

P-0766-006  
December 3, 2021

Ms. Barbara McMillan, Chair  
City of Portsmouth Conservation Commission  
1 Junkins Avenue  
Portsmouth, New Hampshire 03801

Re: **Wetland Conditional Use Permit Application**  
North Mill Pond Greenway  
Vaughan Street  
Portsmouth, New Hampshire

Dear Barbara,

On behalf of The City of Portsmouth, we are pleased to submit the following supplemental information to support a request for a Wetland Conditional Use Permit for the above referenced project:

- One (1) full size and nine (9) half size copies of the Site Plan Set, last revised December 3, 2021.
- Ten (10) copies of the Restoration and Buffer Impact Exhibit, dated December 3, 2021.

This project was originally presented to the Conservation Commission at their October 13, 2021 meeting. The Commission voted to hold a work session for the project at their November 10, 2021 meeting to discuss potential improvements to the design. The enclosed supplemental information is provided to address improvements recommended by the Commission during the work session. The following is a summary of those revisions:

1. The boardwalk area has been reduced by 375 SF from the previous design. The location and size are shown on the enclosed Site Plan Set.
2. The 1-foot gravel shoulders have been eliminated on either side of the 10-foot porous pavement path.
3. Existing trees greater than 6-inch caliper will remain where possible.

Updated buffer impact and restoration calculations resulting from the revised design are summarized in the table below and are also depicted on the enclosed Restoration and Buffer Impact Exhibit.

Project Buffer Impact and Marsh Restoration Comparison			
Wetland and Buffer Setback Area	Proposed Restoration	Proposed Impacts	
		Boardwalk	Porous Pave
Mudflat	3,922 SF	0 SF	0 SF
Jurisdictional Wetland	30,948 SF	206 SF	0 SF
0 - 100 FT*	22,794 SF	126 SF	5,420 SF
Sub Totals	57,664 SF	332 SF	5,420 SF
Totals	57,664 SF	5,752 SF	
*Tidal Buffer Zone per RSA 482-A:4			





## Conclusion

The proposed improvements, including the changes incorporated from the recommendations by the Conservation Commission, intend to restore the impaired shoreline and improve the function and value of the intertidal zone. Moreover, the project will create greater coastal resiliency by creating a stable, living habitat to act as storm damage prevention to the upgradient buffer zone and developed areas. Habitat quality for wildlife will be significantly improved by providing food, cover, and overwintering areas for wildlife. The landward migration of salt marsh as a result of sea level rise will be able to progress into the buffer zone at the site given the gradual rise in elevation in these areas.

We respectfully request to be placed on the Conservation Committee meeting agenda for December 8, 2021. If you have any questions or need any additional information, please contact Patrick Crimmins by phone at (603) 433-8818 or by email at [pmcrimmins@tighebond.com](mailto:pmcrimmins@tighebond.com).

Sincerely,  
**TIGHE & BOND, INC.**



Patrick M. Crimmins, PE  
Senior Project Manager

### Enclosures

Cc: Peter Britz, City Environmental Planner & Interim Planning Director  
Halvorson Tighe & Bond Studio  
DeRosa Environmental Consulting



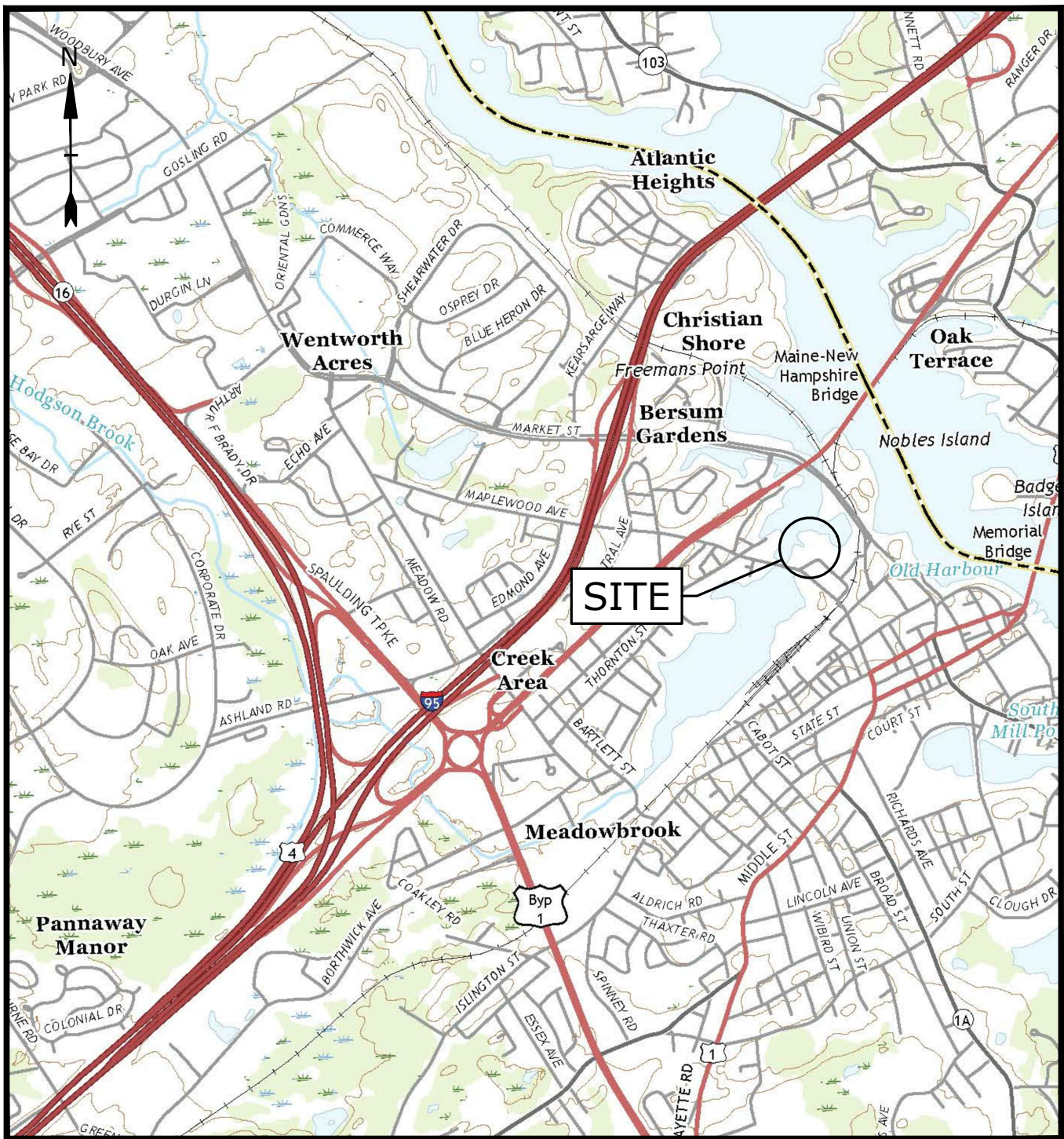
# NORTH MILL POND GREENWAY AND COMMUNITY PARK - AREA 1

VAUGHAN STREET  
PORTSMOUTH, NEW HAMPSHIRE

JULY 21, 2021

LAST REVISED: DECEMBER 3, 2021

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	12/3/2021
C-101	EXISTING CONDITIONS AND DEMOLITION PLAN	12/3/2021
C-102	SITE PLAN	12/3/2021
C-103	GRADING AND DRAINAGE PLAN	12/3/2021
C-501	EROSION CONTROL NOTES AND DETAILS SHEET	7/21/2021
C-502	DETAILS SHEET	7/21/2021
C-503	BOARDWALK DETAILS SHEET	12/3/2021
C-504	RESTORATION SECTION PLAN	7/21/2021
L-101	RESTORATION PLANTING PLAN	12/3/2021



LOCATION MAP  
SCALE: 1" = 2,000'

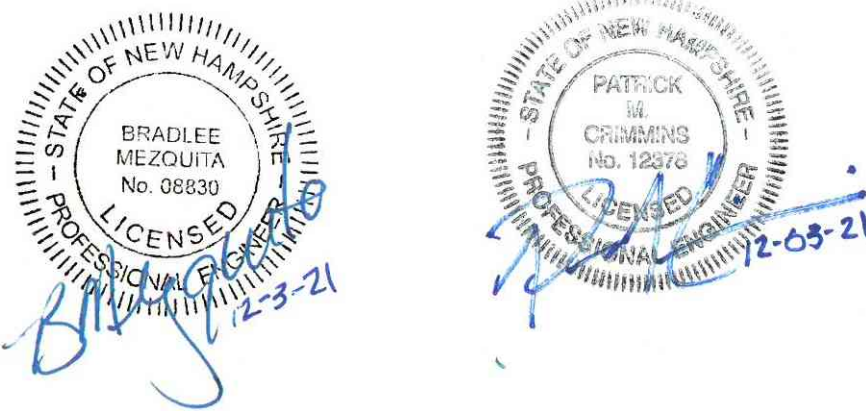
PREPARED BY:  
**HALVORSON**  
Tighe & Bond STUDIO  
25 KINGSTON STREET  
BOSTON, MASSACHUSETTS 02111-2200  
617-536-0380

ENVIRONMENTAL CONSULTANT:  
**DEROSA ENVIRONMENTAL CONSULTING, INC.**  
167 MAIN STREET, PO BOX 716  
ROWLEY, MASSACHUSETTS 01969

