

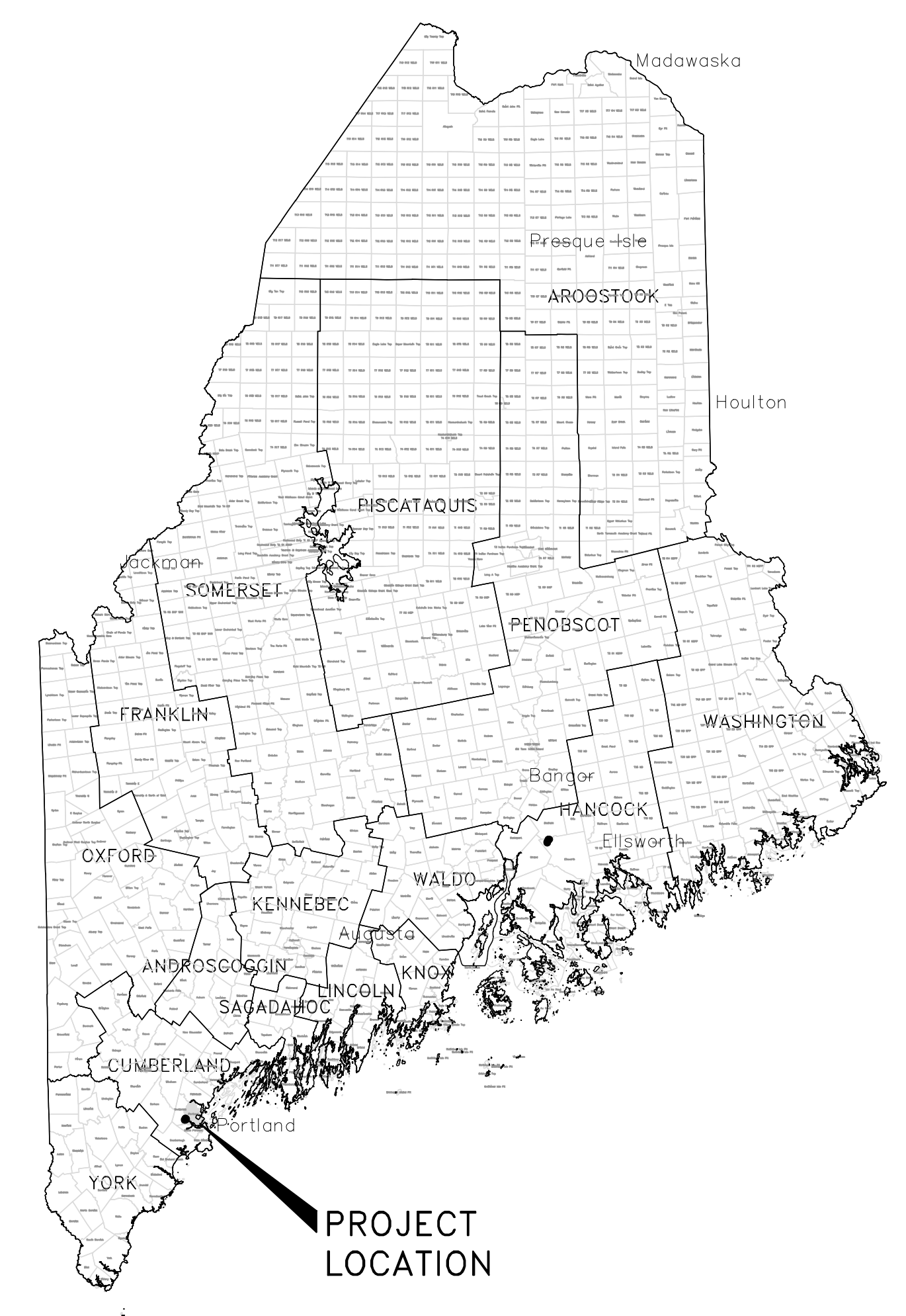
# CAPISIC POND ENHANCEMENTS CITY OF PORTLAND PORTLAND, MAINE

## DECEMBER 2013

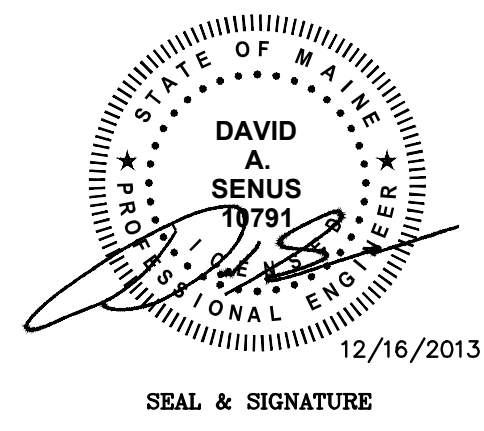


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# PERMIT REVIEW SET NOT FOR CONSTRUCTION

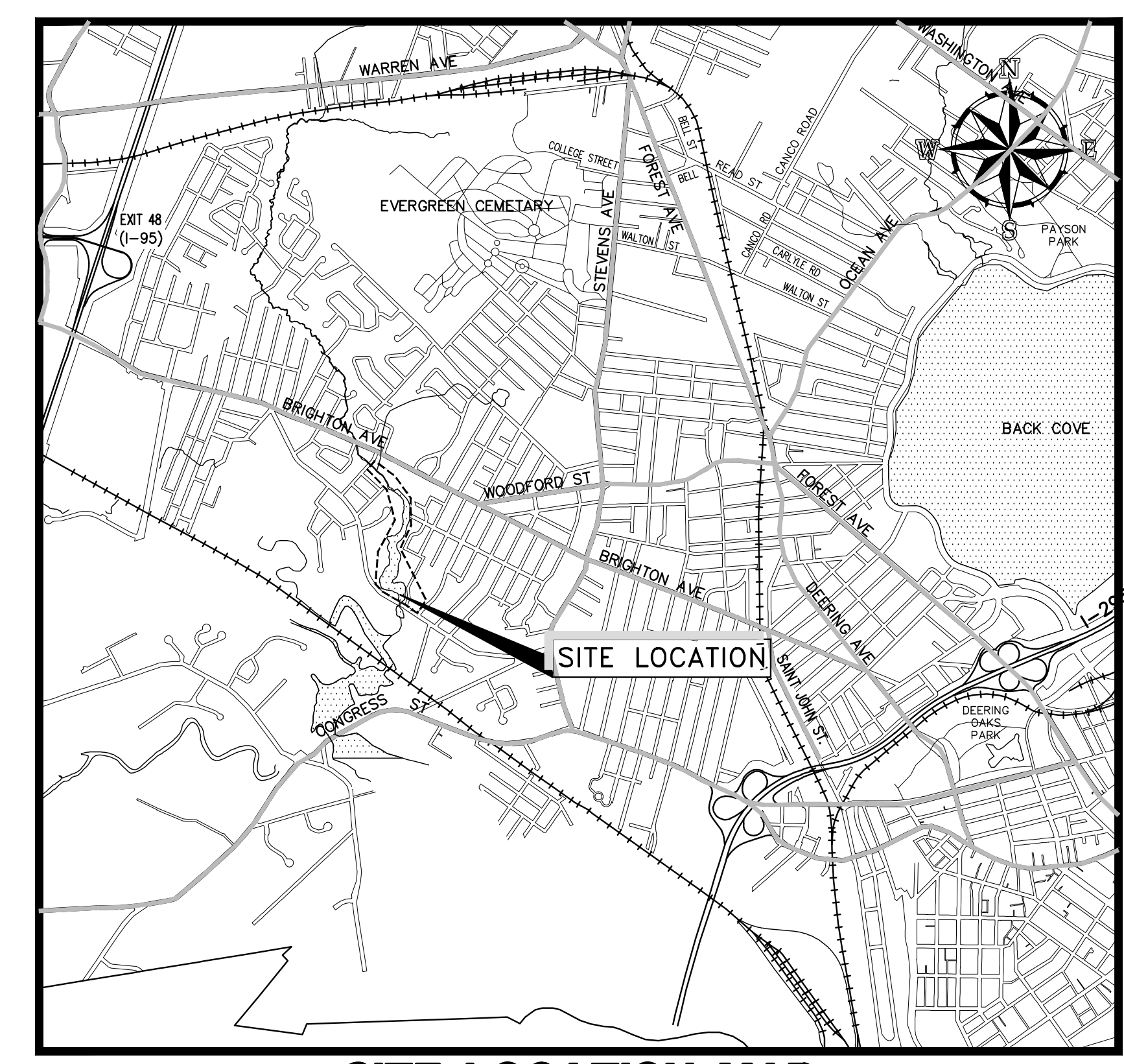


**PROJECT LOCATION MAP**  
N.T.S.

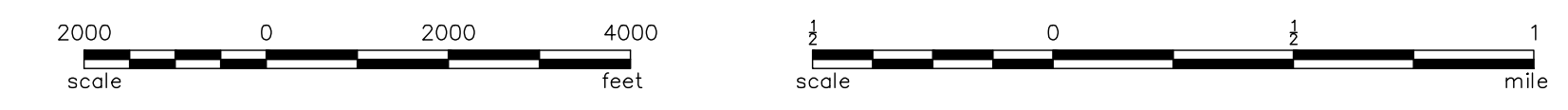


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COMMITMENT & INTEGRITY DRIVE RESULTS



**SITE LOCATION MAP**





**GENERAL NOTES:**

1. SITE AND TOPOGRAPHIC DATA COMPILED FROM NUMEROUS SOURCES INCLUDING A BASE PLAN PREPARED BY KAPPA MAPPING, INC. 6 STATE STREET, SUITE 301 BANGOR, MAINE 04401 UTILIZING AERIAL PHOTOGRAPHY FLOWN ON 4/16/2012 AND BASE PLAN DATA COMPILED FOR THE WEST SIDE INTERCEPTOR SEWER REPLACEMENT PROJECT (APRIL 19, 2010 BY WOODARD & CURRAN INC.
2. MAPPING CONTROL SYSTEMS PROJECTION: MAINE WEST ZONE SPCS HORIZONTAL DATUM; NAD83. VERTICAL DATUM: NAVD83. UNITS: US FEET
3. ADJACENT PROPERTY AND STREET RIGHT OF WAY LINES ARE CITY OF PORTLAND TAX MAP G.I.S. DATA (APPROXIMATE).
4. CAPSIC PARK PROPERTY LINE DERIVED FROM "PLAN OF CITY PROPERTY AT CAPSIC POND", BY J.M. ROBBINS, P.D.P.W. #473
5. THE UTILITY LOCATIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE CITY IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
6. CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
7. COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. CONTACTS ARE LISTED IN SPECIFICATIONS. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
8. CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK, ALLOWING SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF BURIED UTILITIES. CONTRACTOR SHALL CONTACT "DIG SAFE", TELEPHONE 811, PRIOR TO EXCAVATION.
9. RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, GRASS, ETC.). RESTORATION OF PAVED SURFACES, GRAVEL SURFACES, DRIVEWAYS, AND LAWNS DAMAGED BY CONSTRUCTION ACTIVITIES OUTSIDE OF LIMITS OF WORK INDICATED ON THE PLANS SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER. ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND AND MAINE DOT SPECIFICATIONS AT NO ADDITIONAL COST TO OWNER.
10. PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR ACCEPTABLE TO THE CITY.
11. EXISTING FACILITIES (I.E. TREES, POLES, LIGHT POSTS, CATCH BASINS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. CITY RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF CITY AT CONTRACTOR'S EXPENSE.
12. ALL TREES NOT NOTED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED BY CONTRACTOR DURING CONSTRUCTION.
13. ALL WORK WITHIN THE RIGHT OF WAY OF CITY STREETS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER AT LEAST 7 DAYS BEFORE BEGINNING CONSTRUCTION IN ANY STREET. THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER, WHO MAY ATTACH SPECIAL CONDITIONS TO, OR REQUIRE MODIFICATIONS OF, THE TRAFFIC CONTROL PLAN. WORK SHALL NOT BEGIN UNTIL THE PLAN IS APPROVED BY THE TRAFFIC ENGINEER.
14. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY CITY AND/OR LAND OWNER.
15. COORDINATE DISRUPTION OF PRIVATE UTILITY SERVICES WITH LANDOWNERS AT LEAST TWO DAYS (48 HOURS) PRIOR TO DISRUPTION. ALL UTILITY COORDINATION IS RESPONSIBILITY OF CONTRACTOR.
16. RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCING, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR DURING BOTH WORKING AND NON-WORKING HOURS.
17. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
18. THE CONTRACTOR SHALL OBTAIN A CITY STREET OPENING PERMIT FOR ALL WORK IN THE CITY RIGHT OF WAY BEFORE BEGINNING CONSTRUCTION. THE FEE FOR THIS PERMIT WILL BE WAIVED BY THE CITY. THE CONTRACTOR WILL ALSO BE REQUIRED TO HAVE A CURRENT EXCAVATOR'S LICENSE IN THE CITY. THE EXCAVATOR'S LICENSE FEE WILL NOT BE WAIVED BY THE CITY.

**ABBREVIATIONS**

&	AND
A.G.	ABOVE GROUND
BIT	BITUMINOUS
B/W	BETWEEN
CB	CATCH BASIN
CI	CAST IRON
CMP	CENTRAL MAINE POWER
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
DI	DUCTILE IRON
DIA.	DIAMETER
DMH	DRAIN MANHOLE
DTL	DETAIL
E	UNDERGROUND ELECTRICAL
EL	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
FF	FINISH FLOOR
FT	FOOT/FEET
G	GAS MAIN
GS	GAS SERVICE
GALV.	GALVANIZED
GRAN.	GRANITE
HDPE	HIGH DENSITY POLYETHYLENE
HDPP	HIGH DENSITY POLYPROPYLENE
HYD	HYDRANT
INV.	INVERT
LF	LINEAR FEET
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MIN.	MINIMUM
MON	MONUMENT
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NR	NO REFUSAL
N.T.S.	NOT TO SCALE
OE	OVERHEAD ELECTRICAL
OH	OVERHEAD
±	PLUS OR MINUS
LLS	LICENSED LAND SURVEYOR
PROP.	PROPOSED
PT.	POINT
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R.O.W.	RIGHT-OF-WAY
REINF.	REINFORCED CONCRETE PIPE
REINF.	REINFORCED
REQ'D	REQUIRED
RFP	RIBBED PLASTIC PIPE
S	SLOPE (FT./FT.)
S	SEWER
SD	STORM DRAIN
SMH	SEWER MANHOLE
SCH	SCHEDULE
STA.	STATION
TYP.	TYPICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY
VIT.	VITRIFIED CLAY
W	WEST
W	WATER
W	WITH
W	WATERMAIN
WS	WATER SERVICE
WV	WATER VALVE

**SYMBOLS**

DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER MANHOLE		
STORM DRAIN MANHOLE		
CATCH BASIN W/ HEADSTONE		
CATCH BASIN, FIELD INLET		
DRAIN BASIN		
UTILITY POLE W/ GUY		
UTILITY POLE		
WATER GATE		
WATER VALVE		
WATER SHUT OFF		
HYDRANT		
SIGN		
MAILBOX		
TREE		
IRON PIN (FOUND)		
MONUMENTS (FOUND)		
EXISTING GRAVEL		
EXISTING OPEN WATER		
PROPOSED OPEN WATER		
RIPRAP OR STONE ARMORING/ LINING		

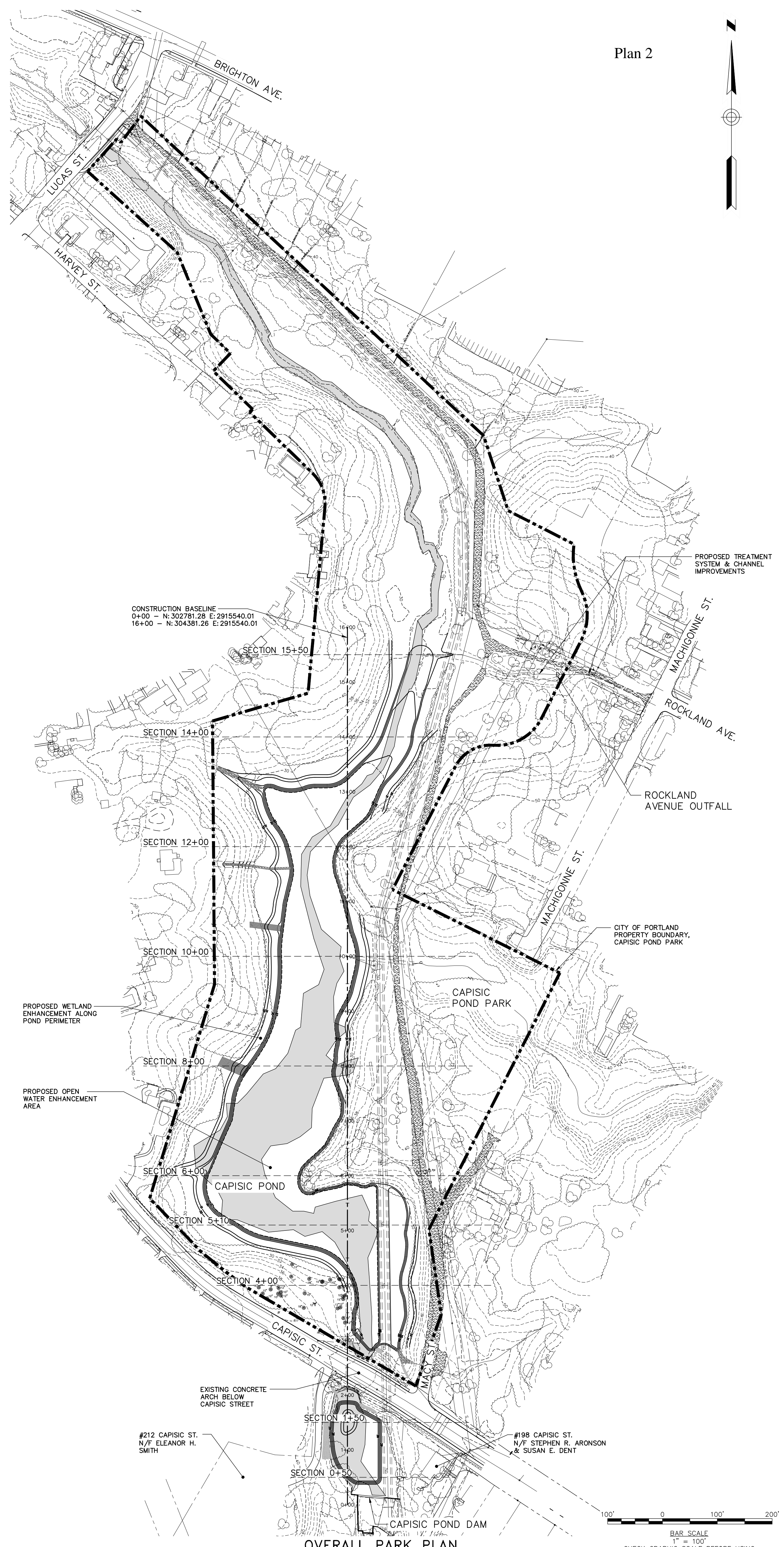
**LINE TYPES**

DESCRIPTION	EXISTING	PROPOSED
CONTOUR (1' INTERVAL)		
CONTOUR (INDEX)		
CONTOUR (INDEX)		
EDGE OF PAVEMENT		
EDGE OF GRAVEL		
EDGE OF GRAVEL		
EDGE OF GRAVEL		

30. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING CAPSIC STREET FREE OF SEDIMENT. A STABILIZED CONSTRUCTION EXIT SHALL BE CONSTRUCTED AT ALL ACCESS POINTS AND CAPSIC STREET WILL BE SWEEPED ON A DAILY BASIS OR AT A MORE FREQUENT RATE AS NECESSARY AS REQUESTED BY THE CITY.

31. THE CONTRACTOR SHALL BE REQUIRED TO ADJUST TRAVEL ROUTES SUCH THAT CONSTRUCTION VEHICLES DO NOT PASS IN FRONT OF THE BREAKWATER SCHOOL ENTRANCE LOCATED AT 489 CAPSIC STREET, NORTHWEST OF THE PROJECT SITE DURING THE SCHOOL ARRIVAL AND DEPARTURE TIMES (7:30-9:00 AM & 2:15-3:15 PM). CONTRACTOR SHALL COORDINATE WITH CITY OF PORTLAND AND BREAKWATER SCHOOL AT THE TIME OF CONSTRUCTION TO VERIFY CURRENT ARRIVAL AND DEPARTURE TIMES, AND TO VERIFY START DATE OF SCHOOL YEAR. ALTERNATE VEHICLE ROUTES MAY BE UTILIZED.

32. VEHICLE ROUTES MAY NOT UTILIZE LOCAL/ RESIDENTIAL NEIGHBORHOOD STREETS. PROPOSED VEHICLE ROUTES SHALL BE SUBMITTED PRIOR TO CONSTRUCTION AS PART OF THE CONTRACTOR'S CONSTRUCTION MANAGEMENT PLAN AND WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND THE CITY OF PORTLAND.



