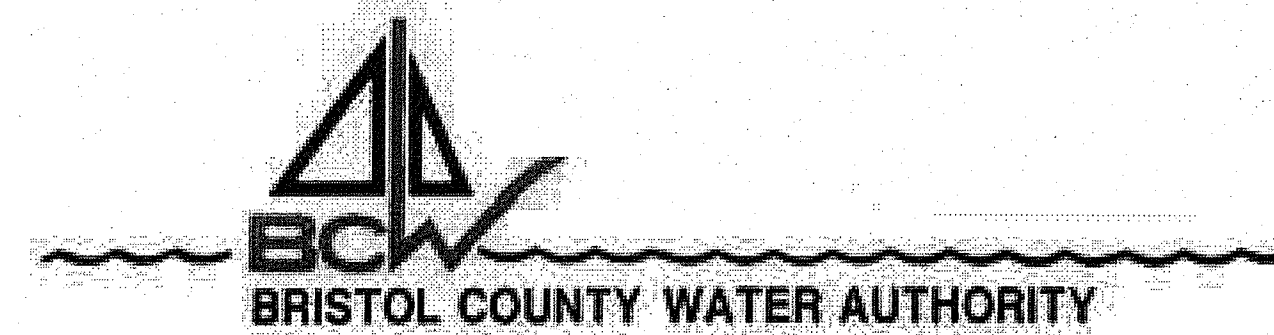


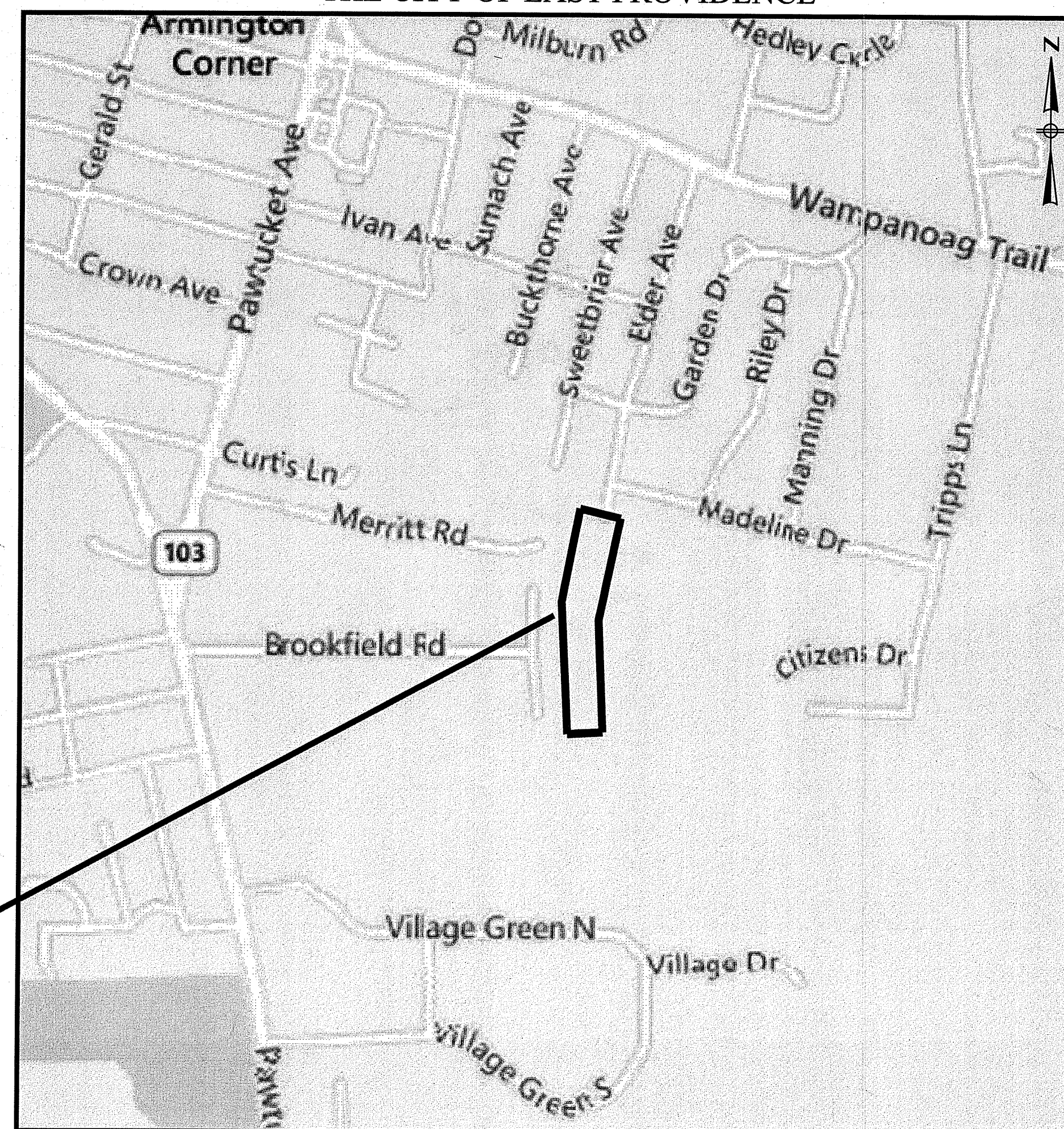
BRISTOL COUNTY WATER AUTHORITY (BCWA) TRANSMISSION SYSTEM IMPROVEMENTS FOR EMERGENCY SUPPLY

DEM WETLANDS APPLICATION # 19-0285



FEBRUARY 2020

THE CITY OF EAST PROVIDENCE



Easement
Location

LOCATION MAP
NOT TO SCALE

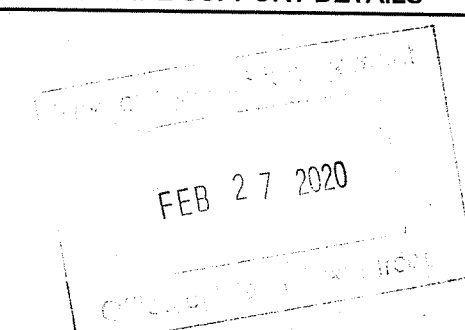
PREPARED BY:



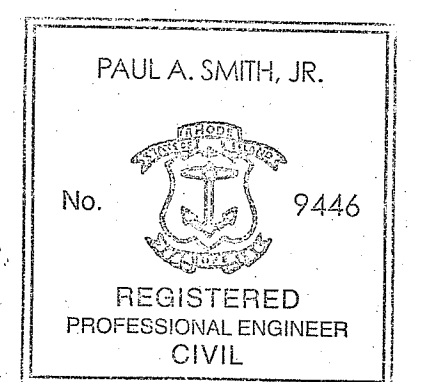
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ISSUE DATE: February 27, 2020

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 2 0 2020 FILE # 19-0285
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



REGISTERED PROFESSIONAL DATE

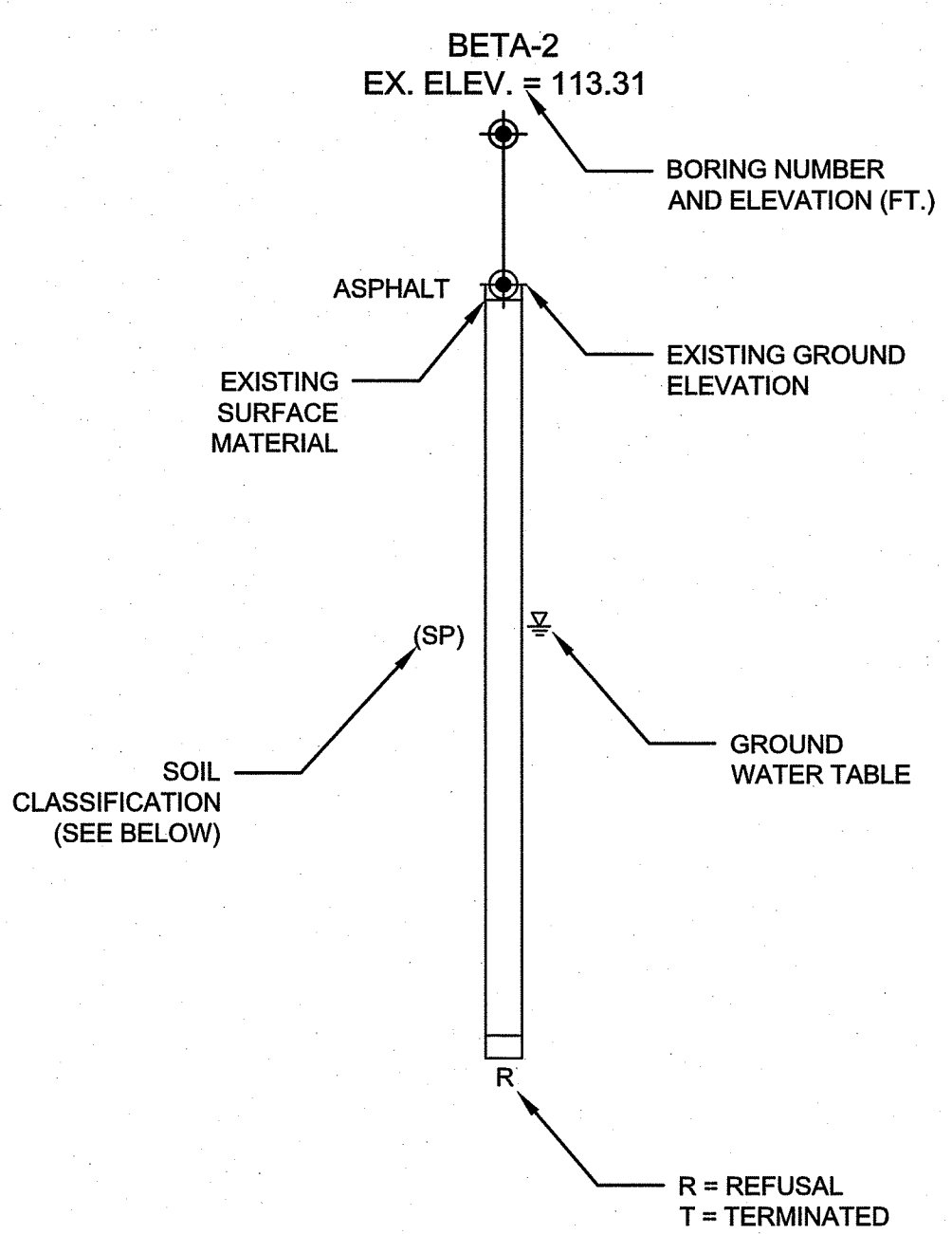
LEGEND

EXISTING	PROPOSED

ABBREVIATIONS

C.I.C.L. - CAST IRON CEMENT LINED
D.I.C.L. - DUCTILE IRON CEMENT LINED
D.I. - DUCTILE IRON
PVC - POLYVINYL CHLORIDE
MH - MANHOLE
GV - GATE VALVE
BV - BUTTERFLY VALVE
WG - WATER GATE
HYD. - HYDRANT
BIT. PAVT - BITUMINOUS PAVEMENT
DMH - DRAIN MANHOLE
SMH - SEWER MANHOLE
CB - CATCH BASIN
UG - UNDER GROUND
STL. - STEEL
S. STL. - STAINLESS STEEL
HORZ. - HORIZONTAL
EX. - EXISTING
PR. - PROPOSED
HDD - HORIZONTAL DIRECTIONAL DRILL
ABD. - ABANDONED
BCWA - BRISTOL COUNTY WATER AUTHORITY
E.P. - EAST PROVIDENCE
INV. EL. - INVERT ELEVATION

BORING LOG



UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		LABORATORY CLASSIFICATION CRITERIA	
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
Clean Gravels (Less than 5% fines)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW
Gravels with fines (More than 12% fines)			
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	GM	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4
	GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above "A" line with P.I. greater than 7
Clean Sands (Less than 5% fines)			
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
	SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for GW
Sands with fines (More than 12% fines)			
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	SM	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4
	SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line with P.I. greater than 7
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP More than 12 percent GM, GC, SM, SC 5 to 12 percent Borderline cases requiring dual symbols
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
	OL	Organic silts and organic silty clays of low plasticity	
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	PLASTICITY CHART A LINE: $P_I = 0.73(LL-20)$
	CH	Inorganic clays of high plasticity, fat clays	
	OH	Organic clays of medium to high plasticity, organic silts	
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils	

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2/27/2020 11:25 AM J:\5861-BCWA DESIGN SERVICES PHASE 1\F-DRAWING FILES\PLANS\SET\681-GENERAL_AND_LEGEND_DEM_SUBMITTAL_2-27-20.DWG (BETA STB BW.STB)

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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS												

FEB 27 2020

GENERAL NOTES

- CONTRACTOR SHALL REFER TO AND COORDINATE THE PROJECT REQUIREMENTS AS INDICATED ON THE GENERAL, CIVIL, AND STANDARD DETAIL DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES AND PIPING AGAINST FLOODING, FLOTATION AND OTHER DAMAGE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO ADJACENT AND NEARBY STRUCTURES DURING CONSTRUCTION. ALL DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL CALL "DIG SAFE" AT 1(888)-DIG-SAFE, AT LEAST 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
- ALL AREAS AND UTILITIES DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHOWN SHALL REQUIRE PRIOR AUTHORIZATION FROM THE ENGINEER AND SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- SEWER, WATER AND OTHER UTILITIES HAVE BEEN SHOWN ON THE SITE PLANS WHERE INFORMATION IS AVAILABLE.
- PIPING WHICH IS EXPOSED DURING EXCAVATION AND THAT IS NOT TO BE RELOCATED, ABANDONED, OR DEMOLISHED SHALL BE SUPPORTED IN-PLACE, BRACED, OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL FIELD VERIFY EXISTING STRUCTURE ELEVATIONS AND LOCATIONS.
- CONTRACTOR SHALL VERIFY EXISTING GRADE ELEVATIONS. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
- EXCEPT WHERE NOTED BY PROPOSED CONTOUR LINES, ALL FINAL CONTOUR LINE ELEVATIONS SHALL BE THE SAME AS EXISTING CONTOUR LINE ELEVATIONS.
- THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE THE SPECIFICATIONS FOR THIS CONTRACT. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS IN ADDITION TO THE GENERAL NOTES.
- THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES FOR CONSTRUCTION PURPOSES WITHIN THE INDICATED LIMITS OF WORK AS SHOWN IN THE CONTRACT DRAWINGS. ALL SURFACES DAMAGED OUTSIDE THE INDICATED LIMITS SHALL BE REPLACED IN KIND AT CONTRACTOR'S EXPENSE.
- DUST CONTROL, USING CALCIUM CHLORIDE, SHALL BE PROVIDED FOR ALL SURFACES OF BACK FILLED AREAS, ALL EQUIPMENT ACCESS ROADWAYS AND/OR AS OTHERWISE DIRECTED BY THE OWNER/ENGINEER.

PAVEMENT RESTORATION

- ALL EXISTING PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED WITH TEMPORARY PAVEMENT AS DETAILED.

MAPPING

- COORDINATE VALUES REFER TO NORTH AMERICAN DATUM OF 1983 (NAD 83), RHODE ISLAND STATE PLANE COORDINATE SYSTEM.
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.
- THE LOCATION, SIZE, AND MATERIAL OF EXISTING PIPES, DUCTS, CONDUITS AND OTHER UNDERGROUND STRUCTURES AND/OR UTILITIES SHOWN ON THESE PLANS ARE FROM THE BEST SOURCES AVAILABLE AT PRESENT AND ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES, UTILITIES OR STRUCTURES ARE SHOWN. EXACT LOCATION TO BE DETERMINED BY CONTRACTOR IN FIELD.
- EXISTING UTILITIES HAVE BEEN PLOTTED FROM THE BEST AVAILABLE DATA AND ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY ALL UTILITY COMPANIES (PUBLIC AND PRIVATE).
- THE LOCATIONS OF DEPICTED PROPERTY LINES ARE APPROXIMATE, AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. WHERE PROPOSED WORK MAY ENCR OACH ONTO PRIVATE PROPERTY, REFER TO REQUIREMENTS UNDER "WORK ON OR NEAR PRIVATE PROPERTY" NOTE SECTION (THIS SHEET).

TEST PITS

- THE CONTRACTOR MUST NOTIFY DIG-SAFE PRIOR TO ANY EXCAVATION OR DEMOLITION WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
- PRIOR TO THE START OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONDUCT TEST PITS AS SHOWN, AT LOCATIONS WHERE CONFLICTS BETWEEN EXISTING PIPING OR STRUCTURES AND PROPOSED PIPING MAY OCCUR, AND WHERE DIRECTED BY THE ENGINEER. CONDUCT TEST PITS TO FIELD VERIFY THE EXACT SIZE, MATERIAL, LOCATION, UTILITY ELEVATION AND ALIGNMENT (VERTICAL AND HORIZONTAL) OF EXISTING UNDERGROUND PIPES AND STRUCTURES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN PROPOSED PIPING AND EXISTING PIPING PRIOR TO STARTING INSTALLATION OF THE PROPOSED PIPING. OTHER TEST PITS MAY BE REQUIRED DURING THE COURSE OF WORK.
- ALL DIMENSIONS AND JOB RELATED CONDITIONS ARE TO BE VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES FOUND ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER/ENGINEER AND PROPERLY RESOLVED BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. CONTINUATION WITH OTHER ASPECTS OF THE WORK SHALL PROCEED WITHOUT DELAY OR CAUSE FOR CLAIM.

TREE PRESERVATION

- PRIOR TO CONSTRUCTION DETERMINE REQUIRED CLEARANCES AND CONTRACT LICENSED ARBORIST TO PRUNE TREES ACCORDINGLY.
- BRANCHES OR LIMBS DAMAGED DURING CONSTRUCTION SHALL BE CUT BACK TO THE TRUNK OR A LATERAL BRANCH.
- MAKE EVERY EFFORT TO MAINTAIN EXCAVATION ACTIVITIES OUTSIDE LIMITS OF THE TREE CANOPY.
- ROOTS LARGER THAN 1.5" IN DIAMETER ENCOUNTERED IN EXCAVATIONS SHALL BE CUT OFF SQUARELY USING A SHARP ARBORIST SAW.
- MAINTAIN STORAGE OF EQUIPMENT AND MATERIALS OUTSIDE THE DISTANCE OF THE RADIUS OF THE TREE CANOPY.
- STRIP, SCREEN AND SEPARATELY STOCKPILE TOPSOIL PRIOR TO EXCAVATING IN UNPAVED AREAS. FOLLOWING CONSTRUCTION AND BACKFILL OPERATIONS IN UNPAVED AREAS, PLACE TOPSOIL BACK IN THE APPROPRIATE LOCATIONS WITHOUT COMPACTION AND VERTICALLY MULCH ROOT SYSTEM. NO AMENDMENTS SHALL BE ADDED.
- IMMEDIATELY FOLLOWING BACKFILL OPERATIONS, PROVIDE DEEP WATERING OF THE ROOT SYSTEM, APPLICATION OF FERTILIZER, AND VERTICAL MULCHING.

EXISTING UTILITIES

- EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE PROTECTED AND SUPPORTED AT ALL TIMES BY THE CONTRACTOR. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO INTERFERE AS LITTLE AS POSSIBLE WITH EXISTING UTILITIES. PAYMENT FOR PROVIDING SAID PROTECTION AND SUPPORTS SHALL BE CONSIDERED A PART OF AND PAID FOR UNDER THE APPROPRIATE PIPE OR STRUCTURE ITEMS UNLESS OTHERWISE INDICATED AND/OR DIRECTED BY THE OWNER. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION BY REASON OF DELAY AND/OR INCONVENIENCE IN ADAPTING HIS OPERATIONS ACCORDINGLY.
- WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION, RELOCATION AND ADJUSTMENT OF WATER, GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES AS REQUIRED.