CIVIL CONSULTANT:  
**Tighe & Bond**  
177 CORPORATE DRIVE  
PORTSMOUTH, NEW HAMPSHIRE 03801  
603-433-8818

APPLICANT/OWNER:  
**CITY OF PORTSMOUTH**  
1 JUNKINS AVENUE, 3RD FLOOR  
PORTSMOUTH, NEW HAMPSHIRE 03801

SURVEYOR:  
**DOUCET SURVEY, LLC**  
192 KENT PLACE  
NEWMARKET, NEW HAMPSHIRE 30857



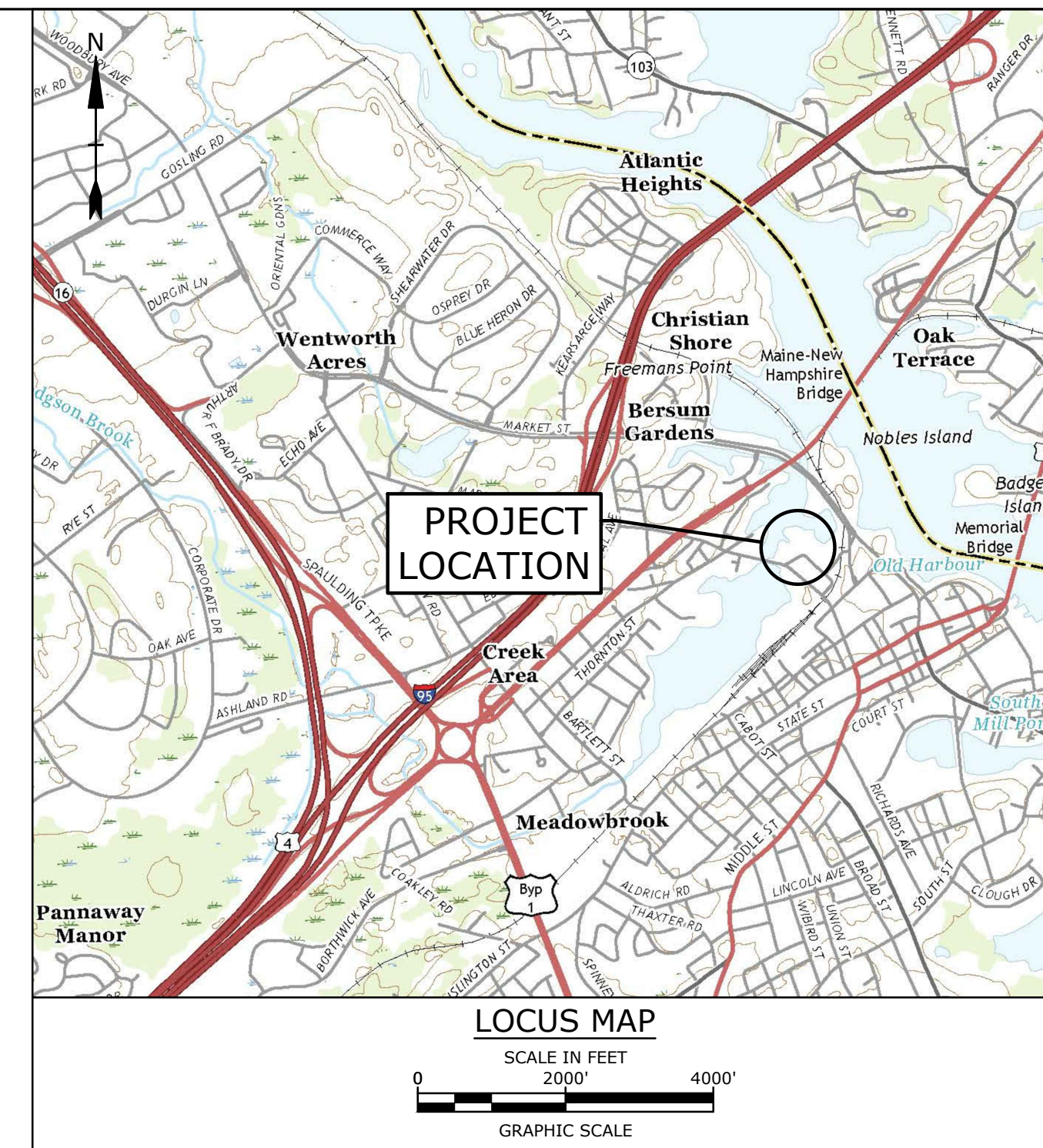
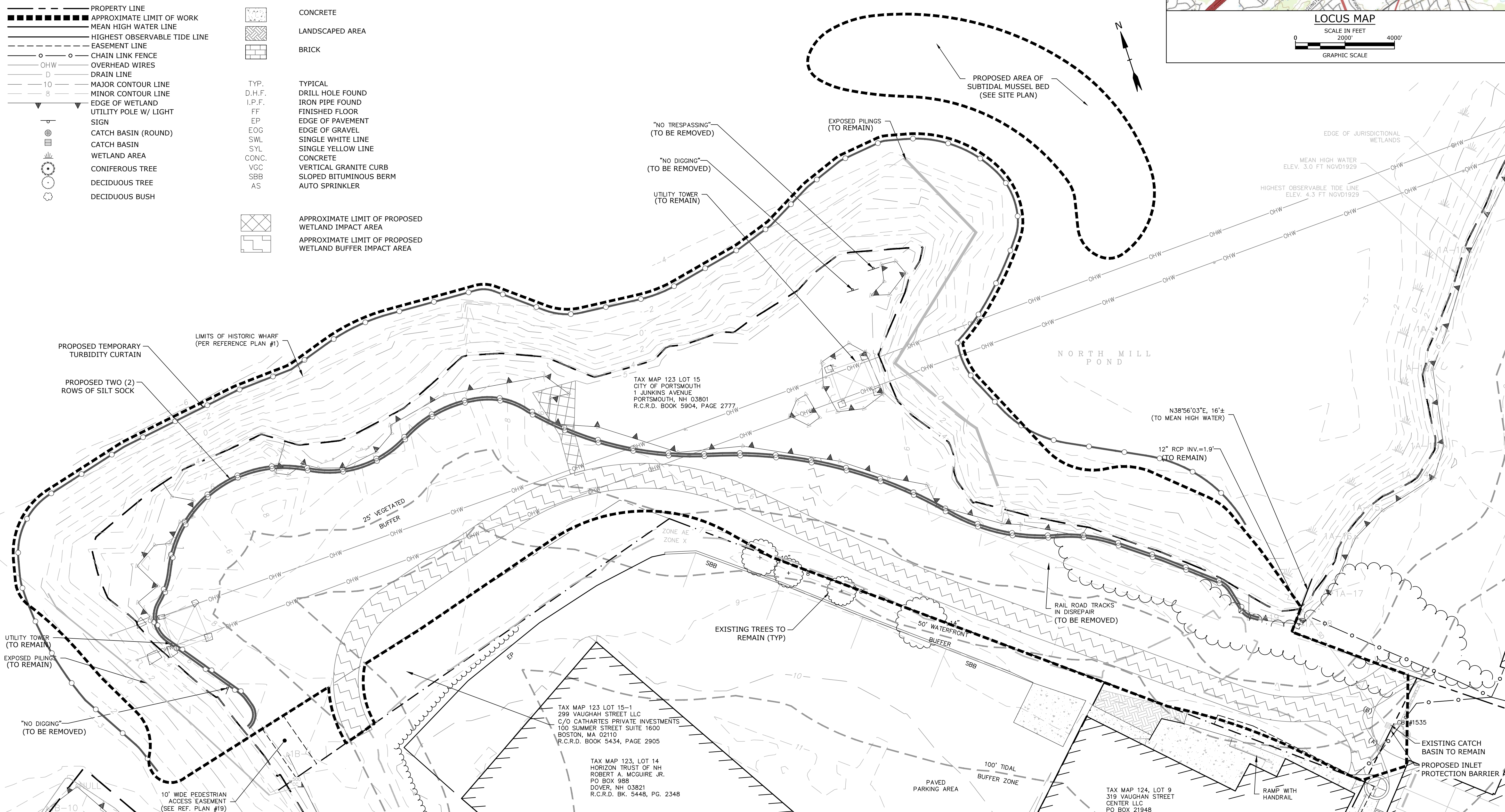


1. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY DOUCET SURVEY INC, DATED FEBRUARY 3, 2016.
2. JURISDICTIONAL WETLANDS DELINEATED BY MARC JACOBS, IN DECEMBER 2015.
3. VERTICAL DATUM IS BASED ON NGVD29 PER DISK B2 1923
4. HORIZONTAL DATUM IS BASED ON NEW HAMPSHIRE STATE PLANE(2800) NAD83(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

1. "EXISTING CONDITIONS PLAN OF TAX MAP 123, LOT 15 & TAX MAP 124, LOTS 10 & 11" PREPARED BY DOUCET SURVEY INC, DATED FEBRUARY 3, 2016.
2. "EXISTING CONDITIONS PLAN FOR TIGHE & BOND OF STONE CREEK REALTY" PREPARED BY DOUCET SURVEY LLC, DATED NOVEMBER 2019.

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
3. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.

	PROPERTY LINE		CONCRETE
	APPROXIMATE LIMIT OF WORK		LANDSCAPED AREA
	MEAN HIGH WATER LINE		BRICK
	HIGHEST OBSERVABLE TIDE LINE		
	EASEMENT LINE	TYP.	TYPICAL
	CHAIN LINK FENCE	D.H.F.	DRILL HOLE FOUND
	OVERHEAD WIRES	I.P.F.	IRON PIPE FOUND
	DRAIN LINE	FF	FINISHED FLOOR
	MAJOR CONTOUR LINE	EP	EDGE OF PAVEMENT
	MINOR CONTOUR LINE	EOG	EDGE OF GRAVEL
	EDGE OF WETLAND	SWL	SINGLE WHITE LINE
	UTILITY POLE W/ LIGHT SIGN	SYL	SINGLE YELLOW LINE
	CATCH BASIN (ROUND)	CONC.	CONCRETE
	CATCH BASIN	VGC	VERTICAL GRANITE CURB
	WETLAND AREA	SBB	SLOPED BITUMINOUS BERM
	CONIFEROUS TREE	AS	AUTO SPRINKLER
	DECIDUOUS TREE		
	DECIDUOUS BUSH		
			APPROXIMATE LIMIT OF PROPOSED WETLAND IMPACT AREA
			APPROXIMATE LIMIT OF PROPOSED WETLAND BUFFER IMPACT AREA

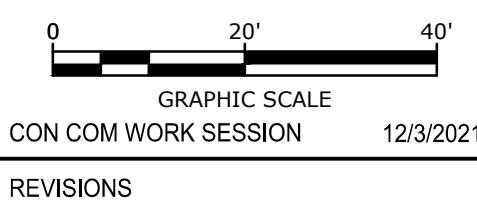


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NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1

PORTSMOUTH, NEW HAMPSHIRE



PROJECT NO:	P0766-006
DRAWN BY:	AFS
CHECKED BY:	PMC
SCALE:	AS SHOWN

PERMIT SET  
NOT FOR CONSTRUCTION

July 21, 2021

### EXISTING CONDITIONS AND DEMOLITION PLAN

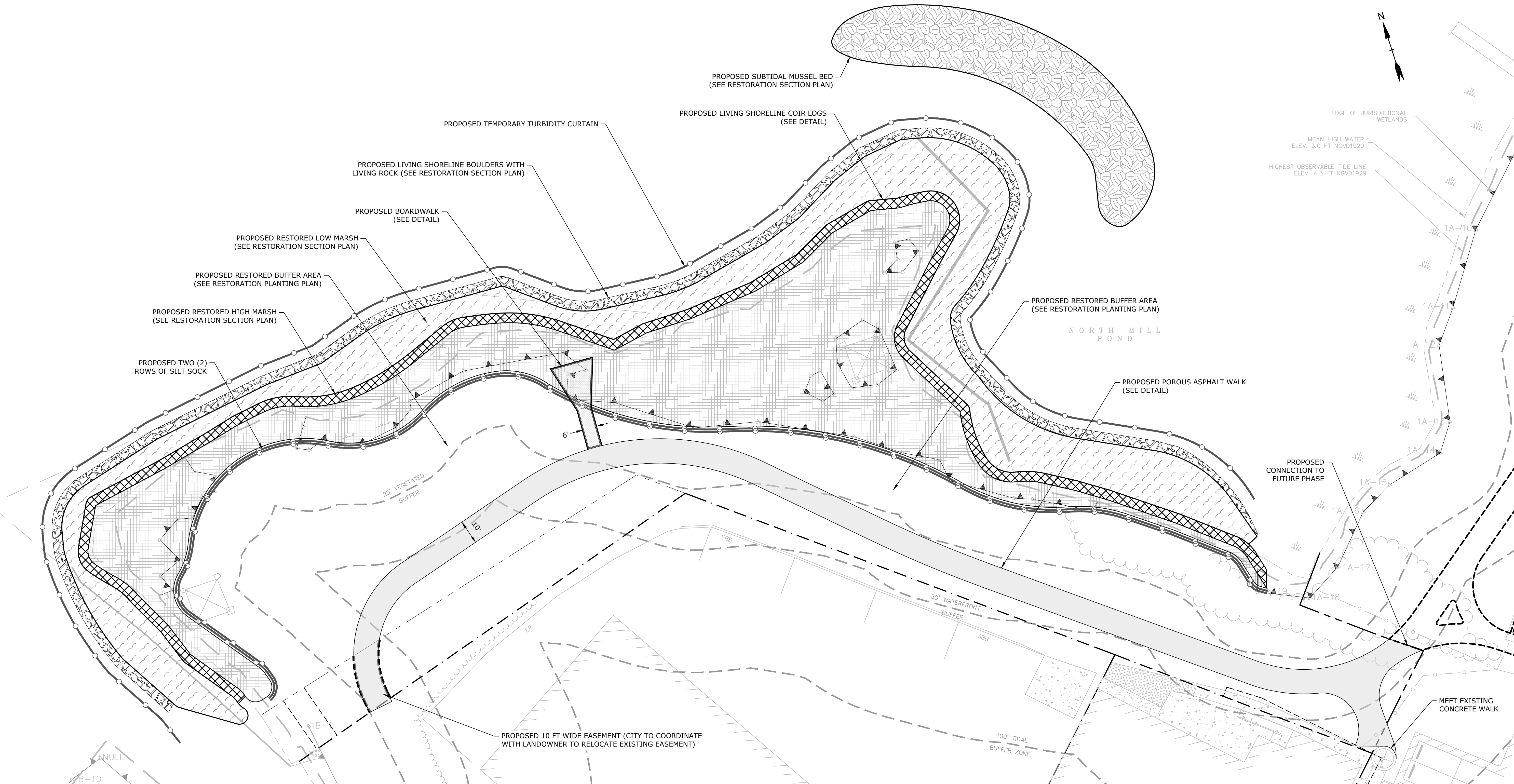
C-101



- SITE NOTES:**
1. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
  2. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
  3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
  4. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAY WITH THE CITY OF PORTSMOUTH.
  5. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
  6. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
  7. SEE LANDSCAPE PLANS FOR LANDSCAPING MATERIALS AND NOTES.