Plan 2

41 Machicoune Drive  
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**WOODARD & CURRAN**  
CONSULTING ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS, AND SURVEYORS

DAVID A. SMITH  
REGISTERED PROFESSIONAL ENGINEER  
NO. 10001  
EXPIRES 12/31/2013

DATE: 12/14/13  
CHECKED BY: DAS  
DESIGNED BY: DAS  
DRAWN BY: ECA

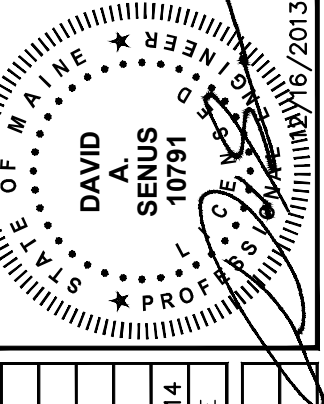
GENERAL NOTES, LEGEND & ABBREVIATIONS

CITY OF PORTLAND, MAINE  
CAPSIC POND ENHANCEMENTS

JOB NO: 225672.15  
DATE: DECEMBER, 2013  
SCALE: AS NOTED  
SHEET: 1 OF 9

**G-001**





REV	DESCRIPTION	DATE	CHECKED BY	DRAWN BY
1	UPDATED PER LEVEL III SITE PLAN COMMENTS	3/3/14		

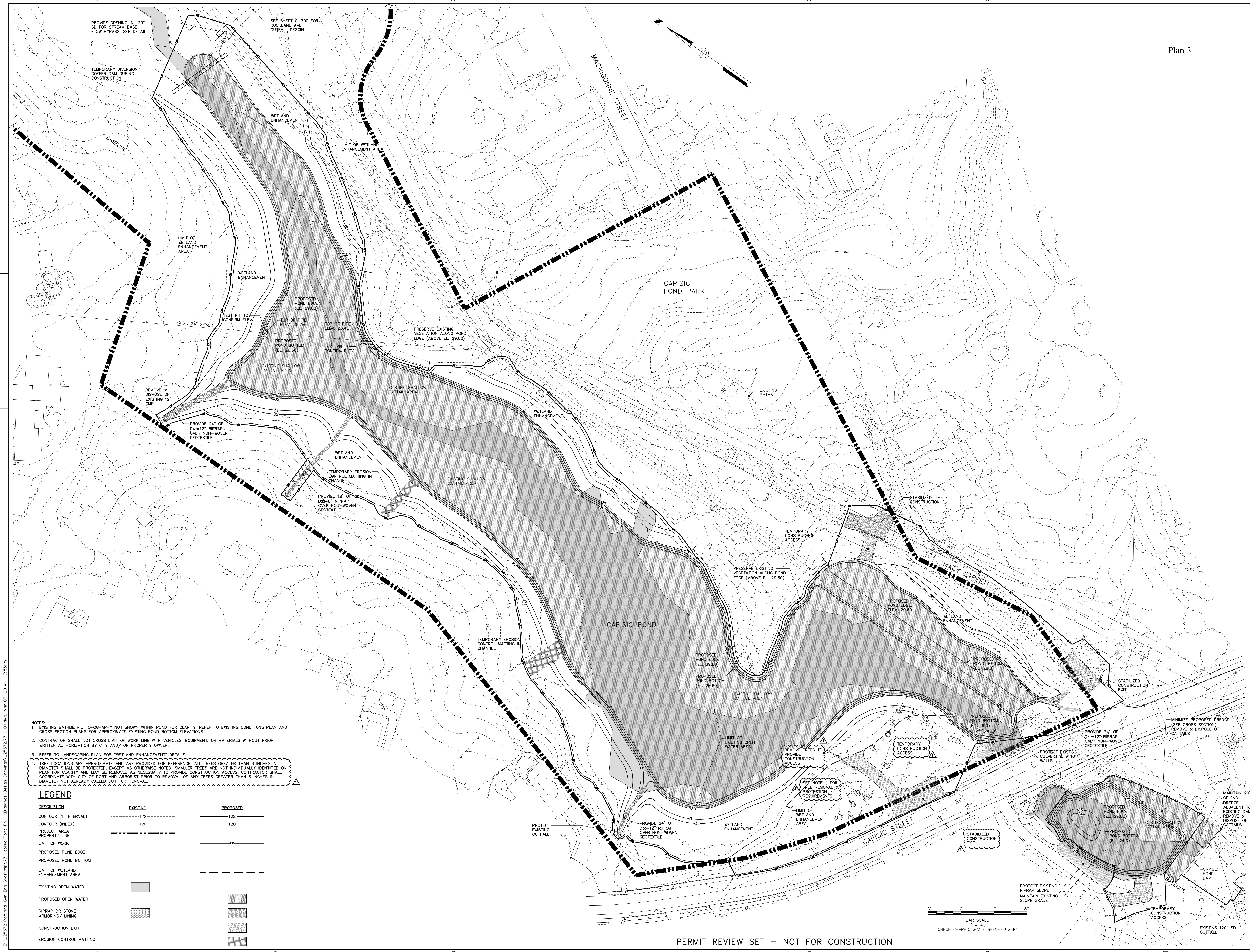
DATE	3/3/14
SCALE	1" = 40'
SHEET	3 OF 9

**CONSTRUCTION PLAN**

CITY OF PORTLAND, MAINE  
**CAPISIC POND ENHANCEMENTS**

JOB NO: 225672.15  
DATE: DECEMBER 2013  
SCALE: 1" = 40'

SHEET: 3 OF 9  
**C-101**

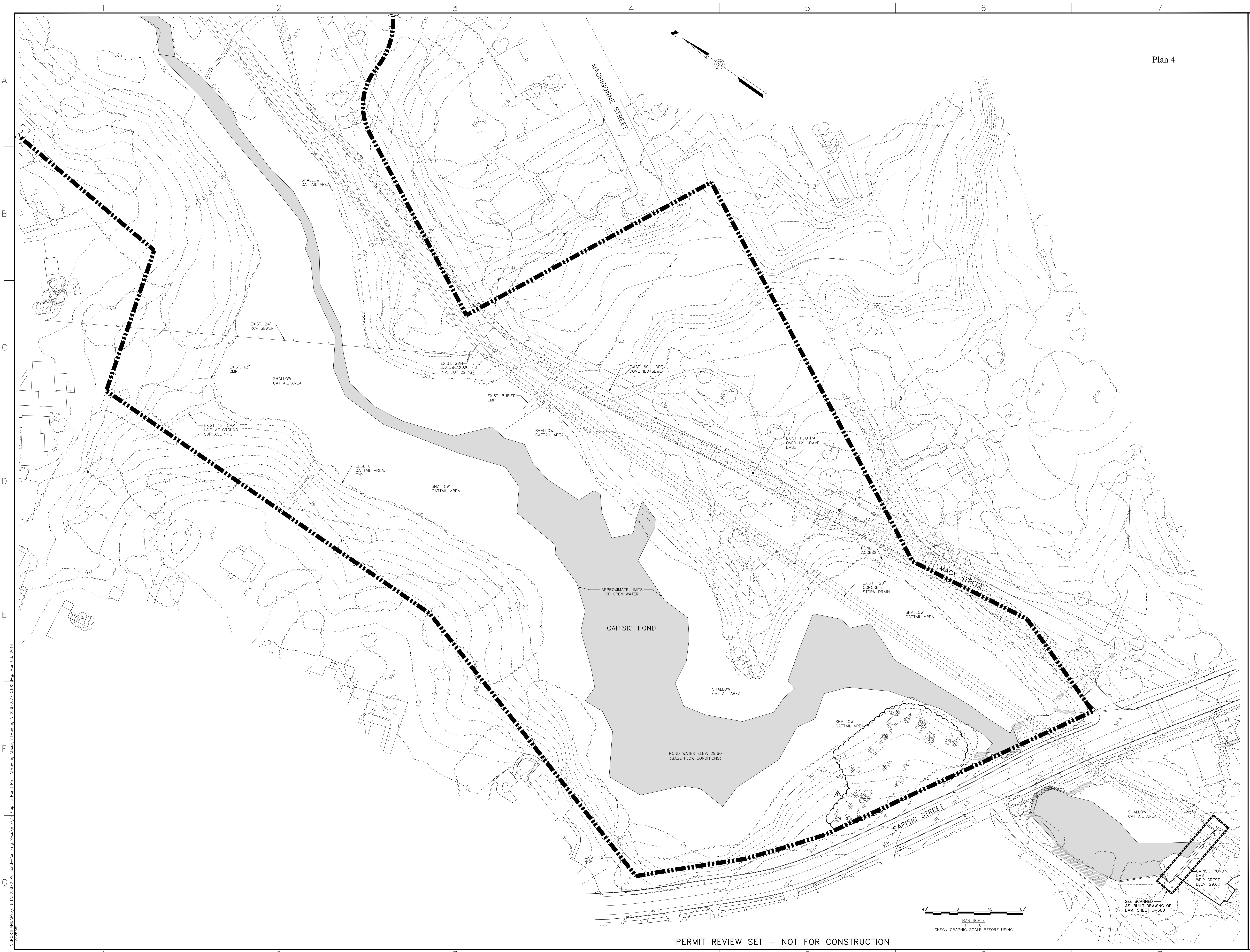


- NOTES:**
- EXISTING BATHYMETRIC TOPOGRAPHY NOT SHOWN WITHIN POND FOR CLARITY. REFER TO EXISTING CONDITIONS PLAN AND CROSS SECTION PLANS FOR APPROXIMATE EXISTING POND BOTTOM ELEVATIONS.
  - CONTRACTOR SHALL NOT CROSS LIMIT OF WORK LINE WITH VEHICLES, EQUIPMENT, OR MATERIALS WITHOUT PRIOR WRITTEN AUTHORIZATION BY CITY AND/OR PROPERTY OWNER.
  - REFER TO LANDSCAPING PLAN FOR "WETLAND ENHANCEMENT" DETAILS.
  - TREE LOCATIONS ARE APPROXIMATE AND ARE PROVIDED FOR REFERENCE. ALL TREES GREATER THAN 8 INCHES IN DIAMETER SHALL BE PROTECTED, EXCEPT AS OTHERWISE NOTED. SMALLER TREES ARE NOT INDIVIDUALLY IDENTIFIED ON PLAN FOR CLARITY AND MAY BE REMOVED AS NECESSARY TO PROVIDE CONSTRUCTION ACCESS. CONTRACTOR SHALL COORDINATE WITH CITY OF PORTLAND ARBORIST PRIOR TO REMOVAL OF ANY TREES GREATER THAN 8 INCHES IN DIAMETER NOT ALREADY CALLED OUT FOR REMOVAL.

**LEGEND**

DESCRIPTION	EXISTING	PROPOSED
CONTOUR (1' INTERVAL)	--- 122 ---	--- 122 ---
CONTOUR (INDEX)	--- 120 ---	--- 120 ---
PROJECT AREA	---	---
PROPERTY LINE	---	---
LIMIT OF WORK	---	---
PROPOSED POND EDGE	---	---
PROPOSED POND BOTTOM	---	---
LIMIT OF WETLAND ENHANCEMENT AREA	---	---
EXISTING OPEN WATER	[Shaded Area]	[Shaded Area]
PROPOSED OPEN WATER	[Shaded Area]	[Shaded Area]
RRAP OR STONE ARMORING/LINING	[Stippled Area]	[Stippled Area]
CONSTRUCTION EXIT	[Dashed Line]	[Dashed Line]
EROSION CONTROL MATTING	[Cross-hatched Area]	[Cross-hatched Area]

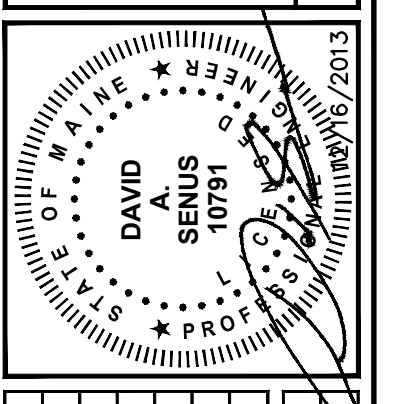




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	DESIGNED BY			
	CHECKED BY			
	DRAWN BY			

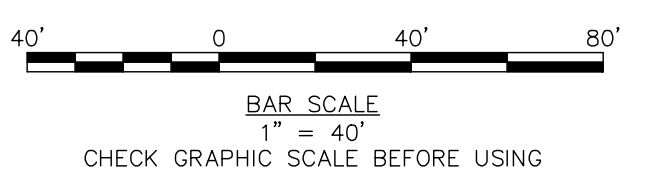
**EXISTING CONDITIONS**

CITY OF PORTLAND, MAINE	CAPISIC POND ENHANCEMENTS
JOB NO: 225672.15	DATE: DECEMBER 2013
SCALE: 1" = 40'	SHEET: 2 OF 9

**C-100**

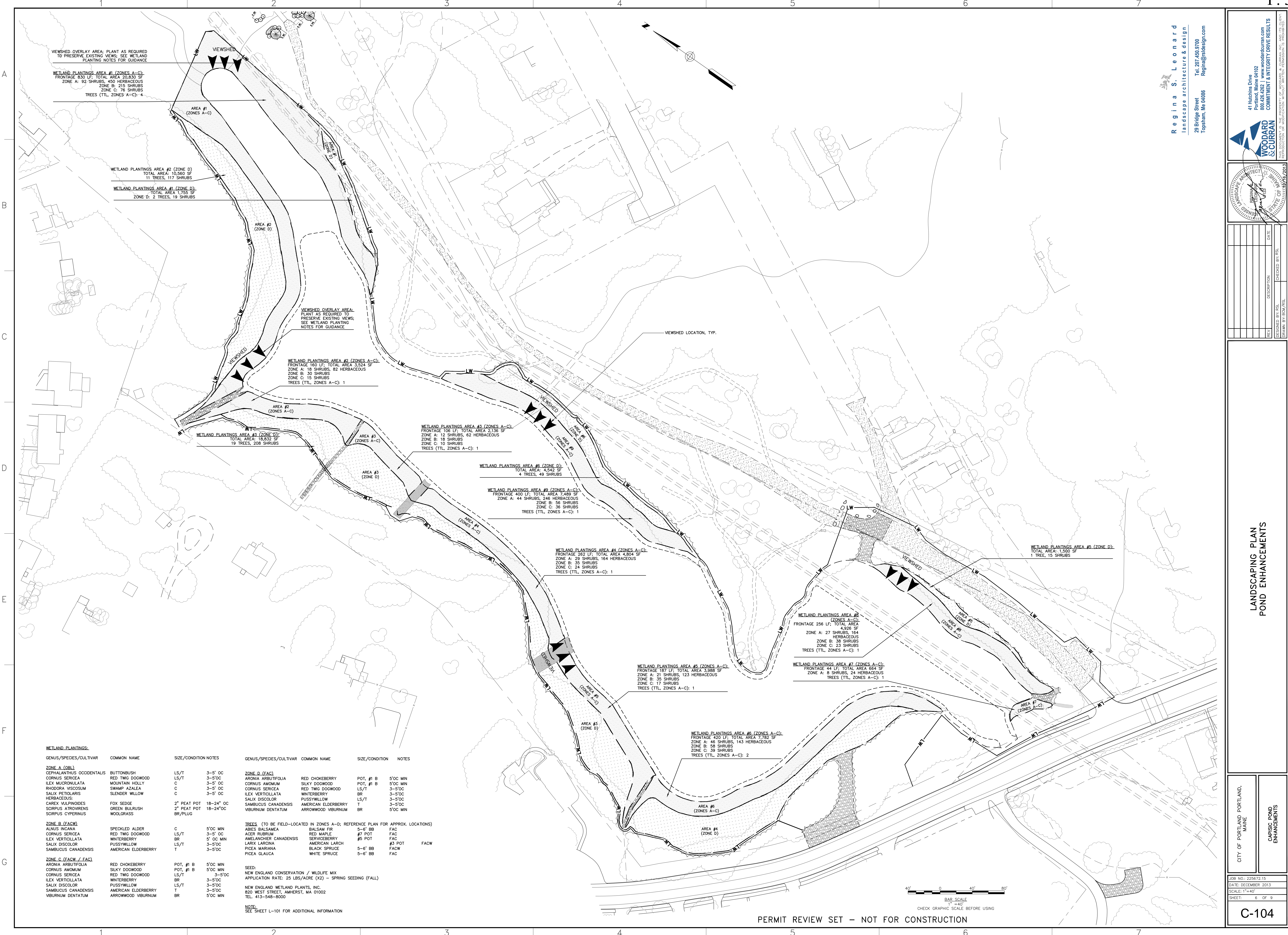
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PERMIT REVIEW SET - NOT FOR CONSTRUCTION



SEE SCANNED AS-BUILT DRAWING OF DAM SHEET C-300





VIEWSHED OVERLAY AREA: PLANT AS REQUIRED TO PRESERVE EXISTING VIEWS; SEE WETLAND PLANTING NOTES FOR GUIDANCE

WETLAND PLANTINGS AREA #1 (ZONES A-C):  
FRONTAGE 830 LF; TOTAL AREA 20,830 SF  
ZONE A: 92 SHRUBS, 450 HERBACEOUS  
ZONE B: 219 SHRUBS  
ZONE C: 76 SHRUBS  
TREES (TTL, ZONES A-C): 4

WETLAND PLANTINGS AREA #2 (ZONE D):  
TOTAL AREA: 10,960 SF  
11 TREES, 117 SHRUBS

WETLAND PLANTINGS AREA #1 (ZONE D):  
TOTAL AREA 1,755 SF  
ZONE D: 2 TREES, 19 SHRUBS

VIEWSHED OVERLAY AREA:  
PLANT AS REQUIRED TO PRESERVE EXISTING VIEWS;  
SEE WETLAND PLANTING NOTES FOR GUIDANCE

WETLAND PLANTINGS AREA #2 (ZONES A-C):  
FRONTAGE 160 LF; TOTAL AREA 3,524 SF  
ZONE A: 18 SHRUBS, 82 HERBACEOUS  
ZONE B: 30 SHRUBS  
ZONE C: 15 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #3 (ZONE D):  
TOTAL AREA: 18,832 SF  
19 TREES, 208 SHRUBS

WETLAND PLANTINGS AREA #3 (ZONES A-C):  
FRONTAGE 108 LF; TOTAL AREA 2,136 SF  
ZONE A: 12 SHRUBS, 62 HERBACEOUS  
ZONE B: 18 SHRUBS  
ZONE C: 10 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #6 (ZONE D):  
TOTAL AREA: 4,542 SF  
4 TREES, 49 SHRUBS

WETLAND PLANTINGS AREA #9 (ZONES A-C):  
FRONTAGE 400 LF; TOTAL AREA 7,489 SF  
ZONE A: 44 SHRUBS, 246 HERBACEOUS  
ZONE B: 96 SHRUBS  
ZONE C: 36 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #4 (ZONES A-C):  
FRONTAGE 292 LF; TOTAL AREA 4,304 SF  
ZONE A: 29 SHRUBS, 164 HERBACEOUS  
ZONE B: 35 SHRUBS  
ZONE C: 24 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #5 (ZONE D):  
TOTAL AREA: 1,500 SF  
1 TREE, 15 SHRUBS

WETLAND PLANTINGS AREA #8 (ZONES A-C):  
FRONTAGE 256 LF; TOTAL AREA 4,926 SF  
ZONE A: 27 SHRUBS, 164 HERBACEOUS  
ZONE B: 38 SHRUBS  
ZONE C: 23 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #7 (ZONES A-C):  
FRONTAGE 44 LF; TOTAL AREA 664 SF  
ZONE A: 8 SHRUBS, 24 HERBACEOUS  
ZONE B: 35 SHRUBS  
ZONE C: 17 SHRUBS  
TREES (TTL, ZONES A-C): 1

WETLAND PLANTINGS AREA #5 (ZONES A-C):  
FRONTAGE 187 LF; TOTAL AREA 3,988 SF  
ZONE A: 21 SHRUBS, 123 HERBACEOUS  
ZONE B: 35 SHRUBS  
ZONE C: 17 SHRUBS  
TREES (TTL, ZONES A-C): 1

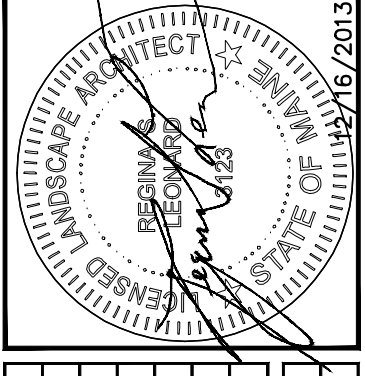
WETLAND PLANTINGS AREA #6 (ZONES A-C):  
FRONTAGE 420 LF; TOTAL AREA 7,782 SF  
ZONE A: 46 SHRUBS, 143 HERBACEOUS  
ZONE B: 58 SHRUBS  
ZONE C: 39 SHRUBS  
TREES (TTL, ZONES A-C): 2

