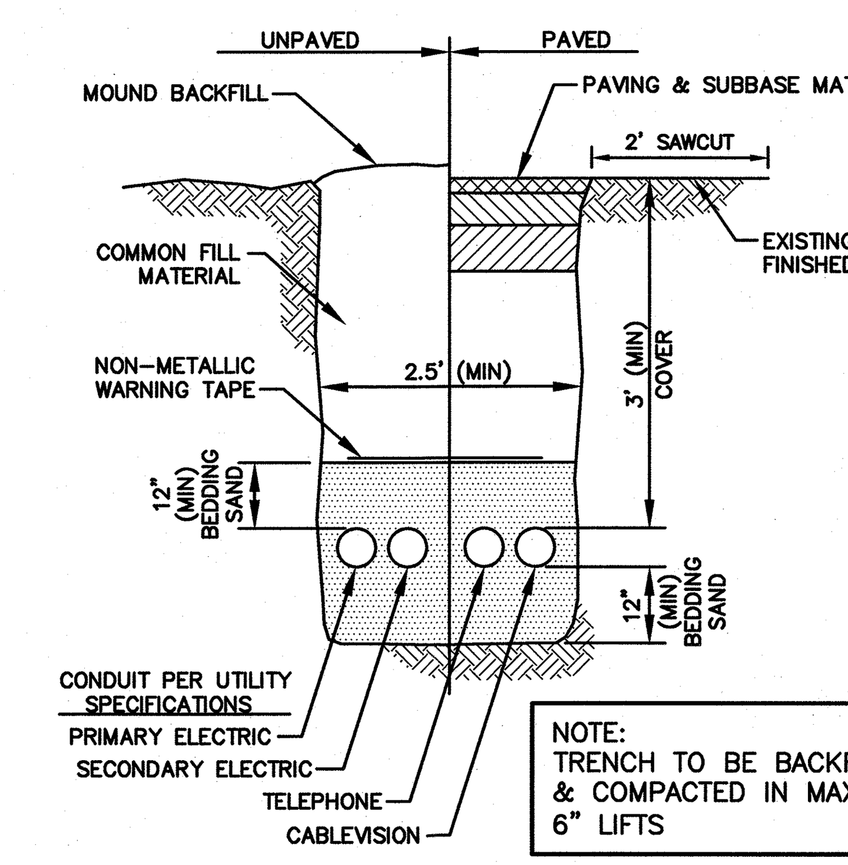
LOW PROFILE GRATE PLAN VIEW

NOT TO SCALE



TYPICAL CLEANOUT

NOT TO SCALE



NOTE:
TRENCH TO BE BACKFILLED & COMPACTED IN MAXIMUM 6" LIFTS

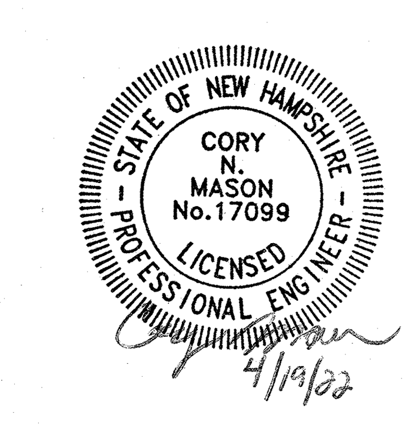
UTILITY TRENCH

NOT TO SCALE

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD
PORTSMOUTH, NH 03801



REVISIONS

NO.	REVISION	DATE
1	REV. PER CITY COMMENTS	3/22/22

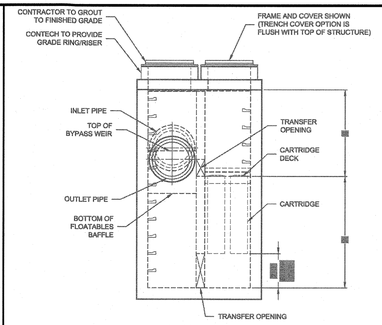
JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

DETAIL SHEET

SCALE: NOT TO SCALE

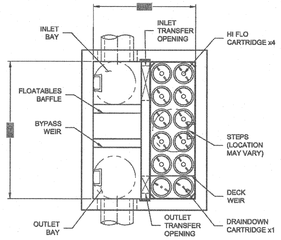
PROJECT NO. NEX-2021163



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' - 10', 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-857, ASTM C-978, 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 RECOMMENDED 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.
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. 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.



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

JELLYFISH 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	40"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-4"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.133 / 0.067
MAX. TREATMENT (CFS)	1.47
DECK TO INSIDE TOP (MIN) (B)	4.00

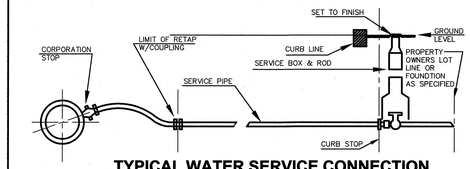
SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	JF-1
WATER QUALITY FLOW RATE (cfs)	0.80
PEAK FLOW RATE (cfs)	5.20
RETURN PERIOD OF PEAK FLOW (yrs)	50
# OF CARTRIDGES REQUIRED (HF / DD)	4/1
CARTRIDGE LENGTH	54"

JELLYFISH FILTER DETAIL

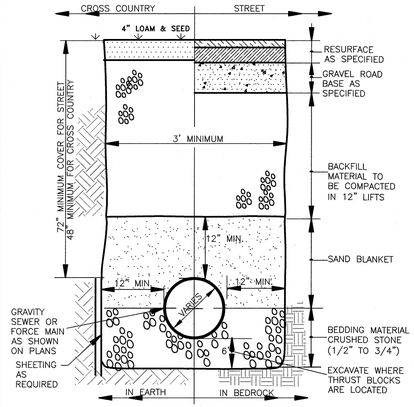
Jellyfish Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,720; 8,221,618; U.S. 8,528,695; OTHER INTERNATIONAL PATENTS PENDING

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

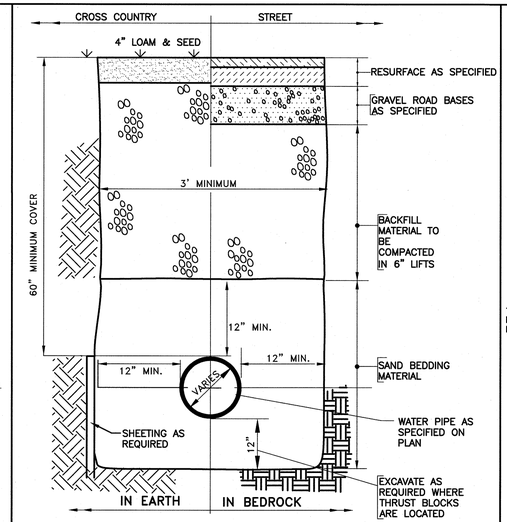
JELLYFISH JFPD0806
STANDARD DETAIL
PEAK DIVERSION CONFIGURATION



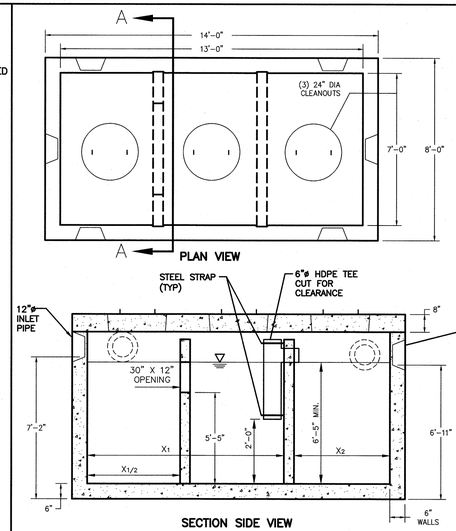
TYPICAL WATER SERVICE CONNECTION
NOT TO SCALE



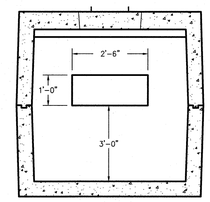
TYPICAL TRENCH SECTION FOR SANITARY SEWER SERVICE
NOT TO SCALE



TYPICAL TRENCH SECTION FOR WATER SERVICE
NOT TO SCALE



4,000 GAL. OIL/WATER SEPARATOR DETAIL (OWS-1)
NOT TO SCALE

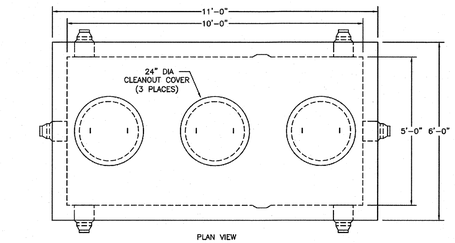


SECTION A–A VIEW

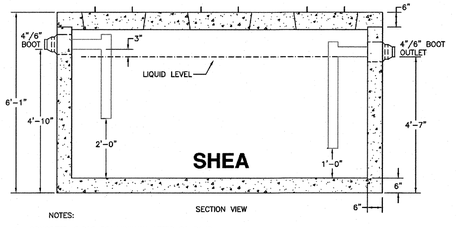
BAFFLE WALL DETAIL

ITEM: 8X14–352C

NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR H–20 LOADING. 1 TO 5 FEET OF COVER.
3. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
4. FIRST & SECOND CHAMBER SIZING BASED ON NHDES CRITERIA OF 400 CF/ACRE OF IMPERVIOUS AREA:
   O/W SEP #1: IMP. AREA = 1.03 Ac.
   400 CF/Ac. x 1.03 Ac.= 412 CF
   X_1 = 412 CF/(6'–5" x 7') = 9'–2"
   X_2 = 3'–6"
5. CONTRACTOR TO SUBMIT SHOP DRAWING FOR APPROVAL.



PLAN VIEW

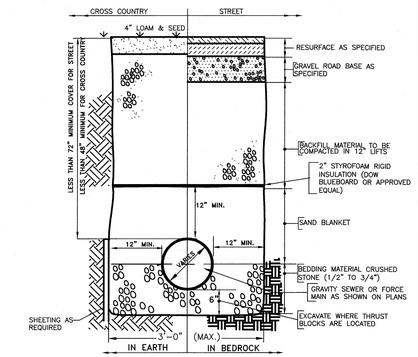


SHEA
SECTION VIEW

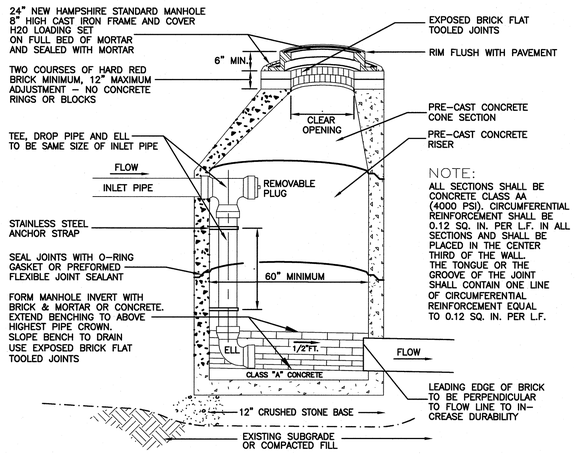
NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR GREASE TRAPS.
3. ALL REINFORCEMENT PER ASTM C1227.
4. DESIGNED FOR AASHTO HS–20 LOADING, 1 TO 5 FT COVER.
5. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN
6. TEES AND BAFFLES SOLD SEPARATELY

	WEIGHT	TOP	BOTTOM
ITEM NO. TK–M1500C	22,600#	5,400#	17,200#
TK–M1500C2C	24,400#	5,400#	19,000#

1,500 GALLON GREASE TRAP DETAIL (H-20 LOADING)
NOT TO SCALE

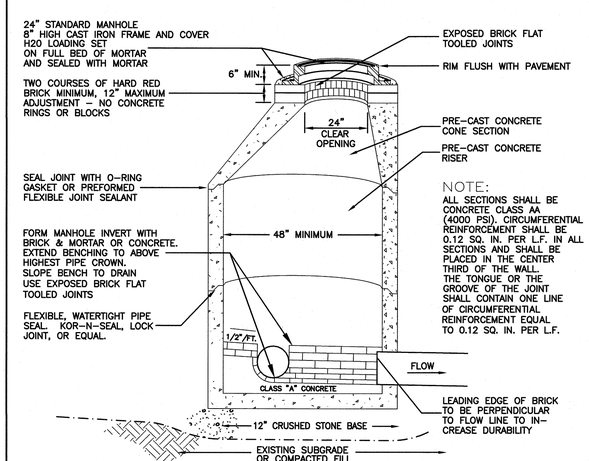


TYPICAL TRENCH SECTION FOR SANITARY SEWER SERVICE WITH LESS THAN 6' OF COVER
NOT TO SCALE



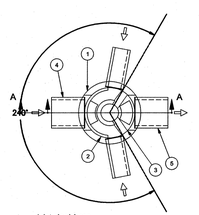
MORTAR SHALL CONSIST OF:
1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

DROP SEWER MANHOLE
NOT TO SCALE



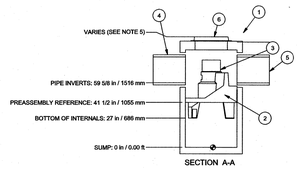
MORTAR SHALL CONSIST OF:
1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

SEWER MANHOLE
NOT TO SCALE



Inlet pipe(s) can enter anywhere within 240° arc.

Parts List		
ITEM	SIZE (in)	DESCRIPTION
1	48	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	12	INLET PIPE (BY OTHERS)
5	15	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)



SECTION A-A

GENERAL NOTES:
1. GENERAL ARRANGEMENT DRAWINGS ONLY. CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC FABRICATION DRAWINGS.
2. THE DIAMETER OF THE INLET & OUTLET PIPES MAY BE NO MORE THAN 24".
3. MULTIPLE INLET PIPES POSSIBLE (REFER TO PROJECT PLANS).
4. INLET/OUTLET PIPE ANGLE CAN VARY TO ALIGN WITH DRAINAGE NETWORK (REFER TO PROJECT PLANS).
5. PEAK FLOW RATE AND MINIMUM HEIGHT LIMITED BY AVAILABLE COVER AND PIPE DIAMETER.
6. LARGER SEDIMENT STORAGE CAPACITY MAY BE PROVIDED WITH A DEEPER SUMP DEPTH.

PRODUCT SPECIFICATIONS:
A. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
B. THE TREATMENT SYSTEM SHALL FIT WITHIN THE LIMITS OF EXCAVATION (AREA AND DEPTH) AS SHOWN IN THE PROJECT PLANS AND WILL NOT EXCEED THE DIMENSIONS FOR THE DESIGN FLOW RATES SPECIFIED HEREIN.
C. THE TREATMENT SYSTEM SHALL REMOVE GREATER THAN OR EQUAL TO 90% OF TSS BASED ON THE TARGET PARTICLE SIZE (TPS) OF 106 MICRONS AND/OR 85% OF TSS BASED ON THE TPS OF 230 MICRONS AT 0.7 CFS AND 1.2 CFS, RESPECTIVELY.
D. THE TREATMENT SYSTEM SHALL CONVEY THE PEAK ON-LINE FLOW RATES OF UP TO 18 CFS WITHOUT CAUSING OBJECTIONABLE SURCHARGE CONDITIONS. FULL-SCALE INDEPENDENT LABORATORY SCOUR TESTING SHALL DEMONSTRATE EFFLUENT CONTROL OF LESS THAN OR EQUAL TO 5 MG/L FOR ALL FLOWS UP TO 200% OF MTFR=10S.
E. THE TREATMENT SYSTEM SHALL BE CAPABLE OF CAPTURING AND RETAINING FINE SILT AND SAND SIZE PARTICLES. ANALYSIS OF CAPTURED SEDIMENT FROM FULL-SCALE FIELD INSTALLATIONS SHALL DEMONSTRATE PARTICLE SIZES PREDOMINANTLY IN THE 20–MICRON RANGE

"FIRST DEFENSE" UNIT DETAIL - FD-4HC
(OR APPROVED EQUAL)
NOT TO SCALE

NOTE: CONTRACTOR SHOULD CONFIRM SYSTEM PARTS AND OBTAIN SHOP DRAWINGS FROM MANUFACTURER PRIOR TO CONSTRUCTION.

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

CORY N. MASON No.17099 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4/19/22

REVISIONS		
1	ADD JELLYFISH	4/19/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

DETAIL SHEET

SCALE: NOT TO SCALE

PROJECT NO. NEX-2021163

12 OF 15

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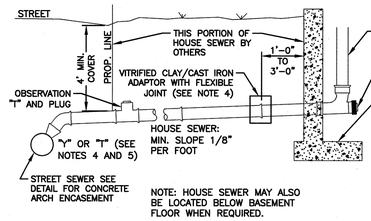
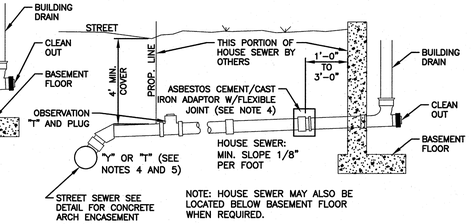
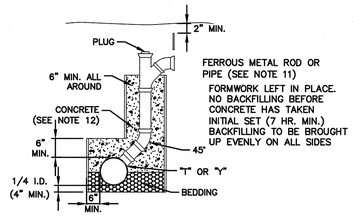


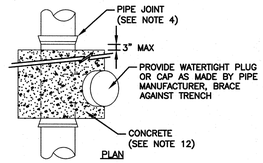
VITRIFIED CLAY SEWER AND HOUSE SEWER



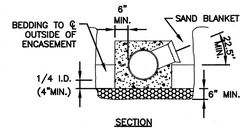
ASBESTOS CEMENT SEWER AND HOUSE SEWER

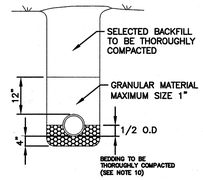


CHIMNEY
(SEE NOTE 13)

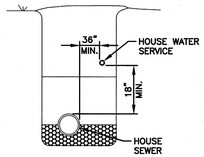


CONCRETE FULL ENCASEMENT





TRENCH CROSS-SECTION



WATER AND SEWER IN SAME TRENCH
(SEE NOTE 9)

HOUSE SEWER DETAILS
NOT TO SCALE

NOTES:
1. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 4 INCHES.
2. PIPE AND JOINT MATERIALS
   - A. VITRIFIED CLAY PIPE
     - a. PIPE AND FITTINGS SHALL BE EXTRA STRENGTH CLAY PIPE CONFORMING TO THE REQUIREMENTS OF ASTM C-700.
     - b. JOINTS SHALL BE MADE WITH OIL RESISTANT GASKETS IN ACCORDANCE WITH ASTM C-425 TYPE III MANUFACTURERS INSTRUCTIONS FOR INSTALLATION SHALL BE FOLLOWED.
   - B. ASBESTOS-CEMENT-NON-PRESSURE SEWER PIPE
     - a. PIPE AND FITTINGS SHALL CONFORM TO ASTM TENTATIVE SPECIFICATIONS C644 TYPE II.
     - b. 2. JOINTS SHALL BE OF THE SLEEVE-COUPLING TYPE CONFORMING TO ASTM SPECIFICATIONS C644 TYPE II COMPRESSION RINGS SHALL BE OF OIL RESISTANT RUBBER TYPE OR ELASTOMERIC MATERIAL AND SHALL CONFORM TO ASTM SPECIFICATION D1869. MANUFACTURERS INSTRUCTIONS SHALL BE FOLLOWED FOR INSTALLATIONS.
   - C. CAST IRON PIPE FITTINGS AND JOINTS
     - a. CAST IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE:
       - A21.1 THICKNESS DESIGN OF CAST IRON PIPE
       - A21.4 CEMENT MORTAR LINING FOR CAST IRON PIPE AND FITTINGS
       - A21.6 CAST IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS FOR WATER OR OTHER LIQUIDS.
       - A21.8 CAST IRON PIPE CENTRIFUGALLY CAST IN SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.
       - A21.10 CAST IRON FITTINGS, 2 INCHES THROUGH 48 INCHES FOR WATER AND OTHER LIQUIDS.
     - b. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE JOINTS AND GASKETS SHALL CONFORM TO:
       - A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE AND FITTINGS.
   - D. DUCTILE IRON PIPE, FITTINGS AND JOINTS
     - a. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
       - A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 DUCTILE IRON CASTINGS
       - A21.51 DUCTILES IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS OR SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.
     - b. JOINTS SHALL BE SPECIFIED IN Cb ABOVE, CAST IRON PIPE JOINTS
3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
4. JOINTS SHALL BE BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATERTIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATICHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER "Y" OR AT THE FOUNDATION WALL, APPROPRIATE ADAPTERS SHALL BE USED.
5. "T" AND "Y" WHERE A "T" OR "Y" IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE IN THE SEWER, FOLLOWING MANUFACTURERS INSTRUCTIONS (USING A BOLTED, CLAMPED OR EPOXY CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH (OR OTHER SUCH MATERIAL) AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED, AS SHOWN IN THE DETAIL, UP TO AND INCLUDING * 15" DIAMETER.
6. PIPE INSTALLATION THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL, AS SPECIFIED IN NOTE 10, BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
7. TESTING THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING):
   - A. AN OBSERVATION "T" SHALL BE INSTALLED AS SHOWN. WHEN READY TESTING , AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE "T". AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
   - B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS. IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECT-IONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

* DOES NOT APPLY TO INSTALLATIONS WHERE "T's" AND "Y's" ARE USED

   - C. FLUORESCENT DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER. IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST MANHOLE DOWNSTREAM. LEAKAGE OBSERVED IN ANY OF THE ABOVE, ALTER-NATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP, IF NECESSARY, AND RELAID SO AS TO ASSURE WATERTIGHTNESS.
8. ILLEGAL CONNECTION NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
9. HOUSE WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
10. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.
    100%-PASSING 1 INCH SCREEN 90-100%-PASSING 3/4 INCH SCREEN
    20-55%-PASSING 3/8 INCH SCREEN 0-10%-PASSING #4 SIEVE
    0-5%-PASSING #8 SIEVE
    WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE (1-1/2 TO 1/2 INCH) SHALL BE USED.
11. LOCATION THE LOCATION OF THE "T" OR "Y" SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE "T" OR "Y", AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.
12. CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE N.H. DEPT. OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
    CEMENT: 6.0 BAGS/C.Y. WATER: 5.75 GALS./BAG CEMENT
    AGGREGATE: 1-1/2 INCH MAX.
13. CHIMNEYS IF VERTICAL DROP INTO THE SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION.

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Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD
PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON
No. 17039
LICENSED PROFESSIONAL ENGINEER
4/19/22

REVISIONS		
NO.	REVISION	DATE

APRIL 19, 2022

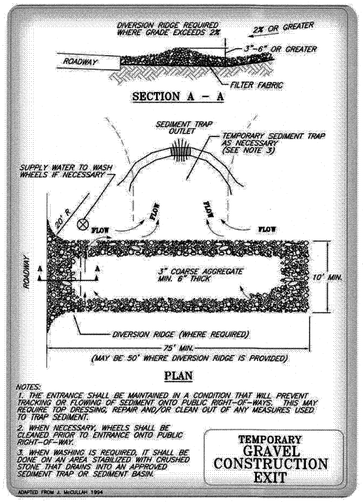
DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

DETAIL SHEET

SCALE: NOT TO SCALE

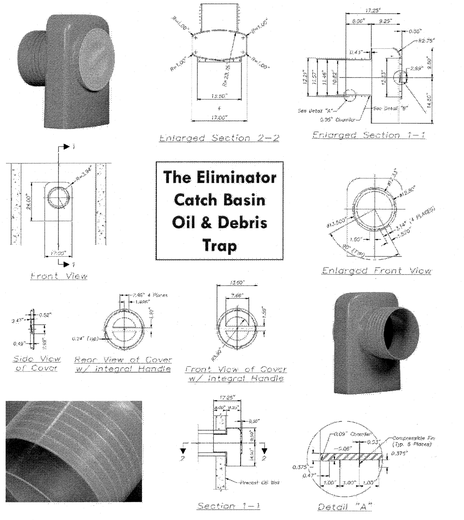
PROJECT NO. NEX-2021163

13 OF 15

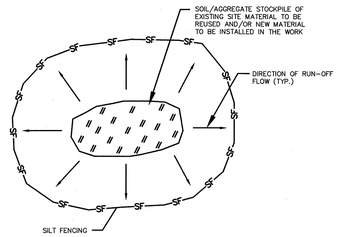


GRAVEL CONSTRUCTION EXIT

NOT TO SCALE



GWR Ground Water Rescue
Ground Water Rescue, Inc.
24 Ryden St., Quincy, MA 02169
Tel: 617-773-1128 Fax: 617-773-0510
www.kleanstream.com
MADE IN USA



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

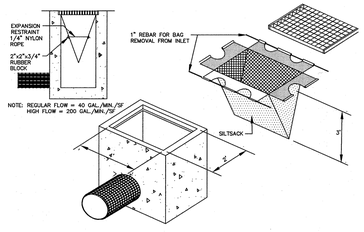
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

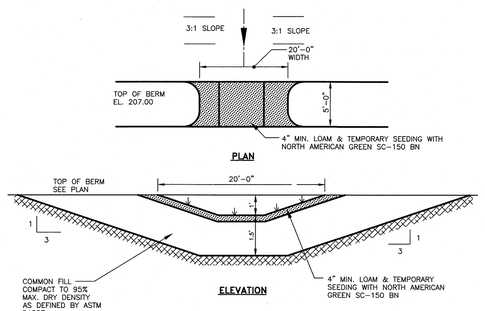
MATERIALS STOCKPILE DETAIL

NOT TO SCALE



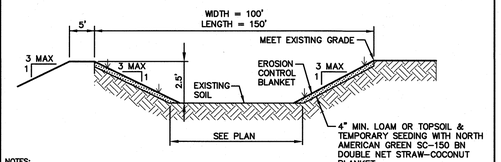
SILTSACK DETAIL-ON OR OFF SITE

NOT TO SCALE



SEDIMENT TRAP SPILLWAY DETAIL

NOT TO SCALE

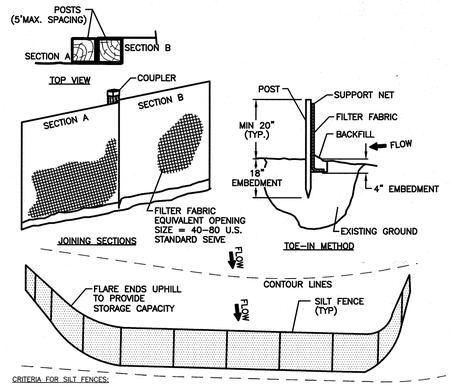


NOTES:

1. SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION.
2. THE SPILLWAY ON THE TRAP SHOULD BE A MINIMUM OF 1 FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
3. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

TEMPORARY SEDIMENT TRAP TYPICAL CROSS SECTION

NOT TO SCALE



CRITERIA FOR SILT FENCES:

1) SILT FENCE FILTER CLOTH: THE FABRIC FOR THE SILT FENCE SHALL MEET THE FOLLOWING SPECIFICATIONS:

FABRIC PROPERTIES:	MINIMUM ACCEPTABLE VALUES	TEST METHOD
GRAB TENSILE STRENGTH (lbs)	90	ASTM D1682
ELONGATION AT FAILURE (%)	50	ASTM D1682
MULLEN BURST STRENGTH (PSI)	190	ASTM D3786
PUNCTURE STRENGTH (lbs)	40	ASTM D751
EQUIVELANT OPENING SIZE:	40–80	US STD SIEVE

2) FENCE POSTS (FOR FABRICATED UNITS) – THE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS WILL BE OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES. STEEL POSTS WILL BE STANDARD T OR U SECTIONS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT. MAXIMUM SPACING SHALL BE 6 LINEAR FEET.

3) WIRE FENCE (FOR FABRICATED UNITS) – WIRE FENCING SHALL BE A MINIMUM 14.5 GUAGE WITH A MAXIMUM 6 INCH MESH OPENING.

4) PREFABRICATED UNITS – PREFABRICATED UNITS MAY BE USED IN LIEU OF THE ABOVE METHOD PROVIDING: (1) THE FILTER CLOTH AND FENCE POSTS MEET THE ABOVE CRITERIA; AND (2) THE UNIT IS INTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE:

1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.

2) IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.

3) SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMTELY ONE-HALF THE HEIGHT OF THE BARRIER.

4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

CONSTRUCTION SPECIFICATIONS:

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.

2) THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND (4" DEEP & 4" WIDE) AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.

3) WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.

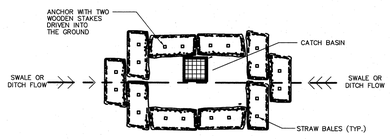
4) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.

5) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EAC OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES (24" IS PREFERRED), FOLDED, AND STAPLED.

6) POSTS TO BE SPACED AT A MAXIMUM OF 6' ON CENTER.

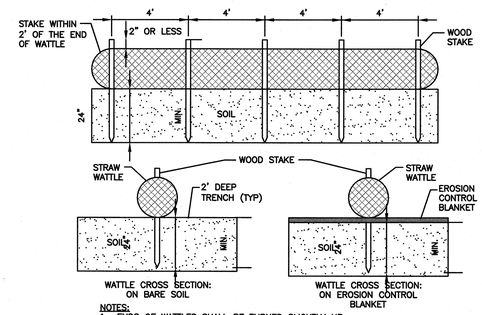
SEDIMENT CONTROL FENCE

NOT TO SCALE



LOW POINT SEDIMENTATION CONTROL BARRIER

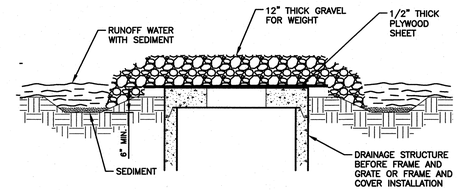
NOT TO SCALE



NOTES:
1. ENDS OF WATTLES SHALL BE TURNED SLIGHTLY UP.
2. RECCOMMENDED STAKES ARE 1 1/8" WIDE x 1 1/8" THICK x 30" LONG. STAKES SHALL NOT EXCEED ABOVE THE STRAW WATTLE MORE THAN 2".

STRAW WATTLE DETAIL

NOT TO SCALE

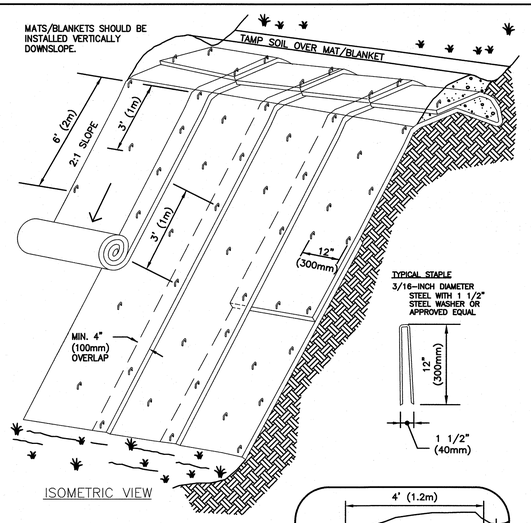


MAINTENANCE

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY.
2. SEDIMENT SHOULD BE REMOVED FROM THE TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF OF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURUAL OR VEGETATIVE MEANS.
3. THE TEMPOARARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.
4. ALL STRUCTURES WITH INLET PROTECTION MUST BE CLEANED AT THE END OF CONSTRUCTION AND WHEN THE SITE IS FULLY STABILIZED.

INLET PROTECTION DETAIL

NOT TO SCALE



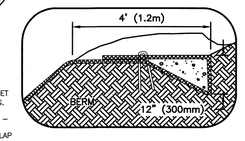
TYPICAL SLOPE SOIL STABILIZATION

NOTES:

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW. LAY BLANKETS LOOSELY & MAINTAIN DIRECT CONTACT WITH SOIL – DO NOT STRETCH.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
5. BLANKETS SHALL BE STAPLED ENOUGH TO ANCHOR BLANKET WHILE MAINTAINING CONTACT WITH SOIL. STAPLES SHALL BE PLACED DOWN THE CENTER & STAGGERED WITH THE STAPLES PLACED ALONG EDGES. PATTERN & AMOUNT OF STAPLES VARIES BY MANUFACTURER, SO FOLLOW MANUFACTURERS RECOMMENDATIONS.
6. BLANKET SHALL BE NORTH AMERICAN GREEN SC-150 OR APPROVED EQUAL.

MAINTENANCE & MATS

1. BLANKETS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION & AFTER A RAINFALL IN EXCESS OF 1/2" IN A 24-HOUR PERIOD.
2. FAILURES SHALL BE REPAIRED IMMEDIATELY. IF ANY OF THE FOLLOWING OCCUR; SLOPE WASHOUT, MAT DISPLACEMENT, DAMAGE TO MAT, THE AFFECTED AREA SHALL BE REPAIRED & RESEEDED & MAT SHALL BE REPLACED OR RE-INSTALLED.



TYPICAL INSTALLATION OF EROSION CONTROL BLANKETS FOR SLOPES

NOT TO SCALE

NOTE: DO NOT USE PRODUCTS THAT CONTAIN WELDED PLASTIC OR THAT ARE "PHOTODEGRADABLE". USE PRODUCTS WITH BIODEGRADABLE NETTING AND NATURAL FIBER MATERIAL (I.E. STRAW OR COCONUT FIBER).

BLANKET SLOPE PROTECTION FOR EROSION CONTROL

NOT TO SCALE

TEST PIT DATA

Test Pit No. 9-1 — SCS Soil: — Pipestone
ESHWT: >48" — Standing Water: None
Refusal: 48" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-30"	A	Loamy Sand	10yr 2/2	FR	
30-48"	B	Loamy Sand	10yr 4/4	FR	
48"	R				

Test Pit No. 9-2 — SCS Soil: — Pipestone
ESHWT: 36" — Standing Water: None
Refusal: 38" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-24"	A	Loamy Sand	10yr 3/2	FR	
24-33"	B	Loamy Sand	10yr 5/8	FR	
33-38"	C	Loamy Sand	2.5y 7/4	FR	@ 36" Distinct
38"	R				

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25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY J. MASON No.17099
LICENSED PROFESSIONAL ENGINEER
4/19/22

REVISIONS		
1	ADD ELIMINATOR DTL FROM SHEET 12	4/19/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

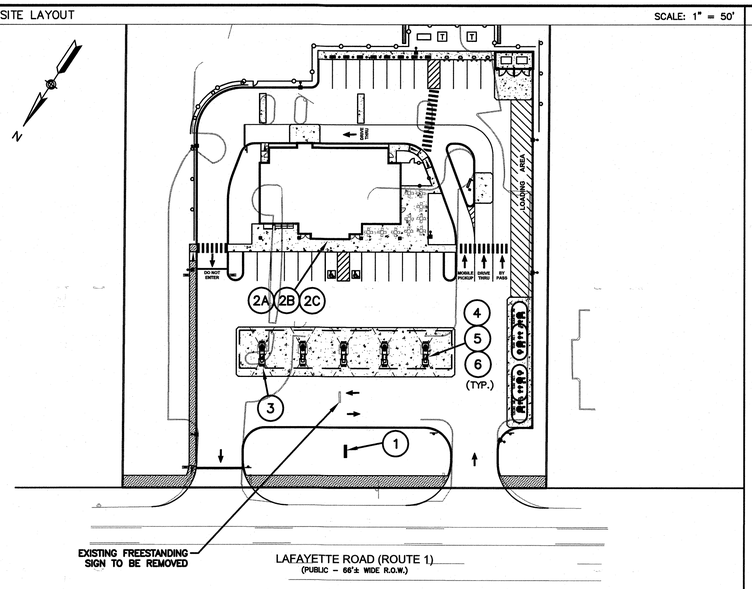
DETAIL SHEET

SCALE: NOT TO SCALE

PROJECT NO. NEX-2021163

01 SITE LAYOUT

SCALE: 1" = 50'

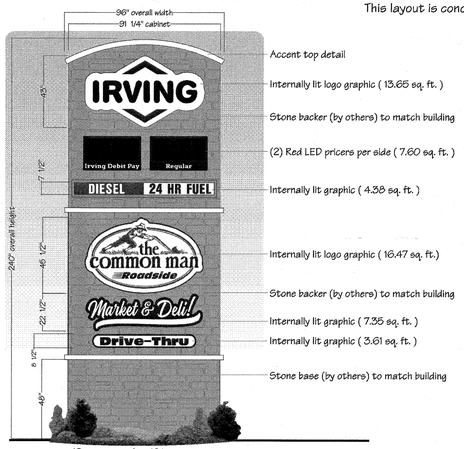


02 PROPOSED FREESTANDING SIGN ELEVATION

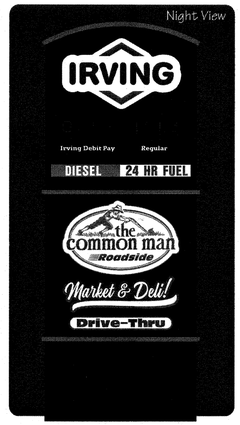
NOT TO SCALE

Common Man Roadside - Irving Epsom, NH Pylon ID Sign CONCEPTUAL — SHEET 01

This layout is conceptual only, all details to be verified and subject to change



Proposed - P1
Option 1.5a



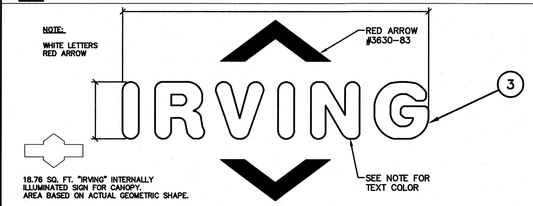
Total area of signage: 53.06 sq. ft.

DATE: 04-26-21	JOB NAME: Common Man Roadside - Irving
REP: J.S.	
CONTACT: Brad Pernaw (617) 821-5604	
AUTHORIZED SIGNATURE REQUIRED TO BEGIN PRODUCTION	

SOUSA Signs — 225 East Industrial Park Dr. Manchester, NH 03109 — 603-622-5067 FAX 603-624-6188

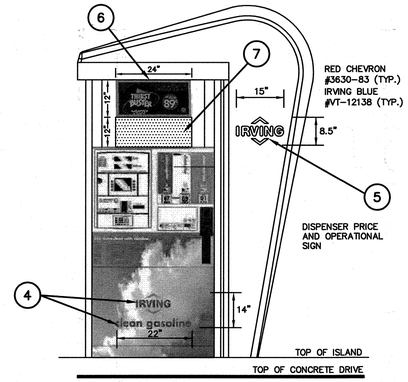
09 PROPOSED "IRVING" CANOPY LOGO

NOT TO SCALE



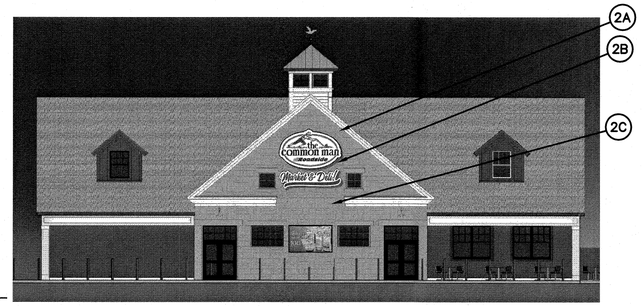
10 PROPOSED MULTI-PRODUCT DISPENSER

NOT TO SCALE



05 PROPOSED STORE ELEVATIONS

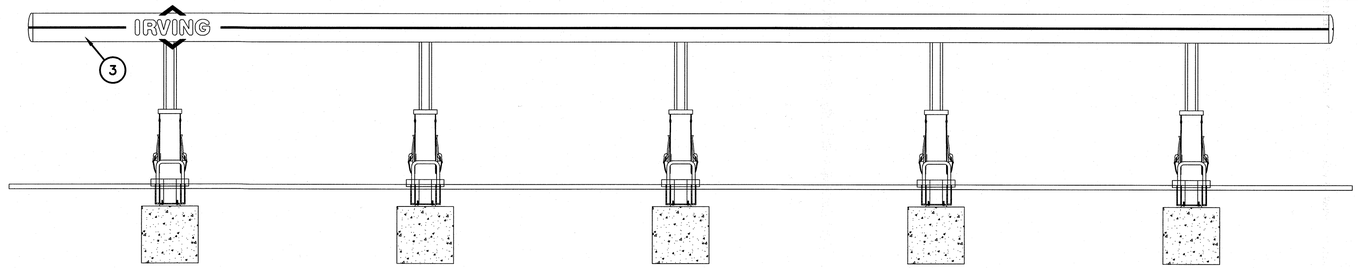
NOT TO SCALE



FRONT ELEVATION
N.T.S.

08 PROPOSED CANOPY ELEVATIONS

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



AUTO FUELING CANOPY- NORTH ELEVATION
1/8" = 1'-0"

06 PROPOSED SIGN SCHEDULE

NOT TO SCALE

PROPOSED SIGN SCHEDULE

MARK	DESCRIPTION	SIZE	AREA	QTY.	TOTAL SF	ILLUM'D.
1	FREESTANDING SIGN	SEE DETAIL 2	100.0*	1	100.0	YES (INTERNAL)
2A	C-STORE WALL SIGN	SEE LOGO DETAIL 4	63.5	3	190.5	YES (INTERNAL)
2B	C-STORE WALL SIGN	SEE LOGO DETAIL 4	28.4	3	85.2	YES (INTERNAL)
2C	C-STORE WALL SIGN	SEE LOGO DETAIL 5	40.0	3	120.0	YES (INTERNAL)
3	"IRVING" CANOPY – LOGO SIGN	SEE LOGO DETAIL 9	18.76	3	56.28	YES (INTERNAL)
4	"IRVING" MPD DOOR GRAPHIC	SEE DISPENSER DETAIL 10	2.14	10	21.4	NO
5	"IRVING" DISPENSER SHROUD LOGO	SEE DISPENSER DETAIL 10	0.89	10	8.9	NO
6	"IRVING" DISPENSER ADVERTISING SIGN	SEE DISPENSER DETAIL 10	2.0	10	20.0	NO
7	DISPENSER PRICE SIGN	SEE DISPENSER DETAIL 10	2.0	10	20.0	NO

* INCLUDES BASE & STRUCTURE PER PORTSMOUTH REGULATIONS

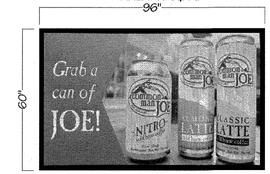
04 C-STORE BUILDING WALL SIGN

NOT TO SCALE

05 C-STORE BUILDING WALL SIGN

NOT TO SCALE

AREA: 40 Sq. Ft.



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44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

REVISIONS

NO.	REVISION	DATE

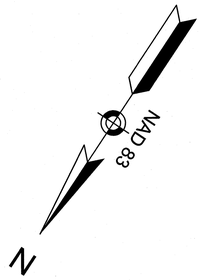
JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

SIGN & GRAPHICS PLAN

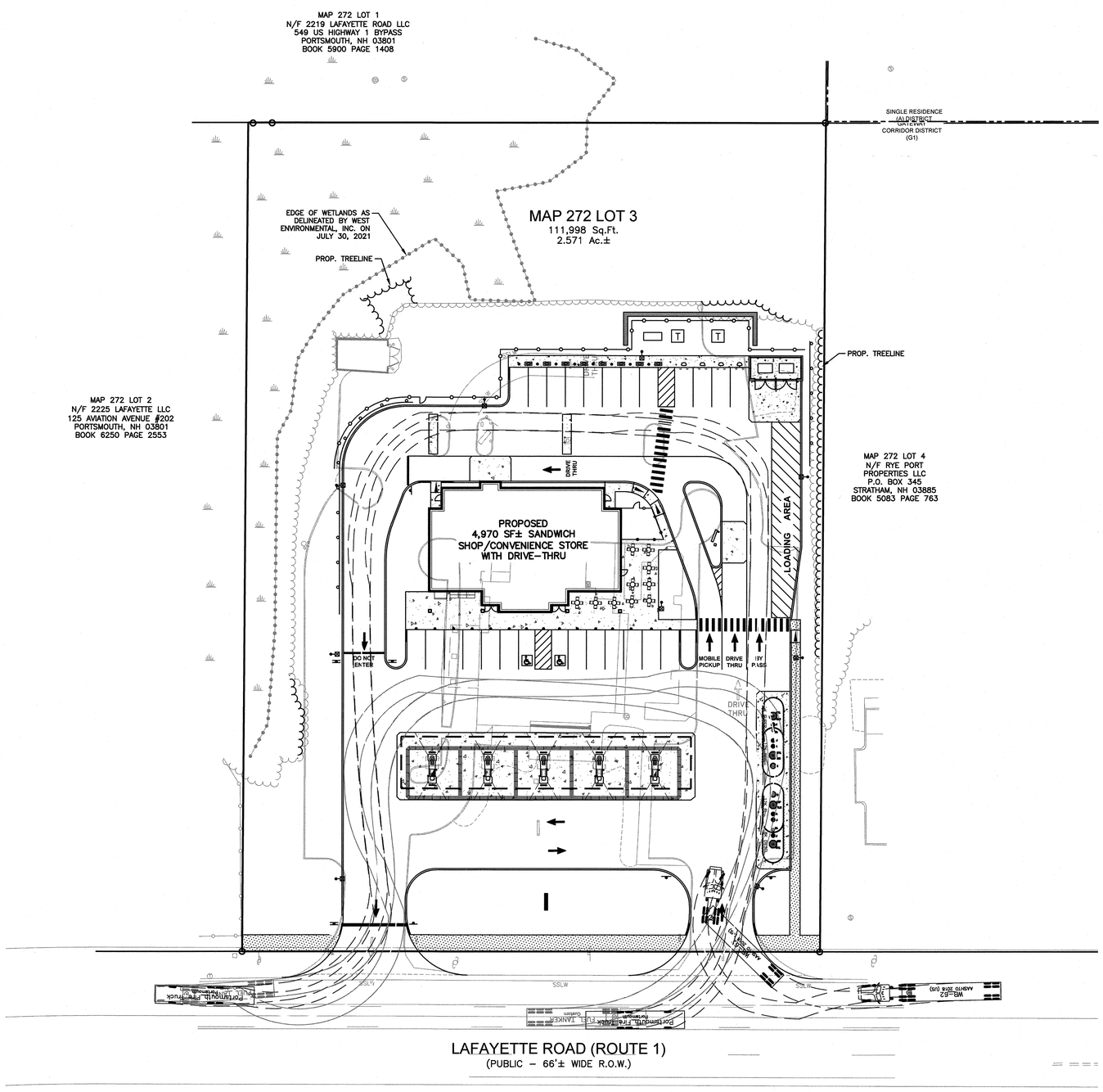
SCALE: AS SHOWN

PROJECT NO. NEX-2021163



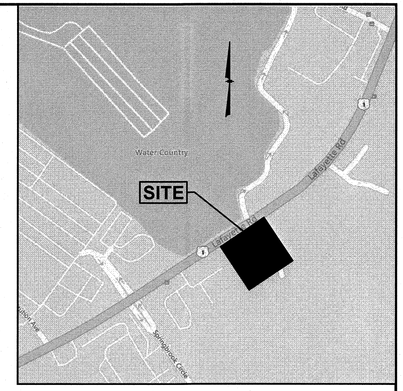
LEGEND

- VGC — VERTICAL GRANITE CURB
- SSLW — SINGLE SOLID LINE WHITE
- G — GAS LINE
- U/GT — UNDERGROUND COMM
- W — WATER LINE
- E — UNDERGROUND ELECTRIC
- CHAIN LINK FENCE
- 90 — CONTOUR ELEVATION
- TREE
- UTILITY POLE
- GUY WIRE
- OVERHEAD WIRE
- TREELINE
- SIGN
- +99.99 — SPOT ELEVATION
- CATCH BASIN
- CLEANOUT
- S — SEWER MANHOLE
- T — TELEPHONE MANHOLE
- WATER SHUT OFF
- BOLLARD
- GM — GAS METER
- LIGHT POLE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- ABUTTER PROPERTY LINE
- ZONE LINE

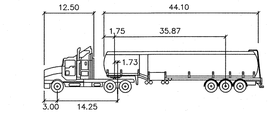


0 30 60 100

SCALE: 1" = 30'

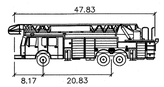


LOCATION MAP
(NOT TO SCALE)



FUEL TANKER — feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 40.0
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



Portsmouth Fire Truck — feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.0

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

STATE OF NEW HAMPSHIRE
CORY N. MASON No.17099 LICENSED PROFESSIONAL ENGINEER
5/24/22

REVISIONS		
3	REV. PER TAC	5/10/22
2	MISC. REVISIONS	4/19/22
1	REV. PER CITY COMMENTS	3/22/22
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

TRUCK TURN PLAN

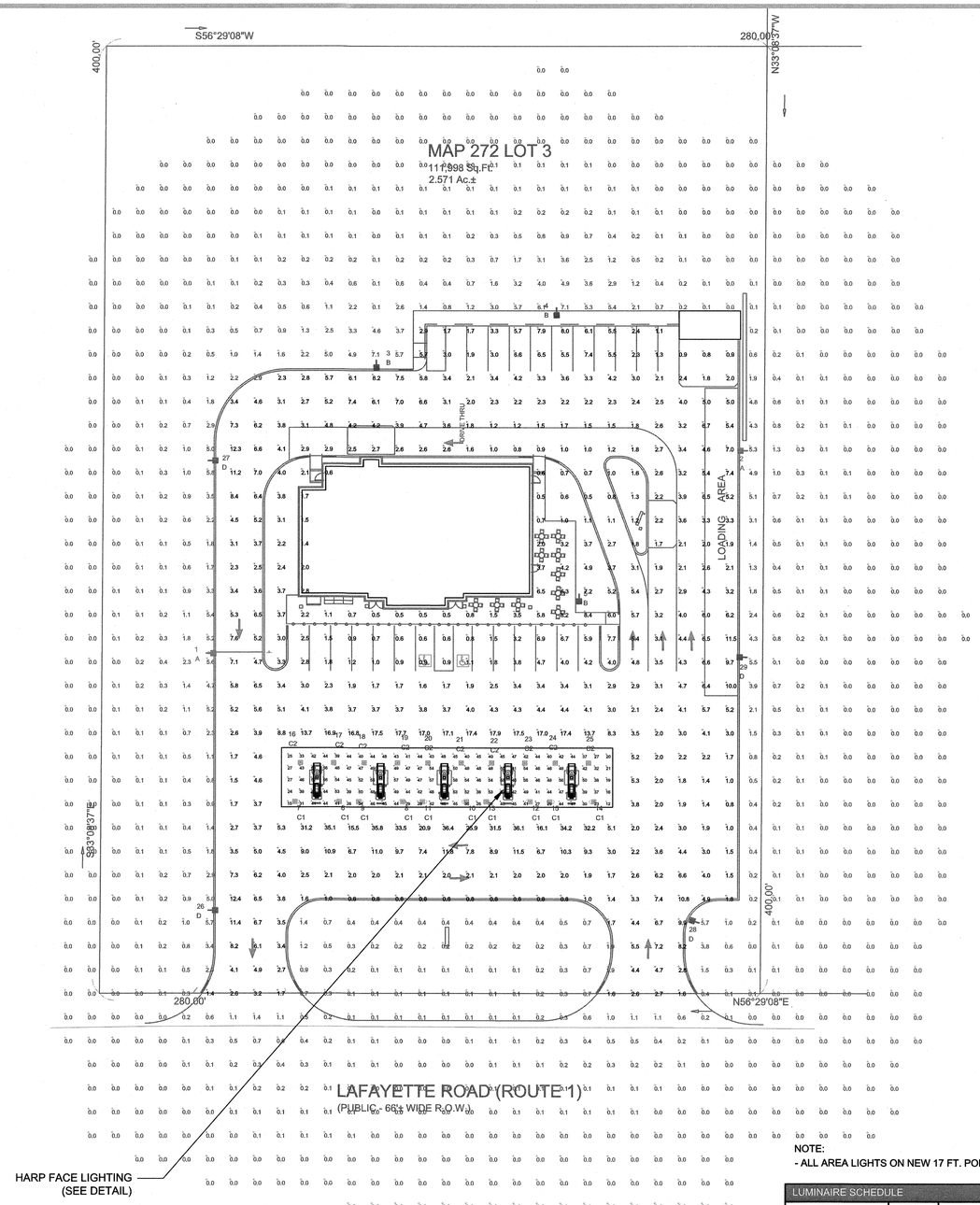
SCALE: 1"=30'

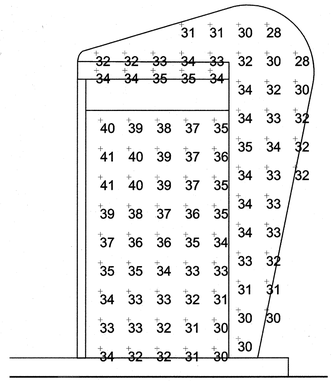
PROJECT NO. NEX-2021163

1 OF 1

811 DigSafe MA.ME.NH.RI.VT

F:\Projects\NEX-2021163 – Portsmouth, NH – GSC\CAD Files\21163_SP.dwg TT 5/24/22 5:16pm cmason





HARP FACE
VERTICAL LIGHTING DETAIL
SCALE: 1/2" = 1 '

THIS SITE IS LOCATED IN A REGION WHERE
LIGHTING IS REGULATED BY LOCAL ORDINANCES

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
1	A	19.5
2	A	19.5
3	B	19.5
4	B	19.5
5	B	19.5
6	C1	14.5
7	C1	14.5
8	C1	14.5
9	C1	14.5
10	C1	14.5
11	C1	14.5
12	C1	14.5
13	C1	14.5
14	C1	14.5
15	C1	14.5
16	C2	14.5
17	C2	14.5
18	C2	14.5
19	C2	14.5
20	C2	14.5
21	C2	14.5
22	C2	14.5
23	C2	14.5
24	C2	14.5
25	C2	14.5
26	D	19.5
27	D	19.5
28	D	19.5
29	D	19.5

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
IRVING HARP FACE (VERTICAL)	33.88	41	28	1.21	1.46
PAVED AREA	4.78	36.4	0.5	9.56	72.80
UNDEFINED	0.35	7.1	0.0	N.A.	N.A.
UNDER CANOPY	42.73	58	12	3.56	4.83

NOTE:
- ALL AREA LIGHTS ON NEW 17 FT. POLE MOUNTED ON 2-1/2 FT. CONCRETE BASE

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	CATALOG LOGIC
	2	A	SINGLE	16998	1.030	B2-U0-G3	132	264	Cree Inc	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-4M-UL-NM--XX + OSQ-BLSLF
	3	B	SINGLE	22098	1.030	B3-U0-G3	132	396	Cree Inc	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-4M-UL-NM-XX
	10	C1	SINGLE	12862	1.030	B2-U1-G1	141	1410	RUUD LIGHTING, INC., A CREE COMPANY	CAN-304-AF-RS-06-E-UL-WH-700-57K
	10	C2	SINGLE	13251	1.030	B3-U0-G1	134	1340	CREE, INC.	CAN-304-SL-RS-06-E-UL-XX-700-57K
	4	D	Single	17499	1.030	B2-U0-G3	132	528	Cree Inc	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-3M-UL-NM-XX + OSQ-BLSLF

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

SCALE: 1" = 30'
LAYOUT BY: JSG
DWG SIZE: D
DATE: 1/10/22

PROJECT NAME:
IRVING OIL
GRANITE STATE C-STORE
DRAWING NUMBER:
RL-7838-S1

IRVING

AREA	QTY	LABEL	DESCRIPTION
	2	A	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-4M-UL-NM--XX + OSQ-BLSLF
	3	B	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-4M-UL-NM-XX
	4	D	OSQ-ML-B-DA-XX + OSQL-B-22L-57K7-3M-UL-NM-XX + OSQ-BLSLF

CANOPY	QTY	LABEL	DESCRIPTION
	10	C1	CAN-304-AF-RS-06-E-UL-WH-700-57K
	10	C2	CAN-304-SL-RS-06-E-UL-XX-700-57K

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Cree TrueWhite® Technology – Medium & Large

Product Description

Performance Summary

Ordering Information

CREE ◆ LIGHTING

304 Series™

LED Recessed Canopy Luminaire

Product Description

Performance Summary

Accessories

Ordering Information

CREE ◆ LIGHTING

OSQ™ LED Area/Flood Luminaire featuring Cree TrueWhite® Technology – Medium & Large

Product Specifications

CREE ◆ LIGHTING

304 Series™ LED Recessed Canopy Luminaire

Product Specifications

CREE ◆ LIGHTING

REDLEONARD ASSOCIATES

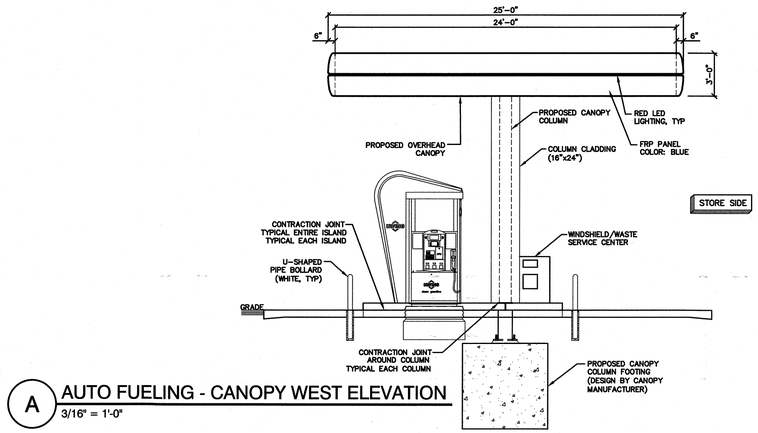
1340 Kemper Meadow Dr, Forest Park, OH 45240

513-574-9500 | redleonard.com

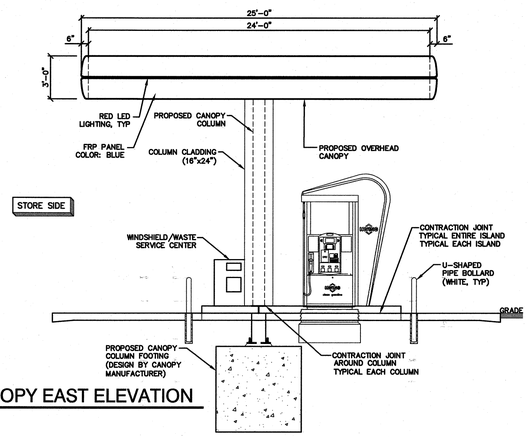
PROJECT NAME:
IRVING OIL
GRANITE STATE C-STORE

DRAWING NUMBER:
RL-7838-S1

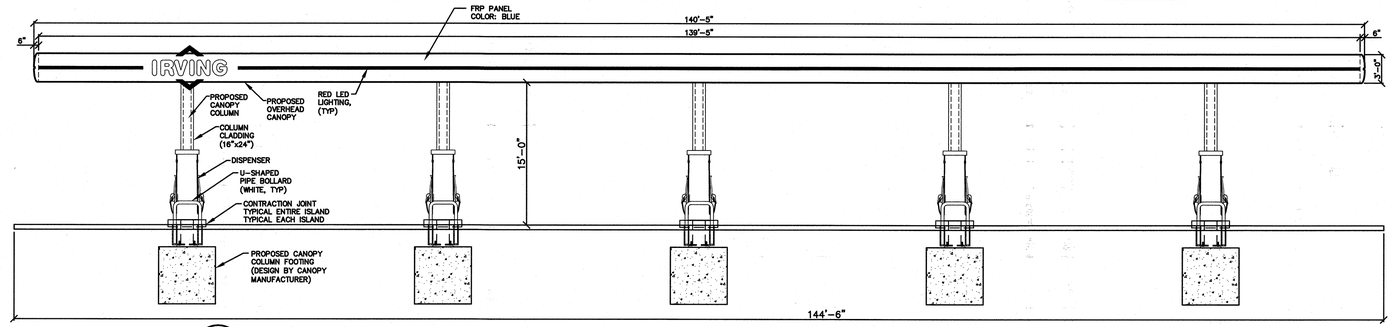
IRVING



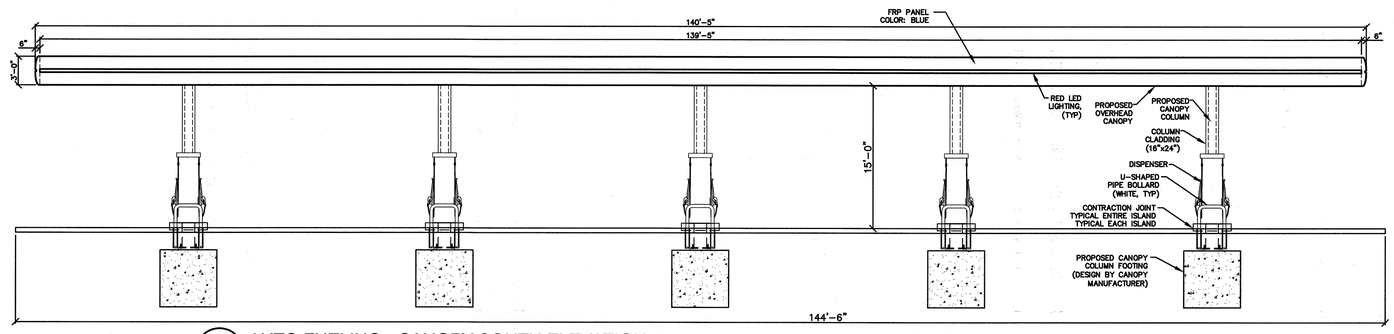
A AUTO FUELING - CANOPY WEST ELEVATION
3/16" = 1'-0"



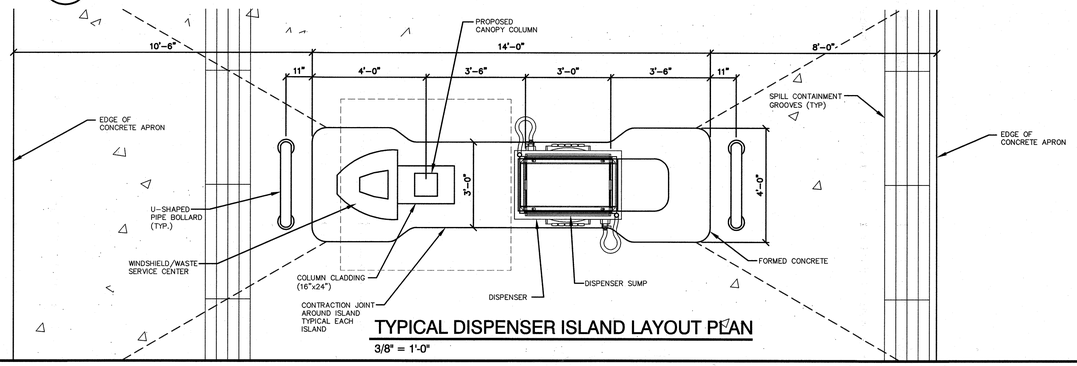
B AUTO FUELING - CANOPY EAST ELEVATION
3/16" = 1'-0"



1 AUTO FUELING CANOPY - NORTH ELEVATION
1/8" = 1'-0"



2 AUTO FUELING - CANOPY SOUTH ELEVATION
1/8" = 1'-0"



TYPICAL DISPENSER ISLAND LAYOUT PLAN
3/8" = 1'-0"

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
GRANITE STATE CONVENIENCE, LLC
25 SPRINGER ROAD
HOOKSETT, NH

PROPOSED RETAIL MOTOR FUEL OUTLET
2255 LAFAYETTE ROAD PORTSMOUTH, NH 03801

REVISIONS		
NO.	REVISION	DATE

JANUARY 26, 2022

DRAWN/DESIGN BY	CHECKED BY
CCC/NID	DRJ

PROPOSED CANOPY ELEVATIONS

SCALE: AS SHOWN

PROJECT NO. NEX-2021163

1 OF 1

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

NEW HAMPSHIRE 200

May 25, 2022

Rick Chellman, Chair
Portsmouth Planning Board
1 Junkins Ave, 3rd Floor
Portsmouth, NH 03801

RE: 70 Pleasant Point Drive – Submittal Rev 1
70 Pleasant Point Drive – Katara, LLC – Tax Map 207 Lot 15
Project #47307.01

Dear Mr. Chellman,

On behalf of our client, Katara, LLC, please find a Wetland Conditional Use Permit submission relative to the above-referenced project. The following materials are included in this submission:

- **Check for Wetland Conditional Use Permit Paid to "City of Portsmouth" ($1,000);**
- **Invasive Removal Report, prepared by Terrain Planning & Design LLC;**
- **Drainage Analysis (1 copy); and**
- **Site Development Plans entitled "Site Development Plans, Tax Map 207 Lot 15, Site Renovation Plans, 70 Pleasant Point Drive, Portsmouth, New Hampshire", prepared by TFMoran, Inc., dated May 25, 2022, (1 copy at 22"x34").**

Project Description

The project includes the development of a two-story, 2,343 SF, single family dwelling at 70 Pleasant Point Drive. The existing Tax Map 207 Lot 15 is approximately .642 acres and currently contains a single-story residence with a shed and water access. The site is within the Single Residence B (SRB) Zone, partially located within the extended flood hazard area, and is adjacent to the Piscataqua River.

The proposed project is to construct a two-story residential dwelling. Associated improvements include but are not limited to access, grading, utilities, stormwater management system, and landscaping. The project proposes a 2,605 SF building footprint and total 3,546 SF of impervious area upon the property and approximately 19,907 SF of disturbance to facilitate the development.

The development is proposed outside the Wetland but within the 100' Wetland Buffer located south of the development. The project will be undergoing additional review by Portsmouth Conservation Commission, and the New Hampshire Department of Environmental Services, for both Wetland and Shoreland Impacts.

70 Pleasant Point Drive – Submittal Rev 1 **May 25, 2022**
70 Pleasant Point Drive – Katara, LLC – Tax Map 207 Lot 15
Project #47307.01

We appreciate your consideration of these matters and look forward to presenting this project to you in the near future.

We respectfully request that we be placed on the upcoming agenda for the Conservation Commission on June 8, 2022

If you have any questions or concerns, please do not hesitate to contact us.

Respectfully,
TFMoran, Inc.

Jason Cook
Civil Project Engineer

JKC/jcc

cc: Rebecca Rowe, Katara, LLC (via rebecca.rowe@unh.edu)
Joshua Butkus, Maugel Destefano Architects (via jbutkus@maugel.com)
Marcos Cintra, Auger Building Company (via marcos@augerbuildingcompany.com)
Eric Buck, Terrain Planning & Design (via eric@terrainplanning.com)

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

NEW HAMPSHIRE 200

Letter of Authorization

I, Rebecca Rowe, of Katara, LLC, 274 Miller Avenue, Portsmouth, NH, hereby authorize TFMoran, Inc., 170 Commerce Way, Suite 102, Portsmouth, NH, to act on my behalf concerning property owned by Katara, LLC, located on 70 Pleasant Point Drive, Portsmouth, NH, known as Tax Map 207, Lot 15.

I hereby appoint TFMoran, Inc. as my agent to act on my behalf in the review process, to include any required signatures.

Rebecca J. Rowe
Client Name

5/24/2022
Date

Witness

Date

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

22508

DATE	INVOICE NO.	COMMENT	AMOUNT	NET AMOUNT
05/24/2022	Ck Rq 5/24/22	Ck Rq JKC - 5/24/2022 - ghb		1,000.00
DATE 05/24/22		**VENDOR** CITY OF PORTSMOUTH	**TOTAL**	1,000.00

22508

One Thousand and no/100

05/24/22 22508 $1,000.00

CITY OF PORTSMOUTH
1 JUNKINS AVENUE
PORTSMOUTH NH 03801

FILE COPY XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX FILE COPY

22508

DATE	INVOICE NO.	COMMENT	AMOUNT	NET AMOUNT
05/24/2022	Ck Rq 5/24/22	Ck Rq JKC - 5/24/2022 - ghb		1,000.00
DATE 05/24/22		**VENDOR** CITY OF PORTSMOUTH	**TOTAL**	1,000.00

terrain
planning & design llc

May 19, 2022

Peter Britz
Environmental Planner/Sustainability Coordinator
City of Portsmouth NH

Re: 70 Pleasant Point Drive Portsmouth NH

Dear Peter:

This letter is intended to address recommendations for invasive species removal and native plant restoration along the shorefront of 70 Pleasant Point Drive. The site is .65 acres with an existing, non-conforming, single family residence that is planned to be torn down and rebuilt. Accompanying the house construction project is the conversion of existing impervious driveway and hardscape surfaces into new permeable driveway and outdoor patio spaces. The project also includes introduction of native plantings along the shoreline and around the home, as well as the transition of a large lawn area into a native, low maintenance grass and ground cover mix mix.

The property sits on the Piscataqua River with almost 336 feet of frontage. A majority of the site is a level plateau that perches above the shoreline. A majority of the site sits within the 100ft buffer and the 250ft NH DES Shoreland protection zone. There is a drastic slope along the southerly shore frontage from the relatively flat part of the site to the tide line. This slope is covered in a mix of ornamental, native and invasive plantings.