UTILITY EXCAVATION AND BACKFILL

- EXCAVATE TRENCHES TO DEPTHS PERMITTING THE PIPE TO BE LAID AT THE ELEVATIONS, SLOPES, OR DEPTHS OF COVER INDICATED ON THE DRAWINGS, AND AT UNIFORM SLOPES BETWEEN INDICATED ELEVATIONS.
- IF ANY EXCAVATION IS EXPANDED BEYOND THE HORIZONTAL LIMITS INDICATED OR PRESCRIBED, THE RESULTING VOID SHALL BE BACKFILLED AT THE CONTRACTOR'S SOLE EXPENSE WITH THOROUGHLY COMPACTED APPROVED GRAVEL BORROW.
- AS THE EXCAVATION APPROACHES EXISTING UTILITIES, PIPES, CONDUITS, OR OTHER UNDERGROUND STRUCTURES, DIGGING BY MACHINERY SHALL BE DISCONTINUED AND THE EXCAVATION SHALL BE DONE BY MEANS OF HAND TOOLS. SUCH MANUAL EXCAVATION WHEN INCIDENTAL TO NORMAL EXCAVATION SHALL BE INCLUDED IN THE WORK TO BE DONE UNDER ITEMS INVOLVING NORMAL EXCAVATION. DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.
- IF THE IN-SITU MATERIAL AT OR BELOW THE GRADE TO WHICH EXCAVATION WOULD NORMALLY BE CARRIED IN ACCORDANCE WITH THE DRAWINGS IS UNSUITABLE FOR FOUNDATION OF THE UTILITY (I.E. NOT MEETING THE MINIMUM RIDOT STANDARDS FOR GRAVEL BORROW BACKFILL), THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SUCH MATERIAL TO THE REQUIRED WIDTH AND DEPTH AND REPLACE IT WITH THOROUGHLY COMPACTED GRAVEL BORROW UNDER THE CONTRACT ITEM PROVIDED FOR SAME.
- THE FILL AND BACKFILL MATERIALS SHALL BE PLACED IN LAYERS NOT EXCEEDING SIX (6) INCHES THICKNESS MEASURED PRIOR TO COMPACTION. UNLESS OTHERWISE INDICATED OR SPECIFIED, EACH LAYER SHALL BE COMPACTED TO 95% MAXIMUM RELATIVE DENSITY (MRD) IN ACCORDANCE WITH ASTM D1557.
- BACKFILL WITH THE MATERIALS AND TO THE LIMITS INDICATED ON THE DRAWINGS.
- BACKFILL MATERIALS AROUND THE PIPE SHALL BE COMPACTED TO A MINIMUM OF 95% MRD.
- LENGTH OF TRENCH TO BE OPEN AT ANY ONE TIME WILL BE CONTROLLED BY SITE CONDITIONS, SUBJECT TO ANY LIMITS THAT MAY BE PRESCRIBED BY THE ENGINEER.
- WHENEVER ANY TRENCH OBSTRUCTS PEDESTRIAN AND VEHICULAR TRAFFIC IN OR TO ANY PUBLIC STREET, PRIVATE DRIVEWAY OR PROPERTY ENTRANCE, OR ON PRIVATE PROPERTY, CONTRACTOR SHALL TAKE SUCH MEANS AS MAY BE NECESSARY TO MAINTAIN PEDESTRIAN AND VEHICULAR TRAFFIC AND ACCESS.
- STREETS AND PREMISES ARE TO BE KEPT FREE FROM UNNECESSARY OBSTRUCTIONS, DEBRIS AND ALL OTHER MATERIALS.
- ANY EXCAVATIONS (WHETHER ON OR OFF-ROAD) WHICH MUST REMAIN UN-BACKFILLED AT THE END OF A GIVEN DAY SHALL BE COMPLETELY COVERED AND PROTECTED AT THE END OF EACH DAY BY MEANS OF STEEL PLATES OR SOME OTHER SATISFACTORY COVER OF ADEQUATE SIZE AND STRENGTH SUITABLY HELD IN PLACE TO KEEP ALL PEDESTRIANS, ANIMALS AND TRAFFIC OUT OF EXCAVATIONS. PERIMETER BARRIERS (E.G. CAUTION TAPE, FENCES) MAY ALSO BE USED, BUT SHALL NOT ALONE BE ADEQUATE PROTECTION OF OPEN EXCAVATIONS.

REMOVAL AND DISPOSAL

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) ALL MATERIALS INDICATED ON THE PLANS TO BE DISPOSED, INCLUDING BUT NOT LIMITED TO, MANHOLES, CATCH BASINS, PIPING, CONCRETE AND BITUMINOUS PAVEMENT, COBBLES, ROCK, TREES AND STUMPS ETC. ALL GRIT AND DEBRIS FROM THE EXISTING STRUCTURES TO BE DEMOLISHED SHALL BE REMOVED AND DISPOSED OF AS INDICATED IN THE SPECIFICATIONS. ALL DEMOLITION MATERIAL INCLUDING CONCRETE, PIPE, AND BRICK SHALL BE DISPOSED OF IN ACCORDANCE WITH RI DEM REQUIREMENTS.
- NOTIFY APPROPRIATE UTILITY COMPANY TO TURN OFF AFFECTED SERVICES PRIOR TO REMOVAL AND DISPOSAL. SEAL WATER, SEWER, DRAINAGE AND GAS UTILITIES AND SERVICES AT EXCAVATION LIMITS OR AS REQUIRED, USING PLUGS, CAPS OR SEALS AS NEEDED.
- UNDERGROUND PIPING TO BE ABANDONED AND REMAIN SHALL BE PROPERLY CAPPED UNLESS IT INTERFERES WITH NEW STRUCTURES, PIPES OR AS INDICATED, SPECIFIED AND DIRECTED BY ENGINEER.
- REMOVE AND DISPOSE OF ALL EXISTING BITUMINOUS CONCRETE AND CEMENT CONCRETE, AS REQUIRED.

SOIL EROSION AND SEDIMENTATION CONTROL

- ALL EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES WILL BE INSTALLED AND INSPECTED PRIOR TO THE START OF CONSTRUCTION. THE E&S CONTROLS SHALL BE CLEANED AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION OPERATIONS AND UNTIL ALL DISTURBED AREAS ARE STABILIZED AFTER CONSTRUCTION IS COMPLETE. E&S CONTROLS SHALL BE INSPECTED AND CLEANED AFTER ALL STORM EVENTS AND UPON THE REQUEST OF THE OWNER OR ENGINEER. CONTRACTOR WILL MAINTAIN AN ADEQUATE SUPPLY OF SILT SOCKS AND SILT FENCE ON SITE TO BE INSTALLED IN AREAS WHERE EXISTING E&S CONTROLS HAVE FAILED OR AS DETERMINED NECESSARY BY THE ENGINEER. NO WORK OR STORAGE OF CONSTRUCTION EQUIPMENT WILL BE PERMITTED OUTSIDE THE LIMIT OF DISTURBANCE ADJACENT TO THE WETLAND. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS (HAYBALES, SILT SOCK, ETC.) SHALL BE MAINTAINED UNTIL ALL EXPOSED SOILS ARE SATISFACTORILY STABILIZED.
- ALL CATCH BASINS SHALL BE PROTECTED WITH STAKED HAYBALES IN UNPAVED LOCATIONS (R.I. STD. 9.8.0) OR FILTER FABRIC INSERTS IN PAVED OR OTHERWISE IMPERVIOUS AREAS (CATCH BASIN EROSION CONTROL PROTECTION) FOR THE DURATION OF THE PROJECT.
- CONSTRUCTION ENTRANCES CONSISTING OF STONE STABILIZED PAD SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR TO PREVENT TRACKING OF OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS.
- ALL REFERENCED SOIL EROSION AND SEDIMENTATION CONTROLS INCLUDING MATERIALS USED, APPLICATION RATES AND THE INSTALLATION PROCEDURES SHALL BE PERFORMED PER THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK", LATEST EDITION, WITH ALL SOIL CONSERVATION SERVICE, AND/OR THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN TWENTY FOUR HOURS AFTER AN EVENT WHICH GENERATES 0.25 INCHES OF RAIN IN A TWENTY FOUR HOUR PERIOD. CLEANOUT OF ACCUMULATED SEDIMENT BEHIND THE SILT SOCK SHALL BE PERFORMED WHEN 1/2 THE ORIGINAL HEIGHT OF THE SILT SOCK BARRIER BECOMES FILLED WITH SEDIMENT. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT SOCK HAS BEEN REMOVED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
- VEGETATIVE PRACTICES ON DISTURBED SOILS, INCLUDING STOCKPILES, SHALL BEGIN AS SOON AS POSSIBLE BUT NO LATER THAN 14 DAYS AFTER THE LAST ACTIVITY IN THAT AREA UNLESS ACTIVITY IS TO RESUME WITHIN 21 DAYS.
- AREAS HAVING SLOPES GREATER THAN OR EQUAL TO 3H:1V SHALL BE STABILIZED WITH EROSION CONTROL MATS OR BLANKETS IN COMBINATION WITH SEEDING, AS INDICATED ON THE DRAWINGS AND SPECIFIED.
- EXCESS SOIL, STUMPS, TREES, ROCKS, BOULDERS, AND OTHER REFUSE SHALL BE DISCARDED OFF-SITE IN AN APPROPRIATE UPLAND LOCATION, OUTSIDE OF ALL REGULATED WETLAND AREAS.

SITE RESTORATION

- THE CONTRACTOR SHALL REMOVE AND RESET ALL SIGNS DISTURBED DURING CONSTRUCTION, IN CONFORMANCE WITH THE RIDOT STANDARD SPECIFICATIONS AND CONSTRUCTION STANDARDS.
- ALL GRASSED AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE LOAMED AND SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS. FINAL RESTORATION SHALL BE EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION AS DETERMINED SOLELY BY THE OWNER/ENGINEER.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

WORK ON OR NEAR PRIVATE PROPERTY

- CONTRACTOR SHALL RESTORE ANY AND ALL DISTURBED AREAS ON PRIVATE PROPERTY TO AS GOOD OR BETTER CONDITION THAN ORIGINAL, TO THE SATISFACTION OF THE PROPERTY OWNER. FOR ROUTINE RESTORATION (I.E. LAWNS, DRIVEWAYS, ETC.), SAID WORK SHALL BE PAID FOR UNDER THE CONTRACT ITEMS FOR SAME.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO EXISTING ITEMS/ FEATURES ON PRIVATE PROPERTY, OR FOR REPLACING DAMAGED ITEMS IF SAID ITEMS CANNOT BE REPAIRED, AT NO ADDITIONAL EXPENSE TO THE OWNER.
- CONTRACTOR SHALL TAKE PRE AND POST-CONSTRUCTION VIDEO OF ALL PRIVATE PROPERTIES IMPACTED BY THE WORK (WHETHER PLANNED OR UNPLANNED) IN ACCORDANCE WITH SPECIFICATION SECTION 01381.

DEWATERING

- THE CONTRACTOR IS RESPONSIBLE FOR THE ADEQUATE DESIGN AND IMPLEMENTATION OF TRENCH DEWATERING SYSTEMS, AS REQUIRED TO PERFORM THE WORK PROPERLY AND IN ACCORDANCE WITH CONTRACT SPECIFICATION AND R.I. DEM REQUIREMENTS.
- OPERATE DEWATERING SYSTEMS TO LOWER THE GROUNDWATER LEVEL IN EXCAVATIONS AND MAINTAIN 2' BELOW SUBGRADE, ALLOWING ALL SUBSEQUENT WORK TO BE DONE ON A STABLE AND DRY SUBGRADE.
- MODIFY DEWATERING PROCEDURES WHICH CAUSE, OR THREATEN TO CAUSE, DAMAGE TO NEW OR EXISTING FACILITIES, TO PREVENT FURTHER DAMAGE. SUCH MODIFICATIONS SHALL BE MADE AT NO ADDITIONAL EXPENSE TO THE OWNER. REPAIR DAMAGED FACILITIES AT CONTRACTOR'S SOLE EXPENSE.
- DISCHARGE WATER IN A MANNER THAT WILL NOT CAUSE EROSION, FLOODING OR DAMAGE TO PUBLIC OR COMPLETED WORK AND/OR PRIVATE AREAS, IMPROVED OR OTHERWISE.
- REMOVE ALL DEWATERING MATERIALS AND EQUIPMENT FROM THE SITE UPON COMPLETION OF DEWATERING OPERATIONS.
- REMOVE ALL DEWATERING WELLS OR SUMPS UPON COMPLETION OF THE WORK.

2/27/2020 11:25 AM J:\5981 - ECWA DESIGN SERVICES PHASE 1F - DRAWING FILES\PLANS\SET\6681-GENERAL_AND_LEGEND_DEM_SUBMITTAL_2-27-20.DWG (BETA SITE BW SITE)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN

DESIGNED BY:
PAS

CHECKED BY:
RD

REGISTERED PROFESSIONAL

PREPARED BY



SUBCONSULTANT

SCALE

NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

BRISTOL COUNTY WATER AUTHORITY

TRANSMISSION SYSTEM IMPROVEMENTS

FOR EMERGENCY SUPPLY

PAWTUCKET PIPELINE PHASE 1

GENERAL NOTES

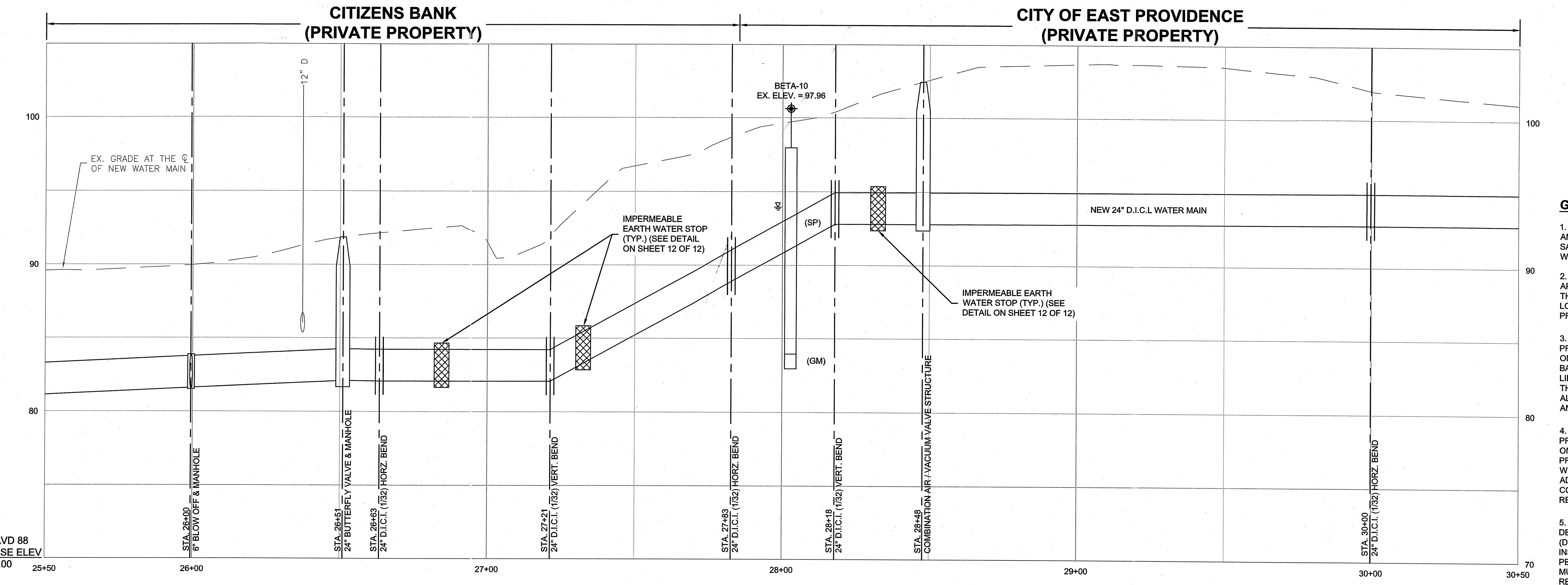
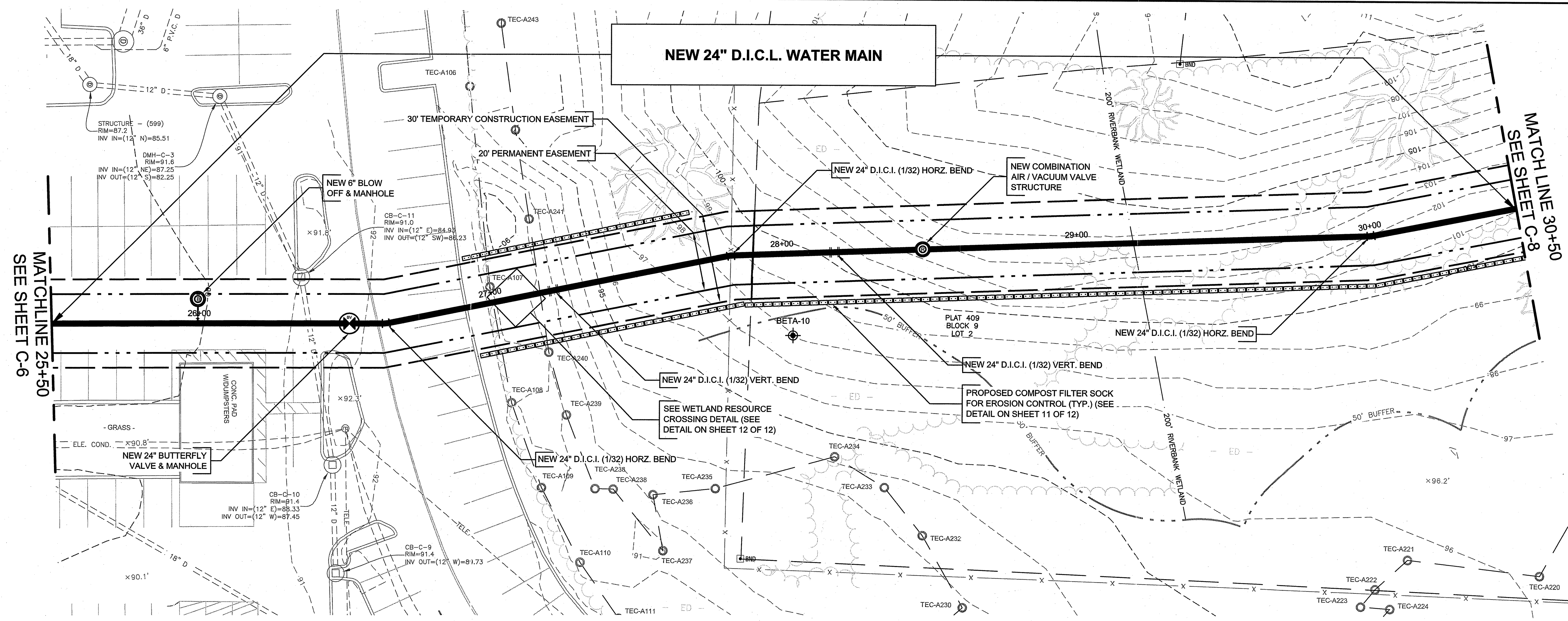
BETA JOB NO. 5861

ISSUE DATE 2/27/2020

SHEET NO. 3 OF 12

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 20 2020 FILE # 19-0285
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Christopher D. Wenzel



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
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GENERAL NOTES

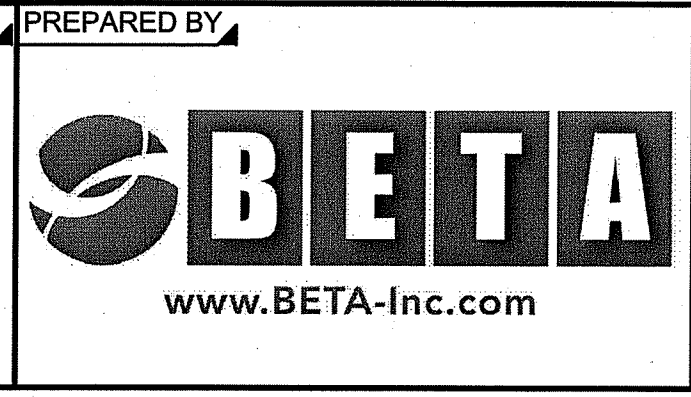
1. THE CONTRACTOR WILL BE REQUIRED TO INSTALL AND MAINTAIN EROSION CONTROL PROTECTION SILT SACKS IN ALL CATCH BASINS WITHIN THE LIMITS OF WORK DURING CONSTRUCTION.
2. THE LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE AND IS NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTE THAT THE PROPOSED WORK FROM STA. 20+85 TO 27+80 OCCURS ON PRIVATE PROPERTY OWNED BY THE CITIZENS BANK. ALL WORK SHALL BE COMPLETED WITHIN THE LIMITS OF THE EASEMENT AS SHOWN. IN ADDITION, THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND PROVISIONS OF THE EASEMENT.
4. THE CONTRACTOR SHALL NOTE THAT THE PROPOSED WORK FROM STA. 27+80 TO 36+90 OCCURS ON PRIVATE PROPERTY OWNED BY THE CITY OF EAST PROVIDENCE. ALL WORK SHALL BE COMPLETED WITHIN THE LIMITS OF THE EASEMENT AS SHOWN. IN ADDITION, THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND PROVISIONS OF THE EASEMENT.
5. THE OWNER HAS APPLIED TO THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (DEM) FOR COVERAGE TO COMPLETE THE WATER MAIN INSTALLATION UNDER A FRESHWATER WETLANDS PERMIT. ALL WORK FROM STA. 26+75 TO STA. 37+00 MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS DEFINED IN THE FRESHWATER WETLANDS PERMIT.