**WETLAND PLANTINGS:**

GENUS/SPECIES/CULTIVAR	COMMON NAME	SIZE/CONDITION	NOTES	GENUS/SPECIES/CULTIVAR	COMMON NAME	SIZE/CONDITION	NOTES
<b>ZONE A (SBL)</b>							
CEPHALANTHUS OCCIDENTALIS	BUTTERNUT	LS/T	3-5' OC	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	POT, #1 B	5'0C MIN
CORNUS SERICEA	RED TWIG DOGWOOD	LS/T	3-5' OC	CORNUS ANOMUM	SILKY DOGWOOD	POT, #1 B	5'0C MIN
ILEX MUCRONULATA	MOUNTAIN HOLLY	C	3-5' OC	CORNUS SERICEA	RED TWIG DOGWOOD	LS/T	3-5' OC
RHODODIA VISCOSUM	SWAMP AZALEA	C	3-5' OC	ILEX VERTICILLATA	WINTERBERRY	BR	3-5' OC
SALIX PETIOLARIS	SLENDER WILLOW	C	3-5' OC	SALIX DISCOLOR	FUSSY WILLOW	LS/T	3-5' OC
<b>HERBACEOUS:</b>							
CAREX VULPINODES	FOX SEDGE	2" PEAT POT	18-24" OC	PICEA MARIANA	BLACK SPRUCE	5-6" BB	FACW
SORBUS ATROVIRENS	GREEN BULRUSH	2" PEAT POT	18-24" OC	PICEA GLAUCA	WHITE SPRUCE	5-6" BB	FACW
SORBUS CYPERRINUS	WOOLGRASS	BR/PLUG		<b>TREES (TO BE FIELD-LOCATED IN ZONES A-D; REFERENCE PLAN FOR APPROX. LOCATIONS)</b>			
<b>ZONE B (FACW)</b>							
ALNUS INCANA	SPECKLED ALDER	C	5'0C MIN	ABIES BALSAMEA	BALSAM FIR	5-6" BB	FAC
CORNUS SERICEA	RED TWIG DOGWOOD	LS/T	3-5' OC	ACER RUBRUM	RED MAPLE	#7 POT	FAC
ILEX VERTICILLATA	WINTERBERRY	BR	3-5' OC	AMELANCHIER CANADENSIS	SERVICEBERRY	#5 POT	FAC
SALIX DISCOLOR	FUSSY WILLOW	LS/T	3-5' OC	LARIX LARicina	AMERICAN LARCH	#3 POT	FACW
SAMBUCUS CANADENSIS	AMERICAN ELDERBERRY	T	3-5' OC	<b>SEED:</b>			
NEW ENGLAND CONSERVATION / WILDLIFE MIX							
APPLICATION RATE: 25 LBS/ACRE (X2) - SPRING SEEDING (FALL)							
NEW ENGLAND WETLAND PLANTS, INC. 820 WEST STREET, AMHERST, MA 01002 TEL. 413-548-8000							
<b>NOTE:</b> SEE SHEET L-101 FOR ADDITIONAL INFORMATION							

**Regina S. Leonard**  
landscape architecture & design  
29 Bridge Street  
Topsham, Me 04086  
Tel. 207.450.9700  
Regina@rsdesign.com

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**LANDSCAPING PLAN  
POND ENHANCEMENTS**

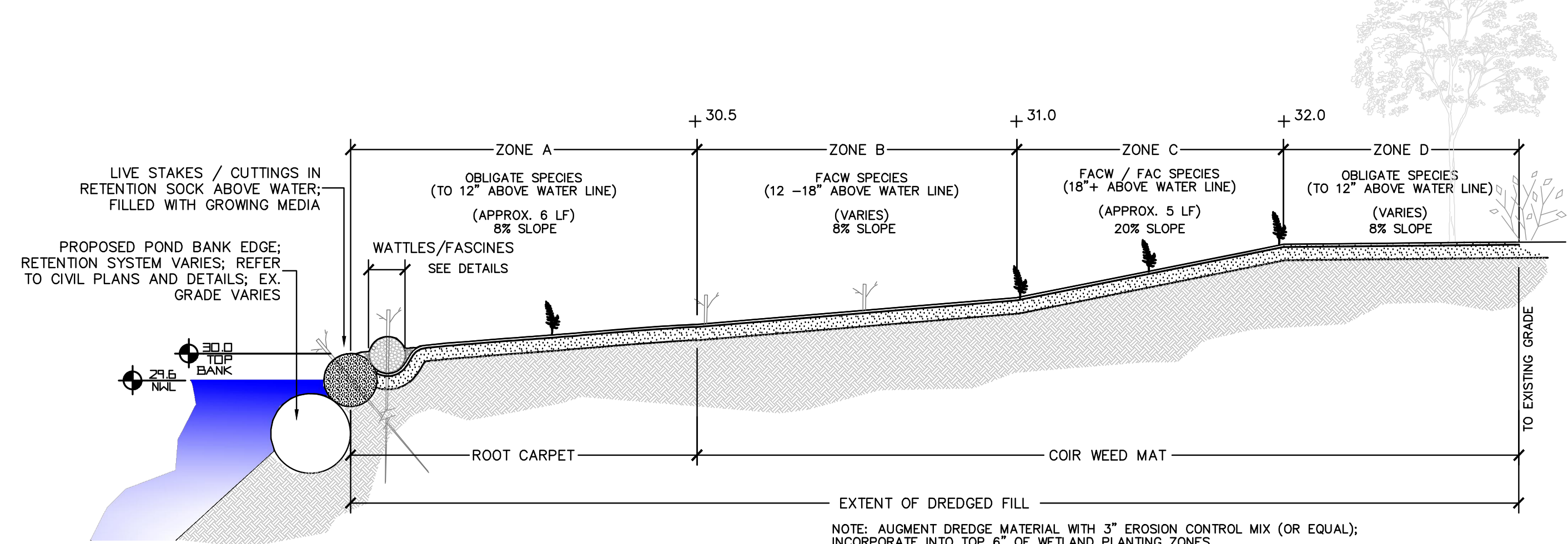
CITY OF PORTLAND, MAINE  
**CAPISIC POND ENHANCEMENTS**

JOB NO: 225672.15  
DATE: DECEMBER 2013  
SCALE: 1"=40'  
SHEET: 6 OF 9  
**C-104**



SOIL TREATMENT & STABILIZATION NOTES - WETLAND PLANTINGS

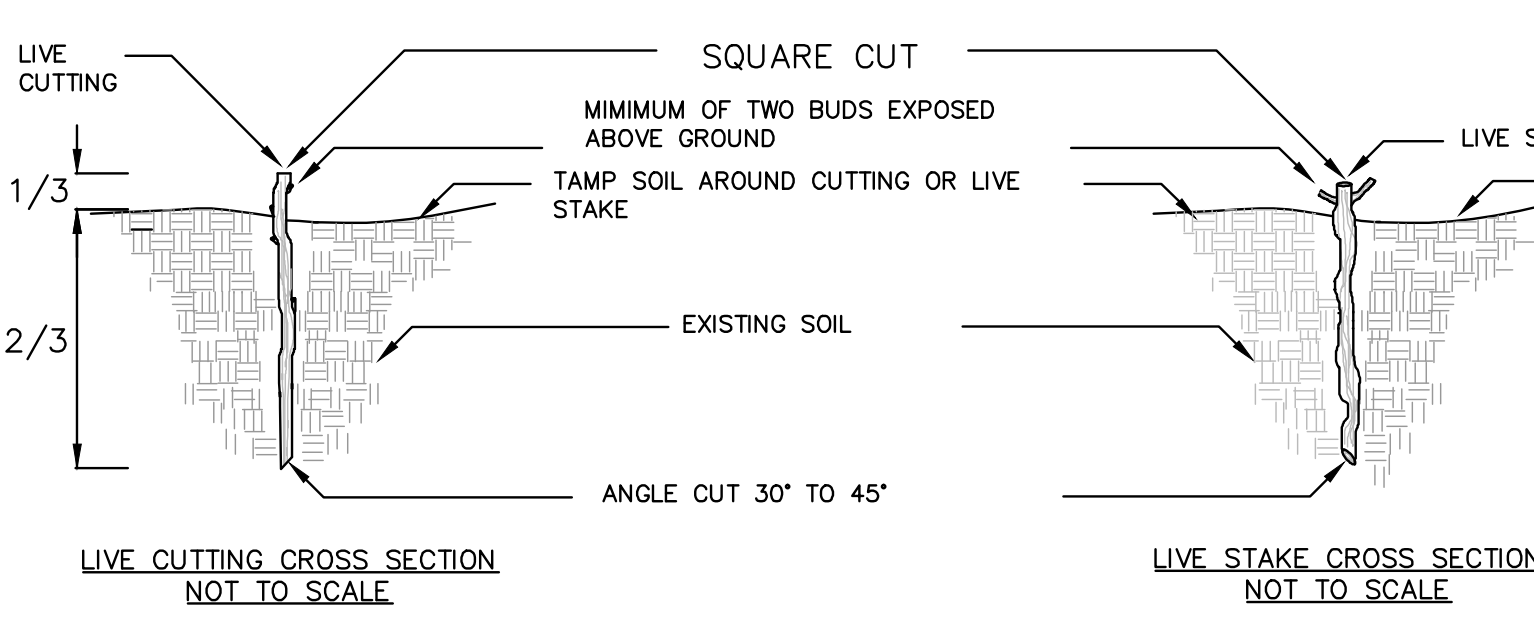
- 1. Dredge material for use within the top 6 inches of the Wetland Planting Zones, as described in the Plans and Details, shall be augmented with Erosion Control Mix (Casella Organics, Portland, ME or equal) at a mixture ratio of 3 parts dredge material to 1 part EC Mix or as otherwise determined by soil testing described below.
2. Contractor should adjust amendment and/or mixing ratio based on soil sampling of the dredge material to be augmented and to achieve optimal growing conditions for the specified wetland plant species. Contractor shall provide sampling data, augmentation material specifications and mixing ratios to the City for approval. Treatment strategy shall be prepared by a wetland professional.
3. Augmented material shall be solely used for the top 6 inches of the wetland planting zones unless otherwise recommended by the wetland professional and authorized by the City Engineer. All grades shall be as specified on the plans.
4. Soils shall be stabilized as shown in the Typical Section / Approach to Wetland Plantings detail. Root Carpet shall be as supplied by Cardo JFNew, 128 Sunset Drive, Walkerton, IN 46574, Tel. 547-586-2412 - or an approved equal. Coir Weed Mat shall be as supplied by Granite Environmental, Inc., PO Box 780928, Sebastian, FL 32978, Tel. 888-703-9889 - or approved equal. Products shall be installed per manufacturer's specifications.



TYPICAL SECTION / APPROACH TO WETLAND PLANTINGS

GENERAL PLANTING NOTES - WETLAND PLANTINGS (POND)

- 1. Native species were chosen based on several factors, including known suitability for wetland enhancement plantings, known ability to provide wildlife habitat, and availability of stock from local nurseries. If substitutions are required due to stocking or other issues, only native plants that can survive in similar hydrologic regime and provide a similar functional role will be considered. Any requests for substitutions in plant material, including size or condition, must be submitted to the City for review and approval.
2. Reference the Typical Section / Approach to Wetland Plantings for guidance related to species placement. Plant placement will need to respond to the specific field conditions and suitability of the growing conditions for the species. Unless otherwise directed plants shall be spaced within the ranges specified herein.
3. Plantings within Viewshed Overlay Areas, as noted on the Plan, shall not exceed 5 feet mature height throughout all zones and shall consist of at least 50% herbaceous material within Zone A. Wattles / Fascines should NOT be used in these locations unless otherwise directed by the Wetland Professional.
4. All materials shall conform to the guidelines established by the American Association of Nurserymen as well as the technical and planting specifications specific to the plant condition.
5. The Contractor shall hire an independent biologist or similarly qualified wetland professional to be on site to monitor construction of the wetland enhancement area to ensure compliance with the intent of the enhancement plan and construction documents.
6. Woody species shall be arranged in groupings of no less than 7 plants. Herbaceous plants shall be used to fill gaps between groupings. Herbaceous plantings shall be spaced at 24" on center average and within Zone A only unless otherwise directed by the Wetland Professional.
7. The Wetland Professional may adjust the planting zone boundaries and/or species if he/she determines that as-built site conditions would pose an unreasonable threat to the survival of plantings installed per the construction documents. The plantings shall be relocated to locations with suitable hydrology and soils and where appropriate structural context with other plantings can be maintained.
8. Trees shown on the plan are approximate and should be field located within the allocated zone to provide satisfactory growing conditions.
9. Plantings in Zone D shall be field located as required for optimal growing conditions. Areas designated as Zone D shall be seeded as noted in the Plantings Key.
10. The Contractor shall assume responsibility to ensure that all work is performed in compliance with all State and Local requirements and permitting authorities.
11. Contractor shall provide a watering plan for approval by the City. The plan should include weekly monitoring and/or watering during dry, hot weather. All plants and newly grassed areas shall be watered as required thereafter to ensure survival and growth through the first growing season or the end of the plant warranty period, whichever is longer.
12. The Wetland Professional shall monitor / inspect restoration plantings twice per month, or as required to determine soil moisture levels, watering requirements, condition of irrigation system, as well as weeding and browse protection requirements.
13. Wetland plantings, except as noted below, shall be considered successful if the cover of the wetland species is equal to 80% within the project planting area. If cover of the wetland species falls below 80% at the end of 1 year, the Wetland Professional shall determine if additional planting is required or if an additional growing season for existing plants will be required until the area has 80% coverage. The plant warranty shall remain in effect for the additional growing season. If coverage is less than 80% at the end of the second growing season, additional plantings shall be required and as specified by the wetland specialist.
14. Woody plant material over 15-inches high at installation shall be guaranteed by the contractor for a period of one year from the date of installation. During the one year guarantee, the contractor shall replace, in kind, any dead, diseased, or substandard plant material at no cost to the owner. The contractor shall receive final acceptance from the owner following the one year guarantee, provided the provisions of the plant guarantee have been satisfactorily met.

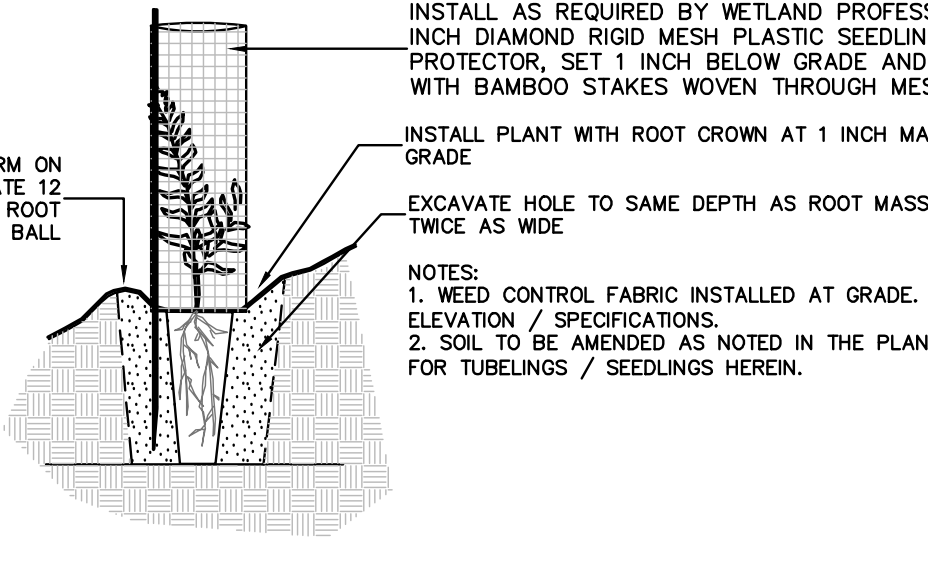


LIVE STAKES / CUTTINGS - INSTALLATION DETAIL

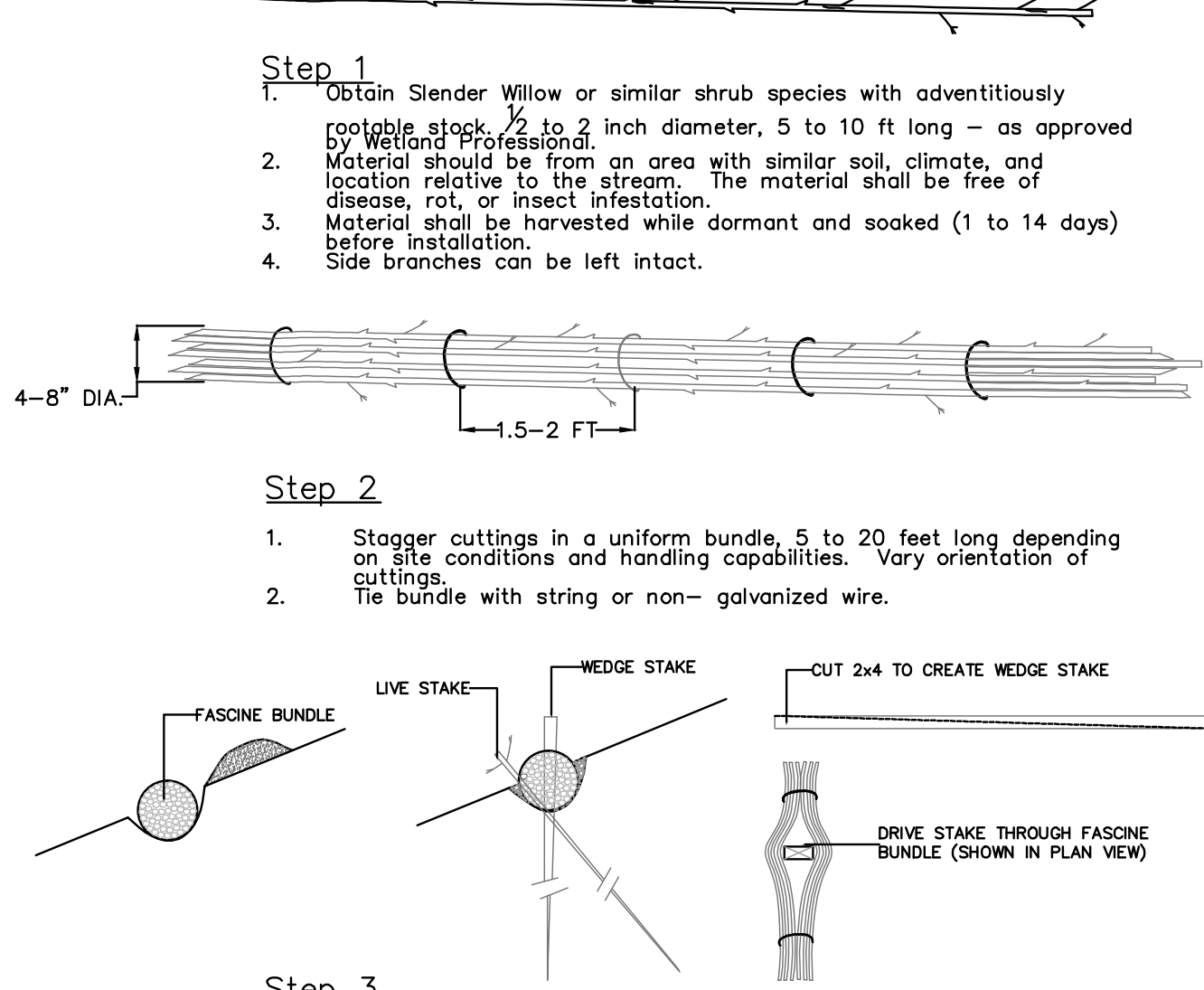
Table with columns: GENUS/SPECIES/CULTIVAR, COMMON NAME, SIZE/CONDITION NOTES, GENUS/SPECIES/CULTIVAR, COMMON NAME, SIZE/CONDITION NOTES. Lists various plant species for Zones A, B, C, and D.