Acting as good stewards the owners have asked that we put together an invasive species analysis and plan for removal and replacement. Enclosed is an outline of our findings as well as recommendations for new native plants to be installed.

Respectfully Submitted,

Eric R. Buck

Eric R. Buck, PLA, ASLA
Owner/ Landscape Architect
Terrain Planning & Design LLC

Our list of existing invasive plant species can be found below. We propose removing invasive species by low-impact manual hand pulling methods whenever possible. During our inventory a majority of the invasives we found had stems less than 1" in diameter. This means they likely have minimal root mass in the slope. However, should larger plants be discovered during the removal process, we recommend a cut & dab herbicide application by licensed applicators. This method of removal for larger specimens will greatly reduce the chance of erosion along the shoreline. All existing erosion shall be stabilized and any soil disturbed during planting will be seeded with native conservation/ wetlands mix.

Likely Invasive species identified:

- *Celastrus orbiculatus,* Asiatic Bittersweet
- *Fallopia japonica,* Japanese Knotweed
- *Rosa multiflora,* Multiflora Rose
- *Deutzia scabra*, Fuzzy Deutzia

Recommended Native Plantings:

- *Amelanchier laevis* Shadblow Serviceberry
- *Clethra alnifolia* Summersweet
- *Cornus amonum* Silky Dogwood
- *Cornus racemosa* Gray Dogwood
- *Ilex vertilicillata* Winterberry
- *Rosa virginiana* Virginia Rose

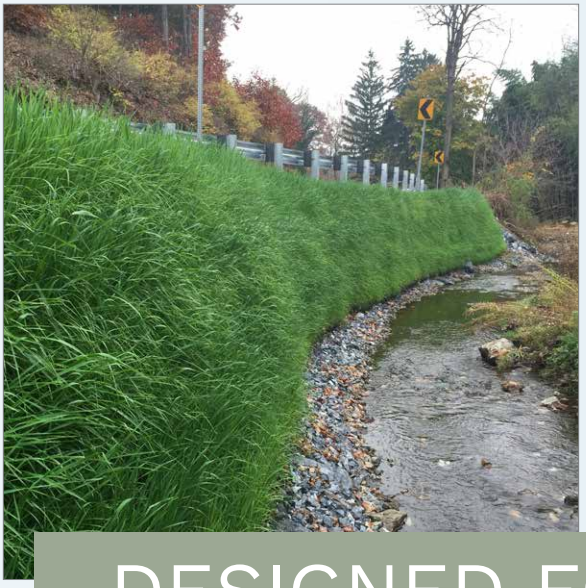
Whenever possible native plantings should be installed via a live staking method, rather than as field grown plant material with a root ball. This will avoid added erosion on the slope caused by excavation of the soil to place the plants. Should the existing slope not have sufficient soil for live staking method to take place, erosion control tubes filled with growing medium are to be staked to the slope and live staking should be placed into the soil socks. Enclosed are specifications for recommended soil medium and erosion sock type and method.

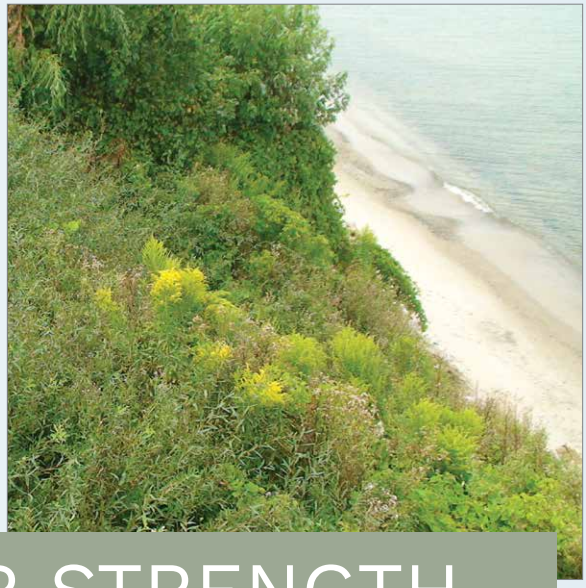
Below are images of the area that was inventoried.

filtrexx®
SUSTAINABLE TECHNOLOGIES

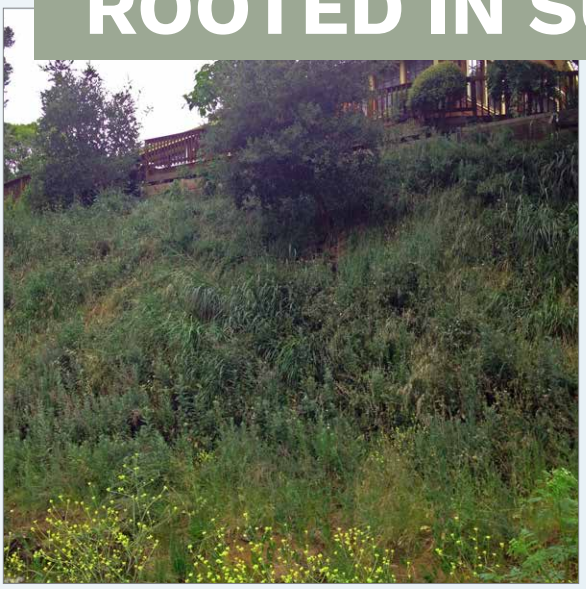
GREENLOXX®

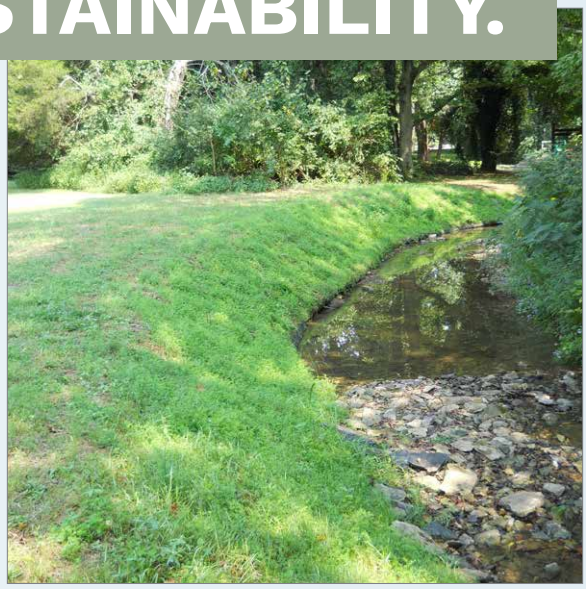
VEGETATED WALL & SLOPE SYSTEMS





DESIGNED FOR STRENGTH.
ROOTED IN SUSTAINABILITY.





GreenLoxx® vegetated systems allow for the restoration of eroded or damaged slopes, riparian waterways, shoreline banks, and more.

Create attractive, naturally vegetated landscapes without the use of hard concrete materials on your restoration projects.

GREENLOXX SYSTEM COMPARISON

System Name	MSE	Slope Degree	Anchors	FLW Geogrid	GroSoxx® Size	Purpose
GreenLoxx VSF Vegetated Slope Facing	No	up to 60°	Yes	Yes	8″x3′	Protect slope surface from erosion
GreenLoxx MSE Mechanically Stabilized Earth	Yes	70° - 90°	No	Yes	12″x2′	Gain back land
GreenLoxx MSE - RSS Reinforced Soil Slope	Yes	50° - 70°	No	Yes	12″x2′	Gain back land

GREENLOXX COMPONENTS

GroSoxx: Durable mesh is filled with Certified GrowingMedia™ as the basis to quickly establish vegetation.

FLW Geogrid: Used to wrap layers of GroSoxx. Biaxial pattern provides strength and features a 2″x2″ opening to eliminate cutting the grid for planting.

Soil Anchors: Used in GreenLoxx VSF to secure layers of geogrid and GroSoxx.

Vegetation: Options include pre-seeded GroSoxx, live staking, broadcast seeding, or plugs.


GROSOXX


GEOGRID + ANCHORS

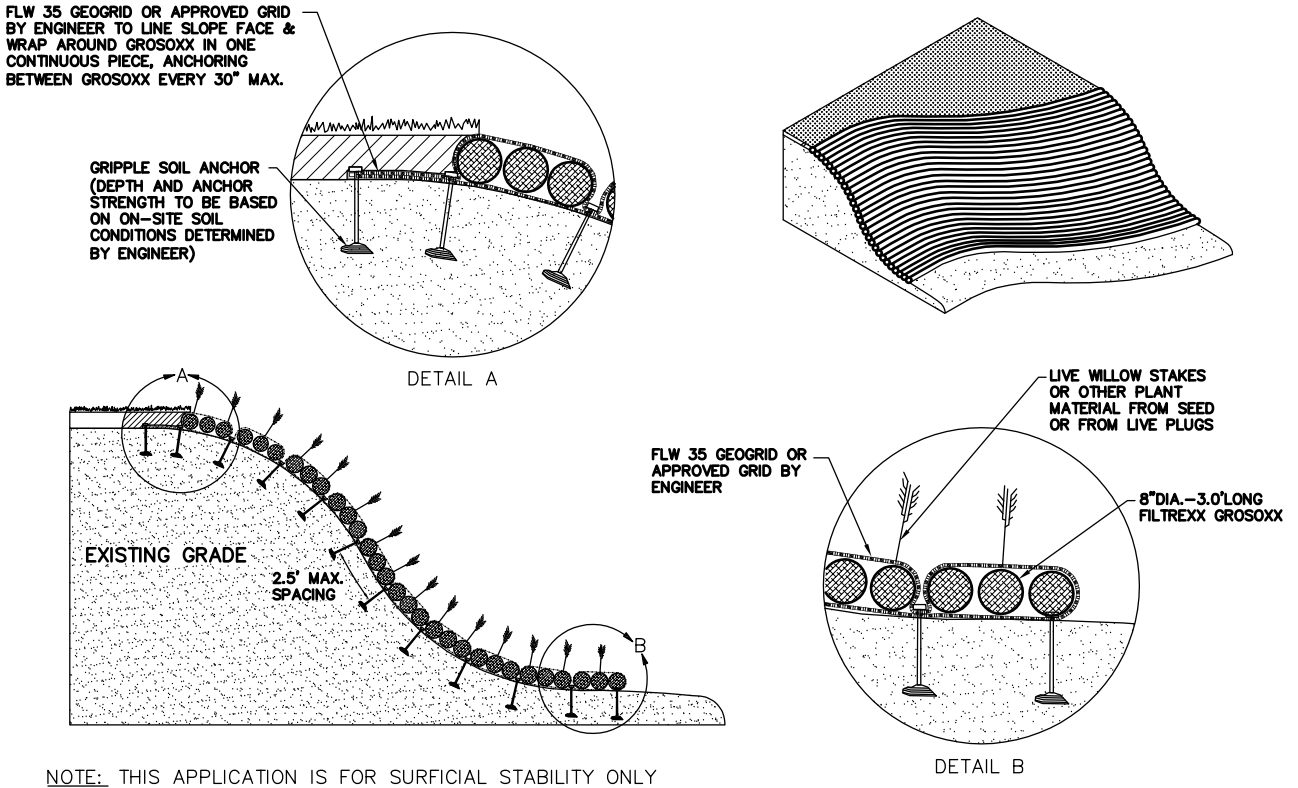
GroSoxx is the basis of GreenLoxx systems for quickly establishing vegetation on shorelines, banks, walls, and slopes. GroSoxx uses Durable mesh, filled with certified, composted GrowingMedia™ to provide a stable and fertile environment for plant growth. The use of GroSoxx for wall infill speeds construction, eliminates waste, prevents weeds from taking root, and offers a safer installation process. Available pre-seeded throughout, or plant after construction is complete. GroSoxx provides the highest amount of facial growing material in each application, maximizing environmental benefits.

Vegetation Options

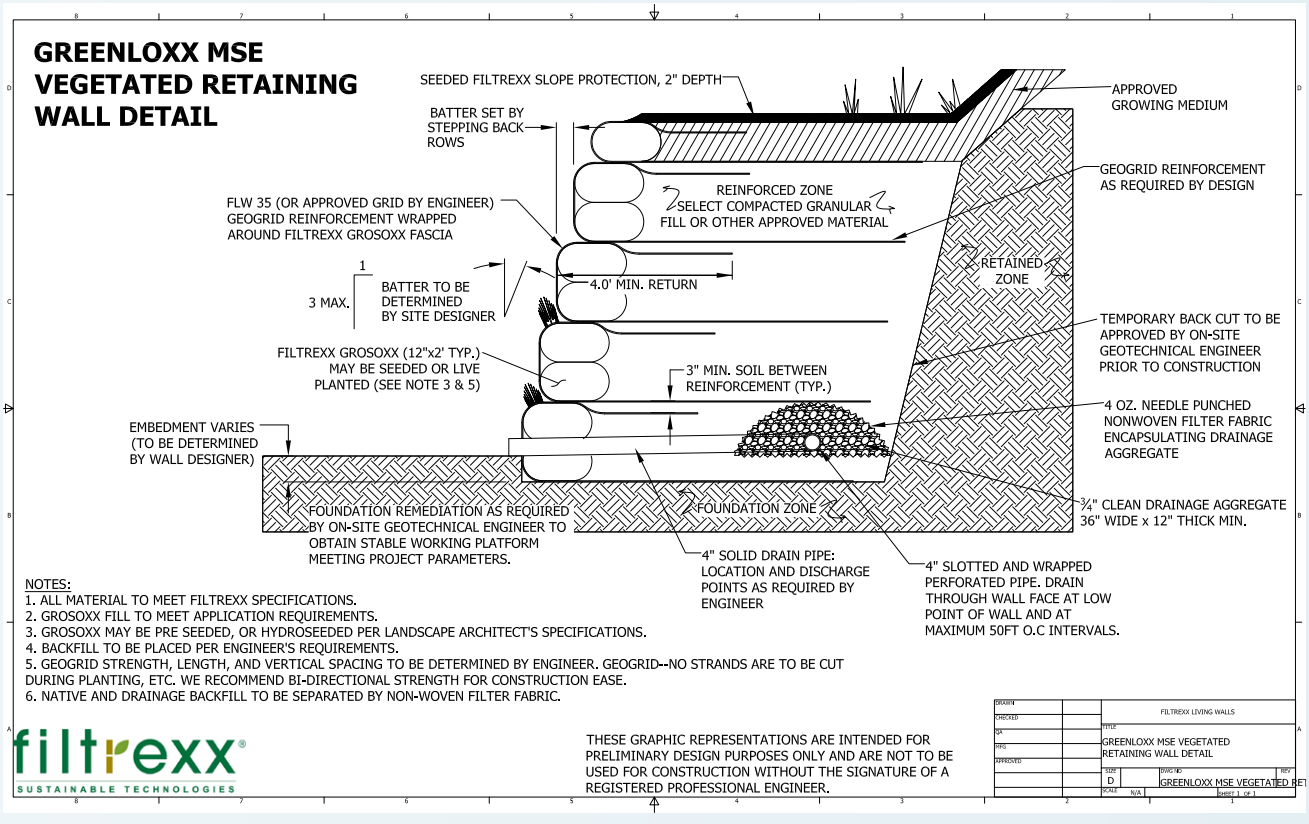
- Grasses, including natives
- Vines and ground cover
- Wildflowers
- Perennials and annuals
- Woody vegetation from live stakes or pots (2″ diameter or less so that grids are not cut in planting)

DESIGN DRAWINGS

Refer to Design Specifications and CADs for complete application, design, installation, and maintenance documentation at **www.filtrexx.com/specs**



filtrexx SUSTAINABLE TECHNOLOGIES	**These graphic representations are intended for preliminary design purposes only and are not to be used for construction without the signature of a registered professional engineer.**	**SCALE: NONE**	**GREENLOXX VEGETATED SLOPE FACING DETAIL (STYLE 1)**



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. GROSOXX FILL TO MEET APPLICATION REQUIREMENTS.
3. GROSOXX MAY BE PRE SEEDED, OR HYDROSEEDED PER LANDSCAPE ARCHITECT'S SPECIFICATIONS.
4. BACKFILL TO BE PLACED PER ENGINEER'S REQUIREMENTS.
5. GEOGRID STRENGTH, LENGTH, AND VERTICAL SPACING TO BE DETERMINED BY ENGINEER. GEOGRID--NO STRANDS ARE TO BE CUT DURING PLANTING, ETC. WE RECOMMEND BI-DIRECTIONAL STRENGTH FOR CONSTRUCTION EASE.
6. NATIVE AND DRAINAGE BACKFILL TO BE SEPARATED BY NON-WOVEN FILTER FABRIC.

filtrexx SUSTAINABLE TECHNOLOGIES

THESE GRAPHIC REPRESENTATIONS ARE INTENDED FOR PRELIMINARY DESIGN PURPOSES ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION WITHOUT THE SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER.

FILTREXX LIVING WALLS
GREENLOXX MSE VEGETATED RETAINING WALL DETAIL
SIZE D
GREENLOXX MSE VEGETATED RET
SCALE N/A
SHEET 1 OF 1

GREENLOXX VEGETATED SLOPE FACING (VSF)


BEFORE

GreenLoxx VSF is typically used to protect the face of the slope or bank from erosion. Requires minimal base preparation/excavation, and no backfill. FLW Geogrid is wrapped over the GroSoxx and secured with soil anchors.

- Lightweight components
- Immediate protection from toe cutting & sloughing
- Establish and reinforce vegetation under intense hydraulic pressure
- Drains freely, less hydrostatic pressure

Project location: Lake Erie shoreline, Rocky River, OH


INSTALLATION


AFTER, 4 MONTHS


AFTER, 1 YEAR

GREENLOXX MECHANICALLY STABILIZED EARTH (MSE)


BEFORE

GreenLoxx MSE is typically used to build a more vertical, structural wall. GroSoxx are stacked in courses wrapped in FLW Geogrid and tied back into the compacted fill behind the face of the wall.

Note: For slopes from 50° - 70°, the GreenLoxx MSE Vegetated Retaining Wall - Reinforced Soil Slope (RSS) alternate design is used.

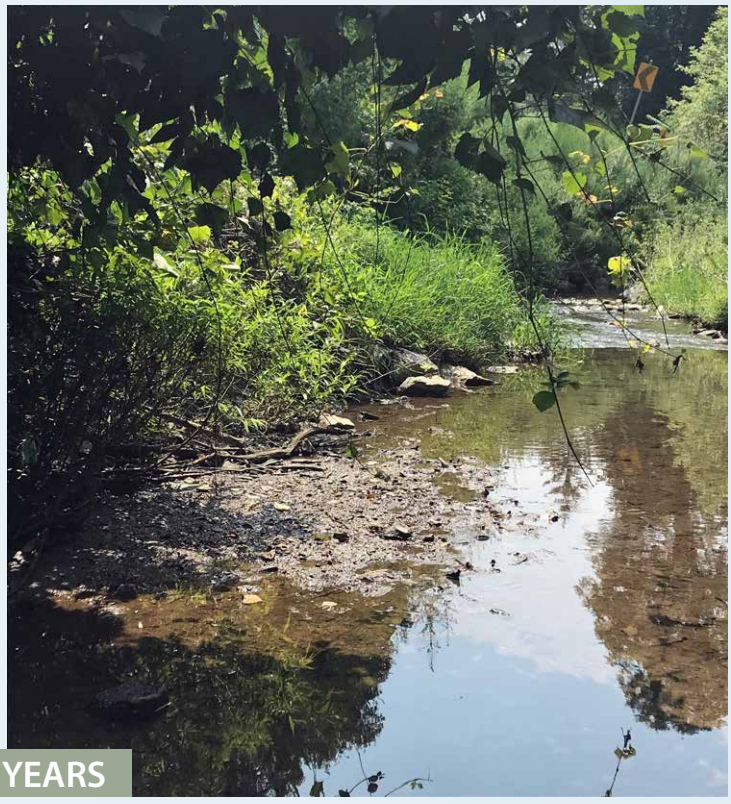
- Lightweight components
- Withstands high flow velocities—ideal for sensitive riparian areas
- Safer & more flexible installation than block walls

Project location: Roadway along Spring Creek, Harrisburg, PA


INSTALLATION


AFTER, 2 MONTHS


AFTER, 3 YEARS



SUSTAINABILITY BENEFITS

Our compost-based GreenLoxx systems are designed for environmental benefits and can have a significant impact on your project's sustainability.

Vegetated Wall & Slope Benefits[1]

- Reduction of the Urban Heat Island Effect
- Improved Exterior Air Quality
- Noise Reduction
- Increased Green Space, Biodiversity and Habitat
- Forage for Native Pollinators
- Urban Agriculture
- On-Site Wastewater Treatment
- Improved Health and Well-Being
- Aesthetic Improvements
- Local Job Creation

Carbon Footprint Reduction[2]

There are three key ways in which compost-based GreenLoxx systems can significantly lower a site's carbon footprint:

- Methane avoidance resulting from diverting organics from landfills
- Carbon sequestration by permanent vegetation
- Carbon sequestration by storing carbon in the soil

This GreenLoxx MSE project on the Chattahoochee River has the following impact:

- 656,000 lbs of Organics Diverted from Landfills
- 1,148,000 lbs of CO_2e Methane Avoidance
- 205 lbs of CO_2 Sequestered in Vegetation
- 110,700 lbs of CO_2 Sequestered in Soil

This is the equivalent of offsetting the greenhouse gas emissions of 121 passenger vehicles driven for one year.[2]

Treating Stormwater Runoff[2]

With approximately 50% organic matter, a high porosity, and high relative surface area, compost has the ability to absorb significant volumes of water.

This GreenLoxx MSE project, restoring a bluff on Lake Michigan, not only provides habitat and beauty, it can also absorb significant amounts of stormwater. Each linear ft of 12-in GroSoxx (1 square foot) can absorb up to 4 gallons of water. Utilizing 2,000 ft of 12-in GroSoxx, this wall has the potential to absorb up to 8,000 gallons of rainfall per event.[2]

In other applications, replacing a traditional concrete block wall with a permeable GreenLoxx system on a site with a stormwater retention basin or bioretention system, may allow engineering and construction of a smaller stormwater retention basin or bioretention system, and/or increased absorption of area rainfall, and may also contribute to LEED Green Building Credits.

Filtrexx Environmental Sustainability Benefits

Filtrexx GroSoxx® uses **locally recycled organic materials** inside of photodegradable or biodegradable mesh. Diverting these organic materials from landfills and applying them to the soil means a reduction in greenhouse gas emissions. **For every 1,000' of 12" GroSoxx used, 160,000 lbs of organic materials are diverted and your carbon footprint is reduced by 307,000 lbs CO_2e.** This is the equivalent of offsetting the greenhouse gas emissions of **29 passenger vehicles** driven for one year. In addition, the potential water absorption equals up to **4,000 gallons, per rainfall event**.[2]

Sources: [1]Green Roofs for Healthy Cities, "About Green Walls". [2]Filtrexx TechLink Research Summary #3335.

PROJECT PROFILE: STREAMBANK RESTORATION

Columbia, SC

A Richland County stream had heavily eroded banks, and residents had begun voicing concerns to the County about the loss of land. Richland County took on the project in order to restore the lost real estate. The engineer originally proposed using turf reinforcement mats, but that would have meant taking away even more land to create the necessary slope angle. "The County was looking for a design that would allow for the streambanks to be built back up quickly, almost vertically in some locations, and a design that would also look very natural," said Allison Steele, Stormwater Engineer for Richland County. "The whole point of the project was to give them their yards back." Engineering firm CDM Smith decided to use the GreenLoxx system, not only for its verticality, but also for its ease of installation in a forested environment. The GroSoxx used in the GreenLoxx system mold to fit around trees, eliminating the need to clear cut. Filtrexx® Certified℠ Installers Eco-FX, Inc. (Charlotte, NC) and Coogler Construction, Inc. (Ballentine, SC) teamed up for the custom installation. Together they installed approximately 600 feet of streambank, and the work was completed in about two weeks. GreenLoxx can be installed with or without mechanical reinforcement—this project used both. The GroSoxx were pre-seeded with an annual cover crop. The team returned in spring to plant several hundred native plants for permanent stabilization.

BEFORE

INSTALLATION

AFTER

Use GreenLoxx Systems for a variety of applications and industries

PROMOTES GROWTH

APPLICATIONS

- STREAMBANKS
- STEEP SLOPES
- SHORELINES
- RETAINING WALLS
- ROADSIDE SLOPES

INDUSTRIES

- MUNICIPALITIES
- RESIDENTIAL/HOA
- LANDSCAPING
- CONSERVATION DISTRICTS

Contact Filtrexx for availability and system packages.

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SUSTAINABLE TECHNOLOGIES

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DESIGN SPECIFICATION

5.2 GrowingMedia™

filtrexx® SUSTAINABLE TECHNOLOGIES

PURPOSE & DESCRIPTION

Composted products used for Filtrexx **GrowingMedia™** shall be weed free and derived from a well-decomposed source of organic matter. The composted products shall be produced using an aerobic composting process meeting USEPA CFR 503 regulations (In Canada: M.O.E. 101, C.C.M.E. Type "A" and Type "AA" regulations), including time and temperature data indicating effective weed seed, pathogen and insect larvae kill. The composted products shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted. Test methods for the items below should follow USCC TMECC guidelines for laboratory procedures:

Section

A. PH – 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost"

B. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.

C. GrowingMedia to be used with Filtrexx® Soxx™ where seeding and/or live stakes are specified; on low grade slopes where vegetation establishment is the priority; or where rainwater absorption, water holding capacity, runoff reduction and infiltration are the priority shall meet the following particle size distribution. Examples include Soxx for Runoff Diversion, Channel Protection, Bank Stabilization, Severe Slope Stabilization, Vegetated Retaining Walls, Vegetated Gabion, Filtration System, Compost Vegetated Cover, Compost Erosion Control Blanket™, Compost Storm Water Blanket™, Compost Engineered Soil, Compost Bioretention System, Green Roof GrowingMedia.

Particle Sizes - 100% passing a 2 in (50mm) sieve, 99% passing a 1 in (25mm) sieve, minimum of 60% passing a ½ in (12.5mm) sieve in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification".

D. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.

E. Material feedstocks shall not contain wood materials that have been treated or painted, contain preservatives or adhesives, or are composed of engineered wood products.

F. A sample shall be submitted to the Engineer for approval prior to being used and must comply with all local, state and federal regulations.

Option A: Erosion Control

For vegetated non Soxx applications where slope grades are greater than 3:1, where sheet runoff rate or velocity may be high, or rainfall rate/intensity may be high.

Substitution for Section C. Particle Size of GrowingMedia shall use the following particle size distribution specification: 99% passing a 1 in (25mm) sieve, maximum of 50% passing a 1/2 in (12.5mm) sieve.

Option B: Non-vegetated Temporary Erosion Control

For non-vegetated non Soxx applications where slope grades are greater than 3:1, where sheet runoff rate or velocity may be high, or rainfall rate/intensity may be high.

Substitution for Section C. Particle Size of GrowingMedia shall use the following particle size distribution specification: 99% passing a 3 in (75mm) sieve and a maximum of 30% passing a 1/2 in (12.5mm) sieve.

Rationale for Options: Research conducted at The University of Georgia and Auburn University (Faucette et al, 2006; Faucette, 2006) to evaluate the performance of particle sizes in compost erosion control blankets found that distributions with predominantly small particles absorbed more rainfall, reduced a greater volume of runoff, increased the delay of runoff commencement, and exhibited greater vegetation growth, relative to compost erosion control blankets with large particle sizes. However, compost erosion control blankets with distributions of predominantly large particles slowed runoff rate and reduced soil loss prior to vegetation establishment over compost erosion control blankets with smaller particles sizes.

FIELD APPLICATION PHOTO REFERENCES

GrowingMedia Sample

ADDITIONAL INFORMATION

For other references on this topic, including additional research reports and trade magazine and press coverage, visit the Filtrexx website at filtrexx.com

Filtrexx International, Technical Support
877-542-7699 | www.filtrexx.com | info@filtrexx.com
Call for complete list of international installers and distributors.

REFERENCES CITED & ADDITIONAL RESOURCES

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Project #47307.01

DRAINAGE ANALYSIS REPORT

F O R

Site Renovation Plans

70 Pleasant Point Drive
Portsmouth, New Hampshire
Rockingham County

Tax Map 207, Lot 15

Owned by and Prepared for Katara, LLC

May 25, 2022

Prepared By:

TFM Since 1968

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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1.0 - SUMMARY & PROJECT DESCRIPTION

The project includes the development of a single-family residential house on 70 Pleasant Point Drive. The existing lot is approximately 0.642 acres and currently contains a single-family residence. The site is within the Single Residence B Zone and Flood Plain Overlay District and is adjacent to the Piscataqua River on both the southeast and southwest side.

The project proposes to remove the existing dwelling and replace with a new modern 2-story dwelling. Associated improvements include, but are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes a 2,605 SF building footprint and total of 3,546 SF of impervious area within the property lines and approximately 19,907 SF of disturbance to facilitate the development.

This analysis has been completed to verify the project will not pose adverse stormwater effects on-site and off-site. Compared to the pre-development conditions, the post-development stormwater management system has been designed to reduce peak runoff rates, reduce runoff volume, reduce the risk of erosion and sedimentation, and improve stormwater runoff quality. In addition, Best Management Practices are employed to formulate a plan that assures stormwater quality both during and after construction. The following summarizes the findings from the study.

2.0 - CALCULATION METHODS

The design storms analyzed in this study are the 2-year, 10-year, 25 year, and 50-year 24-hour storm events. The software program, HydroCAD version 10.00[1] was utilized to calculate the peak runoff rates from these storm events. The program estimates the peak rates using the TR-20 method. A Type III storm pattern was used in the model. Rainfall frequencies for the analyzed region were also incorporated into the model. Rainfall frequencies from the higher of the Extreme Precipitation Rates from Cornell University's Northeast Regional Climate Center (see Appendix A, Table 1). Due to the project's location within the Coastal/Great Bay Region community, the design rainfall increases the Cornell rates by 15% to address projected storm surge, sea level rise, and precipitation events per Env-Wq 1503.08(l). Design standards were taken from the New Hampshire Stormwater Manual, December 2008[2].

	24-HOUR RAINFALL RATES	
Storm-Event (year)	Northeast Regional Climate Center Extreme Precipitation (in)	Design Rainfall (in)
2	3.21	3.69
10	4.86	5.59
25	6.17	7.10
50	7.38	8.49

Table 1 – 24-Hour Rainfall Rates

Time of Concentration is the time it takes for water to flow from the hydraulically most remote point in the watershed (with the longest travel time) to the watershed outlet. This time is

[1] HydroCAD version 10.00, HydroCAD Software Solutions LLC, Chocorua, NH, 2013.
[2] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

determined by calculating the time it takes runoff to travel this route under one of three hydrologic conditions: sheet flow, shallow concentrated flow, or channel flow. Because the Intensity-Duration-Frequency (IDF) curve is steep with short TC's, estimating the actual intensity is subject to error and overestimates actual runoff. Due to this, the TC's are adjusted to a minimum of 6 minutes.

3.0 – EXISTING SITE CONDITIONS

The soils within the proposed area of disturbance are identified per the NRCS Web Soil (see Appendix B for detail and soil locations). The soils are composed of Urban land – canton complex (HSG A). These soils are classified as well-drained.

Three test pits and infiltration tests were conducted. In nearly all test pit locations, loam was discovered. Infiltration tests were determined per Ksat testing using a Compact Constant Head Permeameter (Amoozemeter) per Env-Wq 1504.14(d). The highest Estimated Seasonal High-Water Table (ESWT) observed was at: elevation 10.17' at the location of the proposed bioretention system.

4.0 - PRE-DEVELOPMENT CONDITIONS

The pre-development condition is characterized by four subcatchments composing two watersheds, which flows towards the Piscataqua River. Pre-development subcatchment areas are depicted on the attached plan entitled "Pre-Development Drainage Map," Sheet DRAIN-01 in Appendix H.

Stormwater runoff from the site primarily infiltrates into the well-drained soils on-site. The remaining stormwater runoff discharges primarily towards the Piscataqua River (EPR) while the remaining runoff is directed to the neighboring properties to the north of the site (POI-1).

In the pre-development condition, the total impervious area is 3,642 SF over a total drainage analysis area of 27,965 SF.

5.0 - POST-DEVELOPMENT CONDITIONS

The post-development condition is characterized by two watersheds divided into many subcatchment areas. Post-development subcatchment areas are depicted on the attached plan entitled "Post-Development Drainage Map," sheet DRAIN-02 in Appendix I.

In the post-development condition, the total impervious area is 3,561 SF over a total drainage analysis area of 27,965 SF. The total impervious area decreases from the existing amount. Impervious area from the project consists of a 2,605 SF footprint residential building and associated improvements. One rain garden is proposed to treat and mitigate the stormwater runoff from the impact of the new impervious area from the proposed development.

Table 2 summarizes the pre- and post-development peak runoff rates for the 2-year, 10-year, 25 year, and 50-year 24-hour Type III storm events for all discharge. Table 3 summarizes the pre- and post-development peak runoff volumes for the 2-year 24-hour Type III storm events for all discharge.

POINT OF INTEREST		TABLE 2 – SURFACE WATER PEAK RUNOFF RATE COMPARISON (CFS) DESIGN STORM			
		2-year	10-year	25-year	50-year
POI-1	Pre	0.0	0.1	0.2	0.3
	Post	0.0	0.1	0.1	0.2
Piscataqua River	Pre	0.3	1.1	1.8	2.5
	Post	0.3	0.9	1.6	2.3

Table 2 - Pre- and Post- Development Peak Runoff Rate Comparison

TABLE 3 – SURFACE WATER PEAK RUNOFF VOLUME COMPARISON (CF)		
POINT OF INTEREST		DESIGN STORM 2-year
POI-1	Pre	87
	Post	87
Piscataqua River	Pre	1,437
	Post	1,220

Table 3 - Pre- and Post- Development Peak Runoff Volume Comparison

The proposed project reduces peak rates of runoff compared to existing conditions for all storm events, in accordance with AoT regulations and Portsmouth stormwater regulations. Additionally, per NHDES, the 2-year 24-hour storm does not result in an increased peak flow rate and reduces volume within the limits of Env-Wq 1507.05(b)(1) from the pre-development to post-development condition. There will be no adverse effects on the abutting properties from the proposed stormwater management system.

Appendices D and F summarize all 24-hour storm events for pre- and post-development drainage calculations using HydroCAD analysis. Appendices E and G provide a full summary of the 10-year, 24-hour storm for the pre- and post-development drainage calculations using HydroCAD analysis.

There were three warning messages for the 10-year storm event related to the proposed rain garden:

- *[87] Warning: Pond ST Oscillations may require smaller dt or Finer Routing (severity=114)*
- *[87] Warning: Pond ST2 Oscillations may require smaller dt or Finer Routing (severity=88)*
- *[87] Warning: Pond ST3: Oscillations may require smaller dt or Finer Routing (severity=156)*

There was one warning message for the 10-year storm event related to the proposed pervious patio and:

- *[87] Warning: Pond PVP Oscillations may require smaller dt or Finer Routing (severity=282)*

Warning 87 is related to the dt and fine routing were adjusted to minimize the severity of this occurrence. The oscillation occurs as the water drains down to the surface of the subsurface

infiltration basins (See Figure 1). Oscillation warnings less than 100 are considered minor. All oscillation errors occur outside of the peak runoff and therefore are not a significant factor in the calculations.

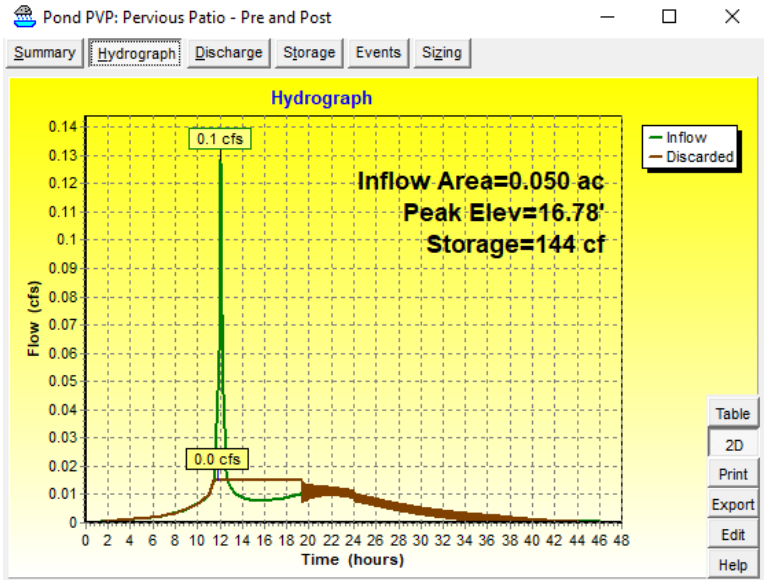

Figure 1: View of the Hydrographs with Oscillation Warning

6.0 – REGULATORY COMPLIANCE

The project meets the stricter of the stormwater standards identified in the New Hampshire Department of Environmental Services (DES) Env-Wq 1500 Alteration of Terrain Regulations and Portsmouth stormwater management regulations.

6.1 – PORTSMOUTH STORMWATER MANAGEMENT STANDARDS

The following regulatory requirements are provided to show project conformance to the applicable criteria of Portsmouth Stormwater Management Performance Standards defined in the Portsmouth Zoning Ordinance Section 10.1018.10. All regulations are met.

All construction activities and uses of buildings, structures, and land within wetlands and wetland buffers shall be carried out so as to minimize the volume and rate of stormwater runoff, the amount of erosion, and the export of sediment from the site. All such activities shall be conducted in accordance with Best Management Practices for stormwater management including but not limited to:

1. New Hampshire Stormwater Manual, NHDES, current version.
2. Best Management Practices to Control Non-point Source Pollution: A Guide for Citizens and City Officials, NHDES, January 2004.

7.0 – BEST MANAGEMENT PRACTICES

Best Management Practices will be developed in accordance with the New Hampshire Stormwater Manual, Volumes Two and Three, December 2008[3] to formulate a plan that assures stormwater quality both during and after construction. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and mitigate any adverse impacts to stormwater quality resulting from development. Best Management Practices for this project include:

- Temporary practices to be implemented during construction.

- Permanent practices to be implemented after construction.

7.1 – TEMPORARY PRACTICES

1. Erosion, sediment, and stormwater detention measures must be installed as directed by the engineer.
2. All disturbed areas, as well as loam stockpiles, shall be seeded and contained by a silt barrier.
3. Silt barriers must be installed prior to any construction commencing. All erosion control devices including silt barriers and storm drain inlet filters shall be inspected at least once per week and following any rainfall. All necessary maintenance shall be completed within twenty-four (24) hours.
4. Any silt barriers found to be failing must be replaced immediately. Sediment is to be removed from behind the silt barrier if found to be one-third the height of the silt barrier or greater.
5. Any area of the site, which has been disturbed and where construction activity will not occur for more than twenty-one (21) days, shall be temporarily stabilized by mulching and seeding.
6. No construction materials shall be buried on-site.
7. After all areas have been stabilized, temporary practices are to be removed, and the area they are removed from must be smoothed and revegetated.
8. Areas must be temporarily stabilized within 14 days of disturbance or seeded and mulched within 3 days of final stabilization.
9. After November 15th, incomplete driveways or parking areas must be protected with a minimum of 3” of crushed gravel, meeting the standards of NHDOT item 304.3.
10. An area shall be considered stable if one of the following has occurred:
    a) Base course gravels are 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 rip rap has been installed.
    d) Erosion control blankets have been properly installed.

[3] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

7.2 – PERMANENT PRACTICES

The objectives for developing permanent Best Management Practices for this site include the following:

1. Maintain existing runoff flow characteristics.
    a) Drainage is structured to minimize any offsite increase in runoff

2. Treatment BMP's are established to ensure the water quality.

3. Maintenance schedules are set to safeguard the long-term working of the stormwater BMP's.

7.3 – BEST MANAGEMENT PRACTICE EFFICIENCIES

Appendix E of Volume 2 of the New Hampshire Stormwater [4] lists the pollutant removal efficiencies of various BMP's. All proposed BMP's meet all state and Portsmouth requirements for total suspended solids (TSS) and pollutant removal, Total Nitrogen (TN), and Total Phosphorous (TP).

Bioretention Systems have a 90% TSS removal efficiency, 65% TN removal efficiency, and 65% TP efficiency.

8.0 – GENERAL CONSTRUCTION SEQUENCING

To minimize erosion and sedimentation due to construction, construction shall follow this general construction sequence.

Modifications to the sequence necessary due to the contractor's schedule shall include appropriate temporary and permanent erosion and sedimentation control measures.

The contractor shall schedule work such that any construction area is stabilized within 45 days of initial disturbance except as noted below. No more than 5 acres of disturbed land shall be unstabilized at any one time.

The project shall be managed so that it meets the requirements and intent of RSA 430:53 and chapter ARG 3800 relative to invasive species.

Do not traffic exposed soil surface of infiltration systems with construction equipment. If feasible, perform excavations with equipment positioned outside the limits of the infiltration components of the system.

Do not discharge sediment-laden waters from construction activities (runoff, water from excavations) to stormwater bmp's. Stormwater runoff must be directed to temporary practices until stormwater bmp's are stabilized.

Do not place stormwater bmp's into service until the contributing areas have been fully stabilized.

[4] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

After the infiltration system is excavated to the final design elevation, the floor should be deeply tilled with a rotary tiller or disc harrow to restore the infiltration rates, followed by a pass with a leveling drag.

1. Notify easement owners prior to commencement of work.
2. Install all perimeter erosion protection measures as indicated on the plans prior to the commencement of construction.
3. Stormwater treatment ponds and swales shall be installed before rough grading the site.
4. During construction every effort shall be made to manage surface runoff quality.
5. Daily, or as required, construct temporary berms, drains, ditches, silt barriers, sediment traps, etc. Mulch and seed as required. (temporary seed mixture of winter rye applied at a rate of 2.5 lbs/1000 sf shall be used).
6. Conduct major earthwork, including clearing and grubbing, within the limits of work. All cut and fill slopes shall be seeded within 72 hours after grading.
7. All stripped topsoil and other earth materials shall be stockpiled outside the immediate work and 100' buffer. A silt barrier shall be constructed around these piles in a manner to provide access and avoid sediment outside of the work area.
8. Construct building pad and commence new building construction.
9. Construct temporary diversions as required.
10. Begin permanent and temporary installation of seed and mulch.
11. Perform earthwork necessary to establish rough grading around driveway. Manage exposed soil surfaces to avoid transporting sediments into wetlands.
12. Install subsurface utilities (water, sewer, gas, electric, communications, drainage, drainage facilities, etc.).
13. Construct proposed driveway, rain gardens, gravel wetlands and drainage swales. All ditches, swales, and gravel wetlands shall be fully stabilized prior to directing flow to them.
14. Complete building and all off-site improvements.
15. Complete seeding and mulching. Seed to be applied with broadcast spreader or by hydro-seeding, then rolled, raked, or dragged to assure seed/soil contact.
16. Remove temporary erosion control measures after seeded areas have become firmly established and site improvements are complete.
17. During the course of the work and upon completion, the contractor shall remove all sediment deposits, either on or off site, including catch basins, and sumps, drain pipes and ditches, curb lines, along silt barriers, etc. Resulting from soil and/or construction operations.
18. See winter construction sequence for work conducted after October 15th.

9.0 – CONCLUSION

The proposed stormwater management system will treat, infiltrate, and mitigate the runoff generated from the proposed development and provide protection of groundwater and surface waters as required through the Alteration of Terrain Bureau and Portsmouth stormwater management regulations. Further, the surface water peak runoff rate is reduced in the 2-year, 10-year, 25-year, and 50-year storm. The project has been designed in accordance with NHDES and Portsmouth regulations. There is little change in the flow characteristics of the site. The proposed project has been designed to pose no adverse effects on surrounding properties.

Respectfully,
TFMoran, Inc. Seacoast Division

Jason Cook
Civil Project Engineer

JKC/jcc

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APPENDIX A – EXTREME PRECIPITATION RATES

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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	
Location	
Longitude	70.746 degrees West
Latitude	43.068 degrees North
Elevation	0 feet
Date/Time	Mon, 18 Apr 2022 11:32:07 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.81	3.22	3.94	4.55	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.94	4.68	5.33	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.07	4.58	**5yr**	3.60	4.40	5.04	5.94	6.70	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.90	3.75	4.86	5.53	**10yr**	4.30	5.32	6.09	7.11	7.98	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.54	2.15	2.78	3.64	4.74	6.17	7.10	**25yr**	5.46	6.83	7.81	9.02	10.05	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.77	**50yr**	1.79	2.53	3.30	4.33	5.67	7.38	8.58	**50yr**	6.54	8.25	9.43	10.81	11.97	**50yr**
100yr	0.60	0.97	1.25	1.78	2.43	3.27	**100yr**	2.09	2.99	3.92	5.17	6.77	8.85	10.37	**100yr**	7.83	9.98	11.39	12.96	14.26	**100yr**
200yr	0.68	1.11	1.43	2.05	2.84	3.85	**200yr**	2.45	3.53	4.63	6.14	8.09	10.60	12.54	**200yr**	9.38	12.06	13.76	15.54	17.00	**200yr**
500yr	0.80	1.32	1.72	2.50	3.50	4.79	**500yr**	3.02	4.40	5.79	7.72	10.23	13.47	16.13	**500yr**	11.92	15.51	17.68	19.77	21.47	**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	0.72	0.88	**1yr**	0.62	0.86	0.93	1.33	1.69	2.25	2.48	**1yr**	1.99	2.38	2.87	3.20	3.91	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.33	3.06	3.45	**2yr**	2.71	3.32	3.82	4.55	5.09	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.11	2.73	3.78	4.18	**5yr**	3.35	4.02	4.72	5.53	6.23	**5yr**
10yr	0.39	0.59	0.73	1.03	1.33	1.60	**10yr**	1.14	1.56	1.80	2.38	3.05	4.36	4.85	**10yr**	3.86	4.66	5.43	6.40	7.18	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.52	4.74	5.87	**25yr**	4.20	5.64	6.62	7.77	8.66	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.16	**50yr**	1.52	2.12	2.34	3.06	3.91	5.36	6.76	**50yr**	4.75	6.50	7.69	9.01	9.99	**50yr**
100yr	0.53	0.81	1.01	1.46	2.01	2.46	**100yr**	1.73	2.41	2.62	3.40	4.32	6.03	7.80	**100yr**	5.34	7.50	8.92	10.47	11.53	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.76	4.76	6.77	8.99	**200yr**	5.99	8.64	10.34	12.17	13.33	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.28	5.40	7.89	10.84	**500yr**	6.99	10.43	12.56	14.89	16.15	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.09	**1yr**	0.77	1.06	1.26	1.74	2.20	2.97	3.17	**1yr**	2.63	3.05	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.87	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.71	**2yr**	3.03	3.57	4.10	4.84	5.62	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.89	2.54	3.26	4.34	4.97	**5yr**	3.84	4.78	5.38	6.39	7.17	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.94	2.29	3.11	3.97	5.34	6.22	**10yr**	4.72	5.98	6.84	7.86	8.77	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.58	**25yr**	1.77	2.52	2.96	4.08	5.17	7.74	8.37	**25yr**	6.85	8.05	9.20	10.36	11.43	**25yr**
50yr	0.67	1.03	1.28	1.84	2.47	3.14	**50yr**	2.13	3.07	3.61	5.02	6.35	9.69	10.50	**50yr**	8.57	10.10	11.51	12.76	13.99	**50yr**
100yr	0.79	1.20	1.50	2.17	2.98	3.83	**100yr**	2.57	3.74	4.39	6.18	7.81	12.11	13.17	**100yr**	10.72	12.66	14.41	15.74	17.13	**100yr**
200yr	0.93	1.40	1.77	2.57	3.58	4.68	**200yr**	3.09	4.57	5.36	7.61	9.61	15.19	16.53	**200yr**	13.44	15.89	18.08	19.41	20.97	**200yr**
500yr	1.16	1.72	2.21	3.21	4.57	6.07	**500yr**	3.94	5.94	6.96	10.07	12.67	20.50	22.33	**500yr**	18.14	21.48	24.39	25.60	27.40	**500yr**

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APPENDIX B – SITE-SPECIFIC SOIL SURVEY & NRCS WEB SOIL REPORT

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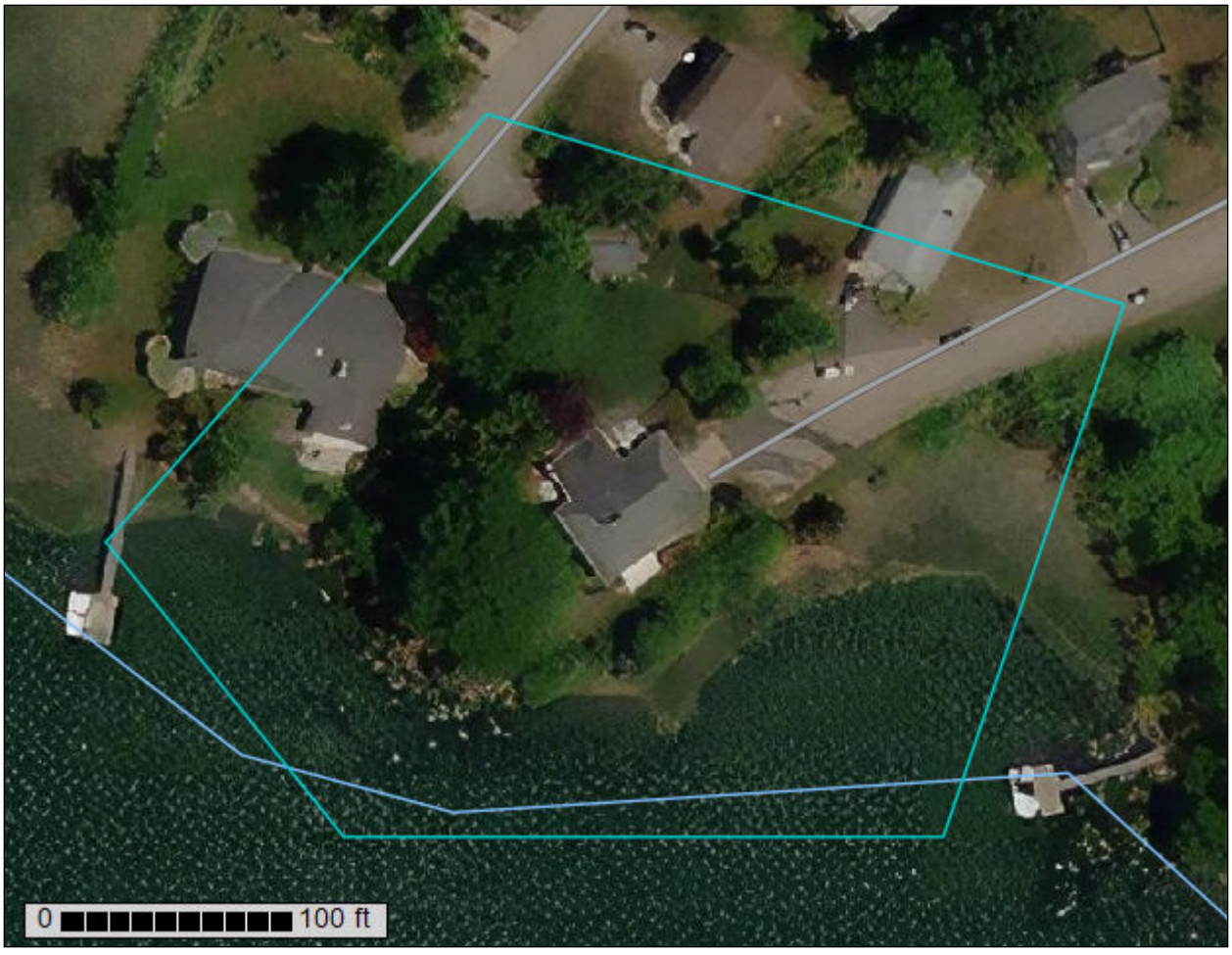
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


70° 44' 48" W
70° 44' 40" W
43° 4' 7" N
43° 4' 4" N
357790
357800
357810
357820
357830
357840
357850
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4769930
4769920
4769910
4769900
4769890
4769880
4769870
4769860
4769850
4769840
4769830
799
Pleasant Point Dr
W
Soil Map may not be valid at this scale.
Map Scale: 1:805 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
10
20
40
60
Feet
0
35
70
140
210
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—Jun 14, 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
799	Urban land-Canton complex, 3 to 15 percent slopes	1.3	59.0%
W	Water	0.9	41.0%
Totals for Area of Interest		**2.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces

Hydric soil rating: Yes

Walpole

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Chatfield

Percent of map unit: 4 percent
Hydric soil rating: No

Scituate and newfields

Percent of map unit: 4 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 9cq3
Elevation: 200 to 2,610 feet
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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APPENDIX C – TEST PIT LOGS & INFILTRATION TEST DATA

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Test Pit Report

For

70 Pleasant Point Drive,

Portsmouth, NH

Prepared For

Katara, LLC

47307.01

PREPARED BY

TFMoran, Inc.

48 Constitution Drive

Bedford, NH 03110

April 6th, 2022

Test Pit # 1 April 6th, 2022

0 – 8 10YR 3/4 Dark Yellowish Brown, Loam, High Organic Concentration, Blocky, Friable,

8 – 21 10YR 5/8 Yellowish Brown, Silt Loam, > 15% Angular Rock Fragments, Friable, Homogeneous, Granular

21 – 28 10YR 6/8 Brownish Yellow, Sandy Loam, > 15% Rounded Cobbles, Friable, Blocky

28 – 37 10YR 6/4 Light Yellowish Brown, Fine Sand, Single Grained, Homogenous

37 – 48 10YR 7/3 Very Pale Brown, Very Fine Sand, Single Grained, Homogenous

48 – 61 2.5Y 5/4 Light Olive Brown, Sandy Clay Loam, > 50% Angular Rock Fragments, Decaying Bedrock

REDOX OBS: 57 – 61 10R 4/8 Red (Oxidization of Iron)

Soil Series: Canton

OBSWT: > 61” Below Grade

ESHWT: 57” Below Grade

Roots: 0 – 23” Below Grade

Ledge: 33” Below Grade & 61” below Grade

Test Pit # 2 April 6th, 2022

0 – 9 10YR 3/3 Dark Brown, Loam, Organic Horizon, Friable, Blocky

9 – 19 2.5Y 4/3 Olive Brown, Loamy Sand, Friable, Common Gravels, Granular

19 – 36 10YR 5/6 Yellowish Brown, Loamy Sand, Common Gravels, Heterogeneous, Massive

36 – 58 2.5Y 6/4 Light Yellowish Brown, Sandy Loam, Blocky, Medium Grain Size, Few Cobbles

58 – 68 10YR 7/6 Yellow, Medium Sand, Heterogeneous, loose, Single Grained

REDOX OBS: 43” Below Grade 7.5YR 5/8 Strong Brown

<u>Soil Series:</u> Canton

OBSWT: > 68” Below Grade

ESHWT: 43” Below Grade

Roots: 8 – 26” Below Grade

Ledge: 50” Below Grade & 68” below Grade

Test Pit # 3 April 6th, 2022

0 – 8 10YR 3/2 Very Dark Grayish Brown, Loam, Organic Horizon, Friable, Blocky

8 – 24 2.5Y 5/6 Light Olive Brown, Sandy Loam, Massive,

24 – 40 2.5Y 7/4 Pale Brown, Loamy Sand, Friable, Granular, Homogenous, Very Few Cobbles

40 – 88 10YR 5/4 Yellowish Brown, Loamy Sand, > 15% Angular Rock Fragments, Homogenous Soils, Platy, Decaying Bedrock

REDOX OBS: 70” Below Grade 2.5YR 4/8 Red

<u>Soil Series:</u> Canton

OBSWT: > 88” Below Grade

ESHWT: 70” Below Grade

Roots: 20 – 24” Below Grade

Ledge: 62” Below Grade

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-1

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 48.0 cm

Depth to Impervious Layer or ESHWT = 142.2 cm 56 in (From Ground Surface

H= D-d = 48-22 = 26

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	36	-	-		-	-	-	-	-	-	-	-			
2	0.5	26	0.00050145	32	4.0	0.008	1	20	9600	4.813926	1.895	94.2	0.000501	0.0003	4.811	1.894	3.099	1.220
3	1	26	0.00050145	27.6	4.4	0.008	1	20	10560	5.295318	2.085	94.2	0.000501	0.0003	5.293	2.084	3.408	1.342
4	1.5	26	0.00050145	23.2	4.4	0.008	1	20	10560	5.295318	2.085	94.2	0.000501	0.0003	5.293	2.084	3.408	1.342
5	2	26	0.00050145	19.2	4.0	0.008	1	20	9600	4.813926	1.895	94.2	0.000501	0.0003	4.811	1.894	3.099	1.220
6	2.5	26	0.00050145	15.3	3.9	0.008	1	20	9360	4.693577	1.848	94.2	0.000501	0.0003	4.691	1.847	3.021	1.189
7	3	26	0.00050145	11.2	4.1	0.008	1	20	9840	4.934274	1.943	94.2	0.000501	0.0003	4.932	1.942	3.176	1.250
8	3.5	26	0.00050145	7.2	4.0	0.008	1	20	9600	4.813926	1.895	94.2	0.000501	0.0003	4.811	1.894	3.099	1.220
9	4	26	0.00050145	3.3	3.9	0.008	1	20	9360	4.693577	1.848	94.2	0.000501	0.0003	4.691	1.847	3.021	1.189
Average Ksat based on readings 2-7											1.887					1.886		1.215

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water D-d)

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer

Project No: 45407.12
Project Name: 437 Lafatette Road - Portsmouth, NH

Date: 4/6/2022
Location: TP-1

For 5 cm Auger

A of Auger Hole = 19.6 cm^2
Radius of Hole = 2.5 cm
Depth of Auger Hole = 43.0 cm
Depth to Impervious Layer or ESHWT = 142.2 cm 56 in (From Ground Surface

H= D-d = 43-13 = 30

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	37	-	-		-	-	-	-	-	-	-	-			
2	0.5	30	0.0003998	34.5	2.5	0.008	1	20	6000	2.398782	0.9444	99.2	0.000400	0.0003	2.398	0.9439	1.645	0.648
3	1	30	0.0003998	32.2	2.3	0.008	1	20	5520	2.206879	0.8689	99.2	0.000400	0.0003	2.206	0.8684	1.514	0.596
4	1.5	30	0.0003998	30	2.2	0.008	1	20	5280	2.110928	0.8311	99.2	0.000400	0.0003	2.110	0.8307	1.448	0.570
5	2	30	0.0003998	27.9	2.1	0.008	1	20	5040	2.014977	0.7933	99.2	0.000400	0.0003	2.014	0.793	1.382	0.544
6	2.5	30	0.0003998	26	1.9	0.008	1	20	4560	1.823074	0.7177	99.2	0.000400	0.0003	1.822	0.717	1.250	0.492
7	3	30	0.0003998	23.9	2.1	0.008	1	20	5040	2.014977	0.7933	99.2	0.000400	0.0003	2.014	0.793	1.382	0.544
8	3.5	30	0.0003998	22	1.9	0.008	1	20	4560	1.823074	0.7177	99.2	0.000400	0.0003	1.822	0.717	1.250	0.492
Average Ksat based on readings 2,4-8											0.7555					0.755		0.518

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water
A Coefficient A from CCHP Manual - Approximate for Glover Solution
d Distinance from top of water to outflow of CCHP (D-H)
A1 Calculated Coefficient A for Glover Solution (H>2s)
B1 Calculated Coefficient A for Glover Solution (H<2s)
s Distance from bottom of auger hole to impereable layer

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-1

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 34.0 cm

Impervious Layer or ESHWT = 142.2 cm 56 in (From Ground Surface

H= D-d = 34-12 = 22

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	38.0	-	-		-	-	-	-	-	-	-	-			
2	0.5	22	0.000651	34.6	3.4	0.008	1	20	8160	5.31216	2.091	108.2	0.000651	0.0003	5.308	2.090	2.727	1.074
3	1	22	0.000651	32.3	2.3	0.008	1	20	5520	3.59352	1.415	108.2	0.000651	0.0003	3.591	1.414	1.845	0.726
4	2	22	0.000651	27.8	4.5	0.017	1	20	5400	3.5154	1.384	108.2	0.000651	0.0003	3.513	1.383	1.805	0.710
5	2.5	22	0.000651	25.8	2.0	0.008	1	20	4800	3.1248	1.230	108.2	0.000651	0.0003	3.123	1.229	1.604	0.632
6	3	22	0.000651	23.9	1.9	0.008	1	20	4560	2.96856	1.169	108.2	0.000651	0.0003	2.966	1.168	1.524	0.600
7	3.5	22	0.000651	22.0	1.9	0.008	1	20	4560	2.96856	1.169	108.2	0.000651	0.0003	2.966	1.168	1.524	0.600
8	4	22	0.000651	20.2	1.8	0.008	1	20	4320	2.81232	1.107	108.2	0.000651	0.0003	2.810	1.106	1.444	0.568
9	4.5	22	0.000651	18.5	1.7	0.008	1	20	4080	2.65608	1.046	108.2	0.000651	0.0003	2.654	1.045	1.363	0.537
											1.123					1.122		1.123

* NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer

Hole #1	1.9
Hole #2	0.8
Hole #3	1.1
Average	**1.3**

Project No: 47307.01
Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH

Date: 4/6/2022
Location: TP-2

For 5 cm Auger

A of Auger Hole = 19.6 cm^2
Radius of Hole = 2.5 cm
Depth of Auger Hole = 93.4 cm
Depth to Impervious Layer or ESHWT = 243.8 cm

23" Down in the hole = 35+23*2.54
96 in (From Ground Surface

H= D-d = 35-15=20

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	34.0	-	-		-	-	-	-	-	-	-	-			
2	0.5	20	0.000753	30.5	3.5	0.008	1	20	8400	6.3252	2.4902	150.4	0.000753	0.0003	6.329	2.492	2.311	0.910
3	1	20	0.000753	26.5	4.0	0.008	1	20	9600	7.2288	2.8460	150.4	0.000753	0.0003	7.233	2.848	2.641	1.040
4	1.5	20	0.000753	23.0	3.5	0.008	1	20	8400	6.3252	2.4902	150.4	0.000753	0.0003	6.329	2.492	2.311	0.910
5	2	20	0.000753	19.8	3.2	0.008	1	20	7680	5.78304	2.2768	150.4	0.000753	0.0003	5.787	2.278	2.113	0.832
6	2.5	20	0.000753	16.4	3.4	0.008	1	20	8160	6.14448	2.4191	150.4	0.000753	0.0003	6.148	2.421	2.245	0.884
7	3	20	0.000753	13.2	3.2	0.008	1	20	7680	5.78304	2.2768	150.4	0.000753	0.0003	5.787	2.278	2.113	0.832
8	3.5	20	0.000753	10.0	3.2	0.008	1	20	7680	5.78304	2.2768	150.4	0.000753	0.0003	5.787	2.278	2.113	0.832
Average Ksat based on readings 1-6											2.3717					2.373		0.867

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water
A Coefficient A from CCHP Manual - Approximate for Glover Solution
d Distinance from top of water to outflow of CCHP (D-H)
A1 Calculated Coefficient A for Glover Solution (H>2s)
B1 Calculated Coefficient A for Glover Solution (H<2s)
s Distance from bottom of auger hole to impereable layer

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-2

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 98.4 cm 23" Down in the hole = 40+23*2.54

Depth to Impervious Layer or ESHWT = 243.8 cm 96 in (From Ground Surface

H= D-d = 40-20 =20

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s*	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	40	-	-		-	-	-	-	-	-	-	-			
2	0.5	20	0.000753	36.7	3.3	0.008	1	20	7920	5.96376	2.3479	145.4	0.000753	0.0003	5.968	2.349	2.241	0.882
3	1	20	0.000753	33.6	3.1	0.008	1	20	7440	5.60232	2.2056	145.4	0.000753	0.0003	5.606	2.207	2.105	0.829
4	1.5	20	0.000753	30.2	3.4	0.008	1	20	8160	6.14448	2.4191	145.4	0.000753	0.0003	6.148	2.421	2.309	0.909
5	2	20	0.000753	27.7	2.5	0.008	1	20	6000	4.518	1.7787	145.4	0.000753	0.0003	4.521	1.780	1.698	0.668
6	2.5	20	0.000753	24.6	3.1	0.008	1	20	7440	5.60232	2.2056	145.4	0.000753	0.0003	5.606	2.207	2.105	0.829
7	3	20	0.000753	21.8	2.8	0.008	1	20	6720	5.06016	1.9922	145.4	0.000753	0.0003	5.063	1.993	1.902	0.749
8	3.5	20	0.000753	19	2.8	0.008	1	20	6720	5.06016	1.9922	145.4	0.000753	0.0003	5.063	1.993	1.902	0.749
9	4	20	0.000753	16.2	2.8	0.008	1	20	6720	5.06016	1.9922	145.4	0.000753	0.0003	5.063	1.993	1.902	0.749
Average Ksat based on readings 1-3											2.0456					2.047		0.769

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer (ESHW - Depth of Auger Hole in cm)

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-2

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 84.4 cm 23" Down in the hole = 26+23*2.54

Impervious Layer or ESHWT = 243.8 cm 96 in (From Ground Surface

H= D-d = 26-13 = 13

											Approximate Glover Solution		Glover Solution						
																if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow		Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr		cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	32.0	-	-		-	-		-	-	-	-	-	-			
2	0.5	13	0.001436	28.0	4.0	0.008	1	20	9600		13.7856	5.427	159.4	0.001436	0.0003	13.786	5.428	3.249	1.279
3	1	13	0.001436	23.4	4.6	0.008	1	20	11040		15.85344	6.242	159.4	0.001436	0.0003	15.854	6.242	3.736	1.471
4	1.5	13	0.001436	19.1	4.3	0.008	1	20	10320		14.81952	5.834	159.4	0.001436	0.0003	14.820	5.835	3.493	1.375
5	2	13	0.001436	14.8	4.3	0.008	1	20	10320		14.81952	5.834	159.4	0.001436	0.0003	14.820	5.835	3.493	1.375
6	2.5	13	0.001436	10.4	4.4	0.008	1	20	10560		15.16416	5.970	159.4	0.001436	0.0003	15.165	5.970	3.574	1.407
7	3	13	0.001436	5.8	4.6	0.008	1	20	11040		15.85344	6.242	159.4	0.001436	0.0003	15.854	6.242	3.736	1.471
Average Ksat based on readings 3-6												5.880					5.880		1.386

* NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer

Hole #1	2.4
Hole #2	2
Hole #3	5.9
Average	**3.4**

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-3

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 88.3 cm 19" Down in the hole = 40+19*2.54

Depth to Impervious Layer or ESHWT = 243.8 cm 96 in (From Ground Surface

H= D-d = 40-8=32

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	18.0	-	-		-	-	-	-	-	-	-	-			
2	0.5	32	0.00036064	14.8	3.2	0.008	1	20	7680	2.769736	1.0904	155.6	0.000360	0.0002	2.768	1.090	1.435	0.565
3	1	32	0.00036064	11.5	3.3	0.008	1	20	7920	2.856291	1.1245	155.6	0.000360	0.0002	2.855	1.124	1.480	0.583
4	1.5	32	0.00036064	8.2	3.3	0.008	1	20	7920	2.856291	1.1245	155.6	0.000360	0.0002	2.855	1.124	1.480	0.583
5	2	32	0.00036064	4.8	3.4	0.008	1	20	8160	2.942845	1.1586	155.6	0.000360	0.0002	2.941	1.158	1.525	0.600
6	2.5	32	0.00036064	0.6	4.2	0.008	1	20	10080	3.635279	1.4312	155.6	0.000360	0.0002	3.633	1.430	1.883	0.742
Average Ksat based on readings 1-6											1.1245					1.124		0.583

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-3

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 79.3 cm 19" Down in the hole = 31+19*2.54

Depth to Impervious Layer or ESHWT = 243.8 cm 96 in (From Ground Surface

H= D-d = 31-10=21

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s*	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	38	-	-		-	-	-	-	-	-	-	-			
2	0.5	21	0.000669	35.7	2.3	0.008	1	20	5520	3.69288	1.4539	164.6	0.000699	0.0002	3.859	1.519	1.362	0.536
3	1	21	0.000669	33.2	2.5	0.008	1	20	6000	4.014	1.5803	164.6	0.000699	0.0002	4.194	1.651	1.481	0.583
4	1.5	21	0.000669	30.8	2.4	0.008	1	20	5760	3.85344	1.5171	164.6	0.000699	0.0002	4.026	1.585	1.421	0.560
5	2	21	0.000669	28	2.8	0.008	1	20	6720	4.49568	1.7700	164.6	0.000699	0.0002	4.697	1.849	1.658	0.653
6	2.5	21	0.000669	25.7	2.3	0.008	1	20	5520	3.69288	1.4539	164.6	0.000699	0.0002	3.859	1.519	1.362	0.536
7	3	21	0.000669	23.2	2.5	0.008	1	20	6000	4.014	1.5803	164.6	0.000699	0.0002	4.194	1.651	1.481	0.583
8	3.5	21	0.000669	20.8	2.4	0.008	1	20	5760	3.85344	1.5171	164.6	0.000699	0.0002	4.026	1.585	1.421	0.560
Average Ksat based on readings 1-3											1.5297					1.598		1.530