2/27/2020 11:26 AM J16951 - BOWA DESIGN SERVICES PHASE 1F - DRAWING FILES\PLANS\SET\5861\PLAN_PROFILE_IN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB BW.STB)

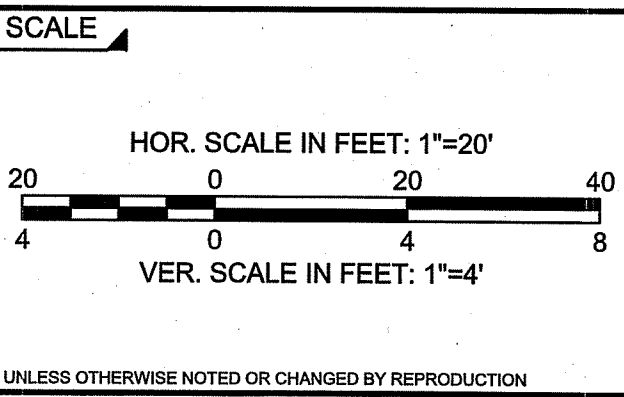
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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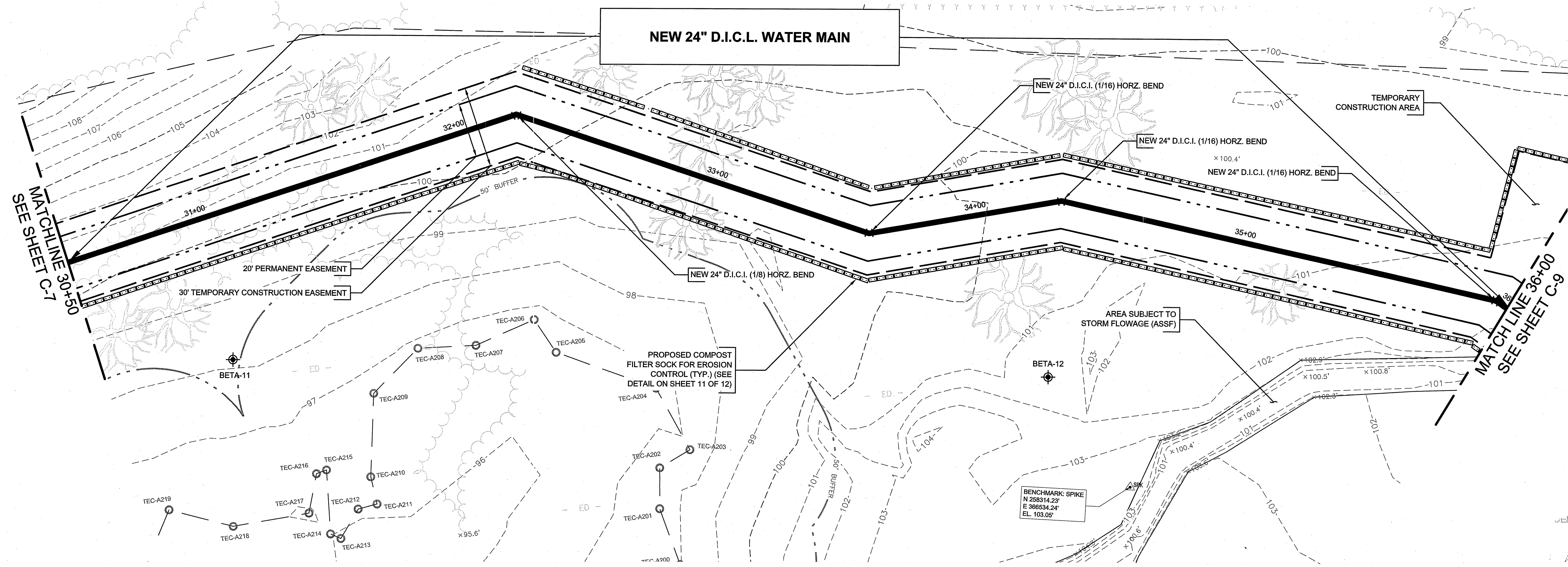


SUBCONSULTANT



TITLE
**BRISTOL COUNTY WATER AUTHORITY
 TRANSMISSION SYSTEM IMPROVEMENTS
 FOR EMERGENCY SUPPLY
 PAWTUCKET PIPELINE PHASE 1
 PLAN & PROFILE STA. 25+50 TO 30+50**

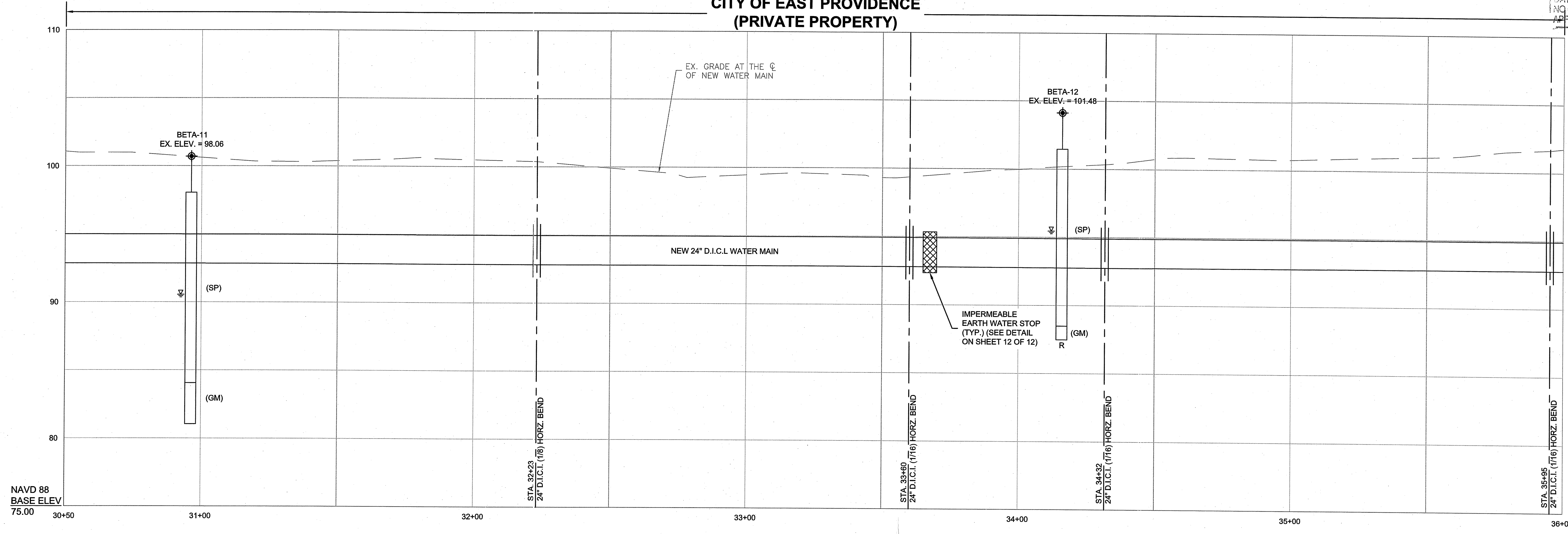
BETA JOB NO. 5861
 ISSUE DATE 2/27/2020
 SHEET NO. 4 OF 12



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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CITY OF EAST PROVIDENCE
 (PRIVATE PROPERTY)



- GENERAL NOTES**
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2/27/2020 11:25 AM J:\6661 - BOWA DESIGN SERVICES PHASE 1\F-DRAWING FILES\PLANS\SET1\5861-PLAN_PROFILE_IN_2020.DWG (BETA STB BIV.STB)

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DESIGNED BY:
PAS

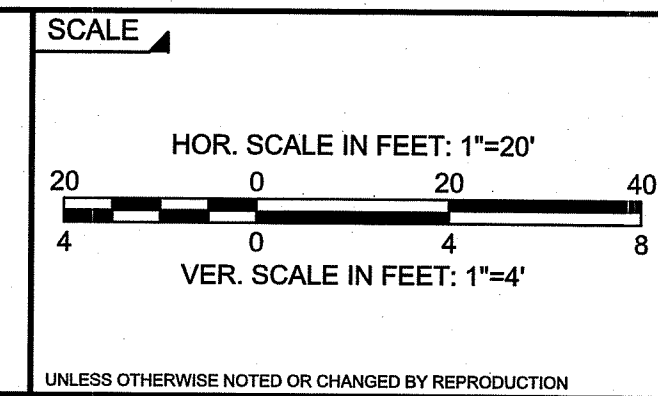
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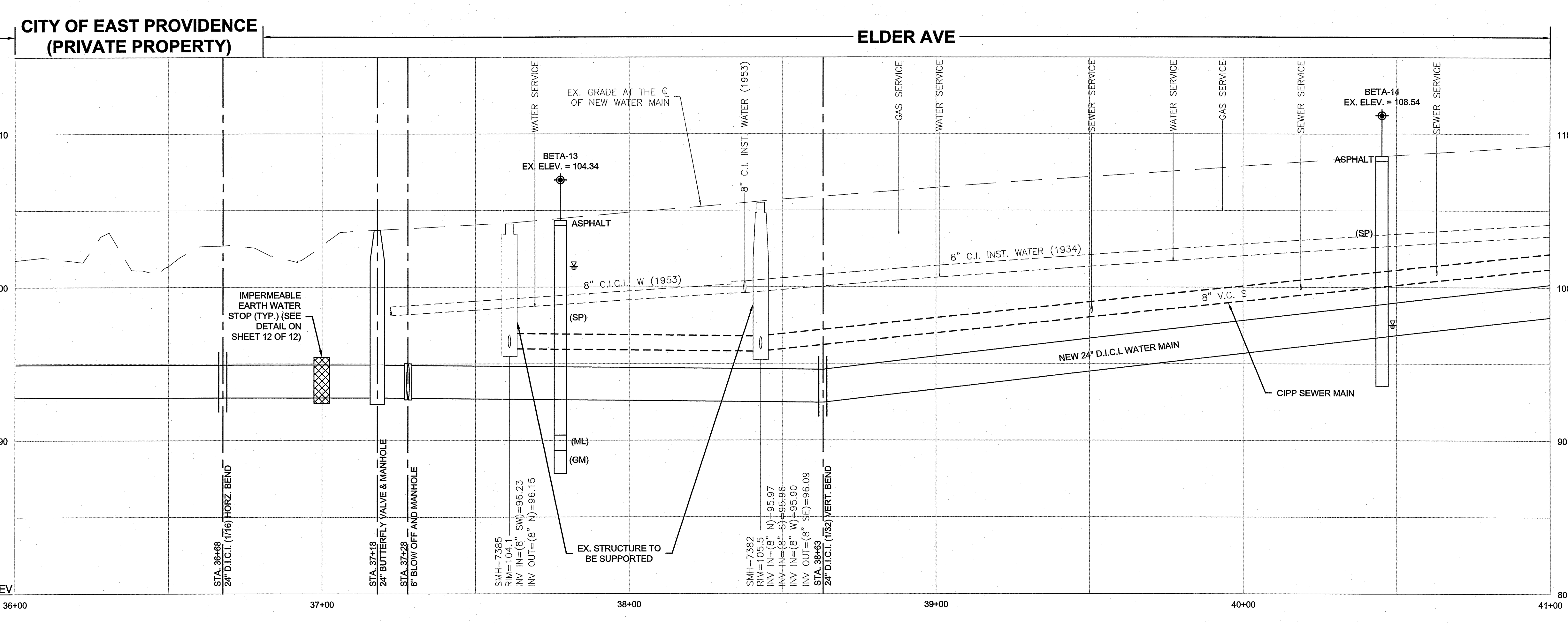
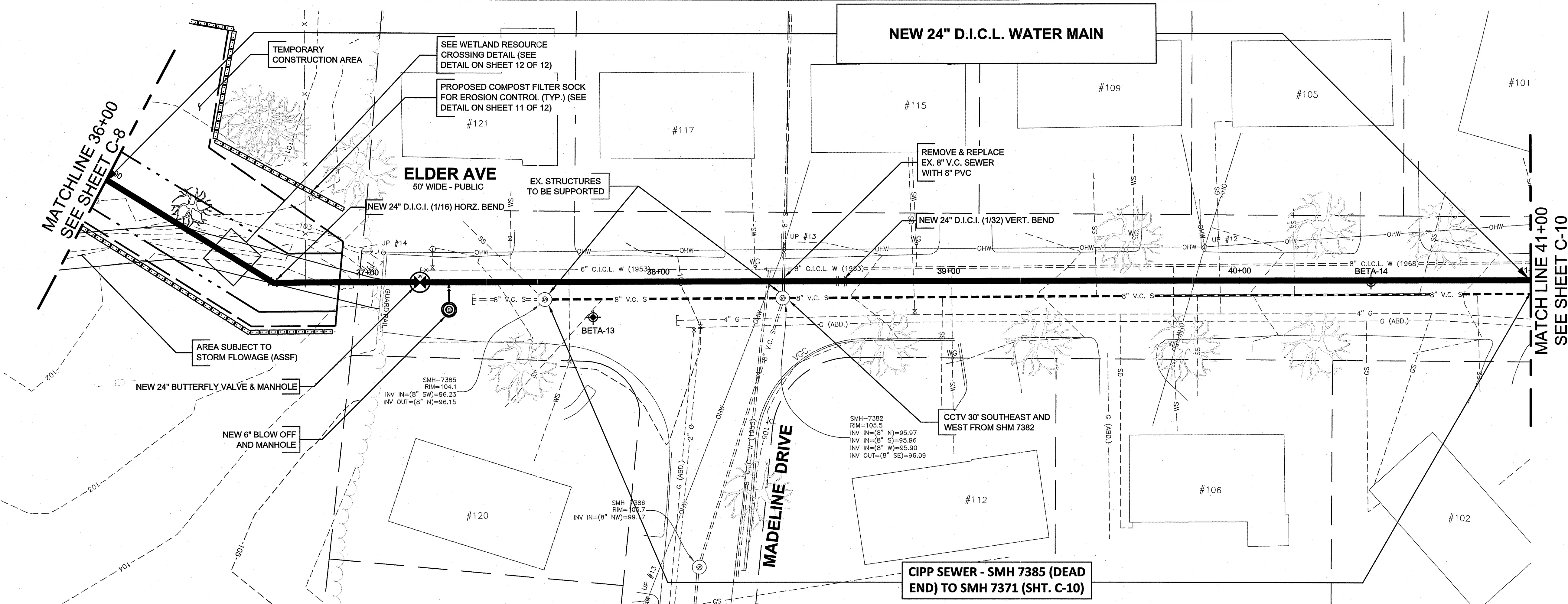
TITLE

**BRISTOL COUNTY WATER AUTHORITY
 TRANSMISSION SYSTEM IMPROVEMENTS
 FOR EMERGENCY SUPPLY
 PAWTUCKET PIPELINE PHASE 1
 PLAN & PROFILE STA. 30+50 TO 36+00**

BETA JOB NO. 5861

ISSUE DATE 2/27/2020

SHEET NO. 5 OF 12



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Christopher D. Smeck

GENERAL NOTES

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6. THE CONTRACTOR SHALL NOTE THAT PORTIONS OF ELDER AVENUE DRAIN TO THE ASSF. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE FUNCTIONALITY OF THE ASSF DURING CONSTRUCTION.

2/27/2020 11:45 AM - BCWA DESIGN SERVICES PHASE 1F - DRAWING FILES\PLANS\SET\6861-PLAN_PROFILE_2-27-20.DWG (BETA STB BW.STB)

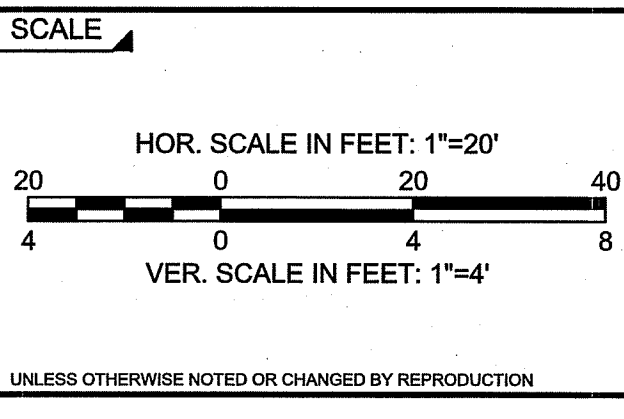
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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 DESIGNED BY:
PAS
 CHECKED BY:
RD

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BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS
FOR EMERGENCY SUPPLY
PAWTUCKET PIPELINE PHASE 1
 PLAN & PROFILE STA. 36+00 TO 41+00

BETA JOB NO. 5861
 ISSUE DATE 2/27/2020
 SHEET NO. 6 OF 12

2/27/2020 11:27 AM J:\5861 - BCWA DESIGN SERVICES PHASE 1\DRAWING FILES\PLANSET\6861-PAWTUCKET_PIPELINE_SITE_RESTORATION_PLAN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB.BW.STB)

APPROVED
FEB 27 2020
Office of Water Resources

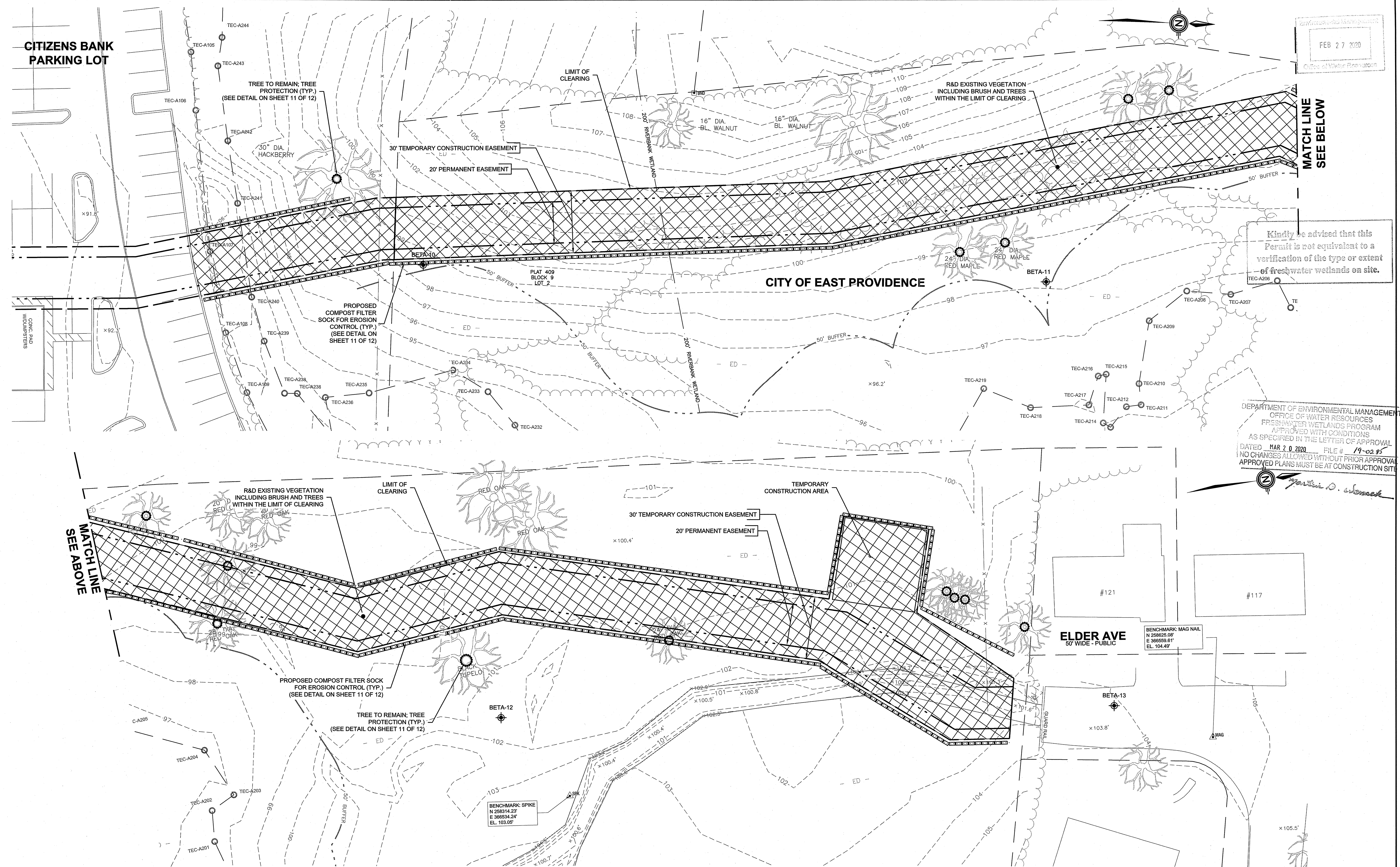
**CITIZENS BANK
PARKING LOT**

**MATCH LINE
SEE BELOW**

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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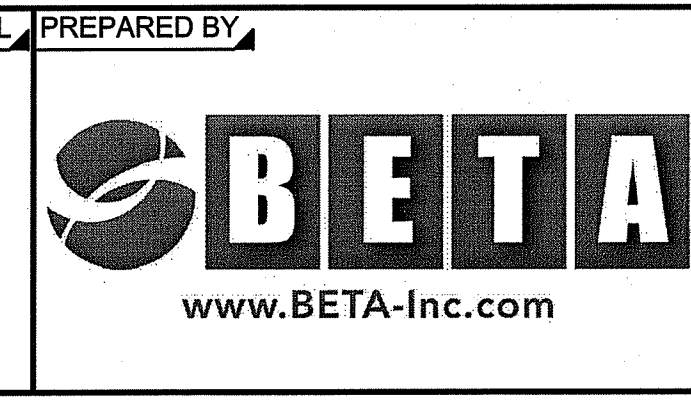
Mark D. Schenck



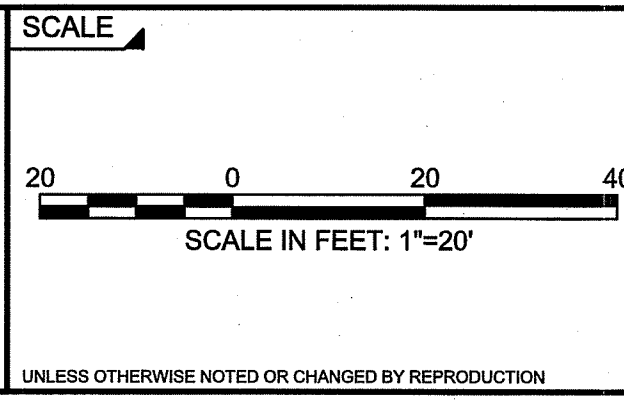
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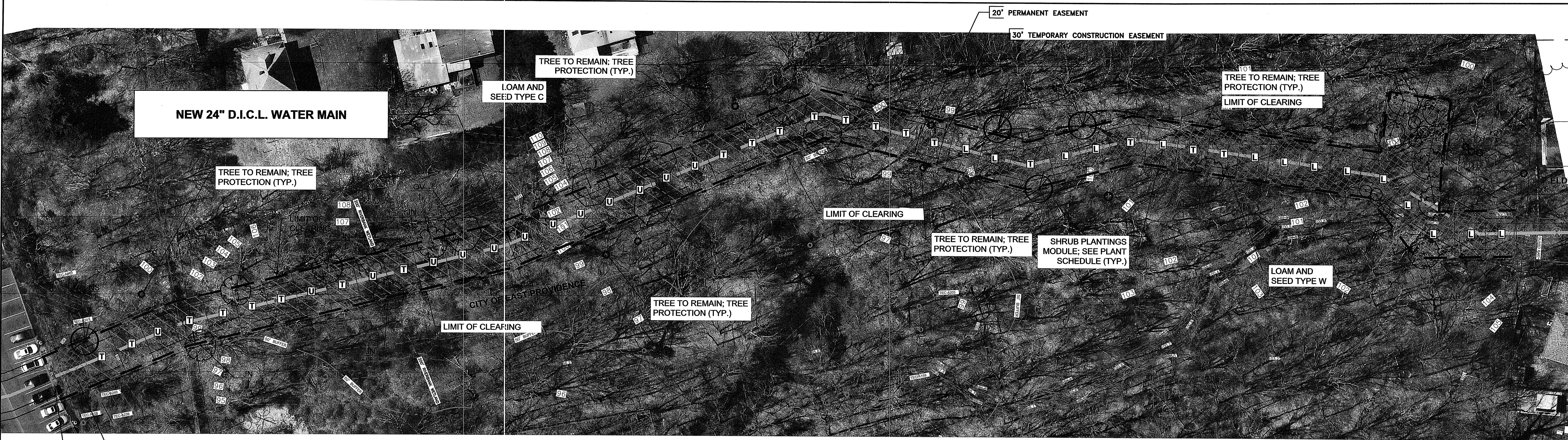
SUBCONSULTANT



BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS FOR EMERGENCY SUPPLY
PAWTUCKET PIPELINE PHASE 1
EAST PROVIDENCE EASEMENT - SITE PREPERATION PLAN

BETA JOB NO. 5861
ISSUE DATE 2/27/2020
SHEET NO. 7 Of 12

2/27/2020 11:28 AM J:\5861 - BCWA DESIGN SERVICES PHASE 1\F-DRAWING FILES\PLANS\16861-PAWTUCKET PIPELINE_LA_SITE_RESTORATION_PLAN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB BIV/STB)

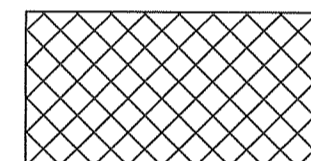


RESTORE PINE BARK MULCH TO MATCH EXIST.