PLANTING AREAS (APPROX.): ALL ZONES: 2.4 ACRES (APPROX.) ZONES A-C: 1.3 ACRES (APPROX.) ZONE D: 1.1 ACRES (APPROX.) PLANT QUANTITIES BY CONDITION / SIZE (FOR PRICING): 29 TREES (8B, 5-6") 11 TREES (#7 POT) 9 TREES (#5 POT) 9 TREES (#3 POT) 1,015 SHRUBS (T/C/L/S) 235 SHRUBS (#1 POT) 332 SHRUBS (BR/12-18") 1,552 HERBACEOUS (BR/PLUG/2" PEAT POT)

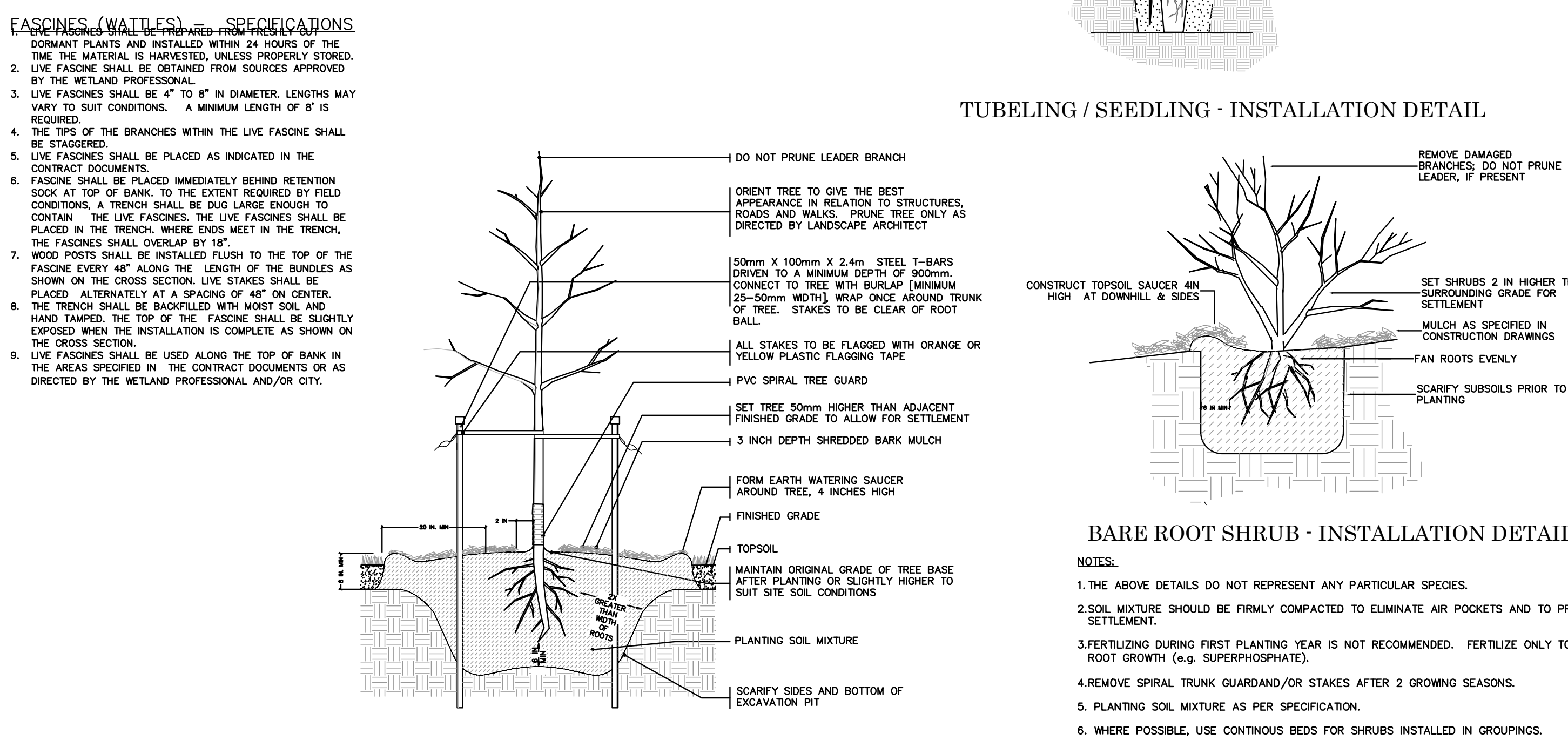
NOTES: 1. ALL TREES AND SHRUBS TO BE FIELD-LOCATED; REFERENCE PLAN AND PLANTING NOTES FOR GUIDANCE. 2. THIS LIST IS PROVIDED FOR GUIDANCE AND PRICING. THE PLANTING PLAN SHOULD BE RE-EVALUATED AND ADJUSTED AS REQUIRED AT THE TIME OF PLANTING AND FOLLOWING THE POND EXCAVATION AND REGRADING WORK TO RESPOND TO AS-BUILT GROWING CONDITIONS AND AVAILABILITY FROM LOCAL SOURCES AT THE TIME OF PLANTING.



TUBELING / SEEDLING - INSTALLATION DETAIL



WATTLES / FASCINES - INSTALLATION DETAIL



BARE ROOT SHRUB - INSTALLATION DETAIL

NOTES: 1. THE ABOVE DETAILS DO NOT REPRESENT ANY PARTICULAR SPECIES. 2. SOIL MIXTURE SHOULD BE FIRMLY COMPACTED TO ELIMINATE AIR POCKETS AND TO PREVENT SETTLEMENT. 3. FERTILIZING DURING FIRST PLANTING YEAR IS NOT RECOMMENDED. FERTILIZE ONLY TO ENCOURAGE ROOT GROWTH (e.g. SUPERPHOSPHATE). 4. REMOVE SPIRAL TRUNK GUARD/ROOT STAKES AFTER 2 GROWING SEASONS. 5. PLANTING SOIL MIXTURE AS PER SPECIFICATION. 6. WHERE POSSIBLE, USE CONTINUOUS BEDS FOR SHRUBS INSTALLED IN GROUPINGS.

PLANTING NOTES - CONTAINERIZED PLANTINGS

- 1. Container plantings shall have a media and root volume of not less than 7 cubic inches. Volumes of 10 to 40 cubic inches are preferred. Properly aged and sized container plants should consist of enough fibrous root mass to retain the shape of the media when removed from the container. Container plants shall be at least 2 years old.
2. All containers shall be removed at the time of planting only.
3. Wetland plantings, except as noted below, shall be considered successful if the cover of the wetland species is equal to 80% within the project planting area. If cover of the wetland species falls below 80% at the end of 1 year, the Wetland Professional shall determine if additional planting is required or if an additional growing season for existing plants will be required until the area has 80% coverage. The plant warranty shall remain in effect for the additional growing season. If coverage is less than 80% at the end of the second growing season, additional plantings shall be required and as specified by the wetland specialist.
4. Woody plant material over 15-inches high at installation shall be guaranteed by the contractor for a period of one year from the date of installation. During the one year guarantee, the contractor shall replace, in kind, any dead, diseased, or substandard plant material at no cost to the owner. The contractor shall receive final acceptance from the owner following the one year guarantee, provided the provisions of the plant guarantee have been satisfactorily met.

PLANT NOTES - BARE ROOT PLANTINGS

- 1. Plants designated as bare root or collected plants shall conform to the American Standard for Nursery Stock.
2. Bare root material shall not be dug or installed after bud break or before dormancy. Immediately after harvesting plants, protect from drying and damage until shipped and delivered to the planting site. All bare root stock sent from the storage facility shall be adequately protected from damage and covered with wet soil, sawdust, woodchips, moss, peat, straw, hay, or other acceptable moisture-holding medium.
3. Plants must be protected at all times from sun or drying winds and shall be covered with a tarpaulin or canvas. Bare root material that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, wet mulch, or other acceptable material, and kept well watered. Plants shall not remain unplanted any longer than three days after delivery.
4. Excavate a planting hole 1.5 times the diameter of the container and to the depth required. Each plant should be installed so that the top of the root ball is level with the grade of the surface grade. Place excavated soil next to hole for later use. Do not reuse unsuitable materials, including but not limited to rocks, debris or solid clay.
5. Plants shall be dug and handled with suitable support of the soil ball to avoid damaging it.
6. The roots of bare-root trees shall be pruned at the time of planting to remove damaged or undesirable roots (those likely to become a detriment to future growth of the root system).
7. Bare-root trees shall have the roots spread to approximate the natural position of the roots and shall be centered in the planting pit on a firmly packed mound of prepared soil. Determine the elevation of the root flare and ensure that it is planted at grade.
8. Hold the plant's trunk and work planting-soil backfill firmly into and around the roots, with care taken to fill in completely with no air pockets.
9. Water plant thoroughly.
10. Place an organic based mulch around the plant to pre-determined standards (typical specification is a minimum of 2 inches deep and an area 24" wide centered on the plant).

PLANTING NOTES - LIVE STAKES

- 1. The live stakes shall be from native woody plant materials or woody plant materials adapted to the site. The plant species and dimensions are shown on the drawings. The plant material shall be free from disease and harmful insects. The plant materials shall be installed within 48 hours after initial preparation unless refrigerated.
2. Cut stakes form long, upright branches taken off the parent plant. Only take cuttings from plants where landowner permission is obtained and the cutting will not unduly impact the health of parent plants. Cuttings must not be allowed to dry out and must be kept covered and moist during transport and storage.
3. Remove leaves and side branches from cuttings and do not use the first year growth. The basal ends should be cut at an angle and the top cut square. Live stakes should be between 18 and 24 inches long and at least three-eighths of an inch in diameter.
4. Make a straight cut at the narrow end of the stake (toward the tip of the branch). At the thicker end (toward the trunk) cut the branch at an angle to make a point that can be driven into the ground.
5. Dip the top (blunt cut, narrow end) 2-3 inches of the stakes in latex paint immediately after they are cut. Use the paint to mark correct planting end, seal the exposed cut and helps prevent drying and cracking. You can also use different colors of paint to color code different species of cuttings, planting times, and other treatments. The paint will also make the stakes visible in the field.
6. Plant live stakes within 24 hours for best results. In the meantime, keep them moist and wet in buckets or wet burlap sacks. On hot days, keep them in the shade until you plant them.
7. Soak or dip the bottom ends of cuttings in a solution of plant rooting hormone before planting to speed up growth. The willows and red osier dogwood species do not require rooting hormone.
8. Drive the stakes into the bank or wetland soil at least one foot deep (the deeper the better) using a rubber mallet. Use a planting bar or length of rebar to start the hole in hard soils. Leave three to six inches above ground surface so they can sprout leaves.
9. Use longer stakes and leave one-foot sticking above the ground if the stake will be shaded by surrounding vegetation.
10. Retain the wires to use to fill gaps in wetter soils as directed by the wetland specialist. Store and plant as described herein.

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CITY OF PORTLAND, ME logo and permit information: JOB NO: 225672.15, DATE: DECEMBER, 2013, SCALE: AS NOTED, SHEET: 7 OF 9, C-201



**EROSION AND SEDIMENTATION CONTROL NOTES**

TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, HYDRAULIC MULCH, HAY AND STRAW MULCH, EROSION CONTROL BLANKET, TURF REINFORCED MATING, RIPRAP AND TEMPORARY SEEDING. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE THE USE OF SILT FENCE, EROSION CONTROL MIX BERMS, PLUNGE POOLS, CHECK DAMS, SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT EROSION CONTROL MEASURES INCLUDE THE USE OF RIPRAP AT EXPOSED STORMWATER AND CULVERT INLETS AND OUTLETS, ARMORED SWALES AND SLOPES AND PERMANENT VEGETATION.

- GENERAL:**
- THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT, IF APPLICABLE.
  - ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPs HANDBOOK PUBLISHED BY THE MAINE DEP UNLESS OTHERWISE NOTED IN THESE PLANS. [HTTP://WWW.MAINE.GOV/DEP/BLWQ/DOCSTAND/ESCBMPS/](http://www.maine.gov/dep/blwq/docstand/escbmps/)
  - ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.
  - THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WELLS AS A RESULT OF THIS PROJECT.
  - THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.
  - CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN-ON TO DISTURBED AREAS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:

- FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS THAT 90% OF THE DISTURBED AREA IS COVERED WITH REASONABLY THICK UNIFORM STAND OF PERMANENT GRASS SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS.
- FOR SLOPED AREAS, PERMANENT STABILIZATION MEANS THAT COMPLETE BINDING OF THE SOIL ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOIL OR DIE OFF.
- FOR MULCH AREAS, PERMANENT STABILIZATION MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.
- FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE. STONE MUST BE SIZED APPROPRIATELY AND IN ACCORDANCE WITH SECTION E-6 OF THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL.
- FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
- FOR OPEN CHANNELS, LEVEL SPREADERS, ENGINEERED BUFFERS OR OTHER DESIGNED STORMWATER CONVEYANCE STRUCTURE, PERMANENT STABILIZATION MEANS THE CHANNELIZED AREA(S) IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH APPROVED RIPRAP, OR WITH OTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE SHALL BE NO EVIDENCE OF SLUMPING, UNDERCUTTING OR DOWNCUTTING OF THE DESIGNED CHANNEL.

- IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE BUILT ON, THEN IMMEDIATELY PROVIDE PERMANENT STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOIL OR THROUGH THE USE OF PERMANENT MULCH OR RIPRAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED, OVERLY-COMPACTED SUBSOIL WITH TOPSOIL OR COMPOST AND LIGHTLY TILL 2"-3" OF SOIL AMENDMENTS INTO THE TOP 8" OF SOIL.
- PERMANENT SEEDING SPECIFICATION: UNLESS OTHERWISE NOTED ON LANDSCAPE PLAN, IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND AUGUST 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDING OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEEDING WITH AROOSTOCK WINTER RYE OR MULCHED AT SPECIFIED RATES. SEE WINTER SEEDING AND MULCHING SPECIFICATIONS FOR STABILIZATION AFTER NOVEMBER 1.

- APPLY TOPSOIL TO A DEPTH OF 4 INCHES. IN COMPACTED AREAS TILL 2"-3" OF COMPOST INTO UPPER 8" OF DISTURBED SOIL AND THEN APPLY 4 INCHES OF TOPSOIL.
- APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 33 LBS PER 1000 SQUARE FEET AND GRANULAR, COMMERCIAL-GRADE FERTILIZER 10-10-10 AT A RATE OF 18 LBS PER 1000 SQUARE FEET.
- UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2.5 BALES PER 1000 SQUARE FEET AND ANCHOR AS NECESSARY.

- THE SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
  - 10% CREeping RED FESCUE
  - 25% KENTUCKY BLUEGRASS
  - 60% PERENNIAL RYE GRASS
  - 5% ANNUAL RYEGRASS
  - 5% RED TOP
- THE SEED MIXTURE FOR NON-LAWN AREAS WITH LOW-MAINTENANCE SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
  - 50% CREeping RED FESCUE
  - 25% FALL FESCUE
  - 10% ANNUAL RYEGRASS
  - 10% WHITE CLOVER
  - 5% RED TOP

- PROTECT ALL SEEDING AREAS WITH MULCH OR EROSION CONTROL BLANKET IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. SCHEDULE SEEDING OR SOILING TO AVOID FAILURE DUE TO SUMMER DROUGHT AND FALL FROST. NEWLY SEEDING AREAS SHOULD BE PROTECTED FROM PEDESTRIAN TRAFFIC AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESEEDING IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.
- DITCH LINES AND RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF THE CULVERT.
- EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1, IN THE BASE OF DITCHES AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (WETLANDS AND WATER RESOURCES). EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN STOBORN OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

- THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURE UPON STABILIZATION OF PROJECT AREA & COST SHALL BE INCIDENTAL TO CONTRACT.

- WINTER CONDITIONS**
- WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15 THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS.

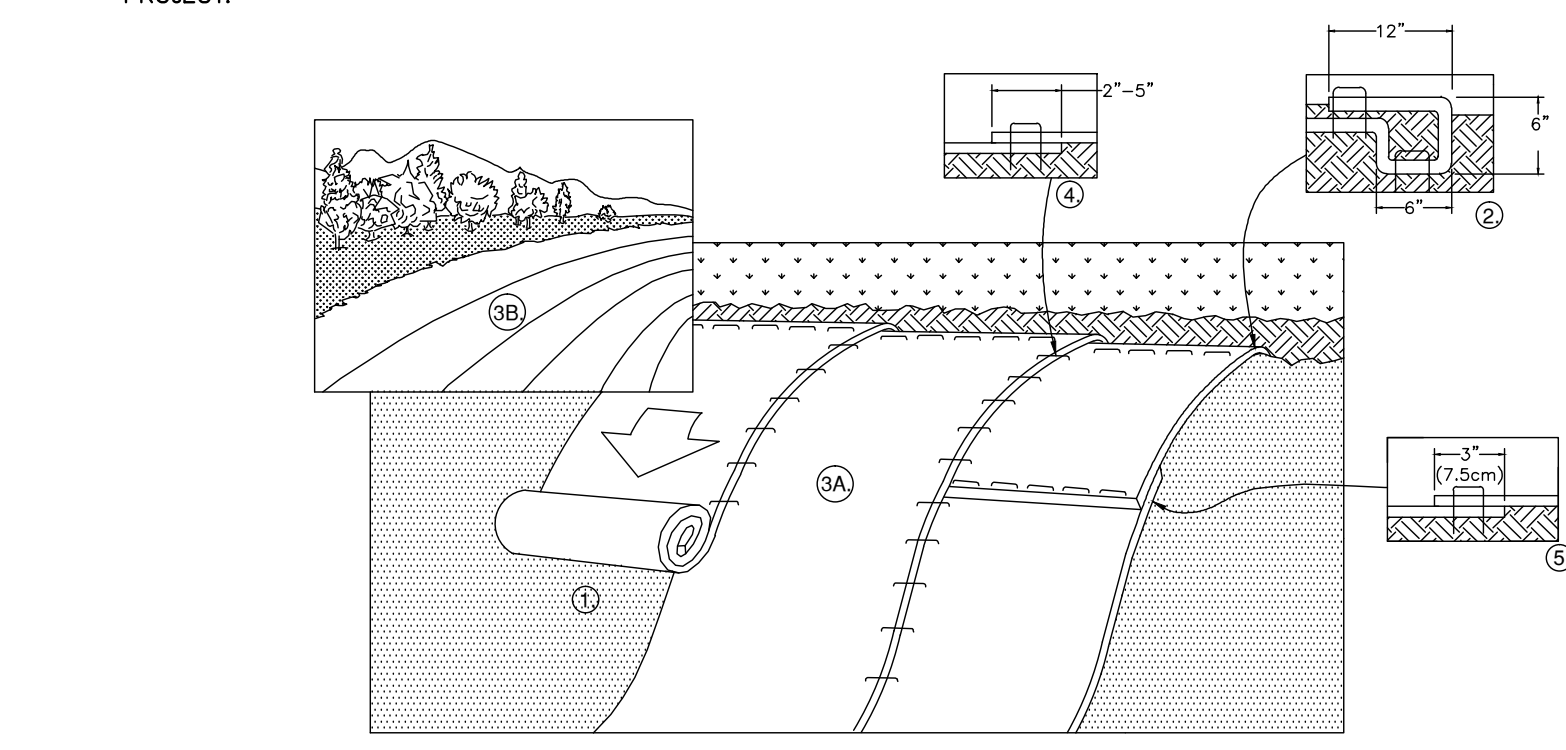
- GOOD HOUSEKEEPING AND POLLUTION PREVENTION**
- SPILL PREVENTION CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER RUNOFF AND APPROPRIATE SPILL PREVENTION, CONTAINMENT AND RESPONSE PLANNING AND IMPLEMENTATION.
  - DURING CONSTRUCTION, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUND OR SURFACE WATERS MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO INFILTRATION AREAS. AN "INFILTRATION AREA" IS ANY ARE OF THE SITE THAT BY DESIGN, OR AS A RESULT OF SOIL AND TOPOGRAPHY, ACCUMULATES RUNOFF THAT INFILTRATES IN THE SOIL, DICES, BERMS, SWMPS AND OTHER FORMS OF TEMPORARY SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

- LOCATE ALL MATERIAL STOCKPILES WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.
- TAKE ALL REASONABLE MEASURES TO MINIMIZE DUST RESULTING FROM THE PROJECT. OIL MAY NOT BE USED FOR DUST CONTROL.
- LOCATE ALL LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.

- TRENCH OR FOUNDATION DE-WATERING MUST BE SPREAD THROUGH SUFFICIENT NATURAL BUFFERS THAT HAVE CAPACITY TO INFILTRATE THE PUMPED WATER OR SHOULD BE PUMPED TO DESIGNED CONSTRUCTION DRAINING DEVICES AS DESCRIBED IN THE MAINE EROSION AND SEDIMENT CONTROL BMPs HANDBOOK.
- SEDIMENTS AND SOIL MATERIALS SHOULD BE SWEEP FROM PAVED SURFACES AT THE END OF EACH WORKDAY OR PRIOR TO RAIN EVENTS, WHENEVER POSSIBLE.

- INSPECTION AND MAINTENANCE**
- A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT, THE MAINE EROSION AND SEDIMENT CONTROL BMPs HANDBOOK AND ANY MUNICIPAL REQUIREMENTS MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF ADDITIONAL BMPs OR MODIFICATIONS TO BMPs ARE NECESSARY, THE MODIFICATIONS MUST BE IMPLEMENTED WITH 7 CALENDAR DAYS OR PRIOR TO ANY PRECIPITATION EVENT. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

- AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT BY THE CONTRACTOR, SUMMARIZING THE SCOPE OF THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO THE OPERATION OF EROSION AND SEDIMENT CONTROL BMPs, MATERIAL STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE CONSTRUCTION AREA. THE INSPECTION LOG SHOULD BE DELIVERED TO THE PROPERTY OWNER OR RESPONSIBLE CONTRACTING ENTITY UPON COMPLETION OF THE PROJECT.



- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED AS WELL AS REMOVING ANY PROTRUDING ROCKS, STUMPS OR ROOTS. DURING THE GROWING SEASON (APRIL 15-SEPTEMBER 15) USE RECP'S ON THE BASE OF GRASSED WATERWAYS. SOIL SLOPES GREATER THAN 1:5 OR ANYWHERE WHERE HAY MULCH HAS PROVEN TO BE INEFFECTIVE AT CONTROLLING SHEET EROSION. RECP'S ARE A MANUFACTURED COMBINATION OF MULCH AND NETTING DESIGNED TO PREVENT EROSION AND RETAIN SOIL MOISTURE. FOR OVER WINTER PROTECTION, APPLY RECP'S ON THE BASE AND SIDE SLOPES OF GRASSED WATERWAYS AND ON SLOPES STEEPER THAN AN 8:1 GRADE.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
- ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE ANCHORS THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON RECP'S TYPE.
- CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SINGLE STAPLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
- UNTIL GRASS IS ABUNDANT, INSPECT PERIODICALLY AND AFTER EACH RAINFALL TO CHECK FOR EROSION. IMMEDIATELY REPAIR AND ADD MORE MULCH UNTIL GRASSES ARE FIRMLY ESTABLISHED. DO NOT MOW THE FIRST YEAR.