**LEGEND**

- |              |   |
|--------------|---|
| ---          | PROPERTY LINE                                       |
| - - - - -    | APPROXIMATE PROPERTY LINE                           |
| - - - - -    | EXISTING EASEMENT LINE                              |
| ---          | PROPOSED EASEMENT LINE                              |
|              |   |
|              | PROPOSED POROUS ASPHALT WALK                        |
|              | PROPOSED BOARDWALK                                  |
|              | PROPOSED RESTORED HIGH MARSH                        |
|              | PROPOSED RESTORED LOW MARSH                         |
|              | PROPOSED LIVING SHORELINE BOULDERS WITH LIVING ROCK |
|              | PROPOSED LIVING SHORELINE BOULDERS WITH LIVING ROCK |
|              | PROPOSED SUBTIDAL OYSTER BED                        |
| TYP<br>COORD | TYPICAL<br>COORDINATE                               |



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NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1  
PORTSMOUTH, NEW HAMPSHIRE



0 20' 40'  
GRAPHIC SCALE

CON COM WORK SESSION 12/3/2021

REVISIONS

PROJECT NO: P0766-006

DRAWN BY: AFS

CHECKED BY: PMC

SCALE: AS SHOWN

PERMIT SET  
NOT FOR CONSTRUCTION

July 21, 2021

SITE PLAN

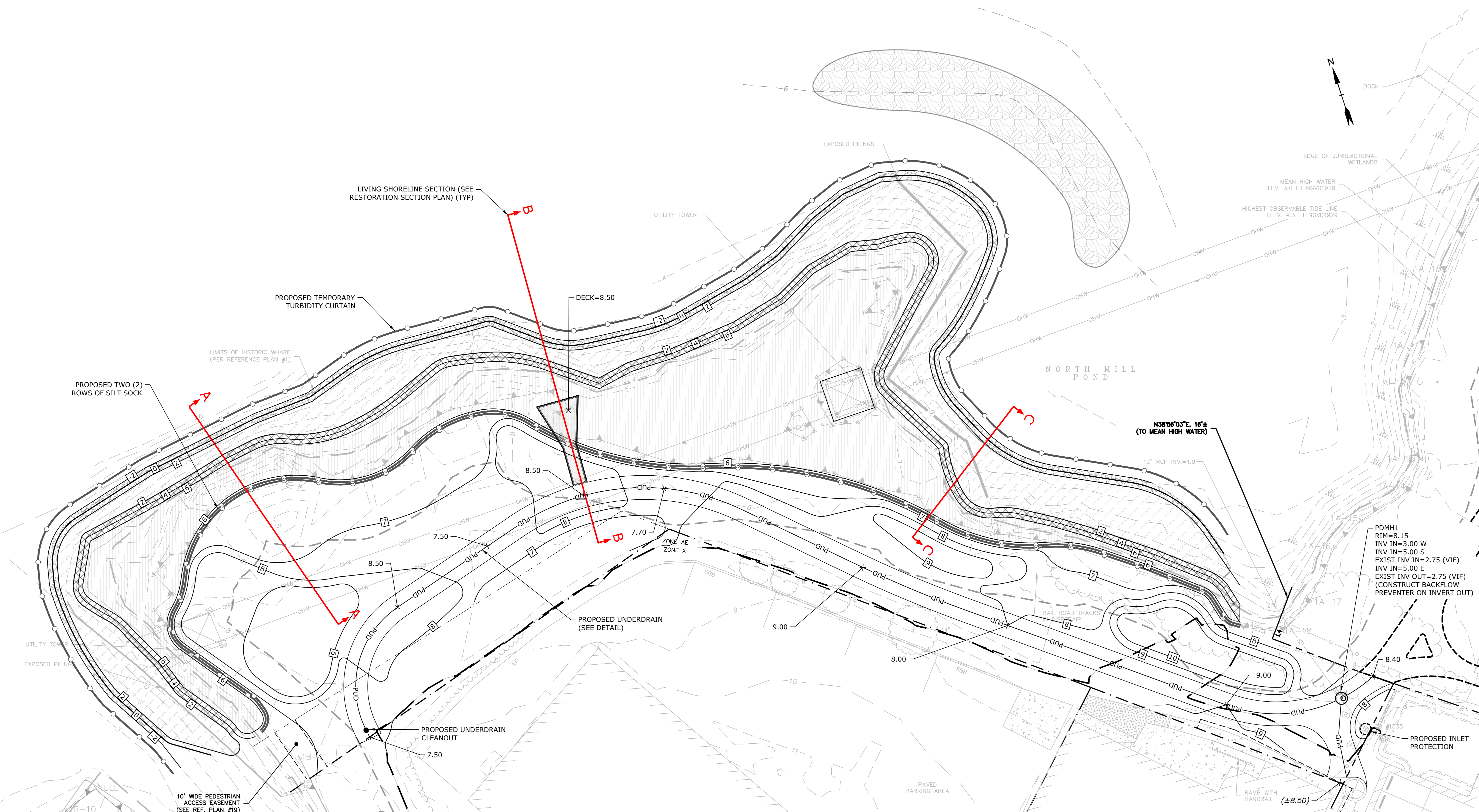
C-102



1. COMPACTION REQUIREMENTS:  
BELOW PAVED OR CONCRETE AREAS 95%  
TRENCH BEDDING MATERIAL AND  
SAND BLANKET BACKFILL 95%  
BELOW LOAM AND SEED AREAS 90%  
\* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
2. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND LOADING DOCK AREAS ADJACENT TO THE BUILDING.
3. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
6. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
7. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

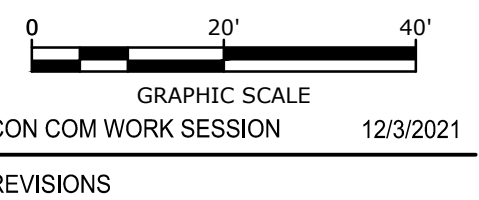
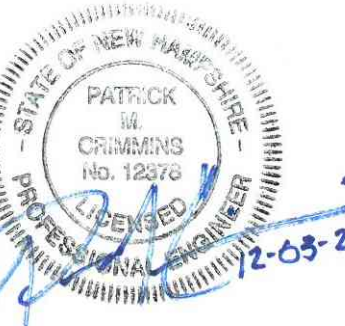
1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING CATCH BASIN INLETS WITHIN THE WORK LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. MAINTAIN FOR THE DURATION OF THE PROJECT.
4. INSTALL STABILIZED CONSTRUCTION EXIT(S).
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAINTAIN EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED WITH PERIMETER CONTROLS AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

	PROPOSED MAJOR CONTOUR LINE
	PROPOSED MINOR CONTOUR LINE
	PROPOSED TEMPORARY EROSION CONTROL DEVICE
	PROPOSED UNDERDRAIN LINE
	INLET PROTECTION SILT SACK
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
	PROPOSED SLOPE AND DIRECTION
	PROPOSED DRAIN MANHOLE



NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1

PORTSMOUTH, NEW HAMPSHIRE



PROJECT NO:	P0766-006
DRAWN BY:	AFS
CHECKED BY:	PMC
SCALE:	AS SHOWN

PERMIT SET  
NOT FOR CONSTRUCTION

July 21, 2021

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GRADING, DRAINAGE  
AND EROSION  
CONTROL PLAN

C-103

Print Save Date: December 2, 2021 3:42 PM By: ASELLAR  
 at Date: Thursday, December 02, 2021 Plotted By: Alexander Sellar



GENERAL PROJECT INFORMATION

PROJECT OWNER: CITY OF PORTSMOUTH  
1 JUNKINS AVENUE  
PORTSMOUTH, NH 03801  
PROJECT NAME: NORTH MILL POND GREENWAY AND COMMUNITY PARK - AREA 1  
PROJECT ADDRESS: VAUGHAN STREET  
PORTSMOUTH, NH 03801  
PROJECT MAP / LOT: MAP 123 / LOT 15  
PROJECT LATITUDE: 43°-04'-49.95"N  
PROJECT LONGITUDE: 70°-45'-49.31"W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF CONSTRUCTION OF A PROPOSED GREENWAY PATH AND BOARDWALK ALONG THE NORTH MILL POND WATERFRONT INCLUDING WETLAND RESTORATION, INVASIVE SPECIES CONTROL, PROPOSED LIVING SHORELINE AND ADDITIONAL DRAINAGE IMPROVEMENTS.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 1.25 ACRES.

SOIL CHARACTERISTICS

BASED ON THE NRCS WEB SOIL SURVEY FOR ROCKINGHAM COUNTY - NEW HAMPSHIRE, THE SOILS ON SITE CONSIST OF URBAN LAND SOILS WITH NO HYDROLOGIC SOIL GROUP RATING PROVIDED.

NAME OF RECEIVING WATERS

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA OVERLAND FLOW OR COLLECTED THROUGH THE POROUS PAVEMENT UNDERDRAIN AND DISCHARGED TO THE NORTH MILL POND.

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

- CUT AND CLEAR VEGETATION.
- CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
  - NEW CONSTRUCTION
  - DEVELOPMENT OF BORROW PIT AREAS
  - DISPOSAL OF SEDIMENT SPOIL, STUMP AND OTHER SOLID WASTE
  - EXCAVATION WORK
  - WETLAND MODIFICATIONS
  - CONTROL OF DUST
  - CONSTRUCTION OF ACCESS AND HAUL ROAD
  - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
  - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
- ALL PERMANENT DITCHES, SWALES, DETENTION, RETENTION AND SEDIMENTATION BASINS TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPs PRIOR TO DIRECTING RUNOFF TO THEM
- CLEAR AND DISPOSE OF DEBRIS.
- CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
- CONSTRUCT AND STABILIZE LIVING SHORELINE AND HELICAL PILES FOR PROPOSED BOARDWALK.
- GRADE AND GRAVEL PATH - AREA SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- FINALIZE BOARDWALK CONSTRUCTION.
- BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
- SEDIMENT TRAPS AND/OR BASINS SHALL BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
- FINISH PAVING PATH.
- INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
- COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- REMOVE TRAPPED SEDIMENTS FROM COLLECTOR DEVICES AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

SPECIAL CONSTRUCTION NOTES:

- THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

EROSION CONTROL NOTES:

- ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
- THE PROJECT MUST BE CONDUCTED IN ACCORDANCE WITH THE "NEW HAMPSHIRE BEST MANAGEMENT PRACTICES FOR EROSION CONTROL DURING TRAIL MAINTENANCE AND CONSTRUCTION (TRAIL BMPs)" PREPARED BY THE NEW HAMPSHIRE BUREAU OF TRAILS.
- PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
- CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING TURBIDITY CURTAINS, HAY BALES, SILT FENCES, MULCH BERMS, SILT SACKS AND SILT SOCKS AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
- SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AND BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- PERIMETER CONTROLS INCLUDING TURBIDITY CURTAINS, SILT FENCES, MULCH BERM, SILT SOCK, AND/OR HAY BALE BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL NON-PAVED AREAS HAVE BEEN STABILIZED.
- THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
- ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED AND FERTILIZER.
- INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.

STABILIZATION:

- AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
  - A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
  - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.;
  - E. IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.
- WINTER STABILIZATION PRACTICES:
  - A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
  - B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
  - C. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
- STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
  - A. TEMPORARY SEEDING;
  - B. MULCHING.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
- WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
- DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED

THROUGH SILT FENCES, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

DUST CONTROL:

- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
- DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
- DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

STOCKPILES:

- LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM SURFACE WATERS, CATCH BASINS, SWALES, AND CULVERTS.
- ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
- PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
- PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING:

- THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

VEGETATION:

- TEMPORARY GRASS COVER:
  - A. SEEDBED PREPARATION:
    - a. APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE;
  - B. SEEDING:
    - a. UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE;
    - b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED;
    - c. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING;
  - C. MAINTENANCE:
    - a. TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
- PERMANENT MEASURES AND PLANTINGS:
  - A. SEE RESTORATION PLANTING PLAN (SHEET L-101).

ALLOWABLE NON-STORMWATER DISCHARGES:

- FIRE-FIGHTING ACTIVITIES;
- FIRE HYDRANT FLUSHING;
- WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
- WATER USED TO CONTROL DUST;
- POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
- ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
- PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
- UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
- UNCONTAMINATED GROUND WATER OR SPRING WATER;
- FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
- UNCONTAMINATED EXCAVATION DEWATERING;
- LANDSCAPE IRRIGATION.

WASTE DISPOSAL:

- WASTE MATERIAL:
  - A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
  - B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
  - C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
- HAZARDOUS WASTE:
  - A. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
  - B. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
- SANITARY WASTE:
  - A. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

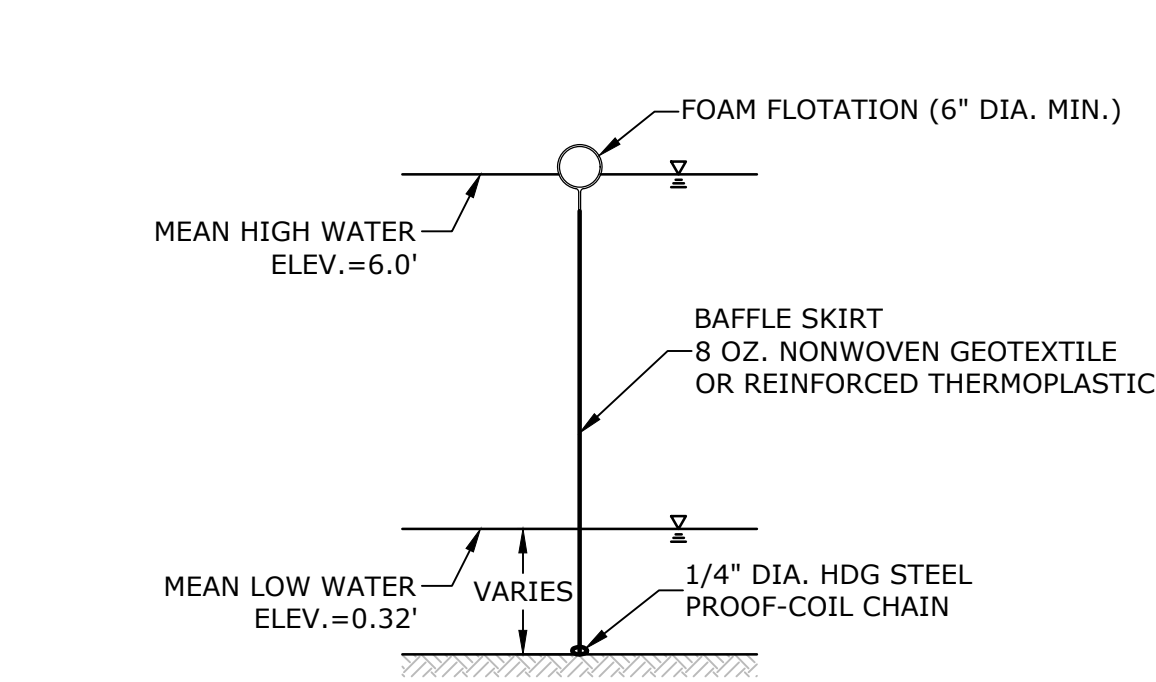
SPILL PREVENTION:

- CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
- THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
  - A. GOOD HOUSEKEEPING - THE FOLLOWING GOOD HOUSEKEEPING PRACTICE SHALL BE FOLLOWED ON SITE DURING CONSTRUCTION:
    - a. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE;
    - b. ALL REGULATED MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE, ON AN IMPERVIOUS SURFACE;
    - c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED;
    - d. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS;
    - e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
    - f. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
    - g. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
  - B. HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
    - a. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
    - b. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
    - c. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
  - C. PRODUCT SPECIFIC PRACTICES - THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
    - i. PETROLEUM PRODUCTS:
      - a. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
      - ii. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
      - iii. SECURE FUEL STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
      - iv. INSPECT FUEL STORAGE AREAS WEEKLY;
      - v. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS;
      - vi. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
      - vii. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
      - viii. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
        - (1) EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;

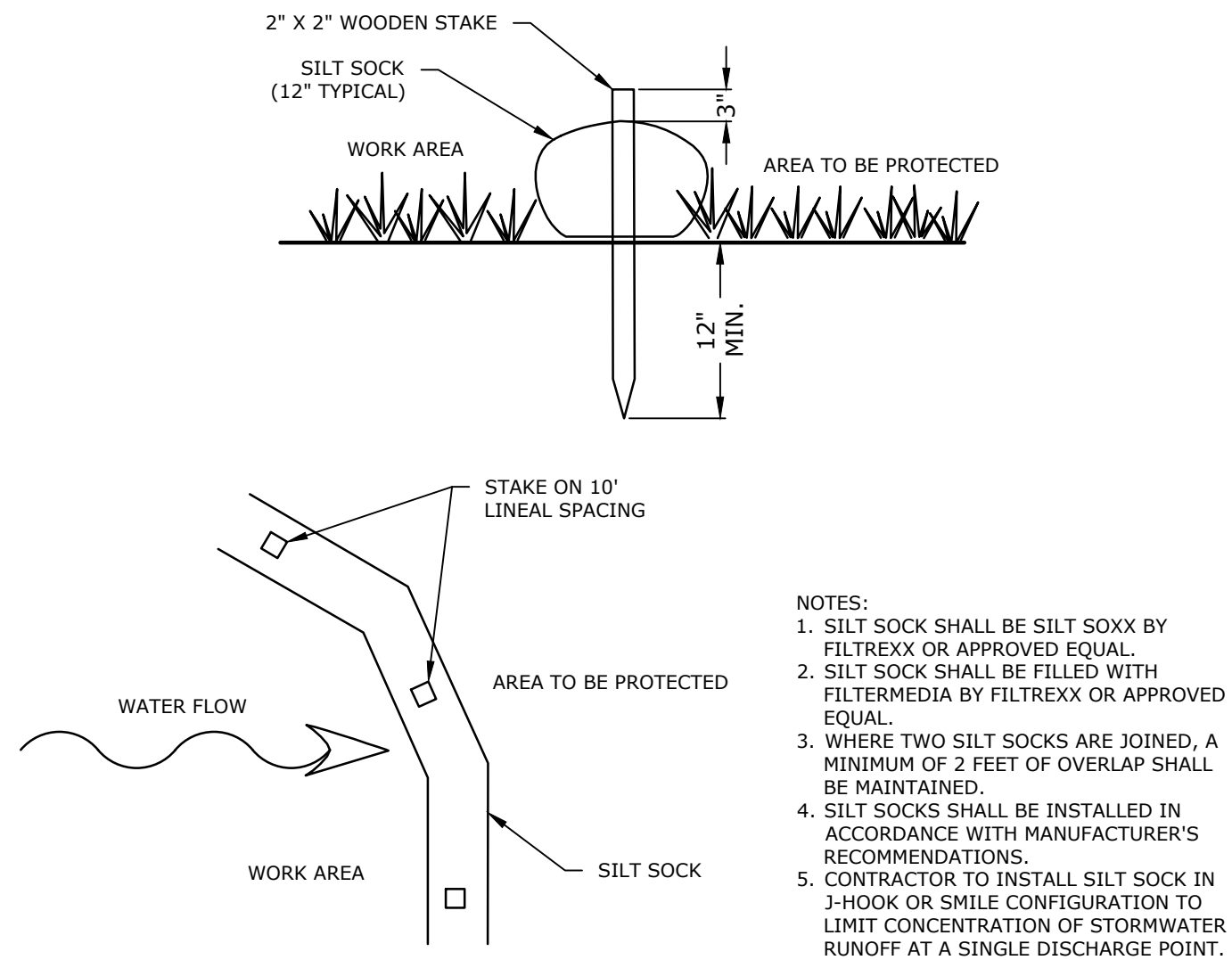
- PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
  - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
  - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES;
  - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
- ix. FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT SHALL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT, OR ITS SUCCESSOR DOCUMENT.  
HTTPS://WWW.DES.NH.GOV/ORGANIZATION/COMMISSIONER/PIB/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF
- b. FERTILIZERS
- i. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
- ii. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
- iii. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
- c. PAINTS:
- i. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
- ii. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
- iii. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
- D. SPILL CONTROL PRACTICES - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES;
- b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE;
- c. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
- d. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE;
- e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED;
- f. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
- E. VEHICLE FUELING AND MAINTENANCE PRACTICE:
- a. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPMENT/VEHICLE FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY;
- b. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY;
- c. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED;
- d. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA;
- e. CONTRACTOR SHALL REGULARLY INSPECT VEHICLES FOR LEAKS AND DAMAGE;
- f. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

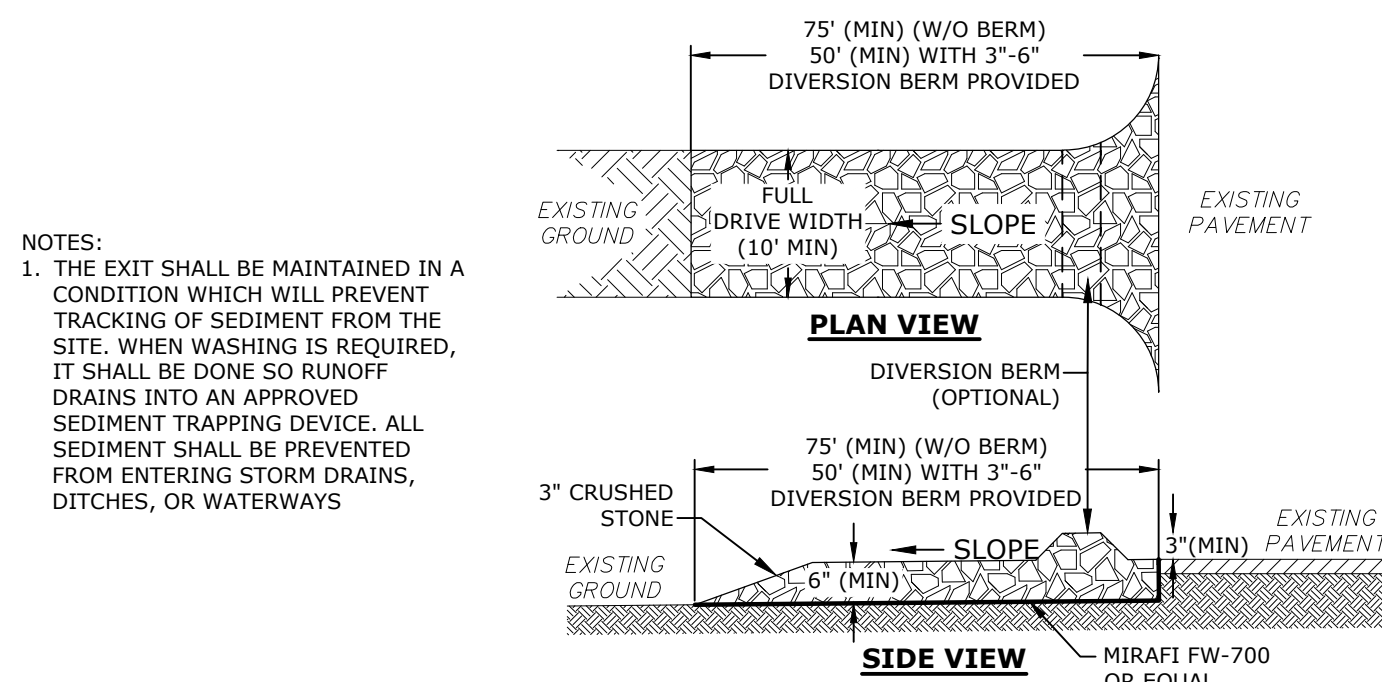
- THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRE A SWPPP. THE SWPPP SHALL BE PREPARED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.
- THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
  - A. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
  - B. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
  - C. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
  - D. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.



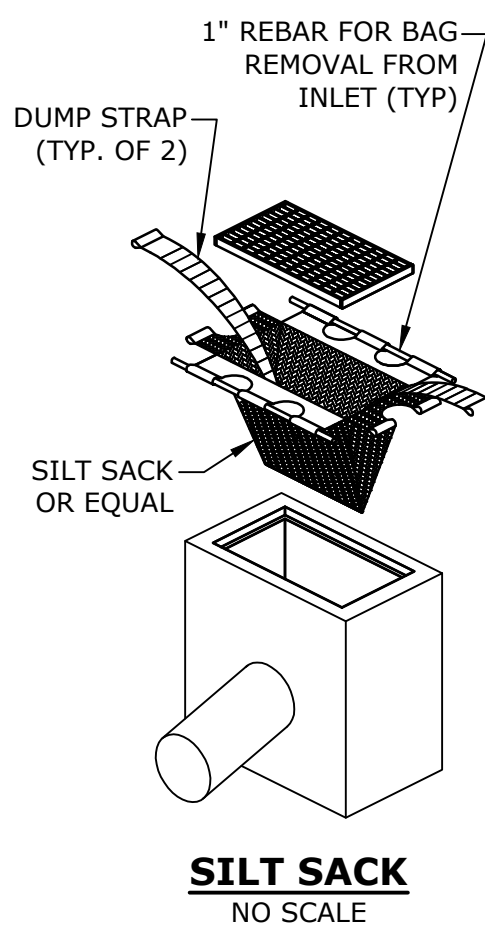
FULL-DEPTH TURBIDITY CURTAIN  
NO SCALE



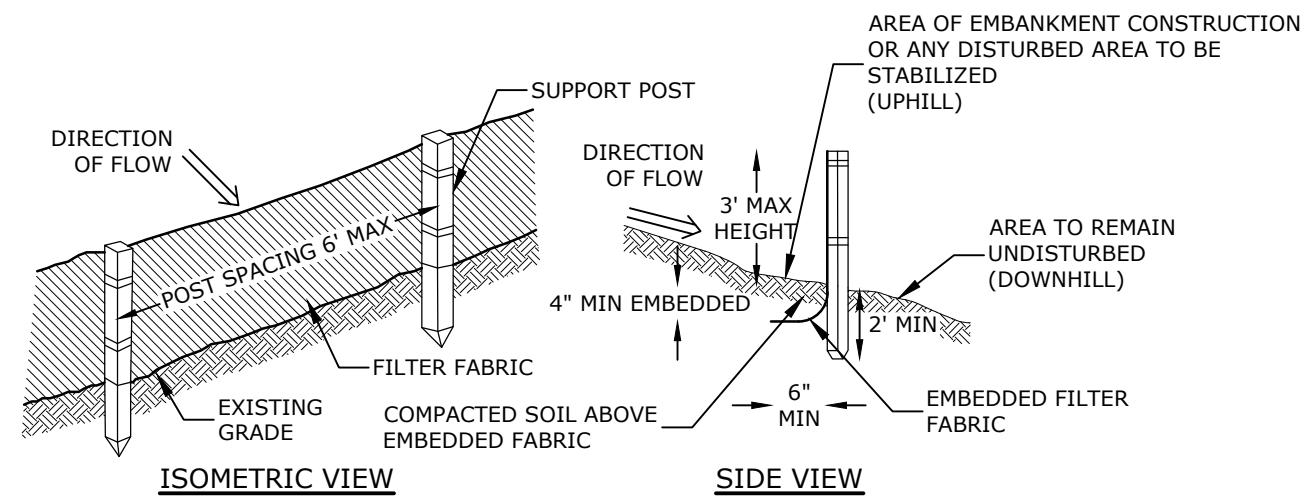
SILT SOCK  
NO SCALE



STABILIZED CONSTRUCTION EXIT  
NO SCALE



SILT SACK  
NO SCALE



SILT FENCE  
NO SCALE

- NOTES:
- SILT FENCE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
  - ADJOINING SECTIONS OF THE FENCE SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED TO A SUPPORT POST.
  - SILT FENCING SHOULD NOT BE STAPLED OR NAILED TO TREES.
  - THE FILTER FABRIC SHOULD BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHOULD BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER.
  - THE FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES FAHRENHEIT TO 120 DEGREES FAHRENHEIT.