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer (ESHW - Depth of Auger Hole in cm)

Project No: 47307.01 Date: 4/6/2022

Project Name: Katara -70 Pleasant Point Drive - Portsmouth, NH Location: TP-3

For 5 cm Auger

A of Auger Hole = 19.6 cm^2

Radius of Hole = 2.5 cm

Depth of Auger Hole = 77.3 cm 19" Down in the hole = 29+19*2.54

Depth to Impervious Layer or ESHWT = 243.8 cm 96 in (From Ground Surface

H= D-d = 29-12 =17

										Approximate Glover Solution		Glover Solution						
															if s>2H		if s<2H	
Reading #	Time Interval	H	Coefficient A	Reading	Δ	Elapsed Time	# On Azm	Conv. Factor (Area)	Outflow	Saturated Hydraulic Conductivity (K_{sat})		s*	A1	B1	Saturated Hydraulic Conductivity (K_{sat})		Saturated Hydraulic Conductivity (K_{sat})	
	min	cm	l/cm	cm	cm	hrs	cm	cm^3	cm^3/hr	cm/hr	in/hr	cm			cm/hr	in/hr	cm/hr	in/hr
1	0	-	-	35	-	-		-	-	-	-	-	-	-	-			
2	0.5	20	0.000753	32.4	2.6	0.008	1	20	6240	4.69872	1.8499	166.6	0.000753	0.0003	4.702	1.851	1.576	0.620
3	1	20	0.000753	29.9	2.5	0.008	1	20	6000	4.518	1.7787	166.6	0.000753	0.0003	4.521	1.780	1.515	0.597
4	1.5	20	0.000753	27.2	2.7	0.008	1	20	6480	4.87944	1.9210	166.6	0.000753	0.0003	4.883	1.922	1.636	0.644
5	2	20	0.000753	24.9	2.3	0.008	1	20	5520	4.15656	1.6364	166.6	0.000753	0.0003	4.159	1.637	1.394	0.549
6	2.5	20	0.000753	22.6	2.3	0.008	1	20	5520	4.15656	1.6364	166.6	0.000753	0.0003	4.159	1.637	1.394	0.549
7	3	20	0.000753	20.4	2.2	0.008	1	20	5280	3.97584	1.5653	166.6	0.000753	0.0003	3.978	1.566	1.333	0.525
8	3.5	20	0.000753	18.1	2.3	0.008	1	20	5520	4.15656	1.6364	166.6	0.000753	0.0003	4.159	1.637	1.394	0.549
Average Ksat based on readings 1-3											1.6187					1.620		1.619

NOTE: Could not keep a steady H reading in the Hole - Infiltrating beyond equipment ability to read

H Steady Head (amount of water in auger hole from bottom of the hole to the surface of the water

A Coefficient A from CCHP Manual - Approximate for Glover Solution

d Distinance from top of water to outflow of CCHP (D-H)

A1 Calculated Coefficient A for Glover Solution (H>2s)

B1 Calculated Coefficient A for Glover Solution (H<2s)

s Distance from bottom of auger hole to impereable layer (ESHW - Depth of Auger Hole in cm)

Hole #1	1.1
Hole #2	1.5
Hole #3	1.6
Average	**1.4**

APPENDIX D – PRE-DEVELOPMENT CALCULATIONS

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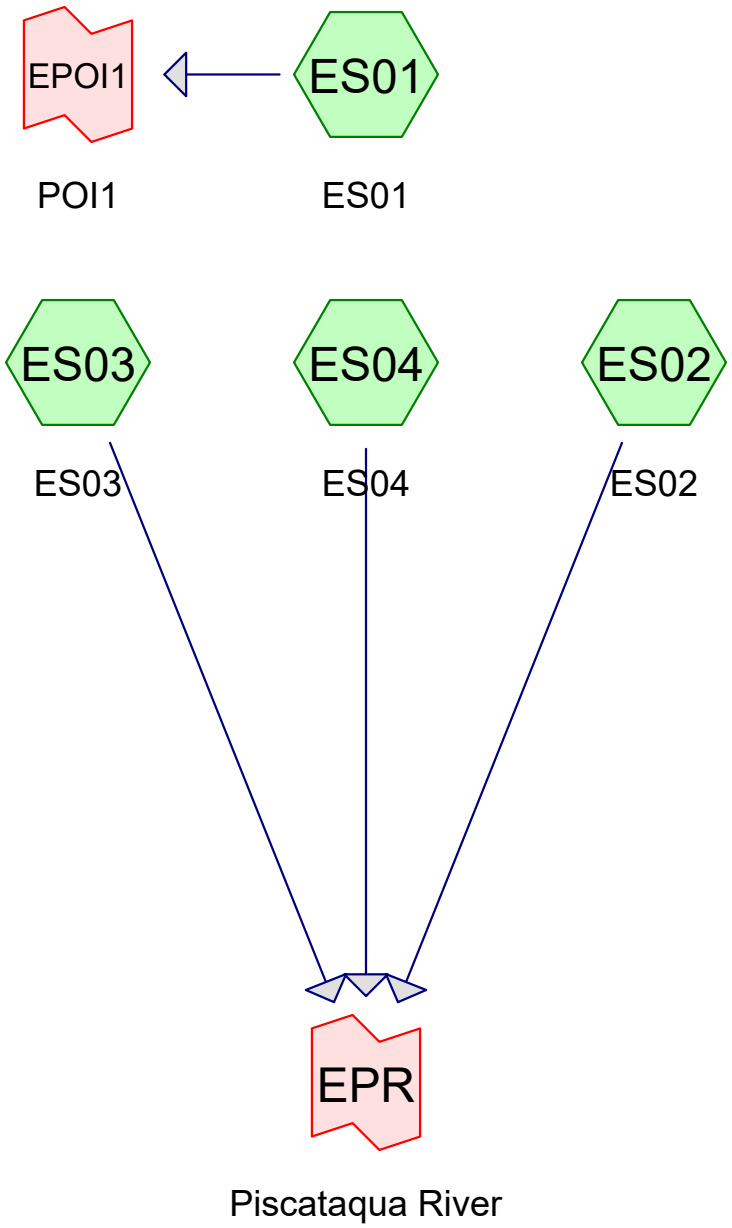
Existing



Subcat Reach Pond Link

Routing Diagram for Pre and Post
Prepared by {enter your company name here}, Printed 5/24/2022
HydroCAD® 10.10-6a s/n 00866 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 yr	Type III 24-hr		Default	24.00	1	3.69	2
2	10 yr	Type III 24-hr		Default	24.00	1	5.59	2
3	25 yr	Type III 24-hr		Default	24.00	1	7.10	2
4	50 yr	Type III 24-hr		Default	24.00	1	8.49	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.142	35	Brush, Fair, HSG A (ES02, ES03, ES04)
0.435	49	Pasture/grassland/range, Fair, HSG A (ES01, ES02, ES03, ES04)
0.120	98	Paved parking, HSG A (ES02, ES03, ES04)
0.057	98	Roofs, HSG A (ES01, ES03, ES04)
0.005	43	Woods/grass comb., Fair, HSG A (ES01)
0.759	**58**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.759	HSG A	ES01, ES02, ES03, ES04
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.759		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.142	0.000	0.000	0.000	0.000	0.142	Brush, Fair	ES02, ES03, ES04
0.435	0.000	0.000	0.000	0.000	0.435	Pasture/grassland/range, Fair	ES01, ES02, ES03, ES04
0.120	0.000	0.000	0.000	0.000	0.120	Paved parking	ES02, ES03, ES04
0.057	0.000	0.000	0.000	0.000	0.057	Roofs	ES01, ES03, ES04
0.005	0.000	0.000	0.000	0.000	0.005	Woods/grass comb., Fair	ES01
0.759	**0.000**	**0.000**	**0.000**	**0.000**	**0.759**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
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 ES01: ES01 Runoff Area=4,670 sf 3.55% Impervious Runoff Depth=0.24"
Flow Length=85' Slope=0.0235 '/' Tc=8.1 min CN=50 Runoff=0.0 cfs 0.002 af

Subcatchment ES02: ES02 Runoff Area=10,846 sf 38.00% Impervious Runoff Depth=0.96"
Flow Length=120' Tc=6.0 min CN=67 Runoff=0.2 cfs 0.020 af

Subcatchment ES03: ES03 Runoff Area=13,313 sf 17.35% Impervious Runoff Depth=0.31"
Flow Length=141' Tc=8.5 min CN=52 Runoff=0.0 cfs 0.008 af

Subcatchment ES04: ES04 Runoff Area=4,216 sf 26.54% Impervious Runoff Depth=0.66"
Flow Length=93' Tc=6.0 min CN=61 Runoff=0.1 cfs 0.005 af

Link EPOI1: POI1 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link EPR: Piscataqua River Inflow=0.3 cfs 0.033 af
Primary=0.3 cfs 0.033 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.035 af Average Runoff Depth = 0.56"
76.65% Pervious = 0.581 ac 23.35% Impervious = 0.177 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
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 ES01: ES01 Runoff Area=4,670 sf 3.55% Impervious Runoff Depth=0.95"
Flow Length=85' Slope=0.0235 '/' Tc=8.1 min CN=50 Runoff=0.1 cfs 0.008 af

Subcatchment ES02: ES02 Runoff Area=10,846 sf 38.00% Impervious Runoff Depth=2.23"
Flow Length=120' Tc=6.0 min CN=67 Runoff=0.6 cfs 0.046 af

Subcatchment ES03: ES03 Runoff Area=13,313 sf 17.35% Impervious Runoff Depth=1.08"
Flow Length=141' Tc=8.5 min CN=52 Runoff=0.3 cfs 0.028 af

Subcatchment ES04: ES04 Runoff Area=4,216 sf 26.54% Impervious Runoff Depth=1.74"
Flow Length=93' Tc=6.0 min CN=61 Runoff=0.2 cfs 0.014 af

Link EPOI1: POI1 Inflow=0.1 cfs 0.008 af
Primary=0.1 cfs 0.008 af

Link EPR: Piscataqua River Inflow=1.1 cfs 0.088 af
Primary=1.1 cfs 0.088 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.096 af Average Runoff Depth = 1.52"
76.65% Pervious = 0.581 ac 23.35% Impervious = 0.177 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
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 ES01: ES01 Runoff Area=4,670 sf 3.55% Impervious Runoff Depth=1.72"
Flow Length=85' Slope=0.0235 '/' Tc=8.1 min CN=50 Runoff=0.2 cfs 0.015 af

Subcatchment ES02: ES02 Runoff Area=10,846 sf 38.00% Impervious Runoff Depth=3.39"
Flow Length=120' Tc=6.0 min CN=67 Runoff=1.0 cfs 0.070 af

Subcatchment ES03: ES03 Runoff Area=13,313 sf 17.35% Impervious Runoff Depth=1.91"
Flow Length=141' Tc=8.5 min CN=52 Runoff=0.6 cfs 0.049 af

Subcatchment ES04: ES04 Runoff Area=4,216 sf 26.54% Impervious Runoff Depth=2.77"
Flow Length=93' Tc=6.0 min CN=61 Runoff=0.3 cfs 0.022 af

Link EPOI1: POI1 Inflow=0.2 cfs 0.015 af
Primary=0.2 cfs 0.015 af

Link EPR: Piscataqua River Inflow=1.8 cfs 0.141 af
Primary=1.8 cfs 0.141 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.157 af Average Runoff Depth = 2.48"
76.65% Pervious = 0.581 ac 23.35% Impervious = 0.177 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
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 ES01: ES01 Runoff Area=4,670 sf 3.55% Impervious Runoff Depth=2.55"
Flow Length=85' Slope=0.0235 '/' Tc=8.1 min CN=50 Runoff=0.3 cfs 0.023 af

Subcatchment ES02: ES02 Runoff Area=10,846 sf 38.00% Impervious Runoff Depth=4.53"
Flow Length=120' Tc=6.0 min CN=67 Runoff=1.3 cfs 0.094 af

Subcatchment ES03: ES03 Runoff Area=13,313 sf 17.35% Impervious Runoff Depth=2.78"
Flow Length=141' Tc=8.5 min CN=52 Runoff=0.8 cfs 0.071 af

Subcatchment ES04: ES04 Runoff Area=4,216 sf 26.54% Impervious Runoff Depth=3.82"
Flow Length=93' Tc=6.0 min CN=61 Runoff=0.4 cfs 0.031 af

Link EPOI1: POI1 Inflow=0.3 cfs 0.023 af
Primary=0.3 cfs 0.023 af

Link EPR: Piscataqua River Inflow=2.5 cfs 0.196 af
Primary=2.5 cfs 0.196 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.218 af Average Runoff Depth = 3.46"
76.65% Pervious = 0.581 ac 23.35% Impervious = 0.177 ac

APPENDIX E – PRE-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10 yr	Type III 24-hr		Default	24.00	1	5.59	2

Summary for Subcatchment ES01: ES01

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.008 af, Depth= 0.95"
Routed to Link EPOI1 : POI1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
166	98	Roofs, HSG A
225	43	Woods/grass comb., Fair, HSG A
4,279	49	Pasture/grassland/range, Fair, HSG A
4,670	50	Weighted Average
4,504		96.45% Pervious Area
166		3.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	85	0.0235	0.18		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"

Summary for Subcatchment ES02: ES02

Runoff = 0.6 cfs @ 12.10 hrs, Volume= 0.046 af, Depth= 2.23"
Routed to Link EPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
4,121	98	Paved parking, HSG A
738	35	Brush, Fair, HSG A
5,987	49	Pasture/grassland/range, Fair, HSG A
10,846	67	Weighted Average
6,725		62.00% Pervious Area
4,121		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	48	0.1250	0.31		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"
0.4	51	0.0660	1.94		**Sheet Flow, Sheet Flow 2** Smooth surfaces n= 0.011 P2= 3.21"
0.2	21	0.1900	2.18		**Shallow Concentrated Flow, Shallow Concentrated 1** Woodland Kv= 5.0 fps
2.8					**Direct Entry, Direct Entry**
6.0	120	Total			

Summary for Subcatchment ES03: ES03

Runoff = 0.3 cfs @ 12.15 hrs, Volume= 0.028 af, Depth= 1.08"
Routed to Link EPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
650	98	Paved parking, HSG A
1,660	98	Roofs, HSG A
5,154	35	Brush, Fair, HSG A
5,849	49	Pasture/grassland/range, Fair, HSG A
13,313	52	Weighted Average
11,003		82.65% Pervious Area
2,310		17.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0300	0.20		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"
0.2	41	0.2190	3.28		**Shallow Concentrated Flow, Shallow Concentrated 1** Short Grass Pasture Kv= 7.0 fps
8.5	141	Total			

Summary for Subcatchment ES04: ES04

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Depth= 1.74"
Routed to Link EPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
463	98	Paved parking, HSG A
656	98	Roofs, HSG A
283	35	Brush, Fair, HSG A
2,814	49	Pasture/grassland/range, Fair, HSG A
4,216	61	Weighted Average
3,097		73.46% Pervious Area
1,119		26.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	19	0.1500	2.21		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.21"
0.1	26	0.0100	2.99	0.30	**Channel Flow, Channel 1** Area= 0.1 sf Perim= 1.3' r= 0.08' n= 0.009 PVC, smooth interior
0.2	48	0.2900	3.77		**Shallow Concentrated Flow, Shallow Concentrated 1** Short Grass Pasture Kv= 7.0 fps
5.6					**Direct Entry, Direct Entry**
6.0	93	Total			

Summary for Link EPOI1: POI1

Inflow Area = 0.107 ac, 3.55% Impervious, Inflow Depth = 0.95" for 10 yr event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.008 af
Primary = 0.1 cfs @ 12.15 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link EPR: Piscataqua River

Inflow Area = 0.651 ac, 26.61% Impervious, Inflow Depth = 1.62" for 10 yr event
Inflow = 1.1 cfs @ 12.11 hrs, Volume= 0.088 af
Primary = 1.1 cfs @ 12.11 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

APPENDIX F – POST-DEVELOPMENT CALCULATIONS

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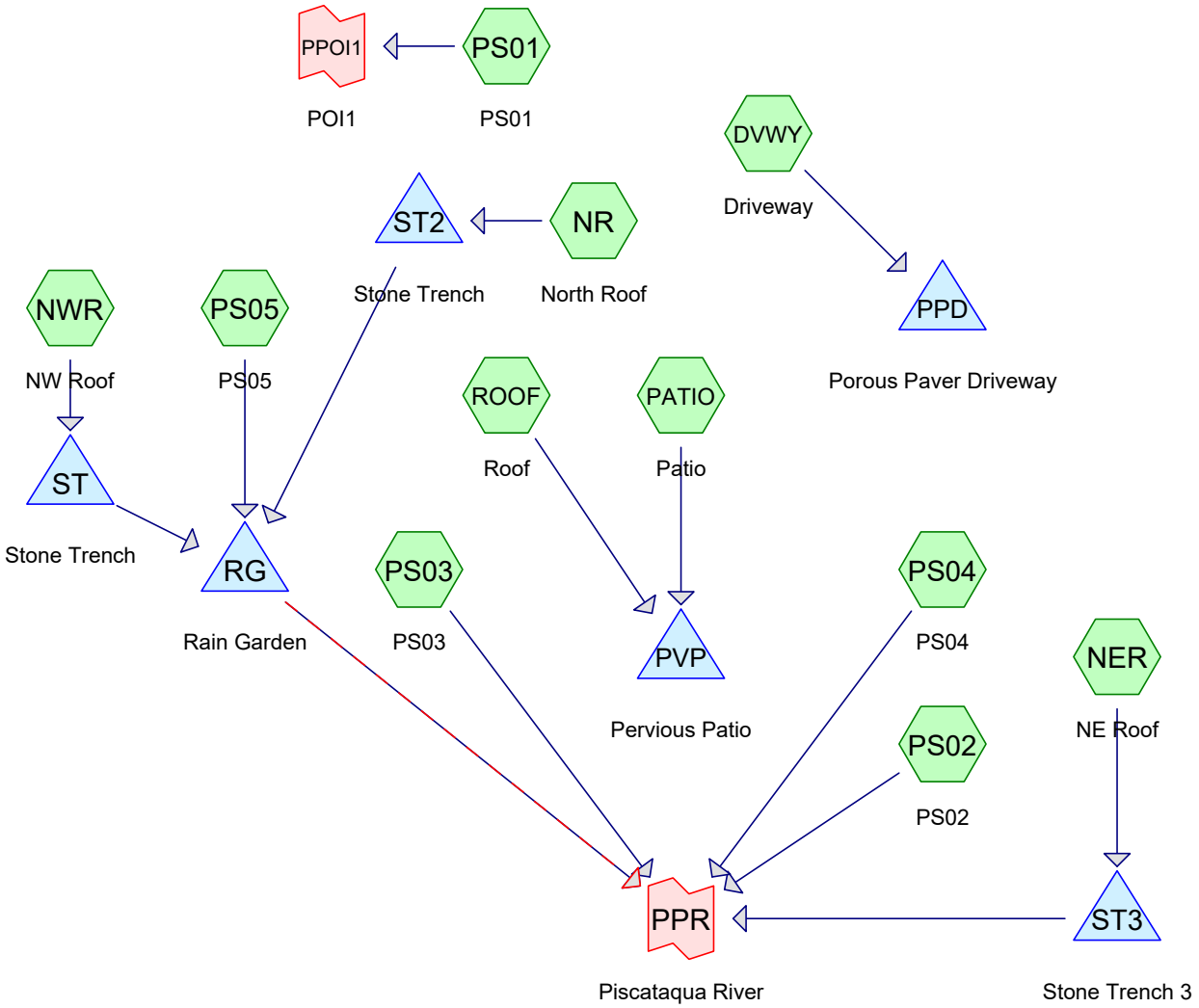

Subcat Reach Pond Link

Routing Diagram for Pre and Post
Prepared by {enter your company name here}, Printed 5/24/2022
HydroCAD® 10.10-6a s/n 00866 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 yr	Type III 24-hr		Default	24.00	1	3.69	2
2	10 yr	Type III 24-hr		Default	24.00	1	5.59	2
3	25 yr	Type III 24-hr		Default	24.00	1	7.10	2
4	50 yr	Type III 24-hr		Default	24.00	1	8.49	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.513	49	Pasture/grassland/range, Fair, HSG A (PS01, PS02, PS03, PS04, PS05)
0.138	98	Paved parking, HSG A (DVWY, PS01, PS02)
0.026	98	Pervious Patio, HSG A (PATIO)
0.013	98	Retaining Wall & Steps, HSG A (PS03)
0.005	98	Retaining Wall & Walkway, HSG A (PS05)
0.004	98	Retaining Wall and Steps, HSG A, (PS04)
0.059	98	Roofs, HSG A (NER, NR, NWR, ROOF)
0.759	**65**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.759	HSG A	DVWY, NER, NR, NWR, PATIO, PS01, PS02, PS03, PS04, PS05, ROOF
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.759		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.513	0.000	0.000	0.000	0.000	0.513	Pasture/grassland/range, Fair	PS01, PS02, PS03, PS04, PS05
0.138	0.000	0.000	0.000	0.000	0.138	Paved parking	DVWY, PS01, PS02
0.026	0.000	0.000	0.000	0.000	0.026	Pervious Patio	PATIO
0.013	0.000	0.000	0.000	0.000	0.013	Retaining Wall & Steps	PS03
0.005	0.000	0.000	0.000	0.000	0.005	Retaining Wall & Walkway	PS05
0.004	0.000	0.000	0.000	0.000	0.004	Retaining Wall and Steps	PS04
0.059	0.000	0.000	0.000	0.000	0.059	Roofs	NER, NR, NWR, ROOF
0.759	**0.000**	**0.000**	**0.000**	**0.000**	**0.759**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentDVWY: Driveway Runoff Area=2,397 sf 100.00% Impervious Runoff Depth>3.44"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.016 af

SubcatchmentNER: NE Roof Runoff Area=871 sf 100.00% Impervious Runoff Depth=3.46"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.006 af

SubcatchmentNR: North Roof Runoff Area=288 sf 100.00% Impervious Runoff Depth=3.46"
Tc=0.0 min CN=98 Runoff=0.0 cfs 0.002 af

SubcatchmentNWR: NW Roof Runoff Area=359 sf 100.00% Impervious Runoff Depth=3.46"
Tc=0.0 min CN=98 Runoff=0.0 cfs 0.002 af

SubcatchmentPATIO: Patio Runoff Area=1,136 sf 100.00% Impervious Runoff Depth>3.44"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.007 af

SubcatchmentPS01: PS01 Runoff Area=3,398 sf 3.91% Impervious Runoff Depth=0.27"
Flow Length=63' Slope=0.0630 '/' Tc=6.0 min CN=51 Runoff=0.0 cfs 0.002 af

SubcatchmentPS02: PS02 Runoff Area=11,262 sf 30.98% Impervious Runoff Depth=0.80"
Flow Length=145' Tc=6.0 min CN=64 Runoff=0.2 cfs 0.017 af

SubcatchmentPS03: PS03 Runoff Area=7,487 sf 7.71% Impervious Runoff Depth=0.34"
Flow Length=71' Slope=0.0600 '/' Tc=6.0 min CN=53 Runoff=0.0 cfs 0.005 af

SubcatchmentPS04: PS04 Runoff Area=2,723 sf 6.17% Impervious Runoff Depth=0.31"
Flow Length=68' Slope=0.1760 '/' Tc=6.0 min CN=52 Runoff=0.0 cfs 0.002 af

SubcatchmentPS05: PS05 Runoff Area=2,083 sf 10.66% Impervious Runoff Depth=0.38"
Flow Length=35' Slope=0.1070 '/' Tc=6.0 min CN=54 Runoff=0.0 cfs 0.001 af

SubcatchmentROOF: Roof Runoff Area=1,041 sf 100.00% Impervious Runoff Depth=3.46"
Tc=6.0 min CN=98 Runoff=0.1 cfs 0.007 af

Pond PPD: Porous Paver Driveway Peak Elev=9.70' Storage=0 cf Inflow=0.0 cfs 0.016 af
Outflow=0.0 cfs 0.016 af

Pond PVP: Pervious Patio Peak Elev=16.61' Storage=75 cf Inflow=0.1 cfs 0.014 af
Outflow=0.0 cfs 0.014 af

Pond RG: Rain Garden Peak Elev=14.02' Storage=88 cf Inflow=0.1 cfs 0.003 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.003 af

Pond ST: Stone Trench Peak Elev=14.71' Storage=0.000 af Inflow=0.0 cfs 0.002 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.001 af Outflow=0.0 cfs 0.002 af

Pond ST2: Stone Trench Peak Elev=18.23' Storage=0.000 af Inflow=0.0 cfs 0.002 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.001 af Outflow=0.0 cfs 0.002 af

Pond ST3: Stone Trench 3 Peak Elev=19.01' Storage=42 cf Inflow=0.1 cfs 0.006 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.004 af Outflow=0.1 cfs 0.006 af

Link PPOI1: POI1 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link PPR: Piscataqua River Inflow=0.3 cfs 0.028 af
Primary=0.3 cfs 0.028 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.067 af Average Runoff Depth = 1.06"
67.68% Pervious = 0.513 ac 32.32% Impervious = 0.245 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentDVWY: Driveway Runoff Area=2,397 sf 100.00% Impervious Runoff Depth>5.32"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.024 af

SubcatchmentNER: NE Roof Runoff Area=871 sf 100.00% Impervious Runoff Depth=5.35"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.009 af

SubcatchmentNR: North Roof Runoff Area=288 sf 100.00% Impervious Runoff Depth=5.35"
Tc=0.0 min CN=98 Runoff=0.0 cfs 0.003 af

SubcatchmentNWR: NW Roof Runoff Area=359 sf 100.00% Impervious Runoff Depth=5.35"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.004 af

SubcatchmentPATIO: Patio Runoff Area=1,136 sf 100.00% Impervious Runoff Depth>5.32"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.012 af

SubcatchmentPS01: PS01 Runoff Area=3,398 sf 3.91% Impervious Runoff Depth=1.01"
Flow Length=63' Slope=0.0630 '/' Tc=6.0 min CN=51 Runoff=0.1 cfs 0.007 af

SubcatchmentPS02: PS02 Runoff Area=11,262 sf 30.98% Impervious Runoff Depth=1.98"
Flow Length=145' Tc=6.0 min CN=64 Runoff=0.6 cfs 0.043 af

SubcatchmentPS03: PS03 Runoff Area=7,487 sf 7.71% Impervious Runoff Depth=1.15"
Flow Length=71' Slope=0.0600 '/' Tc=6.0 min CN=53 Runoff=0.2 cfs 0.016 af

SubcatchmentPS04: PS04 Runoff Area=2,723 sf 6.17% Impervious Runoff Depth=1.08"
Flow Length=68' Slope=0.1760 '/' Tc=6.0 min CN=52 Runoff=0.1 cfs 0.006 af

SubcatchmentPS05: PS05 Runoff Area=2,083 sf 10.66% Impervious Runoff Depth=1.22"
Flow Length=35' Slope=0.1070 '/' Tc=6.0 min CN=54 Runoff=0.1 cfs 0.005 af

SubcatchmentROOF: Roof Runoff Area=1,041 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=98 Runoff=0.1 cfs 0.011 af

Pond PPD: Porous Paver Driveway Peak Elev=9.70' Storage=0 cf Inflow=0.0 cfs 0.024 af
Outflow=0.0 cfs 0.024 af

Pond PVP: Pervious Patio Peak Elev=16.78' Storage=144 cf Inflow=0.1 cfs 0.022 af
Outflow=0.0 cfs 0.022 af

Pond RG: Rain Garden Peak Elev=14.38' Storage=153 cf Inflow=0.1 cfs 0.008 af
Discarded=0.0 cfs 0.005 af Primary=0.0 cfs 0.004 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.008 af

Pond ST: Stone Trench Peak Elev=14.71' Storage=0.000 af Inflow=0.1 cfs 0.004 af
Discarded=0.0 cfs 0.002 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.004 af

Pond ST2: Stone Trench Peak Elev=18.23' Storage=0.000 af Inflow=0.0 cfs 0.003 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.001 af Outflow=0.0 cfs 0.003 af

Pond ST3: Stone Trench 3 Peak Elev=19.02' Storage=42 cf Inflow=0.1 cfs 0.009 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.007 af Outflow=0.1 cfs 0.009 af

Link PPOI1: POI1 Inflow=0.1 cfs 0.007 af
Primary=0.1 cfs 0.007 af

Link PPR: Piscataqua River Inflow=0.9 cfs 0.076 af
Primary=0.9 cfs 0.076 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.138 af Average Runoff Depth = 2.19"
67.68% Pervious = 0.513 ac 32.32% Impervious = 0.245 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentDVWY: Driveway Runoff Area=2,397 sf 100.00% Impervious Runoff Depth>6.82"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.031 af

SubcatchmentNER: NE Roof Runoff Area=871 sf 100.00% Impervious Runoff Depth=6.86"
Tc=0.0 min CN=98 Runoff=0.2 cfs 0.011 af

SubcatchmentNR: North Roof Runoff Area=288 sf 100.00% Impervious Runoff Depth=6.86"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.004 af

SubcatchmentNWR: NW Roof Runoff Area=359 sf 100.00% Impervious Runoff Depth=6.86"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.005 af

SubcatchmentPATIO: Patio Runoff Area=1,136 sf 100.00% Impervious Runoff Depth>6.82"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.015 af

SubcatchmentPS01: PS01 Runoff Area=3,398 sf 3.91% Impervious Runoff Depth=1.81"
Flow Length=63' Slope=0.0630 '/' Tc=6.0 min CN=51 Runoff=0.1 cfs 0.012 af

SubcatchmentPS02: PS02 Runoff Area=11,262 sf 30.98% Impervious Runoff Depth=3.08"
Flow Length=145' Tc=6.0 min CN=64 Runoff=0.9 cfs 0.066 af

SubcatchmentPS03: PS03 Runoff Area=7,487 sf 7.71% Impervious Runoff Depth=2.00"
Flow Length=71' Slope=0.0600 '/' Tc=6.0 min CN=53 Runoff=0.4 cfs 0.029 af

SubcatchmentPS04: PS04 Runoff Area=2,723 sf 6.17% Impervious Runoff Depth=1.91"
Flow Length=68' Slope=0.1760 '/' Tc=6.0 min CN=52 Runoff=0.1 cfs 0.010 af

SubcatchmentPS05: PS05 Runoff Area=2,083 sf 10.66% Impervious Runoff Depth=2.09"
Flow Length=35' Slope=0.1070 '/' Tc=6.0 min CN=54 Runoff=0.1 cfs 0.008 af

SubcatchmentROOF: Roof Runoff Area=1,041 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.2 cfs 0.014 af

Pond PPD: Porous Paver Driveway Peak Elev=9.70' Storage=0 cf Inflow=0.0 cfs 0.031 af
Outflow=0.0 cfs 0.031 af

Pond PVP: Pervious Patio Peak Elev=16.94' Storage=207 cf Inflow=0.2 cfs 0.028 af
Outflow=0.0 cfs 0.029 af

Pond RG: Rain Garden Peak Elev=14.43' Storage=166 cf Inflow=0.2 cfs 0.014 af
Discarded=0.0 cfs 0.005 af Primary=0.2 cfs 0.009 af Secondary=0.0 cfs 0.000 af Outflow=0.2 cfs 0.014 af

Pond ST: Stone Trench Peak Elev=14.71' Storage=0.000 af Inflow=0.1 cfs 0.005 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.003 af Outflow=0.1 cfs 0.005 af

Pond ST2: Stone Trench Peak Elev=18.23' Storage=0.000 af Inflow=0.1 cfs 0.004 af
Discarded=0.0 cfs 0.002 af Primary=0.0 cfs 0.002 af Outflow=0.1 cfs 0.004 af

Pond ST3: Stone Trench 3 Peak Elev=19.02' Storage=42 cf Inflow=0.2 cfs 0.011 af
Discarded=0.0 cfs 0.002 af Primary=0.2 cfs 0.009 af Outflow=0.2 cfs 0.011 af

Link PPOI1: POI1 Inflow=0.1 cfs 0.012 af
Primary=0.1 cfs 0.012 af

Link PPR: Piscataqua River Inflow=1.6 cfs 0.123 af
Primary=1.6 cfs 0.123 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.205 af Average Runoff Depth = 3.24"
67.68% Pervious = 0.513 ac 32.32% Impervious = 0.245 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentDVWY: Driveway Runoff Area=2,397 sf 100.00% Impervious Runoff Depth>8.21"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.038 af

SubcatchmentNER: NE Roof Runoff Area=871 sf 100.00% Impervious Runoff Depth=8.25"
Tc=0.0 min CN=98 Runoff=0.2 cfs 0.014 af

SubcatchmentNR: North Roof Runoff Area=288 sf 100.00% Impervious Runoff Depth=8.25"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.005 af

SubcatchmentNWR: NW Roof Runoff Area=359 sf 100.00% Impervious Runoff Depth=8.25"
Tc=0.0 min CN=98 Runoff=0.1 cfs 0.006 af

SubcatchmentPATIO: Patio Runoff Area=1,136 sf 100.00% Impervious Runoff Depth>8.21"
Tc=790.0 min CN=98 Runoff=0.0 cfs 0.018 af

SubcatchmentPS01: PS01 Runoff Area=3,398 sf 3.91% Impervious Runoff Depth=2.67"
Flow Length=63' Slope=0.0630 '/' Tc=6.0 min CN=51 Runoff=0.2 cfs 0.017 af

SubcatchmentPS02: PS02 Runoff Area=11,262 sf 30.98% Impervious Runoff Depth=4.18"
Flow Length=145' Tc=6.0 min CN=64 Runoff=1.2 cfs 0.090 af

SubcatchmentPS03: PS03 Runoff Area=7,487 sf 7.71% Impervious Runoff Depth=2.89"
Flow Length=71' Slope=0.0600 '/' Tc=6.0 min CN=53 Runoff=0.5 cfs 0.041 af

SubcatchmentPS04: PS04 Runoff Area=2,723 sf 6.17% Impervious Runoff Depth=2.78"
Flow Length=68' Slope=0.1760 '/' Tc=6.0 min CN=52 Runoff=0.2 cfs 0.014 af

SubcatchmentPS05: PS05 Runoff Area=2,083 sf 10.66% Impervious Runoff Depth=3.01"
Flow Length=35' Slope=0.1070 '/' Tc=6.0 min CN=54 Runoff=0.2 cfs 0.012 af

SubcatchmentROOF: Roof Runoff Area=1,041 sf 100.00% Impervious Runoff Depth=8.25"
Tc=6.0 min CN=98 Runoff=0.2 cfs 0.016 af

Pond PPD: Porous Paver Driveway Peak Elev=9.70' Storage=1 cf Inflow=0.0 cfs 0.038 af
Outflow=0.0 cfs 0.038 af

Pond PVP: Pervious Patio Peak Elev=17.10' Storage=271 cf Inflow=0.2 cfs 0.034 af
Outflow=0.0 cfs 0.034 af

Pond RG: Rain Garden Peak Elev=14.45' Storage=172 cf Inflow=0.2 cfs 0.019 af
Discarded=0.0 cfs 0.005 af Primary=0.3 cfs 0.014 af Secondary=0.0 cfs 0.000 af Outflow=0.3 cfs 0.019 af

Pond ST: Stone Trench Peak Elev=14.72' Storage=0.000 af Inflow=0.1 cfs 0.006 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.004 af Outflow=0.1 cfs 0.006 af

Pond ST2: Stone Trench Peak Elev=18.23' Storage=0.000 af Inflow=0.1 cfs 0.005 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.003 af Outflow=0.1 cfs 0.005 af

Pond ST3: Stone Trench 3 Peak Elev=19.03' Storage=42 cf Inflow=0.2 cfs 0.014 af
Discarded=0.0 cfs 0.002 af Primary=0.2 cfs 0.012 af Outflow=0.2 cfs 0.014 af

Link PPOI1: POI1 Inflow=0.2 cfs 0.017 af
Primary=0.2 cfs 0.017 af

Link PPR: Piscataqua River Inflow=2.3 cfs 0.172 af
Primary=2.3 cfs 0.172 af

Total Runoff Area = 0.759 ac Runoff Volume = 0.271 af Average Runoff Depth = 4.29"
67.68% Pervious = 0.513 ac 32.32% Impervious = 0.245 ac

APPENDIX G – POST-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10 yr	Type III 24-hr		Default	24.00	1	5.59	2

Summary for Subcatchment DVWY: Driveway

Runoff = 0.0 cfs @ 21.94 hrs, Volume= 0.024 af, Depth> 5.32"
Routed to Pond PPD : Porous Paver Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
2,397	98	Paved parking, HSG A
2,397		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
790.0					**Direct Entry, Direct Entry**

Summary for Subcatchment NER: NE Roof

Runoff = 0.1 cfs @ 12.00 hrs, Volume= 0.009 af, Depth= 5.35"
Routed to Pond ST3 : Stone Trench 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
871	98	Roofs, HSG A
871		100.00% Impervious Area

Summary for Subcatchment NR: North Roof

Runoff = 0.0 cfs @ 12.00 hrs, Volume= 0.003 af, Depth= 5.35"
Routed to Pond ST2 : Stone Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
288	98	Roofs, HSG A
288		100.00% Impervious Area

Summary for Subcatchment NWR: NW Roof

Runoff = 0.1 cfs @ 12.00 hrs, Volume= 0.004 af, Depth= 5.35"
Routed to Pond ST : Stone Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
359	98	Roofs, HSG A
359		100.00% Impervious Area

Summary for Subcatchment PATIO: Patio

Runoff = 0.0 cfs @ 21.94 hrs, Volume= 0.012 af, Depth> 5.32"
Routed to Pond PVP : Pervious Patio

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

	Area (sf)	CN	Description
*	1,136	98	Pervious Patio, HSG A
	1,136		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
790.0					**Direct Entry, Direct Entry**

Summary for Subcatchment PS01: PS01

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.007 af, Depth= 1.01"
Routed to Link PPOI1 : POI1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
133	98	Paved parking, HSG A
0	98	Roofs, HSG A
3,265	49	Pasture/grassland/range, Fair, HSG A
3,398	51	Weighted Average
3,265		96.09% Pervious Area
133		3.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	63	0.0630	0.25		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"
1.7					**Direct Entry, Direct Entry**
6.0	63	Total			

Summary for Subcatchment PS02: PS02

Runoff = 0.6 cfs @ 12.10 hrs, Volume= 0.043 af, Depth= 1.98"
Routed to Link PPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
3,489	98	Paved parking, HSG A
0	98	Roofs, HSG A
7,773	49	Pasture/grassland/range, Fair, HSG A
0	35	Brush, Fair, HSG A
11,262	64	Weighted Average
7,773		69.02% Pervious Area
3,489		30.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	78	0.0770	0.28		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"
0.3	22	0.0450	1.41		**Sheet Flow, Sheet Flow 2** Smooth surfaces n= 0.011 P2= 3.21"
0.1	18	0.0555	4.78		**Shallow Concentrated Flow, Shallow Concentrated 1** Paved Kv= 20.3 fps
0.2	27	0.1850	2.15		**Shallow Concentrated Flow, Shallow Concentrated 2** Woodland Kv= 5.0 fps
0.7					**Direct Entry, Direct Entry**
6.0	145	Total			

Summary for Subcatchment PS03: PS03

Runoff = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af, Depth= 1.15"
Routed to Link PPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

	Area (sf)	CN	Description
*	577	98	Retaining Wall & Steps, HSG A
	6,910	49	Pasture/grassland/range, Fair, HSG A
	7,487	53	Weighted Average
	6,910		92.29% Pervious Area
	577		7.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	71	0.0600	0.25		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.21"
1.2					**Direct Entry, Direct Entry**
6.0	71	Total			

Summary for Subcatchment PS04: PS04

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.006 af, Depth= 1.08"
Routed to Link PPR : Piscataqua River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

	Area (sf)	CN	Description
*	168	98	Retaining Wall and Steps, HSG A,
	0	98	Roofs, HSG A
	2,555	49	Pasture/grassland/range, Fair, HSG A
	0	35	Brush, Fair, HSG A
	2,723	52	Weighted Average
	2,555		93.83% Pervious Area
	168		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	68	0.1760	0.26		**Sheet Flow, Sheet Flow 1**
					Grass: Dense n= 0.240 P2= 3.21"
1.6					**Direct Entry, Direct Entry**
6.0	68	Total			

Summary for Subcatchment PS05: PS05

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.005 af, Depth= 1.22"
Routed to Pond RG : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

	Area (sf)	CN	Description
*	222	98	Retaining Wall & Walkway, HSG A
	1,861	49	Pasture/grassland/range, Fair, HSG A
	2,083	54	Weighted Average
	1,861		89.34% Pervious Area
	222		10.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	35	0.1070	0.27		**Sheet Flow, Sheet Flow**
					Grass: Short n= 0.150 P2= 3.21"
3.8					**Direct Entry, Direct Entry**
6.0	35	Total			

Summary for Subcatchment ROOF: Roof

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.011 af, Depth= 5.35"
Routed to Pond PVP : Pervious Patio

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.59"

Area (sf)	CN	Description
1,041	98	Roofs, HSG A
1,041		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry**

Summary for Pond PPD: Porous Paver Driveway

Inflow Area = 0.055 ac,100.00% Impervious, Inflow Depth > 5.32" for 10 yr event
Inflow = 0.0 cfs @ 21.94 hrs, Volume= 0.024 af
Outflow = 0.0 cfs @ 21.94 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 21.94 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 9.70' @ 21.94 hrs Surf.Area= 2,099 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (1,455.9 - 1,455.9)

Volume	Invert	Avail.Storage	Storage Description
#1	10.95'	210 cf	**Subbase (Irregular)**Listed below (Recalc) -Impervious 2,099 cf Overall x 10.0% Voids
#2	10.70'	210 cf	**Pea Stone (Irregular)**Listed below (Recalc) -Impervious 525 cf Overall x 40.0% Voids
#3	9.70'	840 cf	**Rock Reservoir (Irregular)**Listed below (Recalc) 2,099 cf Overall x 40.0% Voids
		1,259 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.95	2,099	257.0	0	0	2,099
11.95	2,099	257.0	2,099	2,099	2,356

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.70	2,099	257.0	0	0	2,099
10.95	2,099	257.0	525	525	2,163

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
9.70	2,099	257.0	0	0	2,099
10.70	2,099	257.0	2,099	2,099	2,356

Device	Routing	Invert	Outlet Devices
#1	Discarded	9.70'	**0.650 in/hr Exfiltration over Horizontal area**

Discarded OutFlow Max=0.0 cfs @ 21.94 hrs HW=9.70' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.0 cfs)

Summary for Pond PVP: Pervious Patio

Inflow Area = 0.050 ac,100.00% Impervious, Inflow Depth > 5.34" for 10 yr event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.0 cfs @ 11.85 hrs, Volume= 0.022 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.0 cfs @ 11.85 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 16.78' @ 12.76 hrs Surf.Area= 1,000 sf Storage= 144 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 36.4 min (1,151.9 - 1,115.6)

Volume	Invert	Avail.Storage	Storage Description
#1	19.00'	100 cf	**Subbase (Irregular)**Listed below (Recalc) -Impervious 1,000 cf Overall x 10.0% Voids
#2	18.75'	100 cf	**Pea Stone (Irregular)**Listed below (Recalc) -Impervious 250 cf Overall x 40.0% Voids
#3	16.42'	932 cf	**Rock Reservoir (Irregular)**Listed below (Recalc) 2,330 cf Overall x 40.0% Voids
		1,132 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
19.00	1,000	212.1	0	0	1,000
20.00	1,000	212.1	1,000	1,000	1,212

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
18.75	1,000	212.1	0	0	1,000
19.00	1,000	212.1	250	250	1,053

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
16.42	1,000	212.1	0	0	1,000
18.75	1,000	212.1	2,330	2,330	1,494

Device	Routing	Invert	Outlet Devices
#1	Discarded	16.42'	**0.650 in/hr Exfiltration over Horizontal area**

Discarded OutFlow Max=0.0 cfs @ 11.85 hrs HW=16.46' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.0 cfs)

Summary for Pond RG: Rain Garden

Inflow Area = 0.063 ac, 31.83% Impervious, Inflow Depth = 1.62" for 10 yr event
Inflow = 0.1 cfs @ 12.04 hrs, Volume= 0.008 af
Outflow = 0.0 cfs @ 12.46 hrs, Volume= 0.008 af, Atten= 71%, Lag= 25.3 min
Discarded = 0.0 cfs @ 11.45 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.46 hrs, Volume= 0.004 af
Routed to Link PPR : Piscataqua River
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link PPR : Piscataqua River

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 14.38' @ 12.46 hrs Surf.Area= 115 sf Storage= 153 cf

Plug-Flow detention time= 390.0 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 390.9 min (1,217.7 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	14.00'	99 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) -Impervious
#2	12.25'	40 cf	**Filter Media (Irregular)** Listed below (Recalc) -Impervious 201 cf Overall x 20.0% Voids
#3	11.25'	46 cf	**Crushed Stone (Irregular)** Listed below (Recalc) 115 cf Overall x 40.0% Voids
		185 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.00	115	44.1	0	0	115
14.50	296	64.2	99	99	290

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
12.25	115	44.1	0	0	115
14.00	115	44.1	201	201	192

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
11.25	115	44.1	0	0	115
12.25	115	44.1	115	115	159

Device	Routing	Invert	Outlet Devices
#1	Primary	12.00'	**6.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.00' / 10.00' S= 0.0244 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	11.25'	**0.700 in/hr Exfiltration over Horizontal area**
#3	Secondary	15.10'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#4	Device 1	14.40'	**24.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	14.20'	**2.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.0 cfs @ 11.45 hrs HW=11.29' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.46 hrs HW=14.38' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.0 cfs of 1.1 cfs potential flow)
  ├**4=Grate** (Controls 0.0 cfs)
  └**5=Orifice** (Orifice Controls 0.0 cfs @ 1.50 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=11.25' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond ST: Stone Trench

Inflow Area = 0.008 ac,100.00% Impervious, Inflow Depth = 5.35" for 10 yr event
Inflow = 0.1 cfs @ 12.00 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.00 hrs, Volume= 0.004 af, Atten= 5%, Lag= 0.0 min
Discarded = 0.0 cfs @ 7.00 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 12.00 hrs, Volume= 0.002 af
Routed to Pond RG : Rain Garden

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 14.71' @ 12.00 hrs Surf.Area= 0.001 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 105.7 min (846.4 - 740.7)

Volume	Invert	Avail.Storage	Storage Description
#1	13.70'	0.000 af	**3.00'W x 14.70'L x 1.00'H Prismatoid** 0.001 af Overall x 40.0% Voids
#2	14.70'	0.000 af	**3.00'W x 14.70'L x 0.20'H Prismatoid**-Impervious 0.000 af Overall x 0.0% Voids
		0.000 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.70'	**0.700 in/hr Exfiltration over Surface area**
#2	Primary	14.70'	**16.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Discarded OutFlow Max=0.0 cfs @ 7.00 hrs HW=13.71' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.00 hrs HW=14.71' TW=13.02' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.28 fps)

Summary for Pond ST2: Stone Trench

Inflow Area = 0.007 ac,100.00% Impervious, Inflow Depth = 5.35" for 10 yr event
Inflow = 0.0 cfs @ 12.00 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.00 hrs, Volume= 0.003 af, Atten= 7%, Lag= 0.0 min
Discarded = 0.0 cfs @ 7.80 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.00 hrs, Volume= 0.001 af
Routed to Pond RG : Rain Garden

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 18.23' @ 12.00 hrs Surf.Area= 0.001 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 116.9 min (857.6 - 740.7)

Volume	Invert	Avail.Storage	Storage Description
#1	17.22'	0.000 af	**3.00'W x 14.70'L x 1.00'H Prismatoid** 0.001 af Overall x 40.0% Voids
#2	18.22'	0.000 af	**3.00'W x 14.70'L x 0.20'H Prismatoid**-Impervious 0.000 af Overall x 0.0% Voids
		0.000 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	17.22'	**0.700 in/hr Exfiltration over Surface area**
#2	Primary	18.22'	**16.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Discarded OutFlow Max=0.0 cfs @ 7.80 hrs HW=17.23' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.00 hrs HW=18.23' TW=13.02' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.25 fps)

Summary for Pond ST3: Stone Trench 3

Inflow Area = 0.020 ac,100.00% Impervious, Inflow Depth = 5.35" for 10 yr event
Inflow = 0.1 cfs @ 12.00 hrs, Volume= 0.009 af
Outflow = 0.1 cfs @ 12.00 hrs, Volume= 0.009 af, Atten= 1%, Lag= 0.0 min
Discarded = 0.0 cfs @ 3.05 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.00 hrs, Volume= 0.007 af
Routed to Link PPR : Piscataqua River

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 19.02' @ 12.00 hrs Surf.Area= 33 sf Storage= 42 cf

Plug-Flow detention time= 172.2 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 173.3 min (914.0 - 740.7)

Volume	Invert	Avail.Storage	Storage Description
#1	17.75'	42 cf	**2.00'W x 16.60'L x 1.25'H Prismatoid**
#2	19.00'	0 cf	**2.00'W x 16.65'L x 0.20'H Prismatoid**-Impervious 7 cf Overall x 0.0% Voids
		42 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	17.75'	**0.700 in/hr Exfiltration over Surface area**
#2	Primary	19.00'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.0 cfs @ 3.05 hrs HW=17.77' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.00 hrs HW=19.02' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.32 fps)

Summary for Link PPOI1: POI1

Inflow Area = 0.078 ac, 3.91% Impervious, Inflow Depth = 1.01" for 10 yr event
Inflow = 0.1 cfs @ 12.11 hrs, Volume= 0.007 af
Primary = 0.1 cfs @ 12.11 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link PPR: Piscataqua River

Inflow Area = 0.576 ac, 23.83% Impervious, Inflow Depth = 1.57" for 10 yr event
Inflow = 0.9 cfs @ 12.10 hrs, Volume= 0.076 af
Primary = 0.9 cfs @ 12.10 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

APPENDIX H – PRE-DEVELOPMENT DRAINAGE MAP

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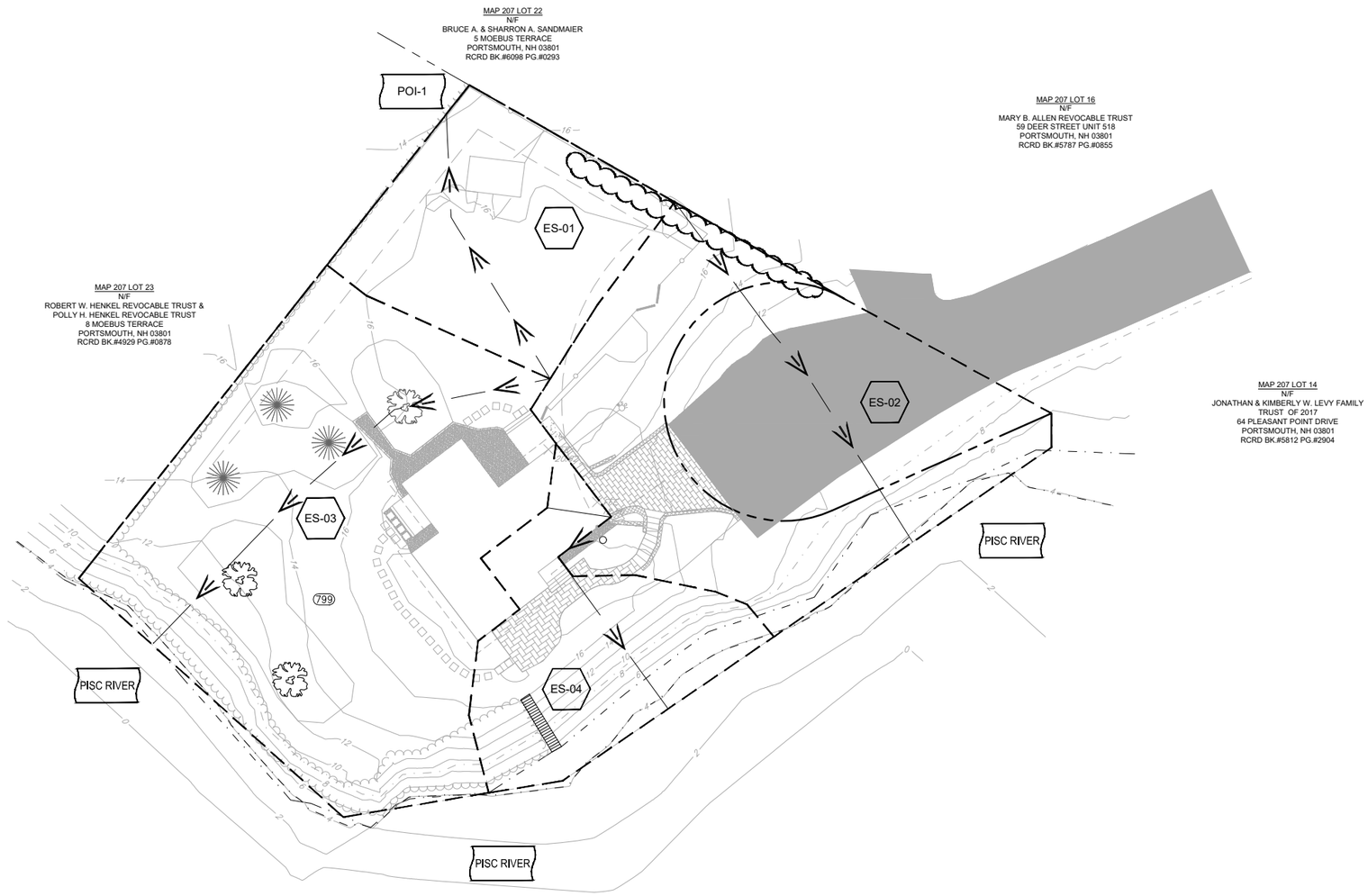

LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- XXX — SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

SOIL LEGEND
(PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
799	URBAN LAND–CANTON COMPLEX, 3 TO 15 PERCENT SLOPES	A

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

PRE-DEVELOPMENT DRAINAGE MAP

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

KATARA, LLC

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")

MAY 25, 2022

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	JKC	FB	–	
47307.01		CK	JCC	CADFILE	47307-01_PRE-DEV	DRAIN-01

APPENDIX I – POST-DEVELOPMENT DRAINAGE MAP

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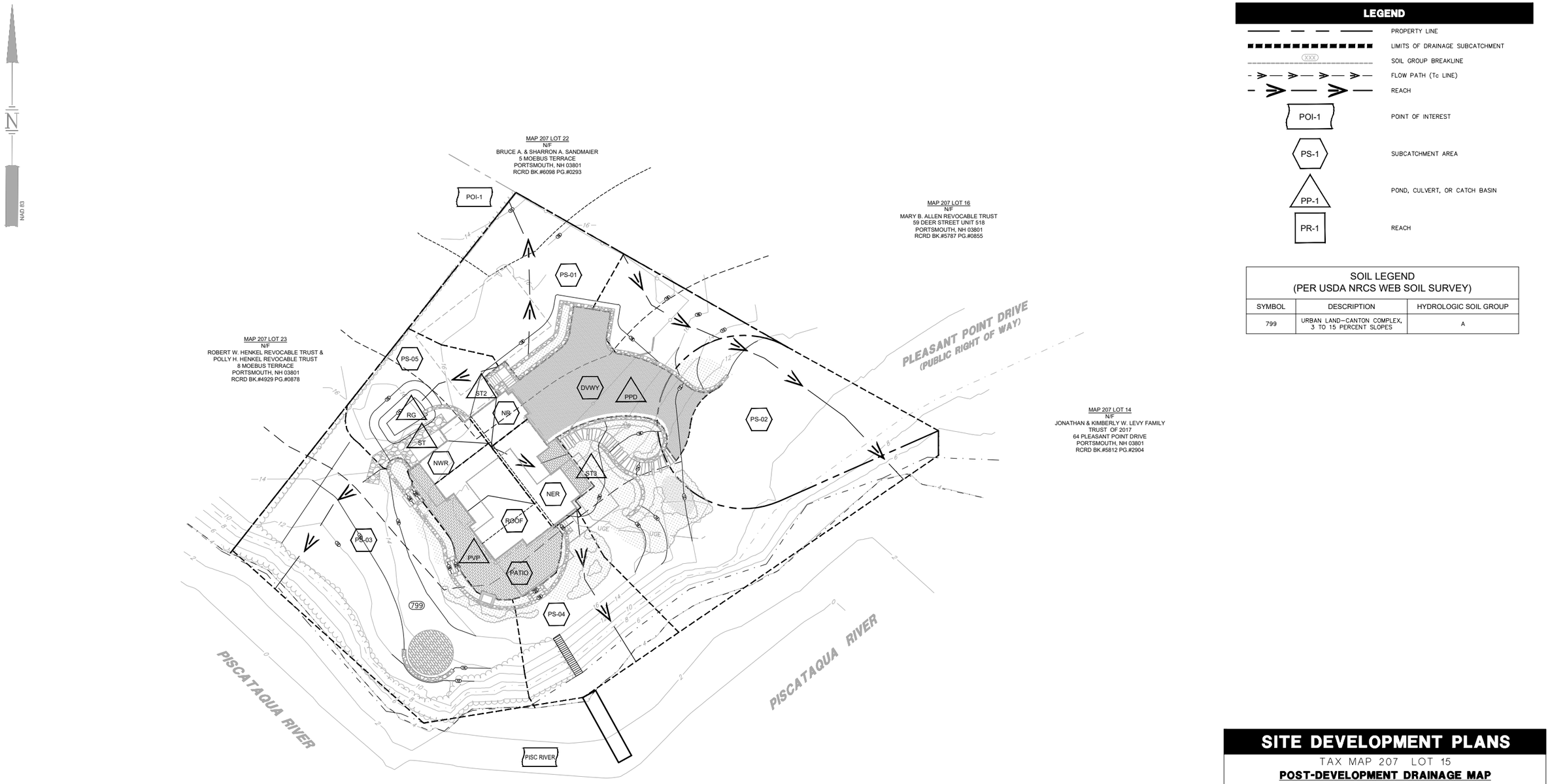

LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- XXX — SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- PS-1 — SUBCATCHMENT AREA
- PP-1 — POND, CULVERT, OR CATCH BASIN
- PR-1 — REACH

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)		
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
799	URBAN LAND–CANTON COMPLEX, 3 TO 15 PERCENT SLOPES	A

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

POST-DEVELOPMENT DRAINAGE MAP

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

KATARA, LLC

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")

MAY 25, 2022

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Fax (603) 472-9747
www.tfmoran.com

FILE					
47307.01	DR JKC	FB –	DRAIN–02		
	CK JCC	CADFILE 47307–01_POST–DEV			

SITE RENOVATION PLANS

70 PLEASANT POINT DRIVE
PORTSMOUTH, NEW HAMPSHIRE

MAY 25, 2022

GENERAL INFORMATION

OWNER/APPLICANT
MAP 207 LOT 15
KATARA, LLC
BECCA ROWE
274 MILLER AVENUE
PORTSMOUTH, NH 03801

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PORTSMOUTH, NH 03801
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BEVERLY MESA-ZENDT, PLANNING DIRECTOR

CONSERVATION COMMISSION
1 JUNKINS AVENUE, 3RD FLOOR
PORTSMOUTH NH, 03801
(603) 610-7216
BARBARA McMILLAN, CHAIR

POLICE DEPARTMENT
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CIVIL ENGINEERING/SURVEYOR
TFMORAN, INC.
170 COMMERCE WAY, SUITE 102
PORTSMOUTH, NH 03801
(603) 431-2222

VICINITY PLAN

HORIZONTAL SCALE 1"=500'
500 250 0 500

INDEX OF SHEETS

SHEET	SHEET TITLE
C-00	COVER
C-01	NOTES & LEGEND
S-01	EXISTING CONDITIONS PLAN
C-02	SITE PREPARATION & DEMOLITION
C-03	SITE PLAN
C-04	GRADING & DRAINAGE
C-05	DETAILS
REFERENCE PLANS BY ASSOCIATED PROFESSIONALS	
–	ARCHITECTURAL ELEVATION PLAN
–	LANDSCAPING PLAN – TERRAIN PLANNING & DESIGN

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
PORTSMOUTH PLANNING BOARD WETLAND CONDITIONAL USE PERMIT	–	–	–
NHDES WETLAND DREDGE AND FILL PERMIT	–	–	–
NHDES SHORELAND WATER QUALITY PROTECTION ACT PERMIT	–	–	–

APPROVED BY THE CITY OF PORTSMOUTH PLANNING BOARD

ON _____

BOARD MEMBER _____ *AND*

BOARD MEMBER _____

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15
COVER
70 PLEASANT POINT DRIVE
PORTSMOUTH, NEW HAMPSHIRE
OWNED BY
KATARA, LLC

SCALE: NTS **MAY 25, 2022**

STATE OF NEW HAMPSHIRE – JOHN J. McTIGUE No. 14960 – LICENSED PROFESSIONAL ENGINEER

DIG SAFE – CALL 811 OR 1-888-DIG-SAFE – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.

REV	DATE	DESCRIPTION	DR	CK

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FILE		DR	JKC	FB	–	
	47307.01	CK	JCC	CADFILE	47307-01_COVER	C-00

May 23, 2022 - 2:14pm
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LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- STONE WALL
- RETAINING WALL
- SILT FENCE
- SS — SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- CONTOUR
- TC100.50 / BC100.00 OR X100.00 — SPOT GRADE
- (##) — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- HEAVY DUTY PAVEMENT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

DIG SAFE — CALL 811 OR 1-888-DIG-SAFE — DIGSAFE.COM — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. ALL IMPROVEMENTS SHOWN ON THE 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 BOARD.
4. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
5. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST, AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT BETWEEN THE HOURS OF 7 AM AND 6 PM, MONDAY THROUGH FRIDAY IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL ORDINANCES AND REGULATIONS OF THE CITY OF PORTSMOUTH, NEW HAMPSHIRE.
    F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    G. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    K. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    M. AN AS-BUILT PLAN WILL BE REQUIRED AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
    N. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    O. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
3. COORDINATE WITH STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
4. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
5. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
6. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
7. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
8. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
9. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED SURFACE.
10. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
11. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603.
12. NO FILL SHALL BE PLACED IN ANY WETLAND AREA OR OTHER AREAS THAN SHOWN ON THE GRADING PLAN.
13. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
14. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
15. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

*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 D-6938.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. 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 THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	CITY SEWER
WATER	CITY WATER
GAS	NOT AVAILABLE
ELECTRIC	EVERSOURCE
TELEPHONE	CONSOLIDATED COMMUNICATIONS
CABLE	COMCAST

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14060 — LICENSED PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

NOTES & LEGEND

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

KATARA, LLC

SCALE: NTS **MAY 25, 2022**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

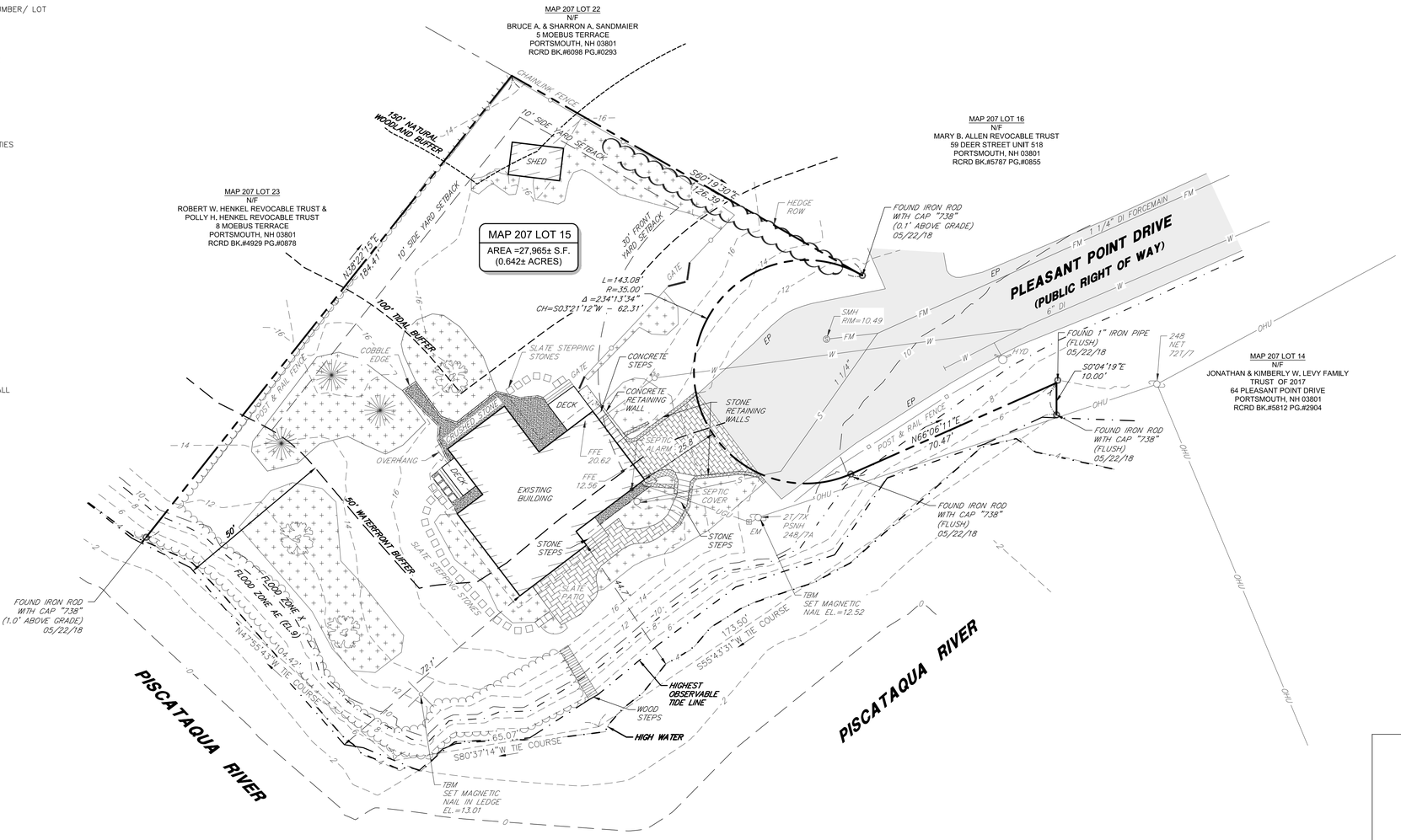
FILE	DR	JKC	FB	–
47307.01	CK	JCC	CADFILE	47307-01_NOTES&LEGEND

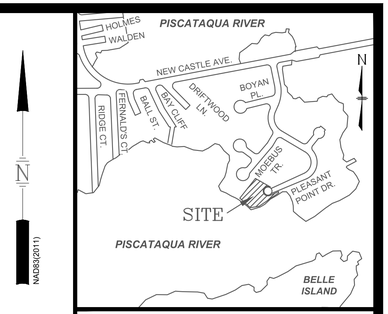
C-01

May 23, 2022 - 2:14pm
P:\MSC Projects\47307 - Pleasant Point Dr - Portsmouth\47307-01 - Katara - 70 Pleasant Point Drive\Design\PRODUCTION DRAWINGS\47307-01_Notes&Legend.dwg

LEGEND:

BK/PG	BOOK & PAGE
CH	CHORD
DI	DUCTILE IRON PIPE
EL.	ELEVATION
EM⊠	ELECTRIC METER
EP	EDGE OF PAVEMENT
FFE	FINISHED FLOOR ELEVATION
L	LENGTH
NET	NEW ENGLAND TELEPHONE
PSNH	PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
N/F	NOW OR FORMERLY
R	RADIUS
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
SMH	SEWER MANHOLE
TBM	TEMPORARY BENCH MARK
Δ	CENTRAL ANGLE
MAP 47 LOT 11	ASSESSOR'S MAP NUMBER/ LOT NUMBER
	PROPERTY LINE
-6-	EXISTING CONTOUR
	POST & RAIL FENCE
	CHAINLINK FENCE
	TREE LINE
-S-	SEWER LINE
-FM-	FORCE MAIN
-W-	WATER LINE
-OHU-	OVERHEAD UTILITIES
-UGU-	UNDERGROUND UTILITIES
	DECIDUOUS TREE
	EVERGREEN TREE
S	SEWER MANHOLE
	UTILITY POLE
HYD	HYDRANT
	WATER SHUTOFF
	BRICK DRIVEWAY
	SLATE PATIO
	LANDSCAPED AREA
	CRUSHED STONE
	PAVED AREA
	STONE RETAINING WALL
	COBBLE EDGE





LOCATION PLAN

NOTES:

1. THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE B (SRB) ZONING DISTRICT.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 207 AS LOT 15.
3. THE PARCEL IS GRAPHICALLY LOCATED IN FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AND SPECIAL FLOOD HAZARD ZONE AE (EL.9), AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) INSURANCE RATE MAP (FIRM), COUNTY OF ROCKINGHAM, NEW HAMPSHIRE, PANEL 278 OF 681, VERSION NUMBER 2.3.2.1, MAP NUMBER 33015C0278F, MAP REVISED JANUARY 29, 2021.
4. OWNER OF RECORD:
   MAP 207 LOT 15
   KATARA, LLC
   274 MILLER AVENUE
   PORTSMOUTH, NH 03801
   RCRD BK.#6290 PG.#1229
5. TOTAL PARCEL AREA:
   27,965± S.F.
   (0.642± ACRES)
6. ZONING REQUIREMENTS:

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	15,000 S.F.	27,965± S.F.
LOT AREA PER DWELLING UNIT:	15,000 S.F.	27,965± S.F.
CONTINUOUS STREET FRONTAGE:	100 FT	213.5 FT
DEPTH:	100 FT	142 FT
MINIMUM YARD DIMENSIONS:		
FRONT:	30 FT	25.8 FT
SIDE:	10 FT	44.7 FT
REAR:	30 FT	72.1 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT		
SLOPED ROOF:	35 FT	
FLAT ROOF:	30 FT	
ROOF APPURTENANCE HEIGHT:	8 FT	
BUILDING COVERAGE:	20%	9.2%
MINIMUM OPEN SPACE:	40%	86.4%

7. UTILITIES SHOWN HEREON ARE BASED ON OBSERVED EVIDENCE, RECORD PLANS AND THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS (DPW) PROVIDED GIS INFORMATION. LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE DEPICTED AND THEREFORE ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIGSAFE TO VERIFY UTILITIES.
8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
9. THE PURPOSE OF THIS PLAN IS TO SHOW THE TOPOGRAPHY AND CURRENT SITE FEATURES OF TAX MAP 207 LOT 15.
10. THE BOUNDARY OF THE LOCUS PROPERTY IS BASED ON PLAN REFERENCE 1. THIS OFFICE COMPLETED A TOPOGRAPHIC AND EXISTING FEATURES SURVEY ONLY.
11. HORIZONTAL DATUM IS NAD83 PER STATIC GPS OBSERVATIONS. VERTICAL DATUM IS NAVD88 PER GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
12. PARCEL IS SUBJECT TO THE RIGHTS AND RESTRICTIONS AS DESCRIBED IN RCRD BK.#2776 PG.#1029.

