

**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.**

**April 13, 2022**

**AGENDA (revised on April 08, 2022)**

**I. APPROVAL OF MINUTES**

1. March 09, 2022

**II. WETLAND CONDITIONAL USE PERMITS (OLD BUSINESS)**

1. 213 Jones Avenue  
Donald Lowell Stickney III, Owner  
Assessor Map 222, Lot 69

**2. REQUEST TO POSTPONE**

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

**III. STATE WETLAND BUREAU APPLICATIONS (NEW BUSINESS)**

1. 325 Little Harbor Road  
ADL Little Harbor Trust, Owner  
Assessor Map 205, Lot 2
2. 137 Northwest Street  
Gregory J. and Amanda B. Morneault, Owners  
Assessor Map 122, Lot 2

**IV. OTHER BUSINESS**

**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:*

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**MINUTES  
CONSERVATION COMMISSION**

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

**3:30 P.M.**

**March 09, 2022**

**MEMBERS PRESENT:** Chair Barbara McMillan; Vice Chair Samantha Collins; Members; Allison Tanner, Jessica Blasko, Thaddeus Jankowski, Henry Mellynychuk, Abigail Gindele, Alternate and Mika Court, Alternate

**MEMBERS ABSENT:**

**ALSO PRESENT:** Peter Britz, Environmental Planner/Sustainability Coordinator

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**I. APPROVAL OF MINUTES**

1. February 09, 2022

Ms. Tanner commented that on page 2 paragraph 8 it should say “the dry well” not “they dry well.”

Ms. Gindele commented that she did not remember asking how much of the asphalt would be removed on page 6, but it was fine to keep it the way it was if it was her.

Chairman McMillan commented that on page 2 it should say “if they kept it” not “if the kept it.”

Ms. Tanner moved to approve the Conservation Commission Minutes from the February 09, 2022, meeting as amended, seconded by Ms. Gindele. The motion passed by a 6-0-1 vote. Ms. Blasko abstained because she was not at the February meeting.

Ms. Britz commented that they may want to postpone the application for 333 Borthwick Ave. at the beginning of the meeting.

Ms. Tanner moved to postpone the Wetland Conditional Use Permit Application for 333 Borthwick Ave. to the April 12, 2022, meeting. The motion passed unanimously by a 7-0 vote.

**II. WETLAND CONDITIONAL USE PERMITS (NEW BUSINESS)**

1. 400 Little Harbor Road  
Society for the Protection of Forests, Owner  
Assessor Map203, Lot 8



Eric Weinrieb from Altus Engineering and Carl Murphy from the Society for the Protection of Forests spoke to the application. Mr. Weinrieb commented that the Society for the Protection of Forests obtained the Carey Cottage in 2000. The cottage was in disrepair and slated to be raised, however, benefactors made it possible to renovate and restore it. They brought municipal water to the site and were permitted a new septic tank for the carriage house. That was installed in the spring of 2020. They renovated the carriage house so now it is available for programming and public use. Currently there are no public restrooms on the grounds. The grounds are heavily used by the public. Providing public restrooms would be a public benefit. The proposal is a stand-alone building with a 2-stall restroom adjacent to the carriage house. The building would be 81.7 feet away from the wetland and built in a previously disturbed area. There will be a stone drip edge around the exterior of the building to mitigate any impact. There will be 413 sf of new impervious surface. There will be a covered area with a bench outside of the building. The septic system is designed for 300 gallons per day capacity. They are using low flow toilets and a sink for hand washing. The septic can handle 160 uses per day. They will not be near that limit, but that's the design flow. This will be a minimal impact project.

Ms. Tanner questioned why they couldn't rotate the building 90 degrees. Mr. Weinrieb responded that there was a lot of ledge out there, so they were trying to minimize the ledge impacts. Also, aesthetically it follows the existing building lines. This is further away from the wetland than the existing building and other features out there.

Vice Chairman Collins questioned if the septic had already been installed. Mr. Weinrieb confirmed that it was installed in the spring of 2020. Vice Chairman Collins questioned if any trees would be removed for this proposal. Mr. Weinrieb responded that no trees were removed for the septic. There is some scrub growth in the proposal area, but nothing is more than 1 or 2 inches in diameter.

Ms. Court appreciated the low flow toilets but questioned if they looked at compost toilets. Mr. Weinrieb responded that they talked about it, but the consensus was to use flush toilets because there will be handwashing and children. It made more sense.

Ms. Gindele questioned if the building was going before the office parking in the muddy gravel area. Mr. Weinrieb responded that it would be 5 feet off the edge of the building.

Chairman McMillan noted that invasive species were a huge issue on that property and questioned how they would be handling that for this proposal. Mr. Weinrieb responded that they cut back the Japanese knotweed when they put in the septic. They will continue to keep cutting it back. The property is full of it in other areas. They will continue to maintain it in this area, but it will be hard to eradicate from the site. Mr. Murphy added that they were doing some long-term planning to eradicate the invasives from the site, but nothing is set in stone yet.

Mr. Jankowski questioned if they were following organic land management practices. Mr. Murphy confirmed they were. There will be a small garden area in the front of the building, and they will use compost and loam. Mr. Jankowski commented that they have been asking other applicants to follow NOFA standards for organic land management.

Vice Chairman Collins questioned if they would be putting in buffer plantings to counteract development in the buffer. Mr. Weinrieb responded that they did not propose any. The building would be over 80 feet away from the wetland and in the disturbed area. It is not going to be maintained lawn back there. It will be a meadow type area. Vice Chairman Collins commented that the aerial photos made it look like a heavily forested area in the back. Mr. Weinrieb responded that there were some large oaks in the tree line that have large canopies.

Ms. Tanner moved to recommend approval for discussion purposes, seconded by Ms. Gindele.

Ms. Tanner commented that they should rotate the building to get it out of the buffer. It should be out of the buffer instead of aesthetically pleasing. Chairman McMillan agreed.

Ms. Blasko appreciated Ms. Tanner's point, but the whole area is pretty disturbed. The proposal seems reasonable. It is a gravelly and rough area. The forest is further away from the building and this area. This doesn't seem like an unreasonable project. Ms. Tanner noted that it was adding impervious to the buffer. If they don't rotate the building, then it should have buffer plantings.

Mr. Mellynychuk commented that the applicant mentioned there was ledge in the area that could prevent rotating it. Ms. Tanner clarified that they should rotate it 90 degrees. Then it would not be in the ledge area or the buffer.

Mr. Weinrieb commented that rotating it will not get out of the buffer. The 413 sf of impervious will not all be in the buffer. They are mitigating it with a stone drip edge and allowing the natural buffer to treat the runoff. This is not a large ask. It is a reasonable layout and aesthetics play a role on a property like Creek Farm. Mr. Weinrieb respectfully asked that the Commission consider the lay out as proposed.

Vice Chairman Collins questioned where they should add plantings. Ms. Tanner noted they should add some native plantings along the buffer's edge. Chairman McMillan questioned if the applicant was amenable to that. Mr. Weinrieb confirmed they were.

Mr. Britz noted that they needed to clarify what Alternate was voting today. Chairman McMillan responded that Ms. Gindele would be voting at this meeting.

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. Plant blueberry bushes or other native shrubs along the buffer area near the wetland edge.
2. Maintain property according to NOFA standards.

The motion passed unanimously by a 7-0 vote.

2. 325 Little Harbor Road  
ADL 325 Little Harbor Road Trust,

Stephen H. Roberts. Esq., Trustee, Owner  
Assessor Map 205, Lot 2

Corey Colwell from TF Moran, Matthew Cunningham and Josh Bourgerly of Mathew Cunningham Landscape and Design, and builder Jim Youngblood were present to speak to the presentation. Mr. Colwell commented that this project was reviewed by the Commission and received a favorable recommendation in November 2021. Since then, they had to make a few revisions. The Planning Department requested that this application go to TAC because of the complexities of bringing the utilities to the island. The driveway coming from Little Harbor Road to the island will need to be excavated to put in utilities and then resurfaced. Some of the driveway work will be in the buffer. There will not be any changes to any natural communities. All of the work will be in the driveway and shoulder. They have also learned that the bridge to the island is in need of some repairs. Eventually it may need to be replaced. There will be new abutments and causeways leading to the bridge. They will be shoring up the bridge and it will have temporary impact to the buffer. The utilities will be hung from the bridge and have temporary impact to the buffer. The last change is to the areas of woodlands. They showed previously that they were saving a lot of woodlands and converting some areas to natural areas. They are not reducing the woodlands but are proposing a change to the shape of the meadows. There will not be any new tree cutting. They will maintain the 50-foot wooded buffer where it exists today. The only changes to the meadow are outside of that buffer. They also added some minor storm water improvements for roof runoff on the main house and caretaker house. The buffer impact is now 195,600 sf and it was previously 175,000 sf. Most of this increase is the result of the bridge and driveway repairs. The total lawn is further reduced to 118,000 sf. Today there is 267,000 sf. Previously they were reducing it to 146,000 sf but now it is further reduced to 118,000 sf. The natural woodland area is reduced from 255,000 sf to 206,000 sf. The reduction is the result of increasing the size of the meadow. They are not cutting any trees. In summary little has been changed since last time the Commission saw this application. They did not realize that putting in those utilities would require road resurfacing and bridge repairs. The new utilities will allow them to remove the septic which is 20 feet from the river. It will also allow them to replace the substandard water that freezes today. The bridge repair and replacement will provide safe access for construction and emergency vehicles. They can remove overhead lines to the island with new electric. The new utilities and bridge impacts don't alter any natural communities in the buffer. It all takes place on previously disturbed upland. There will not be any additional loss of vegetation as a result of these changes.

Ms. Tanner requested more information about the changes to the meadow. Mr. Colwell responded that they changed the shape. Mr. Bourgerly added that part of the reason that was adjusted was for a design change. The client is interested in doing solar panels outside of the buffer. They have not finalized the design yet, so they are not on the plan. There will not be any removal of trees for that. The area is currently predominantly a meadow. Ms. Tanner questioned where the snow would be stored on the site. It cannot go in the buffer. Mr. Colwell responded that they have not noted where it will go, but it is intended to be out of the buffer. They can add a note to the plan to keep it out of the 100-foot buffer. The area that makes the most sense for storage is the circle area just past the main house. It is out of the buffer.

Vice Chairman Collins questioned what was changing with the meadows if they were not cutting trees. Mr. Colwell responded that very little was changing. It is almost all meadow in that area now. They just wanted the number on the plan to be accurate. The solar array has to be within the meadow. It's not all wooded; there are some clear meadow areas. The former owner had horses, and this was the paddock area. They will probably be seeding the area with some wildflower conservation seeding. Vice Chairman Collins requested clarification that there was no physical human intervention with the changes to the meadow. Mr. Colwell confirmed that was correct.

Ms. Blasko commented that it sounded like they would be doing the bridge repairs prior to construction and questioned if they would come back to the Commission if the bridge needed to be replaced. Mr. Colwell responded that they met with Dave Price from DES. The bridge will support trucks today, but not heavy concrete trucks. They have a method to reenforce the bridge to allow for construction. They don't want to replace the bridge until after construction. The steel plating doesn't require permitting from the State. They were told by the structural engineer if they shored up the abutments, then the bridge could remain. They are looking at both repair and replace options. Ms. Blasko questioned if it would be a separate permit if it needed to be replaced. Mr. Britz confirmed that was correct.

Vice Chairman Collins questioned if the driveway going from the bridge to the main property was pervious. Mr. Colwell responded that the driveway was intended to be cobble pavers with gaps and stone layers below. It would be pervious.

Chairman McMillan questioned if the solar panels would be in the buffer. Mr. Colwell responded that they would be out of the natural 150-foot buffer. Chairman McMillan commented that the Commission did not have jurisdiction over things out of the buffer, however the appeal of this application was that the remaining half of the island property was going to be left in a natural woodland state. Now they are talking about solar panels which are good. However, this was approved originally because so much of the island would be left in a natural state. Chairman McMillan questioned if there was any way to commit to that. Mr. Colwell responded that there was no way to commit because they were studying now to see if it would work. They would just be adding panels outside of the buffer. It would require a shoreland permit because it would be in the 250-foot buffer. Chairman McMillan questioned if there were other locations closer to the main house to put them. Mr. Bourgerie responded that this area was previously disturbed paddock areas. They will stay out of the woodland zone and buffer. The area is previously disturbed by the prior owner. The turnaround area is where the prior owner had a dumping area. This is one of the few areas outside of the 50-foot buffer that is feasible for a large solar array.

Ms. Gindele questioned why they couldn't put the panels on the roof of the house. Mr. Bourgerie responded that it was primarily an architectural decision and considering the view sheds for residences offsite. The south facing roof is very visible off the water. Putting them in the meadow on the island there will be a natural screening.

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

Ms. Gindele requested clarification on what they were voting on because the application had been approved previously. Ms. Gindele questioned if she could comment on the whole project or just the changes. Ms. Tanner commented that they were commenting just on what was being changed. Mr. Britz commented that this was an application for an amended approval. The Commission approved the project before, so it only makes sense to talk about the big changes.

Ms. Gindele commented that they said the meadow was previously disturbed, but she did not see that at the site walk. Ms. Gindele questioned why they were allowed to tear down a 5,000-sf house and build a 6,000-sf house in the same location. There is area on the site out of the buffer where they can build. They are removing invasive species on the site, but they probably would have done it anyway to make it look nice. They should put the solar panels on the roof of the house. There is 12,000 sf of buildings on this property, and they are all completely or partially in the buffer except for the barn. They should not be allowed to tear down a house in the buffer and build in the same area. They could put it in a disturbed area and plant out where the house was.

Ms. Court questioned if they could restore the meadow area and put the solar panels somewhere else. Solar panels are not without impact. Ms. Tanner commented that the solar panels were not part of this proposal.

Mr. Britz clarified that the wetland ordinance doesn't totally restrict items in the wetland and buffer. The CUP allows for activity in the buffer. It's a balancing. The Commission looks at where it makes sense and why. The Commission looked at this as a whole project and looked at the balancing. They can knock down the house and rebuild it if the Commission allows it. The Commission looks at whether or not the application improves the site and if they can build out of the buffer. Ms. Gindele commented that this project could work in the meadow out of the buffer. That is one criteria the Commission considers.

Mr. Mellynychuk commented that the people who own it now are managing the land responsibly by eradicating the invasive species. Mr. Mellynychuk looked at it from the aspect of managing the land that they own when this was originally proposed.

Mr. Jankowski commented that when he voted for this project it was with the understanding that half of the island would not be touched. There wasn't a solar array on there. This change to the plan is problematic. Mr. Britz commented that they should only discuss what they have jurisdiction on. They are not proposing solar panels in this application.

Chairman McMillan commented that they have seen this proposal many times before. They have gone back and forth with a lot of concerns. There are a lot of buffer plantings going into this site. There is a comprehensive invasive species management plan. It is above and beyond anything they have ever seen. The company doing the work is renowned. Ms. Gindele raised valid points, but they have done a lot of back and forth. Ms. Gindele commented that they were planning to use glycoside for cut and dab. That should not be going in the soil. Mr. Jankowski commented that they talked about that with the applicants. It is an allowed use in the NOFA standards. It is not the best practice but in situations where it is a broad area then it is an

acceptable method to control invasive plants. Ms. Gindele commented that the chemical doesn't go away for a long time, and they are putting it on an island.

Vice Chairman Collins commented that Ms. Gindele is completely entitled to vote however she wanted to. They were not trying to convince her one way or another, just explaining some of the consideration history.

Ms. Blasko commented that she voted against the project last time. Even though the level of effort was appreciated, it was still too impactful with the blasting and fill. The proposal felt very intense. Ms. Blasko commented that she had heard anecdotally that this was potentially a nesting habitat for blue herons. It would be concerning to lose that. Ms. Blasko commented that her vote for the project has not changed. It is still too intense.

Chairman McMillan commented that the solar panels could impact the bird habitat. Impacting a habitat is more concerning than a viewscape on the roof of the house. That said having solar would be a good idea. It would be nice to consider other location options. Chairman McMillan clarified that was not in the purview of this application, so she would vote in favor. However, the solar panels should go on the roof of the house.

Mr. Colwell commented that the primary reason they looked at solar panels was because of this Commission's original feedback. They tried to put it in the least obtrusive place it could go. It is in a previously disturbed area and out of the buffer. Now the Commission is providing negative feedback about the solar panels after being asked to look into it. The roof may be an option and the meadow is an option too. They did confirm they would be doing geothermal for the heating method. That will use high electricity so additional solar panels will help with that as well.

The motion passed by a 4-3 vote. Ms. Blasko, Ms. Gindele, and Mr. Jankowski voted against the motion.

3. 213 Jones Avenue  
Donald Lowell Stickney III, Owner  
Assessor Map 222, Lot 69

John Chagnon from Ambit Engineering and owner Donald Stickney spoke to the application. The lot is oversized for the neighborhood. There is a small 860 sf residential dwelling unit on the property. Mr. Stickney is looking to potentially provide housing for his father. The lot starts with a lot of frontage and then converges in the back. There is a wetland in the back and a finger of that wetland comes up into the property and creates a buffer around it. The existing structure will become a small detached DADU, and the proposal is to build a primary structure. Typically, a site already has the primary structure, and the proposal is to build a DADU. However, in this case the existing structure will become the DADU, and they will build the primary structure. They are proposing to build the structure on the right side of the lot. They are proposing to build a new driveway. There will be buffer impact with a proposed detention area. Mr. Chagnon included the City's zoning requirements for a DADU structure in the packet. The DADU cannot have more than 2 bedrooms or be larger than 750 sf but can be up to 1,000 sf if the lot area is larger than 2 acres. They are asking the Planning Board for an allowance for the



size because it's an existing small home. The DADU has to be subordinate to the principle dwelling unit in height and appearance. That is the main reason why they have this configuration for the property. The facade of the DADU facing the street should not be more than 40% of the combined visible facade. This plan's facade is 46%, so they are asking for minor relief. The building height must be less than the principle dwelling unit. They comply with that. The architecture must be consistent with the principle structure. They are planning to make some changes to try to bring that more into compliance. The DADU must be separated by at least 20 feet. They comply with that. The front wall must be setback 10 feet further than the principle. The intent of that requirement is that the DADU is not the prominent structure on the lot. It has to be subservient to the primary. This is an existing structure and they have pushed the proposed house as far forward as possible. It does not meet the 10 feet so they will be asking for relief. It does meet the intent. No portions of the DADU can be in the front yard. They comply with that. The buffer line on the plan shows why they cannot place the house fully outside of the buffer because of the DADU. The owner has planted 21 new trees on the property. They are doing work to maintain the property and tried to improve it. The property is also in need of a new septic system. Currently it is inground behind the house and was designed prior to existing regulations. The new system will be appropriately sized and comply with the updated regulations. The front half of the lot drains to the corner to an existing culvert which empties to a wetland near the high school. The other part of the lot drains out the back to the wetland. They are restricted with the location of storm water treatment because of the house and septic. They cannot increase the storm water flow, so they looked at what they could do to mitigate that. There was not enough room in the front yard to provide a detention area. It is in the backyard to slow down runoff before it goes to the culvert. There will be drip aprons around the structure. The applicant will add buffer plantings in the back and they can add more if the Commission stipulates it. The detention area will not be mowed, and they can plant a seed mix on top of it.

Vice Chairman Collins questioned if the new driveway would be impervious. Mr. Chagnon responded that it was showing impervious on the plan, but they could probably make it a porous one. Vice Chairman Collins commented that could help limit what is going to the culvert and may mitigate the size of the detention pond.

Ms. Tanner questioned what would happen to the old septic if the DADU was attached to the new septic. Mr. Chagnon responded that the old septic would be removed or abandoned and left in place. Ms. Tanner noted that the diagram on the plan showed a garden in the wetland. Mr. Chagnon responded that area was currently mowed and there was a garden in that area. When the current owner took possession of the property it was a mowed area. They have been continuing to mow it. Ms. Tanner commented that the detention pond seemed enormous and questioned how deep it would be and how long the water would stay. Ms. Tanner questioned if they could put the pond in the old septic location. Mr. Chagnon responded that the pond was very shallow that's why it's so large. There is not a huge amount of relief in the back of the property. It is very flat. Putting the detention pond in the septic area will not catch all of the runoff. It's located where it is because of the topography. Ms. Tanner questioned if they looked at any other storm water treatment methods other than the pond. Mr. Chagnon commented that they had to account for septic setbacks as well. The soil doesn't infiltrate well. They could think about a storm water tank in the front, but the infiltration may not work well.

Vice Chairman Collins questioned if the proposed storm water plan was relying on sheet flow or a pipe to get runoff to the detention pond. Mr. Chagnon responded that the east side of the house would be guttered and brought to a drip apron on the street side of the house. The west side would sheet flow over the grass into the detention pond. Vice Chairman Collins commented that there was still space between the house and detention pond to infiltrate with a drip edge on the back. Mr. Chagnon responded that they could look at it. They can't put a drip edge on the west side because they wouldn't want to put more water in the leaching area. Vice Chairman Collins commented that they should look at using a couple different treatment techniques to reduce the size of the detention pond.

Ms. Tanner requested clarification on what the red outlined area of the plan was. Mr. Chagnon responded that it showed why they could not put the house in that location because of the DADU. Ms. Tanner agreed with Vice Chairman Collins. They should look at multiple treatment options instead of putting a detention pond in the buffer.

Mr. Jankowski commented that he was surprised there were not any sewer lines out there yet. Mr. Chagnon confirmed the sewer did not reach that far.

Ms. Blasko questioned why it was a detention pond and not a rain garden. Mr. Chagnon responded that the soils could not infiltrate so the intent was to detain the water. They can come up with some plantings on top to make it look like a rain garden.

Ms. Gindele questioned how long it would take to process the water. Mr. Chagnon responded that in a 50-year storm the maximum water level would be 1.5 feet and it would take 30 hours to drain. Ms. Gindele questioned if it would go into the wetland after that. Mr. Chagnon responded that it would discharge slowly out to the street and drain out that way. Ms. Gindele clarified that the delay was so that it would not stress the culvert out. Mr. Chagnon confirmed that was correct.

Vice Chairman Collins questioned if the chicken coop on the plan was still in use. Mr. Stickney confirmed it was still in use.

Chairman McMillan questioned where the runoff went after going to the culvert. Mr. Chagnon responded that it went across the street then to a swale and to a wetland. The design will mitigate the increased flow and will prevent impact to downstream abutters.

Mr. Mellynychuk questioned if they were putting in fill and if that would block the natural swale in that area. Mr. Chagnon responded that they would need to deal with runoff from the back to the front and were trying to deal with the increased impervious area. The pipe from the pond will drain to the front. It allows for the natural flow path to continue.

Vice Chairman Collins questioned if the tree that was going to be removed in between the primary dwelling unit and the garden was due to grading. Mr. Chagnon responded that it would be impacted by the septic construction. Three trees total will be impacted. Vice Chairman



Collins questioned if the pipe would impact the 30-inch maple. Mr. Chagnon responded that they were trying to save that tree. They will add notes to the plan about that.

Chairman McMillan questioned if they should treat this as a work session instead of making a formal motion. A lot of changes need to happen. Mr. Chagnon confirmed they could come back with a revised plan next month.

Ms. Tanner moved to postpone the Wetland Conditional Use Permit to the April 13, 2022, meeting, seconded by Vice Chairman Collins.

Ms. Tanner commented that a detention pond does not belong in the buffer. It should go somewhere else. There are other infiltration options including a porous drive and drip edges. Saving the 36-inch maple is important. There should not be a garden in the wetland.

Vice Chairman Collins agreed and reiterated that they should look at a number of storm water treatment options for the property.

Ms. Blasko commented that there should be plantings included in the detention pond. The Commission appreciated that the plan already included that NOFA standards in it.

Chairman McMillan commented that they would not want storm water treatment to be in the buffer. Looking at alternatives are a great idea.

The motion passed unanimously by a 7-0 vote.

4. **REQUEST TO POSTPONE**

333 Borthwick Avenue

HCA Health Services of NH, Inc. dba Portsmouth Regional Hospital, Owner

Assessor Map 240, Lot 2-1

This was postponed at the beginning of the meeting.

**III. STATE WETLAND BUREAU APPLICATIONS (NEW BUSINESS)**

1. 555 Market Street (Market Street Marine Terminal)  
Pease Development Authority, Owner  
Assessor Map 119, Lot 5

Chairman McMillan recused herself from the application and Vice Chairman Collins acted as Chair.

Christine Perron and Noah Elwood spoke to the application. Mr. Elwood commented that the application was to replace the barge dock at the Marine Terminal. This is related to the replacement of the Sarah Long Bridge. When the bridge was relocated, they removed one of the docks at the terminal. This is a functional replacement to expand the marine wharf. It was

originally built in the 1970s and the contemporary construction was completed in the 1990s. The bridge used to bisect the wharf and when it was moved a large portion of the barge dock had to be removed. The proposal includes extending it 90 feet to the south and 130 feet to the north. There will be steel drilled into the bedrock, and they will be dredging to bring it down to the same depth as the federal channel. The area where small boats currently dock will be rotated and connected to the barge wharf and bridge. The floating dock will be relocated, and an existing pier will be removed as part of construction. There will be some paving and drainage units will be added. The southern extension of the wharf will be supported by caissons and there will be a little grading to match the existing area. The steel caissons are larger in diameter to reduce the amount that need to be drilled into the bedrock. There will be 30 caissons on the southern extension and 45 caissons on the northern one. The northern extension will have riprap where the dock meets the shore. There will be 16,000 cubic yards of soil removed and blasting to remove 2,000 cubic feet of rock. The shoreside alterations will include regrading, paving, and the installation of 2 storm water treatment units.

Ms. Perron summarized the efforts that have been completed to date. Since the project has federal funding, they were required to have an environmental review process with NEPA. They worked to minimize impact. They will be required to do the dredging and blasting between November and March. They will use a fish detection and startle system as well. This will be detailed in blasting plan, and it will be submitted to the appropriate agencies for approval. The NEPA documents were submitted to the DOT on July 15, 2019. They have received NEPA approval and are now getting the required permits. The proposed work will impact to the river itself for 55,000 sf of dredging and 27,000 sf of wharf extension impact. There is no vegetated wetland or eel grass beds in the project area. All impacts to the river channel will be adjacent to the wharf and along the shoreline. The project meets the state and federal regulations. The mitigation requirement will be met through funding toward the Cutts Cove living shoreline project adjacent to the new gateway park.

Ms. Tanner questioned if the blasting and transportation of dredge materials would be completed in the November to March timeframe to protect the fish and turtles. Ms. Perron responded that the construction schedule will need to accommodate those restrictions. Mr. Elwood confirmed that the dredged soils would be transported throughout that timeframe window. They will load it and dispose of it as needed in that timeframe. It is very likely they will dispose of it at the Isle of Shoals site. The alternative is that it will go shoreside if it's not suitable. Ms. Tanner questioned why it would not be going to Arundel. Mr. Elwood responded that the Arundel site was closed now. Now the Isle of Shoals site has opened.

Ms. Gindele questioned what the impact was of putting the soils out at the Isle of Shoals. Mr. Elwood responded that process requires DES and Army Corps approval. It goes through testing before it is sent there. They sample the material and if it is approved, then it will go offshore. Ms. Perron added that these designated offshore disposal sites are federally regulated.

Ms. Tanner moved to recommend approval to the State Wetlands Bureau, seconded by Ms. Blasko with the following **stipulation**:

1. The applicant shall fulfill the recommendations of the National Marine Fisheries Service.

The motion passed unanimously by a 7-0 vote.

#### **IV. CONSERVATION COMMISSION LANDS UPDATE**

Ms. Tanner moved continue the meeting past 5:30 p.m., seconded by Ms. Blasko. The motion passed unanimously by a 7-0 vote.

Ms. Tanner moved address agenda item V. Other Business before agenda item IV. Conservation Commission Lands Update, seconded by Vice Chairman Collins. The motion passed unanimously by a 7-0 vote.

#### **V. OTHER BUSINESS**

##### **1. Conservation Commission Rules and Procedures Discussion**

Ms. Tanner commented that Chairman McMillan sent out a Zoom recording from the NH Association of Conservation Commission. Durham's Conservation Commission had a speaker come who was excellent. It would be great to have this Commission sponsor something like that for the public. The speaker talked about why native species are important and how important caterpillars are in the bird life cycle. It would be a good topic to educate the public on.

Mr. Jankowski agreed it was a good idea. They could even put that Zoom presentation on the web site. Mr. Britz commented the Commission can vote to post it on the web site.

Chairman McMillan questioned if anyone on the Commission had any questions about the expedited minimum impact application that came through for 910 Sagamore Ave. Ms. Tanner commented that it was unclear what was different. Mr. Britz responded that it was for the State permit.

Chairman McMillan commented that they had an upcoming session with the Planning Board and Legal Department to discuss the Conservation Commission rules and procedures. Mr. Britz will send out a poll to schedule the meeting.

Mr. Britz commented that there was concern that the Commission's vote for Chair and Vice Chair was done improperly. The Commission always votes in public, but the rules and procedure say the vote should be held in private. That hasn't been the case and it should be changed in the rules. It is State law that they cannot have a secret ballot. The way the vote went was in accordance with how the Commission has always voted. It is not outlined correctly in the rules and procedures.

Ms. Gindele commented that she assumed that they would have seen who was interested in being chair and then voted. However, a nomination motion was made and if it had a majority vote, then it was set in stone. Mr. Mellynchuk wanted to

nominate someone else but couldn't.

Ms. Tanner commented that it will be helpful for the new members to go through training. They are governed by the CUP and what they can say about that. Ms. Gindele confirmed that they did just have orientation. Ms. Tanner commented that it was helpful to understand the ordinance that governs the 6 criteria for the CUP. It describes more about what the Commission's role is.

Mr. Jankowski commented that last year they had a specific discussion about the role before they decided to nominate anyone. This year was done differently. Mr. Jankowski was not interested in being Chair, he was interested in having the ability to add something on the agenda. In 2020, there were 3 separate meetings before a Chair was elected. There was discussion on how broad the agenda should be. The Commission should have a broader discussion on what they should be addressing.

Mr. Britz commented that the point of this discussion was to talk about the election. The next discussion will be more open to how the Commission works, rules, and procedures. To Ms. Gindele's point, a motion was made. Once a motion is on the floor, then they must follow the procedures and vote on it. Ms. Gindele questioned if they could have made a motion to see who was interested. Mr. Britz responded that they could have, but that wasn't the motion that was made.

Chairman McMillan requested City Attorney Sullivan speak to what can happen after a motion is made. Mr. Sullivan commented that once a motion is made and seconded, then the Commission has to deal with that motion. If there is another action, then they have to determine if it takes precedence over the motion itself or not. If the second motion takes precedence, then they will address that and then return to the main motion. The Commission is obligated to deal with each motion using those basic rules. It is the Commission's duty to stay with the motion until they approve it or deny and dispose of it. A motion is not in front of the Commission until it is seconded. Mr. Mellynychuk clarified that someone could make another motion if the original motion was not seconded. Mr. Sullivan confirmed that was correct. The Chair can ask for a second on a motion. Chairman McMillan confirmed she did ask for a second and received one. Mr. Sullivan confirmed that was appropriate.

Ms. Gindele questioned if someone could make a motion for something else after a motion was already made. Mr. Sullivan responded that would be out of order unless the second motion was germane to the first one. Ms. Gindele clarified that after a motion is made they wait to see if there is a second and then go from there. Mr. Sullivan confirmed that was correct. If there was no second, then they have a clean slate. If the motion is seconded, then another motion is made the Chair has to determine if it is germane to the motion on the table. If it is germane, then they would deal with that and if it is not then it would be ruled out of order.

Vice Chairman Collins commented that a lot of times they make a motion and say

it's for discussion purposes. Mr. Sullivan responded that there was no difference between seconding for discussion purposes or just seconding a motion. Vice Chairman Collins commented that after the nomination motion was seconded and there was discussion that's when the Commission could have discussed who else may have been interested in running. Mr. Sullivan confirmed that was correct. Chairman McMillan confirmed that's how it happened. Vice Chairman Collins agreed it just did not get there as smoothly as it could have. Mr. Sullivan commented that it was important to always keep the rules and procedure in mind. They are intended to facilitate the order and conduct of business. If business is being conducted in an orderly way, then strict adherence to the rules and procedures serves no purpose and could interfere with the operation of the Commission. The Chair is the controlling factor in all of this. If business is being conducted in an orderly fashion and there are no objections, then it can continue in an orderly fashion. If there is an objection, then the Chair can drop back to the rules and procedures.

Chairman McMillan questioned if the Commission had any questions about the secret ballot. Mr. Sullivan commented that the right to know law makes it perfectly clear that all government business should be conducted in public. The exceptions to that are narrowly applied, for example negotiating for piece of property. For those reasons Mr. Sullivan's advice was to not do a secret ballot inside of a Council or Commission meeting. There is a provision in statute that allows elections to have a secret ballot but that is interpreted in the narrow sense of electing Municipal Officers not members of Boards and Commissions. To his knowledge no one has conducted a secret ballot in the time he had been there. Chairman McMillan commented that they should change the language in the rules and procedures. Mr. Sullivan confirmed they should. These rules and procedures were not drafted for Portsmouth. There are language references that make it clear it was written for towns. Chairman McMillan commented that they should change the language at the next meeting. Mr. Britz confirmed they could change it with a vote

## **VI. ADJOURNMENT**

Ms. Tanner moved to adjourn the public portion and enter a non-public session at 6:00 p.m. to discuss land acquisition in accordance with RSA 91 A3 II section D, seconded by Ms. Blasko. The motion passed unanimously by a 7-0 vote.

Respectfully submitted,

Becky Frey,  
Secretary for the Conservation Commission



04/08/2022

**LU-22-34**

Land Use Application

**Status:** Active**Date Created:** Feb 23, 2022**Applicant**

John Chagnon  
 jrc@ambitengineering.com  
 200 Griffin Road  
 Unit 3  
 Portsmouth, NH 03801  
 603-430-9282 ext. 308

**Location**

213 JONES AVE  
 Portsmouth, NH 03801

**Owner:**

STICKNEY DONALD LOWELL III  
 213 JONES AVE PORTSMOUTH, NH 03801

**Applicant Information****Please indicate your relationship to this project**

B. Property Owner's Representative

**Alternative Project Address****Alternative Project Address**

--

**Project Type**

**Addition or Renovation:** any project (commercial or residential) that includes an ADDITION to an existing structure or a NEW structure on a property that already has structure(s) on it



**New Construction:** any project (commercial or residential) that involves adding a NEW structure on a parcel that is currently VACANT. If there are any existing structures on the property (even if you are planning to remove them), you should select Addition and Renovation above



**Minor Renovation:** for projects in the Historic District only that involve a minor exterior renovation or alteration that does not include a building addition or construction of a new structure



**Home Occupation:** residential home occupation established in an existing residential dwelling unit and regulated by the Zoning Ordinance. Home Occupations are not allowed in the following Zoning Districts: Waterfront Business, Office Research, Industrial, or Waterfront Industrial



**New Use/Change in Use:** for a change of land use or an expansion to an existing use (e.g. addition of dwelling units) that includes no exterior work or site modifications



**Temporary Structure / Use:** only for temporary uses (e.g. tents, exhibits, events)



**Demolition Only:** only applicable for demolition projects that do not involve any other construction, renovation, or site work



**Subdivision or Lot Line Revision:** for projects which involved a subdivision of land or an adjustment to an existing lot line



**Other Site Alteration requiring Site Plan Review Approval and/or Wetland Conditional Use Permit Approval**



**Sign:** Only applies to signs requiring approval from a land use board (e.g. Historic Commission, Zoning Board of Adjustment)



**Request for Extension of Previously Granted Land Use Approval**

**AMBIT ENGINEERING, INC.** CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801  
Phone (603) 430-9282 Fax 436-2315

30 March 2022

Rick Chellman, Planning Board Chair  
City of Portsmouth  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: Application for CUP Approval, Tax Map 222, Lot 69, 213 Jones Avenue**

Dear Chair Chellman and Planning Board members:

On behalf of Donald Stickney we submit herewith the attached Application for Conditional Use Permit; Wetland. In support thereof, we are submitting a proposed Site Plan set with the associated exhibits and requirements. This proposal is to add a new structure on this existing parcel and re-use the existing structure as a Detached Accessory Dwelling Unit. The proposed dwelling unit and associated utility connections are shown on the Site Plans. The parking required for the proposed dwelling will be contained in the proposed garage.

This City of Portsmouth Wetland Conditional Use Permit Amendment request is for 1,776 square feet of disturbance within the 100' City of Portsmouth Wetland Buffer. No direct wetland impact is proposed. The wetland is a poorly drained palustrine scrub-shrub broad leaved deciduous wetland system that is seasonally flooded and or saturated. The work in the buffer consists of the construction of a proposed berm. Buffer Plantings associated with this request will occur in the wetland buffer; but those plantings are not included as impact area since there will be no change in the grade or preparation of the surface.

The property currently drains to a 15 inch culvert under Jones Avenue. In order to properly address the impact of the project on area drainage the application proposes to construct a proposed berm and create a drainage detention area in the existing back yard; the location being within the wetland buffer, requiring this request for Conditional Use. The need for the detention area is to not increase flow to the city's 15 inch culvert pipe under Jones Avenue. The location of the proposed berm within the wetland buffer is due to the existing topography of the parcel as well as the limited area available for the site development outside the wetland buffer and the Ordinance regulations requiring that a detached ADU be located behind the primary structure. The site plan for stormwater will also include a drip apron on the street side of the proposed single family dwelling and a porous driveway. The reasoning and justification for the impact is included in the attached submission, and detailed below.

According to the City of Portsmouth Zoning Ordinance, Article 10.1017.50 Criteria for Approval, the proposal shall comply with the following criteria:

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

The proposal is to construct a berm to create a drainage detention area within the 100' City of Portsmouth Wetland Buffer. The portion of the lot located within the 100 foot wetland buffer is impacted by a finger of wetland on the east side of the property that causes the buffer line to jut up to the north on the east side of the lot. Given that the proposed project includes an increase in impervious surface, the increase must be mitigated and the peak flow attenuated. The proposed berm location is within a mowed area and therefore does not require the removal of any naturally vegetated buffer area to achieve construction goals. The property is a larger residential lot in a residential zone where detached ADU's are allowed. The lot topography creates the opportunity to create an area to temporarily detain run-off for a short period of time during a storm event by creating a berm. The berm needs to be partially located within the wetland buffer due to the topography of the property. The work consists of site grading.

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

The property is a larger residential lot in a residential zone where detached ADU's are allowed. Detached ADU's are allowed but they cannot be placed in front of the primary structure. The location of the existing structure; which will become the detached ADU, allows for the new structure, which will become the primary residence, to be placed on the east side of the lot. This location is near the culvert which drains the property under Jones Avenue. Adding impervious area to the lot requires that potential storm water run-off increases are managed. The lot is sloped from back to front making placement of drainage detention near the drainage exit at the front of the lot difficult due to the requirement that the primary structure be placed in that location. Drainage mitigation for the new structure can be achieved with the placement of a berm across the lot. The berm slows down the flow of water from the back of the lot sufficiently to allow the proposed development to not increase the flow to the culvert under Jones Avenue; therefore achieving the storm water goals. The introduction of a porous driveway and a drip apron also serve to reduce, as much as possible, the potential impact of the new impervious area. Due to the topography of the lot, the requirement that the berm be constructed to reach high points of the lot on either side, and the fact that the wetland buffer extends closer to the front of the lot on the east side of the lot, there is no area feasible to propose the detention area, required to mitigate the construction impact, while avoiding the 100' City of Portsmouth Wetland Buffer.

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

The proposal will not impact the existing wetland resource and its current functions and values. The proposed berm is located as need to provide the function required, given site topography. The wetland area currently functions as an area which collects and conveys



storm water run-off; that function is not interrupted by the placement of a berm in the buffer. This area collects run-off from surrounding properties and conveys the run-off across the locus parcel and as such storm water runoff is currently being collected and detained in this area. The location of the proposed development run-off will be downstream from the buffer area. The proposed stone drip apron and porous driveway will provide stormwater treatment from the proposed building. Flow from the proposed development does not flow to the wetland resource and therefore will have no impact on the wetland resource. The wetland buffer will be enhanced with some buffer plantings. The regrading of a portion of the buffer is a temporary impact to the ground surface that will be managed for erosion. The redevelopment will also involve the replacement of the existing septic system that does not meet current codes. Although expanded modestly to the new flow, the improved system meeting current design standards is an improvement. It is our belief therefore that the project will have no adverse impact on the wetland functional values and the surrounding properties, and will allow expansion of much needed housing in the community on an existing, developed lot.

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

The area within the 100' City of Portsmouth Wetland Buffer proposed to be impacted is an existing lawn area, not a woodland. The owner, not as a part of this application but as a part of his long term desires for the property, has undertaken tree plantings within the wetland buffer, those are buffer enhancements and they are shown on the plan. This application shows an additional 3,640 square foot area of the buffer which will be planted, in accordance with Ordinance Section 10.1017.25 Wetland Buffer Enhancement, to achieve a return to a natural vegetated state. There will be no alteration of the natural vegetated state to achieve construction goals; other than the temporary disruption to construct the berm.

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

The project represents the alternative with the least adverse impacts to areas and environments while allowing reasonable use of the property. As stated above, the proposal provides stormwater mitigation in the only area feasible, due to the lot topography. That function currently exists in that location. Placing the development downstream from the resource is the least impacting alternative to the environment.

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

The owner, not as a part of this application, has undertaken tree plantings within the wetland buffer, those are buffer enhancements and they are shown on the plan. This application shows an additional 3,640 square foot area of the buffer which will be planted, in accordance with Ordinance Section 10.1017.25 Wetland Buffer Enhancement, to achieve a return to a natural vegetated state.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Existing Conditions Plan C1 – This plan shows the current property improvements on the property.
- CUP ADU Site Plan C2 – This plan shows layout of the proposed dwelling with Zoning Information, waiver requests, setbacks and lot coverages.
- CUP Wetlands Site Plan C3 – This plan shows layout of the proposed dwelling with the proposed wetland buffer impacts and square footages.
- Erosion Control and Grading Plan C4 – This plan shows the proposed site grading and erosion control measures.
- Septic and Utility Plan C5 – This plan shows layout of the proposed septic system and site utilities.
- Detail Sheets D1 and D2 – These plans shows the construction details for the project.

We look forward to your review of this submission and our in person presentation at the Planning Board meeting. For the reasons stated, we respectfully request the Planning Board grant the Wetland Conditional Use Permit. Thank you for your time and attention to this proposal.

Sincerely,

*John Chagnon*

John R. Chagnon, PE  
CC: 213 Jones Avenue Team



**OWNER:**  
**DONALD LOWELL STICKNEY III**  
 213 JONES AVENUE  
 PORTSMOUTH, N.H. 03801  
 (603)988-7222

**LAND SURVEYOR & CIVIL ENGINEER:**  
**AMBIT ENGINEERING, INC.**  
 200 GRIFFIN ROAD, UNIT 3  
 PORTSMOUTH, N.H. 03801-7114  
 TEL: (603) 430-9282  
 FAX: (603) 436-2315

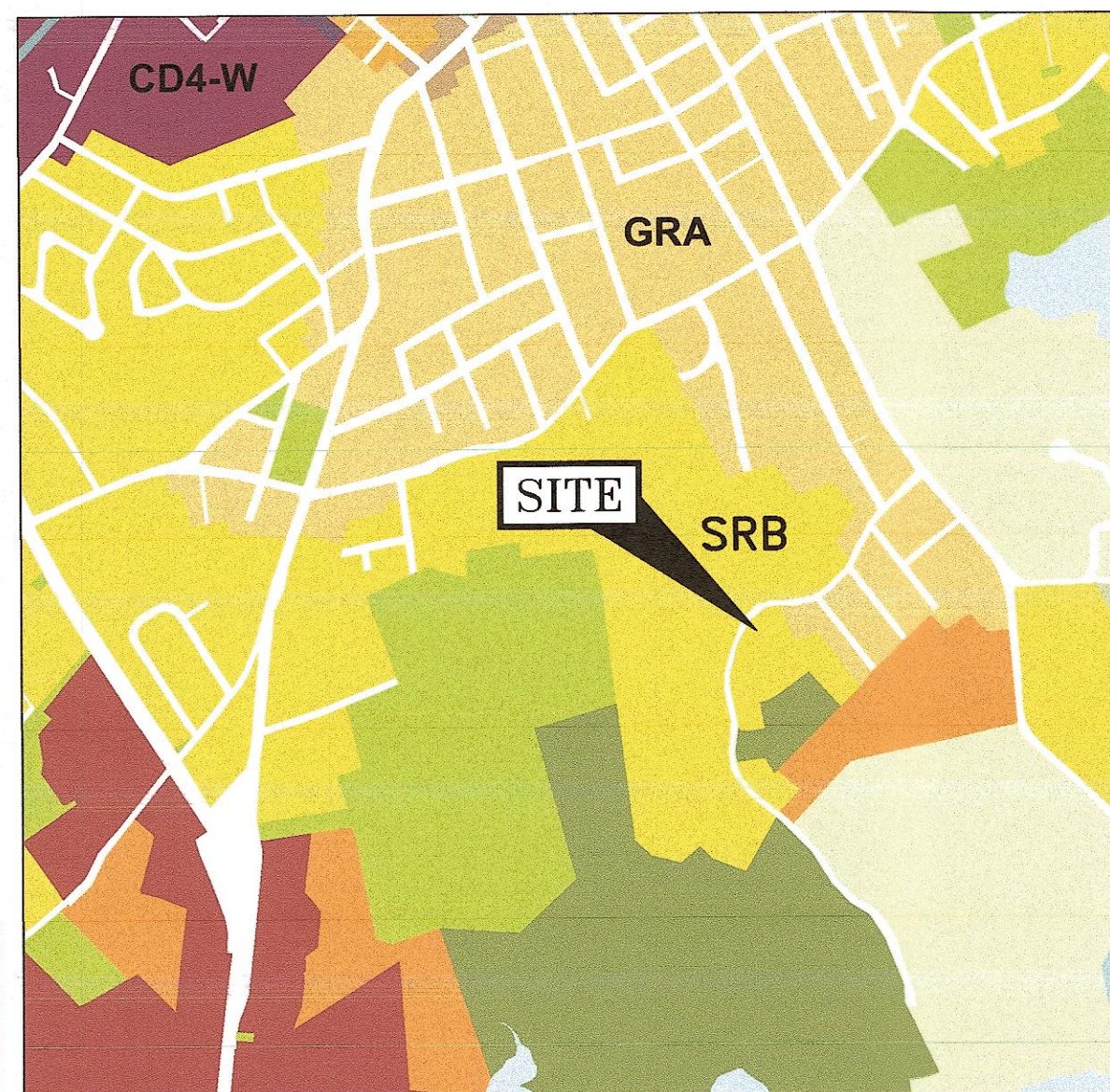
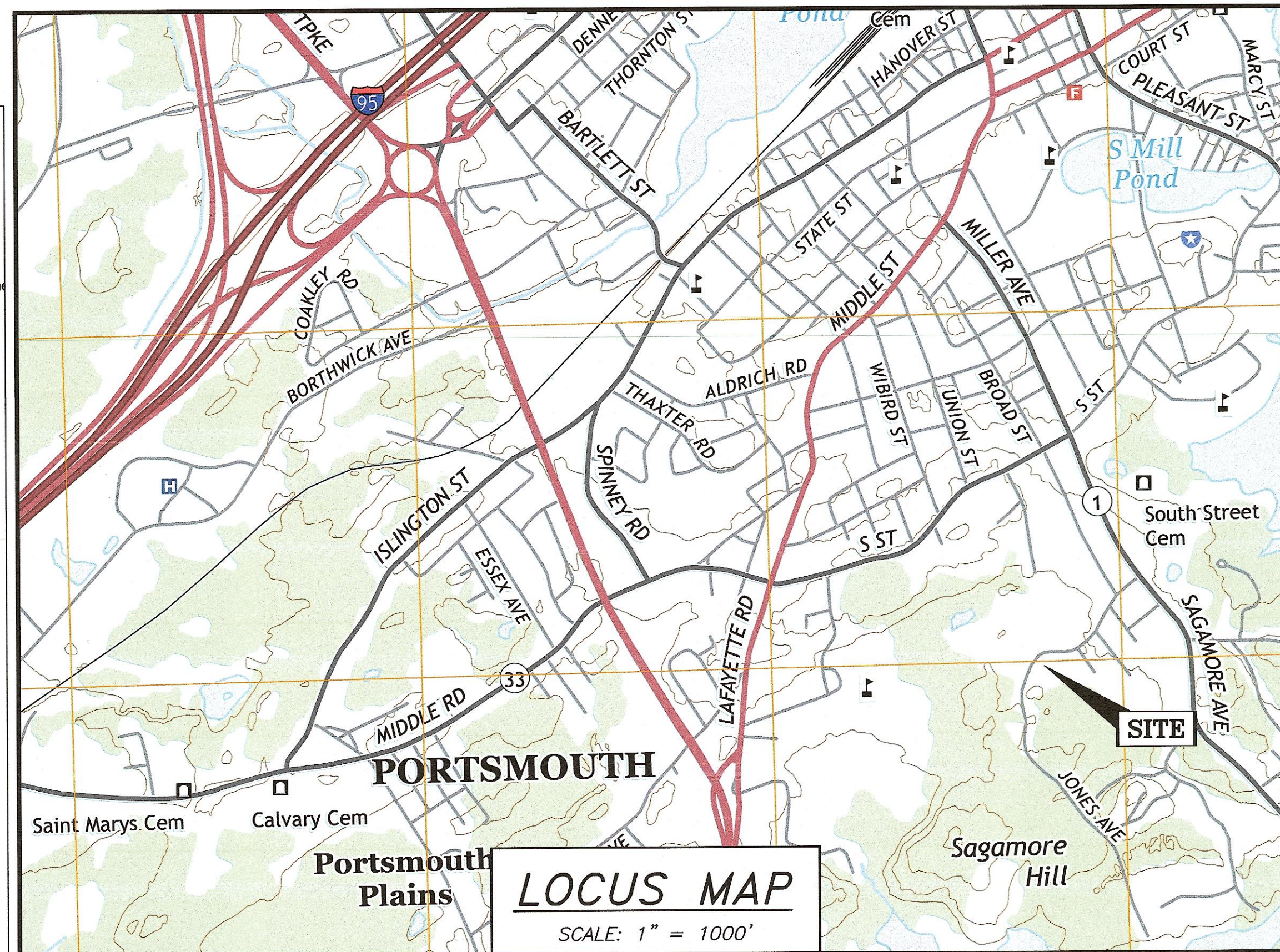
**ATTORNEY:**  
**BOSEN & ASSOCIATES**  
 266 MIDDLE STREET  
 PORTSMOUTH, NH 03801  
 TEL: (603)-427-5500

# PROPOSED ADU 213 JONES AVENUE PORTSMOUTH, NEW HAMPSHIRE PERMIT PLANS

**REQUIRED PERMITS**  
 PORTSMOUTH CONDITIONAL USE PERMIT ADU: PENDING  
 PORTSMOUTH CONDITIONAL USE PERMIT WETLAND: PENDING

**LEGEND:**

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY
	REGISTRY OF DEEDS
	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
	GRANITE BOUND w/IRON ROD FOUND
<b>EXISTING</b>	
FM	FORCE MAIN
S	SEWER PIPE
SL	SEWER LATERAL
G	GAS LINE
D	STORM DRAIN
FD	FOUNDATION DRAIN
W	WATER LINE
FS	FIRE SERVICE LINE
UE	UNDERGROUND ELECTRIC SUPPLY
	UNDERGROUND ELECTRIC SERVICE
OHW	OVERHEAD ELECTRIC/WIRES
	RETAINING WALL
	EDGE OF PAVEMENT (EP)
100	CONTOUR
97x3	SPOT ELEVATION
	UTILITY POLE
	ELECTRIC METER
	TRANSFORMER ON CONCRETE PAD
	ELECTRIC HANDHOLD/PULLBOX
	WATER SHUT OFF/CURB STOP
	PIPE CLEANOUT
	GATE VALVE
	HYDRANT
	CATCH BASIN
	SEWER MANHOLE
	DRAIN MANHOLE
	WATER METER MANHOLE
	TEST BORING
	TEST PIT
	LANDSCAPED AREA
CI	CAST IRON PIPE
COP	COPPER PIPE
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
HYD	HYDRANT
CL	CENTERLINE
EP	EDGE OF PAVEMENT
EL	ELEVATION
FF	FINISHED FLOOR
INV	INVERT
TBM	TEMPORARY BENCH MARK
TYP	TYPICAL



R	Rural
SRA	Single Residence A
SRB	Single Residence B
GRA	General Residence A
GRB	General Residence B
GRC	General Residence C
GA/MH	Garden Apartment/Mobile Home
<b>Mixed Residential Districts</b>	
MRO	Mixed Residential Office
MRB	Mixed Residential Business
G1	Gateway Corridor
G2	Gateway Center
<b>Business Districts</b>	
GB	General Business
B	Business
WB	Waterfront Business
<b>Industrial Districts</b>	
OR	Office Research
I	Industrial
WI	Waterfront Industrial
<b>Airport Districts</b>	
AIR	Airport
AI	Airport Industrial
PI	Pease Industrial
ABC	Airport Business Commercial
<b>Other Districts</b>	
M	Municipal
NRP	Natural Resource Protection
TC	Transportation Corridor



**INDEX OF SHEETS**

- C1 - EXISTING CONDITIONS PLAN
- C2 - CUP ADU SITE PLAN
- C3 - CUP WETLANDS SITE PLAN
- C4 - EROSION CONTROL & GRADING PLAN
- C5 - SEPTIC & UTILITY PLAN
- D1-D2 - DETAILS

**UTILITY CONTACTS**

**ELECTRIC:**  
 EVERSOURCE  
 74 OLD DOVER ROAD  
 ROCHESTER, N.H. 03867  
 Tel. (603) 332-4227,  
 Ext. 555.5325  
 ATTN: MARK COLLINS  
 EMAIL:  
 mark.collins@eversource.com

**NATURAL GAS:**  
 UNITIL  
 325 WEST ROAD  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 6294-5147  
 ATTN: SUSAN DUPLISA  
 dupliseas@unitil.com

**CABLE:**  
 XFINITY BY COMCAST  
 180 GREENLEAF AVE.  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 266-2278  
 ATTN: MIKE COLLINS

**SEWER & WATER:**  
 PORTSMOUTH DEPARTMENT  
 OF PUBLIC WORKS  
 680 PEVERLY HILL ROAD  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 427-1530  
 ATTN: JIM TOW

**COMMUNICATIONS:**  
 FAIRPOINT  
 COMMUNICATIONS  
 1575 GREENLAND ROAD  
 GREENLAND, N.H. 03840  
 Tel. (603) 427-5525  
 ATTN: JOE CONSIDINE  
 EMAIL:  
 jconsidine@fairpoint.com

APPROVED BY THE PORTSMOUTH PLANNING BOARD

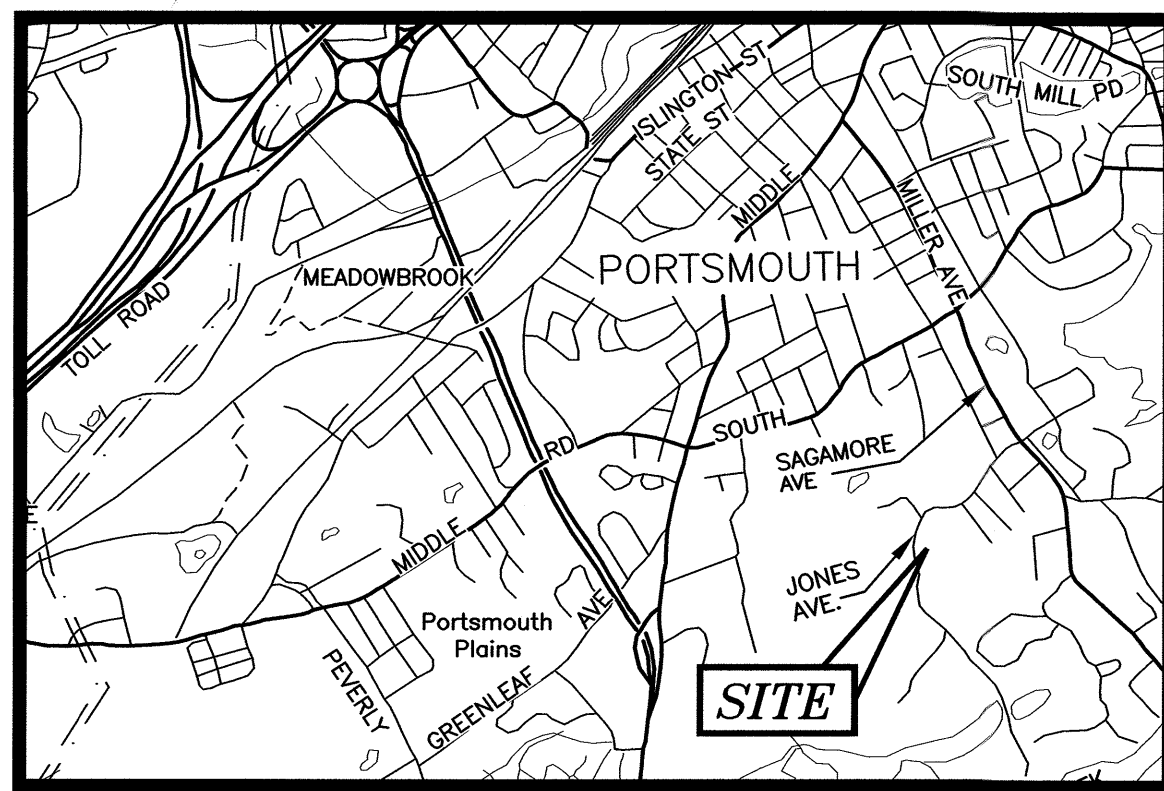
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**PROPOSED ADU  
 213 JONES AVENUE  
 PORTSMOUTH, N.H.**

**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 30 MARCH 2022





LOCATION MAP SCALE: 1" = 2,000'

**LEGEND:**

- N/F NOW OR FORMERLY
- RP RECORD OF PROBATE
- RCRD ROCKINGHAM COUNTY
- RR SPK RAILROAD SPIKE
- MAP 11/LOT 21
- IR FND IRON ROD FOUND
- IP FND IRON PIPE FOUND
- IR SET IRON ROD SET
- DH FND DRILL HOLE FOUND
- DH SET DRILL HOLE SET
- NHHB NHDOT BOUND FOUND
- TB TOWN BOUND
- BND w/DH BOUND WITH DRILL HOLE
- ST BND w/DH STONE BOUND WITH DRILL HOLE

**WETLAND NOTES:**

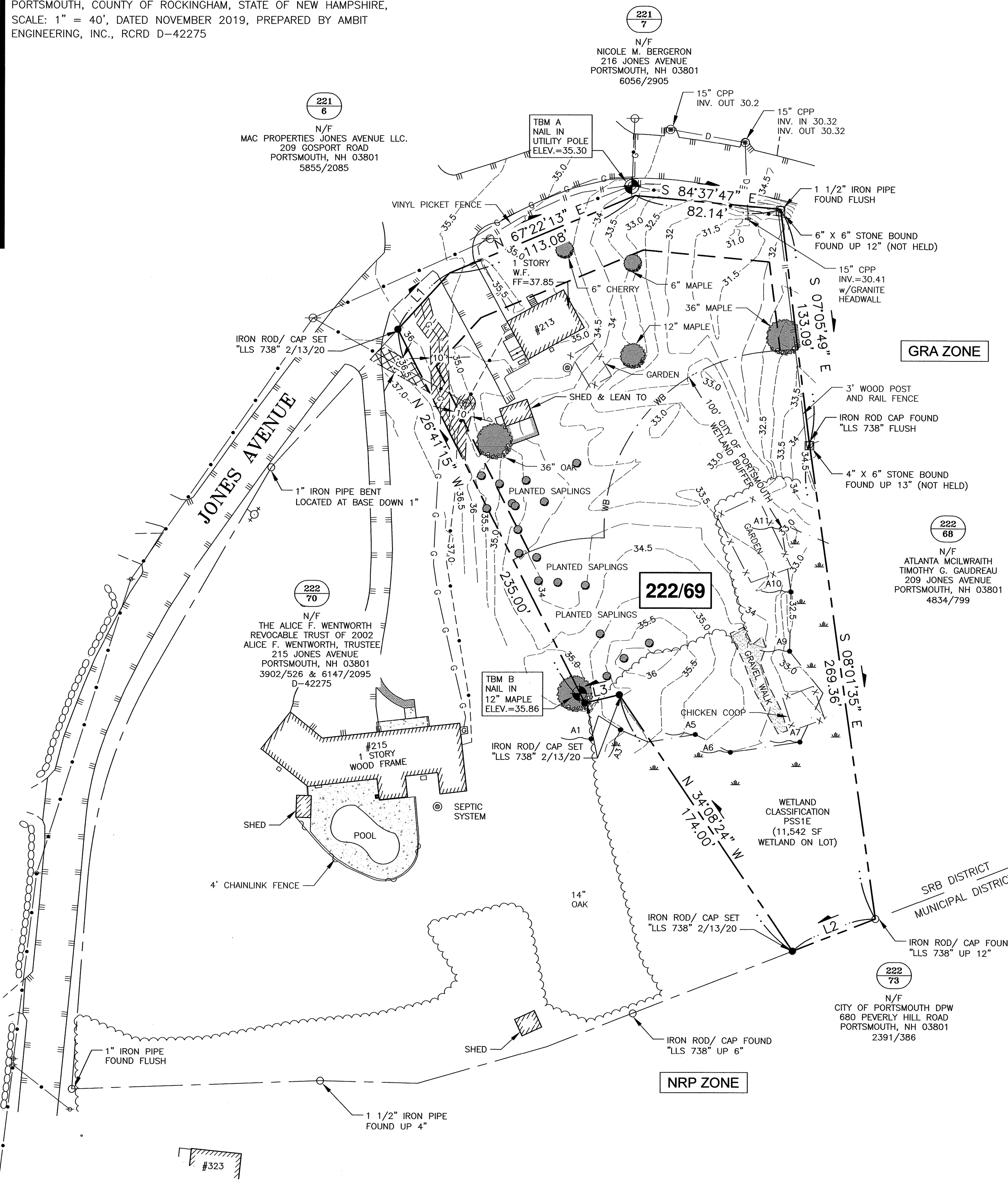
1) WETLAND LINE DELINEATED BY STEVEN D. RIKER, CWS ON 8/25/21 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

- A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JAN. 1987), AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
- B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, USDA-NRCS, 2018 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2019).
- C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1), USFWS (MAY 1988).
- D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).
- E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

**REFERENCE PLAN:**

1) LOT LINE RELOCATION PLAN TAX MAP 222 - LOTS 69 & 70, OWNERS: THE ALICE F. WENTWORTH REVOCABLE TRUST OF 2002 & DONALD LOWELL STICKNEY III, 213 & 215 JONES AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1" = 40', DATED NOVEMBER 2019, PREPARED BY AMBIT ENGINEERING, INC., RCRD D-42275

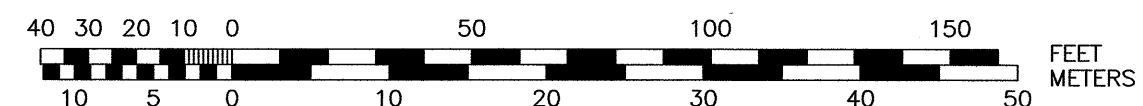


**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	N42°28'40"E	43.00'
L2	N68°42'45"E	50.00'
L3	N76°46'01"E	20.00'

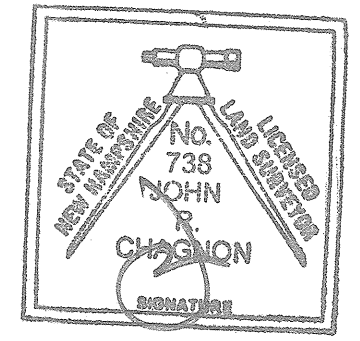
EASEMENT TO BENEFIT ASSESSOR'S MAP 222 LOT 70 FOR UTILITIES OVER ASSESSOR'S MAP 222 LOT 69

**GRAPHIC SCALE**



"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

*JRC* 2.11.22  
 JOHN R. CHAGNON, LLS DATE



**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

**NOTES:**

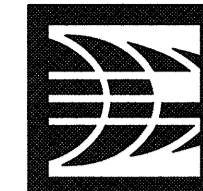
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.
- 2) OWNER OF RECORD:  
 DONALD LOWELL STICKNEY III  
 213 JONES AVENUE  
 PORTSMOUTH, NH 03801  
 5754/2748 & 6147/2092  
 D-42275
- 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0270F. EFFECTIVE JANUARY 29, 2021.
- 4) EXISTING LOT AREA:  
 62,528 S.F.  
 1.4354 ACRES
- 5) PARCEL IS LOCATED IN SINGLE RESIDENCE B (SRB) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
 MIN. LOT AREA: 15,000 S.F.  
 FRONTAGE: 100 FEET  
 SETBACKS:  
     FRONT 30 FEET  
     SIDE 10 FEET  
     REAR 30 FEET  
 MAXIMUM STRUCTURE HEIGHT: 35 FEET  
 MAXIMUM BUILDING COVERAGE: 20%  
 MINIMUM OPEN SPACE: 40%
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.
- 8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

**STICKNEY RESIDENCE  
 213 JONES AVENUE  
 PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	TBM A	2/11/22
1	FF, INVERTS	1/4/22
0	ISSUED FOR COMMENT	9/23/21

SCALE: 1" = 40' SEPTEMBER 2021

EXISTING CONDITIONS PLAN **C1**



**AMBIT ENGINEERING, INC.**

Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

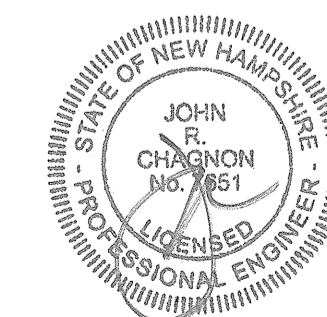
**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.
- 2) OWNER OF RECORD:  
DONALD LOWELL STICKNEY III  
213 JONES AVENUE  
PORTSMOUTH, NH 03801  
5754/2748 & 6147/2092  
D-42275
- 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0270F. EFFECTIVE JANUARY 29, 2021.
- 4) EXISTING LOT AREA:  
62,528 S.F.  
1.4354 ACRES
- 5) PARCEL IS LOCATED IN SINGLE RESIDENCE B (SRB) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
MIN. LOT AREA: 15,000 S.F.  
FRONTAGE: 100 FEET  
SETBACKS:  
FRONT 30 FEET  
SIDE 10 FEET  
REAR 30 FEET  
  
MAXIMUM STRUCTURE HEIGHT: 35 FEET  
MAXIMUM BUILDING COVERAGE: 20%  
MINIMUM OPEN SPACE: 40%
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.
- 8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

**PROPOSED DADU  
213 JONES AVENUE  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
1	ADD BERM; ELIMINATE POND	3/20/22
0	ISSUED FOR COMMENT	2/11/22

**REVISIONS**



SCALE: 1" = 20' FEBRUARY 2022

**CUP DADU SITE  
PLAN**

**C2**

**IMPERVIOUS SURFACE AREAS**

TO PROPERTY LINE

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
BUILDING	886	886+1,824
STAIRS/STEPS	24+8	24+8
SHED	360	360
DECK & PATIOS	0	264
PORCH	51	51
BULKHEAD	37	37
PAVED DRIVE	1396	1396
GRAVEL APRON	0	79
TOTAL	2762	4929
LOT SIZE	62528	62528
% LOT COVERAGE	4.4%	7.9%

**PROPOSED WAIVERS:**

WAIVER FROM SECTION 10.814.52 TO PERMIT 886 S.F. TOTAL GROSS FLOOR AREA WHERE 750 S.F. IS THE MAXIMUM ALLOWED.

WAIVER FROM SECTION 10.814.53 TO PERMIT 42% OF THE COMBINED VISIBLE FAÇADE AREAS FACING THE SAME STREET, WHERE 40% IS THE MAXIMUM ALLOWED.

DADU FAÇADE: 36.4'  
PRIMARY STRUCTURE FAÇADE: 50.0'

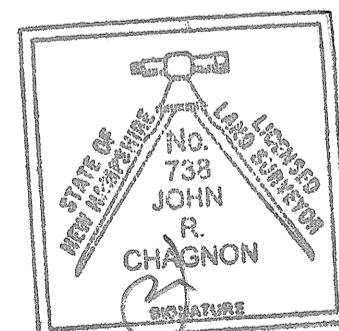
WAIVER FROM SECTION 10.814.55 TO PERMIT THE DADU FRONT WALL TO BE SET BACK 3.2 FT FROM THE FRONT SETBACK OF THE PRIMARY STRUCTURE WHERE 10 FT IS THE MINIMUM ALLOWED.

N/F  
MAC PROPERTIES JONES AVENUE LLC.  
208 GOSPORT ROAD  
PORTSMOUTH, NH 03801  
5855/2085

221  
7  
N/F  
NICOLE M. BERGERON  
216 JONES AVENUE  
PORTSMOUTH, NH 03801  
6056/2905

222  
68  
N/F  
ATLANTA MCILWRAITH  
TIMOTHY G. GAUDREAU  
209 JONES AVENUE  
PORTSMOUTH, NH 03801  
4834/799

222  
70  
N/F  
THE ALICE F. WENTWORTH  
REVOCABLE TRUST OF 2002  
ALICE F. WENTWORTH, TRUSTEE  
215 JONES AVENUE  
PORTSMOUTH, NH 03801  
3902/526 & 6147/2095  
D-42275

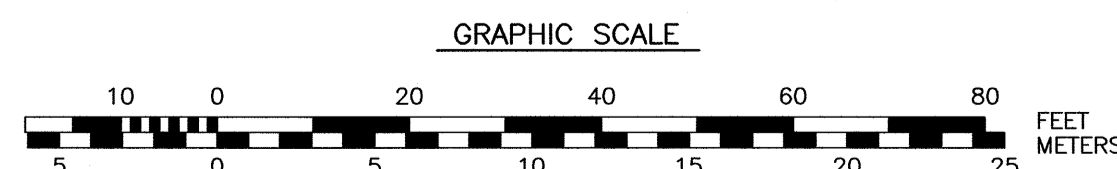
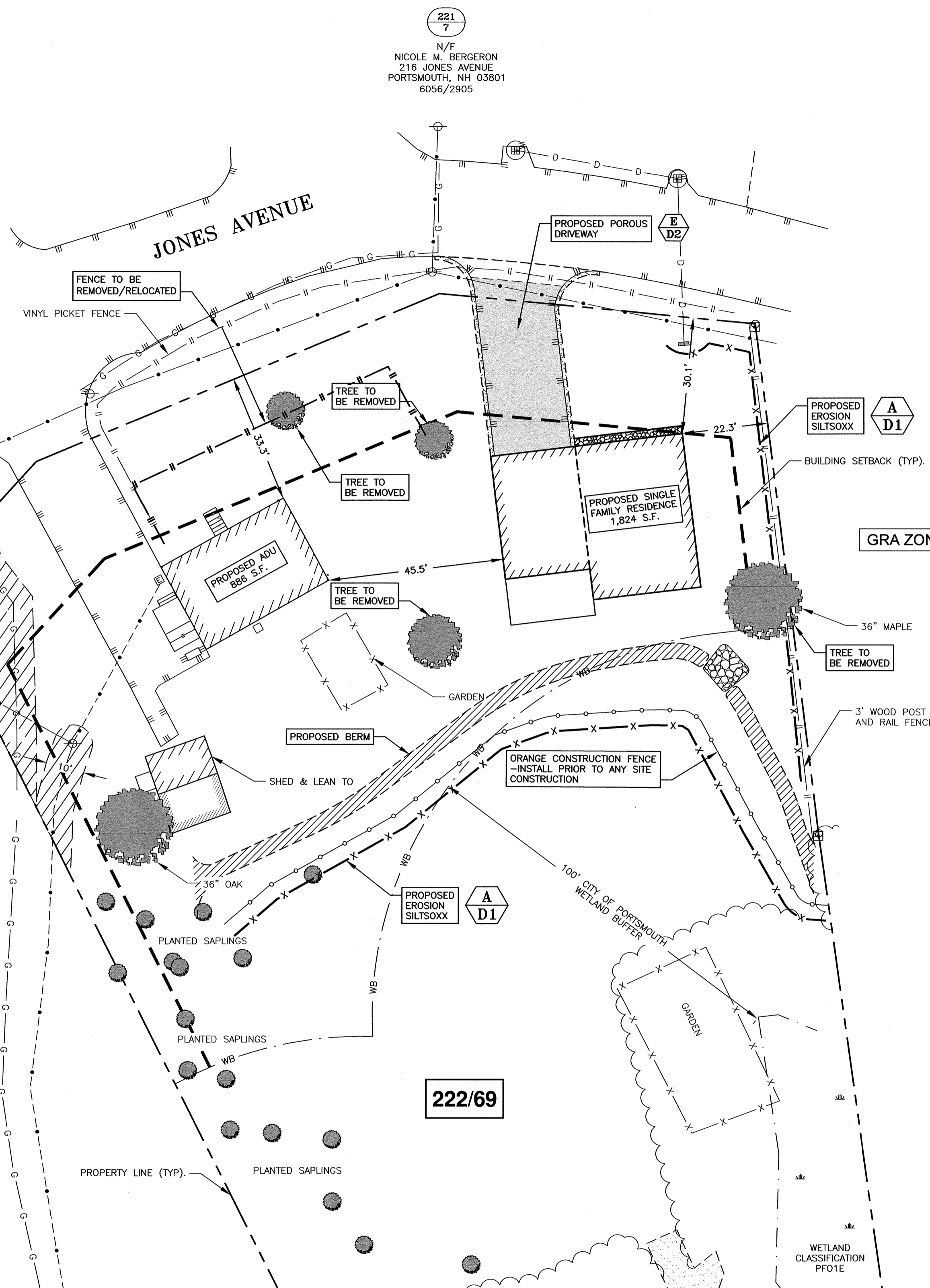


"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

*JRC*  
JOHN R. CHAGNON, LLS DATE 3-20-22

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE



1995  
MAGNETIC  
N  
D-27773  
RCRD



**REFERENCE PLAN:**

1) LOT LINE RELOCATION PLAN TAX MAP 222 - LOTS 69 & 70, OWNERS: THE ALICE F. WENTWORTH REVOCABLE TRUST OF 2002 & DONALD LOWELL STICKNEY III, 213 & 215 JONES AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1" = 40', DATED NOVEMBER 2019, PREPARED BY AMBIT ENGINEERING, INC., RCRD D-42275

BUFFER PLANTING SCHEDULE			
SYMBOL	ITEM	SIZE	QTY
●	RED MAPLE	1" CALIPER	7
	ACER RUBRUM		
○	VACCINIUM CORYMBOSUM	3-4 GALLON	10
⊕	HIGHBUSH BLUEBERRY	3-4 GALLON	10
	VIBURNUM RECOGNITUM		
⊕	NORTHERN ARROWOOD	3-4 GALLON	10

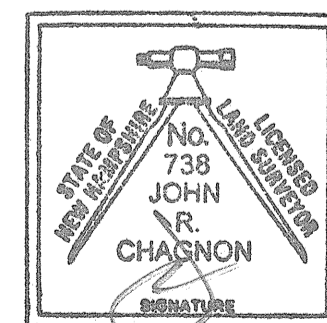
\*BUFFER PLANTING AREA NOT TO BE MOVED OR MAINTAINED.

