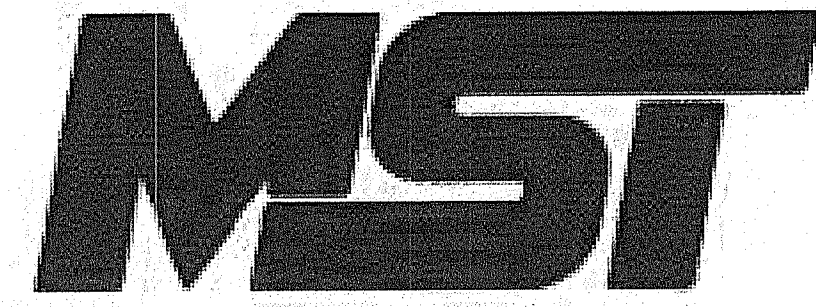


**SITE IMPROVEMENT PLANS FOR A PROPOSED**

**23,700 SQ. FT. SINGLE-STORY COMMERCIAL BUILDING**



**MATERIALSAMPLINGTECHNOLOGIES**

**CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461**

**ZONING DISTRICT: MIXED-USE INDUSTRIAL (MU-2)**

**APPROVALS:**

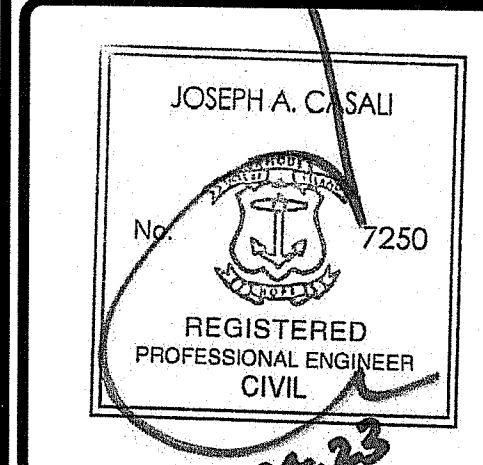
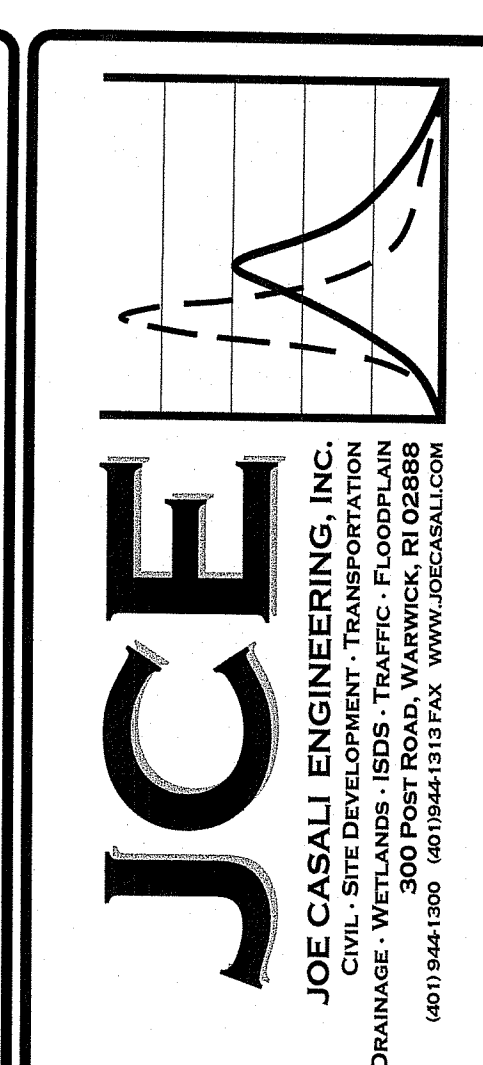
NORTH SMITHFIELD PLANNING BOARD OF REVIEW - PRE-APPLICATION/MASTER PLAN (JUNE 9, 2022)

**FILINGS:**

NORTH SMITHFIELD ZONING BOARD OF REVIEW - DIMENSIONAL RELIEF  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (RIDEM) - APPLICATION TO ALTER  
RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT) - PHYSICAL ALTERATION PERMIT (PAP)  
NORTH SMITHFIELD PLANNING BOARD OF REVIEW - PRELIMINARY PLAN  
NORTH SMITHFIELD SEWER AND WATER DEPARTMENT

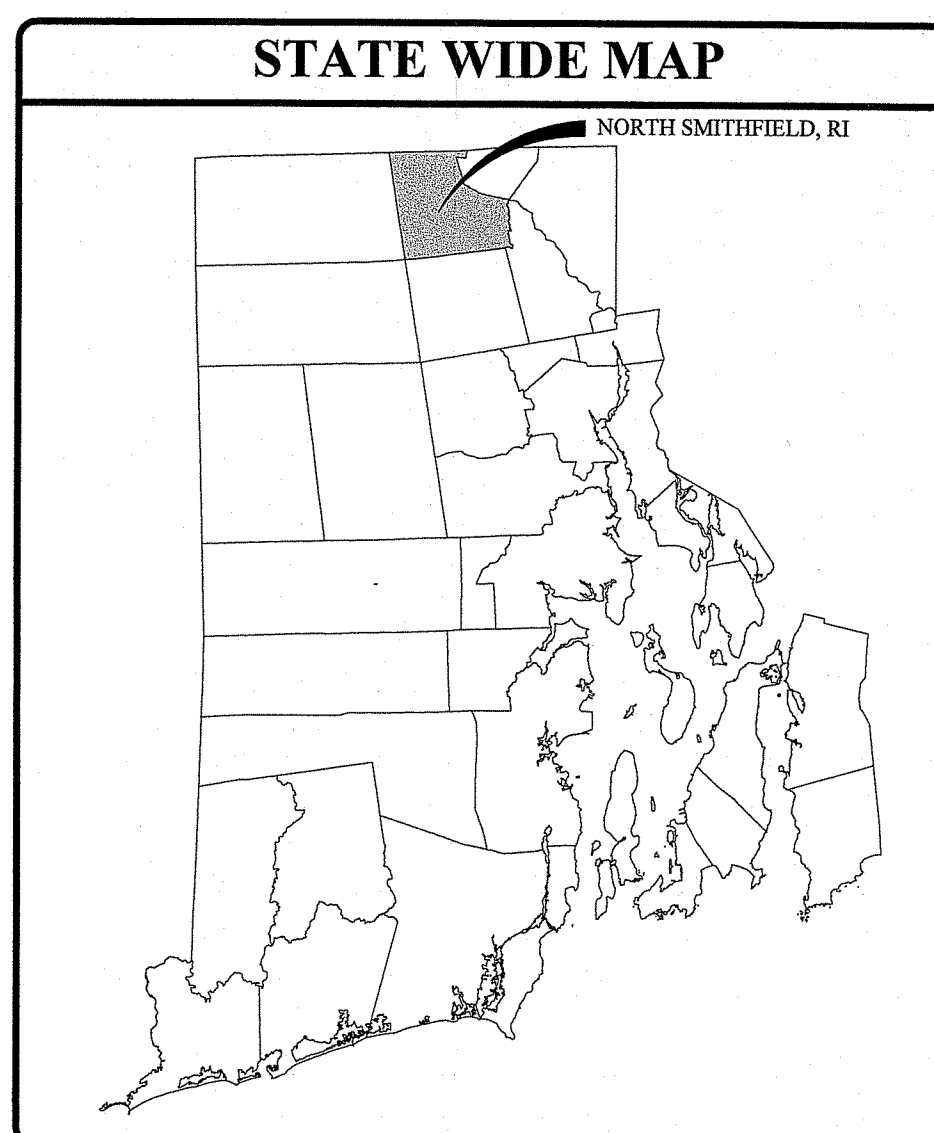
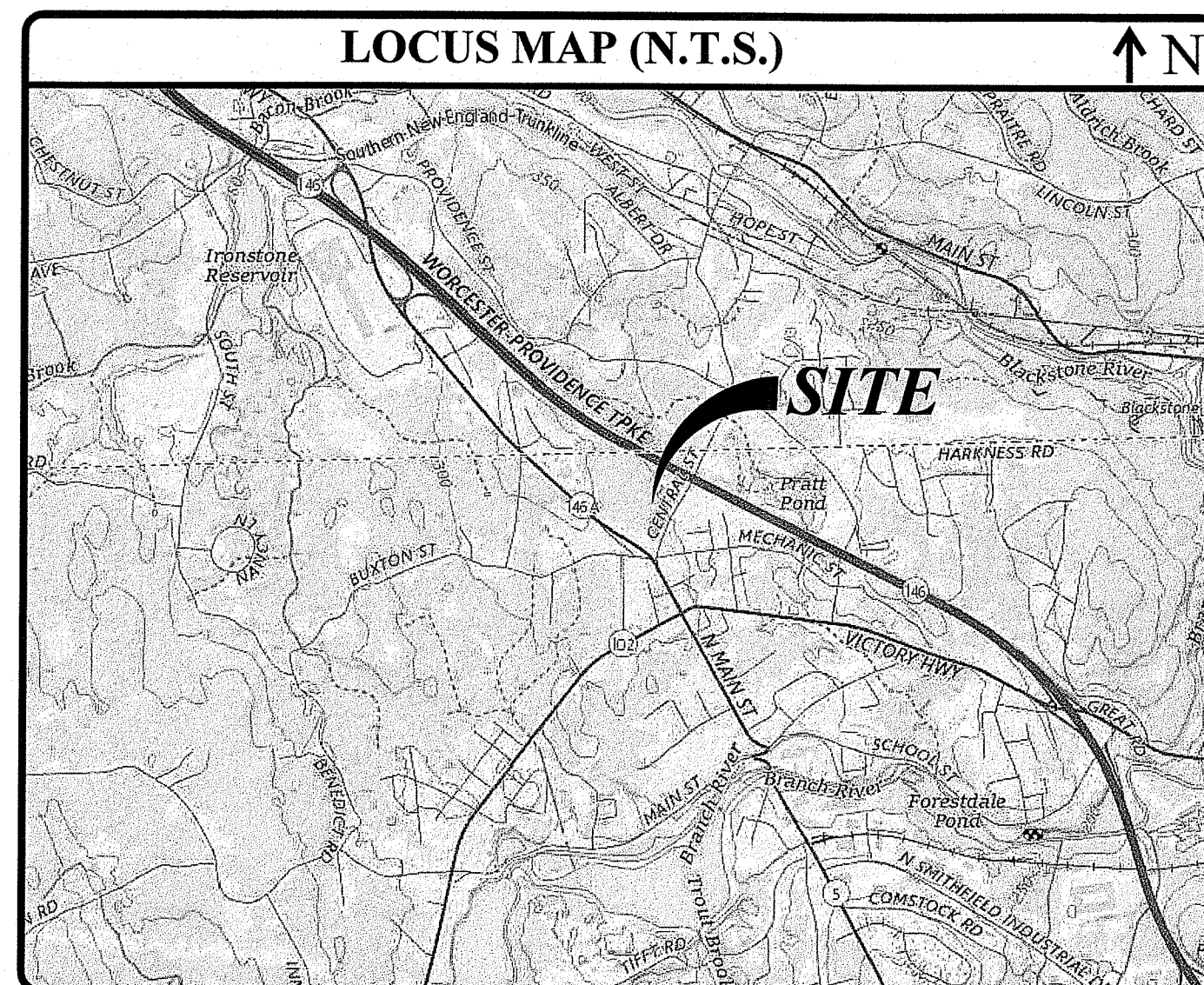
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS  
SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 02 2024 FILE #: 22-0450  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Martin D. Semick*

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461



Q:\21-103 Material Sampling Technologies\ADMIN\ST - Central Street (RIDEM RTC) - RI [Elev. Changes].dwg Mar. 28, 2023 2:56pm

PROJECT TEAM			
<b>OWNER/ APPLICANT:</b>	TECH REALTY LLC 1272 FERRIS AVE EAST PROVIDENCE, RI 02916	<b>LAND SURVEYOR:</b>	DOUGLAS DESIGN GROUP 101 PLAIN STREET (BAY TOWER) LOWER LEVEL, SUITE C PROVIDENCE, RI 02917 PHONE: 774-284-0085
<b>CIVIL ENGINEER:</b>	JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RI 02888 PHONE: 401-944-1300 FAX: 401-944-1313 JOECASALI.COM	<b>WETLAND BIOLOGIST:</b>	NATURAL RESOURCES SERVICES, INC. 180 TINKHAM LANE HARRISVILLE, RI 02830 PHONE: 401-568-7390
<b>ARCHITECT:</b>	DP ARCHITECT 386 MOWRY STREET WOONSOCKET, RI 02895 PHONE: 401-762-5082	<b>LANDSCAPE ARCHITECT:</b>	DIANE C. SOULE & ASSOCIATES, ASLA 422 FARNUM PIKE SMITHFIELD, RI 02917 PHONE: 401-231-0736



INDEX OF DRAWINGS	
SHEET NO.	PLAN
1	COVER SHEET
2	GENERAL NOTES AND LEGEND
3	EXISTING CONDITIONS & SITE PREPARATION PLAN
4	SITE PLAN
5	GRADING & DRAINAGE PLAN
6	UTILITY PLAN
7	WATER MAIN EXTENSION PLAN AND PROFILE I
8	WATER MAIN EXTENSION PLAN AND PROFILE II
9	RHODE ISLAND STANDARD DETAILS
10	CIVIL DETAILS I
11	CIVIL DETAILS II
12	CIVIL DETAILS III
13	CIVIL DETAILS IV
14	CIVIL DETAILS V
15	DRAINAGE PROFILES
RI	SURVEY PLAN, PREPARED BY DOUGLAS DESIGN GROUP, DATED FEBRUARY 2022

REVISIONS:	
NO.	DATE DESCRIPTION
1	3/24/23 RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**COVER SHEET**

**SHEET 1 OF 15**

**GENERAL NOTES:**

- 1. CONTRACTOR SHALL NOTIFY "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. CLASS I PROPERTY LINE AND CLASS III TOPOGRAPHIC SURVEY PROVIDED BY DOUGLAS DESIGN GROUP, BAY TOWER, LOWER LEVEL, SUITE C; 101 PLAIN STREET, PROVIDENCE, RI 02903 IN FEBRUARY 2022.
3. THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR CITY WORKS FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.
4. THE ENTIRE PROJECT SITE LIES WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON THE FIRM MAP FOR THE TOWN OF NORTH SMITHFIELD, RHODE ISLAND, MAP NUMBER 44007C0065G, EFFECTIVE DATE MARCH 2, 2009.
5. THE SITE IS LOCATED WITHIN DEM GROUNDWATER CLASSIFICATION GAA - "GROUNDWATER RESOURCES KNOWN OR PRESUMED TO BE SUITABLE FOR DRINKING WITHOUT TREATMENT". THIS DESIGNATION PLACES THE PROPOSED SITE WITHIN THE NORTH SMITHFIELD GROUNDWATER AQUIFER OVERLAY DISTRICT. HOWEVER, SUBJECT SITE IS EXEMPT FROM THE REQUIREMENTS OF THE GROUNDWATER AQUIFER OVERLAY DISTRICT.
6. BASED ON RIDEM MAPPING, THE SITE IS LOCATED WITHIN A NON-COMMUNITY WELLHEAD PROTECTION AREA. THERE ARE NO HIGH HAZARD AREAS ON THE PROJECT SITE.
7. FRESHWATER WETLANDS SHOWN HEREIN WERE DELINEATED IN AUGUST 2021 AND DECEMBER 2022 BY NATURAL RESOURCE SERVICES, INC., OF HARRISVILLE, RI.
8. SOILS EXISTING ON THE SITE CONSIST OF UDORTMENTS-URBAN LAND COMPLEX (UD), URBAN LAND (Ur), AND CANTON AND CHARLTON FINE SANDY LOAMS, 3-8% SLOPES (c8b). C8B SOILS ARE GENERALLY WELL DRAINED, WITH A DEPTH TO THE SEASONAL HIGH GROUNDWATER TABLE OF GREATER THAN 80-INCHES, BELONGING TO HYDROLOGIC SOIL GROUP B.
9. TEST PIT EVALUATIONS WERE CONDUCTED BY JOE CASALI ENGINEERING, INC. IN AUGUST 2022. SOIL EVALUATION LOGS AND ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATIONS, ARE PROVIDED ON THE DETAIL SHEETS.
10. THERE ARE NO KNOWN EASEMENTS WITHIN THE PROJECT AREA.
11. TELEPHONE, ELECTRIC, SEWER, AND GAS SERVICES ARE ALL AVAILABLE FROM WITHIN CENTRAL STREET. A WATER MAIN EXTENSION FROM MECHANIC STREET IS REQUIRED TO PROVIDE PUBLIC WATER TO THE SITE.

**SITE NOTES:**

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) OF ALL MATERIALS INDICATED ON THE PLANS.
2. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS, AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICAN WITH DISABILITIES ACT AND WITH ALL APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, WHICHEVER IS MORE STRINGENT.
3. STOCKPILES OF EARTH MATERIALS SHALL NOT BE LOCATED ADJACENT TO DRAINAGE STRUCTURES.
4. ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREAS WILL RECEIVE A MINIMUM OF 6" OF LOAM AND SEED.
5. THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEMS FOUND WHICH DO NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SURVEY LAYOUT SERVICES FOR THE WORK AND SHALL SUBMIT "AS-BUILT" DRAWINGS OF ALL WORK, WHICH SHALL BE STAMPED AND CERTIFIED BY A RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR.
7. ANY ITEM OF WORK NOT SPECIFICALLY INDICATED ON THE PLANS BUT IS REQUIRED FOR THE COMPLETE CONSTRUCTION OF THE PROJECT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND INCLUDED IN THE CONTRACT BID PRICE. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EXISTING SITE CONDITIONS.
8. REFER TO ARCHITECTURAL PLANS, STRUCTURAL PLANS, PLUMBING PLANS, FIRE PROTECTION PLANS, AND ELECTRICAL PLANS, FOR ACTUAL SIZE OF THE PROPOSED BUILDING AND WORK WITHIN 5 FEET OF THE PROPOSED BUILDING.
9. WHERE NECESSARY TO REMOVE CURBS, CATCH BASINS OR DRAINS TO COMPLETE WORK, THE CONTRACTOR SHALL REPLACE SUCH ITEMS TO THE SATISFACTION OF THE TOWN OF NORTH SMITHFIELD AT NO ADDITIONAL COST TO THE OWNER.
10. ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.
11. THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION OR REPLACE TREES, SHRUBS, FENCES, SIGNS, GUARDRAILS, DRIVEWAYS, SIDEWALKS AND ANY OTHER OBJECT AFFECTED BY THIS OPERATION, UNLESS OTHERWISE NOTED ON THE SITE PLANS.
12. THE TOPS OF ALL VALVE BOXES AND CURB BOXES SHALL BE FLUSH WITH GROUND OR PAVEMENT SURFACE LEVEL AND PLUMB, UNLESS OTHERWISE DIRECTED.
13. ROADWAYS SHALL BE LEFT PASSABLE AT ALL TIMES. CLOSURE OF ROADWAY IS NOT PERMITTED.
14. WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES.
15. ALL LEDGE TO BE REMOVED BY MECHANICAL MEANS TO THE MAXIMUM EXTENT PRACTICABLE. SHOULD CONTRACTORS PROPOSE TO BLAST LEDGE, A PERMIT MUST BE OBTAINED BY THE STATE FIRE MARSHALS OFFICE. PRE-BLAST SURVEYS MAY BE REQUIRED TO ENSURE NO ADVERSE EFFECTS TO ADJUTING PROPERTIES.
16. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WET POINTS, SCREENS, OR OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE OF ALL SURFACE AND SUBSURFACE WATER ENCOUNTERED IN THE PERFORMANCE OF THE WORK.
17. REFER TO PLUMBING PLANS FOR CONTINUATION OF ALL UTILITIES WITHIN 5' (FIVE) FEET OF THE BUILDING.
18. ALL SITE WORK, INCLUDING BUT NOT LIMITED TO, BITUMINOUS PAVEMENT, ROADWAY CONSTRUCTION, AGGREGATE MATERIALS, DRAINAGE STRUCTURES, CURBING, SIDEWALK, LANDSCAPING, SAW CUTTING, ETC. SHALL CONFORM TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, AMENDED DECEMBER 2010 (WITH LATEST ADDENDA) AND THE RIDOT STANDARD DETAILS, 1998 EDITION (WITH LATEST ADDENDA).

**MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:**

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY AND VEHICULAR SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION.
2. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DIVIDES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
3. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED IN THE STATE OR TOWN RIGHT-OF-WAY.
4. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS CHANNELING DEVICES, ETC. SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.
5. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE RIDOT SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

**DRAINAGE SYSTEM NOTES:**

- 1. THE PROPOSED DRAINAGE LINES SHALL BE ADS N-12 HDPE PIPE OR AN APPROVED EQUAL UNLESS OTHERWISE NOTED ON THE SITE PLANS.
2. ALL RIM ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE SET FLUSH WITH FINAL GRADES.

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES:**

- 1. THE SILT FENCE LINE ILLUSTRATED ON THESE PLANS SHALL SERVE AS THE STRICT LIMIT OF DISTURBANCE FOR THE PROJECT WITHIN OR ADJACENT TO REGULATED FRESHWATER WETLAND AREAS.
2. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN SHALL BE TOTALLY UNDISTURBED, TO REMAIN IN NATURAL CONDITION.
3. ALL CATCH BASINS AND CULVERTS SHALL BE PROTECTED WITH STAKED HAYBALES (R.I. STD. 9.8.0) DURING CONSTRUCTION ACTIVITIES. ALL PROPOSED STORM WATER DISCHARGE AREAS SHALL BE LINED WITH A RIPRAP SPLASH PAD AND PROTECTED WITH STAKED HAYBALE OUTLET PROTECTION (R.I. STD. 9.1.0), OR STAKED HAYBALE WITH SILT FENCE (R.I. STD. 9.3.0) OUTLET PROTECTION (STAKED HAYBALE OR STAKED HAYBALE WITH SILT FENCE) SHALL ALSO BE INSTALLED AT ALL EXISTING STORMWATER DISCHARGE LOCATIONS WHERE DISTRIBUTING PIPES, CATCH BASINS, AND MANHOLES ARE TO BE CLEANED AND FLUSHED.
4. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REGULARLY CHECK ALL SEEDED AREAS TO ENSURE THAT A GOOD STAND IS MAINTAINED. STEEP SLOPE PROTECTION IS TO BE UTILIZED ON ALL SLOPES GREATER THAN 15% IN ACCORDANCE WITH THE PRACTICES LISTED IN THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION HANDBOOK" (UPDATED 2016); SECTION FOUR: EROSION CONTROL MEASURES: SLOPE PROTECTION.
5. ALL SILT FENCE, TEMPORARY TREATMENT (HAY, STRAW, ETC.) AND TEMPORARY EROSION PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
6. STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES OF NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEEDED AND/OR STABILIZED PER CONTRACT SPECIFICATIONS.
7. THE SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY SILT FENCE AS NEEDED. THE CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE DEVICE.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE FOR THE ENTIRE DURATION OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FOLLOW THE DIRECTION OF THE RESIDENT ENGINEER WITH REGARD TO INSTALLATION, MAINTENANCE, AND REPAIR OF ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS (HAYBALES, SILT FENCE, ETC.) SHALL BE MAINTAINED UNTIL ALL EXPOSED SOILS ARE SATISFACTORILY STABILIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND/OR RESEEDING ALL AREAS THAT DO NOT DEVELOP WITHIN ONE YEAR FROM THE COMPLETION OF CONSTRUCTION.
9. 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 HANDBOOK", UPDATED 2016.

**MISCELLANEOUS UTILITY NOTES:**

- 1. PRIOR TO CONSTRUCTION ALL POTENTIAL UTILITY/DRAINAGE CONFLICTS MUST BE IDENTIFIED BY THE CONTRACTOR. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
2. OVERHEAD ELECTRIC AND TELEPHONE SERVICES ARE TO BE REMOVED BY THE APPROPRIATE UTILITY COMPANY AND COORDINATED BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE A SUFFICIENT NUMBER OF WORKMEN AND GUARDS AS MAY BE NECESSARY TO PROPERLY SAFEGUARD THE PUBLIC FROM THEIR OPERATIONS.
4. THE CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OF PAVING, SIDEWALKS, UTILITIES, OR PRIVATE PROPERTIES AND SHALL PROMPTLY REPAIR AT HIS OWN EXPENSE ANY DAMAGE TO SUCH PAVING, SIDEWALKS, UTILITIES, OR PRIVATE PROPERTIES TO THE SATISFACTION OF THE OWNER OR TOWN.
5. EXISTING UTILITY FRAMES AND COVERS FOR SANITARY SEWER, WATER, GAS, STORM DRAINAGE AND OTHER UTILITIES SHALL BE ADJUSTED TO GRADE AS REQUIRED IN NEW PAVING AND PAVEMENT OVERLAY AREAS.
6. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF NORTH SMITHFIELD'S "SEWER ORDINANCE" AND "STANDARD SANITARY SEWER REQUIREMENTS".
7. ALL NEW SEWER PIPES AND MANHOLES SHALL BE CLEANED AND TESTED PRIOR TO ACCEPTANCE. GRAVITY SEWER PIPES SHALL BE REQUIRED TO PASS BOTH LOW PRESSURE AIR AND DEFLECTION (IE., MANDREL) TESTING. LOW PRESSURE SEWER PIPING SHALL BE REQUIRED TO PASS A LOW PRESSURE (IE., HYDROSTATIC) TEST.
8. A BACKFLOW PREVENTION DEVICE MUST BE INSTALLED AT EACH SEWER SERVICE BUILDING CONNECTION THAT IS BELOW THE RIM ELEVATION OF THE NEAREST SEWER MANHOLE, AS REQUIRED BY THE INTERNATIONAL PLUMBING CODE AND THE TOWN OF NORTH SMITHFIELD.
9. APPLICANT IS REQUIRED TO PROVIDE A COMPLETE SET OF FINAL AS-BUILT PLANS TO THE NORTH SMITHFIELD SEWER DEPARTMENT UPON COMPLETION OF CONSTRUCTION, PRIOR TO FINAL ACCEPTANCE. AS-BUILT PLANS SHALL BE PREPARED IN ACCORDANCE WITH THE SEWER DEPARTMENT'S POLICY.
10. INSPECTION OF ALL SEWER CONSTRUCTION SHALL BE PERFORMED BY THE SUPERINTENDENT, PRETREATMENT COORDINATOR OR OTHER DULY AUTHORIZED EMPLOYEES OF THE TOWN OF NORTH SMITHFIELD OR CITY OF WOONSOCKET. APPLICANT SHALL PROVIDE SCHEDULE FOR CONSTRUCTION AS SOON AS POSSIBLE TO ALLOW FOR DEVELOPMENT OF INSPECTION FEE, TO BE PAID BY APPLICANT DIRECTLY TO TOWN OF NORTH SMITHFIELD, UPON PAYMENT OF FEE, COMMENCEMENT OF CONSTRUCTION INSPECTION REQUIRES MINIMUM NOTIFICATION OF 48-HOURS.
11. APPLICANT IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM LOCAL, STATE, AND/OR FEDERAL AGENCIES WITH REGULATORY JURISDICTION OVER THE PROPOSED WORK. COPIES OF ALL PERMITS SHALL BE PROVIDED TO NORTH SMITHFIELD SEWER DEPARTMENT PRIOR TO CONSTRUCTION. ALL SEWER CONSTRUCTION SHALL BE PERFORMED BY A DRAIN LAYER LICENSED IN THE STATE OF RHODE ISLAND AND THE TOWN OF NORTH SMITHFIELD.
12. NO FLOW WILL BE ACCEPTED UNTIL ALL TERMS, CONDITIONS AND REQUIREMENTS HAVE BEEN COMPLETED WITH, ANY FEES DUE ARE PAID IN FULL, AND THE APPLICANT RECEIVES FINAL ACCEPTANCE FROM THE NORTH SMITHFIELD SEWER DEPARTMENT.
13. THE CONTRACTOR SHALL CONFINE HIS CONSTRUCTION OPERATIONS AND ACTIVITIES TO WITHIN THE STREET LINES, EASEMENT AND/OR RIGHT-OF-WAY, AS SHOWN ON THE DRAWINGS.
14. FOUR (4) COMPLETE SETS OF SHOP DRAWINGS WITH MANUFACTURER'S CERTIFICATION THAT ALL MATERIALS TO BE USED FOR CONSTRUCTION OF THE PROJECT / SYSTEM COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS. THE SEWER DEPARTMENT WILL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE APPROVE PLANS.
15. PRIOR TO CONSTRUCTION OF THE RELOCATION OF ALL WATER MAINS, THE CONTRACTOR SHALL COORDINATE WITH NORTH SMITHFIELD WATER DEPARTMENT FOR INSPECTION AND CHLORINATION OF NEW PIPING, FITTINGS AND VALVES.

**SEQUENCE & STAGING OF PROPOSED CONSTRUCTION ACTIVITIES:**

- 1. THIS IS A GENERAL SEQUENCE AND STAGING OF CONSTRUCTION ACTIVITIES. A DETAILED SEQUENCE WITH TIME LINES SHALL BE ESTABLISHED BY THE CONTRACTOR IN COORDINATION WITH THE OWNER, ENGINEER AND SITE CONTRACTORS PRIOR TO THE START OF CONSTRUCTION.
2. SURVEY AND STAKE THE PROPOSED DRAINAGE BMPs AND LIMIT OF DISTURBANCE. THE CONTRACTOR SHALL NOT COMPACT THE AREAS OF THE DRAINAGE BMPs DURING CONSTRUCTION OPERATIONS. CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE TO PROTECT BMPs.
3. PLACE SEDIMENTATION BARRIERS (SILT FENCE) AS SHOWN ON THE PLANS AND AS STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS.
4. BEGIN SITE WORK. TOPSOIL IS TO STRIPPED AND STOCKPILED WITHIN DISTURBANCE LIMITS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIERS. STOCKPILES TO BE COVERED OR TEMPORARILY SEEDED.
5. EXCAVATE AND CONSTRUCT STORMWATER MANAGEMENT AREAS AS SHOWN ON PLAN. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED STORMWATER STORAGE AREA. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED STORMWATER STORAGE AREA.
6. INSTALL UTILITIES AND DRAINAGE INCLUDING DRAINAGE PIPE. IMMEDIATELY PLACE THE RIP-RAP AT THE DISCHARGE POINTS. SEED ALL DISTURBED AREAS.
7. BEGIN BUILDING CONSTRUCTION. BEGIN PAVEMENT INSTALLATION AND PROPOSED GRADING. BRING ROADWAY TO SUBBASE GRADE WITH GRAVEL. SEED ALL DISTURBED AREAS. FINISH PAVEMENT CONSTRUCTION. MAINTAIN SEDIMENT AND EROSIONS CONTROLS WHILE BUILDING ARE CONSTRUCTED.
8. FINISH LANDSCAPING AND PERMANENT STABILIZATION.
9. INSPECT AND REPAIR ALL DRAINAGE STRUCTURES INCLUDING DISCHARGE POINTS. REMOVE ANY DEBRIS (LEAVES, TREE LIMBS, BOULDERS, ETC.) FROM DRAINAGE INLETS AND OUTLETS. FLUSH ALL SEDIMENTS FROM DRAINAGE PIPES AND APPLY TOPSOIL TO PONDS.
10. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE VEGETATION HAS BEEN ESTABLISHED TO ALL DISTURBED AREAS.

**BMP MAINTENANCE SCHEDULE:**

- 1. ALL MAINTENANCE (INCLUDING CLEANING) REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL INCLUDE:
A. MEASURES NEEDED TO ENSURE THE PROPER OPERATION OF THE STORMWATER RUNOFF (DRAINAGE) AND WATER QUALITY CONTROL SYSTEMS TO INCLUDE INSPECTION, CLEANING AND REPAIRS ALL PIPES, INTAKE AND DISCHARGE STRUCTURES, CATCH BASIN SUMPS, AND MANHOLES.
B. INSPECTION OF ALL SLOPES, BERMS, AND OTHER CONTROL STRUCTURES FOR STRUCTURAL INTEGRITY/STABILITY AND EVIDENCE OF SOIL EROSION PROCESSES, AND MAINTENANCE OF THESE STRUCTURES IF NECESSARY. INSPECTIONS SHALL BE PERFORMED FOLLOWING ALL RAIN EVENTS OF 1/2 INCH RAINFALL OR MORE IN A 24-HOUR PERIOD, OR BI-MONTHLY IF NO RAINFALL EVENT OCCURS.
2. UPON COMPLETION OF THE PROJECT CONSTRUCTION, AND PRIOR TO VACATING THE SITE, THE CONTRACTOR SHALL CONDUCT A FINAL INSPECTION AND CLEANING OF THE DRAINAGE SYSTEM AND ALL ASSOCIATED STRUCTURES.
3. ALL INSTALLATION, CLEANING, AND MAINTENANCE OF THE STORMWATER DRAINAGE SYSTEM SHALL FOLLOW AT LEAST THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION MINIMUM STANDARDS, SECTION 212 AND SECTION 708. WHERE APPROPRIATE, PROCEDURES REGARDING THE DRAINAGE INSTALLATION, CLEANING, INSPECTION, AND MAINTENANCE OF THE STORMWATER DRAINAGE SYSTEM SHALL BE FOLLOWED AS OUTLINED IN THE "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" (RIDEM/RICRMC, AMENDED 2015).
4. AFTER CONSTRUCTION, STORMWATER BMPs SHALL BE INSPECTED AND MAINTAINED BY THE OWNER AS FOLLOWS:
ROOF DRAIN LEADERS
• PERFORM ROUTINE ROOF INSPECTIONS QUARTERLY.
• KEEP ROOFS CLEAN AND FREE OF DEBRIS.
• KEEP ROOF DRAINAGE SYSTEMS CLEAR.
PRE-TREATMENT - PEA GRAVEL DIAPHRAGM
• AFTER CONSTRUCTION, THE SEDIMENT FOREBAYS SHALL BE INSPECTED AND CLEANED WHEN SEDIMENT BUILD UP IS IN EXCESS OF 6" OR 25% OF THE SEDIMENT STORAGE VOLUME.
BIORETENTION INFILTRATION BASIN
• DURING THE SIX MONTHS IMMEDIATELY AFTER CONSTRUCTION, THE INFILTRATION BASIN SHALL BE INSPECTED AFTER THE FIRST TWO RAINFALL EVENTS OF AT LEAST 1.0 INCH TO ENSURE THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER INSPECTIONS SHALL BE CONDUCTED ON AN ANNUAL BASIS AND AFTER STORM EVENTS OF GREATER THAN OR EQUAL TO 2 INCHES.
• SILT AND SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE ACCUMULATION EXCEEDS SIX INCHES, OR WHEN WATER PONDS ON THE SURFACE OF THE INFILTRATION BASIN FOR MORE THAN 48 HOURS.
• SOIL EROSION GULLIES SHALL BE REPAIRED WHEN THEY OCCUR.
• THE OUTLET DEVICES SHALL BE CLEANED/REPAIRED WHEN NECESSARY.
• TRASH AND DEBRIS SHALL BE REMOVED WHEN NECESSARY.
• THE OUTFLOW WEIR SHOULD BE INSPECTED ANNUALLY TO ENSURE THAT IT IS FUNCTIONING PROPERLY.