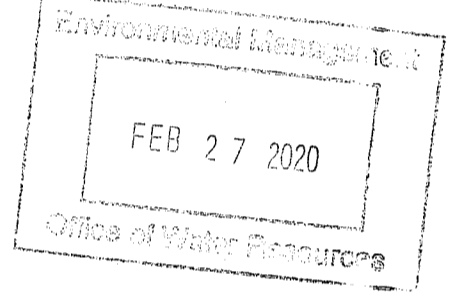


SEED TYPE C 15,914 SF

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SEED TYPE W 16,120 SF



NEW ENGLAND WETLAND PLANTS, INC
 820 WEST STREET, AMHERST, MA 01002
 PHONE: 413-548-8000 FAX 413-549-4000
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

NEW ENGLAND WETLAND PLANTS, INC
 820 WEST STREET, AMHERST, MA 01002
 PHONE: 413-548-8000 FAX: 413-549-4000
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Conservation/Wildlife Mix

New England Wetmix (Wetland Seed Mix)

Botanical Name	Common Name	Indicator
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Desmodium canadense</i>	Showy Tick Trefoil	FAC
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Eupatorium purpureum (Eutrochium maculatum)</i>	Purple Joe Pye Weed	FAC
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Aster pilosus (Symphyotrichum pilosum)</i>	Heath (or Hairy) Aster	UPL
<i>Solidago juncea</i> Early	Goldenrod	

Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Carex lurida</i>	Lurid Sedge	OBL
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Poa palustris</i>	Fowl Bluegrass	FACW
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW
<i>Iris versicolor</i>	Blue Flag	OBL
<i>Glyceria grandis</i>	American Mannagrass	OBL
<i>Mimulus ringens</i> Square	Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes. For both good erosion control and wildlife habitat value.
 SEED TYPE C SEED RATE 1 LB/1750 sq ft

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.
 SEED TYPE W SEED RATE 1 LB/2500 sq ft

- NOTES:
- TREE PLANTING LOCATIONS SHOWN IN PLAN ABOVE.
 - SHRUB PLANTINGS SHALL BE PER SHRUB PLANTING MODULE INDICATED.

SYMBOL DENOTES SHRUB PLANTING MODULE.
 U: UPLAND AREAS
 T: TRANSITIONAL AREAS
 L: LOW LAND AREAS

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PLANT LIST

TREES				
KEY	QTY	BOTANICAL	COMMON	SIZE/CONDITION
AC	6	Amelanchier Canadensis	Shadbush	#7
AR	7	Acer rubrum	Red Swamp Maple	# 15 Cont.
JN	5	Juglans nigra	Black Walnut	#7
QB	2	Quercus bicolor	Swamp White Oak	#10
QV	4	Quercus velutina	Black Oak	18"-24" BB
NS	4	Nyssa sylvatica	Tupelo/Sour Gum	#10

SHRUBS					
MODULE	KEY	QTY	BOTANICAL	COMMON	SIZE/CONDITION
T	CAM	48	Ceanothus americanus	New Jersey Tea	18"-24"
L	CAL	168	Clethra alnifolia	Sweet Pepper Bush	3'-4' ht
U	CAH	48	Corylus americana	American Hazelnut	18"-24"
U & T	CP	120	Comptonia peregrina	Sweet Fern	18"-24"
U	CR	60	Cornus racemosa	Gray Dogwood	2'-3'
L	DP	84	Dennstaedtia punctilobula	Hay Scented Fern	#1
L	IVF	14	Ilex verticillata	Winterberry F	# 7
L	IVM	14	Ilex verticillata	Winterberry M	# 3
U & T	LB	116	Lindera benzoin	Spice Bush	# 2
T	VC	32	Vaccinium corymbosum	Highbush Blueberry	# 3
T	VD	112	Viburnum dentatum	Arrowwood viburnum	# 3
U	VP	24	Viburnum prunifolium	Black Haw Viburnum	#2

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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CC

DESIGNED BY:
PAS

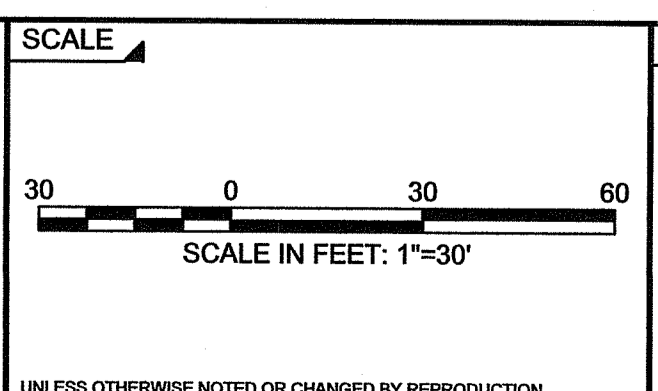
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SUBCONSULTANT



BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS FOR EMERGENCY SUPPLY
 PAWTUCKET PIPELINE PHASE 1
 EAST PROVIDENCE EASEMENT - RESTORATION PLAN

BETA JOB NO. 5861

ISSUE DATE 2/27/2020

SHEET NO. 8 OF 12



PHOTO 10



PHOTO 6



PHOTO 5



PHOTO 3



PHOTO 2

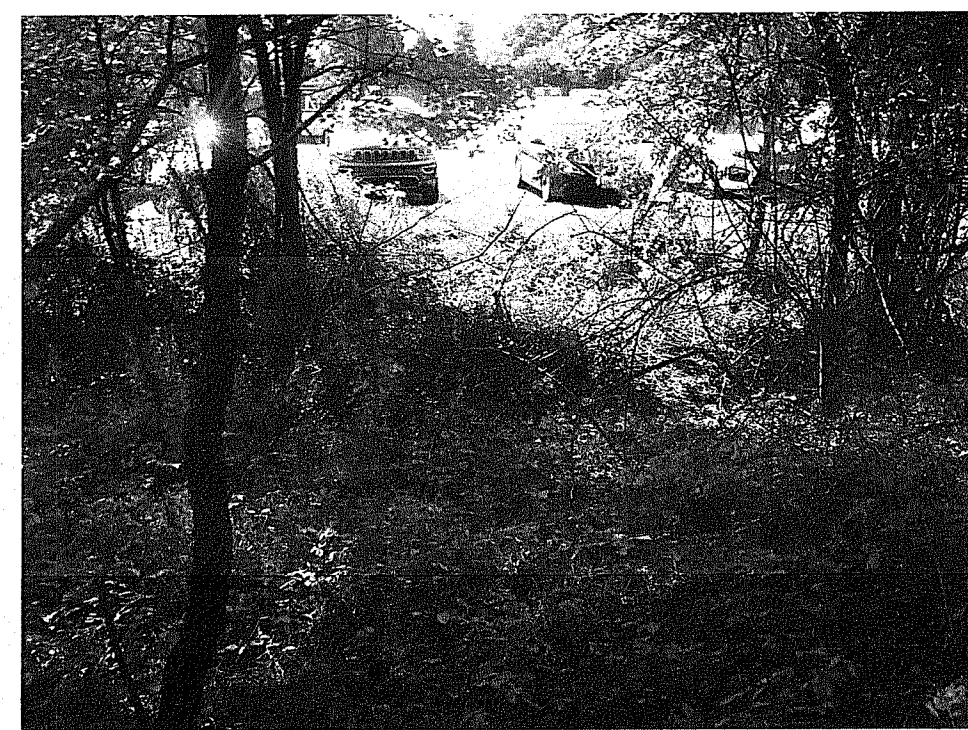
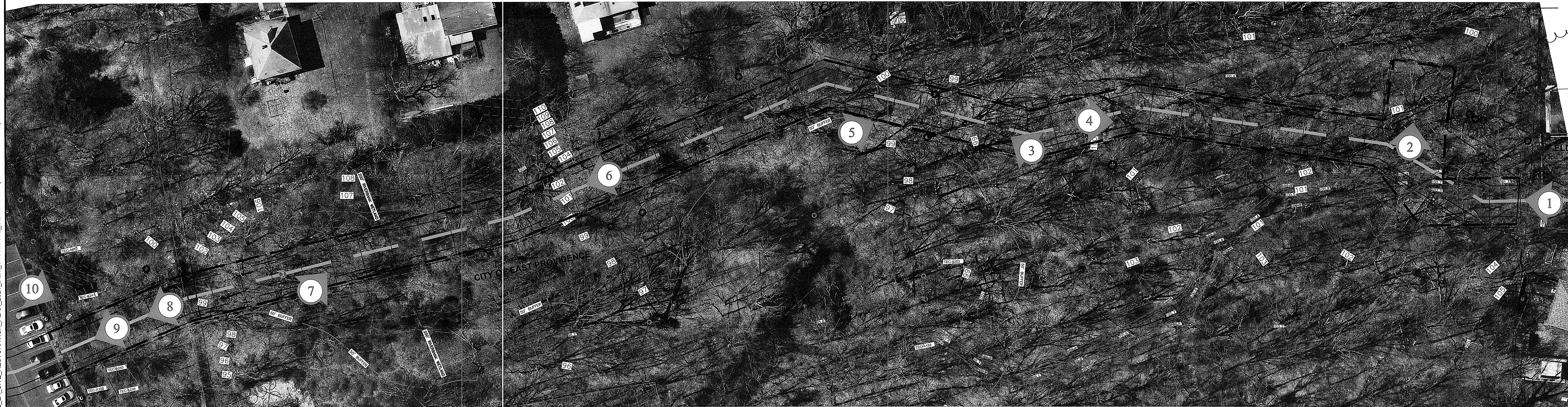


PHOTO 9



PHOTO 8



PHOTO 7



PHOTO 4



PHOTO 1

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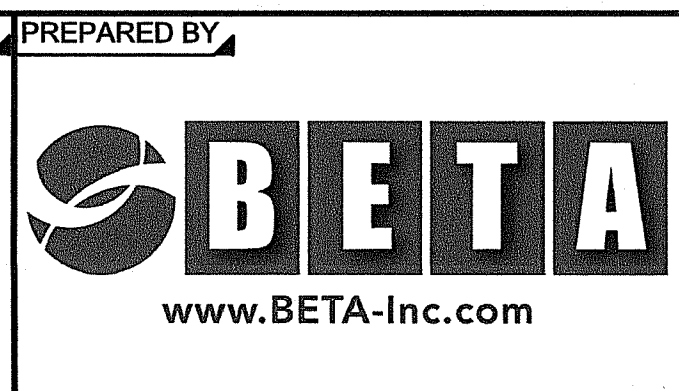
Environmental Agency
 FEB 27 2020
 Office of Water Resources
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2/27/2020 11:28 AM J:5861 - BOVA DESIGN SERVICES PHASE 1F - DRAWING FILES\PLANS\SET15861-PAWTUCKET_PIPELINE_LA_SITE_RESTORATION_PLAN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB BW.STB)

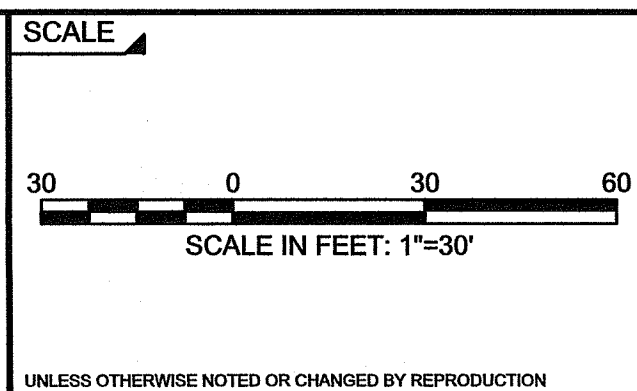
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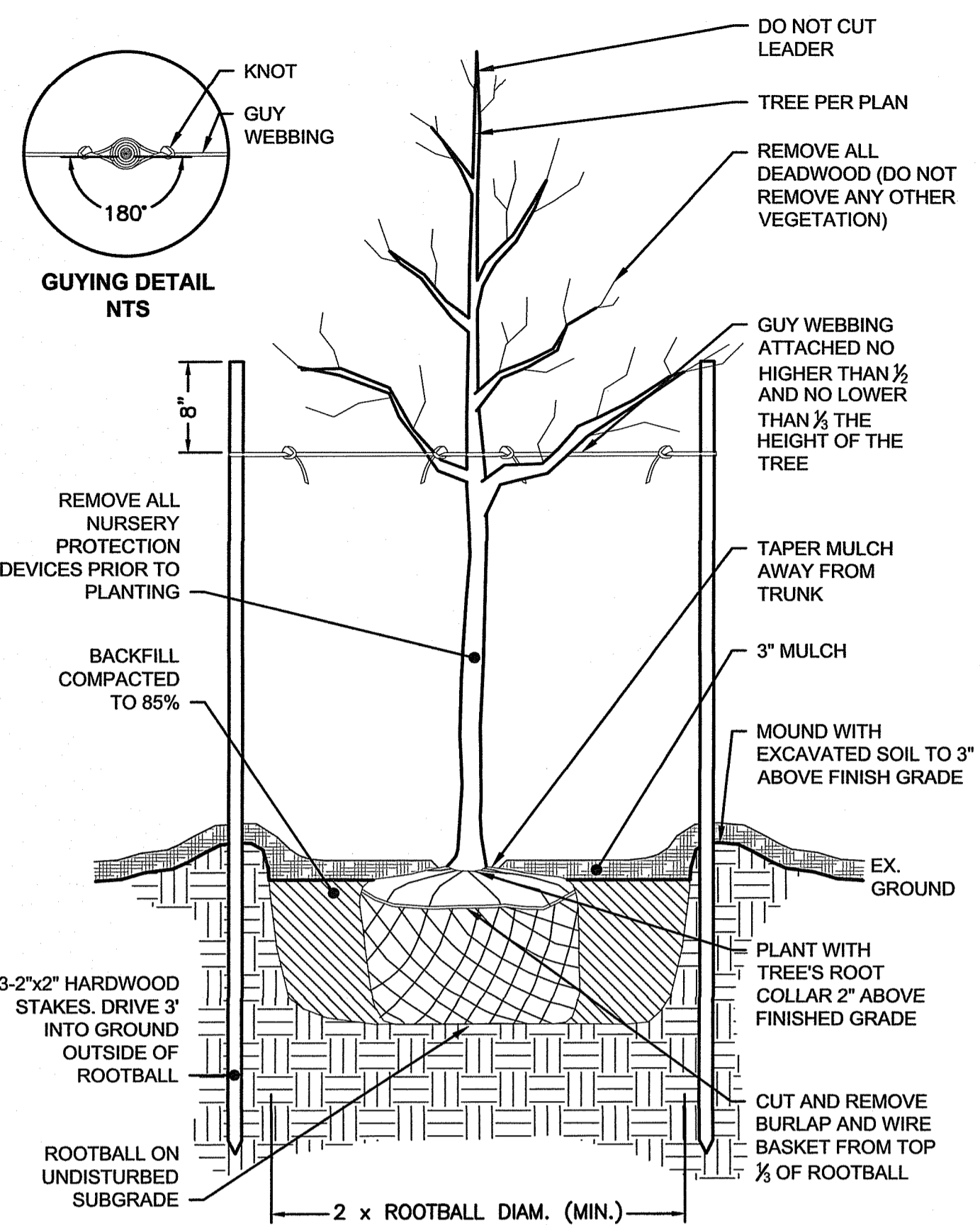
PREPARED BY
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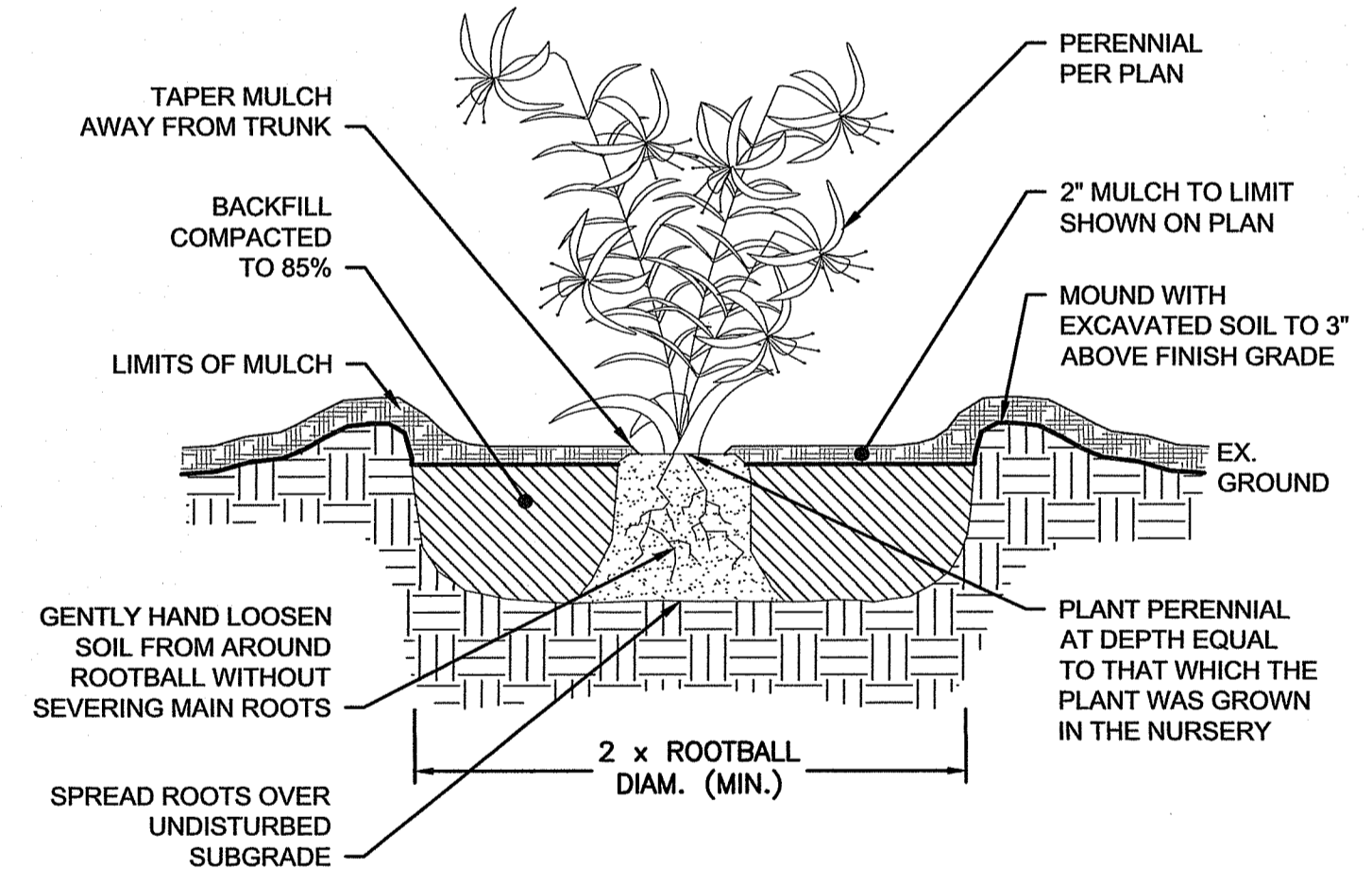
TITLE
**BRISTOL COUNTY WATER AUTHORITY
 TRANSMISSION SYSTEM IMPROVEMENTS FOR
 EMERGENCY SUPPLY
 PAWTUCKET PIPELINE PHASE 1
 EAST PROVIDENCE EASEMENT - PHOTO BOARD**