221  
7  
N/F  
NICOLE M. BERGERON  
216 JONES AVENUE  
PORTSMOUTH, NH 03801  
6056/2905

221  
6  
N/F  
MAC PROPERTIES JONES AVENUE LLC.  
209 GOSPORT ROAD  
PORTSMOUTH, NH 03801  
5855/2085

222  
68  
N/F  
ATLANTA MCILWRAITH  
TIMOTHY S. GAUDREAU  
209 JONES AVENUE  
PORTSMOUTH, NH 03801  
4834/799

222  
70  
N/F  
THE ALICE F. WENTWORTH  
REVOCABLE TRUST OF 2002  
ALICE F. WENTWORTH, TRUSTEE  
215 JONES AVENUE  
PORTSMOUTH, NH 03801  
3902/526 & 6147/2095  
D-42275

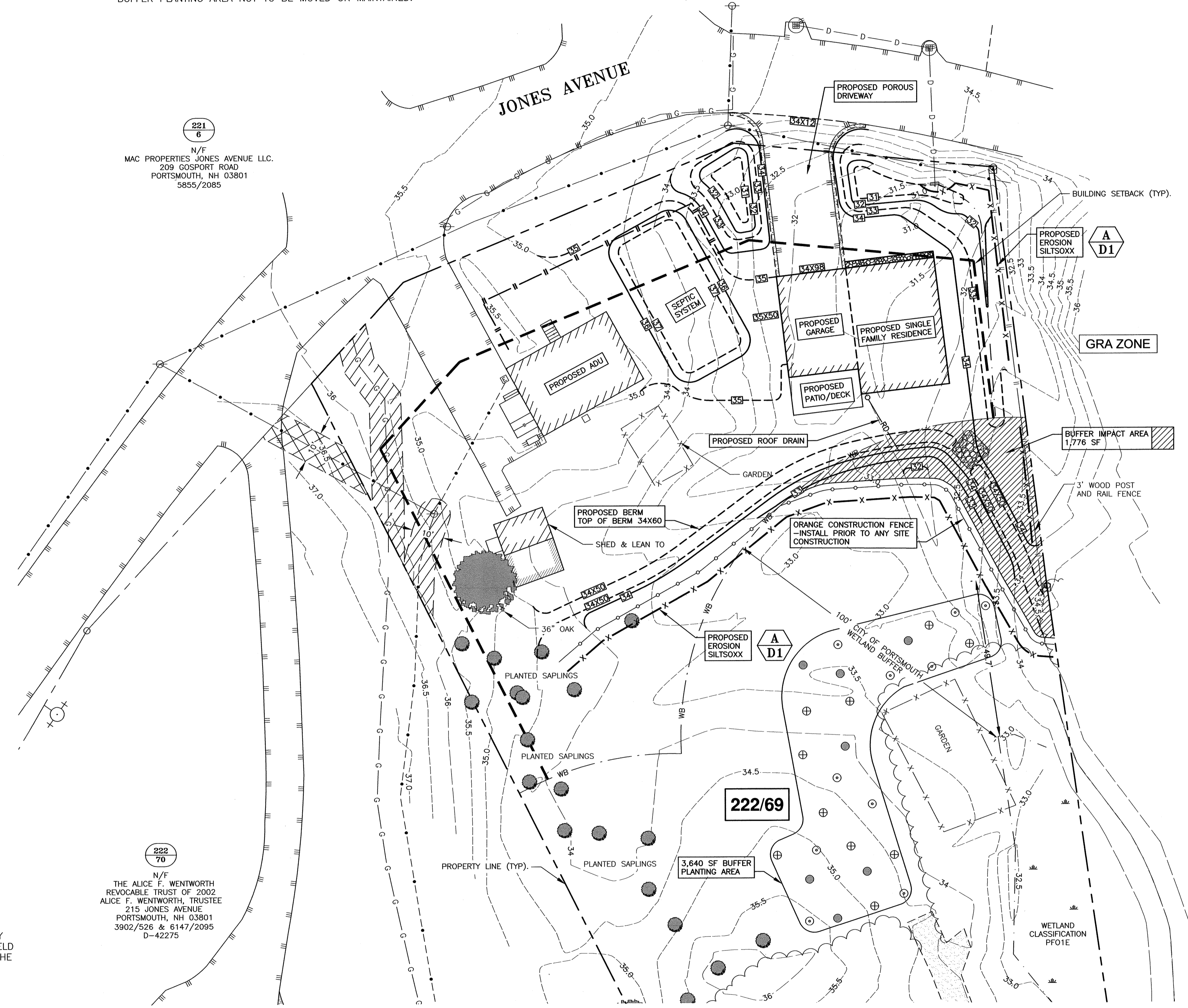
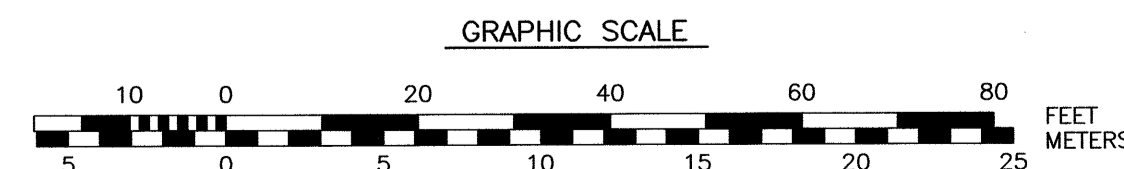


"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

*John R. Chagnon*  
JOHN R. CHAGNON, LLS  
3.30.22  
DATE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



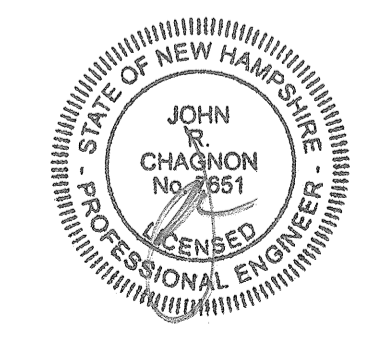
1995  
D-27773  
MAGNETIC  
RCRD

**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
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Tel (603) 430-9282  
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- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.
  - 2) OWNER OF RECORD:  
DONALD LOWELL STICKNEY III  
213 JONES AVENUE  
PORTSMOUTH, NH 03801  
5754/2748 & 6147/2092  
D-42275
  - 3) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
  - 4) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
  - 5) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
  - 6) PLANTING AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NOFA STANDARDS FOR ORGANIC LAND USE.
  - 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE WETLAND BUFFER IMPACT ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.
  - 8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. (CONTOUR INTERVAL 0.5')

**PROPOSED DADU  
213 JONES AVENUE  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
1	ADD BERM, BUFFER PLANTING AREA	3/30/22
0	ISSUED FOR COMMENT	2/11/22



SCALE: 1" = 20'

**CUP WETLANDS  
SITE PLAN**

**C3**



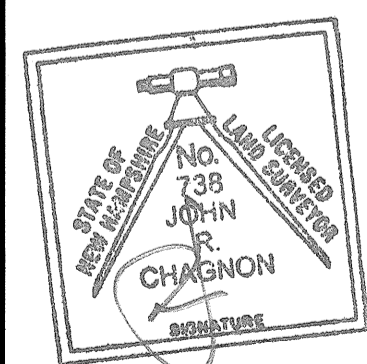
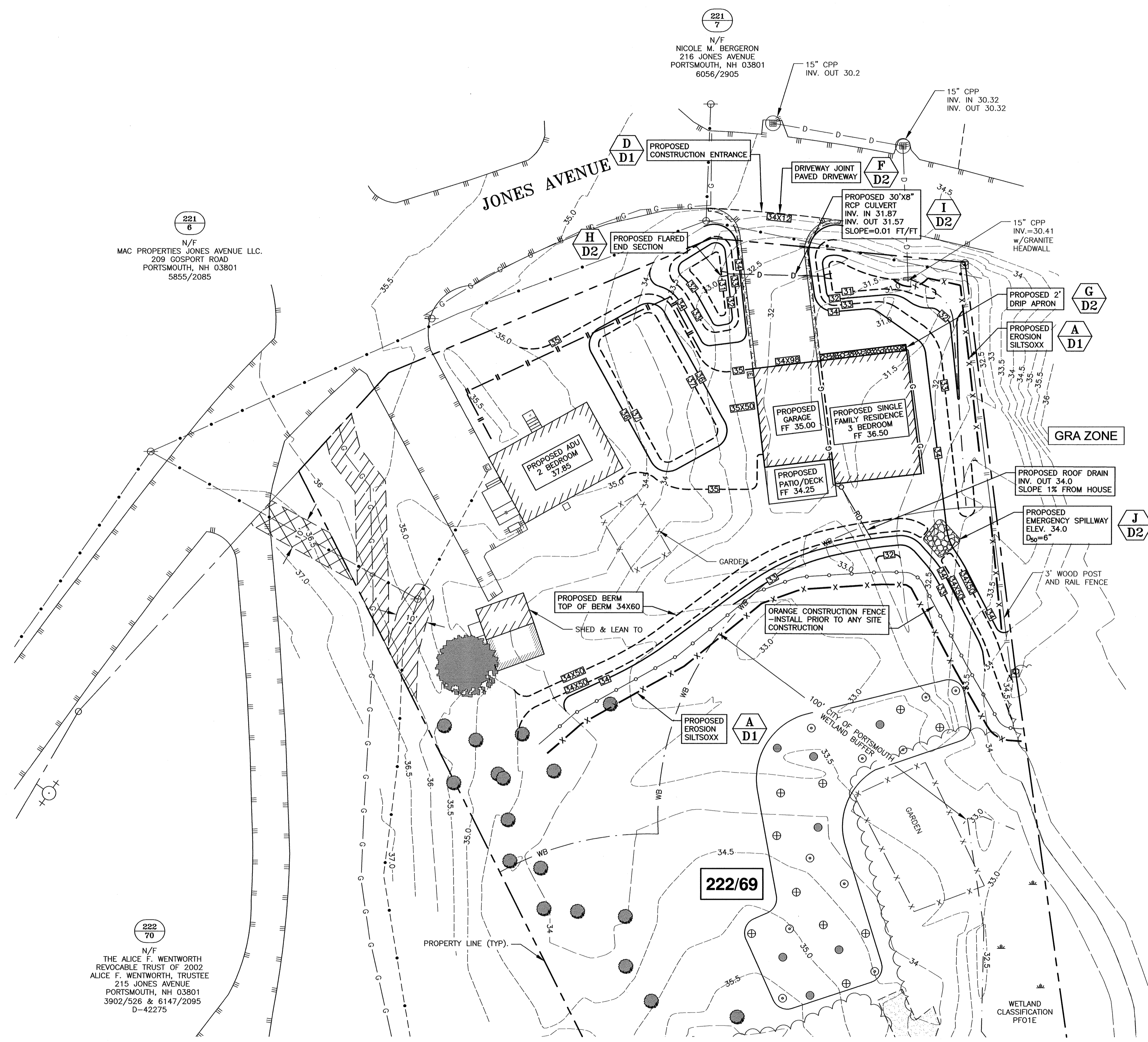
**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

**NOTES:**

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- 4) PLANTING AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NOFA STANDARDS FOR ORGANIC LAND USE.

1995  
MAGNETIC  
RCRD  
D-27773

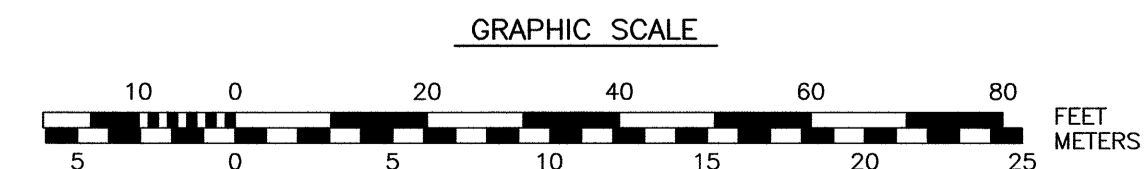


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*John R. Chagnon*  
JOHN R. CHAGNON, LLS  
DATE 3.30.22

APPROVED BY THE PORTSMOUTH PLANNING BOARD

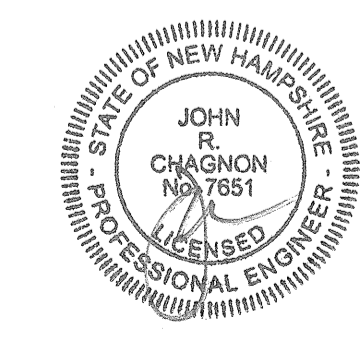
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



**PROPOSED DADU  
213 JONES AVENUE  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
1	ADD BERM	3/30/22
0	ISSUED FOR COMMENT	2/11/22

REVISIONS



SCALE: 1" = 20'

**GRADING, DRAINAGE &  
EROSION CONTROL PLAN**

**C4**







**CONSTRUCTION SEQUENCE**

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, I.E., SILT/SOXX AROUND THE LIMITS OF DISTURBANCE AND DRAINAGE CONSTRUCTION FENCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

CUT BRUSH AND TREES AS REQUIRED. STUMP SITE AND CLEAR TOPSOIL.

INSTALL FOUNDATION AND BACKFILL; ROUGH GRADE DRIVEWAY

ROUGH GRADE SITE, PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

CONSTRUCT BUILDING & SEPTIC SYSTEM.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

FINISH ALL REMAINING LANDSCAPE WORK.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

**GENERAL CONSTRUCTION NOTES**

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3900 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILT/SOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILT/SOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES ( LOAM AND SEED AREAS ) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS--CONSTRUCT SILT FENCE OR SILT/SOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- \* BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- \* A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- \* A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- \* EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.

**NOFA STANDARDS FOR ORGANIC LAND CARE**

\*REFERENCE NOFA STANDARDS FOR ORGANIC LAND CARE MANUAL FOR ALL LAND CARE PRACTICES AT THIS SITE.

**NEW LAWN INSTALLATION**

- ORDER OF PROCESSES:
  1. SOIL TESTING. SOIL TYPE PREFERRED IS CLOSE TO NEUTRAL PH AND HAS A BALANCED FUNGAL TO BACTERIAL RATIO.
  2. PLANTING BED PREPARATION WITH SOIL AMENDMENTS AS SPECIFIED BY SOIL TEST RESULTS.
  3. SEEDING WITH AN APPROPRIATE MIX OF SEEDS BY HAND, USING A SPREADER OR SEED DRILLER, OR BY ORGANIC HYDROSEEDING.
  4. WATERING FREQUENTLY BUT SHALLOWLY, MAINTAINING A "UNIFORMLY MOIST" SEEDBED DURING GERMINATION AND ESTABLISHMENT.

**LAWN MAINTENANCE**

- GRASS SHOULD BE ALLOWED TO GROW 3" OR TALLER IN HEIGHT PRIOR TO FIRST MOWING. GRASS CLIPPINGS SHOULD BE LEFT IN PLACE.
- REMOVE NO MORE THAN 1/3 OF GRASS LENGTH PER MOWING.

**FERTILIZING**

-ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

**EROSION CONTROL NOTES**

**VEGETATIVE PRACTICE**

FOR PERMANENT MEASURES AND PLANTINGS: LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREeping RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREeping RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS: MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:  
PERENNIAL RYE: 0.7 LBS/1,000 S.F.  
1.5 TONS/ACRE

**MAINTENANCE AND PROTECTION**

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER. ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

SILT/SOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

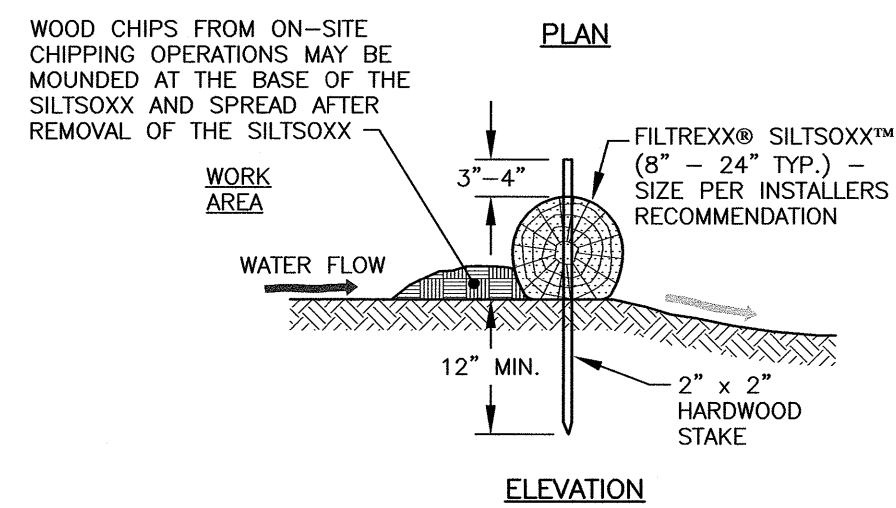
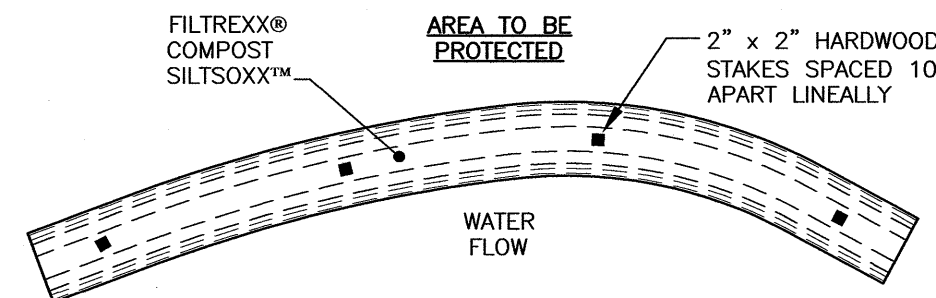
SILT FENCING AND SILT/SOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILT/SOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

**WINTER NOTES**

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

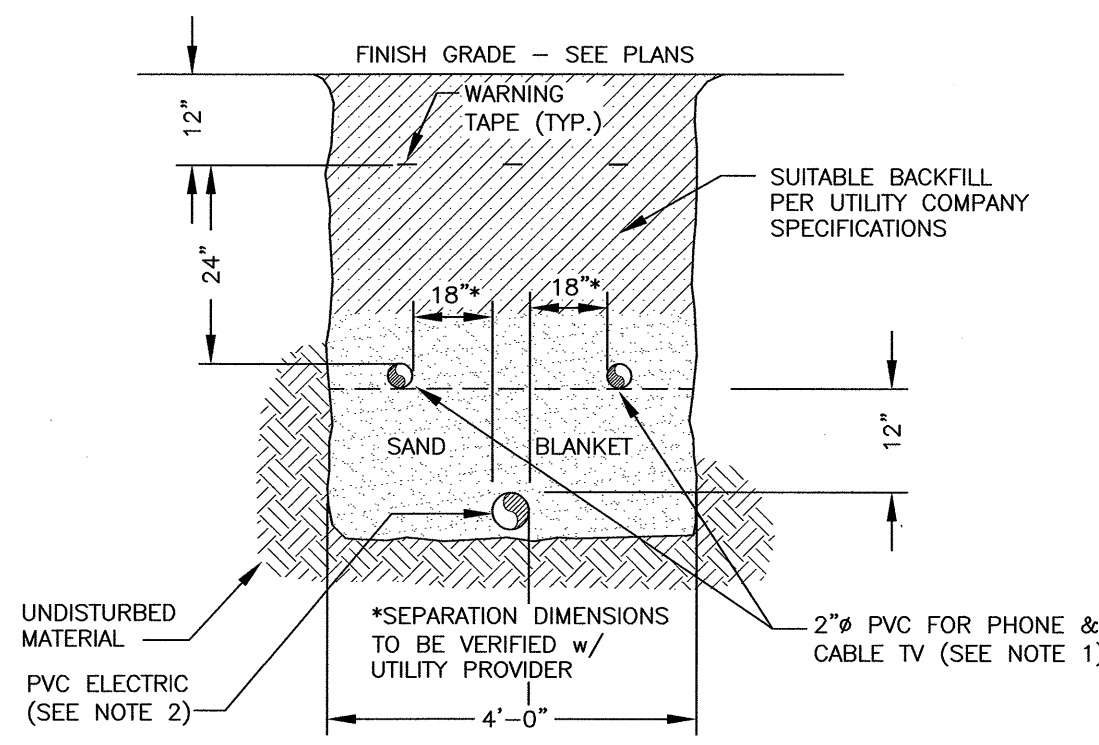
AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



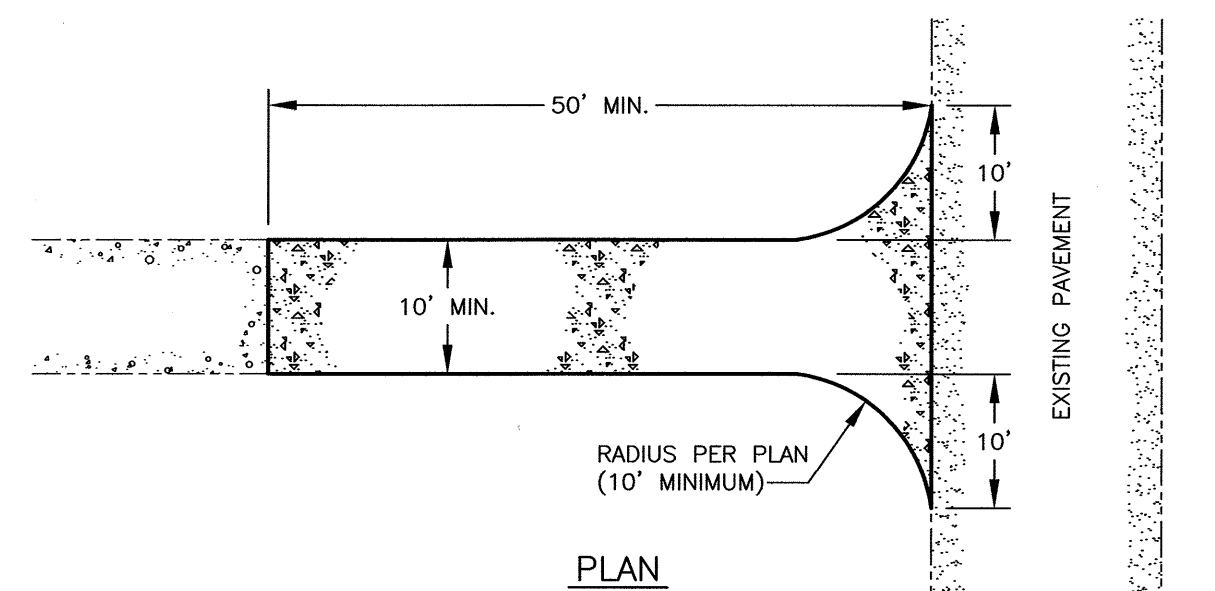
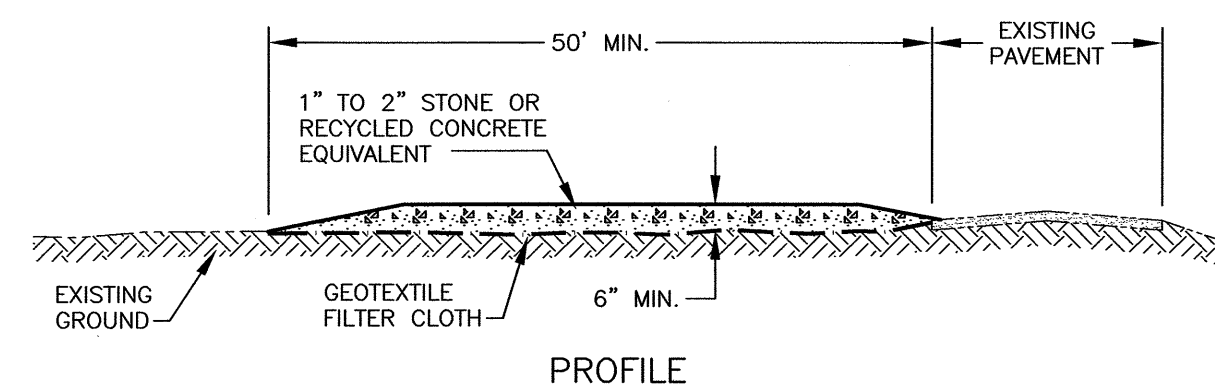
- NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
  2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
  3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
  4. SILT/SOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
  5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

**A C4 FILTREXX® SILT/SOXX™ FILTRATION SYSTEM** NTS

- NOTES:
- 1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.
  - 2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
  - 3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
  - 4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
  - 5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANY'S PRIOR TO ANY CONSTRUCTION.



**C C5 BURIED ELEC/COMM CABLE** NTS



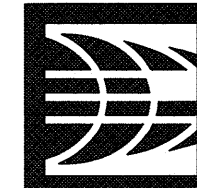
**MAINTENANCE**

- 1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
- 2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

**CONSTRUCTION SPECIFICATIONS**

- 1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- 2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
- 3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- 4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
- 5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
- 6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- 7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
- 8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

**D C4 STABILIZED CONSTRUCTION ENTRANCE** NTS



**AMBIT ENGINEERING, INC.**

Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

**NOTES:**

- 1) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

**PROPOSED DADU  
213 JONES AVENUE  
PORTSMOUTH, NH**

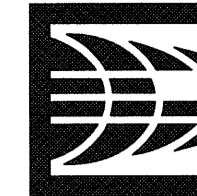
NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/11/22

REVISIONS

SCALE: AS SHOWN FEBRUARY 2022

**EROSION NOTES & DETAILS** **D1**





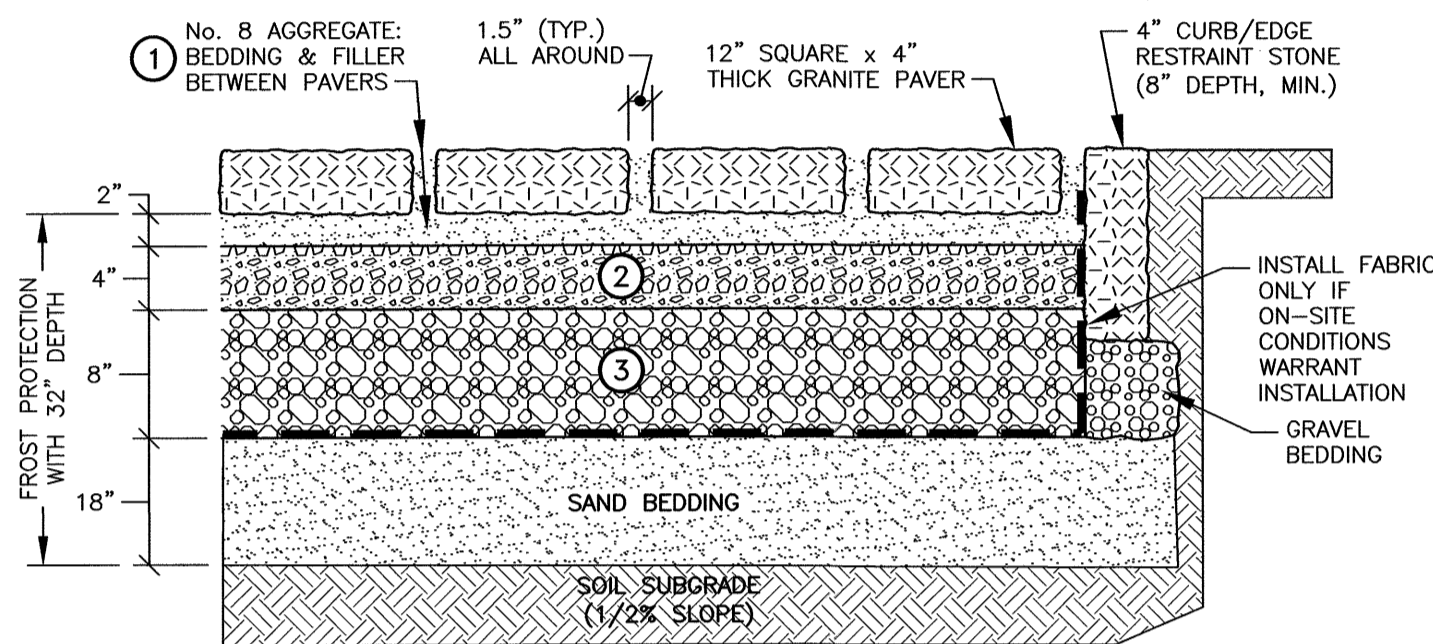
**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

ASTM D 448 GRADATION TABLE

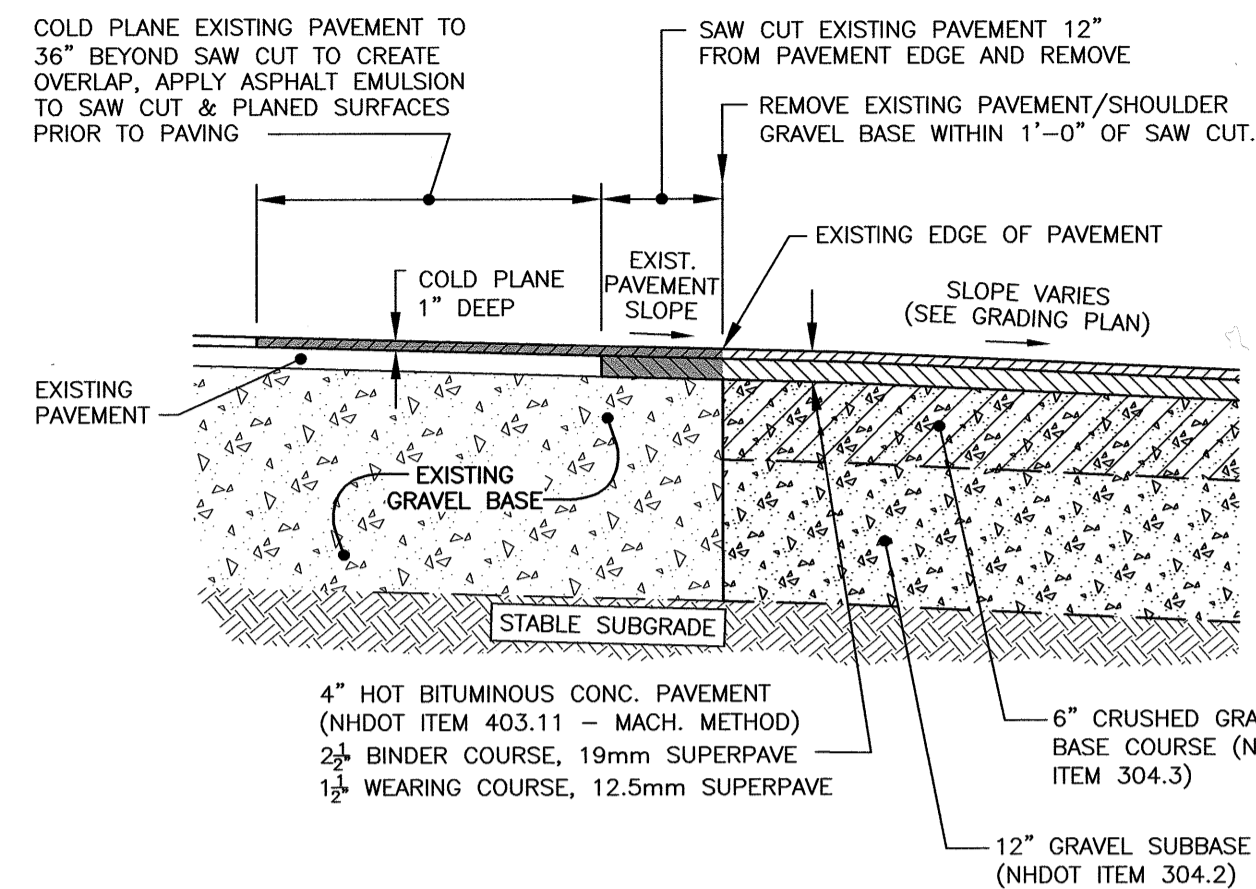
①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85-100	1" (25mm)	95-100	2.5" (63mm)	90-100
No. 4 (4.75mm)	10-30	1/2" (12.5mm)	25-60	2" (50mm)	35-70
No. 8 (2.36mm)	0-10	No. 4 (4.75mm)	0-10	1.5" (37.5mm)	0-15
No. 16 (1.16mm)	0-5	No. 8 (2.36mm)	0-5	3/4" (19mm)	0-5

NOTES:

- 1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO-STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
- 2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
- 3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.
- 4) CONTRACTOR SHALL SUBMIT PROPOSED PAVEMENT BLOCK TO PROJECT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

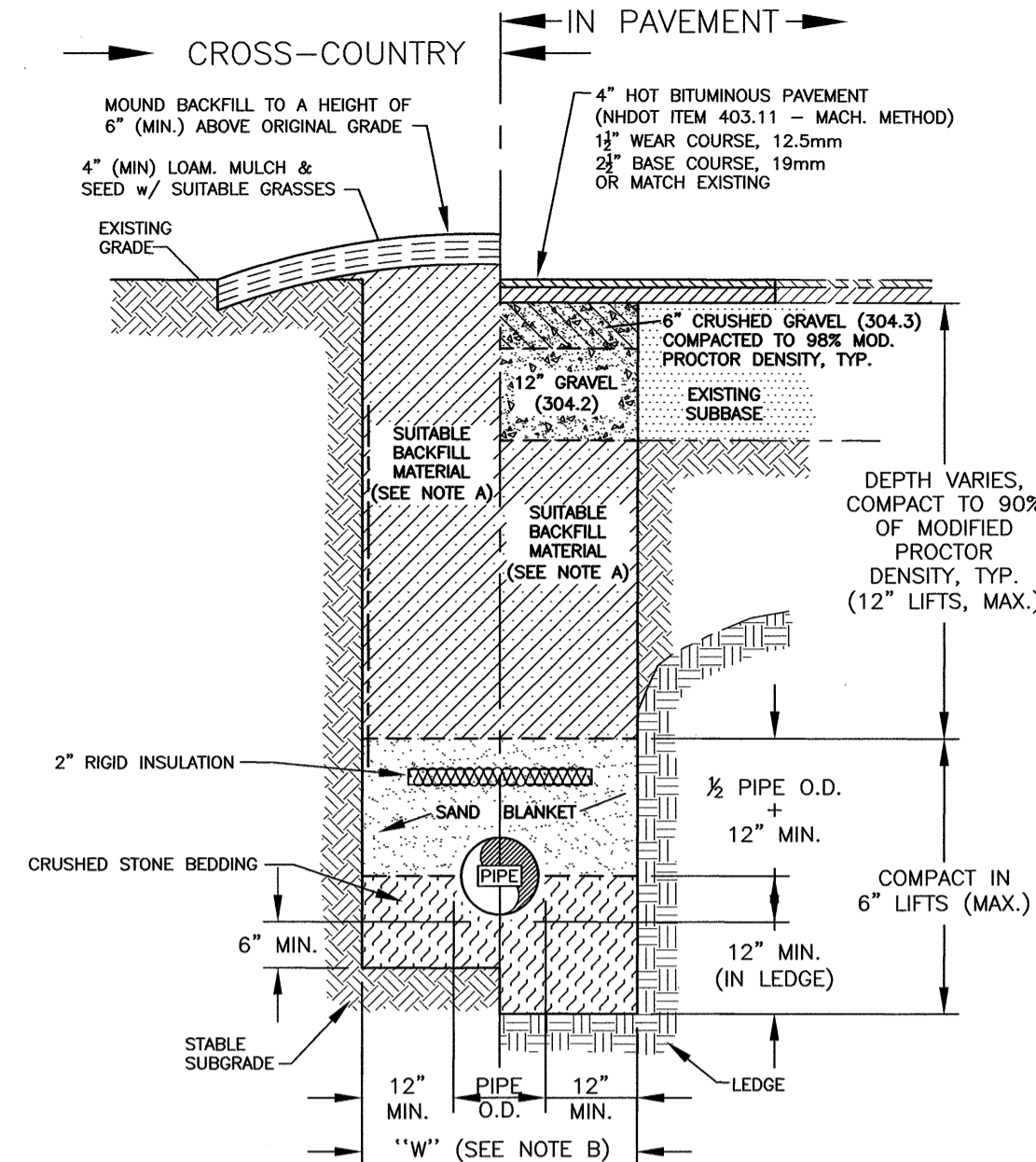


**E** C2 POROUS DRIVEWAY SECTION NTS



- NOTES:
- 1) PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 401.
  - 2) CRUSHED GRAVEL AND GRAVEL SUBBASE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 304, TABLE 1E, AND SHALL BE COMPACTED AS INDICATED IN SECTION 304, 3.6 COMPACTION, AND 3.7 DENSITY TESTING, AND CITY OF PORTSMOUTH CONSTRUCTION STANDARDS, SECTION VIII B AND C.

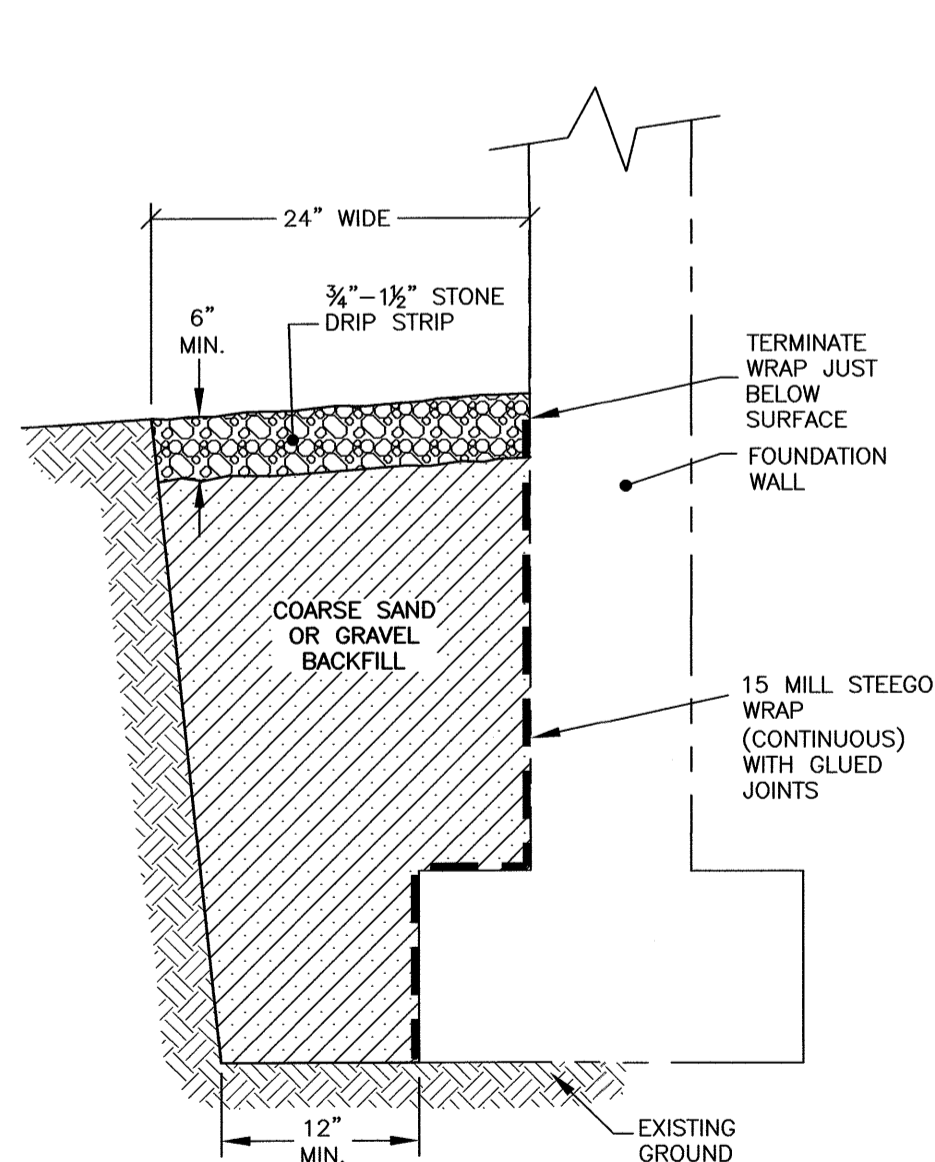
**F** C4 PAVEMENT / PAVEMENT JOINT DETAIL NTS



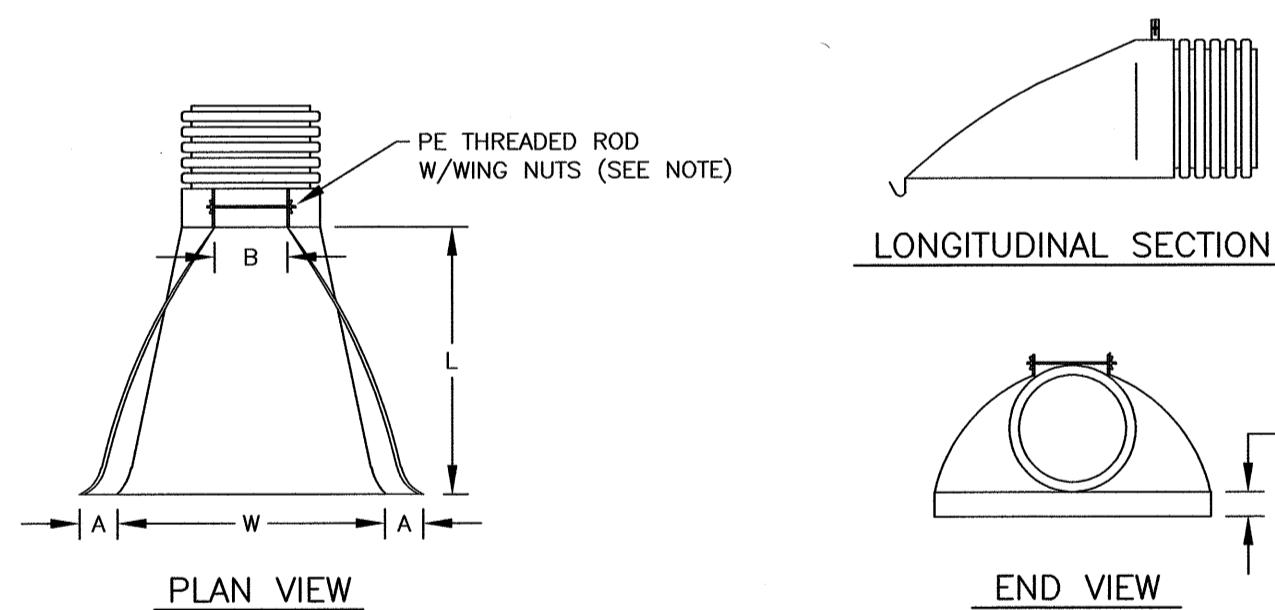
**I** C4 TYPICAL DRAINAGE PIPE TRENCH

NOTES:

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7235) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) PURSUANT TO RSA 483-B:9 11 (D), NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS LOCATED WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER. BEYOND 25 FEET, SLOW OR CONTROLLED RELEASE FERTILIZER MAY BE USED. SLOW RELEASE NITROGEN MUST CONTAIN NO MORE THAN 2% PHOSPHORUS, AND A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.
- 5) NO CHEMICALS INCLUDING PESTICIDES OR HERBICIDES OF ANY KIND, SHALL BE APPLIED TO GROUND, TURF, OR ESTABLISHED VEGETATION WITHIN THE WETLAND BUFFER, EXCEPT IF APPLIED BY HORTICULTURE PROFESSIONAL WHO HAVE AN APPLICATION LICENSE. NO CALCIUM CHLORIDE SHALL BE APPLIED WITHIN THE WETLAND BUFFER.



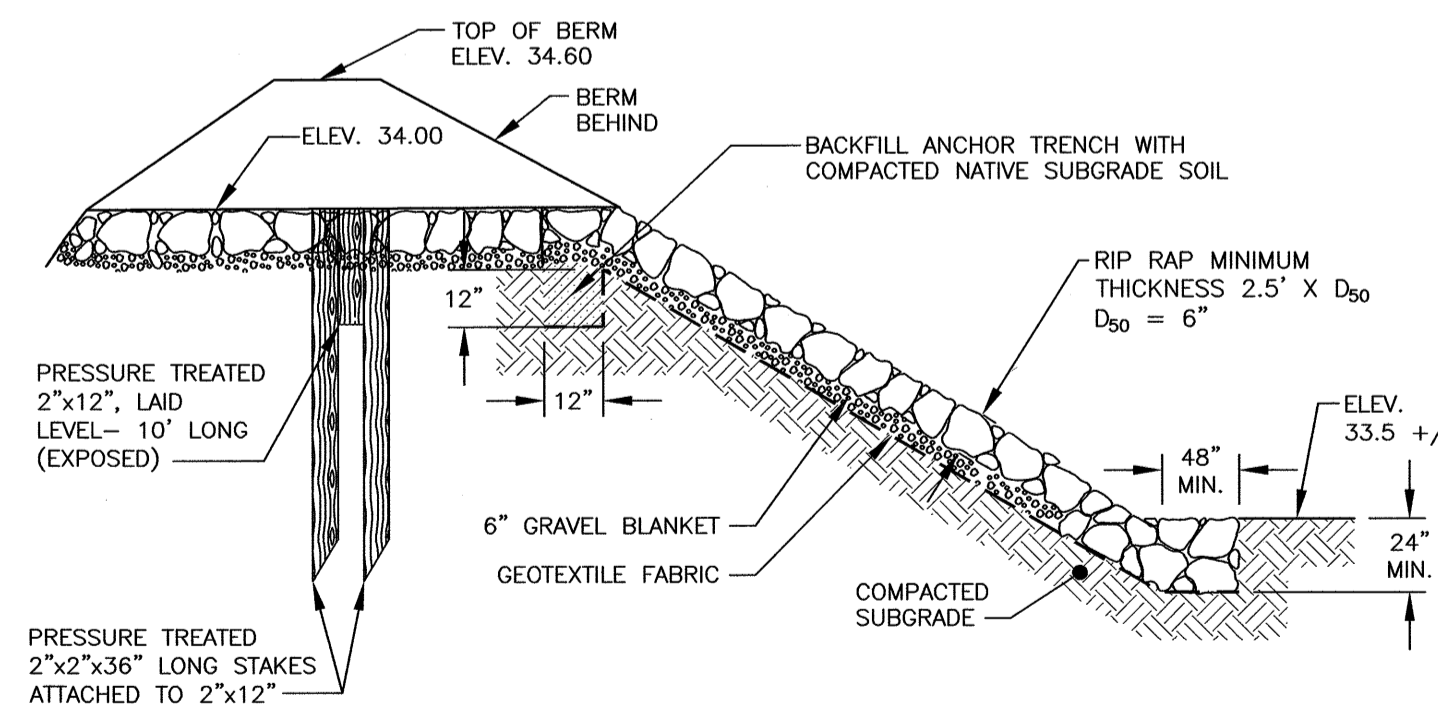
**G** C4 STONE DRIP APRON (UNDER BUILDING DRIP LINE) NTS



PART NO.	PIPE SIZE	A	B (MAX)	H	L	W
1210-NP	12" / 300 mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1210-NP	15" / 375 mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1810-NP	18" / 450 mm	7.5" / 190mm	15" / 380mm	6.5" / 165mm	32" / 812mm	35" / 890mm
2410-NP	24" / 600 mm	7.5" / 190mm	18" / 450mm	6.5" / 165mm	36" / 900mm	45" / 1140mm
3012-NP	30" / 750 mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm
3612-NP	36" / 900 mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"-24", 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURERS RECOMMENDATIONS.

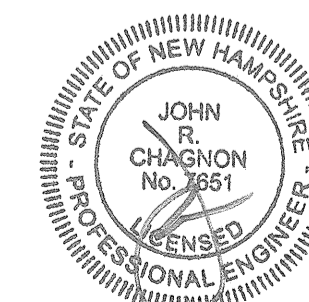
**H** C4 ADVANCED DRAINAGE SYSTEM (ADS) FLARED END SECTION OR APPROVED EQUAL NTS



**J** C4 EMERGENCY SPILLWAY SECTION NTS

PROPOSED DADU  
213 JONES AVENUE  
PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
1	DETAIL E, J	3/30/22
0	ISSUED FOR COMMENT	2/11/22



SCALE: AS SHOWN FEBRUARY 2022

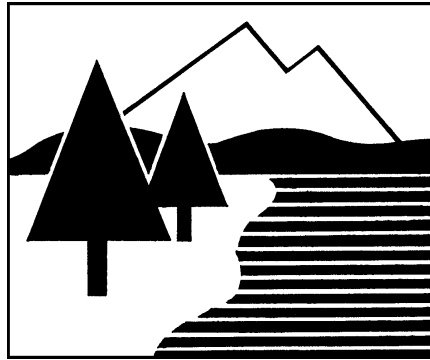
DETAILS

D2

**DRAINAGE ANALYSIS**

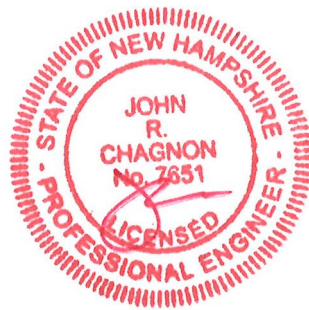
**STICKNEY RESIDENCE  
PROPOSED DADU**

**213 JONES AVENUE  
PORTSMOUTH, NH**



**PREPARED FOR  
DONALD STICKNEY**

**06 APRIL 2022**



 **AMBIT ENGINEERING, INC.**  
**Civil Engineers & Land Surveyors**

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
Phone: 603.430.9282; Fax: 603.436.2315  
E-mail: [jrc@ambitengineering.com](mailto:jrc@ambitengineering.com)  
(Ambit Job Number 531.01)

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Conclusion	7
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Roof Drainage Plan	

## **EXECUTIVE SUMMARY**

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Proposed DADU and new Residence at the property known as 213 Jones Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 222 as Lot 69. The total size of the associated drainage area is 186,102± square-feet (4.272 acres). The total size of the lot is 62,528± square-feet (1.435 acres).

The development will provide for a new driveway and single family residence. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

## **INTRODUCTION / PROJECT DESCRIPTION**

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 222 as Lot 69. Bounding the site to the north is Jones Avenue, a metal yard, and a private residence. The site is bounded on the east by a private residence. The site is bounded to the south by City property. The site is bounded to the west by a residence. A vicinity map is included in the Appendix to this report.

The proposed development will include a driveway and residence with utilities. This report includes information about the existing site and the proposed building necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

## **METHODOLOGY**

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.0 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for

the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from “The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.”

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

### **SITE SPECIFIC INFORMATION**

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of three soil types:

<b>Soil Symbol</b>	<b>Soil Name and Slopes</b>
<b>140B</b>	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky
<b>299</b>	Udorthents, smoothed
<b>799</b>	Urban land-Canton complex, 3 to 15 percent slopes

**Chatfield-Hollis-Canton complex** has a hydrological soil group rating of B, with depths to the restrictive feature of 20 to 41 inches and water table of greater than 80 inches.

**Udorthents** has an unknown hydrological soil group rating, assumed A from test pit data, with depths to the restrictive feature and water table of greater than 80 inches.

**Urban land-Canton complex** has a hydrological soil group rating of A, with depths to the restrictive feature and water table of greater than 80 inches.

Multiple test pits were conducted on the site for the proposed septic system, with an approximate infiltrative rate of 16 minutes per inch and a depth to SHWT of 17”.

A copy of the custom soil survey for this project site as well as test pit data is included in the Appendix to this report.

The physical characteristics of the site consist of gently sloped (0-15%) grades that generally slope from the middle of the lot to the north and south. Elevations on the site range from 31 to 37 feet above sea level.

The existing site is developed and consists of an existing building and a driveway. Some of the contributing areas to the site contain roads and residences. There are wetlands on the property near the proposed development, though the flow from the proposed development will not flow to those wetlands.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0270F (effective date January 29, 2021), the project site is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

### **PRE-DEVELOPMENT DRAINAGE**

In the pre-development condition, the site has been analyzed as two subcatchment basins (E1 and E2) based on localized topography and discharge location. Subcatchment E1 contains the north half of the lot and adjacent areas, and drains to a culvert on the north edge of the lot, discharge point DP1. Subcatchment E2 contains the south half of the lot, and flows to discharge point DP1.

***Table 1: Pre-Development Watershed Basin Summary***

<b>Watershed Basin ID</b>	<b>Basin Area (SF)</b>	<b>Tc (MIN)</b>	<b>CN</b>	<b>10-Year Runoff (CFS)</b>	<b>50-Year Runoff (CFS)</b>	<b>To Design Point</b>
<b>E1</b>	94,535	12.0	62	5.47	12.18	DP1
<b>E2</b>	91,567	12.4	63	5.49	12.00	DP1

### **POST-DEVELOPMENT DRAINAGE**

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has



been analyzed as three subcatchment basins, (P1, P1a, and P2). Subcatchments P1 and P1a combined match the area of subcatchment E1, and drain to Discharge Point DP1.

Subcatchment P2 remains identical to subcatchment E2. Subcatchments P1a and P2 drain to a ponding area created by a proposed berm surrounding the adjacent wetland buffer.

The ponding area has a high flow bypass that drains to DP1.

**Table 2: Post-Development Watershed Basin Summary**

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
P1	54,487	11.7	63	3.35	7.31	DP1
P1a	40,048	10.5	66	2.93	6.05	DP1
P2	91,567	12.4	63	5.49	12.00	DP1

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 0.831 acres (19.44%) in the pre-development condition to 0.904 acres (21.17%) in the post-development condition. The project proposes the construction of a detaining berm on site, reducing the peak flow discharge from the site.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the detaining berm.

**Table 3: Pre-Development to Post-Development Comparison**

Design Point	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		Description
	Pre	Post	Pre	Post	Pre	Post	
DP1	2.76	1.12	5.34	3.10	7.13	7.07	N edge culvert

Note that all post-development peak discharges are either equivalent or less than the existing peak discharges.

### **OFFSITE INFRASTRUCTURE CAPACITY**

The discharge point downstream of the proposed development is an existing 15” culvert beneath Jones Avenue. The proposed peak flows draining to that culvert are at or below existing peak flows, therefore no impact to City infrastructure is anticipated.

### **EROSION AND SEDIMENT CONTROL PRACTICES**

The erosion potential for this site as it exists is moderate due to the presence of gravel areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to “The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.” Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

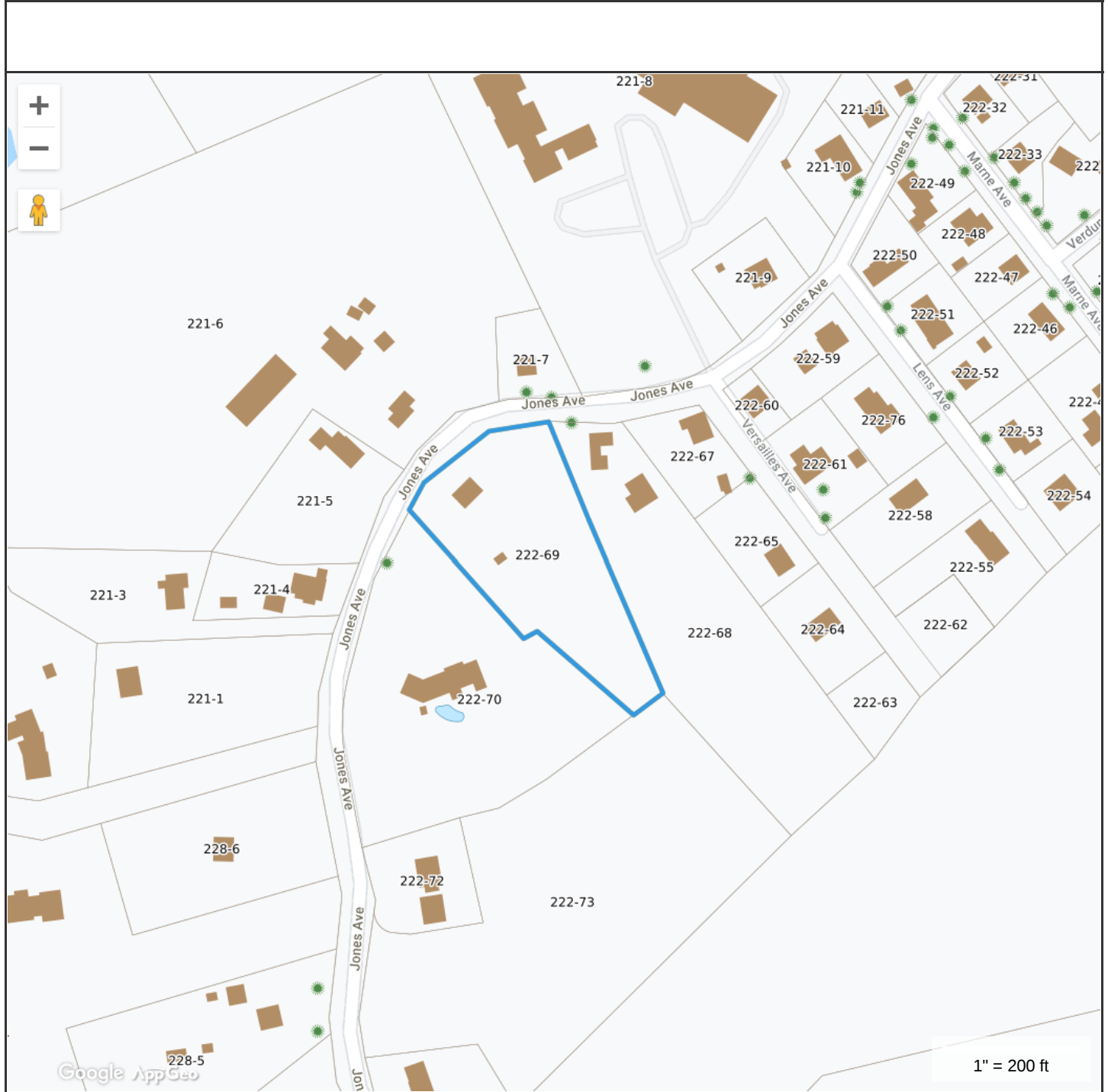
## **CONCLUSION**

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the detaining berm, the post-development runoff rates are reduced to be equivalent or below the pre-development runoff rates. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

## **REFERENCES**

1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.

**APPENDIX A**  
**VICINITY (TAX) MAP**



**Property Information**

**Property ID** 0222-0069-0000  
**Location** 213 JONES AVE  
**Owner** STICKNEY DONALD LOWELL III



**MAP FOR REFERENCE ONLY  
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019  
Data updated 7/17/2019

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

**APPENDIX B**  
**TABLES, CHARTS, ETC.**

# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

<b>Smoothing</b>	Yes
<b>State</b>	New Hampshire
<b>Location</b>	
<b>Longitude</b>	70.759 degrees West
<b>Latitude</b>	43.060 degrees North
<b>Elevation</b>	0 feet
<b>Date/Time</b>	Wed, 09 Feb 2022 11:20:24 -0500

### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.26	0.40	0.50	0.65	0.82	1.04	<b>1yr</b>	0.70	0.98	1.21	1.56	2.03	2.66	2.93	<b>1yr</b>	2.36	2.82	3.23	3.95	4.56	<b>1yr</b>
<b>2yr</b>	0.32	0.50	0.62	0.81	1.02	1.30	<b>2yr</b>	0.88	1.18	1.52	1.94	2.49	3.22	3.58	<b>2yr</b>	2.85	3.44	3.95	4.69	5.34	<b>2yr</b>
<b>5yr</b>	0.37	0.58	0.73	0.98	1.25	1.61	<b>5yr</b>	1.08	1.47	1.89	2.43	3.14	4.07	4.59	<b>5yr</b>	3.61	4.41	5.05	5.95	6.72	<b>5yr</b>
<b>10yr</b>	0.41	0.65	0.82	1.12	1.45	1.89	<b>10yr</b>	1.25	1.73	2.23	2.90	3.76	4.88	5.54	<b>10yr</b>	4.32	5.33	6.10	7.13	7.99	<b>10yr</b>
<b>25yr</b>	0.48	0.76	0.97	1.34	1.78	2.34	<b>25yr</b>	1.53	2.15	2.78	3.63	4.75	6.18	7.12	<b>25yr</b>	5.47	6.84	7.83	9.05	10.07	<b>25yr</b>
<b>50yr</b>	0.54	0.86	1.10	1.54	2.08	2.76	<b>50yr</b>	1.79	2.53	3.30	4.33	5.67	7.40	8.60	<b>50yr</b>	6.55	8.27	9.45	10.84	12.00	<b>50yr</b>
<b>100yr</b>	0.60	0.97	1.25	1.77	2.42	3.26	<b>100yr</b>	2.09	2.98	3.91	5.17	6.78	8.87	10.40	<b>100yr</b>	7.85	10.00	11.42	13.00	14.31	<b>100yr</b>
<b>200yr</b>	0.68	1.10	1.43	2.05	2.83	3.84	<b>200yr</b>	2.44	3.52	4.63	6.14	8.10	10.63	12.58	<b>200yr</b>	9.41	12.09	13.80	15.59	17.06	<b>200yr</b>
<b>500yr</b>	0.80	1.32	1.72	2.49	3.49	4.78	<b>500yr</b>	3.01	4.39	5.78	7.73	10.24	13.51	16.18	<b>500yr</b>	11.96	15.56	17.74	19.84	21.54	<b>500yr</b>

### Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.23	0.36	0.44	0.59	0.72	0.88	<b>1yr</b>	0.63	0.86	0.92	1.33	1.68	2.24	2.50	<b>1yr</b>	1.99	2.41	2.87	3.19	3.91	<b>1yr</b>
<b>2yr</b>	0.31	0.49	0.60	0.81	1.00	1.19	<b>2yr</b>	0.86	1.16	1.37	1.82	2.33	3.07	3.46	<b>2yr</b>	2.71	3.33	3.83	4.56	5.09	<b>2yr</b>
<b>5yr</b>	0.35	0.54	0.67	0.92	1.17	1.40	<b>5yr</b>	1.01	1.37	1.61	2.12	2.73	3.80	4.20	<b>5yr</b>	3.36	4.04	4.73	5.55	6.26	<b>5yr</b>
<b>10yr</b>	0.39	0.59	0.74	1.03	1.33	1.60	<b>10yr</b>	1.15	1.57	1.80	2.39	3.05	4.38	4.88	<b>10yr</b>	3.88	4.69	5.46	6.43	7.22	<b>10yr</b>
<b>25yr</b>	0.44	0.67	0.83	1.19	1.56	1.90	<b>25yr</b>	1.35	1.86	2.10	2.75	3.53	4.74	5.91	<b>25yr</b>	4.20	5.69	6.68	7.83	8.71	<b>25yr</b>
<b>50yr</b>	0.48	0.73	0.91	1.31	1.77	2.17	<b>50yr</b>	1.53	2.12	2.35	3.07	3.92	5.36	6.83	<b>50yr</b>	4.74	6.57	7.77	9.09	10.06	<b>50yr</b>
<b>100yr</b>	0.54	0.81	1.02	1.47	2.01	2.47	<b>100yr</b>	1.74	2.41	2.63	3.41	4.34	6.03	7.89	<b>100yr</b>	5.34	7.58	9.03	10.56	11.61	<b>100yr</b>
<b>200yr</b>	0.59	0.89	1.13	1.64	2.28	2.82	<b>200yr</b>	1.97	2.75	2.94	3.77	4.78	6.77	9.11	<b>200yr</b>	5.99	8.76	10.50	12.30	13.43	<b>200yr</b>
<b>500yr</b>	0.69	1.02	1.32	1.91	2.72	3.36	<b>500yr</b>	2.35	3.29	3.41	4.30	5.44	7.88	11.01	<b>500yr</b>	6.97	10.58	12.81	15.06	16.27	<b>500yr</b>

### Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.29	0.44	0.54	0.72	0.89	1.08	<b>1yr</b>	0.77	1.06	1.26	1.74	2.20	2.99	3.17	<b>1yr</b>	2.64	3.05	3.59	4.38	5.05	<b>1yr</b>
<b>2yr</b>	0.34	0.52	0.64	0.87	1.07	1.27	<b>2yr</b>	0.92	1.24	1.48	1.96	2.51	3.43	3.71	<b>2yr</b>	3.03	3.57	4.10	4.85	5.64	<b>2yr</b>
<b>5yr</b>	0.40	0.62	0.77	1.05	1.34	1.62	<b>5yr</b>	1.15	1.59	1.88	2.54	3.25	4.35	4.97	<b>5yr</b>	3.85	4.78	5.39	6.38	7.17	<b>5yr</b>
<b>10yr</b>	0.47	0.72	0.89	1.25	1.61	1.98	<b>10yr</b>	1.39	1.93	2.28	3.11	3.96	5.35	6.21	<b>10yr</b>	4.73	5.97	6.83	7.85	8.76	<b>10yr</b>
<b>25yr</b>	0.58	0.88	1.09	1.56	2.05	2.57	<b>25yr</b>	1.77	2.52	2.96	4.07	5.15	7.78	8.35	<b>25yr</b>	6.88	8.03	9.15	10.35	11.42	<b>25yr</b>
<b>50yr</b>	0.67	1.02	1.27	1.83	2.47	3.13	<b>50yr</b>	2.13	3.06	3.60	5.00	6.33	9.74	10.46	<b>50yr</b>	8.62	10.06	11.44	12.74	13.97	<b>50yr</b>
<b>100yr</b>	0.79	1.20	1.50	2.16	2.97	3.82	<b>100yr</b>	2.56	3.73	4.38	6.16	7.77	12.18	13.10	<b>100yr</b>	10.78	12.60	14.30	15.71	17.10	<b>100yr</b>
<b>200yr</b>	0.93	1.39	1.77	2.56	3.57	4.66	<b>200yr</b>	3.08	4.56	5.34	7.59	9.55	15.28	16.43	<b>200yr</b>	13.52	15.80	17.90	19.36	20.93	<b>200yr</b>
<b>500yr</b>	1.15	1.71	2.20	3.20	4.55	6.05	<b>500yr</b>	3.92	5.92	6.94	10.03	12.57	20.63	22.17	<b>500yr</b>	18.26	21.32	24.09	25.52	27.35	<b>500yr</b>

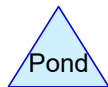
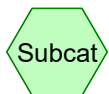
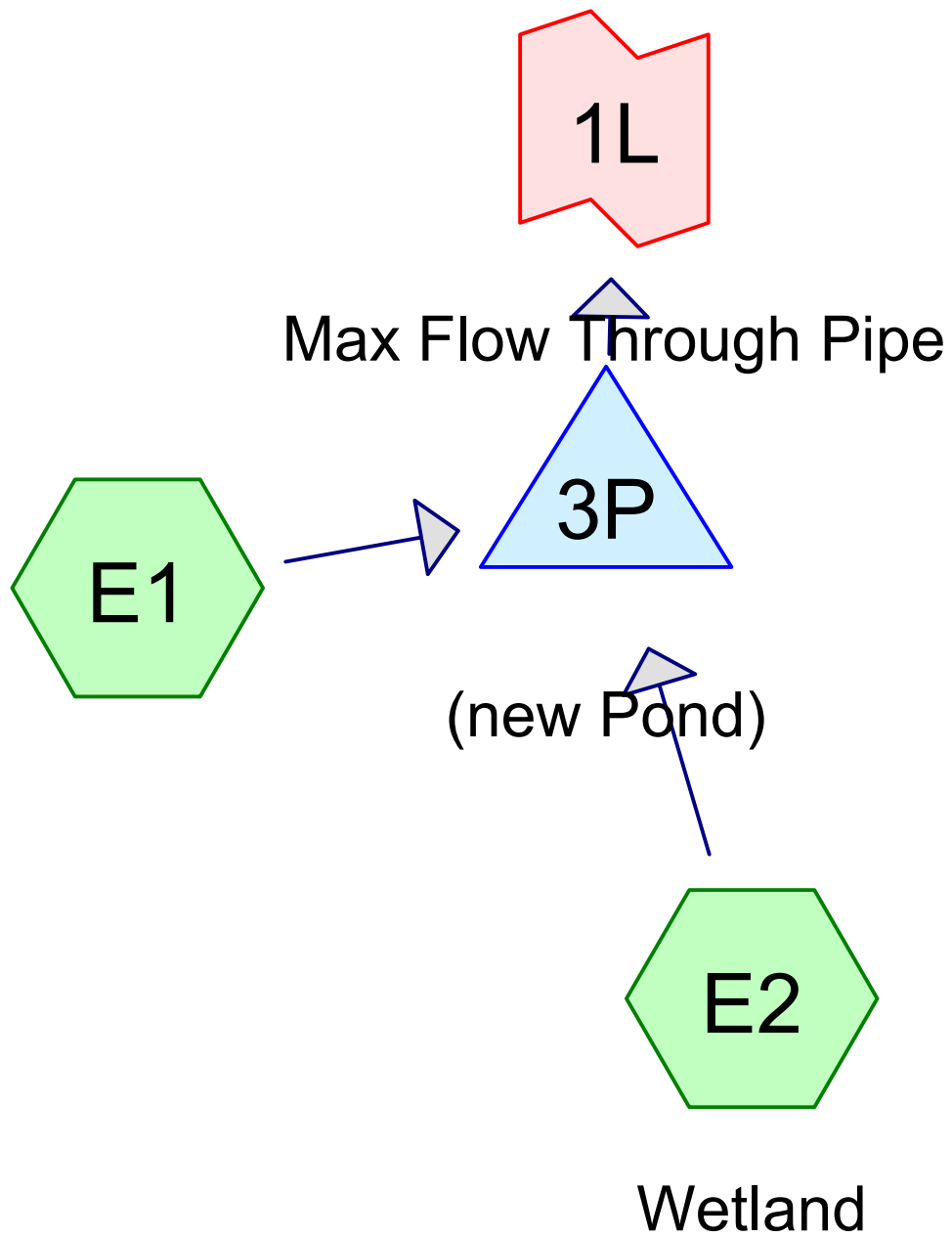




RIPRAP SIZING (Isbash)	(100-yr, 24-hour storm)
Max height in channel	0.34 ft
width of channel	10 ft
side slopes	3 :1
Cross sectional area	3.75 sf
Q	7.24 cfs
V	1.93 ft/s
G <sub>s</sub>	2.65
g	32.20 ft/s <sup>2</sup>
C	1.2
Bottom half of equation	153.01
D <sub>50</sub>	0.29 in

$$D_{50} = \frac{V^2 a}{2gC^2(G_s - 1)}$$

**APPENDIX C**  
**HYDROCAD DRAINAGE**  
**ANALYSIS CALCULATIONS**



## **Project Notes**

Defined 5 rainfall events from output (34) IDF

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### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.11	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.51	2

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### Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.746	54	1/2 acre lots, 25% imp, HSG A (E1, E2)
0.981	70	1/2 acre lots, 25% imp, HSG B (E1, E2)
0.333	39	>75% Grass cover, Good, HSG A (E1)
1.217	61	>75% Grass cover, Good, HSG B (E1, E2)
0.013	96	Gravel surface, HSG B (E2)
0.171	98	Paved parking, HSG A (E1)
0.118	98	Paved parking, HSG B (E1)
0.003	98	Roofs, HSG A (E1)
0.106	98	Roofs, HSG B (E1, E2)
0.583	55	Woods, Good, HSG B (E1, E2)
<b>4.272</b>	<b>63</b>	<b>TOTAL AREA</b>

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**Soil Listing (selected nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
1.254	HSG A	E1, E2
3.019	HSG B	E1, E2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>4.272</b>		<b>TOTAL AREA</b>



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**Ground Covers (selected nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.746	0.981	0.000	0.000	0.000	1.727	1/2 acre lots, 25% imp	E1, E2
0.333	1.217	0.000	0.000	0.000	1.550	>75% Grass cover, Good	E1, E2
0.000	0.013	0.000	0.000	0.000	0.013	Gravel surface	E2
0.171	0.118	0.000	0.000	0.000	0.289	Paved parking	E1
0.003	0.106	0.000	0.000	0.000	0.109	Roofs	E1, E2
0.000	0.583	0.000	0.000	0.000	0.583	Woods, Good	E1, E2
<b>1.254</b>	<b>3.019</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>4.272</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (selected nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	3P	30.41	30.32	43.5	0.0021	0.013	0.0	15.0	0.0

**2022-02-09 Existing Conditions David T**

Type II 24-hr 2-yr Rainfall=3.70"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E1:** Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>0.62"  
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=1.86 cfs 0.113 af

**Subcatchment E2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>0.67"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=1.94 cfs 0.117 af

**Pond 3P: (new Pond)** Peak Elev=31.58' Storage=789 cf Inflow=3.80 cfs 0.229 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=2.76 cfs 0.229 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=2.76 cfs 0.229 af  
Primary=2.76 cfs 0.229 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.229 af Average Runoff Depth = 0.64"**  
**80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac**

**2022-02-09 Existing Conditions David T**

Type II 24-hr 2-yr Rainfall=3.70"

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**Summary for Subcatchment E1:**

Runoff = 1.86 cfs @ 12.06 hrs, Volume= 0.113 af, Depth> 0.62"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		Lag/CN Method,

**Summary for Subcatchment E2: Wetland**

Runoff = 1.94 cfs @ 12.06 hrs, Volume= 0.117 af, Depth> 0.67"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 0.64" for 2-yr event  
 Inflow = 3.80 cfs @ 12.06 hrs, Volume= 0.229 af  
 Outflow = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af, Atten= 27%, Lag= 5.3 min  
 Primary = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 31.58' @ 12.15 hrs Surf.Area= 2,541 sf Storage= 789 cf

Plug-Flow detention time= 2.8 min calculated for 0.229 af (100% of inflow)  
 Center-of-Mass det. time= 1.8 min ( 836.2 - 834.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=2.76 cfs @ 12.15 hrs HW=31.58' (Free Discharge)  
 ↑**1=Culvert** (Barrel Controls 2.76 cfs @ 3.01 fps)

**Summary for Link 1L: Max Flow Through Pipe**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 0.64" for 2-yr event  
 Inflow = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af  
 Primary = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**2022-02-09 Existing Conditions David T**

Type II 24-hr 10-yr Rainfall=5.61"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E1:** Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>1.65"  
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=5.47 cfs 0.298 af

**Subcatchment E2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>1.72"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=5.49 cfs 0.301 af

**Pond 3P: (new Pond)** Peak Elev=32.43' Storage=4,786 cf Inflow=10.96 cfs 0.599 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=5.34 cfs 0.598 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=5.34 cfs 0.598 af  
Primary=5.34 cfs 0.598 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.599 af Average Runoff Depth = 1.68"**  
**80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac**

**Summary for Subcatchment E1:**

Runoff = 5.47 cfs @ 12.05 hrs, Volume= 0.298 af, Depth> 1.65"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		Lag/CN Method,

**Summary for Subcatchment E2: Wetland**

Runoff = 5.49 cfs @ 12.05 hrs, Volume= 0.301 af, Depth> 1.72"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 1.68" for 10-yr event  
 Inflow = 10.96 cfs @ 12.05 hrs, Volume= 0.599 af  
 Outflow = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af, Atten= 51%, Lag= 8.9 min  
 Primary = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 32.43' @ 12.20 hrs Surf.Area= 7,462 sf Storage= 4,786 cf

Plug-Flow detention time= 6.4 min calculated for 0.596 af (100% of inflow)  
 Center-of-Mass det. time= 5.9 min ( 818.0 - 812.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=5.34 cfs @ 12.20 hrs HW=32.43' (Free Discharge)

↑**1=Culvert** (Barrel Controls 5.34 cfs @ 4.35 fps)

**Summary for Link 1L: Max Flow Through Pipe**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 1.68" for 10-yr event  
 Inflow = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af  
 Primary = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af, Atten= 0%, Lag= 0.0 min  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**2022-02-09 Existing Conditions David T**

Type II 24-hr 25-yr Rainfall=7.11"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E1:** Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>2.62"  
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=8.82 cfs 0.474 af

**Subcatchment E2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>2.72"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=8.74 cfs 0.476 af

**Pond 3P: (new Pond)** Peak Elev=32.97' Storage=9,952 cf Inflow=17.56 cfs 0.950 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=6.50 cfs 0.949 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=6.50 cfs 0.949 af  
Primary=6.50 cfs 0.949 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.950 af Average Runoff Depth = 2.67"**  
**80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac**

**Summary for Subcatchment E1:**

Runoff = 8.82 cfs @ 12.04 hrs, Volume= 0.474 af, Depth> 2.62"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=7.11"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		Lag/CN Method,

**Summary for Subcatchment E2: Wetland**

Runoff = 8.74 cfs @ 12.05 hrs, Volume= 0.476 af, Depth> 2.72"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=7.11"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 2.67" for 25-yr event  
 Inflow = 17.56 cfs @ 12.05 hrs, Volume= 0.950 af  
 Outflow = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af, Atten= 63%, Lag= 11.3 min  
 Primary = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 32.97' @ 12.23 hrs Surf.Area= 11,412 sf Storage= 9,952 cf

Plug-Flow detention time= 10.8 min calculated for 0.949 af (100% of inflow)  
 Center-of-Mass det. time= 10.5 min ( 813.0 - 802.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=6.49 cfs @ 12.23 hrs HW=32.97' (Free Discharge)  
 ↑**1=Culvert** (Inlet Controls 6.49 cfs @ 5.29 fps)

**Summary for Link 1L: Max Flow Through Pipe**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 2.67" for 25-yr event  
 Inflow = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af  
 Primary = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af, Atten= 0%, Lag= 0.0 min  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**2022-02-09 Existing Conditions David T**