**MANHOLES / DRAIN LINES**

- INSPECTIONS SHALL BE PERFORMED A MINIMUM OF 2 TIMES PER YEAR (SPRING/FALL). UNITS SHALL BE CLEANED WHENEVER THE DEPTH OF SEDIMENT IS GREATER THAN OR EQUAL TO 2-FEET (LESS THAN 2-FEET FROM THE BOTTOM OF PIPE). ALL REMOVED SEDIMENT SHALL BE TESTED TO DETERMINE POLLUTANT CONTENT AND SHALL BE REMOVED IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
• THE INLET GRATE SHALL NOT BE WELDED TO THE FRAME SO THAT THE SUMP CAN BE EASILY INSPECTED AND MAINTAINED.

**UNDERGROUND INFILTRATION SYSTEMS**

- INFILTRATION SYSTEMS SHALL BE INSPECTED ON A BI-ANNUAL BASIS TO ENSURE PROPER FUNCTIONS. INSPECTION PORTS SHALL BE USED TO VERIFY THAT THE SYSTEMS ARE DRAINING WITHIN 72 HOURS. IF THE SYSTEM FAILS TO DRAIN WITHIN 72-HOURS, THE SYSTEM SHALL BE CLEANED OR REPLACED AS NECESSARY.
• THE INFILTRATION SYSTEM SHALL BE INSPECTED BI-ANNUALLY FOR SEDIMENT ACCUMULATIONS. IF THE SYSTEM HAS ACCUMULATED 3 INCHES OF SEDIMENT, THE SEDIMENT SHALL BE REMOVED BY FLUSHING FROM THE SYSTEM WITH HIGH PRESSURE WATER JETS AND AND VACUUMING THE SEDIMENT AND DEBRIS THROUGH THE ACCESS PORTS. ALL SEDIMENT REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL STATE AND FEDERAL REGULATIONS.

**LOAMING & SEEDING NOTES:**

SEEDING ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH SECTION L.02 SEEDING OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2010 EDITION (WITH LATEST ADDENDA), AND SHALL ALSO CONFORM TO THE FOLLOWING:

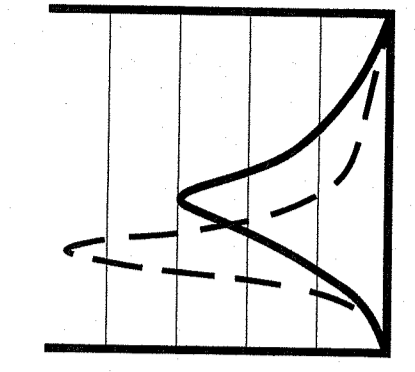
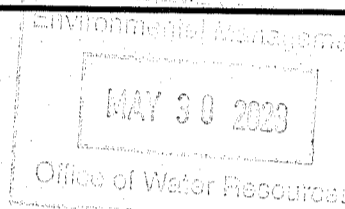
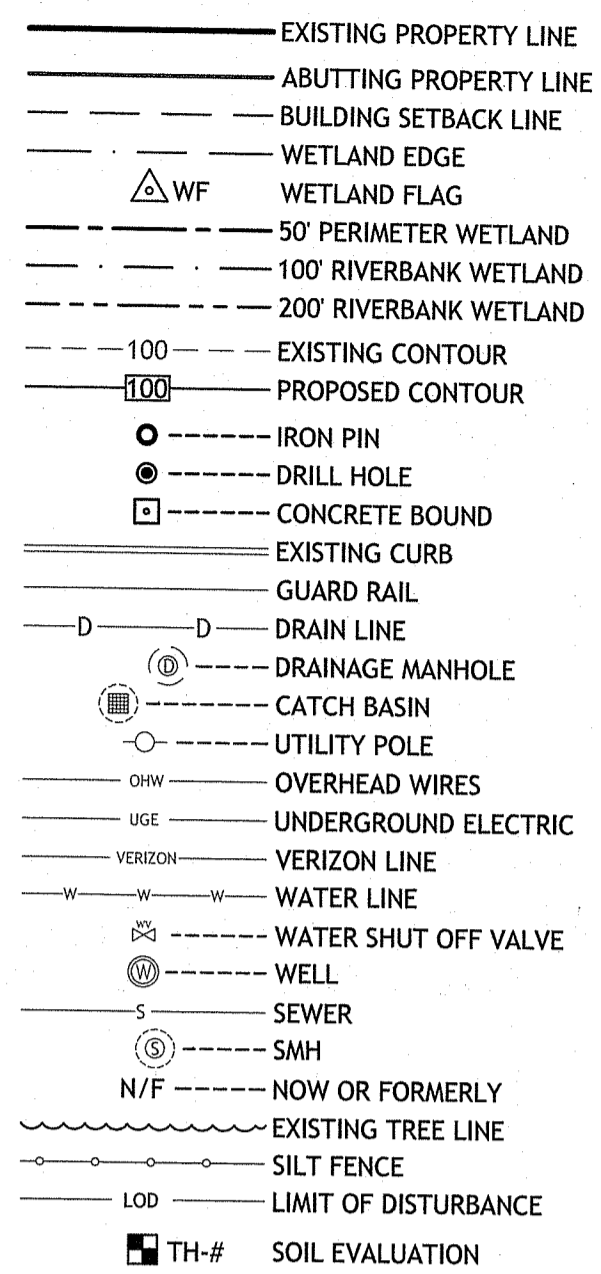
- 1. AFTER ROUGH GRADING IS COMPLETED, ALL DISTURBED AREAS AND AREAS LABELED AS 'LOAM AND SEED' ARE TO BE BROUGHT TO AN ELEVATION OF 6" BELOW THE PROPOSED FINISHED GRADE. SCARIFY THE SUBGRADE TO A DEPTH OF 12" WITH THE TEETH OF A BACKHOE OR A POWER RAKE TO RESULT IN AN UNCOMPACTED SUBSOIL. 6" OF GOOD QUALITY TOPSOIL IS TO BE APPLIED AND RAKED TO FINISHED GRADE.
2. THE TOPSOIL IS TO BE GOOD QUALITY LOAM, FERTILE AND FREE OF WEEDS, STICKS AND STONES OVER 3/4" IN SIZE AND OTHERWISE COMPLYING WITH SECTION M.18.01 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2010 EDITION (WITH LATEST ADDENDA),
3. PRIOR TO SEEDING OR SODDING, FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 1-2" OF THE PLANTING SOIL. APPLY AT A RATE OF 8 LBS. PER 1000 SQUARE FEET.
4. APPLY LIME AT A RATE OF ONE TON PER ACRE AND UNIFORMLY INCORPORATE INTO THE TOP 1-2" OF TOPSOIL.
5. SEEDING
AFTER THE SEED BED IS PREPARED, SEED IS TO BE BROADCAST EVENLY OVER THE SURFACE AND WORKED INTO THE TOP 1" OF SOIL. SEED SHALL BE APPROVED URI #2 OR APPROVED EQUAL. APPLY AT A RATE OF 4-5 LBS. PER 1000 SQUARE FEET OR AS OTHERWISE DIRECTED BY THE MANUFACTURER.

URI #2 IMPROVED SEED MIX, % BY WEIGHT:

- 40% CREEPING RED FESCUE
20% IMPROVED PERENNIAL RYEGRASS
20% IMPROVED KENTUCKY BLUEGRASS
20% KENTUCKY BLUEGRASS

RECOMMENDED SEEDING DATES ARE MARCH 15 TO JUNE 15 AND SEPTEMBER 15 TO NOVEMBER 15. AT THE CONTRACTORS DISCRETION, SEED MAY BE APPLIED BY HYDROSEEDING RATHER THAN THE METHOD DESCRIBED ABOVE.

**LEGEND:**



JOE CASALI ENGINEERING, INC.
Civil, Survey, Drainage, Wetlands, EROSION CONTROL, TRAFFIC, Floodplain
300 POBET ROAD, WARWICK, RI 02888
(401) 944-1500 (401) 944-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI
No. 7250
REGISTERED PROFESSIONAL ENGINEER CIVIL

MATERIAL SAMPLING TECHNOLOGIES
CENTRAL STREET
NORTH SMITHFIELD, RHODE ISLAND
AP 1, LOTS 17 & 461

Table with 2 columns: NO., DATE, DESCRIPTION. Row 1: 1, 3/24/23, RIDEM RTC.

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: APR 02 2024 FILE #: 22-0450
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PRELIMINARY, NOT FOR CONSTRUCTION

GENERAL NOTES AND LEGEND

SHEET 2 OF 15



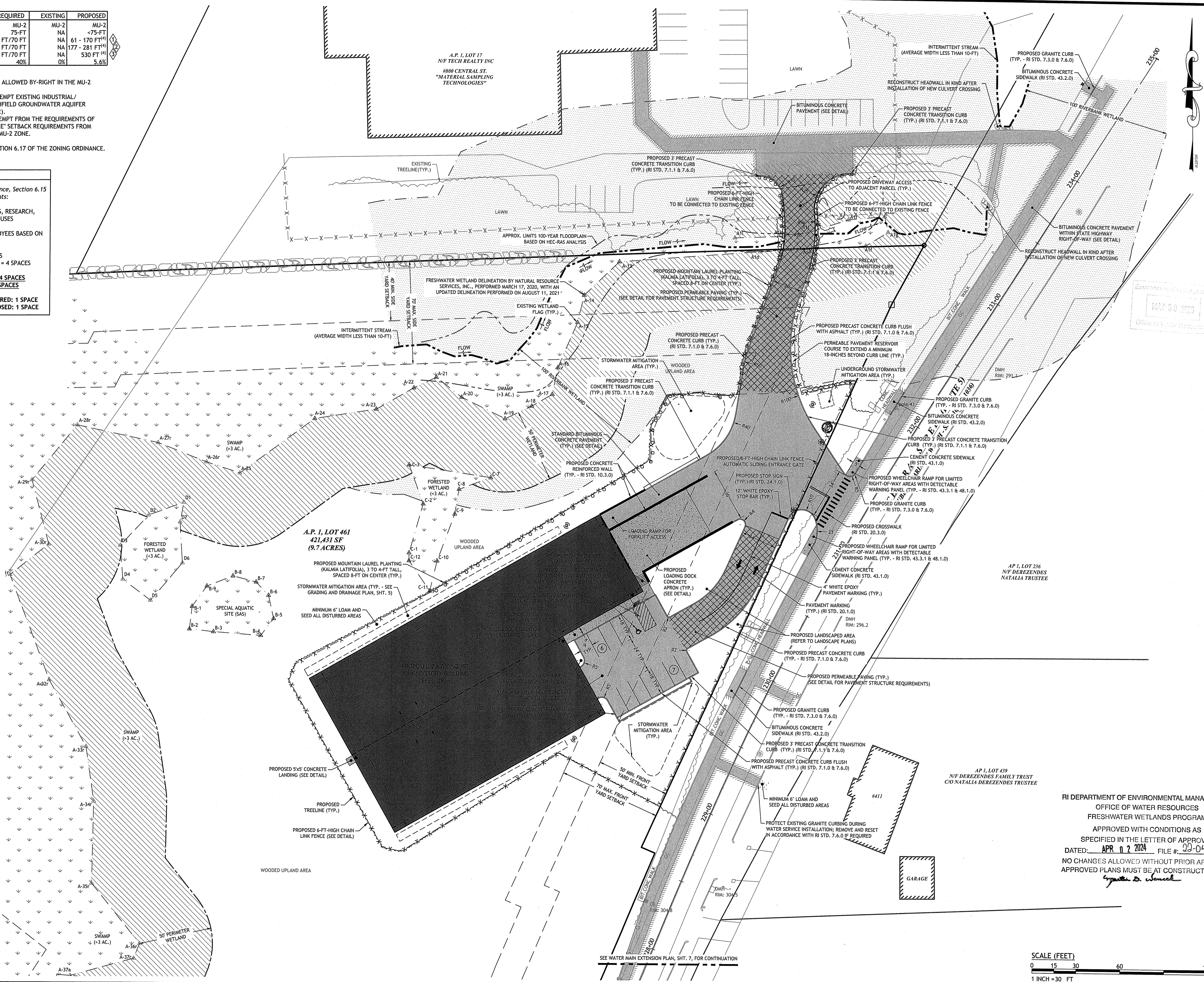
LOCATION OF EXISTING UTILITIES SHOWN, ARE FROM GATE LOCATION AND EXISTING DOCUMENTATION AND MAY NOT BE ACCURATE. EXACT LOCATION TO BE DONE BY THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY PRIOR TO ANY EXCAVATION CALL DIGSAFE AT: 1-888-DIG-SAFE 1-888-344-7233



ZONING CRITERIA (SECTION 12.11)	REQUIRED	EXISTING	PROPOSED
ZONING DISTRICT	MU-2	MU-2	MU-2
MAXIMUM BUILDING HEIGHT	75-FT	NA	<75-FT
MIN./MAX. FRONT YARD SETBACK	50 FT/70 FT	NA	61 - 170 FT <sup>(1)</sup>
MIN./MAX. SIDE YARD SETBACK	40 FT/70 FT	NA	177 - 281 FT <sup>(1)</sup>
MIN./MAX. REAR YARD SETBACK	40 FT/70 FT	NA	530 FT <sup>(1)</sup>
MAXIMUM SITE COVERAGE	40%	0%	5.6%

- NOTES:
- THE PROPOSED USE, LIGHT INDUSTRIAL, IS ALLOWED BY-RIGHT IN THE MU-2 ZONE (SECTION 5.4.10.5).
  - THE SUBJECT PARCEL IS IDENTIFIED AS "EXEMPT EXISTING INDUSTRIAL/COMMERCIAL AREAS" ON THE NORTH SMITHFIELD GROUNDWATER AQUIFER PROTECTION OVERLAY DISTRICT MAP (2012).
  - AS PER SECTION 6.12.3(7), THIS SITE IS EXEMPT FROM THE REQUIREMENTS OF THE "STRUCTURE AND IMPERVIOUS SURFACE" SETBACK REQUIREMENTS FROM WETLANDS, AS THE SITE LIES WITHIN THE MU-2 ZONE.
  - DIMENSIONAL RELIEF REQUIRED.
  - SIGNAGE TO BE IN ACCORDANCE WITH SECTION 6.17 OF THE ZONING ORDINANCE.

PARKING CALCULATION	
Per Town of North Smithfield Zoning Ordinance, Section 6.15 Off-Street Parking Requirements:	
USE:	INDUSTRIAL, CORPORATE OFFICES, RESEARCH, DEVELOPMENT AND WAREHOUSE USES
REQUIRED:	2 PARKING SPACES PER 3 EMPLOYEES BASED ON LARGEST SHIFT
LARGEST SHIFT:	6 EMPLOYEES
	6 EMPLOYEES (2 SPACES/3 EMPLOYEES) = 4 SPACES
TOTAL PARKING SPACES REQUIRED =	4 SPACES
PARKING SPACES PROPOSED =	13 SPACES
ADA ACCESSIBLE PARKING SPACES REQUIRED:	1 SPACE
ADA ACCESSIBLE PARKING SPACES PROPOSED:	1 SPACE



**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - EROSION CONTROL - FLOODPLAIN  
(601) 944-1300 (601) 944-1313 FAX WWW.JOECASALI.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

REVISIONS:

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

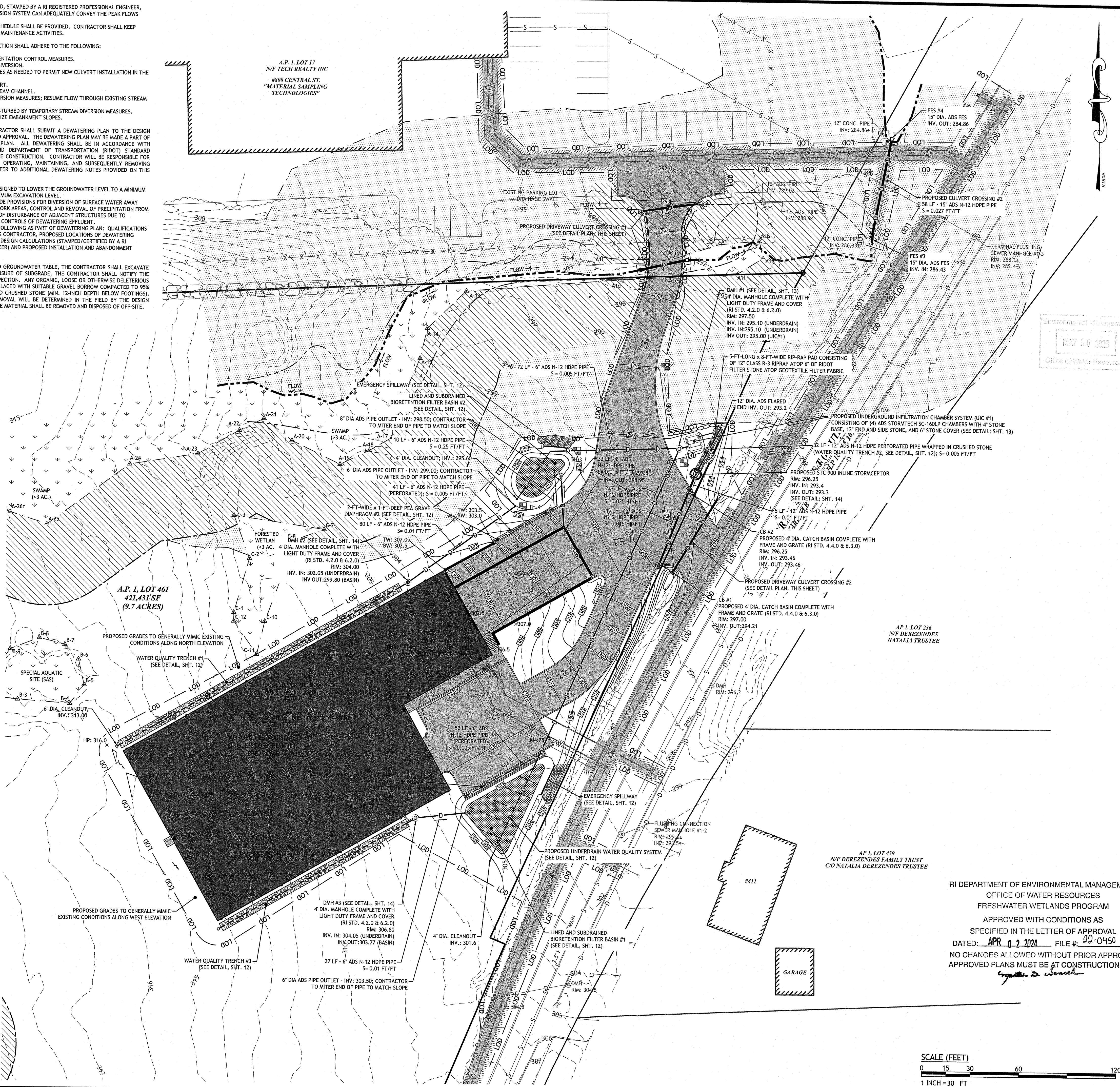
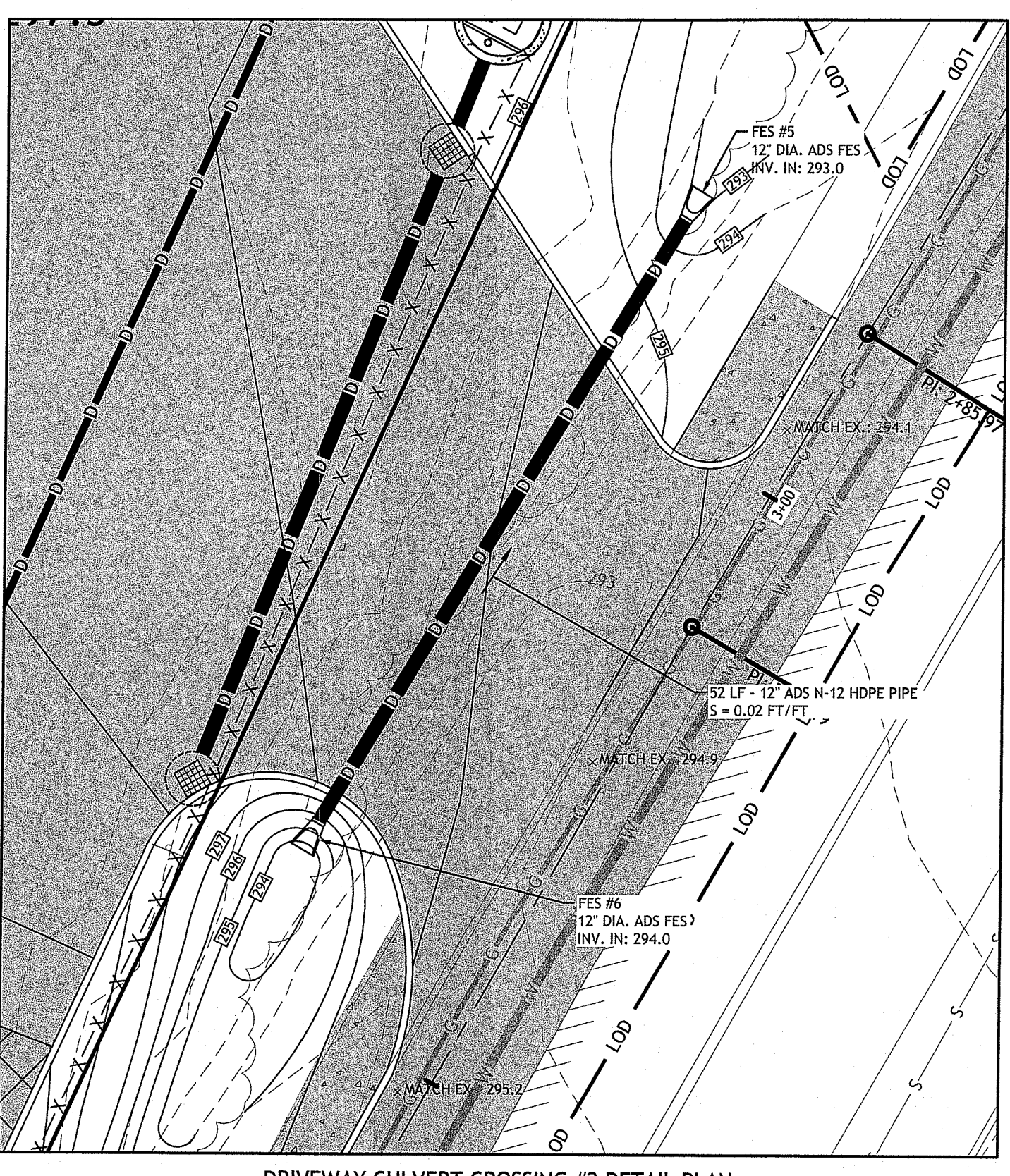
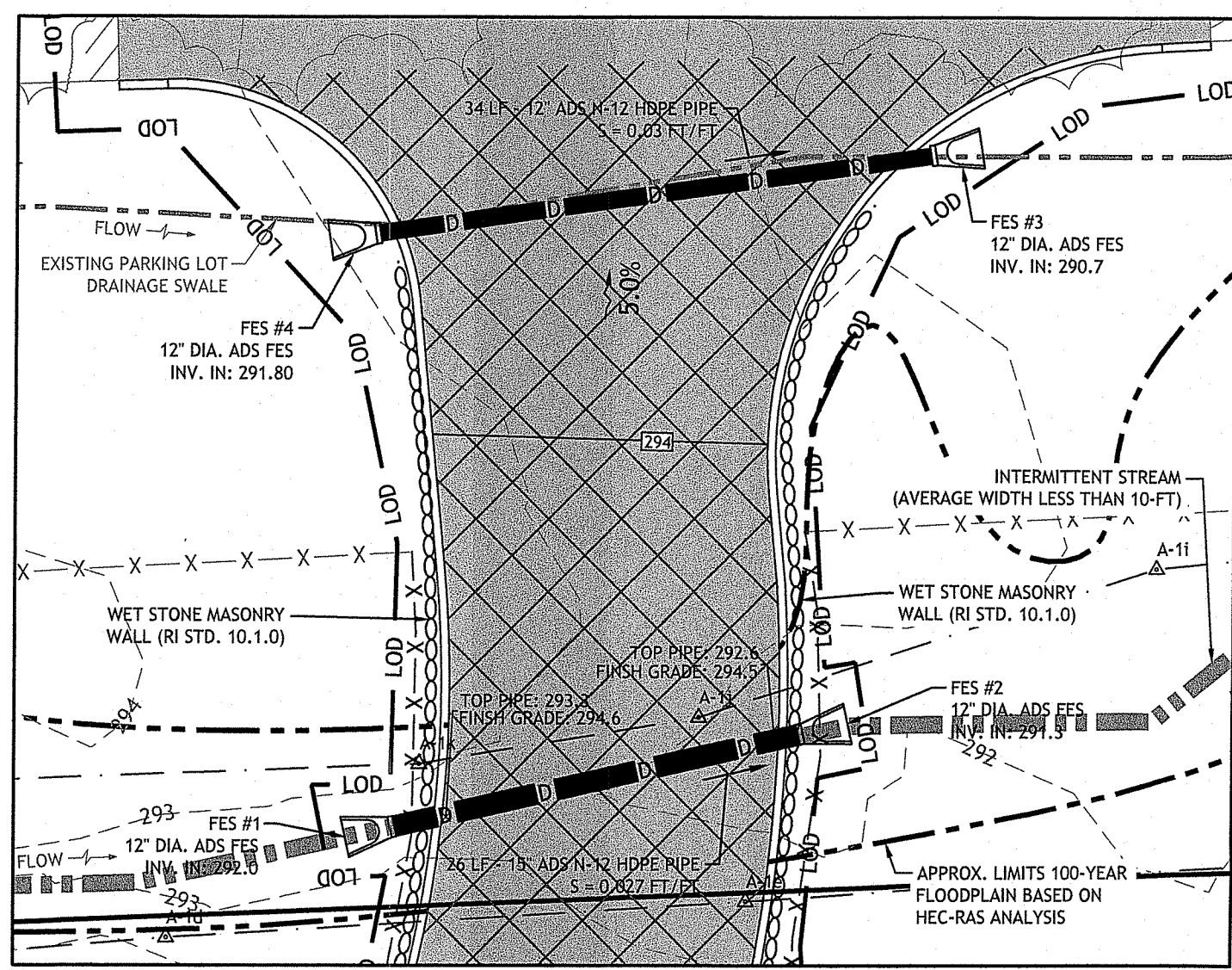
**SITE PLAN**

**SHEET 4 OF 15**

C:\21-103 Material Sampling Technologies\ACAD\MST - Central Street [RIDE]M RTC - RI [Elev. Changes].dwg Mar. 28, 2023 2:56pm

**CULVERT INSTALLATION NOTES:**

- PRIOR TO ANY WORK ASSOCIATED WITH NEW CULVERT CONSTRUCTION, CONTRACTOR SHALL INSTALL ALL NECESSARY SOIL EROSION AND SEDIMENT CONTROL MEASURES AS DETAILED ON SHT. 3 AND AS DESCRIBED IN THE SOIL EROSION AND SEDIMENTATION CONTROL NOTES ON SHT. 2.
- ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WET POINTS, SCREENS, OR OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE OF ALL SURFACE AND SUBSURFACE WATER ENCOUNTERED IN THE PERFORMANCE OF THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH OSHA REQUIREMENTS INCLUDING SHORING IN TRENCHES.
- ALL WORK ASSOCIATED WITH THE EXISTING CULVERT REMOVAL AND/OR THE NEW CULVERT CONSTRUCTION SHALL BE LIMITED TO THE LOW FLOW PERIOD (THE PERIOD FROM JULY 1 TO OCTOBER 31 OF ANY CALENDAR YEAR).
- THE NEW CULVERT IS DESIGNED TO MIMIC THE EXISTING CONDITION; NO ADVERSE HEADWATER OR TAIL WATER CONDITIONS ARE ANTICIPATED OR PROPOSED.
- THE CONTRACTOR SHALL HAVE A BY-PASS PUMP AND ALL NECESSARY EQUIPMENT FOR TRENCH DEWATERING AND BY-PASS PUMPING.
- PROPOSED DIVERSION PLAN OFFERS TWO OPTIONS:
  - INSTALL SANDBAG DAM AND UTILIZE BYPASS PUMP TO AVOID CONSTRUCTION AREA FOR CULVERT INSTALLATION.
  - INSTALL SANDBAG DAM AND 12" HDPE PIPE TO CARRY FLOW THROUGH CONSTRUCTION AREA.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A STREAM BYPASS PLAN TO THE DESIGN ENGINEER OF RECORD FOR REVIEW AND APPROVAL. THE PLAN SHALL INCLUDE MEASURES TO DESIGN, INSTALL, OPERATE, MAINTAIN, REMOVE AND DISPOSE A TEMPORARY STREAM DIVERSION SYSTEM AS NECESSARY TO ALLOW FOR INSTALLATION OF THE NEW CULVERT IN THE DRY. THE PLAN SHALL ADHERE TO THE FOLLOWING REQUIREMENTS:
  - TEMPORARY STREAM DIVERSION MAY BE EITHER A GRAVITY OR A PUMPED SYSTEM. IF A PUMPED SYSTEM IS SPECIFIED, ONCE A PUMPED DIVERSION BEGINS, THE PUMPS MUST RUN CONTINUOUSLY UNTIL IT IS NO LONGER NECESSARY TO BYPASS FLOWS. BACK-UP PUMPS MUST BE MADE AVAILABLE ON SITE AND 24-HOUR MONITORING OF THE SYSTEM WILL BE REQUIRED.
  - SCOUR PROTECTION MUST BE PROVIDED AT THE OUTLET OF THE TEMPORARY STREAM DIVERSION SYSTEM.
  - CONTRACTOR SHALL ARRANGE A MEETING WITH THE DESIGN ENGINEER OF RECORD PRIOR TO IMPLEMENTATION OF THE TEMPORARY STREAM DIVERSION A MINIMUM OF 7 DAYS PRIOR TO IMPLEMENTATION. THE PLAN SHALL INCLUDE DRAWINGS SHOWING THE LOCATION OF TEMPORARY STREAM DIVERSION, ACCESS ROUTES AND EQUIPMENT TO BE USED. SCHEDULE AND SEQUENCE OF WORK SHALL ALSO BE PROVIDED. PLAN SHALL ADDRESS DEWATERING OF THE ISOLATED WORK AREA (NOTE 6), RESTORATION AND STABILIZATION OF THE TEMPORARY STREAM CHANNEL, AND CHANNEL REWATERING.
- CALCULATIONS SHALL BE PROVIDED, STAMPED BY A RI REGISTERED PROFESSIONAL ENGINEER, DEMONSTRATING THAT THE DIVERSION SYSTEM CAN ADEQUATELY CONVEY THE PEAK FLOWS ANTICIPATED.
- INSPECTION AND MAINTENANCE SCHEDULE SHALL BE PROVIDED. CONTRACTOR SHALL KEEP RECORDS OF ALL INSPECTION AND MAINTENANCE ACTIVITIES.
- THE GENERAL SEQUENCE OF CONSTRUCTION SHALL ADHERE TO THE FOLLOWING:
  - INSTALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.
  - IMPLEMENT TEMPORARY STREAM DIVERSION.
  - IMPLEMENT DEWATERING ACTIVITIES AS NEEDED TO PERMIT NEW CULVERT INSTALLATION IN THE DRY.
  - FURNISH AND INSTALL NEW CULVERT.
  - STABILIZE EXISTING DIVERTED STREAM CHANNEL.
  - REMOVE TEMPORARY STREAM DIVERSION MEASURES; RESUME FLOW THROUGH EXISTING STREAM CHANNEL.
  - RESTORE AND STABILIZE AREAS DISTURBED BY TEMPORARY STREAM DIVERSION MEASURES.
  - CONSTRUCT ACCESS ROAD; STABILIZE EMBANKMENT SLOPES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE DESIGN ENGINEER OF RECORD FOR REVIEW AND APPROVAL. THE DEWATERING PLAN MAY BE MADE A PART OF THE TEMPORARY STREAM DIVERSION PLAN. ALL DEWATERING SHALL BE IN ACCORDANCE WITH SECTION 203 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR DESIGNING, FURNISHING, INSTALLING, OPERATING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY DEWATERING SYSTEM. REFER TO ADDITIONAL DEWATERING NOTES PROVIDED ON THIS SHEET.
  - DEWATERING SYSTEM SHALL BE DESIGNED TO LOWER THE GROUNDWATER LEVEL TO A MINIMUM OF TWO (2) FEET BELOW THE MAXIMUM EXCAVATION LEVEL.
  - DEWATERING DESIGN SHALL INCLUDE PROVISIONS FOR DIVERSION OF SURFACE WATER AWAY FROM EXCAVATIONS AND OTHER WORK AREAS. CONTROL AND REMOVAL OF PRECIPITATION FROM EXCAVATION AREAS, PREVENTION OF DISTURBANCE OF ADJACENT STRUCTURES DUE TO DEWATERING AND SEDIMENTATION CONTROLS OF DEWATERING EFFLUENT.
  - CONTRACTOR SHALL SUBMIT THE FOLLOWING AS PART OF DEWATERING PLAN: QUALIFICATIONS AND CREDENTIALS OF DEWATERING CONTRACTOR, PROPOSED LOCATIONS OF DEWATERING EQUIPMENT, SHOP DRAWINGS AND DESIGN CALCULATIONS (STAMPED/CERTIFIED BY A RI REGISTERED PROFESSIONAL ENGINEER) AND PROPOSED INSTALLATION AND ABANDONMENT PROCEDURES.
  - UPON STABILIZATION OF THE LOWERED GROUNDWATER TABLE, THE CONTRACTOR SHALL EXCAVATE FOR CULVERT FOOTINGS. UPON EXPOSURE OF SUBGRADE, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER OF RECORD FOR INSPECTION. ANY ORGANIC, LOOSE OR OTHERWISE DELETERIOUS MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE GRAVEL BORROW COMPACTED TO 95% DRY DENSITY (MODIFIED PROCTOR) AND CRUSHED STONE (MIN. 12-INCH DEPTH BELOW FOOTINGS). EXTENT OF UNSUITABLE MATERIAL REMOVAL WILL BE DETERMINED IN THE FIELD BY THE DESIGN ENGINEER OF RECORD. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OFF-SITE.