BETA JOB NO. 5861
 ISSUE DATE 2/27/2020
 SHEET NO. 9 OF 12

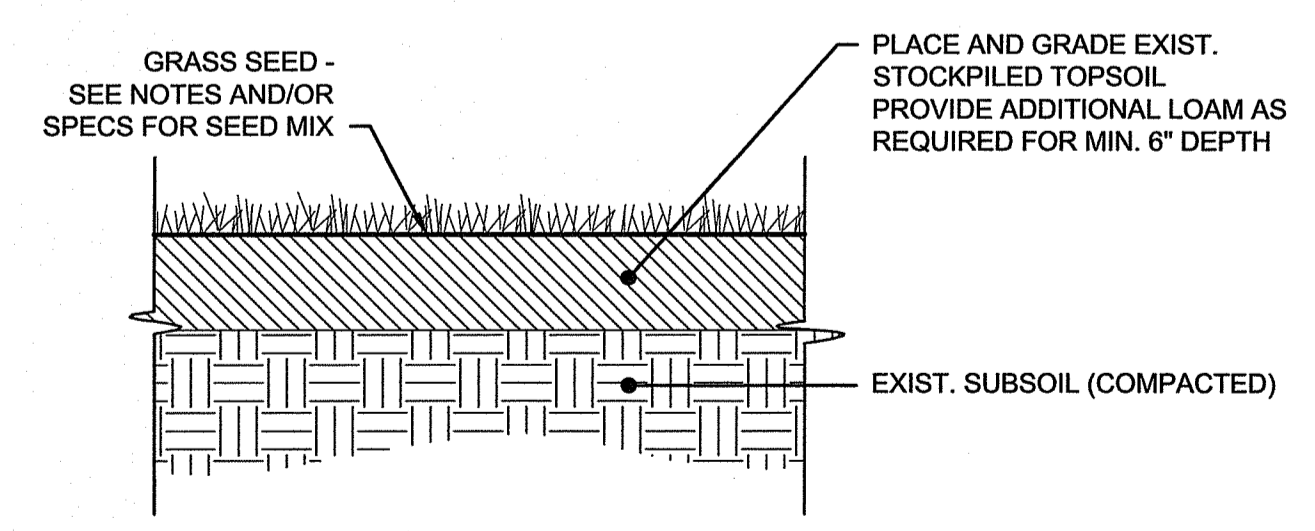
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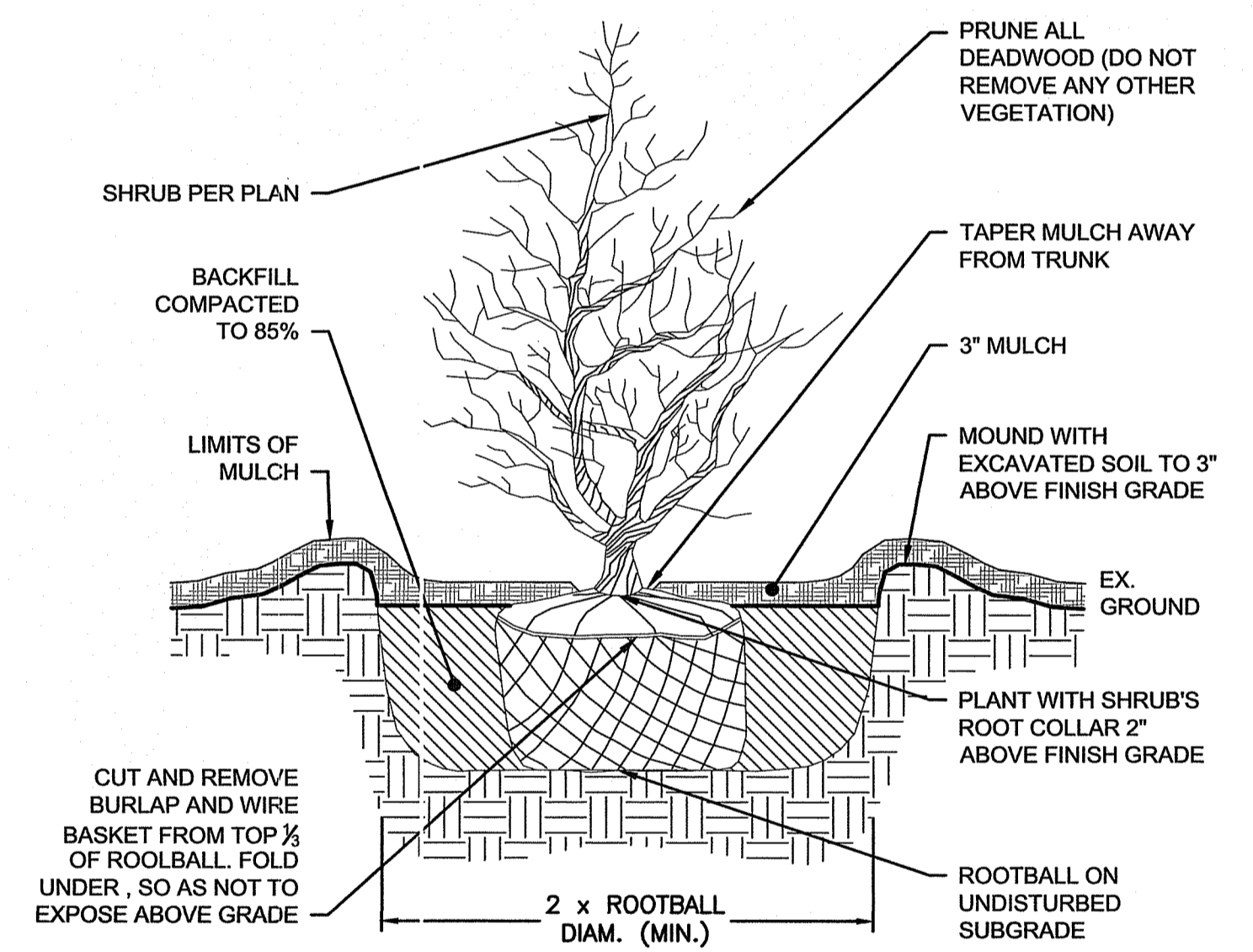
DECIDUOUS TREE STAKING & PLANTING
NOT TO SCALE



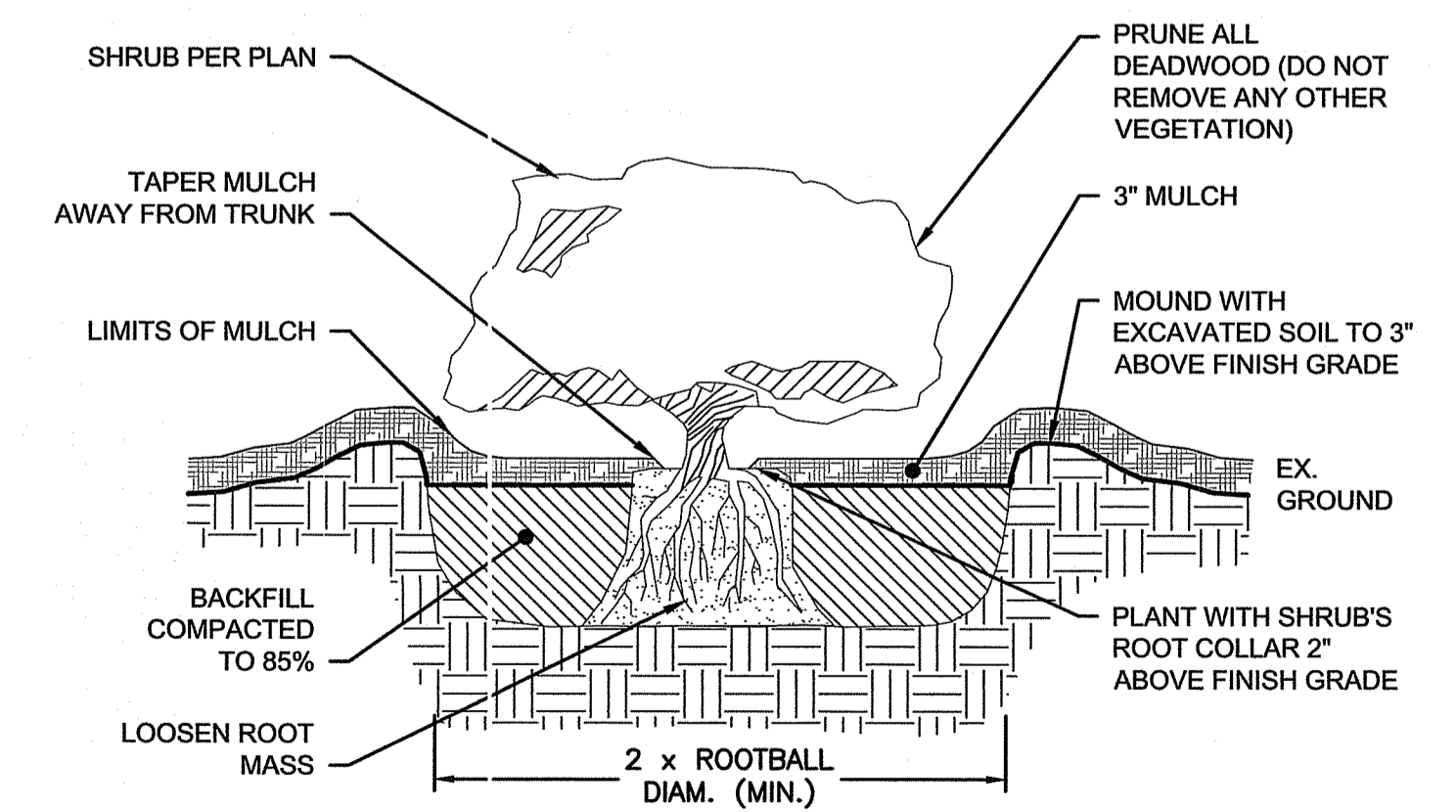
PERENNIALS & GRASSES PLANTING
NOT TO SCALE



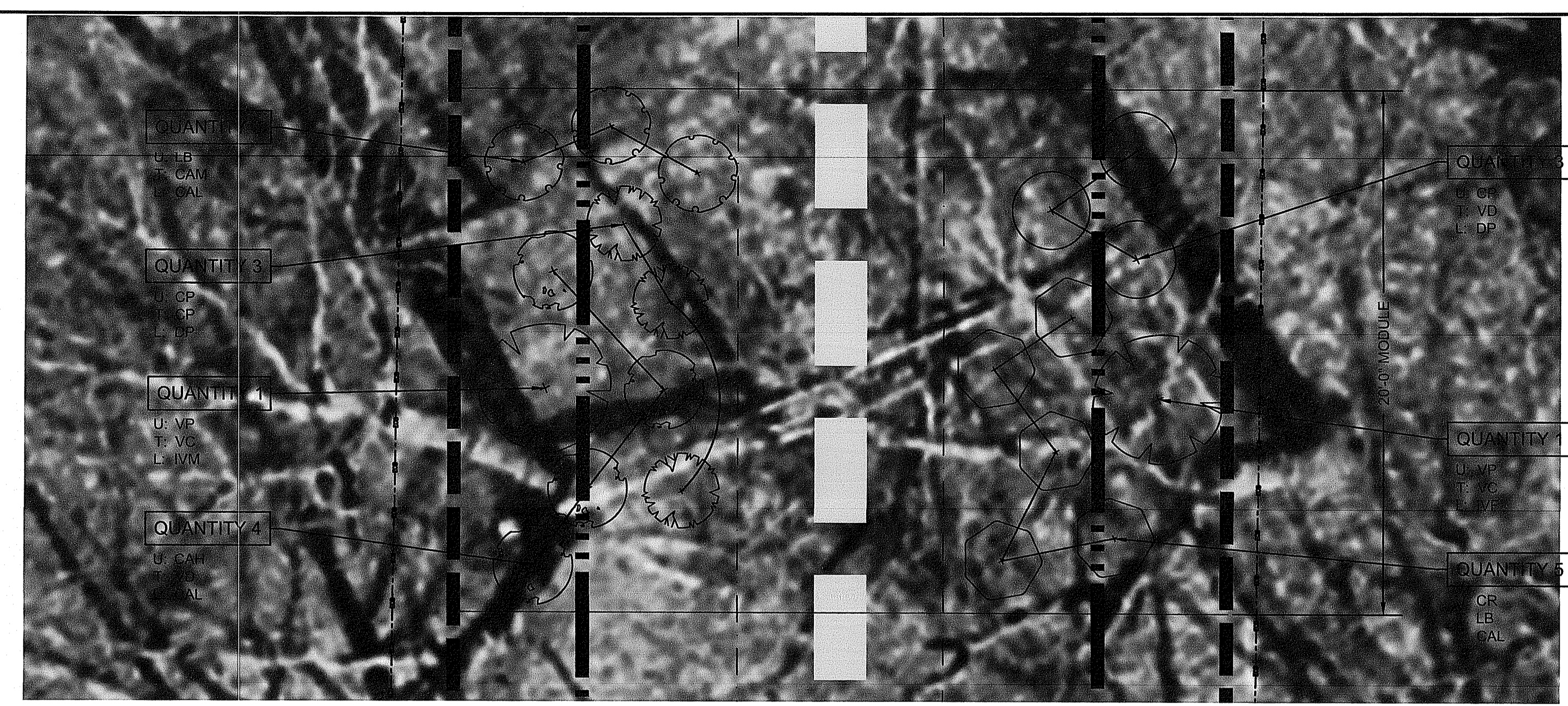
LOAM AND SEED
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE

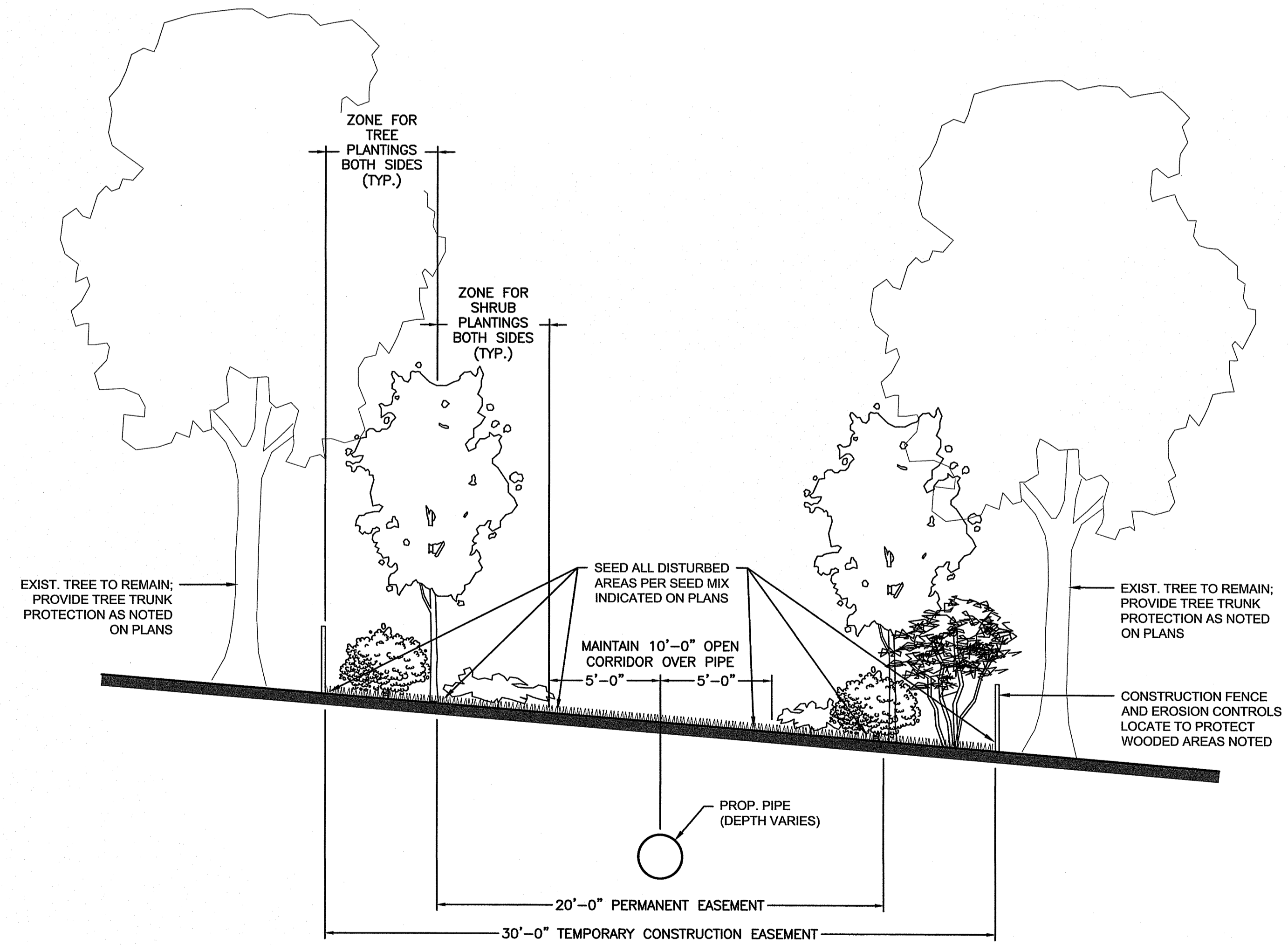


CONTAINER GROWN TREE & SHRUB PLANTING
NOT TO SCALE



- NOTES:
- SHRUB PLANTING MODULE IS BASED ON 20'x30' UNIT.
 - MODULES ARE IDENTIFIED BY SHRUB PLANTING ASSOCIATION. REFER TO PLANS FOR LOCATIONS.
U: UPLAND AREAS
T: TRANSITIONAL AREAS
L: LOW LAND AREAS
 - FINAL FIELD PLACEMENT SHALL BE AS DIRECTED BY THE ENGINEER.