Type II 24-hr 50-yr Rainfall=8.51"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E1:** Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>3.62"  
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=12.18 cfs 0.655 af

**Subcatchment E2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>3.73"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=12.00 cfs 0.654 af

**Pond 3P: (new Pond)** Peak Elev=33.37' Storage=16,141 cf Inflow=24.18 cfs 1.309 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=7.13 cfs 1.308 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=7.13 cfs 1.308 af  
Primary=7.13 cfs 1.308 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 1.309 af Average Runoff Depth = 3.68"**  
**80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac**

**Summary for Subcatchment E1:**

Runoff = 12.18 cfs @ 12.04 hrs, Volume= 0.655 af, Depth> 3.62"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50-yr Rainfall=8.51"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		Lag/CN Method,

**Summary for Subcatchment E2: Wetland**

Runoff = 12.00 cfs @ 12.05 hrs, Volume= 0.654 af, Depth> 3.73"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50-yr Rainfall=8.51"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 3.68" for 50-yr event  
 Inflow = 24.18 cfs @ 12.04 hrs, Volume= 1.309 af  
 Outflow = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af, Atten= 71%, Lag= 13.6 min  
 Primary = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 33.37' @ 12.27 hrs Surf.Area= 20,119 sf Storage= 16,141 cf

Plug-Flow detention time= 16.2 min calculated for 1.304 af (100% of inflow)  
 Center-of-Mass det. time= 15.9 min ( 811.7 - 795.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

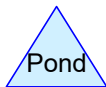
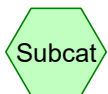
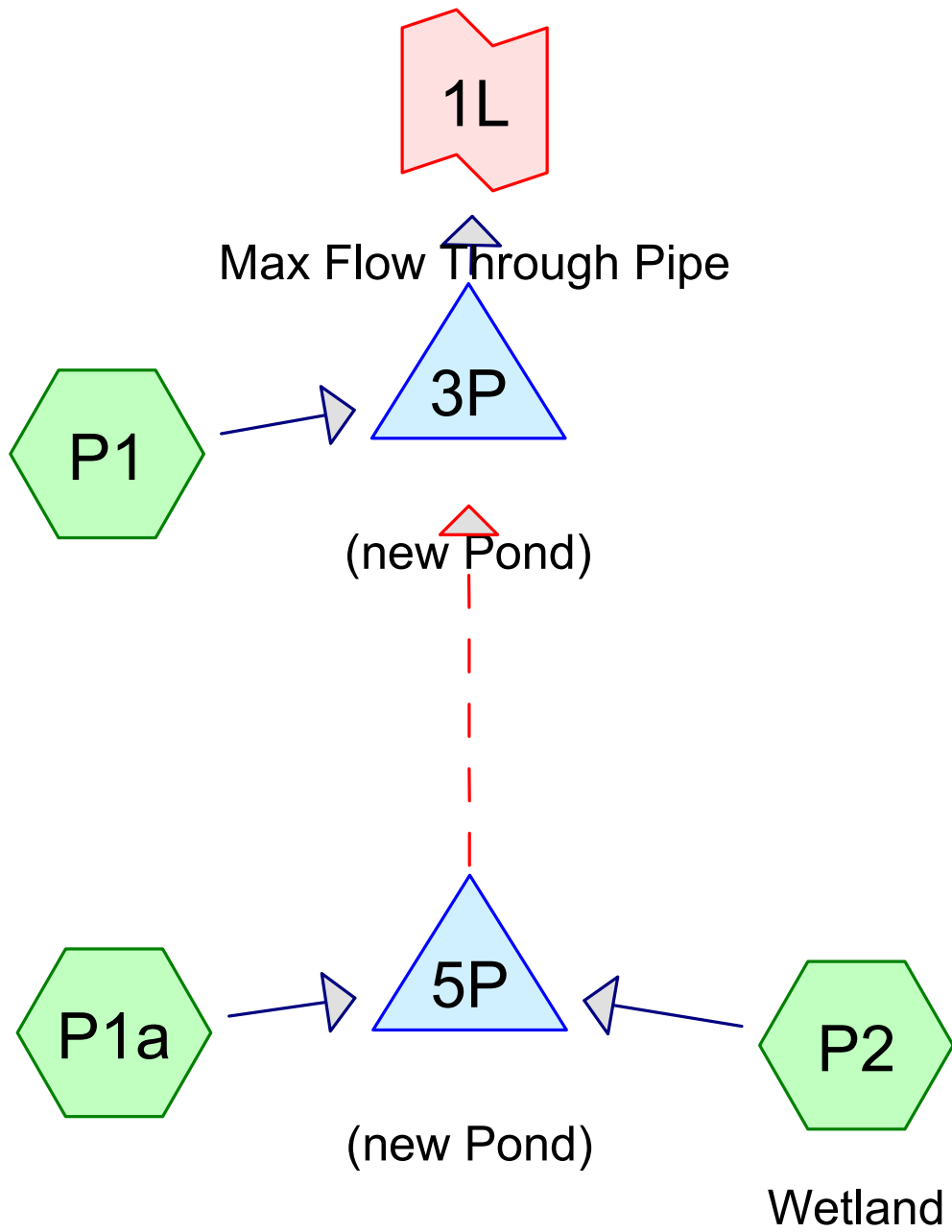
Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=7.13 cfs @ 12.27 hrs HW=33.37' (Free Discharge)  
 ↑**1=Culvert** (Inlet Controls 7.13 cfs @ 5.81 fps)

**Summary for Link 1L: Max Flow Through Pipe**

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 3.67" for 50-yr event  
 Inflow = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af  
 Primary = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af, Atten= 0%, Lag= 0.0 min  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



## **Project Notes**

Defined 5 rainfall events from output (34) IDF



## 2022-03-24 Design 4 Proposed Conditions David T

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### Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.11	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.51	2

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### Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.746	54	1/2 acre lots, 25% imp, HSG A (P1, P1a, P2)
0.981	70	1/2 acre lots, 25% imp, HSG B (P1, P1a, P2)
0.263	39	>75% Grass cover, Good, HSG A (P1)
1.213	61	>75% Grass cover, Good, HSG B (P1, P1a, P2)
0.013	96	Gravel surface, HSG B (P2)
0.197	98	Paved parking, HSG A (P1)
0.118	98	Paved parking, HSG B (P1, P1a)
0.047	98	Roofs, HSG A (P1, P1a)
0.110	98	Roofs, HSG B (P1, P1a, P2)
0.583	55	Woods, Good, HSG B (P1a, P2)
<b>4.272</b>	<b>64</b>	<b>TOTAL AREA</b>

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## Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.253	HSG A	P1, P1a, P2
3.019	HSG B	P1, P1a, P2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>4.272</b>		<b>TOTAL AREA</b>

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**Ground Covers (selected nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.746	0.981	0.000	0.000	0.000	1.727	1/2 acre lots, 25% imp	P1, P1a, P2
0.263	1.213	0.000	0.000	0.000	1.476	>75% Grass cover, Good	P1, P1a, P2
0.000	0.013	0.000	0.000	0.000	0.013	Gravel surface	P2
0.197	0.118	0.000	0.000	0.000	0.315	Paved parking	P1, P1a
0.047	0.110	0.000	0.000	0.000	0.157	Roofs	P1, P1a, P2
0.000	0.583	0.000	0.000	0.000	0.583	Woods, Good	P1a, P2
<b>1.253</b>	<b>3.019</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>4.272</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (selected nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	3P	30.41	30.32	43.5	0.0021	0.013	0.0	15.0	0.0

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 2-yr Rainfall=3.70"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment P1:** Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>0.67"  
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=1.19 cfs 0.070 af

**Subcatchment P1a:** Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>0.81"  
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=1.16 cfs 0.062 af

**Subcatchment P2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>0.67"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=1.94 cfs 0.117 af

**Pond 3P: (new Pond)** Peak Elev=31.10' Storage=203 cf Inflow=1.19 cfs 0.070 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=1.12 cfs 0.068 af

**Pond 5P: (new Pond)** Peak Elev=33.77' Storage=7,777 cf Inflow=3.07 cfs 0.179 af  
Outflow=0.00 cfs 0.000 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=1.12 cfs 0.068 af  
Primary=1.12 cfs 0.068 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.248 af Average Runoff Depth = 0.70"**  
**78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac**

**Summary for Subcatchment P1:**

Runoff = 1.19 cfs @ 12.06 hrs, Volume= 0.070 af, Depth> 0.67"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		Lag/CN Method,

**Summary for Subcatchment P1a:**

Runoff = 1.16 cfs @ 12.04 hrs, Volume= 0.062 af, Depth> 0.81"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 2-yr Rainfall=3.70"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		<b>Lag/CN Method,</b>

**Summary for Subcatchment P2: Wetland**

Runoff = 1.94 cfs @ 12.06 hrs, Volume= 0.117 af, Depth> 0.67"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		<b>Lag/CN Method,</b>

**Summary for Pond 3P: (new Pond)**

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 0.67" for 2-yr event  
 Inflow = 1.19 cfs @ 12.06 hrs, Volume= 0.070 af  
 Outflow = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af, Atten= 6%, Lag= 2.0 min  
 Primary = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 31.10' @ 12.09 hrs Surf.Area= 345 sf Storage= 203 cf

Plug-Flow detention time= 11.6 min calculated for 0.068 af (98% of inflow)  
 Center-of-Mass det. time= 4.6 min ( 837.2 - 832.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)



**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 2-yr Rainfall=3.70"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=1.10 cfs @ 12.09 hrs HW=31.09' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 1.10 cfs @ 2.32 fps)

**Summary for Pond 5P: (new Pond)**

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 0.71" for 2-yr event  
 Inflow = 3.07 cfs @ 12.05 hrs, Volume= 0.179 af  
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af  
 Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 33.77' @ 20.00 hrs Surf.Area= 15,335 sf Storage= 7,777 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	<b>10.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)

**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=32.00' (Free Discharge)  
 ↑1=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

### Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 0.65" for 2-yr event  
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af  
Primary = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min  
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment P1:** Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>1.72"  
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=3.35 cfs 0.179 af

**Subcatchment P1a:** Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>1.96"  
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=2.93 cfs 0.150 af

**Subcatchment P2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>1.72"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=5.49 cfs 0.301 af

**Pond 3P: (new Pond)** Peak Elev=31.67' Storage=475 cf Inflow=3.35 cfs 0.347 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=3.10 cfs 0.345 af

**Pond 5P: (new Pond)** Peak Elev=34.06' Storage=12,907 cf Inflow=8.36 cfs 0.451 af  
Outflow=0.45 cfs 0.168 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=3.10 cfs 0.345 af  
Primary=3.10 cfs 0.345 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.631 af Average Runoff Depth = 1.77"**  
**78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac**

**Summary for Subcatchment P1:**

Runoff = 3.35 cfs @ 12.04 hrs, Volume= 0.179 af, Depth> 1.72"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		Lag/CN Method,

**Summary for Subcatchment P1a:**

Runoff = 2.93 cfs @ 12.03 hrs, Volume= 0.150 af, Depth> 1.96"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		Lag/CN Method,

**Summary for Subcatchment P2: Wetland**

Runoff = 5.49 cfs @ 12.05 hrs, Volume= 0.301 af, Depth> 1.72"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 3.33" for 10-yr event  
 Inflow = 3.35 cfs @ 12.04 hrs, Volume= 0.347 af  
 Outflow = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af, Atten= 7%, Lag= 2.3 min  
 Primary = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 31.67' @ 12.08 hrs Surf.Area= 613 sf Storage= 475 cf

Plug-Flow detention time= 4.4 min calculated for 0.344 af (99% of inflow)  
 Center-of-Mass det. time= 2.4 min ( 884.9 - 882.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 10-yr Rainfall=5.61"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=3.04 cfs @ 12.08 hrs HW=31.65' (Free Discharge)

↑1=Culvert (Barrel Controls 3.04 cfs @ 3.10 fps)

**Summary for Pond 5P: (new Pond)**

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 1.79" for 10-yr event  
 Inflow = 8.36 cfs @ 12.04 hrs, Volume= 0.451 af  
 Outflow = 0.45 cfs @ 13.90 hrs, Volume= 0.168 af, Atten= 95%, Lag= 111.4 min  
 Secondary = 0.45 cfs @ 13.90 hrs, Volume= 0.168 af  
 Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.06' @ 13.90 hrs Surf.Area= 20,305 sf Storage= 12,907 cf

Plug-Flow detention time= 241.2 min calculated for 0.167 af (37% of inflow)  
 Center-of-Mass det. time= 150.2 min ( 959.2 - 809.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	<b>10.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)

**Secondary OutFlow** Max=0.44 cfs @ 13.90 hrs HW=34.06' (Free Discharge)

↑1=Sharp-Crested Rectangular Weir (Weir Controls 0.44 cfs @ 0.78 fps)

### Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 3.31" for 10-yr event  
Inflow = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af  
Primary = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min  
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment P1:** Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>2.72"  
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=5.33 cfs 0.283 af

**Subcatchment P1a:** Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>3.01"  
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=4.49 cfs 0.231 af

**Subcatchment P2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>2.72"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=8.74 cfs 0.476 af

**Pond 3P: (new Pond)** Peak Elev=32.20' Storage=893 cf Inflow=5.33 cfs 0.703 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=4.58 cfs 0.701 af

**Pond 5P: (new Pond)** Peak Elev=34.17' Storage=15,352 cf Inflow=13.18 cfs 0.707 af  
Outflow=2.31 cfs 0.420 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=4.58 cfs 0.701 af  
Primary=4.58 cfs 0.701 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 0.990 af Average Runoff Depth = 2.78"**  
**78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac**



**Summary for Subcatchment P1:**

Runoff = 5.33 cfs @ 12.04 hrs, Volume= 0.283 af, Depth> 2.72"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=7.11"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		Lag/CN Method,

**Summary for Subcatchment P1a:**

Runoff = 4.49 cfs @ 12.02 hrs, Volume= 0.231 af, Depth> 3.01"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=7.11"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 25-yr Rainfall=7.11"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		<b>Lag/CN Method,</b>

**Summary for Subcatchment P2: Wetland**

Runoff = 8.74 cfs @ 12.05 hrs, Volume= 0.476 af, Depth> 2.72"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=7.11"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		<b>Lag/CN Method,</b>

**Summary for Pond 3P: (new Pond)**

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 6.75" for 25-yr event  
 Inflow = 5.33 cfs @ 12.04 hrs, Volume= 0.703 af  
 Outflow = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af, Atten= 14%, Lag= 3.9 min  
 Primary = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 32.20' @ 12.11 hrs Surf.Area= 1,109 sf Storage= 893 cf

Plug-Flow detention time= 3.4 min calculated for 0.701 af (100% of inflow)  
 Center-of-Mass det. time= 2.2 min ( 848.0 - 845.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 25-yr Rainfall=7.11"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=4.56 cfs @ 12.11 hrs HW=32.19' (Free Discharge)

↑1=Culvert (Barrel Controls 4.56 cfs @ 3.72 fps)

**Summary for Pond 5P: (new Pond)**

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 2.81" for 25-yr event  
 Inflow = 13.18 cfs @ 12.04 hrs, Volume= 0.707 af  
 Outflow = 2.31 cfs @ 12.41 hrs, Volume= 0.420 af, Atten= 82%, Lag= 22.3 min  
 Secondary = 2.31 cfs @ 12.41 hrs, Volume= 0.420 af  
 Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.17' @ 12.41 hrs Surf.Area= 22,290 sf Storage= 15,352 cf

Plug-Flow detention time= 155.0 min calculated for 0.420 af (59% of inflow)  
 Center-of-Mass det. time= 76.2 min ( 875.9 - 799.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	<b>10.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)

**Secondary OutFlow** Max=2.31 cfs @ 12.41 hrs HW=34.17' (Free Discharge)

↑1=Sharp-Crested Rectangular Weir (Weir Controls 2.31 cfs @ 1.35 fps)

### Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 6.72" for 25-yr event  
Inflow = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af  
Primary = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min  
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 50-yr Rainfall=8.51"

Prepared by Ambit Engineering

Printed 2022-04-06

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment P1:** Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>3.73"  
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=7.31 cfs 0.389 af

**Subcatchment P1a:** Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>4.08"  
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=6.05 cfs 0.312 af

**Subcatchment P2: Wetland** Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>3.73"  
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=12.00 cfs 0.654 af

**Pond 3P: (new Pond)** Peak Elev=33.33' Storage=3,284 cf Inflow=9.62 cfs 1.065 af  
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=7.07 cfs 1.063 af

**Pond 5P: (new Pond)** Peak Elev=34.32' Storage=18,857 cf Inflow=17.96 cfs 0.967 af  
Outflow=5.89 cfs 0.676 af

**Link 1L: Max Flow Through Pipe** below 1,000.00 cfs Inflow=7.07 cfs 1.063 af  
Primary=7.07 cfs 1.063 af Secondary=0.00 cfs 0.000 af

**Total Runoff Area = 4.272 ac Runoff Volume = 1.356 af Average Runoff Depth = 3.81"**  
**78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac**

**Summary for Subcatchment P1:**

Runoff = 7.31 cfs @ 12.04 hrs, Volume= 0.389 af, Depth> 3.73"  
 Routed to Pond 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50-yr Rainfall=8.51"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		Lag/CN Method,

**Summary for Subcatchment P1a:**

Runoff = 6.05 cfs @ 12.02 hrs, Volume= 0.312 af, Depth> 4.08"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50-yr Rainfall=8.51"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		Lag/CN Method,

**Summary for Subcatchment P2: Wetland**

Runoff = 12.00 cfs @ 12.05 hrs, Volume= 0.654 af, Depth> 3.73"  
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50-yr Rainfall=8.51"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		Lag/CN Method,

**Summary for Pond 3P: (new Pond)**

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 10.22" for 50-yr event  
 Inflow = 9.62 cfs @ 12.12 hrs, Volume= 1.065 af  
 Outflow = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af, Atten= 27%, Lag= 12.7 min  
 Primary = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af  
 Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 33.33' @ 12.33 hrs Surf.Area= 3,377 sf Storage= 3,284 cf

Plug-Flow detention time= 4.5 min calculated for 1.063 af (100% of inflow)  
 Center-of-Mass det. time= 3.5 min ( 832.0 - 828.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

**2022-03-24 Design 4 Proposed Conditions David T**

Type II 24-hr 50-yr Rainfall=8.51"

Prepared by Ambit Engineering

Printed 2022-04-06

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	<b>15.0" Round Culvert</b> L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

**Primary OutFlow** Max=7.06 cfs @ 12.33 hrs HW=33.33' (Free Discharge)  
 ↑1=Culvert (Inlet Controls 7.06 cfs @ 5.75 fps)

**Summary for Pond 5P: (new Pond)**

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 3.84" for 50-yr event  
 Inflow = 17.96 cfs @ 12.04 hrs, Volume= 0.967 af  
 Outflow = 5.89 cfs @ 12.24 hrs, Volume= 0.676 af, Atten= 67%, Lag= 12.4 min  
 Secondary = 5.89 cfs @ 12.24 hrs, Volume= 0.676 af  
 Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.32' @ 12.24 hrs Surf.Area= 24,861 sf Storage= 18,857 cf

Plug-Flow detention time= 123.4 min calculated for 0.676 af (70% of inflow)  
 Center-of-Mass det. time= 54.7 min ( 847.9 - 793.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	<b>10.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)

**Secondary OutFlow** Max=5.87 cfs @ 12.24 hrs HW=34.32' (Free Discharge)  
 ↑1=Sharp-Crested Rectangular Weir (Weir Controls 5.87 cfs @ 1.85 fps)



### Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 10.19" for 50-yr event  
Inflow = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af  
Primary = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af, Atten= 0%, Lag= 0.0 min  
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

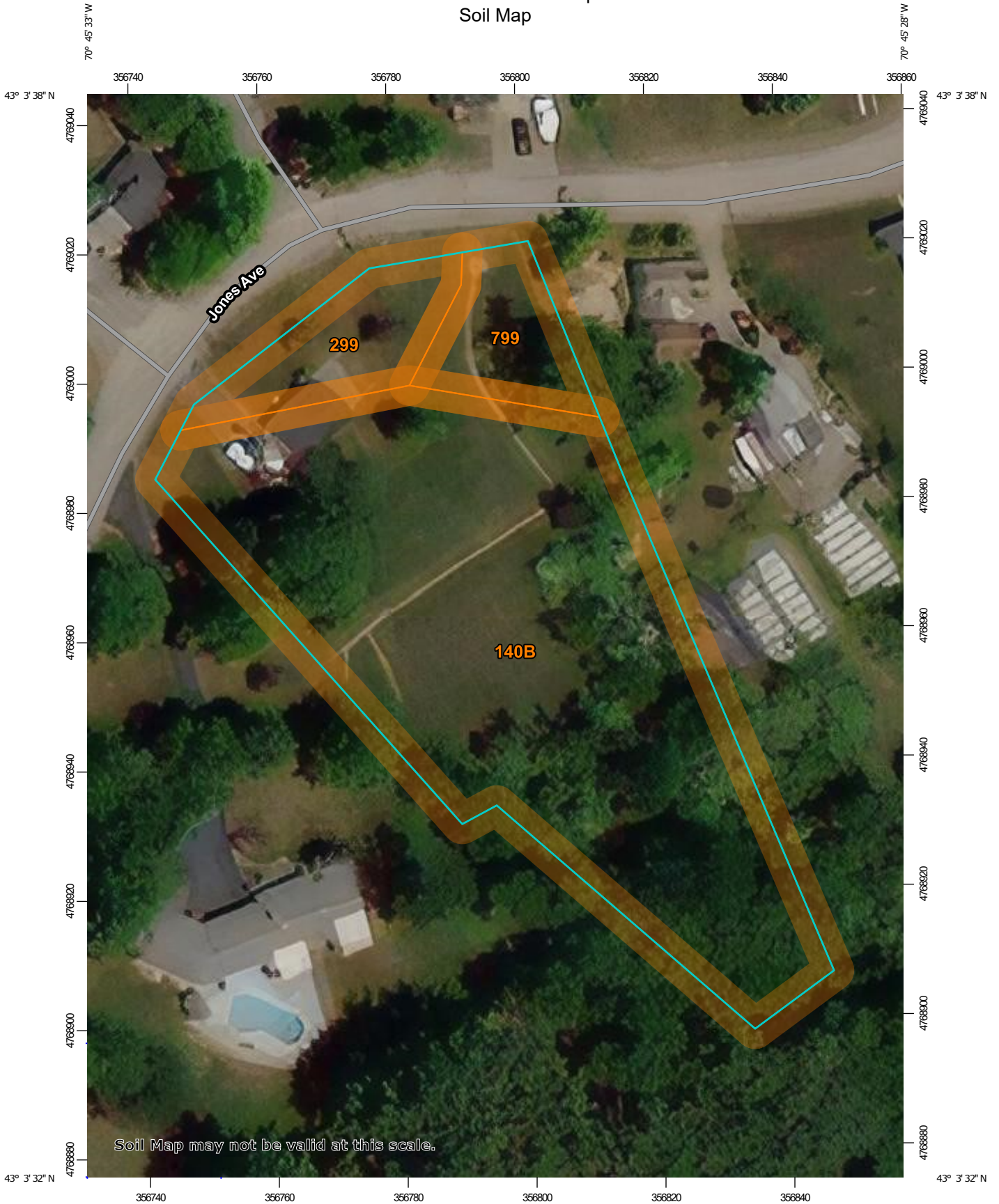
Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**APPENDIX D**  
**SOIL SURVEY INFORMATION**  
**TEST PIT DATA**

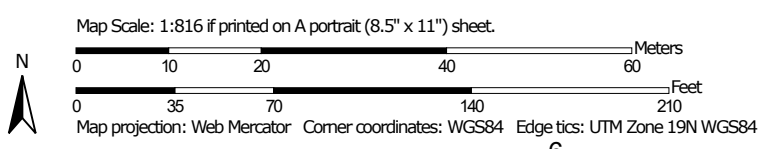
# Custom Soil Resource Report for Rockingham County, New Hampshire



# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



### 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
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	1.2	83.0%
299	Udorthents, smoothed	0.1	9.2%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.1	7.8%
<b>Totals for Area of Interest</b>		<b>1.4</b>	<b>100.0%</b>

## 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

## Custom Soil Resource Report

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

### 140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

#### Map Unit Setting

*National map unit symbol:* 2w82m  
*Elevation:* 380 to 1,070 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 145 to 240 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Chatfield, very stony, and similar soils:* 35 percent  
*Hollis, very stony, and similar soils:* 25 percent  
*Canton, very stony, and similar soils:* 25 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Chatfield, Very Stony

##### Setting

*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Nose slope, side slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

##### Typical profile

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 2 inches:* fine sandy loam  
*B<sub>w</sub> - 2 to 30 inches:* gravelly fine sandy loam  
*2R - 30 to 40 inches:* bedrock

##### Properties and qualities

*Slope:* 0 to 8 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* 20 to 41 inches to lithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Low (about 4.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* B  
*Ecological site:* F144AY034CT - Well Drained Till Uplands



## Custom Soil Resource Report

*Hydric soil rating:* No

### Description of Hollis, Very Stony

#### Setting

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Nose slope, side slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

#### Typical profile

*O<sub>i</sub> - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 7 inches:* gravelly fine sandy loam

*B<sub>w</sub> - 7 to 16 inches:* gravelly fine sandy loam

*2R - 16 to 26 inches:* bedrock

#### Properties and qualities

*Slope:* 0 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* 8 to 23 inches to lithic bedrock

*Drainage class:* Somewhat excessively drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water supply, 0 to 60 inches:* Very low (about 2.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* D

*Ecological site:* F144AY033MA - Shallow Dry Till Uplands

*Hydric soil rating:* No

### Description of Canton, Very Stony

#### Setting

*Landform:* Moraines, hills, ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Nose slope, side slope, crest

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

#### Typical profile

*O<sub>i</sub> - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 5 inches:* fine sandy loam

*B<sub>w1</sub> - 5 to 16 inches:* fine sandy loam

*B<sub>w2</sub> - 16 to 22 inches:* gravelly fine sandy loam

*2C - 22 to 67 inches:* gravelly loamy sand

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* B

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Newfields, very stony

*Percent of map unit:* 5 percent

*Landform:* Ground moraines, hills, moraines

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* No

#### Freetown

*Percent of map unit:* 5 percent

*Landform:* Marshes, depressions, bogs, kettles, swamps

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Walpole, very stony

*Percent of map unit:* 3 percent

*Landform:* Deltas, depressions, outwash plains, depressions, outwash terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Rock outcrop

*Percent of map unit:* 2 percent

*Landform:* Ridges, hills

*Hydric soil rating:* Unranked

## 299—Udorthents, smoothed

### Map Unit Setting

*National map unit symbol:* 9cmt  
*Elevation:* 0 to 840 feet  
*Mean annual precipitation:* 44 to 49 inches  
*Mean annual air temperature:* 48 degrees F  
*Frost-free period:* 155 to 165 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Udorthents and similar soils:* 100 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Udorthents

#### Properties and qualities

*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None

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

### Map Unit Setting

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

### Map Unit Composition

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

**Description of Canton**

**Setting**

*Parent material:* Till

**Typical profile**

*H1 - 0 to 5 inches:* gravelly fine sandy loam

*H2 - 5 to 21 inches:* gravelly fine sandy loam

*H3 - 21 to 60 inches:* loamy sand

**Properties and qualities**

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* A

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

**Minor Components**

**Udorthents**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Squamscott and scitico**

*Percent of map unit:* 4 percent

*Landform:* Marine terraces

*Hydric soil rating:* Yes

**Walpole**

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

**Chatfield**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

**Scituate and newfields**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

**Boxford and eldridge**

*Percent of map unit:* 4 percent

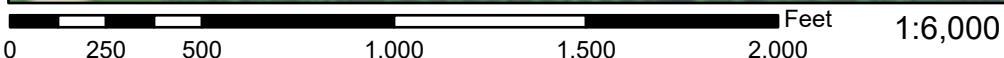
*Hydric soil rating:* No

**APPENDIX E**  
**FEMA FIRM MAP**

# National Flood Hazard Layer FIRMMette



70°45'51"W 43°3'50"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

70°45'14"W 43°3'23"N

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/10/2022 at 9:17 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**APPENDIX F**  
**INSPECTION & LONG TERM**  
**MAINTENANCE PLAN**



**AMBIT ENGINEERING, INC.**  
**Civil Engineers & Land Surveyors**

***INSPECTION & LONG-TERM MAINTENANCE PLAN***  
***FOR***  
**STICKNEY RESIDENCE & DADU**

**213 JONES AVENUE**  
**PORTSMOUTH, NH**

***Introduction***

The intent of this plan is to provide Donald Stickney (herein referred to as “owner”) with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

***Annual Report***

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system’s maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the Portsmouth Code Enforcement Officer, if required.

***Inspection & Maintenance Checklist/Log***

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.



## Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

### *Non-Structural BMPs*

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

### Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings:** Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.
3. **Emergency Spillway:** Monitor accumulation of debris in emergency spillway monthly or after significant rain events. Remove sediments when they accumulate around the riprap stone. During construction, maintain inlet protection until all roadways and parking areas have been stabilized.

### *Pollution Prevention*

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

#### **Spill Procedures**

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

#### **Sanitary Facilities**

Sanitary facilities shall be provided during all phases of construction.

#### **Material Storage**

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

#### **Material Disposal**

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

### *Snow & Ice Management for Standard Asphalt and Walkways*

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

## Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.



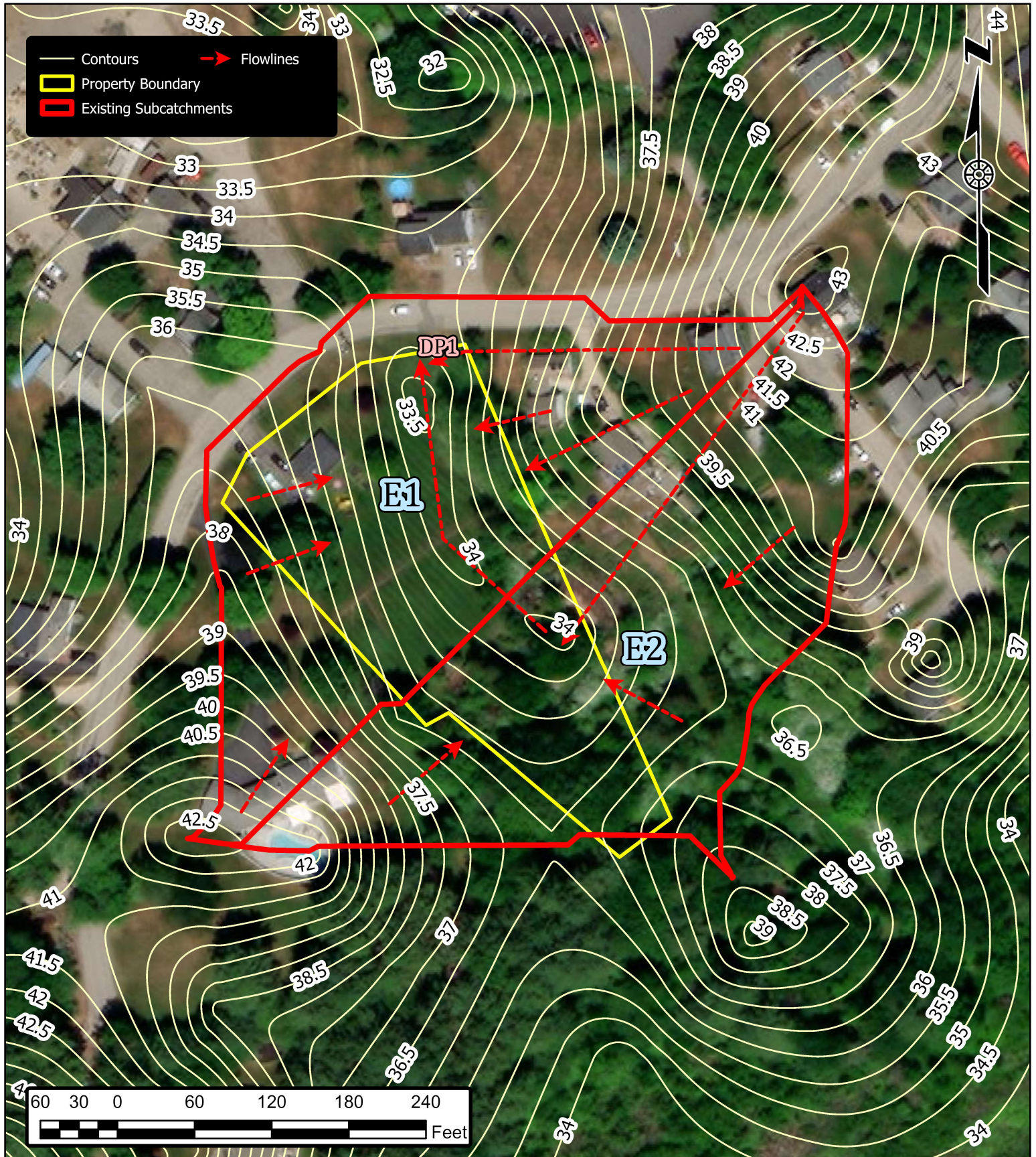
Figure 1: *Lythrum salicaria*, Purple Loosestrife. Photo by Liz West.

Figure 2: *Phragmites australis*. Photo by Le Loup Gris



STICKNEY RESIDENCE  
213 JONES AVENUE  
PORTSMOUTH, N.H.

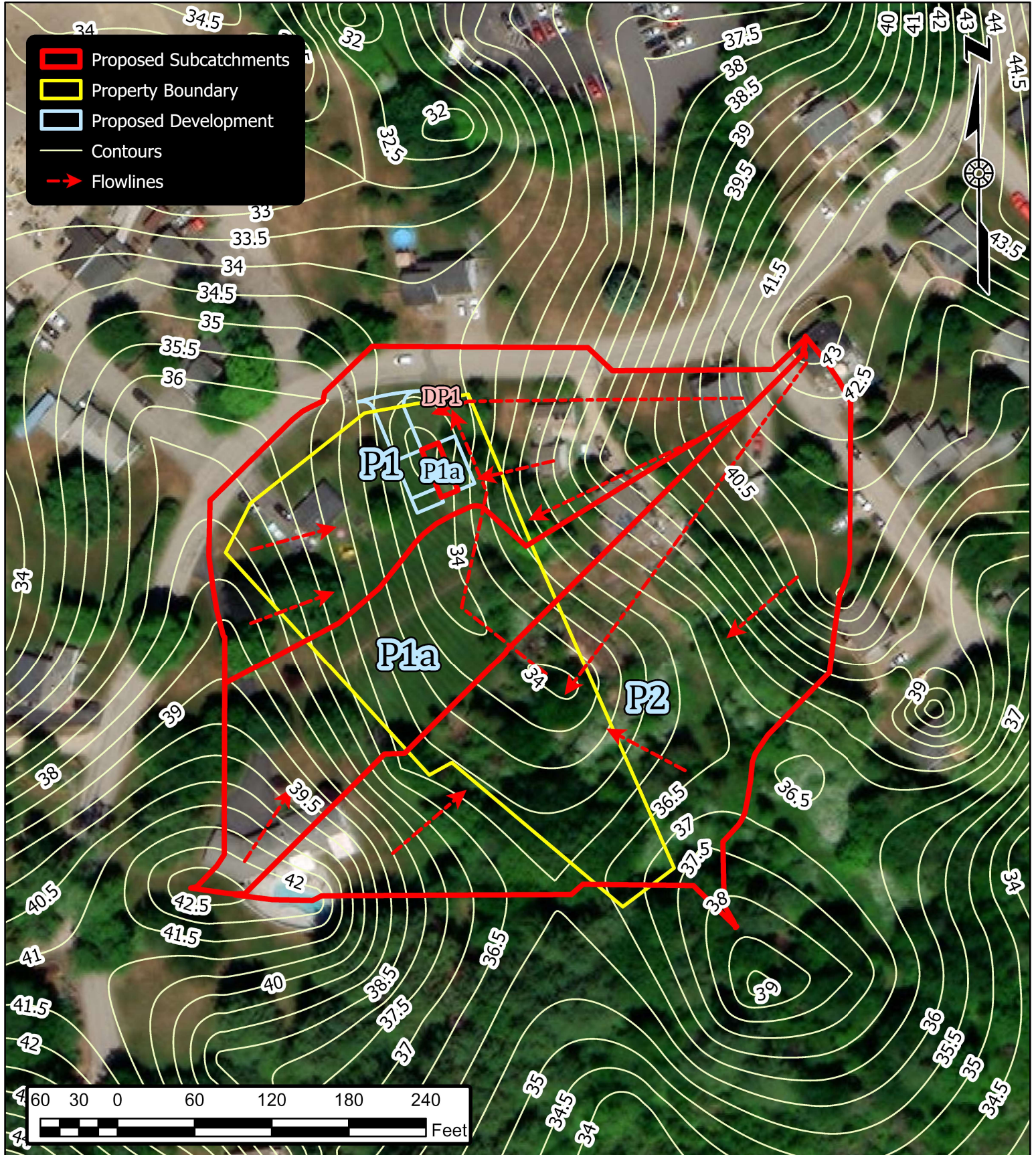
JOB NUMBER: 531.01  
SCALE: 1" = 100'  
SUBMITTED: 04-06-2022





STICKNEY RESIDENCE  
213 JONES AVENUE  
PORTSMOUTH, N.H.

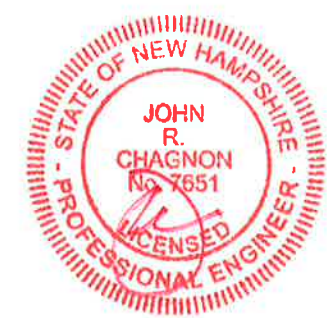
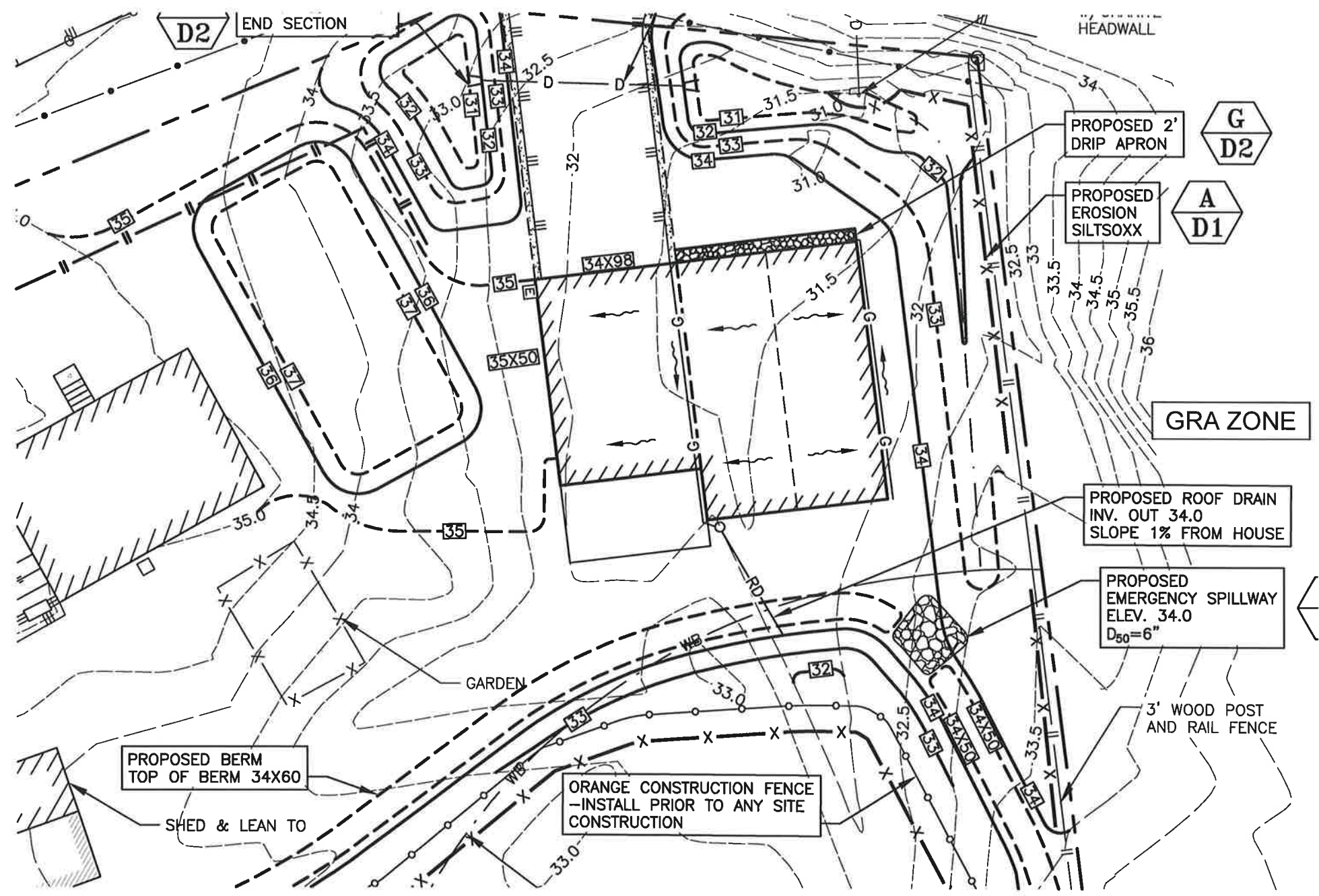
JOB NUMBER: 531.01  
SCALE: 1" = 100'  
SUBMITTED: 04-06-2022





# ROOF DRAINAGE PLAN

OWNER: DONALD LOWELL STICKNEY III  
 PROPERTY LOCATION: 213 JONES AVENUE  
 CITY OF PORTSMOUTH  
 COUNTY OF ROCKINGHAM  
 STATE OF NEW HAMPSHIRE



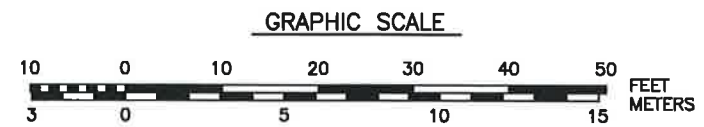
DEED REFERENCE: 5754/2748 & 6147/2092

SCALE: 1"=20' MARCH 2022



**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2915



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Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

Project # 47099.01

NH Wetlands Bureau

***Standard Dredge & Fill  
Wetlands Permit Application***

***for***

***ADL 325 Little Harbor Trust***

***Replace Existing Private Docking Structure with a  
New Private Docking Structure***

***325 Little Harbor Road, Portsmouth, NH***

***Rockingham County***

**March 24, 2022**

**TF Moran, Inc.**

170 Commerce Way – Suite 102  
Portsmouth, NH 03801  
(603) 431-2222

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# **SECTION 1**



**STANDARD DREDGE AND FILL  
WETLANDS PERMIT APPLICATION**  
Water Division/Land Resources Management  
Wetlands Bureau  
[Check the Status of your Application](#)



**RSA/Rule:** RSA 482-A/Env-Wt 100-900

**APPLICANT'S NAME:** ADL 325 Little Harbor Road Trust **TOWN NAME:** Portsmouth

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

<b>SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))</b>	
Please use the <a href="#">Wetland Permit Planning Tool (WPPT)</a> , the Natural Heritage Bureau (NHB) <a href="#">DataCheck Tool</a> , the <a href="#">Aquatic Restoration Mapper</a> , or other sources to assist in identifying key features such as: <a href="#">priority resource areas (PRAs)</a> , <a href="#">protected species or habitats</a> , coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&amp;G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Protected species or habitat?                             <ul style="list-style-type: none"> <li>○ If yes, species or habitat name(s): Marsh elder, Atlantic Sturgeon, Shortnose Sturgeon</li> <li>○ NHB Project ID #: NHB21-0381</li> </ul> </li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
• Bog?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
• Floodplain wetland contiguous to a tier 3 or higher watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
• Designated prime wetland or duly-established 100-foot buffer?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
• Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Name of Local River Management Advisory Committee (LAC): N/A</li> <li>• A copy of the application was sent to the LAC on Month: <input type="text"/> Day: <input type="text"/> Year: <input type="text"/></li> </ul>	

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

For dredging projects, is the subject property contaminated? • If yes, list contaminant: N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For stream crossing projects, provide watershed size (see <a href="#">WPPT</a> or Stream Stats): N/A	
<b>SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))</b>	
Provide a <b>brief</b> description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
Temporarily impact 27 SF and permanently impact 34 SF of the Previously Developed Upland Tidal Buffer Zone and Temporarily impact 305 SF and permanently impact 644 SF of Tidal Surface Waters for the purpose of replacing an existing residential docking structure with a new residential docking structure. Total Impact area = 989 Square Feet.	
<b>SECTION 3 - PROJECT LOCATION</b>	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: 325 Little Harbor Road	
TOWN/CITY: Portsmouth, NH	
TAX MAP/BLOCK/LOT/UNIT: Tax Map: 205, Lot: 2	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Piscataqua River <input type="checkbox"/> N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 43.06725° North 70.74591° West	

<b>SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))</b>		
If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: ADL 325 Little Harbor Road Trust		
MAILING ADDRESS: C/o Stephen H. Roberts, ESQ, 127 Parrott Ave		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
EMAIL ADDRESS: sroberts@hpgrlaw.com		
FAX: [REDACTED]	PHONE: private	
ELECTRONIC COMMUNICATION: By initialing here: [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		
<b>SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))</b>		
<input type="checkbox"/> N/A		
LAST NAME, FIRST NAME, M.I.: Aube, Jason, R.		
COMPANY NAME: TFMoran, Inc.		
MAILING ADDRESS: 170 Commerce Way, Suite 102		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
EMAIL ADDRESS: jaube@tfmoran.com		
FAX: [REDACTED]	PHONE: 603-431-2222	
ELECTRONIC COMMUNICATION: By initialing here JRA, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
<b>SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))</b>		
If the owner is a trust or a company, then complete with the trust or company information.		
<input checked="" type="checkbox"/> Same as applicant		
NAME: [REDACTED]		
MAILING ADDRESS: [REDACTED]		
TOWN/CITY: [REDACTED]	STATE: [REDACTED]	ZIP CODE: [REDACTED]
EMAIL ADDRESS: [REDACTED]		
FAX: [REDACTED]	PHONE: [REDACTED]	
ELECTRONIC COMMUNICATION: By initialing here [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		

**SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))**

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):  
 Please see attached supplemental information entitled, "SECTION 7 - Resource Specific Criteria."

**SECTION 8 - AVOIDANCE AND MINIMIZATION**

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).\* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).\*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

*\*See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

**SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)**

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month:  Day:  Year:

N/A - Mitigation is not required

**SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)**

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable:  I confirm submittal.

N/A – Compensatory mitigation is not required

**SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))**

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Scrub-shrub Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Emergent Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Wet Meadow			<input type="checkbox"/>			<input type="checkbox"/>
	Vernal Pool			<input type="checkbox"/>			<input type="checkbox"/>
	Designated Prime Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Duly-established 100-foot Prime Wetland Buffer			<input type="checkbox"/>			<input type="checkbox"/>
Surface Water	Intermittent / Ephemeral Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Perennial Stream or River			<input type="checkbox"/>			<input type="checkbox"/>
	Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - River			<input type="checkbox"/>			<input type="checkbox"/>
Banks	Bank - Intermittent Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Bank - Perennial Stream / River			<input type="checkbox"/>			<input type="checkbox"/>
	Bank / Shoreline - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
Tidal	Tidal Waters			<input type="checkbox"/>			<input type="checkbox"/>
	Tidal Marsh			<input type="checkbox"/>			<input type="checkbox"/>
	Sand Dune			<input type="checkbox"/>			<input type="checkbox"/>
	Undeveloped Tidal Buffer Zone (TBZ)			<input type="checkbox"/>			<input type="checkbox"/>
	Previously-developed TBZ	13		<input type="checkbox"/>	27		<input type="checkbox"/>
	Docking - Tidal Water	644		<input type="checkbox"/>	305		<input checked="" type="checkbox"/>
<b>TOTAL</b>		<b>657</b>			<b>332</b>		

**SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)**

**MINIMUM IMPACT FEE:** Flat fee of \$400.

**NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

**MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):		SF	×	\$0.40 =	\$	
Seasonal docking structure:	596	SF	×	\$2.00 =	\$	1,192
Permanent docking structure:	393	SF	×	\$4.00 =	\$	1,572
Projects proposing shoreline structures (including docks) add \$400 =					\$	400
Total =					\$	3,164

**The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$**





**SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)**

Indicate the project classification.



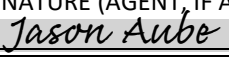
Minimum Impact Project
  Minor Project
  Major Project

**SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)**

Initial each box below to certify:

Initials:  ad	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials:  ad	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials:  ad	The signer understands that: <ul style="list-style-type: none"> <li>• The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:                         <ol style="list-style-type: none"> <li>1. Deny the application.</li> <li>2. Revoke any approval that is granted based on the information.</li> <li>3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.</li> </ol> </li> <li>• The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.</li> <li>• The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.</li> </ul>
Initials:  ad	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

**SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)**

SIGNATURE (OWNER): 	PRINT NAME LEGIBLY: Stephen H. Roberts, Trustee	DATE: 3-22-2022
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): 	PRINT NAME LEGIBLY: Anthony Dilorenzo	DATE: 3/22/2022
SIGNATURE (AGENT, IF APPLICABLE): 	PRINT NAME LEGIBLY: Jason Aube	DATE: 3/21/2022

**SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))**

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: 	PRINT NAME LEGIBLY: 
TOWN/CITY: 	DATE: 

**DIRECTIONS FOR TOWN/CITY CLERK:**

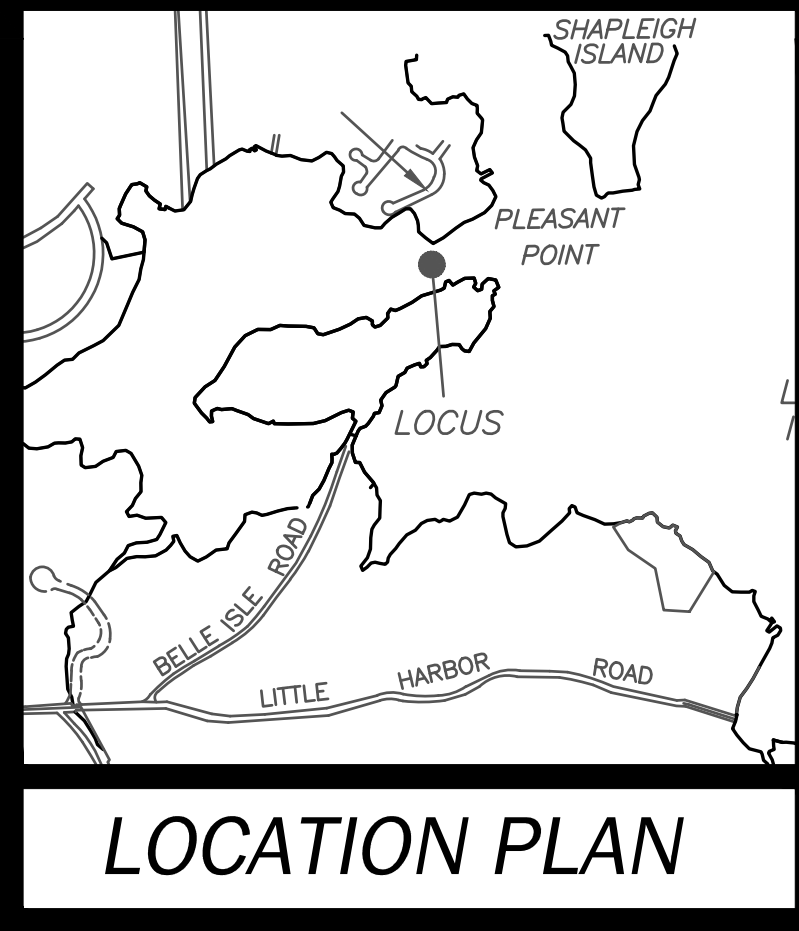
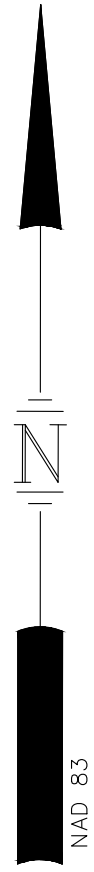
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

**DIRECTIONS FOR APPLICANT:**

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".





### TIDE ELEVATION LEGEND

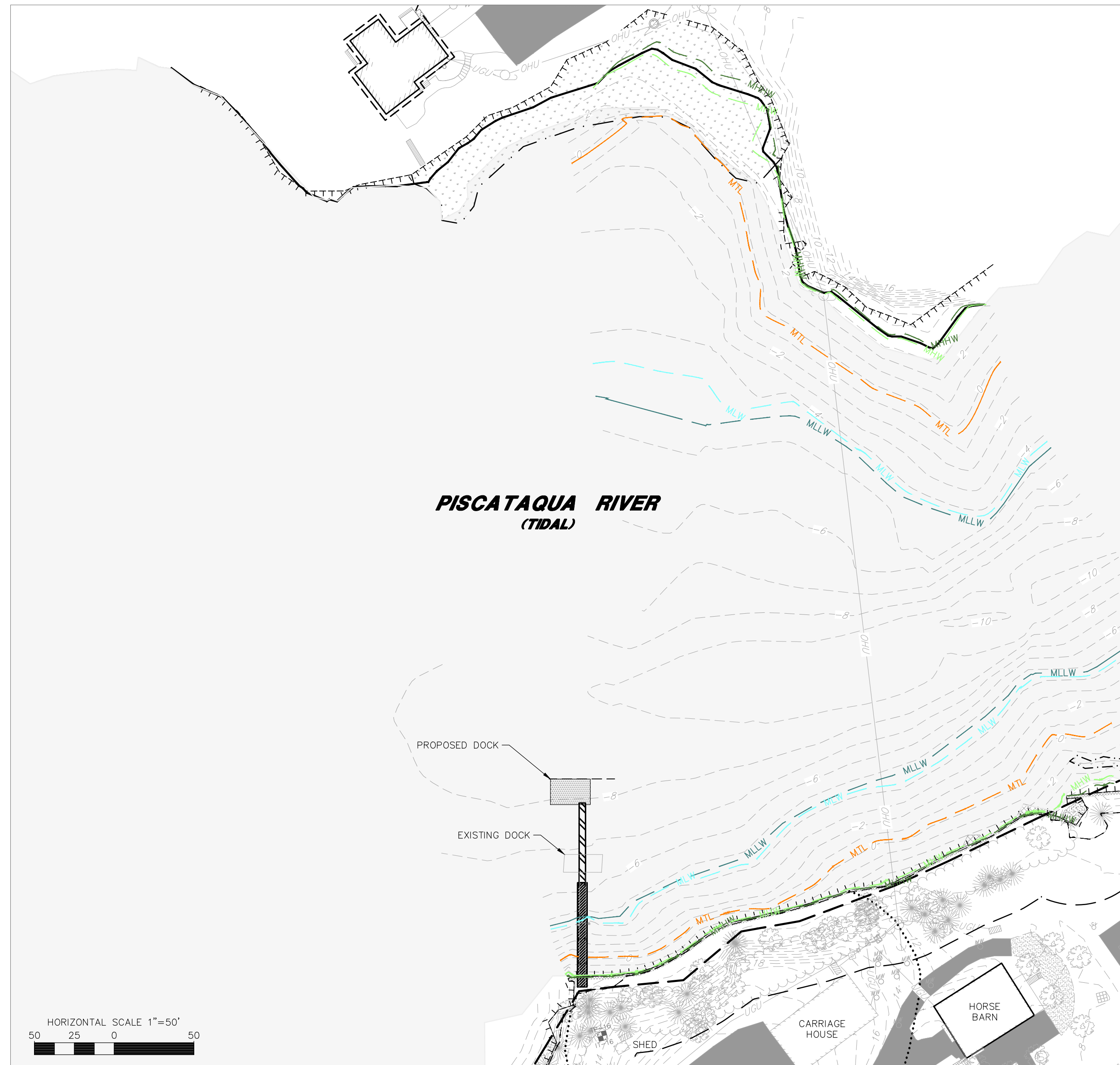
COLOR	ELEV.	TIDE ELEVATION
	-4.71	MEAN LOWER-LOW WATER
	-4.39	MEAN LOW WATER
	-0.32	MEAN TIDE LEVEL
	3.76	MEAN HIGH WATER
	4.18	MEAN HIGHER-HIGH WATER

TIDE ELEVATION IS BASED ON NOAA STATION 8419870, SEAVEY ISLAND, MAINE

### TIDAL DOCK REGULATIONS

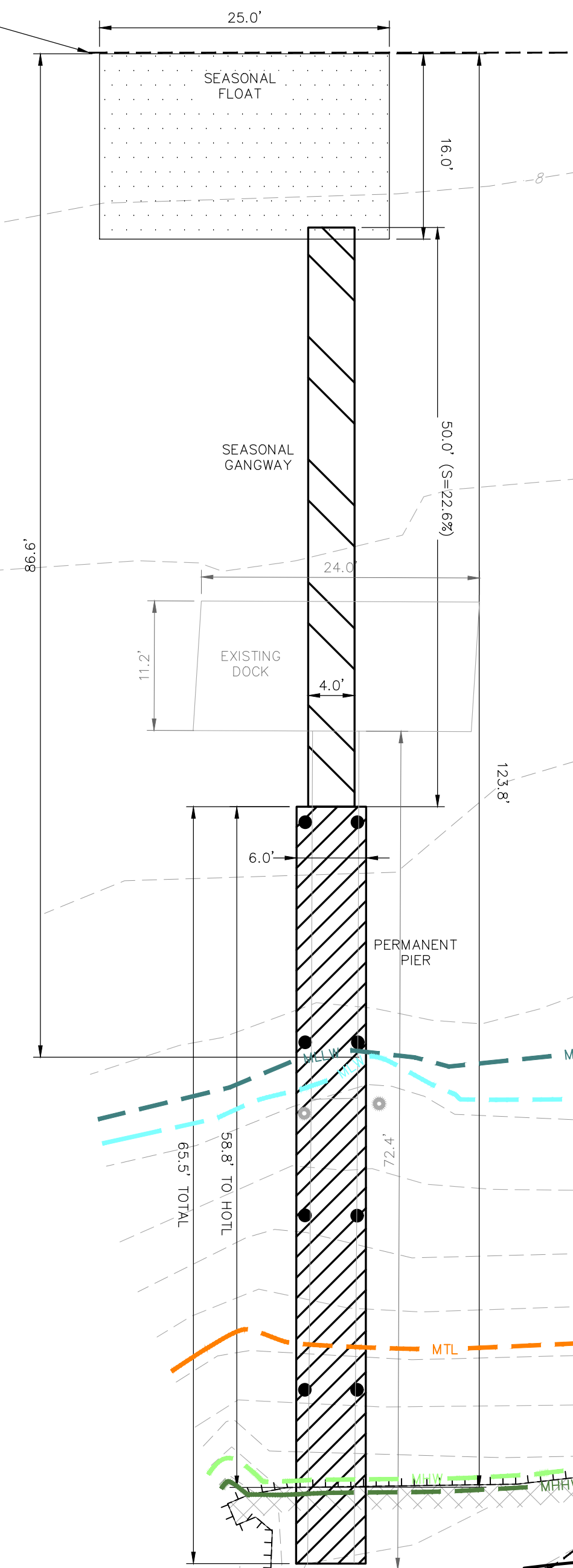
THE FOLLOWING REQUIREMENTS (PROVIDED BY NHDES WB-15 "PERMITTING OF RESIDENTIAL TIDAL DOCKS") ARE MET BY THE PROPOSED TIDAL DOCK.

MINIMAL TIDAL DOCK DIMENSIONS	NHDES LIMITATIONS	PROPOSED
OVERALL STRUCTURE LENGTH	200 FEET	123.8 FEET
25% OF WATERWAY WIDTH AT MEAN LOW WATER	86.6 FEET	86.6 FEET
OVERALL FOOTPRINT	1,500 SF	989 SF
OVERALL FLOAT FOOTPRINT	400 SF	400 SF
<b>DOCK IMPACTS</b>		
PREVIOUSLY DEVELOPED TBZ	27 SF	13 SF
TIDAL SURFACE WATERS	305 SF	644 SF
<b>TOTAL</b>	<b>332 SF</b>	<b>657 SF</b>



HORIZONTAL SCALE 1"=50'  
50 25 0 50

LINE MARKING 25% OF MLLW WATERWAY WIDTH



HORIZONTAL SCALE 1"=10'  
10 5 0 10

### SITE DEVELOPMENT PLANS

TAX MAP 205 LOT 2  
**PROPOSED DOCKING STRUCTURE**  
**LADY ISLE**  
**325 LITTLE HARBOR ROAD, PORTSMOUTH, NH**  
 OWNED BY & PREPARED FOR  
**ADL 325 LITTLE HARBOR ROAD TRUST**

**1"=20' (11"x17')**  
**SCALE: 1"=10' (22"x34')** **MARCH 7, 2022**

Seacoast Division



Civil Engineers  
Structural Engineers  
Traffic Engineers  
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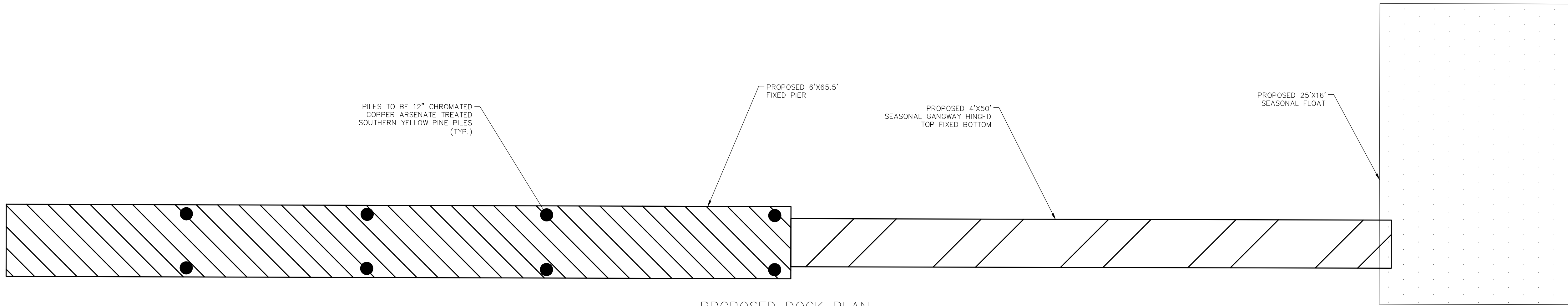
REV	DATE	DESCRIPTION	DR	CK

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	CK JCC	CADFILE	47099-01_DOCK	

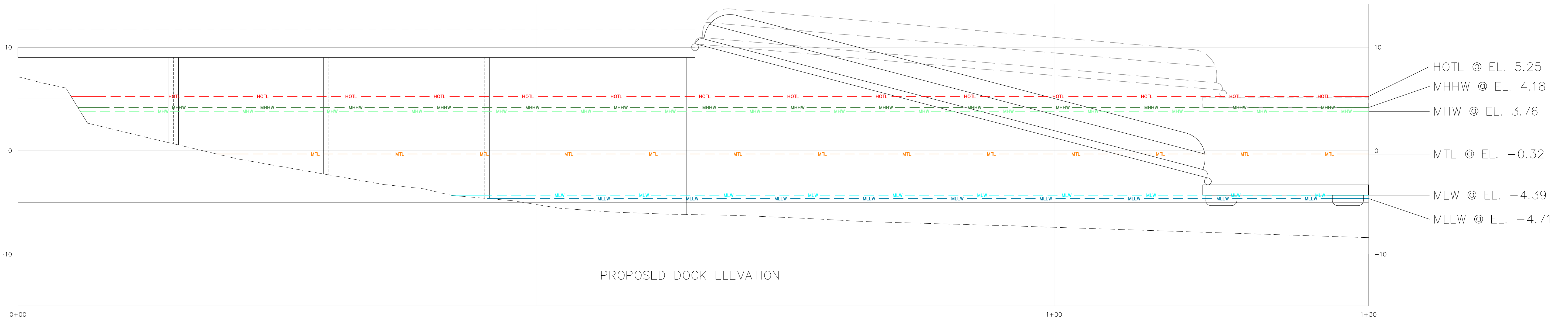
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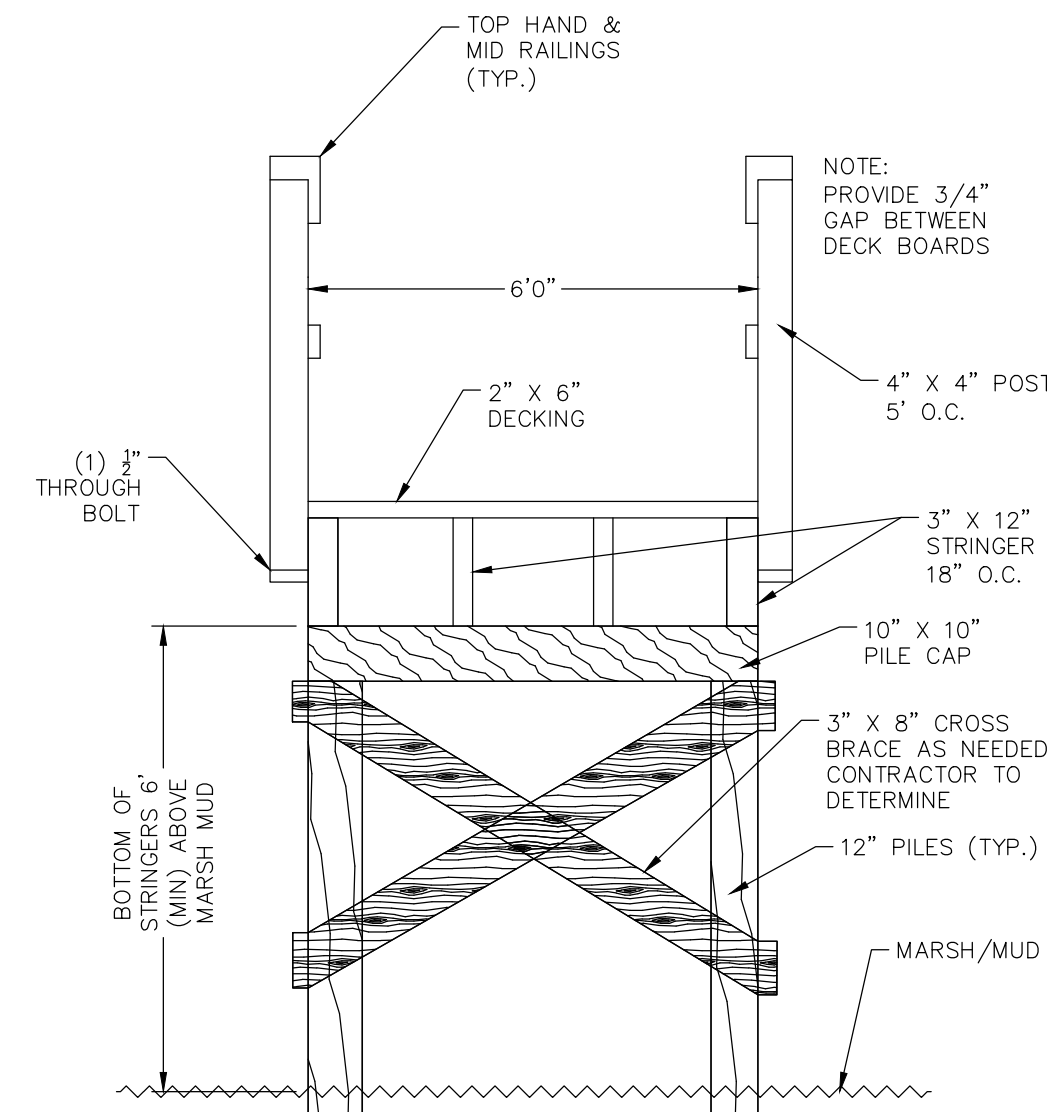




PROPOSED DOCK PLAN



PROPOSED DOCK ELEVATION



PROPOSED PIER DETAIL NTS

**SEQUENCE OF CONSTRUCTION**

1. AT LEAST 48-HOURS PRIOR TO COMMENCING THE CONSTRUCTION ACTIVITIES, THE PROPERTY OWNER, OR THEIR AGENT, WILL NOTIFY NHDES VIA THE INITIATION OF CONSTRUCTION NOTIFICATION FORM.
2. MOBILIZATION OF CRANE BARGE, PUSH BOAT, WORK SKIFF, MATERIALS, AND PREFABRICATED COMPONENTS, INCLUDING THE GANGWAY AND FLOAT WILL BE TRANSFERRED TO THE PROJECT AREA.
3. THE BARGE WILL BE POSITIONED ADJACENT TO THE EXISTING DOCKING STRUCTURE AND BEYOND THE LIMITS OF ANY EMERGENT VEGETATION.
4. THE PROJECT WILL COMMENCE AT LOW TIDE TO MINIMIZE EROSION AND TURBIDITY.
5. THROUGH A MECHANICAL VIBRATORY METHOD, THE EXISTING PILES AND DECKING WILL BE REMOVED AND LOADED ON THE BARGE.
6. USING THE SAME MECHANICAL VIBRATORY TECHNIQUE, THE NEW PILES WILL BE DRIVEN UNTIL REFUSAL. EACH NEW PILE WILL BE LOCATED AS DEPICTED ON THE APPROVED PLANS ASSOCIATED WITH THE APPROVED NHDES PERMIT.
7. ONCE THE PILING ARE SET, THEY ARE CUT AND BEAM CAPS ARE INSTALLED AND THE DECKING IS INSTALLED.
8. THE GANGWAY AND THE FLOAT IS LIFTED FROM THE BARGE AND SECURED TO THE PERMANENT DOCKING STRUCTURE.
9. ANY DISTURBED SOILS WITHIN THE PREVIOUSLY DEVELOPED UPLAND TIDAL BUFFER ZONE WILL BE SEEDED WITH A SHORELINE SEED MIX THAT INCLUDES SPECIES TOLERANT OF SALT AND SANDY SOILS.
10. DURING HIGH TIDE THE BARGE WILL RETREAT FROM THE AREA WITH THE EXISTING DOCKING STRUCTURE MATERIALS.
11. UPON COMPLETING THE PROJECT, THE PROPERTY OWNER, OR THEIR AGENT, WILL NOTIFY NHDES VIA THE COMPLETION OF CONSTRUCTION NOTICE AND CERTIFICATE OF COMPLIANCE FORM.

**DISCHARGES, AVOIDANCE, MINIMIZATION AND MITIGATION**

DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE U.S. AND ANY SECONDARY IMPACTS SHALL BE AVOIDED AND MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. PERMITTEES MAY ONLY FILL THOSE JURISDICTIONAL WETLANDS AND WATERWAYS THAT THE CORP AND NHDES AUTHORIZES AS SECONDARY IMPACTS. IF NOT SPECIFICALLY AUTHORIZED BY USAGE AND NHDES, ANY UNAUTHORIZED FILL OR SECONDARY IMPACT TO WETLANDS MAY BE CONSIDERED AS A VIOLATION OF THE CMA.

UNLESS SPECIFICALLY AUTHORIZED BY USACE AND NHDES, NO WORK SHALL DRAIN A WATER OF THE U.S. BY PROVIDING A CONDUIT FOR WATER ON OR BELOW THE SURFACE.

**HEAVY EQUIPMENT IN TIDAL WETLANDS**

HEAVY EQUIPMENT OTHER THAN FIXED EQUIPMENT (DRILL RIGS, FIXED CRANES, ETC.) WORKING IN WETLANDS SHALL NOT BE STORED, MAINTAINED, OR REPAIRED IN WETLANDS, UNLESS IT IS LESS ENVIRONMENTALLY DAMAGING OTHERWISE, AND AS MUCH AS POSSIBLE SHALL NOT BE OPERATED WITHIN THE INTERTIDAL ZONE. WHERE CONSTRUCTION REQUIRES HEAVY EQUIPMENT OPERATION IN THE WETLANDS, THE EQUIPMENT SHALL EITHER HAVE LOW GROUND PRESSURE (<3 PSI), OR SHALL NOT BE LOCATED DIRECTLY ON WETLAND SOILS AND VEGETATION; IT SHALL BE LACED ON SWAMP MATS THAT ARE ADEQUATE TO SUPPORT THE EQUIPMENT IN SUCH A WAY AS TO MINIMIZE DISTURBANCE OF WETLAND SOIL AND VEGETATION. SWAMP MATS ARE TO BE PLACED IN THE WETLAND FROM THE UPLAND OR FROM EQUIPMENT POSITIONED ON SWAMP MATS IF WORKING IN A WETLAND. DRAGGING SWAMP MATS INTO POSITION IS PROHIBITED. OTHER SUPPORT STRUCTURES THAT ARE LESS IMPACTING AND ARE CAPABLE OF SAFELY SUPPORTING EQUIPMENT MAY BE USED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. SIMILARLY, NOT USING MATS DURING FROZEN, DRY OR OTHER CONDITIONS MAY BE ALLOWED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. CORDUROY ROADS AND SWAMP/CONSTRUCTION MATS ARE CONSIDERED AS FILL WHETHER THEY'RE INSTALLED TEMPORARILY OR PERMANENTLY.

**TIME OF YEAR WORK WINDOW AND NOISE RESTRICTIONS**

1. PILES INSTALLED IN-THE-DRY DURING LOW WATER OR IN-WATER BETWEEN NOV, 8TH - APR, 9TH, OR
2. MUST BE DRILLED AND PINNED TO LEDGE, OR
3. VIBRATORY HAMMERS USED TO INSTALL ANY SIZE AND QUANTITY OF WOOD, CONCRETE OR STEEL PILES, OR
4. IMPACT HAMMERS LIMITED TO ONE HAMMER AND <50 PILES INSTALLED/DAY WITH THE FOLLOWING WOOD PILES OF ANY SIZE, CONCRETE PILES ≤ 18-INCHES DIAMETER, STEEL PILES 12-INCHES DIAMETER IF THE HAMMER IS <3000 LBS. AND A WOOD CUSHION IS USED BETWEEN THE HAMMER AND STEEL PILE FOR 2-4 ABOVE.
  - I. IN-WATER NOISE LEVELS SHALL NOT >187dB SEL RE 1μPa OR 206dB PEAK RE 1μPa AT A DISTANCE >10M FROM THE PILE BEING INSTALLED AND
  - II. IN-WATER NOISE LEVELS >155dB PEAK RE 1μPa SHALL NOT EXCEED 12 CONSECUTIVE HOURS ON ANY GIVEN DAY AND A 12-HOUR RECOVERY PERIOD (I.E. IN-WATER NOISE BELOW 155dB PEAK RE 1μPa) MUST BE PROVIDED BETWEEN WORK DAYS.

**WORK SITE RESTORATION**

UPON COMPLETION OF CONSTRUCTION, ALL DISTURBED WETLAND AREAS SHALL BE PROPERLY STABILIZED. ANY SEED MIX SHALL CONTAIN ONLY PLANT SPECIES NATIVE TO NEW ENGLAND. THE INTRODUCTION OR SPREAD OF INVASIVE PLANT SPECIES IN DISTURBED AREA IS PROHIBITED.

IN AREAS OF AUTHORIZED TEMPORARY DISTURBANCE: IF TREES ARE CUT THEY SHALL BE CUT AT GROUND LEVEL AND NOT UPROOTED IN ORDER TO PREVENT DISRUPTION TO THE WETLAND SOIL STRUCTURE AND TO ALLOW STUMP SPROUTS TO REVEGETATE THE WORK AREA, UNLESS OTHERWISE AUTHORIZED.

WETLAND AREAS WHERE PERMANENT DISTURBANCE IS NOT AUTHORIZED SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION, WHICH UNDER NO CIRCUMSTANCES SHALL BE HIGHER THAN THE PRE-CONSTRUCTION ELEVATION. ORIGINAL CONDITION MEANS CAREFUL PROTECTION AND/OR REMOVAL OF EXISTING SOIL AND VEGETATION, AND REPLACEMENT BACK TO THE ORIGINAL LOCATION SUCH THAT THE ORIGINAL SOIL LAYERING AND VEGETATION SCHEMES ARE APPROXIMATELY THE SAME.