**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - USDS - TRAFFIC - FLOODPLAIN  
(401) 944-1300 (401) 944-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

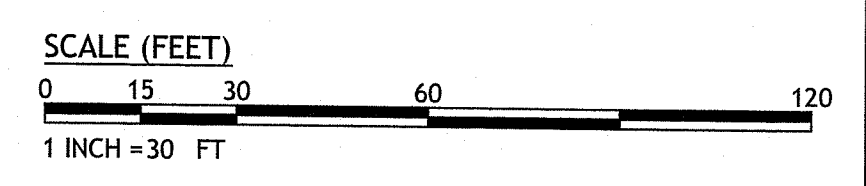
REVISIONS:

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEPS/D  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 12 2024 FILE #: 22-0450  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Joseph D. Wenzel*

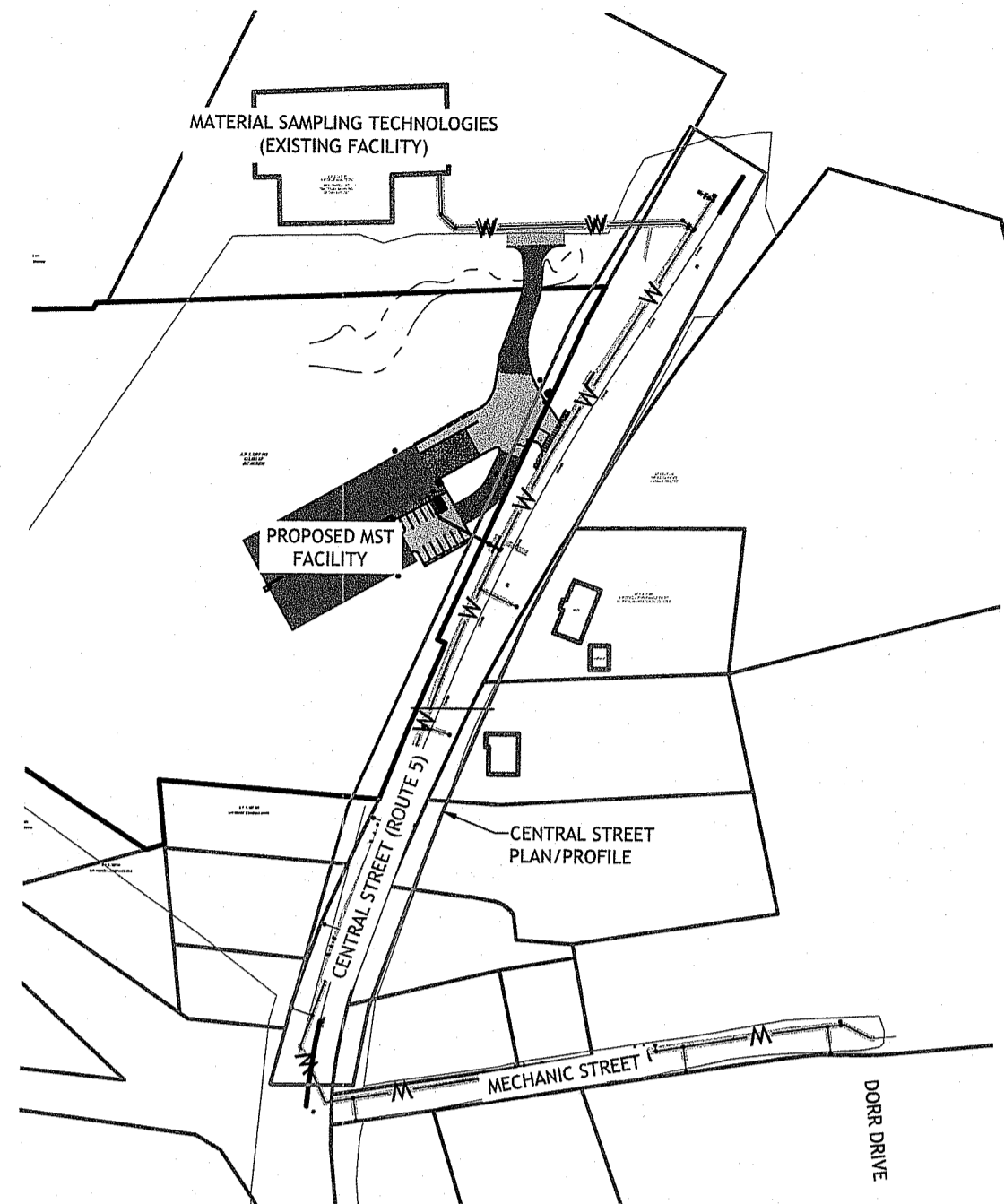


PRELIMINARY, NOT FOR CONSTRUCTION

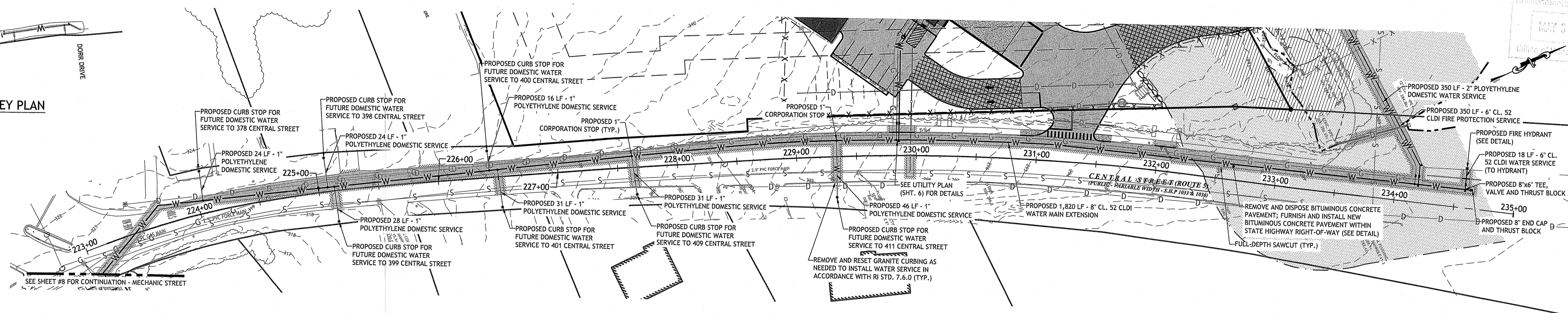
**GRADING & DRAINAGE PLAN**

**SHEET 5 OF 15**

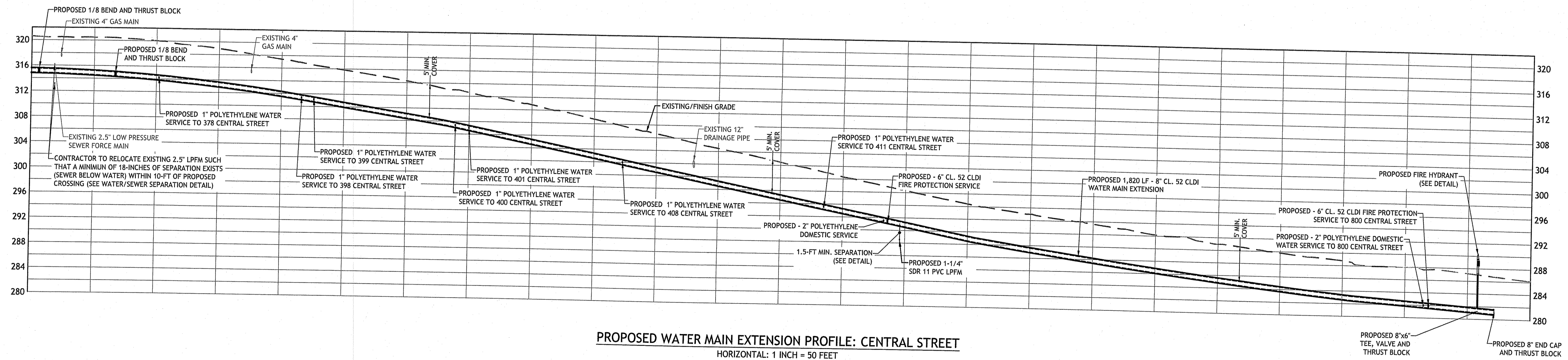




**WATER MAIN EXTENSION KEY PLAN**  
SCALE: 1" = 200'



**PROPOSED WATER MAIN EXTENSION PLAN: CENTRAL STREET**  
SCALE: 1 INCH = 50 FEET



**PROPOSED WATER MAIN EXTENSION PROFILE: CENTRAL STREET**  
HORIZONTAL: 1 INCH = 50 FEET  
VERTICAL: 1 INCH = 10 FEET  
(5X VERTICAL EXAGGERATION)

**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - EROSION CONTROL - FLOODPLAIN  
601-944-1300 (001)944-1313 FAX WWW.JCE-ENGINEERING.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

REVISIONS:

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

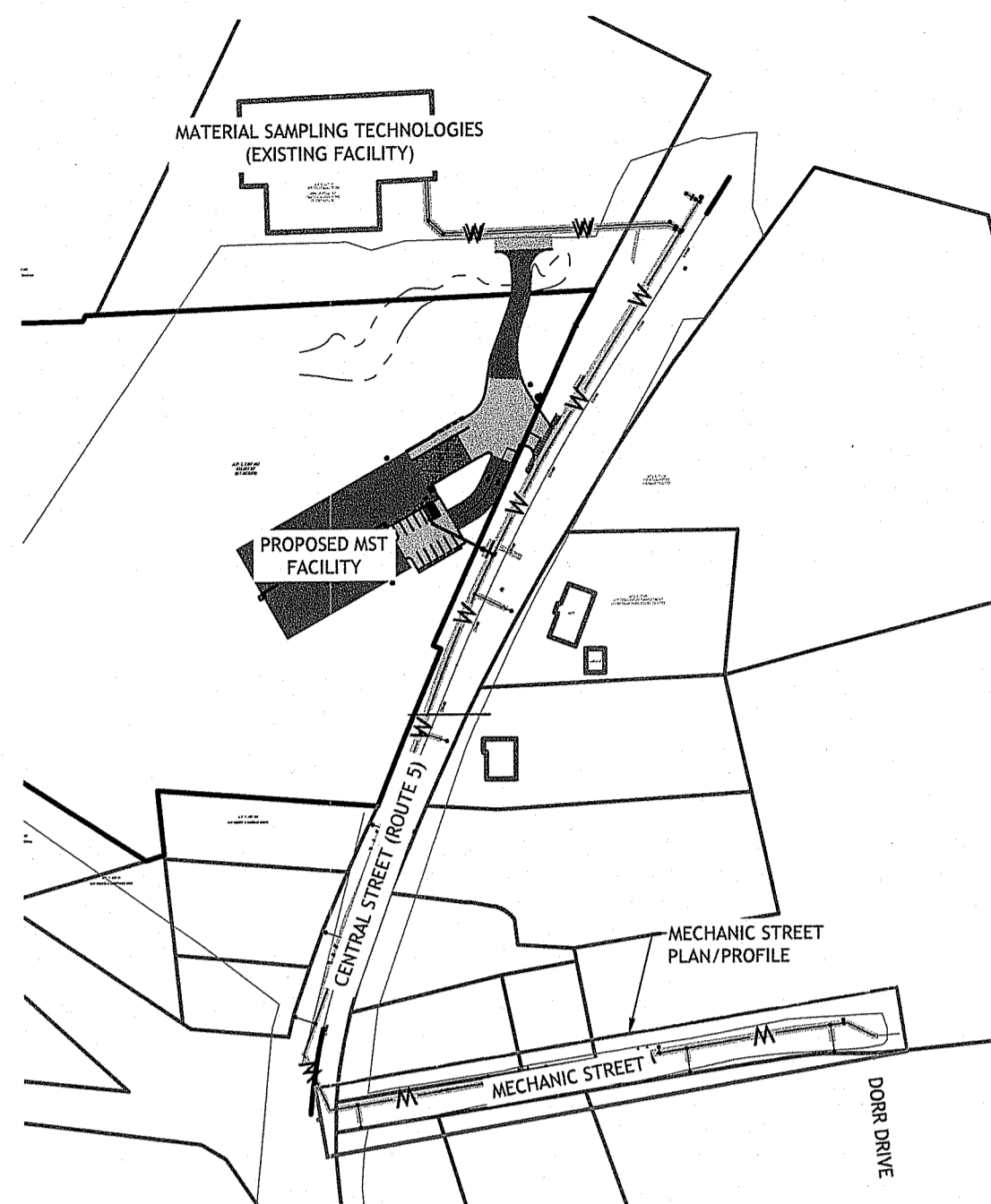
PRELIMINARY, NOT FOR CONSTRUCTION

**WATER MAIN EXTENSION PLAN AND PROFILE I**

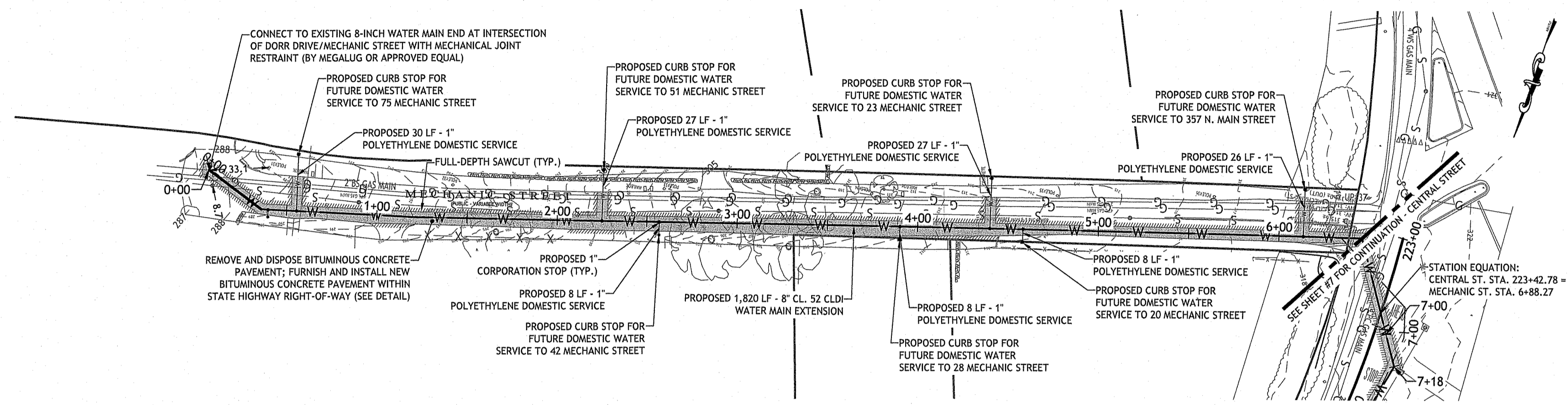
**SHEET 7 OF 15**

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 2 2024 FILE #: 22-0450  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

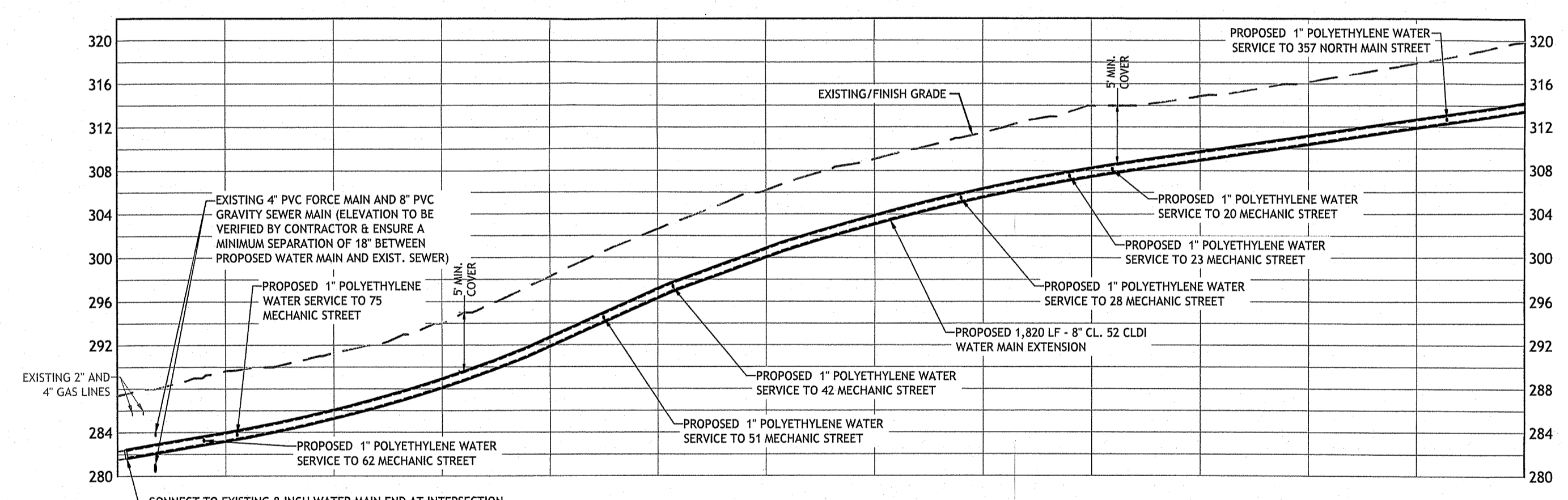
Q:\21-103 Material Sampling Technologies\ACAD\MST - Central Street - RIDEM RTC - B1 [Elek. Changes].dwg Mar. 28, 2023 2:56pm



**WATER MAIN EXTENSION KEY PLAN**  
SCALE: 1" = 200'



**PROPOSED WATER MAIN EXTENSION PLAN: MECHANIC STREET**  
SCALE: 1 INCH = 50 FEET



**PROPOSED WATER MAIN EXTENSION PROFILE: MECHANIC STREET**  
HORIZONTAL: 1 INCH = 50 FEET  
VERTICAL: 1 INCH = 10 FEET  
(5x VERTICAL EXAGGERATION)

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS  
SPECIFIED IN THE LETTER OF APPROVAL  
DATED: **APR 02 2024** FILE #: **22-0450**  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*August D. Senack*

**JOE CASALI ENGINEERING, INC.**  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - ISDS - TRAFFIC - FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
401.944.1300 401.944.1317 WWW.JOECSALI.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

REVISIONS:

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

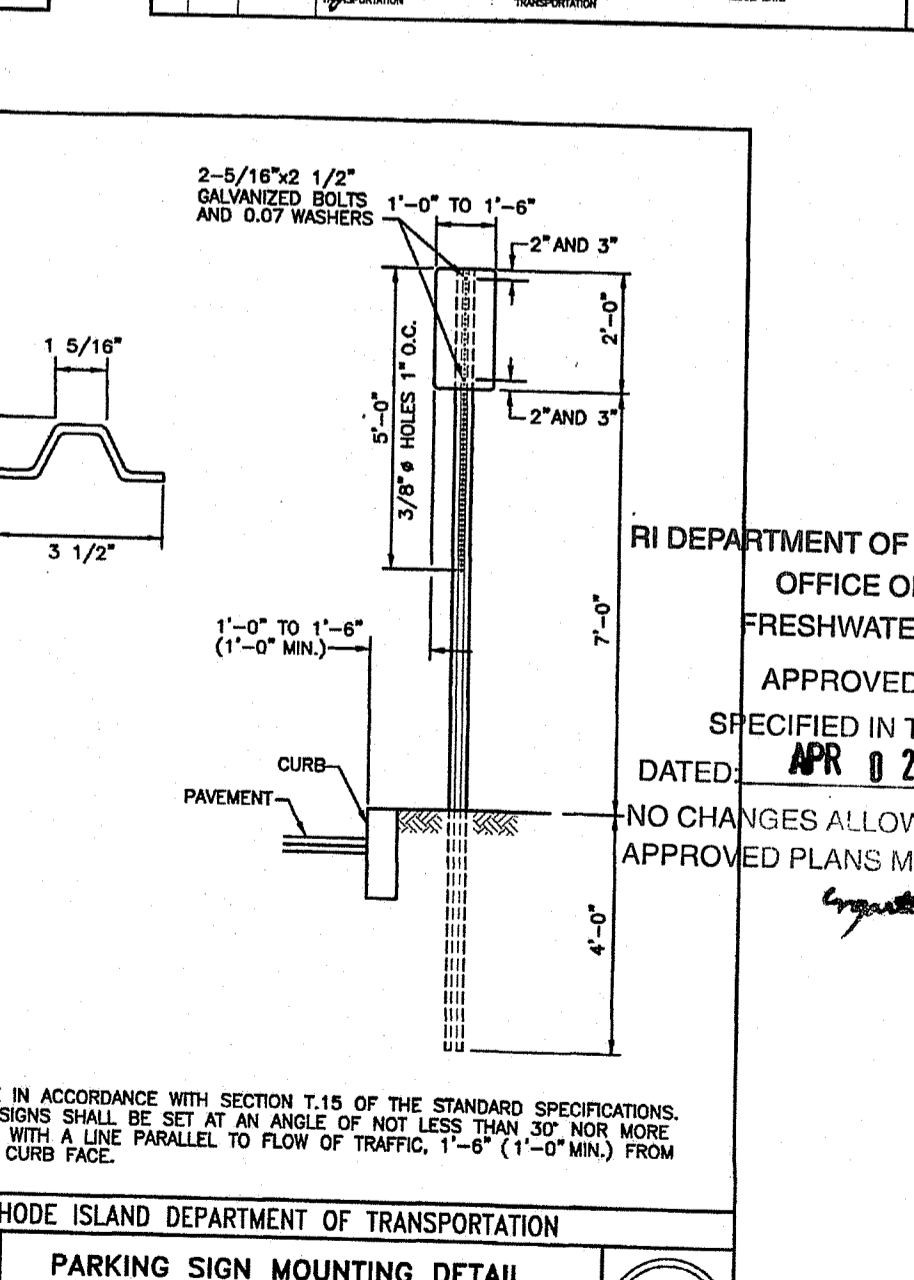
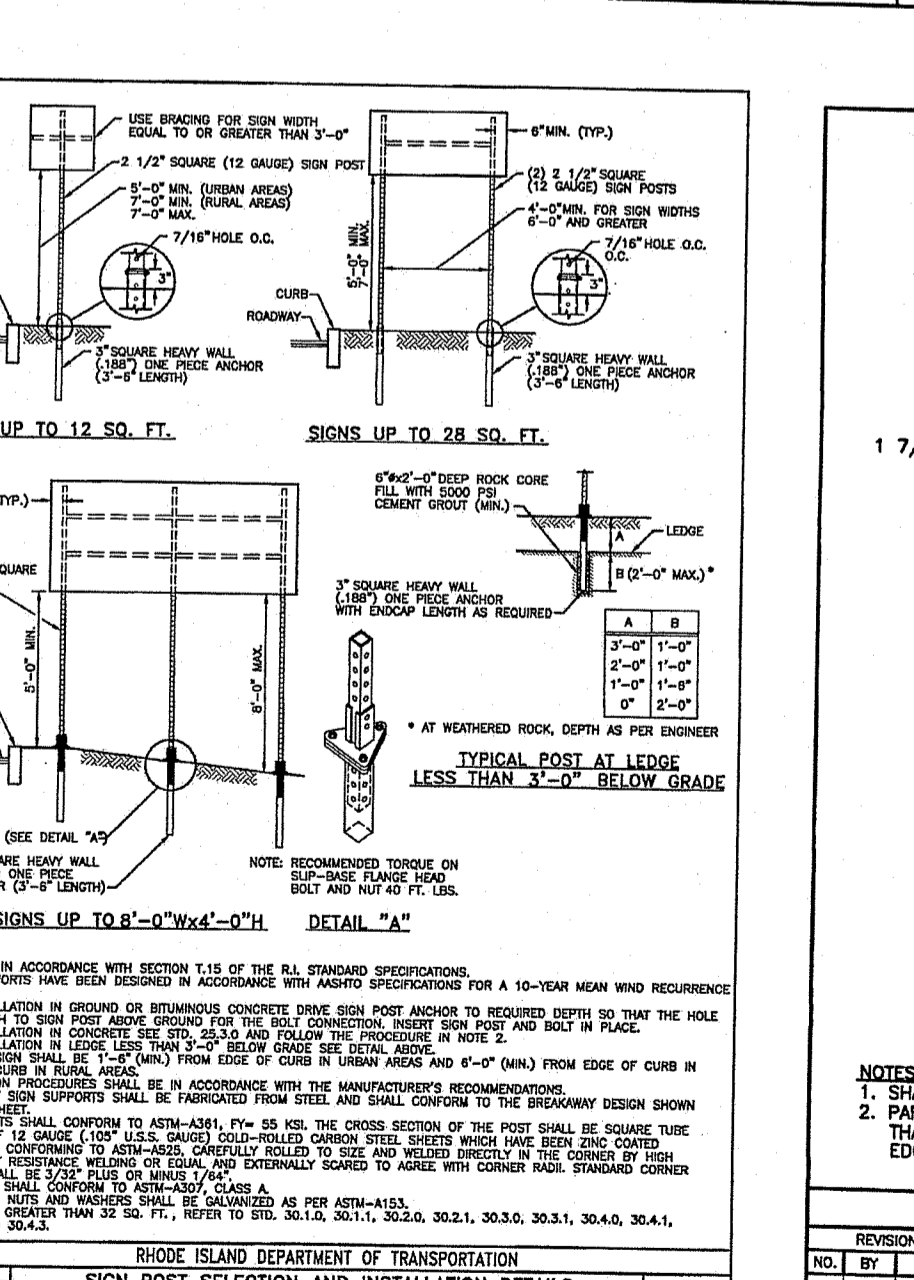
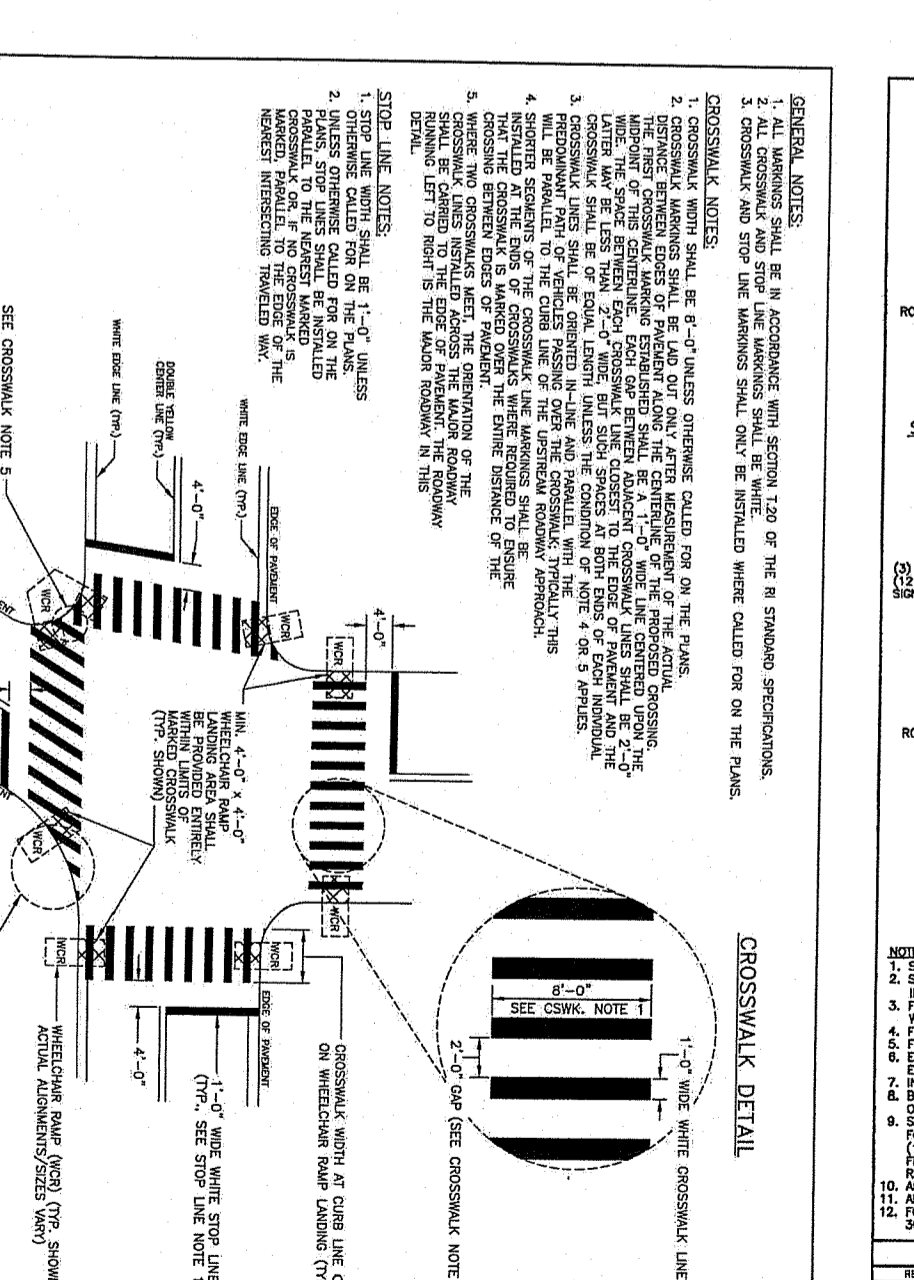
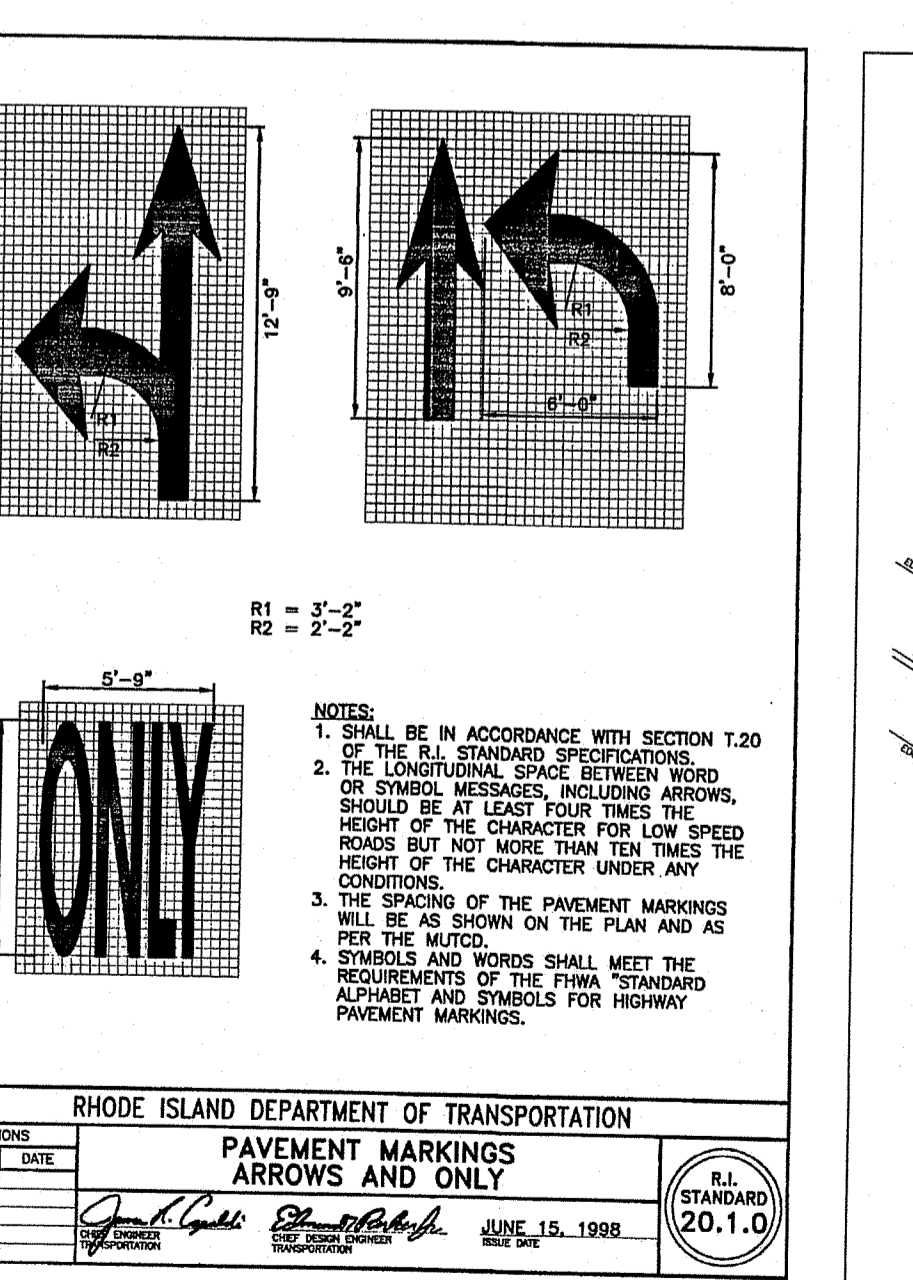
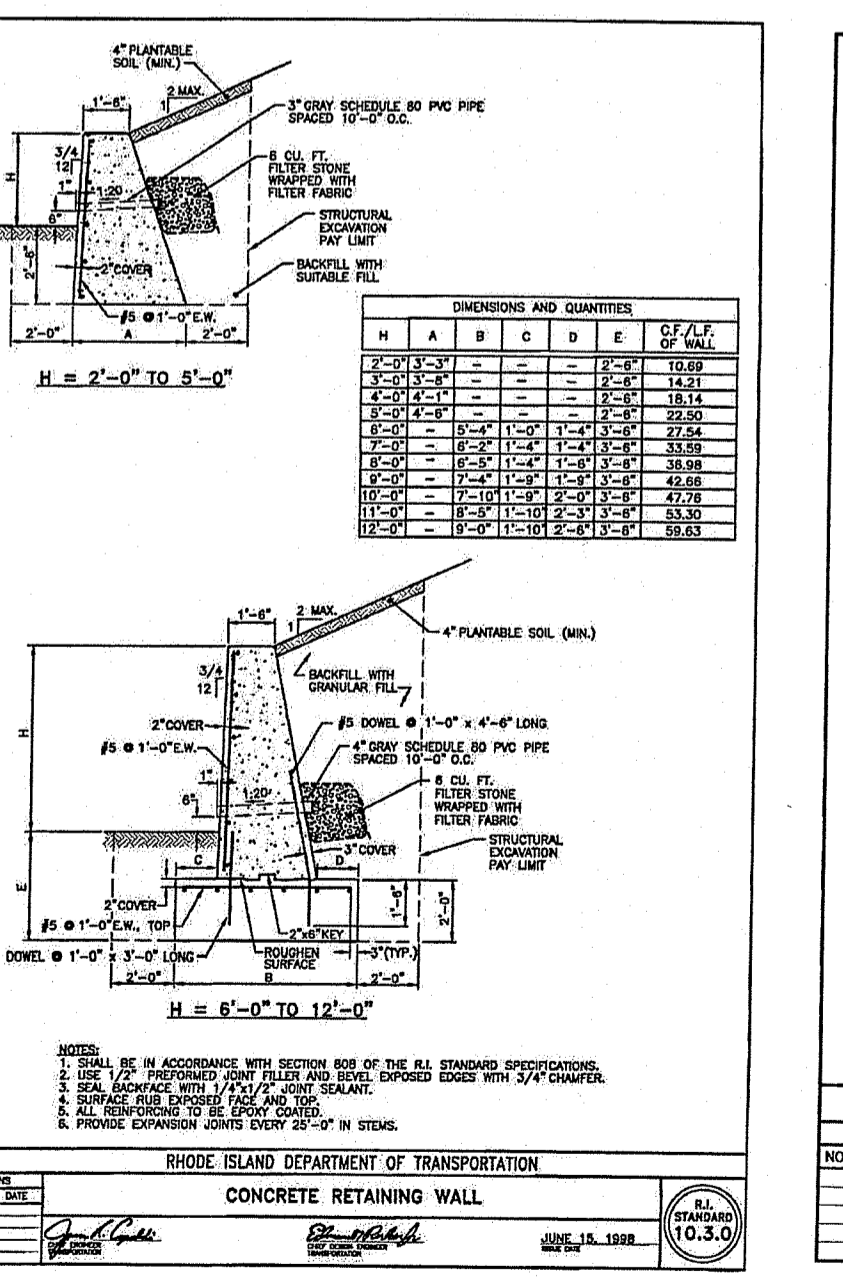
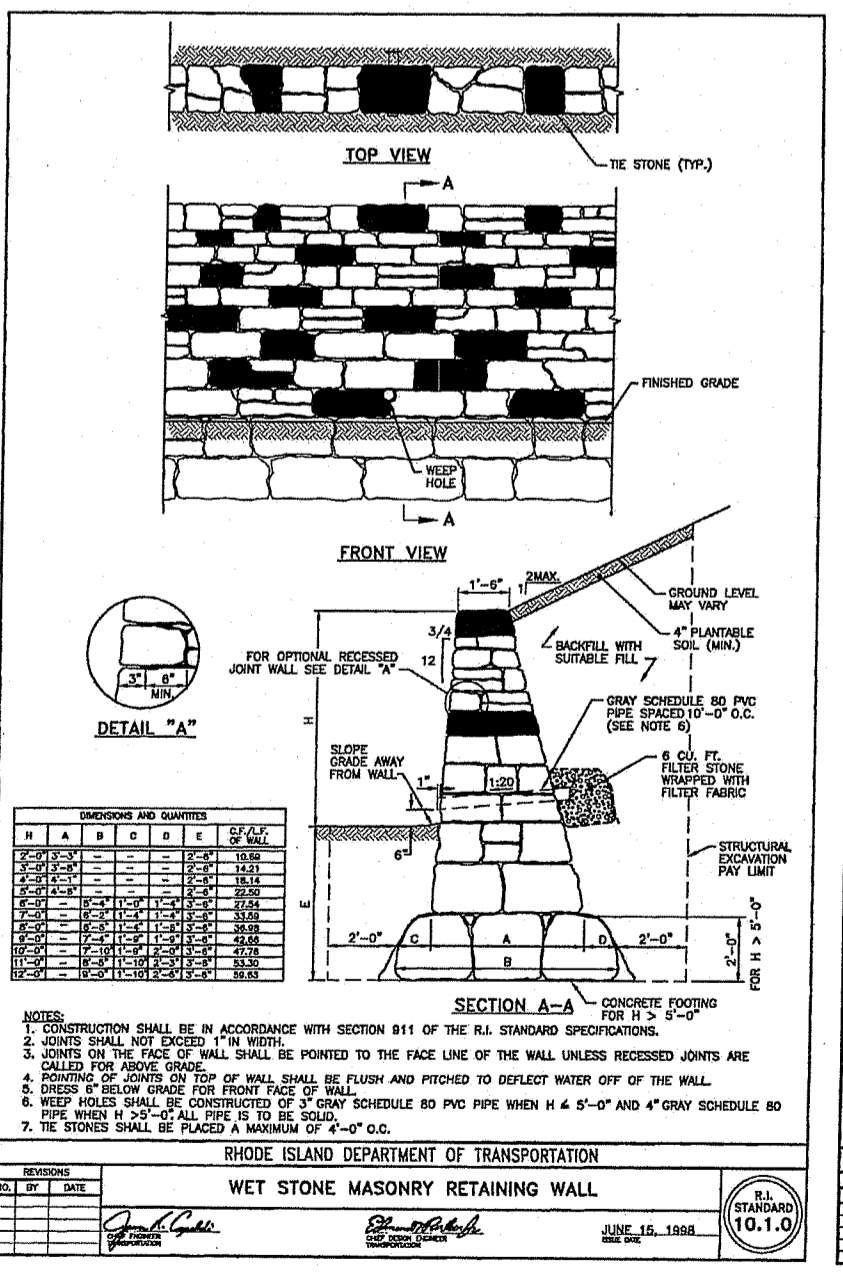
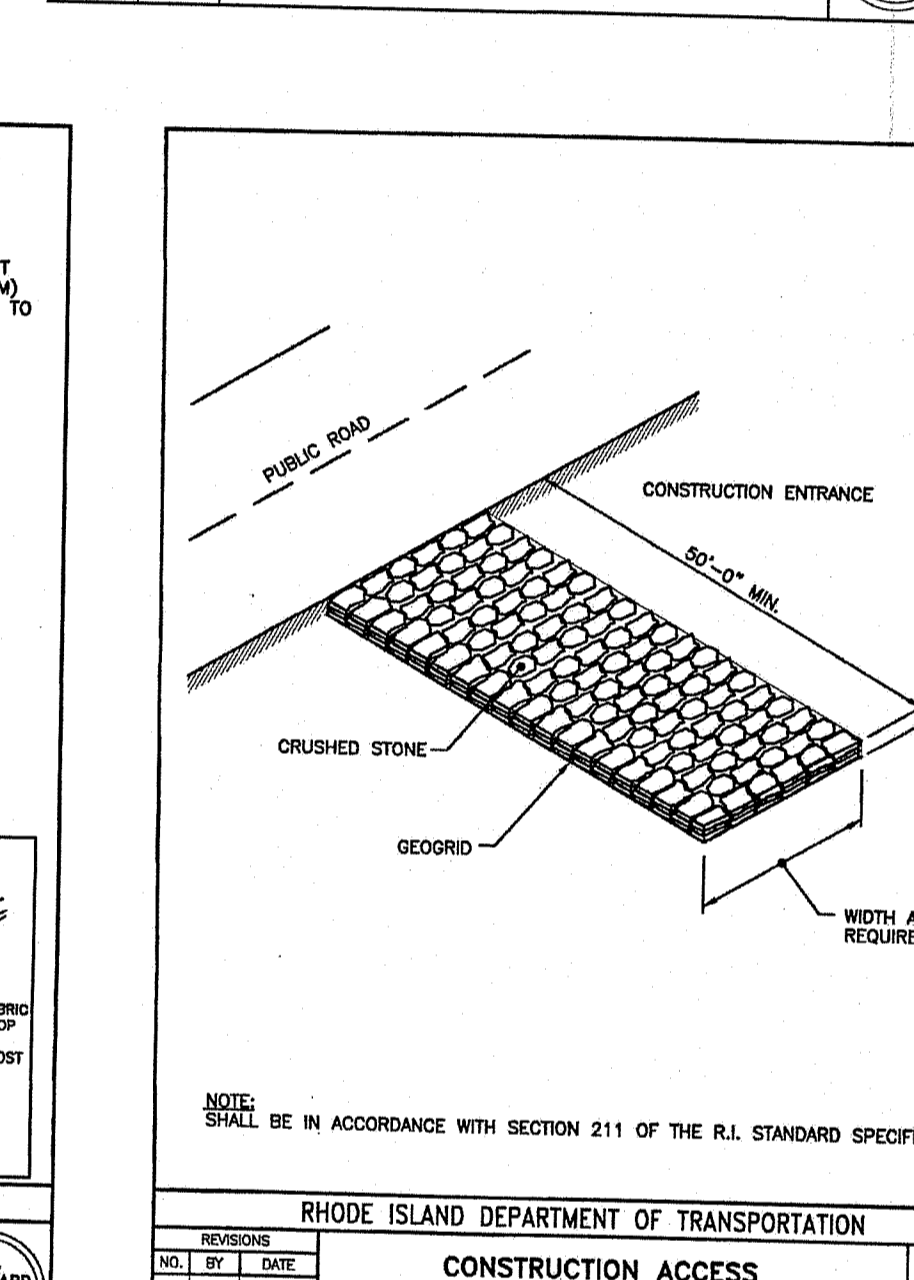
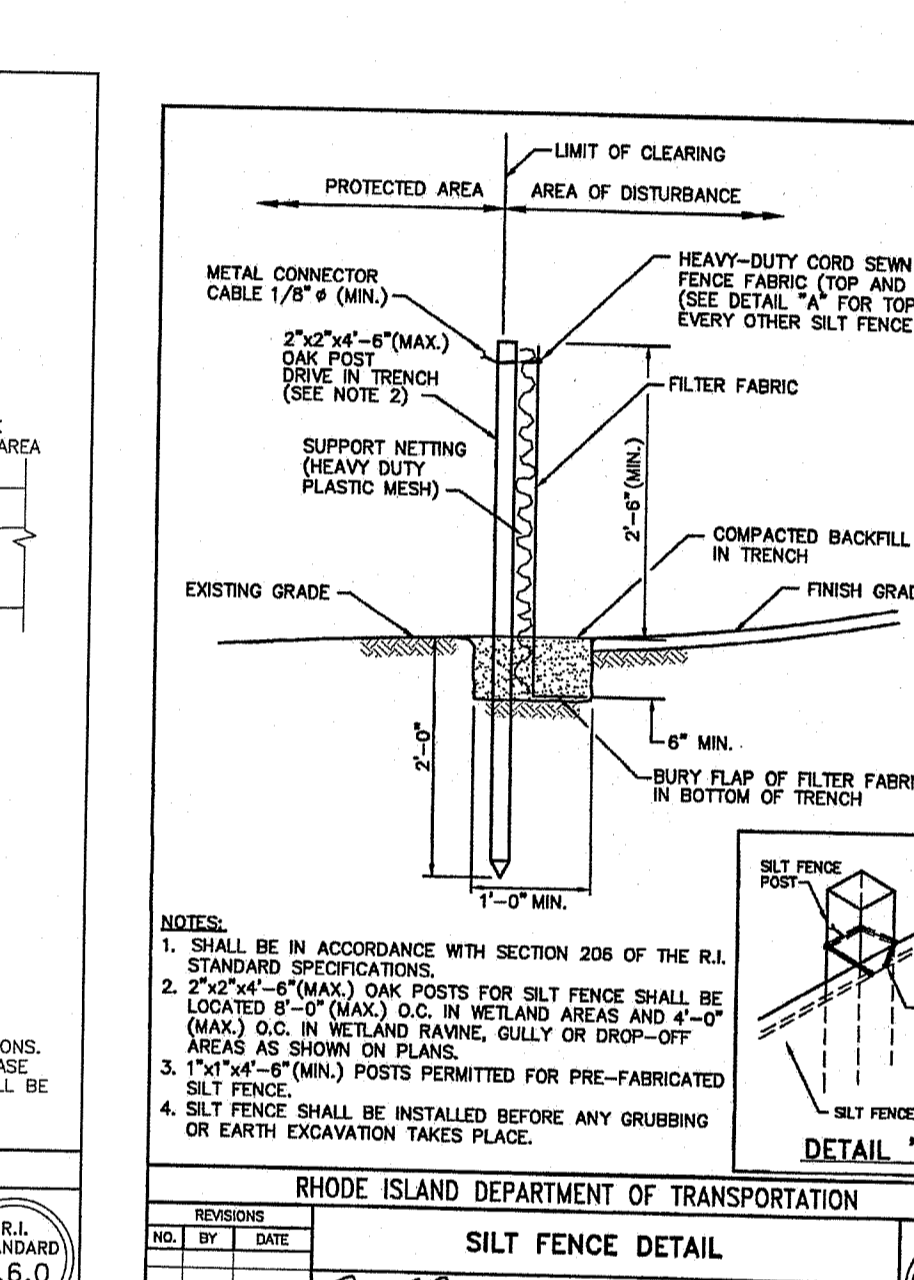
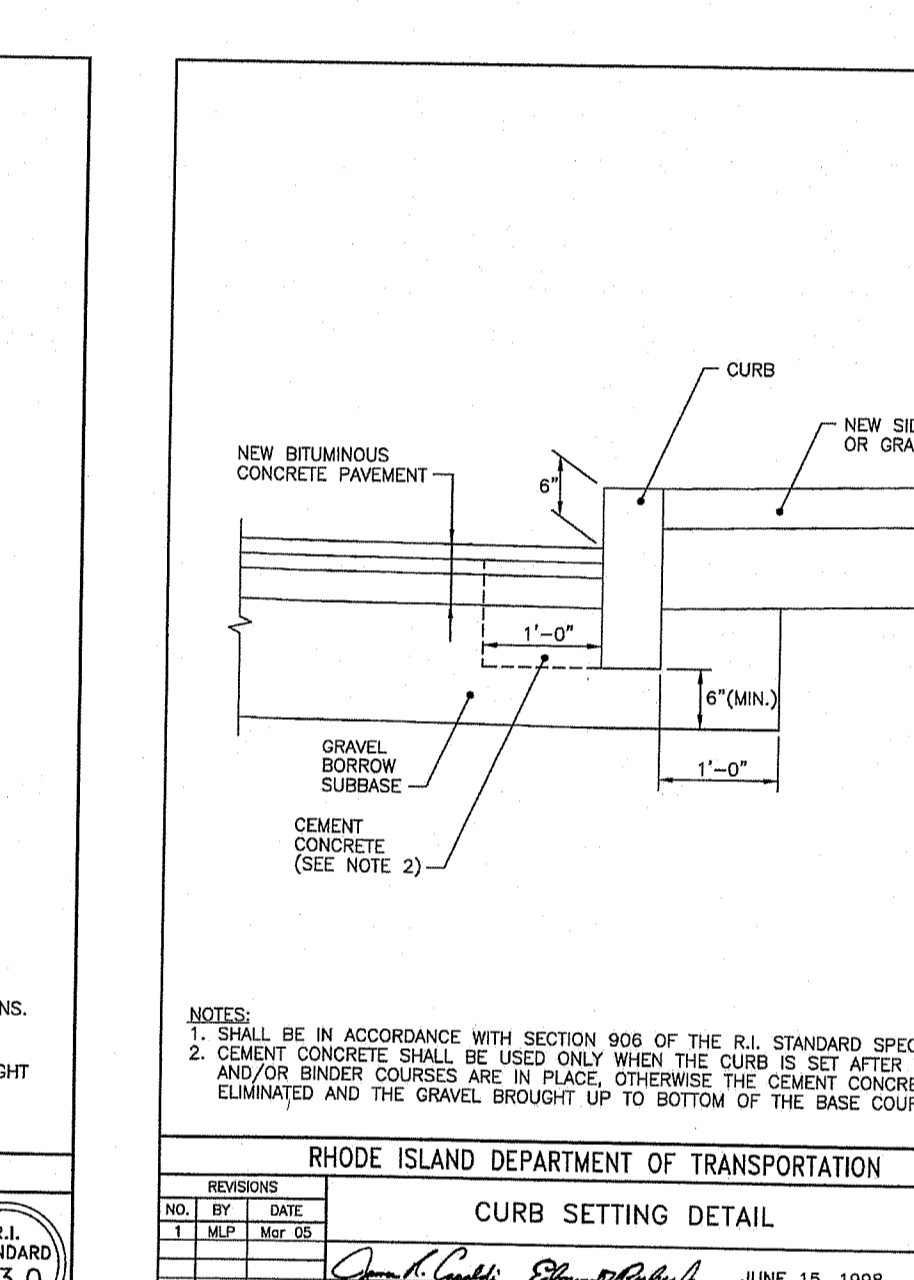
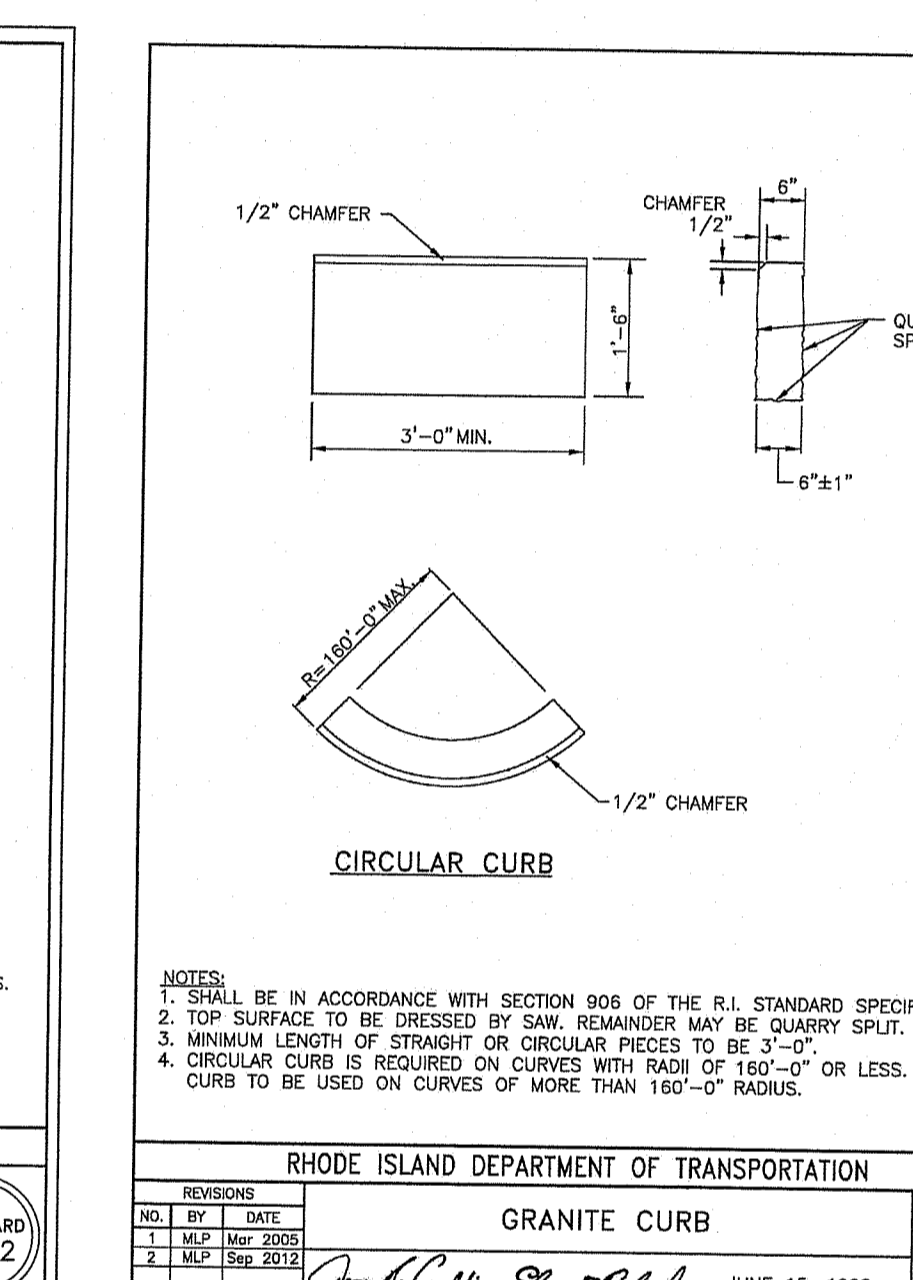