PLAN REFERENCES:

1. "STANDARD BOUNDARY SURVEY OF TAX MAP 207 – LOT 15 FOR DONNA LYN TAMAROFF 70 PLEASANT POINT DRIVE CITY OF PORTSMOUTH COUNTY OF ROCKINGHAM STATE OF NEW HAMPSHIRE" BY AMBIT ENGINEERING, INC., DATED OCTOBER 2012. RCRD PLAN #D-37460.
2. "PLAN OF LOTS, NEWCASTLE AVENUE, PORTSMOUTH, N.H. FOR ROBERT A. MOEBUS & HENRY C. SIVIK" BY JOHN W. DURGIN, CIVIL ENGINEERS, DATED OCTOBER 1952. RCRD PLAN #02160-B.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN MAY 2018. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

STATE OF NEW HAMPSHIRE No. 844 COREY J. COLWELL LICENSED LAND SURVEYOR

LICENSED LAND SURVEYOR

2022-05-23
DATE

20 10 0 20
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR.	CK.

TAX MAP 207 LOT 15

EXISTING CONDITIONS PLAN
FOR PROPERTY AT
70 PLEASANT POINT DRIVE
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
KATARA, LLC

SCALE: 1" = 20' (22x34)
1" = 40' (11x17)
SEPTEMBER 7, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
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www.tfmoran.com

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		CK	JCC	CADFILE		

May 23, 2022 - 9:10am
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ROCK BLASTING AND WATER QUALITY NOTES

1. IDENTIFY DRINKING WATER WELLS LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR 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. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.

2. ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPS) TO PREVENT CONTAMINATION OF GROUNDWATER INCLUDING PREPARING, REVIEWING, AND FOLLOWING AN APPROVED BLASTING PLAN; PROPER DRILLING, EXPLOSIVE HANDING AND LOADING PROCEDURES; OBSERVING THE ENTIRE BLASTING PROCEDURES; EVALUATING BLASTING PERFORMANCE; AND HANDLING AND STORAGE OF BLASTED ROCK.
   A. LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
      (1) 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.
      (2) 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.
      (3) 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.
      (4) 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.
      (5) 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.
      (6) 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:
      (1) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
      (2) 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.
   C. PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
   D. MUCK PILE 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:
      (1) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
      (2) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
   E. SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
      (1) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
         - STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
         - SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
         - LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
         - INSPECT STORAGE AREAS WEEKLY.
         - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
         - 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.
         - 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.
      (2) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
         - EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
         - PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
         - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
         - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
         - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
      (3) THE TRAINING OF ONSITE EMPLOYEES AND THE ON SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
      (4) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING, AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES (NOTE 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).

NOTES

1. SEE NOTES ON SHEET C–01.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
4. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
5. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
6. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
7. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
8. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

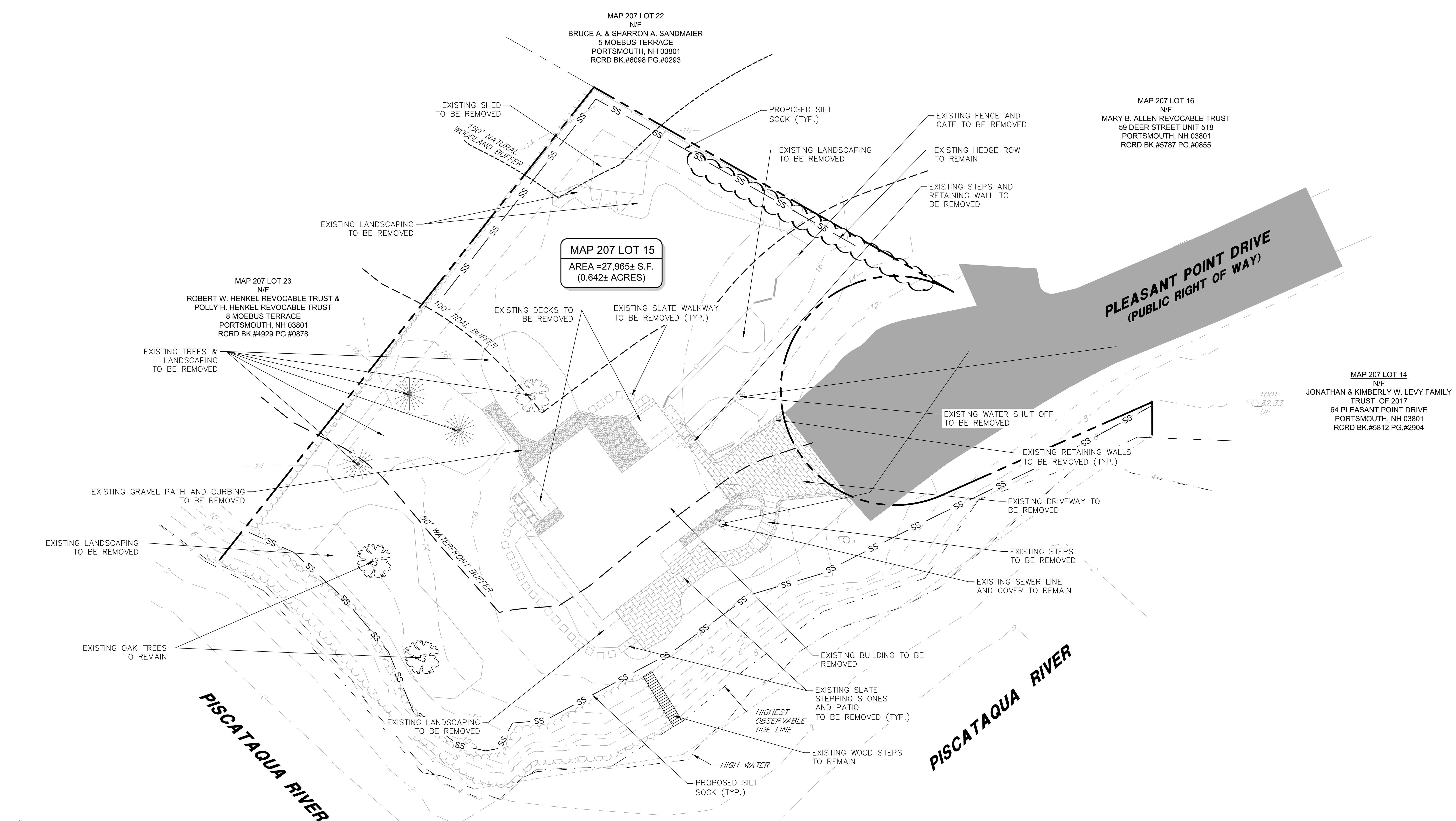
DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.

DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

1. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
2. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
4. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
5. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
6. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
7. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND 100' BUFFER. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
8. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
9. CONSTRUCT TEMPORARY DIVERSIONS AS REQUIRED.
10. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
11. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND DRIVEWAY. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS.
12. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
13. CONSTRUCT PROPOSED DRIVEWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
14. COMPLETE BUILDING AND ALL OFF–SITE IMPROVEMENTS.
15. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO–SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
17. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
18. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.



REV	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

SITE PREPARATION & DEMOLITION

70 PLEASANT POINT DRIVE
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY
KATARA, LLC

1"=20' (11"x17")
SCALE: 1"=10' (22"x34")

MAY 25, 2022

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE	47307.01	DR	JKC	FB	–	C–02
		CK	JCC	CADFILE	47307–01_SITE PREP	

DIG SAFE
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CALL 811 TOLL FREE
UTILITIES UNDER GROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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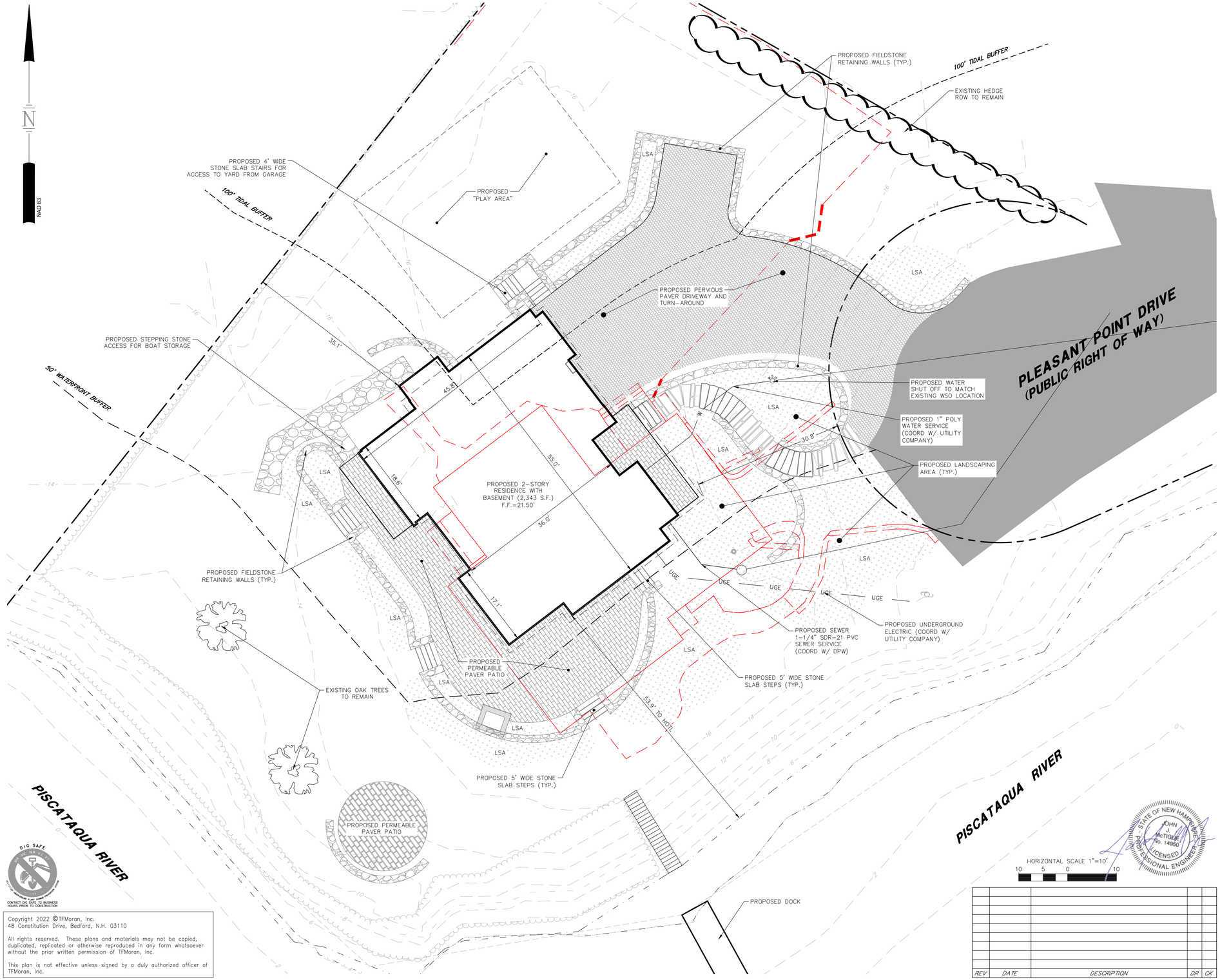

SITE DATA

ZONED: SINGLE RESIDENCE B (SRB)
EXISTING USE: SINGLE RESIDENCE
PROPOSED USE: SINGLE RESIDENCE

DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	15,000 SF (0.34± AC)	27,965 SF (0.642± AC)
LOT FRONTAGE	100 FT	213.5 FT
DEPTH	100 FT	142 FT
MINIMUM YARD DIMENSIONS:		
FRONT	30 FT	30.8 FT
SIDE	10 FT	44.7 FT
REAR	30 FT	72.1 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT		
SLOPED ROOF	35 FT	35 FT
ROOF APPURTENANCE HEIGHT	8 FT	>8 FT
LOT COVERAGE	20%	12.70%
MINIMUM OPEN SPACE	40%	87.30%

NOTES

1. SEE NOTES ON SHEET C-01.

PRE-CONSTRUCTION IMPERVIOUS AREA	
STRUCTURE	COVER
PRIMARY STRUCTURE	1,971 S.F.
DRIVEWAY	512 S.F.
SLATE PATIO	442 S.F.
DECKS	202 S.F.
RETAINING WALLS	113 S.F.
STEPS	211 S.F.
SHED	166 S.F.
CONCRETE PAD	25 S.F.
TOTAL: 3,642 S.F. (13.02% OF LOT)	

POST-CONSTRUCTION IMPERVIOUS AREA	
STRUCTURE	COVER
PRIMARY STRUCTURE	2,605 S.F.
DRIVEWAY (PERVIOUS PAVERS)	N/A
PERVIOUS PATIO	N/A
DECKS	N/A
RETAINING WALLS	684 S.F.
STEPS	257 S.F.
SHED	N/A
CONCRETE PAD	N/A
TOTAL: 3,546 S.F. (12.7% OF LOT)	

– – – – – – EXISTING FEATURES TO BE REMOVED

HORIZONTAL SCALE 1"=10'
10 5 0 10

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

SITE PLAN

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

KATARA, LLC

1"=20' (11"x17")
SCALE: 1"=10' (22"x34")

MAY 25, 2022

STATE OF NEW HAMPSHIRE – JOHN J. McTIGUE No. 14960 – LICENSED PROFESSIONAL ENGINEER

DIG SAFE NH – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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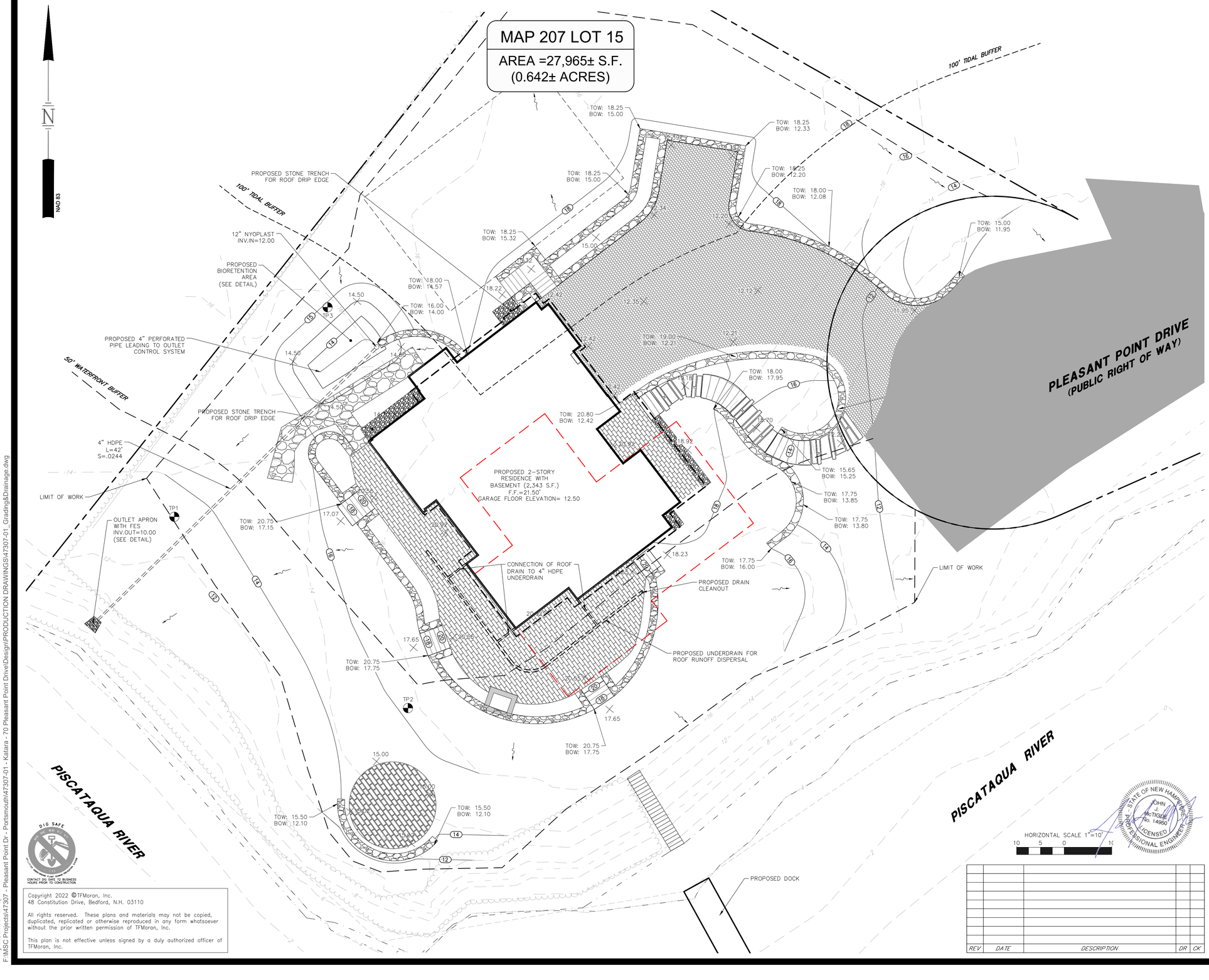

NOTES

1. SEE NOTES ON SHEET C-01.
2. ALL DOORS AND GARAGE ENTRANCES SHALL BE AT FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED.
3. PROPOSED SPOT GRADES ARE PROVIDED TO THE NEAREST 0.05. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE FINISHED GRADES.
4. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
5. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR SUBDRAINAGE SYSTEMS FOR THE BUILDING FOUNDATION. SUBDRAINAGE MUST DAYLIGHT OR TIE INTO THE STORMWATER MANAGEMENT SYSTEM. COORDINATE SUBDRAINAGE SYSMTEM DESIGN WITH THE ENGINEER OF RECORD.

TEST PIT & INFILTRATION TEST

BMP	TEST PIT #	APPROX GROUND	BOTTOM OF POND	INFILTRATION TEST		TEST PIT	
		ELEV	ELEV	ELEV	DEPTH (IN)	ELEV	DEPTH (MIN)
	1	13.1	–	13.1	16.4	13.1	61"
	2	15.8	–	12.8	36.2	15.8	68"
BIORETENTION SYSTEM #1	3	16.1	13.0	14.1	32.1	16.1	62"

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
799	URBAN LAND-CANTON COMPLEX, 3 TO 15 PERCENT SLOPES	A

HORIZONTAL SCALE 1"=10'
10 5 0 10

STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

GRADING & DRAINAGE

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

KATARA, LLC

1"=20' (11"x17")
SCALE: 1"=10' (22"x34")

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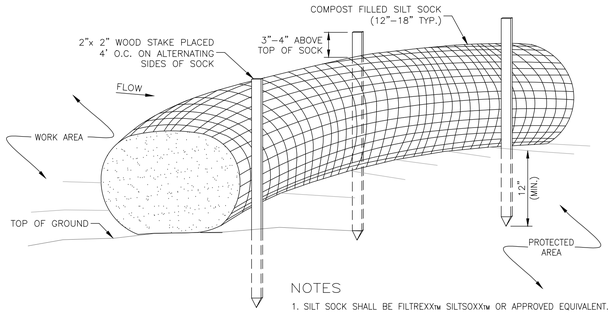
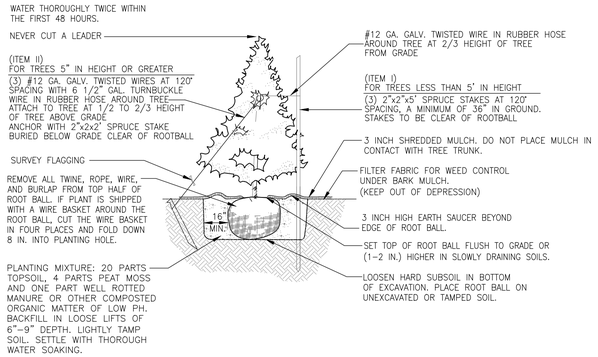


NOTES

1. SILT SOCK SHALL BE FILTREXXтм SILTSOXXтм OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

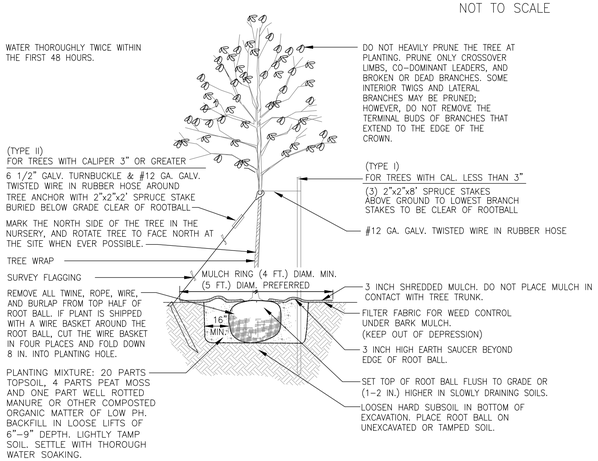
SILT SOCK

NOT TO SCALE



EVERGREEN PLANTING

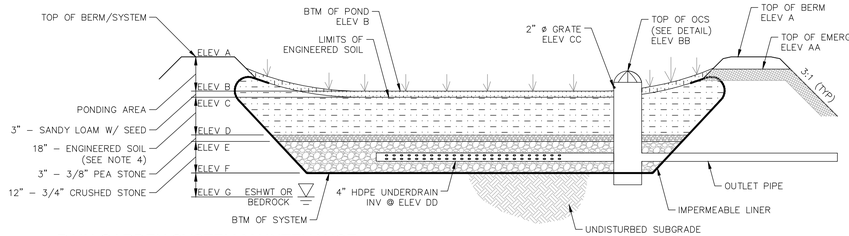
NOT TO SCALE



DECIDUOUS TREE PLANTING

NOT TO SCALE

DIG SAFE
CALL 811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



RAIN GARDEN SYSTEM MAINTENANCE

MAINTENANCE SCHEDULE TO BEGIN AFTER CONSTRUCTION IS FINISHED AND BASIN STABILIZATION IS COMPLETE.

1. CONTRACTOR AND LAND OWNERS TO PERFORM SCHEDULED MAINTENANCE ON THE BIORETENTION SYSTEM IN ACCORDANCE WITH THE STORMWATER OPERATION AND MAINTENANCE MANUAL.

RAIN GARDEN DETAIL

NOT TO SCALE

NOTE: SEE PLANS FOR BED, BERM AND OVERFLOW ELEVATIONS

ELEVATION TABLE	
BIORETENTION SYSTEM #	1
A	15.50
B	14.25
C	14.00
D	12.50
E	12.25
F	11.25
G	10.17

OUTLET TABLE	
BIORETENTION SYSTEM #	1
AA	15.00
BB	14.40
CC	14.20
DD	11.50

RAIN GARDEN SYSTEM CONSTRUCTION

1. CLEAR AND GRUB THE AREA WHERE THE RAIN GARDEN SYSTEMS ARE TO BE LOCATED. STOCKPILE LOAM FOR REUSE ON SLOPES.
2. GRADE RAIN GARDEN SYSTEM ACCORDING TO PLAN AND DETAILS. SIDE SLOPES SHALL HAVE 6" LOAM AND SEED AND A SLOPE NOT TO EXCEED 3:1. BOTTOM OF BIORETENTION SYSTEM AREAS TO BE CONSTRUCTED WITH MANUFACTURED SOIL (SEE RAIN GARDEN SYSTEM CONSTRUCTION DETAIL).
3. BOTTOM OF THE RAIN GARDEN SYSTEM TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL/RESTORATION MIX THAT MEETS NH STATE STANDARDS.
4. THE ENGINEERED SOIL – SEE ENGINEERED SOIL MIX NOTES.
   SOILS TO BE TESTED AND APPROVED BY THE ENGINEER OF RECORD. ENGINEER SHALL SUBMIT LETTER OF VERIFICATION TO THE CITY.
5. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT EQUIPMENT & VEHICLE TRAFFIC FROM DRIVING IN THE AREA OF THE PROPOSED RAIN GARDEN SYSTEM AREA DURING CONSTRUCTION.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES. THE BASIN BOTTOM SHOULD BE LEVELED PRIOR TO BACKFILLING WITH CRUSHED STONE AND RAIN GARDEN SOIL MIXTURE.
7. AASHTO #57 STONE CAN BE USED IN PLACE OF ¾" CRUSHED STONE.

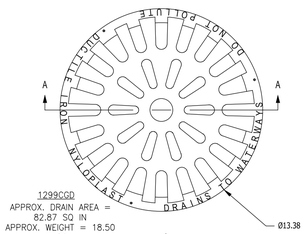
SEEDING

1. USE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR MOIST SITES BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUIVALENT.
2. SEED AT A RATE OF 1LB/1250SF. APPLY TO BARE SOIL. LIGHTLY MULCH WITH CLEAN WEED FREE STRAW.

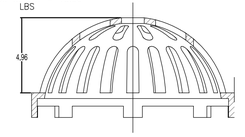
ENGINEERED SOIL MIX PARTICLE SIZE DISTRIBUTION (PSD)			
PSD UPPER LIMIT		PSD LOWER LIMIT	
SIEVE #	% Passing	SIEVE #	% PASSING
4	100	4	100
10	95	10	95
40	40	40	15
200	20	200	15
<200	5	<200	5

ENGINEERED SOIL MIX

1. THE ENGINEERED SOIL IS MADE OF IS 10% WOOD CHIPS, 35% LOAM, AND 55% SAND.
2. LOAM SHALL MEET THE USDA TEXTURAL CLASSIFICATION OF LOAMY FINE SAND.
3. SAND SHALL BE CONCRETE SAND MEETING ASTM C–33 SPECIFICATION.
4. WOOD CHIPS SHALL BE SHREDDED WOOD, WOOD CHIPS, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF STONES, STICKS, SOIL, OR TOXIC MATERIALS
5. SOIL REACTION: PH OF 6 TO 7.
6. CEC OF TOTAL SOIL: MINIMUM 10 MEQ/100 ML AT PH OF 7.0.
7. BASIS–OF–DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS INDICATED ON DRAWINGS
8. BASIC PROPERTIES: MANUFACTURED SOIL SHALL NOT CONTAIN THE FOLLOWING:
   A. UNACCEPTABLE MATERIALS: CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, ASPHALT, BRICKS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, SOLID WASTE, AND OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
   B. UNSUITABLE MATERIALS: STONES, ROOTS, PLANTS, SOD, CLAY LUMPS, AND POCKETS OF COARSE SAND THAT EXCEED A COMBINED MAXIMUM OF 5 PERCENT BY DRY WEIGHT OF THE MANUFACTURED SOIL.
   C. LARGE MATERIALS: STONES, CLODS, ROOTS, CLAY LUMPS, AND POCKETS OF COARSE SAND EXCEEDING 0.187 INCHES (4.76 MM) IN ANY DIMENSION.



1299CCD
APPROX. DRAIN AREA = 82.87 SQ IN
APPROX. WEIGHT = 18.50 LBS



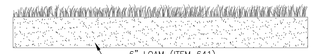
SECTION A–A

DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70–50–05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT LOCKING DEVICE AVAILABLE UPON REQUEST

ADS 24" DOME GRATE

(WITH WEIR)

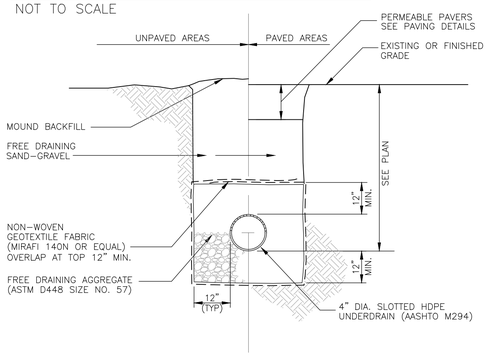
NOT TO SCALE



6" LOAM (ITEM 641)
SEED (ITEM 644) LIMESTONE (ITEM 642) FERTILIZER (ITEM 643.11)
APPLY RATIOS OF LIMESTONE AND FERTILIZER PER MANUFACTURERS SPECIFICATION BASED ON SOIL TEST RESULTS.
STRAW MULCH SHALL BE UTILIZED FOR EROSION CONTROL AT A RATE OF 3 TONS PER ACRE. HYDROSEEDING MAYBE UTILIZED AS AN ALTERNATE METHOD. (SEE HYDROSEEDING NOTES)

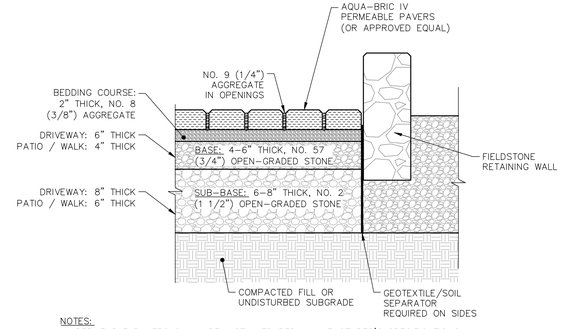
LOAM & SEED

NOT TO SCALE



UNDERDRAIN TRENCH

NOT TO SCALE



NOTES:
1. PERMEABLE PAVERS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. INSTALLATION OF PERMEABLE PAVER SECTION SHALL BEGIN AT LOWEST GRADE AND END AT HIGHEST GRADE.

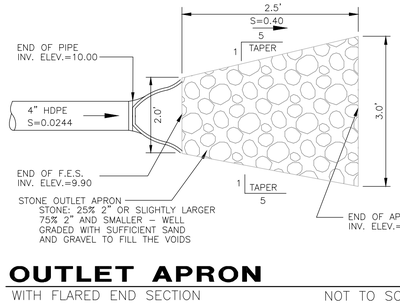
PROFILE VIEW

PERMEABLE PAVER

NOT TO SCALE

RAIN GARDEN

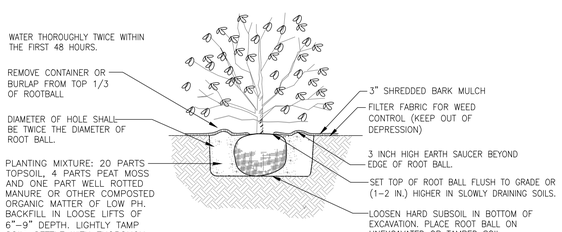
NOT TO SCALE



OUTLET APRON

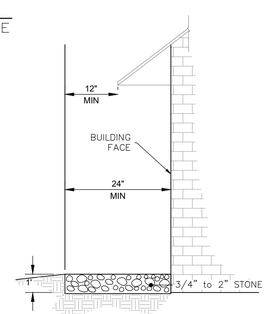
WITH FLARED END SECTION

NOT TO SCALE



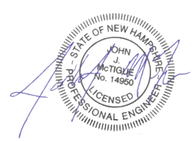
SHRUB PLANTING

NOT TO SCALE



DRIP EDGE TRENCH

NOT TO SCALE



REV	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 15

DETAILS

70 PLEASANT POINT DRIVE

PORTSMOUTH, NEW HAMPSHIRE

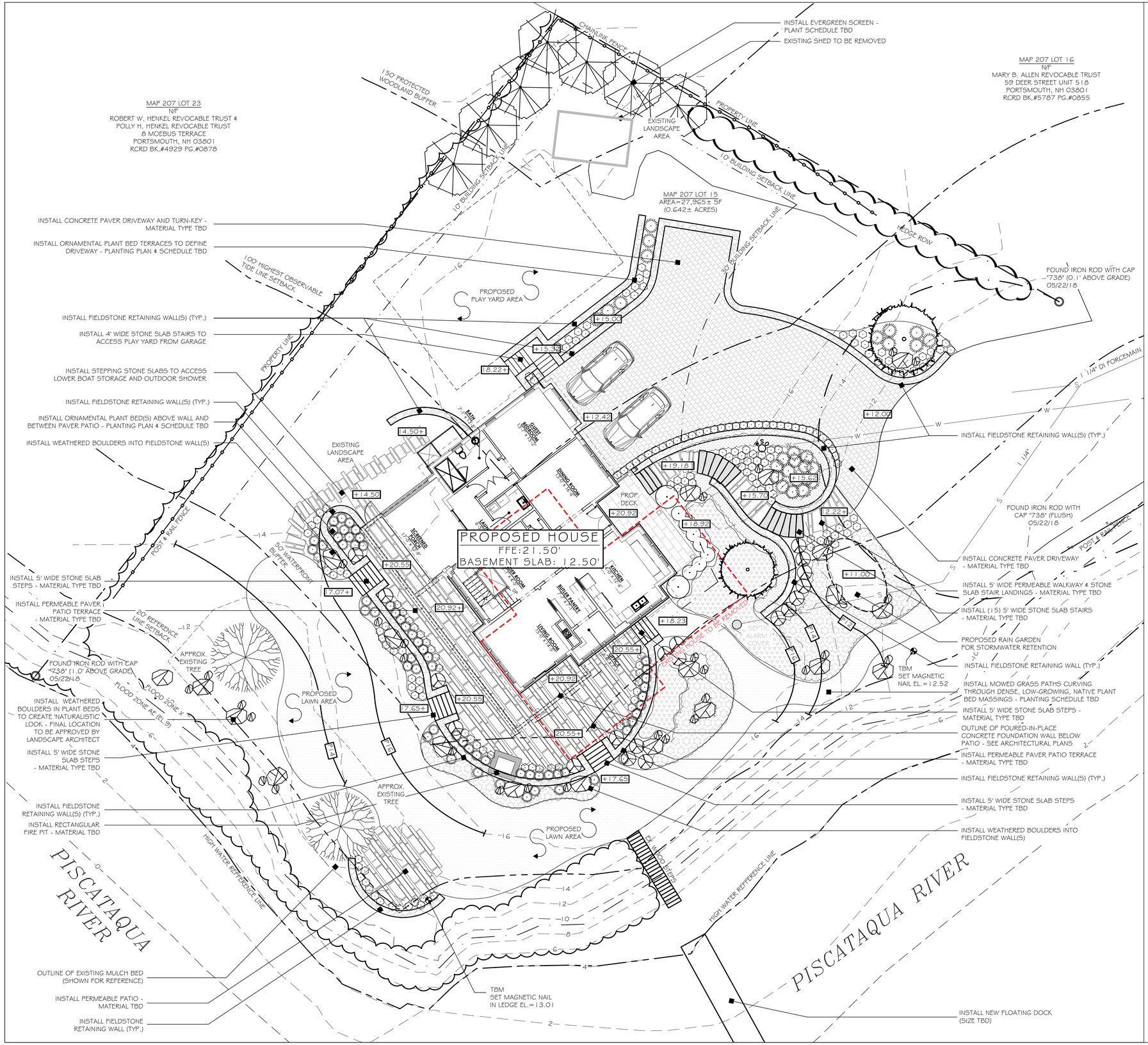
OWNED BY

KATARA, LLC

SCALE: NTS **MAY 25, 2022**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE	DR	JKC	FB	–	
47307.01	CK	JCC	CADFILE	47307–01_DETAILS	C–05



EROSION CONTROL NOTES

1. EXPOSED EARTHWORK SHALL BE CONFINED TO AS LIMITED AN AREA AS IS PRACTICAL AT ANY GIVEN TIME THROUGHOUT THE CONSTRUCTION SEQUENCE. LIMIT OF WORK IS NOTED ON THIS SHEET. CONTRACTOR TO WORK WITHIN THESE LIMITS AS SHOWN. NO AREA OF THE SITE SHALL BE LEFT IN AN UNSTABILIZED CONDITION FOR A PERIOD OF TIME EXCEEDING FIVE CALENDAR DAYS.

2. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PANS. IN ADDITION SIMILAR MEASURES SHALL BE INSTALLED WHERE AND WHEN THE FIELD CONDITION, OR FIELD OPERATION OF THE INDIVIDUAL SITE CONTRACTOR MAY WARRANT. ALL TEMPORARY EROSION CONTROL MEASURES USED SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER 0.5" OF RAINFALL OR MORE. THEY SHALL BE CLEANED AND MAINTAINED AND OTHERWISE KEPT IN AN EFFECTIVE OPERATING MANNER THROUGHOUT THE CONSTRUCTION PERIOD.

3. ALL DISTURBED AREAS DESIGNATED TO BE TURF SHALL RECEIVE A MINIMUM OF 4" LOAM (COMPACTED THICKNESS), PRIOR TO SEEDING AND MULCHING.

4. ALL SWALES AND DITCH LINES SHALL BE PERIODICALLY CLEANED OF DEPOSITED SEDIMENT SO AS TO MAINTAIN AND EFFECTIVE GRADE AND CROSS SECTION. ALL SWALES AND DITCH LINES SHALL BE FULLY STABILIZED PRIOR TO HAVING STORMWATER DIRECTED TOWARDS THEM.

5. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.

6. AN AREA SHALL BE CONSIDERED STABILIZE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - A. BASE COURSE OF GRADES ARE INSTALLED IN AREAS TO BE PAVED;
   - B. A MINIMUM OF 85% VEGETATIVE GROWTH HAS BEEN ESTABLISHED;
   - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIALS, SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; AND/OR
   - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

7. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD.

8. IN NO WAY ARE THE TEMPORARY EROSION CONTROL MEASURES INDICATED ON THESE PLANS CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGMENT IN INSTALLING SUPPLEMENTARY EROSION CONTROL MEASURES WHERE AND WHEN SPECIFIC SITE CONDITIONS AND/OR CONSTRUCTION METHODOLOGIES MAY WARRANT.

9. ALL EROSION CONTROL METHODS TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS AS WELL AS INDICATED IN THE NEW HAMPSHIRE STORMWATER MANUAL "EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION."

10. ALL ROADS, PATHS, DRIVEWAYS, PATIOS AND POOL DECKS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

11. ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF ACHIEVING FINISH GRADE.

PROPOSED IMPERVIOUS CALCULATIONS		
HOUSE	:	2,948 SF
DRIVEWAY	:	1,754 SF
DECK	:	0 SF
SHED	:	0 SF
WALKWAY / PAVER	:	0 SF
STAIRS	:	205 SF
PATIO	:	0 SF
RETAINING WALL	:	683 SF
TOTAL IMPERVIOUS	:	5,590 SF
TOTAL LOT WITHIN 250'	:	27,965 SF
19.99% IMPERVIOUS		

DIG SAFE
811 OR NH RSA 374
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION

LINETYPE LEGEND

- EROSION CONTROL
- PROPERTY LINE
- PROPERTY SETBACKS
- REFERENCE LINE
- REFERENCE LINE SETBACKS
- TOPOGRAPHY MIN
- TOPOGRAPHY MAJ
- VEGETATION QUAD
- MESH FENCING / PARAMETERS OF WORK
- UNALTERED AREA
- TEMPORARY IMPACT AREA

0 5' 10' 20' 30' 50'

PROGRESS PRINT NOT FOR CONSTRUCTION

terrain
planning & design llc
311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com

ROWE - SMALL RESIDENCE

Site Location:
70 Pleasant Point Drive
Portsmouth, NH 03801
Tax Map: 207
Lot #: 15

Prepared For:
KATARA LLC
Rebecca Rowe & Marc Small
274 Miller Avenue
Portsmouth, NH 03801

LANDSCAPING PLAN

DATE: 01 - 04 - 2022

SCALE: 1" = 10'

PROJECT #: 2186

Drawn By: CGB

Checked By: ERB

REVISIONS: DATE:
Issued for Client Review 01-21-22
Revised per client comments 01-31-22
Revised per client comments 02-17-22

L - 01

N

PROPERTY LINE

SETBACK LINE

10'-0"

10'-0"

PLEASANT POINT
DRIVE

UP

1

1

54'-0"

1'-8" | 10'-8" | 15'-8" | 10'-2" | 12'-8" | 3'-2"

SEATING BENCH

DN

BUILT-IN
BREAKFAST NOOK

LINE OF ROOF ABOVE

COVERED
ENTRY

2'-0"

GUEST
BEDROOM
13'-7" x 15'-2"

DINING ROOM
13'-0" x 16'-6"

KITCHEN
14'-0" x 12'-6"

4'-7"

LINE OF EXISTING FOOTPRINT

INTERIOR WINDOW WELL

30'-0"

BATH
7'-1" x 13'-5"

CLOSET

2

2

4

46'-11 1/4"

24'-1 1/8"

42'-6"

2

BUTLER PANTRY
7'-7" x 7'-1"

OFFICE
6'-0" x 7'-1"

MECH (IF
REQ.)

D

W

CLOSET

LAUNDRY
6'-5" x 8'-4"

POWDER ROOM
6'-1" x 4'-5"

DN

INTERIOR WINDOW WELL

DN

UP

LIVING ROOM
15'-0" x 14'-5"

OUTDOOR
SHOWER

OPEN TO
BELOW

14'-11 1/4"

13'-9 7/8"

DN

SCREENED
PORCH
17'-5" x 12'-9"

PATIO

LINE OF
ROOF ABOVE

2'-0" | 18'-5 1/8" | 14'-6 7/8" | 16'-0"

51'-0"

3

1

SHORELINE
(APPROXIMATE)

50' WATERFRONT
BUFFER

PISCATAQUA RIVER

10'-0"

AREA BREAKDOWN

FIRST FLOOR	1,846 SF
SECOND FLOOR	1,553 SF
LOWER LEVEL	927 SF
TOTAL HEATED	4,326SF
GARAGE	684 SF
UNFINISHED	289 SF
TOTAL UNFINISHED	973 SF

N

PROPOSED DESIGN DEVELOPMENT FOR

ROWE SMALL RESIDENCE

70 PLEASANT POINT DR.
PORTSMOUTH, NH

FIRST FLOOR PLAN

1/8" = 1'-0"

20 DECEMBER 2021

21132

D|M|A
DESTEFANO
MAUGEL
ARCHITECTS

PROPERTY LINE

SETBACK LINE

10'-0"

10'-0"

PLEASANT POINT DRIVE

1

1

54'-0"

28'-0"

10'-2"

12'-8"

3'-2"

UNEXCAVATED

4'-7"

LINE OF EXISTING FOOTPRINT

GARAGE
25'-6" x 23'-5"

BUILT-IN BENCH

STORAGE/MECHANICAL
16'-6" x 22'-2"

MUDROOM
8'-7" x 8'-7"

DN

BATH
5'-7" x 5'-8"

23'-11"

42'-6"

2

2

4

30'-0"

43'-0"

MECH (IF REQ.)

CLOSET

OUTDOOR SHOWER

GAME ROOM
16'-6" x 16'-5"

UP

MARC'S HOBBY SPACE

EXCERCISE
17'-5" x 14'-4"

13'-0"

14'-0"

BOAT STORAGE
17'-10" x 6'-0"

UNEXCAVATED

19'-0"

14'-0"

16'-0"

49'-0"

3

1

50' WATERFRONT BUFFER

SHORELINE (APPROXIMATE)

PISCATAQUA RIVER

N

AREA BREAKDOWN

FIRST FLOOR	1,861 SF
SECOND FLOOR	1,575 SF
LOWER LEVEL	881 SF
TOTAL HEATED	4,317 SF
GARAGE	684 SF
UNFINISHED	559 SF
TOTAL UNFINISHED	1,243 SF
HOME FOOTPRINT	2,123 SF

PROPOSED SCHEMATIC DESIGN FOR

ROWE SMALL RESIDENCE

70 PLEASANT POINT DR.
PORTSMOUTH, NH

LOWER LEVEL FLOOR PLAN

1/8" = 1'-0"

20 DECEMBER 2021

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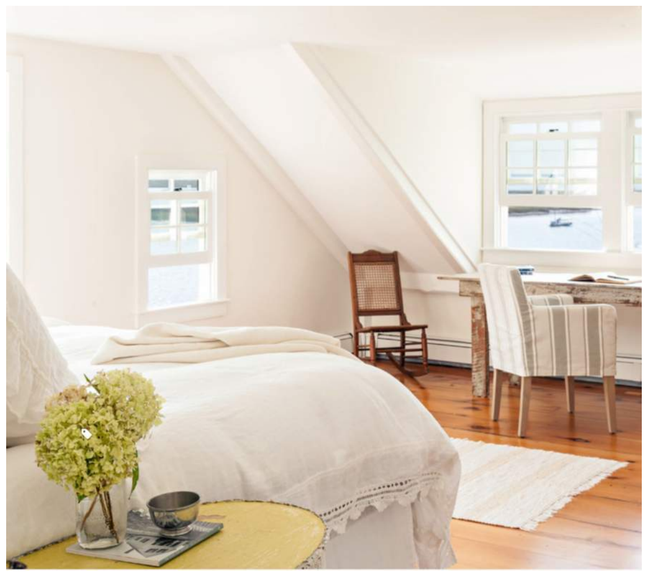
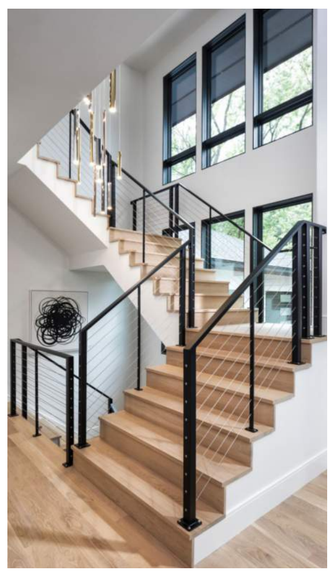
ARCHITECTS





PROPERTY LINE

SETBACK LINE

10'-0"

10'-0"

PLEASANT POINT
DRIVE

1

1

54'-0"

28'-0"

26'-0"

CLOSET

6'-1"

23'-11"

43'-0"

13'-0"

BEDROOM 1
13'-3" x 17'-10"

BEDROOM 2
13'-9" x 17'-10"

BUILT-IN
DRESSER

UNFINISHED

CLOSET 2
5'-11" x 5'-11"

PROVIDE
ATTIC
ACCESS
DOOR

LINE OF ROOF ABOVE

MASTER
BATHROOM
12'-10" x 13'-5"

2

4

2

2

BATH
9'-1" x 8'-7"

LINEN
CLOSET

CLOSET 1
7'-6" x 7'-2"

BUILT-IN

FAMILY ROOM
15'-6" x 14'-7"

DN

OPEN TO
BELOW

MASTER
BEDROOM
15'-0" x 17'-7"

44'-0"

14'-0"

PERGOLA

4'-0"

15'-0"

16'-0"

16'-0"

51'-0"

3

1

PISCATAQUA RIVER

N

AREA BREAKDOWN

FIRST FLOOR	1,861 SF
SECOND FLOOR	1,575 SF
LOWER LEVEL	881 SF
TOTAL HEATED	4,317 SF
GARAGE	684 SF
UNFINISHED	559 SF
TOTAL UNFINISHED	1,243 SF
HOME FOOTPRINT	2,123 SF

PROPOSED SCHEMATIC DESIGN FOR

ROWE SMALL RESIDENCE

70 PLEASANT POINT DR.
PORTSMOUTH, NH

SECOND FLOOR PLAN

1/8" = 1'-0"

20 DECEMBER 2021

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MAUGEL
ARCHITECTS

PROPOSED WEST ELEVATION 4
1/8" = 1'-0"

PROPOSED SOUTH ELEVATION 3
1/8" = 1'-0"

PROPOSED EAST ELEVATION 2
1/8" = 1'-0"

PROPOSED NORTH ELEVATION 1
1/8" = 1'-0"

PROPOSED SCHEMATIC DESIGN FOR

ROWE SMALL RESIDENCE

70 PLEASANT POINT DR.
PORTSMOUTH, NH

PROPOSED ELEVATIONS

1/8" = 1'-0"

20 DECEMBER 2021

21132

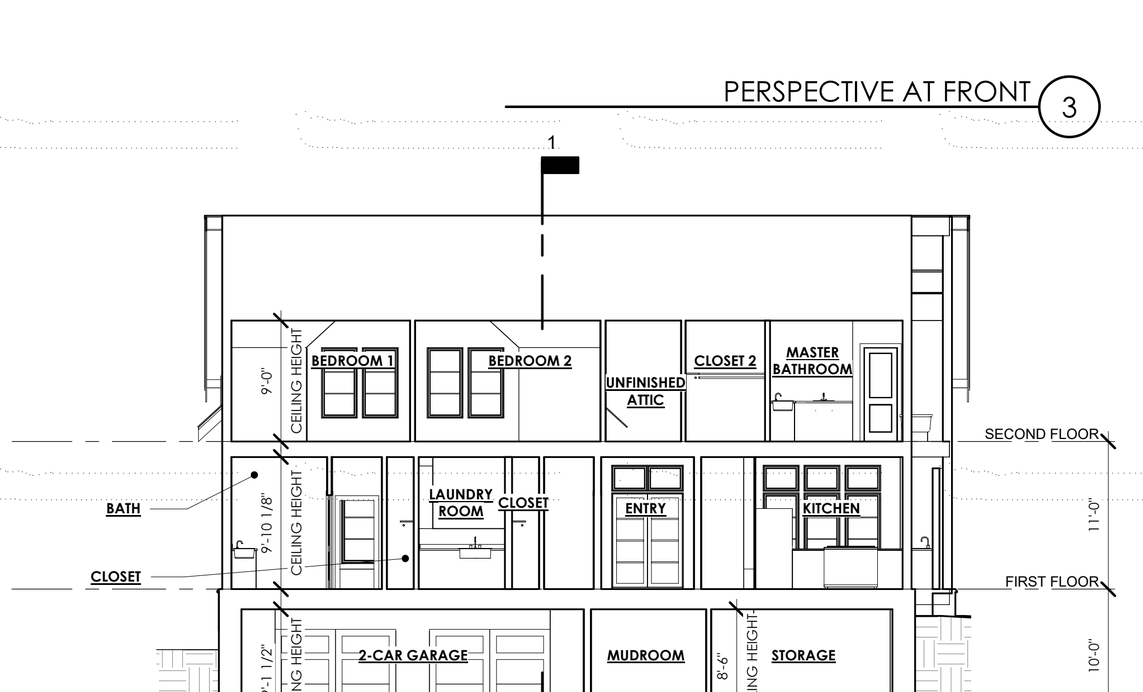
DMA
DESTEFANO MAUGEL
ARCHITECTS

PERSPECTIVE AT REAR 4

PERSPECTIVE AT FRONT 3

1

BUILDING SECTION 2 2
1/8" = 1'-0"



2

BUILDING SECTION 1 1
1/8" = 1'-0"

21132

PROPOSED SCHEMATIC DESIGN FOR

ROWE SMALL RESIDENCE

SECTIONS AND PERSPECTIVES

70 PLEASANT POINT DR.
PORTSMOUTH, NH

1/8" = 1'-0"

20 DECEMBER 2021

D|M|A
DESTEFANO MAUGEL
ARCHITECTS

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

April 27, 2022

Peter Stith, Principal Planner
Portsmouth Zoning Board of Adjustment
1 Junkins Ave
Portsmouth, NH 03801

Re: 81 Taft Rd – Variance Application
Dimensional Relief – Single Residence B

Dear Mr. Stith and Zoning Board Members,

Yankee Construction LLC is submitting the following Variance Application requesting dimensional relief as an authorized agent behalf of Tom and Angela Mita (the Owners) of 81 Taft Rd (the Home). The primary area of concern requiring dimensional relief is secondary frontage to the adjacent Elwyn Rd (north side).

The following statement has been prepared in accordance with Portsmouth Zoning Ordinance Section 10.233.20.

10.233.21 – The variance will not be contrary to the public interest
The proposed addition will not be contrary to public interest. The overall addition footprint of 235 sqft is small in size and will be constructed in manner architecturally similar to the Home. The neighborhood is generally comprised of single residential dwellings, many of which have similarly sized additions.

10.233.22 – The spirit of the ordinance will be observed
The existing home currently faces Taft Rd and the northern side yard of the property well exceeds the standard 10 ft setback for Single Residence B (SRB) homes. Due to the existing Home being a corner lot, there is secondary frontage to Elwyn Rd. The proposed addition will be approximately 20 ft from Elwyn Rd at its nearest point. Further, an existing privacy stockade fence that is approximately 10 ft from Elwyn Rd at it's nearest point will be reconfigured creating more visual space between Elwyn Rd and the Home.

www.yankeeconstructionllc.com
(603) 420-9527
PO Box 1183, North Hampton, NH 03862

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

10.233.23 – Substantial justice will be done

The proposed addition does not infringe upon any neighboring properties or homeowners. The proposed addition does not negatively affect the general public. There would be no foreseeable gain to the general public by denying this variance and alteration to the plan would result unnecessary costs to the Owners.

10.233.24 – The values of the surrounding properties will not be diminished

The proposed addition will be constructed in an aesthetically pleasing manner that would not dimmish the values of neighboring properties. The addition would be expected to add value to the Home thereby having a positive influence on the surrounding properties.

10.233.25 – Literal enforcement of the provisions of the Ordinance would result in an unnecessary hardship

The proposed addition will be utilized as a master bedroom and has been situated on the property to offer both aesthetic value and function as to how it is tied into the existing structure. Altering he location of the addition would require it to be larger in size or impact more of the existing home. Both instances would result in unnecessary costs to the homeowner while offering no benefit in either aesthetic of function.

Key project notes:

- There is currently 1,936 sqft of wetland buffer extending across the northeast corner of the lot. The proposed addition will disturb 17 sqft (0.88%) of the wetland buffer on the lot. A Wetland Conditional Use Permit application has been submitted in parallel.
- Lot and Impervious Surface Data
    - Lot size: 8,765 sqft (2021 professional survey)
    - Existing home size: 1,560 sqft
    - Proposed addition footprint: 235 sqft
    - Driveway coverage: 404 sqft
    - Other impervious coverage: 204 sqft (small concrete patio)
    - Lot topography is generally flat or mildly sloped (3 – 15% slopes)
    - Primary ground cover is lawn, vegetated, landscape beds
    - Area soils are well drained, generally gravelly fine sandy loam over loamy sand (source USDA / NRCS Soil Survey)

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

Existing Conditions photos:

Rear of home and area of proposed addition, west side, Elwyn to left (north)

www.yankeeconstructionllc.com
(603) 420-9527
PO Box 1183, North Hampton, NH 03862

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

North side of home, facing Taft Rd (east) and Elwyn Rd on left (north)

www.yankeeconstructionllc.com
(603) 420-9527
PO Box 1183, North Hampton, NH 03862

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

Area of stockade fence to be removed.

www.yankeeconstructionllc.com
(603) 420-9527
PO Box 1183, North Hampton, NH 03862

YANKEE CONSTRUCTION LLC
General Contractors • North Hampton, N.H.

Additional attachments with this package:

- Doucet Survey LLC "Plan of Land for Thomas J. & Angela M. Mita", dated April 16, 2021, as annotated for this application package by Yankee Construction LLC, April 27, 2022.
- A1 - Mita Residence Existing & Proposed Floor Plans with elevations, Yankee Construction LLC, April 20, 2022
- A2 – Mita Residence Foundation Plan

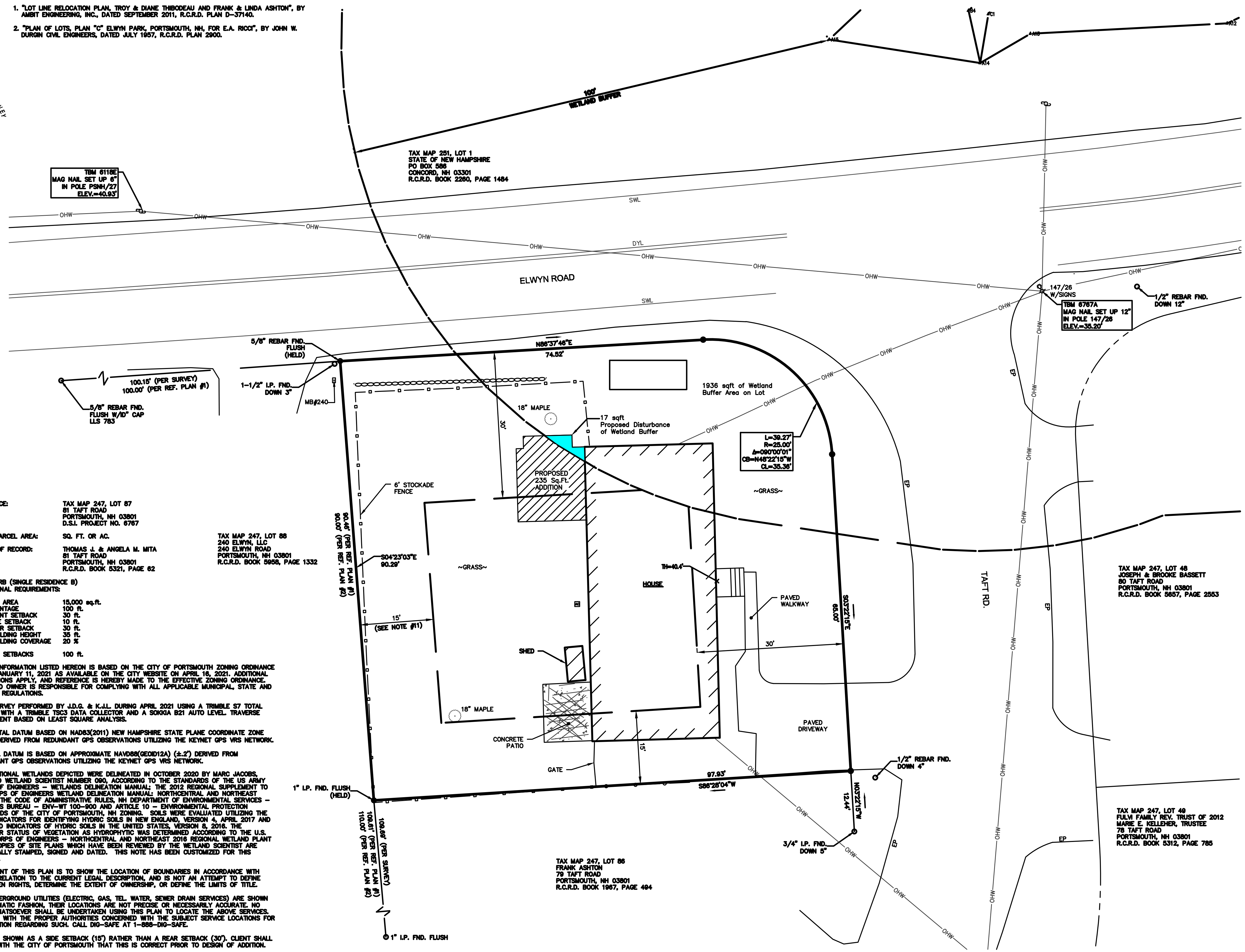
Respectfully submitted,

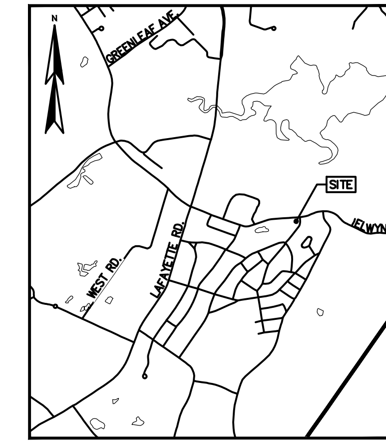
David A. Ciccalone, PG
Co-Owner
Yankee Construction LLC

www.yankeeconstructionllc.com
(603) 420-9527
PO Box 1183, North Hampton, NH 03862

REFERENCE PLANS:

1. "LOT LINE RELOCATION PLAN, TROY & DIANE THIBODEAU AND FRANK & LINDA ASHTON", BY AMBIT ENGINEERING, INC., DATED SEPTEMBER 2011, R.C.R.D. PLAN D-37140.
2. "PLAN OF LOTS, PLAN "C" ELWYN PARK, PORTSMOUTH, NH, FOR E.A. RICCI", BY JOHN W. DURGIN CIVIL ENGINEERS, DATED JULY 1957, R.C.R.D. PLAN 2900.





LOCATION MAP (n.t.s.)

LEGEND

- LOT LINE
- BUILDING SETBACK LINE
- APPROXIMATE ABUTTERS LOT LINE
- STONE WALL
- STOCKADE FENCE
- CHAIN LINK FENCE
- OHW — OVERHEAD WIRE
- EDGE OF WETLAND
- WETLAND AREA
- CONCRETE
- UTILITY POLE
- UTILITY POLE W/LIGHT
- IRON PIPE/ROD FOUND
- 5/8" REBAR W/ID CAP TO BE SET
- DECIDUOUS TREE
- TYP. — TYPICAL
- I.P.F. — IRON PIPE FOUND
- TH — THRESHOLD ELEVATION
- EP — EDGE OF PAVEMENT
- SWL — SINGLE WHITE LINE
- DYL — DOUBLE YELLOW LINE
- ▲A-1 — WETLAND FLAG

Note: The location of the Proposed Addition and corresponding area of Wetland Buffer disturbance was added to the Doucet Survey Drawing by Yankee Construction LLC

NOTES:

1. REFERENCE: TAX MAP 247, LOT 87
81 TAFT ROAD
PORTSMOUTH, NH 03801
D.S.I. PROJECT NO. 6767
2. TOTAL PARCEL AREA: SQ. FT. OR AC.
3. OWNER OF RECORD: THOMAS J. & ANGELA M. MITA
81 TAFT ROAD
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 5321, PAGE 62
4. ZONE: SRB (SINGLE RESIDENCE B)
DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA	15,000 sq.ft.
MIN. FRONTAGE	100 ft.
MIN. FRONT SETBACK	30 ft.
MIN. SIDE SETBACK	10 ft.
MIN. REAR SETBACK	30 ft.
MAX. BUILDING HEIGHT	35 ft.
MAX. BUILDING COVERAGE	20 %
WETLAND SETBACKS	100 ft.

ZONING INFORMATION LISTED HEREON IS BASED ON THE CITY OF PORTSMOUTH ZONING ORDINANCE DATED JANUARY 11, 2021 AS AVAILABLE ON THE CITY WEBSITE ON APRIL 16, 2021. ADDITIONAL REGULATIONS APPLY, AND REFERENCE IS HEREBY MADE TO THE EFFECTIVE ZONING ORDINANCE. THE LAND OWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE MUNICIPAL, STATE AND FEDERAL REGULATIONS.

5. FIELD SURVEY PERFORMED BY J.D.G. & K.J.L. DURING APRIL 2021 USING A TRIMBLE S7 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
6. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
7. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
8. JURISDICTIONAL WETLANDS DEPICTED WERE DELINEATED IN OCTOBER 2020 BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV-WT 100-900 AND ARTICLE 10 – ENVIRONMENTAL PROTECTION STANDARDS OF THE CITY OF PORTSMOUTH, NH ZONING. SOILS WERE EVALUATED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, APRIL 2017 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8, 2016. THE INDICATOR STATUS OF VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.
9. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
10. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
11. SETBACK SHOWN AS A SIDE SETBACK (15') RATHER THAN A REAR SETBACK (30'). CLIENT SHALL VERIFY WITH THE CITY OF PORTSMOUTH THAT THIS IS CORRECT PRIOR TO DESIGN OF ADDITION.

FILE NAME: Y:\PROJECTS\6767 C3D\DWG\6767A (POL).dwg LAYOUT NAME: 6767 PLAN OF LAND PLOTTED: Tuesday, May 11, 2021 - 4:04pm

10 0 10 20
SCALE: 1:20

PLAN OF LAND
FOR
THOMAS J. & ANGELA M. MITA
(TAX MAP 247, LOT 87)
81 TAFT ROAD
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

DRAWN BY:	M.W.F.	DATE:	APRIL 16, 2021
CHECKED BY:	W.J.D.	DRAWING NO.	6767A
JOB NO.	6767	SHEET 1	OF 1

DOUCET SURVEY LLC
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

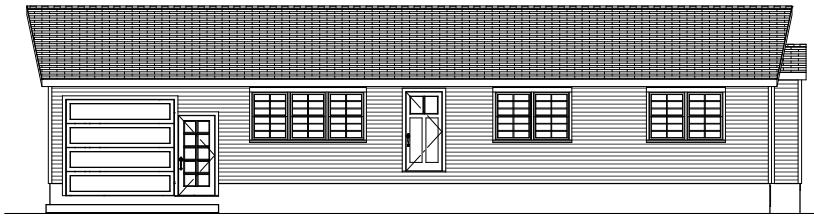
GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH STATE AND MUNICIPAL BUILDING CODES.
2. ALL MECHANICAL WORK SHALL BE PERFORMED BY STATE LICENSED CONTRACTORS.
3. DRAWINGS MAY BE SCALED FOR ESTIMATING PURPOSES AND FOR GENERAL REFERENCE ONLY. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD.
4. ALL DIMENSIONS ARE TO FACE OF STUD OR CENTERLINE OF STRUCTURE UNLESS OTHERWISE NOTED (UON).
5. DOOR AND WINDOW DETAILS ARE INDICATED ON THE DOOR AND WINDOW SCHEDULES. DOOR AND WINDOW DIMENSIONS ARE TO ROUGH OPENINGS UNO.

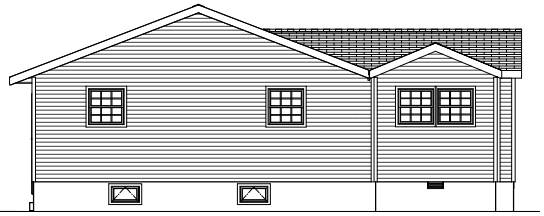
TITLE	LABEL	SHEET
EXISTING & PROPOSED FLOOR PLANS	A1	1
FOUNDATION PLAN	A2	2

ELEVATION NOTES

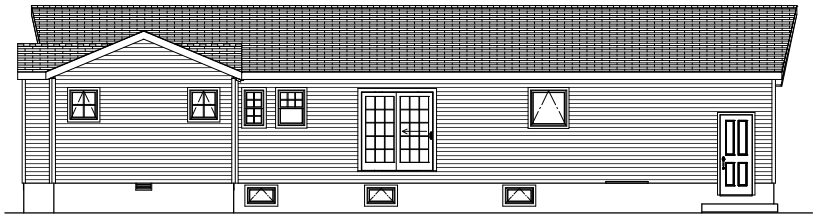
ELEVATIONS SHOW PROPOSED ADDITION ON NW CORNER OF HOME. SOME DETAILS SHOWN IN THE ELEVATIONS MAY NOT BE ACCURATE. ROUGH MEASUREMENTS WERE TAKEN AND ASSUMED TO BUILD EXISTING ELEMENTS OF THE HOUSE, OUTSIDE OF THE ADDITION AREA.