**SEDIMENTATION AND EROSION CONTROL**

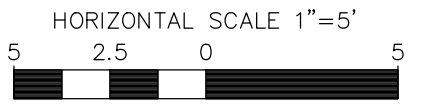
ADEQUATE SEDIMENTATION AND EROSION CONTROL MANAGEMENT MEASURES, PRACTICES AND DEVICES, SUCH AS PHASED CONSTRUCTION, VEGETATED FILTER STRIPS, GEOTEXTILE SILT FENCES, STORMWATER DETENTION AND INFILTRATION SYSTEMS, SEDIMENT DETENTION BASINS OR OTHER DEVICES SHALL BE INSTALLED AND PROPERLY MAINTAINED TO REDUCE EROSION AND RETAIN SEDIMENT ON-SITE DURING AND AFTER CONSTRUCTION. THEY SHALL BE CAPABLE OF PREVENTING EROSION, OR COLLECTING SEDIMENT, SUSPENDED AND FLOATING MATERIALS, AND OF FILTERING FINE SEDIMENT. THE DISTURBED AREAS SHALL BE STABILIZED AND THESE DEVICES SHALL BE REMOVED UPON COMPLETION OF WORK. THE SEDIMENT COLLECTED BY THESE DEVICES SHALL BE REMOVED AND PLACED AT AN UPLAND LOCATION IN A MANNER THAT WILL PREVENT ITS LATER EROSION INTO A WATERWAY OR WETLAND. ALL EXPOSED SOIL AND OTHER FILLS SHALL BE PERMANENTLY STABILIZED AT THE EARLIEST PRACTICABLE DATE.

**SPAWNING AREAS**

DISCHARGES OF DREDGED OR FILL MATERIAL, AND/OR SUSPENDED SEDIMENT PRODUCING ACTIVITIES IN FISH AND SHELLFISH SPAWNING OR NURSERY AREAS, OR AMPHIBIAN AND MIGRATORY BIRD BREEDING AREAS, DURING SPAWNING OR BREEDING SEASONS SHALL BE AVOIDED. IMPACTS TO THESE AREAS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE DURING ALL TIMES OF THE YEAR. INFORMATION ON SPAWNING HABITAT FOR SPECIES MANAGED UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (I.E. EFH FOR SPAWNING ADULTS) CAN BE OBTAINED FROM THE NMFS WEBSITE AT WWW.NERO.NOAA.GOV/HCD.

**INSPECTIONS**

THE PERMITTEE SHALL ALLOW THE CORPS AND NHDES TO MAKE PERIODIC INSPECTIONS AT ANY TIME DEEMED NECESSARY IN ORDER TO ENSURE THAT THE WORK IS BEING OR HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT. THE CORPS AND NHDES MAY ALSO REQUIRE POST-CONSTRUCTION ENGINEERING DRAWINGS FOR COMPLETED WORK, AND POST-DREDGING SURVEY DRAWINGS FOR ANY DREDGING WORK.



REV	DATE	DESCRIPTION	DR	CK

**SITE DEVELOPMENT PLANS**

TAX MAP 205 LOT 2

**DOCK DETAILS**

**LADY ISLE**

**325 LITTLE HARBOR ROAD, PORTSMOUTH, NH**

OWNED BY & PREPARED FOR

**ADL 325 LITTLE HARBOR ROAD TRUST**

**1"=10' (11"x17")**

**SCALE: 1"=5' (22"x34")** **MARCH 7, 2022**

Seacoast Division

Civil Engineers  
Structural Engineers  
Traffic Engineers  
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FILE	47099.01	DR	JKC	FB	-	C-02
		CK	JCC	CADFILE	47099-01_DOCK	

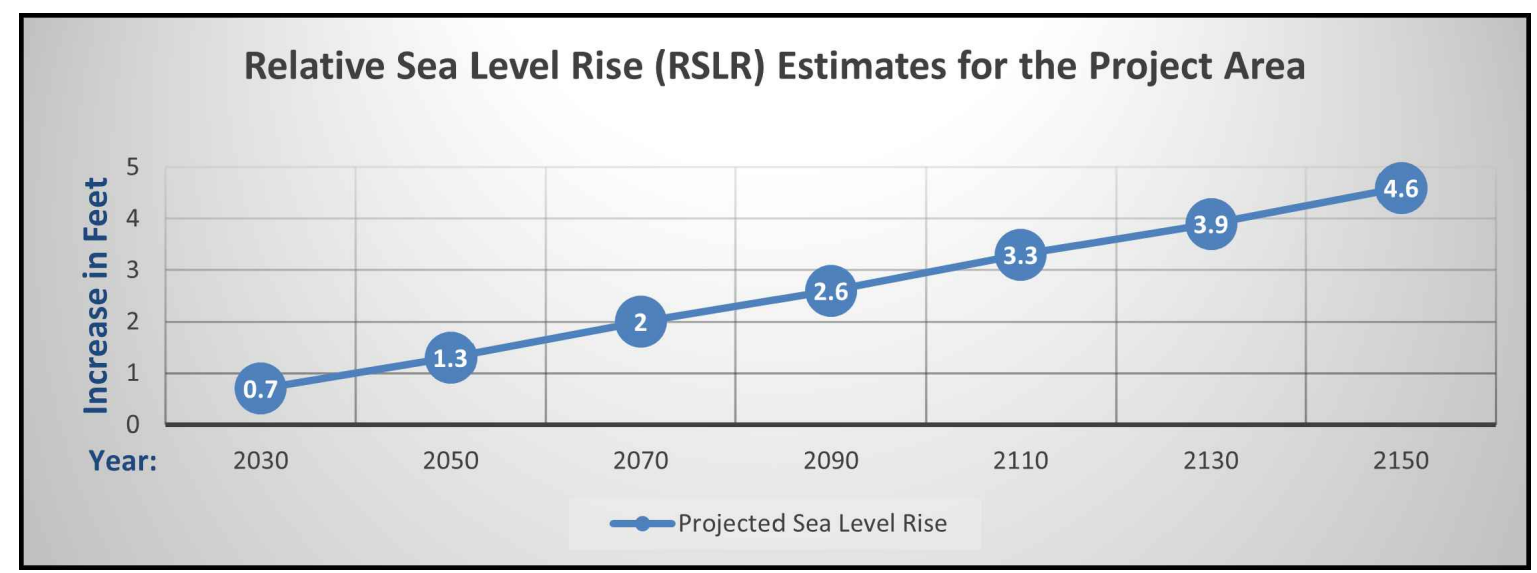
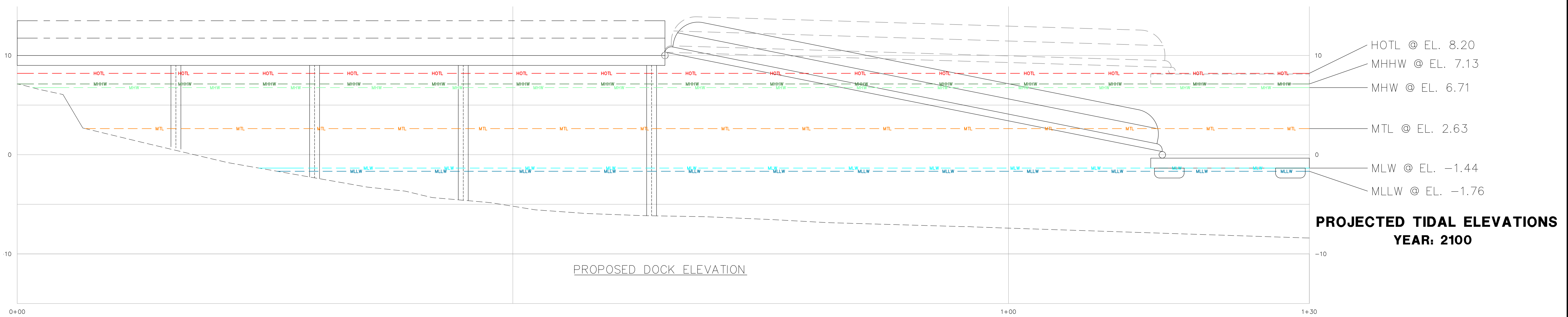
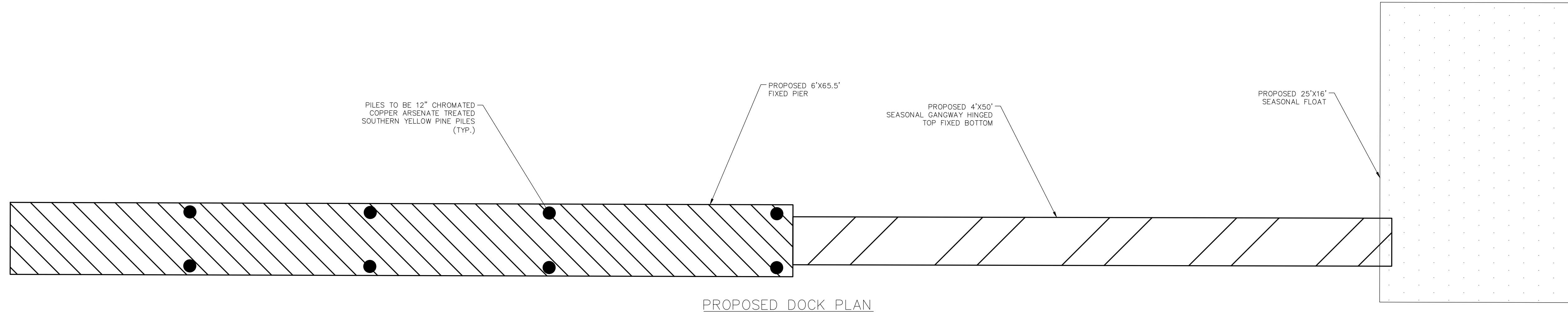
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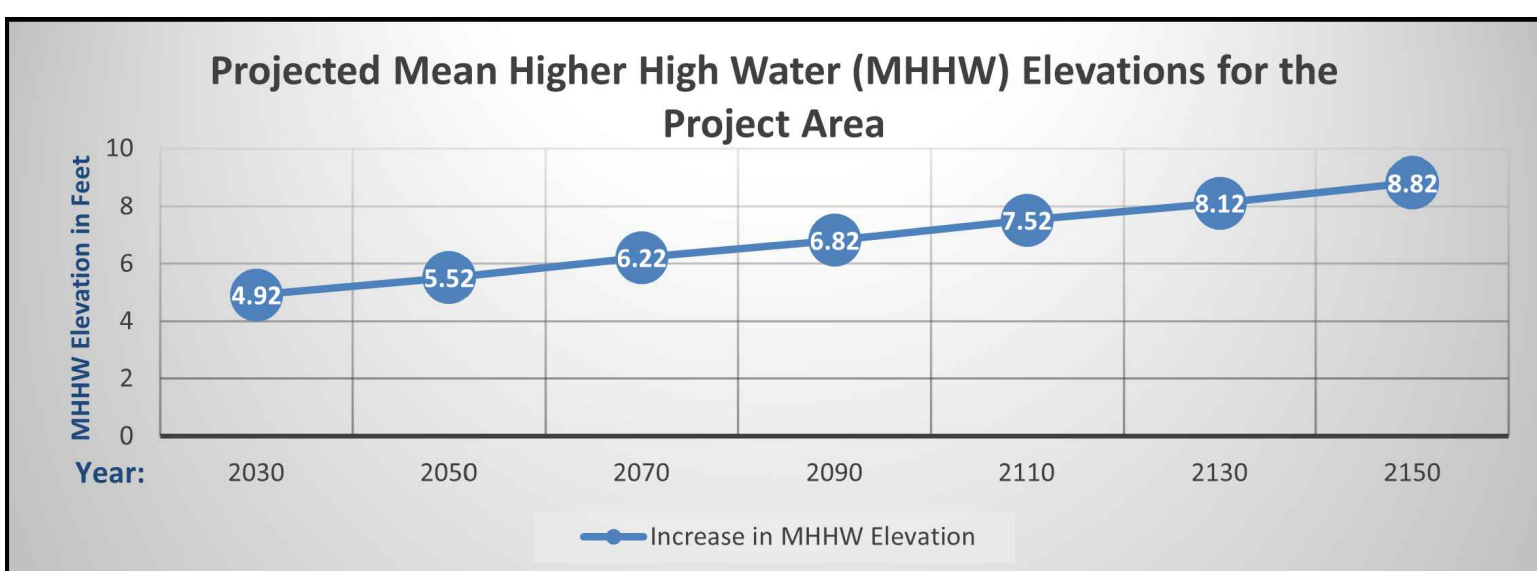
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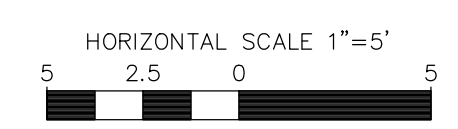
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INCREMENTAL RELATIVE SEA LEVEL RISE FOR THE PROJECT AREA BASED ON REPRESENTATIVE CONCENTRATION PATHWAY (RPC) 4.5



INCREMENTAL RELATIVE SEA LEVEL RISE FOR THE PROJECT AREA BASED ON REPRESENTATIVE CONCENTRATION PATHWAY (RPC) 4.5 AND THE CURRENT MEAN HIGHER HIGH WATER (MHHW) ELEVATION OF 4.22 FEET DETERMINED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION (NOAA) SEAVEY ISLAND, MAINE STATION 8419870 USING NAVD 88 DATUM.



REV	DATE	DESCRIPTION	DR	CK

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**SITE DEVELOPMENT PLANS**

TAX MAP 205 LOT 2  
**VULNERABILITY ASSESSMENT - PROJECTED SEA LEVEL RISE**  
**LADY ISLE**  
**325 LITTLE HARBOR ROAD, PORTSMOUTH, NH**  
OWNED BY & PREPARED FOR  
**ADL 325 LITTLE HARBOR ROAD TRUST**

**1"=10' (11"x17")**  
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FILE NO: 47099.01	DR: JKC	FB	-						
CK: JCC	CADFILE: 47099-01_DOCK				C-03				





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## SECTION 7 – Resource Specific Criteria

### Env-Wt 313.01(a)(3)

#### Env-Wt 400 – Delineating, Classifying Jurisdictional Areas and Project Classification

This project will impact portions of the *Previously Developed Upland Tidal Buffer Zone* and *Tidal Waters* and, accordingly, the *Highest Observable Tide Line* (HOTL), was delineated and it is depicted on the plans submitted with this application. The proposed impact area is within tidal waters, a Priority Resource Area (PRA) and therefore, this project is classified as a *Major Impact Project*.

#### Env-Wt 600 – Project Specific Requirements – Coastal Lands and Tidal Waters/ Wetlands

**Env-Wt 603.02 (a)** – This project proposes to temporarily impact 27 square feet and permanently impact 13 square feet of the Previously Developed Upland Tidal Buffer Zone and temporarily impact 305 square feet and 644 square feet of “Tidal Surface Waters” and mud flats to construct a new permanent pier, seasonal gangway and seasonal float.

**Env-Wt 603.02 (b)** – The natural resource asset proposed to be impacted by this project is Tidal Surface Waters and mud flats. On-site observations and the NHDES Wetlands Permit Planning Tool (WPPT) were used to determine the presence of natural resource assets. Supplemental screening maps using NH GRANIT GIS data layers are included with this wetland permit application.

**Env-Wt 603.02 (c)(1)** – The Coastal Functional Assessment (CFA) is attached to this permit application form. In accordance with Env-Wt 602.07, the Coastal Functional Assessment is an evaluation of the jurisdictional coastal natural resource area proposed to be impacted by this project.

**Env-Wt 603.02 (c)(2)** – The Vulnerability Assessment is attached to this permit application.

**Env-Wt 603.02 (d)** – The Avoidance and Minimization Written Narrative is attached to this permit application form.

**Env-Wt 603.02 (e)(1)** – This project meets all relevant standard conditions of Env-Wt 307. This is demonstrated within the “Standard Conditions Narrative” located within Section-1 of the “Coastal Resource Worksheet.”

**Env-Wt 603.02 (e)(2)** – This project meets all approval criteria under Env-Wt 313.01 and this is demonstrated within the “Approval Criteria Narrative” located within Section-1 of the “Coastal Resource Worksheet.”

**Env-Wt 603.02 (f)(1)** – As required by Env-Wt 603.06, the “Project Design Narrative” is provided within Section-1 of the “Coastal Resource Worksheet.”



**Env-Wt 603.02 (f)(2)** – The design plans associated with this project meet all the requirements of Env-wt 603.07.

**Env-Wt 603.02 (f)(3)** – The Water Depth Supporting Information is depicted on the project plans.

**Env-Wt 603.02 (f)(4)** – A statement from the *Pease Development Authority Division of Ports and Harbors* (“DP&H”) chief harbormaster relative to how the proposed structure will not become a navigational hazard is included with the application form.

**Env-Wt 603.03 (a)(1)** – The data screening was determined using the NHDES Wetlands Permit Planning Tool (WPPT) and GIS data layers available at NH GRANIT. GIS screening maps are included with this permit application form.

**Env-Wt 603.03 (a)(2)** – The impacts associated with installing the pilings are relatively low impact and will have no impact to shellfish sites, salt marsh, salt marsh migration pathways, the 100-year floodplain or eel grass beds. GIS screening maps are included with this permit application form.

**Env-Wt 603.03 (a)(3)** - We have coordinated with the *National Oceanic Atmospheric Association* (NOAA) Marine Fisheries and concluded this project may affect but, is not likely to adversely affect (NLAA), any species listed as threatened or endangered by the National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA) of 1973, as amended.

**Env-Wt 603.03 (a)(4)** – On-site assessments conducted on 6/6/2021 and 9/17/21.

**Env-Wt 603.03 (a)(5)** – The projected sea-level rise and location relative to the 100-year floodplain maps are depicted on the attached plans.

**Env-Wt 603.04** – The Coastal Functional Assessment (CFA) is attached to this permit application form.

**Env-Wt 603.05** – The Vulnerability Assessment is attached to this permit application.

**Env-Wt 603.06 (a)** – The “Project Design Narrative” is provided within Section-1 of the “Coastal Resource Worksheet.”

**Env-Wt 603.06 (b)** – The construction sequence and erosion/ siltation control methods are on the attached plans below the subheading entitled, “Sequence of Construction.” A *Work Sequence Narrative* is also attached to this permit application form.

**Env-Wt 603.06 (c)** – Once the project is completed, any exposed soils on the shoreline will be seeded with a salt tolerant seed mix.

**Env-Wt 603.07** – The attached plans meet all the criteria relative to this design plan rule.

**Env-Wt 603.08** – The Water Depth Supporting Information is depicted on the project plans.

**Env-Wt 603.09** – A statement from the *Pease Development Authority Division of Ports and Harbors* (“DP&H”) chief harbormaster relative to how the proposed structure will not become a navigational hazard is included with this application.



**Env-Wt 604.01** – This project meets all General Criteria for Tidal Beaches, Tidal Shoreline, and Sand Dunes and has been evaluated for the standard conditions of Env-Wt 307, the Avoidance and Minimization Requirements of Env 311.07 and Env-Wt 313,03, the approval criteria of Env-Wt 313.01, the evaluation criteria in Env-Wt 313.05, the project specific criteria of Env-Wt 600, the CFA required by Env-Wt 603.04 and the Vulnerability Assessment required by Env-603.05 above.

**Env-Wt 604.02** - This project meets all the General Criteria for Tidal Buffer Zones and has been evaluated for the standard conditions of Env-Wt 307, the Avoidance and Minimization Requirements of Env 311.07 and Env-Wt 313,03, the approval criteria of Env-Wt 313.01, the evaluation criteria in Env-Wt 313.05, the project specific criteria of Env-Wt 600, the CFA required by Env-Wt 603.04 and the Vulnerability Assessment required by Env-603.05 above.

**Env-Wt 604.03** – This project meets all approval criteria under Env-Wt 313.01 and this is demonstrated within the “Approval Criteria Narrative” located within Section 1 of the “Coastal Resource Worksheet.”

**Env-Wt 605.01** – This project proposal will not adversely impact finfish, shellfish, crustacea or wildlife. The proposed impacts will occur between November 15<sup>th</sup> and March 15<sup>th</sup> when sensitive fish species are less likely to be in the area. The shoreline impact area will be reseeded with native, salt tolerant vegetation and this will enhance wildlife habitat. No groundwater or surface water will be impacted – there is no interface with groundwater and aquifers in this area. No impacts will cause erosion on shoreline properties. No impacts will occur to prevailing currents.

**Env-Wt 605.02** – The impacts associated with installing this dock will have no adverse impacts to beach or tidal flat sediment replenishment, no adverse impacts to the movement of sediments along the shore, no adverse impact on the tidal wetlands ability to dissipate wave energy and storm surge and the project will not impact runoff in a manner that would disrupt the existing salinity levels.

**Env-Wt 605.03** – This project proposes 644 square feet of permanent impacts to tidal surface waters, and therefore, compensatory mitigation is not required. Areas of the property, formerly lawn, will be restored with native vegetation. This is highlighted within the approved Alteration of Terrain Permit Aot-2104.

**Env-Wt 605.04** – Although mitigation is not required, on-site mitigation will be performed. Areas of the property, formerly lawn, will be restored with native vegetation. This is highlighted within the approved Alteration of Terrain Permit Aot-2104.

**Env-Wt 606.02 (a)** – The proposed overwater structure has been located and designed to avoid impacts to important wetland and coastal resource functions identified within the Coastal Functional Assessment. The proposed dock will be constructed within the same area as the previously existing docking structure.

**Env-Wt 606.02 (b)** – This project *does not* contain special aquatic sites or congested or high traffic navigational conditions that requires human alteration to create and maintain access.

**Env-Wt 606.03 (a)(1)** – This project meets the 20-foot property line setback.

**Env-Wt 606.03 (a)(2)** – This project will not impede the passage of non-motorized watercraft or channel navigation to a degree that a reasonable person would find objectionable.



**Env-Wt 606.03 (b)** – A commercial or industrial tidal docking structure is not proposed.

**Env-Wt 606.03 (c)** – A single private docking structure is proposed. No specialized design features are proposed.

**Env-Wt 606.03 (d)(1)** – The floats and floating structures will be positioned waterward to avoid all vegetated wetlands and vegetated shallows.

**Env-Wt 606.03 (d)(2)** – The floats and floating structures will not be placed in areas supporting submerged aquatic vegetation.

**Env-Wt 606.03 (d)(3)** – The floats and floating structures will be located, to the extent practicable, in water that is sufficiently deep for the intended use while:

- a.) avoiding intertidal and shade impacts;
- b.) Minimizing or eliminating the need for dredging; and
- c.) Avoiding displacement of nesting or breeding habitat, eel grass beds, or essential fish habitat.

**Env-Wt 606.03 (e)** – Non-toxic, untreated pilings and decking material will be used.

**Env-Wt 606.03 (f)** – To the greatest extent practicable, ambient light transmission under docking structures will be facilitated by maximizing the height of the docking structure.

**Env-Wt 606.03 (g)** – As evidenced on the attached plans, open, non-toxic, piles will be placed at least 12-feet apart.

**Env-Wt 606.03 (h)** – The proposed supporting piles occupy 5% or less of the total volume under the docking structure at mean high water.

**Env-Wt 606.04** – The attached plans meet all *Plan Requirements for Overwater Structures*.

**Env-Wt 606.05** – This project will be conducted in accordance with all *Docking Construction Requirements and Conditions*.

**Env-Wt 606.06** – This project meets all criteria of *Residential Tidal Docks General Criteria*.

**Env-Wt 606.07** – This project meets all design standards of *Residential Tidal Docks: Design Standards*.

**Env-Wt 606.08** – The proposed docking structure is for residential use and is not a *Commercial Tidal Dock*.





STANDARD DREDGE AND FILL  
WETLANDS PERMIT APPLICATION  
ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management  
Wetlands Bureau

[Check the Status of your Application](#)

**RSA/ Rule:** RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

**APPLICANT'S NAME:** ADL 325 Little Harbor Road Trust **TOWN NAME:** Portsmouth

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

**PART I: AVOIDANCE AND MINIMIZATION**

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

**SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))**

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

There is no practicable alternative that would have a less adverse impact on NHDES Wetlands Bureau jurisdictional areas. The proposed docking structure will be located in the same area as the existing docking structure. No tree removal or bank alteration is required for this project.



**SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))**

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

To the greatest extent practicable, the docking structure will be constructed at a height that maximizes the ambient light below the dock. The docking structure will be constructed of non-toxic material and within the same area and trajectory as the existing dock. The piles will be driven by a low-impact vibratory system during low tide. This project will not impact any known eel grass beds.

**SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))**

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

N/A - This project poses no impacts to hydrologic connections between wetlands.

**SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))**

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

There will be no loss of vernal pools, protected species, and habitat/reproduction areas as a result of this project. We have coordinated with the National Oceanic and Atmospheric Administration (NOAA) Fisheries section and determined that although sensitive species including the Atlantic Sturgeon and Shortnose Sturgeon may be within the vicinity of the "action area" during construction, the project is not likely to adversely affect (NLAA) any species listed as threatened or endangered by the National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA) of 1973. We have also coordinated with NH Fish and Game and determined that, as a result of conducting the project between November 15 and March 15, this will significantly reduce the likelihood of impacting sensitive species.

**SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))**

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

This project poses no impacts to public commerce. Navigation of recreational boats will not be impeded by this project. We have coordinated with the Pease Development Authority Division of Ports and Harbors Chief Harbor Master. This project is scheduled to occur during the non-boating, winter season between November 15<sup>th</sup> and March 15<sup>th</sup>.

**SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))**

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

N/A - There are no floodplain wetlands on this site.

**SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))**

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

N/A -This project has no impact to forested wetland systems or scrub-shrub marsh complexes.

**SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))**

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

N/A - This project will occur solely within tidal areas and will have no impact on drinking water supply or groundwater aquifer levels.

**SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))**

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

N/A - This project proposes no impacts to stream channels.

**SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))**

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

As highlighted within the attached "Section-7 Resource Specific Information", this project has been designed to meet all NHDES Administrative Rules relative to "Overwater Structures in Coastal Areas", more particularly, Env-Wt 606.

**SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))**

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

This project proposes to construct the new dock within the same area as the existing docking structure. The new dock will be constructed with a similar trajectory and does not require any tree removal or modification of the shoreline.

**SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))**

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

This project occurs on a very large, private residential island and meets all setback requirements with ease.

**SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))**

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

The proposed docking structure meets the length limitations of Env-Wt 606 and will not impede the public's right to navigation, passage and use for resources for commerce and recreation. We have coordinated with the Pease Development Authority Division of Ports and Harbors Chief Harbor Master and confirmed the proposed docking structure will not be a navigational hazard.

**SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))**

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

To the greatest extent practicable, the docking structure will be constructed at a height that maximizes the ambient light below the dock. The docking structure will be constructed of non-toxic material and within the same area and trajectory as the existing dock. The piles will be driven by a low-impact vibratory system during low tide. Since the proposed docking structure replaces an existing docking structure of equal width, no additional vegetation removal or earthwork is necessary.

**SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))**

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

To the greatest extent practicable, the docking structure will be constructed at a height that maximizes the ambient light below the dock. The docking structure will be constructed of non-toxic material and within the same area and trajectory as the existing dock. The piles will be driven by a low-impact vibratory system during low tide.

<b>PART II: FUNCTIONAL ASSESSMENT</b>
<p><b>REQUIREMENTS</b></p> <p>Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).</p>
<p><b>FUNCTIONAL ASSESSMENT METHOD USED:</b></p> <p>This project is considered a "Major" project, and therefore, in accordance with Env-Wt 311.03, (b)(10), we have provided a Functional Assessment of the "wetland" on the property. In this instance, the "wetland" is the neighboring tidal marsh adjacent to the proposed impact area. The Army Corps of Engineer Highway Methodology (Sept. 1999) was used to perform the Functional Assessment of this Wetland.</p>
<p><b>NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT:</b> JASON AUBE, CERTIFIED WETLANDS SCIENTIST</p>
<p><b>DATE OF ASSESSMENT:</b> 6/6/2021 &amp; 9/17/2021</p>
<p>Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:</p> <p><input checked="" type="checkbox"/></p>
<p>For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:</p> <p><input checked="" type="checkbox"/></p> <p>Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.</p>





# OVERWATER STRUCTURES IN TIDAL AREAS PROJECT-SPECIFIC WORKSHEET FOR STANDARD APPLICATION



Water Division/Land Resources Management  
Wetlands Bureau

[Check the Status of your Application](#)

**RSA/Rule:** RSA 482-A/ Env-Wt 606

This worksheet summarizes the criteria and requirements for a Standard Permit for “Overwater Structure” projects, as outlined in Chapter Env-Wt 600. In addition to the project-specific criteria and requirements on this worksheet, all Standard Applications must meet the criteria and requirements listed in the [Standard Dredge and Fill Wetlands Permit Application Form \(NHDES-W-06-012\)](#) and the [Coastal Resource Worksheet \(NHDES-W-06-079\)](#).

## SECTION 1 - APPLICATION REQUIREMENTS (Env-Wt 606.04)

An application for an overwater structure shall include the following details:

A plan showing:

- The location of the landward boundary of the Federal Navigation Project (FNP) or, if no FNP is present, the landward boundary of the navigational channel.
- The location and dimensions of all existing shoreline structures on the subject property.
- The location and dimensions of all proposed structures.
- For commercial tidal docks, public docks, and industrial docks, certification by a professional engineer that the dock has been designed for its intended use.
- The location of any proposed impacts, crossings, construction areas, and clearings.

An elevational view, depicting:

- The location and dimensions of all proposed structures, including permanent piers, pilings, float stop structures, ramps, floats, and dolphins.
- The location of the landward boundary of the FNP or, if no FNP is present, the landward boundary of the navigational channel.

For dock maintenance projects that are classified as minimum impact projects under Env-Wt 606.17, the applicant shall provide the following information:

- A plan showing the location and dimensions of all existing structures.
- An identification of those pilings and structures to be repaired or replaced.
- Photographs showing the repair project from the docking structures looking waterward and the end of the dock looking towards the shoreland attachment.

For minor impact dock maintenance projects under Env-Wt 606.04(c), the applicant shall provide:

- Plans and photographs.
- A coastal functional assessment (CFA).

[lrn@des.nh.gov](mailto:lrn@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO BOX 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

**SECTION 2 - APPROVAL CRITERIA (Env-Wt 606.08; Env-Wt 606.09)****Residential Tidal Docks:**

An application for residential tidal docks shall meet the following criteria:

- Residential docks shall be for private recreational use associated with one or more private residences.
- Residential docks shall be designed as specified in this part, which might not result in all-tide access.
- Ramp and float portions of residential tidal docks shall be seasonal and removed from the water during the non-boating season.
- Preference shall be given to residential tidal docks designed to serve multiple properties.
- The subject property shall not already be served by an existing residential tidal dock at the property.
- The location, design, and method of construction for a proposed residential tidal dock shall:
  - Be based on the results of the CFA required by Env-Wt 603.04 so as to avoid negative impacts to valuable and sensitive coastal wetlands and resources identified in the CFA report, and to minimize any impacts that cannot be avoided.
  - Be the least environmentally-impacting practicable alternative.
  - Be certified by a professional engineer as having sufficient structural integrity, based on the results of the vulnerability assessment required by Env-Wt 603.05, to not break free as a result of tidal forces encountered during winter ice and significant storm surges up to and including one percent annual chance event.
  - Not impede the passage of non-motorized watercraft.
- Pile-supported structures and floats shall not be located within 25 feet of currently-existing or previously-known vegetated shallows.
- No structure shall extend across 25% or more of the waterway width at mean low water.
- No structure shall be located within the buffer zone of the horizontal limits of a FNP, which is three times the authorized depth of a constructed FNP as measured on a horizontal plane.
- No structure shall be constructed that obstructs the rights of passage of foot traffic within the inter-tidal zone, near shore watercraft users, or obstruct navigation in the channel.

**Commercial/Industrial Docks:**

An application for commercial/industrial docks shall meet the following criteria:

- Department approval of a new commercial tidal dock or an expansion of an existing commercial tidal dock shall be in addition to any approvals required under applicable lawfully-enacted local land use requirements.
- Transient public use access point structures shall not be approved unless they provide a benefit to the public, such as a docking facility that is open to the general public for transient use.
- The configuration and dimensions for commercial structures shall conform to the standards in Env-Wt 606.02 and Env-Wt 606.03.

**SECTION 3 - DESIGN & CONSTRUCTION REQUIREMENTS (Env-Wt 606.03; Env-Wt 606.07)**

An overwater structure shall be designed and constructed as follows:

- Overwater structures shall meet the 20-foot property line setback specified in RSA 482-A:3, XIII(a).
- A residential tidal dock shall have one of the following configurations:
  - A pile-supported fixed pier perpendicular to the shore, that connects to a ramp, that connects to a float,
  - A ramp that connects the shore to a float, or
  - A pile-supported fixed pier parallel to shore.

- An applicant may propose a fabricated wooden or metal stairway at the landward end of the dock for access to and from a residential tidal dock, which the department shall approve as part of the dock permitting process provided the width of the stairway does not exceed six feet; construction over the bank does not require regrading or recontouring; and the bottom of the stairs lands above mean high tide.
- The maximum overall structure length including pier, ramp, and float, measured seaward from the highest observable tide line (HOTL), shall not exceed the greater of 200 feet or the length needed to reach water of sufficient depth to allow the terminal section of the dock to be floating at mean low water.
- The maximum overall footprint of the entire structure of a residential tidal dock serving a single residence shall not exceed 1,500 square feet (SF) seaward of the HOTL, provided that a residential tidal dock proposed to serve a group of residences may be larger so long as compensatory mitigation is provided for structures exceeding 2,000 SF.
- The maximum width shall not exceed six feet.
- The maximum length shall not exceed 200 feet.
- The height-to-width ratio above the substrate shall be 1:1 or greater.
- Floats may be of any configuration so long as the total square footage does not exceed 400 SF, provided that an additional 200 SF shall be allowed for a float serving a group of residences. Applicants for a residential tidal dock serving more than four residences may request a waiver of the 600 SF limit in accordance with Env-Wt 200.
- All floats shall be designed and installed so as to prevent substantial changes in their positions from tides and storm events that are less than hurricane force.
- To prevent mechanical damage or hydraulic damage, or both, to the substrate from the float(s) during low tides in cases where mean lower low water is seaward of the terminal float(s) at low tide, or if it is impracticable or impossible to place floating docks in water deep enough to avoid contact with the bottom, the design shall include float stops or other means of suspending the float with two feet or more of clearance between the bottom of the float and substrate, with greater clearances required in higher energy environments that experience strong wave action.
- Float stops shall be marked with buoys to avoid being hazards to navigation when ramps and floats are removed for the season.
- Float anchor chains shall be secured to the substrate by helical screw anchors where practicable. If helical screw anchors cannot be installed due to rocky bottom conditions, the applicant shall propose an alternate means of anchoring the floating portion of the dock and show such means on the plans. If block anchors are proposed, the anchors shall be identified in the application as fill.
- The spacing between decking components shall be not less than ¾-inch.
- Minimum spacing between pile bents shall be 12 feet center to center.
- The substrate shall not be shaded by any other structural components not addressed herein.
- Aquaculture structures associated with residential tidal docks shall be installed within existing legal boat slips.
- Aquaculture structures associated with residential tidal docks that extend outside the footprint of the originally permitted docking structure and associated boat slip(s) constitute a modification of the approved docking structure and shall meet the requirements of Env-Wt 603.02.

#### **SECTION 4 - PROJECT CLASSIFICATION (Env-Wt 606.17)**

Refer to Env-Wt 606.17 for project classification.



AVOIDANCE AND MINIMIZATION  
WRITTEN NARRATIVE  
Water Division/Land Resources Management  
Wetlands Bureau  
[Check the Status of your Application](#)



**RSA/ Rule:** RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

**APPLICANT'S NAME:** ADL 325 Little Harbor Road Trust

**TOWN NAME:** Portsmouth

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to the permit application.

**SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))**

Is the primary purpose of the proposed project to construct a water access structure?

No, the purpose of this project is to replace an existing residential tidal docking structure with a new residential tidal docking structure.

**SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))**

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

No, this project is occurring for the purpose of replacing an existing residential tidal docking structure.

**SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))\***

For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

*\*Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*

N/A - This project is related to the construction of a residential tidal docking structure.

**SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))**

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization?](#)

There are no alternative designs, techniques or layouts that would aid in minimizing impacts to jurisdictional areas. The proposed impact area will be in the same area as the existing tidal docking structure. No impacts are proposed to salt marshes or eel grass beds. Screening for sensitive resources has been performed and the results are included with this application form.

**SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))\*\***

How does the project conform to Env-Wt 311.10(c)?

*\*\*Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

A Coastal Functional Assessment (CFA) was performed to assess the wetlands within the vicinity of the proposed docking structure. The Coastal Functional Assessment concluded the wetlands are exceptional resources that had qualifiers for a significant number of wetlands key functions and values. This project will occur in a manner and at a time that poses the least impact to these resources. We have coordinated with the NH Fish and Game Department and the NH Natural Heritage Bureau (NHB) to determine the optimal construction time so impacts to sensitive resources can be minimized.



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

**NEW  
HAMPSHIRE  
200**

## WORK SEQUENCE NARRATIVE

- 1.) At least 48-hours prior to commencing the construction activities, the property owner, or their agent, will notify NHDES via the *Initiation of Construction Notification Form*.
- 2.) Mobilization of crane barge, push boat, work skiff, materials, and prefabricated components, including the gangway and float will be transferred to the project area.
- 3.) The barge will be positioned adjacent to the existing docking structure and beyond the limits of any emergent vegetation.
- 4.) The project will commence at low tide to minimize erosion and turbidity.
- 5.) Through a mechanical vibratory method, the existing piles and decking will be removed and loaded on the barge.
- 6.) Using the same mechanical vibratory technique, the new piles will be driven until refusal. Each new pile will be located as depicted on the approved plans associated with the approved NHDES Wetlands Permit.
7. Once the pilings are set, they are cut and beam caps are installed and the decking is installed.
8. The gangway and the float is lifted from the barge and secured to the permanent docking structure.
- 9.) Any disturbed soils within the Previously Developed Upland Tidal Buffer Zone will be seeded with a shoreline seed mix that includes species tolerant of salt and sandy soils.
- 10.) During high tide the barge will retreat from the area with the existing docking structure materials.
- 11.) Upon completing the project, the property owner, or their agent, will notify NHDES via the *Completion of Construction Notice and Certificate of Compliance Form*.





## **SECTION 2**



COASTAL RESOURCE WORKSHEET  
Water Division/Land Resources Management  
Wetlands Bureau



[Check the Status of your Application](#)

**RSA/Rule:** RSA 482-A/ Env-Wt 600

**APPLICANT LAST NAME, FIRST NAME, M.I.:** ADL 325 Little Harbor Road Trust

This worksheet may be used to present the information required for projects in coastal areas, in addition to the information required for Lower-Scrutiny Approvals, Expedited Permits, and Standard Permits under Env-Wt 603.01.

Please refer to Env-Wt 605.03 for impacts requiring compensatory mitigation.

**SECTION 1 - REQUIRED INFORMATION (Env-Wt 603.02; Env-Wt 603.06; Env-Wt 603.09)**

The following information is required for projects in coastal areas.

Describe the purpose of the proposed project, including the overall goal of the project, the core project purpose consisting of a concise description of the facilities and work that could impact jurisdictional areas, and the intended project outcome. Specifically identify all natural resource assets in the area proposed to be impacted and include maps created through a data screening in accordance with Env-Wt 603.03 (refer to Section 2) and Env-Wt 603.04 (refer to Section 3) as attachments.

**The purpose of this project is to construct a new residential tidal docking structure within the same area as an existing residential tidal docking structure.**

**This project proposes to impact tidal marsh area. No direct impacts are proposed to the salt marsh or eel grass beds.**

**We anticipate the start date will be on, or about, November 20, 2022, and we expect this project will take approximately 6 weeks to complete. As a result of utilizing the NOAA Essential Fish Habitat (EFH) Mapper, coupled with our coordination with the New Hampshire Fish and Game Department, we have determined the time of year restriction is between March 15<sup>th</sup> and November 15<sup>th</sup>.**

**No erosion controls are required for this project. The piles are removed/ driven by way of a mechanical vibration technique at low tide which results in no turbidity.**

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NHDES Wetlands Bureau, 29 Hazen Drive, PO BOX 95, Concord, NH 03302-0095

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For standard permit projects, provide:

- A Coastal Functional Assessment (CFA) report in accordance with Env-Wt 603.04 (refer to Section 3).
- A vulnerability assessment in accordance with Env-Wt 603.05 (refer to Section 4).

Explain all recommended methods and other considerations to protect the natural resource assets during and as a result of project construction in accordance with Env-Wt 311.07, Env-Wt 313, and Env-Wt 603.04.

**To avoid impact to wildlife that utilize this resource, the project is slated to start during the winter season. A low-impact vibratory system will be used to install the pilings from a barge at low tide.**

**Details relative to Avoidance and Minimization, as required by Env-Wt 311.07, are provided within the attached, "Avoidance and Minimization Narrative."**

**This project meets all criteria established within Env-Wt 313 relative to Approving Standard Applications and is demonstrated further below.**

**As required by Env-Wt 603.04, we have included a Wetlands Functional Assessment Worksheet with this permit application to demonstrate the functions and values of the neighboring tidal wetland.**

Provide a narrative showing how the project meets the standard conditions in Env-Wt 307 and the approval criteria in Env-Wt 313.01.

**Relevant Standard Conditions Narrative: This project proposal meets all relevant standards conditions of Env-Wt 307. To ensure this project is compliant with all federal requirements, U.S. Army Corp of Engineers Appendix B is included for NH ACOE review so a State General Permit may be issued. Construction equipment will be inspected for leaks daily. This project proposal meets all relevant minimum standards of RSA 483-B as no increases in impervious area or tree cutting is proposed.**

**Approval Criteria Narrative: This project proposal meets all relevant criteria for approving standard permit applications. This is demonstrated through following attached documents: Coastal Functional Assessment, Avoidance and Minimization Narrative, Coastal Resource Worksheet, and the supplemental document entitled, "Section 7- Resource Specific Criteria."**

Provide a project design narrative that includes the following:

- A discussion of how the proposed project:
  - Uses best management practices and standard conditions in Env-Wt 307;
  - Meets all avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
  - Meets approval criteria in Env-Wt 313.01;
  - Meets evaluation criteria in Env-Wt 313.01(c);
  - Meets CFA requirements in Env-Wt 603.04; and
  - Considers sea-level rise and potential flooding evaluated pursuant to Env-Wt 603.05;
- A construction sequence, erosion/siltation control methods to be used, and a dewatering plan; and
- A discussion of how the completed project will be maintained and managed.

**After project completion, the seasonal portions of the dock will be removed during the non-boating season.**

- Provide design plans that meet the requirements of Env-Wt 603.07 (refer to Section 5);
- Provide water depth supporting information required by Env-Wt 603.08 (refer to Section 6); and
- For any major project that proposes to construct a structure in tidal waters/wetlands or to extend an existing structure seaward, provide a statement from the Pease Development Authority Division of Ports and Harbors (DP&H) chief harbormaster, or designee, for the subject location relative to the proposed structure's impact on navigation. If the proposed structure might impede existing public passage along the subject shoreline on foot or by non-motorized watercraft, the applicant shall explain how the impediments have been minimized to the greatest extent practicable.

**A statement from the Pease Development Authority Division of Ports and Harbors chief harbormaster is included with this permit application. This project poses no threat or impediment to public passage.**

**SECTION 2 - DATA SCREENING (Env-Wt 603.03, in addition to Env-Wt 306.05)**

Please use the Wetland Permit Planning Tool, or any other database or source, to indicate the presence of:

- Existing salt marsh and salt marsh migration pathways;
- Eelgrass beds;
- Documented shellfish sites;
- Projected sea-level rise; and
- 100-year floodplain.

Conduct data screening as described to identify documented essential fish habitat, and tides and currents that may be impacted by the proposed project, by using the following links:

- [National Oceanic and Atmospheric Administration \(NOAA\) Tides & Currents](#); and
- [NOAA Essential Fish Habitat Mapper](#).
- Verify or correct the information collected from the data screenings by conducting an on-site assessment of the subject property in accordance with Env-Wt 406 and Env-Wt 603.04.

**SECTION 3 - COASTAL FUNCTIONAL ASSESSMENT/ AVOIDANCE AND MINIMIZATION (Env-Wt 603.04; Env-Wt 605.01; Env-Wt 605.02; Env-Wt 605.03)**

Projects in coastal areas shall:

- Not impair the navigation, recreation, or commerce of the general public; and
- Minimize alterations in prevailing currents.

An applicant for a permit for work in or adjacent to tidal waters/wetlands or the tidal buffer zone shall demonstrate that the following have been avoided or minimized as required by Env-Wt 313.04:

- Adverse impacts to beach or tidal flat sediment replenishment;
- Adverse impacts to the movement of sediments along a shore;
- Adverse impacts on a tidal wetland's ability to dissipate wave energy and storm surge; and
- Adverse impacts of project runoff on salinity levels in tidal environments.

For standard permit applications submitted for minor or major projects:

- Attach a CFA based on the data screening information and on-site evaluation required by Env-Wt 603.03. The CFA for tidal wetlands or tidal waters shall be:
  - Performed by a qualified coastal professional; and
  - Completed using one of the following methods:
    - a. The US Army Corps of Engineers (USACE) Highway Methodology Workbook, dated 1993, together with the USACE New England District *Highway Methodology Workbook Supplement*, dated 1999; or
    - b. An alternative scientifically-supported method with cited reference and the reasons for the alternative method substantiated.

For any project that would impact tidal wetlands, tidal waters, or associated sand dunes, the applicant shall:

- Use the results of the CFA to select the location of the proposed project having the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- Design the proposed project to have the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- Where impact to wetland and other coastal resource functions is unavoidable, limit the project impacts to the least valuable functions, avoiding and minimizing impact to the highest and most valuable functions; and
- Include on-site minimization measures and construction management practices to protect coastal resource areas.

Projects in coastal areas shall use results of this CFA to:

- Minimize adverse impacts to finfish, shellfish, crustacean, and wildlife;
- Minimize disturbances to groundwater and surface water flow;
- Avoid impacts that could adversely affect fish habitat, wildlife habitat, or both; and
- Avoid impacts that might cause erosion to shoreline properties.

**SECTION 4 - VULNERABILITY ASSESSMENT (Env-Wt 603.05)**

Refer to the New Hampshire Coastal Flood Risk Summary Part 1: Science and New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections or other best available science to:

Determine the time period over which the project is designed to serve.

Please see the attached Coastal Vulnerability Assessment Narrative

Identify the project's relative risk tolerance to flooding and potential damage or loss likely to result from flooding to buildings, infrastructure, salt marshes, sand dunes and other valuable coastal resource areas.

Please see the attached Coastal Vulnerability Assessment Narrative



Reference the projected sea-level rise (SLR) scenario that most closely matches the end of the project design life and the project's tolerance to risk or loss.

Please see the attached Coastal Vulnerability Assessment Narrative

Identify areas of the proposed project site subject to flooding from SLR.

Please see the attached Coastal Vulnerability Assessment Narrative

Identify areas currently located within the 100-year floodplain and subject to coastal flood risk.

Please see the attached Coastal Vulnerability Assessment Narrative

Describe how the project design will consider and address the selected SLR scenario within the project design life, including in the design plans.

Please see the attached Coastal Vulnerability Assessment Narrative

Where there are conflicts between the project's purpose and the vulnerability assessment results, schedule a pre-application meeting with the department to evaluate design alternatives, engineering approaches, and use of the best available science.

Pre-application meeting date held: **no conflicts exist**

**SECTION 5 - DESIGN PLANS (Env-Wt 603.07, in addition to Env-Wt 311)**

Submit design plans for the project in both plan and elevation views that clearly depict and identify all required elements.

The plan view shall depict the following:

- The engineering scale used, which shall be no larger than one inch equals 50 feet;
- The location of tidal datum lines depicted as lines with the associated elevation noted, based on North American Vertical Datum of 1988 (NAVD 88), derived from [https://tidesandcurrents.noaa.gov/datum\\_options.html](https://tidesandcurrents.noaa.gov/datum_options.html), as described in Section 6.
- An imaginary extension of property boundary lines into the waterbody and a 20-foot setback from those property line extensions;
- The location of all special aquatic sites at or within 100 feet of the subject property;
- Existing bank contours;
- The name and license number, if applicable, of each individual responsible for the plan, including:
  - a. The agent for tidal docking structures who determined elevations represented on plans; and
  - b. The qualified coastal professional who completed the CFA report and located the identified resources on the plan;
- The location and dimensions of all existing and proposed structures and landscape features on the property;
- Tidal datum(s) with associated elevations noted, based on NAVD 88; and
- Location of all special aquatic sites within 100-feet of the property.

The elevation view shall depict the following:

- The nature and slope of the shoreline;
- The location and dimensions of all proposed structures, including permanent piers, pilings, float stop structures, ramps, floats, and dolphins; and
- Water depths depicted as a line with associated elevation at highest observable tide, mean high tide, and mean low tide, and the date and tide height when the depths were measured. Refer to Section 6 for more instructions regarding water depth supporting information.

See specific design and plan requirements for certain types of coastal projects:

- Overwater structures (Env-Wt 606).
- Tidal shoreline stabilization (Env-Wt 609).
- Dredging activities (Env-Wt 607).
- Protected tidal zone (Env-Wt 610).
- Tidal beach maintenance (Env-Wt 608).
- Sand Dunes (Env-Wt 611).

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**SECTION 6 - WATER DEPTH SUPPORTING INFORMATION REQUIRED (Env-Wt 603.08)**

Using current predicted NOAA tidal datum for the location, and tying field measurements to NAVD 88, field observations of at least three tide events, including at least one minus tide event, shall be located to document the range of the tide in the proposed location showing the following levels:

- Mean lower low water;
- Mean low water;
- Mean high water;
- Mean tide level;
- Mean higher high water;
- Highest observable tide line; and
- Predicted sea-level rise as identified in the vulnerability assessment in Env-Wt 603.05.

The following data shall be presented in the application project narrative to support how water depths were determined:

- The date, time of day, and weather conditions when water depths were recorded; and
- The name and license number of the licensed land surveyor who conducted the field measurements.

For tidal stream crossing projects, provide:

- Water depth information to show how the tier 4 stream crossing is designed to meet Env-Wt 904.07(c) and (d).

For repair, rehabilitation or replacement of tier 4 stream crossings:

- Demonstrate how the requirements of Env-Wt 904.09 are met.

**SECTION 7 - GENERAL CRITERIA FOR TIDAL BEACHES, TIDAL SHORELINE, AND SAND DUNES (Env-Wt 604.01)**

Any person proposing a project in or on a tidal beach, tidal shoreline, or sand dune, or any combination thereof, shall evaluate the proposed project based on:

- The standard conditions in Env-Wt 307;
- The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- The approval criteria in Env-Wt 313.01;
- The evaluation criteria in Env-Wt 313.05;
- The project specific criteria in Env-Wt 600;
- The CFA required by Env-Wt 603.04; and
- The vulnerability assessment required by Env-Wt 603.05.

New permanent impacts to sand dunes that provide coastal storm surge protection for protected species or habitat shall not be allowed except:

- To protect public safety; and
- Only if constructed by a state agency, coastal resiliency project, or for a federal homeland security project.

Projects in or on a tidal beach, tidal shoreline, or sand dune shall support integrated shoreline management that:

- Optimizes the natural function of the shoreline, including protection or restoration of habitat, water quality, and self-sustaining stability to flooding and storm surge; and
- Protects upland infrastructure from coastal hazards with a preference for living shorelines over hardened shoreline practices.

**SECTION 8 - GENERAL CRITERIA FOR TIDAL BUFFER ZONES (Env-Wt 604.02)**

The 100-foot statutory limit on the extent of the tidal buffer zone shall be measured horizontally. Any person proposing a project in or on an undeveloped tidal buffer zone shall evaluate the proposed project based on:

- The standard conditions in Env-Wt 307;
- The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- The approval criteria in Env-Wt 313.01;
- The evaluation criteria in Env-Wt 313.05;
- The project specific criteria in Env-Wt 600;
- The CFA required by Env-Wt 603.04; and
- The vulnerability assessment required by Env-Wt 603.05.

Projects in or on a tidal buffer zone shall preserve the self-sustaining ability of the buffer area to:

- Provide habitat values;
- Protect tidal environments from potential sources of pollution;
- Provide stability of the coastal shoreline; and
- Maintain existing buffers intact where the lot has disturbed area defined under RSA 483-B:4, IV.

**SECTION 9 - GENERAL CRITERIA FOR TIDAL WATERS/WETLANDS (Env-Wt 604.03)**

Except as allowed under Env-Wt 606, permanent new impacts to tidal wetlands shall be allowed only to protect public safety or homeland security. Evaluation of impacts to tidal wetlands and tidal waters shall be based on:

- The standard conditions in Env-Wt 307;
- The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- The approval criteria in Env-Wt 313.01;
- The evaluation criteria in Env-Wt 313.05;
- The project specific criteria in Env-Wt 600;
- The CFA required by Env-Wt 603.04; and
- The vulnerability assessment required by Env-Wt 603.05.

Projects in tidal surface waters or tidal wetlands shall:

- Optimize the natural function of the tidal wetland, including protection or restoration of habitat, water quality, and self-sustaining stability to storm surge;
- Be designed with a preference for living shorelines over hardened stabilization practices; and
- Be limited to public infrastructure or restoration projects that are in the interest of the general public, including a road, a bridge, energy infrastructure, or a project that addresses predicted sea-level rise and coastal flood risk.

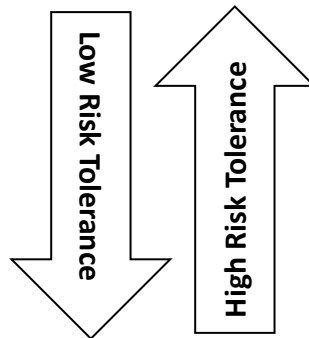
**SECTION 10 – GUIDANCE**

Your application must follow the New Hampshire Coastal Risk and Hazards Commission’s Guiding Principles or other best available science. Below are some of these guidance principles:

- Incorporate science-based coastal flood risk projections into planning;
- Apply risk tolerance\* to assessment, planning, design, and construction;
- Protect natural resources and public access;
- Create a bold vision, start immediately, and respond incrementally and opportunistically as projected coastal flood risks increase over time; and
- Consider the full suite of actions including effectiveness and consequences of actions.

\*Risk tolerance is a project’s willingness to accept a higher or lower probability of flooding impacts. The diagram below gives examples of project with lower and higher risk tolerance:

Critical infrastructures, historic sites, essential ecosystems, and high value assets typically have lower risk tolerance, and thus should be planned, designed, and constructed using higher coastal flood risk projections.



Sheds, pathways, and small docks typically have higher risk tolerance and thus may be planned, designed, and constructed using less protective coastal flood risk projections.

# Wetland Function-Value Evaluation Form

Total area of wetland \_\_\_\_\_ Human made? \_\_\_\_\_ Is wetland part of a wildlife corridor? \_\_\_\_\_ or a "habitat island"? \_\_\_\_\_

Adjacent land use \_\_\_\_\_ Distance to nearest roadway or other development \_\_\_\_\_

Dominant wetland systems present \_\_\_\_\_ Contiguous undeveloped buffer zone present \_\_\_\_\_

Is the wetland a separate hydraulic system? \_\_\_\_\_ If not, where does the wetland lie in the drainage basin? \_\_\_\_\_

How many tributaries contribute to the wetland? \_\_\_\_\_ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. \_\_\_\_\_

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Prepared by: \_\_\_\_\_ Date \_\_\_\_\_

Wetland Impact:  
Type \_\_\_\_\_ Area \_\_\_\_\_

Evaluation based on:  
Office \_\_\_\_\_ Field \_\_\_\_\_

Corps manual wetland delineation completed? Y \_\_\_\_\_ N \_\_\_\_\_

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
 Groundwater Recharge/Discharge				
 Floodflow Alteration				
 Fish and Shellfish Habitat				
 Sediment/Toxicant Retention				
 Nutrient Removal				
 Production Export				
 Sediment/Shoreline Stabilization				
 Wildlife Habitat				
 Recreation				
 Educational/Scientific Value				
 Uniqueness/Heritage				
 Visual Quality/Aesthetics				
<b>ES</b> Endangered Species Habitat				
Other Ecological Integrity				

Notes: Ecological Integrity Score = .74

\* Refer to backup list of numbered considerations.





Civil Engineers  
 Structural Engineers  
 Traffic Engineers  
 Land Surveyors  
 Landscape Architects  
 Scientists



## Ecological Integrity of the Tidal Wetland

### Methods

Tidal marshes are among the most productive and most disturbed ecosystems. Undeveloped, undisturbed natural buffers are critical to supporting the health of aquatic ecosystems. Natural buffers protect tidal resources by anchoring and stabilizing the shoreline, reducing erosion, and absorbing nutrients and contaminants found in stormwater. *Ecological Integrity* is a measure of the extent to which natural ecosystems and their buffers have been altered.

The ecological integrity of the wetlands was assessed using the *Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire (June 1993)* and data from the NH Fish and Game Wildlife Action Plan (WAP).



**Figure 1:** Overview of tidal resource area indicating no unnatural tidal restrictions



# Ecological Integrity of the Tidal Marsh

EU= Evaluation Unit (the Tidal Marsh)

Percent of marsh plant community dominated by invasive plant species	Score
Less than 5% of EU dominated by invasive species	1.0
5% to 20% of EU dominated by invasive species	.5
More than 20% of the EU dominated by invasive species	.1
Number of Tidal Restrictions	
No Tidal Restrictions	1.0
One Tidal Restriction between the EU and free tidal flow	.5
More than one Tidal Restriction between the EU and free tidal flow	.1
Type of Tidal Restriction	
No restriction affecting tidal flow	1.0
Flow through bridge appears adequate	.5
Flow through bridge appears inadequate and/ or flow restricted by culvert(s)	.1
Ditching on the Surface of the EU	
No ditching within the EU	1.0
Ditches present in linear pattern	.5
Ditches present in grid pattern	.1
Dominant Land Use in the 500-Foot Zone of Influence Surrounding the EU	
Forested, Fields, Open Water or Open Space	1.0
Agriculture or Rural Residential	.5
Commercial, Industrial, High Density Residential or Heavily used Highways	.1



<b>Ratio of the Number of Occupied Buildings within the EU or within the Zone of Influence Surrounding the EU</b>	
Less than 0.1 Buildings/ acre.	<b>1.0</b>
From 0.1 to 0.5 Buildings/ acre.	<b>.5</b>
More than 0.5 Buildings/ acre.	<b>.1</b>
<b>Percent of the EU/ Upland Border which has a buffer of woodland or idle land at least 500-feet in width.</b>	
More than 70%	<b>1.0</b>
From 30% to 70%	<b>.5</b>
Less than 30%	<b>.1</b>
<b>Square footage of roads, driveways and parking lots within 150-feet of the EU.</b>	
Ratio less than 1,500 square feet/ acre	<b>1.0</b>
Ration between 1,500 square feet to 6,000 square feet/ acre	<b>.5</b>
Ratio greater than 6,000 square feet/ acre	<b>.1</b>
<b>SCORE = 1.0+1.0+1.0+1.0+.1+.1+.5+.5= 5.2    5.2/8 = .65</b>	<b>.65</b>

**Summary:**

The tidal marsh adjacent to the project area is composed largely of mud flats. Sparce patches of salt marsh surround the mud flat area. Less than 5% of the tidal marsh is dominated with invasive species. The invasive species are predominantly within the upland portions around the perimeter of the tidal resource. No tidal restrictions are present (see figure1). There are no ditches within the area that aid in draining the resource. Dominant land use within the 500-foot Zone of Influence surrounding the EU high density residential and the ratio of the number of occupied buildings within the zone of influence is more than .5 buildings an acre. A relatively large portion of the buffer is left intact with roughly 2,000 square feet per acre of public roads, driveways and other paved areas.

In summary, comparatively speaking, this tidal resource has undergone some degradation by anthropogenic sources. A large portion of the buffer, or zone of influence, has been developed and it is comprised of impervious surfaces that likely contribute untreated runoff to the resource.

**References**

Ammann, A.P. and A.L. Stone. 1993. *Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire.*





Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



# Narrative on Coastal Functional Assessment

## Introduction

This *Coastal Functional Assessment* was conducted to support a NHDES Wetlands Permit Application to temporarily impact 332 square feet and permanently impact 658 square feet of Coastal Resources. These impacts are necessary to replace an existing failing residential docking structure with a new residential docking structure.

The wetlands adjacent to the project site are predominantly Estuarine, Intertidal, Unconsolidated Shore, Cobble-Gravel (E2US1), Estuarine, Intertidal, Unconsolidated Shore, Mud/Organic (E2US3/4), and Estuarine, Subtidal, Unconsolidated Bottom, Mud (E1UBL3). Two isolated narrow bands of salt marsh exist along the neighboring shoreline but, they are greater than 75-feet from the impact area.

The upland area adjacent to the wetland is an approximately 12-acre island. The island consists of a single residential property that previously utilized some areas for equestrian purposes. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat adjacent to the area to be impacted by the project as *Developed Impervious* and *Developed or Barren Land*. The western most area of the island is identified as Appalachian oak-pine. No impacts are proposed to these undisturbed areas. The WAP indicates the area to be Tidal Wetlands resources of which is the *Highest Ranked Habitat in NH*.

## Methods

The wetland boundaries, more particularly, the *Highest Observable Tide Line* (HOTL), was delineated using the methods prescribed by NHDES Administrative Rule Env-Wt 602.23. The wetlands boundaries, including the limits of the 100-foot tidal buffer zone, are depicted on the attached site plans. The wetlands were classified based on the Classification of Wetlands and Deepwater Habitats of the United States, adapted from Cowardin, Carter, Golet and LaRoe (1979), August 2013, FGDC-STD-004-2013.)

The Coastal Functional Assessment (CFA) was conducted by performing field visits on November 17, 2020 and January 8, 2021. The wetlands were assessed using the *Army Corps of Engineers Highway Methodology* (September 1999, NAEPP-360-1-30a).

The *Ecological integrity* of the wetlands was assessed using the *Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire* (June 1993) and data from the NH Fish and Game Wildlife Action Plan (WAP).



## Results:

### Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. Given there are no aquifers in the area and the wetland is estuarine, this wetland *does not* provide this function.

### Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. During storm events and tidal surges, this wetland serves this function by providing floodwater storage capacity and this aids in protecting the neighboring community.

### Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals. Consultation with the National Oceanic and Atmospheric Association (NOAA) Marine Fisheries section indicates the area is considered *Essential Fish Habitat* (EFH) for the Atlantic Sturgeon (*Acipenser oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*) and four (4) species of sea turtles. Anadromous fish, including the striped bass (*Morone saxatilis*), are known to seasonally utilize the area to forage on sea worms/nereids (*Echiurus echiurus*), sand eels (*Ammodytes marinus*), Silversides (*Menidia menidia*) and Green Crabs (*Carcinus maenas*) during high tide.

Although shellfishing is prohibited in this area, various species of mollusks exist. Common periwinkle (*Littorina littorea*) was observed on-site. There is no eel grass within the area. The NH Wildlife Action Plan (WAP) identifies the wetland as Highest Ranked Wildlife Habitat in NH. Fish and Shellfish Habitat is considered a principal function of this wetland.

### Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. This wetland function had a significant level of qualifiers based on the periodic, tidally influenced, slow moving waters. Additionally, the immediate uplands that surround the wetland are well vegetated. The neighboring residential community and island property areas are contributors of sediments and toxicants. This wetland acts to filter and trap these sediments and toxicants, and therefore, it is a principal function of this wetland.

### Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The adjacent residential neighborhood is likely a contributor of phosphorous and nitrogen. Due to the high level of saturation and presence of deep organic/ sediment deposits, this wetland acts to absorb nutrients and it transfers them to other trophic levels, and therefore, nutrient removal/ retention/ transformation is a principal function of this wetland



## Production Export

This function considers the wetland's ability to export resources to other areas. For example, rosette terns utilize the area to forage for silversides and transport the nutrients off-site. As evidenced by the *Fish and Shellfish Habitat* function above, this tidal marsh area is highly productive. Evidence of multiple trophic levels utilizing this area was observed, and therefore, production export is a principal function of this wetland.

## Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. The shoreline is well anchored by mature trees and saplings. Some vegetation along the shoreline and their root systems anchor the shoreline, and therefore, sediment/ shoreline stabilization is a principal function of this wetland.

## Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), this wetland is considered Highest Ranked Habitat in NH. Consultation with National Oceanic and Atmospheric Association (NOAA) Marine Fisheries indicates the area may be used by Atlantic and Shortnose Sturgeon and 4 species of sea turtles. Wildlife Habitat is a principal function of this wetland.

## Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Although the area cannot be directly accessed by the abutting private properties, the area is accessible from other public boat launches. The area is frequented by kayakers and recreational anglers. Due to the lack of direct access, recreation is not considered a primary principal function of this wetland.

## Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." The area does not offer direct public access, and therefore, education/ scientific value is not a key function of this wetland.

## Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. Given NH has a relatively small coastal shoreline, this area is certainly unique to NH. Although the proposed impact area is not within any known archeological sites, the surrounding area was once inhabited by Native Americans. Additionally, the threatened plant species, Marsh Elder (*Iva Frutescens*), is near the impacts area. Unfortunately, the site cannot be accessed by the public, and therefore, Uniqueness/ Heritage is not a principal function of this wetland.





## Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding the wetland is private property. While the area can be accessed by boat and kayak, due to the lack of access, visual quality/ aesthetics is not considered a key function of this wetland.

## Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. Consultation with the National Oceanic and Atmospheric Association (NOAA) Marine Fisheries indicates the area is considered *Essential Fish Habitat* (EFH) for the Atlantic Sturgeon (*Acipenser oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*) and four (4) species of sea turtles. This wetland *does not* provide the key features necessary for spawning (salinity level, substrate, and cover) and therefore, is not considered critical habitat (CH). The Roseate Tern (*Sterna dougallit*) forages on small fish within this wetland during high tide. The threatened species, Marsh Elder (*Iva Frutescens*), is present on the bank of the wetland but, will not be impacted by this project. Endangered Species Habitat is considered a key function of this wetland.

## Ecological Integrity

*Ecological Integrity* is a measure of the extent to which natural ecosystems and their buffers have been altered. For the most part, aside from residential docking structures, the tidal resource has not undergone a tremendous amount of alteration. A large portion of the Zone of Influence is a residential neighborhood which likely contributes to untreated stormwater runoff to the resource. The Ecological Integrity Score of Resource is .65 out of a possible 1.0. Ecological Integrity is a principal function of this resource.

## Summary

This wetland serves many functions including floodflow storage capacity, fish and shellfish habitat, sediment and toxicant retention, nutrient removal, resource export, sediment and shoreline stabilization, wildlife habitat, endangered species habitat and ecological integrity and therefore, it is considered a high value, high functioning resource of the State of New Hampshire.

A low impact vibratory system will be used to install the new piles. The float system of the docking structure will have 24-hour interface with tidal waters and does not require float stops. This docking structure utilizes the fewest amount of piles to support the structure and are placed at least 12-feet apart. The spacing between the deck boards will be at least  $\frac{3}{4}$  inches apart to allow more ambient light to penetrate through the structures.

To minimize impacts to wildlife species that utilize this resource, the project will adhere to the time of year restrictions and will be conducted during late fall/ winter.

In summary, as result of incorporating the aforementioned conservation measures, this project may temporarily affect, but is unlikely to adversely affect the principal functions and values of this resource.



## References

ACOE *Army Corps of Engineers Highway Methodology* (September 1999, NAEPP-360-1-30a).

Cowardin, L.M., V. carter, F.C Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deep-Water Habitats of the United States*. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Ammann, A.P. and A.L. Stone. 1993. *Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire*.

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Scientists



# Coastal Vulnerability Assessment

## Env-Wt 603.05

### Introduction

TFMoran recognizes rising seas pose a significant threat to New Hampshire's coastal communities, ecosystems, and cultural resources (STAP, 2014). This *Coastal Vulnerability Assessment (CVA)* was prepared to accompany the associated NHDES Wetlands Permit Application seeking approval to temporarily impact 332 square feet and permanently impact 657 square feet of tidal resources for the purpose of replacing an existing residential tidal docking structure with a new residential tidal docking structure.

### Methodology

This Coastal Vulnerability Assessment (CVA) was conducted using the *NH Coastal Flood Risk Science and Technical Advisory Panel (STAP) Report, Sea-Level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends* as prescribed by NHDES Wetlands Administrative Rule Env-Wt 603.05. Additionally, the New Hampshire Coastal Flood Risk Summary, Part II: Guidance for Using Scientific Projections (NHCFRSTAP, 2020) prepared by the New Hampshire Coastal Flood Risk Science and Technical Advisory Panel was referenced to demonstrate this site's vulnerability to sea level rise. Moreover, the Rockingham Planning Commission (RPC) Tides to Storms - Preparing for New Hampshire's Future Coast, City of Portsmouth Vulnerability Assessment (RPC, 2015) was consulted. Site visits and field observations were performed by Coastal Professional and Certified Wetlands Scientist (CWS) Jason Aube, on June 6, 2021, and September 17, 2021.

### Step 1.1 – Project Goal and Project Type

The goal of this project is to replace an existing failing residential tidal docking structure with a new structurally sound residential tidal docking structure. The beneficiary is the private property owner who will gain a new, safe docking structure with two boat slips.

### Step 1.2 – Project Area

The project area is located on 325 Little Harbor Road, Portsmouth, NH, Tax Map: 205, Lot: 2, also known as Belle Isle or Lady Isle.

### Step 1.3 – Time Period Over Which the Project is Designed to Serve

This project will be designed to serve to at least the year 2100.



## Step 2.1 – Risk Tolerance to Flooding and Potential Damage or Loss

This project proposes to construct a docking structure that is designed to withstand the daily ebb and flow of tidal waters, and therefore, it has a relatively low sensitivity to inundation. Additionally, this area of the coast is not exposed to highly erosive tidal energy forces. The proposed docking structure is relatively low cost, easy to modify and, if damaged, has no implications on public/ function and safety, and therefore, this project is classified as having a **high tolerance for flood risk**.

Risk Tolerance	High	Medium	Low	Very Low
<b>Description</b>	A project that is able to tolerate a high level of flood risk	A project that is able to tolerate a medium level of flood risk	A project that is only able to tolerate a low level of flood risk	A project that is only able to tolerate a very low level of flood risk
<b>Possible Project Characteristics</b>	Low value or cost	Medium value or cost	High value or cost	Extremely high value or cost
<b>Risk tolerance depends on the combination and importance of the project characteristics</b>	Easy to modify	Moderately modifiable	Difficult to Modify	Extremely difficult to modify
	Little to no implications on public function and/ or safety	Moderate implications for public function and/ or safety	Critical to public function and/ or safety	High risk of public harm if project fails
	Low sensitivity to inundation	Moderate sensitivity to inundation	High Sensitivity to inundation	Extremely high sensitivity to inundation

**Table 1:** Framework for determining projected tolerance for flood risk.

## Step 2.2 – Project Specific Considerations

This project poses no threat to public access to important services. The project area is on an island of private property and, if damaged, posed no threat to the access of public services.

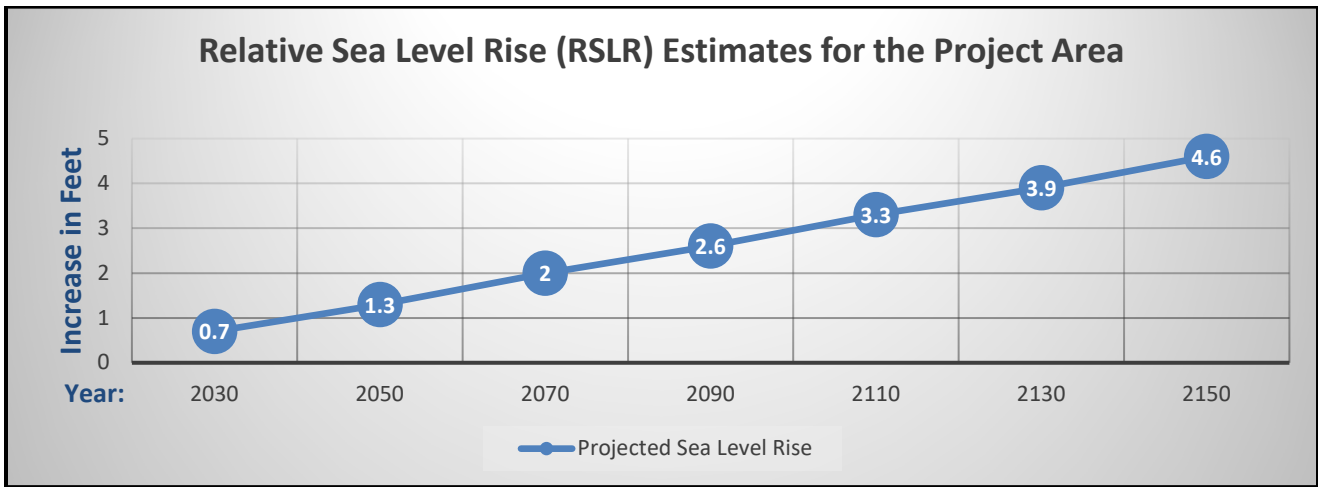
## Step 3.1 Relative Sea Level Rise (RSLR) Estimates For the Project

When considering projected relative sea level rise (RSLR) for this project, four different global greenhouse gas scenarios (Representative Concentration Pathways (RCPs)) were considered. We elected to use the recommended intermediate RCP 4.5 scenario because, according to the data, is the more likely scenario whereby greenhouse emissions peak in 2040 and decline until 2080. Using this RCP also allows us to project sea level rise beyond the year 2100 which our project life expectancy will likely exceed.

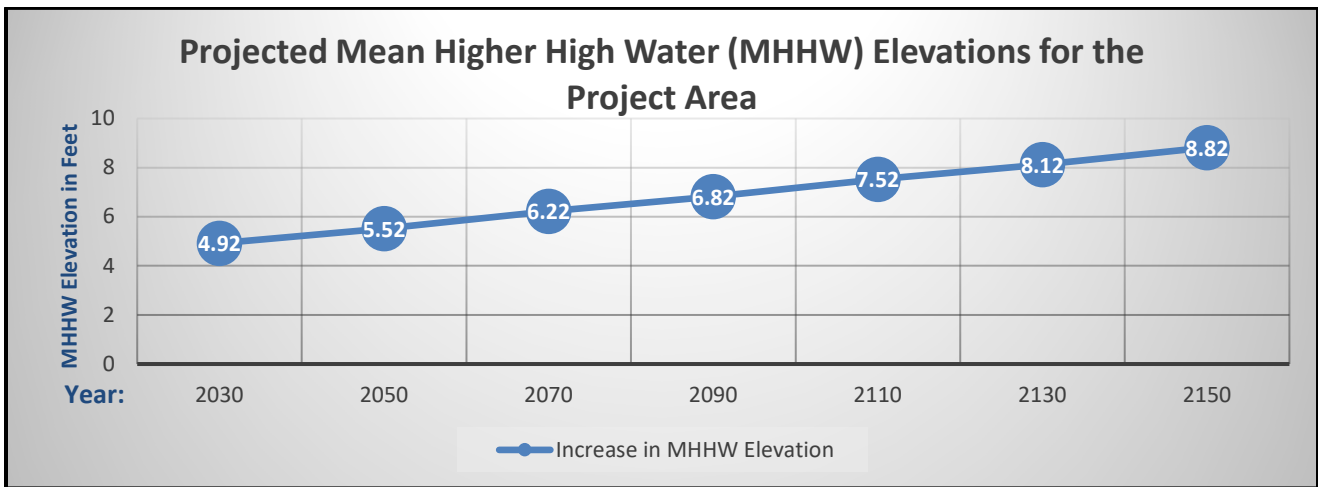


**Figure 1:** Greenhouse gas concentration scenario RCP 4.5 used for RSLR estimates.





**Figure 2:** Incremental Relative Sea Level Rise for the project area based on representative concentration pathway (RPC) 4.5.



**Figure 3:** Incremental Relative Sea Level Rise for the project area based on representative concentration pathway (RPC) 4.5 and the current Mean Higher High Water (MHHW) elevation of 4.22 feet determined by the National Oceanic and Atmospheric Association (NOAA) Seavey Island, Maine Station 8419870 using NAVD 88 datum.