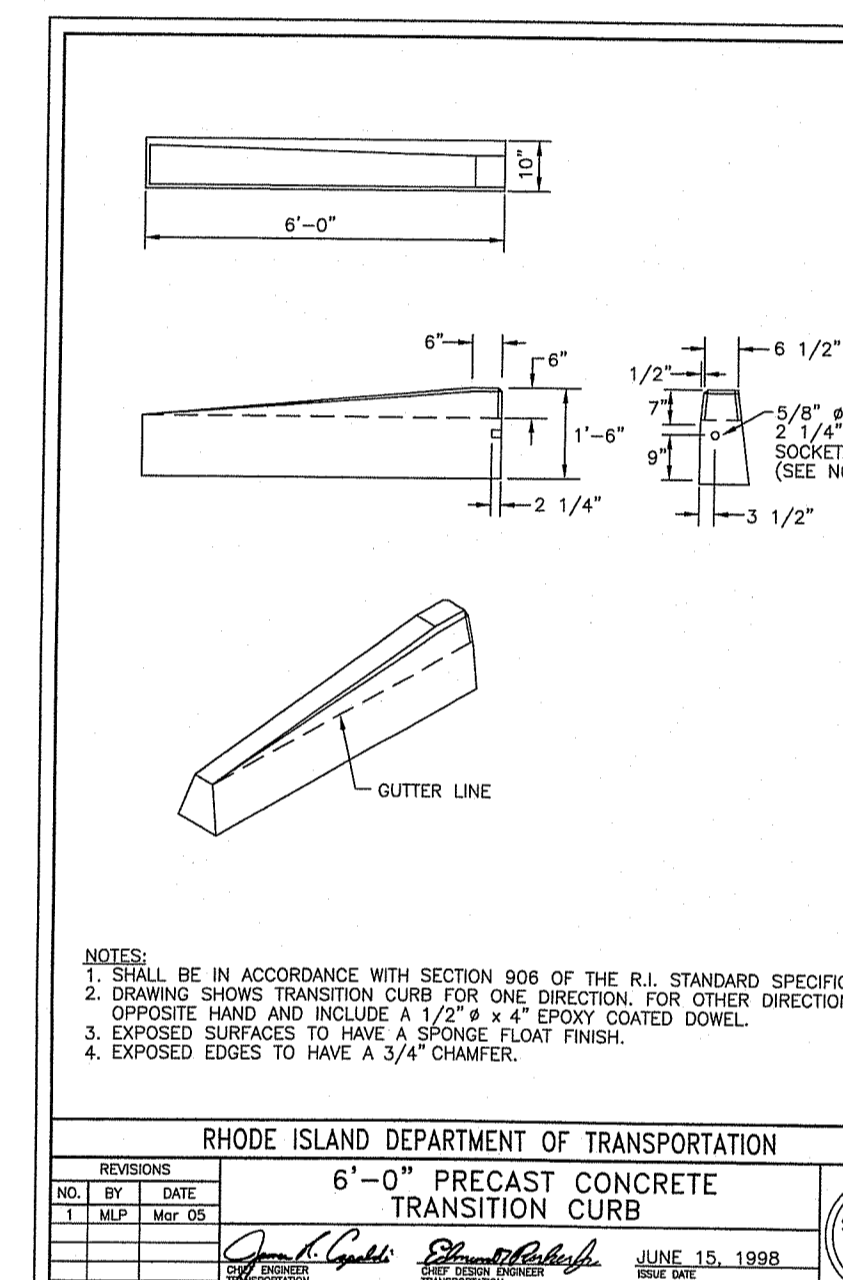
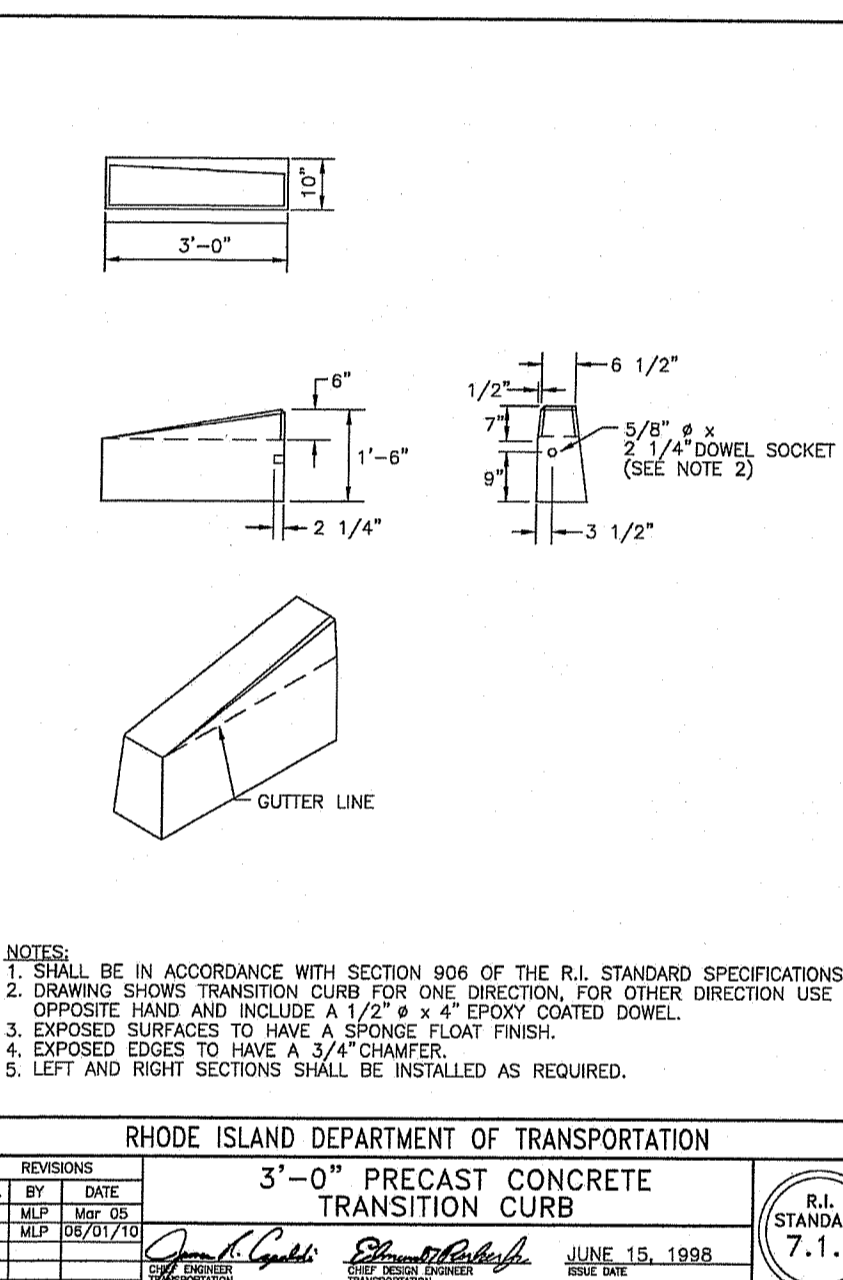
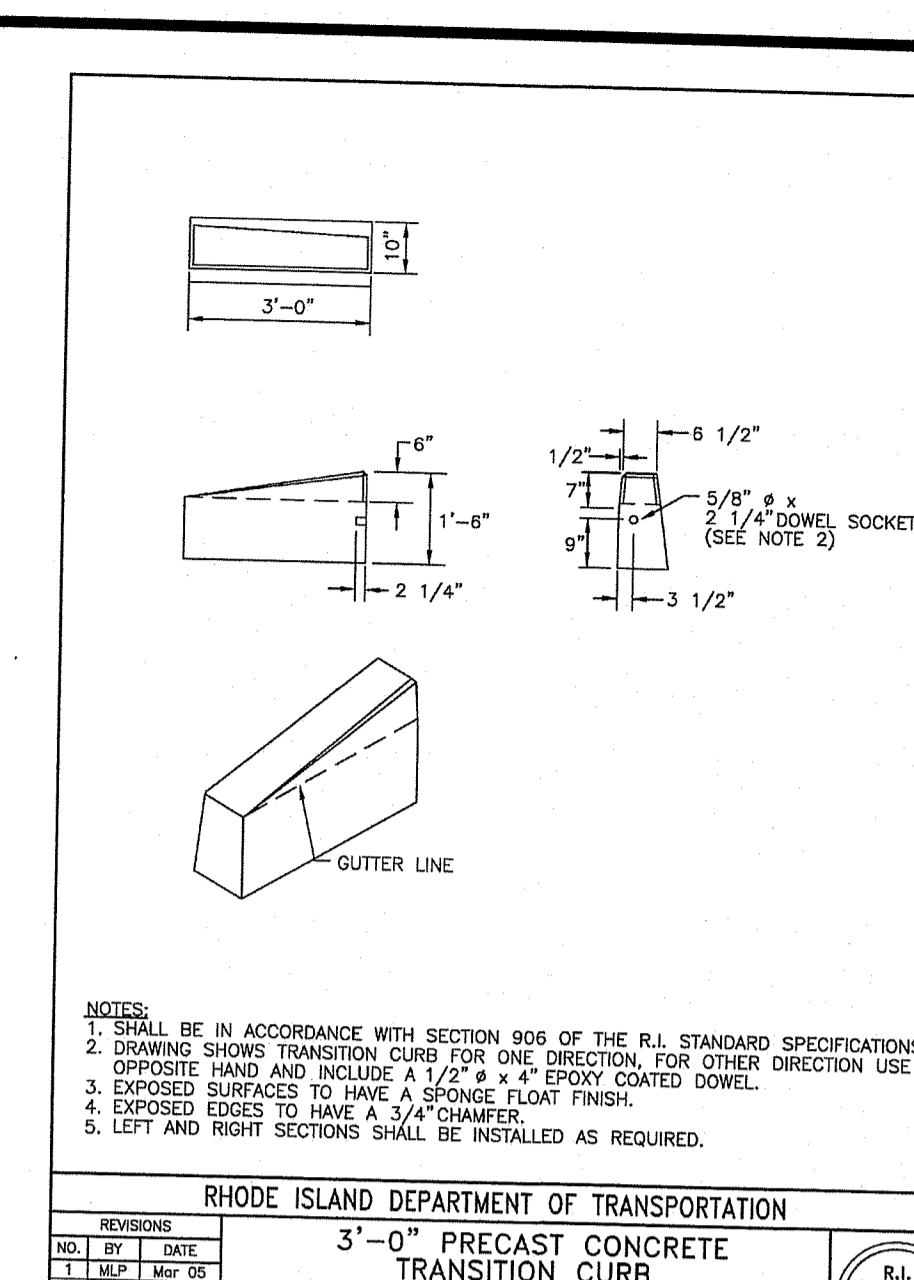
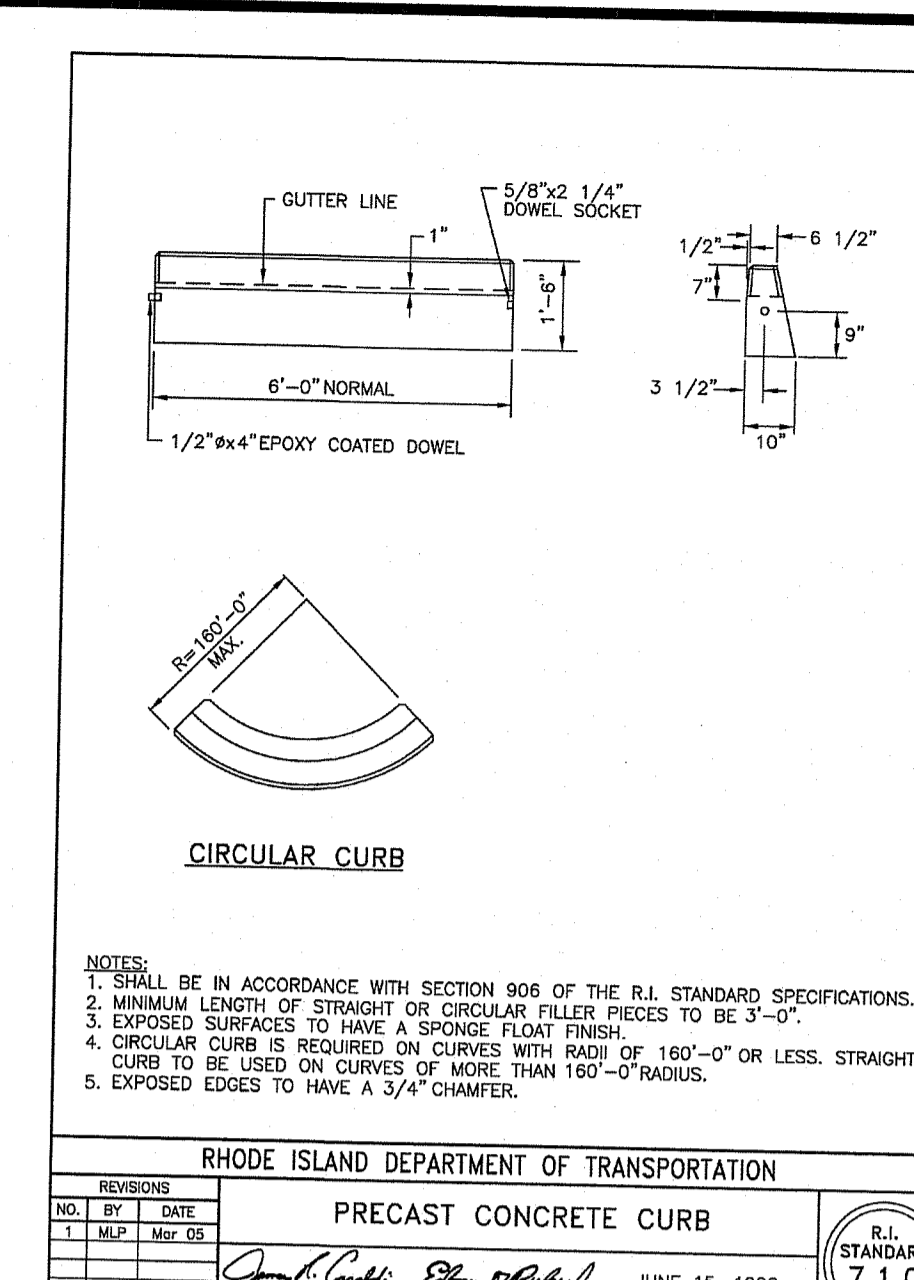
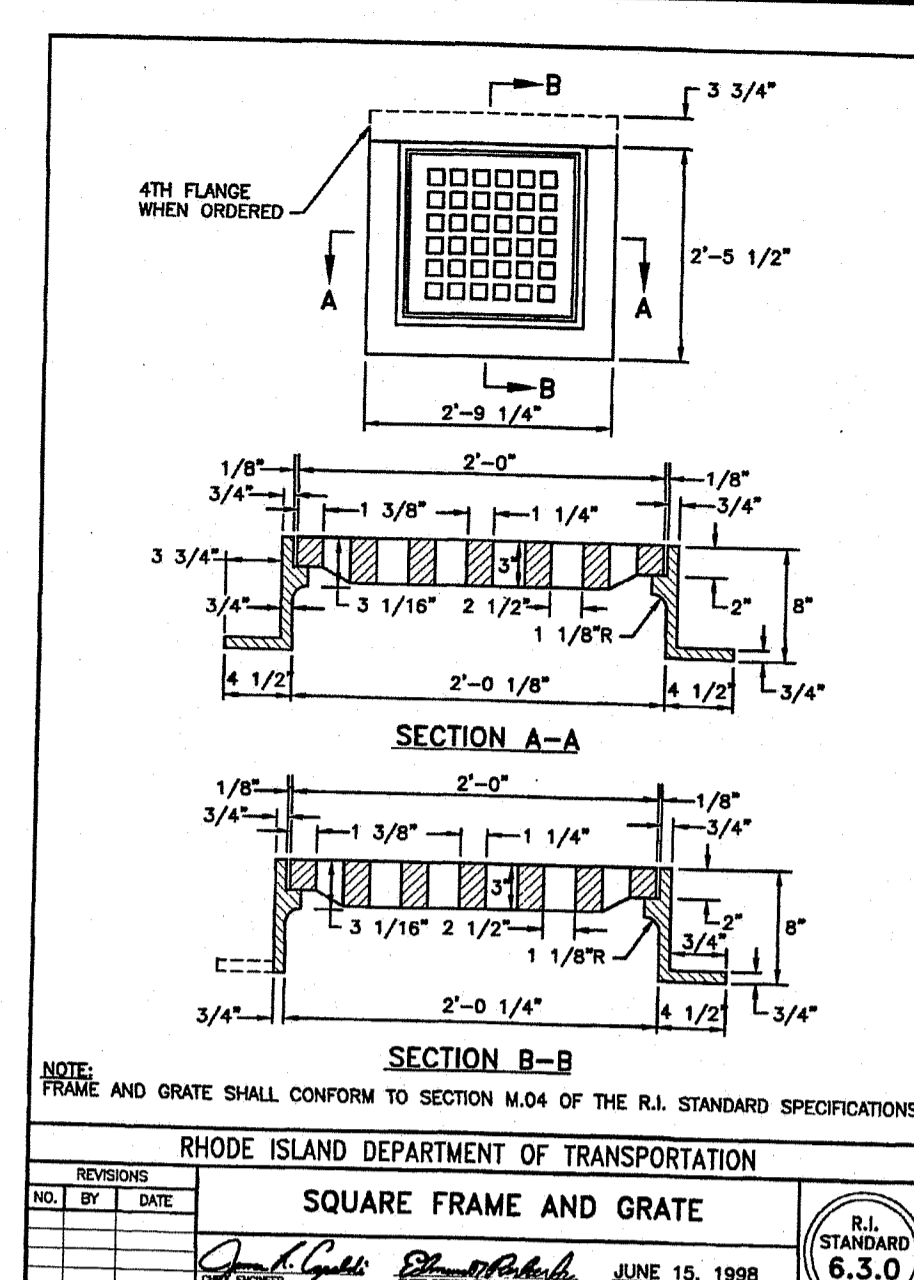
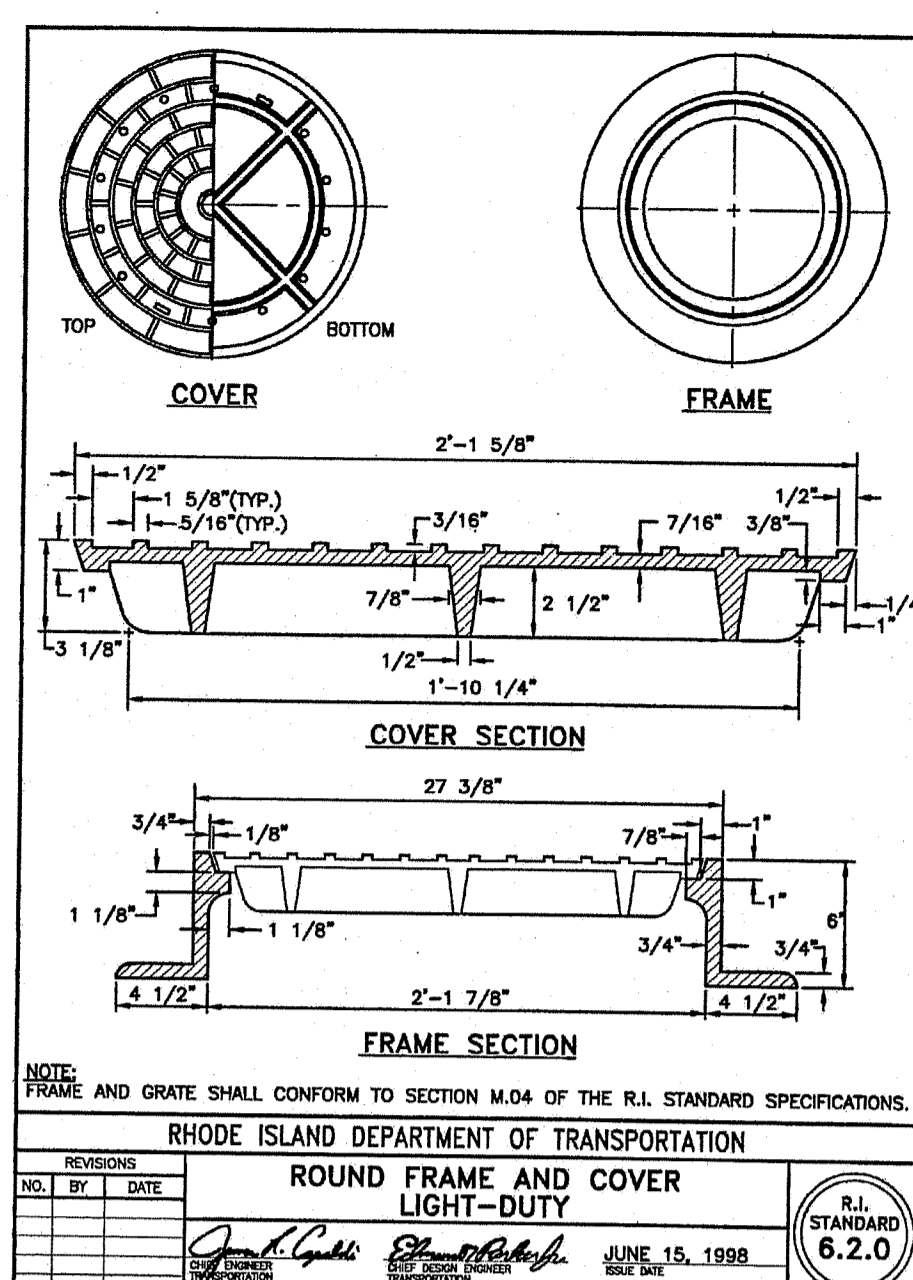
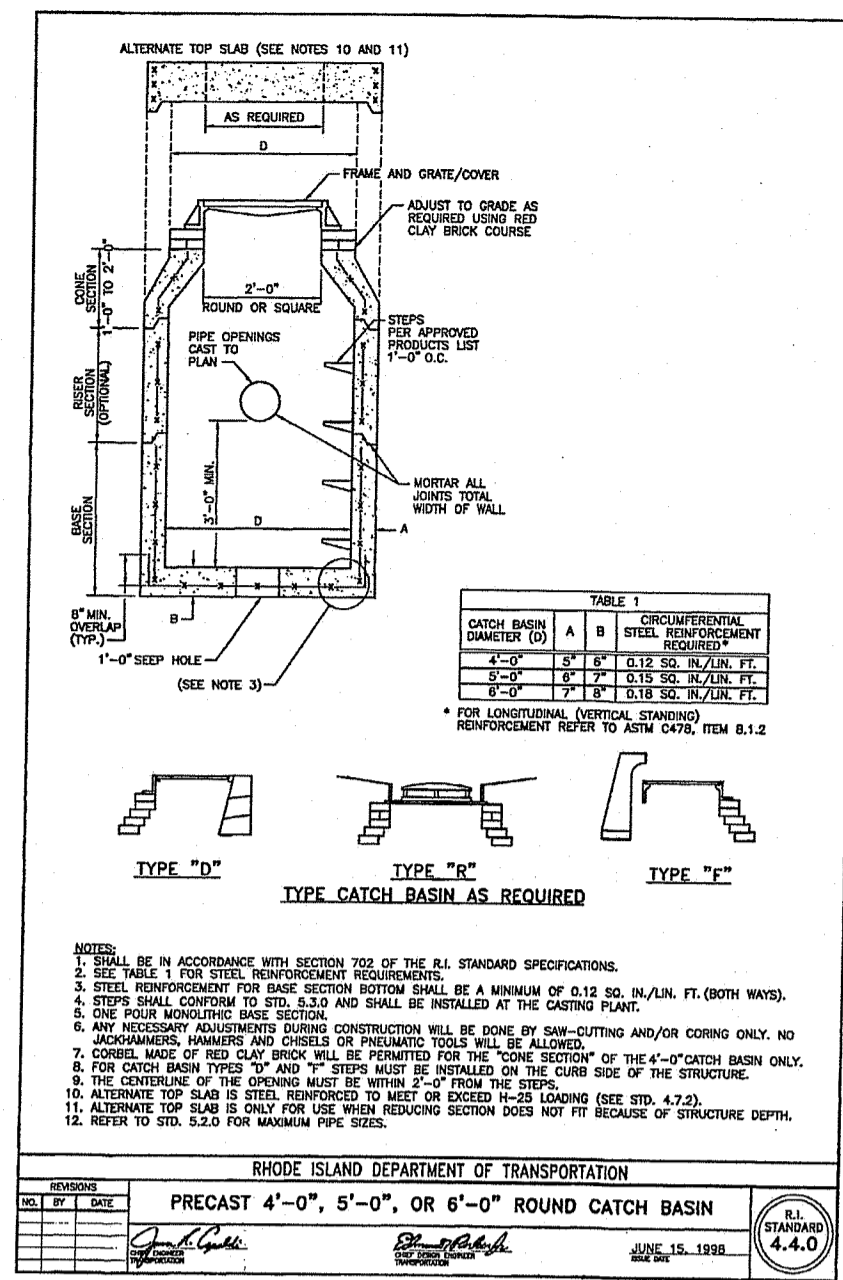
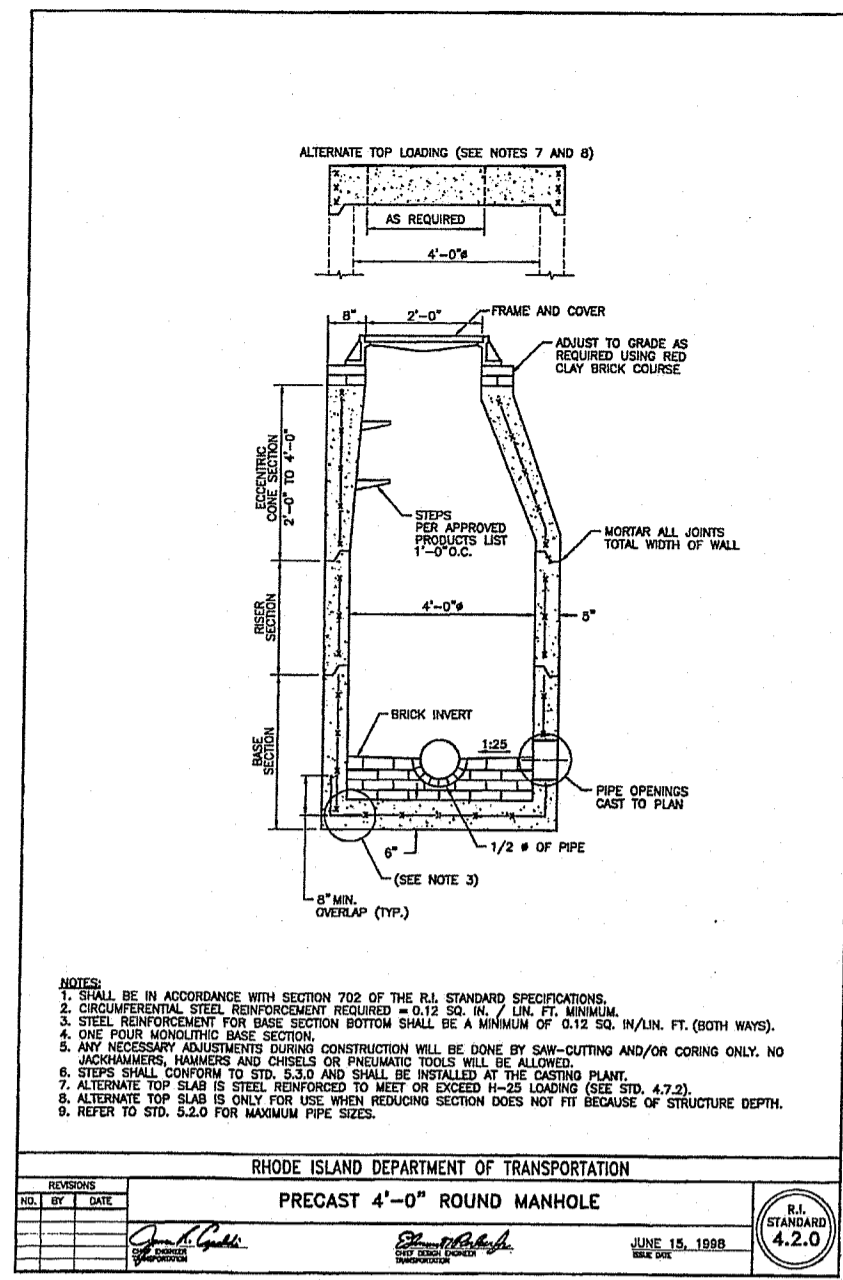
DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**WATER MAIN EXTENSION PLAN AND PROFILE II**