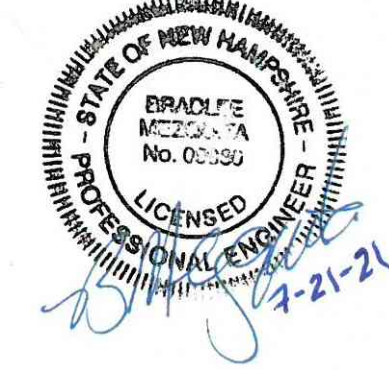


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NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1

PORTSMOUTH, NEW HAMPSHIRE



REVISIONS

PROJECT NO: P0766-006  
DRAWN BY: AFS  
CHECKED BY: PMC  
SCALE: AS SHOWN

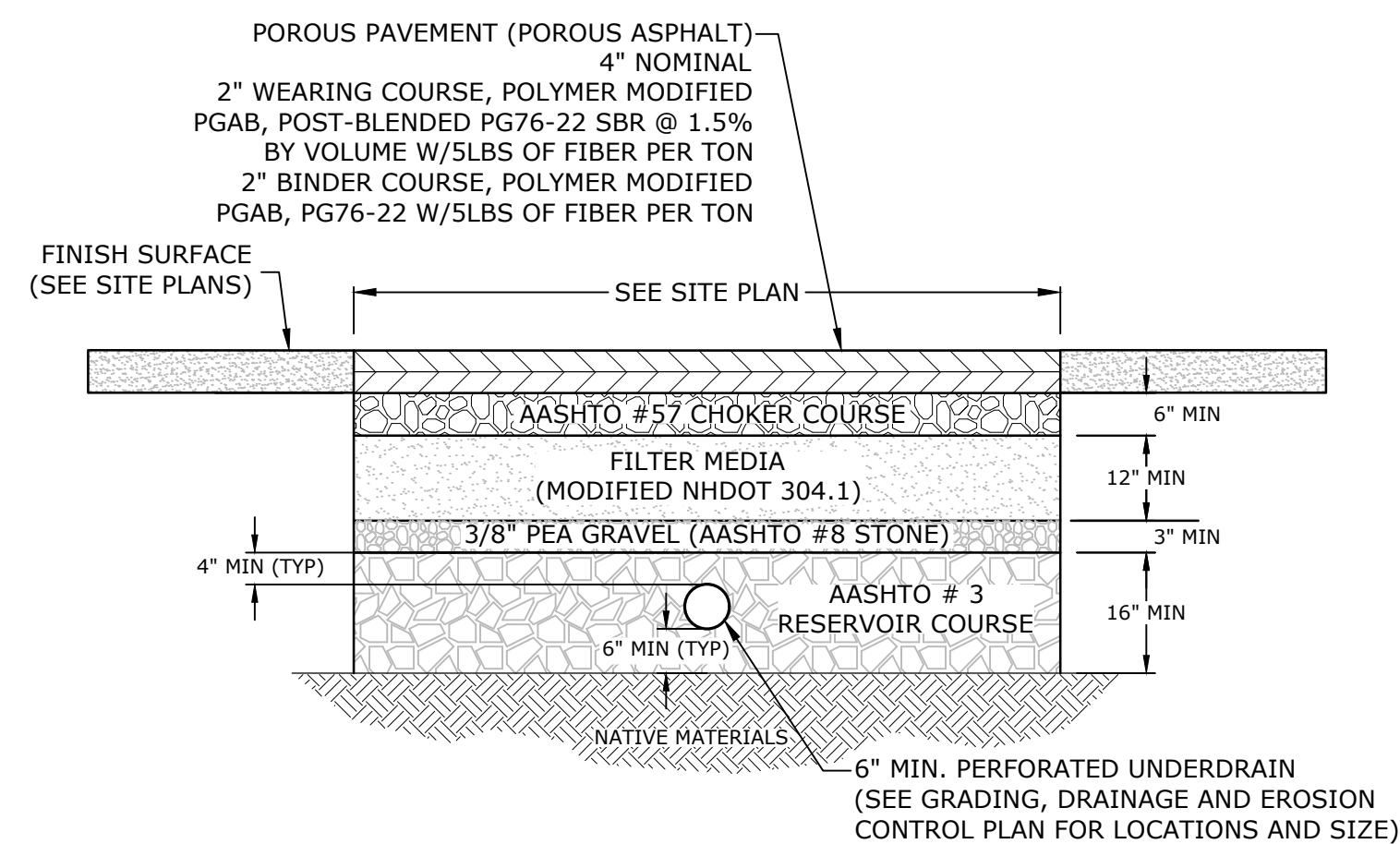
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July 21, 2021

EROSION CONTROL  
NOTES AND  
DETAILS SHEET

C-501





- NOTES:

1. SEE GRADING AND DRAINAGE PLAN FOR SLOPE AND CROSS-SLOPE.
2. GRAVEL SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS FROM THE UNH STORMWATER CENTER FOR POROUS ASPHALT.
3. FILTER COURSE TO BE INCREASED AS NECESSARY TO MEET PROPOSED GRADES.
4. INSTALL FILTER COURSE AGGREGATE TO A MAXIMUM OF 95% STANDARD PROCTOR COMPACTION (ASTM D698 / AASHTO T99). INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
5. INSTALL CHOKER, GRAVEL, AND STONE BASE COURSE AGGREGATE TO A MAXIMUM OF 95% COMPACTION STANDARD PROCTOR (ASTM D698 / AASHTO T99). CHOKER SHOULD BE PLACED EVENLY OVER SURFACE OF FILTER COURSE BED, SUFFICIENT TO ALLOW PLACEMENT OF PAVEMENT, AND NOTIFY ENGINEER FOR APPROVAL. CHOKER BASE COURSE THICKNESS SHALL BE SUFFICIENT TO ALLOW FOR EVEN PLACEMENT OF THE POROUS ASPHALT BUT NOT LESS THAN 6-INCHES IN DEPTH.
6. DENSITY OF STONE SHALL BE DETERMINED BY AASHTO T 191 (SAND-CONE METHOD), AASHTO T 204 (DISCRETE CYLINDER METHOD), OR AASHTO T 238 (NUCLEAR METHODS), OR OTHER APPROVED METHODS AT THE DISCRETION OF THE SUPERVISING ENGINEER.

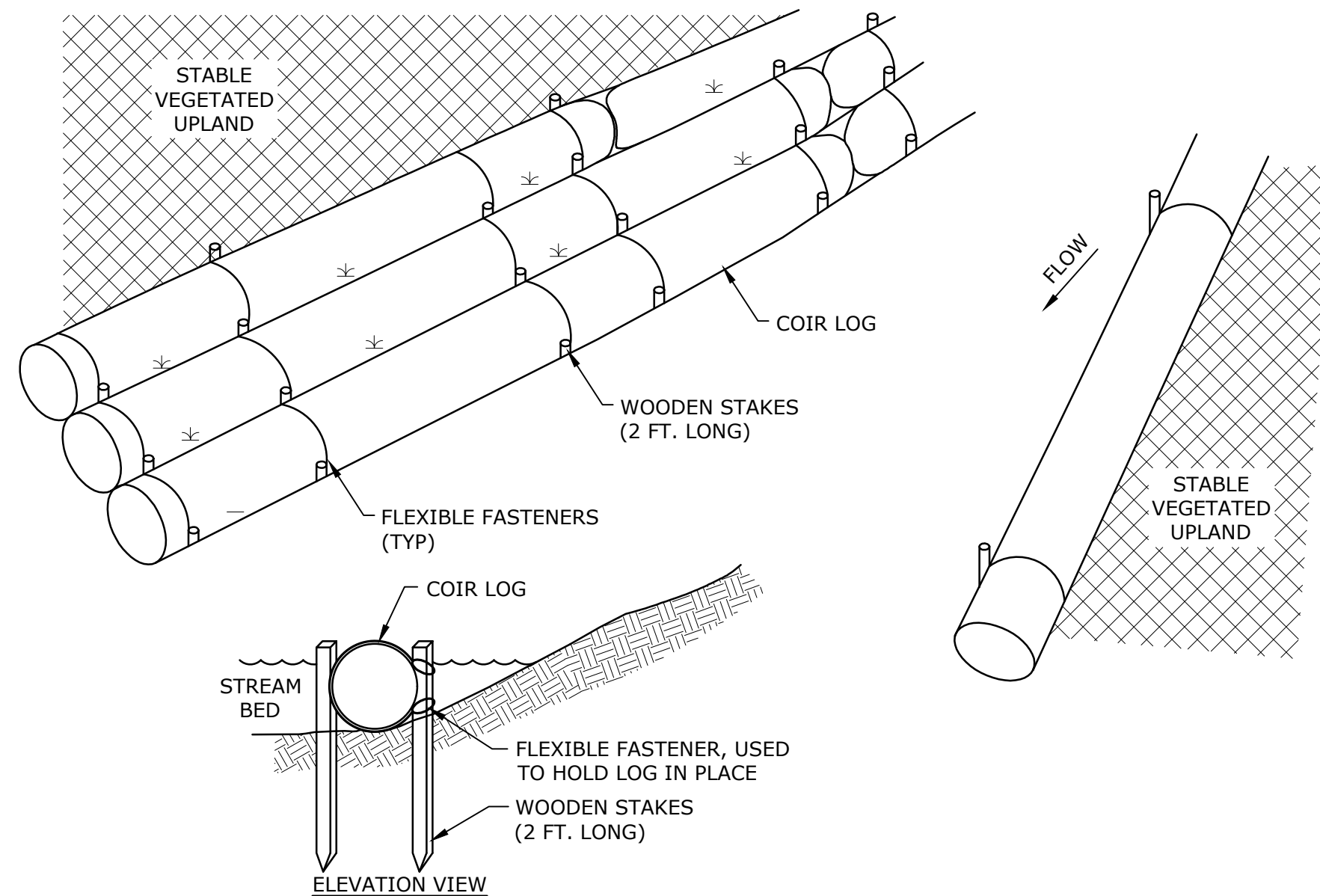
POROUS PAVEMENT SECTION  
NO SCALE

AASHTO #3 STONE (RESERVOIR COURSE)	
	% PASSING
2- $\frac{1}{2}$ "	100
2"	90-100
1- $\frac{1}{2}$ "	35-70
1"	0-15
$\frac{3}{4}$ "	0-5

AASHTO #8 STONE (PEA GRAVEL)	
	% PASSING
1/2"	100
3/8"	85-100
#4	10-30
#8	0-10
#16	0-5

MODIFIED NHDOT 304.1	
	% PASSING
6"	100
#4	70-100
#200	0-6*

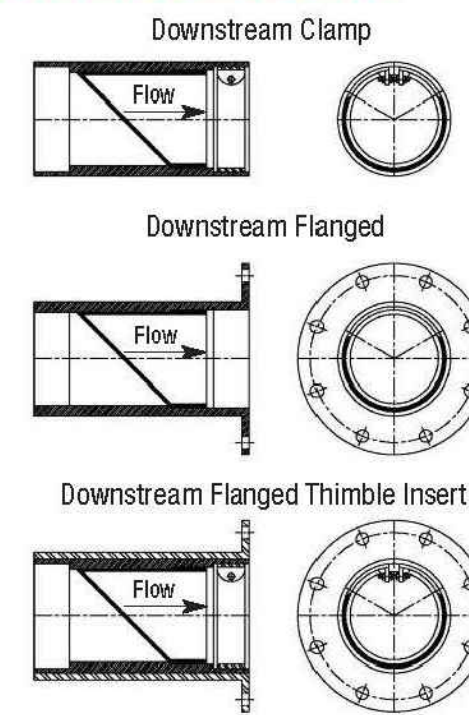
NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12



TYPICAL COIR LOG USE  
FOR BANK STABILIZATION  
NO SCALE

NOMINAL PIPE SIZE I.D.*		OVERALL LENGTH**		NUMBER OF CLAMPS	CUFF DEPTH		BACK PRESSURE RATING	
Inches	Millimeters	Inches	Millimeters		Inches	Millimeters	Feet	Meters
12	300	23	584	1	2	51	40	12