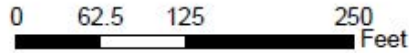
# 1-Foot Sea Level Rise Projection Mean Higher High Water Elevation (MHHW) 5.22 Feet NAVD



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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170 Commerce Way—Suite 102, Portsmouth, NH 03801  
T(603) 431-2222



# 2-Foot Sea Level Rise Projection Mean Higher High Water Elevation (MHHW) 6.22 Feet NAVD



Source: Esri, Microsoft, GeoEye, AeroStar, Geographic, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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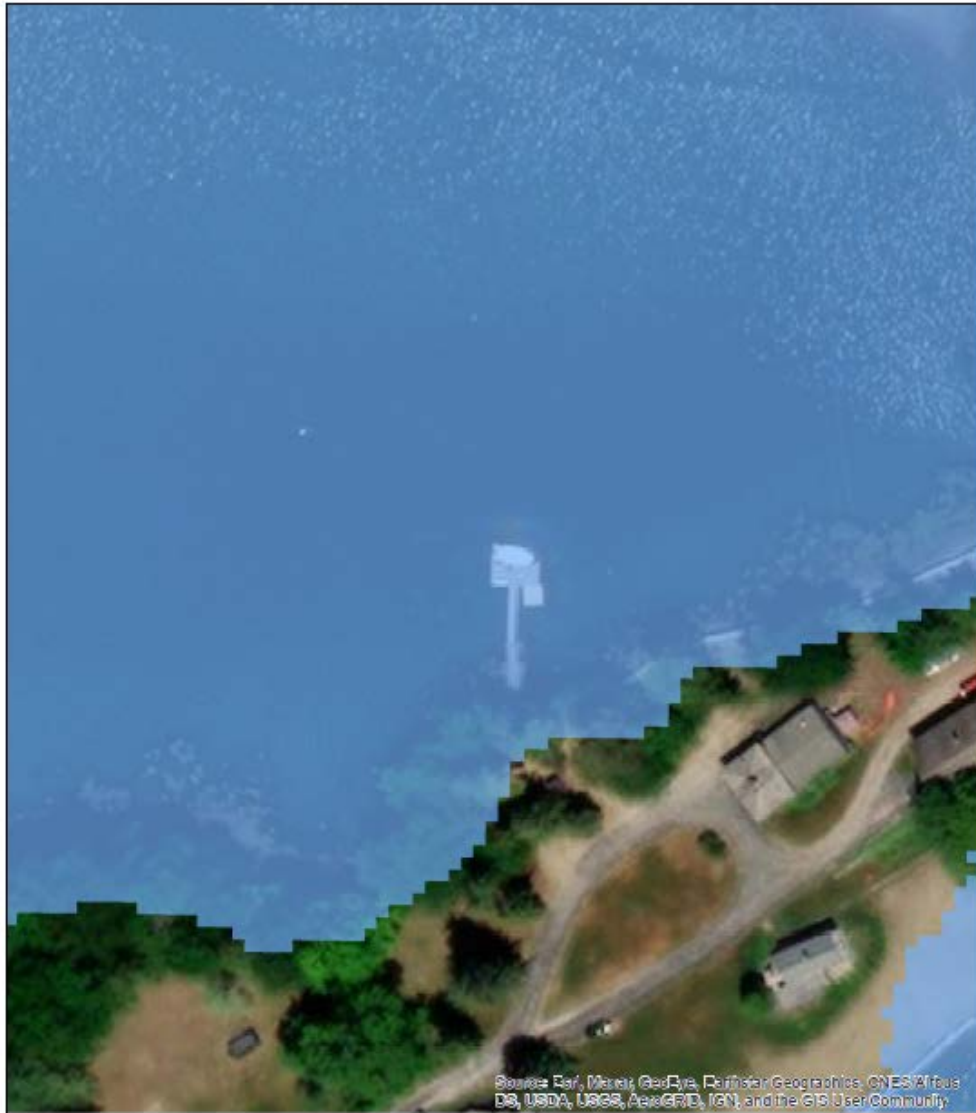
0 62.5 125 250 Feet

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# 4-Foot Sea Level Rise Projection Mean Higher High Water Elevation (MHHW) 8.22 Feet NAVD



Source: Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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### Step 3.2 Assess Relative Sea Level Rise (RSLR) Impacts to the Project

The projected depth and extent of waterflow will have no impact on the proposed docking structure. Docking structures are designed to withstand constant exposure to tidal waters. We have, however, increased height of the permanent portion of the docking structure by 3-feet so that it able to remain above the Mean Higher-High Water elevation beyond the year 2100. This is reflected on page C-3 with the plan set. The proposed docking structure will not be impacted by water inundation. No surrounding infrastructure will affect the project area. Increases in current velocities will not occur within this region of the tidal waters. Increases in sediment deposition will have no bearing on this project in the near future. Erosive forces associated with sea level rise will not adversely impact the proposed docking structure.

### Step 4.1 Identify and Assess Relative Sea Level Rise (RSLR) Adjusted for Coastal Storms/ Design Flood Elevation (DFE)

This section of the Vulnerability Assessment is not applicable to this project as the docking structure must be constructed below the recommended Design Flood Elevation (DFE).

	HIGH TOLERANCE FOR FLOOD RISK	MEDIUM TOLERANCE FOR FLOOD RISK	LOW TOLERANCE FOR FLOOD RISK	VERY LOW TOLERANCE FOR FLOOD RISK
IF PROJECT AREA IS LOCATED IN:	<b>RSLR-ADJUSTED DESIGN FLOOD ELEVATION (DFE) =</b>			
A, AO, OR AE ZONE* NOT IDENTIFIED AS COASTAL A ZONE**	[BFE] + RSLR	[BFE + (required freeboard ≥ 1 ft)] + RSLR	[BFE + (required freeboard ≥ 1 ft)] + RSLR	Whichever is greater: [BFE + (required freeboard ≥ 2ft)] + RSLR OR 0.2% annual chance flood elevation + RSLR
VE ZONE*** AND COASTAL A ZONE			[BFE + (required freeboard ≥ 2 ft)] + RSLR	

**Figure 4:** Recommended approach to determining *Design Flood Elevation (DFE)* based on risk tolerance.

<b>Recommended Design Flood Elevation (DFE)</b>				
Year	Flood Zone	Base Flood Elevation	Projected Sea Level Rise	Design Flood Elevation (DFE)
<b>2050</b>	AE	9 Feet	1.3 Feet	10.3 Feet
<b>2070</b>	AE	9 Feet	2.0 Feet	11.0 Feet
<b>2080</b>	AE	9 Feet	2.3 Feet	11.3 Feet

**Table: 2:** Recommended Design Flood Elevation for high tolerant flood risk above infrastructure.

### Step 4.2 Assess Relative Sea Level Rise-Adjusted Coastal Storm Impacts to the Project

The cumulative impacts of storm events and projected sea level rise will not adversely impact the proposed docking structure. This project has a high degree of tolerance for flood risk.



### Step 5.1 Identify Relative Sea Level Rise Induced Groundwater Rise

Mean groundwater rise is projected to be 66% of relative sea level rise (RSLR) between 0 to 0.6 miles from coastal areas (Knot, Jacobs, et al.) Relative Sea Level Rise Induced Groundwater Rise will not adversely impact the proposed docking structure. The pilings are designed to be submerged within water and saturated marine soils until at least the year 2100.

	<b>PREFERRED APPROACH</b> (MAPPED COASTAL COMMUNITY)	<b>ALTERNATE APPROACH</b> (UNMAPPED COASTAL COMMUNITY)
	<b>IF PROJECT AREA IS LOCATED IN A MAPPED COASTAL COMMUNITY:</b>	<b>IF PROJECT AREA IS LOCATED WITHIN 3 MILES OF TIDAL SHORELINE IN AN UNMAPPED COASTAL COMMUNITY:</b>
<b>RSLR-INDUCED GROUNDWATER RISE =</b>	Refer to Sea-Level Rise Mapper <sup>38</sup> to estimate RSLR-induced groundwater rise	Commit to manage = (RSLR) x (0.33) Be prepared to manage = (RSLR) x (0.66)
<b>DEPTH TO RSLR-ADJUSTED GROUNDWATER =</b>	(Present-day depth to groundwater) - (RSLR-induced groundwater rise)	

Figure 5: The approach selected for determining sea level rise induced groundwater rise at the project site.

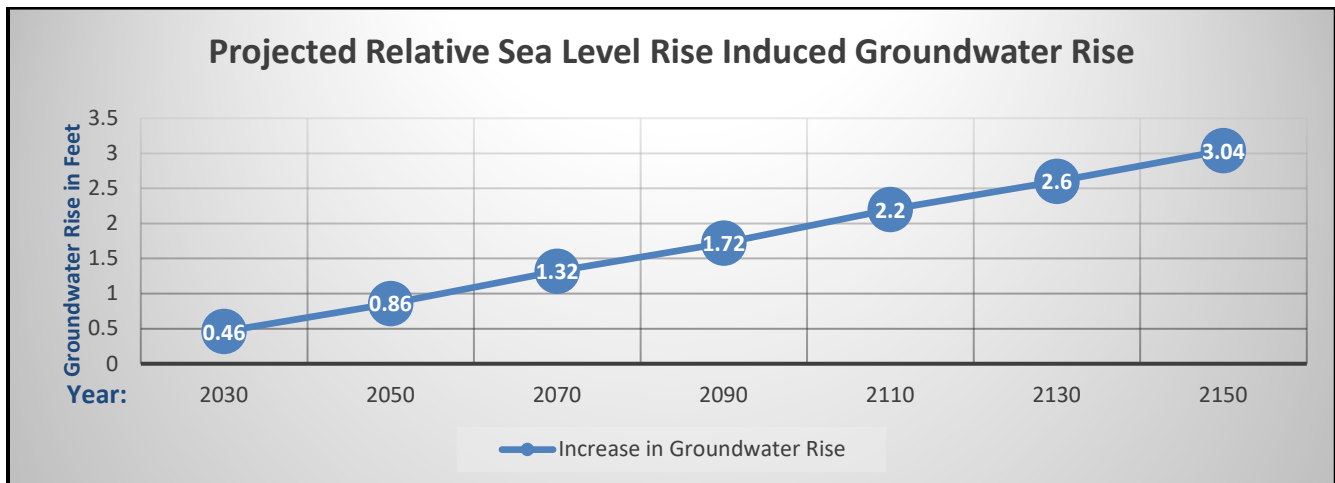


Figure 6: Incremental groundwater rise for the project area based on representative concentration pathway (RPC) 4.5.

### Step 5.2 Estimate Depth to Present-Day and Future Groundwater for the Project Area

This section of the Vulnerability Assessment is not applicable to this project as the docking structure’s pilings will be continually submerged in water and marine sediments.

### Step 5.3 Assess Relative Sea Level Rise-Induced Groundwater Rise Impacts

This section of the Vulnerability Assessment is not applicable to this project as the docking structure’s pilings will be continually submerged in water and marine sediments.

### Step 6.1 Account for Projected Increases in Extreme Precipitation

Under representative concentration pathway (RPC) 4.5, by the end of the century, the amount of precipitation falling on the wettest day of the year is projected to increase by 8-15% (NHC FRSTAP, 2020).





This project has a relatively high tolerance for flood risk, and therefore, we have elected to account for a 15% increase in extreme precipitation estimates.

	<b>HIGH</b> TOLERANCE FOR FLOOD RISK	<b>MEDIUM</b> TOLERANCE FOR FLOOD RISK	<b>LOW</b> TOLERANCE FOR FLOOD RISK	<b>VERY LOW</b> TOLERANCE FOR FLOOD RISK
<b>PROJECTED EXTREME PRECIPITATION ESTIMATE =</b>	<b>(Best available precipitation data) x (1.15)</b>		<b>(Best available precipitation data) x (&gt;1.15)</b>	

Figure 8: The approach for calculating projected extreme precipitation estimates based on the project's tolerance for flood risk.

Extreme Precipitation Tables																					
Northeast Regional Climate Center																					
<i>Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.</i>																					
Smoothing	Yes																				
State																					
Location																					
Longitude	70.745 degrees West																				
Latitude	43.068 degrees North																				
Elevation	0 feet																				
Date/Time	Tue, 09 Mar 2021 18:39:05 -0500																				
Extreme Precipitation Estimates																					
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.66	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

Figure 9: Extreme precipitation data from the Northeast Regional Climate Center for the project area.

Increase in extreme precipitation estimates by 15%			
Storm Event	24-hour precipitation total	Increase x 15%	Projected 24-hour precipitation
1 Year	2.66 inches	x 1.15	3.06 inches
2 Year	3.21 inches	x 1.15	3.69 inches
10 Year	4.87 inches	x 1.15	5.60 inches
50 Year	7.39 inches	x 1.15	8.50 inches

Table 2: Increase in precipitation during predicted 24-hours storm events.



**Step 6.2 Assess Projected Extreme Precipitation Impacts to the Project**

Extreme precipitation events will not have an impact on this project.

**Step 7.1 Assess Cumulative Risk and Evaluate Adaption Options**

Collectively, the compounded impacts of relative sea level rise, coastal storms, relative sea level rise induced groundwater rise and extreme precipitation will not adversely impact the proposed underground infrastructure.

**Step 7.2 Identify and Evaluate Adaptation Options to Mitigate Coastal Flood Risk**

This project proposes no above-ground infrastructure. This project has a very high degree of tolerance for flood risk.

	<b>NO ACTION</b>	<b>AVOID</b>	<b>ACCOMMODATE</b>	<b>RESIST</b>	<b>RELOCATE</b>
<i>IN OTHER WORDS, RECOGNIZE RISK AND...</i>	<i>Don't change anything*</i>	<i>Prioritize investment out of the water's way</i>	<i>Live with the water</i>	<i>Keep the water out</i>	<i>Move assets or facilitate migration</i>
<b>COASTAL FLOOD RISK IS:</b>	<b>Very Low to Low</b>	<b>Very Low</b>	<b>Moderate</b>	<b>High</b>	<b>High</b>
<b>TOLERANCE FOR FLOOD RISK IS:</b>	<b>High</b>	<b>Medium to Very Low</b>	<b>Medium</b>	<b>Low to Very Low</b>	<b>Low to Very Low</b>

**Figure 10:** Adaption adoptions available to manage coastal flood risk.





## References

Extreme Precipitation in New York & New England, Version 1.12. Managed by the Northeast Regional Climate Center.<http://precip.eas.cornell.edu/>

Knott, J.F., Jacobs, J., Daniel, J.S., & Kirshen, P. Journal of Coastal Research. Modeling Groundwater Rise Caused by Sea-Level Rise in Coastal New Hampshire. 2018.

NHCFRSTAP (NH Coastal Flood Risk Science and Technical Advisory Panel). New Hampshire Coastal Flood Risk Summary, Part II: Guidance four Using Scientific Projections. Report Published by the University of New Hampshire, Durham. March, 2020.

NOAA (National Oceanic Atmospheric Association). NOAA Tides and Currents – Datums for Seavey Island, Maine – Site# 8419870. Site viewed on February 10, 2020.  
<https://tidesandcurrents.noaa.gov/datums.html?datum=NAVD88&units=0&epoch=0&id=8419870&name=Seavey+Island&state=ME>

RPC (Rockingham Planning Commission). Tides to Storms, Preparing for New Hampshire's Future Coast, City of Portsmouth Vulnerability Assessment. September, 2015.

SLRM (Sea Level Rise Mapping New Hampshire Open Coast, Piscataqua River, and Great Bay for the University of New Hampshire – Submitted by AECOM). December, 2013.

STAP (Science and Technical Advisory Panel, NH Coastal Risks and Hazards Commission). Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Project Future Trends). August, 2014.



# 100-Year Flood Plain



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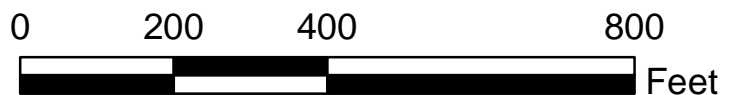


# Prime Wetlands



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

-  Prime-Wetlands
-  Prime-Wetlands-with-100-ft-Buffer



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# Known Eel Grass Beds



 eel-grass-2017

0 375 750 1,500

 Feet



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# Saltmarsh Areas



 Saltmarsh



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# Sand Dunes



 Dune

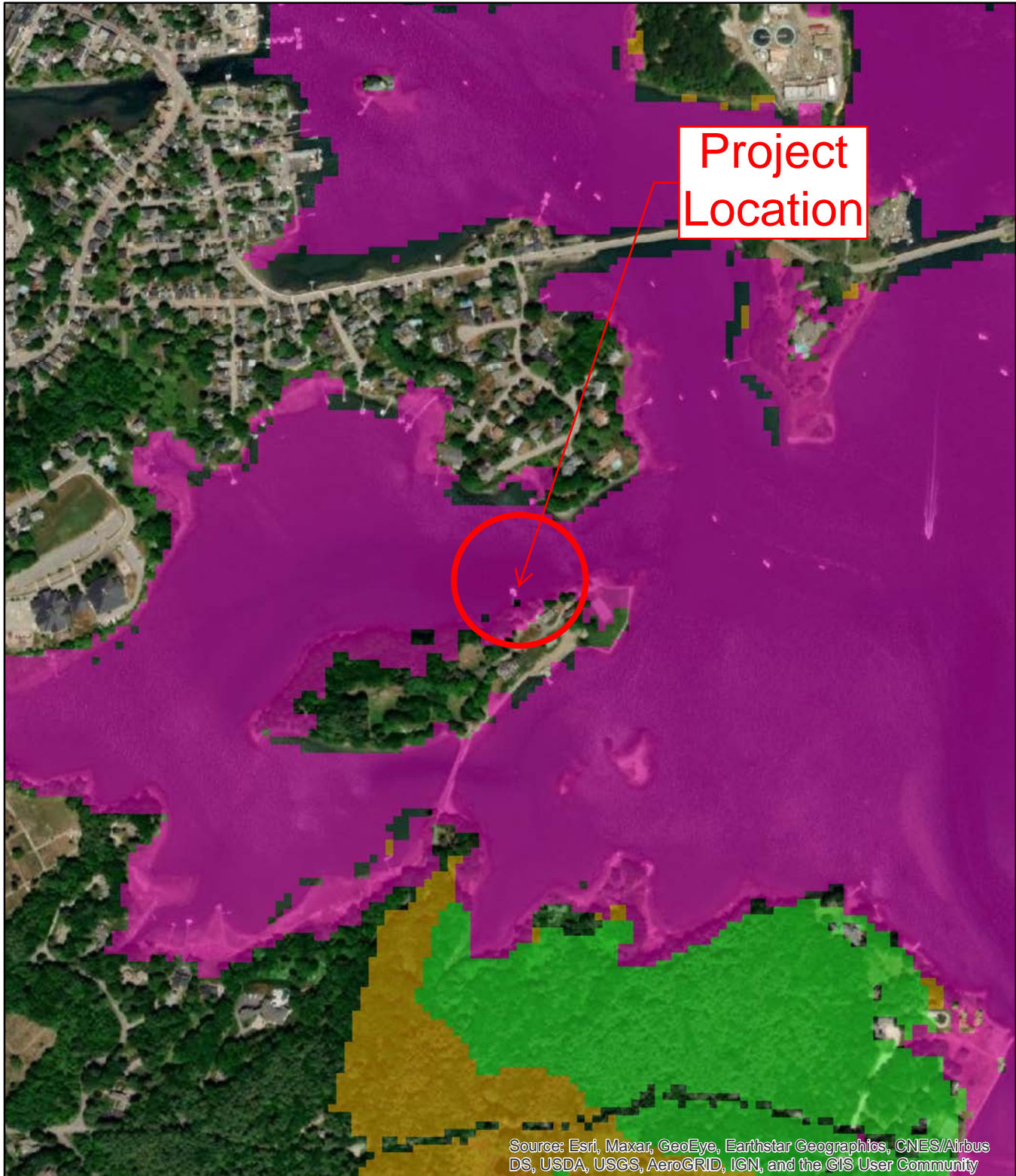


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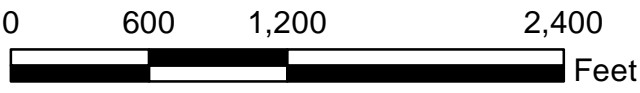




# NH Fish and Game Wildlife-Action Plan (WAP) Tiers






Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## Wildlife-Action-Plan-WAP-Tiers

### WAPTIER

-  1 Highest Ranked Habitat in New Hampshire
-  2 Highest Ranked Habitat in Biological Region
-  3 Supporting Landscapes



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# **SECTION 3**



**US Army Corps  
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## Appendix B

### **Regional General Permits (GPs) Required Information and Corps Secondary Impacts Checklist**

In order for the Corps of Engineers to properly evaluate your application, applicants must submit the following information along with the New Hampshire DES Wetlands Bureau application or permit notification forms. Some projects may require more information. For a more comprehensive checklist, go to [www.nae.usace.army.mil/regulatory](http://www.nae.usace.army.mil/regulatory), “Forms/Publications” and then “Application and Plan Guideline Checklist.” Check with the Corps at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the State of New Hampshire DES Wetlands Bureau application and Permit by Notification forms.

#### **All Projects:**

- Corps application form ([ENG Form 4345](#)) as appropriate.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible black and white (no color) plans no larger than 11”x17” with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show mean low water (MLW) and mean high water (MHW) elevations. Show the high tide line (HTL) elevations when fill is involved. In other waters, show ordinary high water (OHW) elevation.
- On each plan, show the following for the project:
- Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. Don’t use local datum. In coastal waters this may be mean higher high water (MHHW), mean high water (MHW), mean low water (MLW), mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983-2001.
- Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
- Show project limits with existing and proposed conditions.
- Limits of any Federal Navigation Project in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the Federal Navigation Project;
- Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the ordinary high water in inland waters and below the high tide line in coastal waters.
- Delineation of all waterways and wetlands on the project site,;
- Use Federal delineation methods and include Corps wetland delineation data sheets. See GC 2 and [www.nero.noaa.gov/hcd](http://www.nero.noaa.gov/hcd) for eelgrass survey guidance.
- GP 3, Moorings, contains eelgrass survey requirements for the placement of moorings.
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact the Corps for guidance.



**US Army Corps  
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New England District

**New Hampshire General Permits (GPs)  
Appendix B - Corps Secondary Impacts Checklist  
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

<b>1. Impaired Waters</b>	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See <a href="http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm">http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm</a> to determine if there is an impaired water in the vicinity of your work area.*		X
<b>2. Wetlands</b>	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?		X
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at <a href="https://www2.des.state.nh.us/nhb_datacheck/">https://www2.des.state.nh.us/nhb_datacheck/</a> . The book <a href="#">Natural Community Systems of New Hampshire</a> also contains specific information about the natural communities found in NH.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?		N/A
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		N/A
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	N/A	
2.7 What is the area of the proposed fill in wetlands?	N/A	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	N/A	
<b>3. Wildlife</b>	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: <a href="https://www2.des.state.nh.us/nhb_datacheck/">https://www2.des.state.nh.us/nhb_datacheck/</a> USFWS IPAC website: <a href="https://ecos.fws.gov/ipac/location/index">https://ecos.fws.gov/ipac/location/index</a>	X	

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> <li>• PDF: <a href="http://www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm">www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm</a>.</li> <li>• Data Mapper: <a href="http://www.granit.unh.edu">www.granit.unh.edu</a>.</li> <li>• GIS: <a href="http://www.granit.unh.edu/data/downloadfreedata/category/databycategory.html">www.granit.unh.edu/data/downloadfreedata/category/databycategory.html</a>.</li> </ul>	X	X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 21?		
<b>4. Flooding/Floodplain Values</b>	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
<b>5. Historic/Archaeological Resources</b>		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form ( <a href="http://www.nh.gov/nhdhr/review">www.nh.gov/nhdhr/review</a> ) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

\*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

\*\* If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



## EFH Mapper Report

### EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

[Greater Atlantic Regional Office](#)  
[Atlantic Highly Migratory Species Management Division](#)

### Query Results













Degrees, Minutes, Seconds: Latitude = 43° 4' 1" N, Longitude = 71° 15' 18" W  
 Decimal Degrees: Latitude = 43.067, Longitude = -70.745























The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

### \*\*\* WARNING \*\*\*

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

### EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Sea Scallop	ALL	New England	Amendment 14 to the Atlantic Sea Scallop FMP
		Atlantic Wolffish	ALL	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Flounder	Eggs Juvenile Larvae/Adult	New England	Amendment 14 to the Northeast Multispecies FMP
		Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
		Atlantic Herring	Juvenile Adult Larvae	New England	Amendment 3 to the Atlantic Herring FMP
		Atlantic Cod	Larvae Adult Eggs	New England	Amendment 14 to the Northeast Multispecies FMP

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Pollock	Juvenile Eggs Larvae	New England	Amendment 14 to the Northeast Multispecies FMP
		Red Hake	Adult Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Smooth Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		White Hake	Adult Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Thorny Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Bluefin Tuna	Adult	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
		Atlantic Mackerel	Eggs Larvae Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
		Atlantic Butterfish	Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11

### Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

### HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

### EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

**Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.**

**\*\*For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

**Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.**

**\*\*For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

**All spatial data is currently available for the Mid-Atlantic and New England councils,**

**Secretarial EFH,**

Bigeye Sand Tiger Shark,

Bigeye Sixgill Shark,

Caribbean Sharpnose Shark,

Galapagos Shark,

Narrowtooth Shark,

Sevengill Shark,

Sixgill Shark,

Smooth Hammerhead Shark,

Smalltail Shark



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

In Reply Refer To:

September 23, 2021

Consultation Code: 05E1NE00-2021-SLI-4856

Event Code: 05E1NE00-2021-E-14982

Project Name: Dock Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html).

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List



## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New England Ecological Services Field Office**

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

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## Project Summary

Consultation Code: 05E1NE00-2021-SLI-4856

Event Code: Some(05E1NE00-2021-E-14982)

Project Name: Dock Replacement Project

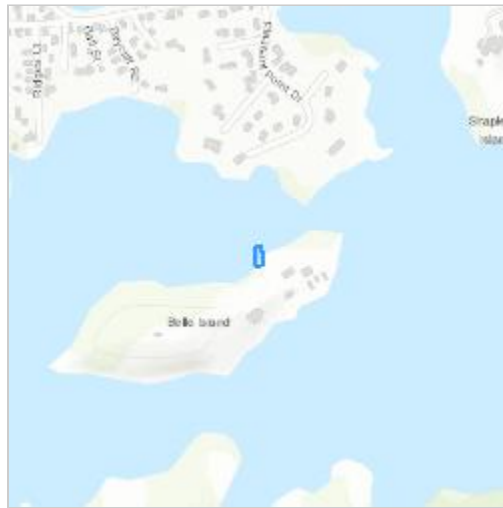
Project Type: DREDGE / EXCAVATION

Project Description: Impact approximately 3,000 square feet for the purpose removing an existing deteriorating dock and constructing a new dock with new piles.

Project Location:

Approximate location of the project can be viewed in Google Maps: [https://](https://www.google.com/maps/@43.06686365,-70.74522723100179,14z)

[www.google.com/maps/@43.06686365,-70.74522723100179,14z](https://www.google.com/maps/@43.06686365,-70.74522723100179,14z)



Counties: Rockingham County, New Hampshire

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## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

### Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	Threatened

### Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# CONFIDENTIAL – NH Dept. of Environmental Services review

## Memo

NH Natural Heritage Bureau  
NHB Datacheck Results Letter

**To:** Jay Aube  
170 Commerce Way - Suite 102  
Portsmouth, NH 03801

**From:** Amy Lamb, NH Natural Heritage Bureau

**Date:** 2/11/2021 (valid until 02/11/2022)

**Re:** Review by NH Natural Heritage Bureau

**Permits:** NHDES - Wetland Standard Dredge & Fill - Major, USA CE - General Permit

NHB ID: NHB21-0381

Town: Portsmouth

Location: 325 Little Harbor Road

Description: This project proposes to replace an existing docking structure and associated gangway with a new docking structure and gangway.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

**Comments** NHB: Please contact NHB if there is any marsh elder within or immediately adjacent to the work area.  
F&G: Please contact NHFG.

Plant species	State <sup>1</sup>	Federal	Notes
marsh elder ( <i>Iva frutescens</i> )	T	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.

Vertebrate species	State <sup>1</sup>	Federal	Notes
Atlantic Sturgeon ( <i>Acipenser oxyrinchus oxyrinchus</i> )	T	T	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).
Shortnose Sturgeon ( <i>Acipenser brevirostrum</i> )	E	E	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (\*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F & G, (603) 271-6544.

---

**CONFIDENTIAL – NH Dept. of Environmental Services review**

**Memo**

NH Natural Heritage Bureau  
NHB Datacheck Results Letter

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



February 10, 2022

Mike Dionne, Marine Biologist  
NH Fish and Game Department  
225 Main Street  
Durham, NH 03824

**Re: Replace Existing Dock with new Dock – 325 Little Harbor Road, Portsmouth, Tax Map: 205, Lot: 2 – NHB21-0381**

Dear Mr. Dionne:

Attached herein are plans that depict the newly proposed docking structure at 325 Little Harbor Road, also known as Belle Isle, in Portsmouth.

Through the New Hampshire *Natural Heritage Bureau* (NHB) screening process – NHB21-0381, we have determined that Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) and Shortnose Sturgeon (*Acipenser brevirostrum*) may, at times, be within the *Project Area*.

The docking structure, as proposed, *does not* exceed the 200-foot length limitation of Env-Wt 606.07 (b) and does not exceed the 1,500 square feet size limitation of Env-Wt 606.07 (d). To minimize adverse affects to the aforementioned species, we are proposing to construct the docking structure in late fall.

Should you have any questions regarding this matter or require additional information, please do not hesitate to contact me directly at (603) 431-2222.

Respectfully,

**TFMoran, Inc.**

Jay Aube, CWS  
Environmental Permitting Specialist

cc NHDES Wetlands Bureau

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



Please mail the completed form and required material to:

New Hampshire Division of Historical Resources  
State Historic Preservation Office  
Attention: Review & Compliance  
19 Pillsbury Street, Concord, NH 03301-3570

**RECEIVED**

**FEB 08 2021**

DHR Use Only	
R&C#	12437
Log In Date	2, 8, 21
Response Date	2, 18, 21
Sent Date	2, 19, 21

**Request for Project Review by the  
New Hampshire Division of Historical Resources**

# 47099.01

- This is a new submittal
- This is additional information relating to DHR Review & Compliance (R&C) #:

**GENERAL PROJECT INFORMATION**

Project Title ADL 325 Little Harbor Trust - Dock Replacement Project Portsmouth, NH

**RECEIVED**

Project Location 325 Little Harbor Road (Belle Isle)

**FEB 24 2021**

City/Town Portsmouth Tax Map 205 Lot # 2

**MSC/TFM**

NH State Plane - Feet Geographic Coordinates: Easting 1230646 Northing 207942.3  
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) US Army Corp of Engineers (ACOE)  
(Agency providing funds, licenses, or permits)  
Permit Type and Permit or Job Reference # N/A

State Agency and Contact (if applicable) NHDES, Stefanie Giallongo, Permitting Specialist  
Permit Type and Permit or Job Reference # Wetlands

**APPLICANT INFORMATION**

Applicant Name ADL 325 Little Harbor Trust

Mailing Address 549 US Highway 1 Bypass Phone Number 603-294-4721

City Portsmouth State NH Zip 03801 Email adilorenzo@keyauto.com

**CONTACT PERSON TO RECEIVE RESPONSE**

Name/Company Jason Aube, TFMoran, Inc.

Mailing Address 170 Commerce Way, Suite 102 Phone Number 603-431-2222

City Portsmouth State NH Zip 03801 Email jaube@tfmoran.com

*This form is updated periodically. Please download the current form at [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review). Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review) or contact the R&C Specialist at [marika.labash@dncr.nh.gov](mailto:marika.labash@dncr.nh.gov) or 603.271.3558.*

**PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION**

Project Boundaries and Description

- Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- Attach a detailed narrative description of the proposed project.
- Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)  
EMMIT or in-house records search conducted on February 13/2021.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area?  Yes  No  
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): N/A

- Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity?  Yes  No  
If yes, submit all of the following information:

- Description of current and previous land use and disturbances.
- Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

**Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.**

**DHR Comment/Finding Recommendation** *This Space for Division of Historical Resources Use Only*

- Insufficient information to initiate review.  Additional information is needed in order to complete review.
- No Potential to cause Effects  No Historic Properties Affected  No Adverse Effect  Adverse Effect

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.*

Authorized Signature: Neek Mulla DSHPO Date: 2/18/21

## Susan D. Ramsdell

---

**From:** Dionne, Michael <Michael.A.Dionne@wildlife.nh.gov>  
**Sent:** Thursday, February 24, 2022 9:16 AM  
**To:** Jason Aube  
**Subject:** Re: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

Hi Jason,

I have reviewed the revised plans for the proposed docking structure on Belle Isle. With the proposed work performed after November 15<sup>th</sup>, 2022, and the use of best management practices the NHFG Marine Division confirms that this project *will not* adversely affect sturgeon species.

As far as the herring run on the Bellamy goes, I think we are still many years away from fish getting all the way to the Bellamy Reservoir. There is a pretty substantial ledge, a culvert, and dam ruins all in the vicinity of Bellamy Road in Dover that we need to contend with over the coming years. Once those are resolved I believe herring should be able to run right to the foot of the reservoir dam in Madbury.

Mike Dionne  
Marine Biologist

NH Fish and Game Department  
225 Main St. Durham, NH 03824  
(603) 868-1095, michael.dionne@wildlife.nh.gov

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*Did you know? New Hampshire Fish and Game has been conserving New Hampshire's wildlife and their habitats since 1865.*

---

**From:** Jason Aube <jaube@tfmoran.com>  
**Sent:** Wednesday, February 23, 2022 3:32 PM  
**To:** Dionne, Michael <Michael.A.Dionne@wildlife.nh.gov>  
**Subject:** RE: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

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---

Hi Mike,

I'm just following up on this email we sent you on the 10<sup>th</sup> – see below.

I have included a revised set of plans that has raised the docking structure by 3-feet so that it is less vulnerable to projected sea level elevations in the future. The docking structure meets all NHDES size and length limitations. If you have any questions, you're welcome to contact me anytime.

Thanks! -Jay

---

**From:** Jason Aube  
**Sent:** Thursday, February 10, 2022 8:19 AM  
**To:** Dionne, Michael [Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)  
**Subject:** NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

Hi Mike,

Long time no communication! We've got this project back on track again. Attached to this email are plans that depict the location of the proposed docking structure on Belle Isle. We plan to perform the work after November 15<sup>th</sup>, 2022. We're seeking confirmation that this project *will not* adversely affect sturgeon species.

On another note, I was biking on the Madbury Reservoir the other night – made it out to the dam. Was pondering if river herring can now make it up this far. I'll be out this spring scouting things out.

**Jay Aube, CWS**

*Environmental Permitting Specialist  
Certified Wetland Scientist*

TFMoran Seacoast Division  
**170 Commerce Way - Suite 102, Portsmouth, NH 03801**  
**Tel: (603) 431-2222 Fax: (603) 431-0910**

---

**From:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Sent:** Tuesday, July 13, 2021 9:12 AM  
**To:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Subject:** Re: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

The NH dredge window is 11/15-3/15. This is the time of the year we restrict work that may cause sedimentation to. Send along the plans when you have it designed, and we can talk more about it. If they are shooting for Fall, a 11/15 start may work for them anyway.

As far as river herring in the Bellamy, yes we had fish moving through the restoration site. We went down and did multiple time counts looking for fish moving upriver under the RT 108 bridge. I believe we encountered fish moving through on 4 different occasions.

Mike Dionne  
Marine Biologist

NH Fish and Game Department  
225 Main St. Durham, NH 03824  
(603) 868-1095, [michael.dionne@wildlife.nh.gov](mailto:michael.dionne@wildlife.nh.gov)

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*Did you know? New Hampshire Fish and Game has been conserving New Hampshire's wildlife and their habitats since 1865.*

---

**From:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Sent:** Tuesday, July 13, 2021 8:41 AM

To: Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>

Subject: RE: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

**EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.**

Hi Mike,

Can you tell me a bit more about the "normal dredge window?" I think we may try to go out another 10-feet. Once we have a plan, we'll provide you with a copy. The property owner would like to install the structure mid to late fall.

On another note – was there any evidence of alewife activity beyond the dam removal area on the Bellamy?

**Jay Aube**

*Environmental Permitting Specialist*



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Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



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TFMoran Seacoast Division

170 Commerce Way - Suite 102, Portsmouth, NH 03801

Tel: (603) 431-2222 Fax: (603) 431-0910



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From: Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>

Sent: Tuesday, July 13, 2021 8:23 AM

To: Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>

Subject: Re: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

Looks like half that dock is already beyond low water line. How much further is it going out? I think we will need more info on the design. In this location we may be able to be a bit lenient on a couple piles being driven in the wet during low tide, but if we are talking about several piles it will have to occur during normal dredge window.

Is there any idea what time of year the client is looking to do this installation?

Mike Dionne  
Marine Biologist

NH Fish and Game Department  
225 Main St. Durham, NH 03824  
(603) 868-1095, [michael.dionne@wildlife.nh.gov](mailto:michael.dionne@wildlife.nh.gov)

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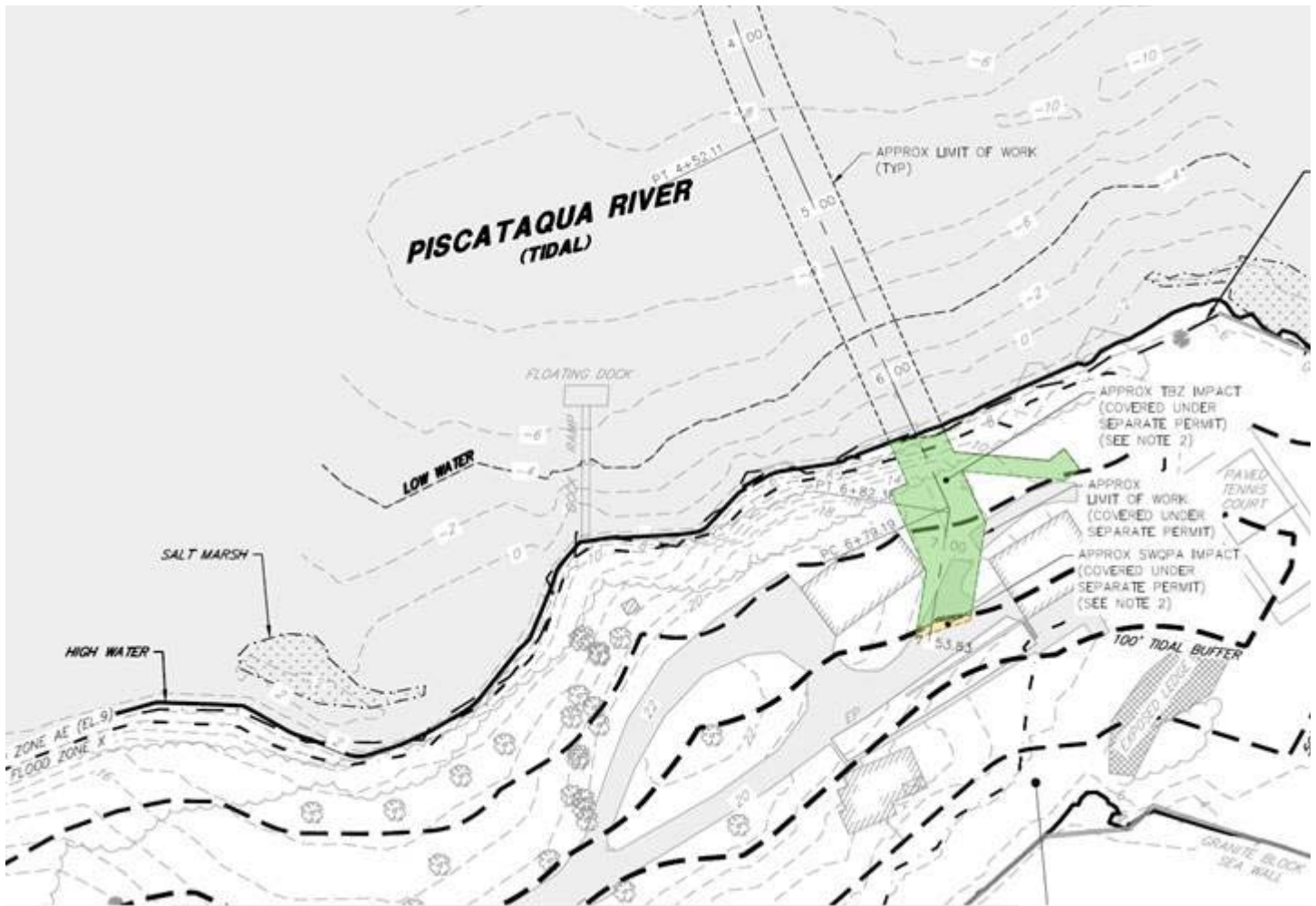
**From:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Sent:** Monday, July 12, 2021 1:22 PM  
**To:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Subject:** RE: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

**EXTERNAL:** Do not open attachments or click on links unless you recognize and trust the sender.

---

No, it looks like some will have to be done below the *Mean Low Water* level.





**From:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Sent:** Monday, July 12, 2021 1:13 PM  
**To:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Subject:** Re: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

Yes that is preferred. Can they all be done at low tide in the dry above mean low tide line?

Mike Dionne  
 Marine Biologist

NH Fish and Game Department  
 225 Main St. Durham, NH 03824  
 (603) 868-1095, [michael.dionne@wildlife.nh.gov](mailto:michael.dionne@wildlife.nh.gov)

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[www.wildnh.com](http://www.wildnh.com), [www.facebook.com/nhfishandgame](https://www.facebook.com/nhfishandgame)

**Did you know?** New Hampshire Fish and Game has been conserving New Hampshire's wildlife and their habitats since 1865.

**From:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Sent:** Monday, July 12, 2021 11:23 AM  
**To:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Subject:** RE: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

**EXTERNAL:** Do not open attachments or click on links unless you recognize and trust the sender.

---

Hi Mike,

Thanks for providing that report! Great to hear the success story in the Exeter River, I hope that's broadcasted in the media.

Yes, the new piles will be driven by way of the vibratory system and can be accomplished from a barge at low tide. This is the preferred approach, correct?

Thanks again.

---

**From:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Sent:** Monday, July 12, 2021 10:55 AM  
**To:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Subject:** Re: NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

Hey Jay,

Yes all is going well. I'm just returning from a week vacation which was welcomed after fish ladder season. The herring run turned out pretty good. The Lamprey return doubled a normal year, the Oyster had the best return since '10, over 100k fish passed through the former Great Dam location in Exeter, and we had a huge run in the Salmon Falls River. Unfortunately we had another very bad return at the Cocheco. We are working hard to figure out what is going on there.

Will the new dock structure have all new piles driven? If so to what extent can they be driven in the dry at low tide?

Mike Dionne  
Marine Biologist

NH Fish and Game Department  
225 Main St. Durham, NH 03824  
(603) 868-1095, [michael.dionne@wildlife.nh.gov](mailto:michael.dionne@wildlife.nh.gov)

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*Did you know? New Hampshire Fish and Game has been conserving New Hampshire's wildlife and their habitats since 1865.*

---

**From:** Jason Aube <[jaube@tfmoran.com](mailto:jaube@tfmoran.com)>  
**Sent:** Thursday, July 8, 2021 9:10 AM  
**To:** Dionne, Michael <[Michael.A.Dionne@wildlife.nh.gov](mailto:Michael.A.Dionne@wildlife.nh.gov)>  
**Subject:** NHB21-0381 - Atlantic Sturgeon and Shortnose Sturgeon - Belle Isle

**EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.**

---

Hi Mike,

I hope all is well. We have a project where we're looking to replace an existing docking structure. The new dock may be slightly longer to attain greater water depths but, it will still meet the NHDES requirements. What are your thoughts on impacts to the two sturgeon species? See attached images and image below:

Do you have any recommendations/ time of year restrictions for this project?

On another note – how was this year's alewife run? Were the numbers in-line with past years?

Take care,

**Jay Aube**

*Environmental Permitting Specialist*



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



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TFMoran Seacoast Division

**170 Commerce Way - Suite 102, Portsmouth, NH 03801**

**Tel: (603) 431-2222 Fax: (603) 431-0910**



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Civil Engineers  
 Structural Engineers  
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 Land Surveyors  
 Landscape Architects  
 Scientists



February 8, 2022

Pease Development Authority  
 Division of Ports and Harbors  
 Rodney McQuate, Portsmouth Harbor Master  
 555 Market Street  
 Portsmouth, NH 03801

**Re: Replace Existing Dock with new Dock – 325 Little Harbor Road, Portsmouth, Tax Map: 205, Lot: 2**

Dear Mr. McQuate:

Attached herein are plans that depict the newly proposed docking structure at 325 Little Harbor Road, also known as Belle Isle, in Portsmouth. Under NHDES Wetlands Bureau Administrative Rule Env-Wt 603.02 (f)(4), we are required to notify you of this project proposal. We are also required to furnish a statement from you to NHDES confirming the docking structure, as proposed, will not become a navigational hazard.

The docking structure, as proposed, *does not* exceed the 200-foot length limitation of Env-Wt 606.07 (b) and does not exceed the 1,500 square feet size limitation of Env-Wt 606.07 (d).

Should you have any questions regarding this matter or require additional information, please do not hesitate to contact me directly at (603) 431-2222/ Thank you for your consideration in this matter.

Respectfully,

**TFMoran, Inc.**

Jay Aube, CWS  
 Environmental Permitting Specialist

cc NHDES Wetlands Bureau

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

February 24, 2022

NH Department of Environmental Service  
Coastal Division  
Pease Field Office  
222 International Drive, Suite 175  
Portsmouth, NH 03801

Attn: Kristin Duclos

Re: 325 Little Harbor Road Trust

Dear Kristin,

We reviewed plans for the construction of a pier and float system on the Piscataqua River back channel in Portsmouth on property belonging to

325 Little Harbor Road Trust  
325 Little Harbor Road  
Portsmouth, NH  
Map 205 Lot 2

We examined the proposed site and found that the structure will have no negative effect on navigation in the channel.

Sincerely,



Tracy R. Shattuck  
Chief Harbor Master

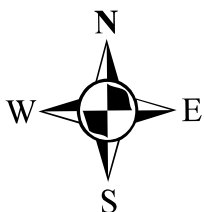
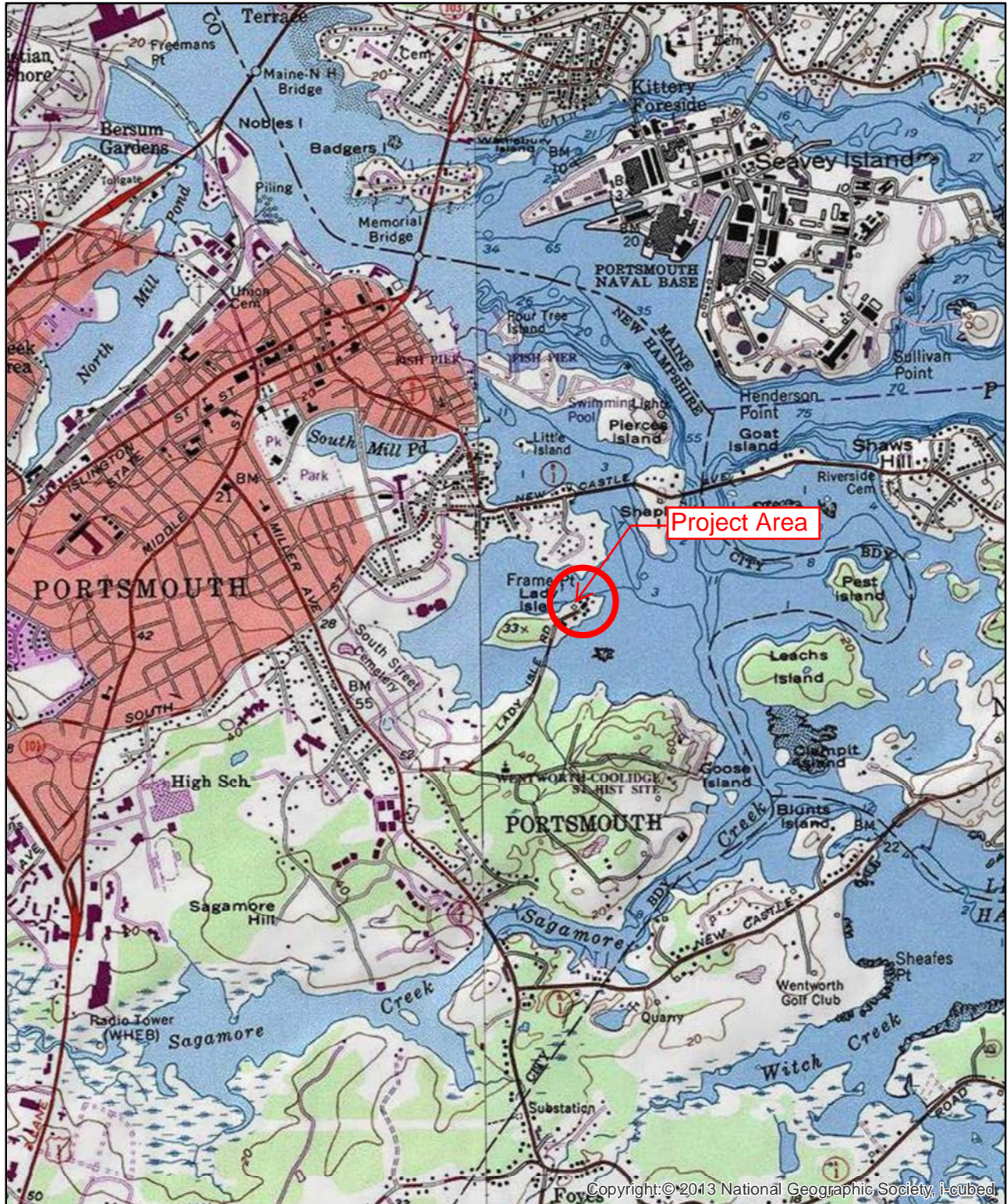
Cc: Jay Aube, CWS  
TFMoran Seacoast Division  
170 Commerce Way - Suite 102  
Portsmouth, NH 03801



# **SECTION 4**

# USGS Map of Project Area

Scale = 1:24,000



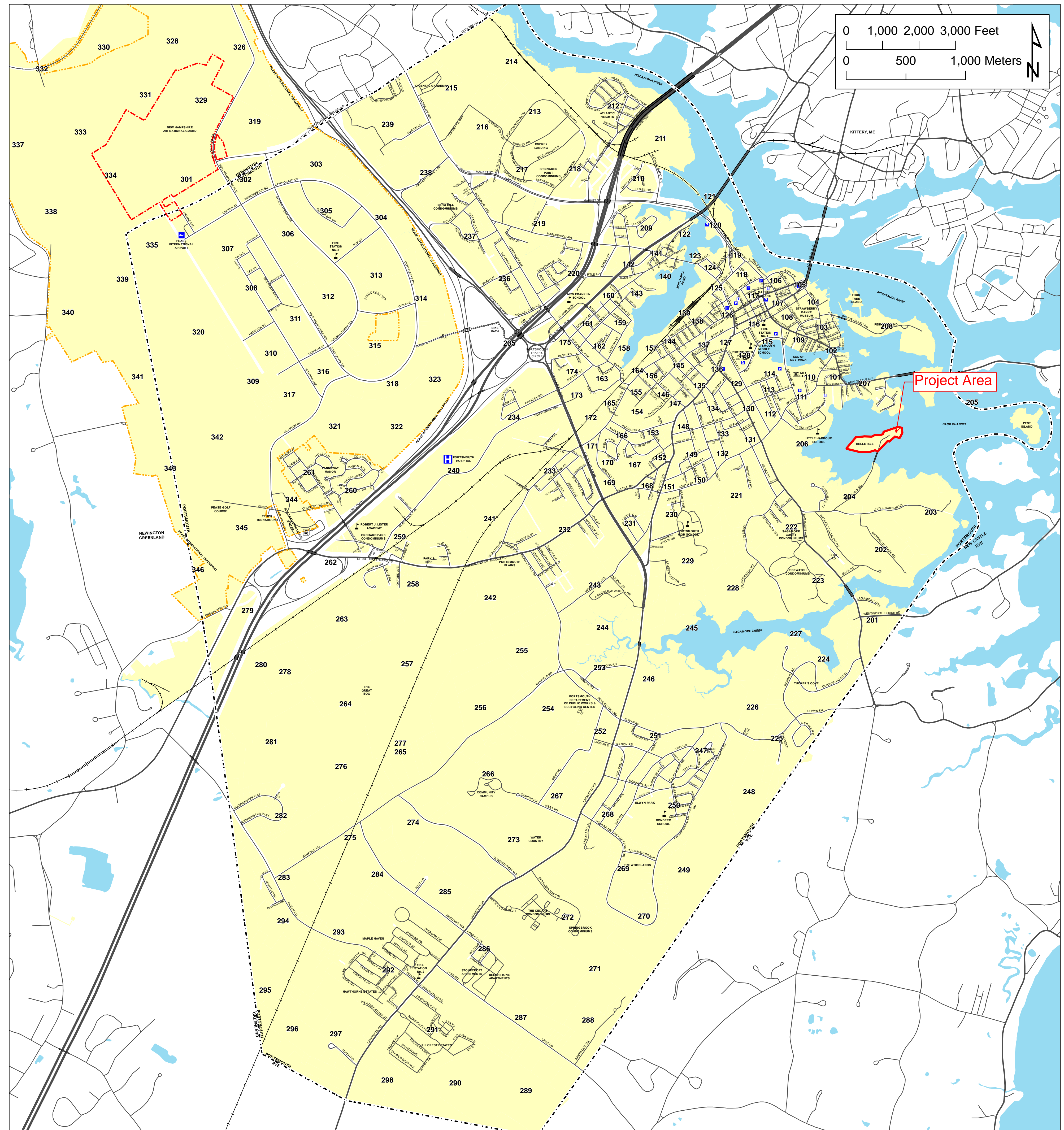




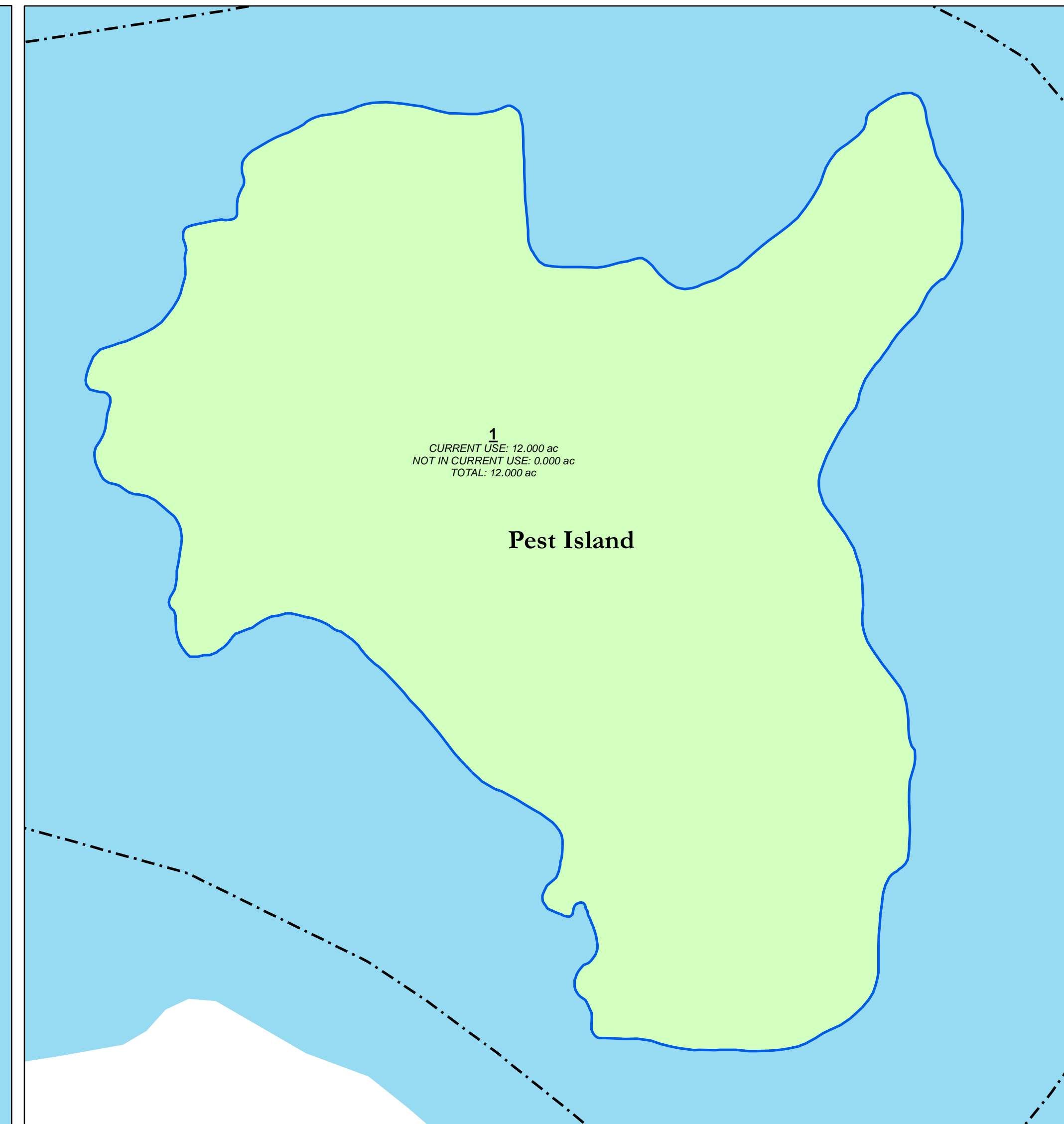
# City of Portsmouth 2019 Rural Tax Maps

Maps 201-298

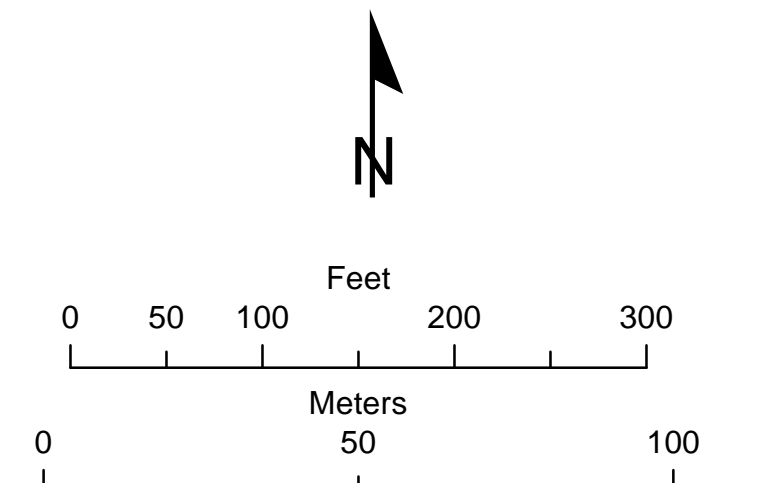
Tax Map Legend	
<b>7-5A</b>	Lot or Lot-Unit Number
2.56 ac	Parcel Area in Acres
23	Address Number
233-137	Parcel Number from a Neighboring Map
68'	Parcel Line Dimension
SIMS AVE	Street Name
<b>Piscataqua River</b>	Water Body
	Cemetery
	Parcel Assigned to the Current Map
	Parcel from Another Map (please refer to the appropriate map)
	Water
	Parcel in Current Use
	Line Between Parcels
	Line Between Parcel and Right of Way
	Line Between Parcel and Water
	City Line
	New Hampshire Air National Guard (NHANG) Boundary
	Pease International Tradeport Boundary
	Structure (2006 data)
	Swimming Pool (2006 data)
	Railroad Track



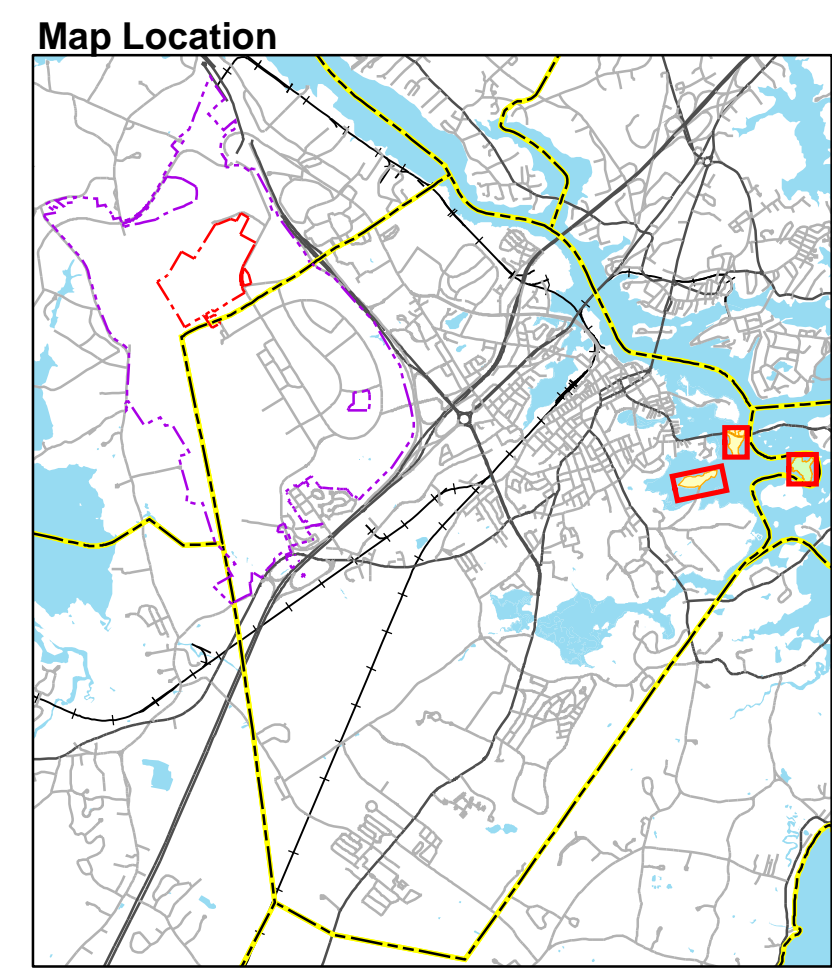
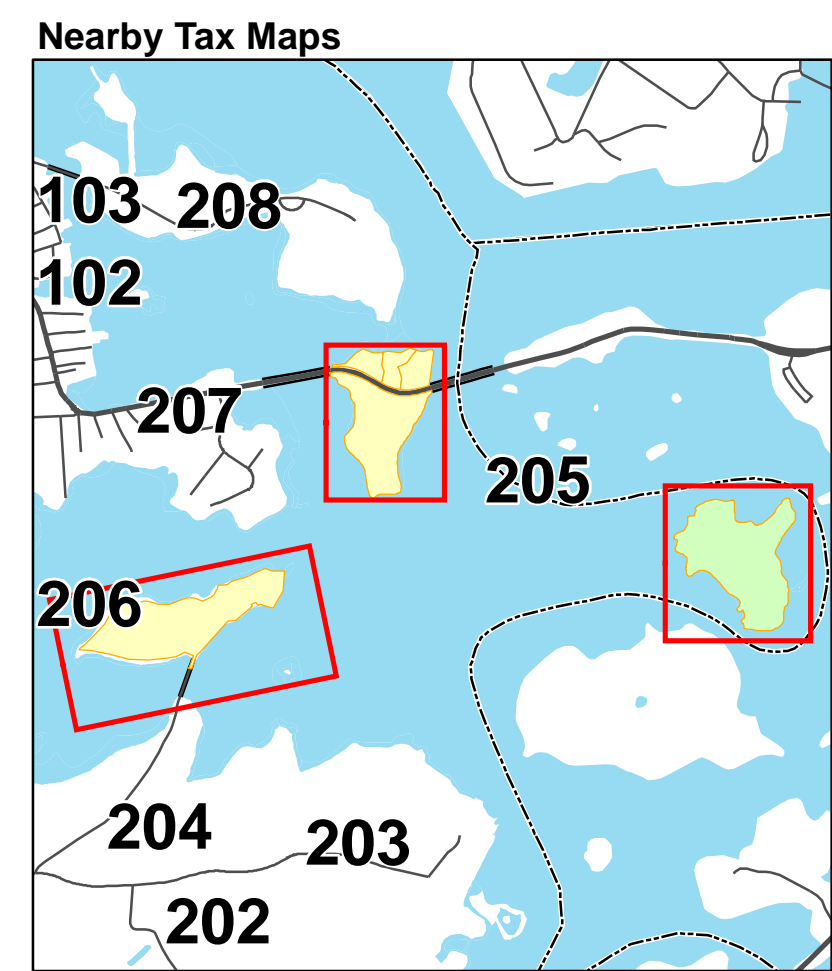




- Partial Legend**  
See the cover sheet for the complete legend.
- 7-5A** Lot or lot-unit number
  - 2.56 ac Parcel area in acres (ac) or square feet (sf)
  - 75 Address number
  - 233-137 Parcel number from a neighboring map
  - 68 Parcel line dimension
  - Street name
- SIMS AVE** Street name
- Parcel/Parcel boundary
  - Parcel/ROW boundary
  - Water boundary
  - Structure (2006 data)
- Parcel covered by this map
  - Parcel from a neighboring map (see other map for current status)

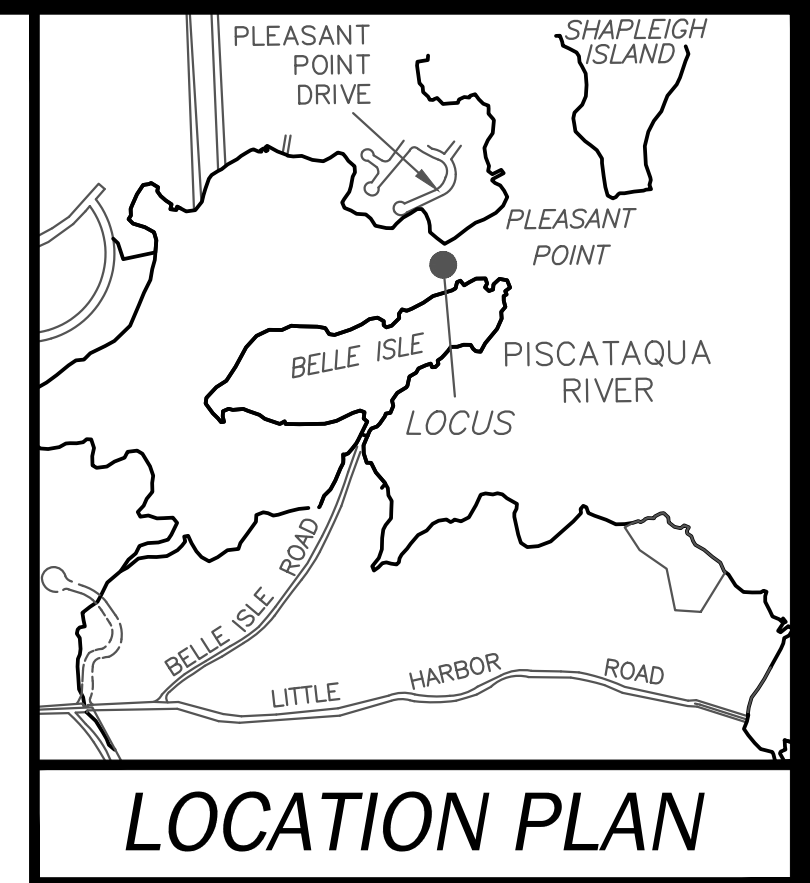


*This map is for assessment purposes only. It is not intended for legal description or conveyance. Parcels are mapped as of April 1. Building footprints are 2006 data and may not represent current structures. Streets appearing on this map may be paper (unbuilt) streets. Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.*





# Photo Orientation Map



**LEGEND:**

BK.2562/PG.2783	BOOK NO./PAGE NO.
DI	DUCTILE IRON
ELEV.	ELEVATION
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
HDPE	HIGH-DENSITY POLYETHYLENE
NET	NEW ENGLAND TELEPHONE
PSNH	PUBLIC SERVICE COMPANY OF NEW ENGLAND
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
SMH	SEWER MANHOLE
UGU	UNDERGROUND UTILITIES
TBM	TEMPORARY BENCH MARK
TL	TREE LINE
OHU	OVERHEAD UTILITIES
18	EXISTING CONTOUR
---	LIMIT OF SALT MARSH
UGU	UNDERGROUND UTILITIES
FM	SEWER FORCE MAIN LINE
W	WATER LINE
ws	WATER SERVICE
---	HIGHEST OBSERVABLE TIDE LINE
---	HIGH WATER
---	FLOOD ZONE LINE
U	UTILITY POLE
T	DECIDUOUS TREE
C	CONIFEROUS TREE
M	MONITORING WELL
S	SEWER MANHOLE
SC	SEPTIC COVER
H	HYDRANT
HS	WATER SHUT OFF
T	TRANSFORMER
TE	TELEPHONE PEDESTAL
EM	ELECTRIC METER
EB	ELECTRIC BOX
GP	GUY POLE/WIRE
TB	TEST BORE
WF	WETLAND FLAG
P	PAVEMENT
SM	SALT MARSH
W	WATER



- NOTES:**
- THE PROPERTY IS LOCATED IN THE RURAL ZONE.
  - THE PROPERTY IS OWNED BY THE STATE OF NEW HAMPSHIRE BETWEEN THE HIGH WATER ELEVATION OF MAP 205 LOT 2 & MAP 207 LOTS 14 & 15.
  - THE PROPERTY IS GRAPHICALLY LOCATED IN FLOOD HAZARD ZONE AE (EL.9) AND ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM), ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 278, MAP NUMBER 3301500278E, EFFECTIVE DATE: MAY 17, 2005.
  - THIS PLAN IS PREPARED FOR:  
THE ADL 325 LITTLE HARBOR ROAD TRUST  
STEPHEN H. ROBERTS, ESQ., TRUSTEE  
127 PARROTT AVENUE  
PORTSMOUTH, NH 03801  
RCRD BK.5959 PG.1244
  - HIGHEST OBSERVABLE TIDE LINE (HOTL) AND SALT MARSH DEPICTED WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST 090, ON MAY 24, 2019. SALT MARSH WAS DELINEATED BASED UPON THE EXTENT OF ROOTED EMERGENT SALT-TOLERANT VEGETATION OBSERVED DURING LOW TIDE. HOTL WAS DELINEATED BASED UPON THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900, ESPECIALLY ENV-WT 101.49. COPIES OF SITE PLANS WHICH DEPICT THE DELINEATION THAT HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.
  - THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. CALL 1-888-344-7233. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION, SIZE AND ELEVATION OF EXISTING UTILITIES. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. 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. THE CONTRACTOR SHALL COORDINATE TERMINATION OF ALL UTILITIES WITH THE APPROPRIATE UTILITY COMPANY.
  - ALL USES AND CONSTRUCTION SHALL COMPLY WITH RSA 483-B, THE SHORELAND WATER QUALITY PROTECTION ACT (SWQPA). REFERENCE IS ALSO MADE TO ARTICLE 10 SECTION 10.1016 OF THE PORTSMOUTH ZONING ORDINANCES WHICH SPECIFIES THE PERMITTED USES IN THE 100' TIDAL BUFFER ZONE SHOWN HEREON.
  - HORIZONTAL DATUM IS NAD83(2011). VERTICAL DATUM IS NAVD88 (GEOID12B).
  - THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING FEATURES BETWEEN PLEASANT POINT AND BELLE ISLE AND THE EXISTING MUNICIPAL WATER AND SEWER LINES AT PLEASANT POINT DRIVE.
  - FIELD SURVEY COMPLETED BY TODD C. EMERSON, ERIC J. SALOVITCH & RYAN C. KAULBACH IN APRIL & JUNE 2019 USING A TOPCON DS103, TOPCON HYPERV GPS UNIT AND TOPCON FC5000 DATA COLLECTOR.
  - EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
  - THE BOUNDARY LINE OF MAP 205 LOT 2 IS THE HIGH WATER LINE SHOWN HEREON.

- PLAN REFERENCES:**
- "TAX MAP 205 LOT 2 BELLE ISLE / AKA LADY ISLE EXISTING CONDITIONS 325 LITTLE HARBOR ROAD PORTSMOUTH, NEW HAMPSHIRE COUNTY OF ROCKINGHAM, OWNED BY THE ADL 325 LITTLE HARBOR ROAD TRUST" BY MSC A DIVISION OF TFMORAN, INC., DATED JULY 22, 2019. PLAN IS NOT RECORDED.
  - "TAX MAP 207 LOT 15 WETLAND PERMIT PLAN EXISTING CONDITIONS 70 PLEASANT POINT DRIVE PORTSMOUTH, NEW HAMPSHIRE COUNTY OF ROCKINGHAM OWNED BY DONNA LYN TAMAROFF" BY MSC A DIVISION OF TFMORAN, INC., DATED JUNE 25, 2018. PLAN IS NOT RECORDED.

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 APRIL 2019, DECEMBER 2020 AND MARCH 2021. 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.

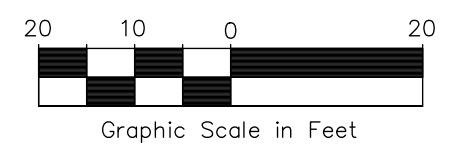
LICENSED LAND SURVEYOR

DATE



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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



REV.	DATE	DESCRIPTION	DR	CK

TAX MAP 205 LOT 2

**EXISTING CONDITIONS**  
**BELLE ISLAND/PISCATAQUA RIVER/PLEASANT POINT**  
**PORTSMOUTH, NEW HAMPSHIRE**  
**COUNTY OF ROCKINGHAM**

OWNED BY  
**THE ADL 325 LITTLE HARBOR ROAD TRUST**

SCALE: 1" = 20' (22"x34")  
1" = 10' (11"x17")

FEBRUARY 3, 2022

**TFM**

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
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47099.01

DR FB  
CK CADFILE

S-01

Feb.03.2022 - 3:10pm  
C:\Users\J\Coop\Desktop\47099-01 Dock Existing Conditions.dwg





Civil Engineers  
 Structural Engineers  
 Traffic Engineers  
 Land Surveyors  
 Landscape Architects  
 Scientists

**NEW  
 HAMPSHIRE  
 200**

**325 Little Harbor Rd,  
 Portsmouth**



**Photo: 1**



**Photo: 2**


**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



# **SECTION 5**



LCHIP ROA429347 25.00  
RECORDING 22.00  
SURCHARGE 2.00



Return to:   
Hoefle, Phoenix, Gormley & Roberts, P.A.  
127 Parrott Avenue  
Portsmouth, NH 03801

**WARRANTY DEED**

KNOW ALL MEN BY THESE PRESENTS, that **Stephen H. Roberts, Esq., Trustee of The ADL Portsmouth Residence Trust**, u/d/t October 30, 2017 with a business address of 127 Parrott Avenue, Portsmouth, New Hampshire 03801, for consideration, grants to **Stephen H. Roberts, Esq., Trustee of the ADL 325 Little Harbor Road Trust**, u/d/t October 31, 2018 with a business address of 127 Parrott Avenue, Portsmouth, New Hampshire 03801, with warranty covenants, the following described premises:

A certain tract or parcel of land, with the buildings thereon, situated on the northerly side of Little Harbor Road, in Portsmouth in the County of Rockingham and State of New Hampshire, bounded and described as follows:

A certain tract of land, situated in said Portsmouth, and being the island heretofore known as Marston's Island, anciently know as Salter's Island and before that Jackson's Island, now known as "Belle Isle," together with all the buildings thereon, also the bridge, together with its approaches, piling, planks, rails and other appurtenances connecting said Island with the lot of land first herein conveyed (other land formerly of said Michael R. Clark), together with such rights of way, if any from New Castle Avenue, in, upon, over and across the land formerly of John J. Pickering, or any others, from New Castle Avenue to Frame Point and from said Frame Point to said New Castle Avenue, as may be appurtenant.