**SHEET 8 OF 15**

Q:\21-103 Material Sampling Technologies\ACAD\MST - Central Street [RIDEA RTC] - R1 [Elev. Changes].dwg Mar. 28, 2023 2:56pm



**JCE**  
 JOE CASALI ENGINEERING, INC.  
 CIVIL-SITE DEVELOPMENT-TRANSPORTATION  
 DRAINAGE-UTILITY-TRAFFIC-FLOODPLAIN  
 MANAGEMENT-CONSTRUCTION  
 300 PO BOX 300  
 04019-0300 (603)944-9313 FAX WWW.JCEASAL.COM

JOSEPH A. CASALI  
 No. 7250  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
 CENTRAL STREET  
 NORTH SMITHFIELD, RHODE ISLAND  
 AP 1, LOTS 17 & 461

R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED APR 8 2024 FILE #:  
 NO CHANGES ALLOWED WITHOUT PREVIOUS APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

REVISIONS:  
 NO. DATE DESCRIPTION  
 1. 05/27/2024 RIDEM RTC  
 2. 06/03/2024 APPROVAL

DESIGNED BY: DRD  
 DRAWN BY: SEPSD  
 CHECKED BY: JAC  
 DATE: AUGUST 2022  
 PROJECT NO: 21-103

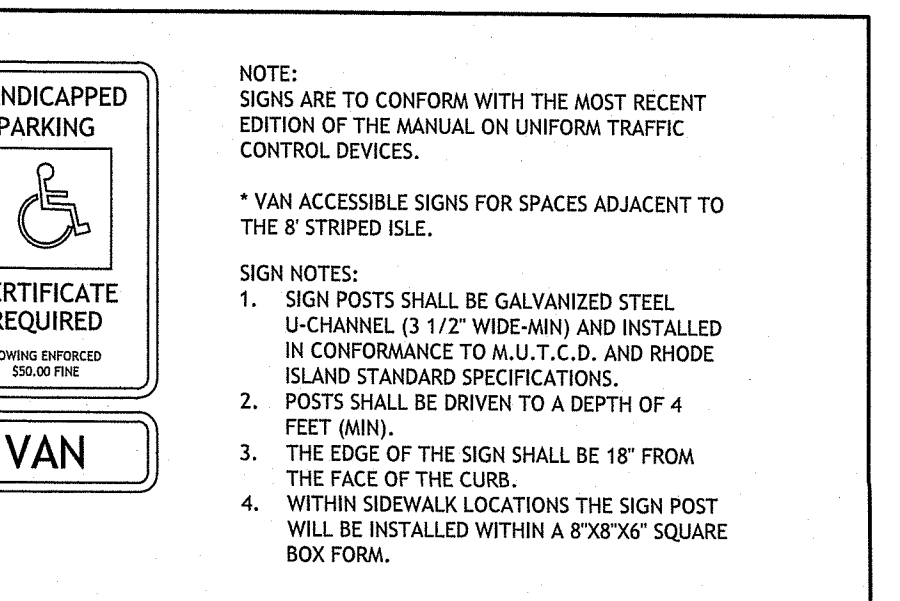
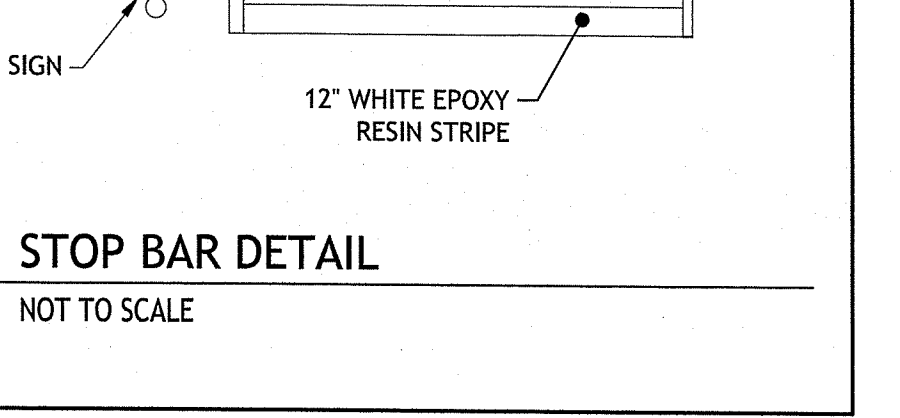
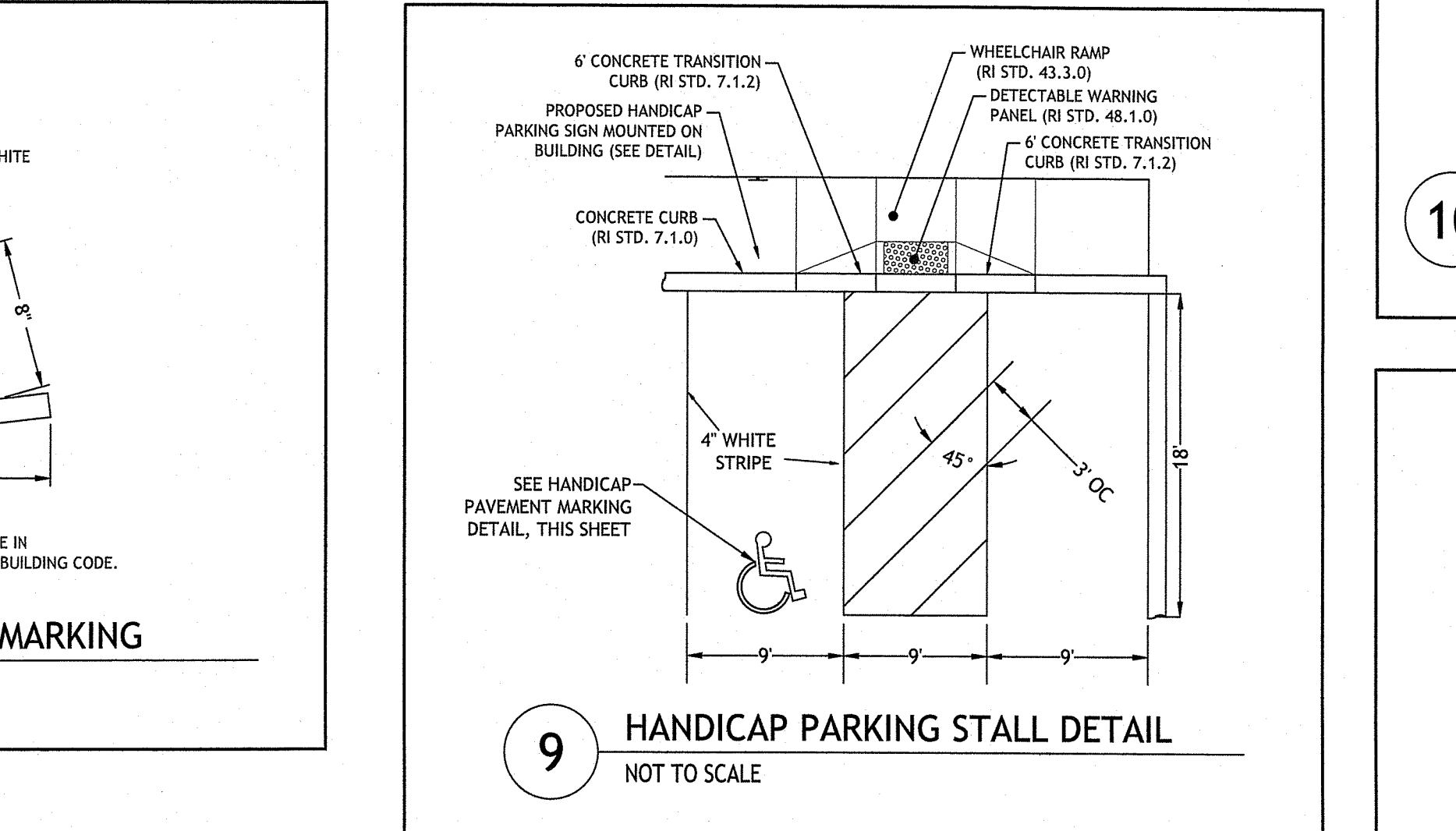
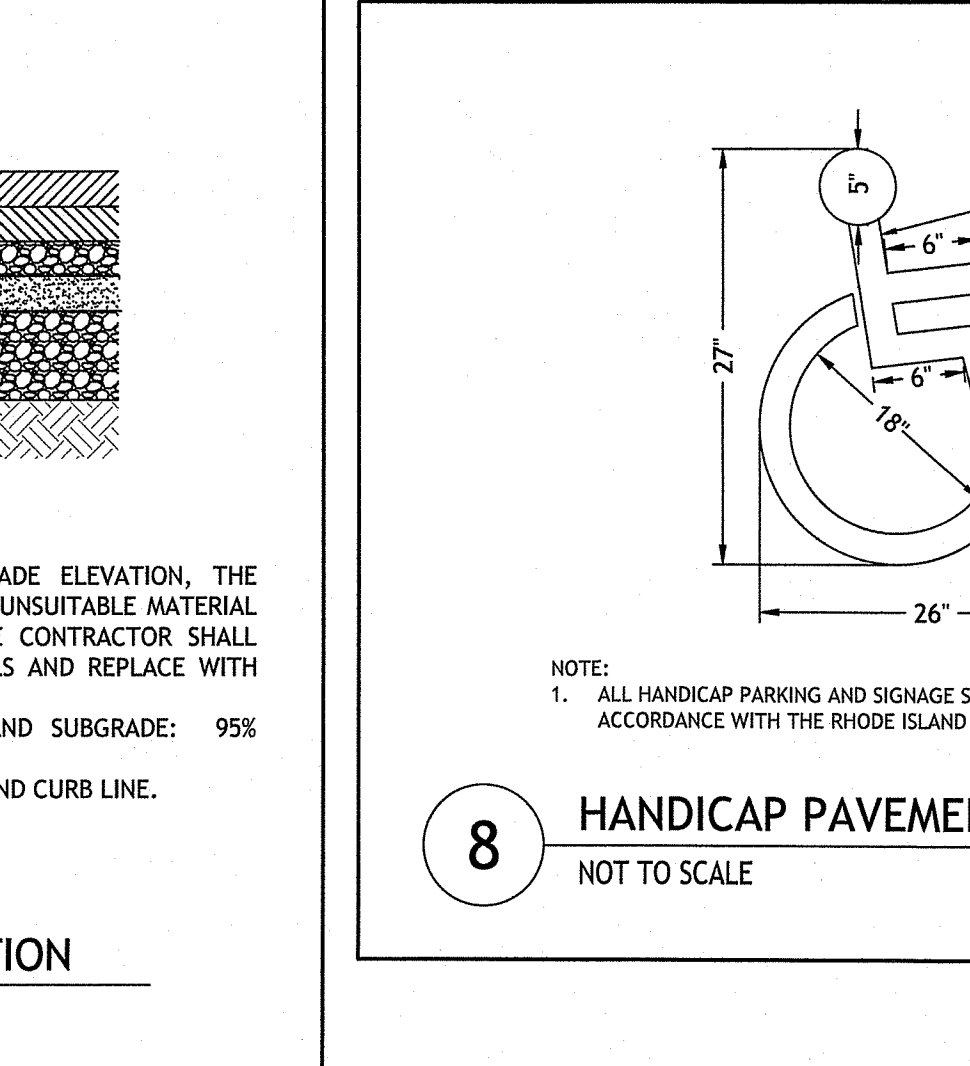
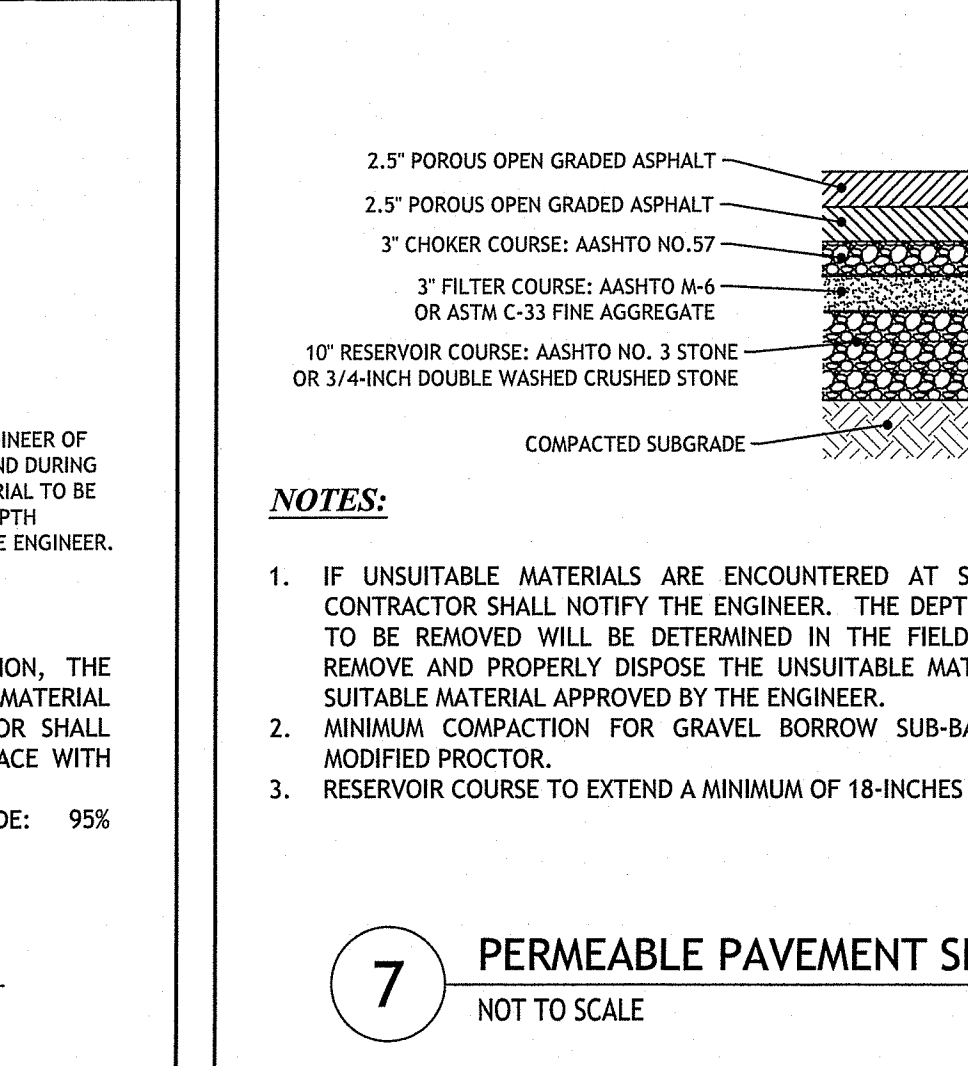
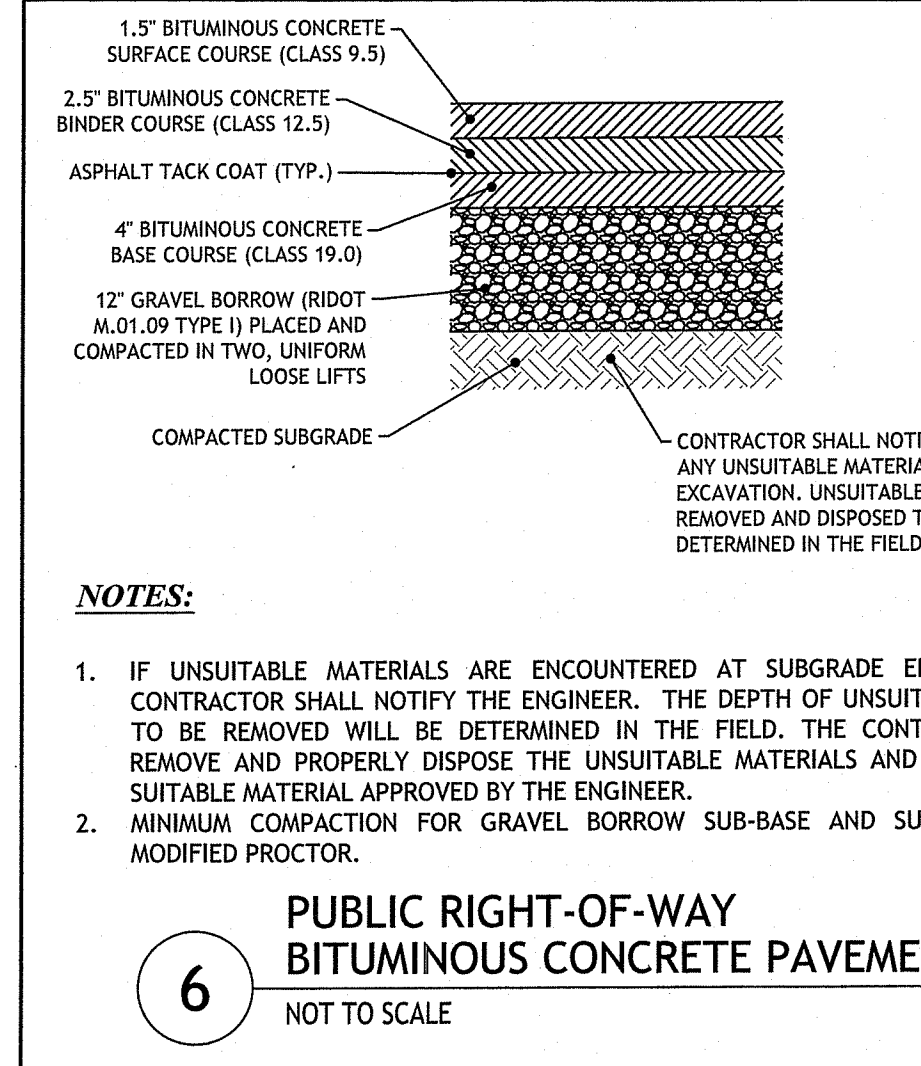
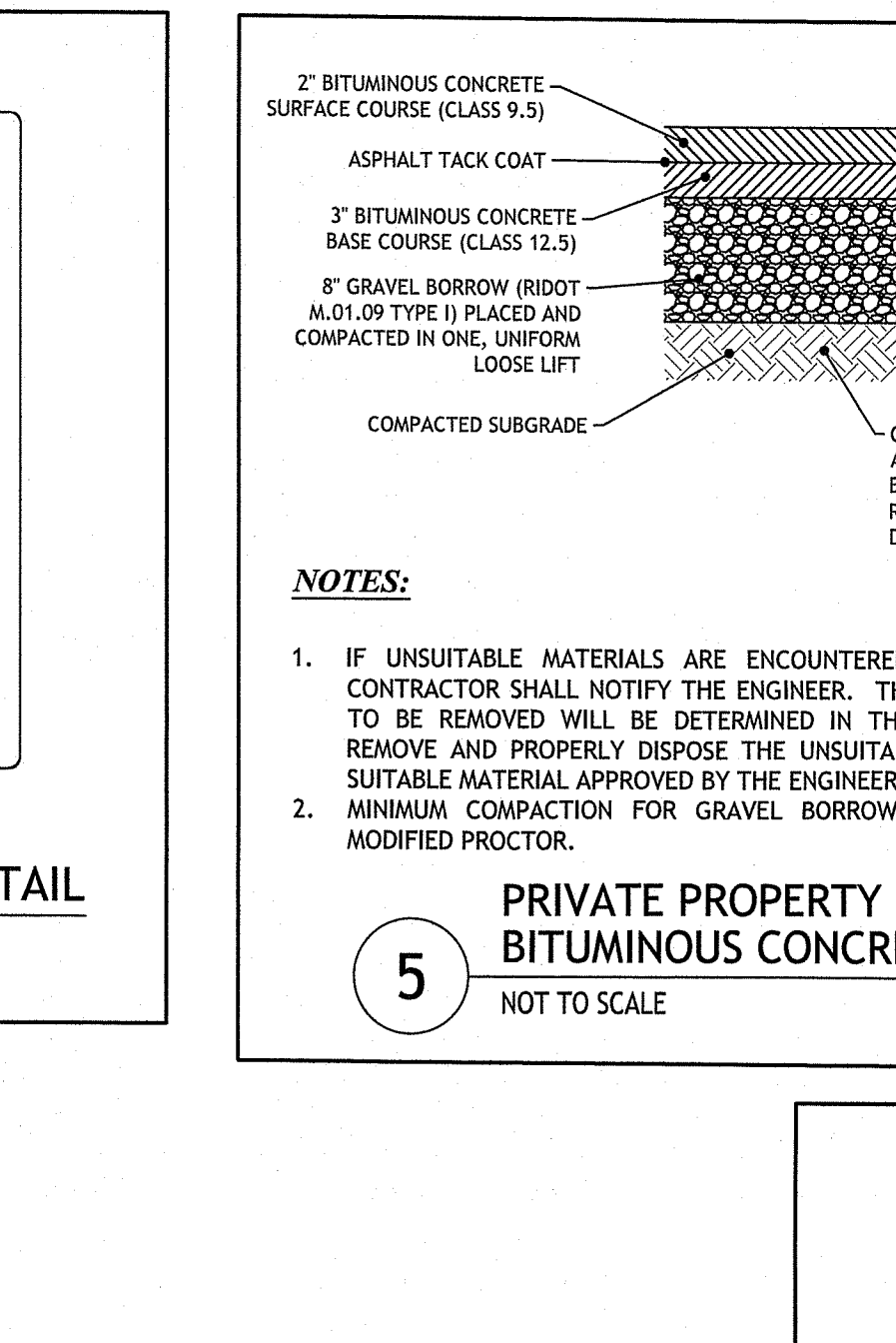
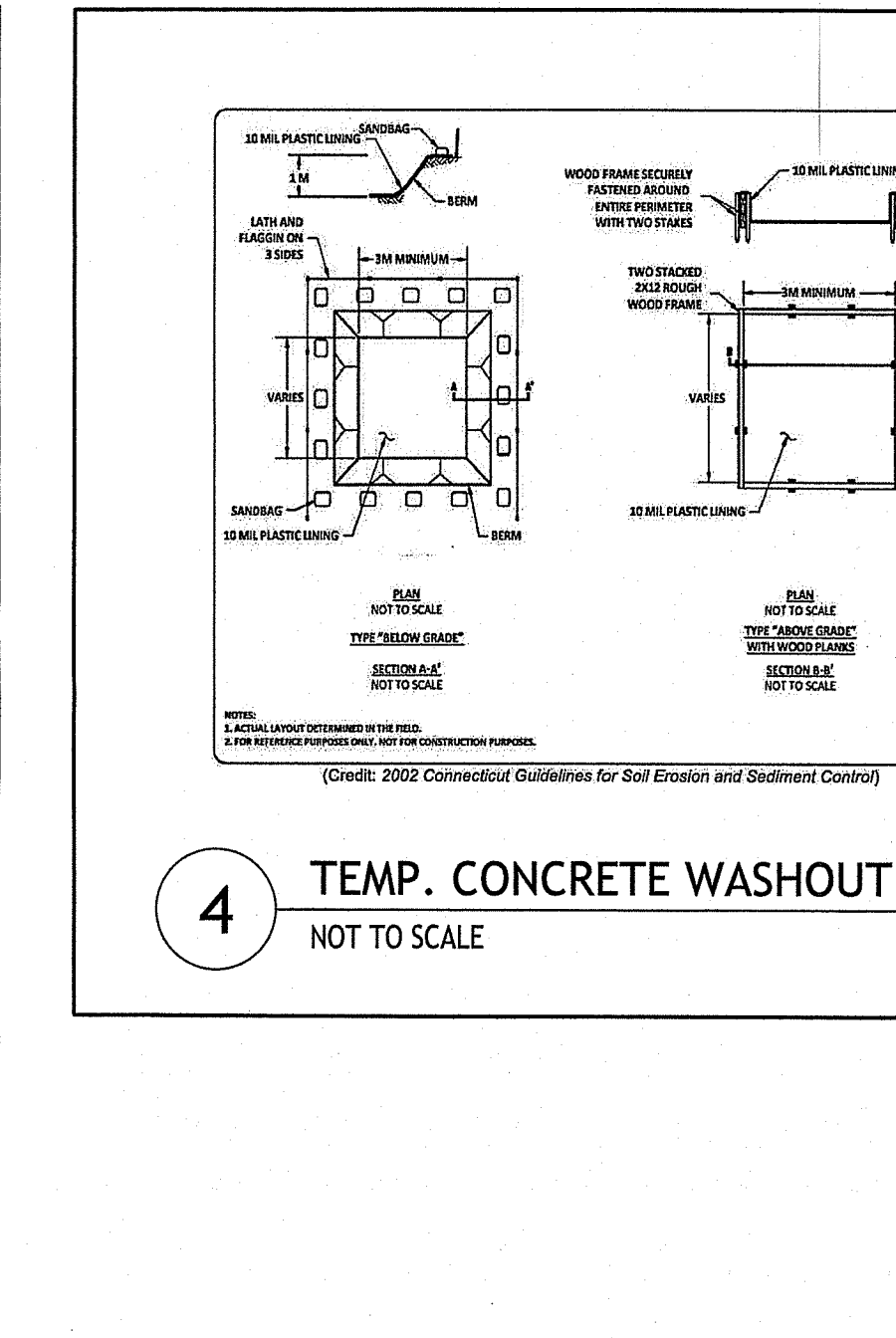
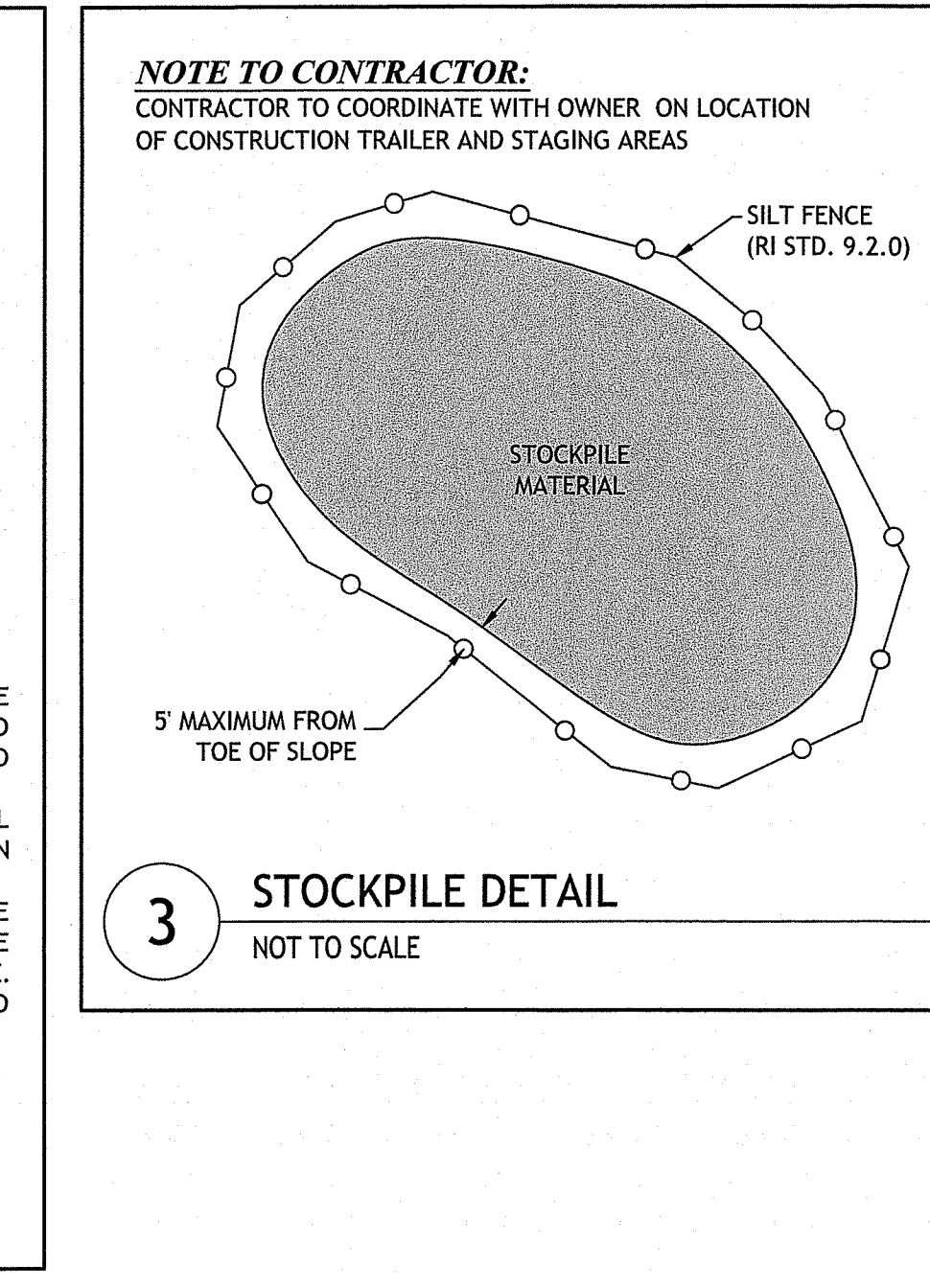
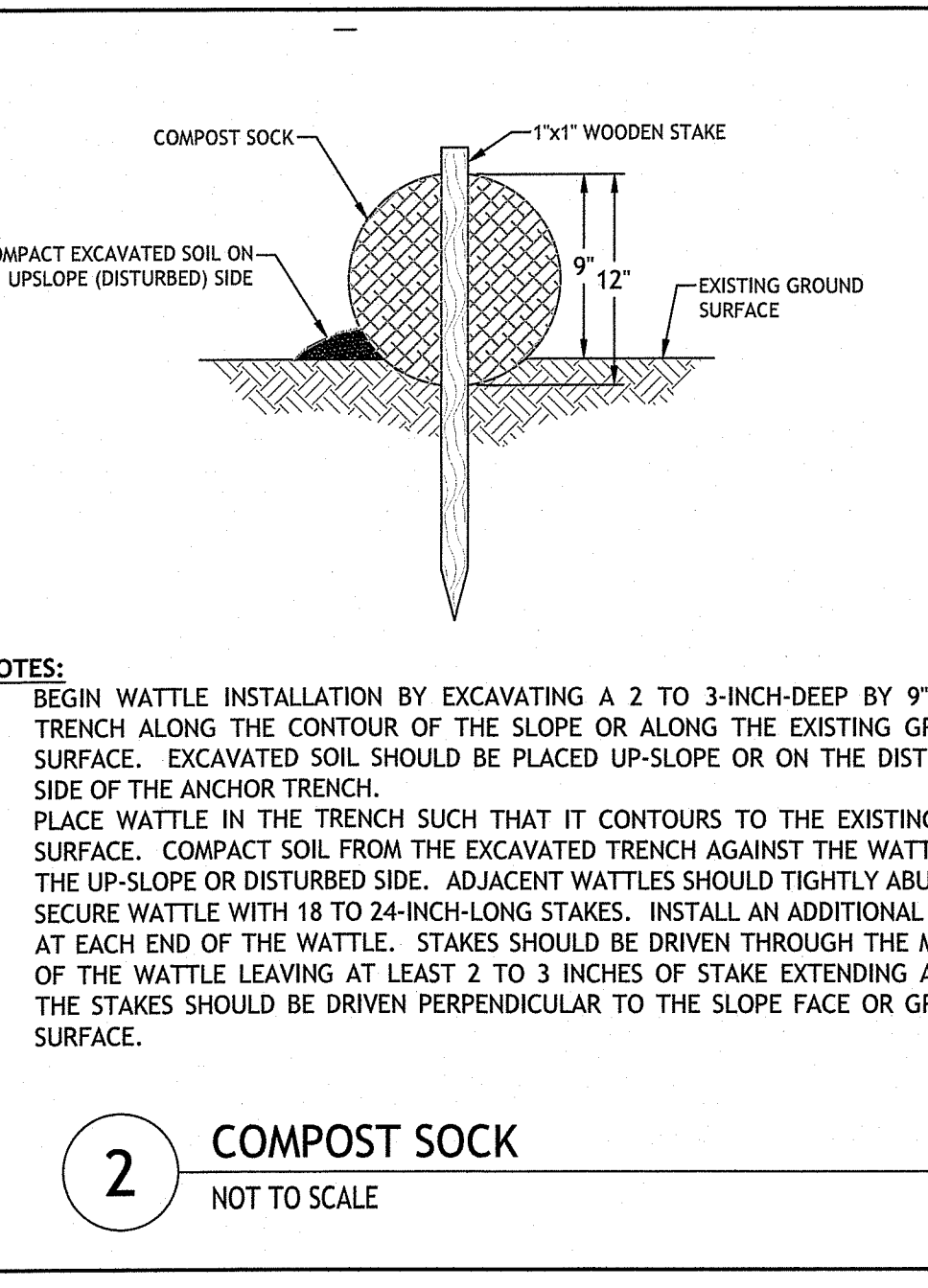
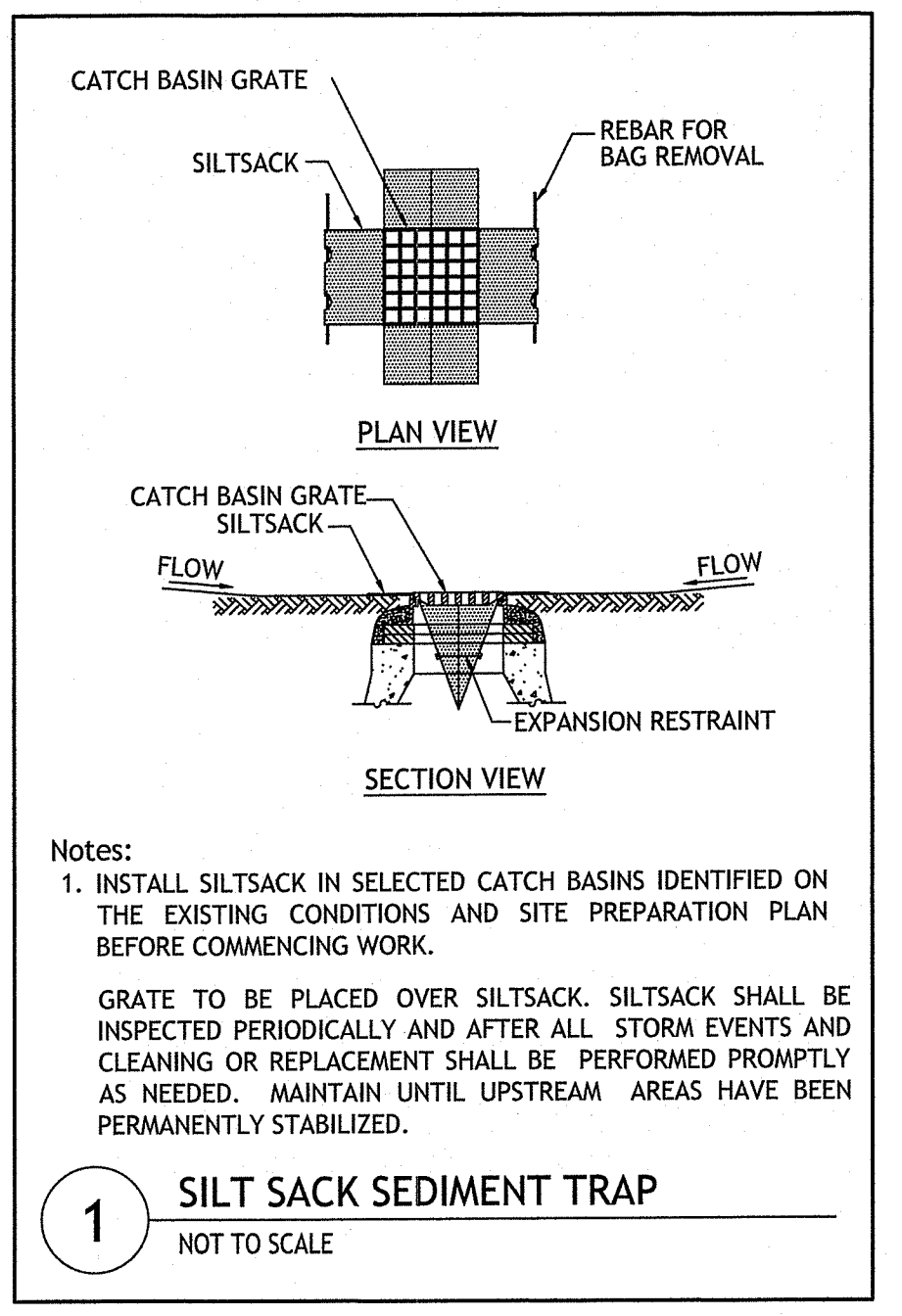
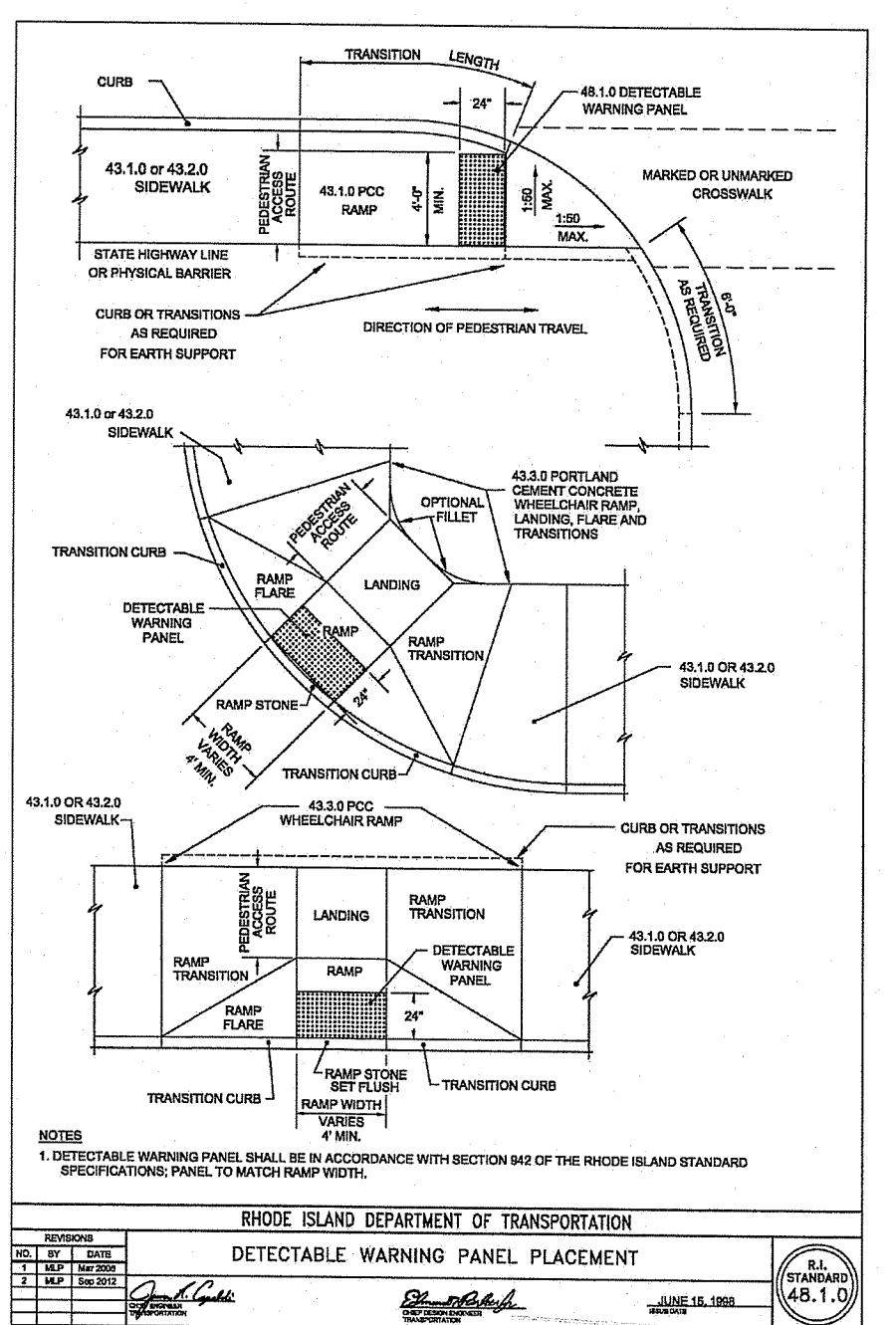
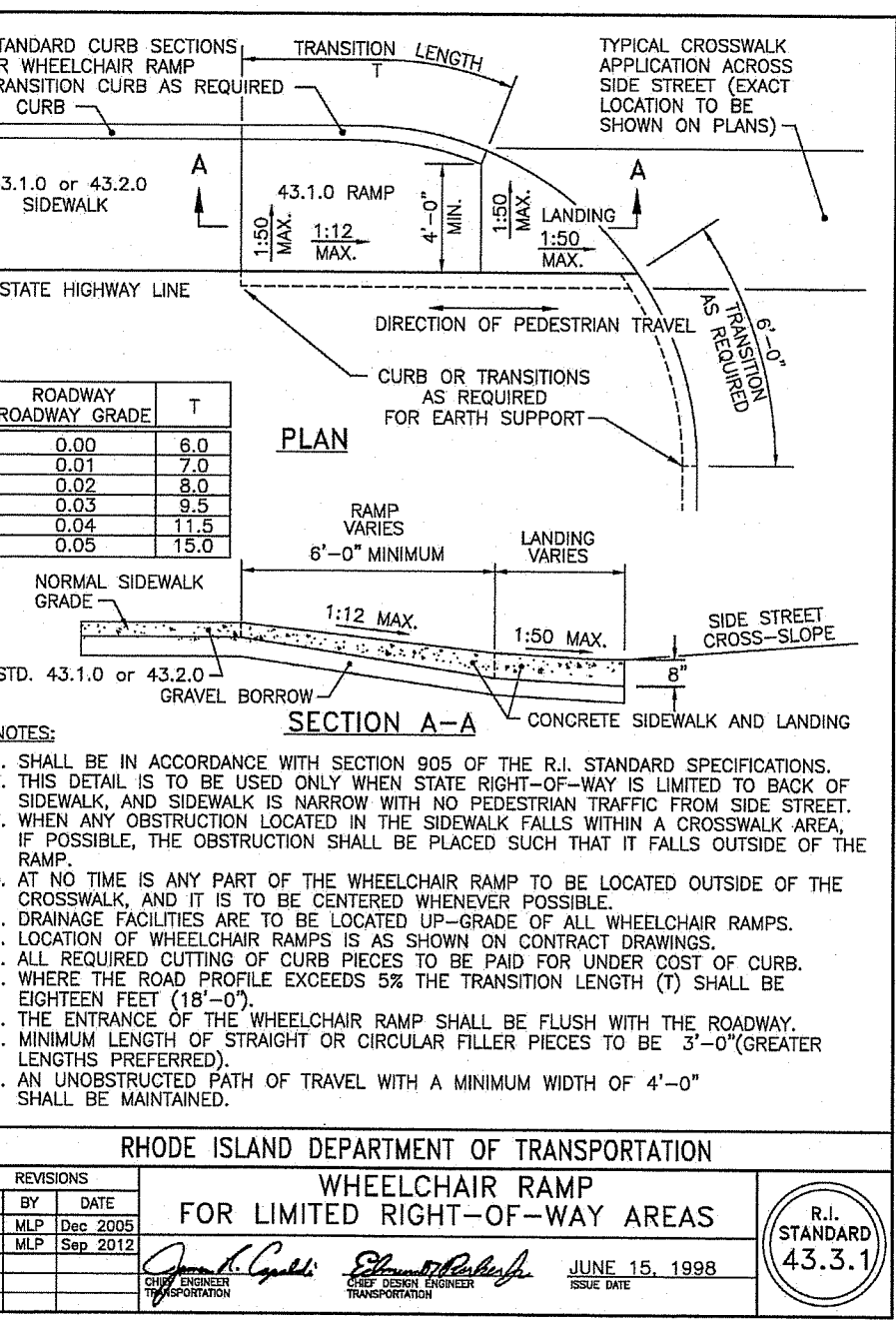
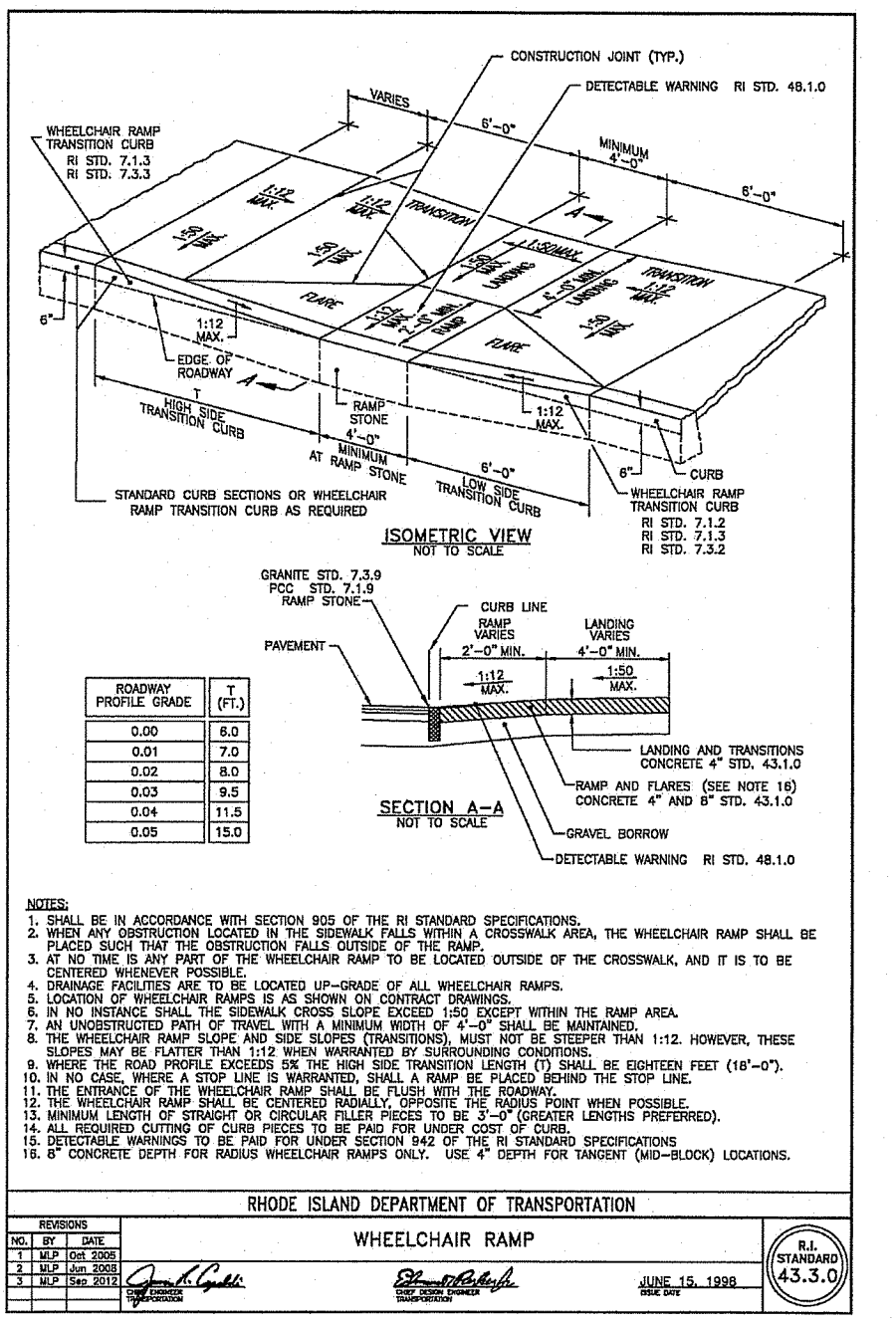
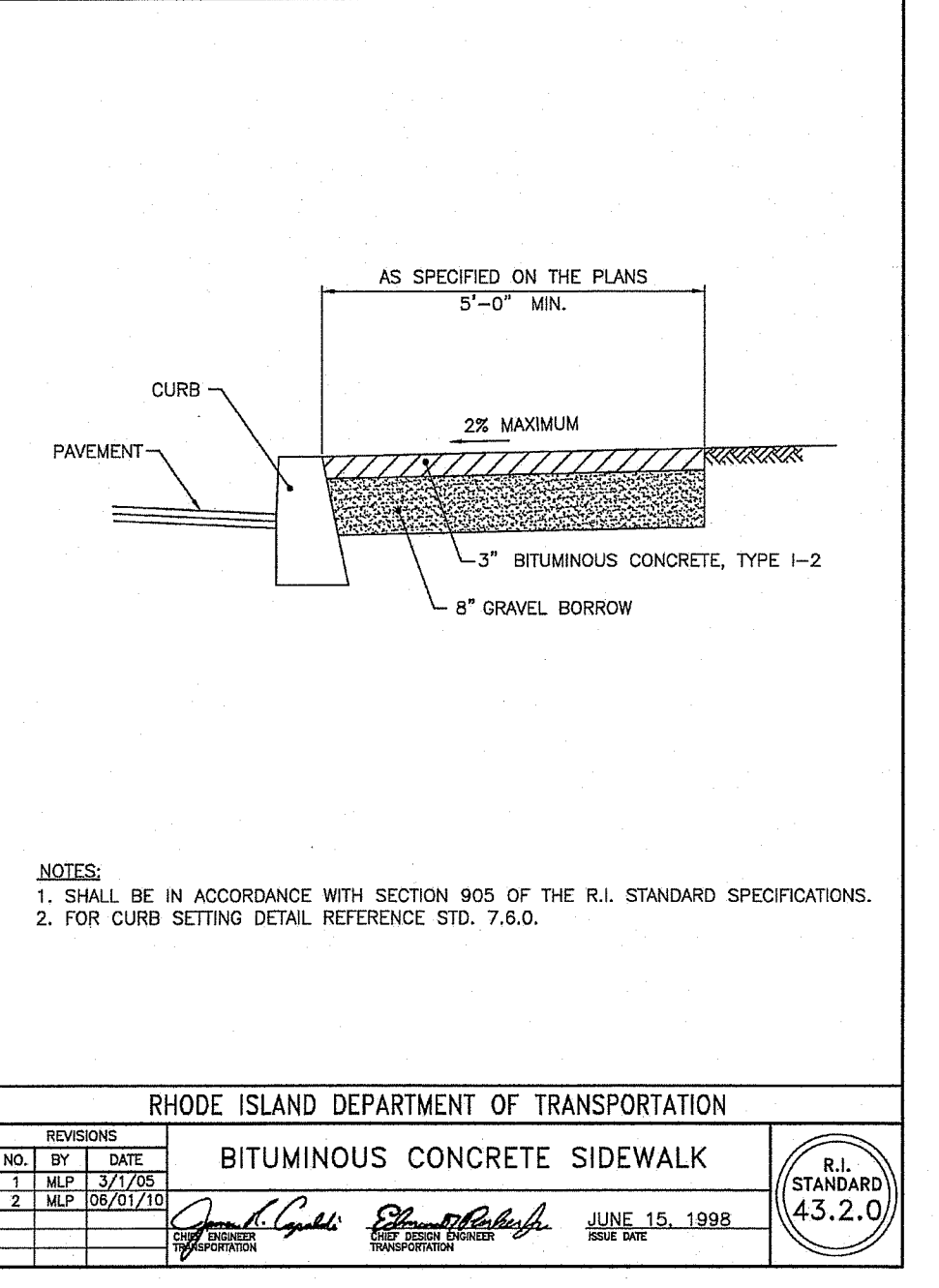
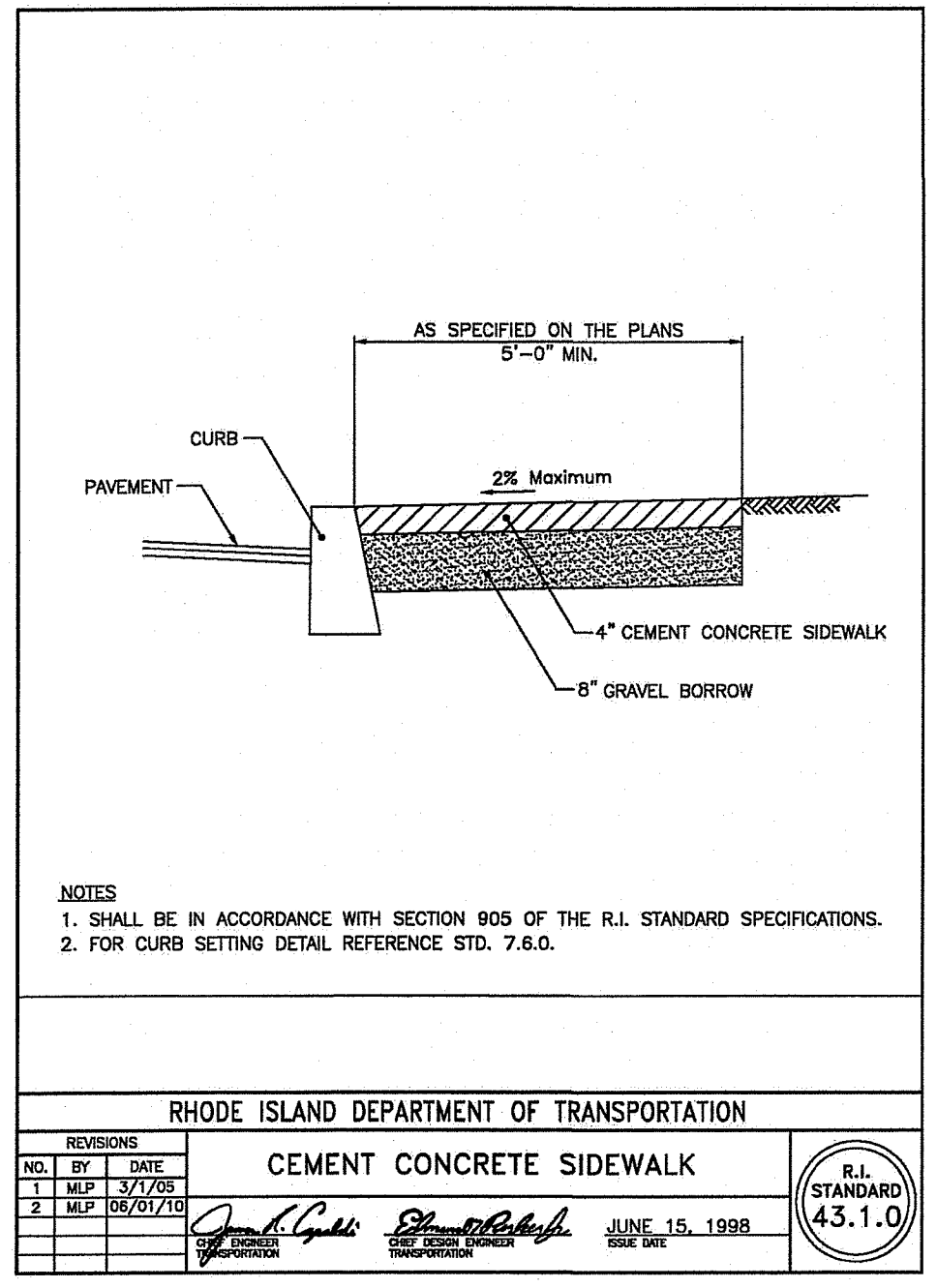
PRELIMINARY, NOT FOR CONSTRUCTION

**RHODE ISLAND STANDARD DETAILS**

SHEET 9 OF 15

Q:\121-103 Material Sampling Technologies\ACAD\DWG - Central Street [RIDEA, RTC] - RI Elev. Changes.dwg Mar. 28, 2023 2:56pm

NO.	SYMBOL	DESCRIPTION	NO.	SYMBOL	DESCRIPTION
1		STOP	10		NO LEFT TURN
2		NO RIGHT TURN	11		NO U-TURN
3		NO LEFT TURN	12		NO RIGHT TURN
4		NO U-TURN	13		NO LEFT TURN
5		NO RIGHT TURN	14		NO U-TURN
6		NO LEFT TURN	15		NO RIGHT TURN
7		NO U-TURN	16		NO LEFT TURN
8		NO RIGHT TURN	17		NO U-TURN
9		NO LEFT TURN	18		NO RIGHT TURN