**ROLLED EROSION CONTROL MATTING**  
N.T.S.

**EROSION AND SEDIMENT CONTROL NOTES**

**Temporary Erosion Control**

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer in accordance with Section E-6.

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up-slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsoxx, Siltsoxx Inlet Filter, or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil prior to rain events apply 100-150 lbs (2.5 bales) per 1,000 sq. ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil prior to precipitation apply 150 to 170 lbs mulch (4 bales) per 1,000 sq. ft. and anchor with netting at the end of each working day. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary.

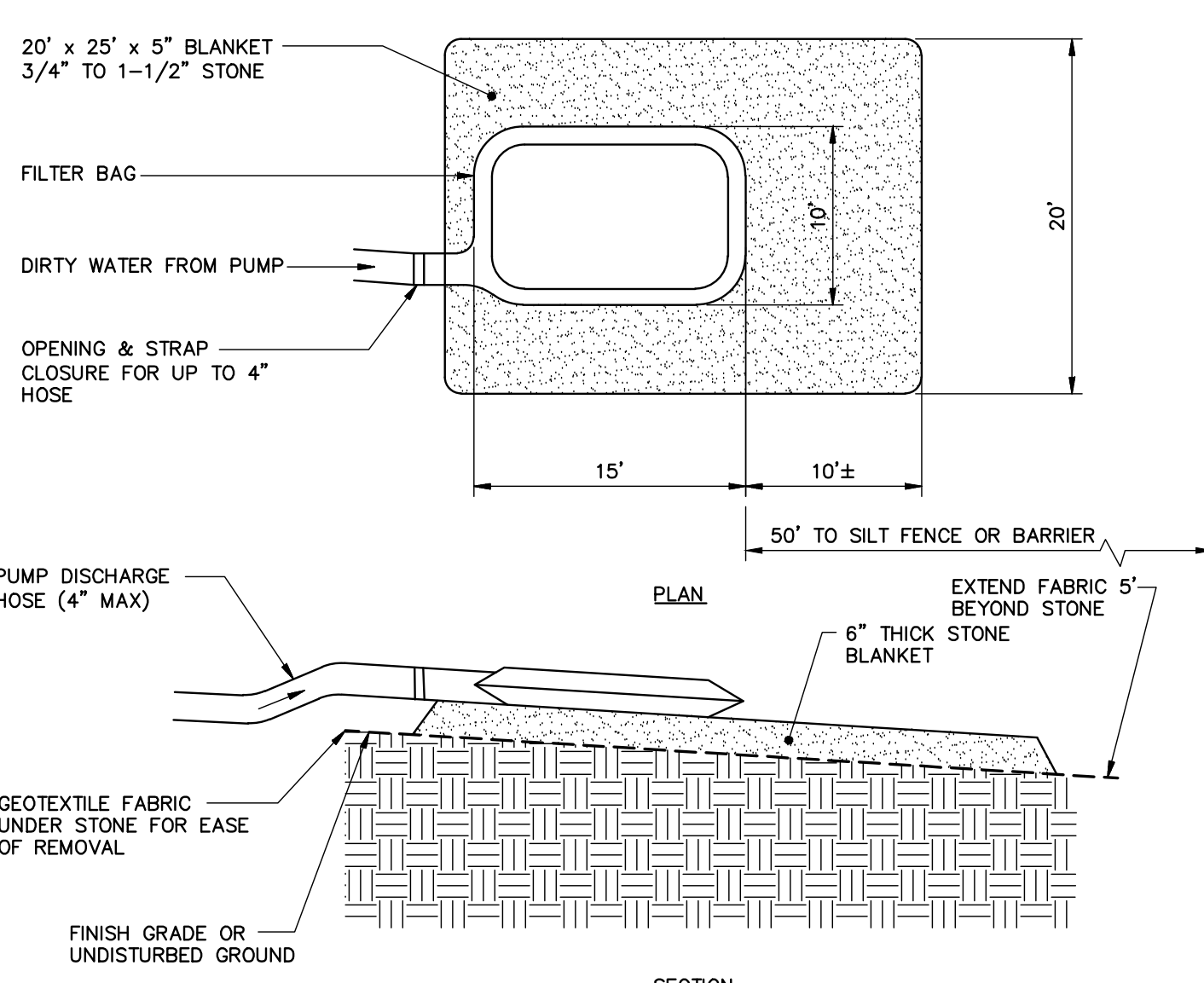
**Permanent Erosion Control:**

Measure	Dates For Use	Timing, Activity, and Location
Pavement - Base Course - Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil, apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

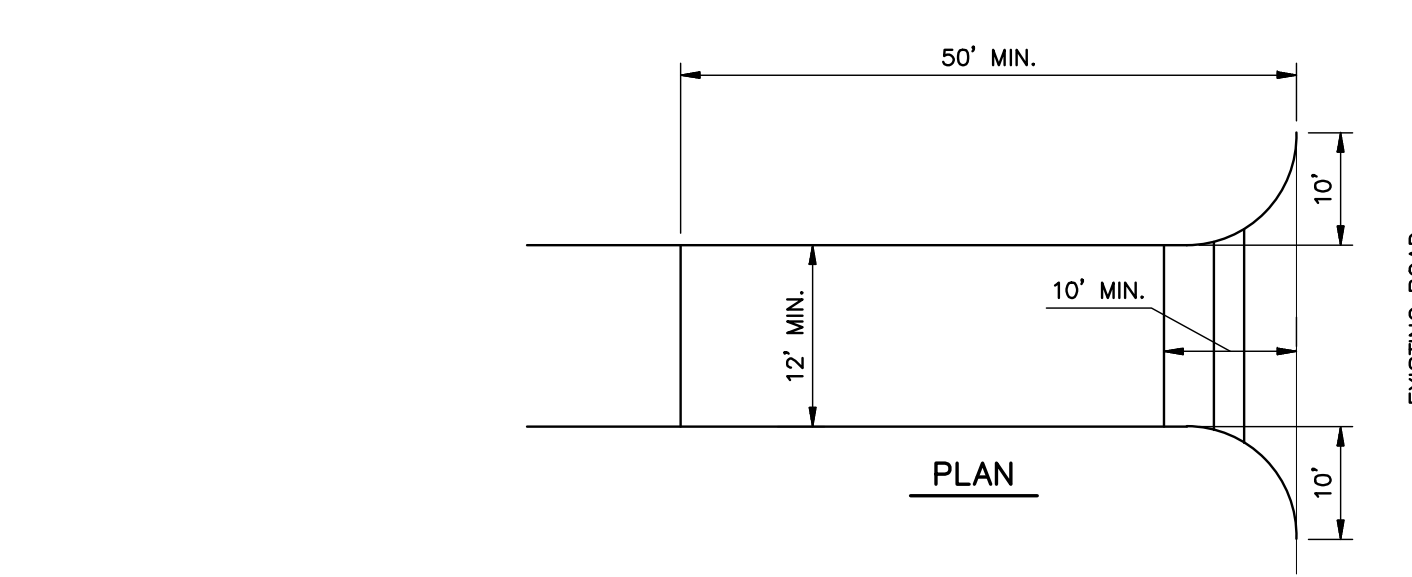
**Inspections:**

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rindlets.
Sediment Barrier	Sediment build-up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build-up and structure blockages. Slow flow/ponding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build-up.
Construction Entrance	Sedimentation of roadways. Off-site dust complaints.

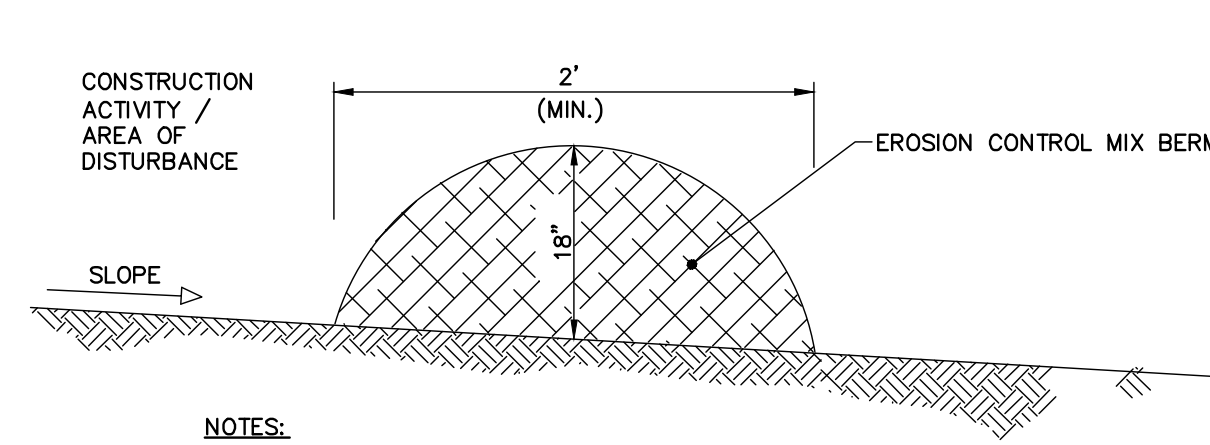


**PUMPED DISCHARGE SEDIMENT CONTROL DEVICE**  
N.T.S.



- NOTES:**
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
  - WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.
- MAINTENANCE:** INSPECT FOR EFFECTIVE REMOVAL OF SOIL FROM VEHICLES PRIOR TO LEAVING THE SITE. SWEEP ANY SOIL FROM ADJACENT ROADWAYS.
- REMOVAL:** AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

**STABILIZED CONSTRUCTION ENTRANCE DETAIL**  
N.T.S.



**NOTES:**

**Erosion Control Mix Berms**

Erosion control mix can be manufactured on or off the project site. It must consist primarily of organic material and may include: shredded bark, stump grindings, composted bark, or acceptable manufactured products. Wood and bark chips, ground construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.

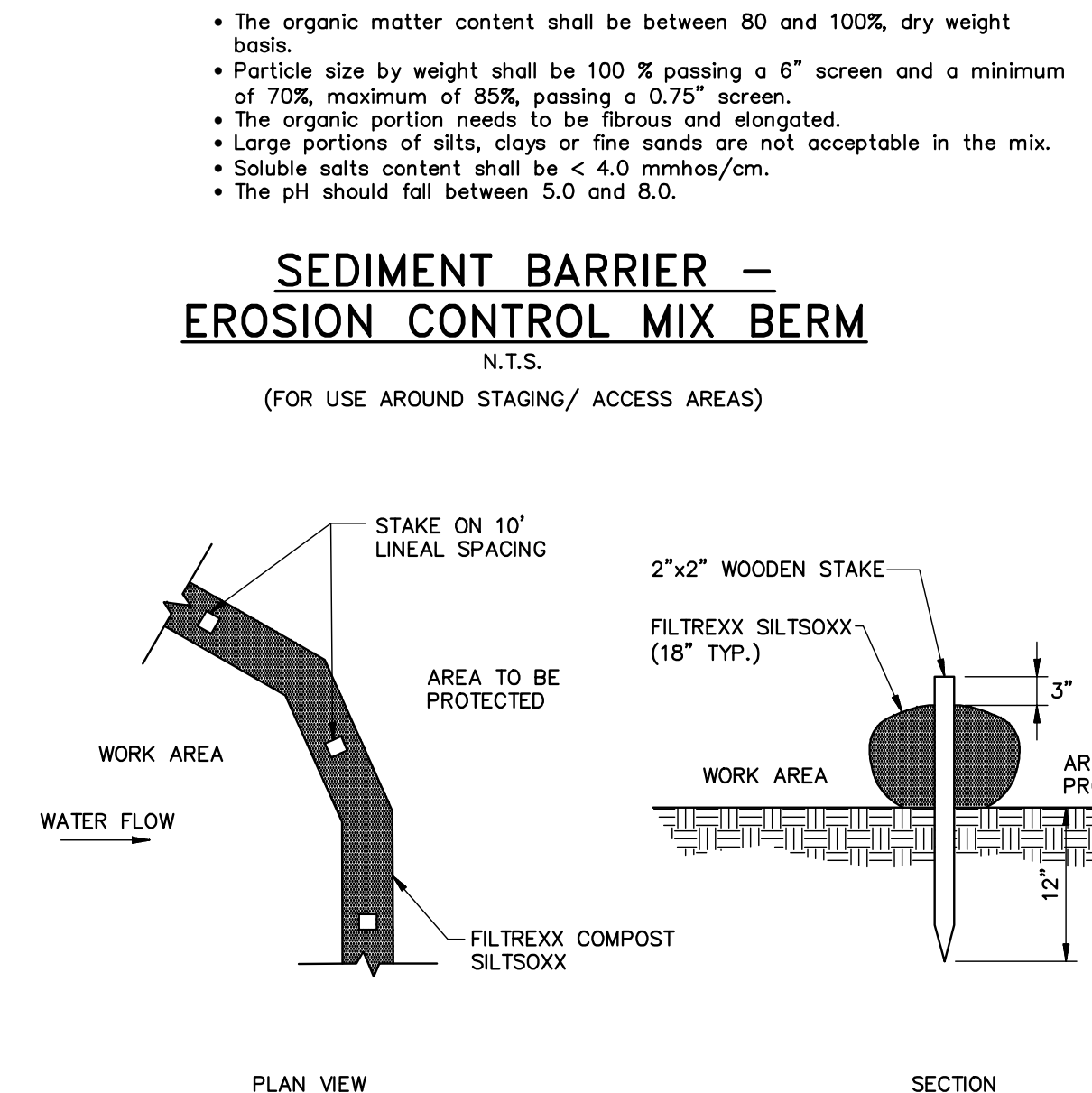
**Composition:**

Erosion control mix shall contain a well-graded mixture of particle sizes and may contain rocks less than 4" in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth. The mix composition shall meet the following standards:

- The organic matter content shall be between 80 and 100%, dry weight basis.
- Particle size by weight shall be 100% passing a 6" screen and a minimum of 70% maximum of 85% passing a 0.75" screen.
- The organic portion needs to be fibrous and elongated.
- Large portions of silt, clay or fine sands are not acceptable in the mix.
- Soluble salts content shall be < 4.0 mmhos/cm.
- The pH should fall between 5.0 and 8.0.

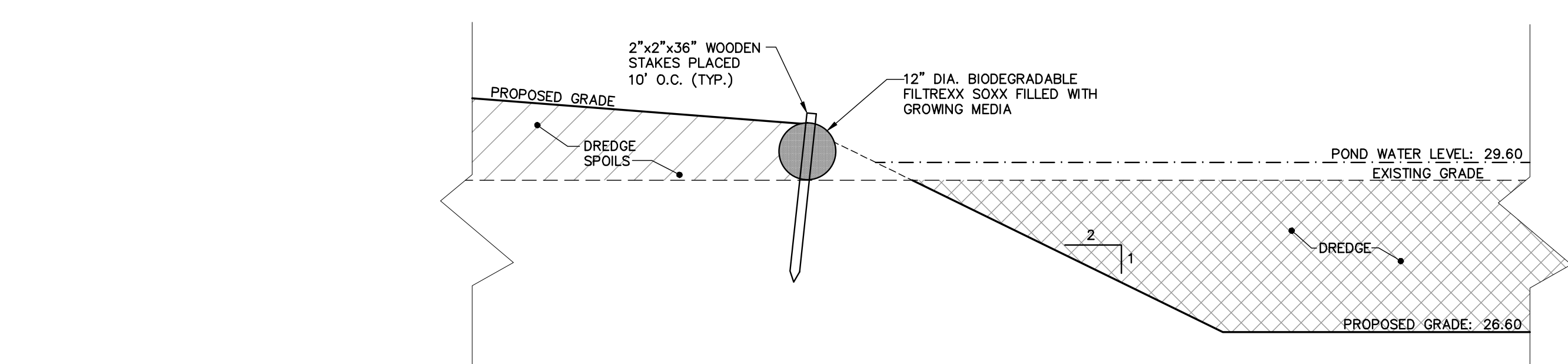
**SEDIMENT BARRIER - EROSION CONTROL MIX BERM**  
N.T.S.

(FOR USE AROUND STAGING/ ACCESS AREAS)

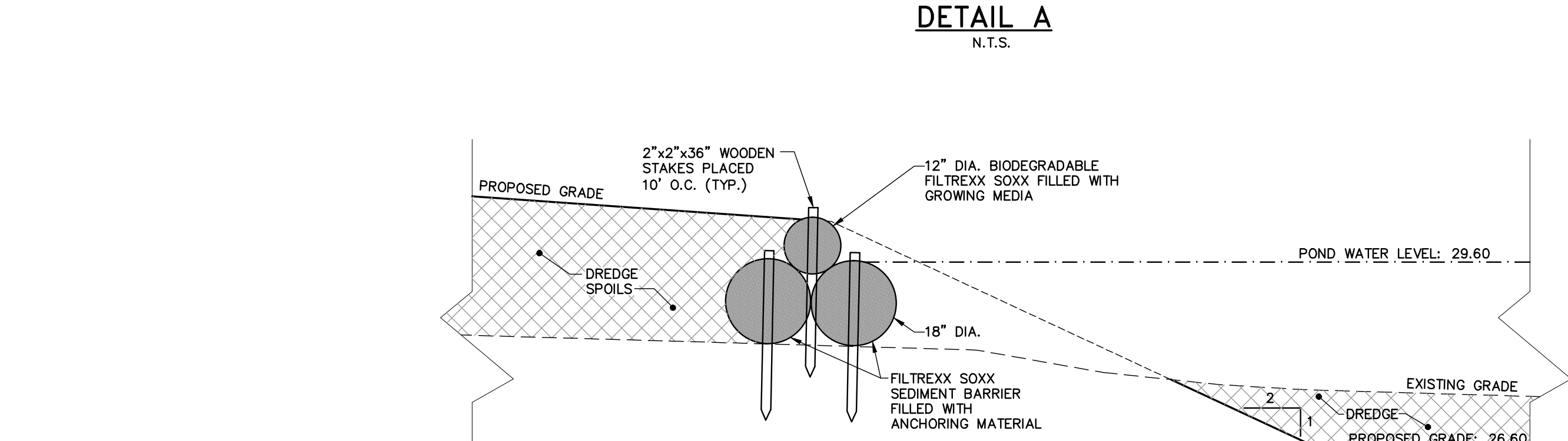


**SEDIMENT BARRIER - SILTISOXX**  
N.T.S.

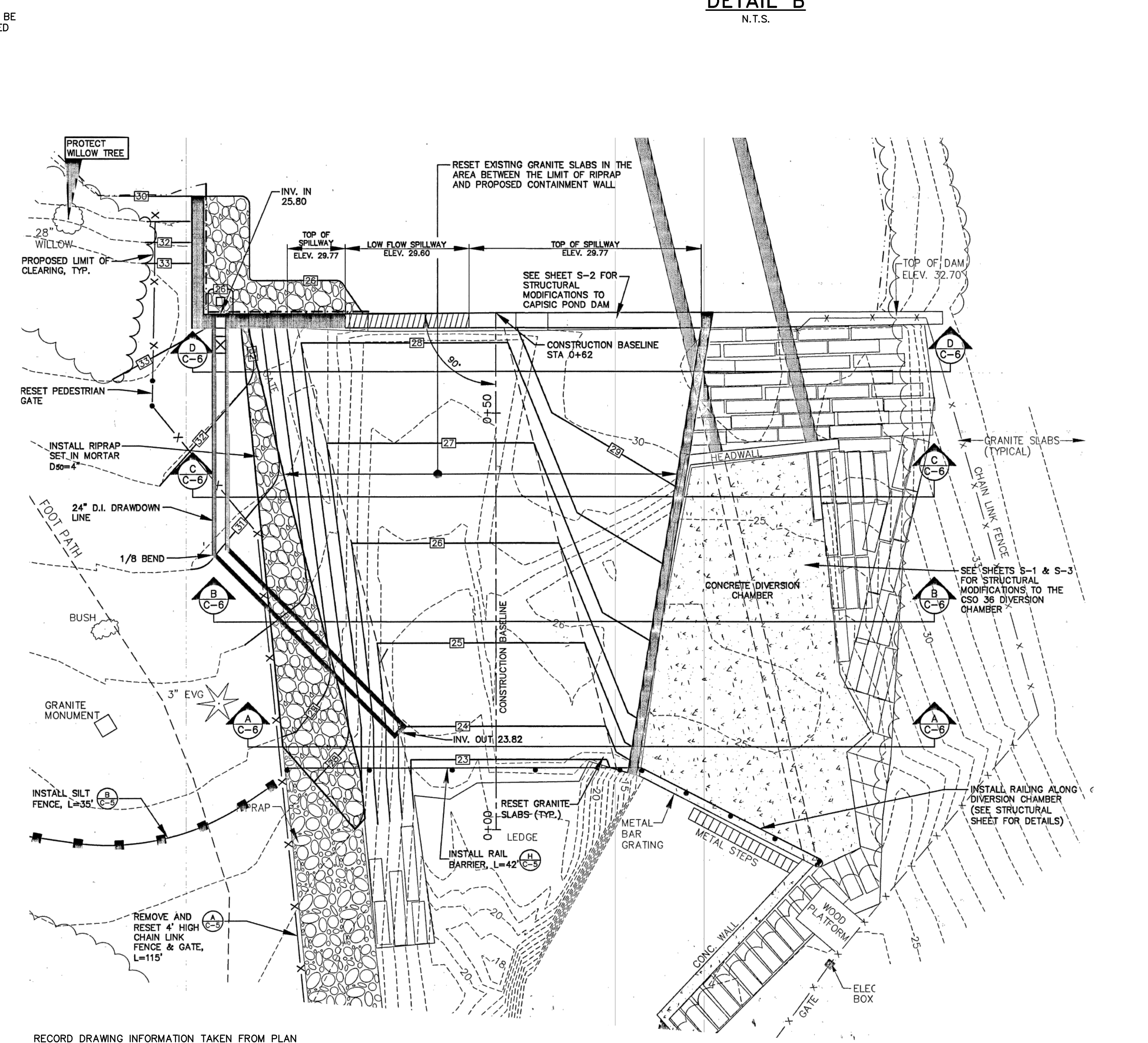
(FOR USE AROUND STAGING/ ACCESS AREAS)



**POND EDGE DREDGE RETENTION DETAIL A**  
N.T.S.



**POND EDGE DREDGE RETENTION DETAIL B**  
N.T.S.



RECORD DRAWING TAKEN FROM PLAN ENTITLED "PROPOSED MODIFICATIONS TO CAPISIC POND DAM & CSO 36 DIVERSION CHAMBER, SITE LAYOUT PLAN (C-4)" BY DELUCA-HOFFMAN ASSOCIATES, INC DATED 11/2/01. THIS PLAN INCLUDED FOR REFERENCE PURPOSES ONLY.