PIPELINE REFORESTATION MODULE PLAN VIEW (TYP.)
SCALE: 1/4"=1'-0"



PIPELINE REFORESTATION CROSS SECTION (TYP.)
SCALE: 1/4"=1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 20 2020 FILE # 19-0285
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jonathan D. Sanchez

2/27/2020 11:29 AM J:\5681 - BCWA DESIGN SERVICES PHASE 1F- DRAWING FILES\PLANS\SET\601-PAWTUCKET_PIPELINE_LA_SITE_RESTORATION_PLAN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
CC
DESIGNED BY:
PAS
CHECKED BY:
RD

REGISTERED PROFESSIONAL
For Review Only



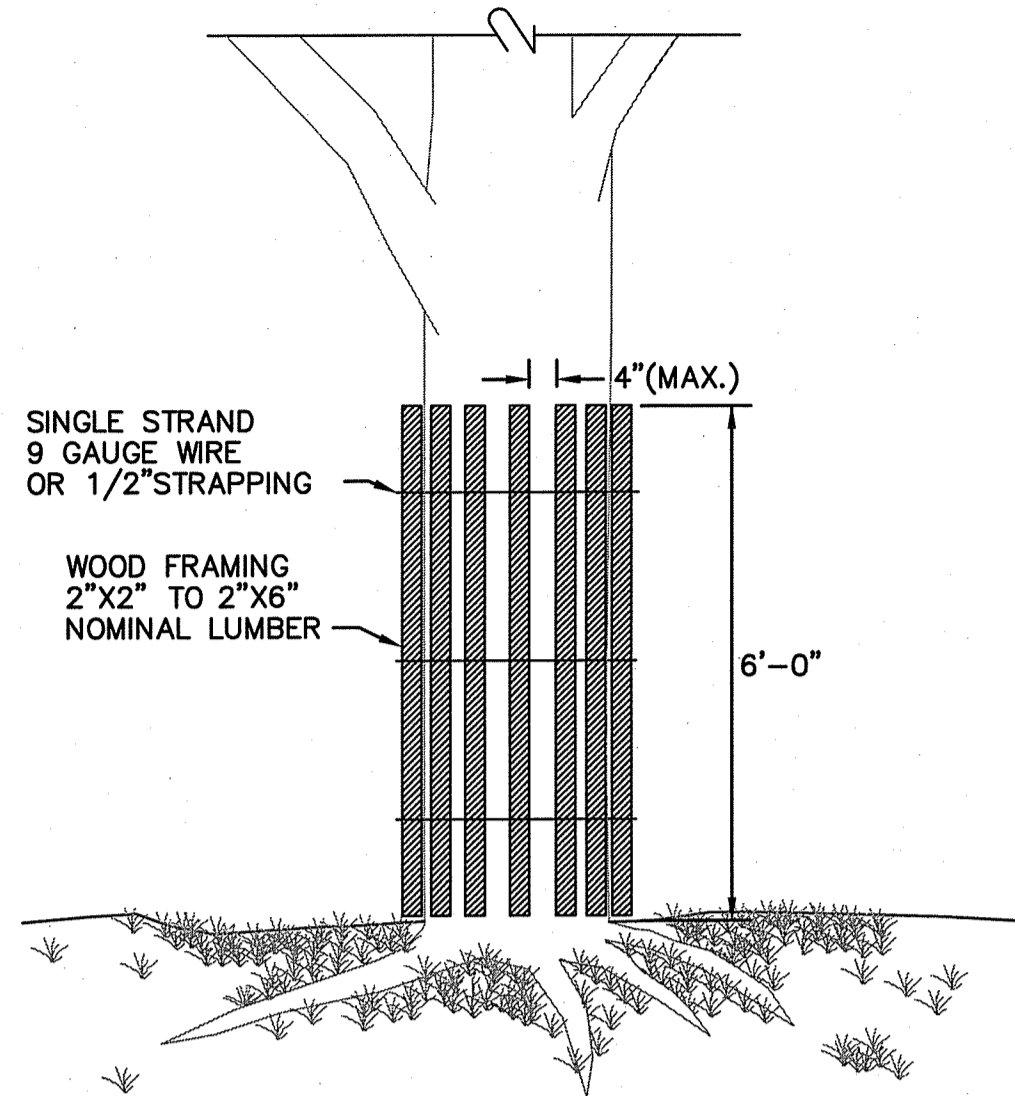
PREPARED BY:
SUBCONSULTANT
SCALE:
AS SHOWN

TITLE:
**BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS FOR
EMERGENCY SUPPLY
PAWTUCKET PIPELINE PHASE 1
LANDSCAPE DETAILS**

BETA JOB NO. 5861
ISSUE DATE 2/27/2020
SHEET NO. 10 OF 12

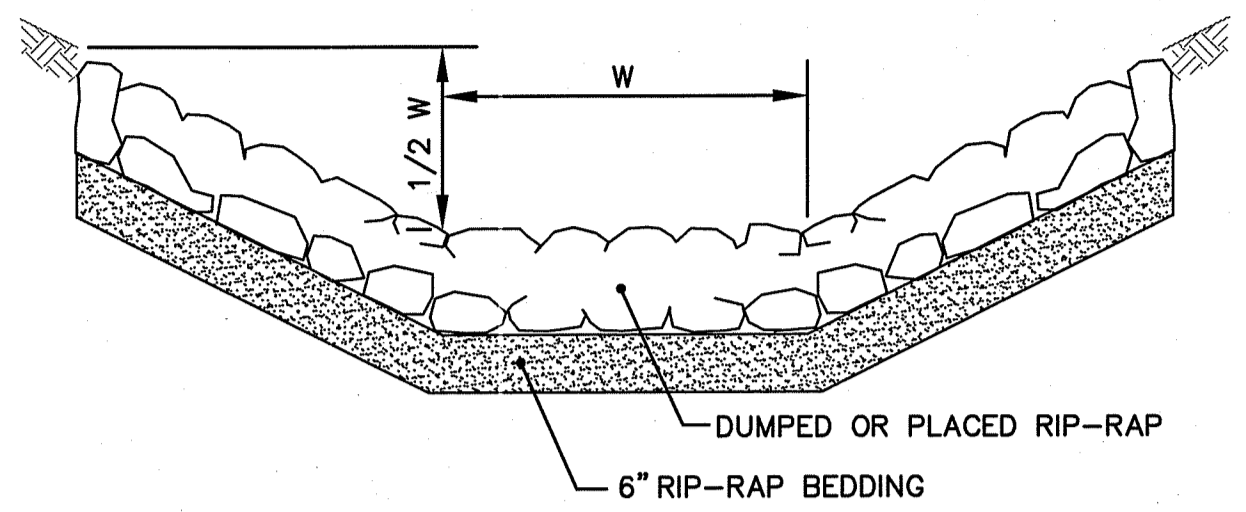
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

2/27/2020 11:29 AM J:\5881 - BCWA DESIGN SERVICES PHASE 1F - DRAWING FILES\PLANSET\6861-PAWTUCKET_PIPELINE_LA_SITE_RESTORATION_PLAN_2020_DEM_SUBMITTAL_2-27-20.DWG (BETA STB.BW.STB)



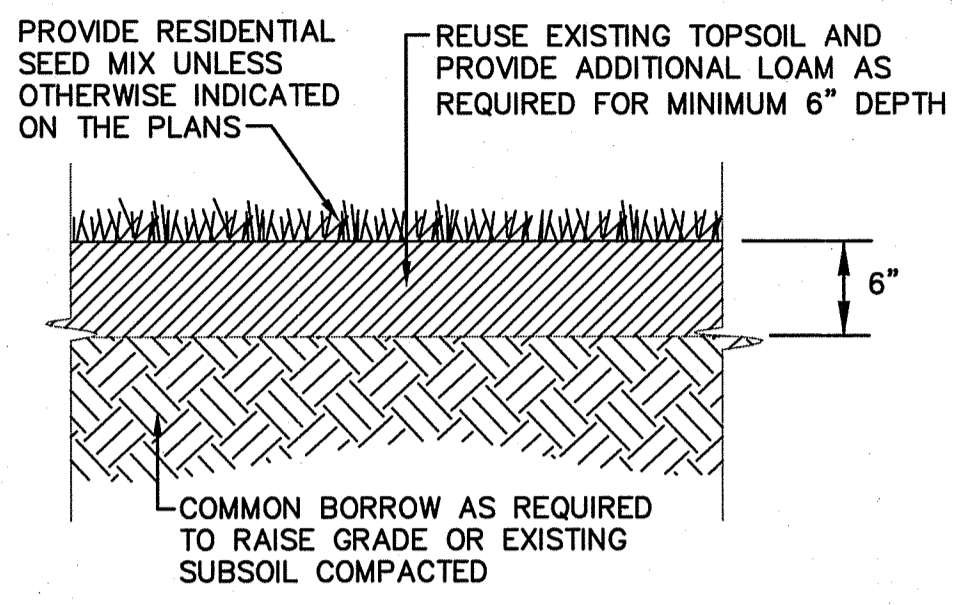
NOTE: SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE STANDARD SPECIFICATIONS.

TREE PROTECTION DEVICE
NOT TO SCALE

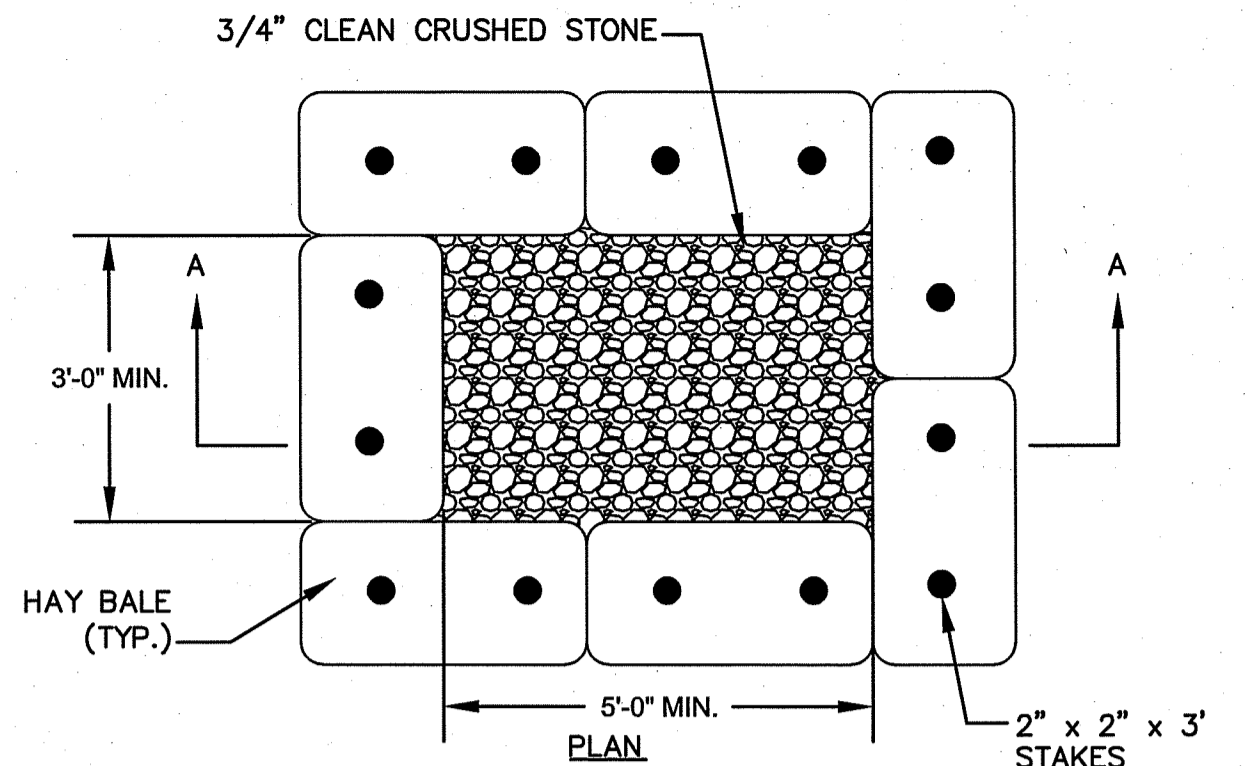


NOTES:
1. SLOPES MAY VARY TO SUIT CONDITIONS AS PER PLANS OR ENGINEER.
2. RIP-RAP AND BEDDING SIZE MAY VARY. SEE CONTRACT DOCUMENTS.

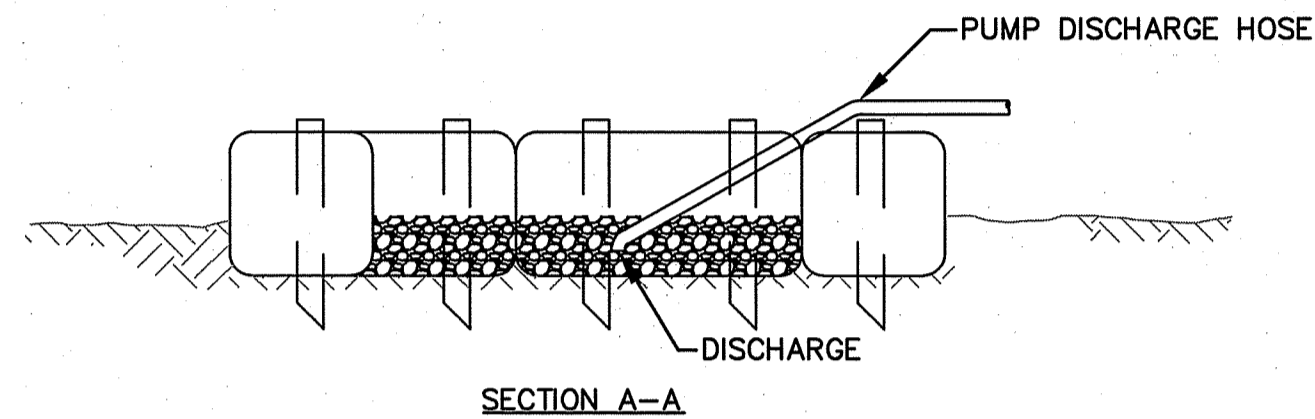
RIP-RAP DITCH
NOT TO SCALE



LOAM AND SEED DETAIL
NOT TO SCALE

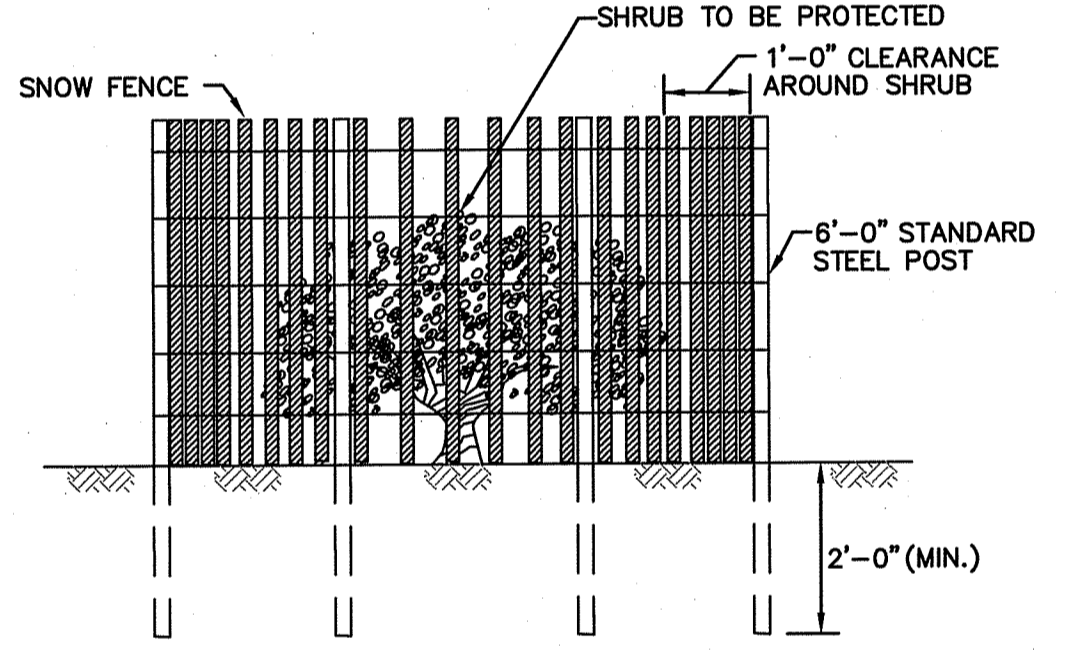


NOTE: ALL DEWATERING DISCHARGES SHALL BE THROUGH SEDIMENT CONTROL TRAPS. CONTRACTOR SHALL MAINTAIN AND CLEAN TRAP AS REQUIRED.



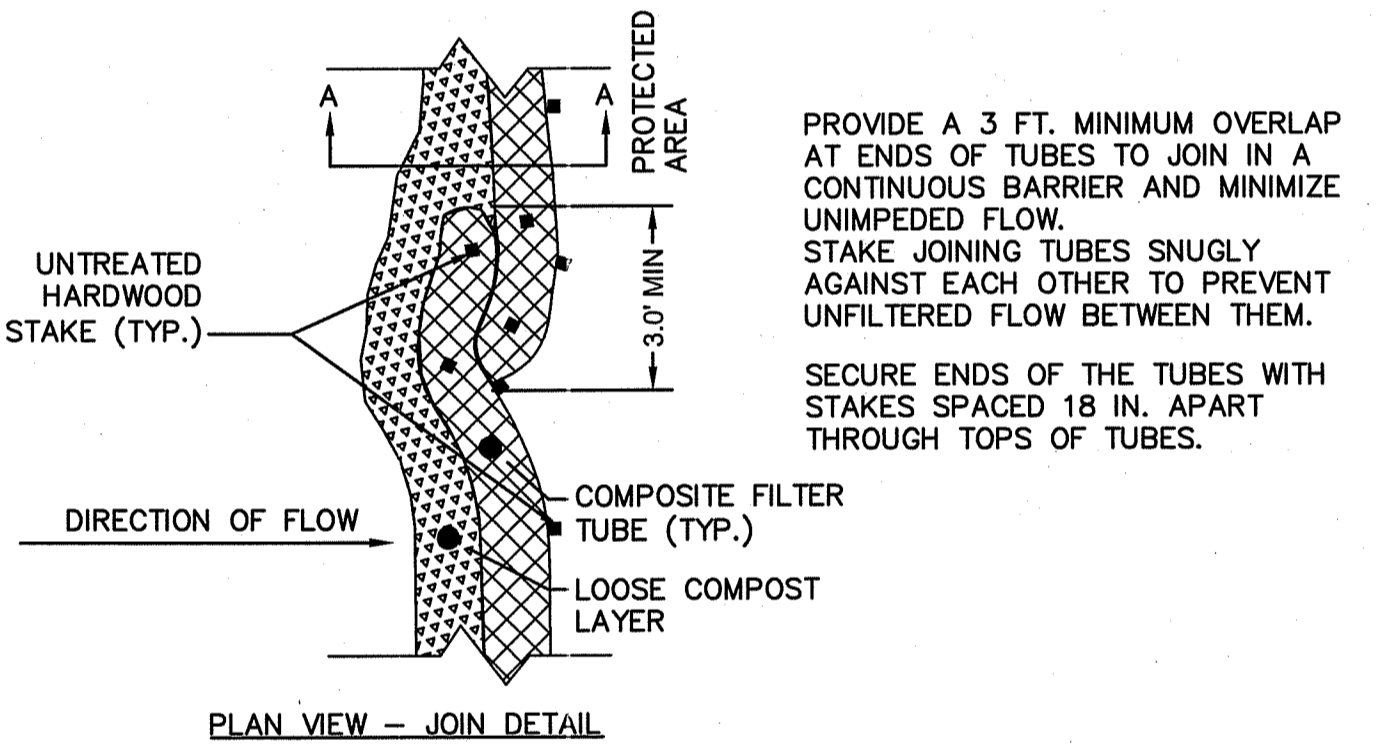
SEDIMENT CONTROL TRAP
NOT TO SCALE

APPROVED FOR CONSTRUCTION
FEB 27 2020
Office of Water Resources



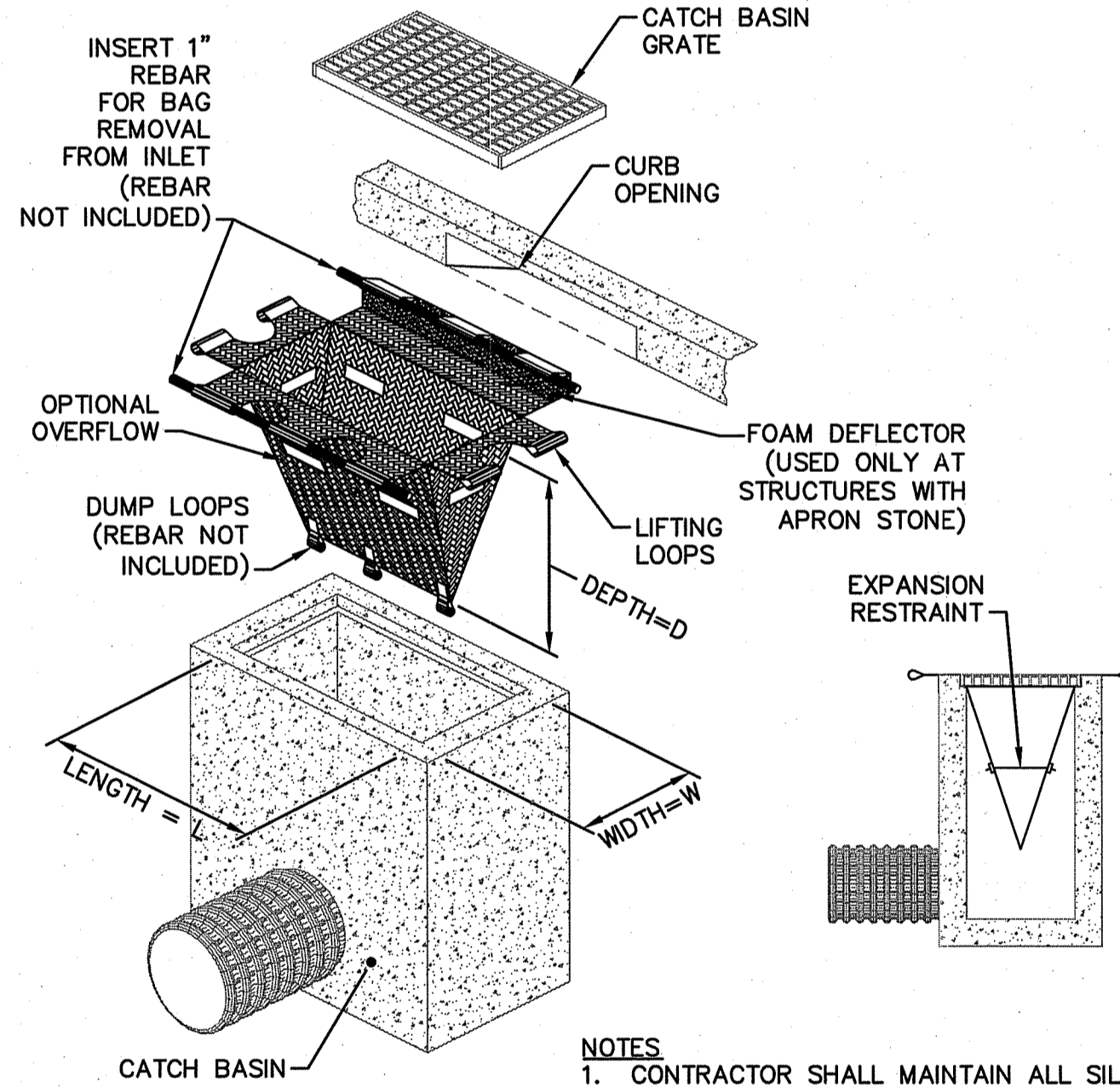
NOTE: SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE R.I. STANDARD SPECIFICATIONS.

SHRUB PROTECTION DEVICE
NOT TO SCALE



PROVIDE A 3 FT. MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM. SECURE ENDS OF THE TUBES WITH STAKES SPACED 18 IN. APART THROUGH TOPS OF TUBES.