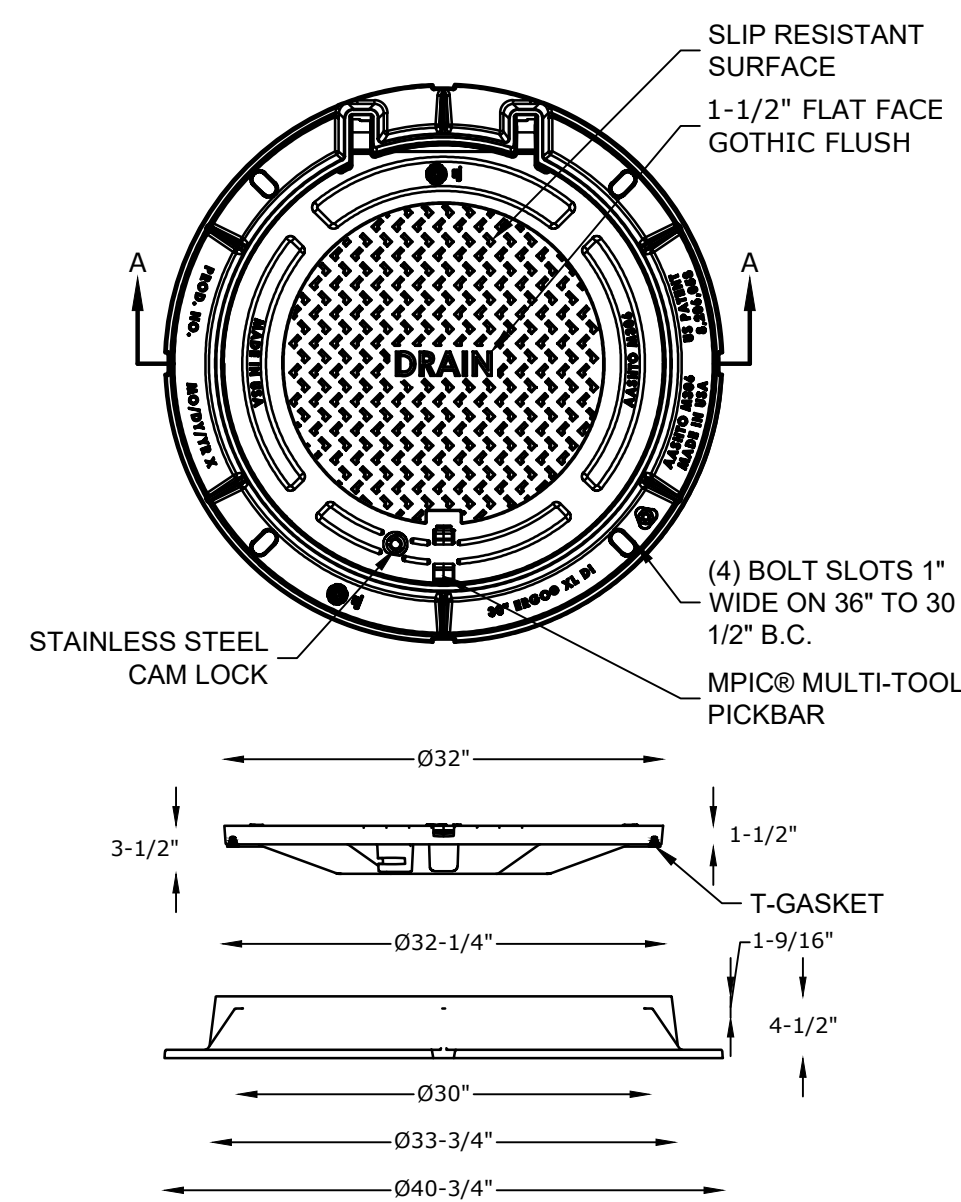
## Mounting Styles and Configurations



Flange shape and bolt pattern can be customized  
Flangeless thimble inserts are available.

## TYPICAL BACK FLOW PREVENTER

NO SCALE

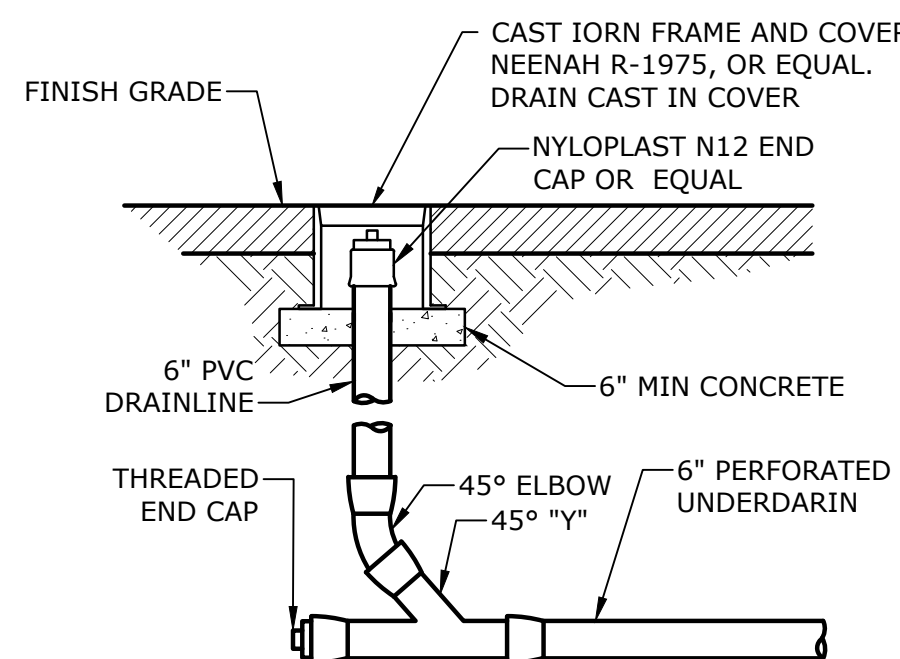


**SECTION A-A**

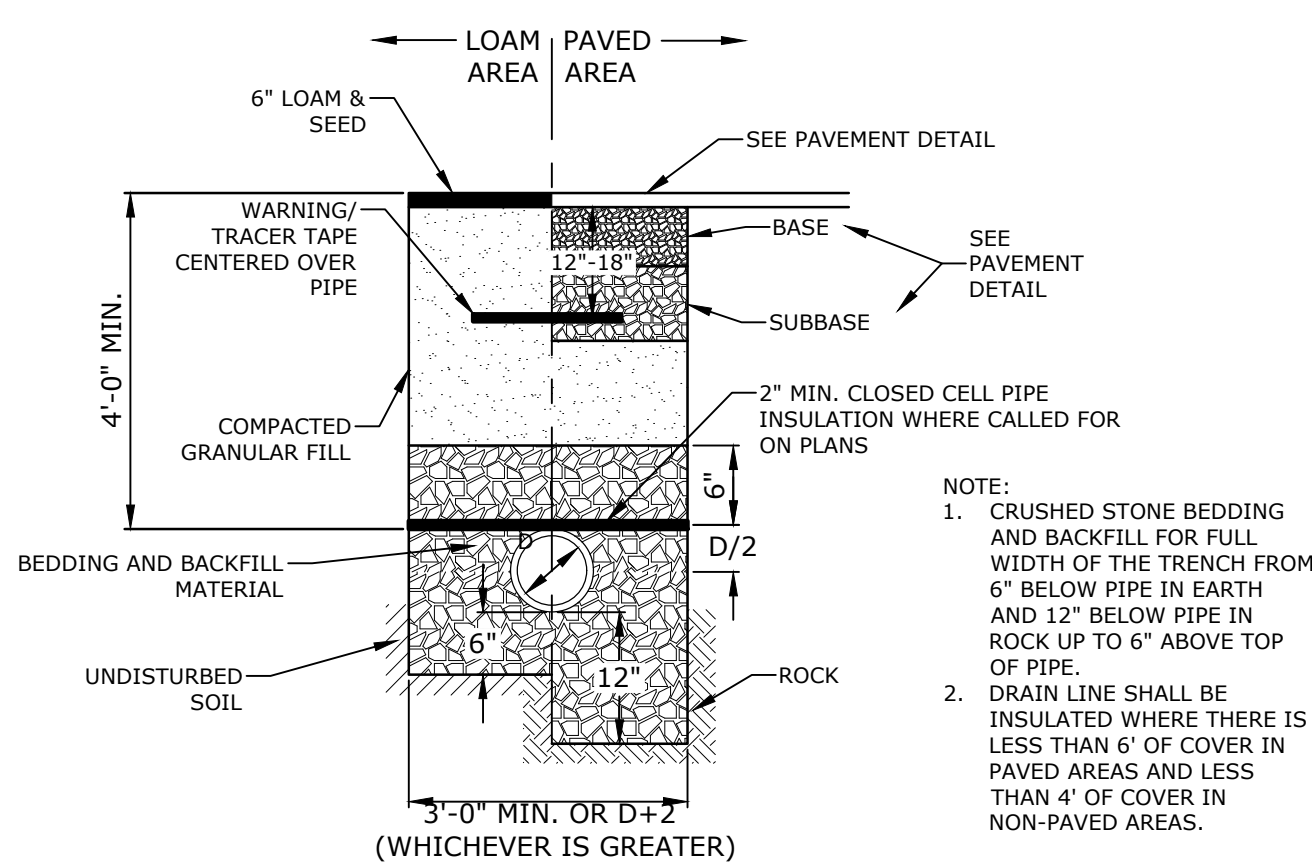
- NOTES:

1. MANHOLE FRAME AND COVER SHALL BE 32" HINGED ERGO XL BY EJ CO.
2. ALL DIMENSIONS ARE NOMINAL.
3. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
  - A. THE FRAME MEET OR EXCEED THE SPECIFIED LOAD RATING.
  - B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
  - C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
4. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN HE CENTER OF THE COVER.

**DRAIN MANHOLE FRAME & COVER**  
NO SCALE

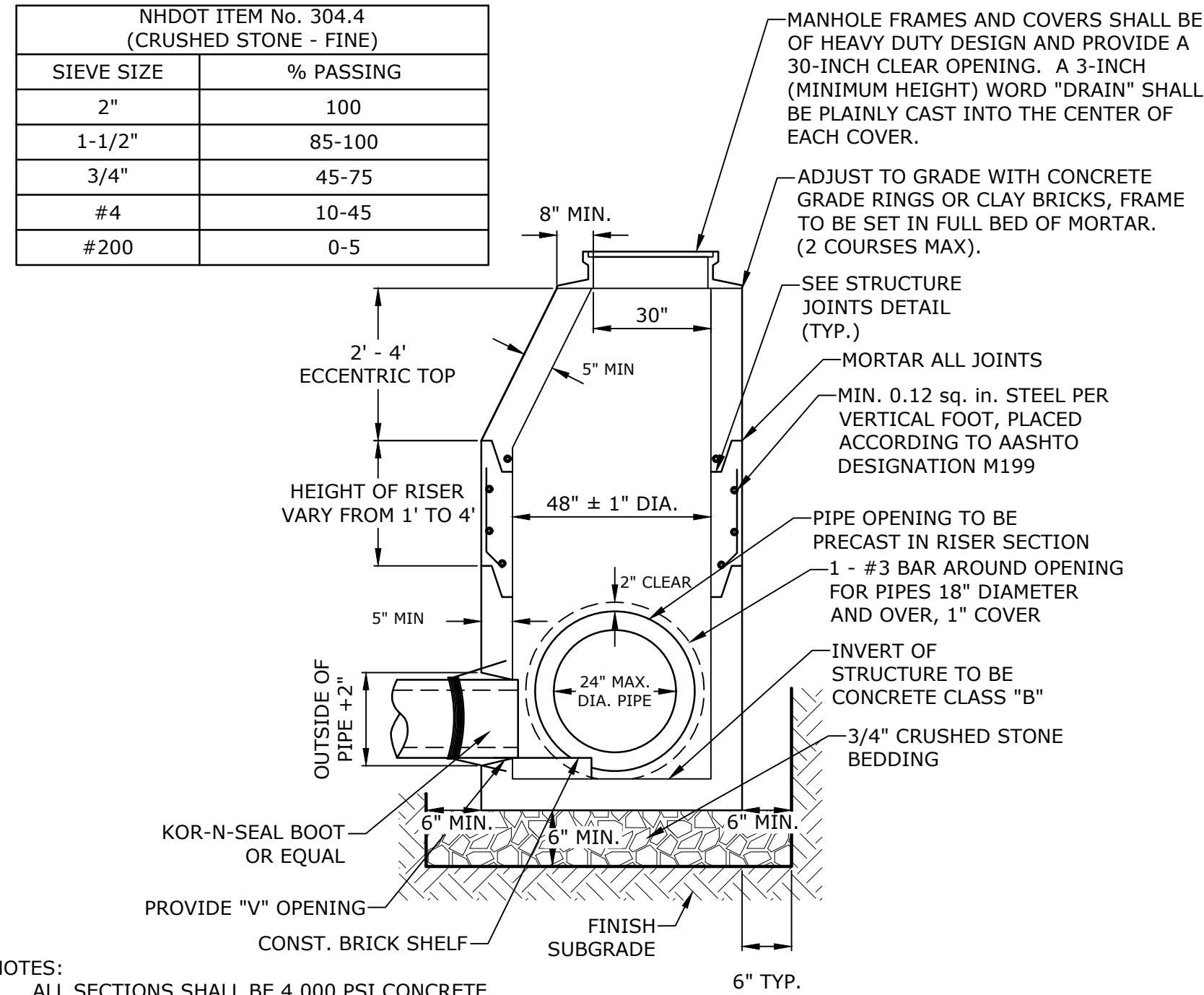


**DRAIN CLEAN-OUT**  
NO SCALE



STORM DRAIN TRENCH  
NO SCALE

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



- NOTES:

1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE. 6" TYP.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H2O LOADING.
5. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER (6" MINIMUM THICKNESS)
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
7. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
8. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
9. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
10. ALL STRUCTURES SHALL BE MOUNTED TO A MINIMUM 12" MINIMUM THICKNESS CONCRETE SLAB. THERE SHALL BE NO SURFACE BETWEEN HOLES, NO MORE THAN 10% OF A HORIZONTAL CROSS SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
13. THE INSIDE OF THE CONCRETE STRUCTURE SHALL BE TREATED WITH A SILOXANE COATING AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SILOXANE COATING SHALL BE SIKAGARD-705L OR APPROVED EQUAL.