**CAPISIC DAM RECORD DRAWING FOR REFERENCE PURPOSES**  
SCALE: 1"=10'

44 Hilditch Drive  
Portland, Maine 04102  
800.426.4262 | www.woodardcurran.com

**WOODARD & CURRAN**  
CONSULTING ENGINEERS AND ARCHITECTS  
MEMBER OF WOODWARD-CLIFTON, WATKINS, HERRINGTON & ASSOCIATES

DAVID A. SUTHER  
PROJECT ENGINEER  
REGISTERED PROFESSIONAL ENGINEER  
NOVEMBER 2013

CHECKED BY: DAS  
DATE: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

DRAWN BY: TECH

CITY OF PORTLAND, MAINE  
CAPISIC POND ENHANCEMENTS

JOB NO: 225672.15  
DATE: DECEMBER 2013  
SCALE: AS NOTED  
SHEET: 8 OF 9

**C-300**

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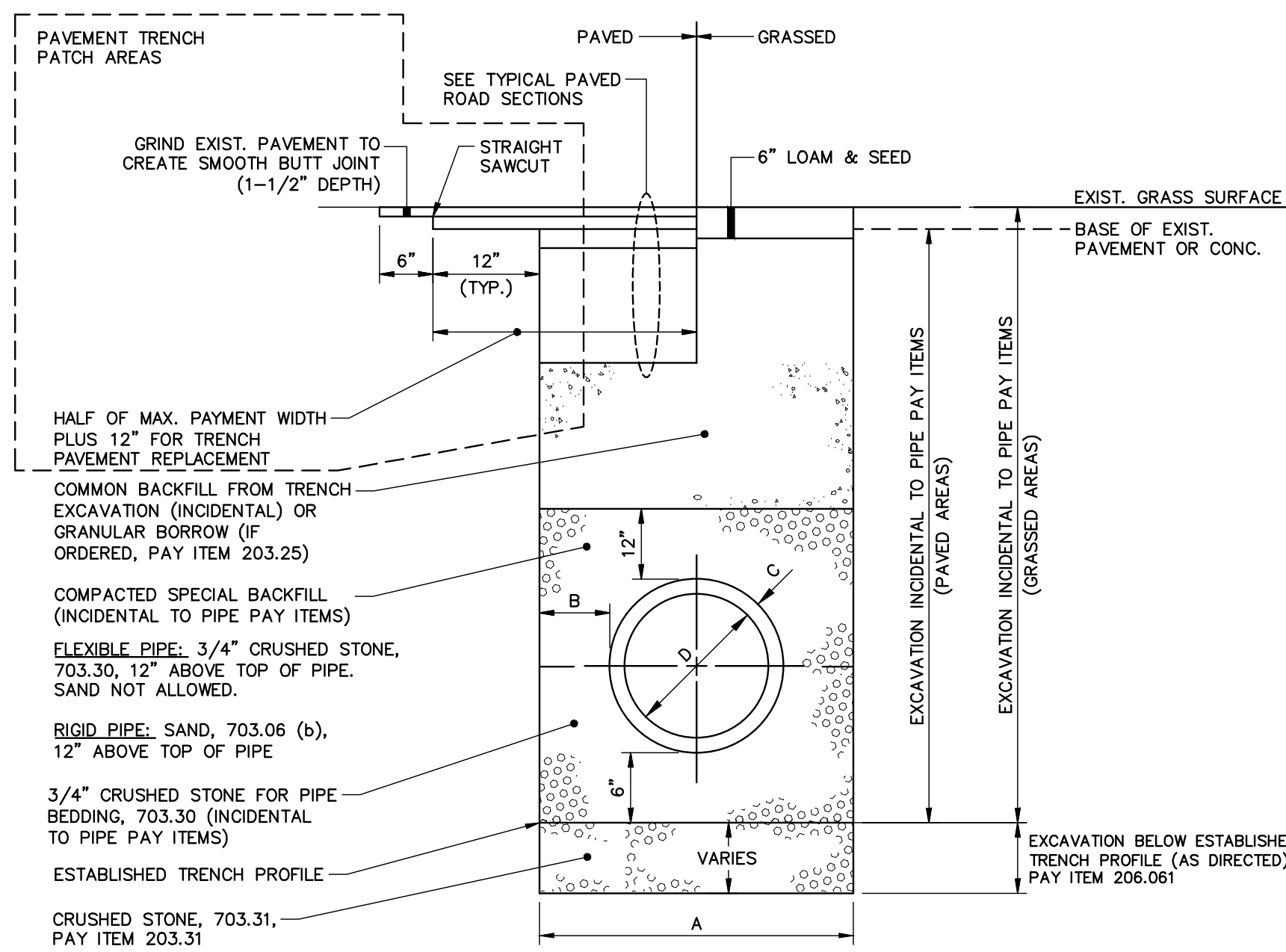


**PIPE INSTALLATION DETAIL – NOTES**

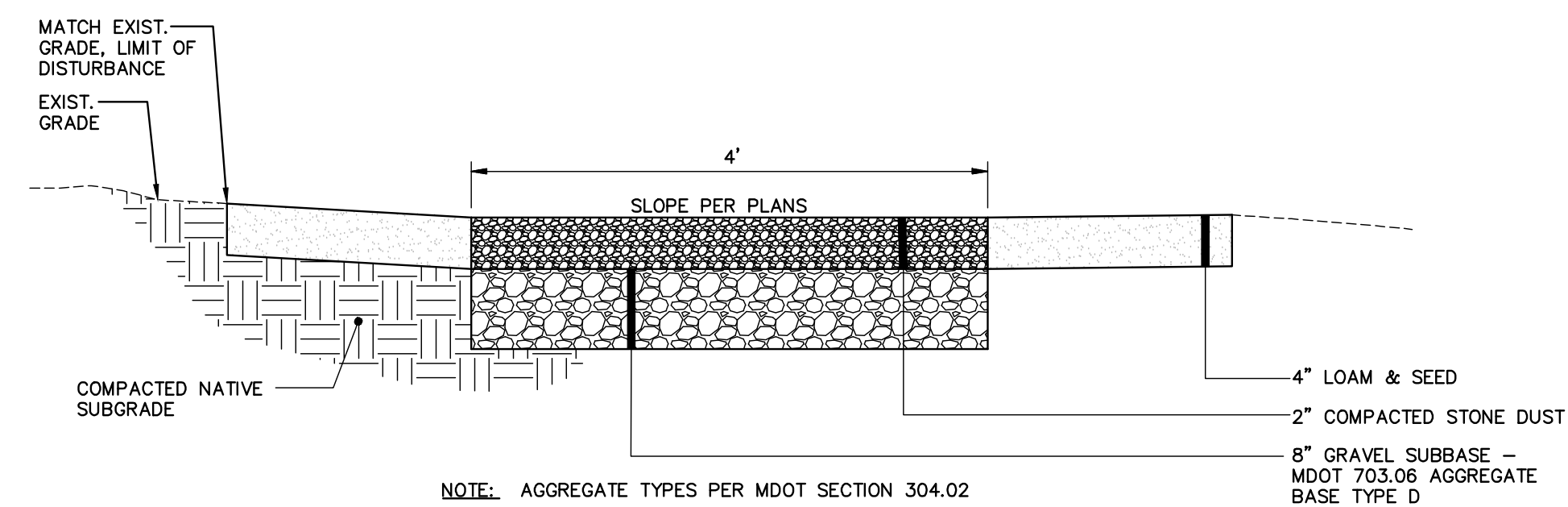
- ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
- IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAYMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
- DIMENSION "B" SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE, BUT IN ALL CASES "B" SHALL BE AT LEAST 9".
- DIMENSION "A" IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER ITEMS 203.25 GRANULAR BORROW, 203.29 CRUSHED STONE, 206.061 STRUCTURAL EARTH EXCAVATION, BELOW GRADE AND 206.17 STRUCTURAL ROCK EXCAVATION. DIMENSION "A" SHALL BE BASED ON PIPE DIAMETER, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, "D" (INCHES)	MAX. TRENCH WIDTH, "A" (FEET)
6	4.0
8	4.0
10	4.0
12	4.0
15	4.0
18	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36	7.0
42	8.0
48	8.0
54	8.0
60	9.0

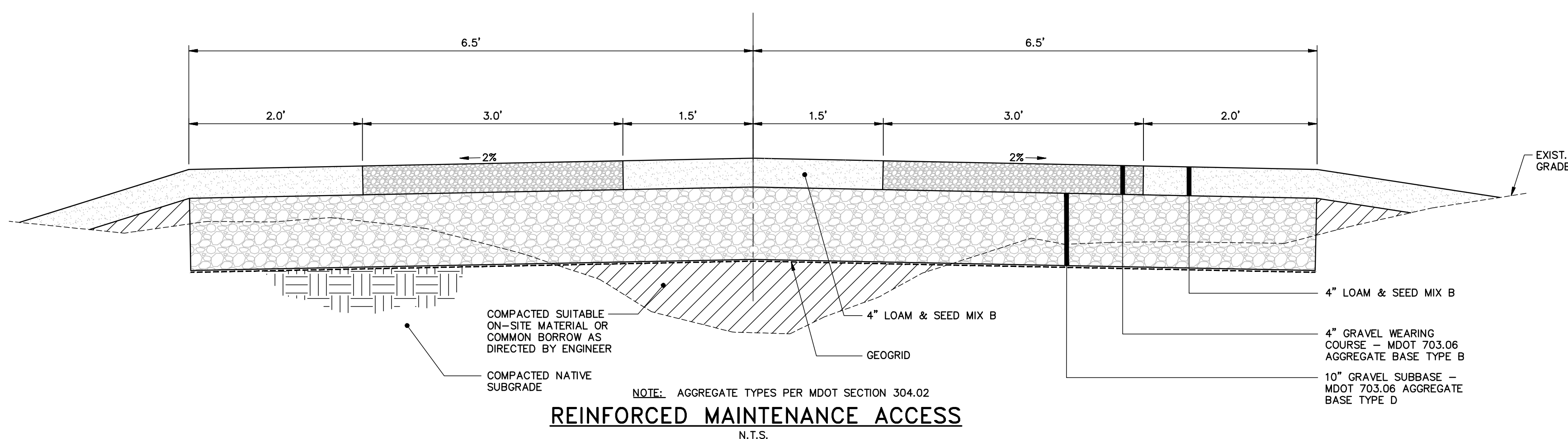
**NOTES:**  
ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.



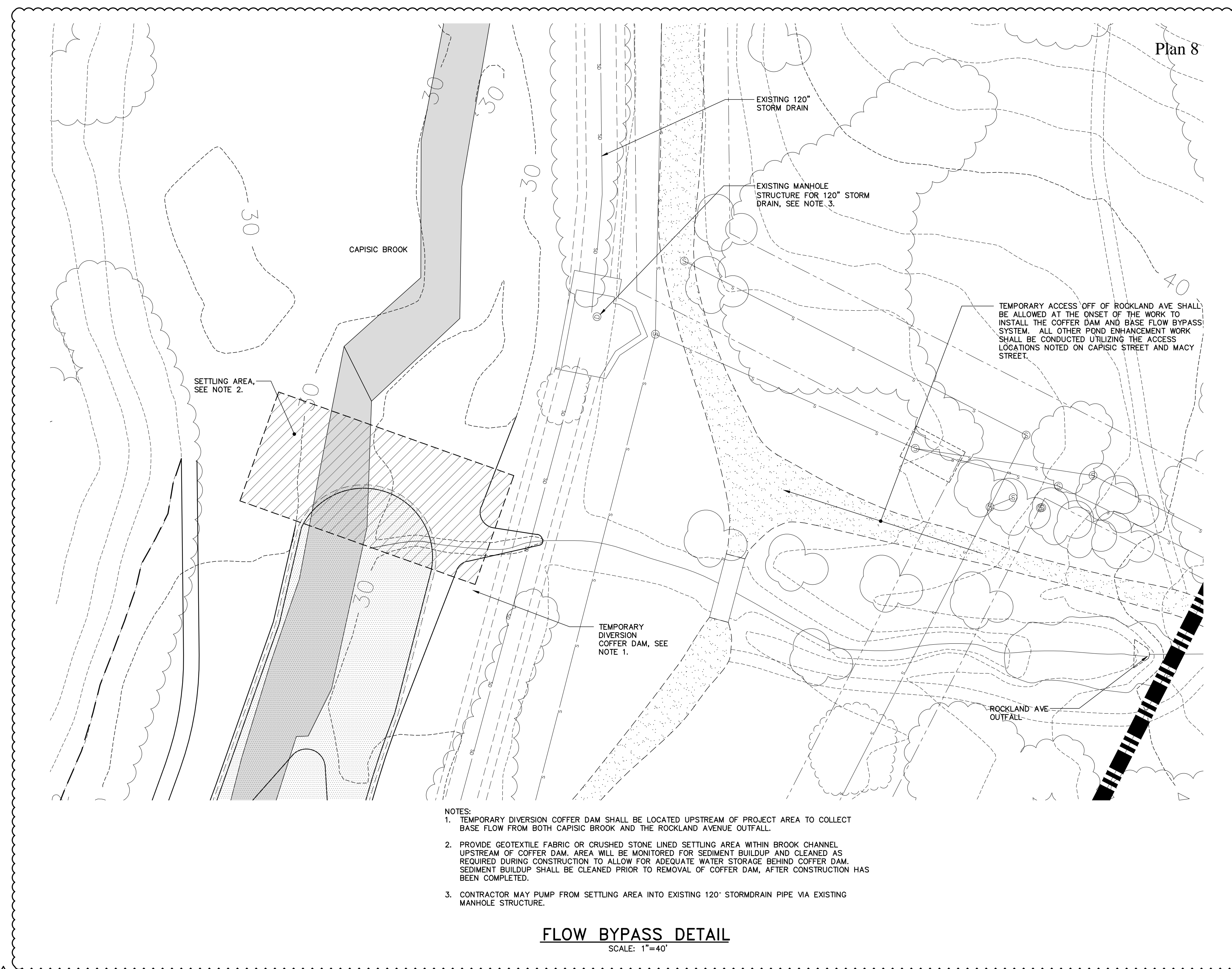
**PIPE INSTALLATION DETAIL**  
N.T.S.



**TYPICAL GRAVEL PATH SECTION**  
N.T.S.

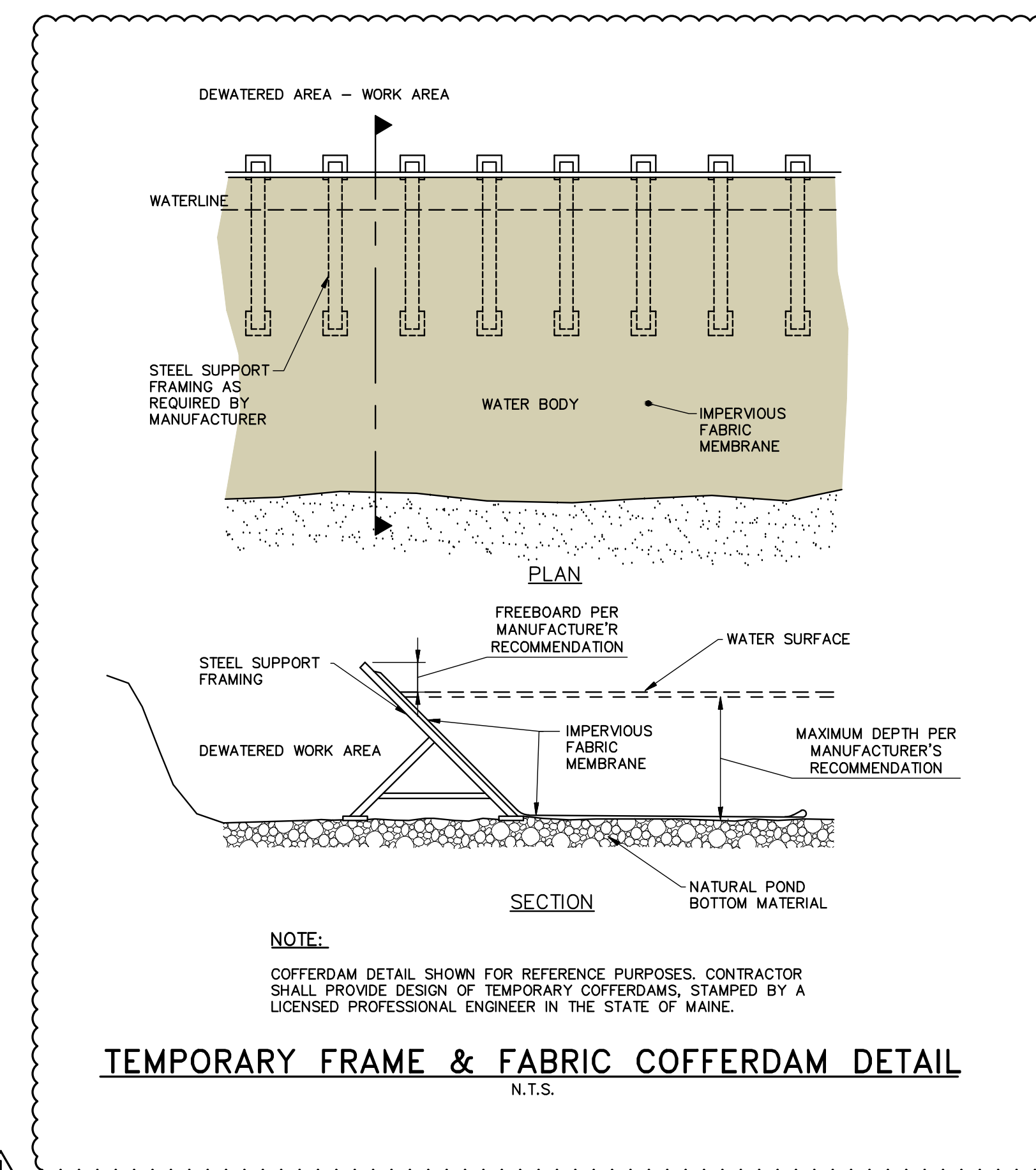


**REINFORCED MAINTENANCE ACCESS**  
N.T.S.



- NOTES:**
- TEMPORARY DIVERSION COFFER DAM SHALL BE LOCATED UPSTREAM OF PROJECT AREA TO COLLECT BASE FLOW FROM BOTH CAPISEC BROOK AND THE ROCKLAND AVENUE OUTFALL.
  - PROVIDE GEOTEXTILE FABRIC OR CRUSHED STONE LINED SETTLING AREA WITHIN BROOK CHANNEL UPSTREAM OF COFFER DAM. AREA WILL BE MONITORED FOR SEDIMENT BUILDUP AND CLEANED AS REQUIRED DURING CONSTRUCTION TO ALLOW FOR ADEQUATE WATER STORAGE BEHIND COFFER DAM. SEDIMENT BUILDUP SHALL BE CLEANED PRIOR TO REMOVAL OF COFFER DAM, AFTER CONSTRUCTION HAS BEEN COMPLETED.
  - CONTRACTOR MAY PUMP FROM SETTLING AREA INTO EXISTING 120" STORMRAIN PIPE VIA EXISTING MANHOLE STRUCTURE.

**FLOW BYPASS DETAIL**  
SCALE: 1"=40'



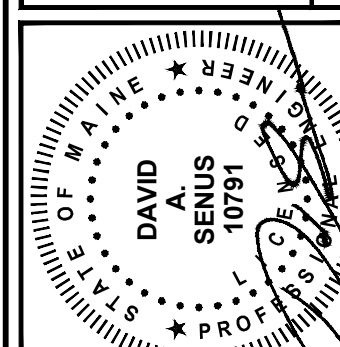
**TEMPORARY FRAME & FABRIC COFFERDAM DETAIL**  
N.T.S.