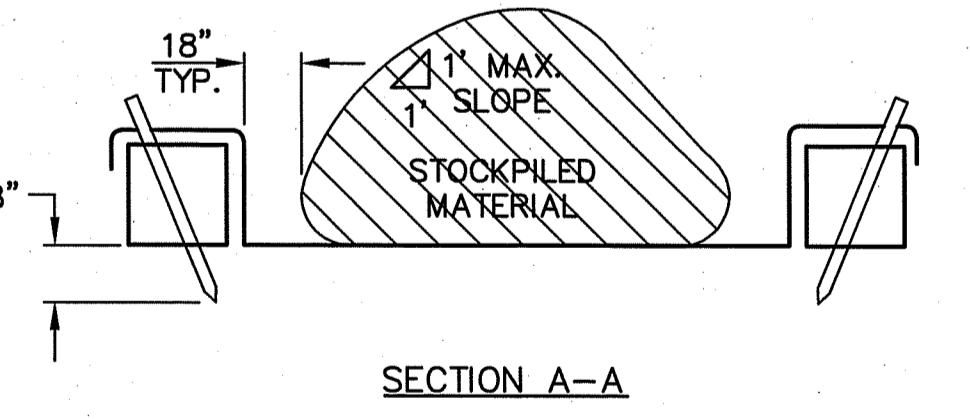
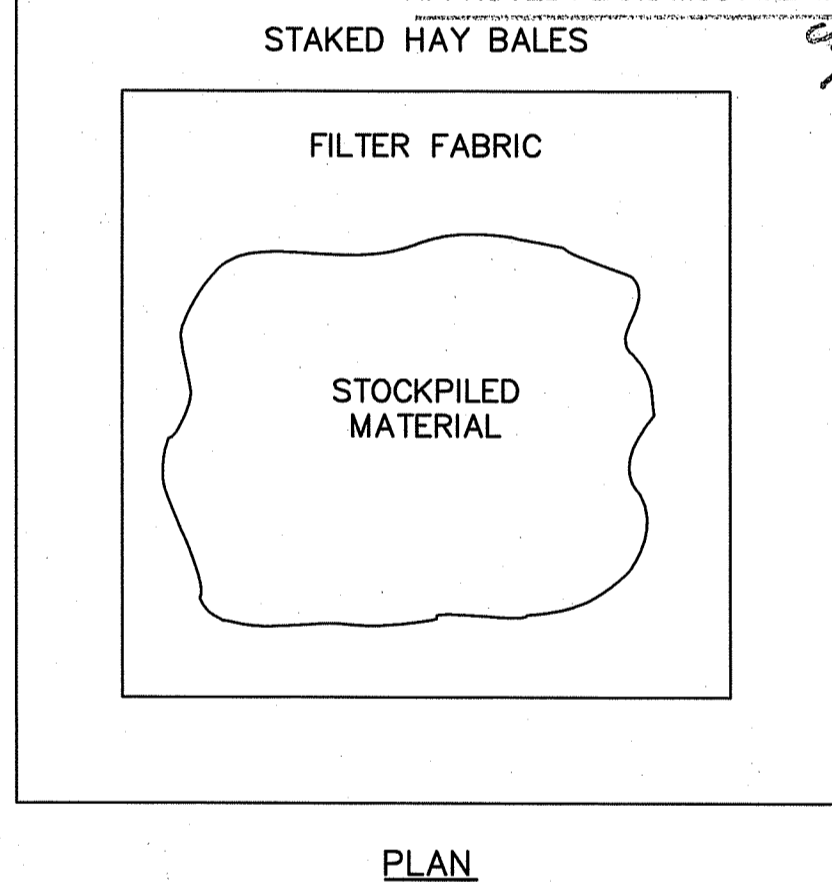
PLAN VIEW - JOIN DETAIL



NOTES
1. CONTRACTOR SHALL MAINTAIN ALL SILT SACK SEDIMENT CONTROL DEVICE INSTALLATIONS AND REPLACE WHEN SATURATED WITH SEDIMENT BASED ON MANUFACTURER RECOMMENDATIONS. SILT SACK SHALL BE INSPECTED AFTER EVERY RAIN EVENT BUT NO LONGER THAN EVERY TWO WEEKS.
2. SILT SACK SHALL BE DOUBLE NEEDLE SEWN POLYPROPYLENE GEOTEXTILE FABRIC AND RATED FOR HIGH FLOW UNLESS OTHERWISE DIRECTED.
3. CONTRACTOR SHALL PROVIDE CURB OPENING DEFLECTOR AT ALL CATCH BASINS AS NECESSARY.

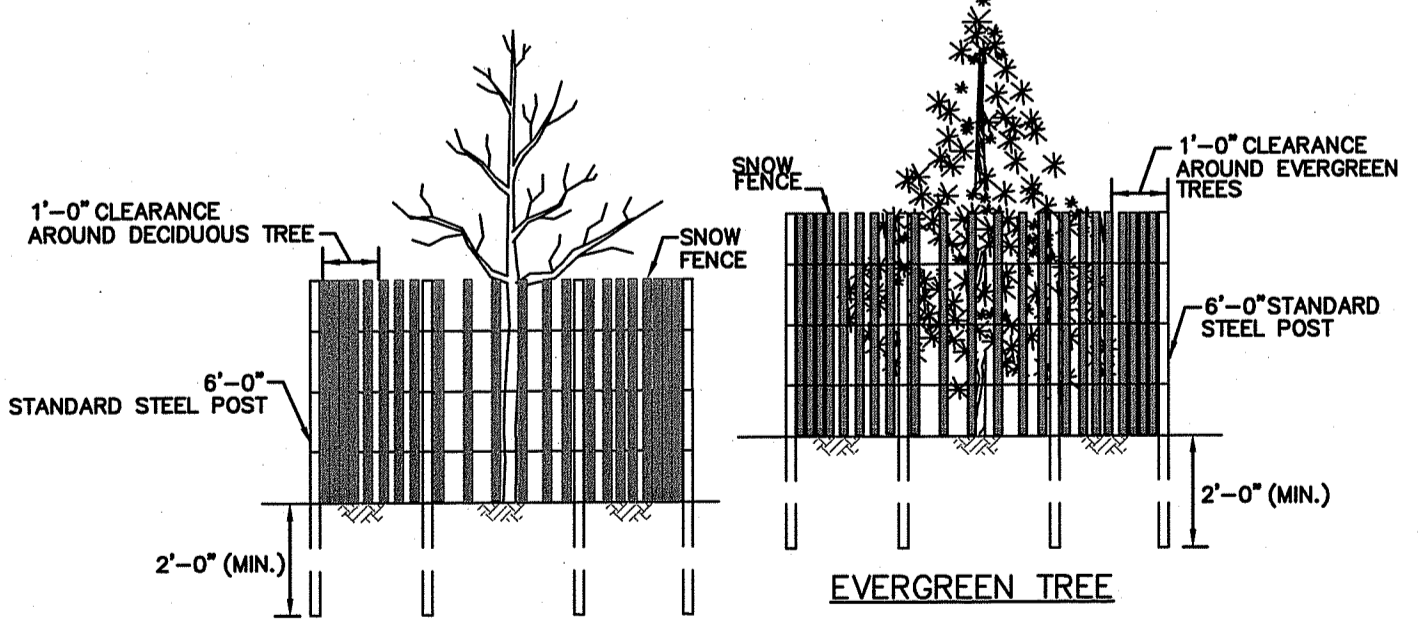
TYPICAL CATCH BASIN EROSION CONTROL PROTECTION
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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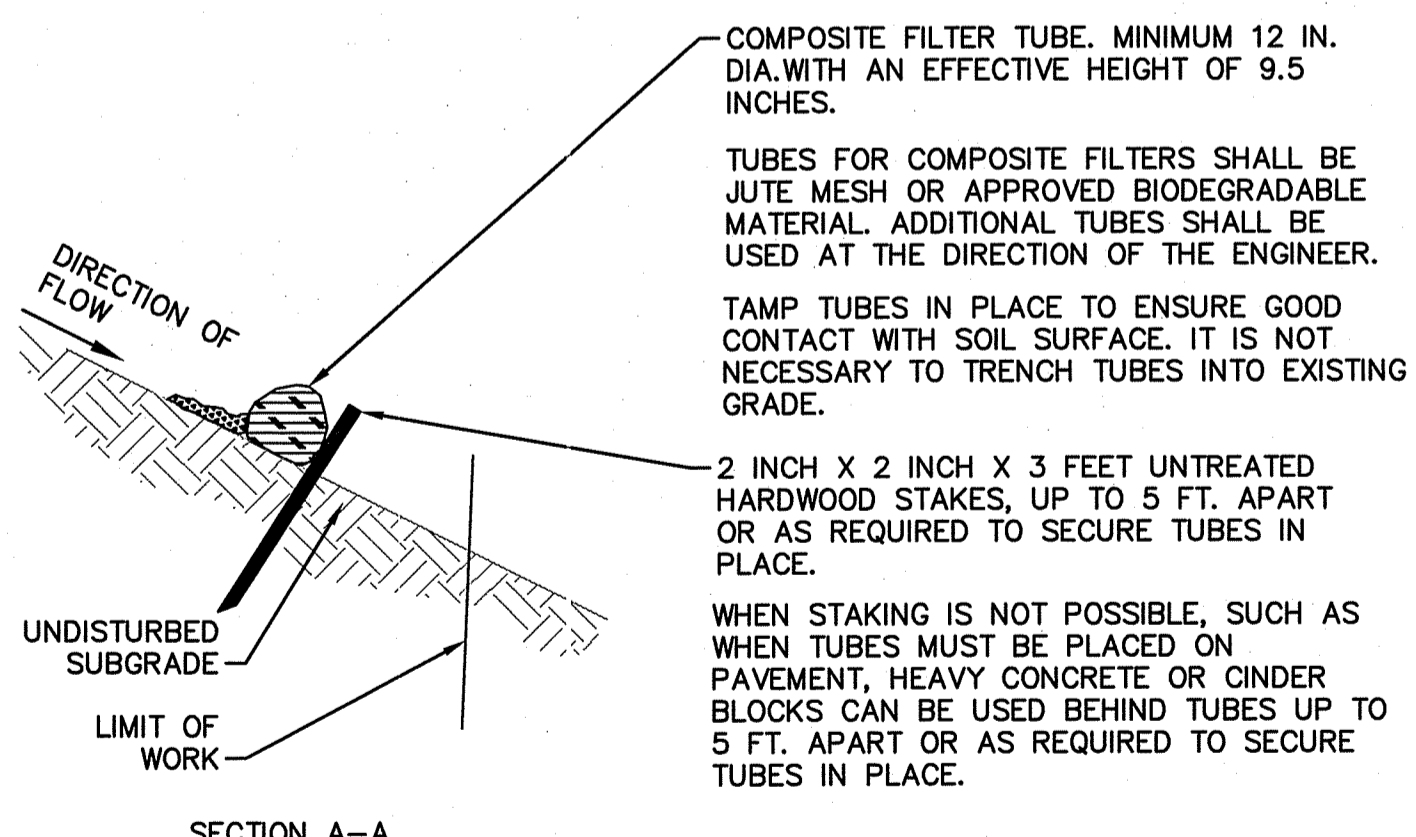
NOTE:
1. DIMENSIONS OF STOCKPILE AREA MAY VARY DEPENDING ON QUANTITY OF EXCAVATED MATERIAL. AVOID OVERTOPPING OR SLOPES IN EXCESS OF 1:1.

PLAN OF TEMPORARY STOCKPILE AREA
NOT TO SCALE



NOTE: SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE R.I. STANDARD SPECIFICATIONS.