**JOE CASALI ENGINEERING, INC.**  
 CIVIL, SITE DEVELOPMENT, TRANSPORTATION  
 DRAINAGE, WETLANDS, I-95, TRAFFIC FLOORPLAN  
 (401) 944-1300 / (401) 944-1313 FAX / WWW.JOECSA.COM

JOSEPH A. CASALI  
 No. 7250  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
 CENTRAL STREET  
 NORTH SMITHFIELD, RHODE ISLAND  
 AP 1, LOTS 17 & 461

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: APR 02 2024 FILE # 23-945  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

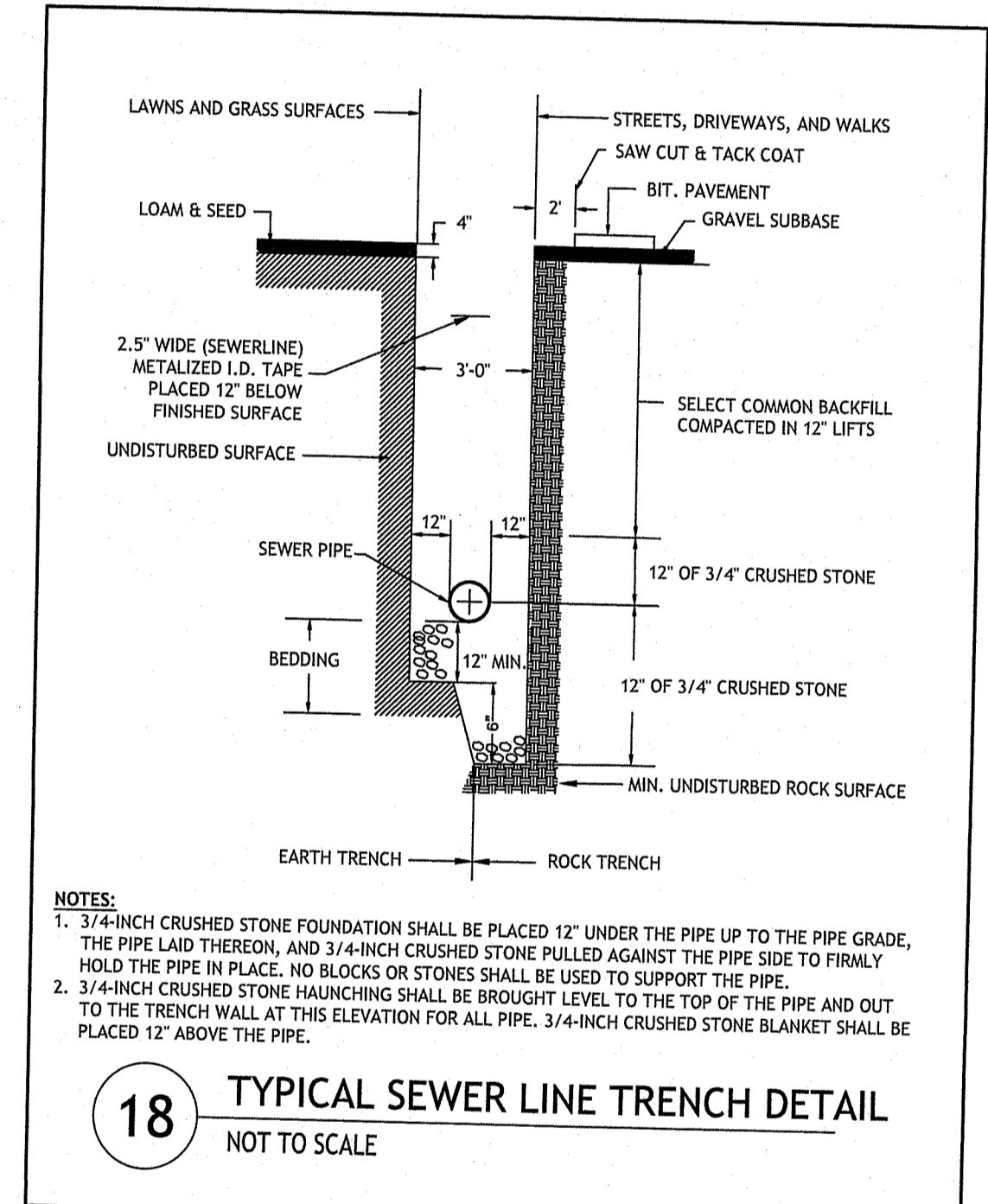
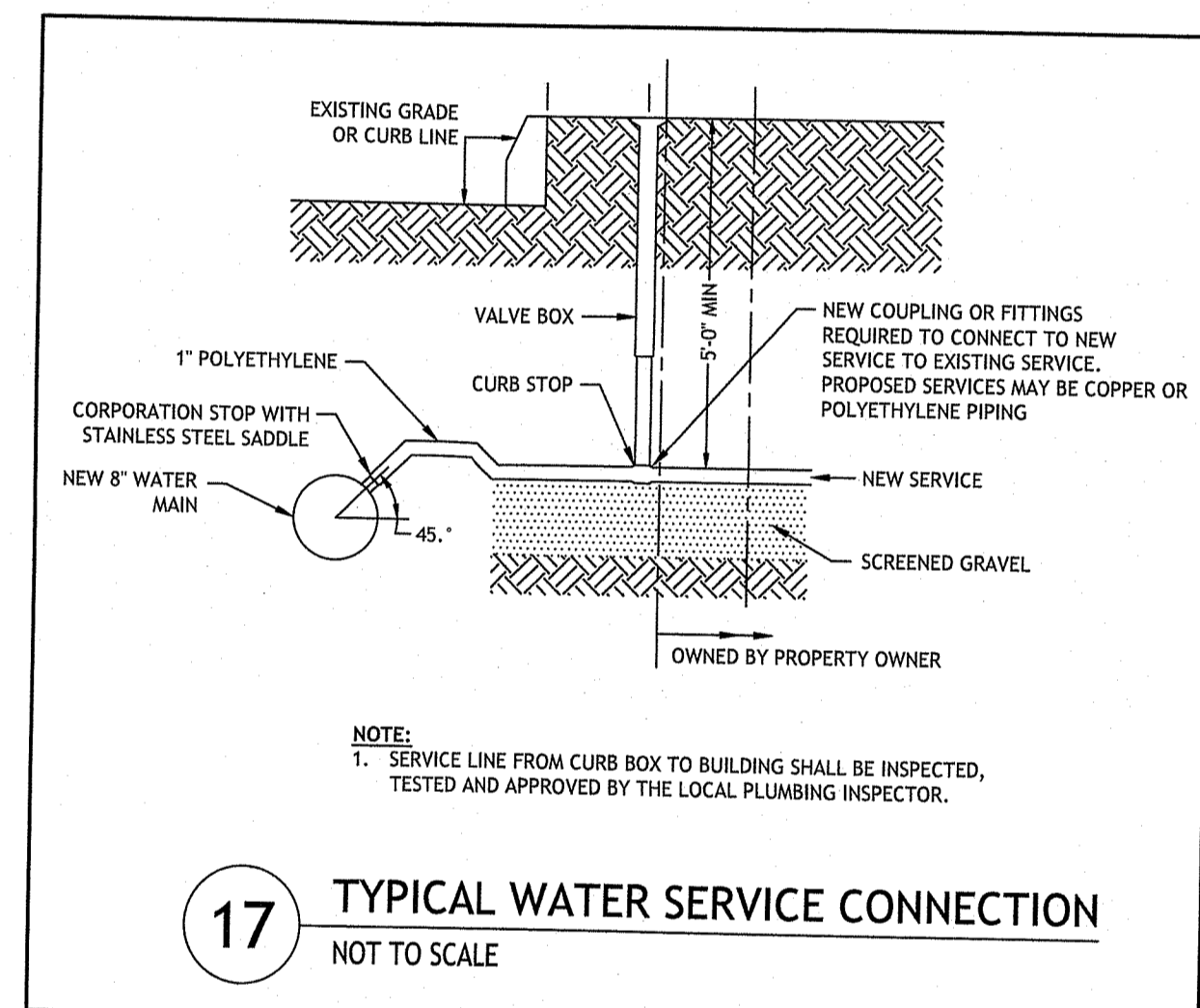
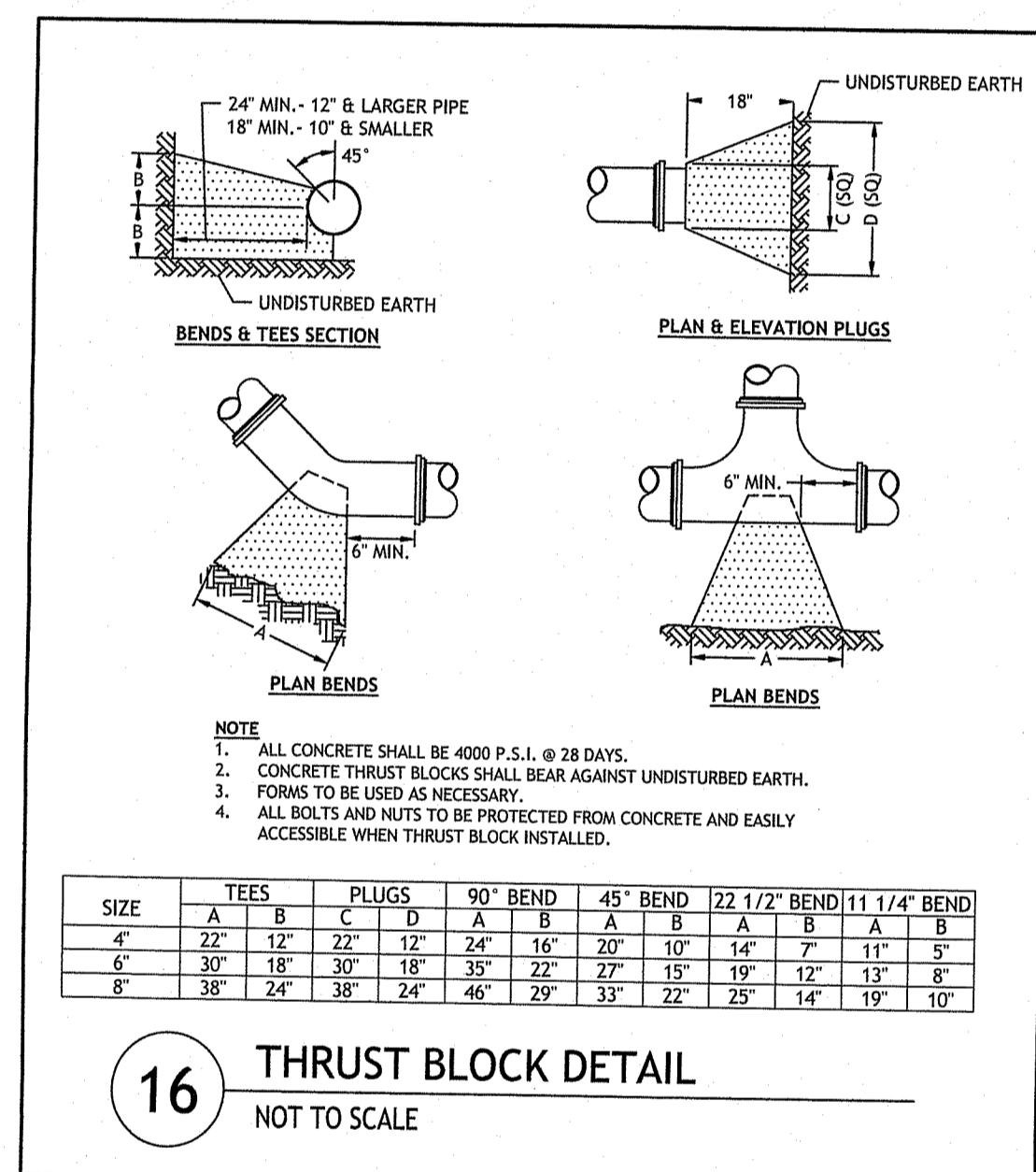
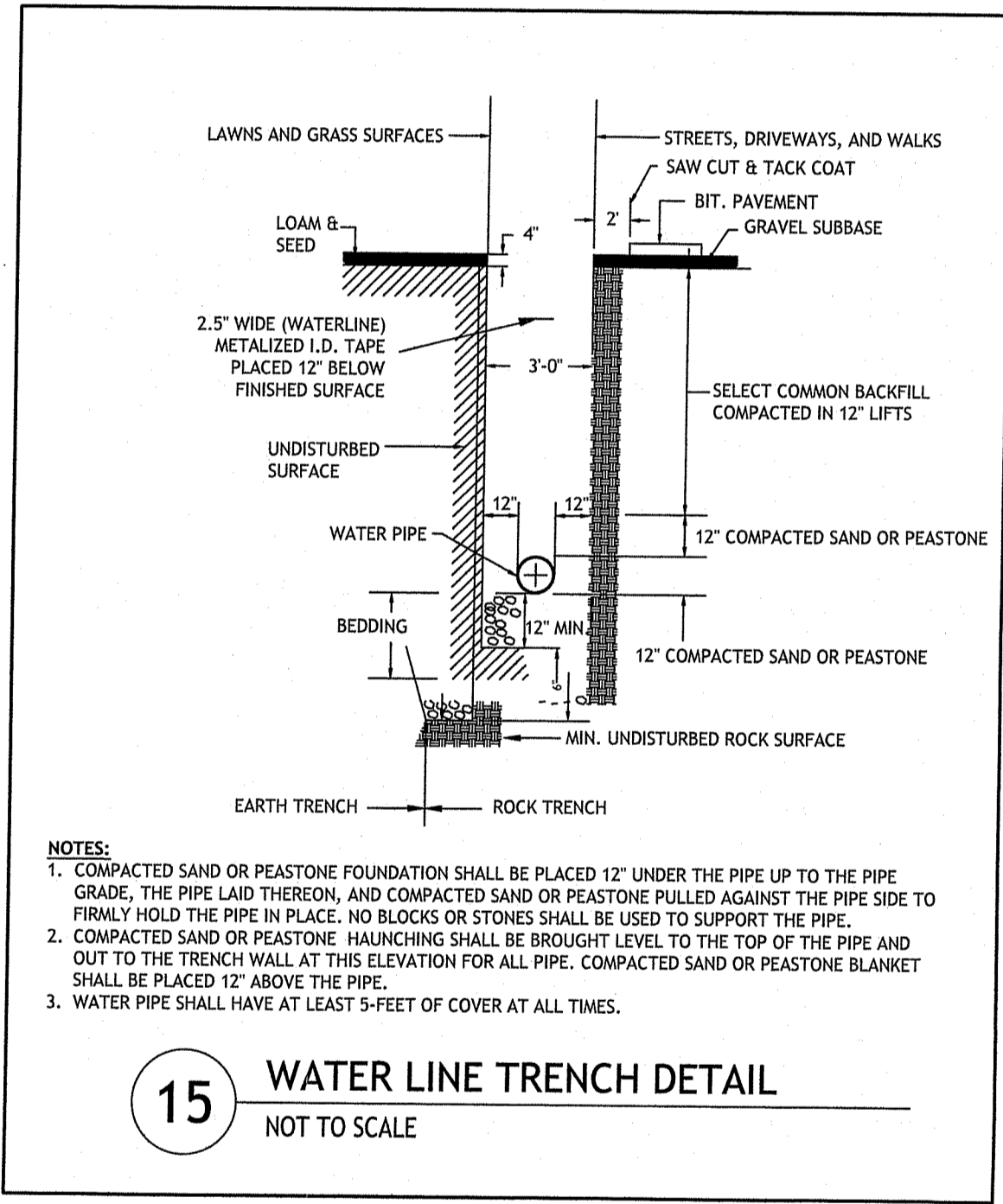
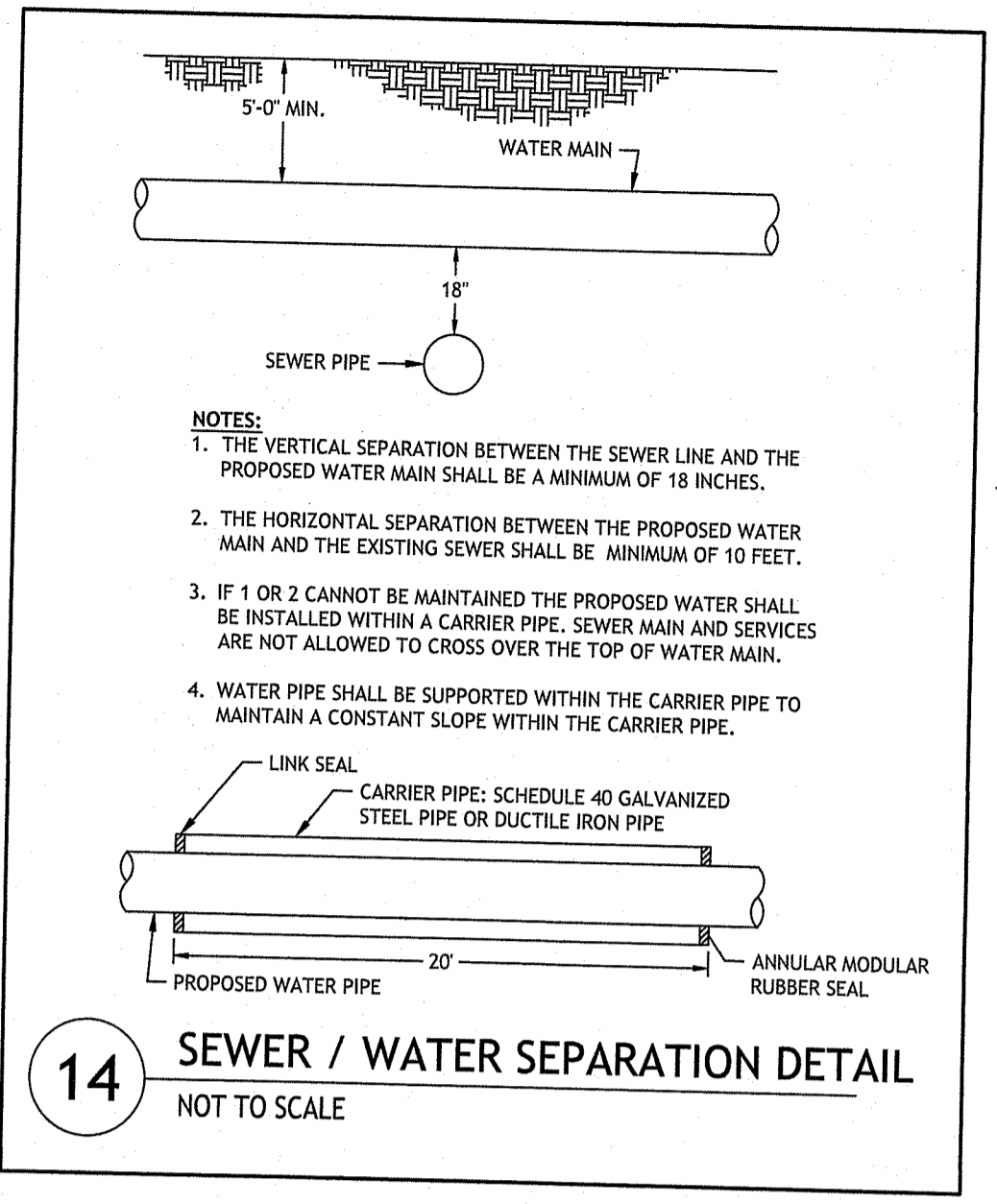
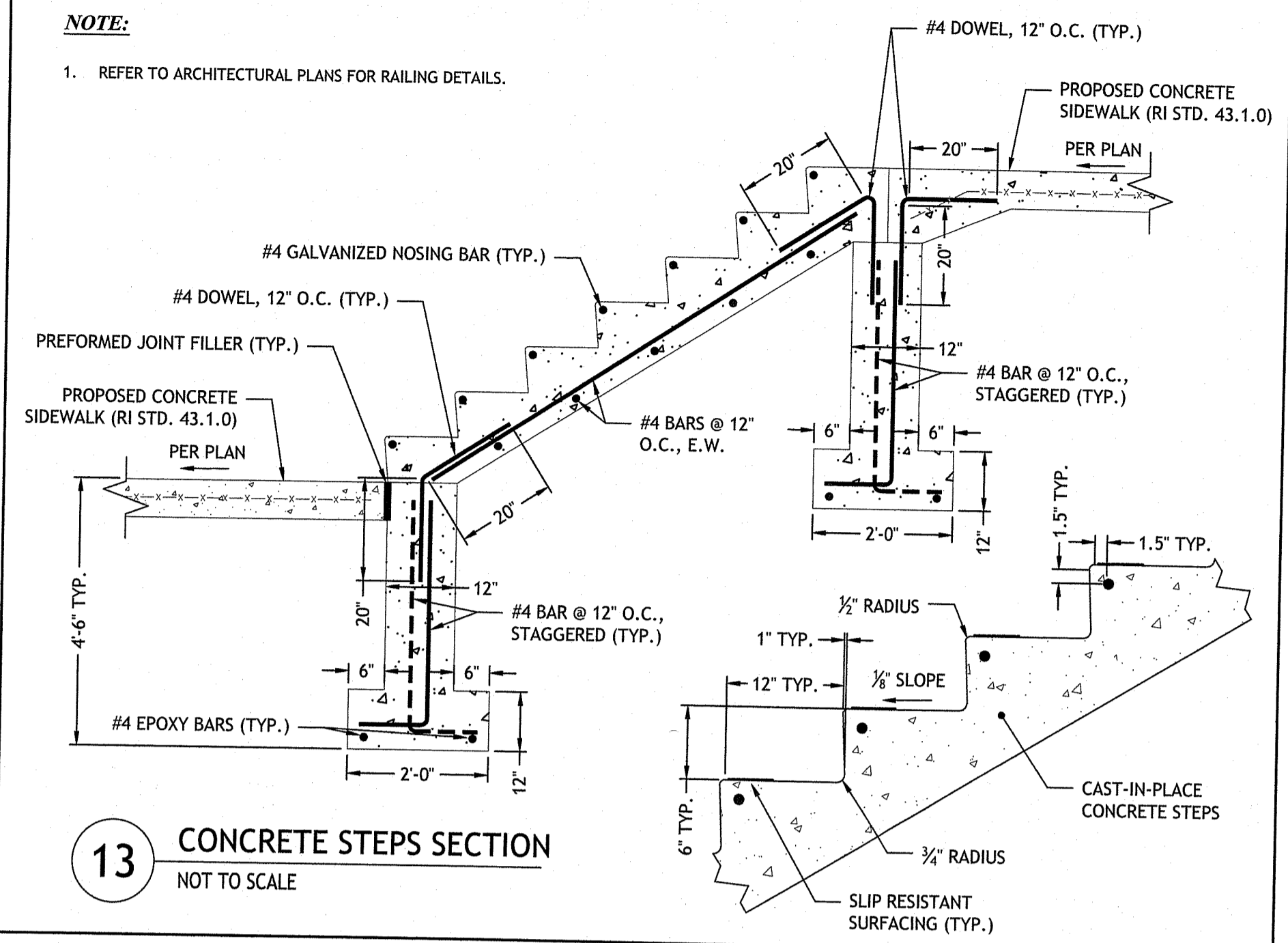
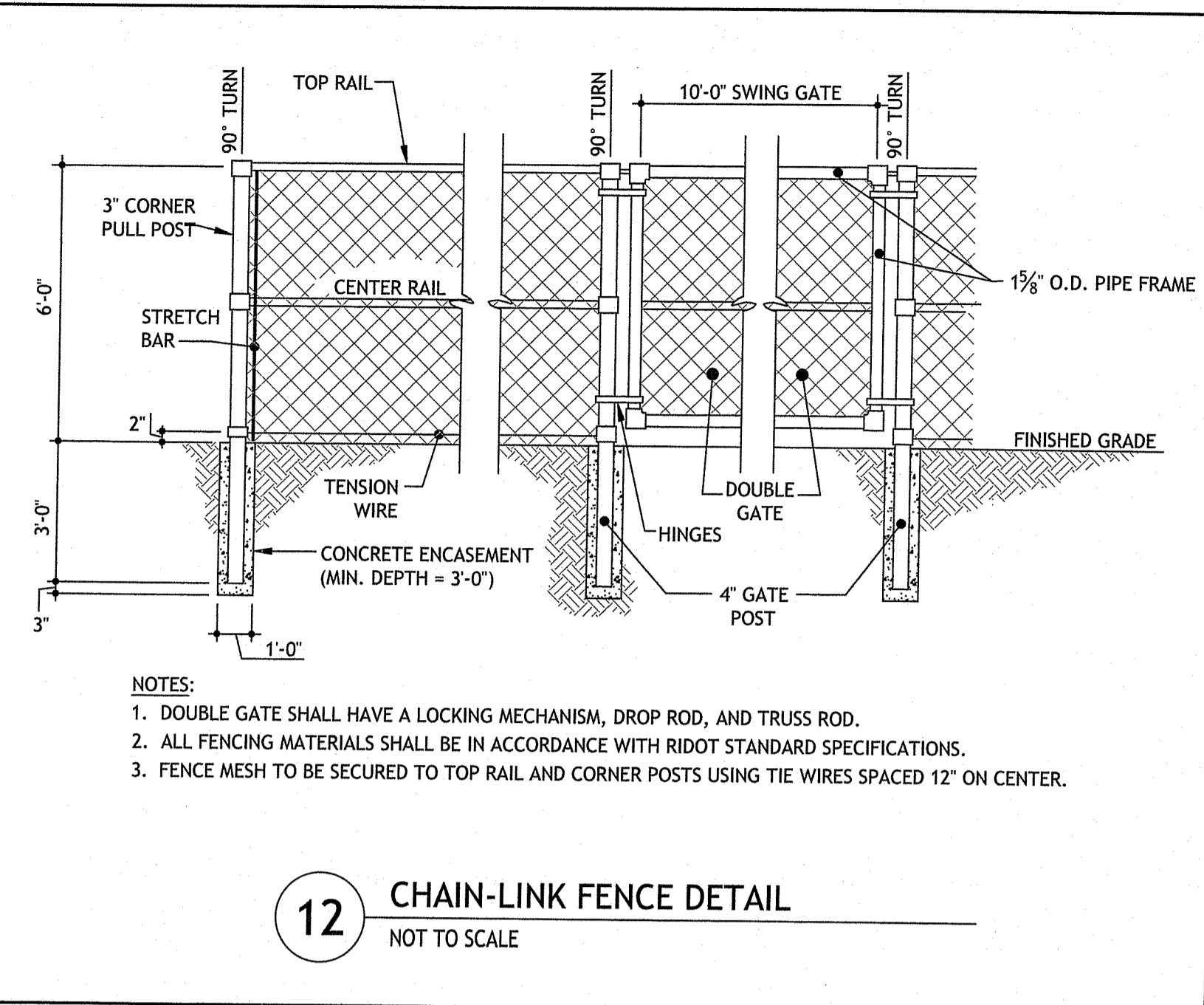
DESIGNED BY: DRD  
 DRAWN BY: SEP/SD  
 CHECKED BY: JAC  
 DATE: AUGUST 2022  
 PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL DETAILS I**