**NOTE:**  
COFFERDAM DETAIL SHOWN FOR REFERENCE PURPOSES. CONTRACTOR SHALL PROVIDE DESIGN OF TEMPORARY COFFERDAMS, STAMPED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MAINE.

41 Hutchins Drive  
Portland, Maine 04102  
800.426.4262 | www.woodardcurran.com

**WOODARD & CURRAN**  
COMMITMENT & INTEGRITY DRIVE RESULTS

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REV	DESCRIPTION	DATE	CHECKED BY	DRAWN BY
1	UPDATED PER L&E III SITE PLAN COMMENTS	3/3/14		

CITY OF PORTLAND, MAINE	
CAPISEC POND ENHANCEMENTS	

**SITE DETAILS - 2**

JOB NO: 225672.15
DATE: DECEMBER, 2013
SCALE: AS NOTED
SHEET: 9 OF 9

**C-301**

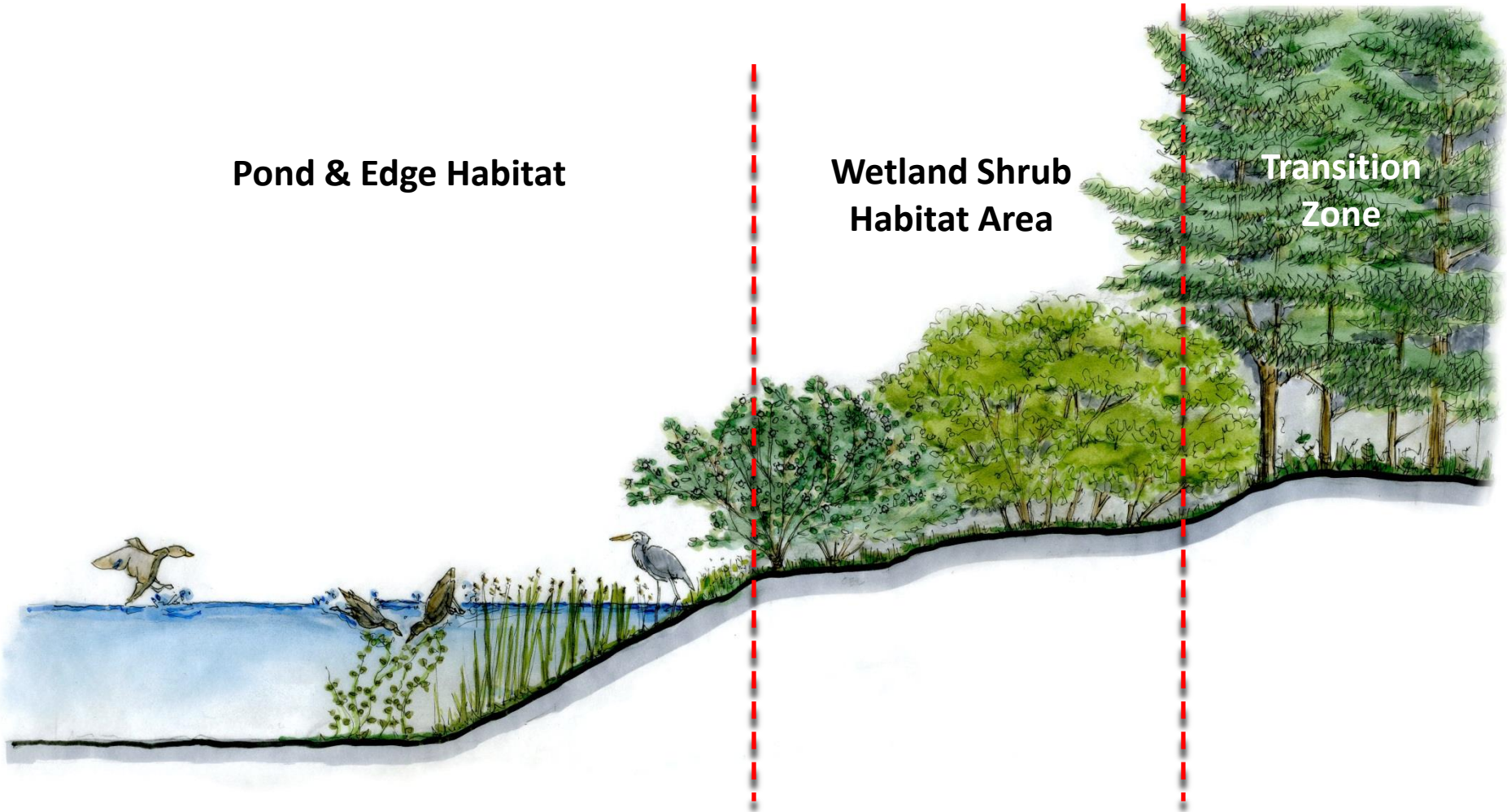


# TYPICAL WETLAND CROSS SECTION TARGET FUTURE CONDITION

**Pond & Edge Habitat**

**Wetland Shrub  
Habitat Area**

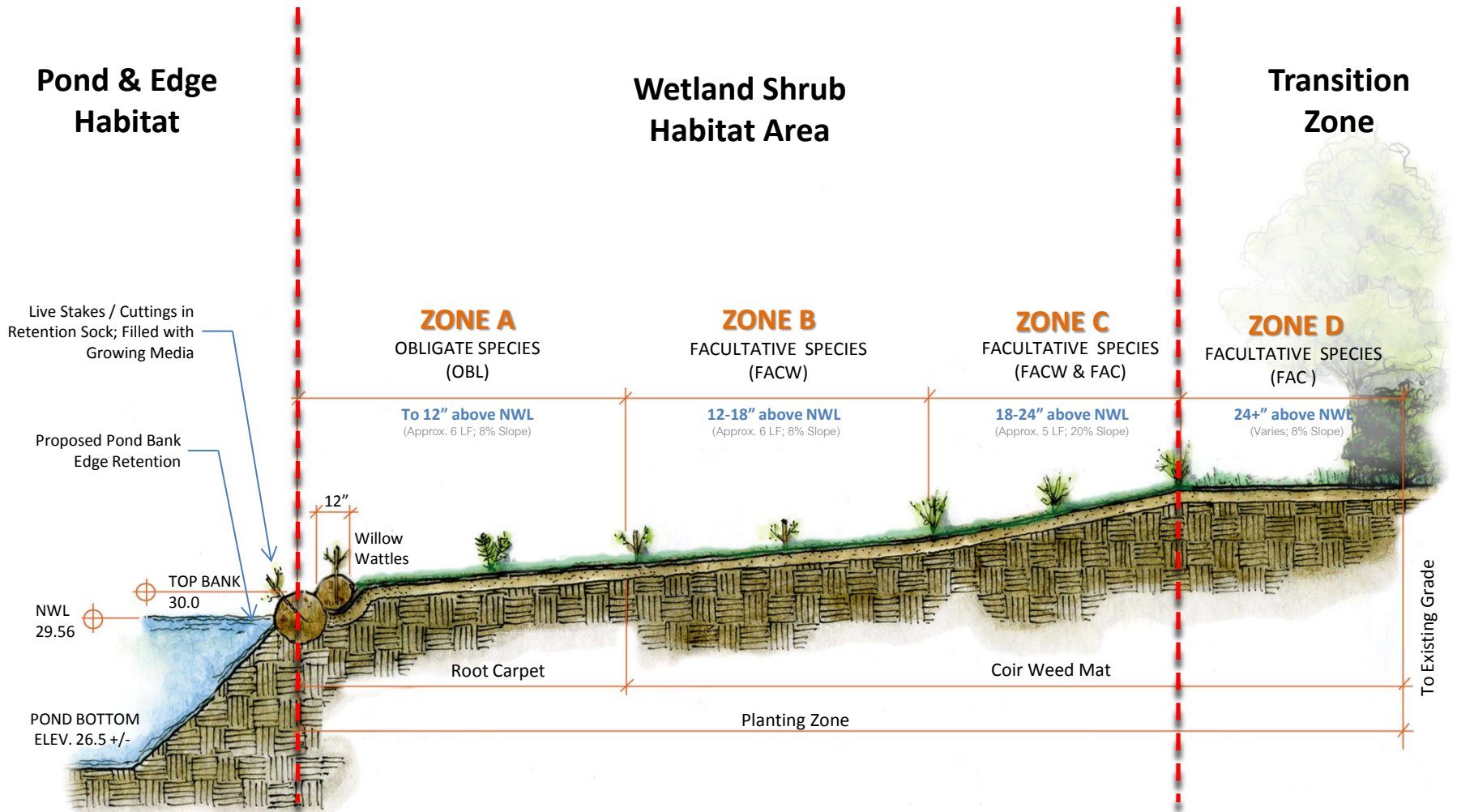
**Transition  
Zone**





# RESTORATION PLANTINGS

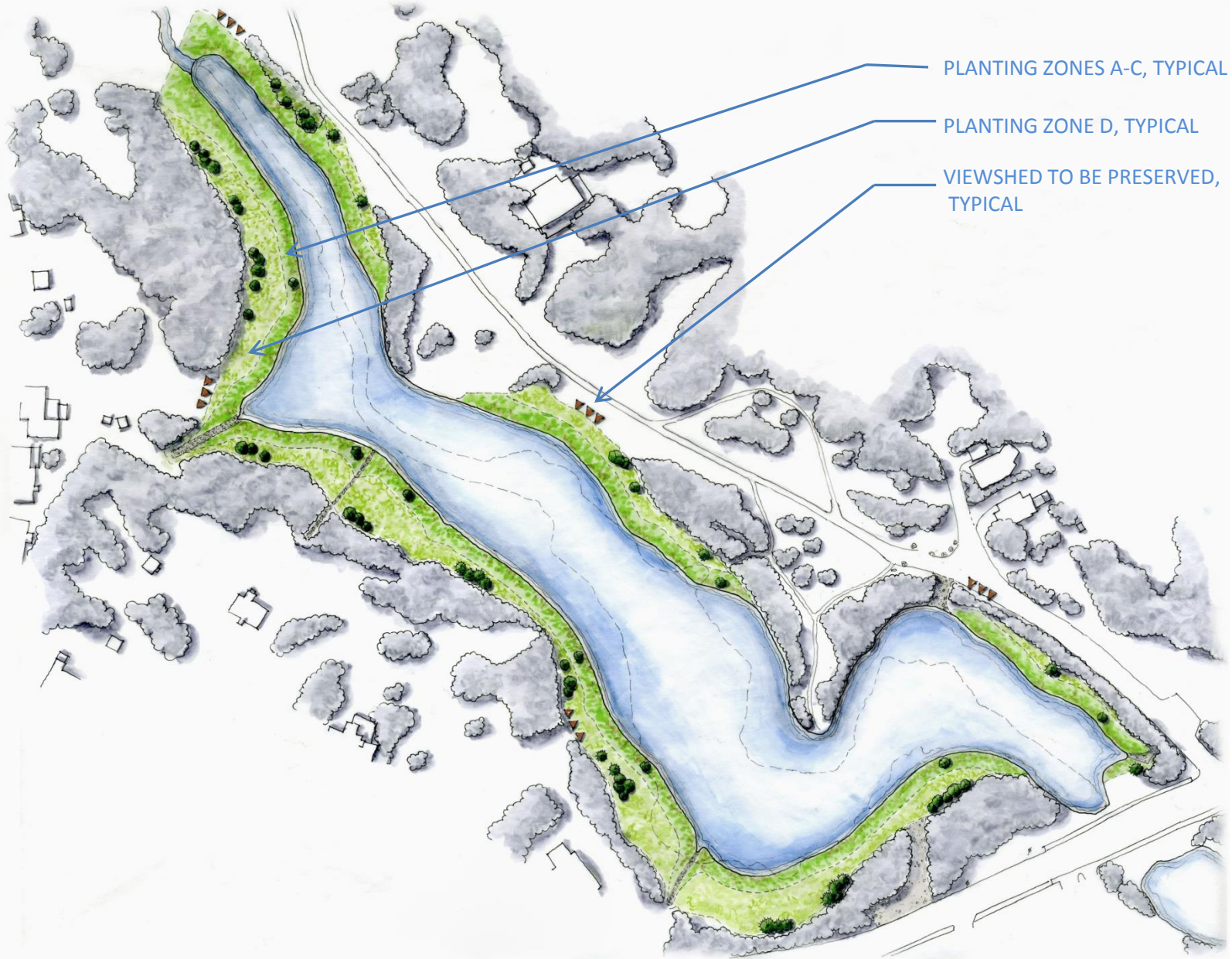
## TYPICAL CROSS SECTION





# CAPISIC POND

## PLAN ILLUSTRATION

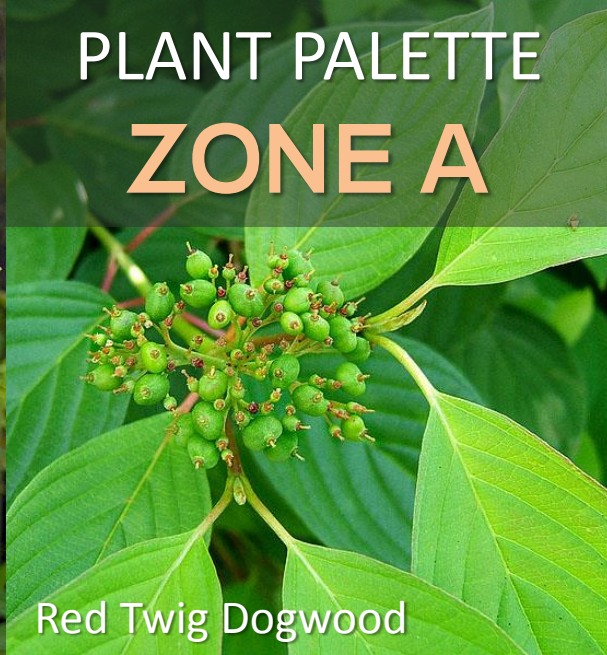




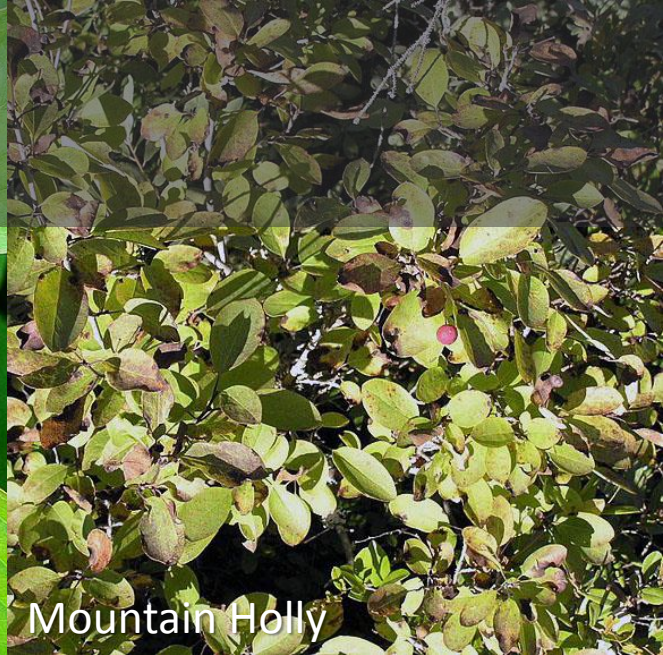
# PLANT PALETTE ZONE A



Buttonbush



Red Twig Dogwood



Mountain Holly

Image credits. Above, left to right: Gabriel Hurley, Wildfeuer, Richtid (commons.wikimedia.org) Image credits. Below, left and right (large images): J.S. Peterson, R.W. Lutz (USDA Plant Database)



Swamp Azalea



Slender Willow



Fox Sedge  
Green Bulrush  
Woolgrass

Image credits. Clockwise, from top left: Robert Mohlenbrock, Jennifer Anderson, Kunth (USDA Plant Database),



# PLANT PALETTE ZONE B



Speckled Alder



Red Twig Dogwood



Winterberry



Pussy Willow



Elderberry

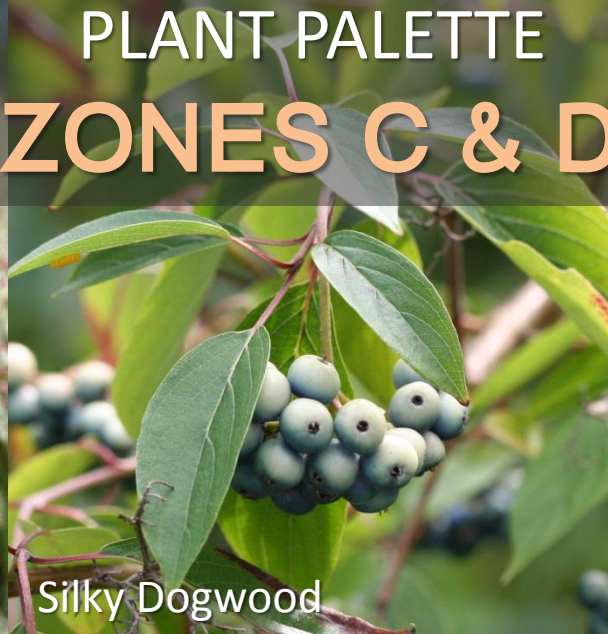
Image credits. Clockwise, from top left: Vassil, Wildefeur, James Steakley, M. Sebastian, Avicennasis (commons.wikimedia.org).



# PLANT PALETTE ZONES C & D



Red Chokeberry



Silky Dogwood



Red Twig Dogwood

Image credits. Clockwise, from top left: Daderot, Michael Wolf, Wildefleur (commons.wikimedia.org).



Winterberry



Pussy Willow



American  
Elderberry



Arrowwood  
Viburnum

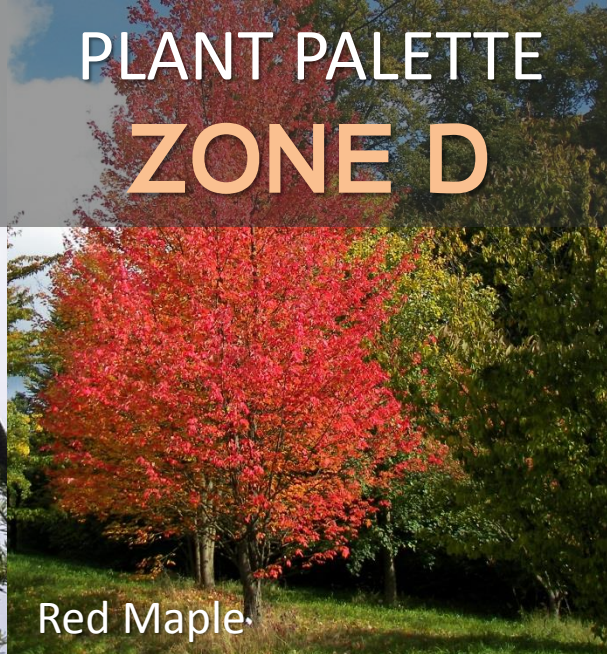
Image credits. From above left: James Steakley, M. Sebastian, (commons.wikimedia.org), James H. Miller USDA Forest Service.



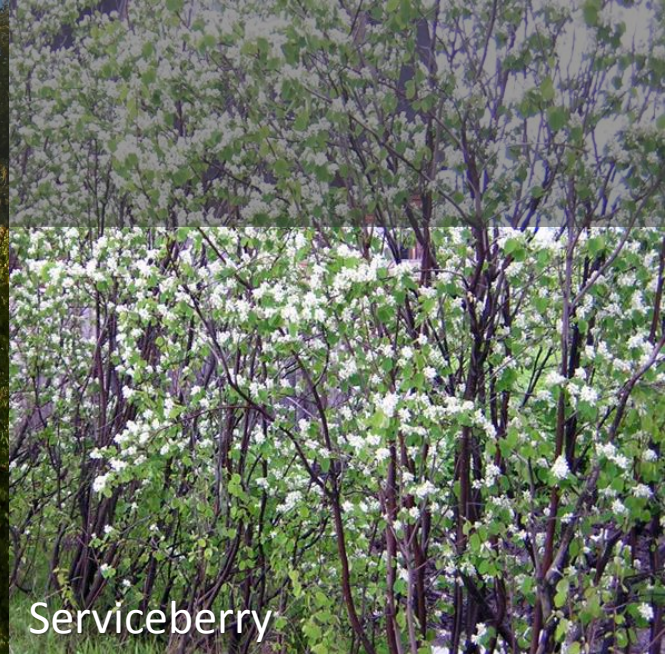
# PLANT PALETTE ZONE D



Balsam Fir



Red Maple

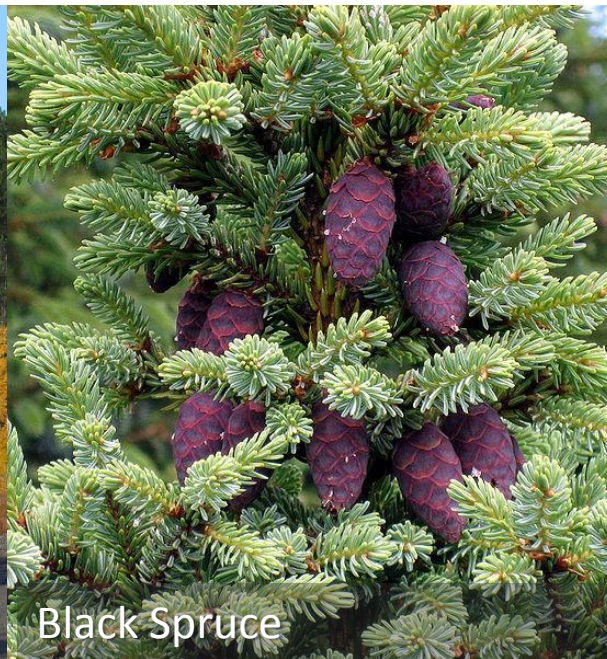


Serviceberry

Image credits. Clockwise, from top left: US Fish and Wildlife Service, Willow, Borealis55, Bitsy, Kyle Woods, MPF US Forest Service, (commons.wikimedia.org).