DRIP LINE TREE PROTECTION DEVICE FOR EXISTING TREES
NOT TO SCALE



COMPOST FILTER TUBE FOR EROSION CONTROL
NOT TO SCALE

DRAWN BY: PAN
DESIGNED BY: PAS
CHECKED BY: RD

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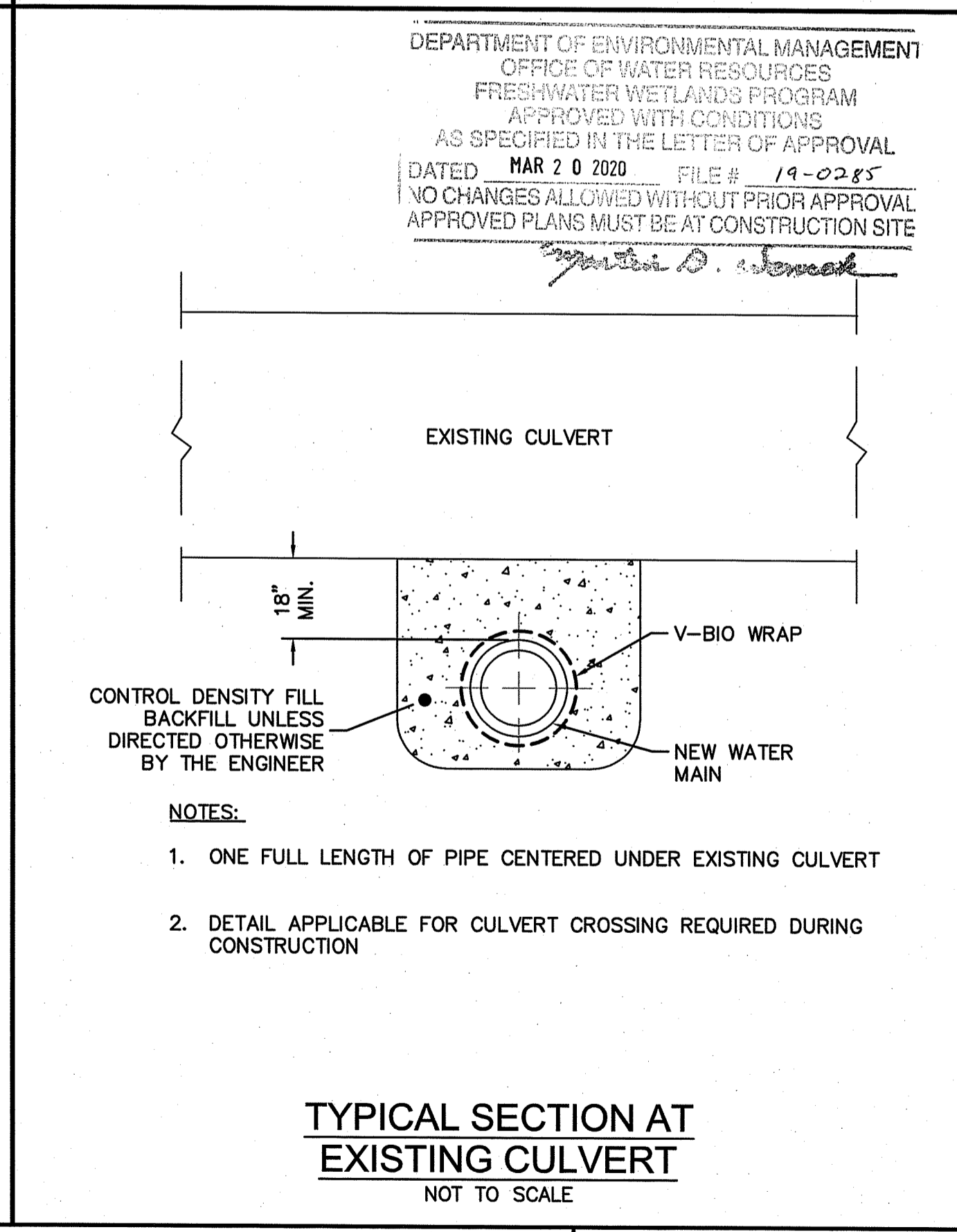
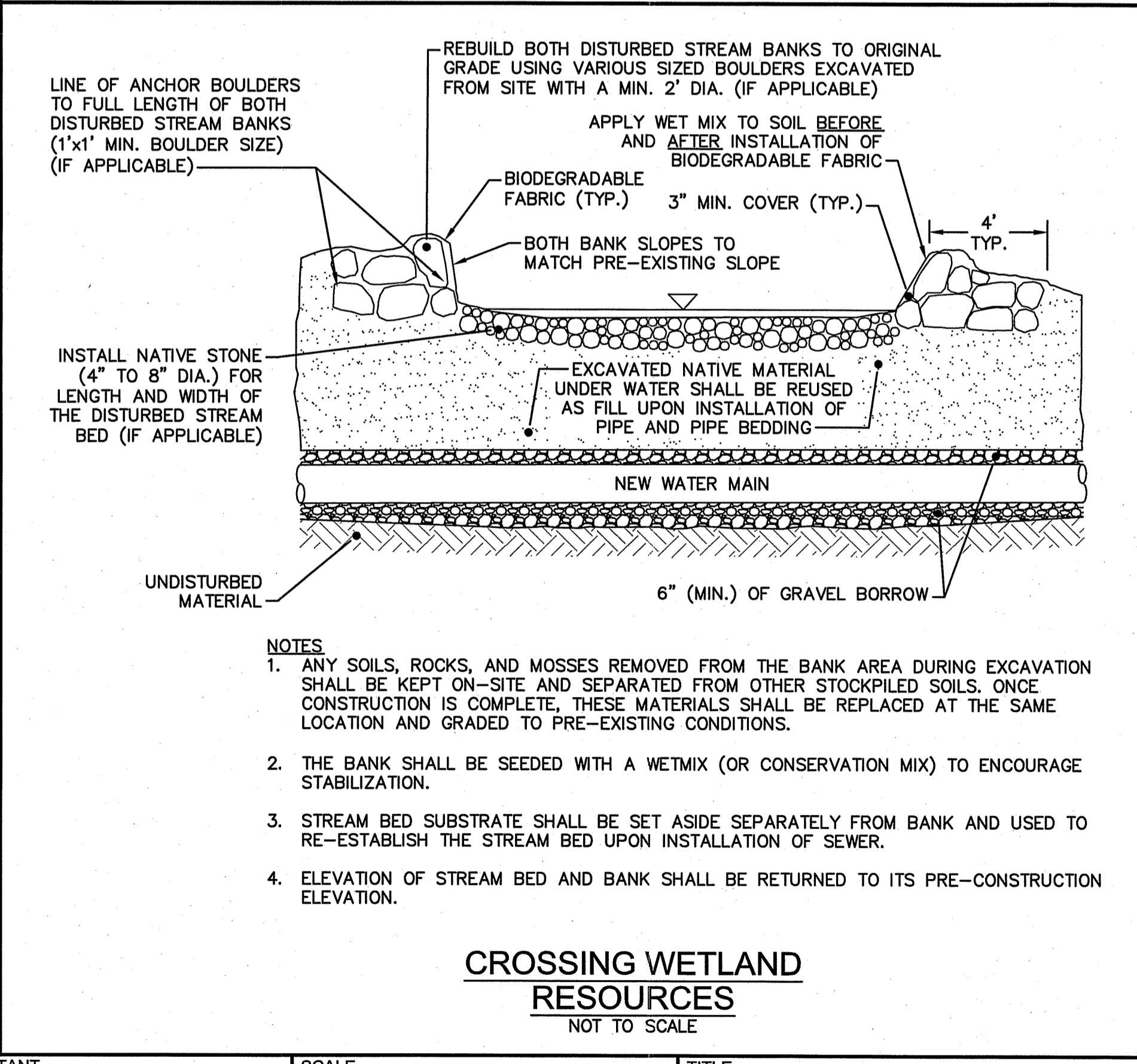
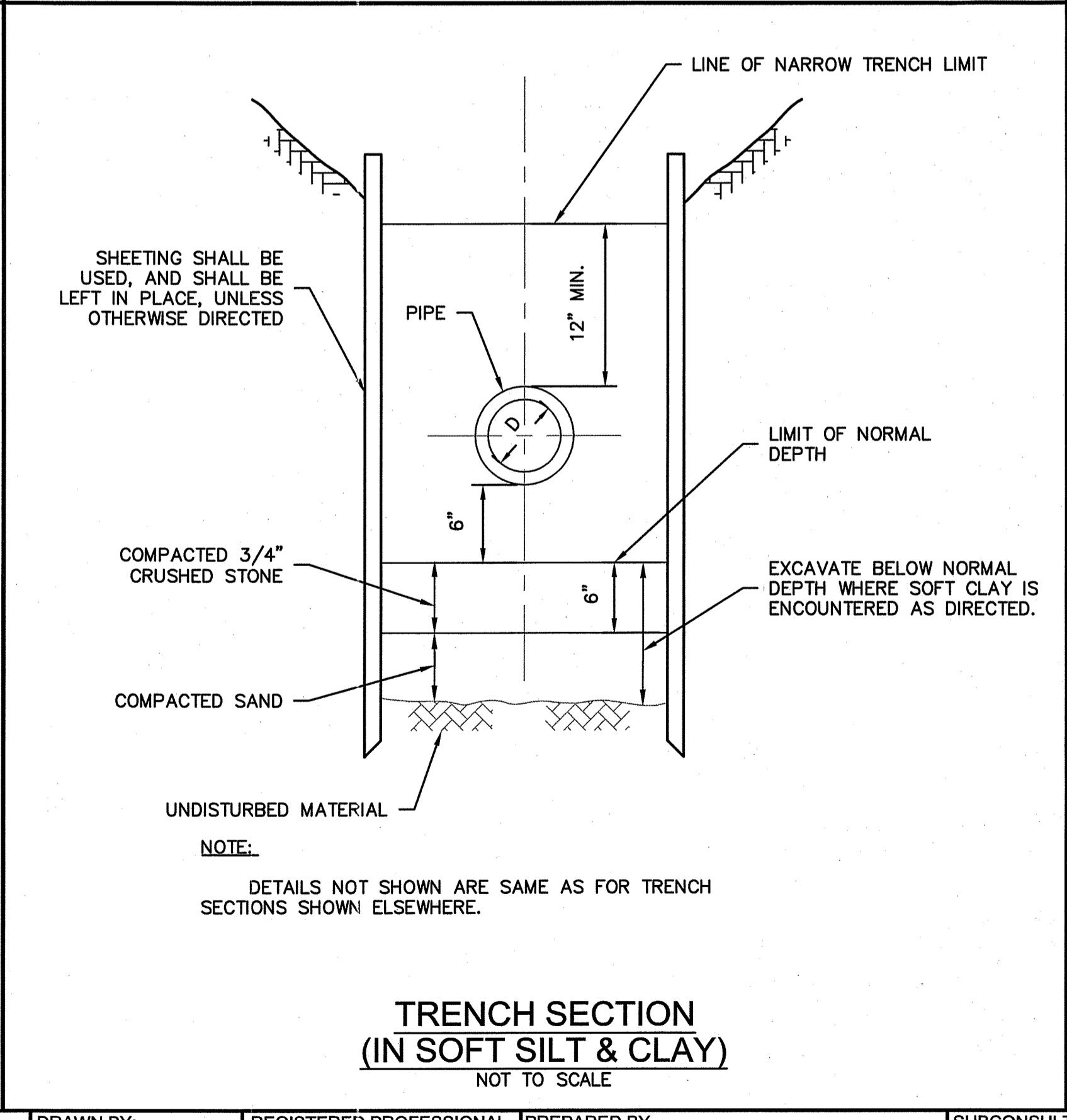
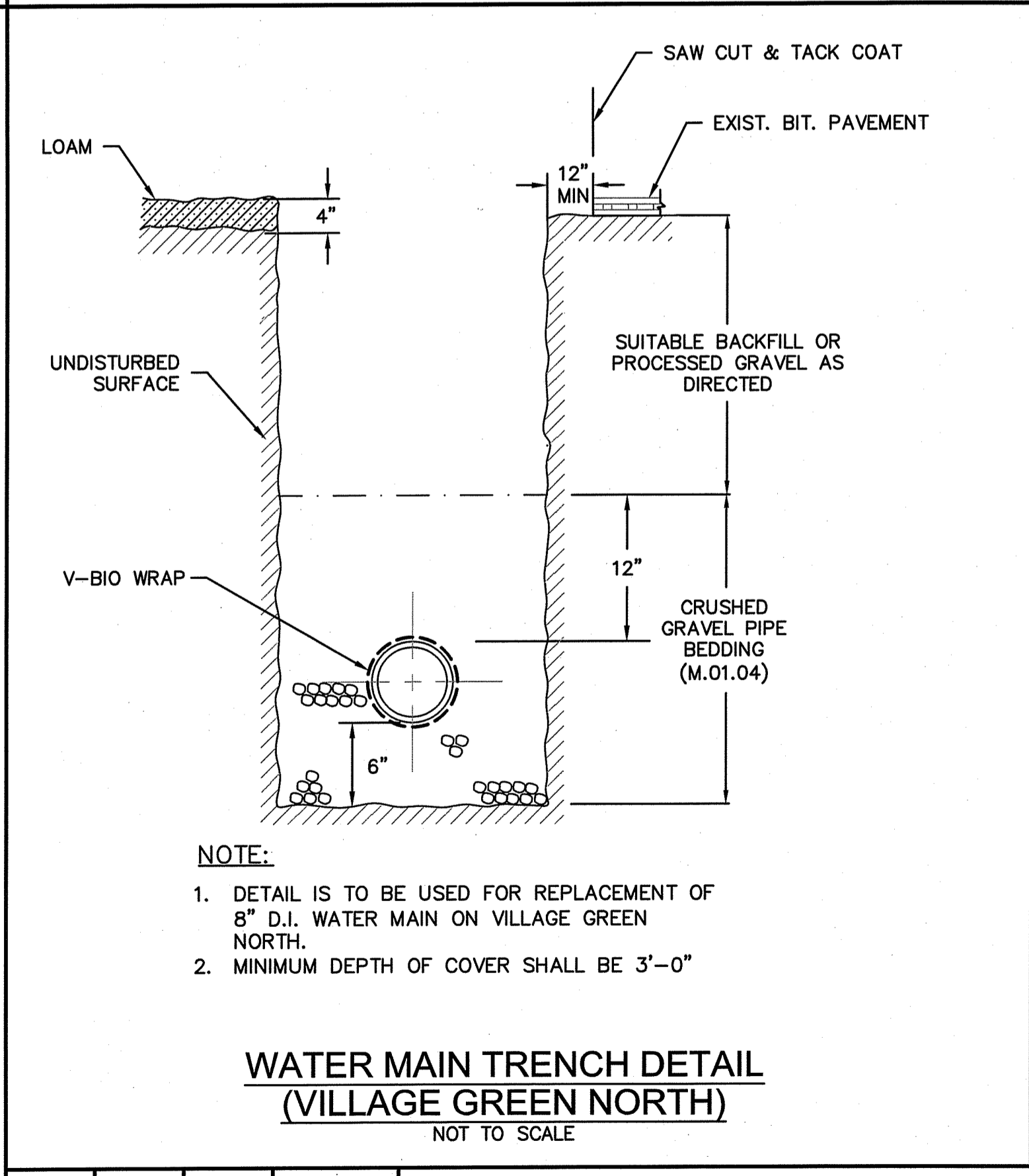
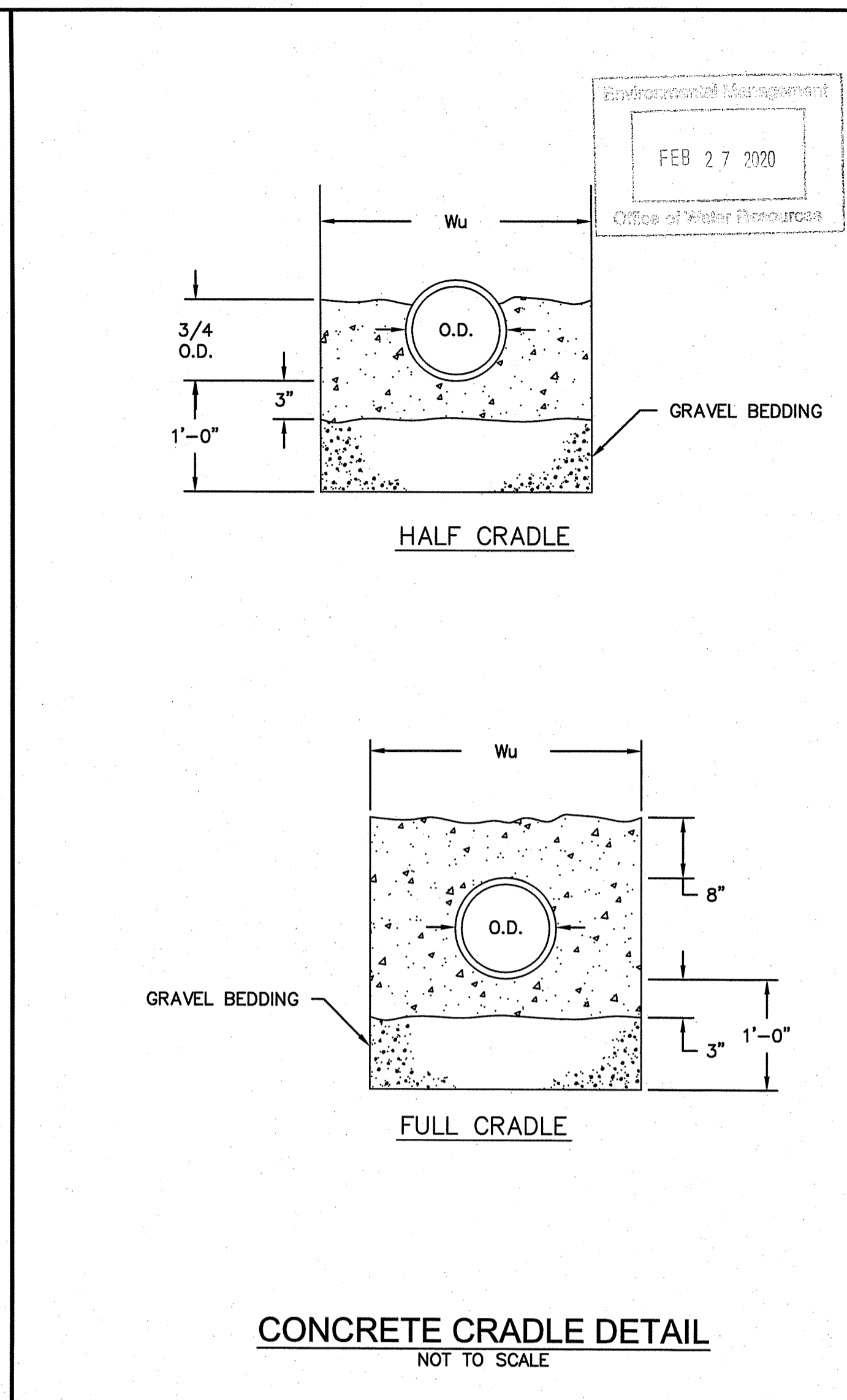
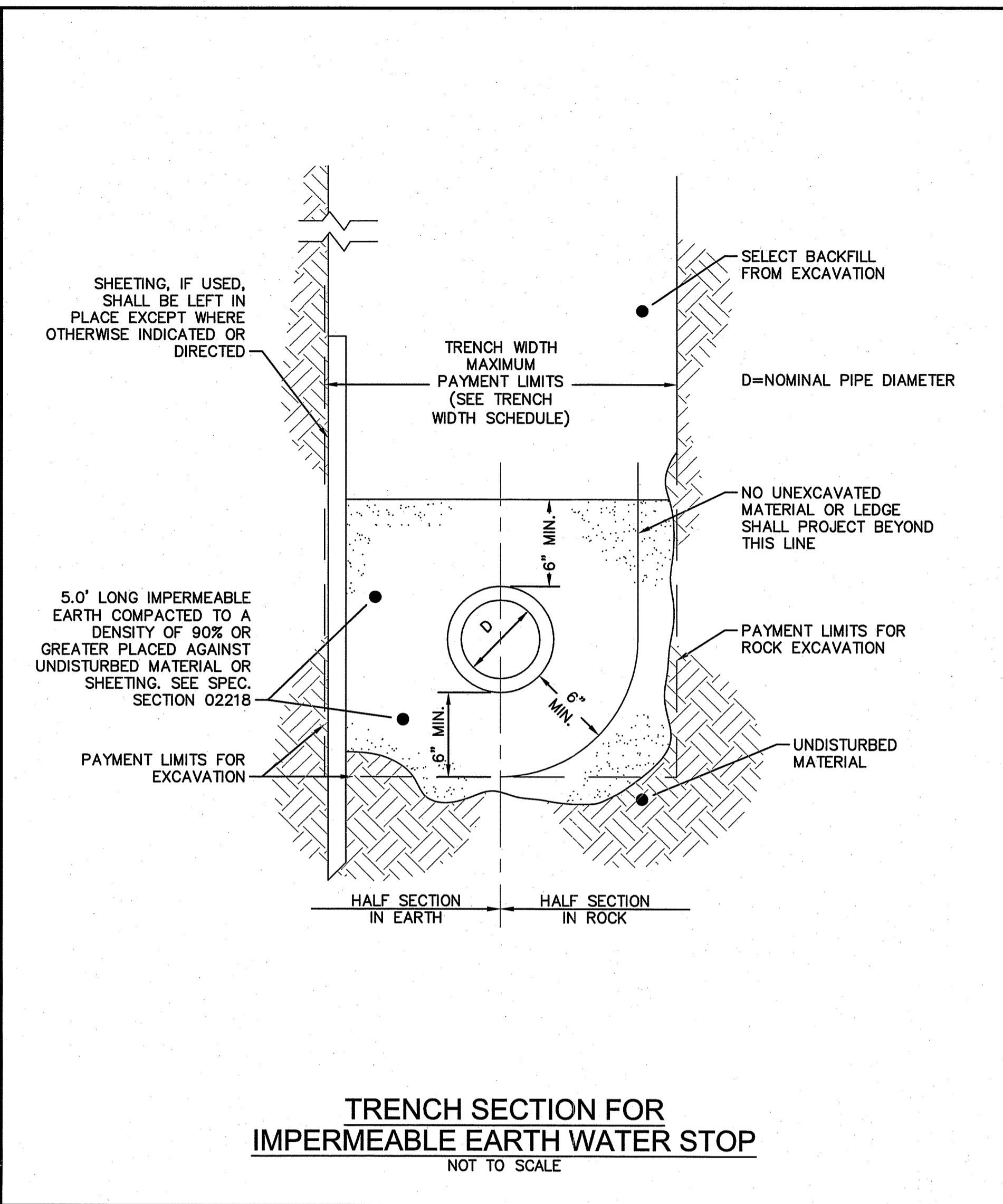
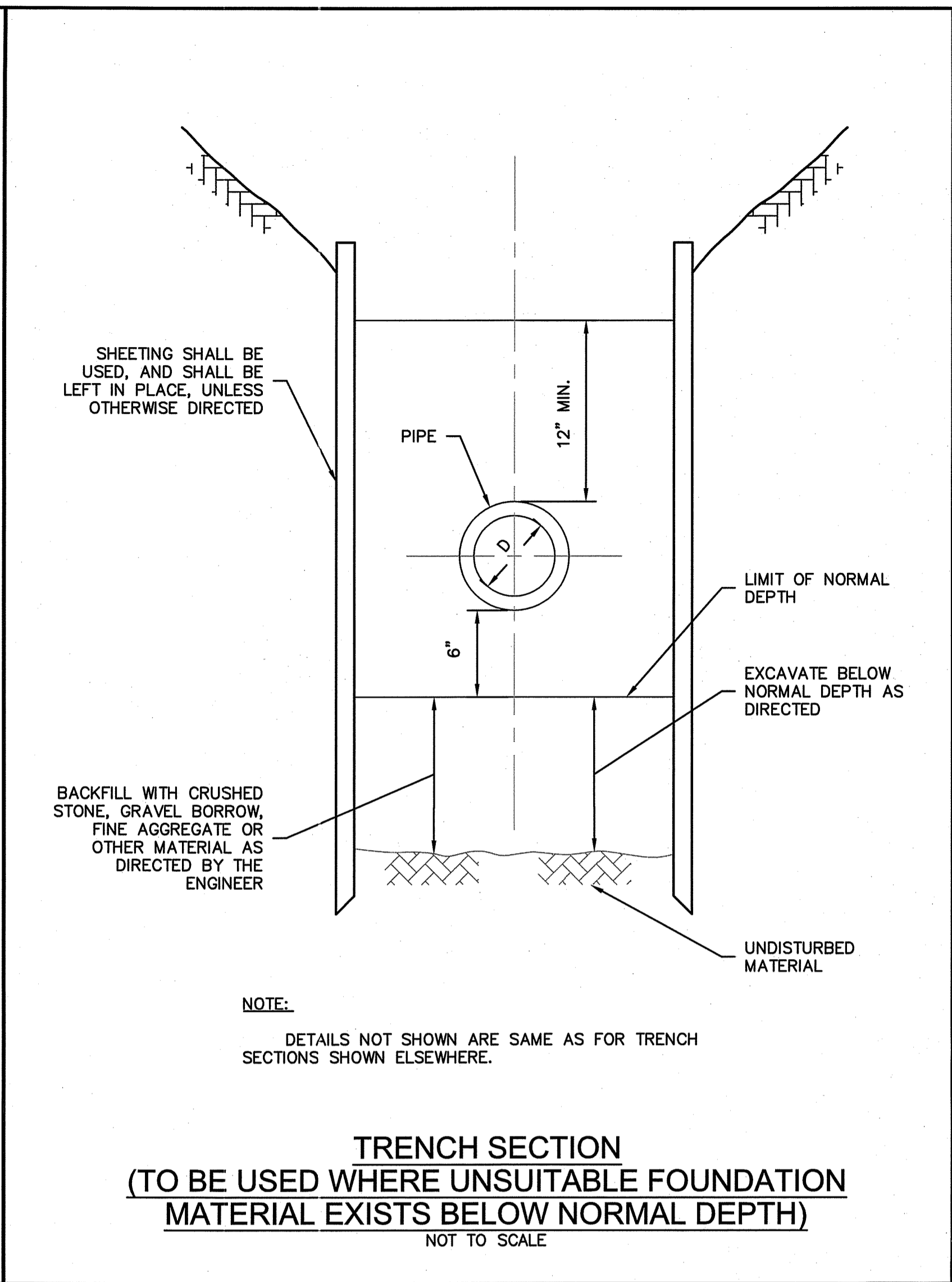
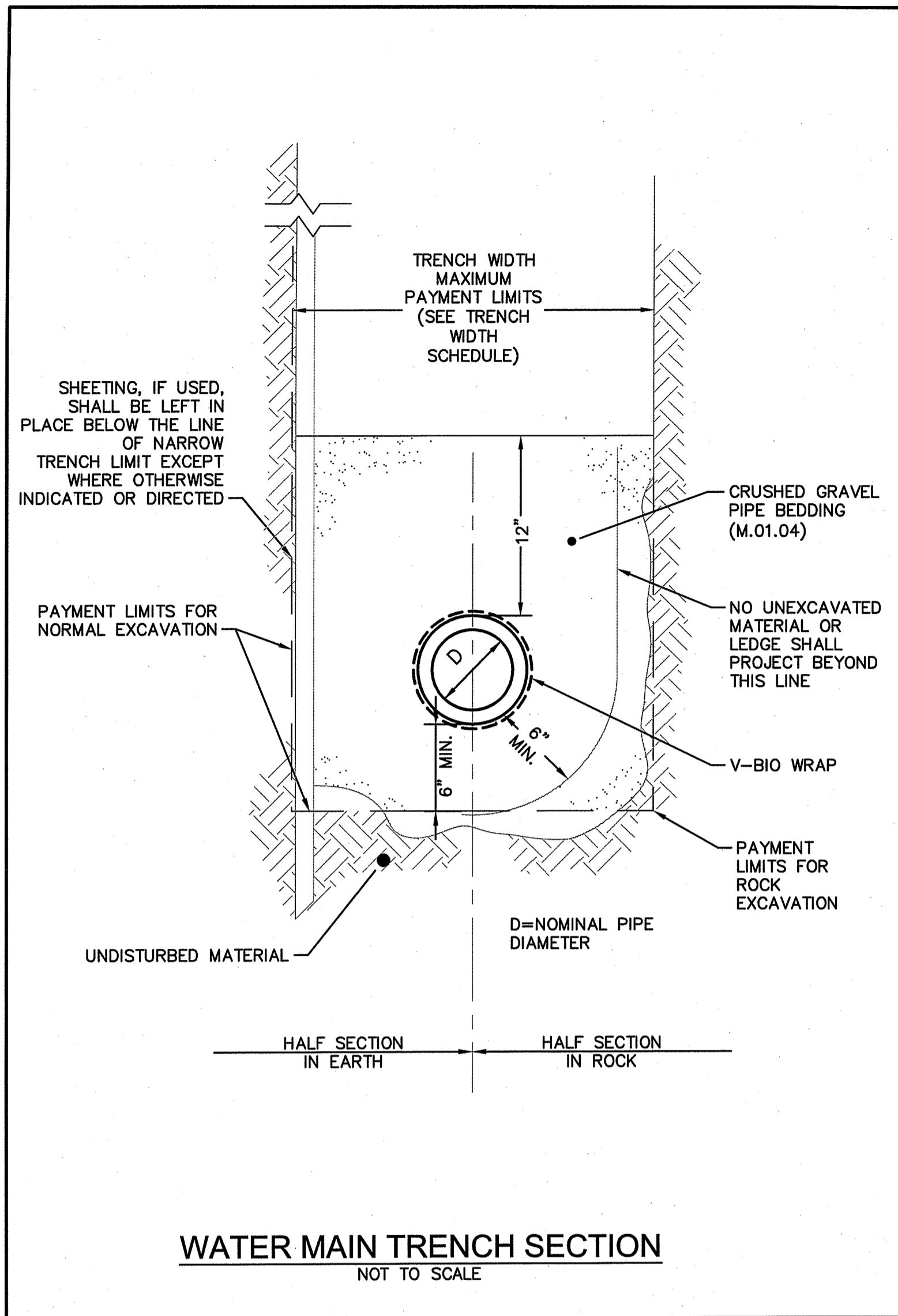
SCALE
HOR. SCALE IN FEET: 1"=80'
VER. SCALE IN FEET: 1"=8'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS FOR EMERGENCY SUPPLY
PAWTUCKET PIPELINE PHASE 1 RESTORATION & PROTECTION DETAILS

BETA JOB NO. _____
ISSUE DATE: 2/27/2020
SHEET NO. 11 OF 12

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

2/27/2020 11:29 AM - BOWA DESIGN SERVICES PHASE 1A - DRAWING FILES\PLANS\CONSTRUCTION DETAILS_DEM_SUBMITTAL_2-27-20.DWG (BETA STB EM/STB)



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PAS

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SCALE
AS SHOWN

TITLE
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BRISTOL COUNTY WATER AUTHORITY
TRANSMISSION SYSTEM IMPROVEMENTS
FOR EMERGENCY SUPPLY
PAWTUCKET PIPELINE PHASE 1
TRENCH & PIPE SUPPORT DETAILS

BETA JOB NO. 5861

ISSUE DATE 2/27/2020

SHEET NO. 12 OF 12