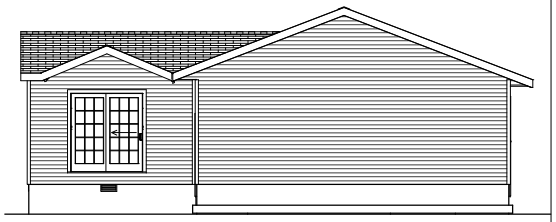
Elevation 1
1/16 in = 1 ft



Elevation 2
1/16 in = 1 ft



Elevation 3
1/16 in = 1 ft

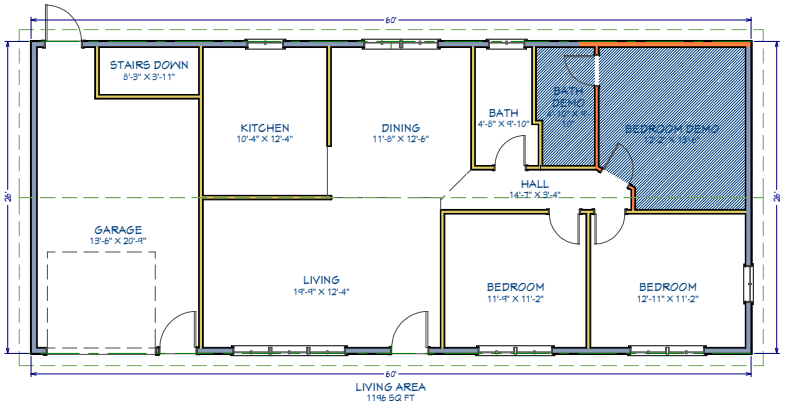


Elevation 4
1/16 in = 1 ft

RELATIVE DEMO NOTES

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, SYSTEMS, AND STRUCTURE

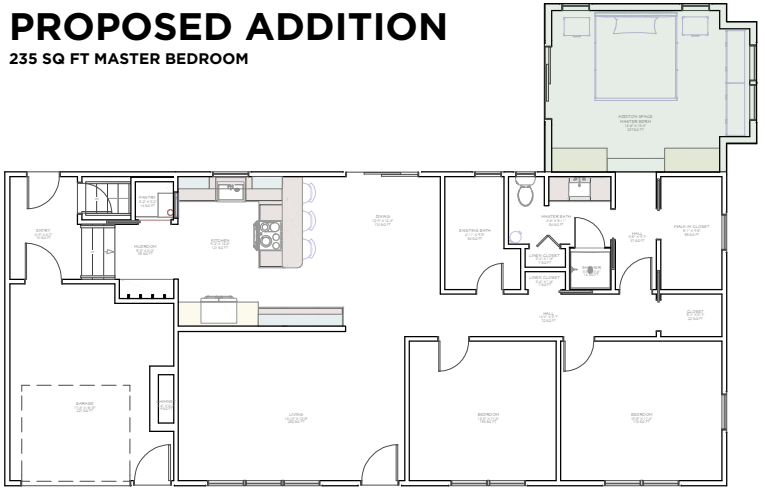
1. REMOVE INTERIOR WALLS AS NOTED
2. REMOVE SIDING FROM EXTERIOR WALL, KEEP STUDS AND INSULATION



Existing Floor Plan
1/16 in = 1 ft

PROPOSED ADDITION

235 SQ FT MASTER BEDROOM



Entry Level Floor Plan
1/16 in = 1 ft

YANKEE CONSTRUCTION LLC
GENERAL CONTRACTORS
PO BOX 1183, NORTH HAMPTON, NH 03862 603.420.9927

THE MITA RESIDENCE
81 Taft Rd, Portsmouth, NH

Revisions

Issued Date 2022.04.20

Drawn By JT

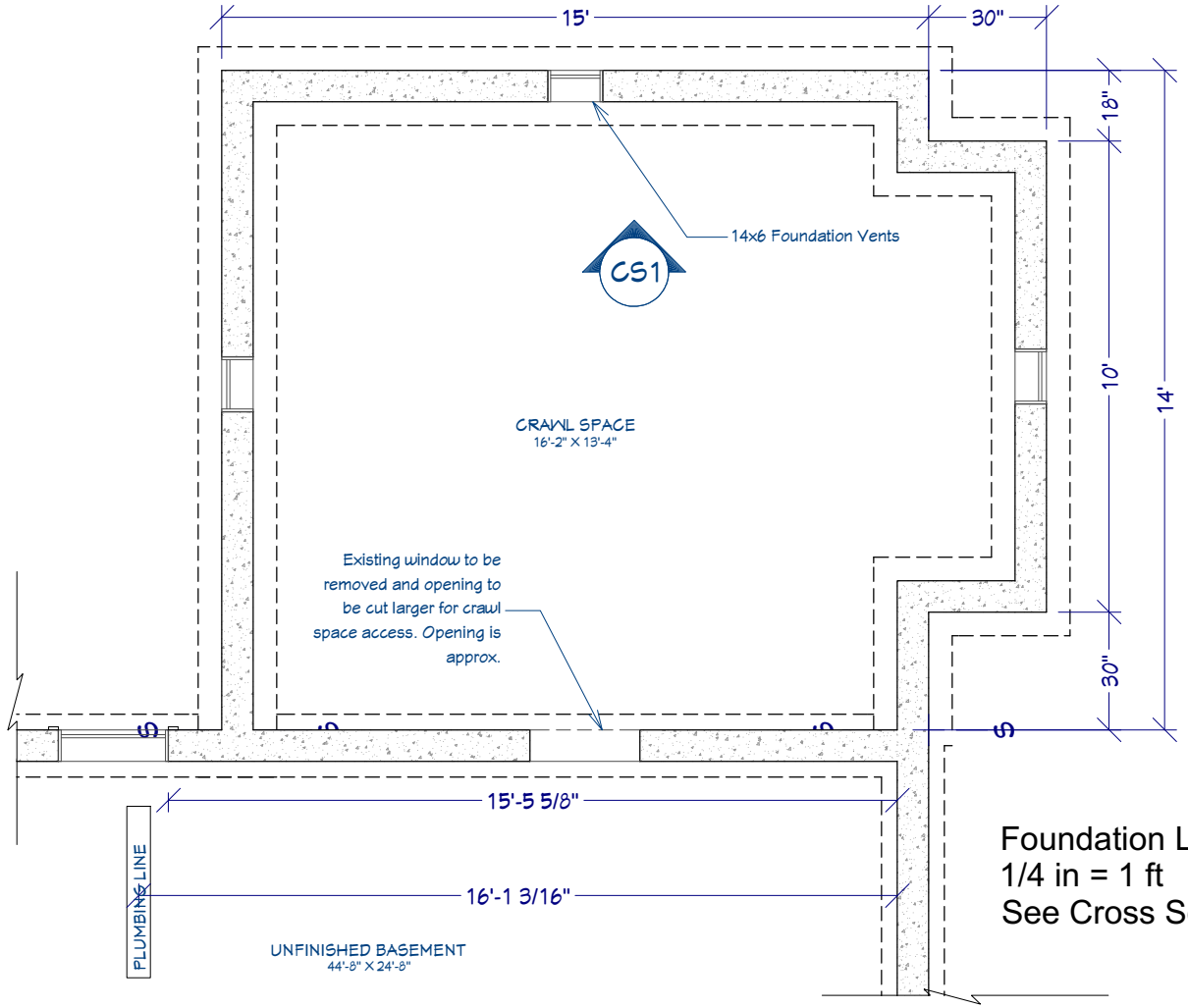
Project No. 2022.22

Scale AS NOTED

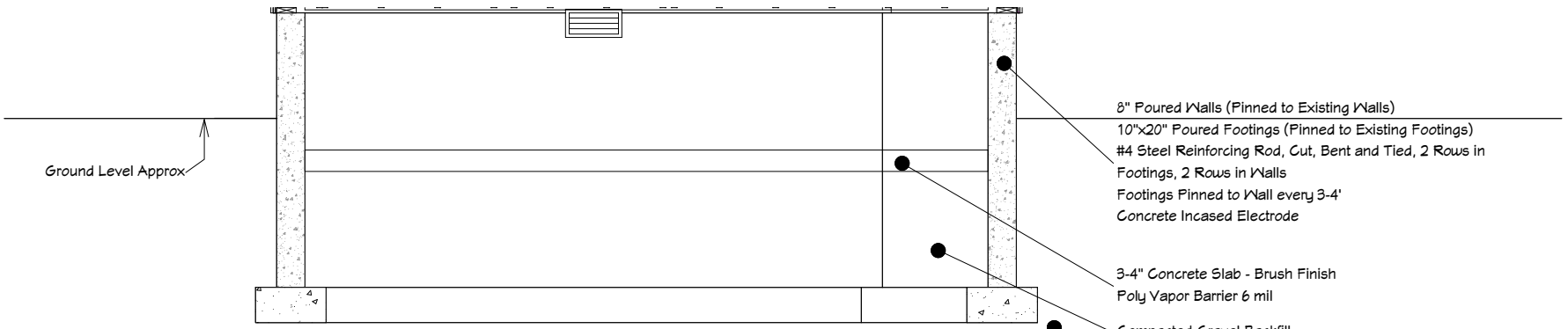
Existing & Proposed Floor Plans

A1

Sheet No.



Foundation Level Plan
1/4 in = 1 ft
See Cross Section for Details



Cross Section 1
1/4 in = 1 ft

YANKEE CONSTRUCTION LLC
GENERAL CONTRACTORS
PO BOX 1183, NORTH HAMPTON, NH 03862 603.420.9227

THE MITA RESIDENCE
81 Taft Rd, Portsmouth, NH

Revisions
Issued Date 2022.04.20
Drawn By JT
Project No. 2022.22
Scale AS NOTED

Foundation Plan

A2
Sheet No.

Ross Engineering
Civil/Structural Engineering & Surveying

909 Islington Street **603-433-7560**
Portsmouth, NH 03801 **alexross@comcast.net**

May 25, 2022
Portsmouth Planning Department
1 Junkins Ave
Portsmouth, NH 03801

11 Fletcher Street
CONDITIONAL USE PERMIT

RE: Lancen & Sophie LaChance
11 Fletcher St
Portsmouth, NH 03801
Tax Map 233, Lot 76-1

This project involves construction of a house on an existing vacant lot. The house, attached garage, porch, and deck will all be outside the 100' wetland buffer. A conditional use permit is required because the proposed stormwater drain outlet will be in the wetland buffer. The department of public works recommends that the drain outlet be located in the lower lot corner as shown. The drain outlet will provide a direct route to the wetland area and avoid a flowpath towards Lot 73 which is in a low-lying area.

Proposed site improvements include:

1. Pervious paver driveway to collect runoff from the driveway and the northern garage roof.

2. Infiltration trenches along the perimeter of the building collecting runoff from the roofs.

3. A stone area beneath the deck to collect runoff from the roofs, as well as stormwater from the pervious pavers and infiltration trenches. Water is stored in this area, before being slowly released to the outlet protection in the southwest through a 4" pipe. Wetland buffer plantings will be installed surrounding the outlet.

4. Sewer and water trenches are proposed to connect to existing lines on Sims Ave.

A drainage study has been prepared and after the improvements are installed the stormwater runoff rate will be lower than currently exists.

Sincerely,

Alex Ross, PE, LLS

Ross Engineering
Civil / Structural Engineering

909 Islington Street **603-433-7560**
Portsmouth, NH 03801 **alexross@comcast.net**

List of Abutters

Dated 5-25-2022
To: City of Portsmouth
1 Junkins Ave
Portsmouth, NH 03801

Applicant & Land Owner's Name:
Lancen & Sophie Lachance
281 Dennett St
Portsmouth, NH 03801

Location of Land:
11 Fletcher St
Portsmouth, NH 03801
Tax Map 233, Lot 76-1

Abutters:
Judith B. Pope Revocable Trust of 2011
66 Benson St
Portsmouth, NH 03801
Tax Map 233, Lot 73

Stephanie J. Long Revocable Trust of 2008
80 Sims Ave
Portsmouth, NH 03801
Tax Map 233, Lot 74

Eric R. Hutchins Revocable Trust of 2015
74 Sims Ave
Portsmouth, NH 03801
Tax Map 233, Lot 75

Mark G. Broderick & Emily Spencer
70 Sims Ave
Portsmouth, NH 03801
Tax Map 233, Lot 76

Riverbrook at Portsmouth Condominium
Multiple Owners
Portsmouth, NH 03801
Tax Map 232-121

Civil Engineer & Surveyor
Alex Ross
Ross Engineering
Certified Professional Engineer
Licensed Land Surveyor
909 Islington Street
Portsmouth, NH 03801

Ross Engineering
Civil / Structural Engineering
909 Islington Street
Portsmouth, NH 03801
603-433-7560
alexross@comcast.net

1. Aerial of neighborhood, before lot clearing

2. Aerial of Site, before lot clearing

Ross Engineering
Civil / Structural Engineering
909 Islington Street
Portsmouth, NH 03801
603-433-7560
alexross@comcast.net

3. Looking upslope North East

4. View towards south east corner

Ross Engineering
Civil / Structural Engineering
909 Islington Street
Portsmouth, NH 03801
603-433-7560
alexross@comcast.net

5. Looking south west towards woodland wetland buffer.

Ross Engineering, LLC

909 Islington Street
Portsmouth, NH 03801

603-433-7560
alexross@comcast.net

May 24, 2022

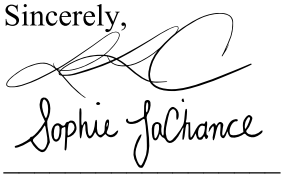
Planning Department
City of Portsmouth
Portsmouth, NH 03801

RE: 11 Fletcher St
Tax Map 233, Lot 76-1
Portsmouth, NH 03801

Owner: Lancen & Sophie LaChance
281 Dennett St
Portsmouth, NH 03801

Please be advised that Alex Ross of Ross Engineering is authorized to be our agent for the above application process. Should you have any questions, please contact us.

Sincerely,



Lancen & Sophie LaChance
281 Dennett St
Portsmouth, NH 03801

FLETCHER STREET

SEE NOTE 2

N 68°52'39" E
127.30'

S 21°13'42" E
50.00'

S 20°14'43" E
60.58'

S 17°44'37" E
39.50'

N 68°52'39" E
130.74'

100' BUFFER SETBACK

30' SETBACK

10' SETBACK

50' LIMITED CUT AREA

25' VEGETATIVE BUFFER STRIP

WETLAND DELINEATION

TP 1

TP 2

DH FOUND

IRON PIN 3" ABOVE GRADE (HELD)

LANCEN & SOPHIE LACHANCE
TAX MAP 233, LOT 76-1
RCRD 6364-2154
12,850 SQFT, 0.295 ACRES

MARK G. & EMILY BRODERICK
TAX MAP 233, LOT 76
RCRD 5710-76

N/F ERIC R. HUTCHINS TRUSTEE
ERIC R. HUTCHINS REV. TRUST 2015
TAX MAP 233, LOT 75
RCRD 5682-653

N/F STEPHANIE J. LONG TRUSTEE
STEPHANIE J. LONG REV. TRUST 2015
TAX MAP 233, LOT 75
RCRD 5682-653

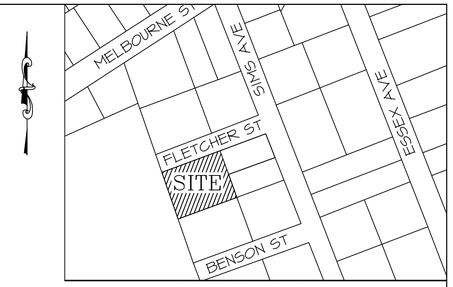
N/F RIVERBROOK AT
PORTSMOUTH CONDOMINIUM
TAX MAP 232, LOT 121-12
MULTIPLE OWNERS

N/F JUDITH B. POPE TRUSTEE
JUDITH B. POPE REV. TRUST 2011
TAX MAP 233, LOT 73
RCRD 5546-1239

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
SCALE: 1" = 10'

LEGEND

- 100 — EXISTING CONTOUR
- 100 — PROPOSED CONTOUR
- 100x00 — SPOT ELEVATION
- SEWER MANHOLE
- MONUMENT FOUND
- UTILITY POLE
- VERTICAL GRANITE CURB
- CATCH BASIN
- LEDGE
- STONE WALL



LOCUS PLAN
N.T.S.

NOTES

1) OWNER OF RECORD:
LANCEN & SOPHIE LACHANCE
TAX MAP 233, LOT 76-1
70 SIMS AVENUE
PORTSMOUTH, NH 03801
RCRD: 6364-2154
LOT 76-1 AREA: 12,850 SF, 0.29 Ac

2) BASIS OF BEARING HELD FROM PLAN REFERENCE #1.

3) PARCEL IS IN SINGLE RESIDENCE B DISTRICT:

MINIMUM LOT AREA	15,000 SF
MIN. LOT AREA PER DWELLING UNIT	15,000 SF
MINIMUM FRONTAGE	100 FT
MINIMUM DEPTH	100 FT
SETBACKS:	
FRONT	30 FT
SIDE	10 FT
REAR	30 FT
MAXIMUM BUILDING HEIGHT:	
SLOPED ROOF	35 FT
MAXIMUM BUILDING COVERAGE	20%
MINIMUM OPEN SPACE	40%

4) THE PARCEL IS NOT WITHIN A FEMA FLOOD ZONE, AS PER FLOOD INSURANCE RATE MAPS #33015C0259F & #33015C0270F, PANELS 259 & 270 OF 681, DATED JANUARY 29, 2021.

REFERENCE PLANS

1) "STANDARD BOUNDARY SURVEY, TAX MAP 223 LOT 73 FOR MICHAEL TRAVIS, 66 BENSON STREET CITY OF PORTSMOUTH" BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2006.
2) "CONDOMINIUM SITE PLAN FOR RIVERBROOK AT PORTSMOUTH, N.H." BY RICHARD P. MILLETTE AND ASSOCIATES. DATED AUGUST 25, 1987.
2) "DANIELS PARK PORTSMOUTH, NH" DATED JUNE 1918 BY C.A. THAYER ENGR. RCRD 0241

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

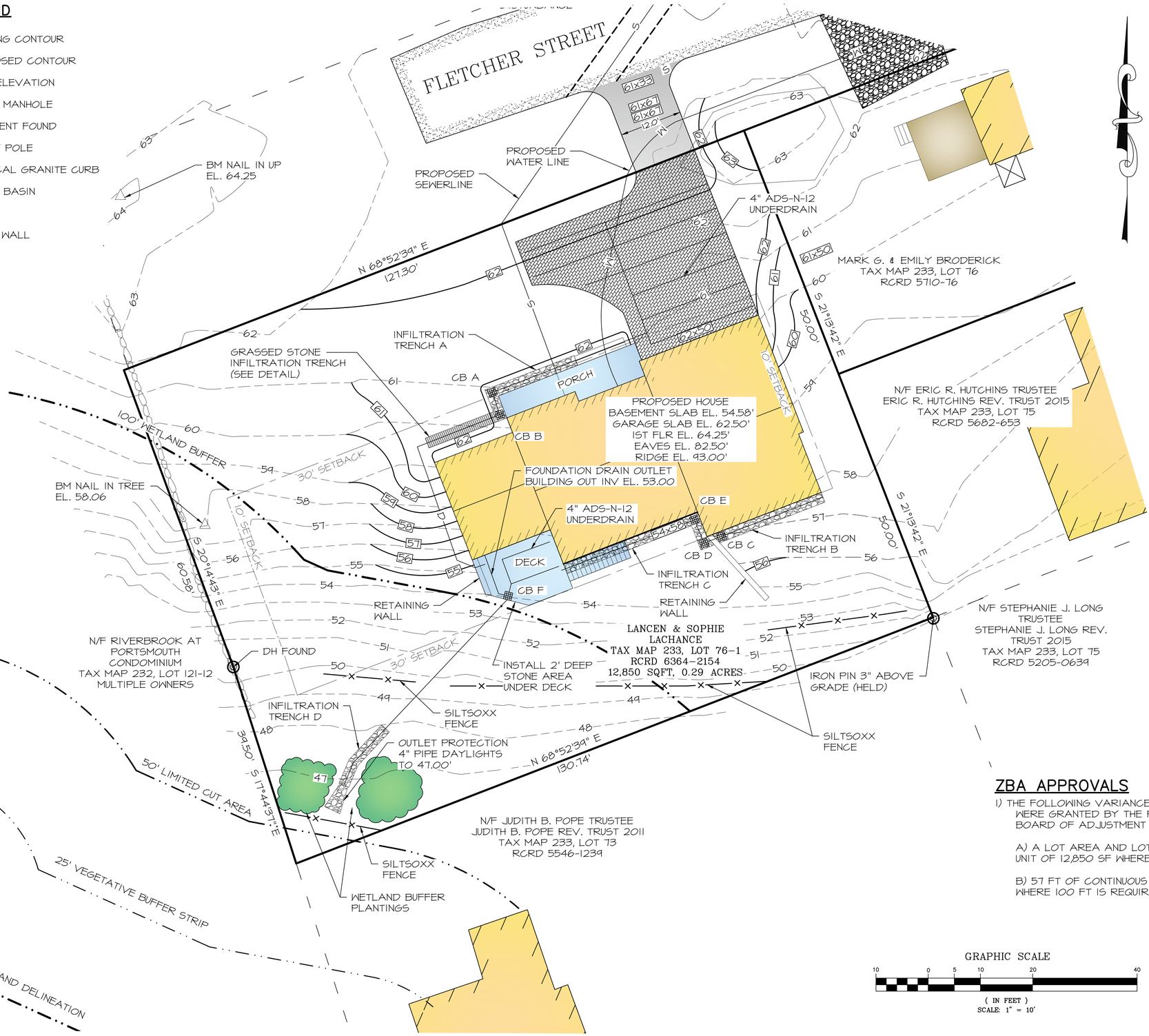
CLIENT
LANCEN & SOPHIE LACHANCE
281 DENNETT STREET
PORTSMOUTH, NH 03801

TITLE
EXISTING CONDITIONS PLAN
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	1 OF 8	2

LEGEND

- 100 — EXISTING CONTOUR
- 100 — PROPOSED CONTOUR
- 100x00 — SPOT ELEVATION
- (S) — SEWER MANHOLE
- MONUMENT FOUND
- UTILITY POLE
- VERTICAL GRANITE CURB
- CATCH BASIN
- LEDGE
- STONE WALL



NOTES

1) OWNER OF RECORD:
LANCEN & SOPHIE LACHANCE
TAX MAP 233, LOT 76-1
70 SIMS AVENUE
PORTSMOUTH, NH 03801
RCRD 6364-2154
LOT 76-1 AREA: 12,850 SF, 0.29 AC

2) PARCEL IS IN SINGLE RESIDENCE B DISTRICT:

MINIMUM LOT AREA	15,000 SF
MIN. LOT AREA PER DWELLING UNIT	15,000 SF
MINIMUM FRONTAGE	100 FT
MINIMUM DEPTH	100 FT
SETBACKS:	
FRONT	30 FT
SIDE	10 FT
REAR	30 FT
MAXIMUM BUILDING HEIGHT:	
SLOPED ROOF	35 FT
MAXIMUM BUILDING COVERAGE	20%
MINIMUM OPEN SPACE	40%

3) COVERAGES
BUILDING COVERAGE
EXISTING COVERAGE = 0 SF

PROPOSED COVERAGE	
HOUSE	1987 SF
PORCH & DECK	327 SF
PROPOSED STRUCTURE	2314 SF = 18.0%

LOT COVERAGE
EXISTING COVERAGE = 0 SF

PROPOSED COVERAGE	
HOUSE	1987 SF
PORCH, DECK & STAIRS	371 SF
ASPHALT	0 SF
TOTAL LOT COVERAGE	2358 SF
PROPOSED OPEN SPACE	10,492 SF
PROPOSED OPEN SPACE	81.6%

4) GRADE PLANE IS DEFINED AS THE REFERENCE PLANE OF THE AVERAGE GROUND LEVELS ADJOINING THE BUILDING AT THE EXTERIOR WALLS, OR THE AVERAGE GROUND LEVEL AT A POINT 6' AWAY FROM THE BUILDING WHEN THE GROUND LEVEL SLOPES AWAY FROM THE EXTERIOR WALLS. THE GRADE PLANE WAS DETERMINED TO BE 57.75'.

5) BUILDING HEIGHT IS DEFINED AS THE VERTICAL MEASUREMENT BETWEEN TWO REFERENCE POINTS. THE FIRST BEING DEFINED AS THE GRADE PLANE ABOVE. THE SECOND BEING THE MIDWAY POINT BETWEEN THE EAVES AND THE RIDGE ON A PITCHED ROOF.

GRADE PLANE EL. = 57.75'
EAVES EL. = 82.50'
RIDGE EL. = 93.00'
ROOF MIDWAY EL. = 82.50 + 93.00 / 2 = 87.75'

BUILDING HEIGHT = 87.75' - 57.75' = 30.00' < 35'

ZBA APPROVALS

1) THE FOLLOWING VARIANCES FROM SECTION 10.521 WERE GRANTED BY THE PORTSMOUTH ZONING BOARD OF ADJUSTMENT ON APRIL 21, 2020.

A) A LOT AREA AND LOT AREA PER DWELLING UNIT OF 12,850 SF WHERE 15,000 SF IS REQUIRED.

B) 57 FT OF CONTINUOUS STREET FRONTAGE WHERE 100 FT IS REQUIRED.

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
SCALE: 1" = 10'

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

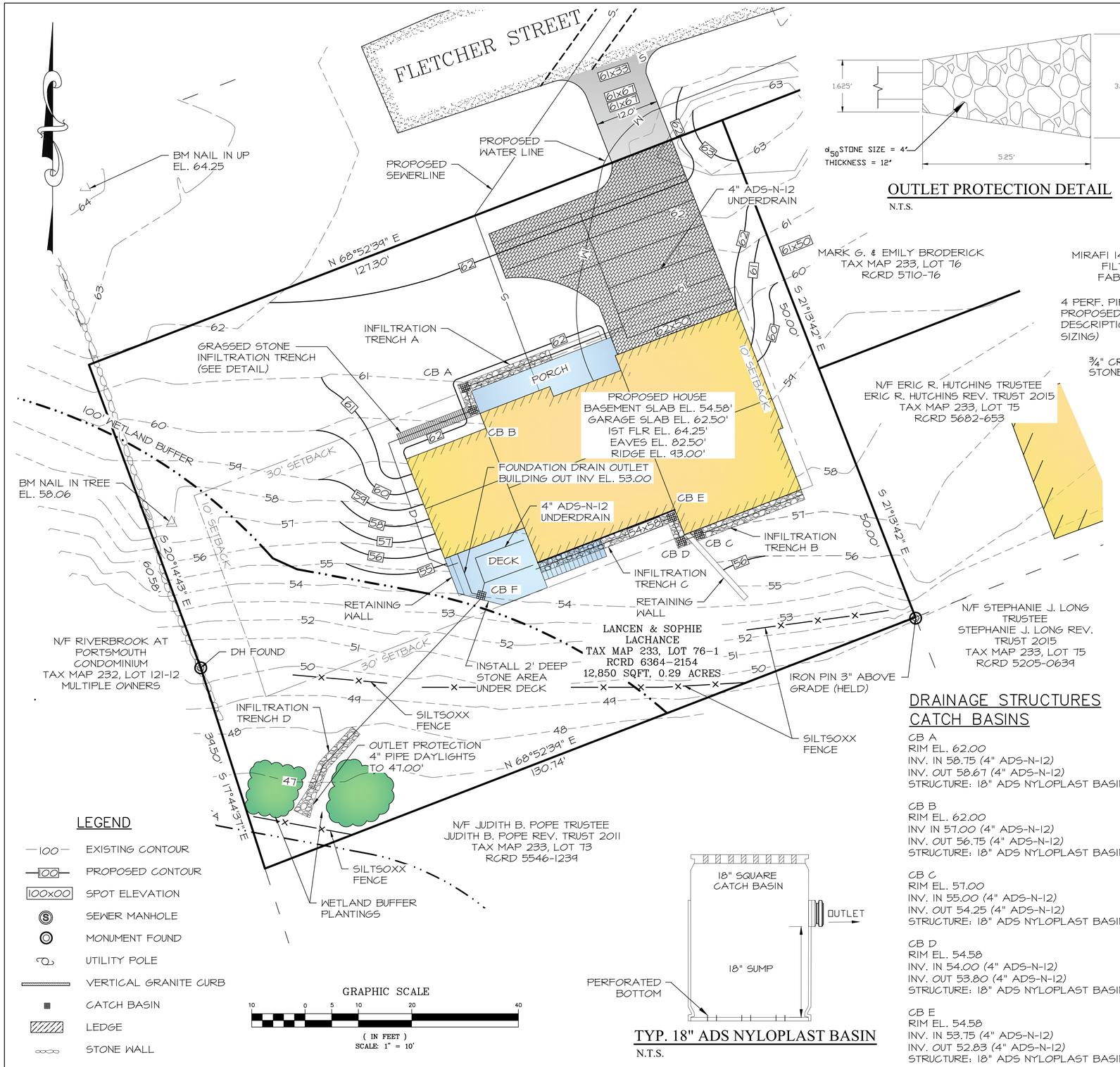
SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
LANCEN & SOPHIE LACHANCE
281 DENNETT STREET
PORTSMOUTH, NH 03801

TITLE
SITE PLAN
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	2 OF 8	2



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SPOT ELEVATION
- SEWER MANHOLE
- MONUMENT FOUND
- UTILITY POLE
- VERTICAL GRANITE CURB
- CATCH BASIN
- LEDGE
- STONE WALL

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
SCALE: 1" = 10'

OUTLET PROTECTION DETAIL

N.T.S.

TYP. 18" ADS NYLOPLAST BASIN

N.T.S.

DRAINAGE STRUCTURES
CATCH BASINS

CB A
RIM EL. 62.00
INV. IN 58.75 (4" ADS-N-12)
INV. OUT 58.67 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

CB B
RIM EL. 62.00
INV IN 57.00 (4" ADS-N-12)
INV. OUT 56.75 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

CB C
RIM EL. 57.00
INV. IN 55.00 (4" ADS-N-12)
INV. OUT 54.25 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

CB D
RIM EL. 54.58
INV. IN 54.00 (4" ADS-N-12)
INV. OUT 53.80 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

CB E
RIM EL. 54.58
INV. IN 53.75 (4" ADS-N-12)
INV. OUT 52.83 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

CB F
RIM EL. 54.00
INV. IN 52.75 (4" ADS-N-12 FND DRAIN)
INV. IN 52.55 (4" ADS-N-12 UNDERDRAIN)
INV. OUT 52.50 (4" ADS-N-12)
STRUCTURE: 18" ADS NYLOPLAST BASIN

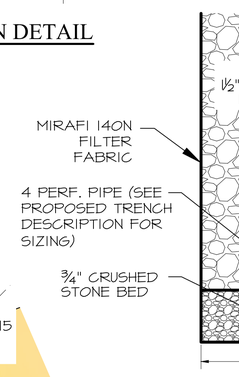
NOTES

1) THE FOLLOWING STORMWATER MANAGEMENT IMPROVEMENTS ARE PROPOSED

A) PERVIOUS PAVERS DRIVEWAY COLLECTING WATER FROM THE ROOF AND ASPHALT DRIVEWAY.

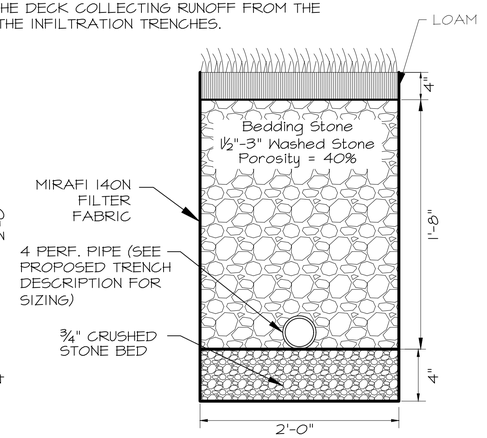
B) INFILTRATION TRENCHES ALONG THE PERIMETER OF THE BUILDING COLLECTING WATER FROM THE ROOFS.

C) STONE AREA BENEATH THE DECK COLLECTING RUNOFF FROM THE ROOF AND WATER FROM THE INFILTRATION TRENCHES.



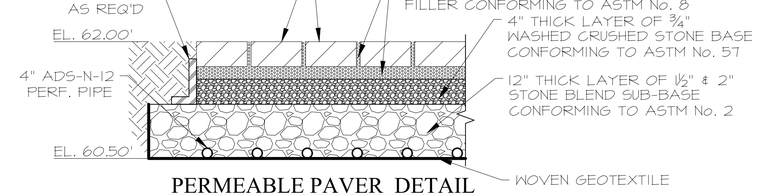
STONE TRENCH DETAIL

N.T.S.



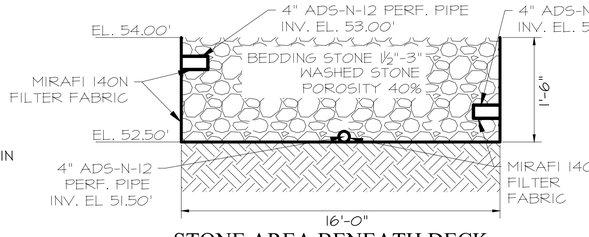
GRASSED STONE TRENCH DETAIL

N.T.S.



PERMEABLE PAVER DETAIL

N.T.S.



STONE AREA BENEATH DECK

N.T.S.

STONE TRENCH	DEPTH	WIDTH	INV. TRENCH	OUTLET INV.
A	2.00'	2.00'	60.00'	53.00' (4" ADS-N-12)
B	2.00'	2.00'	55.00'	55.00' (4" ADS-N-12)
C	2.00'	2.00'	52.58'	52.58' (4" ADS-N-12)
D	2.00'	2.00'	47.00'	47.00' (4" ADS-N-12)

PROPOSED TRENCH DESCRIPTION

N.T.S.

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

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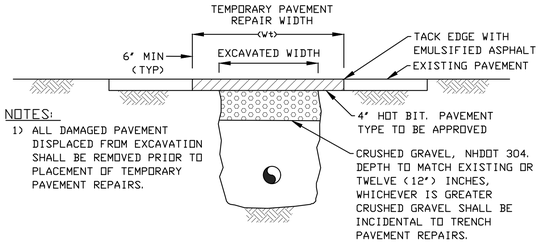
TITLE
STORMWATER MANAGEMENT

11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	3 OF 8	2



NOTES:

1) ALL DAMAGED PAVEMENT DISPLACED FROM EXCAVATION SHALL BE REMOVED PRIOR TO PLACEMENT OF TEMPORARY PAVEMENT REPAIRS.

TEMPORARY TRENCH PAVEMENT REPAIR

Scale : N.T.S.

NOTES:

1) ALL PAVEMENT REMOVAL SHALL BE PRECEDED BY MACHINE CUTTING.

2) ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT TRENCH REPAIRS,

3) DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.

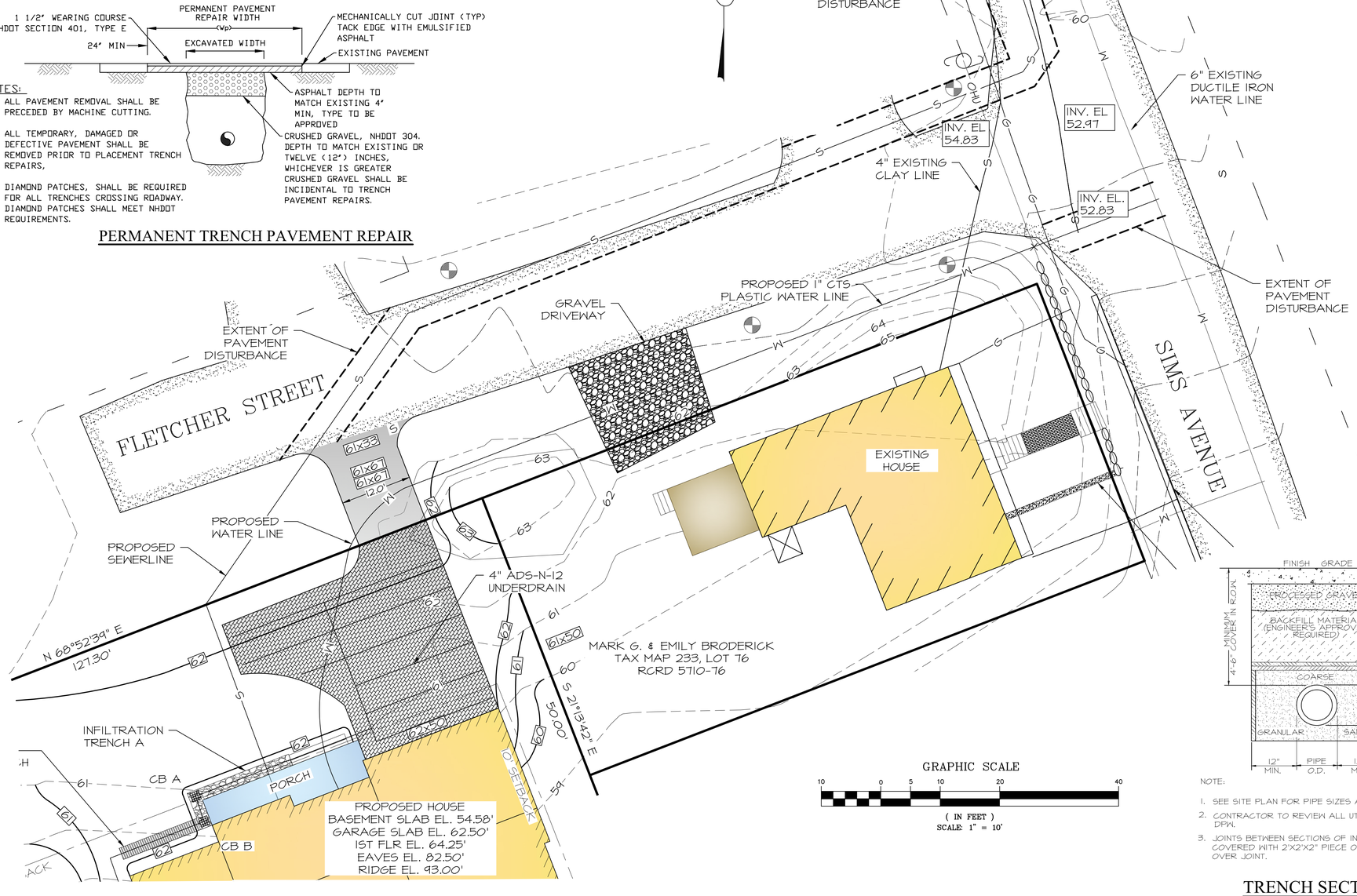
PERMANENT TRENCH PAVEMENT REPAIR

PAVEMENT REPAIR NOTE:

THE DIMENSIONS SHOWN SHALL BE CONSIDERED MINIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.

MINIMUM TRENCH PAVEMENT WIDTHS

PIPE I.D.	Wt (INCHES).	Wp (INCHES)
1-21 INCHES	72	108
24-30 INCHES	84	120
> 30 INCHES	96	132



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

SCALE: 1" = 10'

EXISTING STRUCTURES

SEWER MANHOLE

SMH #1
RIM EL. 54.51
INV. OUT 50.43 (6" PVC)
INV IN (PROPOSED) 53.01 (6" PVC)

UTILITIES:

CONTACT LIST:

WATER: PORTSMOUTH DPW: 603-427-1530
SEWER: PORTSMOUTH DPW: 603-427-1530

PROPOSED UTILITIES:

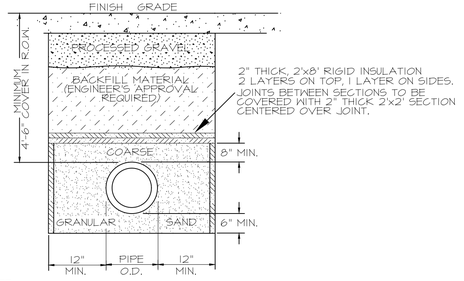
1. WATER:
   DOMESTIC: A NEW 1" LINE WILL BE INSTALLED TO THE BUILDING FROM THE EXISTING 6" DUCTILE IRON LINE ON SIMS AVE.

2. SEWER:
   A NEW PVC SEWER LATERAL SHALL BE CONNECTED TO THE EXISTING SEWER MANHOLE (SMH #1) IN SIMS AVE. INVERT ELEVATION AT BUILDING SHALL BE 56.1'. SEE CROSS SECTION.

   THE SEWER CONNECTION SHALL BE WITNESSED AND APPROVED BY THE PORTSMOUTH WATER DIVISION AND SOLID COUPLINGS WILL BE USED TO CUT IN THE SERVICE TO THE MAIN.

LEGEND

- 100 — EXISTING CONTOUR
- 100 — PROPOSED CONTOUR
- 100x00 — SPOT ELEVATION
- S — SEWER MANHOLE
- MONUMENT FOUND
- UTILITY POLE
- VERTICAL GRANITE CURB
- CATCH BASIN
- LEDGE
- STONE WALL
- TEST PIT
- INV. EL 52.97 — CITY TRACE ELEVATION OF UTILITY



NOTE:

1. SEE SITE PLAN FOR PIPE SIZES AND SERVICES.
2. CONTRACTOR TO REVIEW ALL UTILITIES WITH PORTSMOUTH DPW.
3. JOINTS BETWEEN SECTIONS OF INSULATION TO BE COVERED WITH 2'X2'X2" PIECE OF INSULATION CENTERED OVER JOINT.

TRENCH SECTION

N.T.S.

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE 1" = 10'
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CHECKED

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LANCEN & SOPHIE LACHANCE
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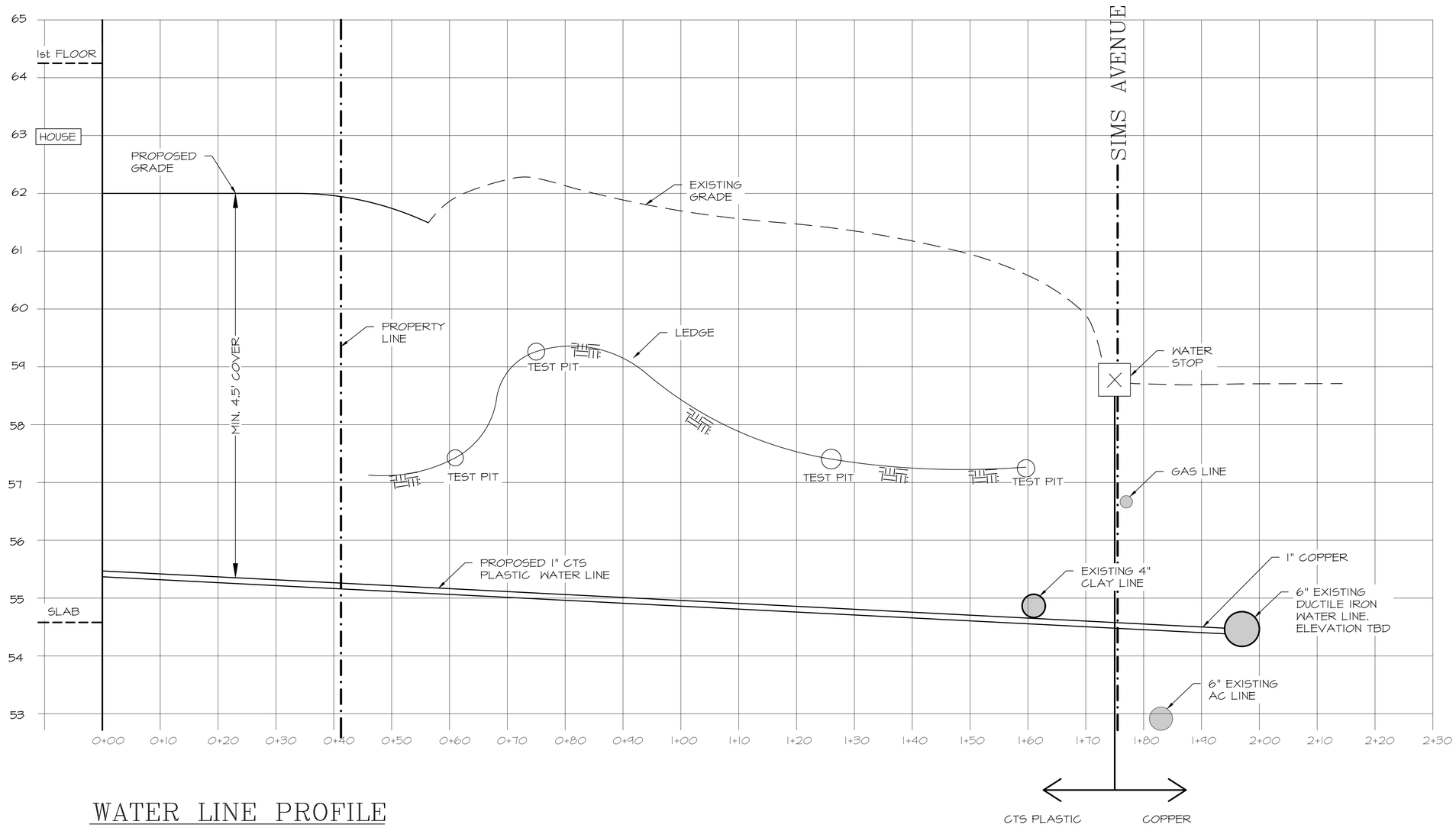
PORTSMOUTH, NH 03801

TITLE

UTILITY PLAN

11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	4 OF 8	2



WATER LINE PROFILE

SCALE: HORIZONTAL: 1" = 10'
VERTICAL: 1" = 1'

ISS.	DATE	DESCRIPTION OF ISSUE
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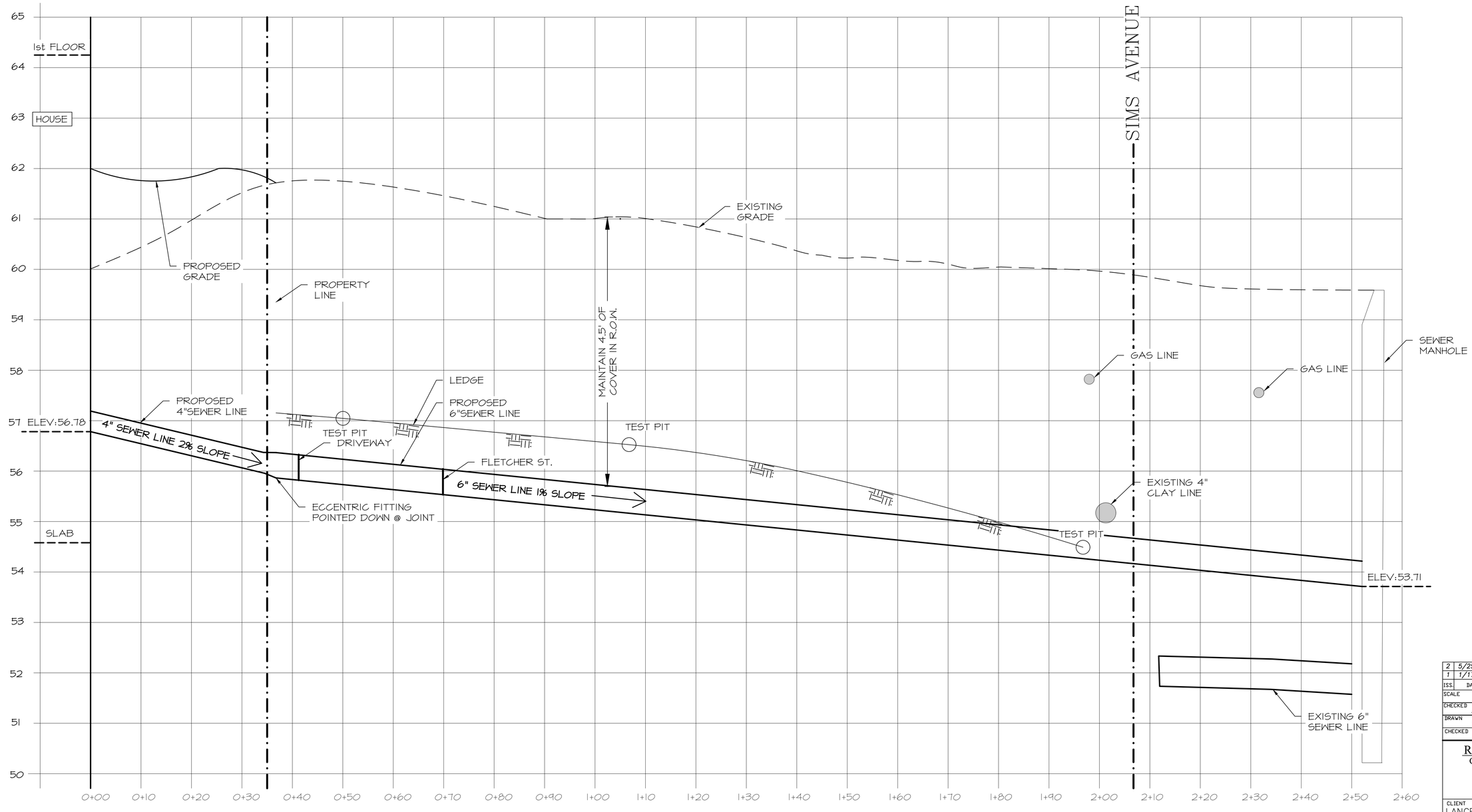
PORTSMOUTH, NH 03801

TITLE
WATER LINE PROFILE
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	5 OF 8	2



6" SEWER LINE RUNS 215' LONG AT 1%
(55.87' - 53.71' = 2.17') 2.16' / 215' = 0.01
4" SEWER LINE RUNS 37' LONG AT 2%
(56.78' - 55.87' = 0.91') 0.91' / 37' = 0.02

SEWER LINE PROFILE

SCALE: HORIZONTAL: 1" = 10'
VERTICAL: 1" = 1'

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE
CHECKED A.ROSS
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TITLE
SEWER LINE PROFILE
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	6 OF 8	2

SEWER LINES

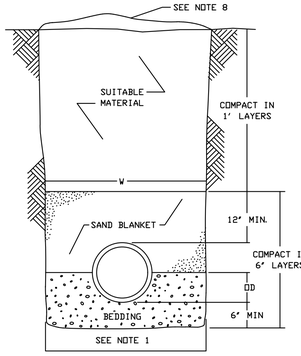
1) MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES.
2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

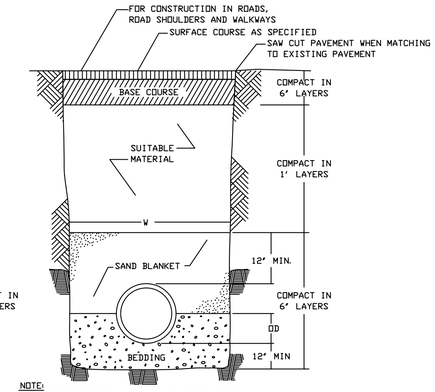
      *PVC: POLY VINYL CHLORIDE
      *ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. -JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
      -PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5% PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412 DURING MANUFACTURE.
      -PVC PIPE USED FOR FORCE MAINS SHALL CONFORM TO ASTM D2241 OR ATM D1784.
      -FORCE MAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2 1/2 TIMES THE DESIGN TOTAL DYNAMIC HEAD.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.
      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS:
         -AWWA C151 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND LINED MOLDS, FOR WATER OR OTHER LIQUIDS.
         -AWWA C150 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A 536 DUCTILE IRON CASTINGS.
         -JOINTS SHALL BE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL-AND-SOCKET TYPE.
3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PREMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER. AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.
6) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
7) -ALL NEW SEWERS, MANHOLES, AND FORCE MAINS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF EITHER WATER OR LOW-PRESSURE AIR TESTS.
   -LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH ASTM C828.
   -THE RATE OF INFILTRATION OR EXFILTRACTION SHALL BE NOT GREATER THAN 100 GALLONS PER DAY PER INCH OF PIPE DIAMETER PER MILE OF PIPE FOR SIZES TO 48", AND NOT GREATER THAN 200 GALLONS PER DAY PER INCH OF PIPE DIAMETER PER MILE FOR SIZES OVER 48".
   -FORCE MAINS SHALL BE TESTED IN ACCORDANCE WITH SECTION 4 OF AWWA C600 "INSTALLATION OF CAST IRON WATER MAINS", AT A PRESSURE EQUAL TO 150% OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD.
   -MANHOLES SHALL BE TESTED FOR LEAKAGE USING EITHER A WATER EXILTRATION TEST OR A VACUUM TEST.
   -THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      *NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FT. IN DEPTH.
      *NOT LESS THAN 2 1/2 MINUTES FOR MANHOLES 10-15 FT. DEEP.
      *NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FT. DEEP.
   -LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.
   -A WATERTIGHT HATCH IS REQUIRED TO PREVENT STORM SURGE INTRUSION.
8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PREMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
9) HOUSE WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.
10) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
11) CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS AS FOLLOWS:
    CEMENT: 6.0 BAGS PER CUBIC YARD
    WATER: 5.75 GALLONS PER BAG CEMENT
    MAXIMUM SIZE OF AGGREGATE: 1 INCH
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

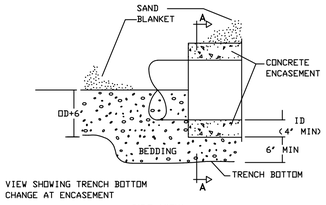


EARTH CONSTRUCTION
NOT TO SCALE



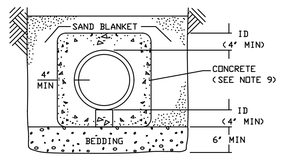
NOTE:
MIN. BEDDING DEPTH AND MAX. PAYMENT DEPTH FOR LEDGE EXCAVATION SHALL BE 12"

LEDGE CONSTRUCTION
NOT TO SCALE



VIEW SHOWING TRENCH BOTTOM CHANGE AT ENCASEMENT

SIDE VIEW



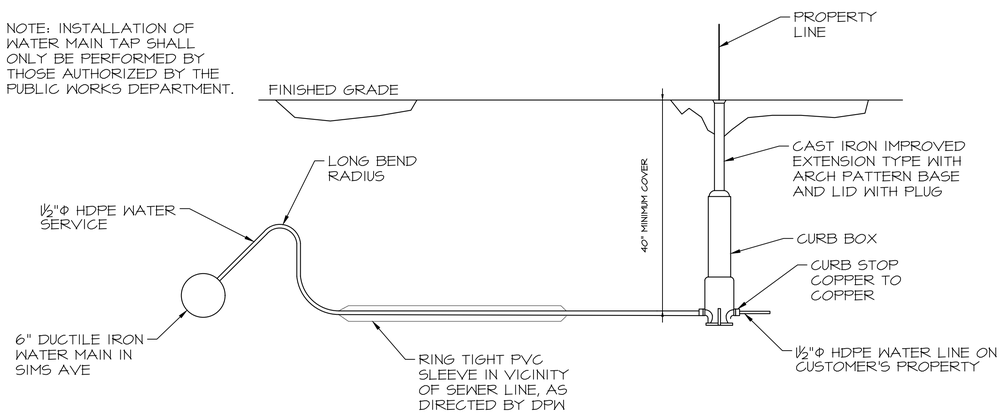
SECTION A-A
(SEE NOTE 10)

CONCRETE FULL ENCASEMENT
NOT TO SCALE

GENERAL NOTES

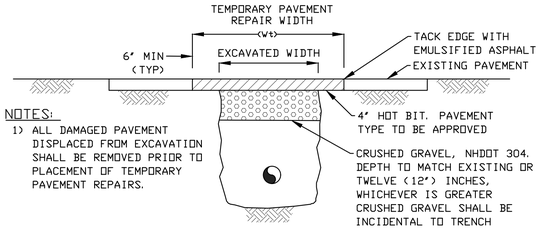
1) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE NOTE 7.
2) -PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR ORDERED EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33 STONE SIZE NO. 67.
   -COMPACTION SHALL BE 12 INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.
   -BACKFILL MATERIAL SHALL BE COMPACTED IN 3 FEET LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3 FEET SHALL BE COMPACTED IN 12 INCH LAYERS TO THE ROAD BASE SURFACE.
3) SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER SO GRADED THAT 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAT 15% WILL PASS A #200 SIEVE. PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.
4) SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALK-WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
   IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.
5) BASE COURSE, FOR TRENCH REPAIR, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:
   STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.
6) WOOD SHEETING, IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
7) W= MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES, FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6 INCH BELOW THE BOTTOM OF THE PIPE OUTSIDE SURFACE.
8) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
9) CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 LB) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:
    CEMENT: 6.0 BAGS PER CUBIC YARD
    WATER: 5.75 GALLONS PER BAG CEMENT
    MAXIMUM SIZE OF AGGREGATE: 1 INCH
10) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
11) TRENCHES FOR SEWER PIPES WITH SLOPES OVER .08 FEET PER FOOT SHALL HAVE TRENCH DAMS TO LOWER POSSIBLE GROUNDWATER FLOW VELOCITY AND POTENTIAL DISTRUBANCE TO PIPE ZONE MATERIALS.
12) PRECAUTION SHALL BE TAKEN TO AVOID GROUNDWATER POOLING AT THE SURFACE BY DRAINAGE TO SUITABLE OUTLET AT CATCH BASINS OR RUN-OFF SWALES.

NOTE: INSTALLATION OF WATER MAIN TAP SHALL ONLY BE PERFORMED BY THOSE AUTHORIZED BY THE PUBLIC WORKS DEPARTMENT.



WATER SERVICE CONNECTION

Scale: NTS



NOTES:
1) ALL DAMAGED PAVEMENT DISPLACED FROM EXCAVATION SHALL BE REMOVED PRIOR TO PLACEMENT OF TEMPORARY PAVEMENT REPAIRS.

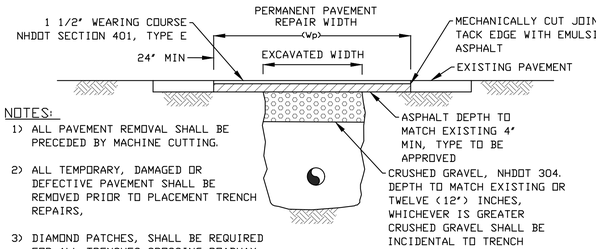
NOTE:
THE DIMENSIONS SHOWN SHALL BE CONSIDERED MINIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.

MINIMUM TRENCH PAVEMENT WIDTHS

PIPE I. D.	Wt (INCHES).	Wp (INCHES)
1-21 INCHES	72	108
24-30 INCHES	84	120
> 30 INCHES	96	132

TEMPORARY TRENCH PAVEMENT REPAIR

Scale : N.T.S.



NOTES:
1) ALL PAVEMENT REMOVAL SHALL BE PRECEDED BY MACHINE CUTTING.
2) ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT TRENCH REPAIRS,
3) DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.

PERMANENT TRENCH PAVEMENT REPAIR

Scale : N.T.S.

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
LANCEN & SOPHIE LACHANCE
281 DENNETT STREET
PORTSMOUTH, NH 03801

TITLE
UTILITY NOTES
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	7 OF 8	2

EROSION AND SEDIMENTATION CONTROL CONSTRICTION PHASING AND SEQUENCING

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILTSOXX FENCING AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES , LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL & COVER WHERE PRACTICABLE.
5. MINIMIZE DUST THROUGH APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES ON SITE.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT SOXX FENCING TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT SOXX FENCING ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. ALL TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC. MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
14. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
15. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM
16. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
18. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
19. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
20. LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

PLANTING NOTES:

1. ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
2. ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
3. ALL TREES AND SHRUBS SHALL HAVE WATER SAUCERS BUILT AROUND THEIR BASES AND THESE SHALL BE MULCHED WITH 4" OF DARK BROWN AGED BARK MULCH. MULCH MUST BE KEPT 2" AWAY FROM THEIR TRUNKS.
4. ALL TREES AND SHRUBS SHALL BE PLANTED AND MULCHED BEFORE LAWN IS SEEDED.

MAINTENANCE REQUIREMENTS:

1. ALL TREES, SHRUBS, AND PERENNIALS WILL NEED TO BE WATERED THROUGH THANKSGIVING DURING THE FIRST SEASON IN WHICH THEY ARE INSTALLED.
2. AN UNDERGROUND DRIP IRRIGATION SYSTEM IS RECOMMENDED. IF AN UNDERGROUND DRIP IRRIGATION SYSTEM IS NOT INSTALLED, SOAKER HOSES WOUND THROUGHOUT PLANTING BEDS ARE ACCEPTABLE. ALTHOUGH OVERHEAD SPRINKLERS ARE RECOMMENDED FOR LAWN AREAS, THEY ARE NOT ACCEPTABLE FOR IRRIGATING TREES AND SHRUBS.

SEEDING AND STABILIZATION FOR LOAMED SITE:

FOR TEMPORARY & LONG TERM SEEDINGS USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL
COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE,
FERTILIZER & LIME:
NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P205) 100 LBS/ACRE, POTASH (K20) 100 LBS/ACRE, LIME 2000 LBS/ACRE
MULCH:
HAY OR STRAW 1.5-2 TONS/ACRE

A) GRADING AND SHAPING
1) SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED, WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

B) SEED BED PREPARATION
1) SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
2) STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 2 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
3. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
4. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED WITHIN 24 HOURS OF EARTH-DISTURBING ACTIVITIES BEING CEASED, AND WILL BE FULLY STABILIZED NO LONGER THAN 14 DAYS AFTER INITIATION. (SEE NOTE II FOR DEFINITION OF STABLE). ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE. ALL TEMPORARY OR LONG TERM SEEDING MUST BE APPLIED TO COMPLY WITH "WINTER CONSTRUCTION NOTES" (SEE WINTER CONSTRUCTION NOTES). EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED (SEE NOTE II FOR DEFINITION OF STABLE).
5. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
6. SILTSOXX FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILTSOXX AND ANY EDGE OF WET AREA.
7. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
8. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
9. SILTSOXX FENCING WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
10. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
11. AN AREA SHALL BE CONSIDERED FULLY STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

11. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON STANDARDS AND SPECIFICATIONS SET FORTH IN THE STORM WATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (DECEMBER 2008 OR LATEST) PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, N.H. DES AND NRCS.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPETED IN ADVANCE OF THAW OR SPRING MELT EVENT.;
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

LONG TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	lb/ACRE	lb/1000SF
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED CLOVER (ALSIKE)	20	0.45
TOTAL	48	1.35

LIME: AT 2 TONS PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 20 20 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED.
SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL.
THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

SHORT TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	#/ACRE	#/1000SF
FOR APRIL 1 - AUGUST 15		
ANNUAL RYE GRASS	40	1
FOR FALL SEEDING		
WINTER RYE	112	2.5

LIME: AT 1 TON PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 10 10 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED.
SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL.
THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

WHEN PROPOSED FOR ALTERATION DURING CONSTRUCTION AS BEING INFESTED WITH INVASIVE SPECIES SHALL BE MANAGED APPROPRIATELY USING THE DISPOSAL PRACTICES IDENTIFIED IN "NHDOT - BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS -2008" AND "METHODS FOR DISPOSING NON-NATIVE INVASIVE PLANTS - UNH COOPERATIVE EXTENSION - 2010"

SEED MIXES SHALL NOT CONTAIN ANY SPECIES IDENTIFIED BY THE NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST.

INSPECTION AND MAINTENANCE OF FACILITIES AND PROPERTY

A. MAINTENANCE OF COMMON FACILITIES OR PROPERTY

1. FUTURE OWNERS OR ASSIGNS ARE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER INFRASTRUCTURE ASSOCIATED WITH THE FACILITY AND THE PROPERTY. THIS INCLUDES THE ROOF DRAINAGE SYSTEM, STONE INFILTRATION BEDS, GRAVEL AREAS, AND THE PERVIOUS PAVEMENT.

B. GENERAL INSPECTION AND MAINTENANCE REQUIREMENTS

1. PERMANENT STORMWATER AND SEDIMENT AND EROSION CONTROL FACILITIES TO BE MAINTAINED ON THE SITE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

a. ROOF DRAINAGE SYSTEM
b. CRUSHED STONE INFILTRATION BEDS
c. DRAIN LINES
d. PERVIOUS PAVEMENT

2. MAINTENANCE OF PERMANENT MEASURES SHALL FOLLOW THE FOLLOWING SCHEDULE:

a. DRIVEWAY, PARKING LOT INSPECTION AT THE END OF EVERY WINTER, PRIOR TO THE START OF THE SPRING RAIN SEASON. SAND/DEBRIS THAT HAS COLLECTED OFF THE DRIVEWAY AND PARKING LOT SHOULD BE REMOVED OFF-SITE AND DISPOSED OF PROPERLY.

b. ANNUAL INSPECTION OF THE SITE FOR EROSION, DESTABILIZATION, SETTLING, AND SLOUGHING. ANY NEEDED REPAIRS ARE TO BE CONDUCTED IMMEDIATELY.

c. ANNUAL INSPECTION OF SITE'S VEGETATION AND LANDSCAPING. ANY AREAS THAT ARE BARE SHALL BE RESEEDED AND MULCHED WITH HAY OR, IF THE CASE IS EXTREME, LOAMED AND SEEDED OR SODDED TO ENSURE ADEQUATE VEGETATIVE COVER. LANDSCAPE SPECIMENS SHALL BE REPLACED IN-KIND, IF THEY ARE FOUND TO BE DEAD OR DYING.

d. THE FOLLOWING RECOMMENDATIONS WILL HELP ASSURE THAT THE ROOF DRAINAGE SYSTEM IS MAINTAINED TO PRESERVE ITS EFFECTIVENESS:

i. INITIALLY, PRIOR TO A CERTIFICATE OF OCCUPANCY FOR THE RESIDENTIAL UNITS, IT SHOULD BE TESTED BY INSERTING A GARDEN HOSE INTO THE INLET AND ALLOWING THE WATER TO RUN AT FULL STRENGTH FOR A MINIMUM OF ONE HOUR. THE WATER SHOULD STAY UNDERGROUND WITHIN THE GRAVEL. IF WATER COMES OUT OF THE OVERFLOW, THE SYSTEM SHOULD BE FURTHER INSPECTED AND POSSIBLY REPLACED. THIS PROCEDURE SHOULD BE PERFORMED EVERY YEAR DURING THE ANNUAL INSPECTION.

ii. IN THE SPRING AND FALL, VISUALLY INSPECT THE AREA AROUND THE SYSTEM AND REPAIR ANY EROSION. USE SMALL STONES TO STABILIZE EROSION ALONG DRAINAGE PATHS. RE-MULCH ANY VOID AREAS BY HAND AS NEEDED. ALSO, INSPECT THE ROOF COLLECTION AND PIPING AND CLEAN AND REPAIR AS NECESSARY.

iii. DO NOT PLANT DEEP ROOTED TREES AND SHRUBS WITHIN 5' OF THE SYSTEM.

iv. KEEP HEAVY VEHICLES FROM DRIVING OR PARKING OVER THE SYSTEM.

e. THE FOLLOWING REQUIREMENTS WILL HELP ASSURE THAT THE PERVIOUS PAVEMENT SYSTEM IS MAINTAINED TO PRESERVE ITS EFFECTIVENESS:

i. INSPECTION OF SITE SHALL OCCUR MONTHLY FOR THE FIRST FEW MONTHS AFTER CONSTRUCTION. THEN INSPECTIONS CAN OCCUR ON AN ANNUAL BASIS, PREFERABLY AFTER RAIN EVENTS WHEN CLOGGING CAN OCCUR AND BE OBVIOUS. PERMEABLE PAVEMENT REQUIRES MINIMAL MAINTENANCE; HOWEVER MAINTENANCE IS ABSOLUTELY NECESSARY TO ENSURE A PROPER WORKING SYSTEM.

ii. ASPHALT SEAL COATING IS ABSOLUTELY FORBIDDEN. SURFACE SEAL COATING IS NOT REVERSIBLE.

iii. STREET SWEEPERS WITH VACUUMS, WATER, AND BRUSHES CAN BE USED TO RESTORE PERMEABILITY. FOLLOW SWEEPING WITH HIGH-PRESSURE HOSING OF THE SURFACE PORES. SURFACE SHOULD BE VACUUMED 4 TIMES PER YEAR, AND AT ANY ADDITIONAL TIMES SEDIMENT IS SPILLED, ERODED, OR TRACKED ONTO THE SURFACE.

iv. PLANTED AREAS ADJACENT TO PERVIOUS PAVEMENT SHOULD BE WELL MAINTAINED TO PREVENT SOIL WASHOUT ONTO THE PAVEMENT. IF ANY BARE SPOTS OR ERODED AREAS ARE OBSERVED WITHIN THE PLANTED AREAS, THEY SHOULD BE REPLANTED AND/OR STABILIZED AT ONCE.

v. IMMEDIATELY CLEAN ANY SOIL DEPOSITED ON PAVEMENT. SUPERFICIAL DIRT DOES NOT NECESSARILY CLOG THE VOIDS. HOWEVER, DIRT THAT IS GROUND IN REPEATEDLY BY TIRES CAN LEAD TO CLOGGING. THEREFORE, TRUCKS OR OTHER HEAVY VEHICLES SHOULD BE PREVENTED FROM TRACKING OR SPILLING DIRT ONTO THE PAVEMENT.

vi. DO NOT ALLOW CONSTRUCTION STAGING, SOIL/MULCH STORAGE, ETC. ON UNPROTECTED PAVEMENT SURFACE.

vii. NO WINTER SANDING. MECHANICAL SNOW AND ICE REMOVAL PREFERRED.

viii. DEICING IS PERMITTED ON PERVIOUS PAVEMENT IN THE WINTER. MINIMIZE APPLICATION OF SALT BY REDUCING THE APPLICATION BY 50% OVER TRADITIONAL PAVEMENT.

viii. WRITTEN AND VERBAL COMMUNICATION TO THE POROUS PAVEMENT'S FUTURE OWNER SHOULD MAKE CLEAR THE SPECIAL PURPOSE AND SPECIAL MAINTENANCE REQUIREMENTS SUCH AS THOSE LISTED HERE.

f. THE FOLLOWING REQUIREMENTS WILL HELP ASSURE THAT THE STONE INFILTRATION
SYSTEM IS MAINTAINED TO PRESERVE ITS EFFECTIVENESS:

i. INSPECTED AT LEAST TWICE ANNUALLY AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD.

ii. IF SYSTEM DOES NOT DRAIN WITHIN 72 HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL ENGINEER SHOULD ASSESS THE CONDITION OF THE STONE TRENCH TO DETERMINE MEASURES REQUIRED TO RESTORE INFILTRATION FUNCTION. INCLUDING, BUT NOT LIMITED TO, REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE INFILTRATION TRENCH.