**4' DIAMETER DRAIN MANHOLE**  
NO SCALE

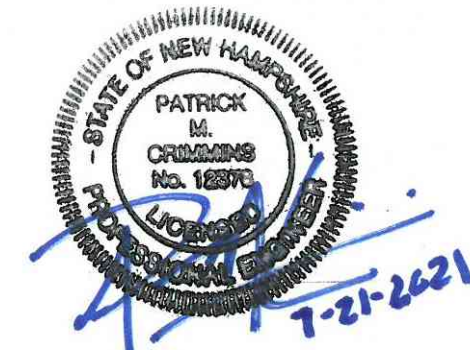


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NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1

PORTSMOUTH, NEW HAMPSHIRE



## REVISIONS

PROJECT NO: P0766-008

DRAWN BY: AFS

CHECKED BY: \_\_\_\_\_ PMC

SCALE: AS SHOWN

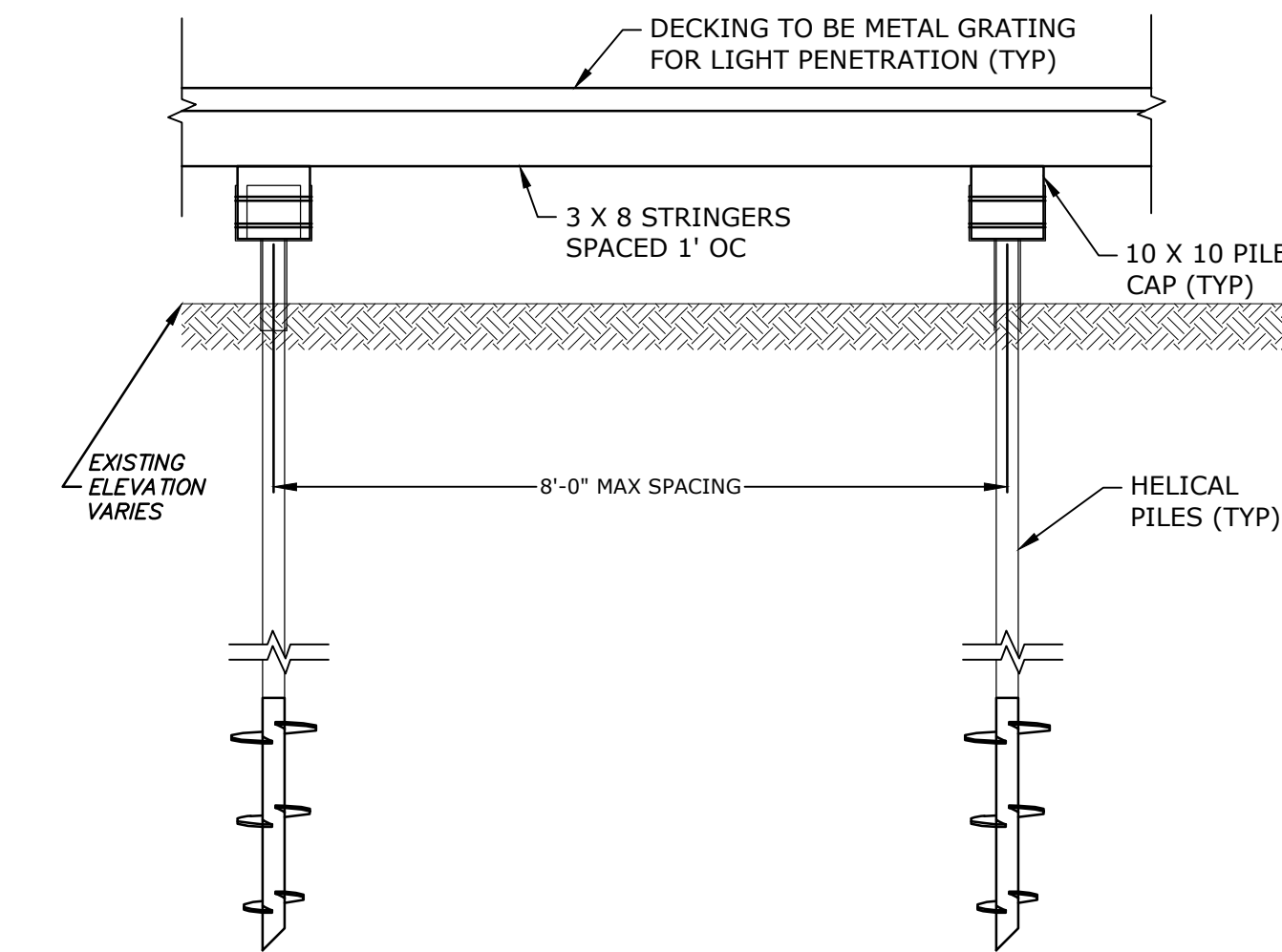
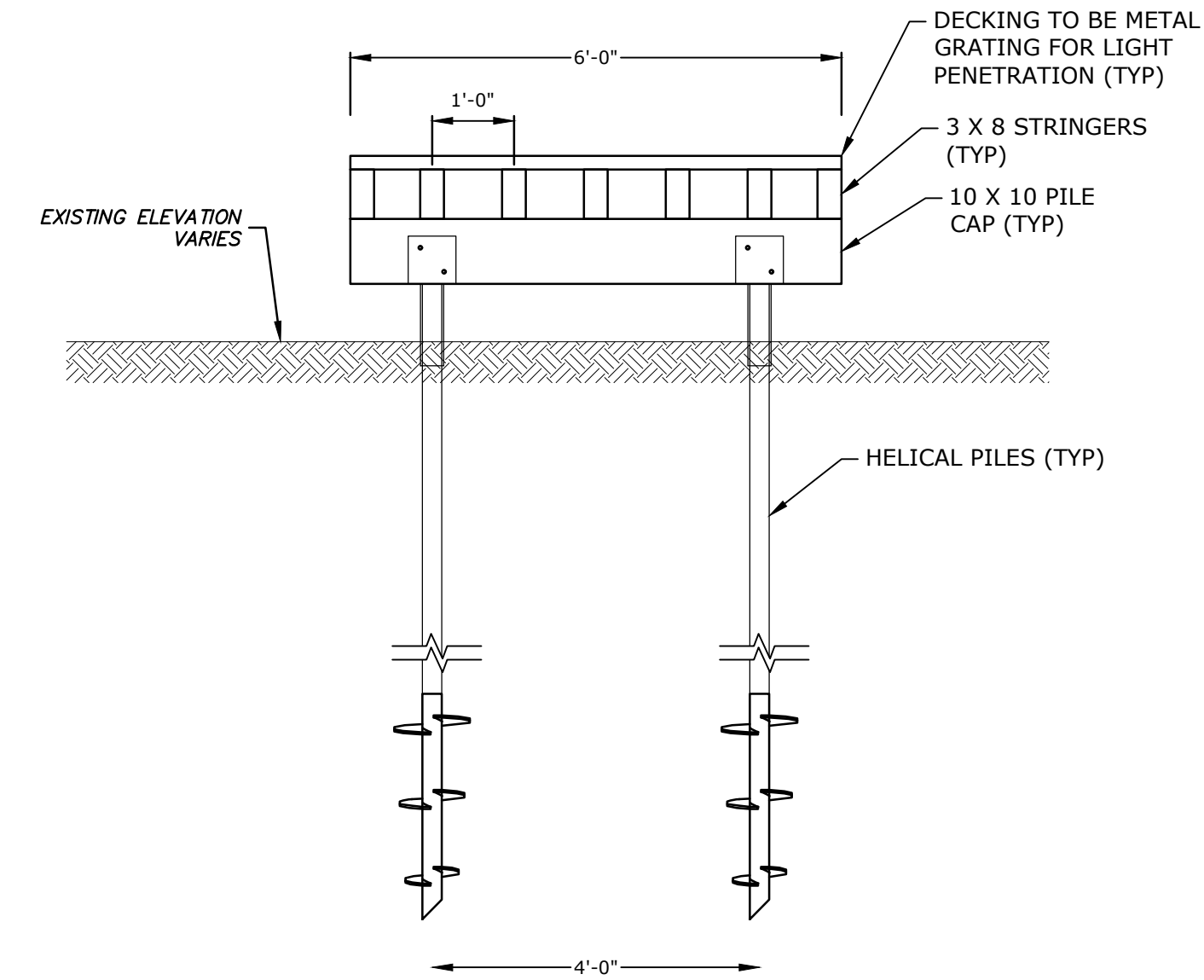
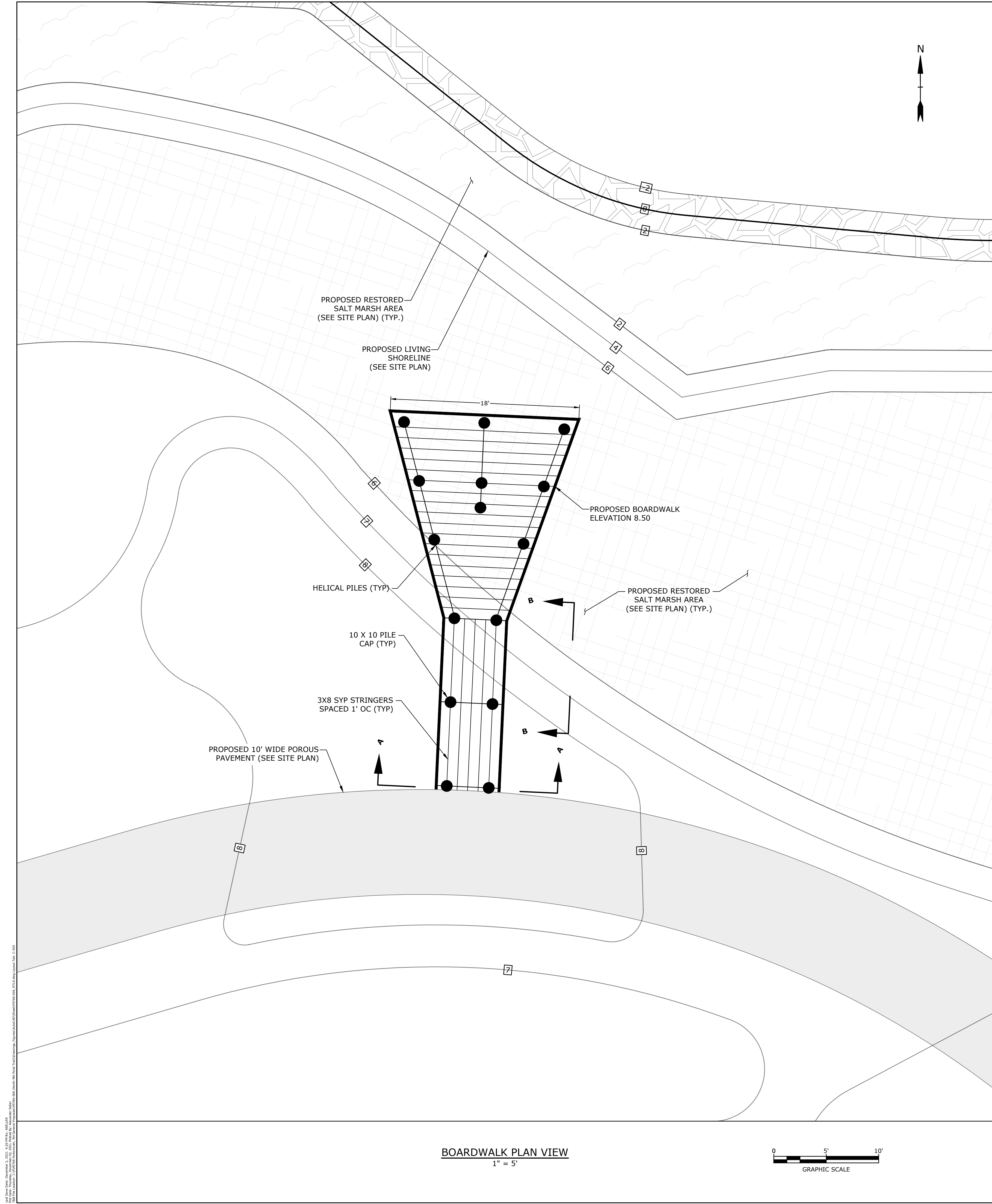
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July 21, 2021