TOGETHER WITH THE BENEFIT OF the following permanent access, building restrictions, and waterline easements reserved to the current and/or future owner(s) of the above described "Belle Isle" as set forth in a certain Easement and Restriction Deed granted from Michael R. Clark to Michael R. Clark, dated September 12, 2005 and recorded in the Rockingham County Registry of Deeds at Book 4548, Page 2823 and Corrective Easement and Restriction Deed recorded at Book 4551, Page 327. Said permanent easements are identified on plan of land entitled, "Subdivision Plan for Michael R. Clark, Little Harbor Road, Portsmouth, NH," dated July 30, 2004, by Doucet Survey, Inc., 76 Exeter Street, P.O. Box 163, Newmarket, NH, 03857-0163, revised through August 10, 2005 and recorded in the Rockingham County Registry of Deeds as Plan #D-33062. Said permanent easements are more particularly bounded and described in accordance with said Plan as follows:

(i) A permanent easement for vehicular and pedestrian travel, access, maintenance, repair and replacement, over the area identified as Tax Map 205, Lot 2 on said Plan, which easement is identified on said plan as "Proposed 25 Foot Wide Access Easement" and "Existing Paved Driveway" and more particularly bounded and described as follows:

Beginning at a railroad spike set on Lot 1 on said plan, at Little Harbor Road, 29.36 feet southeasterly of the southwesterly most corner of Proposed Lot 1; thence turning and running N 54 degrees 01' 55" E, a distance of 37.11 feet to a drill hole set; thence turning and running along a curve to the right, length 151.50 feet, radius 487.50 feet, delta 17 degrees 48' 20", tangent 76.36 chord direction N 62 degrees 56' 05"E, on a chord of 150.89 feet to a drill hole set; thence turning and running N 71 degrees 50' 15" E, distance of 159.08 feet to a 5/8" rebar set, up to 4" to the boundary of Lot 2 on said plan; thence turning and running N 71 degrees 50' 15" E, a distance of 296.12 feet to a 5/8" rebar set up 2"; thence turning and running along a curve to the left a length of 247.7 feet, radius 737.50 feet, delta 19 degrees 14' 38", tangent 125.03, chord direction N 62 degrees 12' 56" E, on a chord of 246.54 feet to a 5/8" rebar set; thence turning and running N 52 degrees 35' 37" E, a distance of 198.23 feet to a 5/8" rebar set up 2"; thence turning and running along a curve to the left length 192.61 feet, radius 1487.50 feet, delta 07 degrees 25' 14", tangent 96.46, chord direction N 48 degrees 53' 00" E, chord length 192.51 feet to a point, thence turning and running S 37 degrees 28' 00" E, a distance of 25.20 feet to a point; thence turning and running along a curve to the right, length 192.62, radius 152.150, delta 07 degrees 17' 50" W, chord direction S 48 degrees 56' 42" W, chord length 192.50 feet to a drill hole set in a 10" diameter boulder; thence turning and running S 52 degrees 35' 37" W, a distance of 198.23 feet to a 5/8" rebar set up 2"; thence turning and running along a curve to the right, length 256.10 feet, radius 762.50 feet, delta 19 degrees 14' 38", tangent 129.27, chord direction S 62 degrees 12' 56" W, chord length 254.90 feet to a 5/8" rebar set up 1", thence turning and running S 71 degrees 50' 15" W, a distance of 352.38 feet to a 5/8" rebar set up 1", the common lot line between Proposed Lot 1 and Proposed Lot 2; thence turning and running S 71 degrees 50' 15" W, a distance of 102.82 feet to a 5/8" rebar set up 2"; thence turning and running along a curve to the left, length 143.73 feet, radius 462.50 feet, delta 17 degrees 48' 20", tangent 72.45 feet, chord direction S 62 degrees 56' 05" W, chord length 143.15 feet to a 5/8" rebar set up 1"; thence turning and running S 54 degrees 01' 55" W, a distance of 17.27 feet to a railroad spike set at Little Harbor Road; thence turning and running N 74 degrees 24' 17" W, a distance of 31.92 feet to a railroad spike set and the point of beginning.

(ii) A permanent easement identified on said plan as "easement area" 54,600 square feet, 1.38 acres (Not Buildable). The term "not buildable" as used herein, refers only to buildings and shall not preclude the owner of "Belle Isle" from installing and maintaining landscaping, fences, walkways, gates and the like as permitted by law. The current and/or future owner of "Belle Isle" shall also have the exclusive use for vehicular and pedestrian access to "Belle Isle" over the "easement area" so described, said area more particularly described as follows:

Beginning at a 5/8" rebar set up 3" at the southwesterly corner of the easement area so described, thence running N 37 degrees 28' 00" W, a distance of 12.25 feet to a point; thence turning and running N 37 degrees 28' 00" W, a distance of 25.20 feet to a point; thence turning and running N 37 degrees 28' 00" W, a distance of 12.55 feet to a 5/8" rebar set up 8"; thence turning and running N 39 degrees 19' 45" E, a distance of 233.36 feet to a 5/8" rebar set up 5" at the bank of the Piscataqua River; thence turning and running along the bank of the river along a tie line

N 75 degrees 16' 04" E, a distance of 268.60 feet to a 5/8" rebar set up 1"; thence turning and running S 52 degrees 35' 37" W, a distance of 474.94 feet to a 5/8" rebar set up 3" at the point of beginning.

(iii) A permanent easement for the installation, operation, maintenance, repair and replacement of the existing waterline running from Little Harbor Road to and along the "Proposed 25 foot wide Access Easement" described on said Plan to the "Belle Isle" lot. Said easement is 16 feet in width, 8 feet on each side of the centerline of the waterline. The owner of "Belle Isle" shall be responsible for the maintenance and plowing of the primary driveway identified as "Existing Paved Driveway" on said plan; provided, however, that if the owner of "Belle Isle" does not maintain and plow said driveway, the owners of Proposed Lot 1 and/or Proposed Lot 2, shall be entitled to plow and maintain that portion of said driveway as necessary to gain access to their respective lots, all without recourse to the owner of "Belle Isle". For that portion of the foregoing easement that burdens Lot 1 as shown on the Plan, see Easement Deed from Lisa A. Grondahl, Trustee of the Lisa A. Grondahl Revocable Trust of 2006 to Michael R. Clark dated August 14, 2015 and recorded in the Rockingham County Registry of Deeds at Book 5648, Page 2721.

Meaning and intending to describe and convey the premises conveyed to Stephen H. Roberts, Esq., Trustee of The ADL Portsmouth Residence Trust, u/d/t October 30, 2017 by virtue of a Warranty Deed from Anthony DiLorenzo, dated October 30, 2017 and recorded in the Rockingham County Registry of Deeds in Book 5867, Page 2492.

THIS IS A NON-CONTRACTUAL TRANSFER AND IS EXEMPT FROM TRANSFER TAXES UNDER RSA 78-B:2, IX.

### Trustee's Certificate

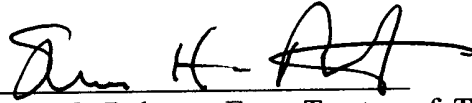
The undersigned **Stephen H. Roberts, Esq., Trustee of The ADL Portsmouth Residence Trust, u/d/t October 30, 2017**, hereby states pursuant to RSA 564-A:7, that said Trustee has full and absolute power in said Trust Agreement to execute, sign and deliver a deed for any real estate or other property held in said Trust, and no purchaser or third party shall be bound to inquire whether the Trustee has said power or is properly exercising said power or to see to the proceeds paid for any conveyance.

**Stephen H. Roberts, Esq., Trustee of The ADL Portsmouth Residence Trust, u/d/t October 30, 2017**, certifies that the Trust is in full force and effect, that he is empowered to act as Trustee on the date of this certificate, and that the Trust has not been revoked or amended.

The Trustee further certifies that the undersigned is the Trustee of said Trust, and that the undersigned has received all written authorizations from beneficiaries, if any, required by the terms of said Trust.

This is not homestead property of the Grantor.

WITNESS my hand and seal this 1st day of November, 2018.



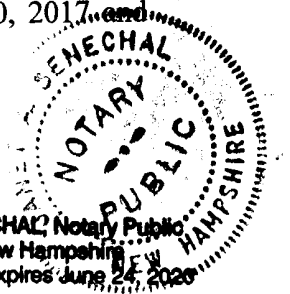
Stephen H. Roberts, Esq., Trustee of The  
ADL Portsmouth Residence Trust, u/d/t  
October 30, 2017

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

Dated this 1st day of November, 2018, personally appeared the above named Stephen H. Roberts, Esq., Trustee of The ADL Portsmouth Residence Trust, u/d/t October 30, 2017, and acknowledged the execution of the foregoing to be his free act and deed, before me.



Notary Public  
My commission expires



JANET A. SENECHAL, Notary Public  
State of New Hampshire  
My Commission Expires June 24, 2020





Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

# Abutters List

**ADL 325 Little Harbor Road Trust**  
**325 Little Harbor Road, Portsmouth, NH**  
February 10, 2022  
47099.01

Assessors Map		Abutter Name	Mailing Address
Map	Lot		
		No Abutters This is an Island	



**AMBIT ENGINEERING, INC.** CIVIL ENGINEERS AND LAND SURVEYORS  
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

1 March 2022

Wetland Inspector  
New Hampshire Department of Environmental Services  
Wetlands Bureau  
29 Hazen Drive / P.O. Box 95  
Concord, New Hampshire 03302

**Re: NHDES Minor Impact Wetland Permit Application  
Tax Map 122 Lot 2  
Northwest Street  
Portsmouth, New Hampshire**

Dear Wetland Inspector:

This letter transmits a New Hampshire Department of Environmental Services (NHDES) Minor Impact Expedited Wetland Permit Application request to permit 3,912 sq. ft. of temporary impact and 978 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for residential development including construction of a new home, driveway, a patio, utility connections, grading and associated landscaping. The project also proposes the removal of an existing gravel drive and improvements associated with an existing sewer pump station and 45 sq. ft. of impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall associated with drainage structures located within Northwest Street. This existing outfall has created scouring and erosion at the point of discharge and the rip rap outlet protection will greatly reduce the potential for erosion and sedimentation in the future.

Attached to this application you will find a "NH DES Permit Plan-C5" which depicts the existing lot, jurisdictional areas, abutting parcels, existing structures, proposed work, temporary and permanent impact areas.

Per Env-Wt 306.05, Certified Wetland Scientist Steve Riker from Ambit Engineering, Inc. classified all jurisdictional areas and identified the predominant functions of all relevant resources. The Highest Observable Tide Line marks the reference line for the 100' TBZ, as well as the beginning of Tidal Wetland on the attached plan set. Attached to this application is a Coastal Functional Assessment as this project is subject to the requirements of Env-Wt 603.05.

The project does not require the removal of any trees or shrubs within the 50' Waterfront Buffer to achieve construction goals, but does propose the removal of an existing gravel drive partially located in the 50' Waterfront Buffer which will be planted with buffer plantings (see Subdivision Site Plan-Sheet C2).

The project represents the alternative with the least adverse impacts to areas and environments while allowing reasonable use of the property.

Per Env-Wt 603.02(b), attached to this application you will find a plan set which depicts the existing lot, jurisdictional areas, all natural resources in the area, abutting parcels, existing structures, proposed

structures, and temporary impact areas. Also included in this application are maps created in accordance with Env-Wt 603.03 and Env-Wt 603.05.

In order to complete the application package for this project, the DES Wetlands Bureau rules in Chapter Env-Wt 306.05 (a)(2) has been evaluated and addressed below.

(2) a. Contains any documented occurrences of protected species or habitat for such species, using the NHB DataCheck tool;

**Attached to this application are the results of the NHB review and it was determined that although there was a NHB record present in the vicinity, it is not expected to be impacted by the proposed project.**

(2) b. Is a bog;

**Utilizing the NH DES WPPT, the subject property is not a bog, nor does it contain any portion of a bog.**

(2) c. Is a floodplain wetland contiguous to a tier 3 or higher watercourse;

**Utilizing the NH DES WPPT, the subject property does contain a floodplain wetland contiguous to a tier 3 or higher watercourse.**

(2) d. Does the property contain a designated prime wetlands or a duly established 100-foot buffer; or

**The property does not contain a prime wetland or duly established 100 foot buffer.**

(2) e. Does the property contain a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone;

**The property does not contain a sand dune or undeveloped tidal buffer zone. The project area does contain a tidal wetland and tidal waters.**

The DES Wetlands Bureau rules in Chapter Env-Wt 306.05 (a)(4) and (a)(7) has been evaluated and addressed below.

(4) a. Is the subject property within LAC jurisdiction;

**The property does not fall within an area of LAC jurisdiction.**

(4) b. Does the subject property fall within or contain any areas that are subject to time of year restrictions under Env-Wt 307;

**The property does not fall within or contain any areas that are subject to time of year restrictions.**

(7) Does the project have potential to impact impaired waters, class A waters, or outstanding resource waters;

**I do not believe the nature of the proposed project has the potential to impact an impaired water. The project does propose buffer area plantings that will serve to improve stormwater quality that leaves the site.**

The DES Wetlands Bureau rules in Chapter Env-Wt 603.02 (e) & (f) have been evaluated and addressed below.

(e)(1) The project meets the standard conditions in Env-Wt 307;

**The project meets the standard conditions in Env-Wt 307 as the proposed project meets the standards of Env-Wq 1000, RSA 483-B and Env-Wq 1400. Sediment and erosion controls will also be used and maintained during the proposed construction ensuring protection of water quality on the site. Under Env-Wt 306.05 (a)(2)a. a NHB review has been performed to ensure**

**there are no impacts to protected species or habitats of such species. The protection of Prime Wetlands or Duly-Established 100 foot buffers does not apply as none exist on or adjacent to the subject lot.**

- (e)(2) The project meets the approval criteria in Env-Wt 313.01;  
**The project meets the approval criteria in Env-Wt 313.01 as the project requires a functional assessment (attached), meets the avoidance and minimization requirements specified in Env-Wt 313.03, does not require compensatory mitigation, meets applicable conditions specified in Env-Wt 307 (above), meets project specific criteria listed in Env-Wt 600 (above), and the project is located entirely within the boundary of the applicants property.**
- (f)(1) The project design narrative as described in Env-Wt 603.06;  
**The project design narrative is provided above.**
- (f)(2) Design plans that meet the requirements of Env-Wt 603.07;  
**The design plans meet the above standard.**
- (f)(3) The water depth supporting information required by Env-Wt 603.08;  
**The design plans do not provide water depth information as it is non-applicable to the proposed project.**
- (f)(4) A statement regarding impact on navigation and passage required by Env-Wt 603.09.  
**Navigation and passage is not applicable to the proposed project.**

Please contact me if you have any questions or concerns regarding this application.

Respectfully submitted,



Steven D. Riker, CWS  
NH Certified Wetland Scientist/Permitting Specialist  
Ambit Engineering, Inc.

17 February, 2022

**To Whom It May Concern**

**RE: New Hampshire Department of Environmental Services Applications for residential site re-development for Darrell Moreau, TBD Northwest Street, Portsmouth, NH.**

This letter is to inform the New Hampshire Department of Environmental Services, in accordance with State Law that Ambit Engineering is authorized to obtain approvals in regards to the above referenced property.

Please feel free to call me if there is any question regarding this authorization.

Sincerely,

A handwritten signature in black ink, appearing to read 'Darrell Moreau', with a long horizontal flourish extending to the right.

Darrell Moreau  
1B Jackson Hill Street  
Portsmouth, NH 03801  
603-512-5116





**STANDARD DREDGE AND FILL  
WETLANDS PERMIT APPLICATION**  
Water Division/Land Resources Management  
Wetlands Bureau  
[Check the Status of your Application](#)



**RSA/Rule:** RSA 482-A/Env-Wt 100-900

**APPLICANT'S NAME:** Darrell Moreau

**TOWN NAME:** Portsmouth

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))	
Please use the <a href="#">Wetland Permit Planning Tool (WPPT)</a> , the Natural Heritage Bureau (NHB) <a href="#">DataCheck Tool</a> , the <a href="#">Aquatic Restoration Mapper</a> , or other sources to assist in identifying key features such as: <a href="#">priority resource areas (PRAs)</a> , <a href="#">protected species or habitats</a> , coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&amp;G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Protected species or habitat?                             <ul style="list-style-type: none"> <li>○ If yes, species or habitat name(s): Unknown</li> <li>○ NHB Project ID #: 22-3316</li> </ul> </li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
• Bog?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
• Floodplain wetland contiguous to a tier 3 or higher watercourse?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
• Designated prime wetland or duly-established 100-foot buffer?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
• Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Name of Local River Management Advisory Committee (LAC):</li> <li>• A copy of the application was sent to the LAC on Month: Day: Year:</li> </ul>	

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

For dredging projects, is the subject property contaminated? • If yes, list contaminant: N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For stream crossing projects, provide watershed size (see <a href="#">WPPT</a> or Stream Stats): N/A	
<b>SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))</b>	
Provide a <b>brief</b> description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
The project proposes 3,912 sq. ft. of temporary impact and 978 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for residential development including construction of a new home, driveway, a patio, utility connections, grading and associated landscaping. The project also proposes the removal of an existing gravel drive and improvements associated with an existing sewer pump station and 45 sq. ft. of impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall associated with drainage structures located within Northwest Street.	
<b>SECTION 3 - PROJECT LOCATION</b>	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: Northwest Street	
TOWN/CITY: Portsmouth	
TAX MAP/BLOCK/LOT/UNIT: Map 122, Lot 2-1	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: North Mill Pond <input type="checkbox"/> N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 1,224,999.4022° North 213,532.7715° West	

<b>SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))</b>		
If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: Darrell Moreau		
MAILING ADDRESS: 1B Jackson Hill Street		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
EMAIL ADDRESS: darrellamoreau@gmail.com		
FAX: [REDACTED]	PHONE: 603-512-5116	
ELECTRONIC COMMUNICATION: By initialing here: [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		
<b>SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))</b>		
<input type="checkbox"/> N/A		
LAST NAME, FIRST NAME, M.I.: Riker, Steven, D.		
COMPANY NAME: Ambit Engineering, Inc.		
MAILING ADDRESS: 200 Griffin Road, Unit 3		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
EMAIL ADDRESS: sdr@ambitengineering.com		
FAX: [REDACTED]	PHONE: 603-430-9282	
ELECTRONIC COMMUNICATION: By initialing here <i>SR</i> , I hereby authorize NHDES to communicate all matters relative to this application electronically.		
<b>SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))</b>		
If the owner is a trust or a company, then complete with the trust or company information.		
<input type="checkbox"/> Same as applicant		
NAME: Gregory J. & Amanda B. Morneault		
MAILING ADDRESS: 137 Northwest Street		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
EMAIL ADDRESS: [REDACTED]		
FAX: [REDACTED]	PHONE: [REDACTED]	
ELECTRONIC COMMUNICATION: By initialing here [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		

**SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))**

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Please see attached narrative.

**SECTION 8 - AVOIDANCE AND MINIMIZATION**

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).\* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).\*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

*\*See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

**SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)**

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month:  Day:  Year:

N/A - Mitigation is not required

**SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)**

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable:  I confirm submittal.

N/A – Compensatory mitigation is not required

**SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))**

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Scrub-shrub Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Emergent Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Wet Meadow			<input type="checkbox"/>			<input type="checkbox"/>
	Vernal Pool			<input type="checkbox"/>			<input type="checkbox"/>
	Designated Prime Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Duly-established 100-foot Prime Wetland Buffer			<input type="checkbox"/>			<input type="checkbox"/>
Surface Water	Intermittent / Ephemeral Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Perennial Stream or River			<input type="checkbox"/>			<input type="checkbox"/>
	Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - River			<input type="checkbox"/>			<input type="checkbox"/>
Banks	Bank - Intermittent Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Bank - Perennial Stream / River			<input type="checkbox"/>			<input type="checkbox"/>
	Bank / Shoreline - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
Tidal	Tidal Waters			<input type="checkbox"/>			<input type="checkbox"/>
	Tidal Marsh	45		<input type="checkbox"/>			<input type="checkbox"/>
	Sand Dune			<input type="checkbox"/>			<input type="checkbox"/>
	Undeveloped Tidal Buffer Zone (TBZ)			<input type="checkbox"/>			<input type="checkbox"/>
	Previously-developed TBZ	978		<input type="checkbox"/>	3,912		<input type="checkbox"/>
	Docking - Tidal Water			<input type="checkbox"/>			<input type="checkbox"/>
<b>TOTAL</b>		<b>1,023</b>			<b>3,912</b>		

**SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)**

**MINIMUM IMPACT FEE:** Flat fee of \$400.

**NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

**MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking): 4,935 SF × \$0.40 = \$ 1,974

Seasonal docking structure: SF × \$2.00 = \$

Permanent docking structure: SF × \$4.00 = \$

Projects proposing shoreline structures (including docks) add \$400 = \$

Total = \$

**The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 1,974**

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)



**SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)**

Indicate the project classification.









Minimum Impact Project

Minor Project







Major Project

**SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)**

Initial each box below to certify:

Initials:  <i>SR</i> 	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials:  <i>SR</i> 	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials:  <i>SR</i> 	The signer understands that: <ul style="list-style-type: none"> <li>The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:                         <ol style="list-style-type: none"> <li>Deny the application.</li> <li>Revoke any approval that is granted based on the information.</li> <li>If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.</li> </ol> </li> <li>The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.</li> <li>The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.</li> </ul>
Initials:  <i>SR</i> 	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

**SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)**

SIGNATURE (OWNER): 	PRINT NAME LEGIBLY: 	DATE: 
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): 	PRINT NAME LEGIBLY: 	DATE: 
SIGNATURE (AGENT, IF APPLICABLE): <i>Steven Riker</i>	PRINT NAME LEGIBLY: Steven D. Riker	DATE: 3/1/22

**SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))**

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: 	PRINT NAME LEGIBLY: 
TOWN/CITY: 	DATE: 



AVOIDANCE AND MINIMIZATION  
WRITTEN NARRATIVE  
Water Division/Land Resources Management  
Wetlands Bureau  
[Check the Status of your Application](#)



**RSA/ Rule:** RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

**APPLICANT'S NAME:** Darrell Moreau

**TOWN NAME:** Portsmouth

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to the permit application.

**SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))**

Is the primary purpose of the proposed project to construct a water access structure?

No

**SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))**

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

No.

**SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))\***

For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

*\*Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*

The project proposes residential development of an existing lot of record. The owner/applicant does not have access to other properties that would serve as an alternative and achieve the same purpose.

**SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))**

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization?](#)

The proposed residential development has been designed and located on the lot to avoid impacts to the previously developed 100' Tidal Buffer Zone to the greatest extent practicable. Due to the configuration of the lot, the location of tidal wetlands associated with the site, and local zoning and dimensional requirements, the building envelope in which a structure could be built is limited. The proposed structure has been placed within this building envelope and completely avoids the placement of structures within the 50' Waterfront Buffer.

**SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))\*\***

How does the project conform to Env-Wt 311.10(c)?

*\*\*Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

The project proposes a total of 3,912 sq. ft. of temporary impact and 978 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone, and 45 sq. ft. of impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall which qualifies as a minor impact project under Env-Wt 605.03(b)(5) and therefore a Coastal Functional Assessment is required and a Coastal Vulnerability Assessment is required and attached to this application.



COASTAL RESOURCE WORKSHEET  
Water Division/Land Resources Management  
Wetlands Bureau



[Check the Status of your Application](#)

**RSA/Rule:** RSA 482-A/ Env-Wt 600

**APPLICANT LAST NAME, FIRST NAME, M.I.:** [REDACTED]

This worksheet may be used to present the information required for projects in coastal areas, in addition to the information required for Lower-Scrutiny Approvals, Expedited Permits, and Standard Permits under Env-Wt 603.01.

Please refer to Env-Wt 605.03 for impacts requiring compensatory mitigation.

**SECTION 1 - REQUIRED INFORMATION (Env-Wt 603.02; Env-Wt 603.06; Env-Wt 603.09)**

The following information is required for projects in coastal areas.

Describe the purpose of the proposed project, including the overall goal of the project, the core project purpose consisting of a concise description of the facilities and work that could impact jurisdictional areas, and the intended project outcome. Specifically identify all natural resource assets in the area proposed to be impacted and include maps created through a data screening in accordance with Env-Wt 603.03 (refer to Section 2) and Env-Wt 603.04 (refer to Section 3) as attachments.

**The project proposes 3,912 sq. ft. of temporary impact and 978 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for residential development including construction of a new home, driveway, a patio, utility connections, grading and associated landscaping. The project also proposes the removal of an existing gravel drive and improvements associated with an existing sewer pump station and 45 sq. ft. of impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall associated with drainage structures located within Northwest Street. This existing outfall has created scouring and erosion at the point of discharge and the rip rap outlet protection will greatly reduce the potential for erosion and sedimentation in the future.**

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO BOX 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

For standard permit projects, provide:

- A Coastal Functional Assessment (CFA) report in accordance with Env-Wt 603.04 (refer to Section 3).
- A vulnerability assessment in accordance with Env-Wt 603.05 (refer to Section 4).

Explain all recommended methods and other considerations to protect the natural resource assets during and as a result of project construction in accordance with Env-Wt 311.07, Env-Wt 313, and Env-Wt 603.04.

**The proposed residential development has been designed and located on the lot to avoid impacts to the previously developed 100' Tidal Buffer Zone to the greatest extent practicable. Due to the configuration of the lot, the location of tidal wetlands associated with the site, and local zoning and dimensional requirements, the building envelope in which a structure could be built is limited. The proposed structure has been placed within this building envelope and also entirely avoids the placement of structures within the 50' Waterfront Buffer. The project does include the removal of an existing gravel drive within the 50' Waterfront Buffer which will become a buffer planting area. See attached Coastal Vulnerability Assessment for project avoidance related to projected sea level rise.**

Provide a narrative showing how the project meets the standard conditions in Env-Wt 307 and the approval criteria in Env-Wt 313.01.

**The attached narrative and the project plan set, specifically the Details Sheet includes all notes demonstrating compliance with Env-Wt 307 and Env-Wt 313.01.**



Provide a project design narrative that includes the following:

- A discussion of how the proposed project:
  - Uses best management practices and standard conditions in Env-Wt 307;
  - Meets all avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
  - Meets approval criteria in Env-Wt 313.01;
  - Meets evaluation criteria in Env-Wt 313.01(c);
  - Meets CFA requirements in Env-Wt 603.04; and
  - Considers sea-level rise and potential flooding evaluated pursuant to Env-Wt 603.05;
- A construction sequence, erosion/siltation control methods to be used, and a dewatering plan; and
- A discussion of how the completed project will be maintained and managed.



- Provide design plans that meet the requirements of Env-Wt 603.07 (refer to Section 5);
- Provide water depth supporting information required by Env-Wt 603.08 (refer to Section 6); and
- For any major project that proposes to construct a structure in tidal waters/wetlands or to extend an existing structure seaward, provide a statement from the Pease Development Authority Division of Ports and Harbors (DP&H) chief harbormaster, or designee, for the subject location relative to the proposed structure's impact on navigation. If the proposed structure might impede existing public passage along the subject shoreline on foot or by non-motorized watercraft, the applicant shall explain how the impediments have been minimized to the greatest extent practicable.



**SECTION 2 - DATA SCREENING (Env-Wt 603.03, in addition to Env-Wt 306.05)**

Please use the Wetland Permit Planning Tool, or any other database or source, to indicate the presence of:

- Existing salt marsh and salt marsh migration pathways;
- Eelgrass beds;
- Documented shellfish sites;
- Projected sea-level rise; and
- 100-year floodplain.

Conduct data screening as described to identify documented essential fish habitat, and tides and currents that may be impacted by the proposed project, by using the following links:

- [National Oceanic and Atmospheric Administration \(NOAA\) Tides & Currents](#); and
- [NOAA Essential Fish Habitat Mapper](#).
- Verify or correct the information collected from the data screenings by conducting an on-site assessment of the subject property in accordance with Env-Wt 406 and Env-Wt 603.04.

**SECTION 3 - COASTAL FUNCTIONAL ASSESSMENT/ AVOIDANCE AND MINIMIZATION (Env-Wt 603.04; Env-Wt 605.01; Env-Wt 605.02; Env-Wt 605.03)**

Projects in coastal areas shall:

- Not impair the navigation, recreation, or commerce of the general public; and
- Minimize alterations in prevailing currents.

An applicant for a permit for work in or adjacent to tidal waters/wetlands or the tidal buffer zone shall demonstrate that the following have been avoided or minimized as required by Env-Wt 313.04:

- Adverse impacts to beach or tidal flat sediment replenishment;
- Adverse impacts to the movement of sediments along a shore;
- Adverse impacts on a tidal wetland's ability to dissipate wave energy and storm surge; and
- Adverse impacts of project runoff on salinity levels in tidal environments.

For standard permit applications submitted for minor or major projects:

- Attach a CFA based on the data screening information and on-site evaluation required by Env-Wt 603.03. The CFA for tidal wetlands or tidal waters shall be:
  - Performed by a qualified coastal professional; and
  - Completed using one of the following methods:
    - a. The US Army Corps of Engineers (USACE) Highway Methodology Workbook, dated 1993, together with the USACE New England District *Highway Methodology Workbook Supplement*, dated 1999; or
    - b. An alternative scientifically-supported method with cited reference and the reasons for the alternative method substantiated.

For any project that would impact tidal wetlands, tidal waters, or associated sand dunes, the applicant shall:

- Use the results of the CFA to select the location of the proposed project having the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- Design the proposed project to have the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- Where impact to wetland and other coastal resource functions is unavoidable, limit the project impacts to the least valuable functions, avoiding and minimizing impact to the highest and most valuable functions; and
- Include on-site minimization measures and construction management practices to protect coastal resource areas.

Projects in coastal areas shall use results of this CFA to:

- Minimize adverse impacts to finfish, shellfish, crustacean, and wildlife;
- Minimize disturbances to groundwater and surface water flow;
- Avoid impacts that could adversely affect fish habitat, wildlife habitat, or both; and
- Avoid impacts that might cause erosion to shoreline properties.

**SECTION 4 - VULNERABILITY ASSESSMENT (Env-Wt 603.05)**

Refer to the New Hampshire Coastal Flood Risk Summary Part 1: Science and New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections or other best available science to:

Determine the time period over which the project is designed to serve.

See attached CVA.

Identify the project's relative risk tolerance to flooding and potential damage or loss likely to result from flooding to buildings, infrastructure, salt marshes, sand dunes and other valuable coastal resource areas.

See attached CVA

Reference the projected sea-level rise (SLR) scenario that most closely matches the end of the project design life and the project's tolerance to risk or loss.

See attached CVA

Identify areas of the proposed project site subject to flooding from SLR.

See attached CVA

Identify areas currently located within the 100-year floodplain and subject to coastal flood risk.

See attached CVA

Describe how the project design will consider and address the selected SLR scenario within the project design life, including in the design plans.

See attached CVA

Where there are conflicts between the project's purpose and the vulnerability assessment results, schedule a pre-application meeting with the department to evaluate design alternatives, engineering approaches, and use of the best available science.

Pre-application meeting date held: **N/A**



STANDARD DREDGE AND FILL  
WETLANDS PERMIT APPLICATION  
ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management  
Wetlands Bureau

[Check the Status of your Application](#)

**RSA/ Rule:** RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

**APPLICANT'S NAME:** Darrell Moreau

**TOWN NAME:** Portsmouth

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

**PART I: AVOIDANCE AND MINIMIZATION**

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

**SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))**

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

THE PROJECT PROPOSES RESIDENTIAL DEVELOPMENT OF AN EXISTING RESIDENTIAL LOT. THE OWNER/APPLICANT DOES NOT HAVE ACCESS TO OTHER PROPERTIES THAT WOULD SERVE AS AN ALTERNATIVE AND ACHIEVE THE SAME PURPOSE. THE PROPOSED RESIDENTIAL DEVELOPMENT HAS BEEN DESIGNED AND LOCATED ON THE LOT TO AVOID IMPACTS TO THE PREVIOUSLY DEVELOPED 100' TIDAL BUFFER ZONE TO THE GREATEST EXTENT PRACTICABLE. DUE TO THE CONFIGURATION OF THE LOT, THE LOCATION OF TIDAL WETLANDS ADJACENT TO THE SITE, AND LOCAL ZONING AND DIMENSIONAL REQUIREMENTS, THE BUILDING ENVELOPE IN WHICH A STRUCTURE COULD BE BUILT IS LIMITED. THE PROPOSED STRUCTURE HAS BEEN PLACED WITHIN THIS BUILDING ENVELOPE AND ALSO AVOIDS THE PLACEMENT OF ANY STRUCTURES WITHIN THE 50' WATERFRONT BUFFER.



**SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))**

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

The project proposes 45 sq. ft. of impact to tidal salt marsh for the installation of rip rap outlet protection at an existing stormwater outfall into North Mill Pond. This existing outfall has created scouring and erosion at the point of discharge and the rip rap outlet protection will greatly reduce the potential for erosion and sedimentation in the future.

**SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))**

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

Since the proposed project proposes impacts to the previously developed 100' Tidal Buffer Zone and very minimal impact to salt marsh for rip rap outlet protection, there is no project component that would impact streams or the conveyance of water from wetland to another.

**SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))**

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

The project does not propose any impacts to exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of special concern.

**SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))**

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The proposed project is located on private property and proposes no impacts or interference to public commerce, navigation or recreation.

**SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))**

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

The residential component of the project is not located in a flood zone and therefore does not have the potential to impact any floodplains, or floodplain wetlands that provide flood storage. The rip rap outlet protection provides a stormwater best management practice for an existing outfall, is intended to provide a benefit to the resource, and would not effect the resource from providing flood storage potential.

**SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))**

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

The project does not propose impacts to riverine forested wetland systems and scrub shrub marsh complexes.

**SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))**

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

The wetland resources associated with the project site are not hydrologically connected to a groundwater aquifer or drinking water supply.

**SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))**

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

The project does not propose any impacts to stream channels.

**SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))**

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

N/A

**SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))**

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

N/A



**SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))**

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

N/A

**SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))**

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

N/A

**SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))**

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

N/A

**SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))**

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

N/A

<b>PART II: FUNCTIONAL ASSESSMENT</b>
<p><b>REQUIREMENTS</b></p> <p>Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).</p>
<p><b>FUNCTIONAL ASSESSMENT METHOD USED:</b></p> <p>Wetland functions and values were assessed using the Highway Methodology Workbook, Wetland Functions and Values: A Descriptive Approach. U.S. Army Corps of Engineers. 1999. The Highway Methodology Workbook Supplement, Wetland Functions and Values: A Descriptive Approach. U.S. Army Corps of Engineers. New England Division. 32pp. NAEPP-360-1-30a.</p>
<p><b>NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT:</b> STEVEN D. RIKER, NH CWS 219</p>
<p><b>DATE OF ASSESSMENT:</b> OCTOBER 26, 2021</p>
<p>Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:</p> <p><input checked="" type="checkbox"/></p>
<p>For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:</p> <p><input checked="" type="checkbox"/></p> <p>Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.</p>



# Map by NH GRANIT



1 X: 1224999.402271  
Y: 213532.771526

## Legend

- State
- County
- City/Town

Map Scale

1: 12,988

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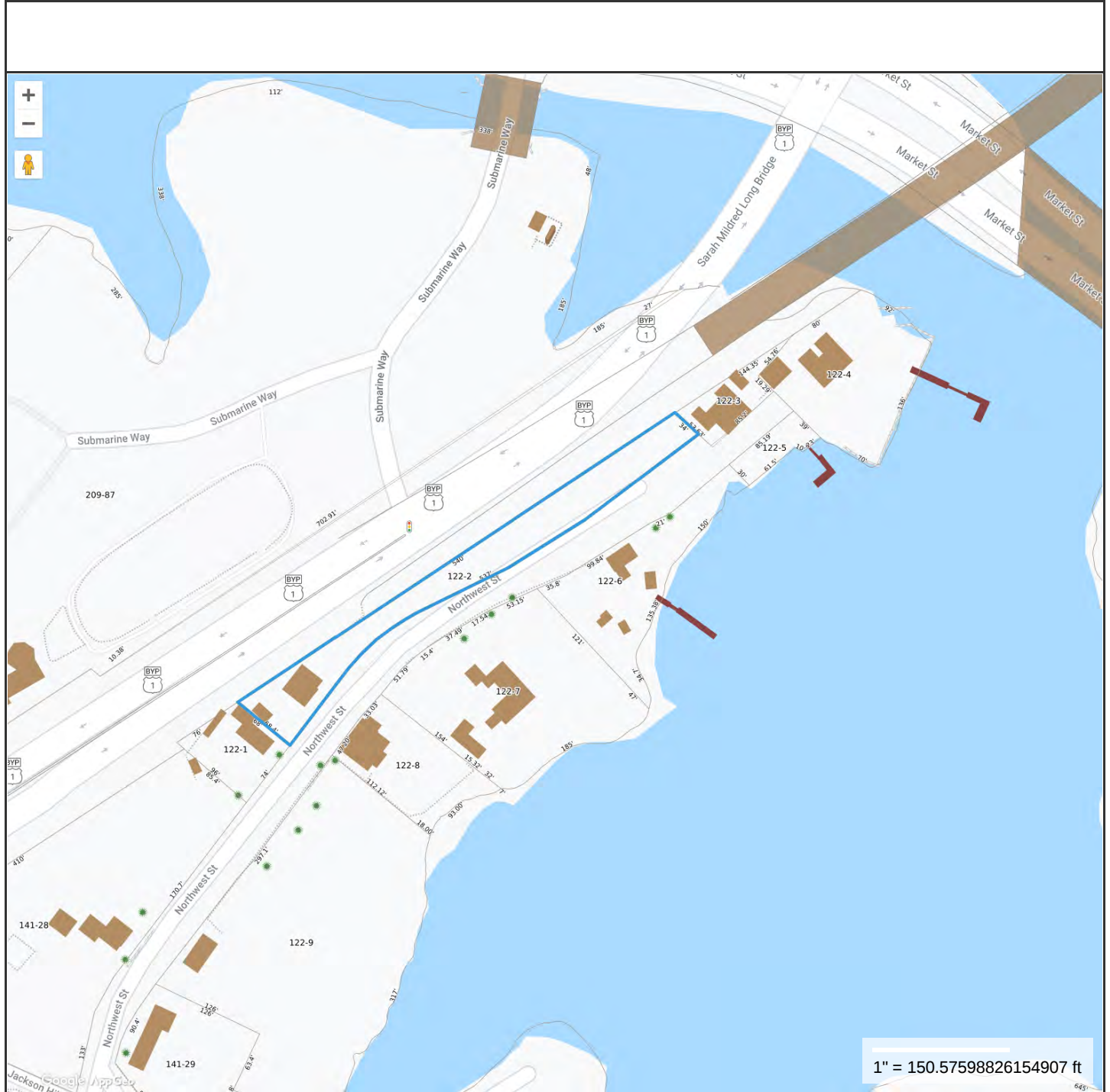
Map Generated: 10/29/2021



## Notes







**Property Information**

**Property ID** 0122-0002-0000  
**Location** 137 NORTHWEST ST  
**Owner** MORNEAULT GREGORY J



**MAP FOR REFERENCE ONLY  
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019  
Data updated 7/17/2019

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.







**AMBIT ENGINEERING, INC.** CIVIL ENGINEERS AND LAND SURVEYORS  
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

1 March 2022

Andrea L. Ardito & R. Brad Lebo  
121 Northwest Street  
Portsmouth, NH 03801

**RE: New Hampshire Wetland & Shoreland Applications for proposed site development for Darrell Moreau, Northwest Street, Portsmouth, NH.**

Dear Property Owner,

Under NH RSA 482-A and RSA 483-B this letter is to inform you in accordance with State Law that a NH DES Wetlands Permit and a NH DES Shoreland Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact the 100' Tidal Buffer Zone, the 250' Protected Shoreland and tidal wetlands**, on behalf of your abutter, **Darrell Moreau**.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **Darrell Moreau** proposes a project that requires construction in the 100' Tidal Buffer Zone, the 250' Protected Shoreland, and tidal wetlands, all jurisdictional areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing at the office of the Portsmouth clerk, **Portsmouth City offices** during their normal business hours, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147. It is suggested that you call ahead to the appropriate office to ensure the application is available for review.

Please feel free to call if you have any questions or comments.

Sincerely,

Steven D. Riker  
NH Certified Wetland Scientist-Permitting Specialist

**CERTIFIED MAIL/Return Receipt Requested**



**AMBIT ENGINEERING, INC.** CIVIL ENGINEERS AND LAND SURVEYORS  
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

1 March 2022

Mary A. Mahoney  
206 Northwest Street  
Portsmouth, NH 03801

**RE: New Hampshire Wetland & Shoreland Applications for proposed site development for Darrell Moreau, Northwest Street, Portsmouth, NH.**

Dear Property Owner,

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Please feel free to call if you have any questions or comments.

Sincerely,

Steven D. Riker  
NH Certified Wetland Scientist-Permitting Specialist

**CERTIFIED MAIL/Return Receipt Requested**



**AMBIT ENGINEERING, INC.** CIVIL ENGINEERS AND LAND SURVEYORS  
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

1 March 2022

Michael George Petrin & Katie Marie Laverriere  
PO Box 899  
Durham, NH 03824

**RE: New Hampshire Wetland & Shoreland Applications for proposed site development for Darrell Moreau, Northwest Street, Portsmouth, NH.**

Dear Property Owner,

Under NH RSA 482-A and RSA 483-B this letter is to inform you in accordance with State Law that a NH DES Wetlands Permit and a NH DES Shoreland Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact the 100' Tidal Buffer Zone, the 250' Protected Shoreland and tidal wetlands**, on behalf of your abutter, **Darrell Moreau**.

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Please feel free to call if you have any questions or comments.

Sincerely,

Steven D. Riker  
NH Certified Wetland Scientist-Permitting Specialist

**CERTIFIED MAIL/Return Receipt Requested**

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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Postage	\$
Total Postage and Fees	\$

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Street and Apt. No., or PO Box No.  
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City, State, ZIP+4®  
**PORTSMOUTH, NH 03801**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Postage	\$
Total Postage and Fees	\$

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Street and Apt. No., or PO Box No.  
**PO BOX 899**  
City, State, ZIP+4®  
**DORR, NH 03824**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



Site Photograph #1

March 2022



Site Photograph #2

March 2022





Site Photograph #3

March 2022



Site Photograph #4

March 2022





Site Photograph #5

March 2022



Site Photograph #6

March 2022





Site Photograph #7

March 2022



Site Photograph #8

March 2022





# New Hampshire Natural Heritage Bureau

## NHB DataCheck Results Letter

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**To:** John Chagnon, Ambit Engineering, Inc.  
200 Griffin Road  
Unit 3  
Portsmouth, NH 03801

**From:** NH Natural Heritage Bureau

**Date:** 11/4/2021 (valid until 11/4/2022)

**Re:** Review by NH Natural Heritage Bureau of request submitted 10/22/2021

**Permits:** NHDES - Shoreland Standard Permit, NHDES - Wetland Standard Dredge & Fill - Major

**NHB ID:** NHB21-3316

**Applicant:** Darrel Moreau

**Location:** Portsmouth  
Northwest Street

**Project Description:** The project proposes the construction of a single family home with attached 2 car garage, driveway, grading and associated landscaping. The project also proposes the reconfiguration of the existing access/egress to the City of Portsmouth sewer pump station that exists on the lot, and also providing rip rap outlet protection for an existing stormwater discharge pipe on the southern side of Northwest Street.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 10/22/2021 11:53:52 AM, and cannot be used for any other project.

# New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

## MAP OF PROJECT BOUNDARIES FOR: NHB21-3316

**NHB21-3316**







# CITY OF PORTSMOUTH

Planning Department  
1 Junkins Avenue  
Portsmouth, New  
Hampshire 03801  
(603) 610-7216

## PLANNING BOARD

November 23, 2021

Gregory & Amanda Morneault  
137 Northwest Street  
Portsmouth, NH 03801

RE: Preliminary and Final Subdivision Approval for property located at 137 Northwest Street (LU-20-222)

Dear Mr. & Mrs. Morneault:

The Planning Board, at its regularly scheduled meeting of Thursday, November 18, 2021, considered your application for Preliminary and Final Subdivision Approval to subdivide 1 existing lot with 18,134 square feet of lot area, 19 feet of lot depth, and 537 feet of street frontage into 2 lots as follows: Proposed Lot 1 with 7,500 square feet of lot area, 44 feet of lot depth, and 179 feet of street frontage; Proposed Lot 2 with 10,634 square feet of lot area, 25 feet of lot depth, and 357 feet of street frontage. The existing residence will remain and be on Proposed Lot 1 and a new home will be constructed on Proposed Lot 2. Said property is shown on Assessor Map 122 Lot 2 and lies within the General Residence A (GRA) District. As a result of said consideration, the Board voted grant preliminary and final subdivision approval as presented and advertised.

The Board's decision may be appealed up to thirty (30) days after the vote. Any action taken by the applicant pursuant to the Board's decision during this appeal period shall be at the applicant's risk. Please contact the Planning Department for more details about the appeals process.

All stipulations of subdivision approval, including recording of the plat as required by the Planning Department, shall be completed within six (6) months of the date of approval, unless an extension is granted by the Planning Director or the Planning Board in accordance with Section III.D of the Subdivision Rules and Regulations. If all stipulations have not been completed within the required time period, the Planning Board's approval shall be deemed null and void.

This subdivision approval is not final until the Planning Director has certified that the applicant has complied with the conditions of approval imposed by the Planning Board.

The minutes and audio recording of this meeting are available by contacting the Planning Department.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Dexter R. Legg". The signature is written in a cursive, somewhat stylized font.

Dexter R. Legg, Chairman of the Planning Board

cc: Rosann Maurice-Lentz, City Assessor

Darrell Moreau

John Chagnon, Ambit Engineering

R. Timothy Phoenix, Esq., Hoefle, Phoenix, Gormley & Roberts, PLLC

# CITY OF PORTSMOUTH

Planning Department  
1 Junkins Avenue  
Portsmouth, New  
Hampshire 03801  
(603) 610-7216



## PLANNING BOARD

February 2, 2022

Gregory & Amanda Morneault  
137 Northwest Street  
Portsmouth, NH 03801

RE: Wetland Conditional Use Permit Approval for property located at 137 Northwest Street (LU-20-222)

Dear Mr. & Mrs. Morneault:

The Planning Board, at its regularly scheduled meeting of **Thursday, January 27, 2022**, considered your application for Wetland Conditional Use Permit under Section 10. 1017 of the Zoning Ordinance to impact 5,062 square feet of wetland buffer and 45 square feet of tidal wetland. The proposed new home and existing turnaround is partially within the 100' tidal buffer zone of the North Mill Pond. In addition to the new home the applicant is proposing to remove an existing gravel turnaround and install a new paved parking apron for City vehicles to turn around. This new turnaround and the City pump station are all within a new easement. In addition, there is a plan to upgrade the stormwater outfall to protect against erosion. Said property is shown on Assessor Map 122 Lot 2 and lies within the General Residence A (GRA) District. As a result of said consideration, the Board voted to **grant** the request as presented and advertised.

The Board's decision may be appealed up to thirty (30) days after the vote. Any action taken by the applicant pursuant to the Board's decision during this appeal period shall be at the applicant's risk. Please contact the Planning Department for more details about the appeals process.

Unless otherwise indicated, applicant is responsible for applying for and securing a building permit from the Inspection Department prior to starting any project work. All stipulations of approval must be completed prior to issuance of a building permit unless otherwise indicated.

This approval shall expire one year after the date of approval by the Planning Board unless a building permit is issued prior to that date. The Planning Board may grant a one-year extension of a conditional use permit if the applicant submits a written request to the Planning Board prior to the expiration date.

The minutes and audio recording of this meeting are available by contacting the Planning Department.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rick Chellman". The signature is stylized and cursive, with a long horizontal line extending to the right.

Rick Chellman, Chairman of the Planning Board

cc: Shanti Wolph, Chief Building Inspector  
Rosann Maurice-Lentz, City Assessor  
Darrell Moreau  
John Chagnon, Ambit Engineering  
R. Timothy Phoenix, Esq., Hoefle, Phoenix, Gormley & Roberts, PLLC

Morneault, 137 Northwest Street



# **Coastal Vulnerability Assessment**

**Prepared for:**

**Darrell Moreau  
1B Jackson Hill Street  
Portsmouth, New Hampshire 03801**

**Prepared By:**

**Ambit Engineering, Inc  
200 Griffin, Unit 3  
Portsmouth, New Hampshire 03801**



## **Introduction**

This Coastal Vulnerability Assessment (CVA) is being provided in support of a New Hampshire Department of Environmental Services (NHDES) Wetland Permit Application for proposed site development located at TBD Northwest Street in Portsmouth, NH (herein referred to as “project site”). The project site is a residential lot located on the north side of Northwest Street and to the north of North Mill Pond. The site contains an existing sewer pump station which is maintained and operated by the City of Portsmouth. The surrounding land use is residential with similar residential structures.

## **Methods**

On October 26, 2021, Steven D. Riker, CWS from Ambit Engineering, Inc. conducted a site visit to evaluate coastal characteristics of the project site. This CVA was completed utilizing the NH Coastal Flood Risk Science and Technical Advisory Panel (2019). New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections. Report Published by the University of New Hampshire (herein referred to as Guidance Document).

### **Part 1.1 – Project Type**

This project proposes site development on the lot including including construction of a new home, driveway, a patio, utility connections, grading and associated landscaping. The project also proposes the removal of an existing gravel drive and improvements associated with an existing sewer pump station and impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall associated with drainage structures located within Northwest Street. For more details regarding the proposed site improvements, please refer to the NH DES Wetlands Bureau Application Letter to the Wetlands Inspector and attached NHDES Permit Plan – C5.

### **Part 1.2 – Project Location**

The project location is TBD Northwest Street, Portsmouth, NH, Tax Map 122, Lot 2 and consists of 10,634 sq. ft. of residential upland but does not contain any shoreline frontage along North Mill Pond. Access to the project site will be from Northwest Street for the staging of equipment and materials.

### **Part 1.3 – Timeline for Desired Useful Life**

The desired useful life for this project is considered to be 2100 (50-100 years) due to the fact that the improvements involve an existing residential structure, which has a life expectancy of approximately 50-75 years.

### **2.1 – Project Risk Tolerance**

The proposed project is considered to have a high risk tolerance considering the proposed improvements have a relatively low cost, are relatively easy to modify, propose little to no implications on public function and/or safety; and involve the construction of a residential structure. In addition, when referencing the American Society of Civil Engineers (ASCE), Flood Resistant Design and Construction, ASCE 24 document, this project would meet the standards of Flood Class 1.

## 2.2 – Risk Tolerance of Important Access and Service Areas

The risk tolerance of surrounding access and service areas is not applicable to this project, as the project occurs on a residential, private lot and is intended for private use; primary access of which would be from the residence.

## 3.1 – Relative Sea Level Rise Scenario (RSLR)

Based on Table 3 in the Guidance Document (see table below), the RSLR for this project (based on the previously determined high risk tolerance) is considered to be on the lower magnitude, and higher probability. The following table depicts the probable sea level rise from 2000 through 2150.

**Table 3 from the Guidance Document:**

Risk Tolerance	High	Medium	Low	Extremely Low
Example Project	Walking Trail *Docking structure & Stone Revetment	Local Road Culvert	Wastewater Treatment Facility	Hospital
Timeframe	Manage to the following sea level rise (ft*) <i>Compared to the sea level in the year 2000</i>			
	Lower magnitude Higher probability	←—————→		Higher magnitude Lower probability
2030	0.7	0.9	1.0	1.1
2050	1.3	1.6	2.0	2.3
2100	2.9	3.8	5.3	6.2
2150	4.6	6.4	9.9	11.7

\*Added by Ambit Engineering, Inc. based on the application of the Guidance Document towards our project.

## 3.2 – RSLR Impacts to the Project Evaluation

Please see the attached Figure 1 – Projected SLR’s; which depicts the project site and relevant Highest Observable Tide Line (HOTL) and the projected SLR’s for the years 2030, 2050, 2100 and 2150. Considering the High Risk Tolerance and lower magnitude of this project; the project should be managed to 2.9 feet of predicted sea level rise in the year 2100. Given that the location of the HOTL is approximately at elevation 5, and the proposed finished floor of the proposed garage will be elevation 12 and the proposed home at elevation 13.75, it is not expected the projected RSLR for this project needs to be a strong consideration.

## 3.3 – Other Factors

Other factors were evaluated in conjunction with RSLR including surface water levels, groundwater levels, and current velocities which will increase with sediment erosion and deposition, which will also change. The projects position in the landscape was also considered relative to other infrastructure. The closest surface water to the project site is the adjacent North Mill Pond, projections of RSLR of which have already been depicted and discussed. There are no current restrictions on the project site or associated with the proposed project.

## 4.1 – RSLR and Coastal Storms

Due to the project site location being relatively adjacent to North Mill Pond, it is anticipated that RSLR and storm surge on the proposed project site are not at risk given location of HOTL is at approximate elevation 5, and the proposed finished floor of the proposed garage will be elevation 12, providing 7 feet of freeboard for wave action and or storm surge.

## **4.2 – Other Factors**

Other factors such as surface water levels, groundwater levels, wind and current velocities have been considered. Considering the high risk tolerance of this project, it is not anticipated that this project has a significant level of vulnerability to RSLR and coastal storms.

Attached to this application you will find a “NH DES Permit Plan-C5” which depicts the existing lot, jurisdictional areas, abutting parcels, existing structures, proposed work, and permanent impact areas.

## **5.1 – Projected RSL-Induced Groundwater Rise**

Groundwater rise mapping projections depicted on the NH Coastal Viewer were evaluated for the project site. The NH Coastal Viewer depicts a 1.2-2.2 feet groundwater level rise as the result of 2 feet of projected sea level rise. The NH Coastal Viewer projections have been subtracted from the estimated groundwater depths (Estimated Seasonal High Water Table-ESHWT) for the site of 30” resulting in ESHWT of 4-16”; however, the proposed development does not include any stormwater structures that would require infiltration or an on-site septic system that would be negatively impacted by groundwater rise.

## **5.2 – Projected Groundwater Depth at the Project Location**

Based on knowledge of the site and soil morphology of the site, groundwater depth (Estimated Seasonal High Water Table) is approximately 30” below the soil surface.

## **6.1 – Best Available Precipitation Estimates**

Please see the attached Extreme Precipitation Tables from the Northeast Regional Climate Center.

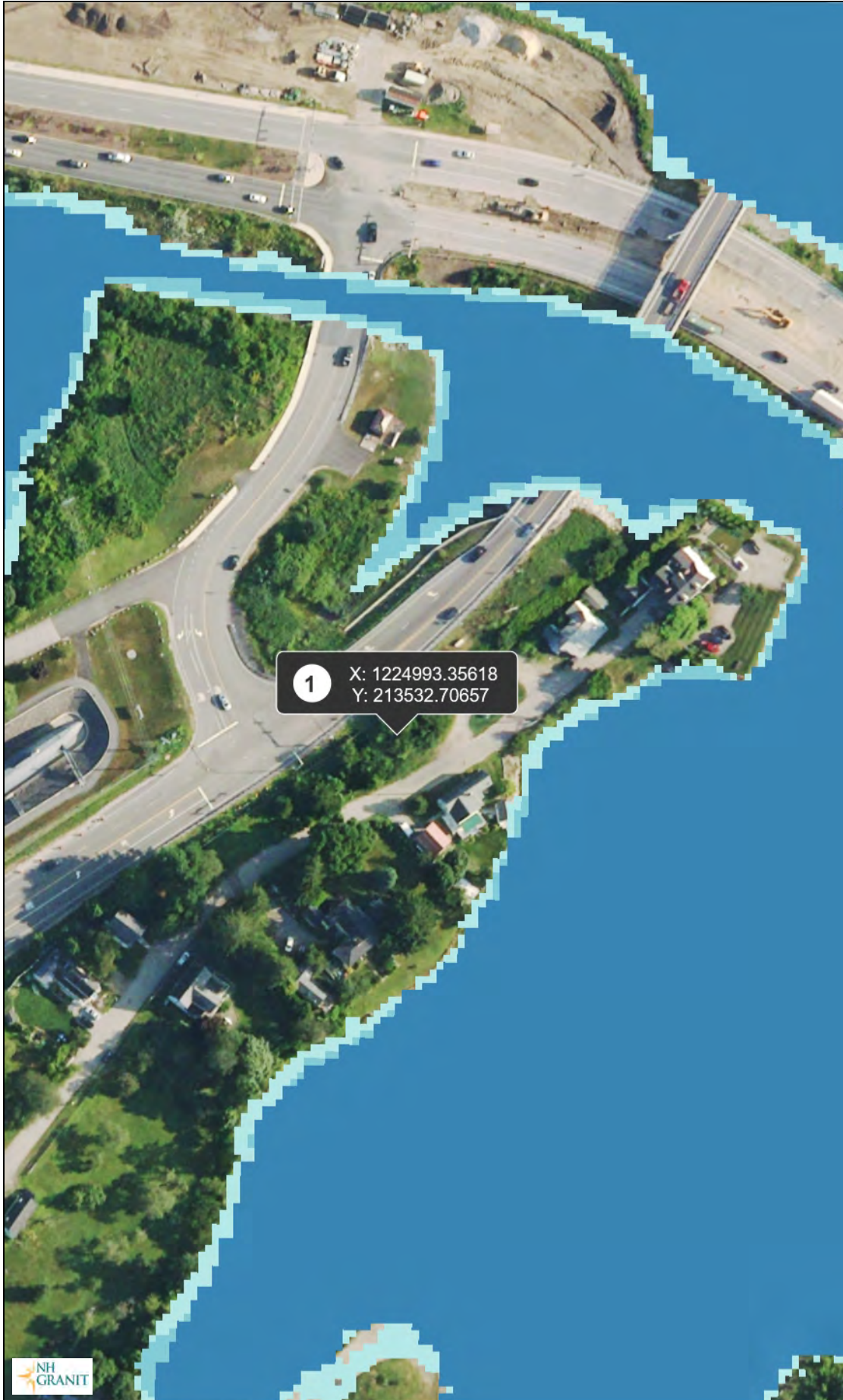
## **7.1 – Cumulative Coastal Flood Risk to the Project**

Based on the high risk tolerance of this project combined with all other factors including RSLR, coastal storms, RSLR-induced groundwater rise, extreme precipitation and/or freshwater flooding occurring together; this project is not considered to be at high risk from coastal flooding.

## **7.2 – Possible Actions to Mitigate Coastal Flood Risk**

Given the high risk tolerance of the proposed project, it is not anticipated that it is necessary to mitigate for coastal flood risk beyond what has already been incorporated into the design plan for the proposed development.

# Map by NH GRANIT



## Legend

MHHW + 1-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

Coastal 2019 1-foot RGB

Map Scale

1: 1,624

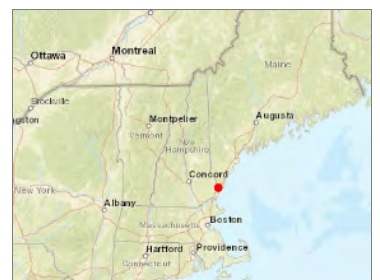
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Map Generated: 2/18/2022



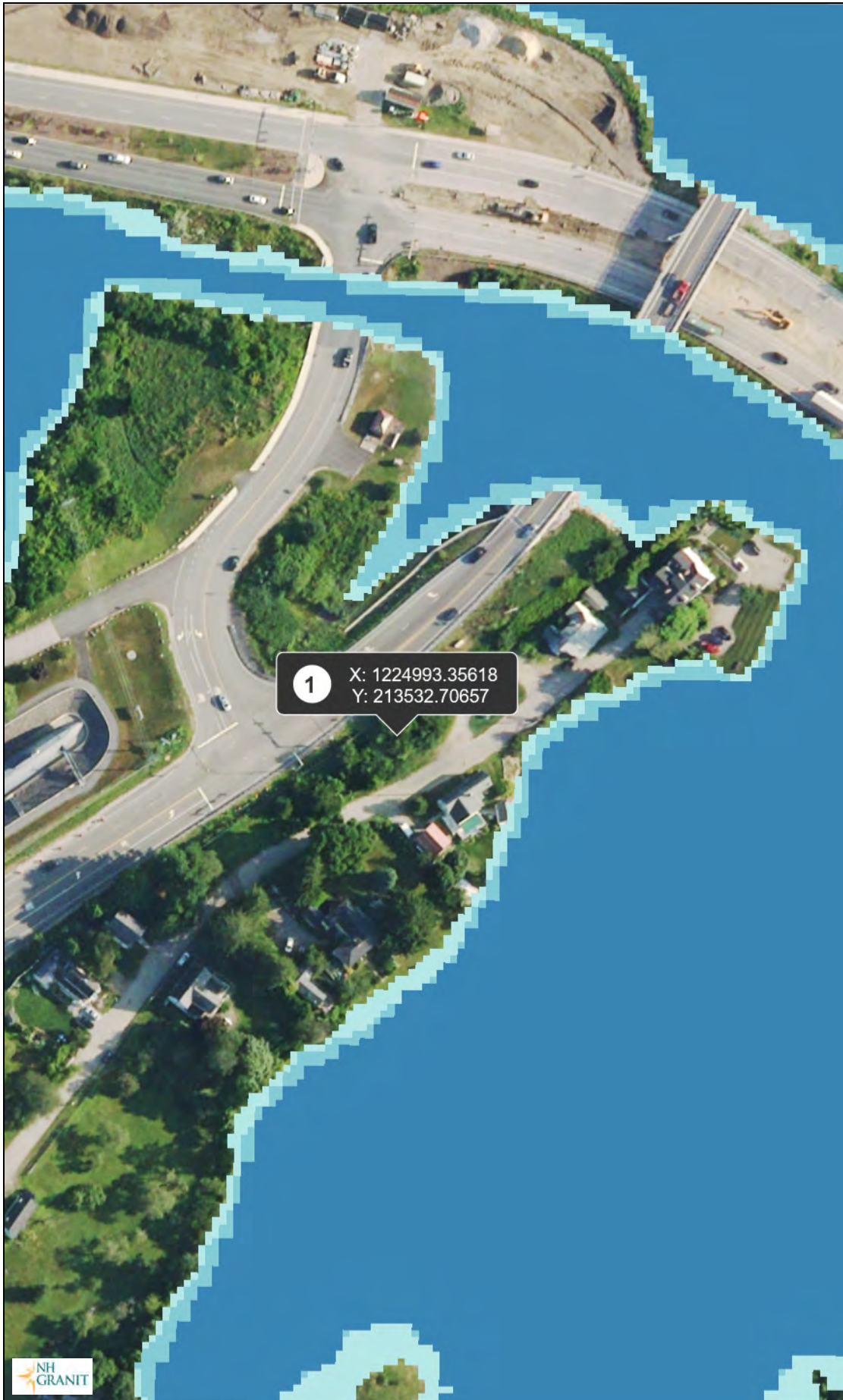
## Notes

1 foot SLR





# Map by NH GRANIT



## Legend

MHHW + 2-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

1: 1,624

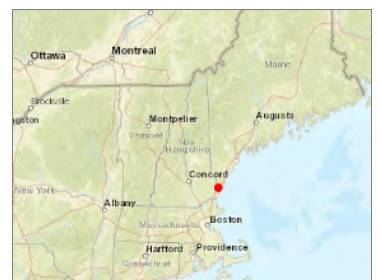
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Map Generated: 2/18/2022

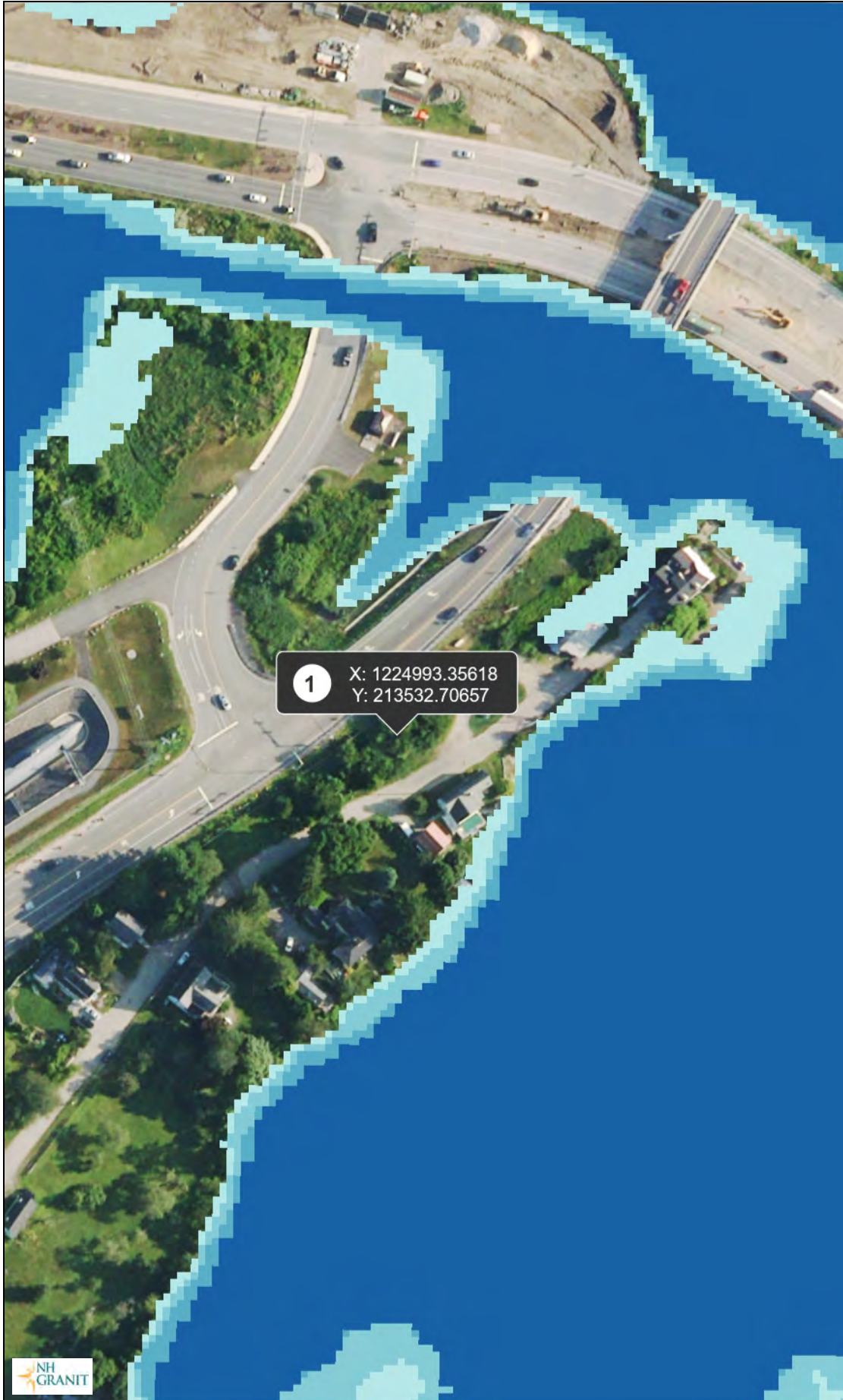


## Notes

2 foot SLR



# Map by NH GRANIT



## Legend

MHHW + 4-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

1: 1,624

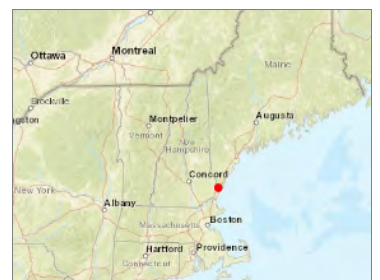
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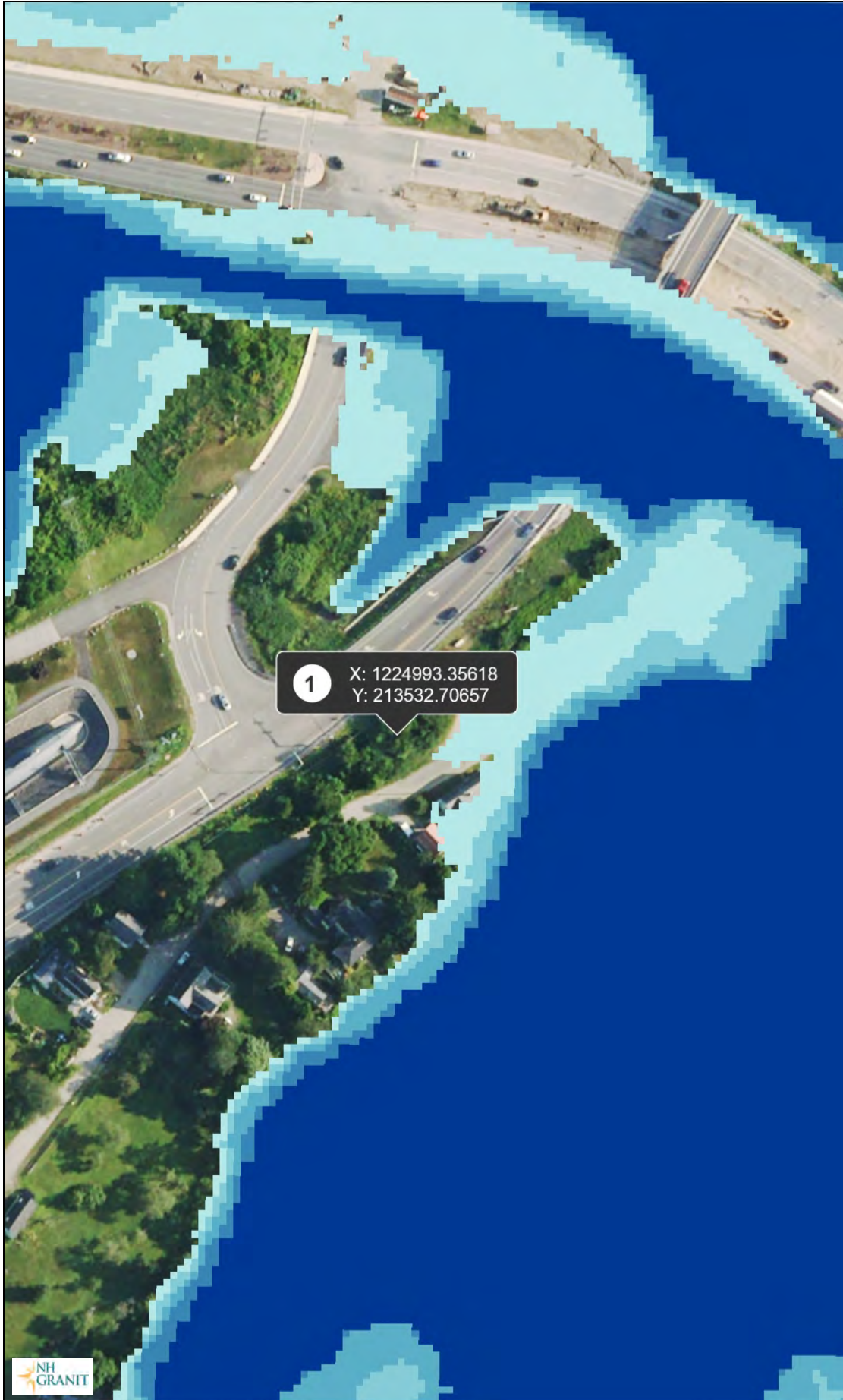
## Notes

4 foot SLR





# Map by NH GRANIT



## Legend

MHHW + 6-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

1: 1,624

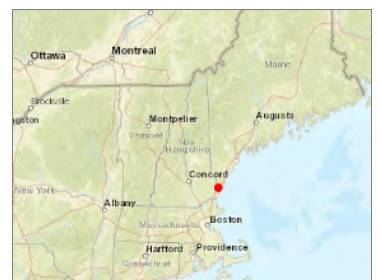
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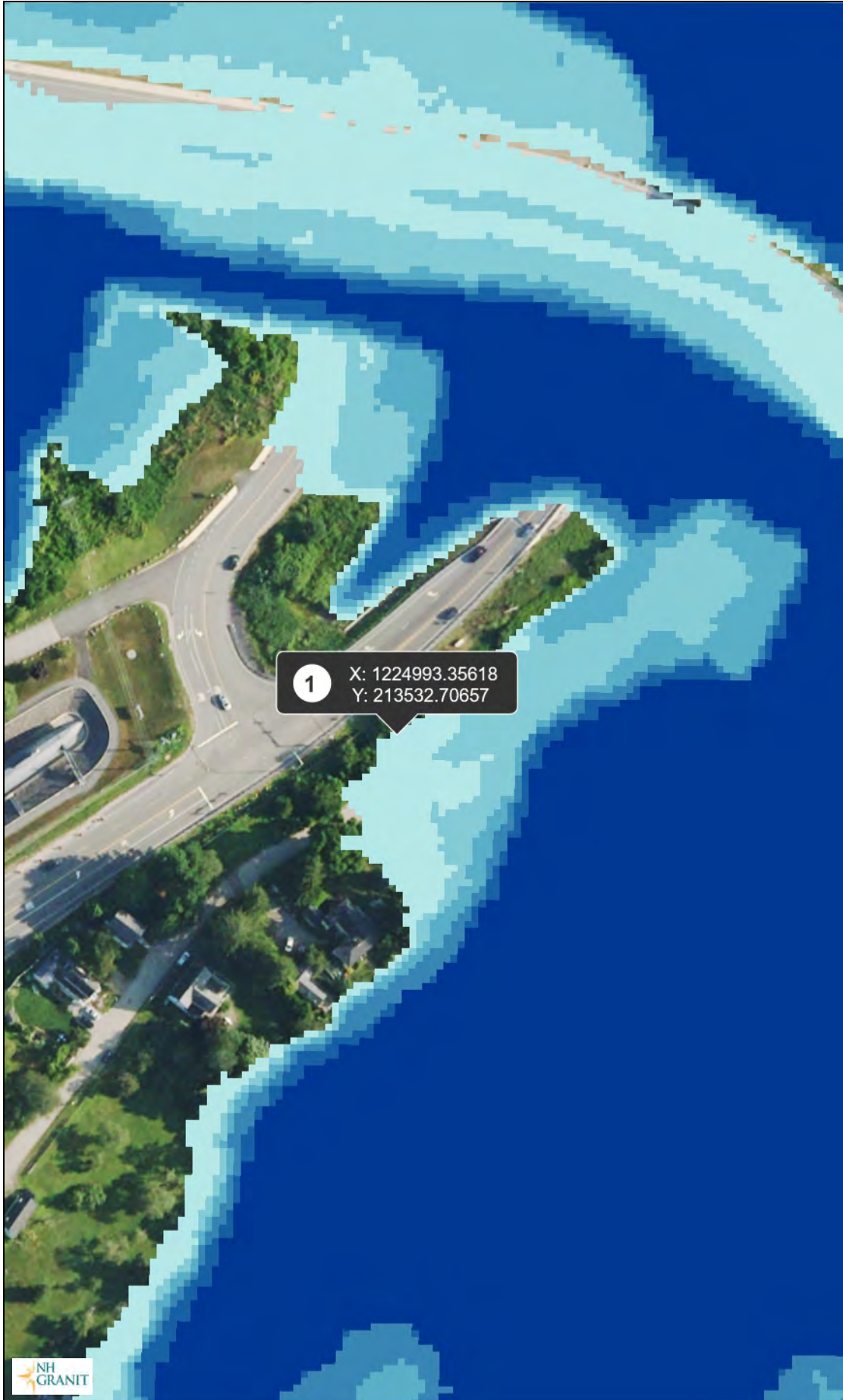


## Notes

6 foot SLR



# Map by NH GRANIT



## Legend

MHHW + 8-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

1

X: 1224993.35618  
Y: 213532.70657

Map Scale

1: 1,624

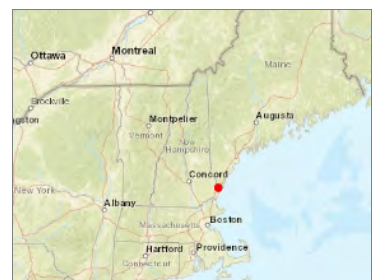
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Map Generated: 2/18/2022



## Notes

8 foot SLR





# 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	70.745 degrees West
Latitude	43.071 degrees North
Elevation	0 feet
Date/Time	Tue, 21 Jan 2020 12:37:30 -0500

Precipitation estimates multiplied by 1.15 are listed below:

1-yr: 3.06  
 2-yr: 3.69  
 10-yr: 5.59  
 50-yr: 8.49

### 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



# **Wetland Functions and Values Assessment**

**Prepared for:**

**Darrell Moreau  
1B Jackson Hill Street  
Portsmouth, New Hampshire 03801**

**Prepared By:**

**Ambit Engineering, Inc  
200 Griffin, Unit 3  
Portsmouth, New Hampshire 03801**



**Date: February 17, 2022**

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**Functions and Values Assessment.....Page 2**

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**Summary and Conclusions.....Page 4**

**APPENDICES**

- Appendix A Wetland Function-Value Evaluation Form
- Appendix B Photo Log
- Appendix C NH Natural Heritage Bureau Letter

## INTRODUCTION

The applicant is proposing the development of a property located at TBD Northwest Street, Portsmouth, New Hampshire. The project site is the result of a subdivision and will be identified on Portsmouth Tax Map 122 as Lot 2-1, approximately 10,634 sq. ft. in size. As currently designed, the proposed project would require impacts to the 100' previously developed Tidal Buffer Zone (TBZ).