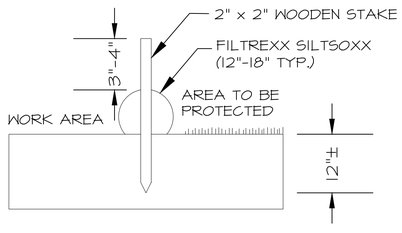
g. OWNERS SHALL PROVIDE A REPORT ON ACTIVITIES PERFORMED THROUGHOUT THE YEAR. REPORT SHALL INCLUDE DOCUMENTATION THAT PAVEMENT CLEANING IS ACCOMPLISHED PER THIS DOCUMENT AND A CERTIFICATION THAT THE SYSTEM CONTINUES TO FUNCTION AS DESIGNED.

ACTIVITY	DATE OF INSPECTION	WHO INSPECTED	SATISFACTORY; YES, NO, N/A	MAINTENANCE NEEDED	IMPLEMENTED DATE OF CORRECTIVE ACTION	FINDINGS OF INSPECTOR
PARKING LOT SWEEPING						
PARKING LOT SWEEPING PERVIOUS PAVEMENT						
ROOF DRAINAGE SYSTEM						
STONE INFILTRATION						
RAIN GARDEN						
CULVERTS						

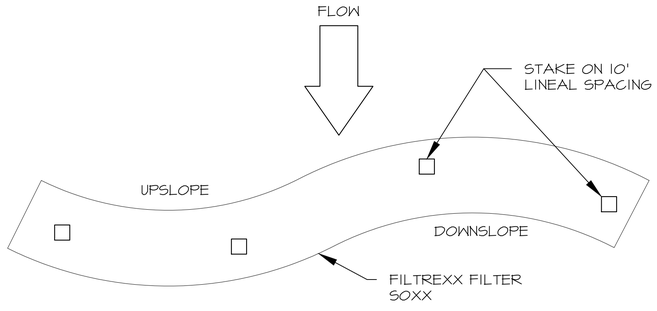
FILTREXX SILTSOXX NOTES

1) ALL MAERTIAL TO MEET FILTREXX SPECIFICATIONS

2) SILTSOXX COMPOST, SOIL, ROCK, SEED FILL TO MEET APPLICATION REQUIREMENTS



Filtrexx SiltSoxx Section
N.T.S.



Filtrexx SiltSoxx Plan View
N.T.S.

ISS.	DATE	DESCRIPTION OF ISSUE
2	5/25/2022	FOR PB
1	1/17/2022	PRELIMINARY

SCALE: AS NOTED
CHECKED: A.ROSS
DRAWN: M.G.P.
CHECKED:

ROSS ENGINEERING
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
LANCEN & SOPHIE LACHANCE
281 DENNETT STREET
PORTSMOUTH, NH 03801

TITLE
EROSION CONTROL PLAN
11 FLETCHER ST
PORTSMOUTH, NH 03801
TAX MAP 233, LOT 76-1

JOB NUMBER	DWG. NO.	ISSUE
21-176	8 OF 8	2

K0076-038
May 24, 2022

Ms. Beverly M. Zendt, Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Site Plan Review & Wetlands Conditional Use Permit Applications**
Proposed 2-story Building, 230 Commerce Way, Portsmouth, NH

Dear Beverly:

On behalf of 230 Commerce Way, LLC (owner/applicant), we are pleased to submit via the City of Portsmouth online permitting system the following information to support a request for a Site Plan Review and Wetland Conditional Use Permit for the above referenced project:

- One (1) full size & one (1) half size copy of the Site Plan Set last, dated May 24, 2022;
- Site Review Checklist dated, May 24, 2022;
- Drainage Analysis Memorandum, dated May 24, 2022;
- Long-Term Operation & Maintenance Plan, dated May 24, 2022;
- Fire Truck Turning Exhibit dated, May 24, 2022;
- Trip Generation Analysis Memorandum, dated May 24, 2022;
- Eversource Will Service Letter dated, May 24, 2022;
- Unitil Will Service Letter dated, May 12, 2022;
- 100' Wetland Buffer Impact Exhibit dated May 24, 2022;
- Green Building Statement, dated May 24, 2022;
- Application fee calculation form for the Site Review and Wetland Conditional Use Permit application fees;
- Cheek in the amount of $6,240.00 for the Site Plan Review & Wetland Conditional Use Permit application fee

The proposed project is located at 230 Commerce Way on the corner of Portsmouth Boulevard and Commerce way, on property identified as Map 216 Lot 1-5 on the City of Portsmouth Tax Maps. The existing site currently consists of a 3-story office building with a large associated parking lot. The proposed project consists of a new 2-story building for veterinary care uses within the limits of the existing parking lot, modifications to the parking lot, and associated site improvements. The associated site improvements include the site lighting, underground utilities, stormwater treatment/management system, and wetland buffer enhancements.

Land Use Permit Applications

Site Plan Review Permit

The project will require a Site Plan Review Permit for the site improvements described above in the project summary. The project has previously been before the Planning Board for Conceptual Consultation, and Conservation Commission and the Technical Advisory Committee for work sessions.

Wetland Conditional Use Permit

A portion of the proposed work is located in the 100-foot wetland buffer thus requiring a Conditional Use Permit per Section 10.1017 of the Zoning Ordinance. As a result of the project there is going to be a reduction of existing impervious area within the wetland buffer of approximately 5,070 SF. The project is also proposing 9,250 SF of buffer enhancement area.

Conditional Use Permit Criteria

Based on the above described and enclosed materials, the following addresses how the proposed project warrants the granting of a Wetland Conditional Use Permit by satisfying the following six (6) criteria for approval in Section 10.1017.50 of the Zoning Ordinance:

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

The land is currently a previously disturbed site which consists of an office building and parking lot and is suited for enhancement. The proposed project site lies partially within a previously wetland buffer area. The proposed project will result in impervious surface reduction in the buffer and buffer enhancement. Advanced stormwater treatment is also part of the proposed project which will improve the quality of the runoff to the wetland from the project site.

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

The placement of the proposed building is limited by the 75-foot side yard setbacks that are required in the Office Research (OR) zone. The proposed project design reduces the impervious surface within the 100' buffer and proposes to replace existing pavement and lawn areas with wetland buffer seed mix and plant native shrubs and trees.

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

There will be no adverse impact on the wetland functional values of the site as the existing condition is previously disturbed and consists of building, parking area and no existing stormwater treatment. The proposed project designs site and landscape plans enhance the previously disturbed buffer area given the existing condition and provide treatment of stormwater runoff where none currently exists.

(4) Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals; and

The proposed project design proposes no alteration to any natural woodland or wetlands area. The area impacted consists of mainly of impervious surfaces. Any temporary disturbances of the wetland buffer for construction of the stormwater outlet and removal of existing pavement will be restored following construction.

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

The proposed project design is not an adverse impact to the site as it would enhance the buffer by reducing overall impervious surface on the site and improve water quality through stormwater treatment. Impervious surfaces have been reduced from the existing condition. The proposed project will reduce the impervious area within the 100-foot wetland buffer.

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

The proposed project design within the vegetated buffer strip is limited to construction of the stormwater outlet from the stormwater collection and treatment system. The existing property has no stormwater treatment measures. The proposed project will collect and treat the onsite impervious surfaces prior to discharging to the on-site wetland. Implementing these treatment measures will help improve the water quality runoff discharging to the wetland. In order for this system to work, disturbances with the buffer strip are necessary. Areas temporarily disturbed for the construction of the outlet will be restored following construction. The landscape plan proposes restoring the disturbed areas within the foot wetland buffer with a wetland buffer seed mix, and the addition of several native trees and shrubs.

We respectfully request to be placed on the TAC meeting agenda for June 7, 2022. If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

CC: 230 Commerce Way, LLC
Nelson Architecture & Interior, Inc.
City of Portsmouth Technical Advisory Committee
City of Portsmouth Conservation Commission

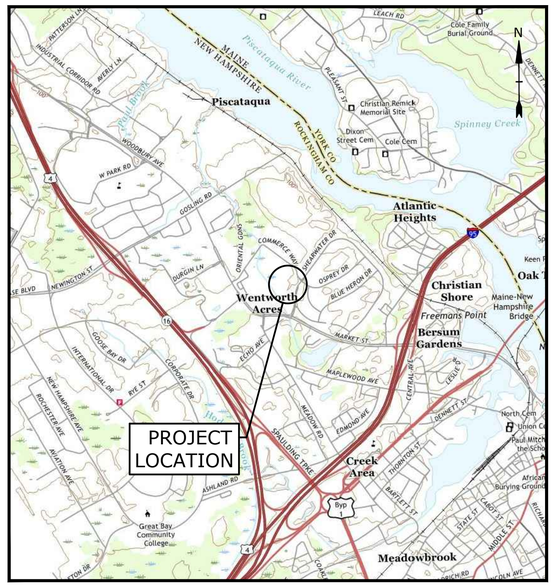
j:\k\k0076 the kane company - general proposals\0076-038 portsmouth blvd\report_evaluation\applications\city of portsmouth\20220524_tac\cover letter.docx

PROPOSED 2-STORY BUILDING

230 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE
MAY 24, 2022

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	05/24/2022
1 OF 5	TOPOGRAPHIC PLAN	04/19/2022
2 OF 5	TOPOGRAPHIC PLAN	04/19/2022
3 OF 5	TOPOGRAPHIC PLAN	04/19/2022
4 OF 5	TOPOGRAPHIC PLAN	04/19/2022
5 OF 5	TOPOGRAPHIC PLAN	04/19/2022
C-101	DEMOLITION PLAN	05/24/2022
C-102	SITE PLAN	05/24/2022
C-103	GRADING, DRAINAGE & EROSION CONTROL PLAN	05/24/2022
C-104	UTILITY PLAN	05/24/2022
C-105	LANDSCAPE PLAN	05/24/2022
C-501	EROSION CONTROL NOTES & DETAILS SHEET	05/24/2022
C-502	DETAILS SHEET	05/24/2022
C-503	DETAILS SHEET	05/24/2022
C-504	DETAILS SHEET	05/24/2022
C-505	DETAILS SHEET	05/24/2022
C-506	DETAILS SHEET	05/24/2022
C-701	PHOTOMETRICS PLAN	05/24/2022
A-200	ELEVATIONS	05/23/2022
A-201	ELEVATIONS	05/23/2022

LIST OF PERMITS		
FEDERAL	STATUS	DATE
CONSTRUCTION GENERAL PERMIT	PENDING	
LOCAL		
SITE PLAN REVIEW PERMIT	PENDING	



LOCATION MAP
SCALE: 1" = 2,000'

CONSTRUCTION NOTES:
1. THE CONTRACTOR SHALL NOT RELY ON SCALED DIMENSIONS AND SHALL CONTACT THE ENGINEER FOR CLARIFICATION IF A REQUIRED DIMENSION IS NOT PROVIDED ON THE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND FOR SITE CONDITIONS THROUGHOUT CONSTRUCTION. NEITHER THE PLANS NOR THE SEAL OF THE ENGINEER AFFIXED HEREON EXTEND TO OR INCLUDE SYSTEMS REQUIRED FOR THE SAFETY OF THE CONTRACTOR, THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND IMPLEMENTING SAFETY PROCEDURES AND SYSTEMS AS REQUIRED BY THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ANY STATE OR LOCAL SAFETY REGULATIONS.
3. TIGHE & BOND. ASSUMES NO RESPONSIBILITY FOR ANY ISSUES LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION OF TIGHE & BOND.

PREPARED BY:
Tighe&Bond
177 Corporate Drive
Portsmouth New Hampshire, 03801
603.433.8818

PATRICK M. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/24/22

APPLICANT / OWNER:
230 Commerce Way, LLC
210 Commerce Way, Suite 300
Portsmouth, NH 03801
603.559.9666

SURVEY CONSULTANT:
DOUCET SURVEY INC
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

ARCHITECT (OWNER):
Nelson Worldwide, LLC
99 Chauncy St 10th Floor
Boston, MA 02111
617.751.5886

WETLAND CONSULTANT:
Gove Environmental Services, INC
8 Continental Dr Bldg 2 Unit H
Exeter, NH 03833
603.778.0644

ARCHITECT (TENANT):
Capone Architecture
18 Shipyard Dr #2a
Hingham, MA 02043
617.875.0786

TAC SUBMISSION SET
COMPLETE SET 20 SHEETS

811 DigSafe MA-ME-NH-RI-VT

Last Save Date: May 24, 2022 10:15 AM By: CML
Plot Date: Tuesday, May 24, 2022 10:16 AM By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings, Figures\AutoCAD\Sheet\K0076-038_CS.dwg Layout Tab: T&B_CS_22x34

ABUTTERS

TAX MAP 216, LOT 1–2
COMMERCE CENTER AT PORTMSOUTH
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 3507, PAGE 2405

TAX MAP 216, LOT 1–8
195 COMMERCE WAY LLC
210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 5418, PAGE 1358

TAX MAP 216, LOT 1–8A
BEACON HARBOR TRUST LLC
210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 5877, PAGE 2905

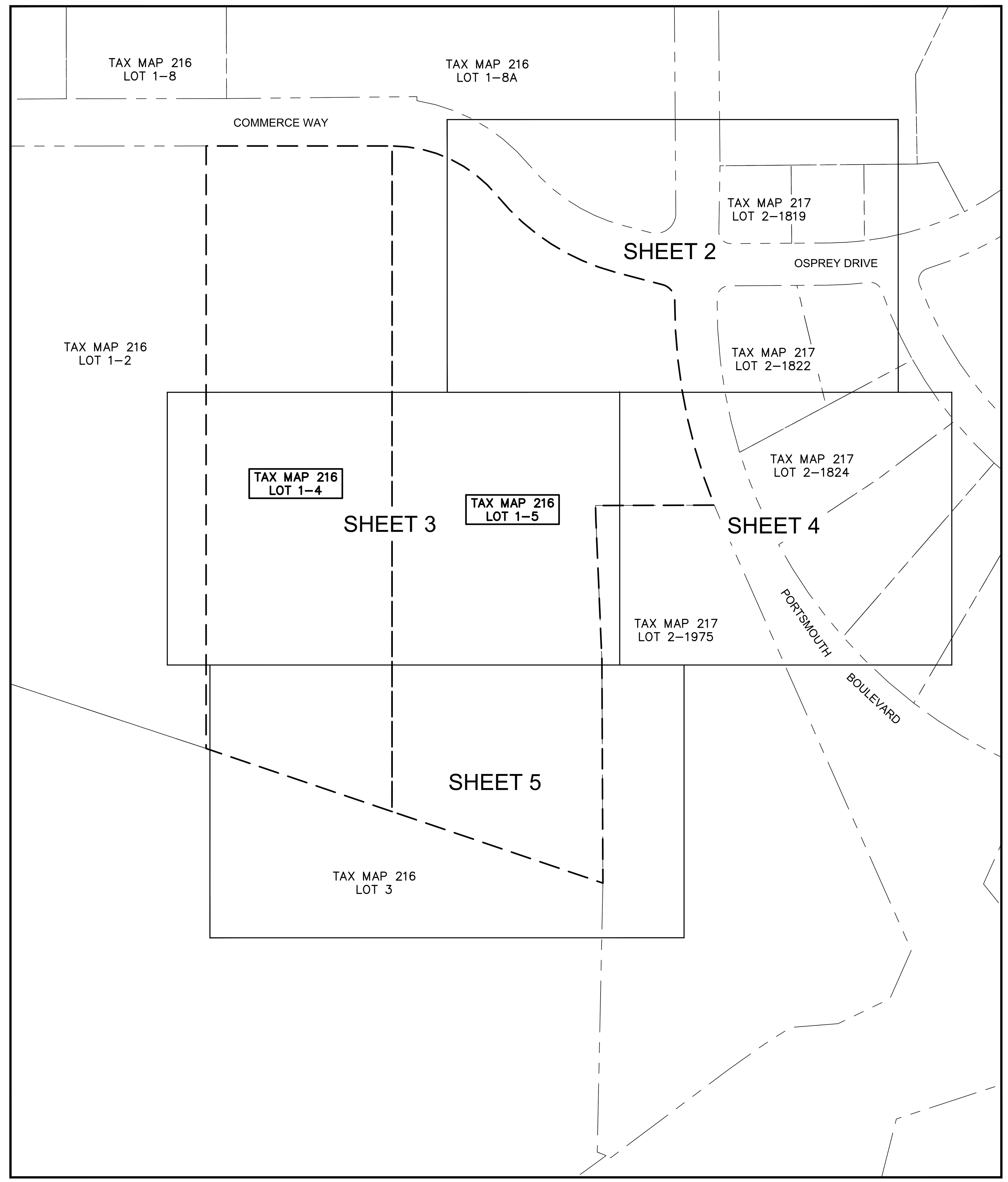
TAX MAP 216, LOT 3
BROMLEY PORTSMOUTH LLC
C/O QUINCY & CO. INC.
57 DEDHAM AVENUE
NEEDHAM, MA 02492
R.C.R.D. BOOK 4486, PAGE 2167

TAX MAP 217, LOT 2–1819
BRORA LLC
210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 3474, PAGE 866

TAX MAP 217, LOT 2–1822
MARTIN A. TORRES REV. TRUST
MARTIN A. TORRES, TRUSTEE
2 OSPREY DRIVE
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 3543, PAGE 89

TAX MAP 217, LOT 2–1824
JAMES J. MCGOVERN IRREVOCABLE TRUST
19 SANDERLING WAY
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 4895, PAGE 2707

TAX MAP 217, LOT 2–1975
BRORA LLC
210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801
R.C.R.D. BOOK 3507, PAGE 118



KEY MAP

LOCATION MAP (n.t.s.)

LEGEND

	APPROXIMATE LOT LINE
	APPROXIMATE ABUTTERS LOT LINE
	STONE WALL
	CHAIN LINK FENCE
	GUARDRAIL
OHW	OVERHEAD WIRE
SS	SEWER LINE
SD	DRAIN LINE
XS	SEWER LINE (PER CITY GIS)
XD	DRAIN LINE (PER CITY GIS)
E	UNDERGROUND ELECTRIC LINE
100	MAJOR CONTOUR LINE
98	MINOR CONTOUR LINE
	TREE LINE
	SHRUB LINE
	EDGE OF WETLAND
	EDGE OF WATER
	WETLAND AREA
	CONCRETE
	LANDSCAPED AREA
	CRUSHED STONE
	BRICK
	UTILITY POLE & GUY WIRE
	UTILITY POLE W/LIGHT
	LIGHT POLE W/ARM
	LIGHT POLE (MULTI–ARMS)
	SIGN
	BOLLARD
HYD	FIRE HYDRANT
WV	WATER GATE VALVE
WS	WATER SHUTOFF VALVE
GR	GAS REGULATOR
VP	VENT PIPE

T	PAD MOUNTED TRANSFORMER
E	ELECTRIC BOX
U	UTILITY BOX
	CATCH BASIN
D	DRAIN MANHOLE
E	ELECTRIC MANHOLE
T	TELEPHONE MANHOLE
S	SEWER MANHOLE
CO	CLEANOUT
	CONIFEROUS TREE
	DECIDUOUS TREE
	CONIFEROUS SHRUB
	DECIDUOUS BUSH
	BORING LOCATION
	ACCESSIBLE PARKING SPACE
TYP.	TYPICAL
CONC.	CONCRETE
HDWL	HEADWALL
TH	THRESHOLD ELEVATION
EP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
DYL	DOUBLE YELLOW LINE
GM	GAS METER
"HP"	HANDICAP PARKING SIGN
"NP"	NO PARKING SIGN
"R"	RESERVED PARKING SIGN
• A–1	WETLAND FLAG

NOTES:

1. REFERENCE:

TAX MAP 216, LOT 1–4	TAX MAP 216, LOT 1–5
210 COMMERCE WAY LLC	230 COMMERCE WAY LLC
210 COMMERCE WAY, SUITE 300	210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801	PORTSMOUTH, NH 03801
R.C.R.D. BOOK 5418, PAGE 1360	R.C.R.D. BOOK 5418, PAGE 1364
D.S. PROJECT NO. 5864	

2. FIELD SURVEY PERFORMED BY DOUCET SURVEY DURING FEBRUARY 2022 USING A TRIMBLE S7 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
3. HORIZONTAL DATUM BASED ON NEW HAMPSHIRE STATE PLANE(2800) NAD83(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
4. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
5. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY, INC. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
6. WETLANDS WERE NOT DELINEATED ON SITE. ANY FLAGS LOCATED WERE FROM A PREVIOUS DELINEATION.
7. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
8. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON–SITE.
9. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG–SAFE AT 1–888–DIG–SAFE.
10. OVERALL PARCEL BOUNDARIES AS SHOWN HEREON ARE BASED ON NEW HAMPSHIRE'S GRANIT GIS DATA AND ARE IN THEIR ORIGINAL LOCATION. THE PARCEL BOUNDARIES HAVE NOT BEEN ADJUSTED TO MATCH FOUND PROPERTY MONUMENTS OR THE EDGE OF RIGHT OF WAY AS DETERMINED BY THE SURVEYOR.

100 0 100 200
SCALE: 1 INCH = 100 FT.

TOPOGRAPHIC PLAN
FOR
RW NORFOLK HOLDING, LLC
PROPERTIES OF
210 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-4)
&
230 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-5)
COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	04/19/22	ADDITIONAL TOPOGRAPHY (SPRING)	P.C.L

DRAWN BY:	P.C.L.	DATE:	FEBRUARY 23, 2022
CHECKED BY:	M.W.F.	DRAWING NO.	5864A
JOB NO.	5896	SHEET	1 OF 5

DOUCET SURVEY LLC
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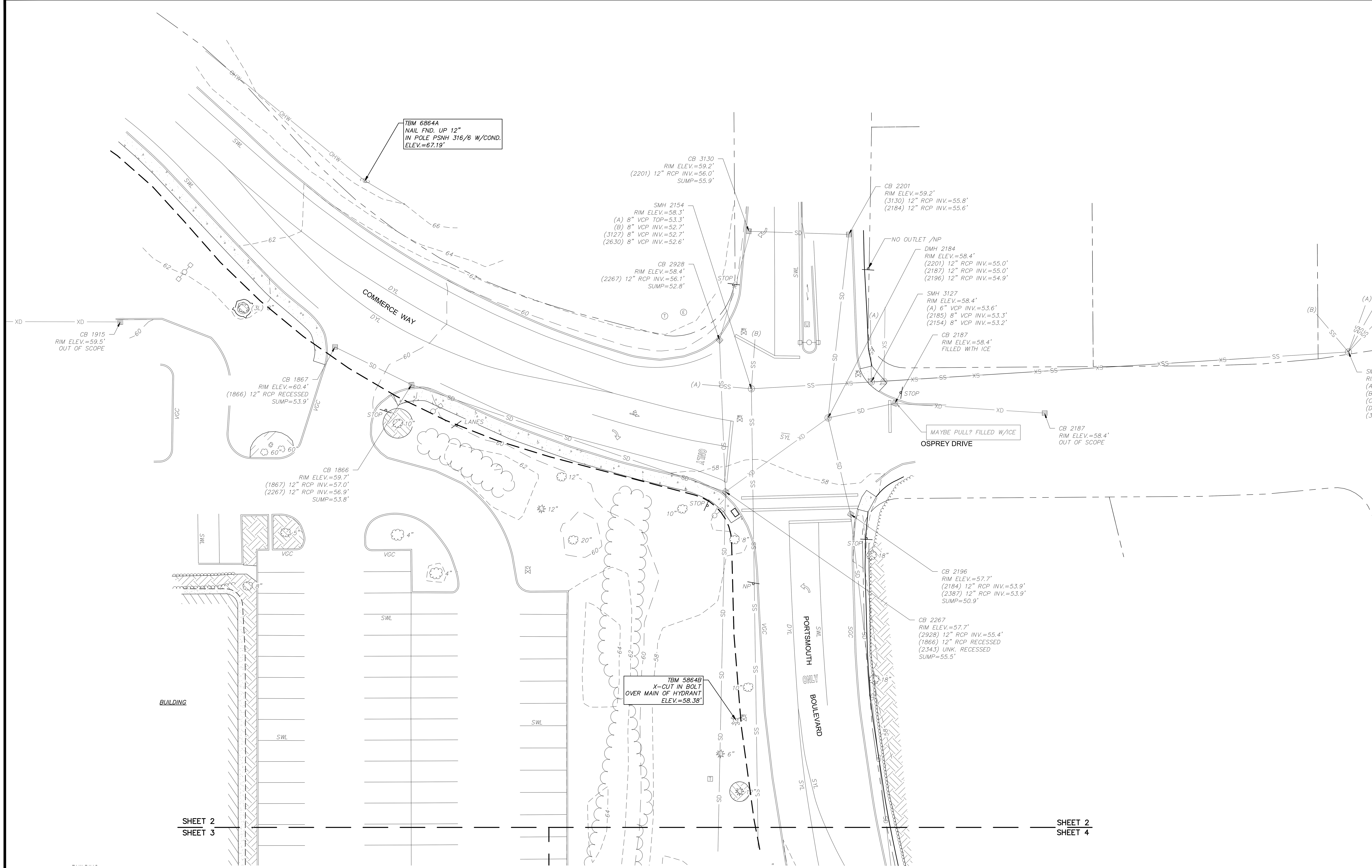
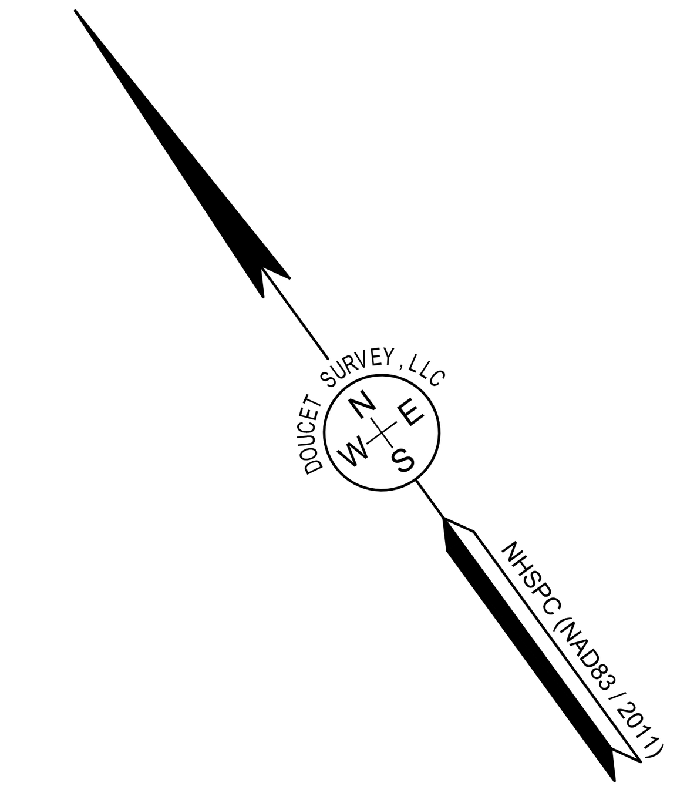
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
Offices in Bedford & Keene, NH and Kennebunk, ME
http://www.doucetsurvey.com

FILE NAME: C:\CIVIL 3D FILES\temp\AcPublish_12960\5864A 2022-04-19.dwg LAYOUT NAME: T1 PLOTTED: Tuesday, April 19, 2022 - 4:29pm



TBM 6864A
NAIL FND. UP 12"
IN POLE PSNH 316/6 W/COND.
ELEV.=67.19'
COMMERCE WAY
CB 1915
RIM ELEV.=59.5'
OUT OF SCOPE
CB 1867
RIM ELEV.=60.4'
(1866) 12" RCP RECESSED
SUMP=53.9'
CB 1866
RIM ELEV.=59.7'
(1867) 12" RCP INV.=57.0'
(2267) 12" RCP INV.=56.9'
SUMP=53.8'
CB 3130
RIM ELEV.=59.2'
(2201) 12" RCP INV.=56.0'
SUMP=55.9'
SMH 2154
RIM ELEV.=58.3'
(A) 8" VCP TOP=53.3'
(B) 8" VCP INV.=52.7'
(3127) 8" VCP INV.=52.7'
(2630) 8" VCP INV.=52.6'
CB 2928
RIM ELEV.=58.4'
(2267) 12" RCP INV.=56.1'
SUMP=52.8'
CB 2201
RIM ELEV.=59.2'
(3130) 12" RCP INV.=55.8'
(2184) 12" RCP INV.=55.6'
NO OUTLET /NP
DMH 2184
RIM ELEV.=58.4'
(2201) 12" RCP INV.=55.0'
(2187) 12" RCP INV.=55.0'
(2196) 12" RCP INV.=54.9'
SMH 3127
RIM ELEV.=58.4'
(A) 6" VCP INV.=53.6'
(2185) 8" VCP INV.=53.3'
(2154) 8" VCP INV.=53.2'
CB 2187
RIM ELEV.=58.4'
FILLED WITH ICE
MAYBE PULL? FILLED W/ICE
OSPREY DRIVE
CB 2187
RIM ELEV.=58.4'
OUT OF SCOPE
SMH 2185
RIM ELEV.=64.7'
(A) 4" PVC INV.=59.9'
(B) 4" PVC INV.=58.0'
(C) 4" PVC OBSTRUCTED
(D) 8" VCP INV.=55.9'
(3127) 8" VCP INV.=55.5'
CB 2196
RIM ELEV.=57.7'
(2184) 12" RCP INV.=53.9'
(2387) 12" RCP INV.=53.9'
SUMP=50.9'
CB 2267
RIM ELEV.=57.7'
(2928) 12" RCP INV.=55.4'
(1866) 12" RCP RECESSED
(2343) UNK. RECESSED
SUMP=55.5'
TBM 5864B
X-CUT IN BOLT
OVER MAIN OF HYDRANT
ELEV.=58.38'
PORTSMOUTH
BOULEVARD
BUILDING
LANES
STOP
SHEET 2
SHEET 3
SHEET 2
SHEET 4



20 0 20 40
SCALE: 1 INCH = 20 FT.

TOPOGRAPHIC PLAN
FOR
RW NORFOLK HOLDING, LLC
PROPERTIES OF
210 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-4)
&
230 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-5)
COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	04/19/22	ADDITIONAL TOPOGRAPHY (SPRING)	P.C.L

DRAWN BY: P.C.L.	DATE: FEBRUARY 23, 2022
CHECKED BY: M.W.F.	DRAWING NO. 5864A
JOB NO. 5896	SHEET 2 OF 5

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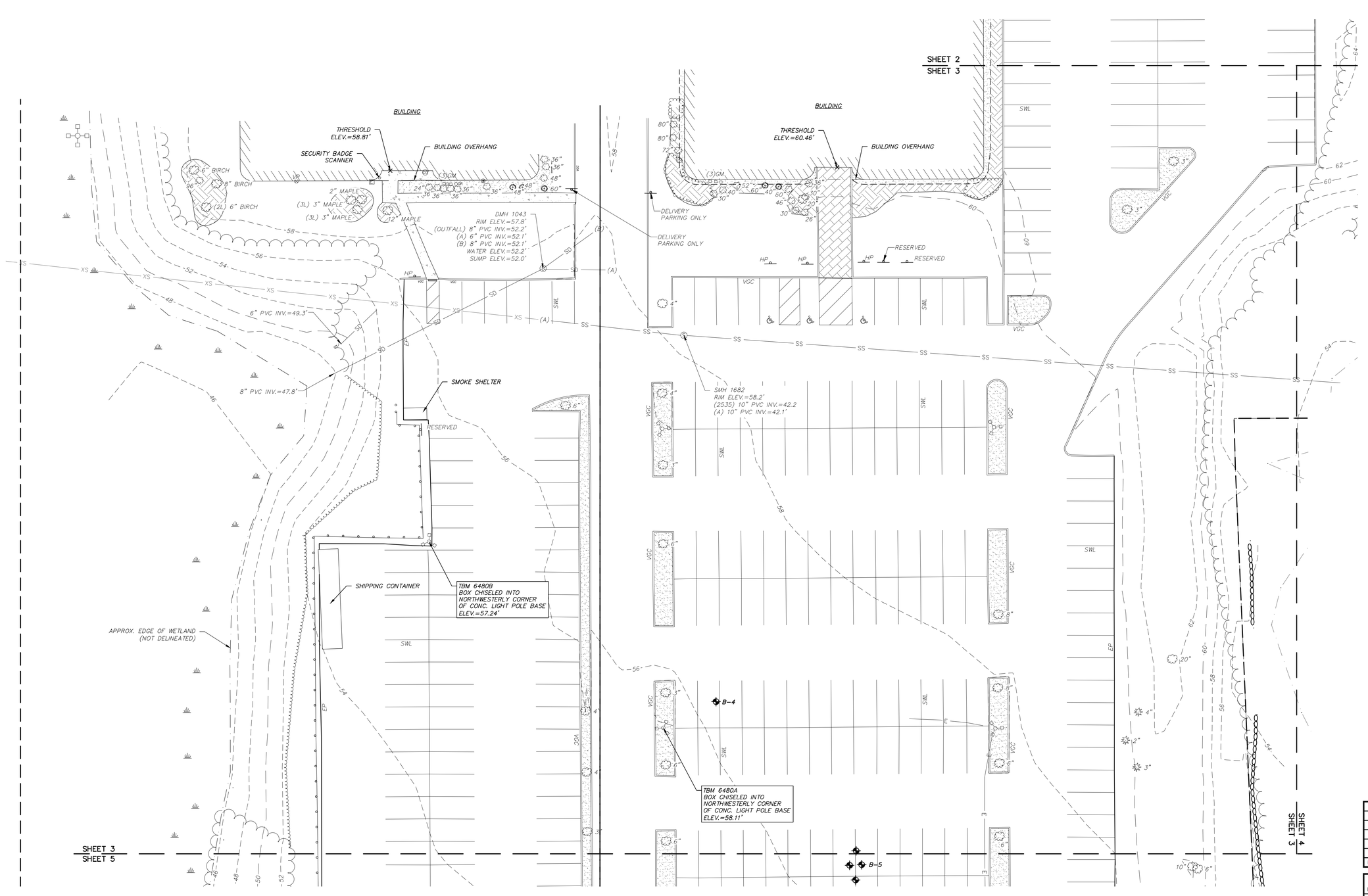

SCALE: 1 INCH = 20 FT.

TOPOGRAPHIC PLAN
FOR
RW NORFOLK HOLDING, LLC
PROPERTIES OF
210 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-4)
&
230 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-5)
COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	04/19/22	ADDITIONAL TOPOGRAPHY (SPRING)	P.C.L

DRAWN BY: P.C.L.		DATE: FEBRUARY 23, 2022	
CHECKED BY: M.W.F.		DRAWING NO. 5864A	
JOB NO. 5896		SHEET 3 OF 5	

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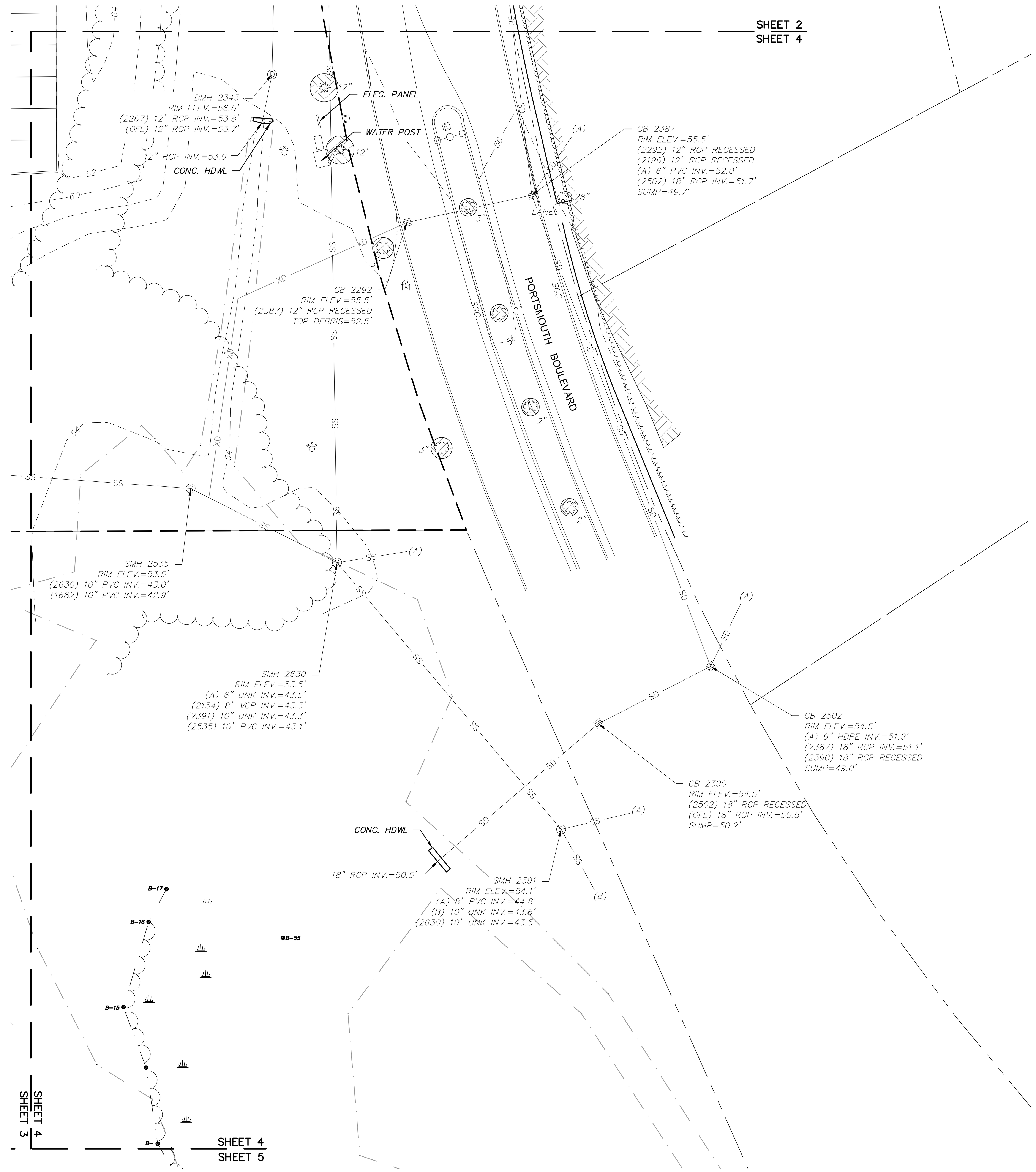

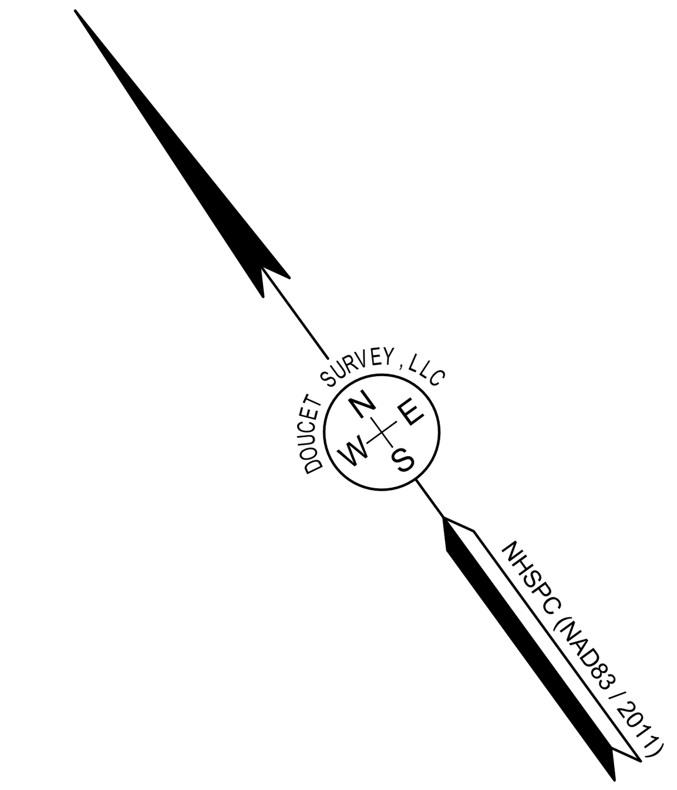

20 0 20 40

SCALE: 1 INCH = 20 FT.

TOPOGRAPHIC PLAN
FOR
RW NORFOLK HOLDING, LLC
PROPERTIES OF
210 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-4)
&
230 COMMERCE WAY LLC
(TAX MAP 216, LOT 1-5)
COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	04/19/22	ADDITIONAL TOPOGRAPHY (SPRING)	P.C.L.

DRAWN BY: P.C.L.	DATE: FEBRUARY 23, 2022
CHECKED BY: M.W.F.	DRAWING NO. 5864A
JOB NO. 5896	SHEET 1 OF 5

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TOPOGRAPHIC PLAN

FOR

RW NORFOLK HOLDING, LLC

PROPERTIES OF

210 COMMERCE WAY LLC

(TAX MAP 216, LOT 1-4)

&

230 COMMERCE WAY LLC

(TAX MAP 216, LOT 1-5)

COMMERCE WAY

PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	04/19/22	ADDITIONAL TOPOGRAPHY (SPRING)	P.C.L

DRAWN BY: P.C.L.	DATE: FEBRUARY 23, 2022
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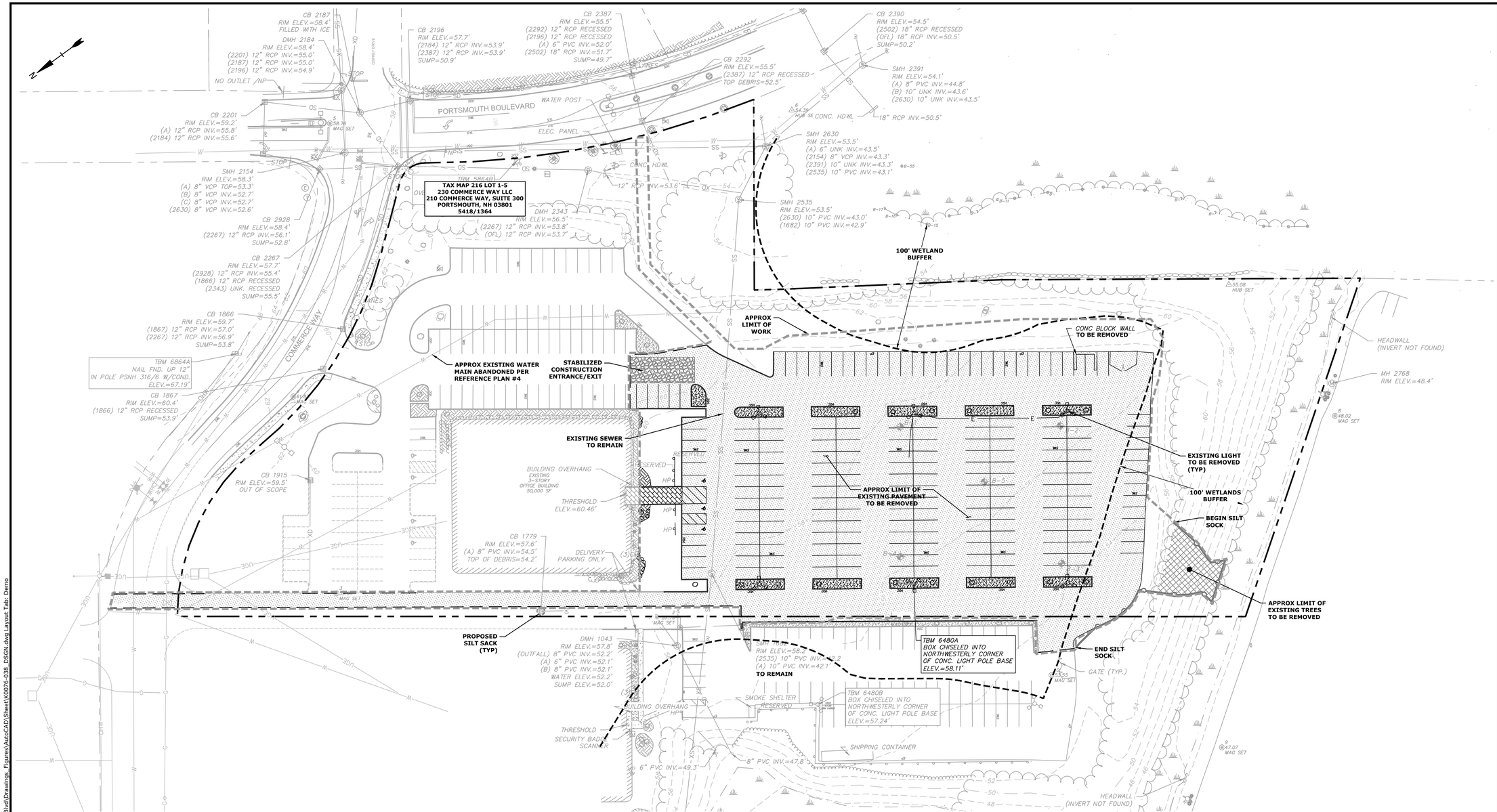

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

DEMOLITION 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. 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.
3. 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.
4. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
5. 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.
6. 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.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR 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.
9. 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.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK.
11. 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.
12. 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.
13. ALL ITEMS WITHIN THE LIMIT OF WORK ARE TO REMAIN UNLESS SPECIFICALLY IDENTIFIED TO BE REMOVED OR OTHERWISE ALTERED BY THE CONTRACTOR. ITEMS TO BE REMOVED INCLUDE, BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, MANHOLES, CATCH BASINS, UNDERGROUND PIPING & UTILITIES, POLES, STAIRS, STRUCTURES, FENCES, RAMPS, BUILDING FOUNDATIONS, TREES, AND LANDSCAPING. THE CONTRACTOR SHALL CONFIRM WITH THE ENGINEER IF THE TREATMENT OF CERTAIN ITEMS IS UNCLEAR.
14. COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH.
15. 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.
16. 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.
17. 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.
18. 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.
19. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
20. 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.
21. 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.
22. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

LEGEND

	APPROXIMATE LOT LINE
	APPROXIMATE ABUTTERS LOT LINE
	STONE WALL
	CHAIN LINK FENCE
	GUARDRAIL
OHW	OVERHEAD WIRE
SS	SEWER LINE
SD	DRAIN LINE
XS	SEWER LINE (PER CITY GIS)
XD	DRAIN LINE (PER CITY GIS)
E	UNDERGROUND ELECTRIC LINE
100	MAJOR CONTOUR LINE
98	MINOR CONTOUR LINE
	TREE LINE
	SHRUB LINE
	EDGE OF WETLAND
	EDGE OF WATER
	WETLAND AREA
	CONCRETE
	LANDSCAPED AREA
	CRUSHED STONE
	BRICK
	UTILITY POLE & GUY WIRE
	UTILITY POLE W/LIGHT
	LIGHT POLE W/ARM
	LIGHT POLE (MULTI-ARMS)
	SIGN
	BOLLARD
	FIRE HYDRANT
	WATER GATE VALVE
	WATER SHUTOFF VALVE
	GAS REGULATOR
	VENT PIPE
	PAD MOUNTED TRANSFORMER
	ELECTRIC BOX
	UTILITY BOX
	CATCH BASIN
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	SEWER MANHOLE
	CLEANOUT
	CONIFEROUS TREE
	DECIDUOUS TREE
	CONIFEROUS SHRUB
	DECIDUOUS BUSH
	BORING LOCATION
	ACCESSIBLE PARKING SPACE

GM	GAS METER
"HP"	HANDICAP PARKING SIGN
"NP"	NO PARKING SIGN
"R"	RESERVED PARKING SIGN
• A-1	WETLAND FLAG
TYP.	TYPICAL
CONC.	CONCRETE
HDWL	HEADWALL
TH	THRESHOLD ELEVATION
EP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
DYL	DOUBLE YELLOW LINE

DEMOLITION LEGEND

	APPROXIMATE LIMIT OF WORK
	APPROXIMATE LIMIT OF SAW CUT
	EXISTING CURB TO BE REMOVED
	APPROXIMATE LIMIT OF PAVEMENT TO BE REMOVED
	APPROXIMATE LIMIT OF CLEARING
TBR	TO BE REMOVED
APPROX	APPROXIMATE

EXISTING CONDITIONS PLAN & WETLANDS NOTES:

1. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY DOUCET SURVEY, DATED FEBRUARY.
2. JAMES GOVE, CERTIFIED WETLAND SCIENTIST #51, OF GOVE ENVIRONMENTAL CONSULTANTS, INC. OF EXETER, NH, PERFORMED THE WETLAND MAPPING FOR FLAGS A-1 THROUGH A-58 AND B-1 THROUGH B-18 ON SEPTEMBER 23, 2020 ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

REFERENCE PLANS:

1. "CONDITIONAL USE PLAN" PREPARED BY ERIC C. MITCHELL & ASSOC. INC., DATED DECEMBER 18, 2020.
2. "LOT LINE ADJUSTMENT PLAN TAX MAP R-17, LOT 2-1975 SHEARWATER DRIVE / DOVECKIE WAY / MARKET STREET PORTSMOUTH, NH SCALE: 1"=40' DATE: AUG. 1999" PREPARED BY CLD CONSULTING ENGINEERS, MANCHESTER, NH R.C.R.D. PLAN #D-28384.
3. "TOPOGRAPHIC PLAN", SHEETS 1 THRU 5, PREPARED BY DOUCET SURVEY, DATED APRIL 19, 2022.
4. "PROPOSED ROADWAY IMPROVEMENTS", PREPARED BY TIGHE & BOND, DATED MARCH 21, 2014.

Tighe&Bond

PATRICK M. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
5/24/22

MARK	DATE	DESCRIPTION
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CHECKED:	NAH
APPROVED:	PMC

Proposed 2-Story Building

230 Commerce Way, LLC

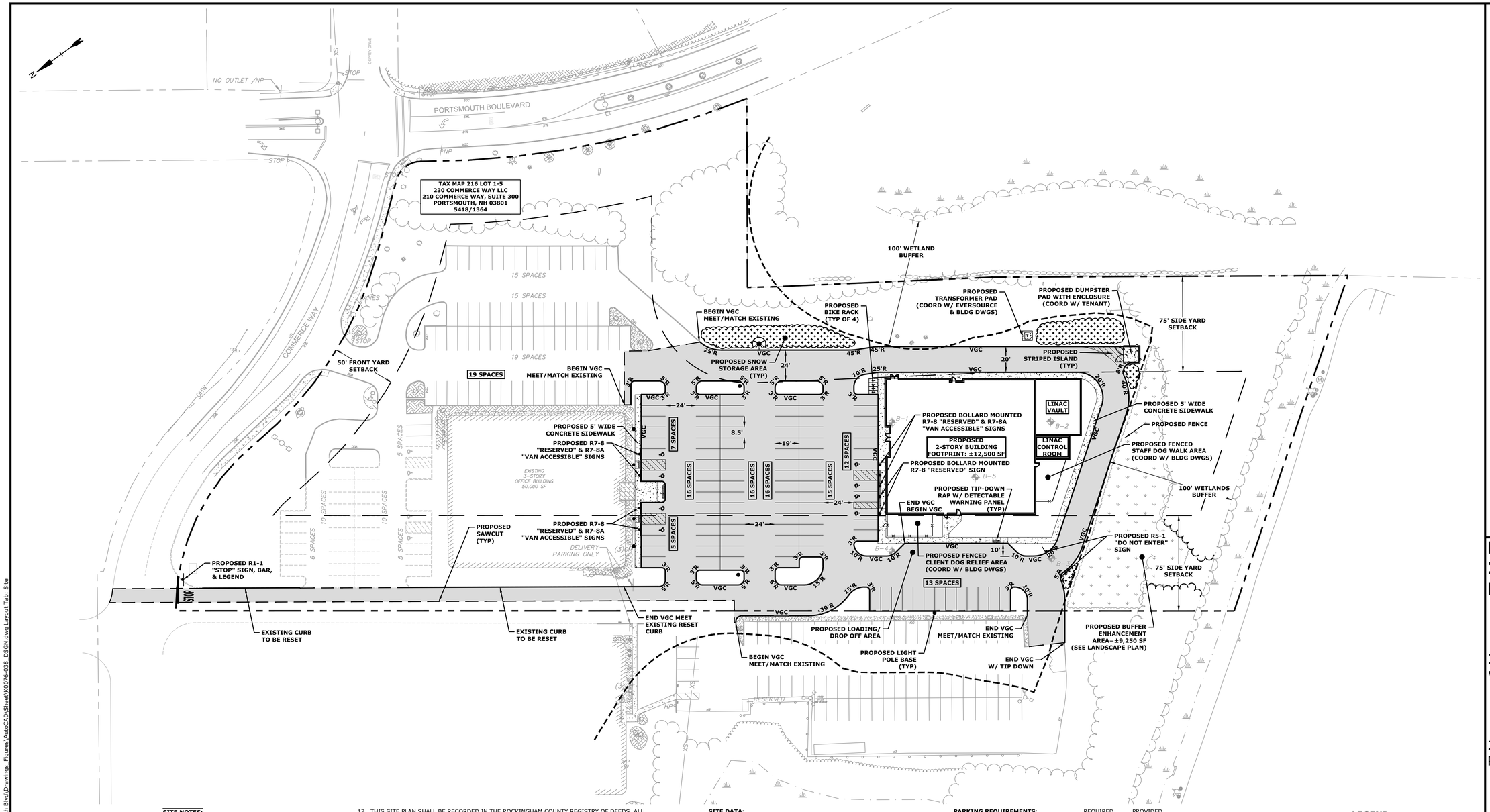
230 Commerce Way
Portsmouth, NH

DEMOLITION PLAN

SCALE: AS SHOWN

C-101

Last Save Date: May 24, 2022 10:25 AM By: CML
Plot Date: May 24, 2022 10:25 AM By: Christine M. Langton
T&B File Location: J:\K\K0076 The Kane Company_General Proposals\0076-038 Portsmouth Blvd\Drawings, Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Demo



SITE NOTES:

1. STRIPE PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, ADA SYMBOLS, PAINTED ISLANDS, CROSS WALKS, ARROWS, LEGENDS AND CENTERLINES SHALL BE THERMOPLASTIC MATERIAL. THERMOPLASTIC MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO AASHTO M249. (ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT. CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT 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 PARKING STALL MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES. STOP BARS SHALL BE EIGHTEEN (18) INCHES WIDE.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
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. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
9. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAY WITH THE CITY OF PORTSMOUTH.
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. SEE BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
12. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS.
13. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
14. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
15. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
16. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
17. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
18. 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 THAT 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.
19. ALL TREES TO BE PLANTED ARE TO BE INSTALLED UNDER THE SUPERVISION OF THE CITY OF PORTSMOUTH DPW USING STANDARD INSTALLATION METHODS.
20. THE APPLICATION SHALL PREPARE A CONSTRUCTION MITIGATION AND MANAGEMENT PLAN (CMMP) FOR REVIEW AND APPROVAL BY THE CITY'S LEGAL AND PLANNING DEPARTMENTS.

SITE DATA:
LOCATION:TAX MAP 216, LOT 5
230 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

ZONING DISTRICT: OFFICE RESEARCH
WETLANDS OVERLAY
ALLOWED USE: PROFESSIONAL / BUSINESS OFFICE
VETERINARY CARE[1]

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROVIDED
MINIMUM LOT AREA:	3 ACRES	±5.6 ACRES
MINIMUM STREET FRONTAGE:	300 FT	±675 FT
MAXIMUM BUILDING COVERAGE:	30%	±10%
MINIMUM OPEN SPACE:	30%	±52%
PROPOSED BUILDING MINIMUM SETBACKS:		
• FRONT:	50 FT	±412 FT
• SIDE:	75 FT	±76 FT
• REAR:	50 FT	±172 FT
PROPOSED BUILDING MAXIMUM HEIGHT:	60 FT	<60 FT

(1) - SPECIAL EXCEPTION FROM SECTION 10.440 FOR VETERINARY CARE USE GRANTED ON FEBRUARY 28, 2022.

PARKING REQUIREMENTS:	REQUIRED	PROVIDED
PARKING STALL LAYOUT:		
• STANDARD 90°	8.5' X 19'	8.5' X 19'
DRIVE AISLE WIDTH:		
• 90° (2-WAY TRAFFIC)	24 FT	24 FT
• 1-WAY TRAFFIC	14 FT	20 FT
PARKING SPACE REQUIREMENTS:	REQUIRED	PROVIDED
OFFICE:		
1 / 350 SF		
= 50,000 SF / 350 SF/SPACE =	143 SPACES	
VETERINARY CARE:		
1 / 500 SF		
= 25,000 SF / 500 SF/SPACE =	50 SPACES	
MINIMUM REQUIRED PARKING:	193 SPACES	
MAXIMUM PARKING (120% OF MINIMUM):	232 SPACES	204 SPACES[1]

(1) - INCLUDES 12 ADA PARKING SPACES

LEGEND

	PROPOSED EDGE OF PAVEMENT
	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED PAVEMENT SECTION
	PROPOSED CONCRETE
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
30'R	PROPOSED CURB RADIUS
VGC	PROPOSED VERTICAL GRANITE CURB
SGC	PROPOSED SLOPED GRANITE CURB

Tighe&Bond

PATRICK M. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/24/22

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

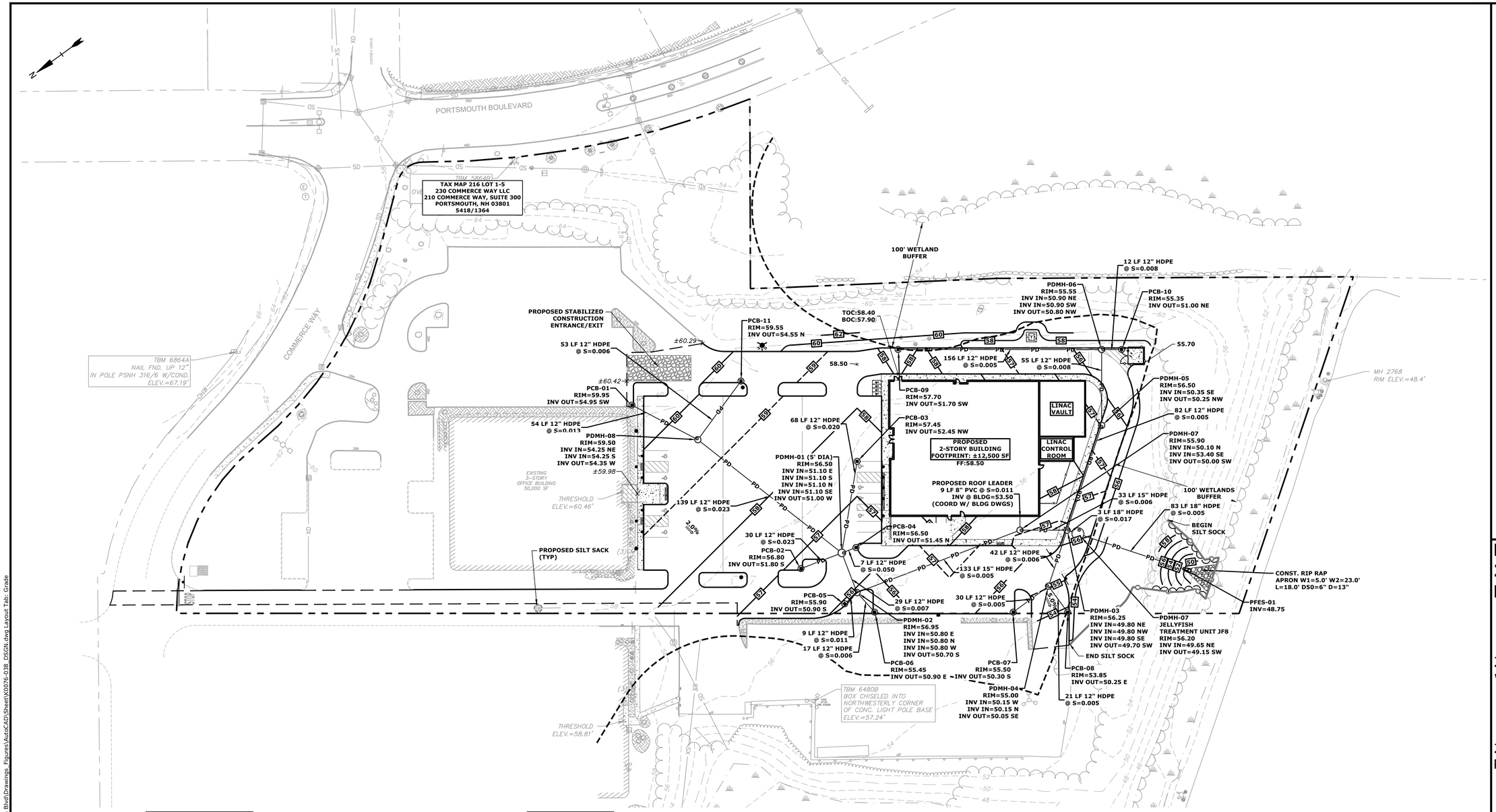
PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

SITE PLAN

SCALE: AS SHOWN

C-102

Last Save Date: May 24, 2022 10:25 AM By: CML
Plotted: May 24, 2022 10:26 AM By: Christopher M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Site



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. SEE UTILITY PLAN FOR ALL SITE UTILITY INFORMATION.
4. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
5. 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.
6. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
7. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
8. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
9. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
10. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.
11. 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.
12. 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.
13. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.
14. AREAS DISTURBED WITHIN THE 25' VEGETATED BUFFER BY HEADWALLS AND CULVERT CONSTRUCTION SHALL BE LOAMED, SEEDED WITH NEW ENGLAND WILDLIFE AND CONSERVATION SEED MIX AND STABILIZED WITH JUTE MESH.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. MAINTAIN FOR THE DURATION OF THE PROJECT.
4. INSTALL STABILIZED CONSTRUCTION EXIT(S).
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY 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.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED WITH PERIMETER CONTROLS AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.
15. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

LEGEND

- 50 — PROPOSED CONTOUR LINE
- 51 — PROPOSED CONTOUR LINE
- PD PD — PROPOSED DRAIN LINE
- PROPOSED SILT SOCK
- INLET PROTECTION SILT SACK
- PROPOSED CATCHBASIN
- PROPOSED DRAIN MANHOLE

Tighe&Bond

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SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

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230 Commerce Way
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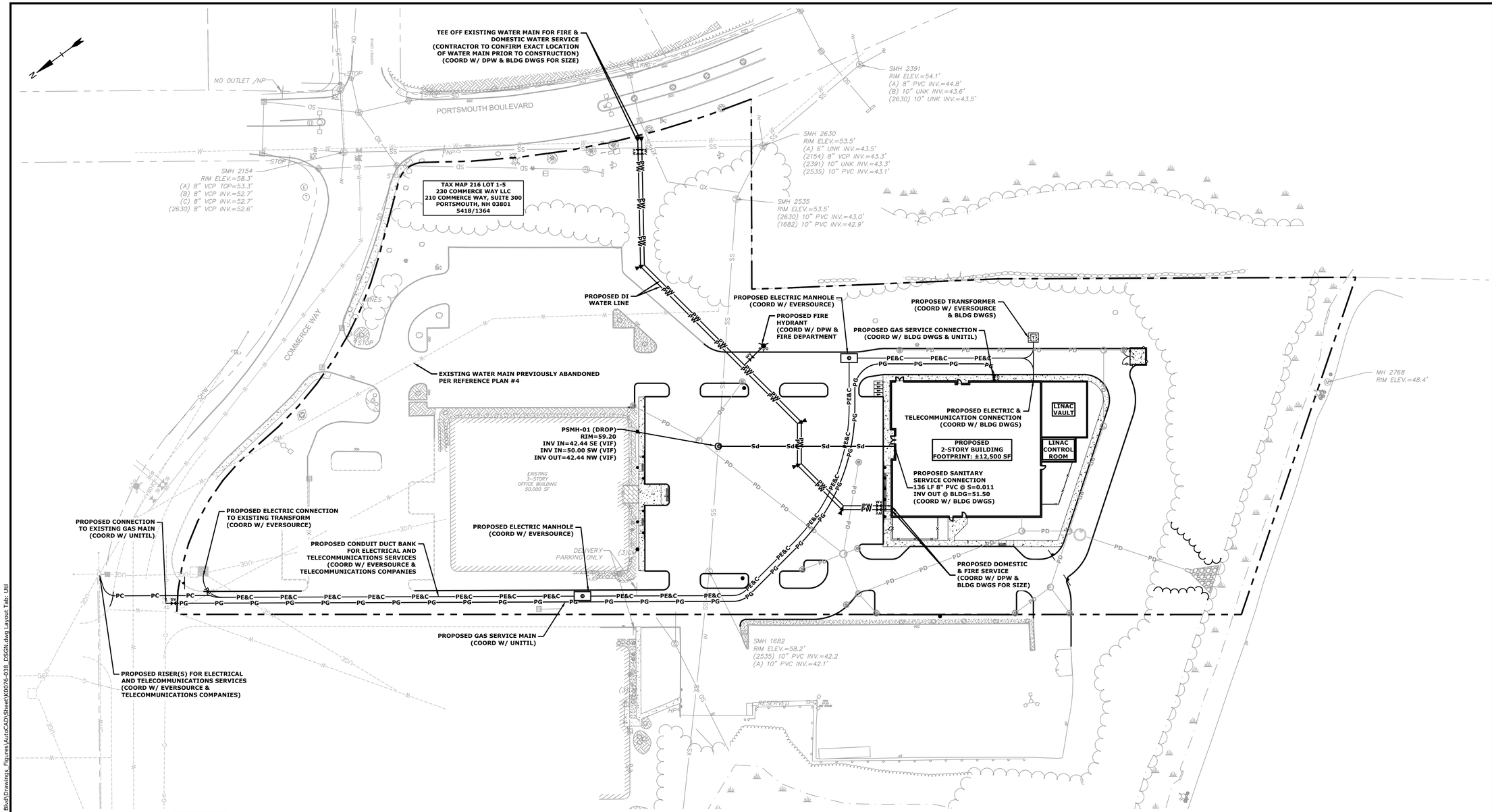
APPROVED:	PMC

GRADING, DRAINAGE & EROSION CONTROL PLAN

SCALE: AS SHOWN

C-103

Last Save Date: May 24, 2022 10:25 AM By: CML
Plot Date: May 24, 2022 10:27 AM By: Christine M. Langton
T&B File Location: J:\K\K0076 The Kane Company\ General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Grade



UTILITY NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR 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 AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - NATURAL GAS - UNITIL
   - WATER/SEWER - CITY OF PORTSMOUTH
   - ELECTRIC - EVERSOURCE
   - COMMUNICATIONS - CONSOLIDATED COMMUNICATIONS & COMCAST
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
5. THE APPLICANT SHALL COORDINATE WITH THE CITY'S CONSULTANT TO COMPLETE A WATER CAPACITY ANALYSIS USING THE CITY'S CAPACITY MODELING AND SHALL MODIFY THE WATER SERVICE DESIGN AS REQUIRED. THE PRIVATE WATER LINE THAT CURRENTLY FEEDS THE DEVELOPMENT LOT SHALL BE EITHER REPLACED OR ABANDONED DEPENDING ON THE OUTCOME OF THE STUDY. ALL MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE DPW AND THE FIRE DEPARTMENT.
6. PROPOSED WATER MAIN WILL REMAIN PRIVATE AND A PRIVATE WATER MAIN MAINTENANCE AGREEMENT WITH THE CITY IS REQUIRED.
7. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, CEMENT LINED DUCTILE IRON PIPE.
8. 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.
9. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
10. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH.
11. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
12. CONNECTION TO EXISTING WATER MAIN SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH STANDARDS.
13. 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.
14. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
15. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
16. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
17. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
18. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
19. 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.
20. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
21. 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.
22. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
23. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILES) TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
24. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
25. HYDRANTS, GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
26. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
27. ALL SEWER PIPE WITH LESS THAN 6' OF COVER IN PAVED AREAS OR LESS THAT 4' OF COVER IN UNPAVED AREAS SHALL BE INSULATED.
28. 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.
29. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
30. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER.
31. CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
32. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

LEGEND

PS PS PS	PROPOSED SANITARY SEWER
PW PW PW	PROPOSED WATER
PG PG PG	PROPOSED GAS
PE&C PE&C	PROPOSED UNDERGROUND ELECTRIC & COMMUNICATIONS
S#	PROPOSED SEWER MANHOLE
W#	PROPOSED WATER VALVE
H#	PROPOSED HYDRANT
G#	PROPOSED GAS VALVE
E	PROPOSED ELECTRIC MANHOLE
●	PROPOSED LIGHT POLE BASE
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
VIF	VERIFY IN FIELD

Tighe&Bond

PATRICK M. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/24/22

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
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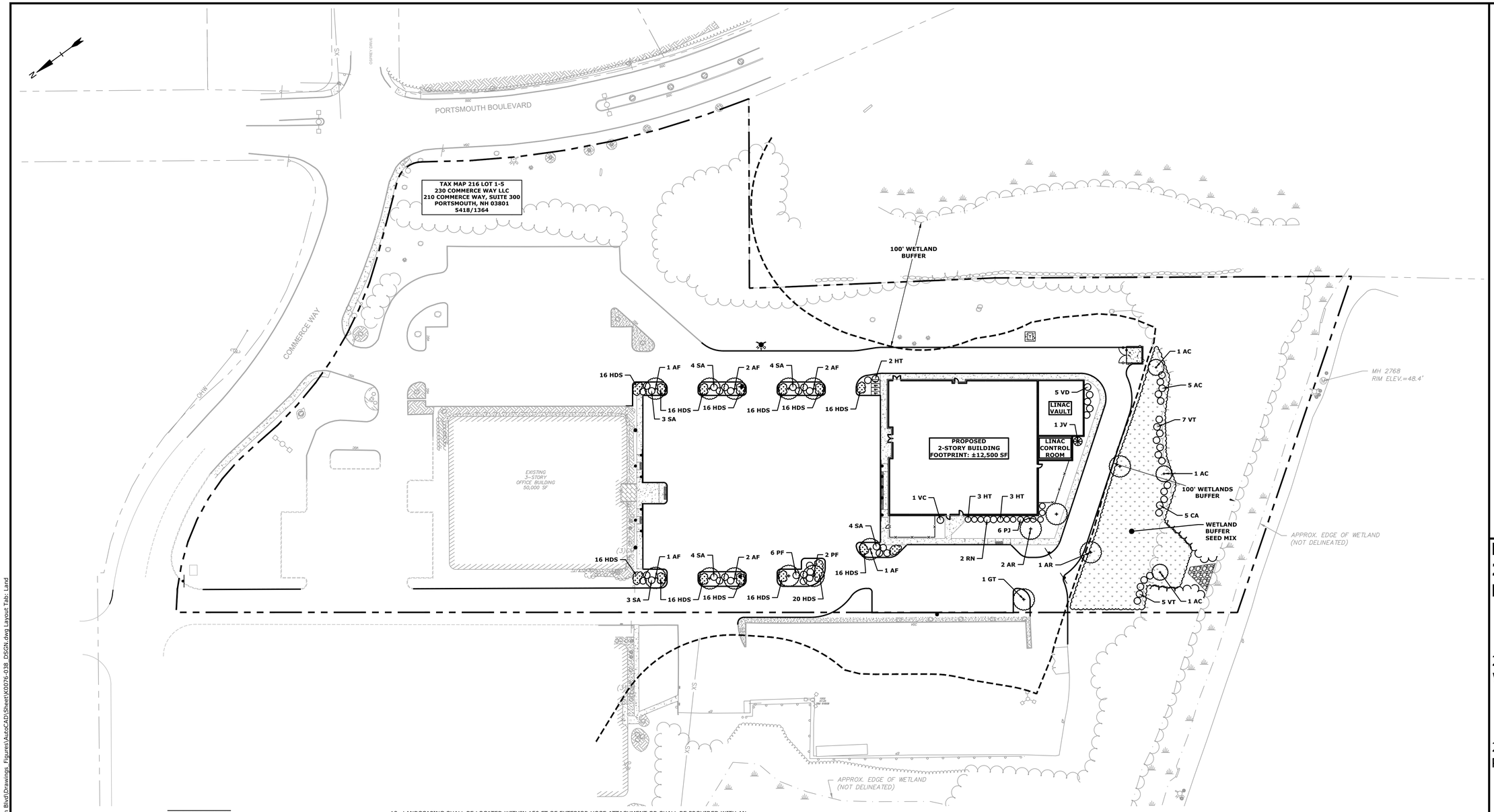
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

UTILITY PLAN

SCALE: AS SHOWN

C-104

Last Save Date: May 24, 2022 10:25 AM By: CML
Plot Date: Tuesday, May 24, 2022 10:25 AM By: Christine M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Util



LANDSCAPE NOTES:

1. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR, AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
2. ALL REQUIRED PLANT MATERIALS SHALL BE SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.
3. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE, AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED, AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.
4. THE CONTRACTOR SHALL FURNISH AND PLANT ALL PLANTS IN QUANTITIES AS SHOWN ON THIS PLAN. NO SUBSTITUTIONS WILL BE PERMITTED UNLESS APPROVED BY OWNER. ALL PLANTS SHALL BE NURSERY GROWN.
5. ALL PLANTS SHALL BE NURSERY GROWN AND PLANTS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS, INCLUDING BUT NOT LIMITED TO SIZE, HEALTH, SHAPE, ETC., AND SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO ARRIVAL ON-SITE AND AFTER PLANTING.
6. PLANT STOCK SHALL BE GROWN WITHIN THE HARDINESS ZONES 4 THRU 7 ESTABLISHED BY THE PLANT HARDINESS ZONE MAP, MISCELLANEOUS PUBLICATIONS NO. 814, AGRICULTURAL RESEARCH SERVICE, UNITED STATES DEPARTMENT AGRICULTURE, LATEST REVISION.
7. PLANT MATERIAL SHALL BARE THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE PRIOR TO DIGGING.
8. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE PROVIDED IN THE PLANT LIST OR ON THE PLAN IS FOR THE CONTRACTOR'S CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LABEL AND THE NUMBER OF SYMBOLS SHOWN ON THE DRAWINGS, THE GREATER NUMBER SHALL APPLY.
9. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
10. THE CONTRACTOR SHALL LOCATE, VERIFY AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWN WORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES SHALL IMMEDIATELY BE REPORTED TO THE OWNER SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
11. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED, SHALL RECEIVE 6" OF LOAM AND SEED. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
12. THREE INCHES (3") OF BARK MULCH IS TO BE USED AROUND THE TREE AND SHRUB PLANTING AS SPECIFIED IN THE DETAILS. WHERE BARK MULCH IS TO BE USED IN A CURBED ISLAND THE BARK MULCH SHALL MEET THE TOP INSIDE EDGE OF THE CURB. ALL OTHER AREAS SHALL RECEIVE 6" INCHES OF LOAM AND SEED.
13. LANDSCAPING SHALL BE LOCATED WITHIN 150 FT OF EXTERIOR HOSE ATTACHMENT OR SHALL BE PROVIDED WITH AN IRRIGATION SYSTEM.
14. SEE PLANTING DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. TREE STAKES SHALL REMAIN IN PLACE FOR NO LESS THAN 6 MONTHS AND NO MORE THAN 1 YEAR.
16. PLANTING SHALL BE COMPLETED FROM APRIL 15TH THROUGH OCTOBER 1ST. NO PLANTING DURING JULY AND AUGUST UNLESS SPECIAL PROVISIONS ARE MADE FOR DROUGHT.
17. PARKING AREA PLANTED ISLANDS TO HAVE MINIMUM OF 1'-0" TOPSOIL PLACED TO WITHIN 3 INCHES OF THE TOP OF CURB ELEVATION. REMOVE ALL CONSTRUCTION DEBRIS BEFORE PLACING TOPSOIL.
18. TREES SHALL BE PRUNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI A300 'TREES, SHRUBS AND OTHER WOOD PLANT MAINTENANCE STANDARD PRACTICES.
19. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN, IF NECESSARY DURING THE FIRST GROWING SEASON. LANDSCAPE CONTRACTOR SHALL COORDINATE WATERING SCHEDULE WITH OWNER DURING THE ONE (1) YEAR GUARANTEE PERIOD.
20. EXISTING TREES AND SHRUBS SHOWN ON THE PLAN ARE TO REMAIN UNDISTURBED. ALL EXISTING TREES AND SHRUBS SHOWN TO REMAIN ARE TO BE PROTECTED WITH A 4-FOOT SNOW FENCE PLACED AT THE DRIP LINE OF THE BRANCHES OR AT 8 FEET MINIMUM FROM THE TREE TRUNK. ANY EXISTING TREE OR SHRUB SHOWN TO REMAIN, WHICH IS REMOVED DURING CONSTRUCTION, SHALL BE REPLACED BY A TREE OF COMPARABLE SIZE AND SPECIES TREE OR SHRUB.
21. THE CONTRACTOR SHALL GUARANTEE ALL PLANTINGS TO BE IN GOOD HEALTHY, FLOURISHING AND ACCEPTABLE CONDITION FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF ACCEPTANCE OF SUBSTANTIAL COMPLETION. ALL GRASSES, TREES AND SHRUBS THAT, IN THE OPINION OF THE LANDSCAPE ARCHITECT, SHOW LESS THAN 80% HEALTHY GROWTH AT THE END OF ONE YEAR PERIOD SHALL BE REPLACED BY THE CONTRACTOR.
22. UPON EXPIRATION OF THE CONTRACTOR'S ONE YEAR GUARANTEE PERIOD, THE OWNER SHALL BE RESPONSIBLE FOR LANDSCAPE MAINTENANCE INCLUDING WATERING DURING PERIODS OF DROUGHT
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTING AND LAWNS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. THIS PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL THE FORMAL ACCEPTANCE OF ALL THE PLANTINGS.
24. PRE-PURCHASE PLANT MATERIAL AND ARRANGE FOR DELIVERY TO MEET PROJECT SCHEDULE AS REQUIRED IT MAY BE NECESSARY TO PRE-DIG CERTAIN SPECIES WELL IN ADVANCE OF ACTUAL PLANTING DATES.