## DETAILS SHEET

C-502

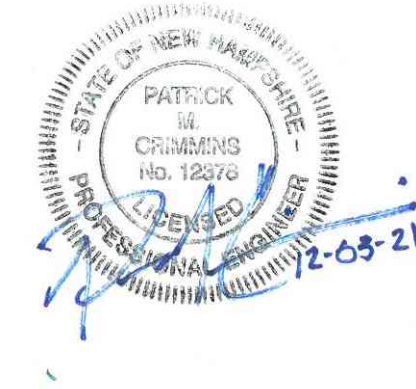




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NORTH MILL POND GREENWAY AND  
COMMUNITY PARK - AREA 1  
PORTSMOUTH, NEW HAMPSHIRE



CON COM WORK SESSION 12/3/2021  
REVISIONS

PROJECT NO: P0766-006  
DRAWN BY: AFS  
CHECKED BY: PMC  
SCALE: AS SHOWN

PERMIT SET  
NOT FOR CONSTRUCTION

July 21, 2021

BOARDWALK DETAILS  
SHEET

C-503



Unit: Feet, Scale: 1" = 100', 1/8" = 10', 1/4" = 20', 1/2" = 40', 3/4" = 60', 1" = 80', 1 1/4" = 100', 1 1/2" = 120', 1 3/4" = 140', 2" = 160', 2 1/4" = 180', 2 1/2" = 200', 2 3/4" = 220', 3" = 240', 3 1/4" = 260', 3 1/2" = 280', 3 3/4" = 300', 4" = 320', 4 1/4" = 340', 4 1/2" = 360', 4 3/4" = 380', 5" = 400', 5 1/4" = 420', 5 1/2" = 440', 5 3/4" = 460', 6" = 480', 6 1/4" = 500', 6 1/2" = 520', 6 3/4" = 540', 7" = 560', 7 1/4" = 580', 7 1/2" = 600', 7 3/4" = 620', 8" = 640', 8 1/4" = 660', 8 1/2" = 680', 8 3/4" = 700', 9" = 720', 9 1/4" = 740', 9 1/2" = 760', 9 3/4" = 780', 10" = 800', 10 1/4" = 820', 10 1/2" = 840', 10 3/4" = 860', 11" = 880', 11 1/4" = 900', 11 1/2" = 920', 11 3/4" = 940', 12" = 960', 12 1/4" = 980', 12 1/2" = 1000', 12 3/4" = 1020', 13" = 1040', 13 1/4" = 1060', 13 1/2" = 1080', 13 3/4" = 1100', 14" = 1120', 14 1/4" = 1140', 14 1/2" = 1160', 14 3/4" = 1180', 15" = 1200', 15 1/4" = 1220', 15 1/2" = 1240', 15 3/4" = 1260', 16" = 1280', 16 1/4" = 1300', 16 1/2" = 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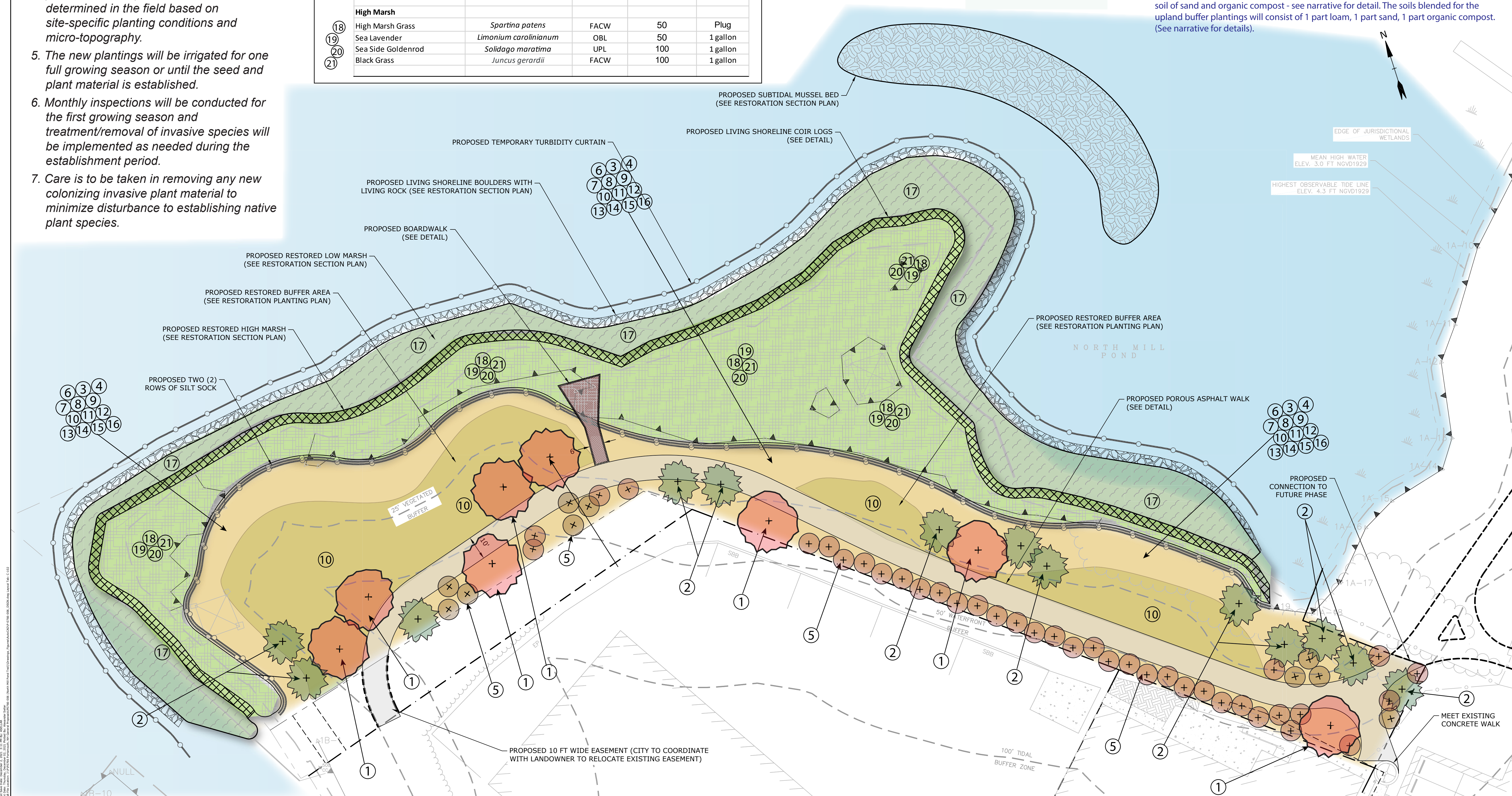
Planting Notes:

1. Invasive plant material will be removed using mechanical, whole plant removal strategies and chipped and composted at an appropriate facility or burned on site according to local fire department rules and regulations.
2. Disturbed soils within the upland buffer zone will be augmented as needed with a custom blended soil of one part loam, one part compost and one part clean sand.
3. Seeded areas are to be covered with salt marsh hay to retain soil moisture and protect against seed predation by birds and small mammals.
4. Native plant material will be laid out and installed by an ecological restoration specialist or persons trained in horticultural practices. Exact plant locations will be determined in the field based on site-specific planting conditions and micro-topography.
5. The new plantings will be irrigated for one full growing season or until the seed and plant material is established.
6. Monthly inspections will be conducted for the first growing season and treatment/removal of invasive species will be implemented as needed during the establishment period.
7. Care is to be taken in removing any new colonizing invasive plant material to minimize disturbance to establishing native plant species.

Restoration Planting List   North Mill Pond Greenway   Portsmouth NH				
Common Name	Scientific Name	Indicator Status	Quantity	Size
Buffer Zone Adjacent to Salt Marsh-Living Shoreline				
① Red Maple	<i>Acer rubrum</i>	FAC	8	2.5
② Red cedar	<i>Juniperus virginiana</i>	FACU	12	3 gallon
③ Beach Plum	<i>Prunus maritima</i>	UPL	25	5 gallon
④ Witch Hazel	<i>Hamamelis virginiana</i>	FACU	25	5 gallon
⑤ Gray Dogwood	<i>Cornus racemosa</i>	FAC	50	5 gallon
⑥ Pearly Everlasting	<i>Anaphalis margaritacea</i>	FACU	50	1 gallon
⑦ False Indigo (purple)	<i>Asclepias syriaca</i>	UPL	50	1 gallon
⑧ Black-eyed Susan	<i>Rudbeckia hirta</i>	FACU	100	1 gallon
⑨ Coneflower	<i>Rudbeckia laciniata</i>	UPL	100	1 gallon
⑩ Red Fescue	<i>Festuca rubra</i>	FACU-	100 pounds	seed
⑪ Indian Grass	<i>Sorghastrum nutans</i>	UPL	50	1 gallon
⑫ Switchgrass	<i>Panicum virgatum</i>	FAC	50	1 gallon
⑬ Upland Bentgrass	<i>Agrostis perennans</i>	FACU	50	1 gallon
⑭ Little Bluestem	<i>Schizachyrium scoparium</i>	FACU-	100	1 gallon
⑮ NE Lupine	<i>Lupinus perennis</i>	UPL	200	1 gallon
⑯ New Jersey Tea	<i>Ceanothus americanus</i>	UPL	100	1 gallon
Living Shoreline Plant List				
Low Marsh				
⑰ Chordgrass	<i>Spartina alterniflora</i>	OBL	500	Plug
High Marsh				
⑱ High Marsh Grass	<i>Spartina patens</i>	FACW	50	Plug
⑲ Sea Lavender	<i>Limonium carolinianum</i>	OBL	50	1 gallon
⑳ Sea Side Goldenrod	<i>Solidago maritima</i>	UPL	100	1 gallon
㉑ Black Grass	<i>Juncus gerardii</i>	FACW	100	1 gallon

- (1) Plant species with scientific names and quantities provided. Included in planting list.
- (2) Source of planting materials or whether the plan relies on natural re-vegetation; Source will be from local nurseries including by not limited to: Pierson Nursery, Biddeford Maine; Bigelow Nursery, Northborough MA.
- (3) Plant stock size and zones of predicted plant occurrence; Included on planting list
- (4) Plant survival goals; Expect to achieve 75 % success on or before 3 years post installation
- (5) The proposed locations of native plant stock and the rate and type of seed-ing; Included on planting plan but will be determined in the field at time of planting based on local microtopography and specific site conditions.
- (6) When and where seeding or planting will take place; and Plantings to be installed in early spring as soon as possible after completion of construction to insure full growing season to establish before winter storms.
- (7) Notation of dead snags, tree stumps, or logs per acre, where appropriate, to provide structure and cover for wildlife and food chain support; New plantings will be installed at densities that will provide cover and structure for wildlife with the intent of creating wildlife corridors along the wetland edge.

- (d) Documentation of existing and proposed soils as follows:
  - (1) The existing soils on the proposed mitigation site; Existing soils consist of fill materials and debris; gravel, brick, wood. These materials will be filled with blended soils as described below to elevations conducive to the establishment of the native plant species proposed for the different planting zones: low marsh, high marsh, upland buffer.
  - (2) The source of soils to be placed on the site; Blended soils consisting of 2 parts sand and 1 part organic compost will be sourced from local vendors and inspected before use in the project. Soils will be blended at the facility and delivered to the site in their final form.
  - (3) The likely seed bank composition of soils; The seed bank of existing soils is likely composed of a variety of invasive species that currently occupy the site including black locust, Asiatic Bittersweet, Phragmites, privet, bush honeysuckle, and multiflora rose. The proposed invasive species management plan (see narrative) intends to manage the site for re-colonization of the site with these invasive species.
  - (4) The depth of proposed growing medium; and The total depth of growth medium and blended soils will vary across the site within the various growing areas. 12 to 24 inches in the low marsh; 12 to 24 inches in the high marsh, and 12 to 18 inches in the upland buffer areas.
  - (5) The soil properties such as texture and organic content; The blended soils for the low and high marsh areas will consist principally of the blended soil of sand and organic compost - see narrative for detail. The soils blended for the upland buffer plantings will consist of 1 part loam, 1 part sand, 1 part organic compost. (See narrative for details).





Project Buffer Impact and Marsh Restoration Comparison			
Wetland and Buffer Setback Area	Proposed Restoration	Proposed Impacts	
		Boardwalk	Porous Pave
Mudflat	3,922 SF	0 SF	0 SF
Jurisdictional Wetland	30,948 SF	206 SF	0 SF
0 - 100 FT*	22,794 SF	126 SF	5,420 SF
Sub Totals	57,664 SF	332 SF	5,420 SF
Totals	57,664 SF	5,752 SF	
*Tidal Buffer Zone per RSA 482-A:4			