The purpose of this report is to present the existing functions and values of the tidal wetlands and to assess any impacts the proposed project may have on their ability to continue to perform these functions and values. The tidal wetlands being impacted were assessed with consideration to their association with North Mill Pond, the Piscataqua River and the larger marine ecosystem, and was not limited to the tidal wetlands immediately on-site.

## METHODS

### DATA COLLECTION

The tidal wetlands associated with this project area were identified and characterized through field surveys and review of existing information. Ambit Engineering, Inc. (Ambit) conducted site visits in October 2021 to characterize the tidal wetlands and collect the necessary information to complete a functions and values assessment. In addition, Ambit contacted the New Hampshire Natural Heritage Bureau (NHB) regarding existing information of documented rare species or natural communities within the vicinity of the project site.

### WETLAND FUNCTIONS AND VALUES ASSESSMENT

Ambit assessed the ability of the tidal wetlands to provide certain functions and values and analyzed the potential affects the proposed project may have on their ability to continue to provide those functions and values. Wetland functions and values were assessed using the *Highway Methodology Workbook, Wetland Functions and Values: A Descriptive Approach*.<sup>1</sup> This method bases function and value determinations on the presence or absence of specific criteria for each of the 13 wetland functions and values (see definitions below). These criteria are assessed through direct field observations and a review of existing resource maps and databases. As part of the evaluation, the most important functions and values associated with the on-site wetlands are identified. In addition, the ecological integrity of the wetlands is evaluated based on the existing levels of disturbance and the overall significance of the wetlands within the local watershed.

#### ° **Groundwater Interchange (Recharge/Discharge)**

*This function considers the potential for the project area wetlands to serve as groundwater recharge and/or discharge areas. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.*

#### ° **Floodwater Alteration (Storage and Desynchronization)**

*This function considers the effectiveness of the wetlands in reducing flood damage by attenuating floodwaters for prolonged periods following precipitation and snow melt events.*

#### ° **Fish and Shellfish Habitat**

*This function considers the effectiveness of seasonally or permanently flooded areas within the subject wetlands for their ability to provide fish and shellfish habitat.*

#### ° **Sediment/Toxicant Retention**

*This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland to function as a trap for sediments, toxicants, or pathogens, and is generally related to factors such as the type of soils, the density of vegetation, and the position in the landscape.*

#### ° **Nutrient Removal/Retention/Transformation**

*This wetland function relates to the effectiveness of the wetland to prevent or reduce the adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries*

---

<sup>1</sup> U.S. Army Corps of Engineers. 1999. *The Highway Methodology Workbook Supplement, Wetland Functions and Values: A Descriptive Approach*. U.S. Army Corps of Engineers. New England Division. 32pp. NAEPP-360-1-30a.

◦ **Production Export (Nutrient)**

*This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.*

◦ **Sediment/Shoreline Stabilization**

*This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion, primarily through the presence of persistent, well-rooted vegetation.*

◦ **Wildlife Habitat**

*This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.*

◦ **Recreation (Consumptive and Non-Consumptive)**

*This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities.*

◦ **Educational/Scientific Value**

*This value considers the effectiveness of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.*

◦ **Uniqueness/Heritage**

*This value relates to the effectiveness of the wetland or its associated water bodies to provide certain special values such as archaeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geologic features.*

◦ **Visual Quality/Aesthetics**

*This value relates to the visual and aesthetic qualities of the wetland.*

◦ **Endangered Species Habitat**

*This value considers the suitability of the wetland to support threatened or endangered species.*

## **FUNCTIONS AND VALUES ASSESSMENT**

Results of the wetland functions and values assessment are presented below. This assessment includes a discussion of potential changes to existing wetland functions and values that may occur as a result of the proposed project:

### **Groundwater Interchange (Recharge/Discharge)**

Because there is no identified sand and gravel aquifer underlying the project area, and the wetlands are not underlain by sands or gravel, it is unlikely that significant groundwater recharge is occurring within the tidal wetlands.

### **Floodflow Alteration (Storage and Desynchronization)**

The tidal wetlands and North Mill Pond receive floodwaters from the surrounding watershed and connected waterways; therefore, is considered a principal function considering the large size of the combined waterways.

### **Fish and Shellfish Habitat**

The tidal wetland does provide fish and shellfish habitat, is associated with North Mill Pond and the Piscataqua River and the Atlantic Ocean; therefore, is considered a principal function.

### **Sediment/Toxicant Retention**

The tidal wetland (on site) contains dense vegetation and a significant source of sediments or toxicants, therefore this is considered a principal function.

### **Nutrient Removal/Retention/Transformation**

The tidal wetland (on site) contains dense vegetation and a significant source of nutrients, therefore this is considered a principal function.

**Production Export (Nutrient)**

Production export is a wetland function that typically occurs in the form of nutrient or biomass transport via watercourses, foraging by wildlife species, and removal of timber and other natural products. Because the tidal wetland provides fish and wildlife habitat, commercial and recreational fisheries opportunities, and nutrients are transferred over several trophic levels in the marine ecosystem, this is considered a principal function.

**Sediment/Shoreline Stabilization**

Due to the tidal nature and wave action of this wetland; sediment/shoreline stabilization is considered a principal function.

**Wildlife Habitat**

The greater tidal wetland and North Mill Pond provide a variety of coastal and marine habitat, therefore would be considered a principal function.

**Recreation (Consumptive and Non-Consumptive)**

The greater tidal wetland and North Mill Pond provide a variety of consumptive and non-consumptive recreational opportunities including hunting, fishing and bird watching; therefore, would be considered a principal function.

**Education/Scientific Value**

The tidal wetland and North Mill Pond are part of a larger marine ecosystem with multiple areas of public access making this a principal value.

**Uniqueness/Heritage**

The tidal wetland and North Mill Pond are unique to the seacoast area. Additionally, there are pre and post-colonial historical components associated with the North Mill Pond and the surrounding areas making this a principal value.

**Visual Quality/Aesthetics**

The North Mill Pond provides aesthetically pleasing coastal views that are viewable from surrounding uplands as well as from the water, making this a principal function.

**Endangered Species Habitat**

No threatened or endangered species, species of special concern, or their associated habitats were observed on the project site. However, an online inquiry with the NHB resulted in an unspecified occurrence of a sensitive species or natural community near the project area. NHB determined that it is not expected that the project will have any negative impacts on the species or communities of record (see Appendix C). Because there is no specific endangered species habitat in the immediate project area, this is not considered a principal function.

**PROPOSED IMPACTS**

This report is accompanying a New Hampshire Department of Environmental Services (NHDES) Minor Impact Wetland Permit Application request to permit 3,912 sq. ft. of temporary construction impact, 978 sq. ft. of permanent impact to previously developed 100' TBZ for residential development including construction of a new home, driveway, a patio, utility connections, grading and associated landscaping. The project also proposes the removal of an existing gravel drive and improvements associated with a an existing sewer pump station and 45 sq. ft. of impact to saltmarsh for the addition of rip rap outlet protection for an existing stormwater outfall associated with drainage structures located within Northwest Street. This existing outfall has created scouring and erosion at the point of discharge and the rip rap outlet protection will greatly reduce the potential for erosion and sedimentation in the future.

**SUMMARY AND CONCLUSIONS**

The jurisdictional tidal wetland is part of a large marine system and provides eleven principal functions and values when evaluated as a whole. These functions and values include: floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, sediment/shoreline



stabilization, wildlife habitat, recreation, education/scientific value, uniqueness/heritage, and visual quality aesthetics. While the entire marine system provides these principal functions and values, the proposed impacts will not have any affect on its ability to continue to provide them. Additionally, the removal of the existing gravel drive and 2,311 sq. ft. buffer planting area will serve to improve water quality that leaves the site, a function that does not currently exist.

The proposed impacts have been minimized to the greatest extent practicable, while allowing reasonable use of the property. The proposed residential structure is only partially located within the previously developed 100' Tidal Buffer Zone. The proposed rip rap outlet protection will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement. The rip rap outlet protection will greatly reduce the potential for erosion and sedimentation within the tidal wetland in the future.













Based on our assessment of the current functions and values and the proposed project, it is our belief that the proposed project will have no significant impact on the tidal wetlands or greater marine systems ability to continue to provide their functions and values.

## **APPENDIX A**

### **WETLAND FUNCTION - VALUE EVALUATION FORM**

## Wetland Function – Value Evaluation Form

<b>Wetland Description:</b> Wetland A is a tidal wetland associated with North Mill Pond and the Piscataqua River.		<b>File number:</b> 2759.02	
		<b>Wetland identifier:</b> Wetland A	
		Latitude:X:1,224, 999.4	Longitude:Y:213,532.
		<b>Preparer(s):</b> Ambit Engineering, Inc.	
		200 Griffin Road	
		<b>Date:</b> October 26, 2021	

Function/Value	Capability		Summary	Principal Yes/No
	Y	N		
 Groundwater Recharge/Discharge		X	This wetland does not possess the characteristics needed to provide this function as there are no identified underlying sand or gravel aquifers.	—
 Floodwater Alteration	X		The tidal wetland and North Mill Pond do receive floodwater from the surrounding watershed and connected waterways; therefore, this would be considered a principal function.	Y
 Fish and Shellfish Habitat	X		The tidal wetland and North Mill Pond are part of a larger coastal marine system and provide both fish and shellfish habitat. This is considered a Principal Function.	Y
 Sediment/Toxicant Retention	X		The immediate tidal wetlands contain dense vegetation therefore this is considered a Principal Function.	Y
 Nutrient Removal	X		The immediate tidal wetlands contain dense vegetation therefore this is considered a Principal Function.	Y
 Production Export	X		Because the tidal wetland provides fish and wildlife habitat, commercial and recreational fishing opportunities, and nutrients are transferred over several trophic levels in the marine ecosystem, this is considered a principal function.	Y
 Sediment/Shoreline Stabilization	X		Due to the tidal nature and wave action of this wetland; sediment/shoreline stabilization is considered a principal function. Part of this project is to provide rip rap outlet protection for an existing stormwater outfall which should prevent erosion.	Y
 Wildlife Habitat	X		The greater tidal wetland and North Mill Pond provides a variety of coastal and marine habitat, therefore would be considered a principal function.	Y
 Recreation	X		The adjacent tidal wetland provides a variety of consumptive and non-consumptive recreational opportunities including hunting, fishing and bird watching; therefore, would be considered a principal function.	Y
 Education/Scientific Value	X		The tidal wetland and North Mill Pond are part of a larger marine ecosystem with multiple areas of public access making this a principal value.	Y
 Uniqueness/Heritage	X		The tidal wetland and North Mill Pond are unique to the seacoast area. Additionally, there are pre and post-colonial historical components associated with North Mill Pond and the surrounding areas making this a principal value.	Y
 Visual Quality/Aesthetics	X		The North Mill Pond provides aesthetically pleasing coastal views that are seeable from surrounding uplands as well as from the water, making this a principal function.	Y
<b>ES</b> Endangered Species Habitat		X	An online inquiry with the NH Natural Heritage Bureau resulted in an unspecified occurrence of a sensitive species near the project area; however, they determined that it is not expected that the project will have negative impacts on them. (Appendix D).	—
Other				

Notes:

\* Attach list of considerations.

## **APPENDIX B**

### **PHOTO LOG**

## **APPENDIX C**

### **NEW HAMPSHIRE NATURAL HERITAGE BUREAU CORRESPONDENCE**



# PROPOSED SUBDIVISION PLAN

## TBD NORTHWEST STREET

### PORTSMOUTH, NEW HAMPSHIRE

# PERMIT PLANS

**REQUIRED PERMITS**  
 NHDES SHORELAND PERMIT: PENDING  
 NHDES WETLAND PERMIT: PENDING  
 PORTSMOUTH CONDITIONAL USE PERMIT: PENDING  
 PORTSMOUTH ZONING BOARD: APPROVED 2/16/21  
 PORTSMOUTH PLANNING BOARD SUBDIVISION: APPROVED 11/18/21

**OWNERS:**

GREGORY J. MORNEAULT  
 AMANDA B. MORNEAULT  
 137 NORTHWEST STREET  
 PORTSMOUTH, N.H. 03801

**APPLICANT:**

DARRELL MOREAU  
 1B JACKSON HILL STREET  
 PORTSMOUTH, N.H. 03801  
 TEL: (603) 512-5116

**LAND SURVEYOR & CIVIL ENGINEER:**

AMBIT ENGINEERING, INC.  
 200 GRIFFIN ROAD, UNIT 3  
 PORTSMOUTH, N.H. 03801-7114  
 TEL: (603) 430-9282  
 FAX: (603) 436-2315

**ARCHITECT:**

ART FORM ARCHITECTURE, INC.  
 44 LAFAYETTE ROAD  
 NORTH HAMPTON, NH. 03862  
 TEL: (603) 431-9559

**LEGEND:**

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY
	REGISTRY OF DEEDS
11/21	MAP 11/LOT 21
● IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
○ DH FND	DRILL HOLE FOUND
○ DH SET	DRILL HOLE SET
□	GRANITE BOUND w/IRON ROD FOUND

EXISTING	PROPOSED	
---	---	PROPERTY LINE
---	---	SETBACK LINE
FM	FM	FORCE MAIN
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	PG	GAS LINE
D	D	STORM DRAIN
FD	FD	FOUNDATION DRAIN
W	W	WATER LINE
FS	FS	FIRE SERVICE LINE
UE	UGE	UNDERGROUND ELECTRIC SUPPLY
	UWE	UNDERGROUND ELECTRIC SERVICE
OHW	OHW	OVERHEAD ELECTRIC WIRES
	---	RETAINING WALL
	---	EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
○	○	UTILITY POLE
□	□	ELECTRIC METER
□	□	TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD/PULLBOX
○ C.O.	○ C.O.	WATER SHUT OFF/CURB STOP
		PIPE CLEANOUT
○	○	GATE VALVE
		HYDRANT
○	○	CATCH BASIN
○	○	SEWER MANHOLE
○	○	DRAIN MANHOLE
○	○	WATER METER MANHOLE
○	○	TEST BORING
○	○	TEST PIT
LA	LA	LANDSCAPED AREA
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
CMP	CMP	CORRUGATED METAL PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
HYD	HYD	HYDRANT
℄	℄	CENTERLINE
EP	EP	EDGE OF PAVEMENT
EL	EL	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

■ R	Rural
■ SRA	Single Residence A
■ SRB	Single Residence B
■ GRA	General Residence A
■ GRB	General Residence B
■ GRC	General Residence C
■ GAMH	Garden Apartment/Mobile Home

Mixed Residential Districts	
■ MRO	Mixed Residential Office
■ MRB	Mixed Residential Business
■ G1	Gateway Corridor
■ G2	Gateway Center

Business Districts	
■ GB	General Business
■ B	Business
■ WB	Waterfront Business

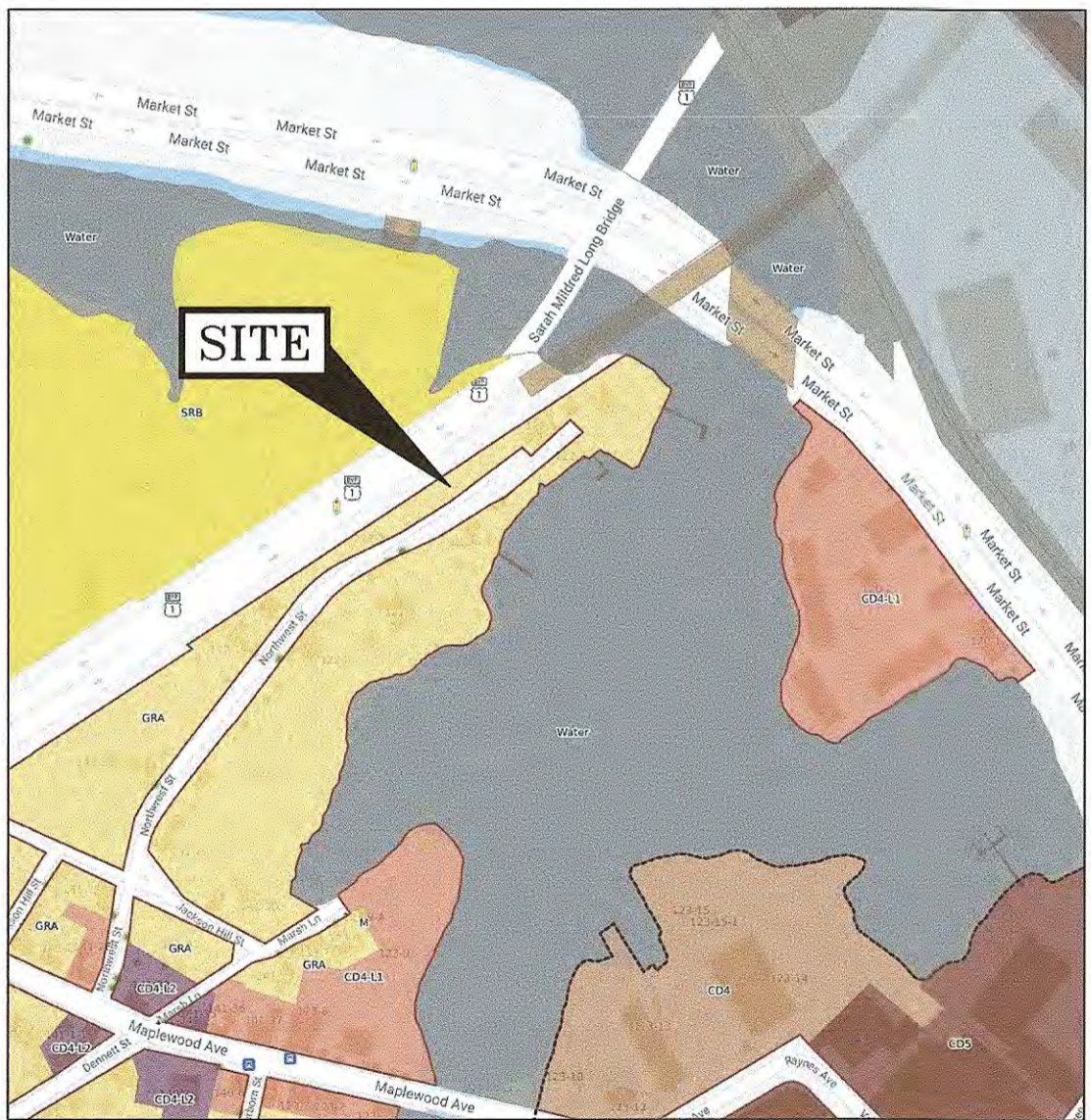
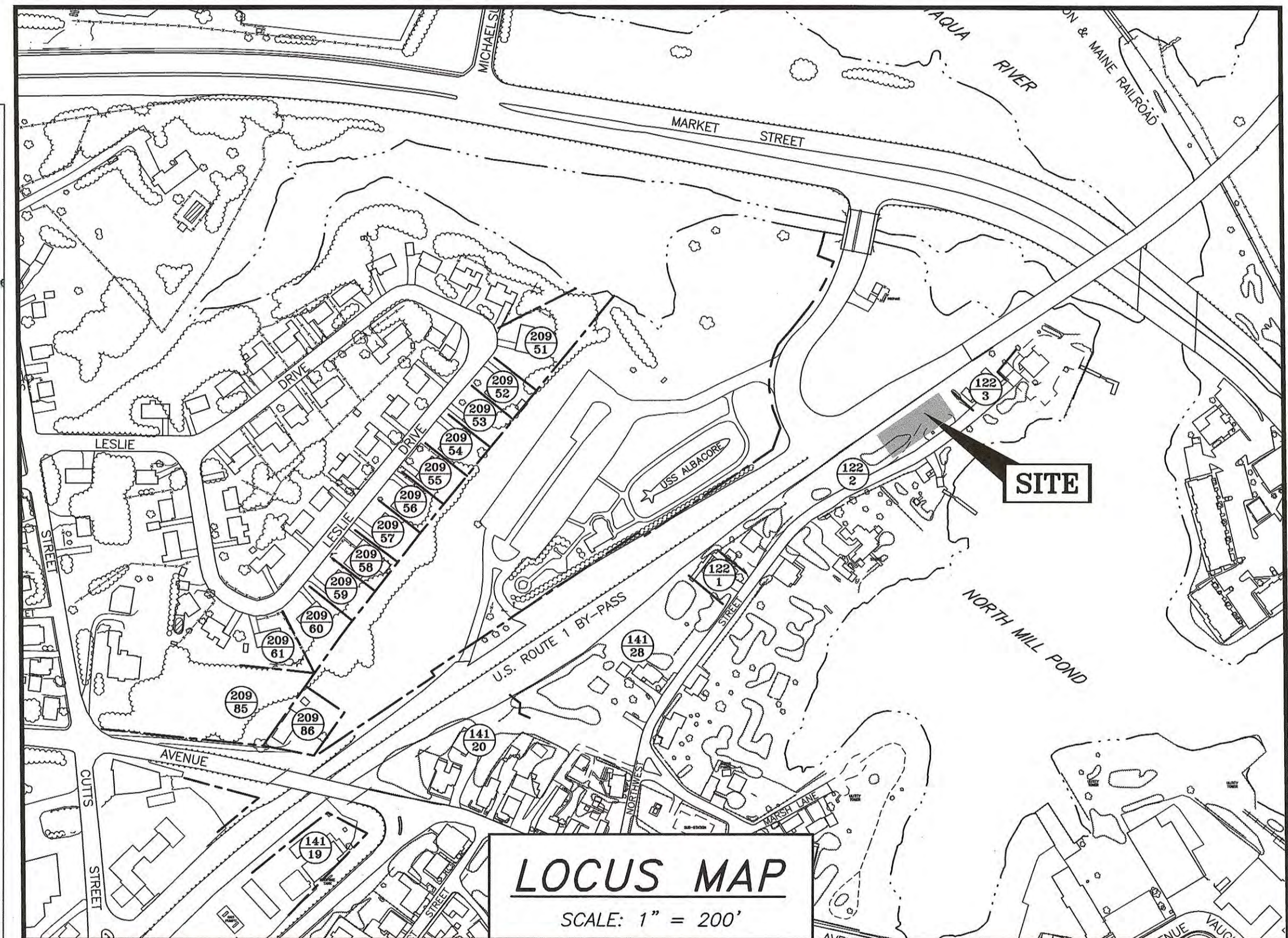
Industrial Districts	
■ OR	Office Research
■ I	Industrial
■ WI	Waterfront Industrial

Airport Districts	
■ AIR	Airport
■ AI	Airport Industrial
■ PI	Pease Industrial
■ ABC	Airport Business Commercial

Other Districts	
■ M	Municipal
■ NRP	Natural Resource Protection
■ TC	Transportation Corridor



**INDEX OF SHEETS**

- SUBDIVISION PLAN
- C1- EXISTING CONDITIONS PLAN
- C2- SUBDIVISION SITE PLAN
- C3- EROSION CONTROL & GRADING PLAN
- C4- UTILITY PLAN
- C5- CUP & NHDES PERMIT PLAN
- P1- NEIGHBORHOOD PLAN- AERIAL
- D1-D2- DETAILS

**UTILITY CONTACTS**

- ELECTRIC:**  
 EVERSOURCE  
 74 OLD DOVER ROAD  
 ROCHESTER, N.H. 03867  
 Tel. (603) 332-4227,  
 Ext. 555.5325  
 ATTN: MARK COLLINS  
 EMAIL:  
 mark.collins@eversource.com
- NATURAL GAS:**  
 UNITIL  
 325 WEST ROAD  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 6294-5147  
 ATTN: SUSAN DUPLISA  
 duplisesa@unitil.com
- CABLE:**  
 XFINITY BY COMCAST  
 180 GREENLEAF AVE.  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 266-2278  
 ATTN: MIKE COLLINS
- SEWER & WATER:**  
 PORTSMOUTH DEPARTMENT  
 OF PUBLIC WORKS  
 680 PEVERLY HILL ROAD  
 PORTSMOUTH, N.H. 03801  
 Tel. (603) 427-1530  
 ATTN: JIM TOW
- COMMUNICATIONS:**  
 FAIRPOINT  
 COMMUNICATIONS  
 1575 GREENLAND ROAD  
 GREENLAND, N.H. 03840  
 Tel. (603) 427-5525  
 ATTN: JOE CONSIDINE  
 EMAIL:  
 jconsidine@fairpoint.com

**PROJECT ABUTERS:**

- |   |   |  |
|---|---|--|
| 122<br>1<br>N/F<br>ANDREA L. ARDITO<br>R. BRAD LEBRO<br>121 NORTHWEST STREET<br>PORTSMOUTH, NH 03801<br>5646/912                            | 122<br>3<br>N/F<br>MICHAEL GEORGE PETRIN<br>& KATIE MARIE LAVERRIERE<br>268 DENNETT STREET<br>PORTSMOUTH, NH 03801<br>6138/647 (12.3% INT.) | 122<br>3<br>N/F<br>NATHAN LAVERRIERE<br>2040 FRANKLIN STREET<br>APT. #801<br>SAN FRANCISCO, CA 94109<br>6138/647 (87.7% INT.)            |
| 122<br>5<br>N/F<br>MICHAEL GEORGE PETRIN<br>& KATIE MARIE LAVERRIERE<br>268 DENNETT STREET<br>PORTSMOUTH, NH 03801<br>6138/647 (12.3% INT.) | 122<br>5<br>N/F<br>NATHAN LAVERRIERE<br>2040 FRANKLIN STREET<br>APT. #801<br>SAN FRANCISCO, CA 94109<br>6138/647 (87.7% INT.)               | 122<br>6<br>N/F<br>MARY A. MAHONEY TRUST<br>c/o MARY A. MAHONEY TRUST<br>208 NORTHWEST STREET<br>PORTSMOUTH, NH 03801<br>6042/1984       |
| 122<br>7<br>N/F<br>LARRY BOOZ<br>172 NORTHWEST STREET<br>PORTSMOUTH, NH 03801<br>5773/2064<br>0-14146                                       | 122<br>8<br>N/F<br>LISA E. GROUX<br>136 NORTHWEST STREET<br>PORTSMOUTH, NH 03801<br>4666/602<br>C-33849                                     | 122<br>9<br>N/F<br>THE SOCIETY FOR THE PRESERVATION<br>OF NEW ENGLAND ANTIQUITIES<br>141 CAMBRIDGE STREET<br>BOSTON, MA 02114<br>786/216 |

**PORTSMOUTH APPROVAL CONDITIONS NOTE:**  
 ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN  
 PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF  
 PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

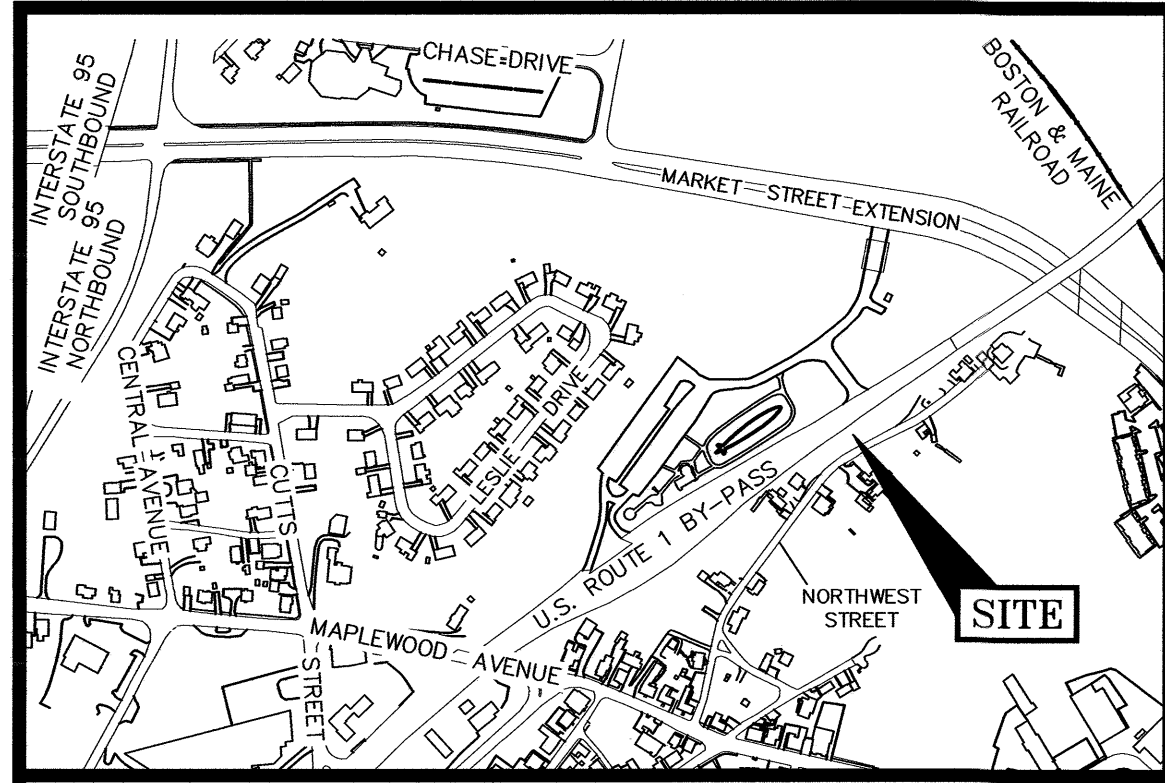
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**PROPOSED SUBDIVISION PLAN**  
**TBD NORTHWEST STREET**  
**PORTSMOUTH, N.H.**

**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 3 JANUARY 2022





LOCATION MAP SCALE: 1" = 500'

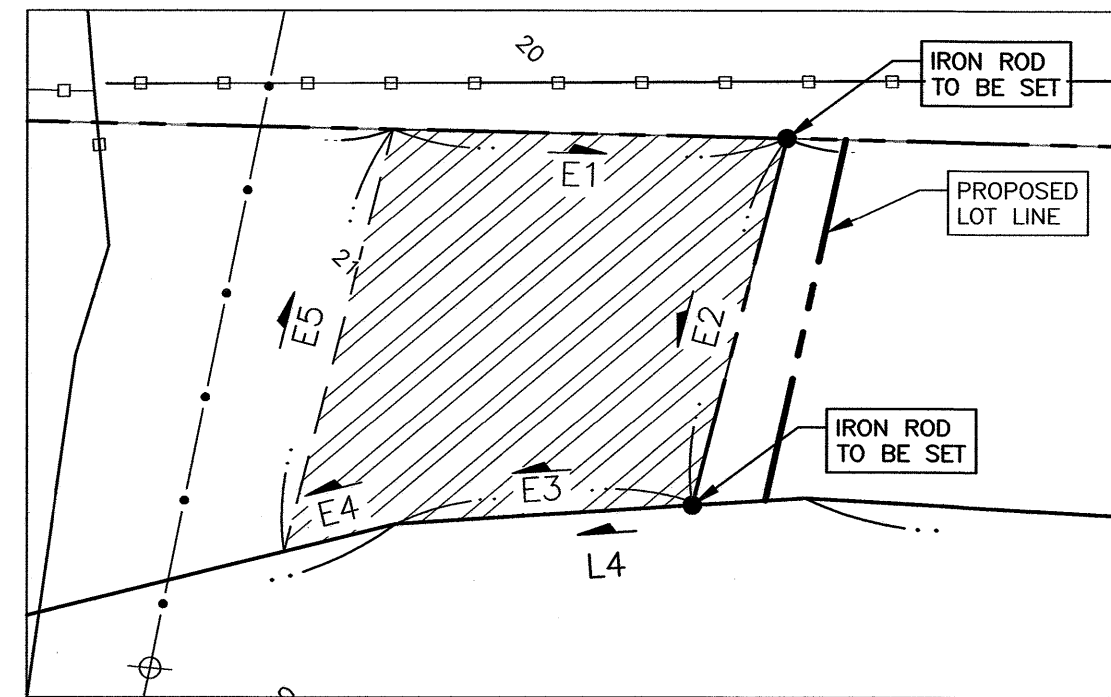
**PLAN REFERENCES:**

- 1) MAINE NEW HAMPSHIRE INTERSTATE BRIDGE AUTHORITY PISCATAQUA RIVER BRIDGE KITTERY, MAINE - PORTSMOUTH, NEW HAMPSHIRE RIGHT OF WAY MAP - N.H. APPROACH, SCALE: 1" = 50', PREPARED BY HARRINGTON AND CORTELYOU CONSULTING ENGINEERS KANSAS CITY, MO., DATED DECEMBER 1938, SHEET 1 OF 11, NOT RECORDED
- 2) MAINE - NEW HAMPSHIRE INTERSTATE BRIDGE AUTHORITY PISCATAQUA RIVER BRIDGE KITTERY, MAINE - PORTSMOUTH, NEW HAMPSHIRE RIGHT OF WAY MAPS N.H. APPROACH, RE-SURVEYED BY: MOULTON ENGINEERING CO. KITTERY, MAINE 1954, SCALE: 1" = 50', SHEET 1 OF 5, NOT RECORDED
- 3) US ROUTE 1 BYPASS & SUBMARINE WAY RIGHT OF WAY LAYOUT PLANS CITY OF PORTSMOUTH JULY 17, 2019, OWNER OF RECORD: STATE OF NEW HAMPSHIRE, STATE PROJECT NO. 13455, SCALE: 1" = 50', PREPARED BY GM2 ASSOCIATES, SHEETS 3 & 4 OF 6, RCRD D-41603
- 4) PLAN OF LAND PORTSMOUTH, N.H. FOR ESTATE OF GRACE L. HOYT, SCALE: 1" = 20' DATED DEC. 1972 REV. MAR. 1973, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD D-3596
- 5) CONDOMINIUM SITE PLAN FOR GANTRY REALTY TRUST 172 NORTHWEST STREET COUNTY OF ROCKINGHAM PORTSMOUTH, N.H. SCALE: 1" = 20', DATED SEPT. 11, 1985 REV OCT. 1, 1985, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATES, SHEET 1 OF 3, RCRD D-14146
- 6) STANDARD PROPERTY SURVEY AND CONDOMINIUM SITE PLAN OF LAND OF LOT 4 TAX MAP U-22 250 NORTHWEST STREET PORTSMOUTH, NEW HAMPSHIRE COUNTY OF ROCKINGHAM, SCALE: 1" = 10', DATED 9-9-96, PREPARED BY CIVILWORKS DOVER, N.H., RCRD D-24961
- 7) PLAN OF LAND IN THE NAME OF THE SUSAN M. REED REVOCABLE TRUST OF TAX MAP 122 / LOT 8 LOCATED AT #136 NORTHWEST STREET COUNTY OF ROCKINGHAM PORTSMOUTH, NH, SCALE: 1" = 20' DATED MAY 23, 2006, PREPARED BY DAVID W. VINCENT, LLS RCRD C-33849

**LEGEND:**

- N/F NOW OR FORMERLY
- RP RECORD OF PROBATE
- RCRD ROCKINGHAM COUNTY
- RR SPK RAILROAD SPIKE
- MAP 11/LOT 21
- IR FND IRON ROD FOUND
- IP FND IRON PIPE FOUND
- IR SET IRON ROD SET
- DH FND DRILL HOLE FOUND
- DH SET DRILL HOLE SET
- NHNB NHDOT BOUND FOUND
- TB TOWN BOUND
- BND w/DH BOUND WITH DRILL HOLE
- ST BND w/DH STONE BOUND WITH DRILL HOLE

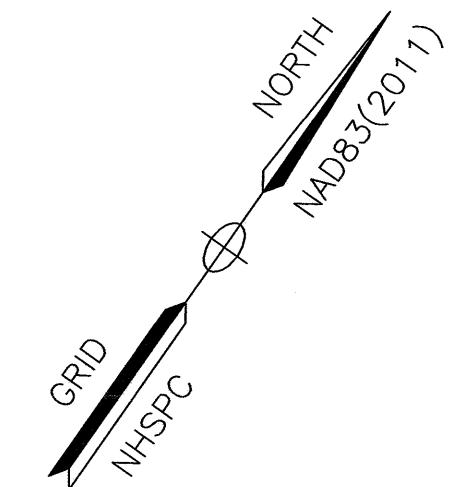
**PROPOSED WATERLINE EASEMENT**



AREA A SCALE 1"=10'

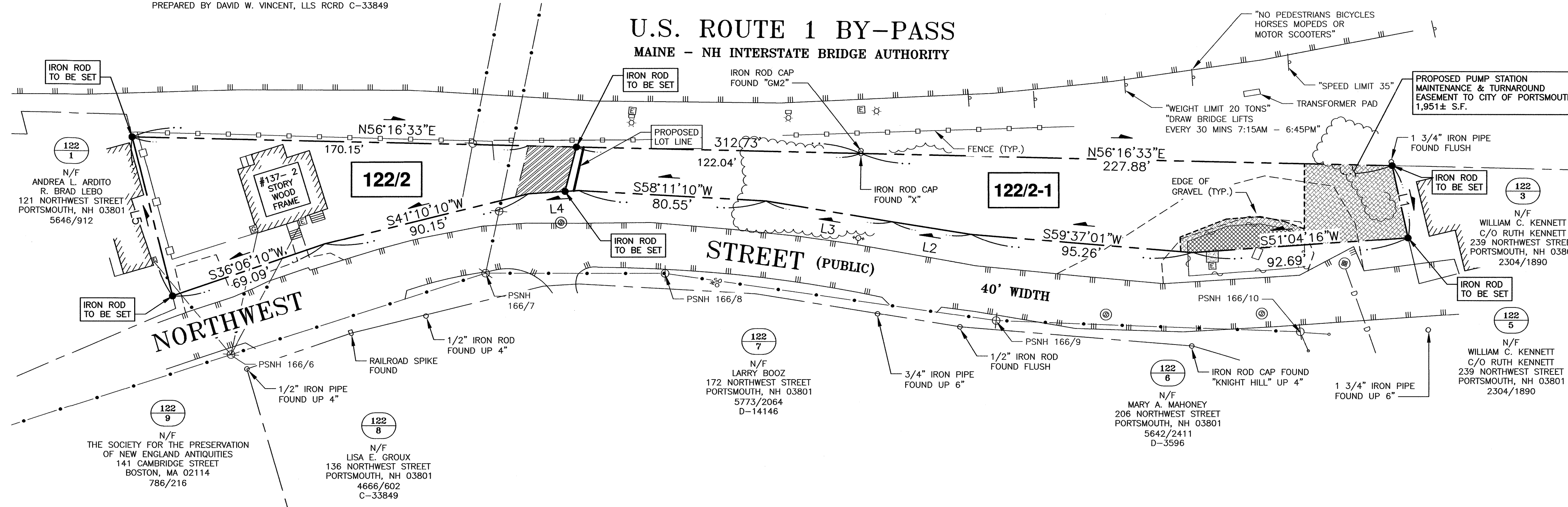
**REQUIRED VARIANCES:**

SECTION 10.521  
 A LOT DEPTH OF 44.7 FEET FOR LOT 1 AND 25.4 FEET FOR LOT 2 WHERE 70 FEET IS REQUIRED FOR EACH.  
 APPROVED 2-16-2021

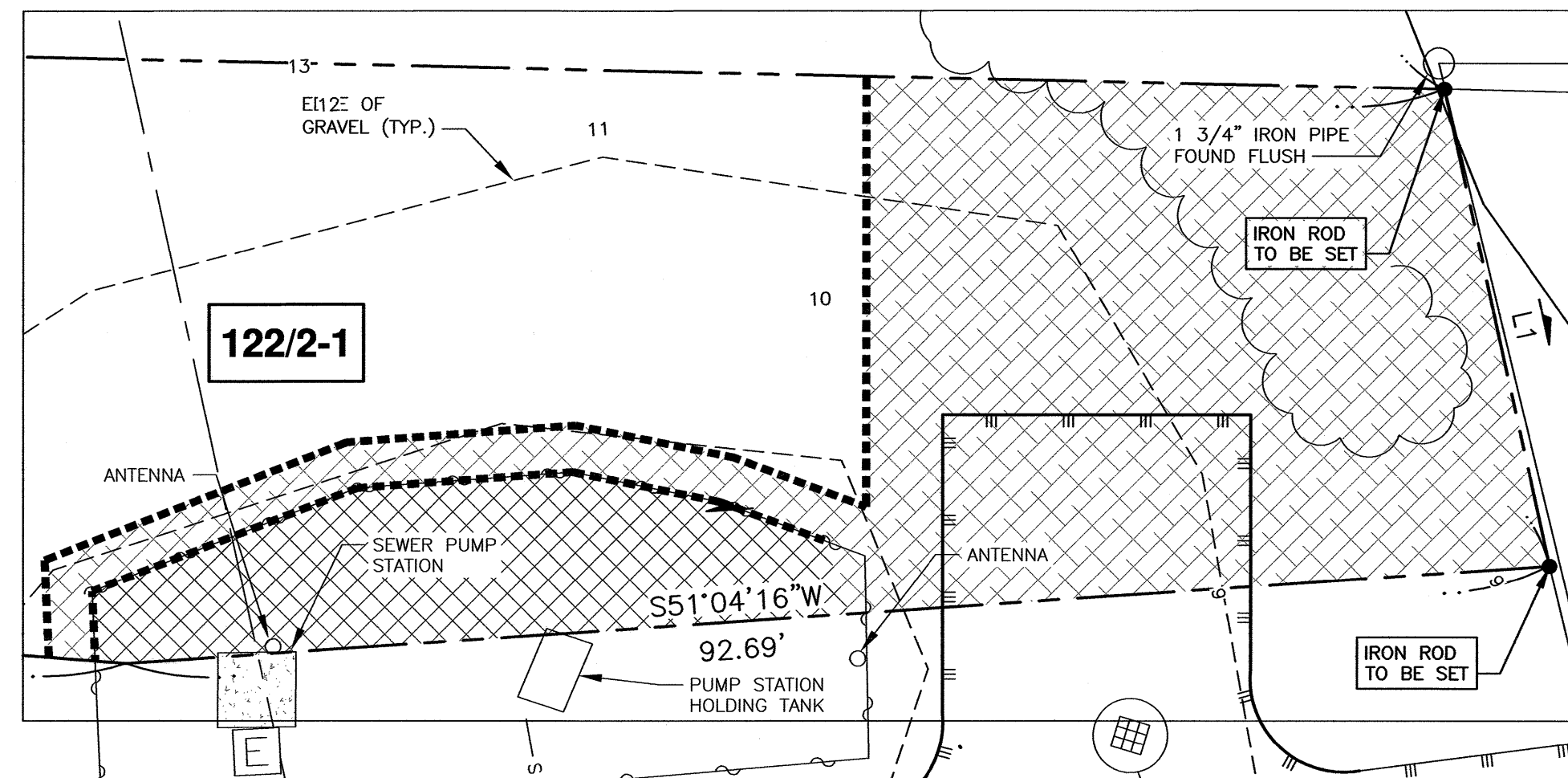


**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 122 AS LOT 2.
  - 2) OWNERS OF RECORD:  
 GREGORY J. MORNEAULT  
 AMANDA B. MORNEAULT  
 137 NORTHWEST STREET  
 PORTSMOUTH, N.H. 03801  
 APPLICANT:  
 DARRELL MOREAU  
 1B JACKSON HILL STREET  
 PORTSMOUTH, NH 03801
  - 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA (AE EL 8) AS SHOWN ON FIRM PANEL 33015C0259E. EFFECTIVE DATE MAY 17, 2005. PARCEL IS PARTIALLY IN THE 2' EXTENDED FLOOD HAZARD ZONE.
  - 4) EXISTING LOT AREA:  
 18,134 S.F.  
 0.4163 ACRES  
 PROPOSED LOT AREAS:  
 122/2 122/2-1  
 7,500 S.F. 10,634 S.F.  
 0.1722 ACRES 0.2441 ACRES
  - 5) THE PURPOSE OF THIS PLAN IS TO SHOW THE SUBDIVISION OF ONE LOT INTO TWO LOTS AND CREATE EASEMENTS TO THE CITY OF PORTSMOUTH.
  - 6) ZONING DISTRICTS:  
 GENERAL RESIDENCE A (GRA) AND HISTORIC DISTRICT.
  - 7) DIMENSIONAL REQUIREMENTS:  
 LOT AREA: 7,500 S.F.  
 FRONTAGE: 100'  
 DEPTH: 70'  
 SETBACKS: FRONT: 15', SIDE: 10', REAR: 20'.  
 MAXIMUM STRUCTURE HEIGHT: 35'  
 MAXIMUM BUILDING COVERAGE: 25%  
 MINIMUM OPEN SPACE: 30%
  - 8) PROPOSED LOT 1 DIMENSIONAL CALCULATIONS:  
 LOT AREA: 7,500 S.F.  
 FRONTAGE: 179'  
 DEPTH: 44.7' AVERAGE  
 SETBACKS:  
 FRONT: 13.8'  
 SIDE: 40.5'  
 REAR: 1.8'  
 BUILDING COVERAGE: 1,029 S.F. - 14%  
 OPEN SPACE: 6,246 S.F. - 83%



**SEWER PUMP STATION & TURN AROUND**



AREA B SCALE 1"=10'

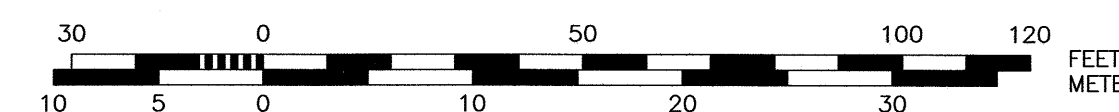
**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	S 47°28'51" E	31.75'
L2	S 64°01'21" W	34.26'
L3	S 64°19'54" W	54.79'
L4	S 51°20'10" W	21.35'
L5	N 49°16'35" W	70.45'

**EASEMENT LENGTH TABLE**

LINE	BEARING	DISTANCE
E1	N 56°16'33" E	20.54'
E2	S 20°36'02" E	19.73'
E3	S 51°20'10" W	15.48'
E4	S 41°10'10" W	5.99'
E5	N 20°36'02" W	22.71'

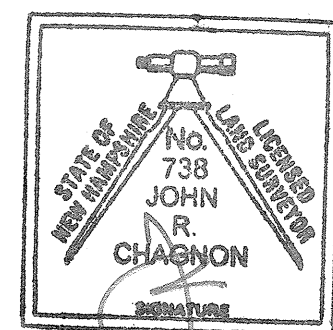
**GRAPHIC SCALE**



I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

*John R. Chagnon*  
 JOHN R. CHAGNON, LLS 738

8.23.21  
 DATE

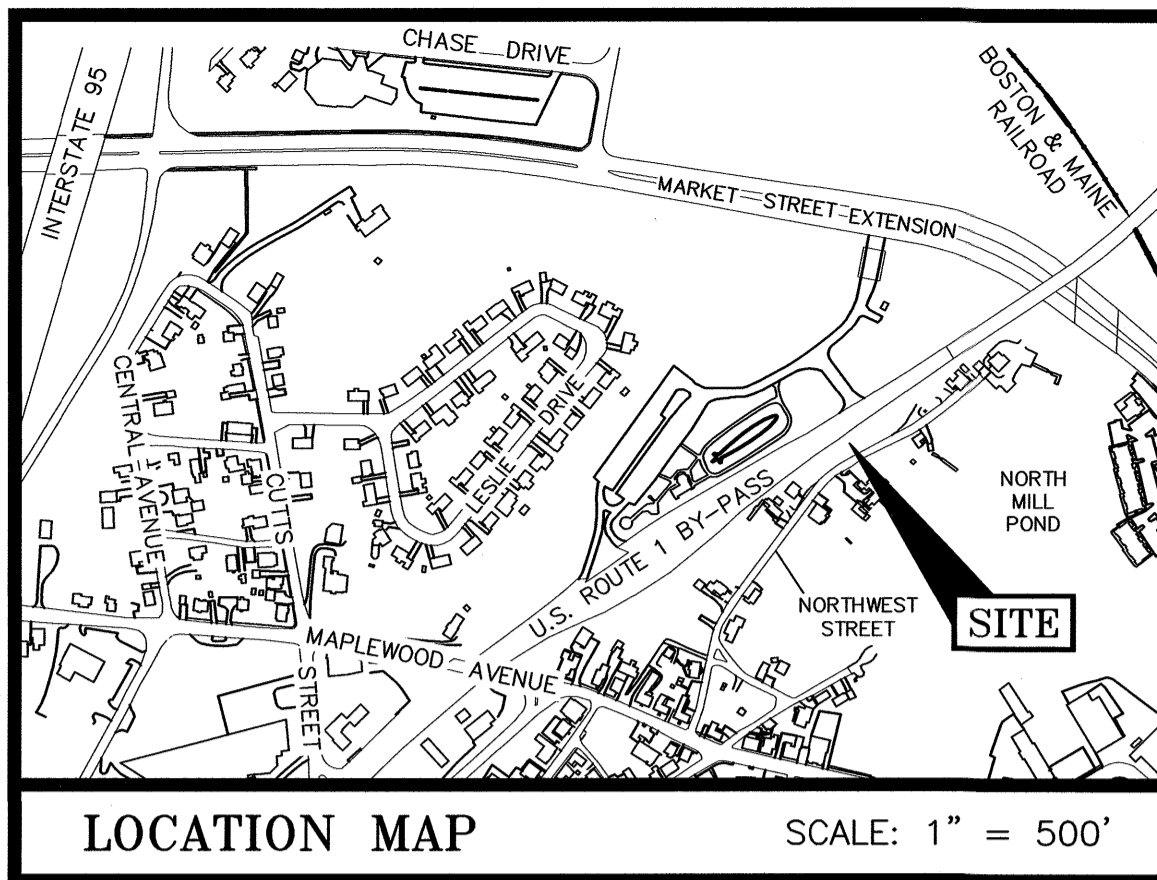


APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

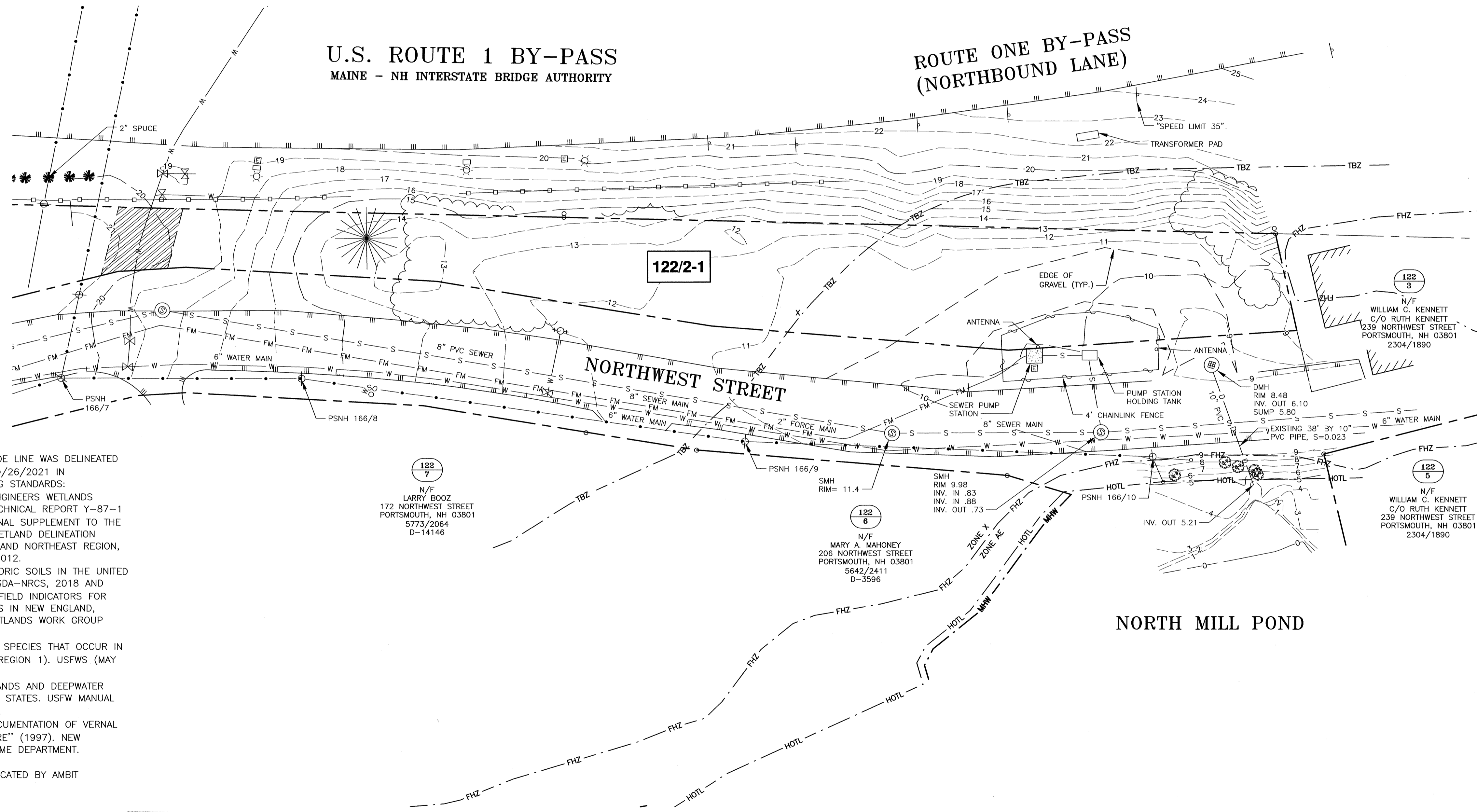
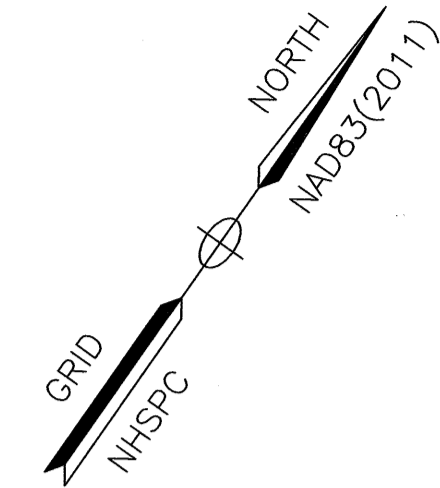
NO.	DESCRIPTION	DATE
1	EASEMENT LOCATION	8/23/21
0	ISSUED TO TAC	5/17/21

**SUBDIVISION PLAN**  
**TAX MAP 122 - LOT 2**  
 OWNERS:  
**GREGORY J. MORNEAULT & AMANDA B. MORNEAULT**  
 137 NORTHWEST STREET  
 CITY OF PORTSMOUTH  
 COUNTY OF ROCKINGHAM  
 STATE OF NEW HAMPSHIRE



**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 122 AS LOT 2.
- 2) OWNERS OF RECORD:  
 GREGORY J. MORNEAULT  
 AMANDA B. MORNEAULT  
 137 NORTHWEST STREET  
 PORTSMOUTH, N.H. 03801  
 APPLICANT:  
 DARRELL MOREAU  
 18 JACKSON HILL STREET  
 PORTSMOUTH, NH 03801
- 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA (AE EL. 8) AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE DATE JANUARY 29, 2021. PARCEL IS PARTIALLY IN THE 2' EXTENDED FLOOD HAZARD ZONE.
- 4) EXISTING LOT AREA:  
 10,634 S.F.  
 0.2441 ACRES
- 5) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON LOT 2-1 OF THE PROPOSED SUBDIVISION.
- 6) ZONING DISTRICTS:  
 GENERAL RESIDENCE A (GRA) AND HISTORIC DISTRICT.
- 7) DIMENSIONAL REQUIREMENTS:  
 LOT AREA: 7,500 S.F.  
 FRONTAGE: 100'  
 DEPTH: 70'  
 SETBACKS: FRONT: 15', SIDE: 10', REAR: 20'.  
 MAXIMUM STRUCTURE HEIGHT: 35'  
 MAXIMUM BUILDING COVERAGE: 25%  
 MINIMUM OPEN SPACE: 30%
- 8) PROPOSED LOT 2 DIMENSIONAL CALCULATIONS:  
 LOT AREA: 10,634 S.F.  
 FRONTAGE: 357'  
 DEPTH: 25.4 AVERAGE
- 9) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.



**WETLAND NOTES:**

- 1) THE HIGHEST OBSERVABLE TIDE LINE WAS DELINEATED BY STEVEN D. RIKER, CWS ON 10/26/2021 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
  - A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JAN. 1987), AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
  - B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, USDA-NRCS, 2018 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, NEIWPCC WETLANDS WORK GROUP (2019).
  - C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).
  - D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).
  - E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.
- 2) LINE LOCATION WAS FIELD LOCATED BY AMBIT ENGINEERING, INC.

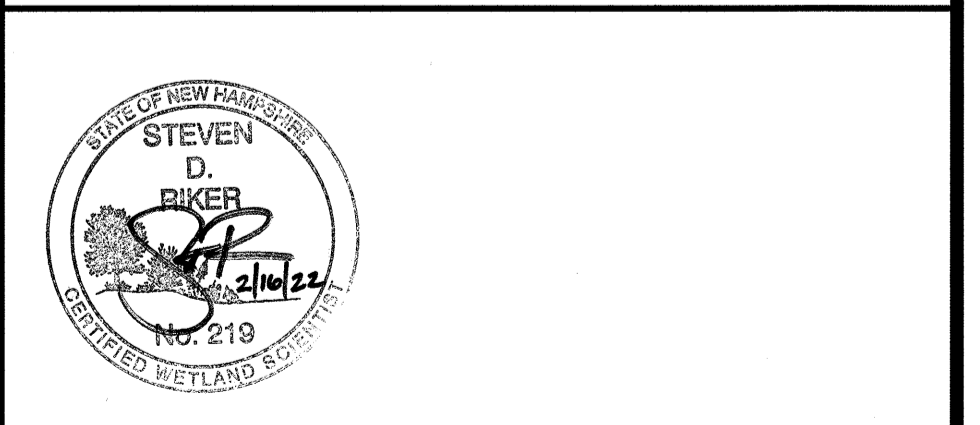
122  
7  
N/F  
LARRY BOOZ  
172 NORTHWEST STREET  
PORTSMOUTH, NH 03801  
5773/2064  
D-14146

122  
6  
N/F  
MARY A. MAHONEY  
206 NORTHWEST STREET  
PORTSMOUTH, NH 03801  
5642/2411  
D-3596

122  
5  
N/F  
WILLIAM C. KENNETT  
C/O RUTH KENNETT  
239 NORTHWEST STREET  
PORTSMOUTH, NH 03801  
2304/1890

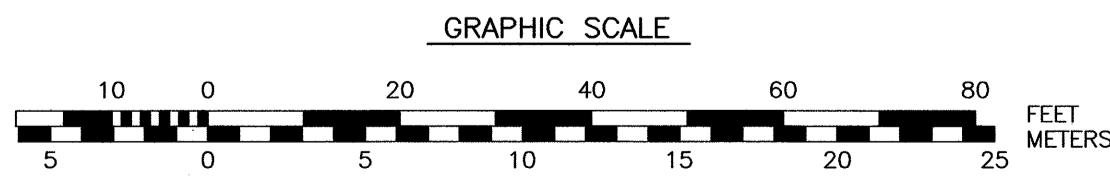
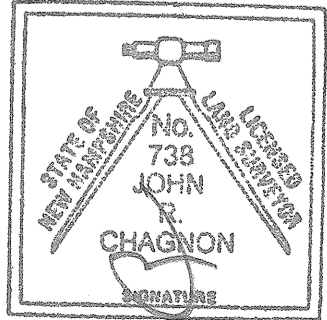
**PROPOSED HOUSING  
 TBD NORTHWEST ST.  
 PORTSMOUTH, NH**

2	RIGHT OF WAY LINES	2/11/22
1	WET DELINEATION NOTE	1/27/21
0	ISSUED FOR COMMENT	8/23/21
NO.	DESCRIPTION	DATE



"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

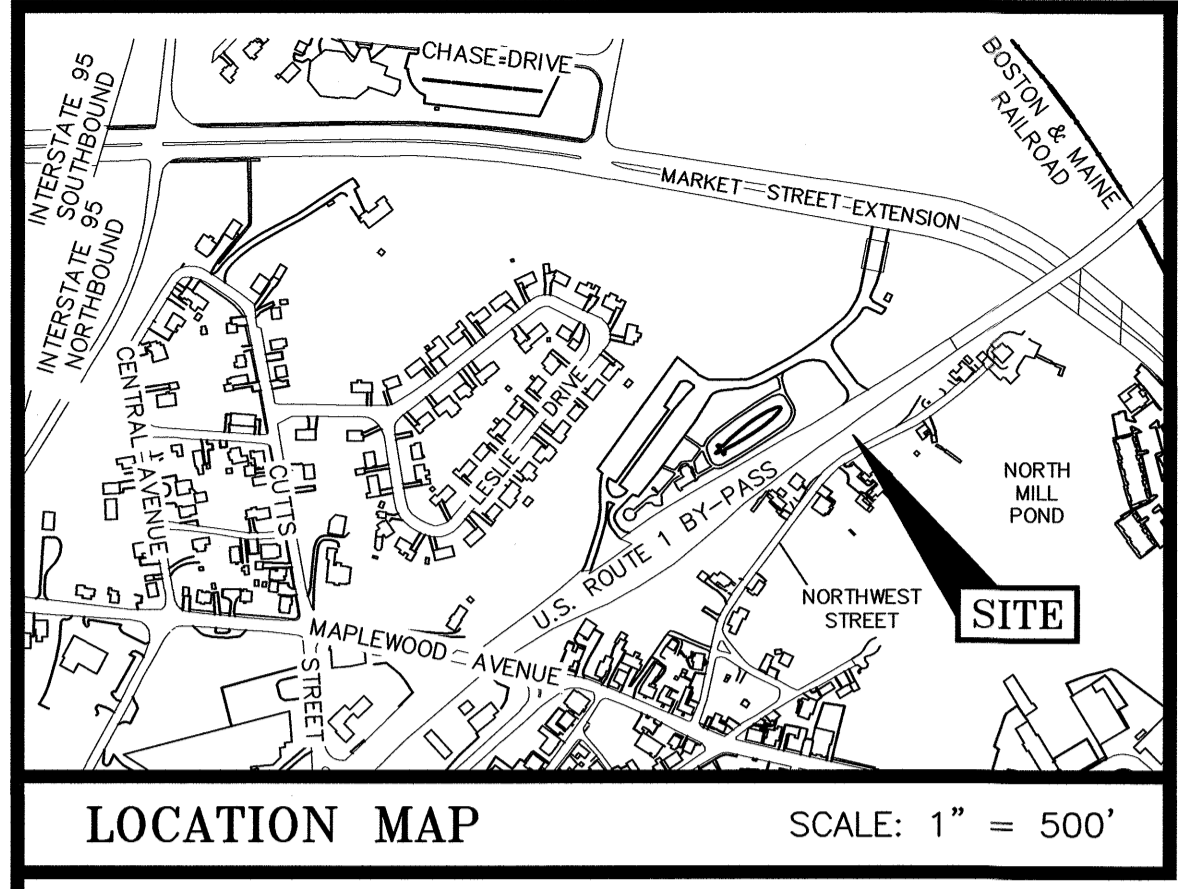
*John R. Chagnon*  
 JOHN R. CHAGNON, L.L.S.  
 DATE: 2.11.22



SCALE: 1" = 20' JUNE 2021

EXISTING CONDITIONS PLAN- LOT 2-1 **C1**



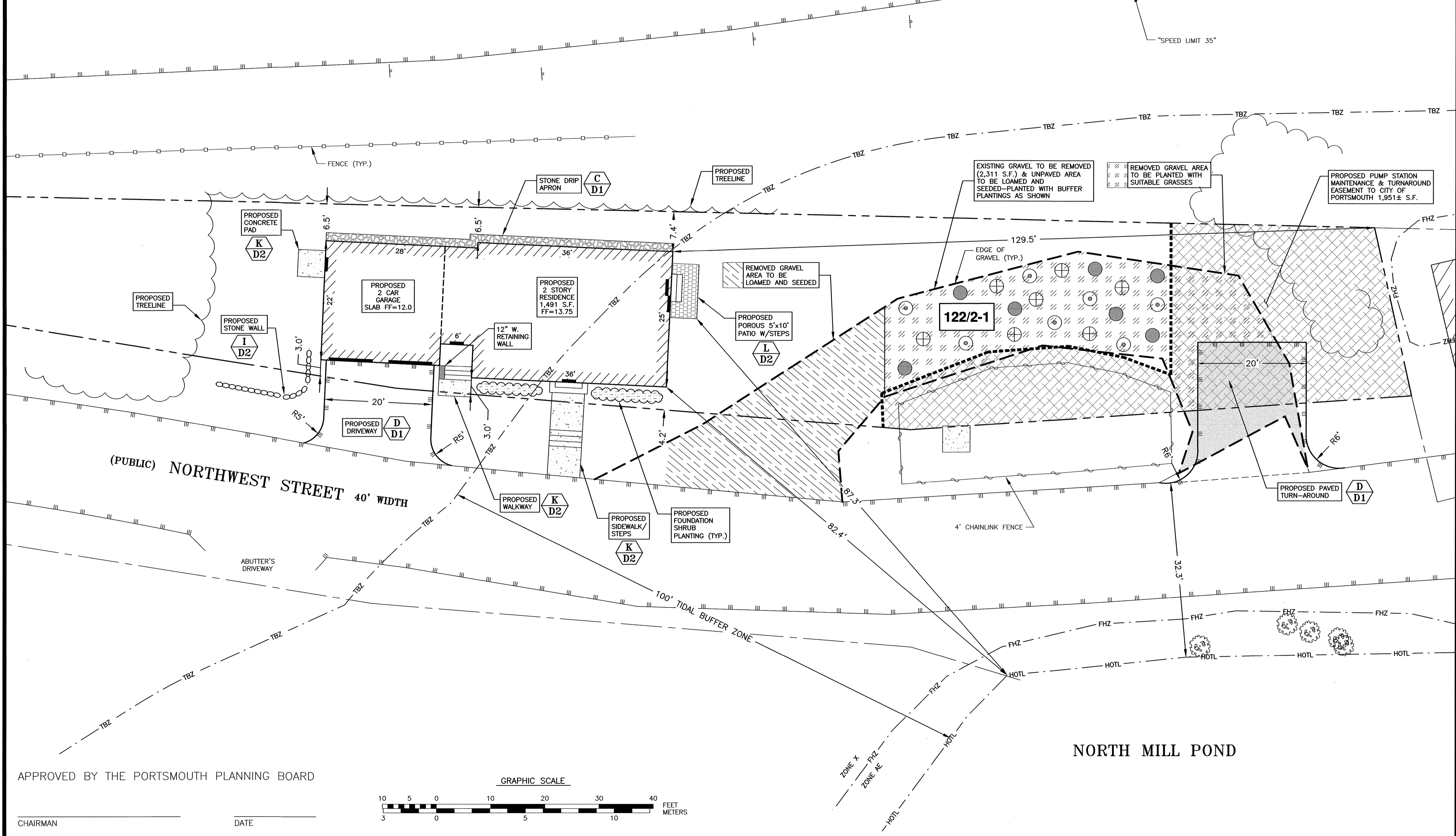
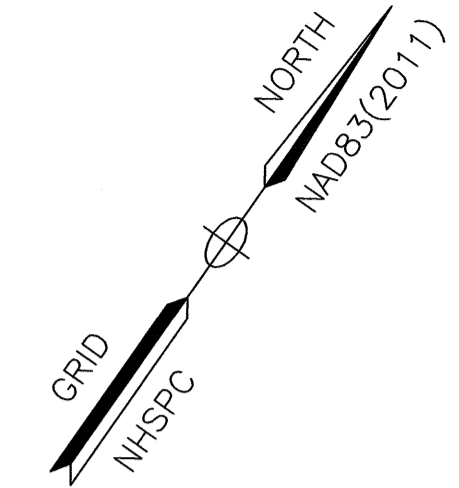


IMPERVIOUS SURFACE AREAS (TO PROPERTY LINE)		
STRUCTURE	*PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	0	1,491
STAIRS/STEPS	0	60
CONCRETE SLAB	0	25
PAVEMENT	0	319
GRAVEL	1692	0
WALKWAY	0	25
RETAINING/STONE WALL	0	8
<b>TOTAL</b>	<b>1,692</b>	<b>1,928</b>
LOT SIZE	10,634	10,634
% LOT COVERAGE	15.9%	18.1%

\*NOTE: PUMP STATION & CONTROLS NOT INCLUDED.

BUFFER PLANTING SCHEDULE			
SYMBOL	ITEM	SIZE	QTY
●	CLETHRA ALNIFOLIA	3-4 GALLON	7
○	SWEET PEPPERBUSH	3-4 GALLON	7
⊕	MYRICA PENNSYLVANICA	3-4 GALLON	7
	NORTHERN BAYBERRY	3-4 GALLON	7
	VIBURNUM RECOGNITUM	3-4 GALLON	7
	NORTHERN ARROWOOD	3-4 GALLON	7
	MEADOW SWEET	3-4 GALLON	7

ROUTE ONE BY-PASS  
(NORTHBOUND LANE)



**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 122 AS LOT 2.
  - 2) OWNERS OF RECORD:  
GREGORY J. MORNEAULT  
AMANDA B. MORNEAULT  
137 NORTHWEST STREET  
PORTSMOUTH, N.H. 03801  
  
APPLICANT:  
DARRELL MOREAU  
1B JACKSON HILL STREET  
PORTSMOUTH, NH 03801
  - 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA (AE EL 8) AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE DATE JANUARY 29, 2021. PARCEL IS PARTIALLY IN THE 2' EXTENDED FLOOD HAZARD ZONE.
  - 4) EXISTING LOT AREA:  
10,634 S.F.  
0.2441 ACRES
  - 5) THE PURPOSE OF THIS PLAN IS TO SHOW THE PLACEMENT OF A PROPOSED RESIDENCE ON LOT 2 OF THE PROPOSED SUBDIVISION.
  - 6) ZONING DISTRICTS:  
GENERAL RESIDENCE A (GRA) AND HISTORIC DISTRICT.
  - 7) DIMENSIONAL REQUIREMENTS:  
LOT AREA: 7,500 S.F.  
FRONTAGE: 100'  
DEPTH: 70'  
SETBACKS: FRONT: 15', SIDE: 10', REAR: 20'.  
MAXIMUM STRUCTURE HEIGHT: 35'  
MAXIMUM BUILDING COVERAGE: 25%  
MINIMUM OPEN SPACE: 30%
  - 8) PROPOSED LOT 2 DIMENSIONAL CALCULATIONS:  
LOT AREA: 10,634 S.F.  
FRONTAGE: 357'  
DEPTH: 25.4 AVERAGE  
  
SETBACKS:  
FRONT: 3.0'  
SIDE: 129.5'  
REAR: 6.5'  
  
STRUCTURE HEIGHT: <35'  
BUILDING COVERAGE: 1,527 S.F. (14%)  
OPEN SPACE: 8,706 S.F. (82%)
  - 9) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
  - 10) PLANTING & MAINTENANCE SHALL BE IN ACCORDANCE WITH NOFA STANDARDS FOR ORGANIC LAND CARE.

**PROPOSED HOUSING  
TBD NORTHWEST ST.  
PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
2	BUILDING LOCATION	1/3/22
1	BUILDING, DRIVEWAY, STONEWALL, PLANTING	10/27/21
0	ISSUED FOR COMMENT	8/23/21

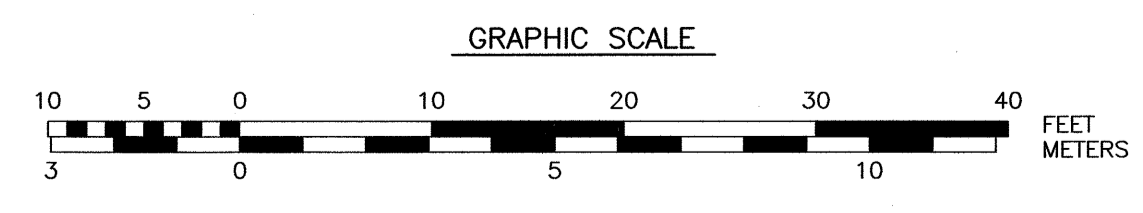
REVISIONS

SCALE 1" = 10'      JUNE 2021

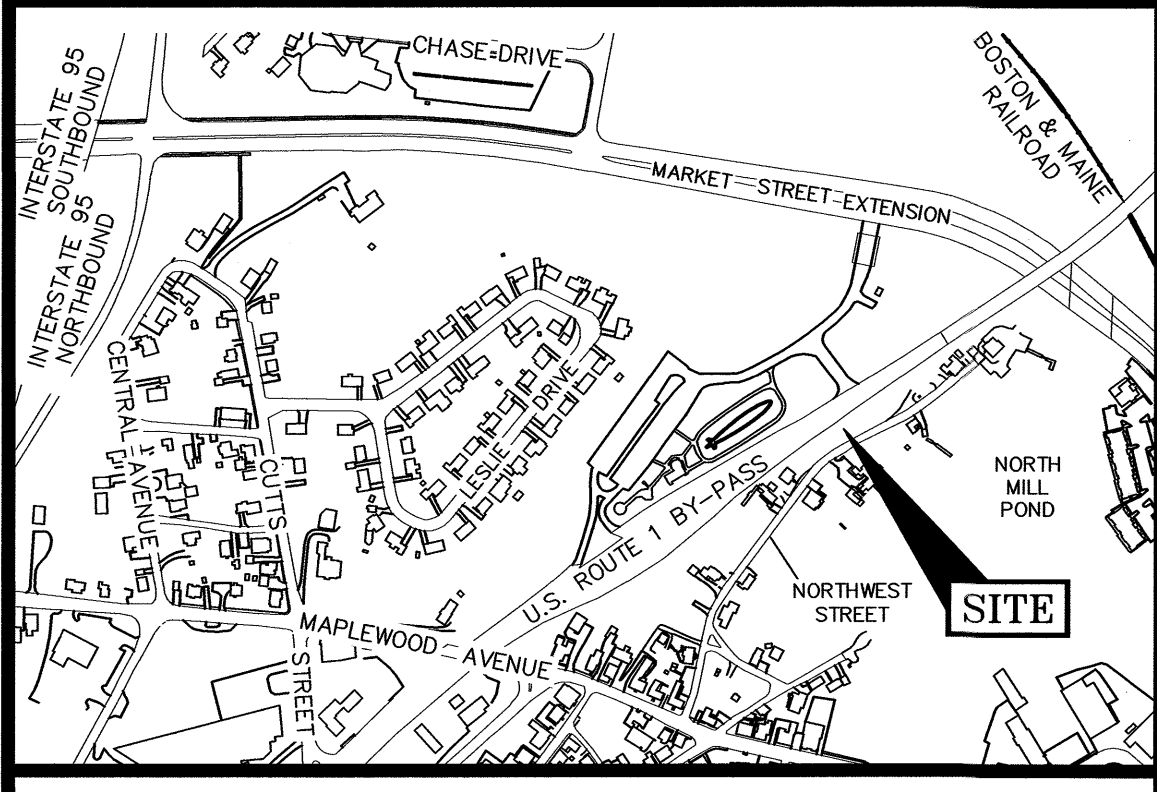
SUBDIVISION SITE  
PLAN- LOT 2-1      **C2**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



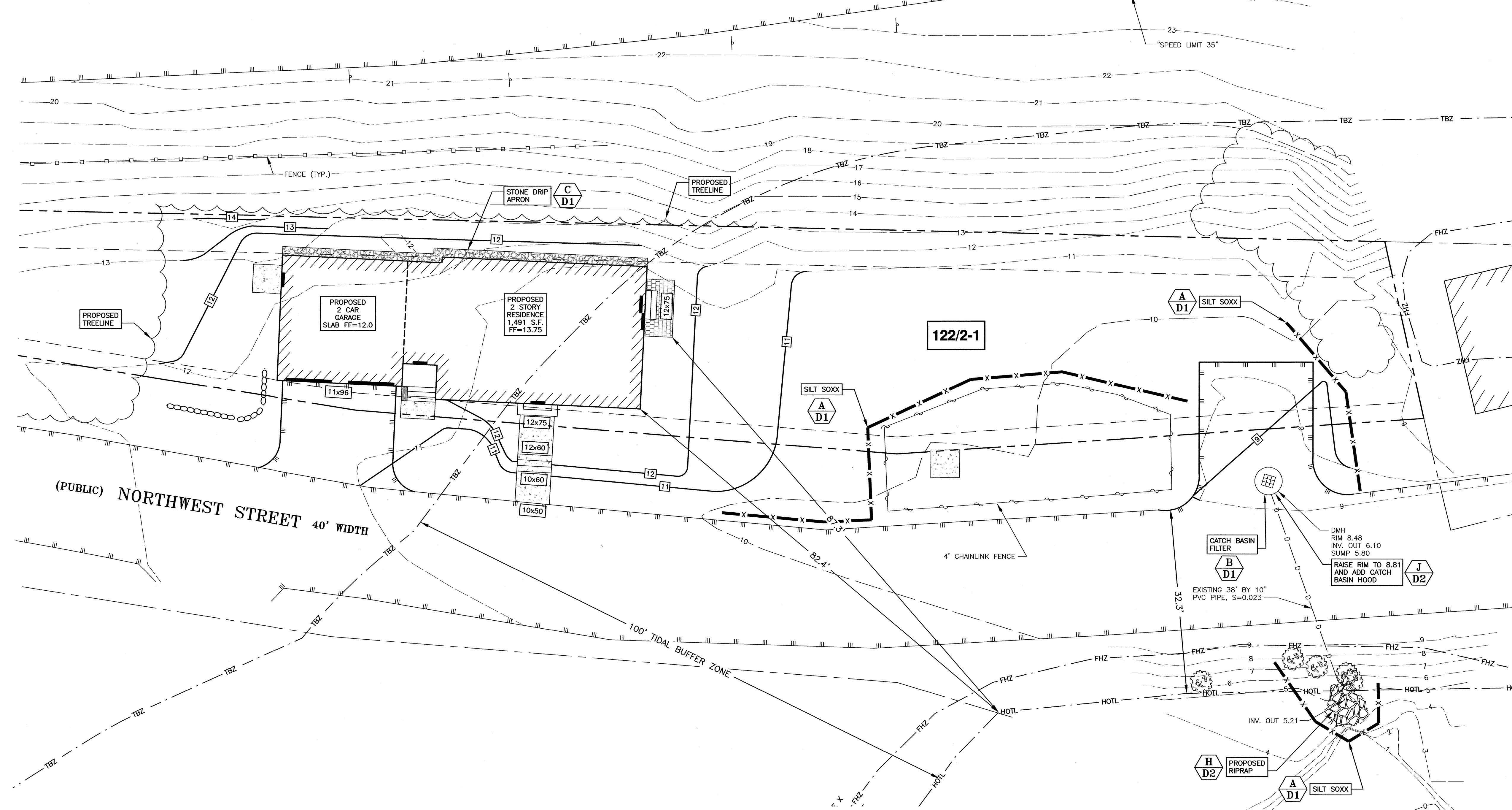
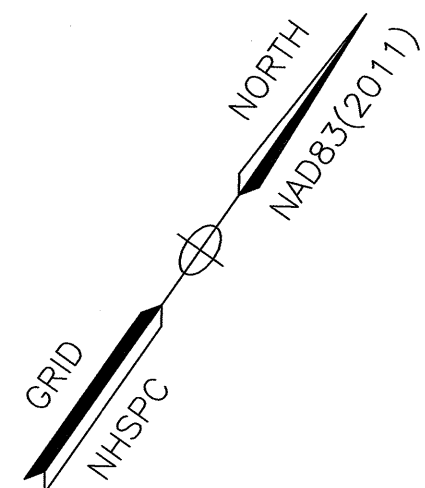
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LOCATION MAP SCALE: 1" = 500'

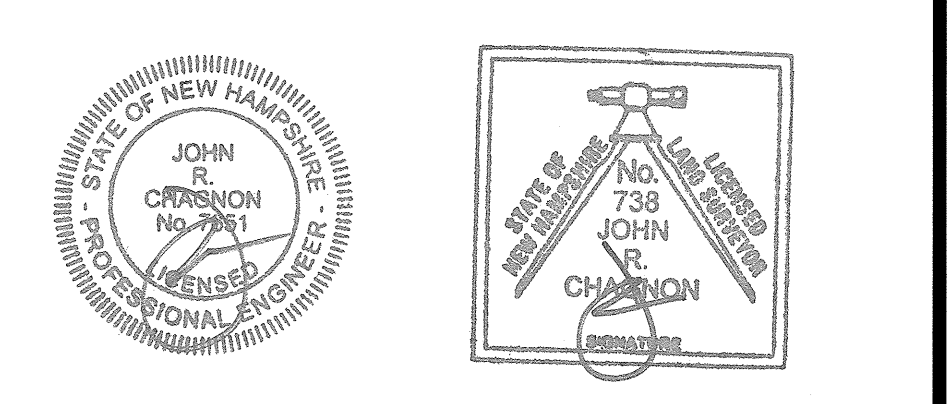
- NOTES:**
- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
  - 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
  - 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008)".