PLANT SCHEDULE				
CODE	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES				
AC	AMELANCHIER CANADENSIS	SERVICEBERRY	5' - 6'	B & B
AF	ACER FREEMANII	AUTUM BLAZE MAPLE	2-1/2" - 3"	CALIPER
GT	GLEDITSIA TRIACANTHOS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST	2.5" - 3"	CALIPER
JV	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EMERALD SENTINEL RED CEDAR	6' - 7'	B & B
SHRUBS				
SA	SPIREA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	3 GAL	
PF	POTENTILLA FRUTICOSA 'PRIMROSE BEAUTY'	PRIMROSE BEAUTY CINQUEFOIL	3 GAL	
CA	CORNUS AMMOMUM	SILKY DOGWOOD	3 GAL	
VT	VIBURNUM TRILOBUM	AMERICAN CRANBERRY	5 GAL	
VC	VIBURNUM CARLESII 'CAYUGA'	CAYUGA MAYFLOWER	5 GAL	
HT	HYDRANGEA 'TWIST & SHOUT'	TWIST & SHOUT HYDRANGEA	3 GAL	
RN	RHODODENDRON 'NOVA ZEMBLA'	NOVA ZEMBLA RHODODENDRON	2' - 2.5'	B & B
RP	RHODODENDRON 'PJM PINK'	PINK PJM RHODODENDRON	2' - 2.5'	B & B
VD	VIBURNUM DENTATUM	ARROWOOD VIBURNUM	4' - 4.5'	B & B
HSD	HEMEROCALIS 'STELA D'ORO'	STELA D'ORO DAYLILY	1 GAL	18" OC

LEGEND

- PROPOSED DECIDUOUS TREE (W/ BARK MULCH)
- PROPOSED DECICUOUS TREE (W/O BARK MULCH)
- PROPOSED SHRUBS (W/ BARK MULCH)
- PROPOSED SHRUBS (W/O BARK MULCH)
- PROPOSED GROUND COVER
- PROPOSED EVERGREEN TREE
- PROPOSED EVERGREEN SHRUB

WETLAND BUFFER SEED MI: NEW ENGLAND CONSERVATION/WILDLIFE MIX AS PROVIDED BY NEW ENGLAND PLANTS, AMHERST MA (NEWP.COM) SEEDED @ 25 LB/AC

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK M. CUMMINS No. 12377 – LICENSED PROFESSIONAL ENGINEER – 5-24-22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 – LICENSED PROFESSIONAL ENGINEER – 5/24/22

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

LANDSCAPE PLAN

SCALE: AS SHOWN

C-105

Last Save Date: May 24, 2022 10:25 AM By: CML
Plot Date: Tuesday, May 24, 2022 Plotted By: M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Land

GENERAL PROJECT INFORMATION

PROJECT OWNER: 230 COMMERCE WAY, LLC
210 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801
PROJECT NAME: PROPOSED 2-STORY BUILDING
PROJECT ADDRESS: 230 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801
PROJECT LATITUDE: 43°-08'-14"N
PROJECT LONGITUDE: 70°-56'-22"W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF 2 STORY BUILDING WITH ASSOCIATED SITE IMPROVEMENTS THE WORK IS ANTICIPATED TO START IN FALL OF 2022, AND BE COMPLETED BY SUMMER OF 2024.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 2.25 ACRES.

SOIL CHARACTERISTICS

BASED ON THE NRCS WEB SOIL SURVEY FOR THE SOILS ON SITE CONSIST OF CHATFIELD-HOLLIS-CANTON COMPLEX AND URBAN LAND SOILS WHICH ARE MODERATELY DRAINED SOILS.

NAME OF RECEIVING WATERS

THE STORM WATER RUNOFF WILL ULTIMATELY DISCHARGE INTO AN UNNAMED WETLAND. PRIOR TO DISCHARGING TO THE WETLAND, STORMWATER RUNOFF WILL BE COLLECTED AND TREATED BY VARIOUS TREATMENT SWALES, SEDIMENTATION BASINS AND A GRAVEL WETLAND.

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:
    - CONTROL OF DUST
    - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
    - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
3. CLEAR AND DISPOSE OF DEBRIS.
4. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
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. GRADE AND GRAVEL ROADWAYS AND PARKING AREAS - ALL ROADS AND PARKING AREA SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
5. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
6. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
7. FINISH PAVING ALL ROADWAYS AND PARKING LOTS.
8. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
9. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
10. 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 NOVEMBER 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. 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.
5. 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 NOVEMBER 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	50 LBS/ACRE
KENTUCKY BLUEGRASS	100 LBS/ACRE
PERENNIAL RY GRASS	50 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 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;
        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.
    B. HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
        g. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
        h. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
        i. 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:
            - ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
            - 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.
        b. FERTILIZERS:
            - FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
            - ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
            - 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:
            - ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
            - EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
            - 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 EQUIPTMENT/VEHICAL 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

THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRES A SWPPP. THE SWPPP SHALL BE PREPARED BY THE ENGINEER. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.

THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:

1. 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;
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
3. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

BLASTING NOTES:

1. IF MORE THAN 5000 CUBIC YARDS ARE TO BE BLASTED A BLASTING PLAN SHALL BE PROVIDED. THE BLASTING PLAN SHALL INCLUDE:
    A. LOCATION AND IDENTIFICATION OF DRINKING WATER WELLS LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES;
    B. A GROUNDWATER QUALITY SAMPLING PROGRAM, APPROVED BY NHDES PRIOR TO INITIATING BLASTING, TO MONITOR 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 NHDES.
2. 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:
        a. 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;
        b. 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;
        c. 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;
        d. 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;
        e. 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;
        f. 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:
        a. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION;
        b. 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
    C. PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
    D. 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:
        c. REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE;
        d. MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
    E. SPILL PREVENTION MEASURES AND SPILL MITIGATION - SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
        a. THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
            - STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE;
            - SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
            - LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY;
            - INSPECT STORAGE AREAS WEEKLY;
            - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
            - 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;
            - 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.
        b. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
            - EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;
            - PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
            - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
            - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES;
            - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
        c. 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.
        d. 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

NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR EQUAL
2. INSTALL SILT SOCK IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.

SILT SOCK

NO SCALE

NOTES:
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

SILT SACK

NO SCALE

Tighe&Bond

PATRICK M. CRIMMINS No. 1237[illegible]
5-24-22

NEIL A. HANSEN No. 15227
5/24/22

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/25/2022	Planning Board Submission

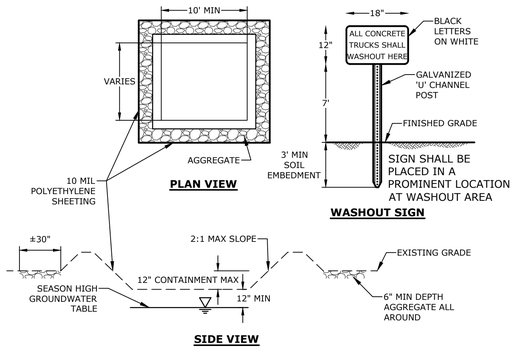
PROJECT NO:	K0076-038
DATE:	5/25/2022
FILE:	K0076-038_DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

EROSION CONTROL NOTES & DETAILS SHEET

SCALE: AS SHOWN

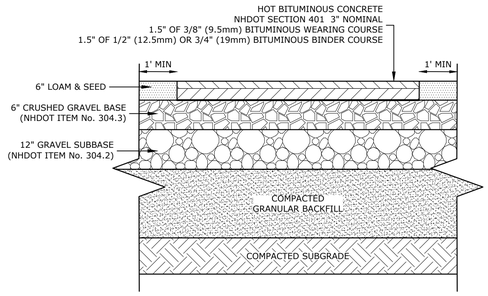
C-501

Last Save Date: May 24, 2022 9:40 AM By: CML
Plot Date: Tuesday, May 24, 2022 Plotted By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DTLS.dwg Layout Tab: C-501



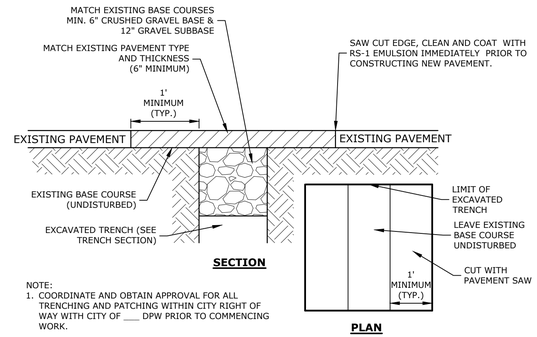
NOTES:
1. CONTAINMENT SHALL BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT SHALL BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY, REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT AREA
NO SCALE



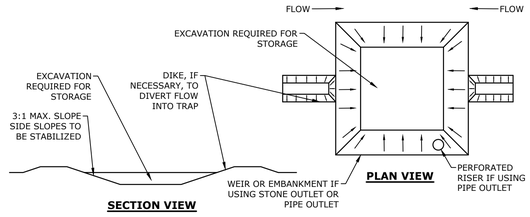
NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.

TYPICAL PAVEMENT SECTION
NO SCALE



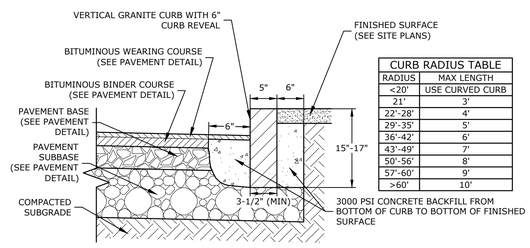
NOTE:
1. COORDINATE AND OBTAIN APPROVAL FOR ALL TRENCHING AND PATCHING WITHIN CITY RIGHT OF WAY WITH CITY OF ___ DPW PRIOR TO COMMENCING WORK.

ROADWAY TRENCH PATCH
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.

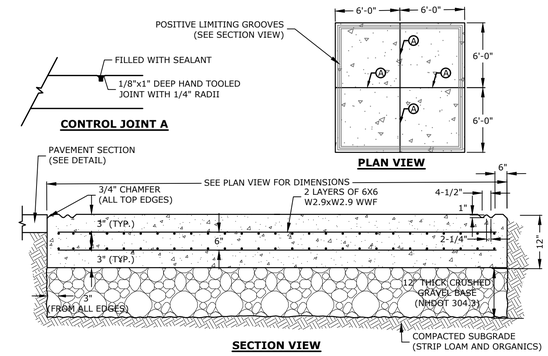
SEDIMENT TRAP
NO SCALE



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'

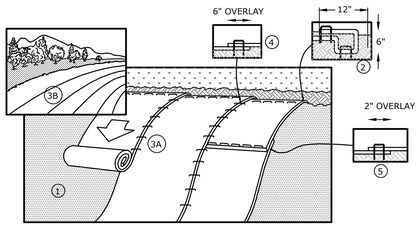
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE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



NOTES:
1. CONCRETE TO BE 4500 PSI, 7% AIR ENTRAINED
2. STANDARD BROOM FINISH.

DUMPSTER PAD
NO SCALE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAPLE PATTERN GUIDE.
4. STAPLE LENGTHS SHALL BE A MINIMUM OF 8 INCHES.
5. EROSION CONTROL BLANKET SHALL BE 'EAST COAST EROSION CONTROL ECC-2B™' OR APPROVED EQUAL.

STABILIZATION BLANKET
NO SCALE

Tighe&Bond

PATRICK M. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/24/22

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/25/2022	Planning Board Submission

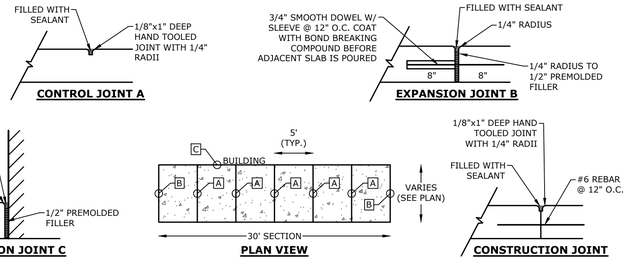
PROJECT NO:	K0076-038
DATE:	5/25/2022
FILE:	K0076-038_DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

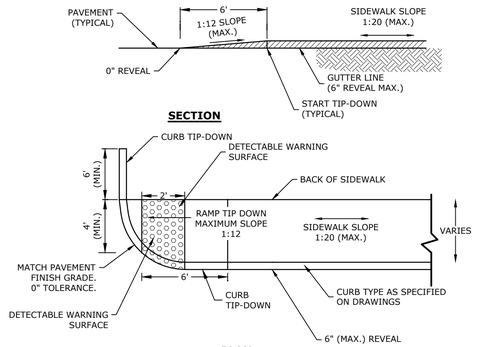
C-502

Last Save Date: May 24, 2022 9:40 AM By: CML
Plot Date: Wednesday, May 25, 2022 Plotted By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings, Figures\AutoCAD\Sheet\K0076-038_DTLS.dwg Layout Tab: C-502



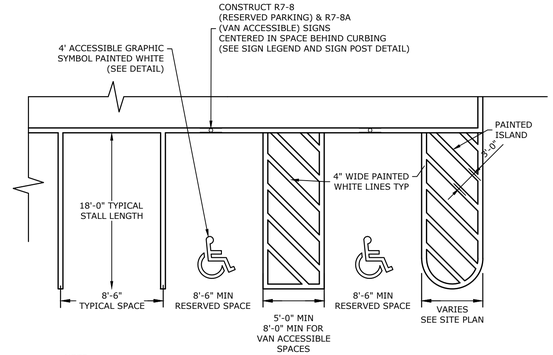
NOTES:
1. SEE SITE PLAN FOR SIDEWALK WIDTH AND LOCATIONS.
2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR WALK AND SIDE SLOPE GRADES.
3. ISOLATION JOINTS ADJACENT TO BUILDING SHALL BE COORDINATED WITH BUILDING DRAWINGS.

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.

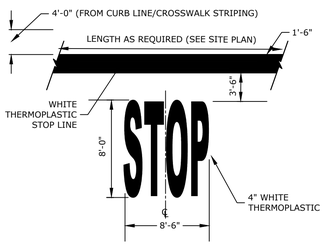
CONCRETE SIDEWALK TIP-DOWN RAMP WITH DETECTABLE WARNING PANEL
NO SCALE



NOTE:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
3. FINISH PAVEMENT GRADES AT ALL HANDICAP ACCESSIBLE STALLS AND PAINTED ACCESS AISLES SHALL NOT EXCEED 2% IN ANY DIRECTION.

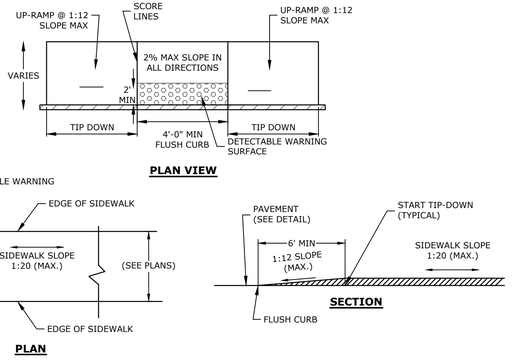
PARKING SPACE STRIPING
NO SCALE

Tighe&Bond



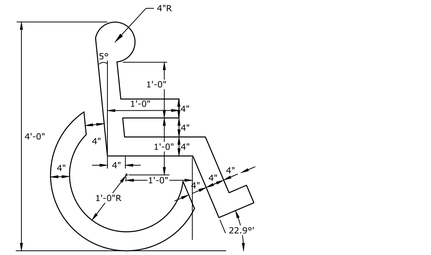
NOTE:
1. PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS AS SHOWN ON SITE PLAN.
2. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

STOP BAR & LEGEND
NO SCALE



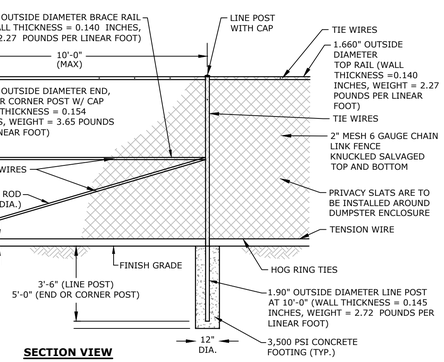
NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 8" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON WITH BLACK COATING

CONCRETE SIDEWALK TIP-DOWN RAMP WITH DETECTABLE WARNING PANEL
NO SCALE



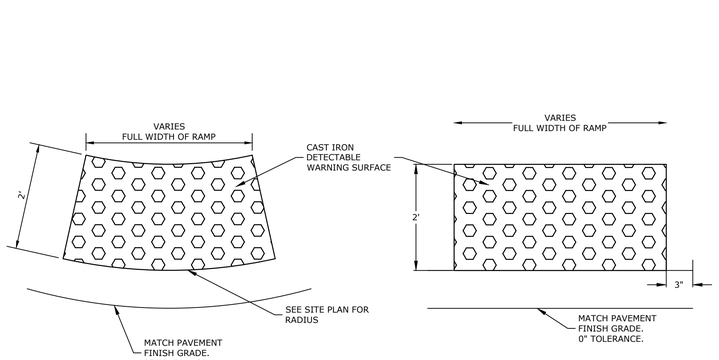
NOTES:
1. SYMBOL SHALL BE CONSTRUCTED IN ALL ACCESSIBLE SPACES USING FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOL SHALL BE CONSTRUCTED TO THE LATEST ADA, STATE AND LOCAL REQUIREMENTS.

ACCESSIBLE SYMBOL
NO SCALE



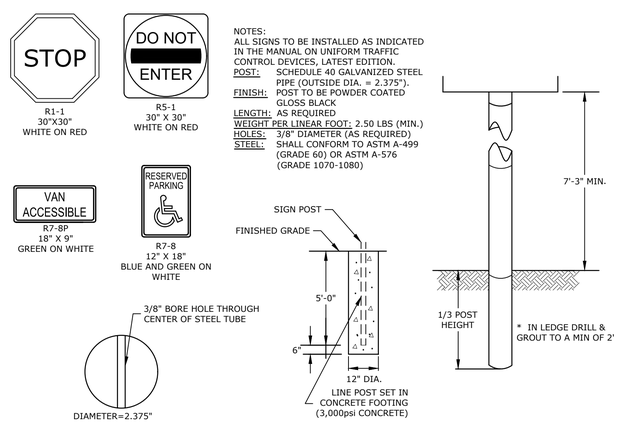
NOTES:
1. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN GRADE AND CHANGES IN HORIZONTAL ALIGNMENT OF 30° OR MORE.
2. POSTS, RAILS & BRACES SHALL BE TYPE I, SCHEDULE 40 PIPE.
3. FABRIC TO BE TOP SELVAGE AND BOTTOM SELVAGE TWISTED TIGHT.
4. TIE WIRE:
   4.1. SHALL BE 6 GAUGE GALVANIZED STEEL WIRE @ 14" O.C. MAXIMUM FOR ATTACHMENT OF FABRIC TO LINE POSTS.
   4.2. TIE WIRES SHALL BE 13 GAUGE GALVANIZED STEEL WIRE @ 24" O.C. MAXIMUM FOR ATTACHMENT OF FABRIC TO RAILS AND BRACES.
5. HOG RING TIES SHALL BE 12- 1/2 GAUGE GALVANIZED STEEL WIRE @ 24" O.C. MAXIMUM FOR ATTACHMENT OF FABRIC TO TENSION WIRE.
6. PRIVACY SLATS SHALL BE VINYL, COLOR TO BE BLACK.

TYPICAL FENCE / ENCLOSURE
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



SIGN LEGEND & POST
NO SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/25/2022	Planning Board Submission

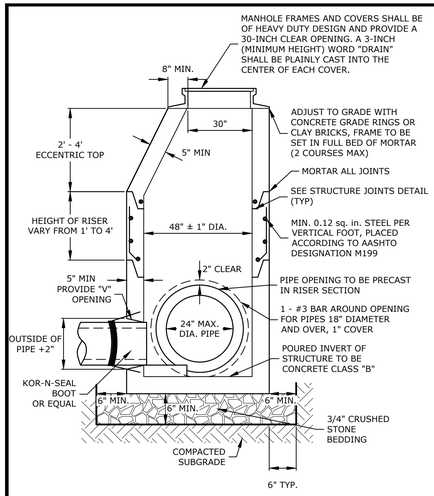
PROJECT NO:	K0076-038
DATE:	5/25/2022
FILE:	K0076-038_DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

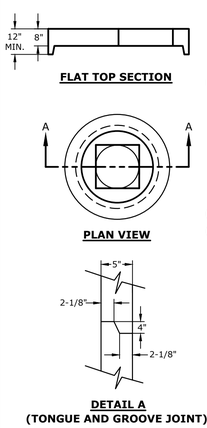
C-503

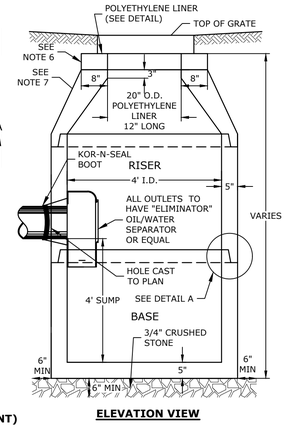
Last Save Date: May 24, 2022 9:40 AM By: CML
Plot Date: Tuesday, May 24, 2022 9:40 AM By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DTLS.dwg Layout Tab: C-503



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.

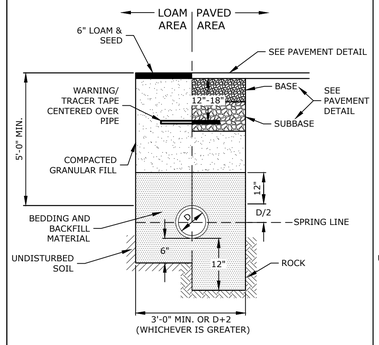
4' DIAMETER DRAIN MANHOLE
NO SCALE





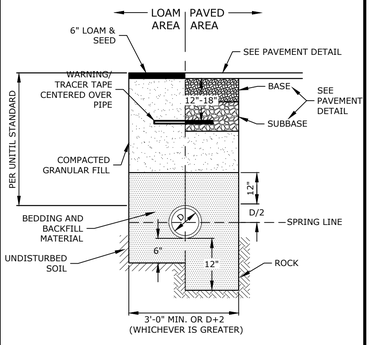
NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 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 CATCH BASIN
NO SCALE



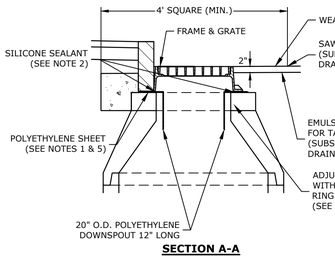
NOTES:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. WATER MAIN SHALL BE INSTALLED PER CITY OF PORTSMOUTH STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

TYPICAL WATER 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.

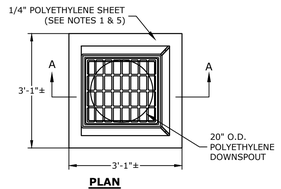
TYPICAL GAS TRENCH
NO SCALE



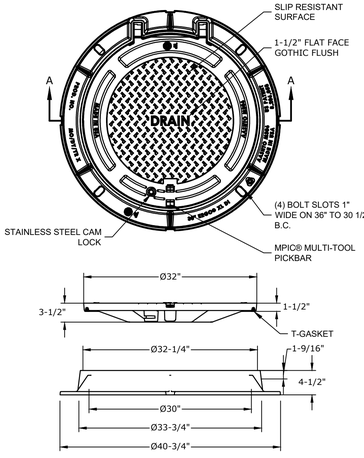
SECTION A-A

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



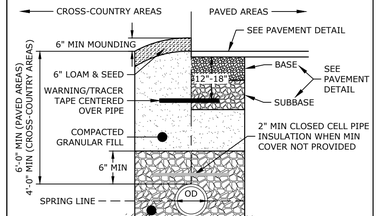
PLAN



SECTION A-A

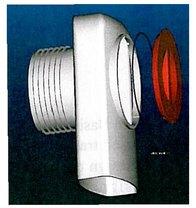
NOTES:
1. MANHOLE FRAME AND COVER SHALL BE 32" HINGED ERGO XL BY EJ CO.
2. ALL DIMENSIONS ARE NOMINAL.
3. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN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



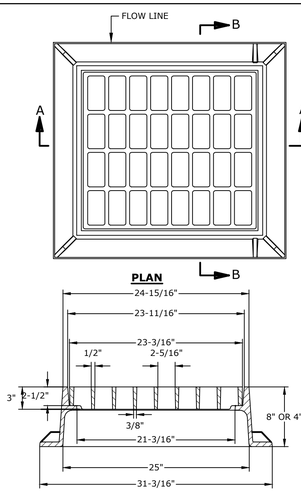
NOTES:
1. 3/4" CRUSHED STONE BEDDING AND BACKFILL MATERIAL FOR FULL WIDTH OF THE TRENCH FROM MINIMUM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO MINIMUM OF 6" OVER THE TOP OF THE PIPE.
2. SANITARY SEWER SHALL BE INSTALLED PER THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

TYPICAL SEWER TRENCH
NO SCALE

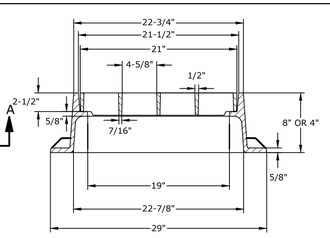


NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)
2. INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.
3. 1/4" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP

"ELIMINATOR" OIL FLOATING DEBRIS TRAP
NO SCALE



PLAN

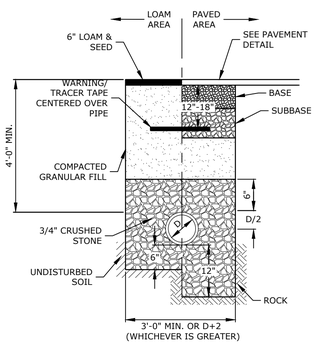


SECTION B-B

SECTION A-A

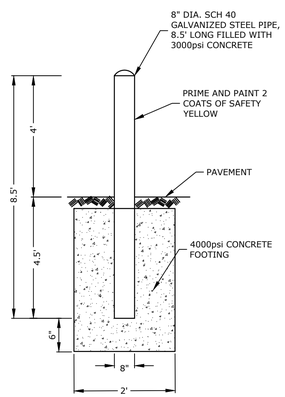
NOTES:
1. ALL DIMENSIONS ARE NOMINAL
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   2.1. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   2.2. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   2.3. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS
4. FREE OPEN AREA = 2.55 SQ. FT.
5. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

CATCH BASIN FRAME & GRATE
NO SCALE

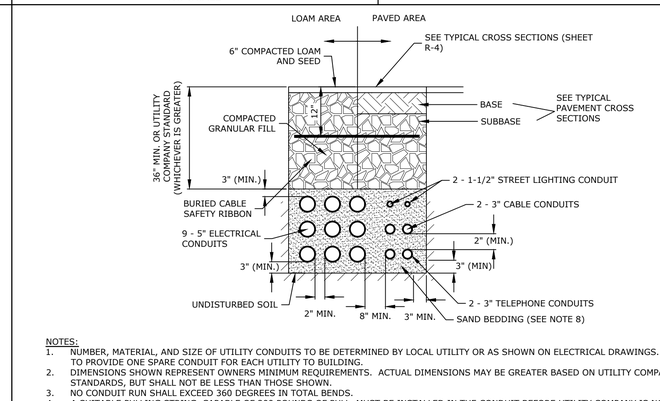


NOTE:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF PORTSMOUTH.

STORM DRAIN TRENCH
NO SCALE



TYPICAL BOLLARD
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.

TYPICAL ELECTRICAL AND COMMUNICATION CONDUIT
NO SCALE

Tighe&Bond

PATRICK W. CUMMINS No. 12377 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5-24-22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/24/22

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

A	5/25/2022	Planning Board Submission
MARK	DATE	DESCRIPTION

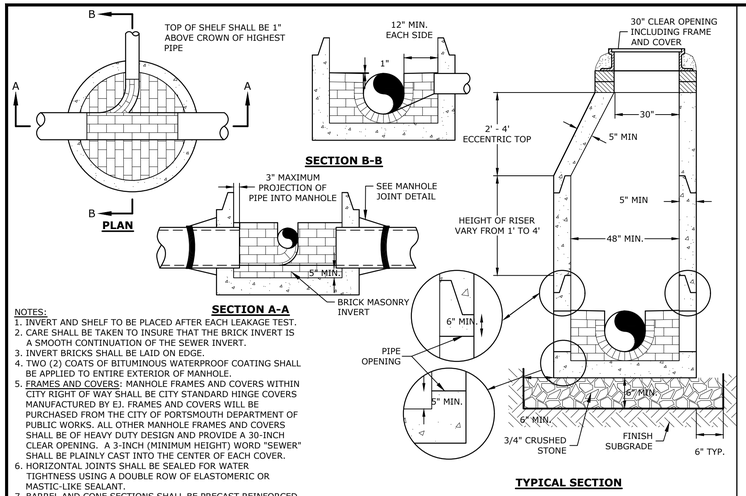
PROJECT NO:	K0076-038
DATE:	5/25/2022
FILE:	K0076-038_DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

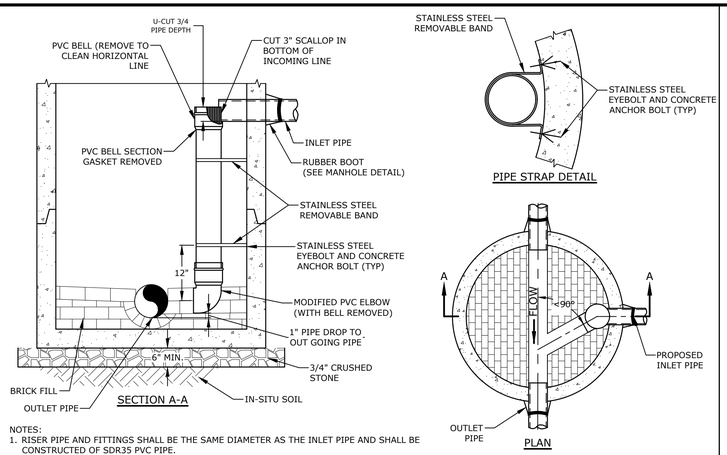
C-504

Last Save Date: May 24, 2022 9:40 AM By: CML
Plot Date: Tuesday, May 24, 2022 9:42 AM By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DTLS.dwg Layout Tab: C-504



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. RISER PIPE AND FITTINGS SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF SDR35 PVC PIPE.
2. SANITARY SEWER SHALL BE INSTALLED PER THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS.
3. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

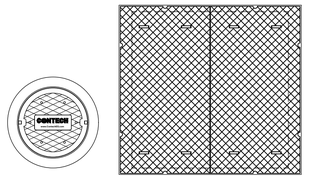
INSIDE DROP SEWER MANHOLE
NO SCALE

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø96" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 1.96 CFS. IF THE SITE CONDITIONS EXCEED 1.96 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	10 / 2			

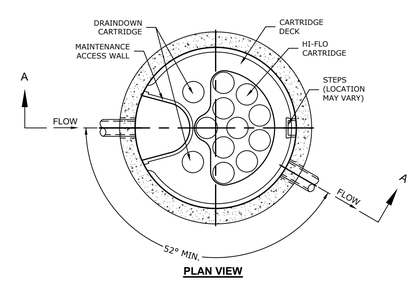


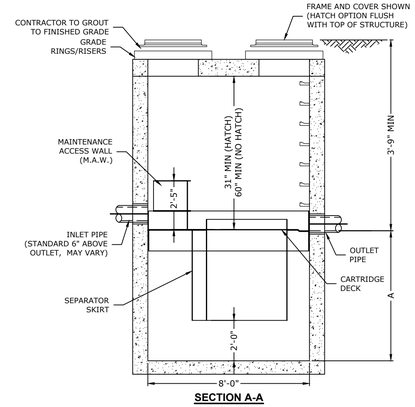
FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

HATCH
(72" x 72" CAST INTO SLAB)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	8'
WATER QUALITY FLOW RATE (cfs)	1.74
PEAK FLOW RATE (cfs)	18.0
RETURN PERIOD OF PEAK FLOW (yrs)	50
# OF CARTRIDGES REQUIRED (HF / DD)	10 / 2
CARTRIDGE SIZE	54"

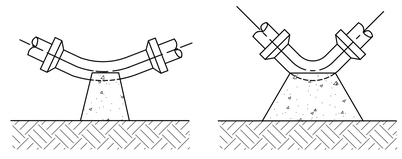




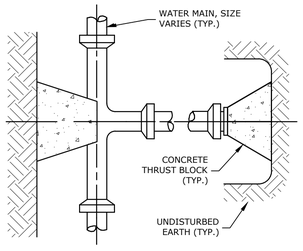
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL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

JELLYFISH (JF8) TREATMENT UNIT
NO SCALE

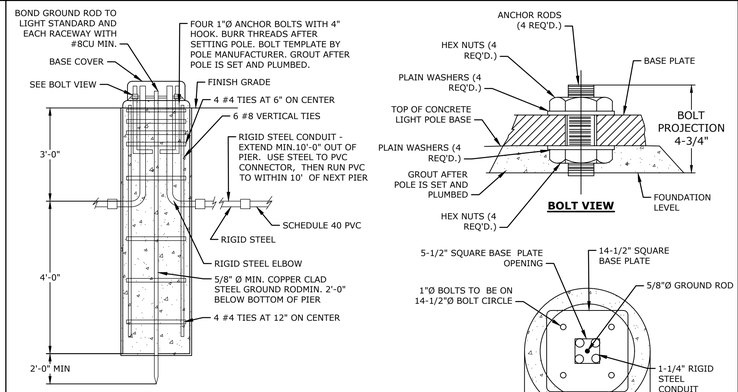


TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
	REACTION TYPE	PIPE SIZE				
		4"	6"	8"	10"	12"
	A 90°	0.89	2.19	3.82	11.14	17.24
	B 180°	0.65	1.55	2.78	8.38	12.00
	C 45°	0.48	1.19	2.12	6.02	9.32
	D 22-1/2°	0.25	0.60	1.06	3.08	4.74
	E 11-1/4°	0.13	0.30	0.54	1.54	2.38



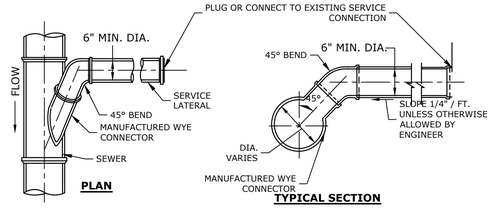
NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT 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
NO SCALE

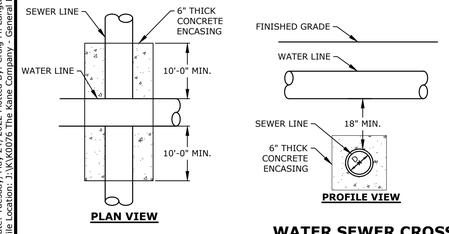


NOTES:
1. PAINT BASE SAFETY YELLOW (UNLESS PROTECTED BY CURBED ISLAND).
2. CONCRETE TO BE CLASS A, 4000 PSI, AIR ENTRAINED STEEL TO BE 60 KSI
3. REFER TO ELECTRICAL PLANS FOR WIRING DETAILS.

TYPICAL LIGHT POLE BASE
NO SCALE

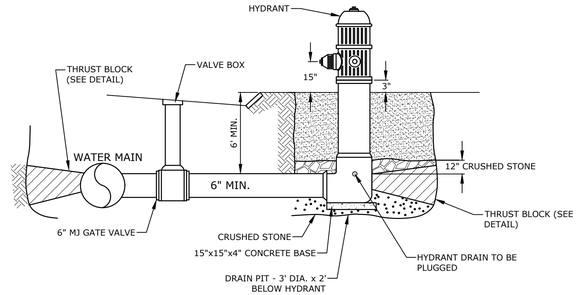


STANDARD SERVICE LATERAL CONNECTION
NO SCALE



NOTES:
1. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED FROM ANY EXISTING OR PROPOSED WATER LINE.
2. AN 18" MINIMUM EDGE TO EDGE VERTICAL SEPARATION SHALL BE PROVIDED, WITH WATER ABOVE SEWER, AT ALL CROSSINGS.
3. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
4. WHERE AN 18" VERTICAL SEPARATION CANNOT BE PROVIDED, SEWER PIPE SHALL BE CONSTRUCTED USING A SDR 26 PVC PIPE OR ENCASED CONCRETE FOR A MINIMUM DISTANCE OF 10 FEET ON BOTH SIDES OF THE LINE BEING CROSSED, AS SHOWN ABOVE.
5. CROSSINGS SHALL CONFORM TO THE CITY PORTSMOUTH DPW STANDARDS AND SPECIFICATIONS.

WATER SEWER CROSSING
NO SCALE



NOTE:
1. HYDRANT TO BE KENNEDY TYPE K-81, RIGHT OPEN (NO EQUAL). COORDINATE WITH CITY OF PORTSMOUTH WATER DEPARTMENT AND CITY OF PORTSMOUTH FIRE DEPARTMENT.
2. PAINT HYDRANT IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS AFTER INSTALLATION AND TESTING.

FIRE HYDRANT
NO SCALE

Tighe&Bond

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

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DETAILS SHEET

SCALE: AS SHOWN

C-505

Last Save Date: May 24, 2022 9:40 AM By: CML
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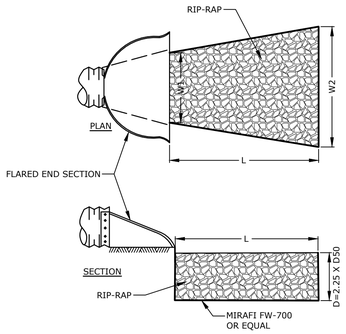
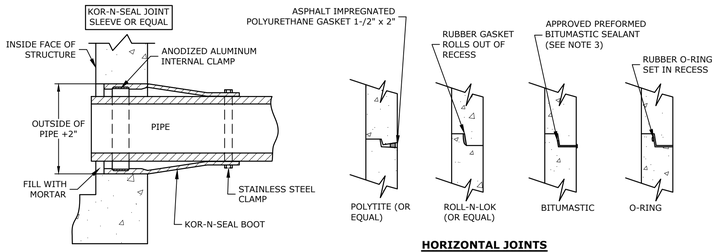
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings, Figures\AutoCAD\Sheet\K0076-038_DTLS.dwg Layout Tab: C-505



NOTES:
1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

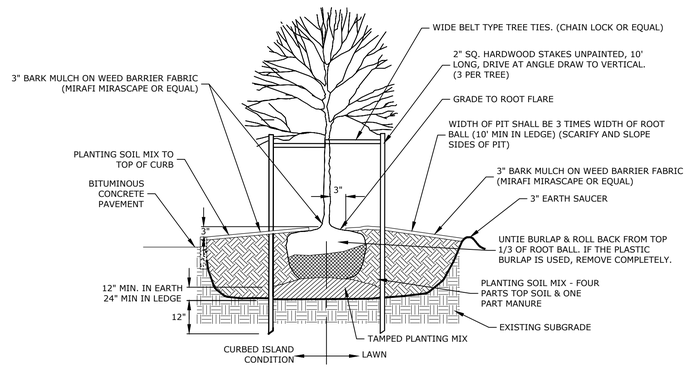
RIP-RAP APRON
NO SCALE



PIPE JOINTS **HORIZONTAL JOINTS**

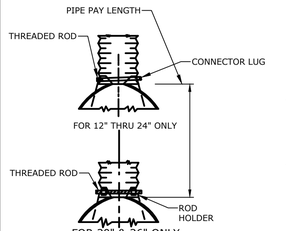
NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER CITY OF PORTSMOUTH DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER CITY OF PORTSMOUTH STANDARD.
3. FOR BITUMASTIC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

STRUCTURE JOINTS
NO SCALE

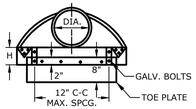


NOTES:
1. PLANT AT SAME DEPTH AS PREVIOUSLY PLANTED, OR WITHIN 2" ABOVE.

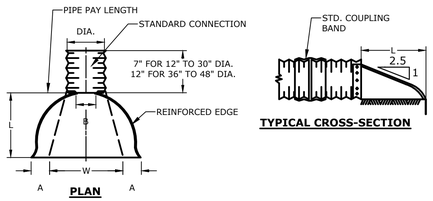
DECIDUOUS TREE PLANTING
NO SCALE



ALTERNATE CONNECTIONS



ELEVATION



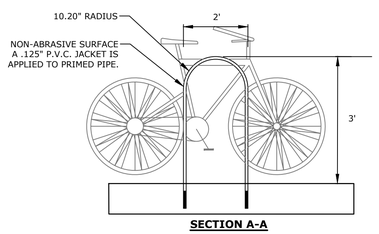
PLAN

TYPICAL CROSS-SECTION

PIPE Ø	METAL GAGE	DIMENSIONS				
		A(1" TOL.)	B MAX	H(1" TOL.)	L(1" TOL.)	W(2" TOL.)
12"	16	6"	6"	6"	21"	24"
15"	16	7"	8"	6"	26"	30"
18"	16	8"	13"	6"	31"	36"
24"	16	10"	16"	6"	41"	48"
30"	14	12"	16"	8"	51"	60"
36"	14	14"	19"	9"	60"	72"
42"	12	16"	22"	11"	69"	84"
48"	12	18"	27"	12"	78"	90"

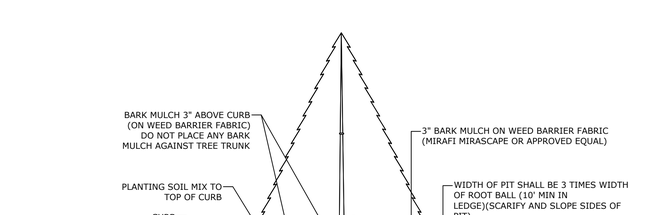
NOTES:
1. END SECTION FOR 12" TO 30" DIA. PIPE IN ONE PIECE, FOR 36" TO 48" DIA. PIPE TO BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE.
2. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME THICKNESS AS END SECTION AND EACH TO BE GALVANIZED.

METAL FLARED END SECTION
NO SCALE



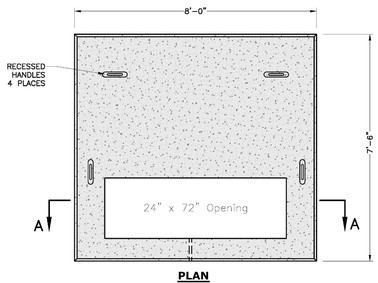
SECTION A-A **PLAN**

BIKE RACK
NO SCALE

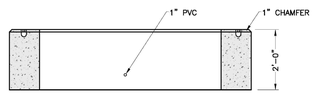


NOTE: PLANT AT SAME DEPTH AS PREVIOUSLY PLANTED IN NURSERY, OR WITHIN 2" ABOVE.

EVERGREEN TREE PLANTING
NO SCALE



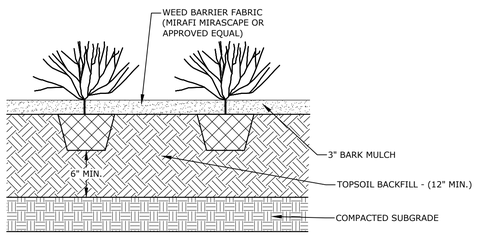
PLAN



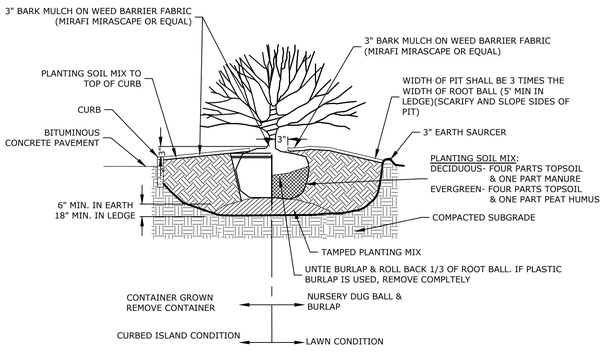
SECTION A-A

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



PERENNIAL PLANTING
NO SCALE



NOTES:
1. PLANT AT SAME DEPTH AS PREVIOUSLY PLANTED, OR WITHIN 2" ABOVE.

SHRUB PLANTING
NO SCALE

Tighe&Bond

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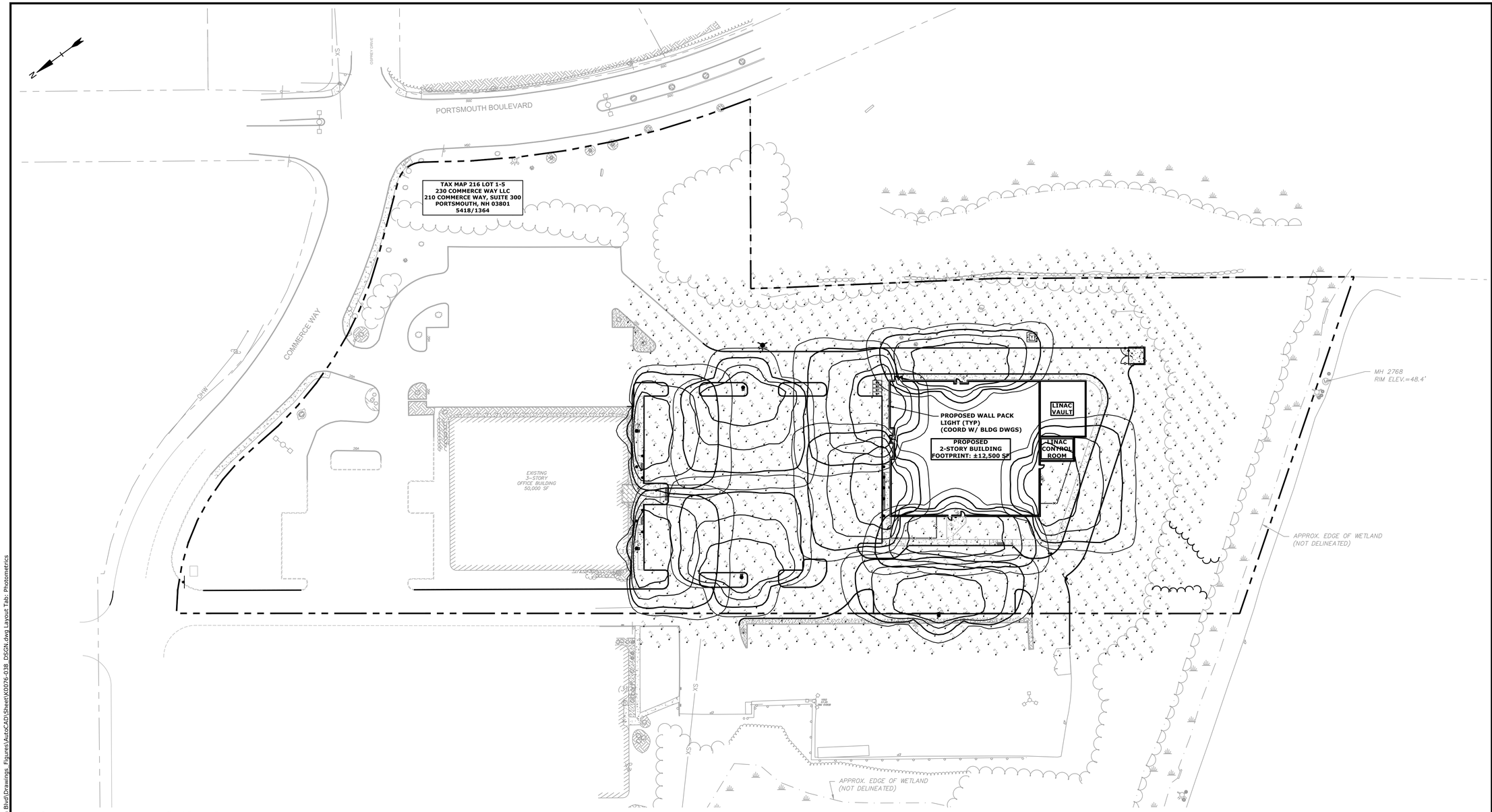


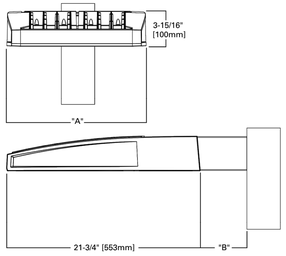
StatArea_1
MAIN PARKING LOT
Illuminance (Fc)
Average = 1.95
Maximum = 5.4
Minimum = 0.6
Avg/Min Ratio = 3.25
Max/Min Ratio = 9.00

StatArea_2
SIDE PARKING LOT AREA
Illuminance (Fc)
Average = 2.33
Maximum = 7.5
Minimum = 0.6
Avg/Min Ratio = 3.88
Max/Min Ratio = 12.50

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	1	S3	Single	GLEON-SA2C-740-U-SL3 / SSS4A20SFN1 (20' AFG)
	2	S4	Single	GLEON-SA2C-740-U-T4FT / SSS4A20SFN1 (20' AFG)
	2	S4-HS	Single	GLEON-SA2C-740-U-T4FT-HSS/ SSS4A20SFN1 (20' AFG)
	2	W3	Single	GWC-SA2C-740-U-SL3 / WALL MTD 18' AFG
	3	W4	Single	GWC-SA2C-740-U-T4FT / WALL MTD 18' AFG

NOTE:
1. PROPOSED LIGHT FIXTURES SHALL BE DARK SKY FRIENDLY.

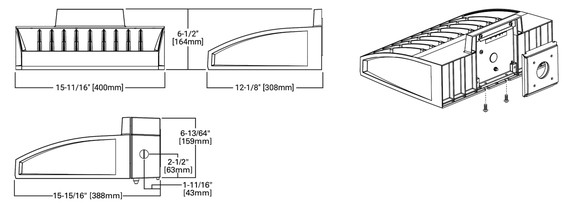
Dimensional Details



Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length [1]	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	--
9-10	33-3/4"	7"	16"	--	--

NOTES:
For arm selection requirements and additional line art, see Mounting Details section.

Dimensional Details



Tighe&Bond

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

PHOTOMETRICS PLAN

SCALE: AS SHOWN

C-701

1 A-200 East Elevation
3/16" = 1'-0"

2 A-200 West Elevation
3/16" = 1'-0"

NELSON
Nelson Architecture & Interiors, Inc.

198 Tremont Street, Suite 439
Boston, MA. 02116
Phone: (617) 778-7229
WWW.NELSONWORLDWIDE.COM

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25 PORTSMOUTH BOULEVARD

PORTSMOUTH, NH 03801

Issue: No: Date:

ELEVATIONS

Proj #: 20.0003391 Reviewed By: Checker

A-200

5/23/2022 1:57:34 PM C:\Users\jnovak\Revit_Locals\2021\215 Commerce Way_jnovakYPHR7.rvt

1 A-201 South Elevation
3/16" = 1'-0"

2 A-201 North Elevation
3/16" = 1'-0"

5/23/2022 1:58:58 PM C:\Users\jnovak\Revit_Locals\2021\215 Commerce Way_jnovakYPHR7.rvt

NELSON
Nelson Architecture & Interiors, Inc.

198 Tremont Street, Suite 439
Boston, MA. 02116
Phone: (617) 778-7229
WWW.NELSONWORLDWIDE.COM

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25 PORTSMOUTH BOULEVARD

PORTSMOUTH, NH 03801

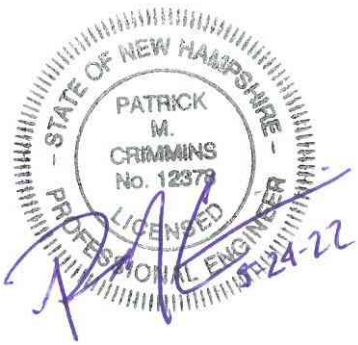
Issue: No: Date:

ELEVATIONS

Proj #: 20.0003391 Reviewed By: Checker

A-201

Drainage Analysis



TO: City of Portsmouth Technical Advisory Committee (TAC)

FROM: Neil A. Hansen, PE
Patrick M. Crimmins, PE
Craig Langton, PE

COPY: 230 Commerce Way, LLC

DATE: May 24, 222

1.0 Project Description

The proposed project is located at 230 Commerce Way. The existing parcels includes a three (3) story office building with a footprint of approximately 16,650 SF with associated surface parking. The site is bound to the southeast by Portsmouth Boulevard, and two (2) commercial properties to the southwest and northwest. The topography of the site has high points along Commerce Way and slopes to the rear, southwest, portion of the site.

Runoff generated by the existing site flows to one (1) discharge point identified as Point of Analysis 1 (PA-1) on the enclosed Pre-Development Watershed Plan. PA-1 is an existing wetland complex in the rear of the site that collects the drainage from the existing commercial uses adjacent to the site.

The proposed project consists of the constructing of an additional 2-story building that has an overall footprint of approximately 12,500 SF with associated site improvements within the area of the rear parking lot of the existing site. The proposed site improvements include a stormwater management system providing treatment not only to the newly redeveloped areas but also to portions of the existing impervious areas on site.

Portions of the proposed project are location within the local wetland buffer setback, and as part of the redevelopment there will be a decrease of impervious area of approximately 5,070 SF within the buffer as well as an overall decrease of impervious area to the overall site.

2.0 Drainage Analysis

2.1 Calculation Methods

The parcels on-site watersheds were analyzed under this section. The design storms analyzed in this study are the 2-year, 10-year, 25-year and 50-year 24-hour duration storm as per NHDES AoT Regulations (Env-Wq 1500). The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. A Type III storm pattern was used in the model. The rainfall data for these storm events were obtained from the data published by the Northeast Regional Climate Center at Cornell University for the extreme precipitation estimates.

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.

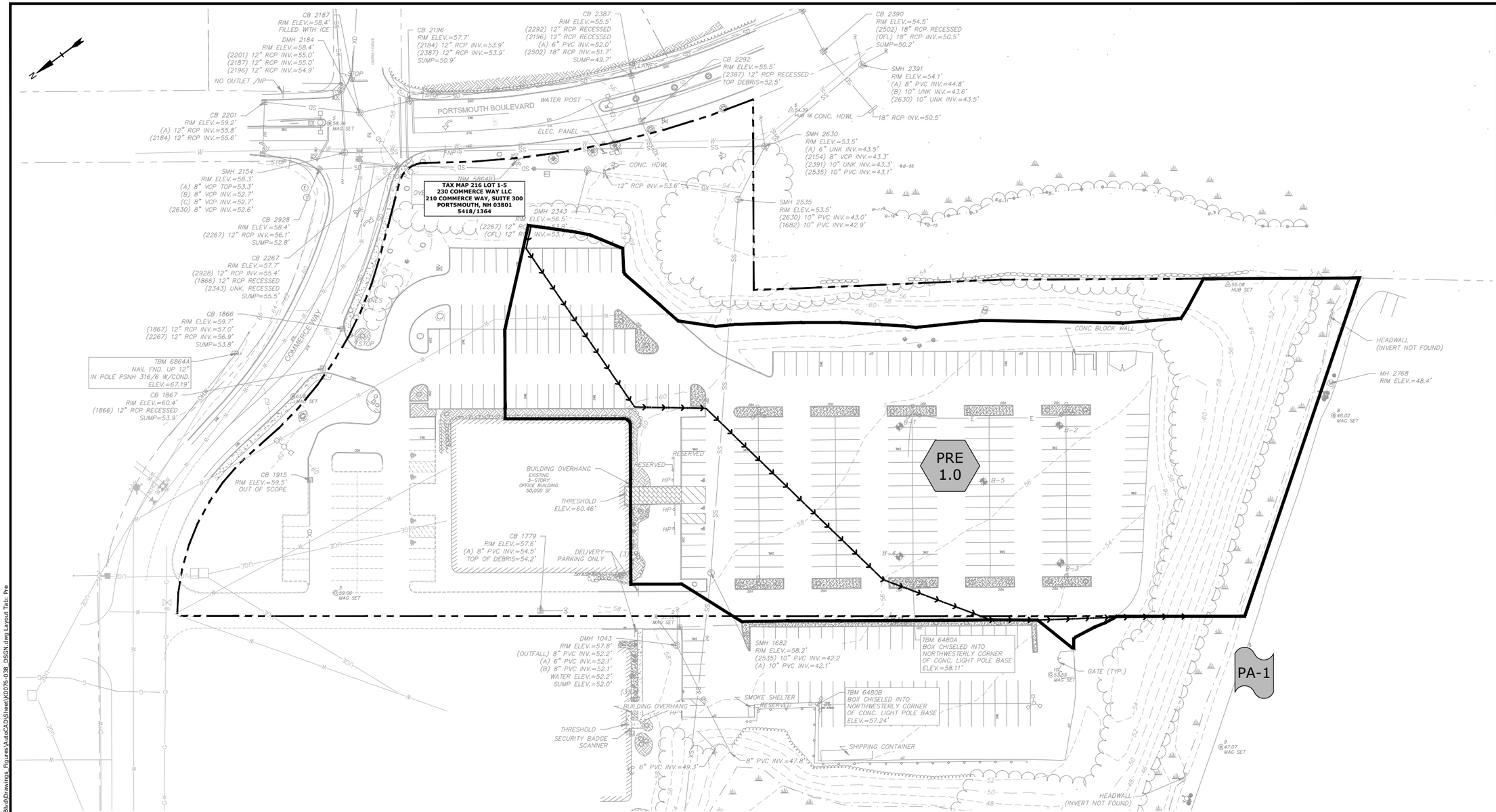
3. "Extreme Precipitation in New York & New England." Extreme Precipitation in New York & New England by Northeast Regional Climate Center (NRCC), 26 June 2012.

2.2 Pre-Development Calculations

As stated above the stromwater runoff characteristics of the site were analyzed at one distinct point of analysis. This point of analysis being the existing wetland complex in the rear of the site identified as PA-1. The limits of the contributing watershed area (Pre-1.0) of the pre-development condition studied in this analysis are depicted the enclosed plan entitled "Pre-Development Watershed Plan", Sheet C-801.