American Larch



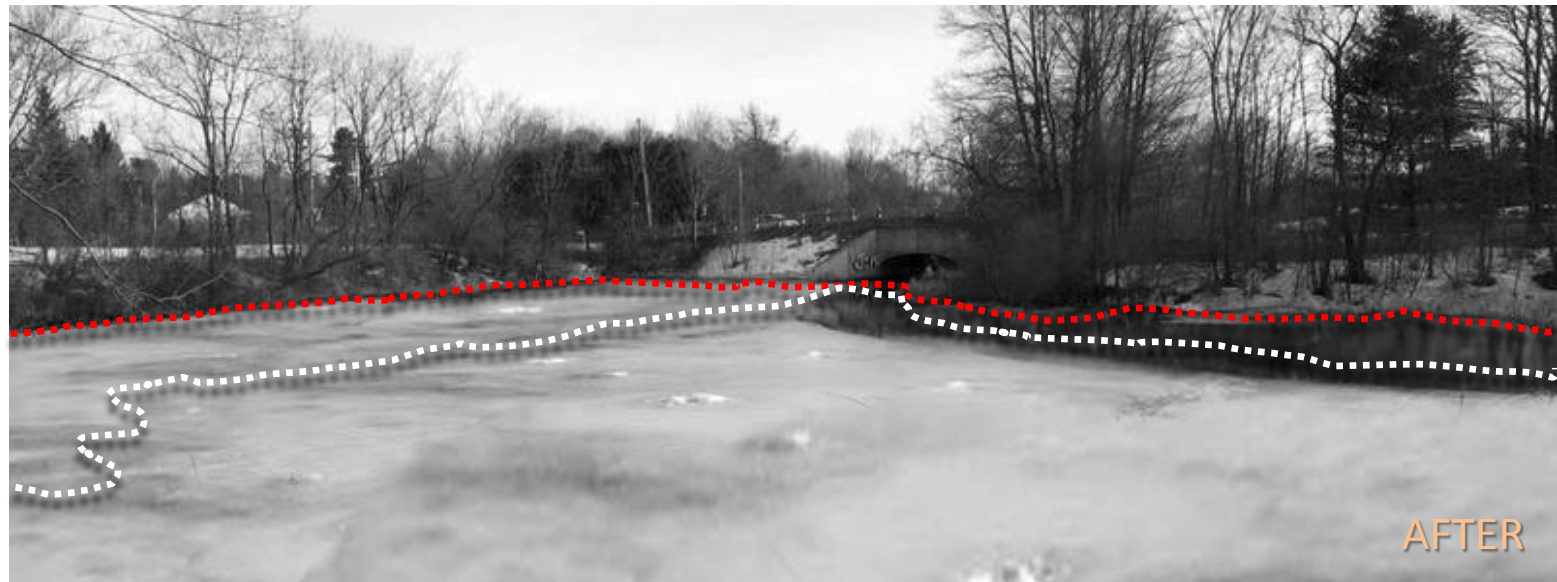
Black Spruce



White Spruce

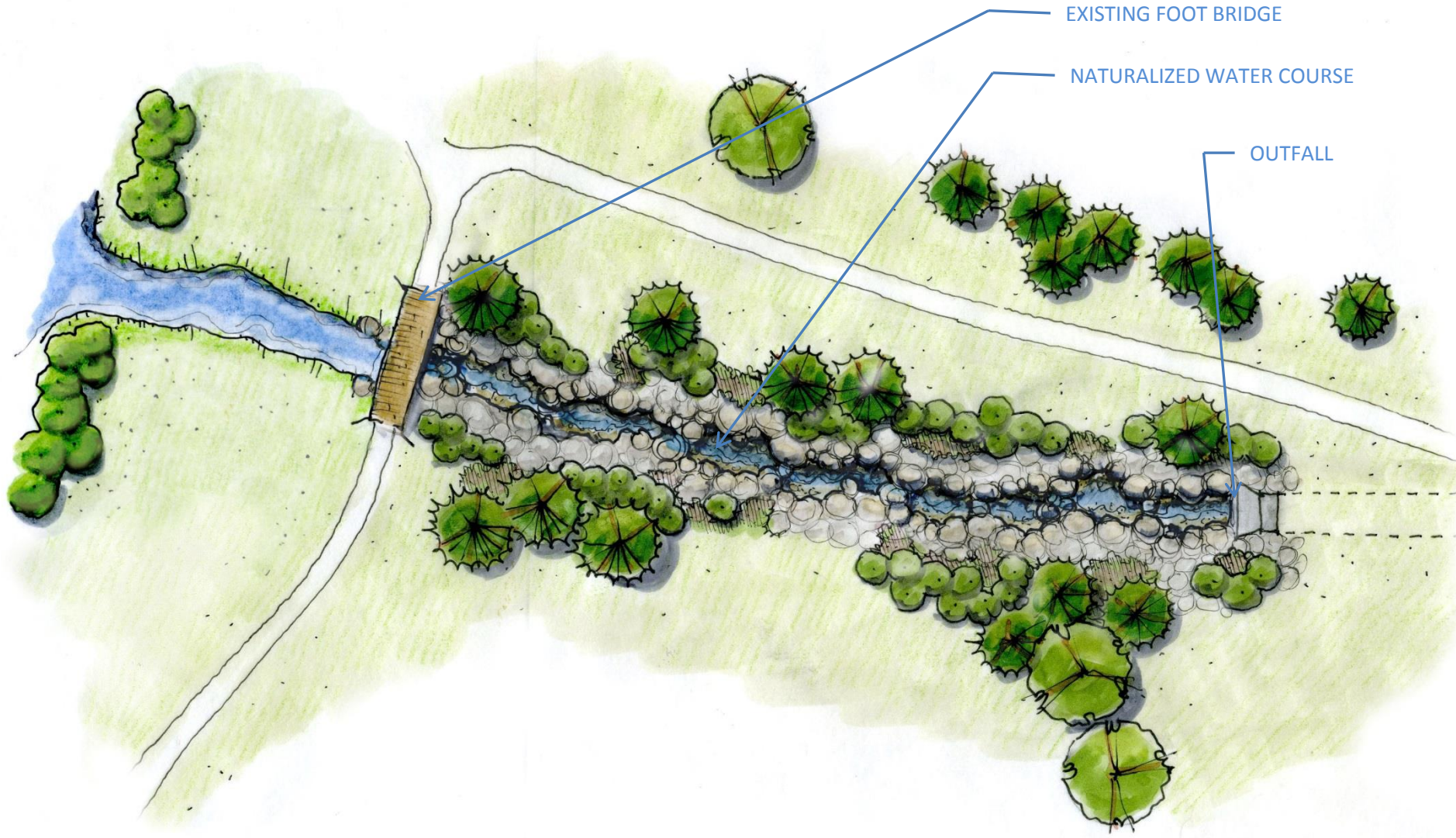


# BEFORE / AFTER ILLUSTRATION





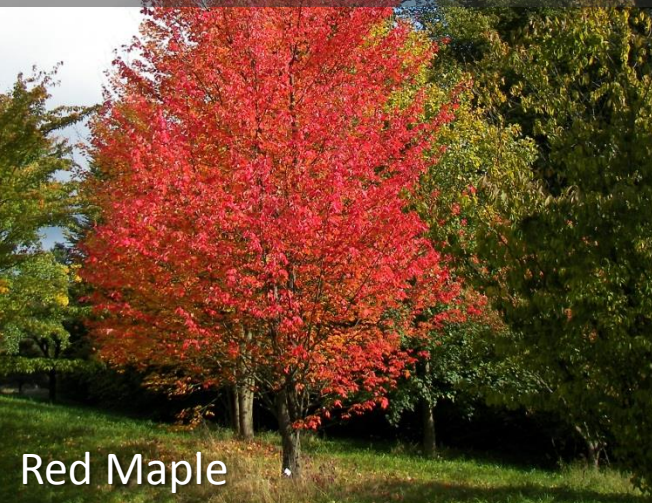
# ROCKLAND AVENUE OUTFALL PLAN ILLUSTRATION



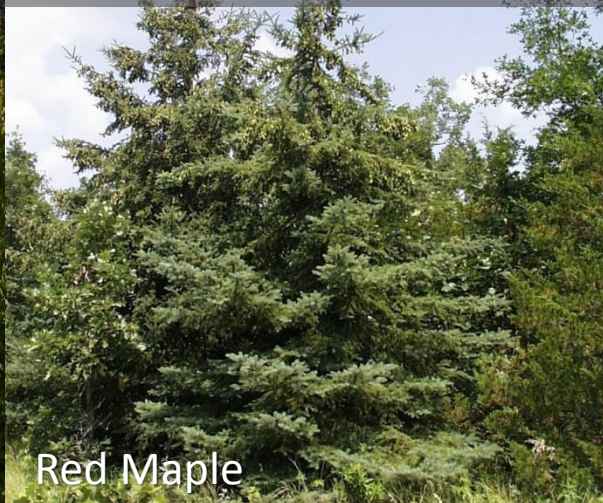


# PLANT PALETTE

## ROCKLAND AVENUE OUTFALL



Red Maple

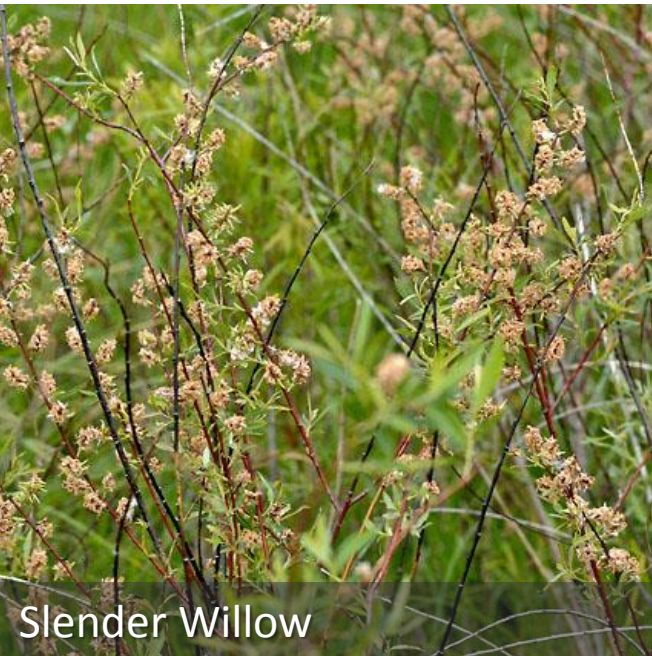


Red Maple



Winterberry

Image credits. Clockwise, from top left: Willow, MPF US Forest Service, M. Sebastian(commons.wikimedia.org).; Below, left and right (large images); R.W. Lutz (USDA Plant Database), Avicennasis (commons.wikimedia.org).



Slender Willow



Elderberry



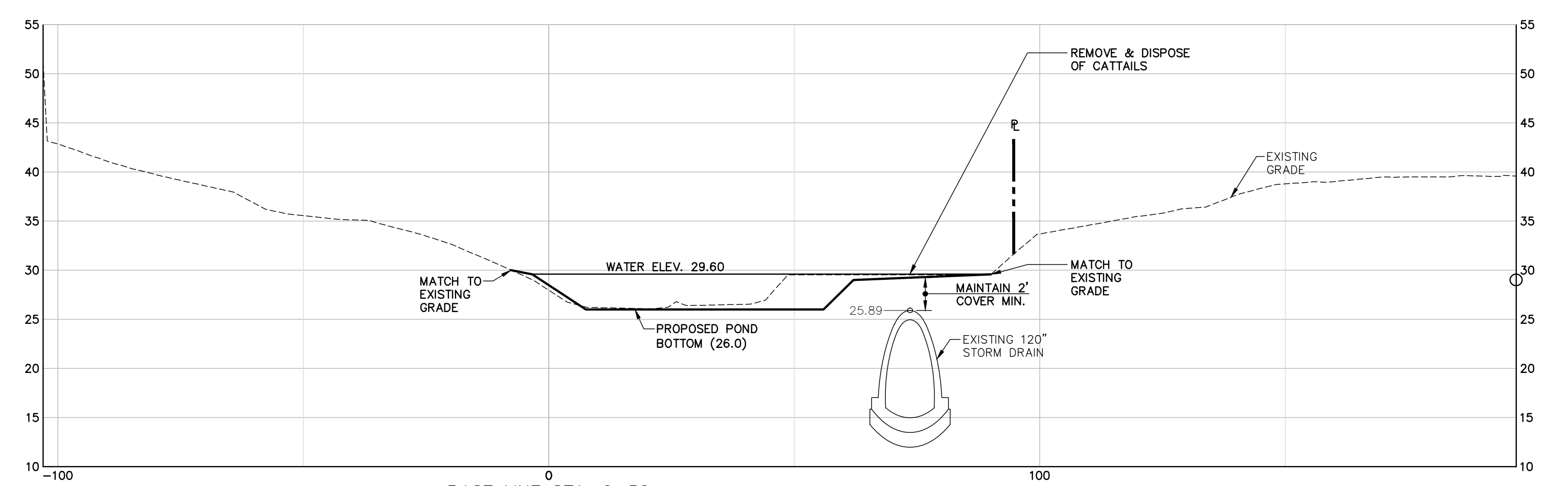
Turtlehead  
Soft Rush  
Cardinal Flower

Image credits. Above, clockwise, from top left: H. Zell, Jan Bakker, Stan Stebs (commons.wikimedia.org).

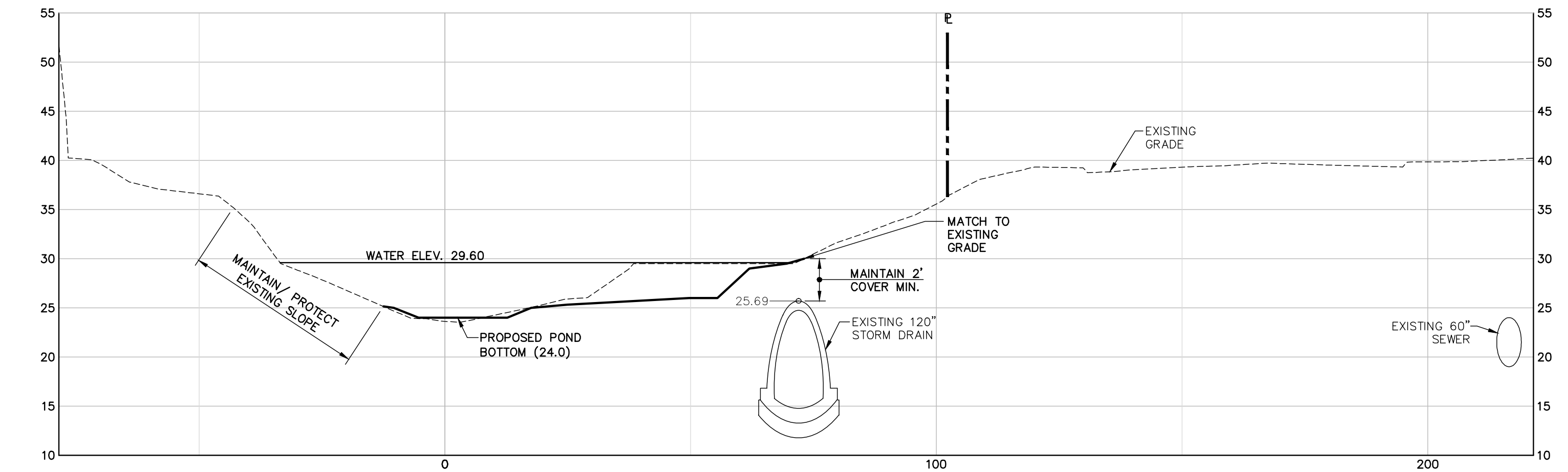


1 2 3 4 5 6 7

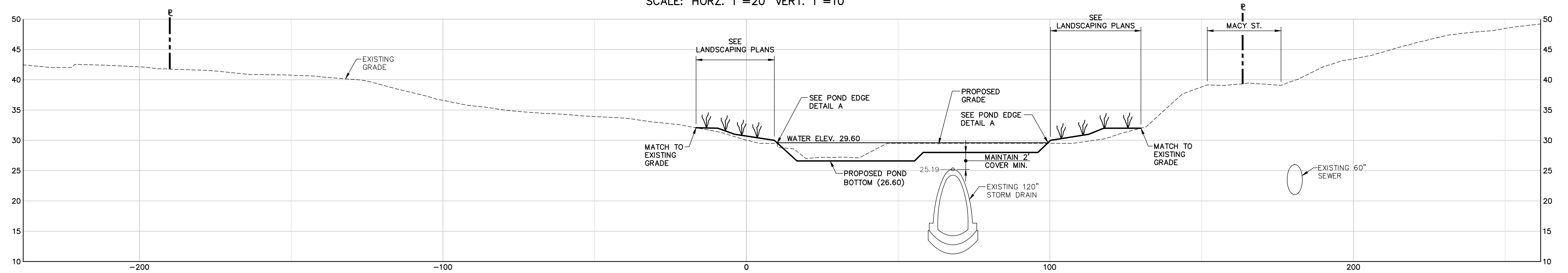
A  
B  
C  
D  
E  
F  
G



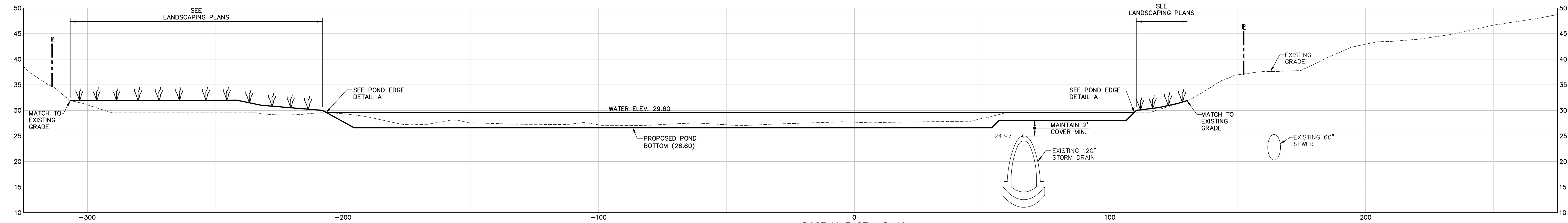
BASE LINE STA. 0+50  
SCALE: HORZ. 1"=20' VERT. 1"=10'



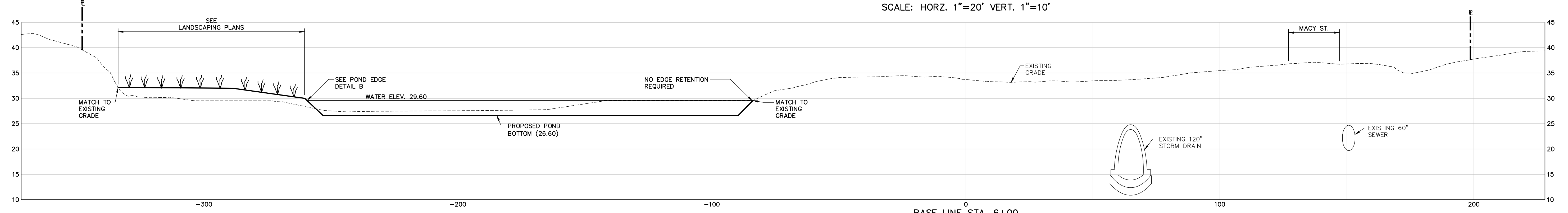
BASE LINE STA. 1+50  
SCALE: HORZ. 1"=20' VERT. 1"=10'



BASE LINE STA. 4+00  
SCALE: HORZ. 1"=20' VERT. 1"=10'



BASE LINE STA. 5+10  
SCALE: HORZ. 1"=20' VERT. 1"=10'

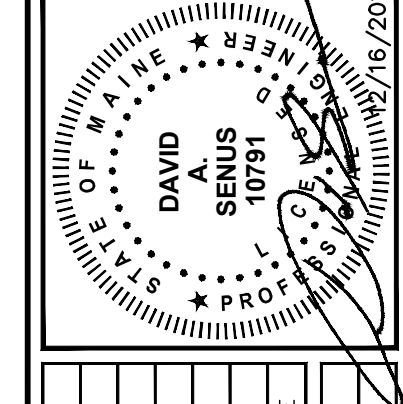


BASE LINE STA. 6+00  
SCALE: HORZ. 1"=20' VERT. 1"=10'

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**POND CROSS SECTIONS - 1**

CITY OF PORTLAND, MAINE  
CAPSIC POND ENHANCEMENTS

JOB NO: 225672.15  
DATE: DECEMBER, 2013  
SCALE: AS NOTED  
SHEET: 4 OF 9

**C-102**

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