**ROUTE ONE BY-PASS  
 (NORTHBOUND LANE)**

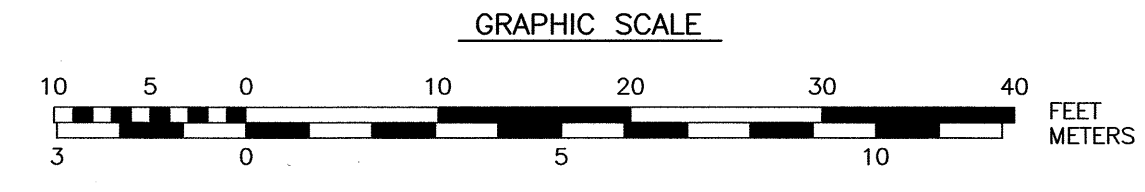


**PROPOSED HOUSING  
 TBD NORTHWEST ST.  
 PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
3	STRUCTURE LOCATION	1/3/22
2	STRUCTURE, DRIVEWAY, TREELINE, STONE WALL	10/27/21
1	RIPRAP	8/25/21
0	ISSUED FOR COMMENT	8/23/21



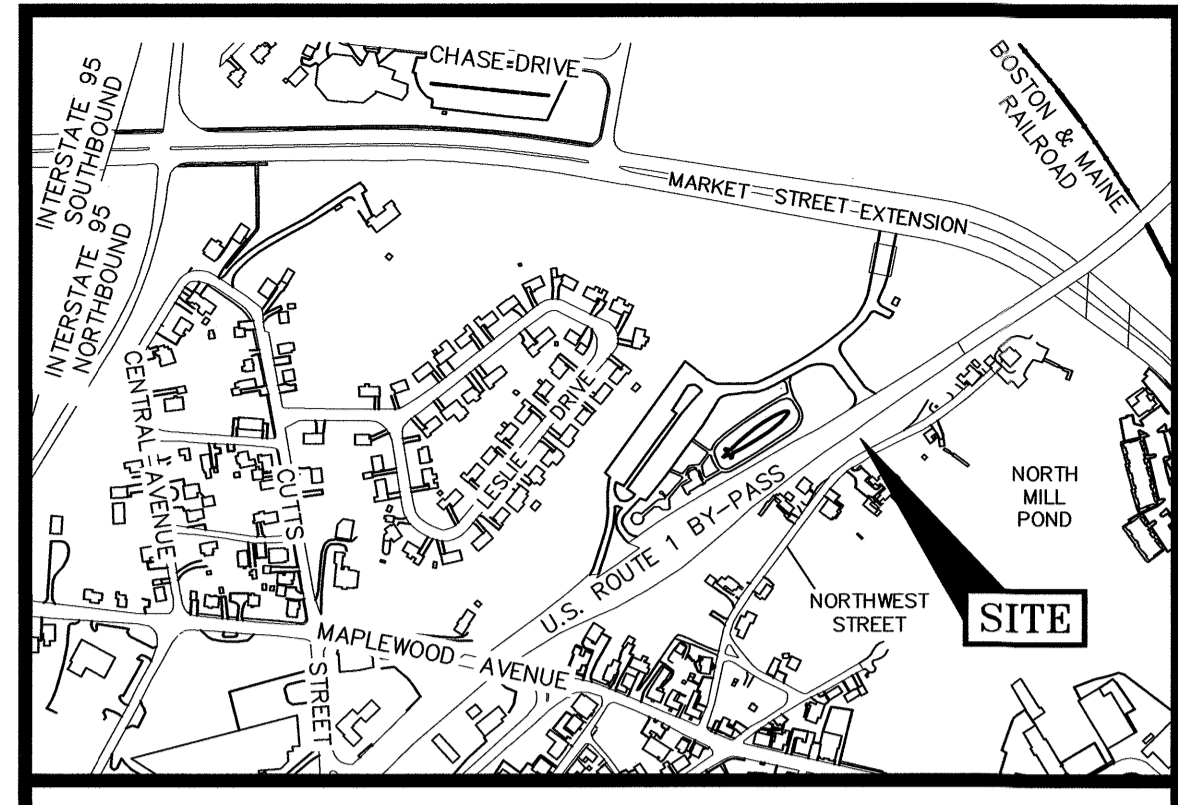
APPROVED BY THE PORTSMOUTH PLANNING BOARD  
 CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



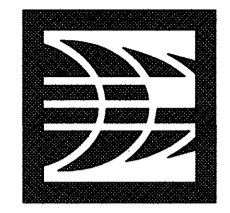
SCALE 1" = 10' JUNE 2021

**EROSION CONTROL  
 & GRADING PLAN-  
 LOT 2-1** **C3**





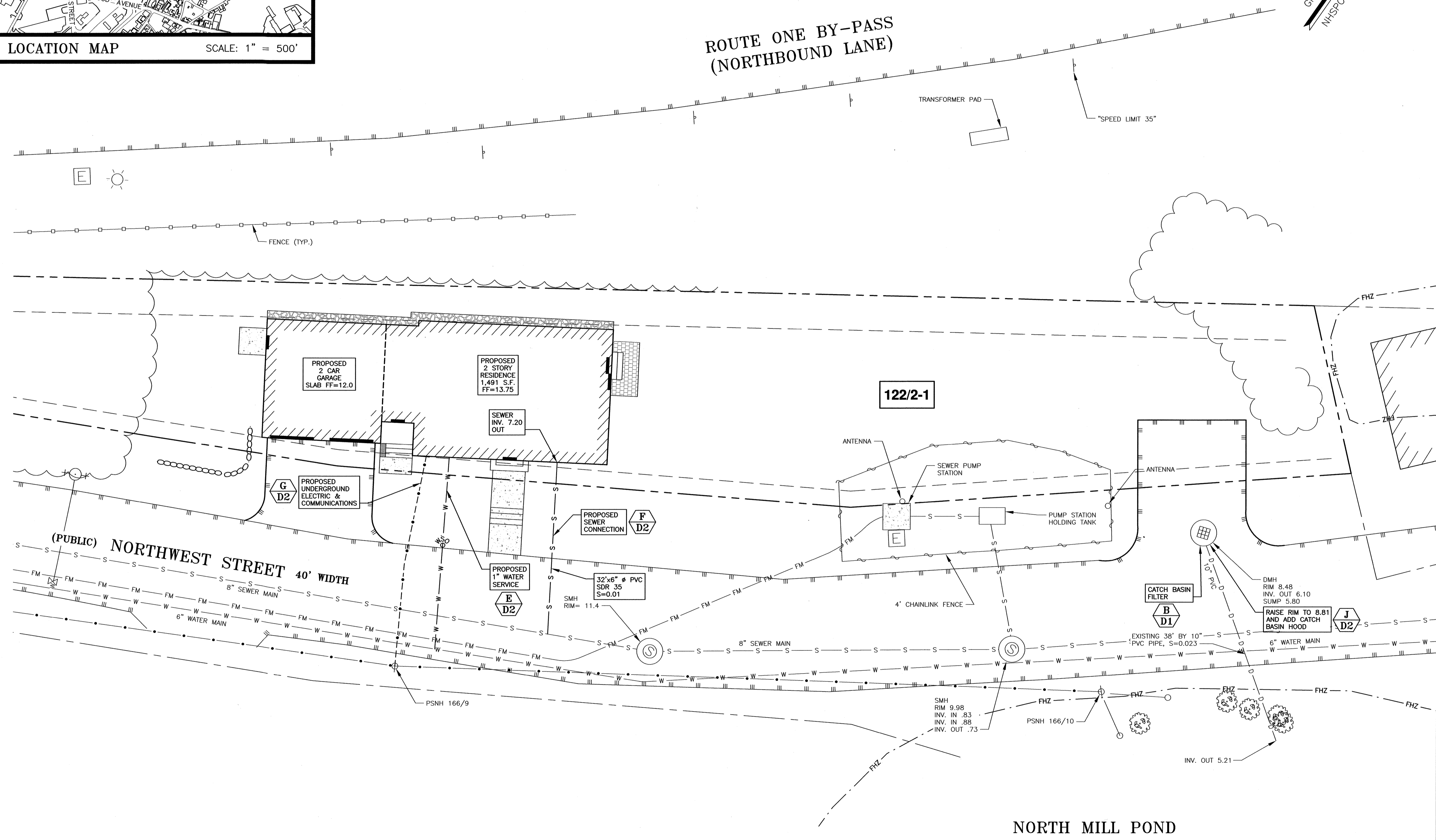
LOCATION MAP SCALE: 1" = 500'



**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

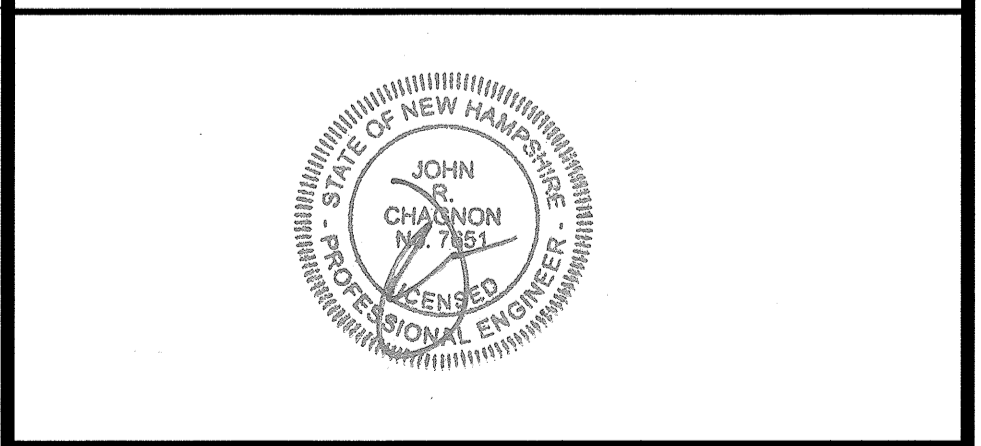
- NOTES:**
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  - 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008)".

**ROUTE ONE BY-PASS  
 (NORTHBOUND LANE)**



**PROPOSED HOUSING  
 TBD NORTHWEST ST.  
 PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
2	STRUCTURE LOCATION	1/3/22
1	WATER SERVICE SIZE	10/27/21
0	ISSUED FOR COMMENT	8/23/21

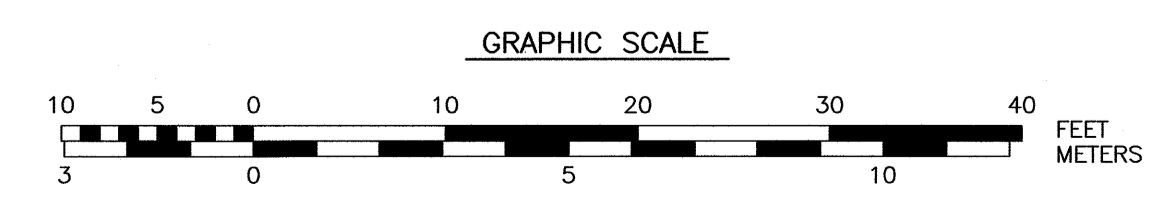


SCALE 1" = 10' JUNE 2021

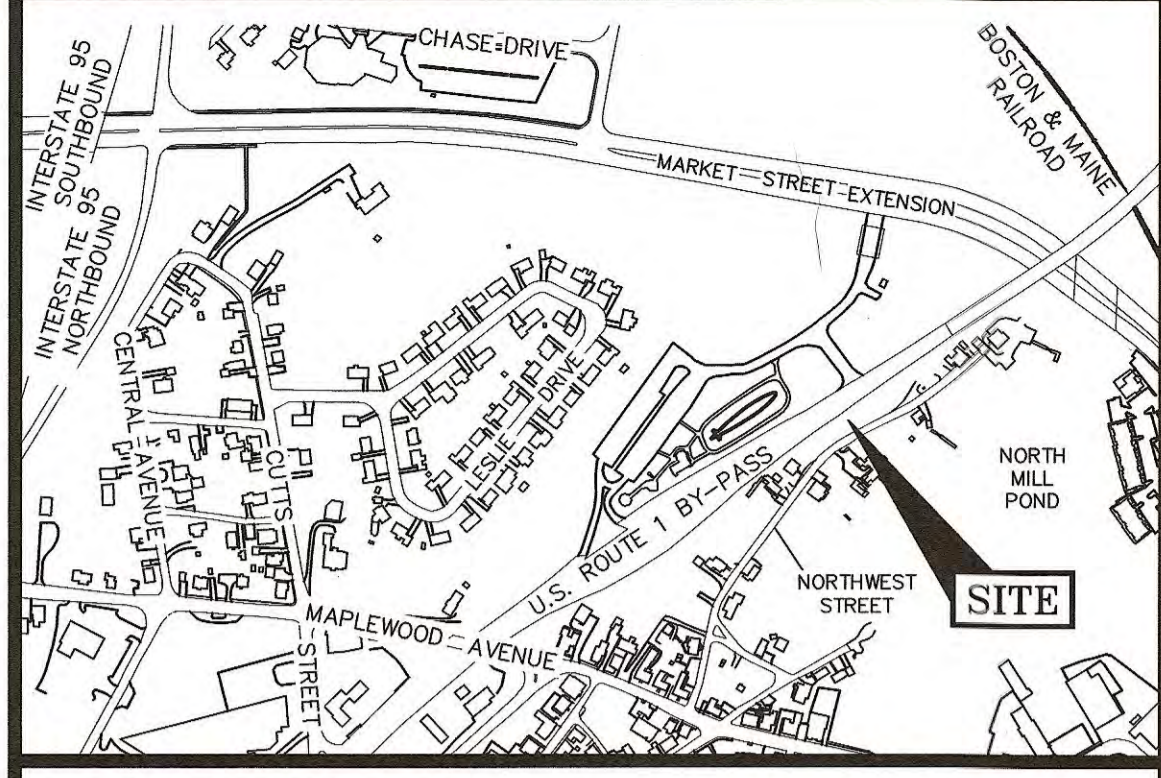
UTILITY PLAN-  
 LOT 2-1 **C4**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_







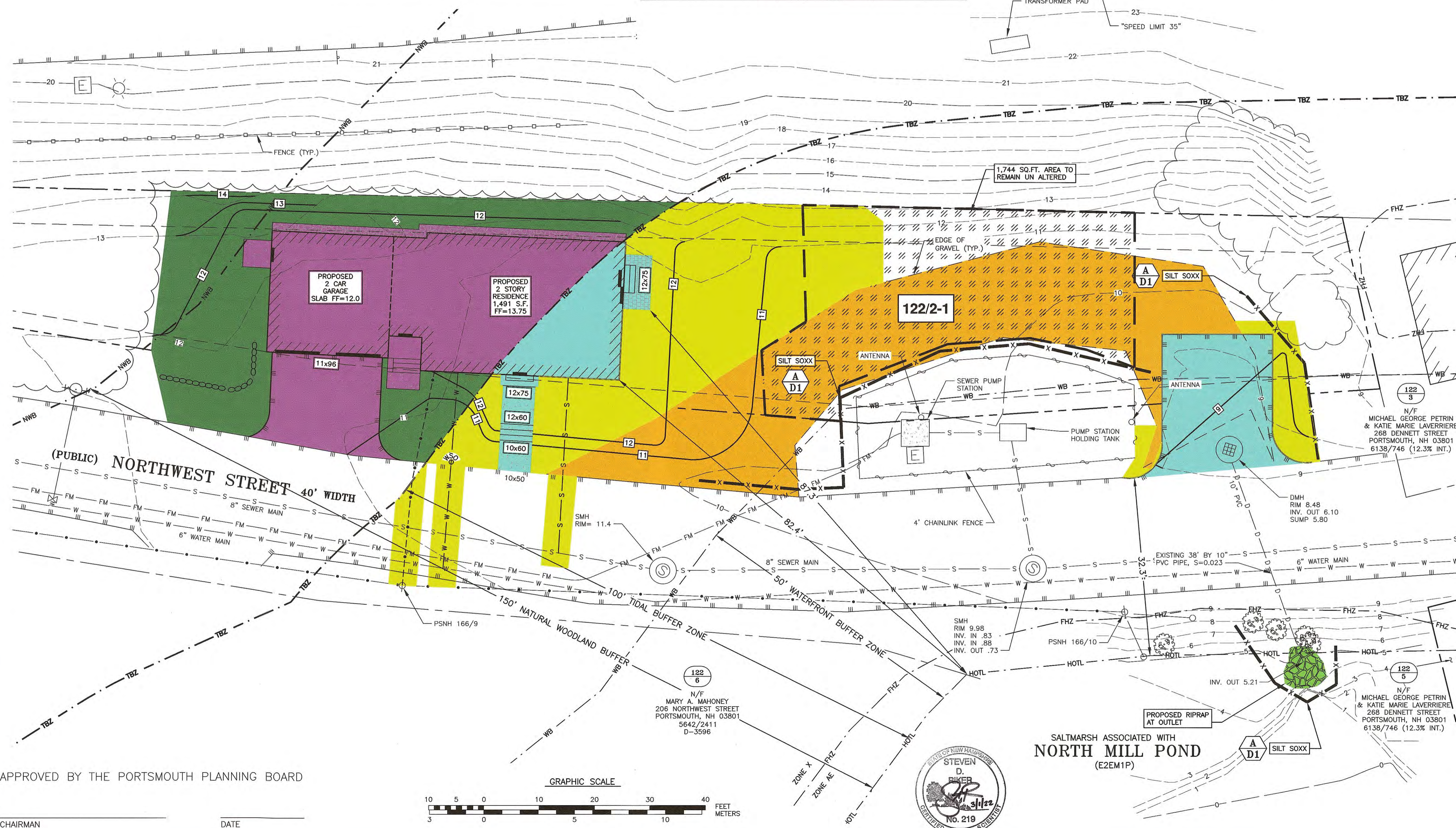
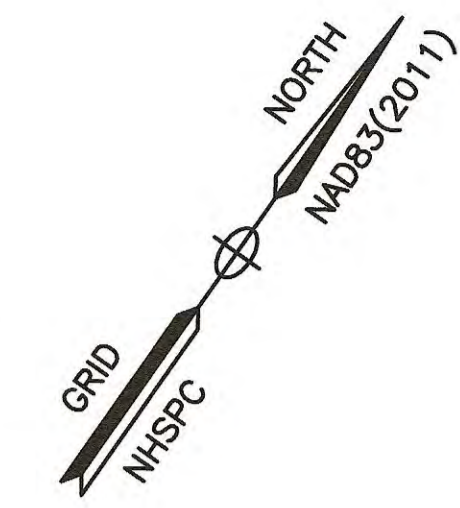
LOCATION MAP SCALE: 1" = 500'

IMPERVIOUS SURFACE AREAS (WITHIN 250' PROTECTED SHORELAND)		
STRUCTURE	*PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	0	1,491
STAIRS/STEPS	0	60
CONCRETE SLAB	0	25
PAVEMENT	0	319
GRAVEL	1692	0
WALKWAY	0	25
RETAINING/STONE WALL	0	8
TOTAL	1,692	1,928
LOT SIZE	10,634	10,634
% LOT COVERAGE	15.9%	18.1%

\*NOTE: PUMP STATION & CONTROLS NOT INCLUDED.

NH DES IMPACT AREAS		
STRUCTURE	COLOR	PROPOSED (S.F.)
IMPERVIOUS: GRAVEL-TO BE REMOVED (TBZ TEMPORARY IMPACT)	Orange	1,995
PROPOSED STRUCTURE & PAVEMENT (TBZ PERMANENT IMPACT)	Light Blue	978
PROPOSED RIPRAP (SALTMARSH PERMANENT IMPACT)	Green	45
TEMPORARY IMPACT AREAS (TBZ)	Yellow	1,917
TOTAL (TBZ) IMPACT AREA		4,890
SHORELAND ZONE PERMANENT IMPACT	Purple	1,710
SHORELAND ZONE TEMPORARY IMPACT	Dark Green	1,419
TOTAL SHORELAND IMPACT		3,129

U.S. ROUTE ONE BY-PASS  
MAINE - N.H. INTERSTATE BRIDGE AUTHORITY



**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 122 AS LOT 2.
  - 2) OWNERS OF RECORD:  
GREGORY J. MORNEAULT  
AMANDA B. MORNEAULT  
137 NORTHWEST STREET  
PORTSMOUTH, N.H. 03801  
  
APPLICANT:  
DARRELL MOREAU  
1B JACKSON HILL STREET  
PORTSMOUTH, NH 03801
  - 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA (AE EL 8) AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE DATE JANUARY 29, 2021. PARCEL IS PARTIALLY IN THE 2' EXTENDED FLOOD HAZARD ZONE.
  - 4) EXISTING LOT AREA:  
10,634 S.F.  
0.2441 ACRES
  - 5) THE PURPOSE OF THIS PLAN IS TO SHOW THE PLACEMENT OF A PROPOSED RESIDENCE ON LOT 2 OF THE PROPOSED SUBDIVISION.
  - 6) ZONING DISTRICTS:  
GENERAL RESIDENCE A (GRA) AND HISTORIC DISTRICT.
  - 7) DIMENSIONAL REQUIREMENTS:  
LOT AREA: 7,500 S.F.  
FRONTAGE: 100'  
DEPTH: 70'  
SETBACKS: FRONT: 15', SIDE: 10', REAR: 20'.  
MAXIMUM STRUCTURE HEIGHT: 35'  
MAXIMUM BUILDING COVERAGE: 25%  
MINIMUM OPEN SPACE: 30%
  - 8) PROPOSED LOT 2 DIMENSIONAL CALCULATIONS:  
LOT AREA: 10,634 S.F.  
FRONTAGE: 357'  
DEPTH: 25.4 AVERAGE  
SETBACKS:  
FRONT: 3.0'  
SIDE: 129.5'  
REAR: 6.5'  
STRUCTURE HEIGHT: <35'  
BUILDING COVERAGE: 1,527 S.F. (14%)  
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**PROPOSED HOUSING  
TBD NORTHWEST ST.  
PORTSMOUTH, NH**

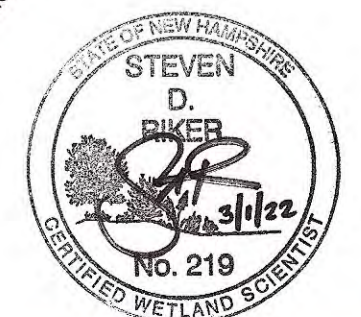
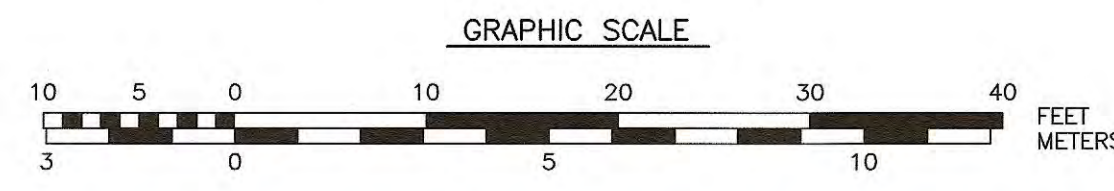
NO.	DESCRIPTION	DATE
2	ADD UNALTERED AREA	2/23/22
1	REVISE ABUTTERS	2/17/22
0	ISSUED FOR COMMENT	2/1/22

REVISIONS

SCALE 1" = 10' JUNE 2021

NHDES PERMIT PLAN **C5**

APPROVED BY THE PORTSMOUTH PLANNING BOARD



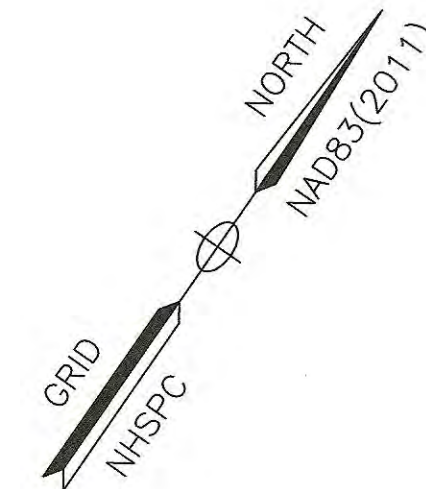




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**NOTES:**

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- 2) OWNERS OF RECORD:  
 GREGORY J. MORNEAULT  
 AMANDA B. MORNEAULT  
 137 NORTHWEST STREET  
 PORTSMOUTH, N.H. 03801  
  
 APPLICANT:  
 DARRELL MOREAU  
 1B JACKSON HILL STREET  
 PORTSMOUTH, NH 03801
- 3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE DEVELOPMENT IN CONTEXT TO THE NEIGHBORHOOD.



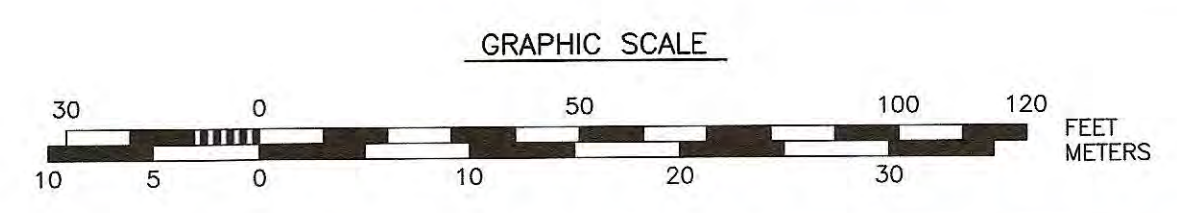
**PROPOSED HOUSING  
 TBD NORTHWEST ST.  
 PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
1	STRUCTURE LOCATION	1/3/22
0	ISSUED FOR COMMENT	10/27/21

REVISIONS	

SCALE 1" = 30'      JUNE 2021

**NEIGHBORHOOD  
 PLAN-AERIAL**      **P1**



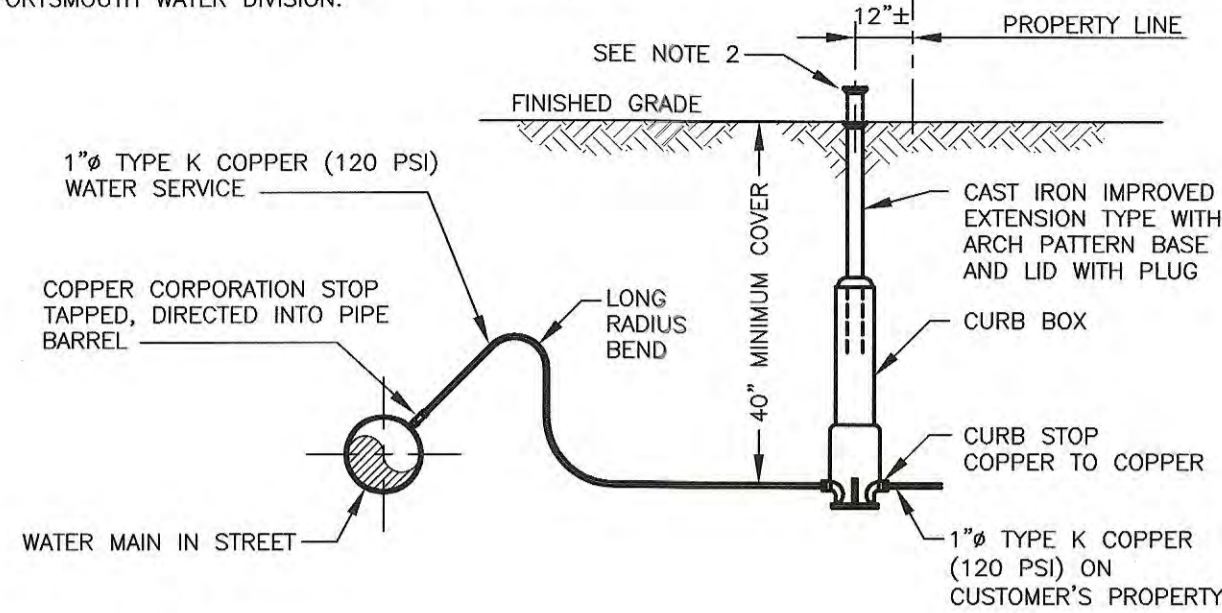
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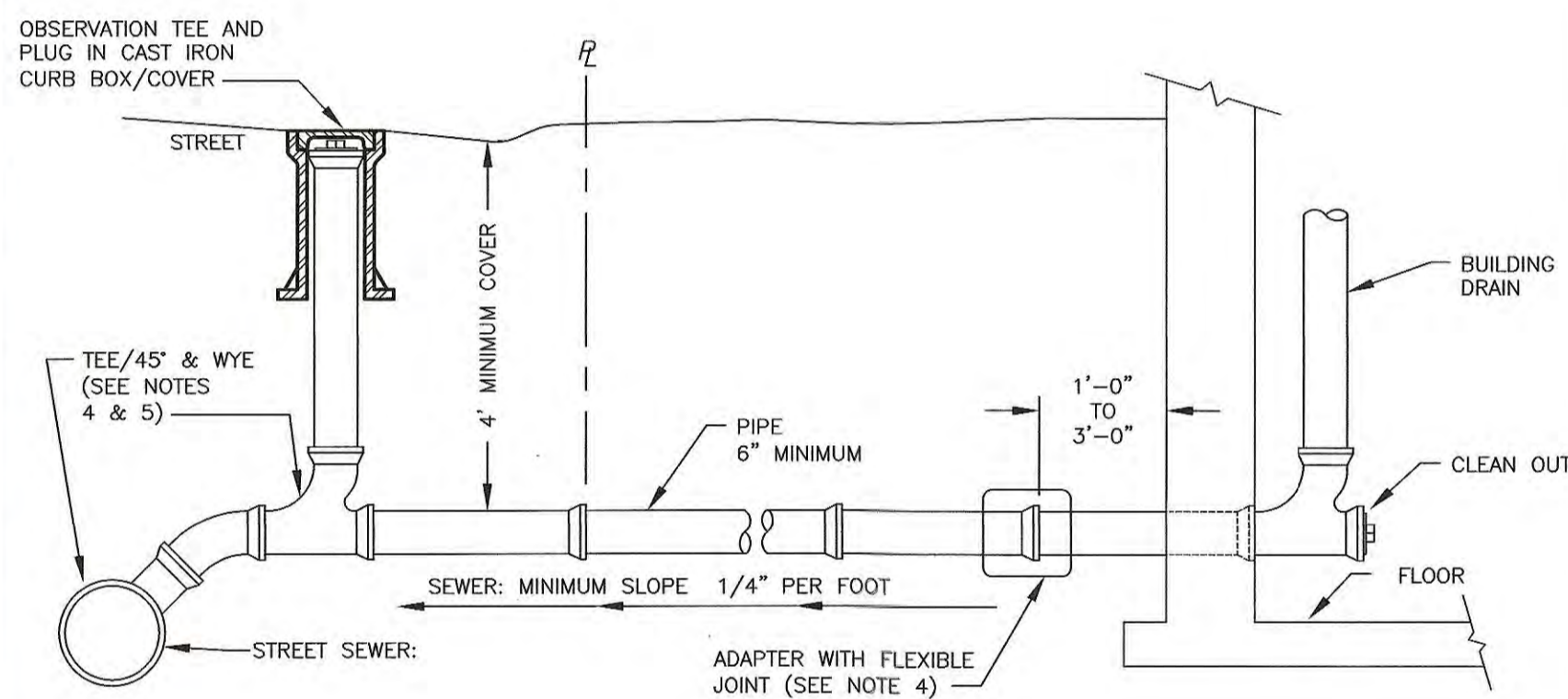


**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

- NOTE:  
1) INSTALLATION OF WATER MAIN TAP & CURB STOP & BOX SHALL ONLY BE PERFORMED BY THOSE AUTHORIZED BY THE PUBLIC WORKS DEPARTMENT.  
2) IN AREAS OF HEAVY GROWTH THE CURB BOX COVER SHALL BE SET 6" ABOVE FINISH GRADE AND A WITNESS STAKE SET.  
3) CURB BOX SHALL BE SET APPROXIMATELY 12" OUTSIDE PROPERTY LINE AS SHOWN.  
4) PRIOR TO ACCEPTANCE, A PLAN INDICATING THE LOCATION OF THE CURB BOX SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH WATER DIVISION.

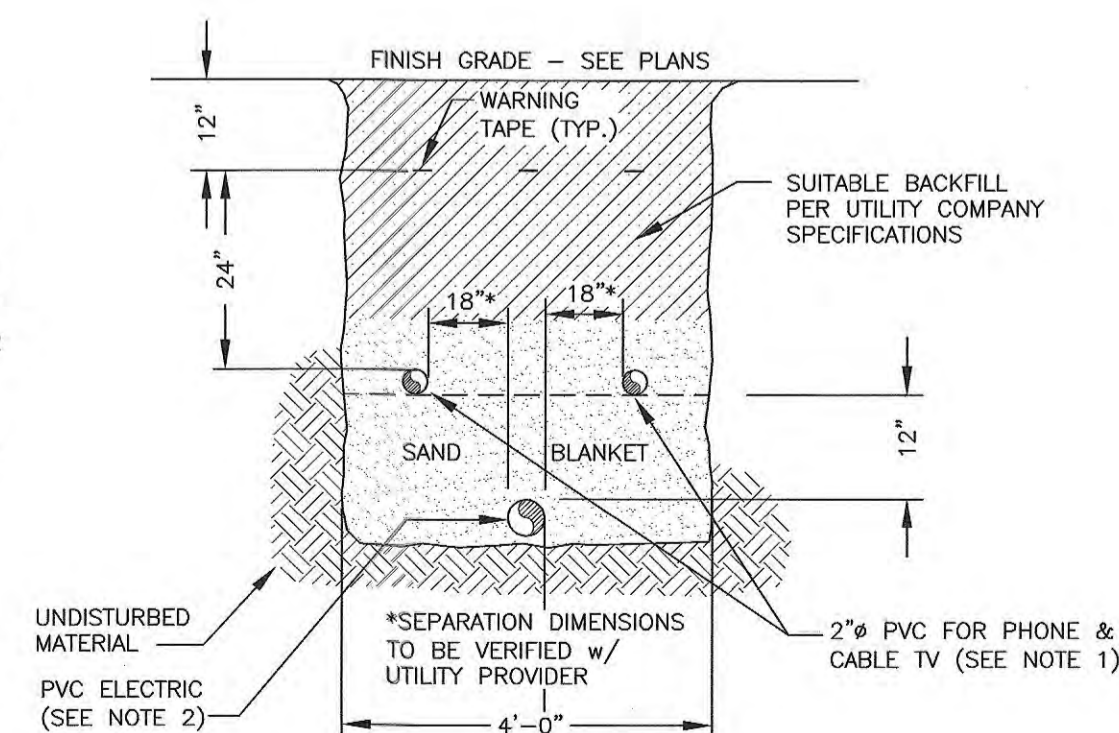


**E C4** WATER SERVICE CONNECTION (PORTSMOUTH) NTS

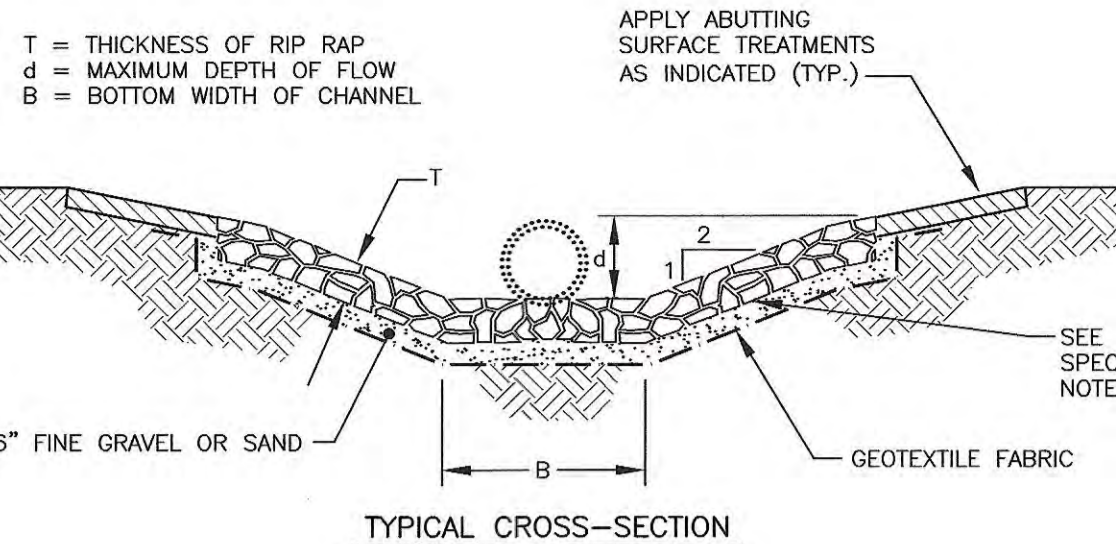


**F C4** SEWER SERVICE DETAILS INSTALL PER PORTSMOUTH REQUIREMENTS NTS

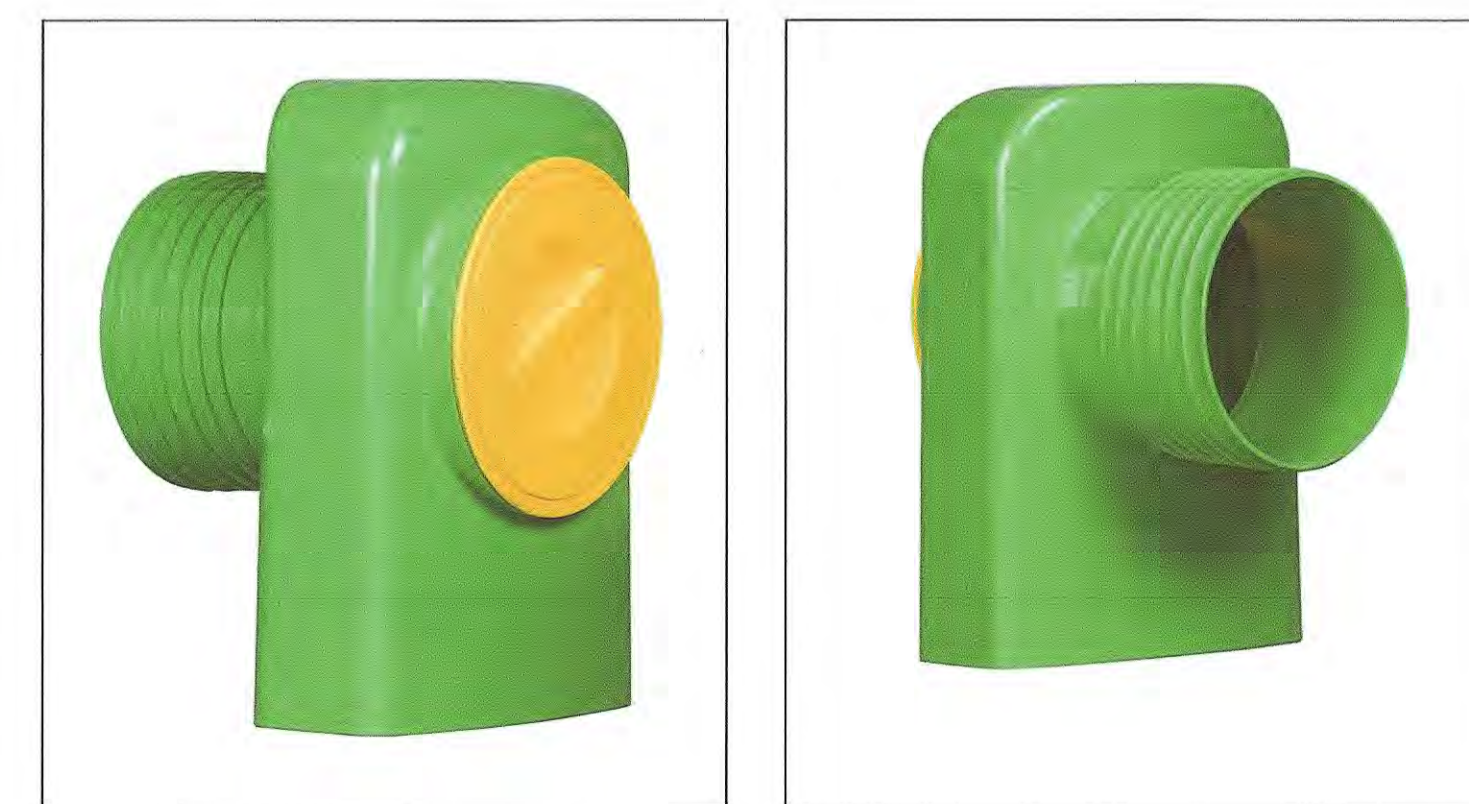
- NOTES:  
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.  
2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.  
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)  
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT  
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANY'S PRIOR TO ANY CONSTRUCTION.



**G C4** BURIED ELEC/COMM CABLE NTS



**H C3** RIP RAP LINED OUTLET NTS



- NOTES:  
1) EXISTING CATCH BASIN (SEE SHEET C4) TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP INSTALLED.  
2) MANUFACTURED BY KLEANSTREAM (NO EQUAL).  
3) INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.  
4) 1/2" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP.

**J C3** "ELIMINATOR" OIL & FLOATING DEBRIS TRAP NTS

**RIPRAP GRADATION TABLE**

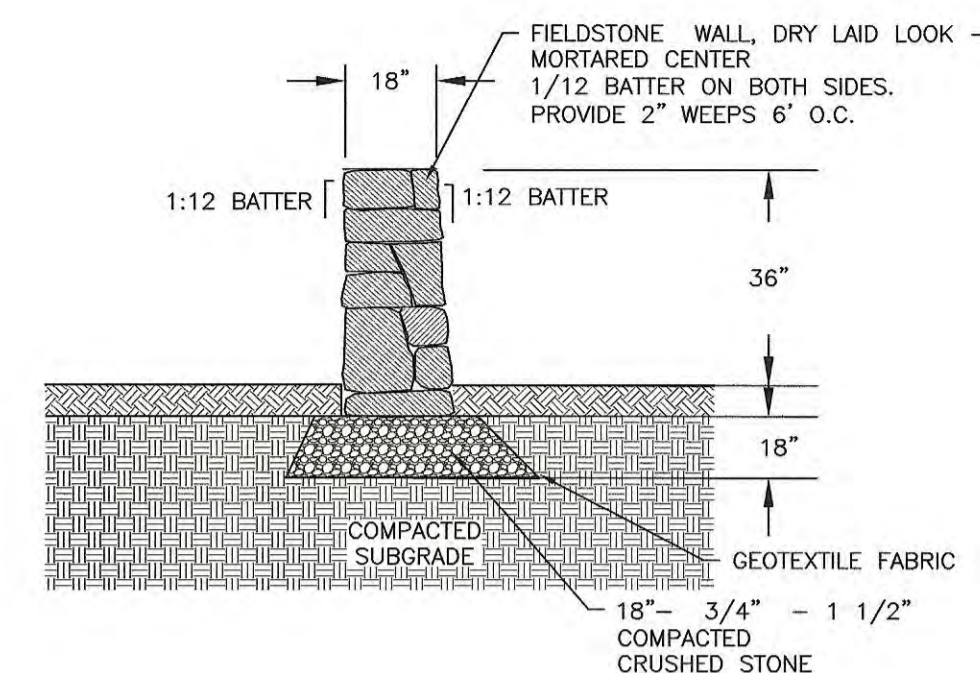
RIPRAP - 9"	SIZE OF STONE RANGE IN INCHES
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	
d100	18
d50	8.5 TO 10.5
d15	5.5 TO 7.8

**MATERIALS SPECIFICATIONS:**

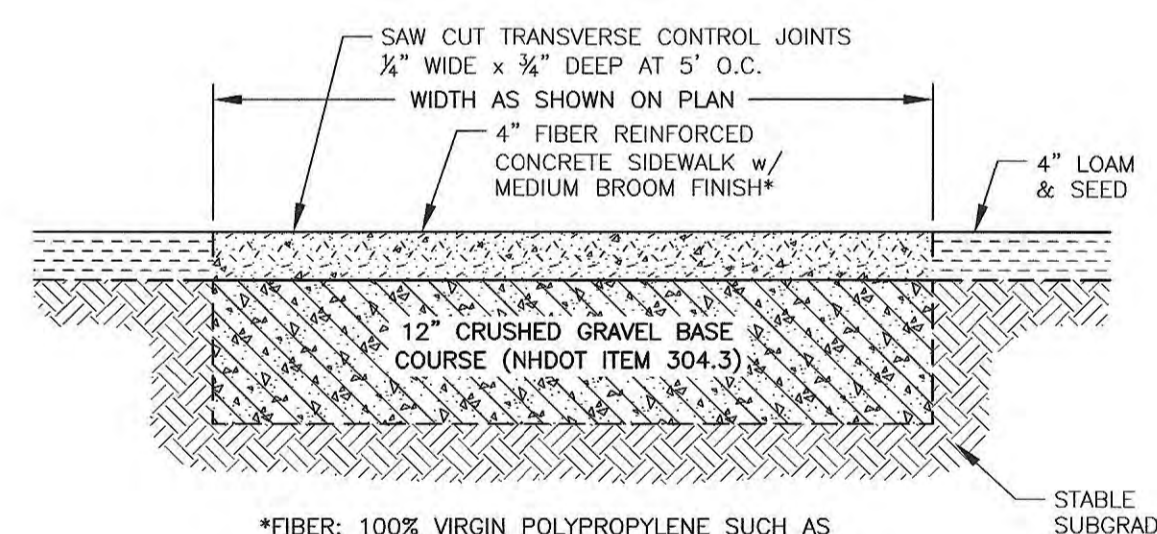
- 1) GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF NEW HAMPSHIRE STORM WATER MANAGEMENT AND EROSION CONTROL HANDBOOK BMP FOR ROCK RIP RAP.
- 2) ANCHOR PINS: STEEL PINS WITH WASHERS OR WOODEN STAKES SHALL BE PLACED TO HOLD GEOTEXTILE FABRIC IN POSITION PER MANUFACTURER'S RECOMMENDATIONS.
- 3) GRAVEL BLANKET: UNIFORMLY GRADED SCREENED GRAVEL (3/8" TO 1-1/2")
- 4) RIP RAP: NHDOT CLASS D.

- CONSTRUCTION SPECIFICATIONS:**
- 1) THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC AND RIP RAP SHALL BE CLEARED AND GRUBBED TO REMOVE ALL ROOTS, VEGETATION, AND DEBRIS AND PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS. THE EXISTING RETAINING WALL SHALL BE REMOVED.
  - 2) EXCAVATE ANCHOR TRENCH, PLACE STABILIZATION FABRIC AND SECURE TO SUBGRADE WITH ANCHOR PINS. BACKFILL ANCHOR TRENCH WITH COMPACTED NATIVE SUBGRADE SOIL. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING PLACEMENT OF THE ROCK RIP RAP BY PLACING A CUSHION OF GRAVEL OVER THE FABRIC. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIR OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
  - 3) SPREAD GRAVEL BLANKET UNIFORMLY TO DEPTH INDICATED.
  - 4) RIP RAP: PLACE RIP RAP IMMEDIATELY FOLLOWING GRAVEL BLANKET INSTALLATION. LAY RIP RAP STONES INDIVIDUALLY UPWARD FROM THE TOE OF THE SLOPE, WITH LARGER STONES AT THE TOE OF THE SLOPE. FILL VOIDS WITH SPALLS. FINISHED SURFACE TO BE REASONABLY UNIFORM IN APPEARANCE AND APPROXIMATELY PARALLEL TO AND WITHIN 6" OF THE LINES AND GRADES SHOWN OR ORDERED.

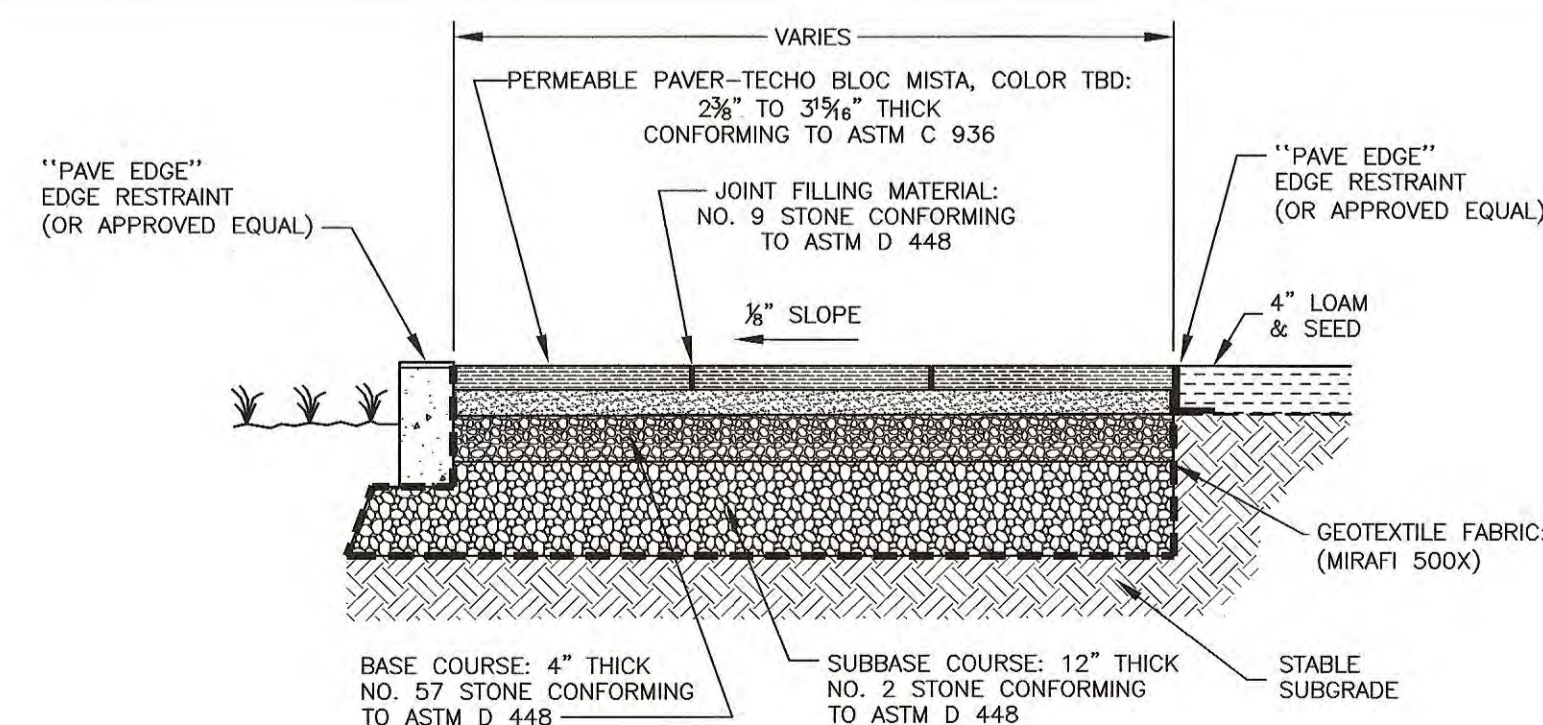
THE ROCK USED FOR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.  
STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE NHDOT CLASS D, CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE UNDERLYING MATERIALS. HAND PLACEMENT MAY BE REQUIRED TO PREVENT DAMAGE TO ANY ADJACENT AREAS. STONES FOR RIP RAP SHALL BE ANGULAR OR SUBANGULAR. THE STONES SHOULD BE SHAPED SO THAT THE LEAST DIMENSION OF THE STONE FRAGMENT IS NOT LESS THAN ONE THIRD OF THE GREATEST DIMENSION OF THE FRAGMENT. FLAT ROCKS SHALL NOT BE USED FOR RIP RAP. VOIDS IN THE ROCK RIP RAP SHOULD BE FILLED WITH SPALLS AND SMALLER ROCKS.



**I C2** FIELDSTONE WALL NTS



**K C3** CONCRETE WALKWAY/SLAB NTS



**L C2** TECO-BLOC® POROUS PATIO HARDSCAPE DESIGN & INSTALLATION NTS  
1-410-969-9260

**NOTES:**

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) PURSUANT TO RSA 483-B:9 11 (D), NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS LOCATED WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER. BEYOND 25 FEET, SLOW OR CONTROLLED RELEASE FERTILIZER MAY BE USED. SLOW RELEASE NITROGEN MUST CONTAIN NO MORE THAN 2% PHOSPHORUS, AND A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.
- 5) PURSUANT TO RSA 483-B:9, V (A) (2) (A), NO CHEMICALS INCLUDING PESTICIDES OR HERBICIDES OF ANY KIND, SHALL BE APPLIED TO GROUND, TURF, OR ESTABLISHED VEGETATION WITHIN THE WATERFRONT BUFFER, EXCEPT IF APPLIED BY HORTICULTURE PROFESSIONAL WHO HAVE AN APPLICATION LICENSE OR AS ALLOWED BY SPECIAL PERMIT ISSUED UNDER RSA 541-A. NO CALCIUM CHLORIDE SHALL BE APPLIED WITHIN THE WATERFRONT BUFFER.

**PROPOSED HOUSING  
TBD NORTHWEST ST.  
PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
4	DETAILS E, J, L	1/3/22
3	DETAIL J	11/22/21
2	DETAIL I, J, K	10/27/21
1	DETAIL H	8/25/21
0	ISSUED FOR COMMENT	8/23/21

**REVISIONS**



SCALE: AS SHOWN JUNE 2021

DETAILS

**D2**



**CONSTRUCTION SEQUENCE**

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILT/SOXX AROUND THE LIMITS OF DISTURBANCE AND CATCH BASIN SOCK FILTER BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

CUT BRUSH AND TREES AS REQUIRED. STUMP SITE AND CLEAR TOPSOIL.

INSTALL FOUNDATION AND BACKFILL.

ROUGH GRADE SITE, PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

CONSTRUCT BUILDING.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

FINISH ALL REMAINING LANDSCAPE WORK.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

**GENERAL CONSTRUCTION NOTES**

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILT/SOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILT/SOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES ( LOAM AND SEED AREAS ) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS--CONSTRUCT SILT FENCE OR SILT/SOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
 \* BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED  
 \* A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED  
 \* A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED  
 \* EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.

**NOFA STANDARDS FOR ORGANIC LAND CARE**

\*REFERENCE NOFA STANDARDS FOR ORGANIC LAND CARE MANUAL FOR ALL LAND CARE PRACTICES AT THIS SITE.

**NEW LAWN INSTALLATION**

ORDER OF PROCESSES:  
 1. SOIL TESTING. SOIL TYPE PREFERRED IS CLOSE TO NEUTRAL PH AND HAS A BALANCED FUNGAL TO BACTERIAL RATIO.  
 2. PLANTING BED PREPARATION WITH SOIL AMENDMENTS AS SPECIFIED BY SOIL TEST RESULTS.  
 3. SEEDING WITH AN APPROPRIATE MIX OF SEEDS BY HAND, USING A SPREADER OR SEED DRILLER, OR BY ORGANIC HYDROSEEDING.  
 4. WATERING FREQUENTLY BUT SHALLOWLY, MAINTAINING A "UNIFORMLY MOIST" SEEDBED DURING GERMINATION AND ESTABLISHMENT.

**LAWN MAINTENANCE**

-GRASS SHOULD BE ALLOWED TO GROW 3" OR TALLER IN HEIGHT PRIOR TO FIRST MOWING. GRASS CLIPPINGS SHOULD BE LEFT IN PLACE.  
 -REMOVE NO MORE THAN 1/3 OF GRASS LENGTH PER MOWING.

**FERTILIZING**

-ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

**EROSION CONTROL NOTES**

**VEGETATIVE PRACTICE**

FOR PERMANENT MEASURES AND PLANTINGS: LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREeping RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	
<b>SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)</b>		
CREeping RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS: MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:  
 PERENNIAL RYE: 0.7 LBS/1,000 S.F.  
 1.5 TONS/ACRE

**MAINTENANCE AND PROTECTION**

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDDED AREAS WILL BE FERTILIZED AND RESEEDDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER. ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

SILT/SOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

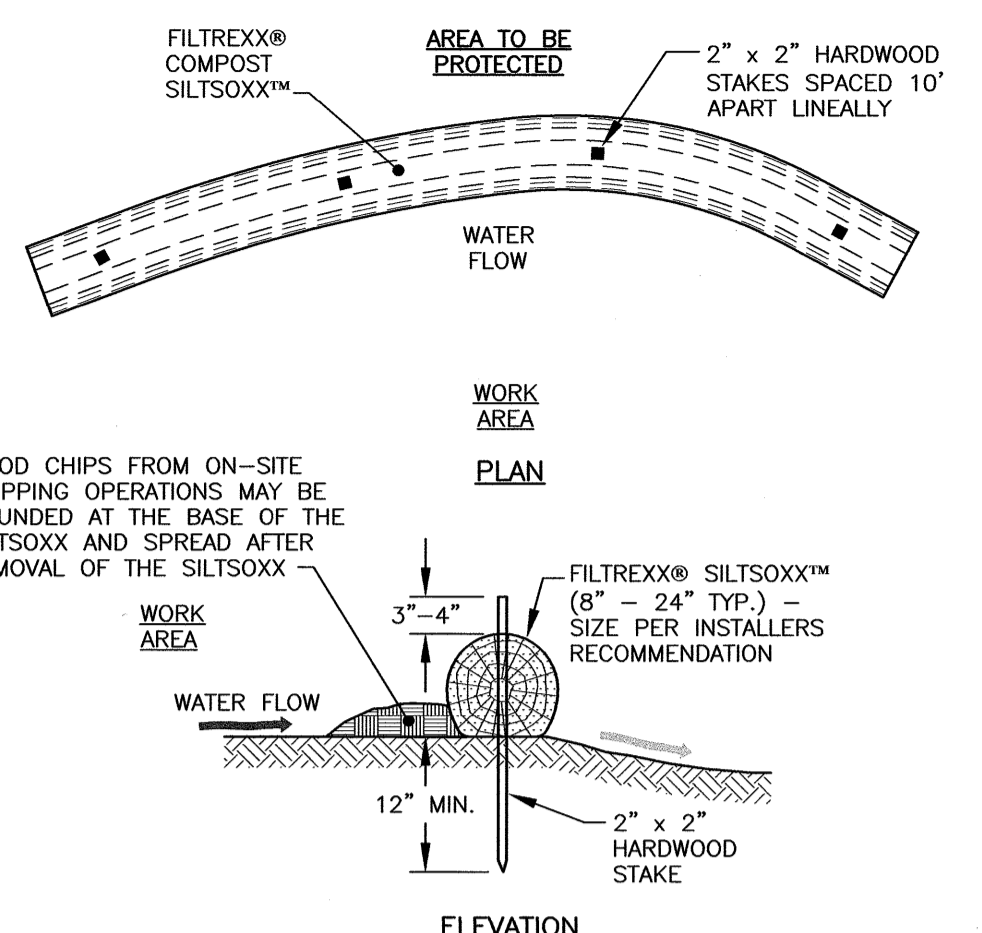
SILT FENCING AND SILT/SOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILT/SOXX REMOVAL SHALL BE PERMANENTLY SEEDDED.

**WINTER NOTES**

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

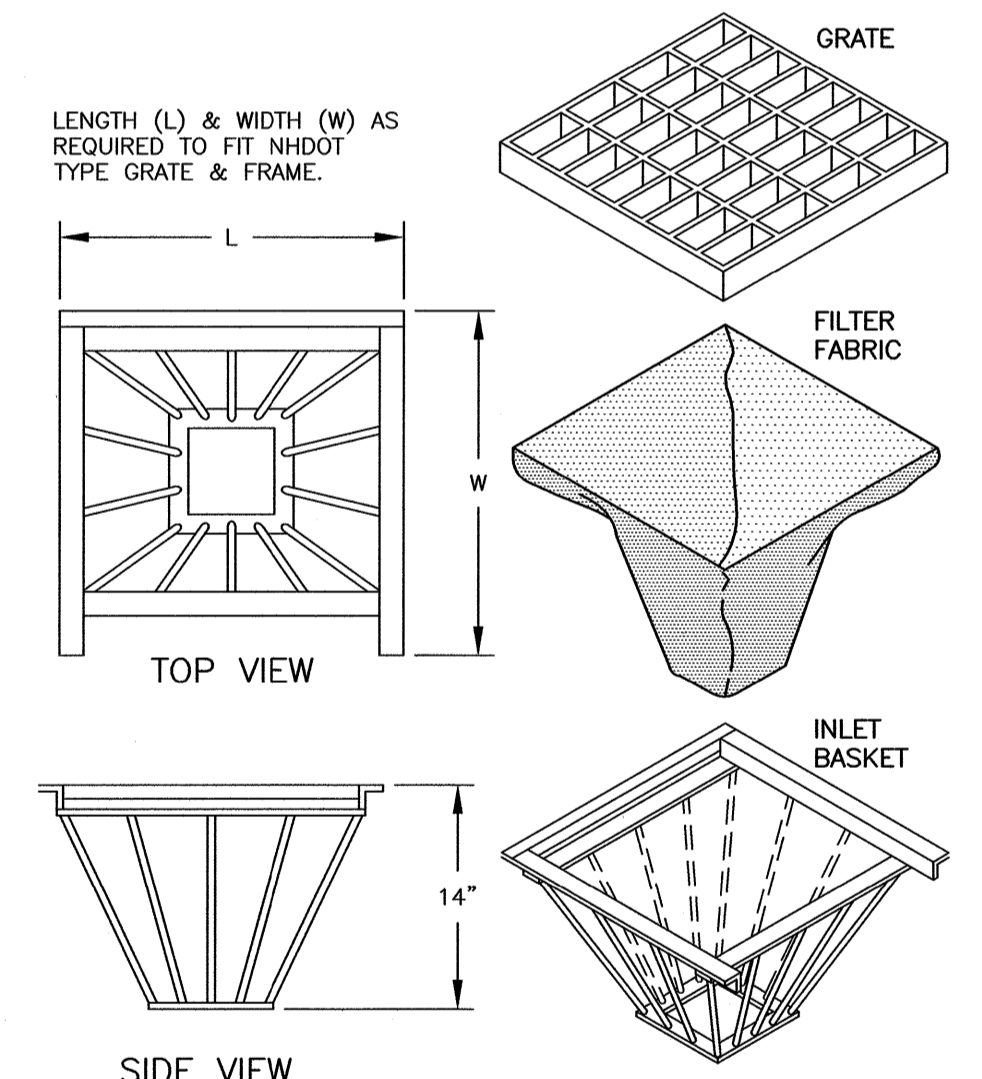
ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



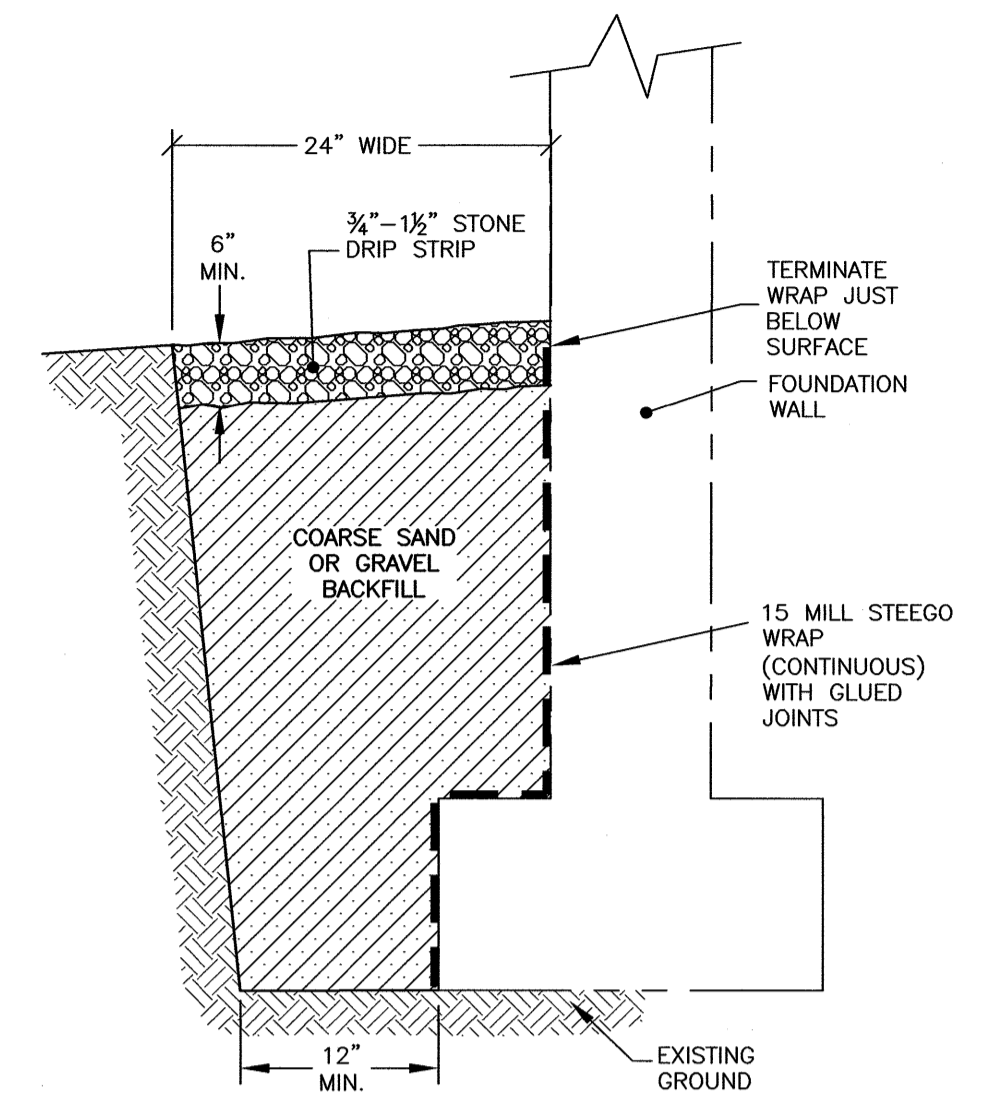
**A C3** **FILTREXX® SILT/SOXX™ FILTRATION SYSTEM** NTS

NOTES:  
 1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.  
 2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.  
 3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.  
 4. SILT/SOXX DEPICTED IS FOR MINIMUM SLOPES; GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.  
 5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

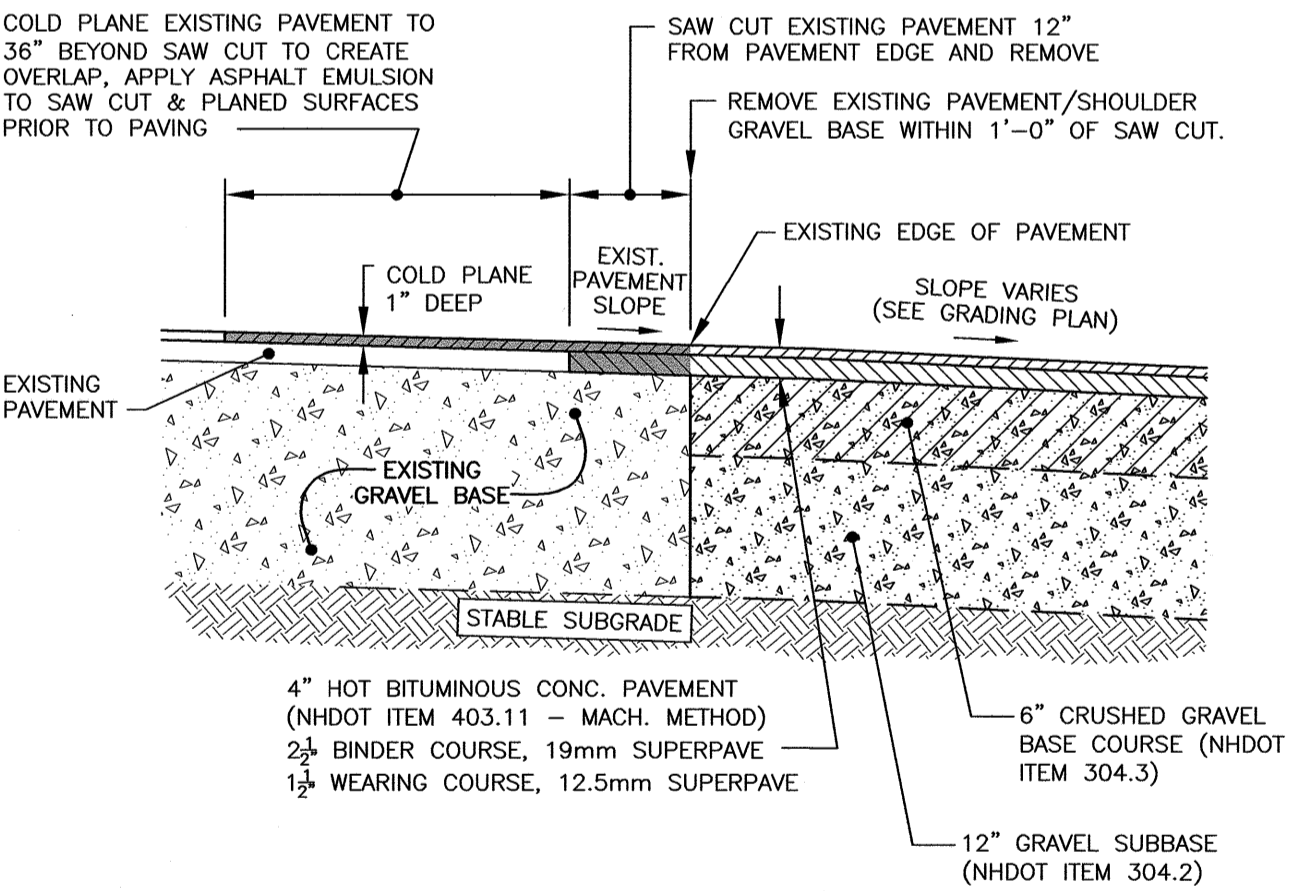


1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.  
 2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.  
 3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC, POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:  
 -RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)  
 -MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)  
 4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.-1 FROM ASTM 54491-85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)  
 5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.  
 6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

**B C3** **CATCH BASIN INLET BASKET** NTS



**C C3** **STONE DRIP APRON (UNDER BUILDING DRIP LINE)** NTS



NOTES:  
 1) PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 401.  
 2) CRUSHED GRAVEL AND GRAVEL SUBBASE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 304, TABLE 1E, AND SHALL BE COMPACTED AS INDICATED IN SECTION 304, 3.6 COMPACTION, AND 3.7 DENSITY TESTING, AND CITY OF CONCORD CONSTRUCTION STANDARDS, SECTION VIII B AND C.

**D C2** **PAVEMENT / PAVEMENT JOINT DETAIL** NTS

**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2316

**NOTES:**

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) PURSUANT TO RSA 483-B:9 11 (D), NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS LOCATED WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER. BEYOND 25 FEET, SLOW OR CONTROLLED RELEASE FERTILIZER MAY BE USED. SLOW RELEASE NITROGEN MUST CONTAIN NO MORE THAN 2% PHOSPHORUS, AND A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.
- 5) PURSUANT TO RSA 483-B:9, V (A) (2) (A), NO CHEMICALS INCLUDING PESTICIDES OR HERBICIDES OF ANY KIND, SHALL BE APPLIED TO GROUND, TURF, OR ESTABLISHED VEGETATION WITHIN THE WATERFRONT BUFFER, EXCEPT IF APPLIED BY HORTICULTURE PROFESSIONAL WHO HAVE AN APPLICATION LICENSE OR AS ALLOWED BY SPECIAL PERMIT ISSUED UNDER RSA 541-A. NO CALCIUM CHLORIDE SHALL BE APPLIED WITHIN THE WATERFRONT BUFFER.

**PROPOSED HOUSING  
 TBD NORTHWEST ST.  
 PORTSMOUTH, NH**

NO.	DESCRIPTION	DATE
1	UPDATE SEQUENCE	1/3/22
0	ISSUED FOR COMMENT	8/23/21

REVISIONS

SCALE: AS SHOWN JUNE 2021

**EROSION NOTES & DETAILS**

**D1**