2.2.1 Pre-Development Calculations

2.2.2 Pre-Development Watershed Plan



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

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

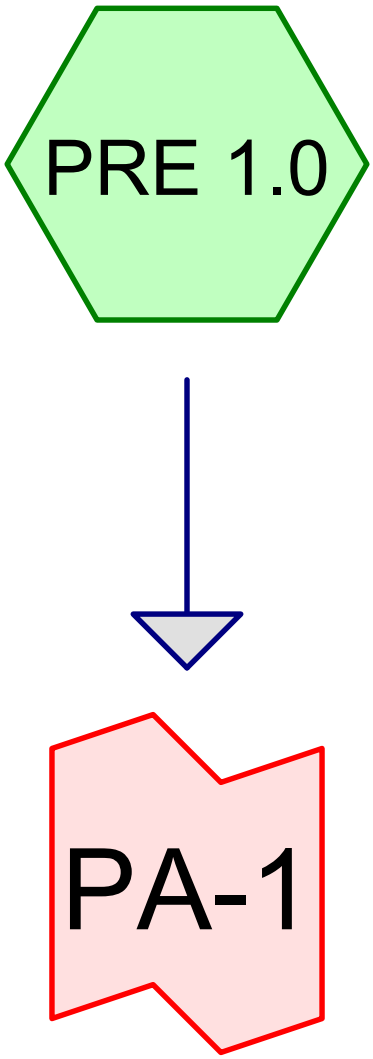
PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

PRE-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-801

Last Save Date: May 23, 2022 5:03 PM By: CML
Plot Date: May 23, 2022 5:03 PM By: Chris M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings, Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Pre



Subcat Reach Pond Link

Routing Diagram for K0076-038_PRE
Prepared by Tighe & Bond, Printed 5/17/2022

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
25,735	61	>75% Grass cover, Good, HSG B (PRE 1.0)
6,305	80	>75% Grass cover, Good, HSG D (PRE 1.0)
86,704	98	Paved parking, HSG B (PRE 1.0)
17,987	55	Woods, Good, HSG B (PRE 1.0)
136,731	**85**	**TOTAL AREA**

Summary for Subcatchment PRE 1.0:

Runoff = 6.67 cfs @ 12.07 hrs, Volume= 20,027 cf, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.20"

Area (sf)	CN	Description
86,704	98	Paved parking, HSG B
6,305	80	>75% Grass cover, Good, HSG D
17,987	55	Woods, Good, HSG B
25,735	61	>75% Grass cover, Good, HSG B
136,731	85	Weighted Average
50,027		36.59% Pervious Area
86,704		63.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	500	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	56	0.1439	5.69		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	656	Total			

Summary for Link PA-1:

Inflow Area = 136,731 sf, 63.41% Impervious, Inflow Depth = 1.76" for 2yr event
Inflow = 6.67 cfs @ 12.07 hrs, Volume= 20,027 cf
Primary = 6.67 cfs @ 12.07 hrs, Volume= 20,027 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PRE 1.0:

Runoff = 12.16 cfs @ 12.07 hrs, Volume= 36,800 cf, Depth= 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=4.85"

Area (sf)	CN	Description
86,704	98	Paved parking, HSG B
6,305	80	>75% Grass cover, Good, HSG D
17,987	55	Woods, Good, HSG B
25,735	61	>75% Grass cover, Good, HSG B
136,731	85	Weighted Average
50,027		36.59% Pervious Area
86,704		63.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	500	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	56	0.1439	5.69		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	656	Total			

Summary for Link PA-1:

Inflow Area = 136,731 sf, 63.41% Impervious, Inflow Depth = 3.23" for 10yr event
Inflow = 12.16 cfs @ 12.07 hrs, Volume= 36,800 cf
Primary = 12.16 cfs @ 12.07 hrs, Volume= 36,800 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PRE 1.0:

Runoff = 16.54 cfs @ 12.06 hrs, Volume= 50,638 cf, Depth= 4.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.15"

Area (sf)	CN	Description
86,704	98	Paved parking, HSG B
6,305	80	>75% Grass cover, Good, HSG D
17,987	55	Woods, Good, HSG B
25,735	61	>75% Grass cover, Good, HSG B
136,731	85	Weighted Average
50,027		36.59% Pervious Area
86,704		63.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	500	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	56	0.1439	5.69		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	656	Total			

Summary for Link PA-1:

Inflow Area = 136,731 sf, 63.41% Impervious, Inflow Depth = 4.44" for 25yr event
Inflow = 16.54 cfs @ 12.06 hrs, Volume= 50,638 cf
Primary = 16.54 cfs @ 12.06 hrs, Volume= 50,638 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PRE 1.0:

Runoff = 20.61 cfs @ 12.06 hrs, Volume= 63,778 cf, Depth= 5.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=7.36"

Area (sf)	CN	Description
86,704	98	Paved parking, HSG B
6,305	80	>75% Grass cover, Good, HSG D
17,987	55	Woods, Good, HSG B
25,735	61	>75% Grass cover, Good, HSG B
136,731	85	Weighted Average
50,027		36.59% Pervious Area
86,704		63.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	500	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	56	0.1439	5.69		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	656	Total			

Summary for Link PA-1:

Inflow Area = 136,731 sf, 63.41% Impervious, Inflow Depth = 5.60" for 50yr event
Inflow = 20.61 cfs @ 12.06 hrs, Volume= 63,778 cf
Primary = 20.61 cfs @ 12.06 hrs, Volume= 63,778 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

2.3 Post-Development Calculations

The stromwater runoff characteristics of the pre-development conditions were analyzed at same distinct point of analysis (PA-1). However, in the post-development condition the overall contributing watershed was split into two (2) sub watershed areas (Post-1.0 & Post-1.1). Though the two (2) post-development watershed areas ultimately drain to the same point of analysis (PA-1), the proposed drainage system was designed to capture runoff from the contributing impervious areas (Post-1.1) and direct the flow through a proprietary stormwater treatment unit prior to discharging the runoff to PA-1. Post-development watershed areas (Post-1.0 & Post-1.1) of the post-development condition are depicted the enclosed plan entitled "Post-Development Watershed Plan", Sheet C-802.

2.3.1 Post-Development Calculations

2.3.2 Post-Development Watershed Plan

PORTSMOUTH BOULEVARD

COMMERCE WAY

OSPREY DRIVE

TAX MAP 216 LOT 1-5
230 COMMERCE WAY LLC
210 COMMERCE WAY, SUITE 300
PORTSMOUTH, NH 03801
5418/1364

TBM 6864A
NAIL FND. UP 12"
IN POLE PSNH 316/6 W/COND.
ELEV.=67.19'

EXISTING
3-STORY
OFFICE BUILDING
50,000 SF

THRESHOLD
ELEV.=60.46'

THRESHOLD
ELEV.=58.81'

PROPOSED
2-STORY BUILDING
FOOTPRINT: ±12,500 SF

LINAC
VAULT

LINAC
CONTROL
ROOM

TBM 6480B
BOX CHISELED INTO
NORTHWESTERLY CORNER
OF CONC. LIGHT POLE BASE
ELEV.=57.24'

POST
1.0

POST
1.1

PA-1

LEGEND

- POST-DEVELOPMENT WATERSHED BOUNDARY
- NRCS WEB SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- POST 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- PA-1 — POINT OF ANALYSIS

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

POST-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-802

Last Save Date: May 23, 2022, 5:03 PM By: CML
Plot Date: Monday, May 23, 2022 Plotted For: Craig M. Langton
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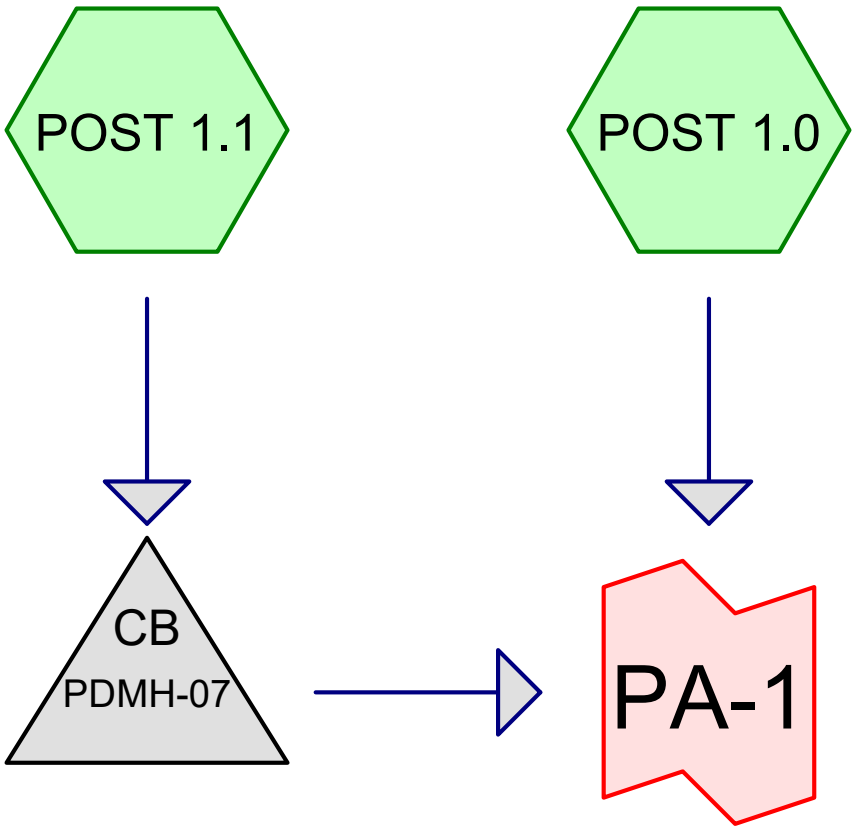

JELLYFISH JF8

Subcat Reach Pond Link

Routing Diagram for K0076-038_POST
Prepared by Tighe & Bond, Printed 5/17/2022

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
33,121	61	>75% Grass cover, Good, HSG B (POST 1.0, POST 1.1)
6,305	80	>75% Grass cover, Good, HSG D (POST 1.0)
66,420	98	Paved parking, HSG B (POST 1.1)
14,617	98	Roofs, HSG B (POST 1.1)
16,268	55	Woods, Good, HSG B (POST 1.0, POST 1.1)
136,731	**83**	**TOTAL AREA**

Summary for Subcatchment POST 1.0:

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 924 cf, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.20"

Area (sf)	CN	Description
0	98	Paved parking, HSG B
0	98	Roofs, HSG B
6,305	80	>75% Grass cover, Good, HSG D
13,316	55	Woods, Good, HSG B
1,719	61	>75% Grass cover, Good, HSG B
21,340	63	Weighted Average
21,340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.3333	0.21		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Summary for Subcatchment POST 1.1:

Runoff = 6.16 cfs @ 12.07 hrs, Volume= 18,413 cf, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.20"

Area (sf)	CN	Description
66,420	98	Paved parking, HSG B
14,617	98	Roofs, HSG B
0	80	>75% Grass cover, Good, HSG D
2,952	55	Woods, Good, HSG B
31,402	61	>75% Grass cover, Good, HSG B
115,391	87	Weighted Average
34,354		29.77% Pervious Area
81,037		70.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	19	0.0815	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	151	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	194	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.2	34	0.0060	3.51	2.76	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.7	166	0.0050	3.72	4.57	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.0	13	0.0080	5.32	9.40	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.3	75	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
4.3	652	Total			

Summary for Pond PDMH-07: JELLYFISH JF8

Inflow Area = 115,391 sf, 70.23% Impervious, Inflow Depth = 1.91" for 2yr event
Inflow = 6.16 cfs @ 12.07 hrs, Volume= 18,413 cf
Outflow = 6.16 cfs @ 12.07 hrs, Volume= 18,413 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.16 cfs @ 12.07 hrs, Volume= 18,413 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 50.61' @ 12.07 hrs
Flood Elev= 55.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.10'	**18.0" Round Culvert** L= 74.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 49.10' / 48.75' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.93 cfs @ 12.07 hrs HW=50.57' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 5.93 cfs @ 4.25 fps)

Summary for Link PA-1:

Inflow Area = 136,731 sf, 59.27% Impervious, Inflow Depth = 1.70" for 2yr event
Inflow = 6.37 cfs @ 12.07 hrs, Volume= 19,337 cf
Primary = 6.37 cfs @ 12.07 hrs, Volume= 19,337 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment POST 1.0:

Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,516 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=4.85"

Area (sf)	CN	Description
0	98	Paved parking, HSG B
0	98	Roofs, HSG B
6,305	80	>75% Grass cover, Good, HSG D
13,316	55	Woods, Good, HSG B
1,719	61	>75% Grass cover, Good, HSG B
21,340	63	Weighted Average
21,340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.3333	0.21		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Summary for Subcatchment POST 1.1:

Runoff = 10.85 cfs @ 12.06 hrs, Volume= 32,946 cf, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=4.85"

Area (sf)	CN	Description
66,420	98	Paved parking, HSG B
14,617	98	Roofs, HSG B
0	80	>75% Grass cover, Good, HSG D
2,952	55	Woods, Good, HSG B
31,402	61	>75% Grass cover, Good, HSG B
115,391	87	Weighted Average
34,354		29.77% Pervious Area
81,037		70.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	19	0.0815	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	151	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	194	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.2	34	0.0060	3.51	2.76	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.7	166	0.0050	3.72	4.57	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.0	13	0.0080	5.32	9.40	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.3	75	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
4.3	652	Total			

Summary for Pond PDMH-07: JELLYFISH JF8

Inflow Area = 115,391 sf, 70.23% Impervious, Inflow Depth = 3.43" for 10yr event
Inflow = 10.85 cfs @ 12.06 hrs, Volume= 32,946 cf
Outflow = 10.85 cfs @ 12.06 hrs, Volume= 32,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.85 cfs @ 12.06 hrs, Volume= 32,946 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 51.92' @ 12.06 hrs
Flood Elev= 55.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.10'	**18.0" Round Culvert** L= 74.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 49.10' / 48.75' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.48 cfs @ 12.06 hrs HW=51.81' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 10.48 cfs @ 5.93 fps)

Summary for Link PA-1:

Inflow Area = 136,731 sf, 59.27% Impervious, Inflow Depth = 3.11" for 10yr event
Inflow = 11.63 cfs @ 12.06 hrs, Volume= 35,462 cf
Primary = 11.63 cfs @ 12.06 hrs, Volume= 35,462 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment POST 1.0:

Runoff = 1.33 cfs @ 12.07 hrs, Volume= 4,058 cf, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.15"

Area (sf)	CN	Description
0	98	Paved parking, HSG B
0	98	Roofs, HSG B
6,305	80	>75% Grass cover, Good, HSG D
13,316	55	Woods, Good, HSG B
1,719	61	>75% Grass cover, Good, HSG B
21,340	63	Weighted Average
21,340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.3333	0.21		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Summary for Subcatchment POST 1.1:

Runoff = 14.56 cfs @ 12.06 hrs, Volume= 44,819 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.15"

Area (sf)	CN	Description
66,420	98	Paved parking, HSG B
14,617	98	Roofs, HSG B
0	80	>75% Grass cover, Good, HSG D
2,952	55	Woods, Good, HSG B
31,402	61	>75% Grass cover, Good, HSG B
115,391	87	Weighted Average
34,354		29.77% Pervious Area
81,037		70.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	19	0.0815	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	151	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	194	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.2	34	0.0060	3.51	2.76	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.7	166	0.0050	3.72	4.57	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.0	13	0.0080	5.32	9.40	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.3	75	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
4.3	652	Total			

Summary for Pond PDMH-07: JELLYFISH JF8

Inflow Area = 115,391 sf, 70.23% Impervious, Inflow Depth = 4.66" for 25yr event
Inflow = 14.56 cfs @ 12.06 hrs, Volume= 44,819 cf
Outflow = 14.56 cfs @ 12.06 hrs, Volume= 44,819 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.56 cfs @ 12.06 hrs, Volume= 44,819 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 53.24' @ 12.06 hrs
Flood Elev= 55.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.10'	**18.0" Round Culvert** L= 74.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 49.10' / 48.75' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=14.08 cfs @ 12.06 hrs HW=53.06' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 14.08 cfs @ 7.97 fps)

Summary for Link PA-1:

Inflow Area = 136,731 sf, 59.27% Impervious, Inflow Depth = 4.29" for 25yr event
Inflow = 15.89 cfs @ 12.06 hrs, Volume= 48,876 cf
Primary = 15.89 cfs @ 12.06 hrs, Volume= 48,876 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment POST 1.0:

Runoff = 1.89 cfs @ 12.07 hrs, Volume= 5,642 cf, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=7.36"

Area (sf)	CN	Description
0	98	Paved parking, HSG B
0	98	Roofs, HSG B
6,305	80	>75% Grass cover, Good, HSG D
13,316	55	Woods, Good, HSG B
1,719	61	>75% Grass cover, Good, HSG B
21,340	63	Weighted Average
21,340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.3333	0.21		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"

Summary for Subcatchment POST 1.1:

Runoff = 18.00 cfs @ 12.06 hrs, Volume= 56,040 cf, Depth= 5.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=7.36"

Area (sf)	CN	Description
66,420	98	Paved parking, HSG B
14,617	98	Roofs, HSG B
0	80	>75% Grass cover, Good, HSG D
2,952	55	Woods, Good, HSG B
31,402	61	>75% Grass cover, Good, HSG B
115,391	87	Weighted Average
34,354		29.77% Pervious Area
81,037		70.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	19	0.0815	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	151	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	194	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.2	34	0.0060	3.51	2.76	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.7	166	0.0050	3.72	4.57	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.0	13	0.0080	5.32	9.40	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.3	75	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
4.3	652	Total			

Summary for Pond PDMH-07: JELLYFISH JF8

Inflow Area = 115,391 sf, 70.23% Impervious, Inflow Depth = 5.83" for 50yr event
Inflow = 18.00 cfs @ 12.06 hrs, Volume= 56,040 cf
Outflow = 18.00 cfs @ 12.06 hrs, Volume= 56,040 cf, Atten= 0%, Lag= 0.0 min
Primary = 18.00 cfs @ 12.06 hrs, Volume= 56,040 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 54.82' @ 12.06 hrs
Flood Elev= 55.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.10'	**18.0" Round Culvert** L= 74.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 49.10' / 48.75' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=17.42 cfs @ 12.06 hrs HW=54.55' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 17.42 cfs @ 9.86 fps)

Summary for Link PA-1:

Inflow Area = 136,731 sf, 59.27% Impervious, Inflow Depth = 5.41" for 50yr event
Inflow = 19.89 cfs @ 12.06 hrs, Volume= 61,683 cf
Primary = 19.89 cfs @ 12.06 hrs, Volume= 61,683 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

2.4 Peak Rate Comparisons

The following table summarizes and compares the pre- and post-development peak runoff rates for the 2-year, 10-year, 25-year and 50-year storm events at each point of analysis.

Table 2.4.1 - 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	6.67	12.16	16.54	20.61
Post-Development Watershed				
PA-1	6.37	11.63	15.89	19.89

2.5 Stormwater Treatment

The stormwater management system has been designed to provide stormwater treatment as required by the City of Portsmouth Site Review Regulations and the NHDES AoT Regulations (Env-Wq 1500).

Runoff generated from impervious areas will be treated by a Contech Jellyfish (JF8) stormwater treatment system. The surface parking area will receive pre-treatment via deep sump catch basins prior to discharging to the Jellyfish unit. Roof runoff is to be discharged directly in the proposed closed drainage system prior to being directed to the Contech stromwater treatment unit.

The Contech stormwater treatment unit was sized to treat the one (1) inch storm per the NHDES AoT Regulations for water quality flow (WQF), as shown on the enclosed NHDES WQF worksheet.

3.0 Conclusion

The proposed project will result in a reduction in post-development peak runoff rates from the pre-development condition. The impervious area resulting from the proposed project will be treated by the proposed stormwater treatment system.

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)

2.65	ac	A = Area draining to the practice
1.86	ac	A_I = Impervious area draining to the practice
0.70	decimal	I = Percent impervious area draining to the practice, in decimal form
0.68	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
1.81	ac-in	WQV= 1" x Rv x A
6,559	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".
0.68	inches	Q = Water quality depth. Q = WQV/A
97	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.3	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.068	inches	Ia = Initial abstraction. Ia = 0.2S
4.3	minutes	T_c = Time of Concentration
615.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
1.736	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:

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	70.786 degrees West
Latitude	43.089 degrees North
Elevation	0 feet
Date/Time	Wed, 11 May 2022 10:39:24 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.02	2.65	2.91	**1yr**	2.35	2.80	3.20	3.93	4.53	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.51	1.93	2.48	3.20	3.56	**2yr**	2.83	3.42	3.92	4.66	5.31	**2yr**
5yr	0.37	0.58	0.73	0.97	1.24	1.60	**5yr**	1.07	1.46	1.88	2.42	3.13	4.05	4.56	**5yr**	3.59	4.38	5.02	5.91	6.68	**5yr**
10yr	0.41	0.64	0.81	1.11	1.44	1.88	**10yr**	1.24	1.72	2.22	2.88	3.73	4.85	5.51	**10yr**	4.29	5.30	6.05	7.08	7.95	**10yr**
25yr	0.47	0.75	0.96	1.32	1.76	2.32	**25yr**	1.52	2.13	2.76	3.61	4.71	6.15	7.07	**25yr**	5.44	6.80	7.75	8.98	10.01	**25yr**
50yr	0.53	0.85	1.09	1.52	2.05	2.73	**50yr**	1.77	2.51	3.26	4.29	5.63	7.36	8.55	**50yr**	6.51	8.22	9.36	10.76	11.93	**50yr**
100yr	0.59	0.95	1.23	1.75	2.39	3.22	**100yr**	2.06	2.95	3.87	5.12	6.73	8.82	10.33	**100yr**	7.80	9.94	11.30	12.89	14.22	**100yr**
200yr	0.67	1.09	1.41	2.02	2.79	3.79	**200yr**	2.41	3.49	4.57	6.08	8.03	10.57	12.50	**200yr**	9.35	12.02	13.64	15.45	16.96	**200yr**
500yr	0.79	1.29	1.69	2.45	3.43	4.70	**500yr**	2.96	4.34	5.70	7.63	10.15	13.43	16.08	**500yr**	11.88	15.46	17.52	19.65	21.42	**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	0.89	**1yr**	0.63	0.87	0.92	1.32	1.67	2.22	2.49	**1yr**	1.96	2.39	2.84	3.16	3.87	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.36	1.82	2.34	3.05	3.44	**2yr**	2.70	3.31	3.81	4.53	5.05	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.74	3.78	4.18	**5yr**	3.34	4.02	4.69	5.51	6.22	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.40	3.07	4.36	4.85	**10yr**	3.86	4.66	5.42	6.38	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.34	1.86	2.10	2.77	3.56	4.67	5.88	**25yr**	4.14	5.65	6.61	7.76	8.65	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.10	3.96	5.28	6.79	**50yr**	4.67	6.53	7.69	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	3.45	4.39	5.92	7.84	**100yr**	5.24	7.54	8.93	10.45	11.51	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.82	**200yr**	1.96	2.75	2.93	3.83	4.85	6.63	9.05	**200yr**	5.86	8.70	10.37	12.15	13.30	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.37	**500yr**	2.33	3.29	3.40	4.38	5.54	7.69	10.93	**500yr**	6.81	10.51	12.63	14.85	16.08	**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**	0.76	1.06	1.25	1.75	2.21	2.99	3.14	**1yr**	2.64	3.02	3.57	4.37	5.03	**1yr**
2yr	0.33	0.52	0.64	0.86	1.06	1.26	**2yr**	0.92	1.24	1.48	1.96	2.51	3.42	3.68	**2yr**	3.02	3.54	4.07	4.82	5.62	**2yr**
5yr	0.40	0.61	0.76	1.04	1.33	1.61	**5yr**	1.15	1.58	1.88	2.53	3.24	4.32	4.94	**5yr**	3.83	4.75	5.35	6.34	7.12	**5yr**
10yr	0.46	0.71	0.89	1.24	1.60	1.96	**10yr**	1.38	1.92	2.27	3.10	3.94	5.32	6.17	**10yr**	4.71	5.93	6.77	7.80	8.71	**10yr**
25yr	0.57	0.87	1.08	1.54	2.03	2.55	**25yr**	1.75	2.49	2.94	4.05	5.12	7.77	8.29	**25yr**	6.87	7.97	9.07	10.28	11.35	**25yr**
50yr	0.66	1.01	1.26	1.81	2.44	3.10	**50yr**	2.10	3.03	3.58	4.97	6.26	9.73	10.39	**50yr**	8.61	9.99	11.33	12.65	13.89	**50yr**
100yr	0.78	1.18	1.48	2.13	2.92	3.77	**100yr**	2.52	3.68	4.35	6.12	7.68	12.17	13.01	**100yr**	10.77	12.51	14.16	15.60	17.01	**100yr**
200yr	0.91	1.37	1.74	2.51	3.50	4.59	**200yr**	3.02	4.49	5.30	7.53	9.41	15.28	16.32	**200yr**	13.52	15.70	17.71	19.22	20.82	**200yr**
500yr	1.13	1.68	2.16	3.13	4.45	5.95	**500yr**	3.84	5.82	6.87	9.93	12.35	20.64	22.03	**500yr**	18.27	21.19	23.82	25.34	27.23	**500yr**

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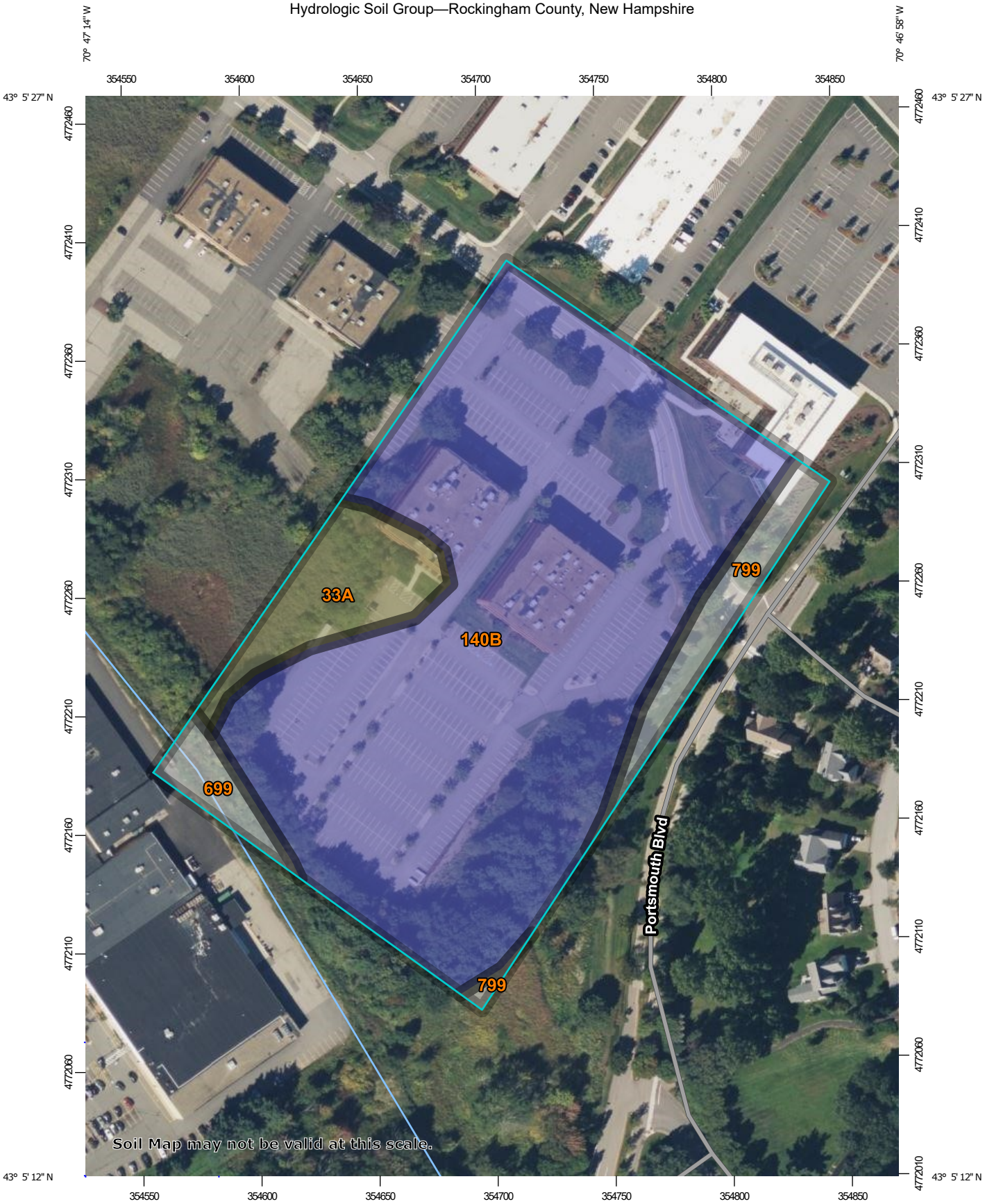
Northeast Regional Climate Center



Map Scale: 1:2,220 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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 Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2021—Nov 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
33A	Scitico silt loam, 0 to 5 percent slopes	C/D	0.9	8.3%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	B	9.2	82.8%
699	Urban land		0.3	2.8%
799	Urban land-Canton complex, 3 to 15 percent slopes		0.7	6.0%
Totals for Area of Interest			**11.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

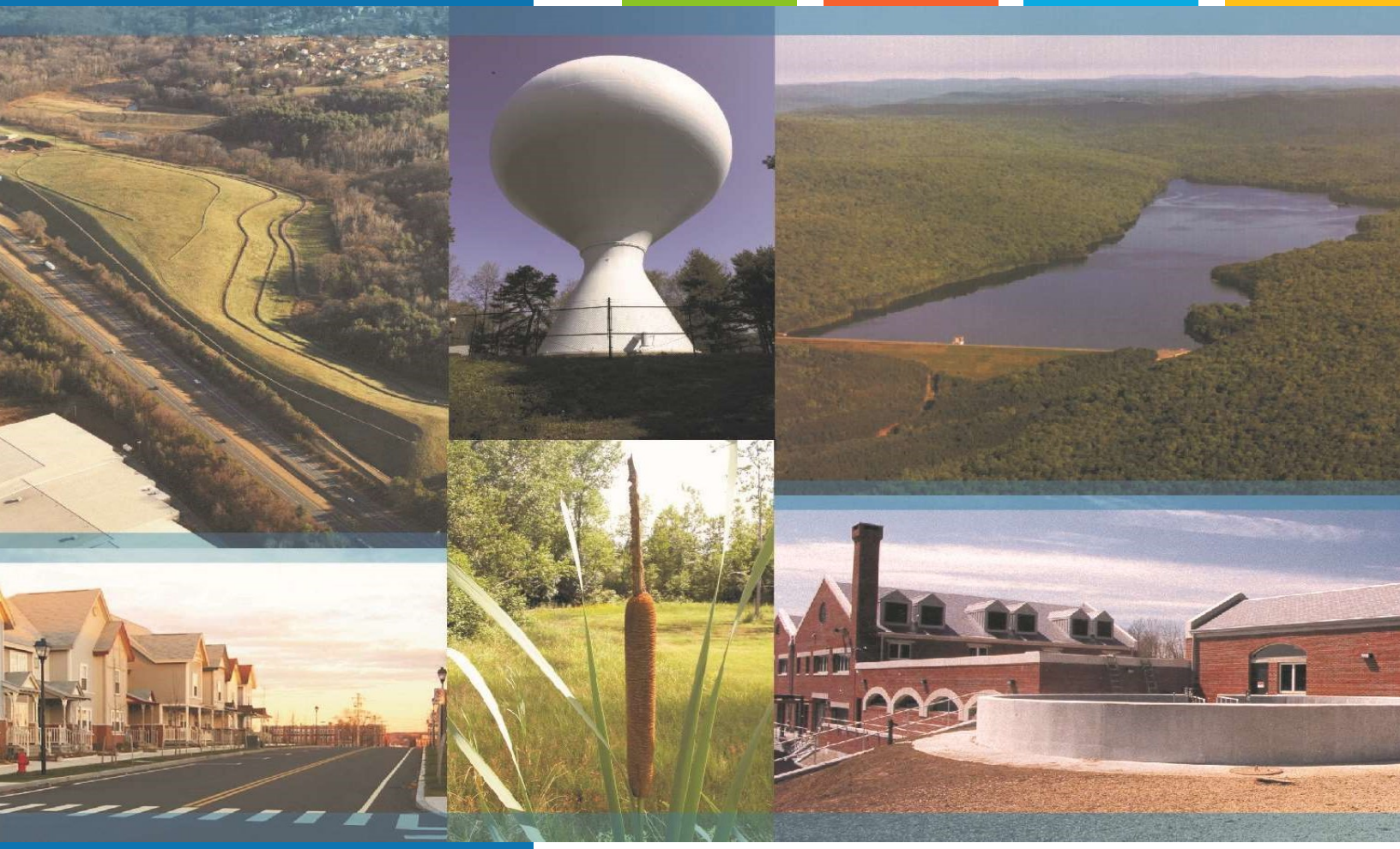
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Proposed 2-Story Building

Portsmouth, NH

Long Term Operation & Maintenance Plan

Prepared For:

230 Commerce Way LLC
210 Commerce Way, Suite 300
Portsmouth, NH 03801

May 24, 2022

Section 1 Long-Term Operation & Maintenance Plan

1.1 Contact/Responsible Party 1-1
1.2 Maintenance Items 1-1
1.3 Overall Site Operation & Maintenance Schedule 1-2
1.3.1 Disposal Requirements 1-2
1.4 Jellyfish Treatment Unit Maintenance Requirements 1-3
1.5 Snow & Ice Management for Standard Asphalt and Walkways 1-4

Section 2 Annual Updates and Log Requirements

Section 1
Long-Term Operation & Maintenance Plan

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high-quality stormwater runoff.

1.1 Contact/Responsible Party

Kelsey Kraus, Director of Property Management
The Kane Company, Inc.
210 Commerce Way, Suite 300
Portsmouth, NH 03801
603-559-9666

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

1.2 Maintenance Items

Maintenance of the following items shall be recorded:

- Litter/Debris Removal
- Landscaping
- Catch Basin
- Pavement Sweeping
- ADS Water Quality Unit

The following maintenance items and schedule represent the minimum action required. Periodic site inspections shall be conducted, and all measures must be maintained in effective operating condition. The following items shall be observed during site inspection and maintenance:

- Inspect vegetated areas, particularly slopes and embankments for areas of erosion. Replant and restore as necessary
- Inspect catch basins for sediment buildup
- Inspect site for trash and debris

1.3 Overall Site Operation & Maintenance Schedule

Maintenance Item	Frequency of Maintenance
Litter/Debris Removal	Weekly
Pavement Sweeping - Sweep impervious areas to remove sand and litter.	Annually
Landscaping - Landscaped islands to be maintained and mulched.	Maintained as required and mulched each Spring
Catch Basin (CB) Cleaning - CBs to be cleaned of solids and oils.	Bi-Annually
Jellyfish Treatment Unit - Visual observation of sediment levels within system - Cleaned (pumped and pressure washed) - Per manufacture recommendations	 - Quarterly and after major storm events. - Annually - See manufactures Jellyfish Treatment Unit Inspection and Maintenance Guide, enclosed

1.3.1 Disposal Requirements

Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

1.4 Jellyfish Treatment Unit Maintenance Requirements

1.5 Snow & Ice Management for Standard Asphalt and Walkways

Snow storage areas shall be located such that no direct untreated discharges are possible to receiving waters from the storage site (snow storage areas have been shown on the Site Plan).

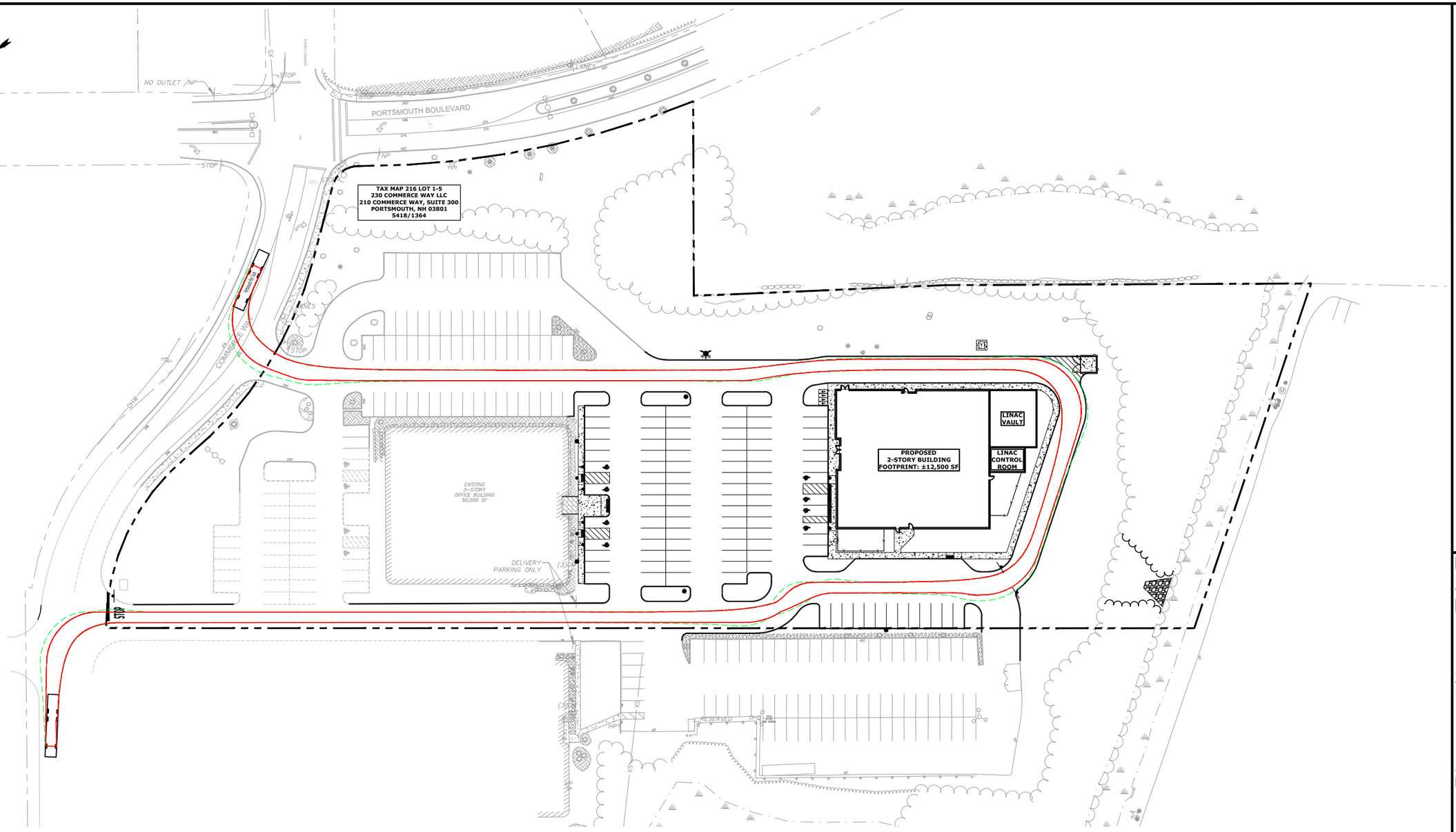
Section 2
Annual Updates and Log Requirements

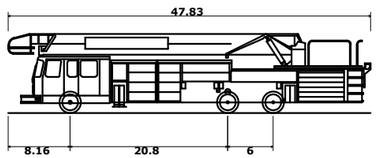
The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site.

Copies of the Stormwater Maintenance report shall be submitted to the City of Portsmouth DPW on an annual basis.

Stormwater Management Report						
Proposed Hampton Street Hangars		**Proposed 2-Story Building – Portsmouth NH 03801**				
BMP Description	**Date of Inspection**	**Inspector**	**BMP Installed and Operating Properly?**	**Cleaning / Corrective Action Needed**	**Date of Cleaning / Repair**	**Performed By**
Deep Sump CB's			❑Yes ❑No			
Jellyfish Treatment Unit			❑Yes ❑No			





Portsmouth Fire Truck	
Overall Length	47.830ft
Overall Width	8.500ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	38.00°

LEGEND

- VEHICLE OVERHANG
- VEHICLE WHEEL BASE

Tighe&Bond

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

FIRE TRUCK TURNING EXHIBIT

SCALE: AS SHOWN

1 OF 1

Last Save Date: May 23, 2022 4:17 PM By: CML
Last Plot Date: May 23, 2022 4:17 PM By: Craig M. Langton
T&B File Location : J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\Autocad\CAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Fire Truck

K0076-038
May 24, 2022

Mr. Eric Eby, City Traffic Engineer
City of Portsmouth
Department of Public Works
680 Peverly Hill Road
Portsmouth New Hampshire

Re: **Trip Generation Analysis**
Proposed 2-Story Building, 230 Commerce Way, Portsmouth, NH

Dear Eric:

Tighe & Bond has performed a trip generation analysis related to the construction of a proposed two-story 25,000 SF (GFA) building that will consist of a Veterinary Care use located at 230 Commerce Way in Portsmouth, NH. Port City Veterinary Referral Hospital ("Port City") will be relocating from its current 15,000 SF facility located at 215 Commerce Way.

This analysis was performed utilizing Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. For the purposes of analysis, we have calculated the trip generation for the the veterinary use utilizing the average peak AM and PM hour rates for ITE Land Use Code 640 – Animal Hospital/Veterinary Clinic, which are 3.64 and 3.53 per 1,000 SF, respectively.

	Veterinary Care (ITE LUC 640)
Weekday AM Peak Hour	
Trips Entering (67%)	61
Trips Exiting (33%)	30
Total Vehicle Trips	**91**
Weekday PM Peak Hour	
Trips Entering (40%)	35
Trips Exiting (60%)	53
Total Vehicle Trips	**88**

As depicted above, the proposed Veterinary Care use will result in approximately 1.5 additional vehicle trips every minute during the Weekday AM and PM peak hours which is anticipated to have minimal impact to the surrounding roadway network during these peak times.

In addition to the above trip generation calculations, the subject site has previously been reviewed through the City of Portsmouth Site Review process with respect to traffic-related impacts.

- In the September 1999, CLD Consulting Engineers, Inc. (CLD) prepared a *Traffic Impact Evaluation* for full build out of the Portsmouth Office Park with 244,000 square feet of Office use.

- In October 2005, AMES MSC prepared a *Traffic Impact Evaluation* as part of the Homewood Suites project located on Portsmouth Boulevard. This evaluation replaced 19,000 square feet of the Office use that was evaluated in the 1999 CLD *Traffic Impact Evaluation* with a 108-room hotel. With this evaluation, there was 225,000 SF of Office use remaining from the prior CLD study that was not yet constructed.

- In June 2015, Tighe & Bond prepared a *Traffic Evaluation* as part of an Office Building project located 75 Portsmouth Boulevard. This evaluation reviewed impacts associated with the construction of 112,000 SF of Office use at 75 Portsmouth Boulevard. This memorandum evaluated the proposed 112,000 SF of office to be built plus the 113,000 SF of remaining office use from the CLD study for the full build out of Portsmouth Office Park. **It should be noted that only 67,000 SF of the proposed 112,000 SF was ultimately built.**

- The proposed 25,000 SF Veterinary Care use has a peak hour generator that is approximately the equivalent of a 60,000 SF Office use. Thus, the peak hour trip generation associated with the Veterinary Care use is already accounted in the 2015 Tighe & Bond *Traffic Evaluation* described above.
    - With only 67,000 SF of the approved 112,000 SF of Office use being constructed at 75 Portsmouth Boulevard, a 45,000 SF balance of Office use previously anticipated to be constructed remains from the 2015 Tighe & Bond evaluation.
    - Applying this 45,000 SF balance to the Veterinary use equivalent of 60,000 SF leaves a surplus of 15,000 SF of Office use. This 15,000 SF surplus would then be subtracted from the 113,000 SF of Office use remaining for the full build out of Portsmouth Office Park as described above. In summary, a balance of 98,000 SF of Office use accounted for in the June 2015 Traffic Evaluation still remains not yet constructed for the full buildout of Portsmouth Office Park.

Please feel free to contact us if you have any questions or need any additional information.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

Patrick M. Crimmins, PE
Vice President

EVERSOURCE ENERGY

May 24, 2022

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

Craig Langton, PE
Tighe & Bond
177 Corporate Drive
Portsmouth NH, 03801

Dear Craig:

I am responding to your request to confirm the availability of electric service for the proposed 230 Commerce Way project being constructed for/by 230 Commerce Way, LLC.

The proposed project consists of a 2-story building with 0 residential units approximately 25,000 s/f of Veterinary Care space. The proposed development will be constructed along Commerce Way and Portsmouth Boulevard.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan C-104. The proposed building service will be fed from Commerce Way, to be determined by Eversource Engineering as depicted on utility plan C-104. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Utility Plan" dated May 24, 2022, shows transformer locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

Unitil
Northern Utilities, Inc.

May 12th, 2022

Craig Langton, PE
Project Engineer
Tighe & Bond
177 Corporate Drive, Portsmouth, NH, 03801

Natural Gas to 230 Commerce Way Portsmouth, NH

Hi Craig,

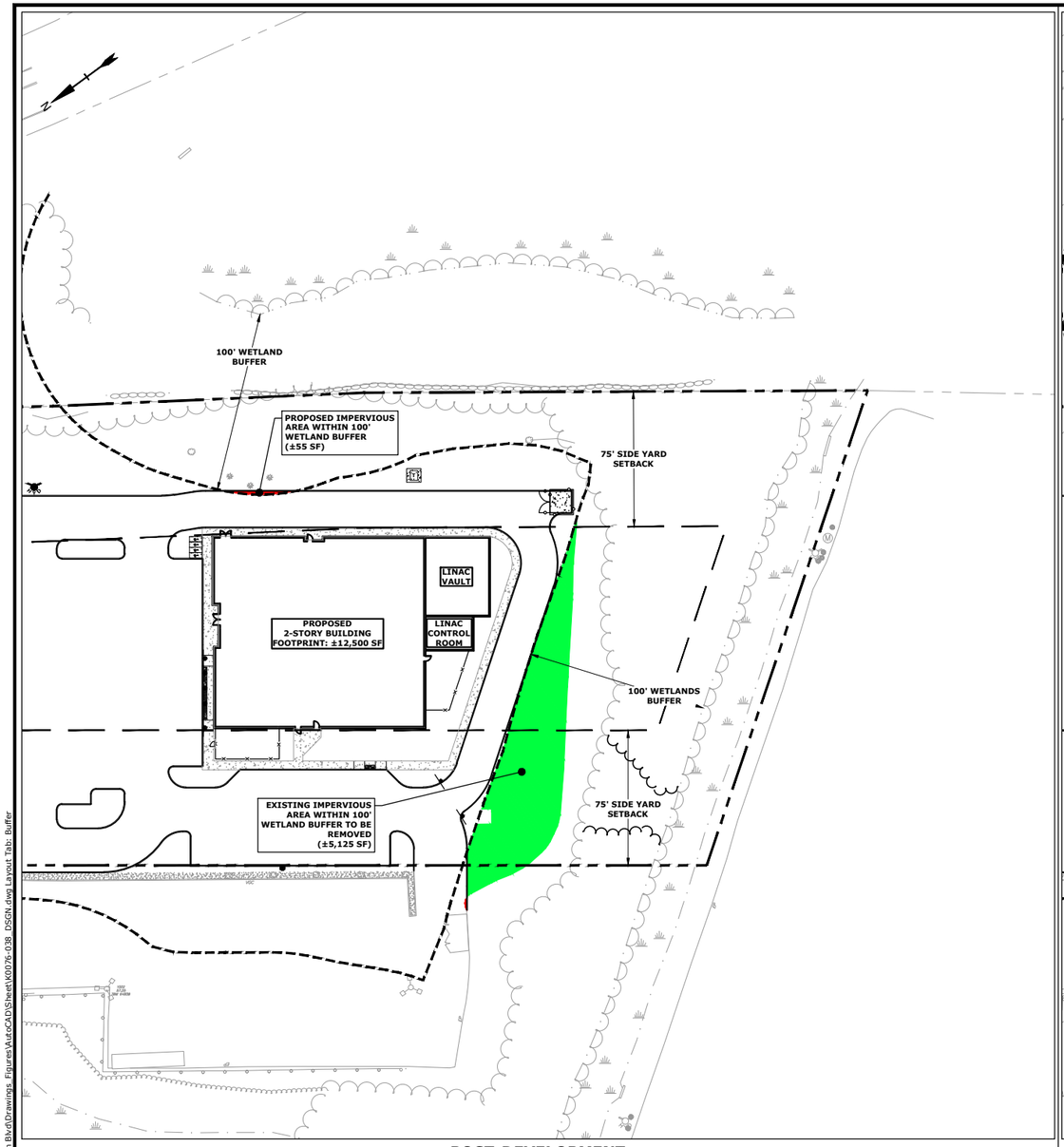
Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for natural gas service:

Unitil hereby confirms that natural gas is available for the proposed two-story commercial building at 230 Commerce Way, Portsmouth, NH.

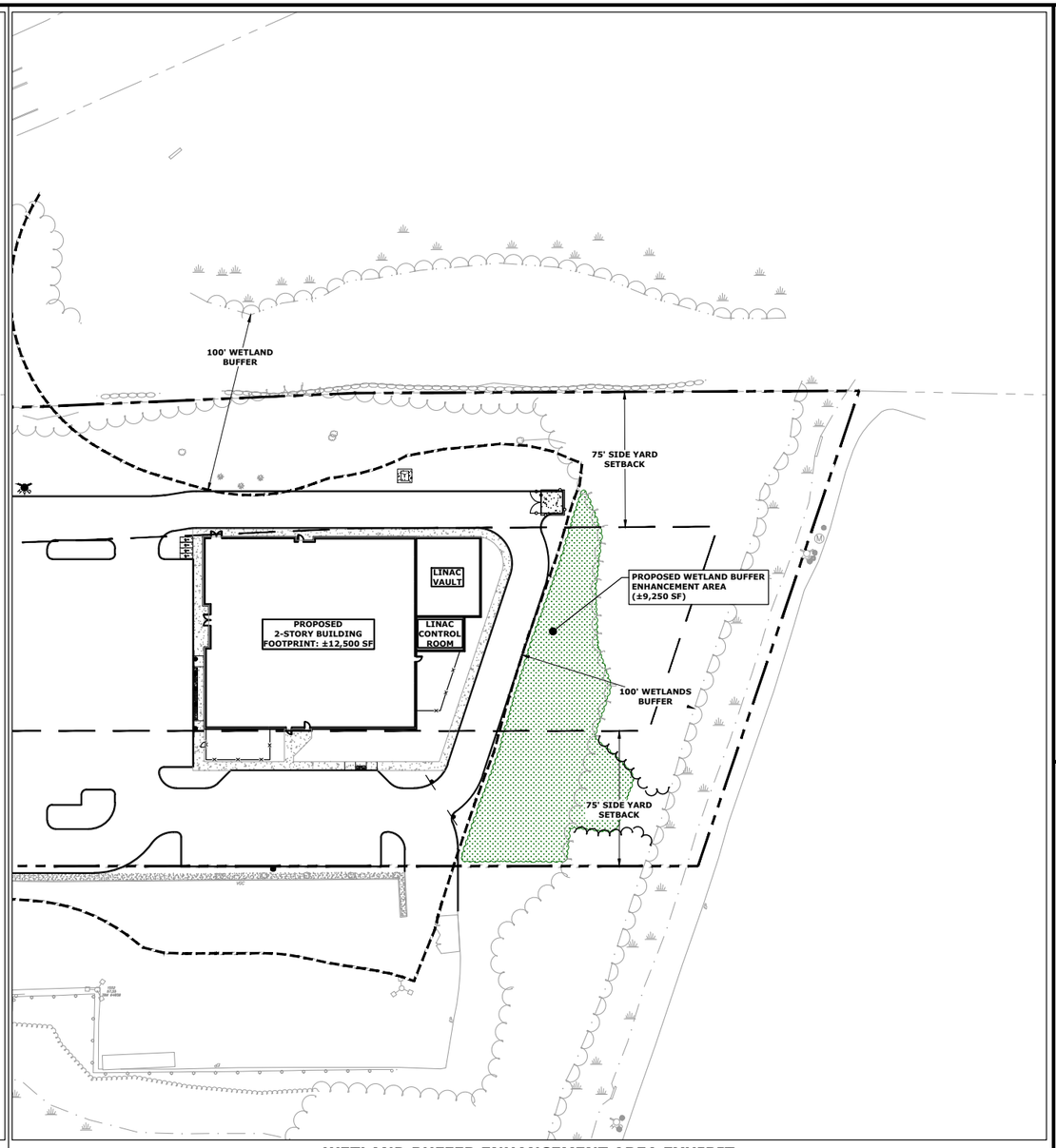
If you have any questions, please contact me at 603-534-2379.

Sincerely,

Dave MacLean
Senior Business Development Rep
Unitil
T 603.294.5261 **M** 603.534.2379 **F** 603.294.5264
Email macleand@unitil.com



POST-DEVELOPMENT
IMPERVIOUS AREA REDUCTION EXHIBIT



WETLAND BUFFER ENHANCEMENT AREA EXHIBIT

Tighe&Bond

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed 2-Story Building

230 Commerce Way, LLC

230 Commerce Way
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	5/24/2022	TAC Submission

PROJECT NO:	K0076-038
DATE:	5/24/2022
FILE:	K0076-038_DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

100' WETLAND BUFFER IMPACT EXHIBIT

SCALE: AS SHOWN

1 OF 1

Last Save Date: May 23, 2022 4:17 PM By: CML
Plot Date: Monday, May 23, 2022 Plotted By: Craig M. Langton
T&B File Location: J:\K\K0076 The Kane Company - General Proposals\0076-038 Portsmouth Blvd\Drawings_Figures\AutoCAD\Sheet\K0076-038_DSGN.dwg Layout Tab: Buffer

May 24, 2022

Sustainability Narrative for Planning Board

Proposed Office/Animal Clinic Building

25 Portsmouth Boulevard, Portsmouth NH

Introduction

25 Portsmouth Boulevard is a core and shell construction project located in Portsmouth that will accommodate office and animal clinic program components. It will follow the U.S. Green Building Council under the LEED v4 Building Design + Construction for Core & Shell. The project team expects the project shows sufficient potential to reach a minimum of Certified level LEED certification. This shall be accomplished through various qualities attributed to both the project context, as well as its design merits, and client (and tenant) initiatives described in the following sections.

Integrative Design

Integrative Process

During the preliminary design phases, the team studied site conditions, basic envelope attributes, energy-related systems, and water-related systems to identify potential synergies across disciplines and building systems.

Location and Transportation

Sensitive Land Protection

The project site is not located on prime farmland, not parkland, not on previously undeveloped land, not designated as habitat for endangered species, and not in proximity to wetlands or water bodies. The project site is in a previously developed parking lot area surrounded by other similar scale office properties

Access to Quality Transit

The planned project is 100 feet from Portsmouth Avenue and Shearwater COAST #2 bus stop. The site is also a 6 minute drive to Portsmouth International Airport.

Bicycle Facilities

The project will provide numerous bicycle racks for short-term storage outside of the project building for occupants' and visitors' use. Additionally, if the tenant choses to provide, the building will contain shower and locker/changing facilities for its regular occupants.

Green Vehicles

Hybrid vehicle preferred parking spaces and charging stations designated for use by plug-in electric vehicles are being explored.

Sustainable Sites

Construction Activity Pollution Prevention

A project-specific erosion and sedimentation control plan will be created with the objective of preventing loss of soil during construction, sedimentation of storm sewers, and pollution of the air with dust and particulate matter. The contractor shall be required to document compliance with the ESC throughout the construction process.

Site Assessment

A site assessment including topography, hydrology, climate, vegetation, soils, human uses, and human health effects will be performed and will inform the design of the project as appropriate.

Site Development –Protect or Restore Habitat

The project is built on a site with no greenfield area. Greenspace with a variety of native or adaptive vegetation, trees, and soil restoration will be provided.

Open Space

The project will provide some open space within the site area. The outdoor space will be physically accessible and includes pet and pedestrian-oriented paving with physical site elements that accommodate outdoor social activities.

Rainwater Management

The proposed stormwater management system will be designed to comply with the City of Portsmouth standards.

Heat Island Reduction

The solar reflectance index on the light-colored and reflective low sloped roofing, which will cover more than 75% of the overall building roof surface

Light Pollution Reduction

All exterior lighting shall automatically turn off when sufficient daylight is available. All building façade/landscape lighting shall be automatically shut off between midnight/business closing, and 6am/business opening.

Tenant Design and Construction Guidelines

Tenant design and construction guidelines will be issued to the building tenant to educate about implementing sustainable design and construction features in their tenant improvement fit-out. These guidelines will encourage building tenants to earn LEED ID+C v4 Certification for their interior fit-out.

Water Efficiency

Outdoor Water Use Reduction

Plant selection and an efficient irrigation system will reduce the potable water used for irrigation by at least 75% from a calculated midsummer baseline case as delineated under Option 2 for Reduced Irrigation.

Indoor Water Use Reduction

Water-efficient plumbing fixtures will reduce domestic water below the LEED water use baseline, shown through the usage-based calculations
· All toilets will utilize 1.1 gpf low flush valves
· All urinals will utilize 0.125 gpf ultra low flow flush valves
· All lavatories will utilize 0.35 gpm with metering tempering faucets
· All showers will utilize 1.5 gpm low flow shower heads
· All kitchen sinks will utilize 1.5 gpm faucets

Building – Level Water Metering & Water Metering

Permanent water meters will be installed which will measure the total potable water use for the building and its associated grounds.

Energy and Atmosphere

Fundamental Commissioning And Verification & Enhanced Commissioning

A third-party Commissioning Agent may be engaged before the end of the design development phase, and will review and comment on the project Owner's Project Requirements (OPR), Basis of Design, draft Design Development & Construction Documents. Additionally, he/she will develop and implement a Commissioning Plan for the building HVAC, plumbing, lighting systems and envelope, review construction submittals, and then issue a summary Commissioning Report. Finally, the CxA will participate in training for the building operational staff.

In addition to the Fundamental scope listed above, the CxA verifies the following for mechanical, electrical, plumbing, energy systems, and building envelope; these tasks shall be included in the OPR and BOD:

- Review contractor submittals.
- Verify Inclusion of systems manuals and operator training requirements in the construction documents
- Verify systems manual updates and delivery
- Verify operator and occupant training delivery and effectiveness
- Verify seasonal testing
- Review building operations 10 months after substantial completion.
- Develop an on-going commissioning plan

Minimum Energy Performance & Optimize Energy Performance

An energy model will be developed to describe how an energy-efficient building envelope and base building mechanical systems will reduce the building design performance rating to below the baseline building performance rating. This will continue to evolve through the design phase and align with the project design and any additional energy savings we are able to confirm as the design further develops.

Building-Level Energy Metering

Permanently installed meters will measure total building energy consumption

Fundamental Refrigerant Management & Enhanced Refrigerant Management

Building refrigerants will be selected to minimize the emission of compounds that contribute to ozone depletion and global climate change. Building refrigerants will not exceed maximum threshold allowances for contributions to ozone depletion and global warming potential. Our core and shell project will likely not include all HVAC associated with anticipated work by the tenant.

Green Power and Carbon Offsets

The Kane Company *is investigating options* to engage in a contract to purchase building's energy from green power, carbon offsets, or renewable energy certificates for a minimum of five years.

Materials and Resources

Storage and Collection of Recyclables

A Recycling Staging Room at the building loading area will support a building-wide recycling program for paper, corrugated cardboard, glass, plastic, and metal.

Construction and Demolition Waste Management Planning

A construction and demolition waste management plan will be developed prior to the start of construction which will identify at least five materials targeted for diversion, whether these materials will be separated or comingled, and will approximate a percentage of the overall project waste that these will represent, at least 50% of the construction and demolition debris and a minimum of four material streams will be diverted from landfill and incineration facilities and redirected instead for recycling to the manufacturing process and reusable materials to appropriate sites.

Building Product Disclosure and Optimization Environmental Product Declarations, Sourcing of Raw Materials, and Material Ingredients

The design team shall proactively seek and track materials and products that comprehensively address these material and resource concerns during the design phase. Priority will be given to those items that comprise a high percentage of the project's overall material cost, and Low-Emitting Materials.

Minimum Indoor Air Quality Performance

Building HVAC systems will meet the minimum requirements of Sections 4 through 7 of ASHRAE Standard 62.1-2010 - Ventilation for Acceptable Indoor Air Quality, based on anticipated future tenant requirements.

Environmental Tobacco Smoke (ETS) Control

Smoking will be prohibited inside the building and within 25 feet of the entire building perimeter.

Enhanced Indoor Air Quality Strategies

To promote a healthy indoor air quality, permanent entryway systems or appropriate roll-up mats will be installed at all regularly used building entrances; any room with hazardous gases or chemicals will be negatively pressured to contain such elements. MERV 13 or higher filters will be provided in all ventilation systems providing outdoor air to occupied spaces.

Low-Emitting Materials

The design team shall proactively seek and track products that comply with the low-emitting requirements during the design phase

Construction IAQ Management Plan

An indoor air quality plan during construction will require the builder to follow industry best-practices such as SMACNA IAQ Guidelines for Occupied Buildings Under Construction, protecting absorptive materials stored on site from moisture

Daylight

The project will provide window shading devices, and prioritize daylighting strategies for regularly occupied spaces.

Quality Views

The design of the building envelope and floor plan is exploring prioritizing quality view strategies that would allow tenants to design their fit-out with a direct line of sight to the outdoors in at least 75% of all regularly occupied areas.

Innovation

Innovation

The project will target this category by pursuing and combination of Innovation and Pilot Credits recognized by USGBC. The strategies listed below are currently being considered:

· Innovation: Purchasing – Lamps – The based building lighting shall be selected to focus on low- or no mercury-containing lamps. A purchasing plan will be implemented for both indoor and outdoor fixtures.

· Innovation: Green Education. The project will consider utilizing the building's sustainable feature as an opportunity to educate tenants and visitors on the value of green building.

LEED Accredited Professional

The project team includes several LEED Accredited Professionals

Regional Priority Credits

Regional Priority Credits

The project currently anticipates potentially earning points for the Regional Priority category

Sincerely,

Sr. VP/Managing Director, Boston

NELSON

Site Plan Review & Wetlands Conditional Use Application Fees

Project: 230 Commerce Way **Map/Lot:** 216/1-5

Applicant: 230 Commerce Way, LLC c/o The Kane Company

Site Plan Review Fee

All development

Base fee $500			$500.00
Plus $5.00 per $1,000 of site costs			
Site costs	$750,000	+	$3,750.00
Plus $10.00 per 1,000 S.F. of site development area			
Site development area	99,000 S.F.	+	$990.00
		Subtotal Fee	**$5,240.00**

Maximum fee: $15,000.00

Wetlands Conditional Use Application Fee

Area of disturbance in wetland or wetland buffer:

Up to 250 sq. ft. ($100.00)		$0.00
Up to 1,000 sq. ft. ($500.00)		$0.00
Greater than 1,000 sq. ft. ($1,000.00)		$1,000.00
	Subtotal Fee	**$1,000.00**
	Total Fee	**$6,240.00**

Memo

TO: Conservation Commission Members
FROM: Peter Britz, Environmental Planner
DATE: June 3, 2022
SUBJ: June 8, 2022 Conservation Commission Meeting

2255 Lafayette Road

This application proposes to convert an existing fast food restaurant site into a retail fueling station and a convenience store/sandwich shop with drive-through window and five fuel dispenser island and associated paving parking and stormwater system upgrades for the entire site. The overall disturbance in the wetland buffer is 33,555 square feet which consists primarily of previously disturbed paved site areas.

1. The land is reasonably suited to the use activity or alteration.
Given that the site is currently paved and has a structure on it this project seeks to upgrade the site. The site is not seeking to expand the impact in the buffer so the land is reasonably suited to the use.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.
The site as it exists is paved within and close to the edge of wetland. There is no location on this property where the project could be completed outside of the buffer.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.
The applicant is proposing to reduce the amount of impervious surface 9,124 square feet on this previously developed site. This reduction in impervious surface combined with the addition of enhanced stormwater treatment reduces the overall site impacts for this site and surrounding properties.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.
This project is proposing an extensive landscape plan for the interior of the site. The area at the rear of the site which is being converted from pavement to proposed loam and seed could be enhanced further with the addition of wetland buffer plantings and/or a wetland seed mix. Additionally, the applicant should be clear in their application to adhere to the City's regulations for fertilizer use according to section 10.1018.24.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.
This site proposes reductions in impervious surfaces and enhanced stormwater treatment as a less impacting alternative than what is existing.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.
As stated above the buffer planting stating loam and seed should be revisited to include more appropriate wetland buffer plantings. The plantings could be mowable but staff recommends they look towards a reduced mowing cycle, i.e. annual or twice annual to enhance buffer function. Additionally, the buffer could be enhanced with specific plantings of shrubs which work for this site.

Recommendation: Staff recommends approval of the project with three stipulations:

1. That the plans match the City's fertilizer standards per section 10.1018.24.
2. That the applicant provide a wetland buffer seed mix and reduced mowing frequency for the areas labelled for loam and seed on the plan.
3. That the applicant consider some type of wetland edge signage as appropriate for this site.

70 Pleasant Point Drive

This is an application to replace an existing home with a new home on the same lot. The proposed structure is still in the buffer but the plan calls for it to be pulled back from the shoreline along with a new driveway configured to be made of pervious pavers also further from the edge of the shoreline.

1. The land is reasonably suited to the use activity or alteration.
The site has an existing single family home on it currently. The applicant proposes to move the home further back from the edge of wetland but the size of the patio has expanded. While there is a table showing a 96 square foot reduction of impervious surface on the property it is not clear what the overall change in buffer impact is. Clearly moving the house back further from the buffer is a reduction of structure impact but the application does not appear to show the size of the buffer impact for all surfaces in the buffer. The removal of invasive species and planting plan are definitely an enhancement to the project and appropriate or this site.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.
The site as it exists is a single family lot and the applicant has worked to move the house further back from the wetland buffer. The new location of the house does appear appropriate. It is hard to determine the size of the other impacts in the buffer. Additionally, there is a dock proposed on the site with no details about how the stairs connect to the dock through the saltmarsh. Similarly the plan shows a bioretention basin in the buffer. It is not clear whether this could be located outside of the buffer and what the impact of the outfall will be flowing on tidal waters.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.
The applicant is proposing to reduce the amount of impervious surface 96 square feet and enhance the vegetation on the site with a thoughtful invasive species removal plan and planting plan. While it does not appear that this project will create an adverse impact on the site it is not clear how large the patio areas are and whether they are, as designed an enhancement to the site overall. A more detailed buffer impact plan describing all of the impacts in the buffer would be helpful to better understand the project.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.
This project is proposing an extensive landscape plan and invasive species removal plan. The overall landscaping for the site shows some beneficial plantings. More information about the existing lawn area versus the proposed would be helpful to evaluate the overall site. For instance is there a 25' vegetated buffer provided throughout the site?

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.
The applicant proposes to provide an invasive species management plan, new pervious areas and move the house further from the edge of wetland which are all positive steps. More detail is needed to better understand the impacts overall.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.
The invasive species removal plan and native planting plan seeks to accomplish this. It would be helpful to see whether the 25' vegetated buffer is provided throughout the site and get more details on the impacts in the buffer as shown on the plans.

Recommendation: Staff believes there are more questions for the applicant, addressed above, which will help the Commission get a better understanding of the project. In addition, a site walk would be helpful to see the

site and understand the proposed changes. Further, the Commission will be asked to comment on the State Wetland Permit and the Commission would benefit from reviewing the NHDES application along with the Wetland Conditional Use Permit. For these reasons staff recommends the applicant proceed with a work session or postpone the application in anticipation of more information and a site walk.

81 Taft Road

This is an application to add an addition to an existing home on Taft Road. This is very minor addition in the front yard of this home.

1. The land is reasonably suited to the use activity or alteration.
Given the small size of the addition and the fact that it is in an existing lawn area on the opposite side of the street from the wetland in question this is a reasonable request.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.
There is not an alternative location for the addition given the home exists, this is a reasonable request.

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

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.
This project is proposing an addition 17 of square feet of which are in the buffer. It is not clear whether the maple tree shown will be able to be saved when this addition is complete.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.
This is a very small impact in the buffer in an area of lawn.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.
The lawn area will be lost to the addition but it will have little effect on the wetland across the street.

Recommendation: Staff recommends approval as presented.

11 Fletcher Street

This is an application to construct a new single family home on a residential lot.

1. The land is reasonably suited to the use activity or alteration.
The applicant has worked to keep the house including the site grading outside of the wetland buffer making the site reasonable for this project.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.
In consideration of the nearby adjacent home and site topography the applicant has proposed the drainage to move to the rear corner of the site to avoid impacts to the neighboring property. The stormwater design does not anticipate regular flow but needs this swale for large rain events.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.
The way the project is designed the majority of the stormwater will be infiltrated onsite. This swale outlet will accommodate large rain events and will not have an adverse effect on the adjacent wetland.

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

This project is proposing to outlet the stormwater pipe to the wetland buffer. In addition, the applicant is proposing to install some wetland buffer plantings adjacent to the proposed swale.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.
There will be a temporary disturbance from the installation of the drain line and a small disturbance from the swale but no impervious surface is proposed with this project.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.
The applicant is proposing to install some wetland buffer plantings and to restore the site after the temporary disturbance.

Recommendation: Staff recommends approval as presented.

230 Commerce Way

This is an application to construct a new two story building for veterinary care within an existing parking lot. There are modification to the parking lot proposed which require a small impact in the buffer but overall there is a large area of parking lot being removed from the buffer making the site more conforming to the wetland buffer regulations.

1. The land is reasonably suited to the use activity or alteration.
This project proposes to largely enhance the buffer through the removal of parking areas and plantings in the wetland buffer.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.
This project proposes a net reduction in paving in the wetland buffer and as such is a feasible and reasonable location for the project.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.
The way the project is designed the result will be a net improvement to wetland functional value for this and surrounding properties.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.
This project is proposing to reduce pavement areas and add new wetland buffer plantings which is a net benefit for the site.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.
There will be some temporary disturbances from this project but overall the project should result in a net improvement to the wetland buffer.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.
The applicant is proposing to expand planted areas in the wetland buffer by 9,250 square feet

Recommendation: Staff recommends approval as presented.