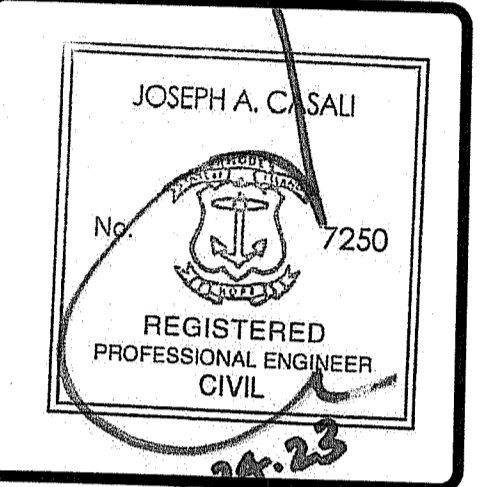
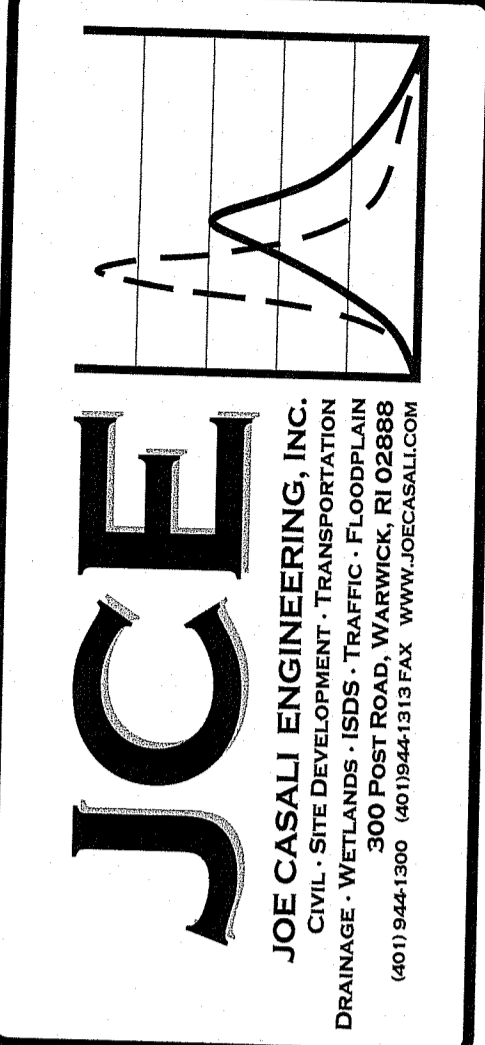
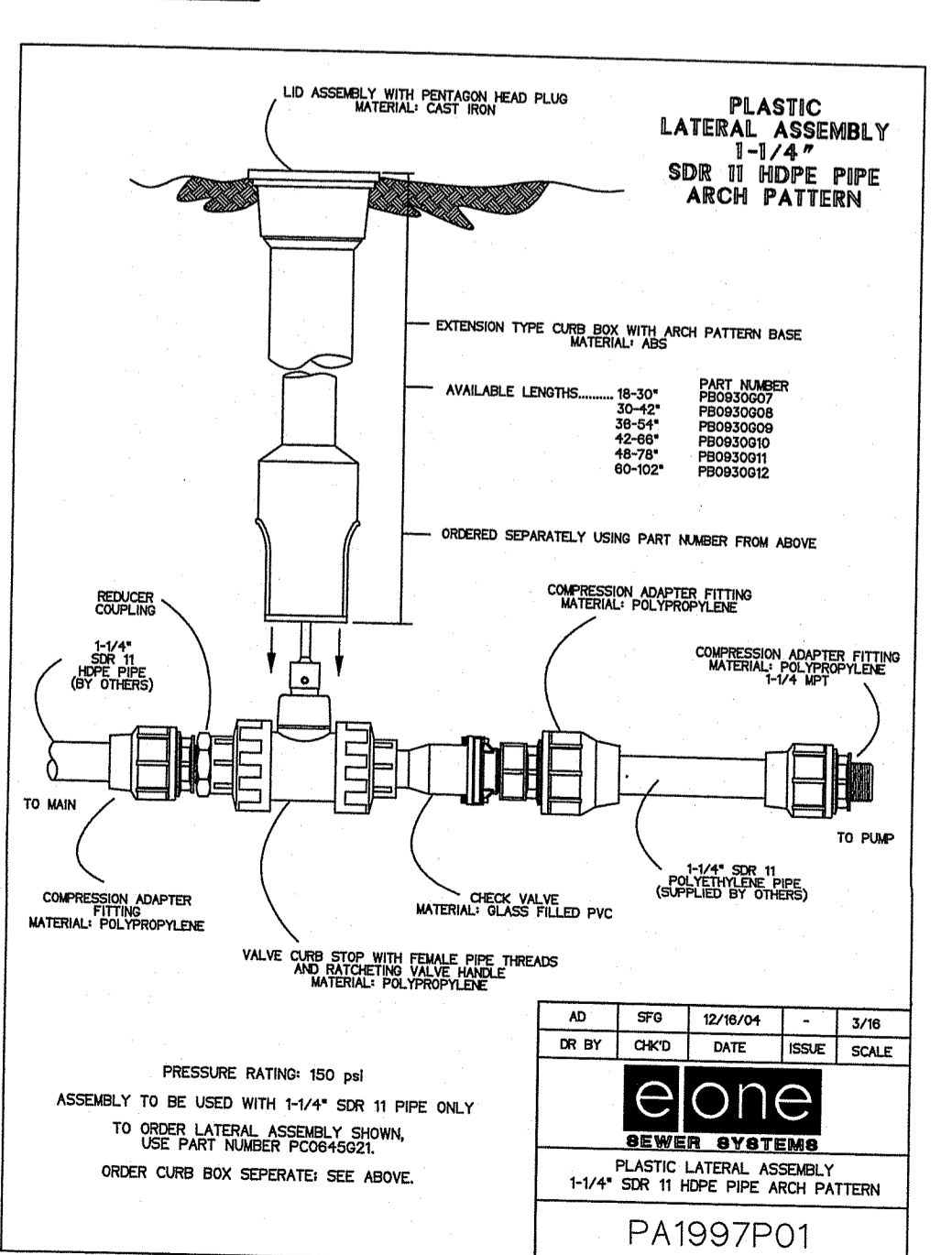
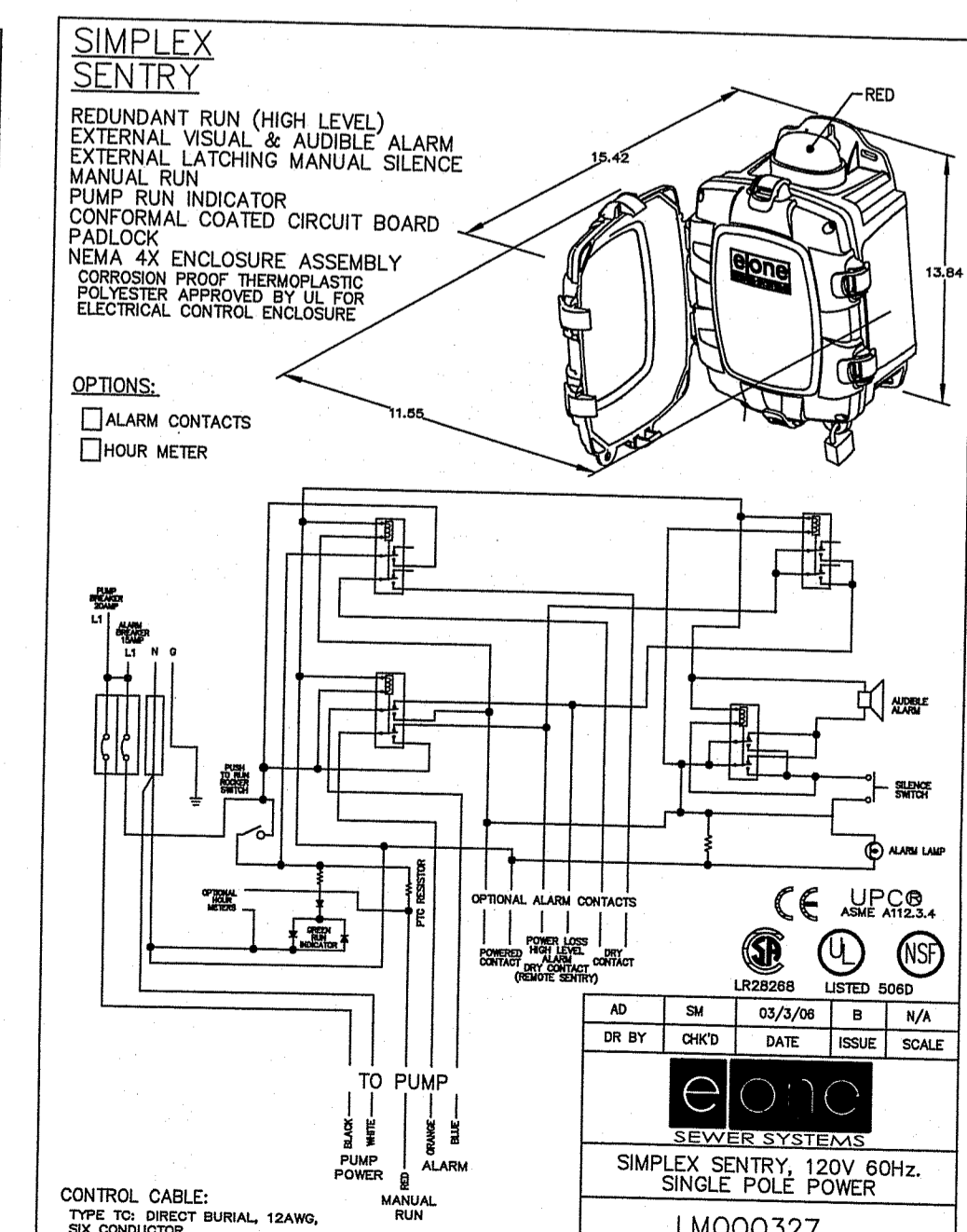
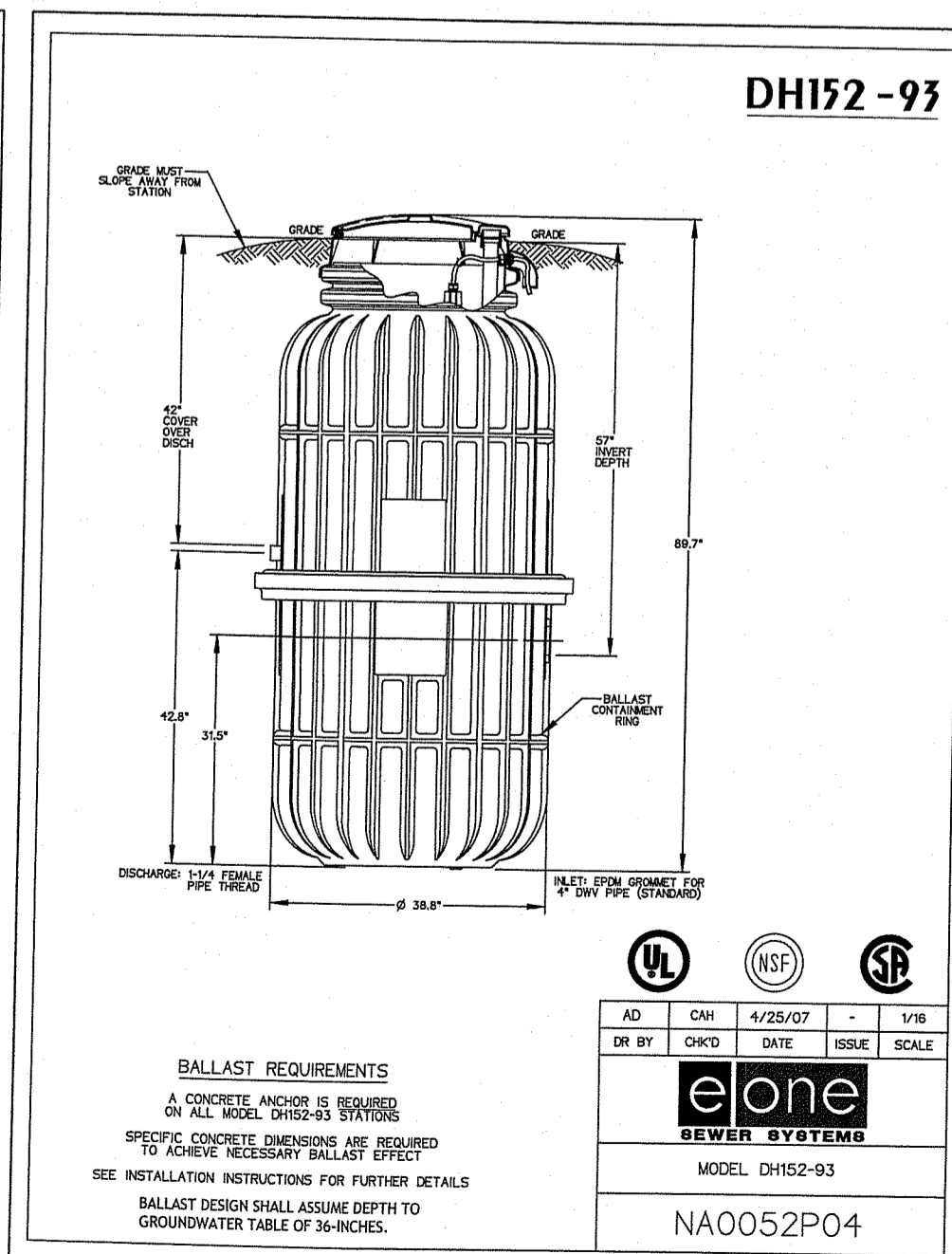
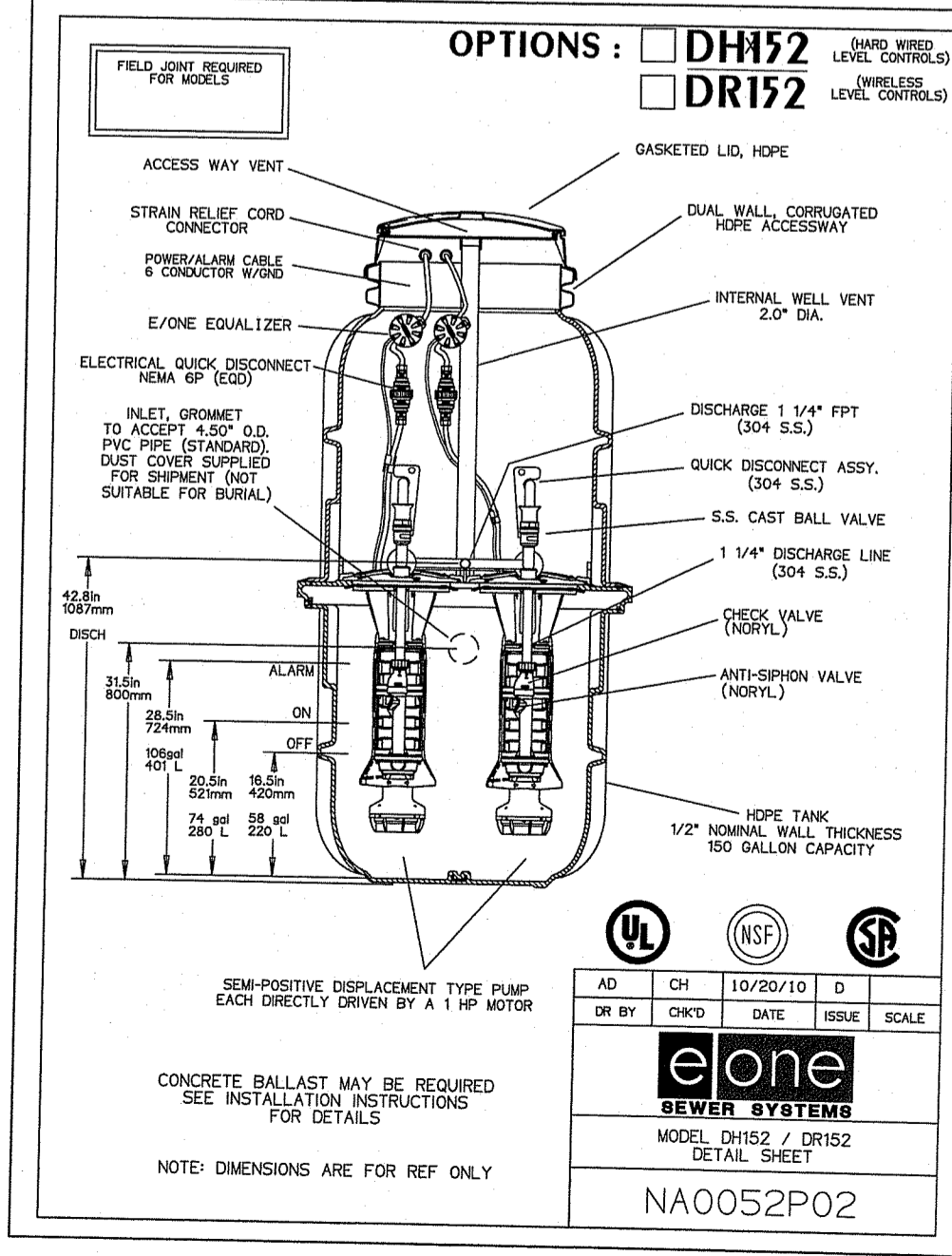
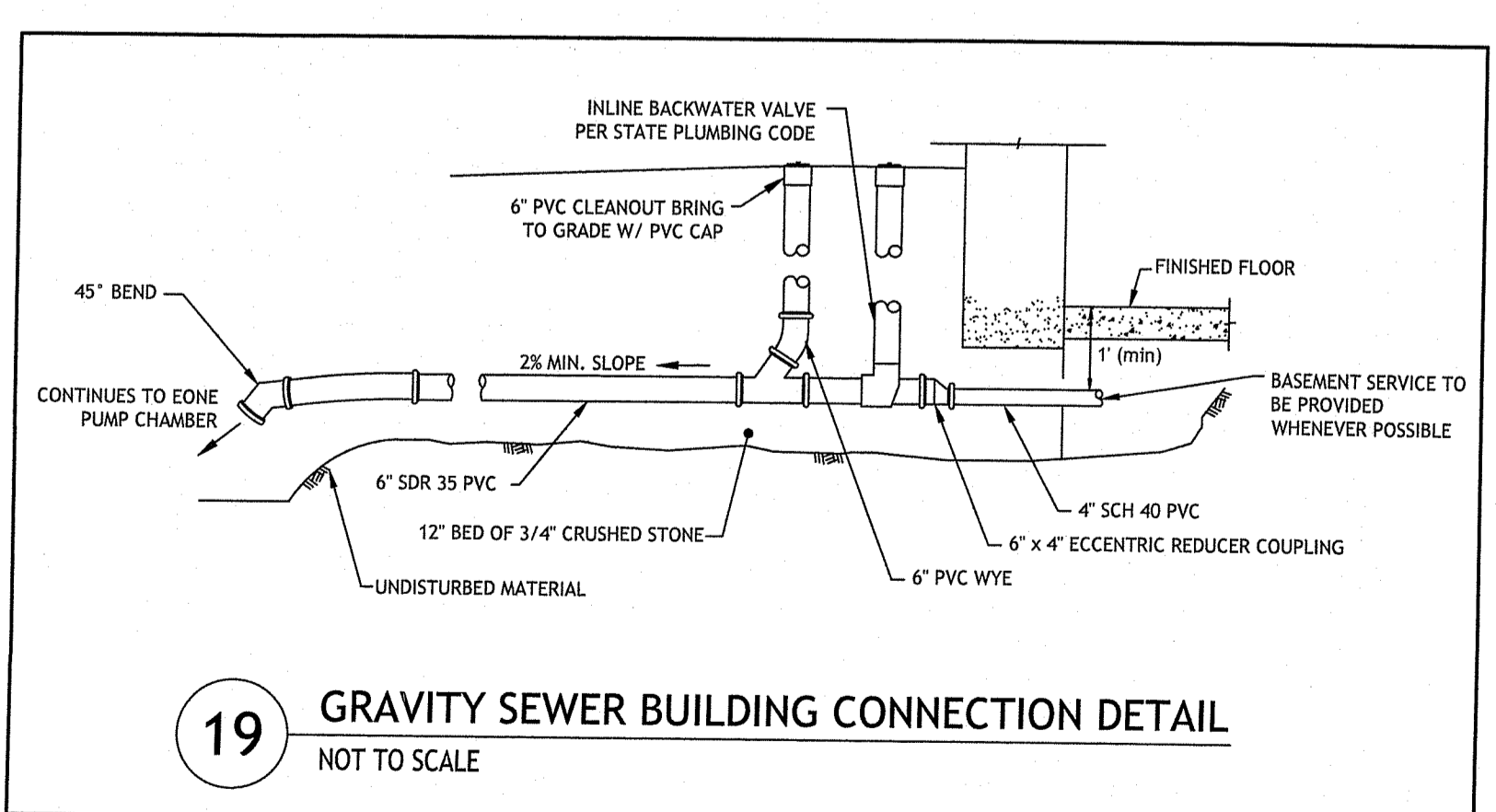
**SHEET 10 OF 15**

Q:\21-103 Material Sampling Technologies\CAD\DWG - RIDEM RTC - Central Street (RIDEA RTC) - RI [Elev. Changes].dwg, Mar. 28, 2023 2:57pm



RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 02 2024 FILE #: 22-0450  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Joseph D. Sanchez*



**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

REVISIONS:

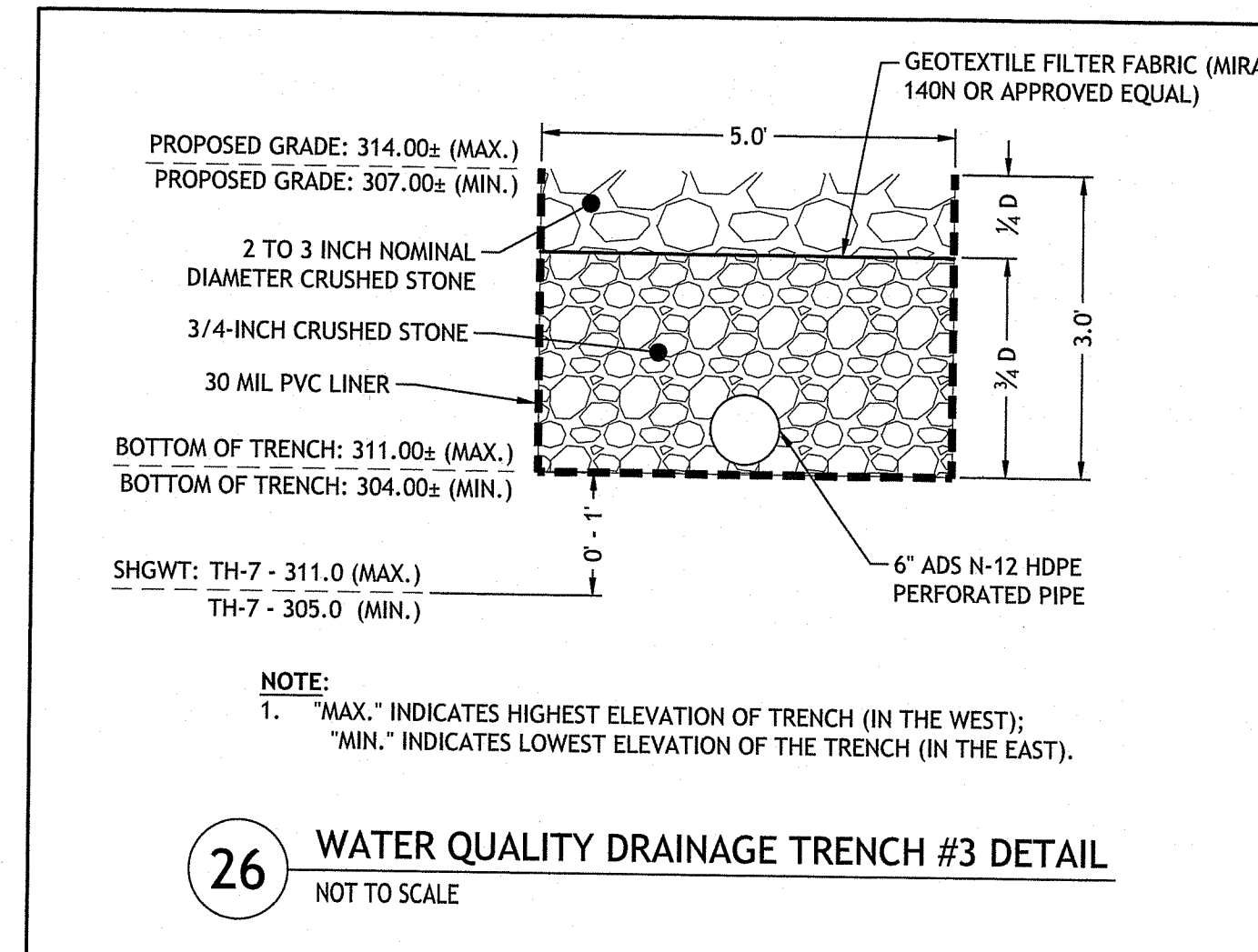
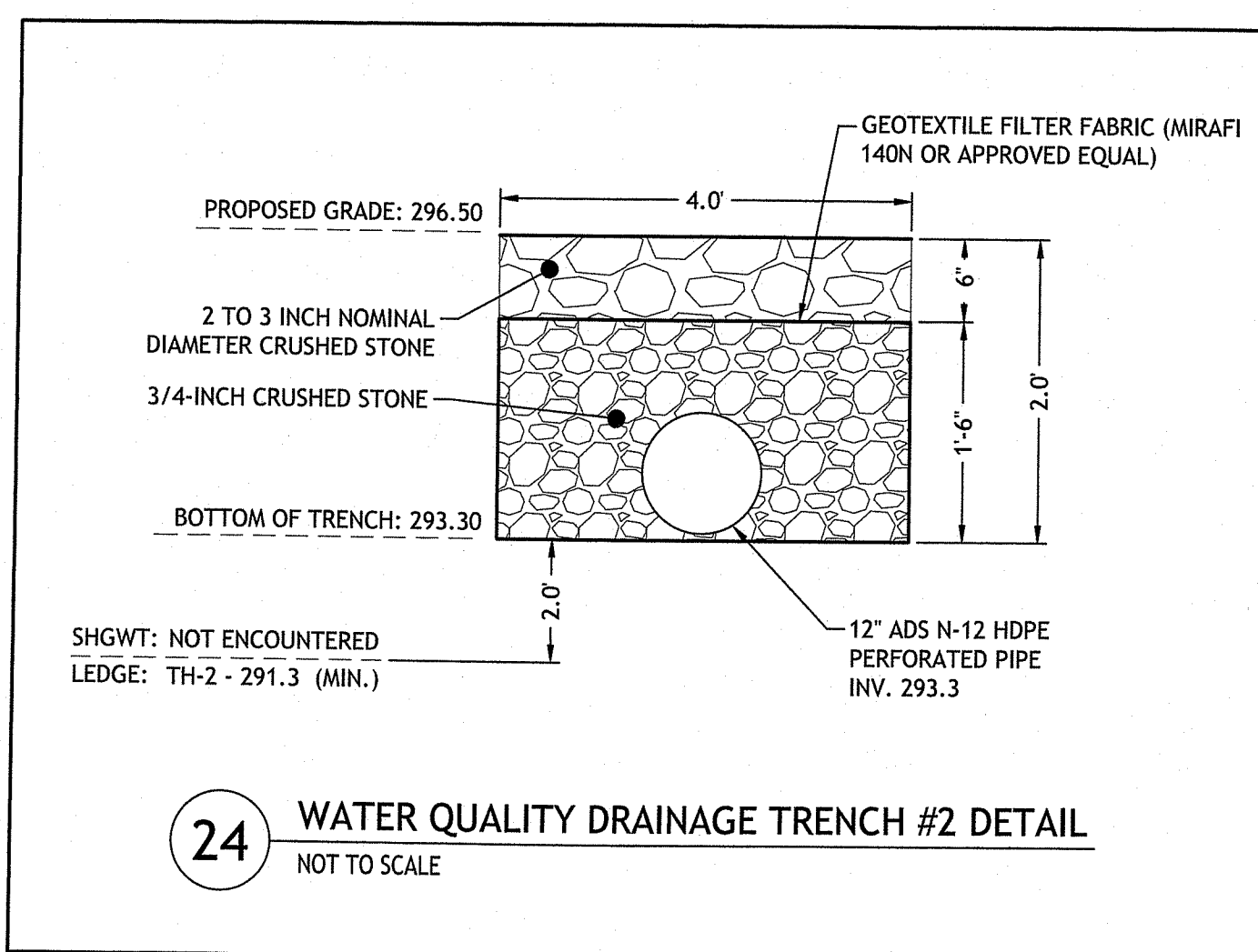
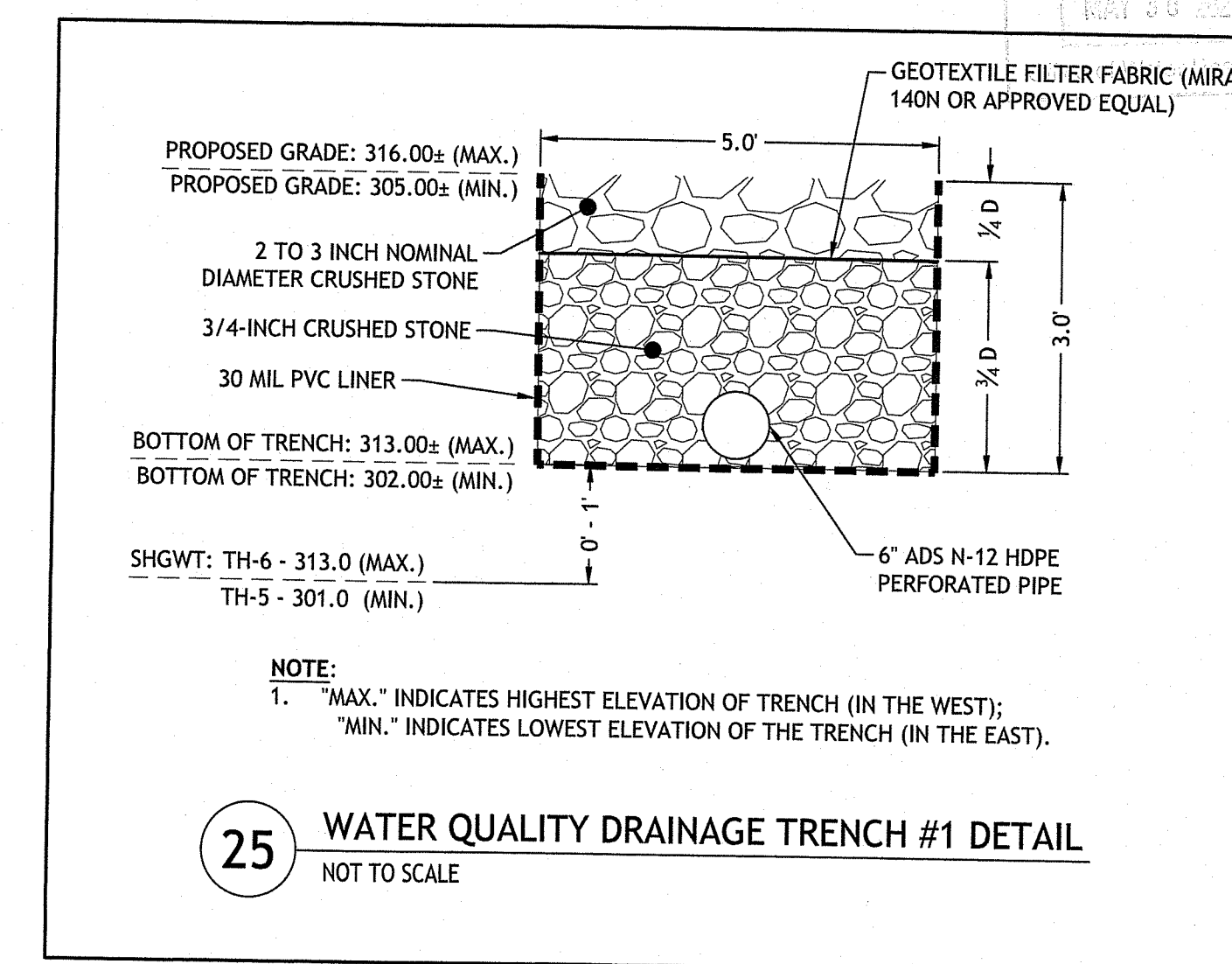
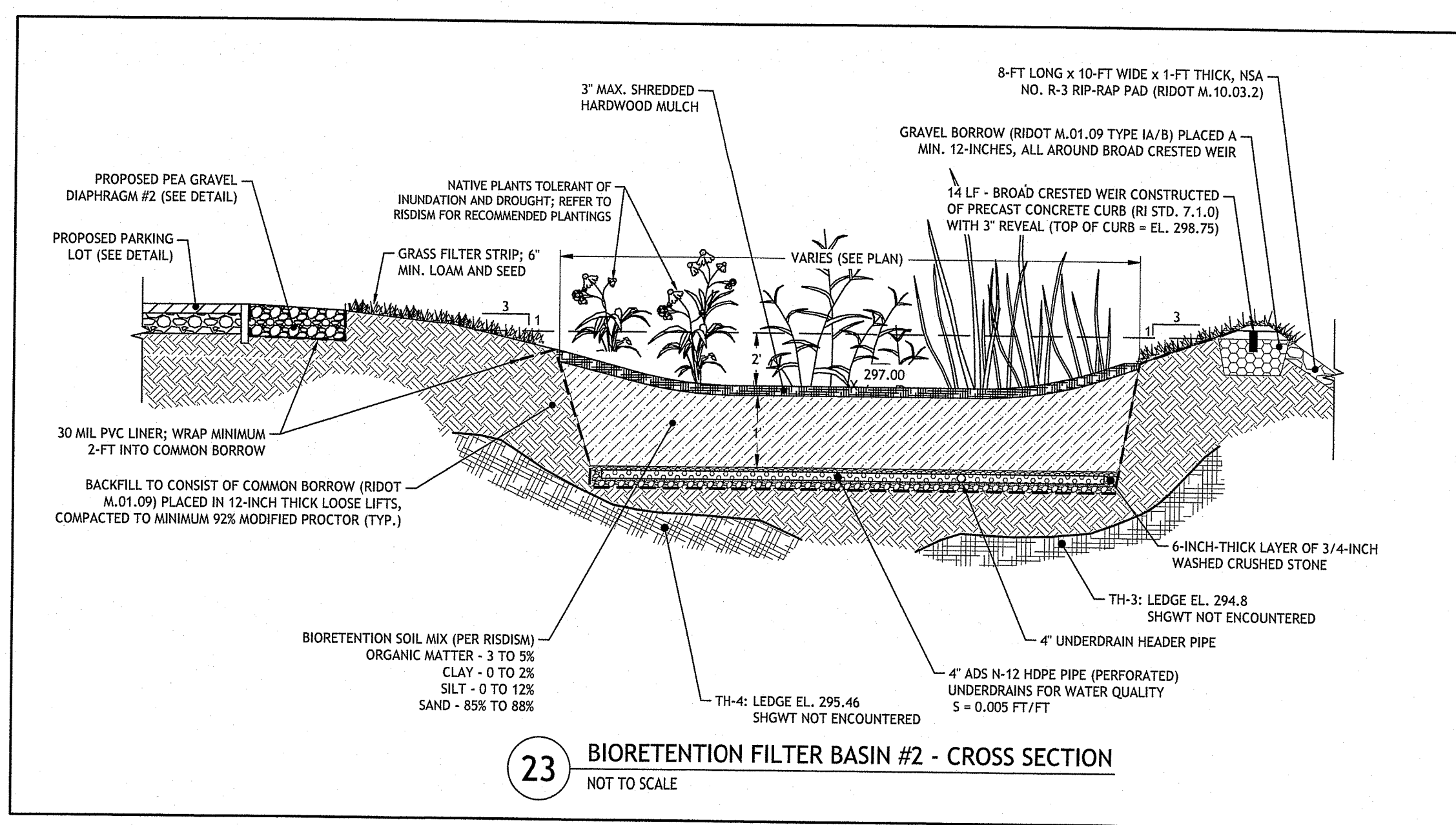
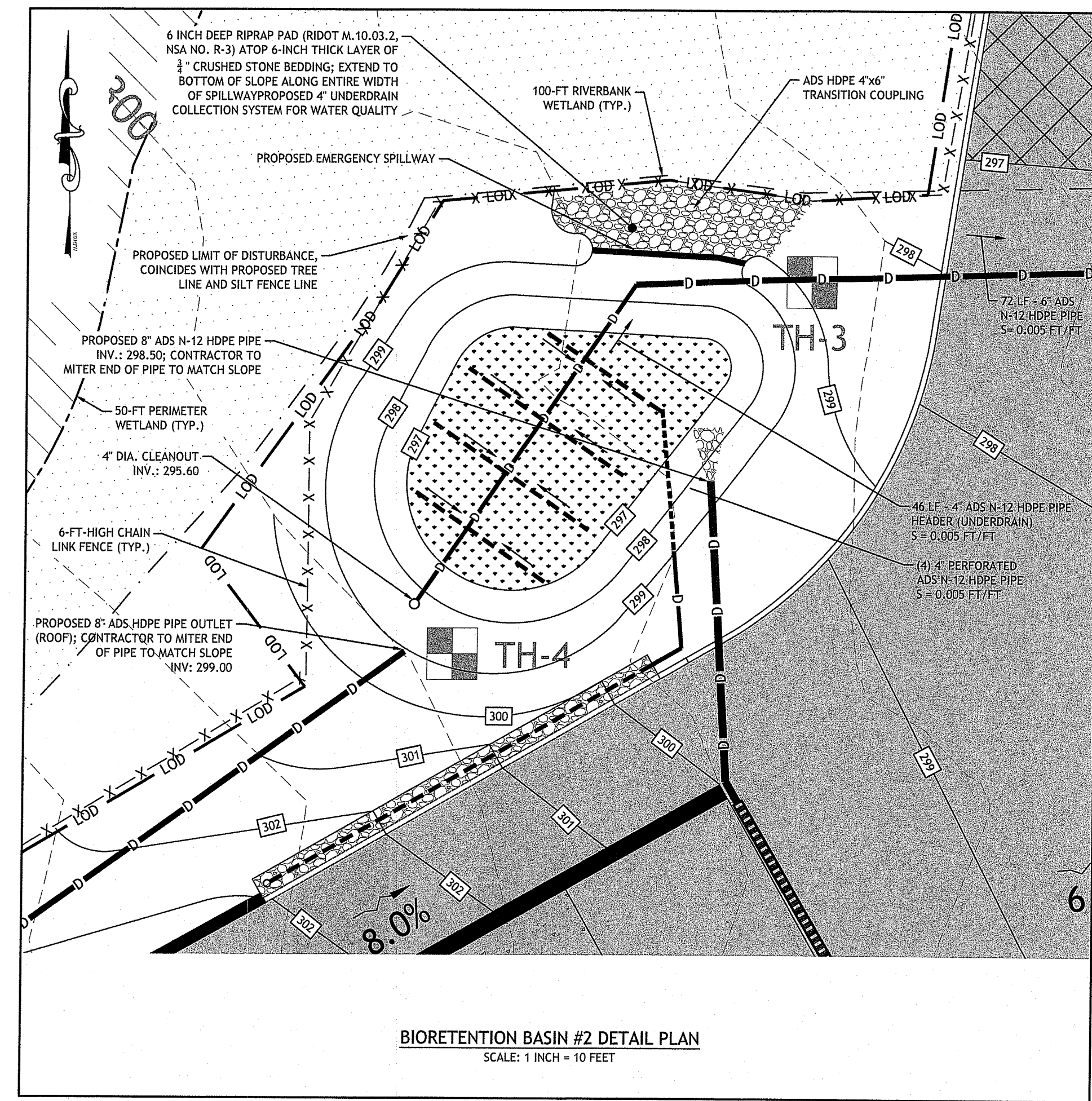
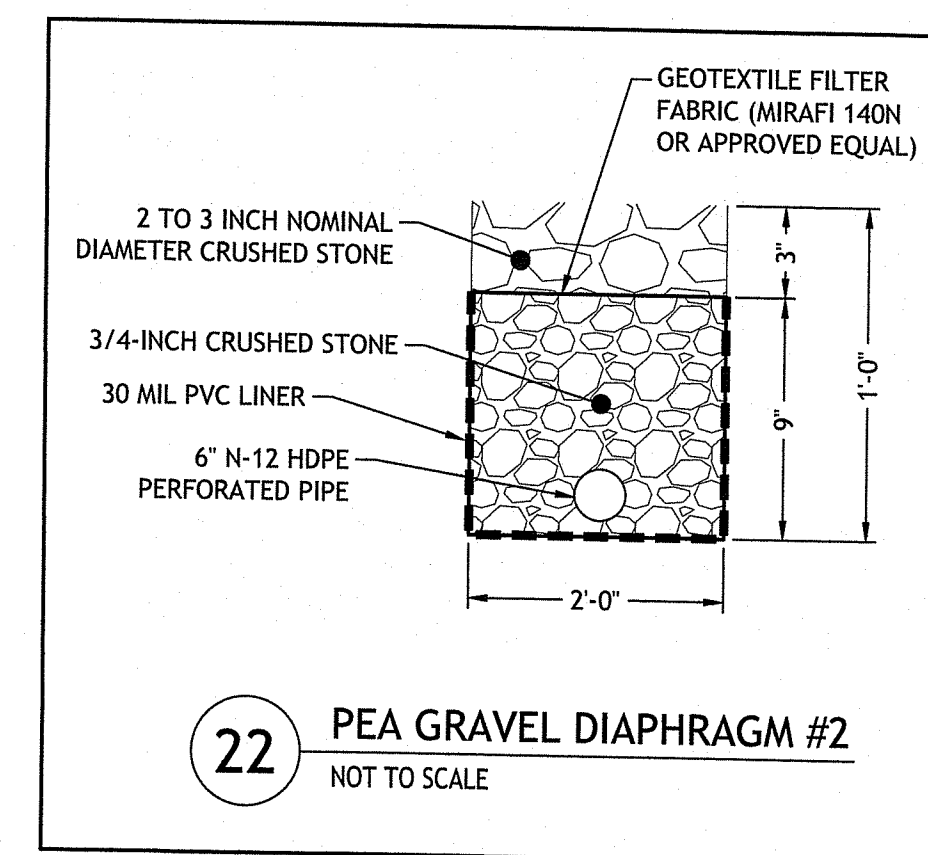
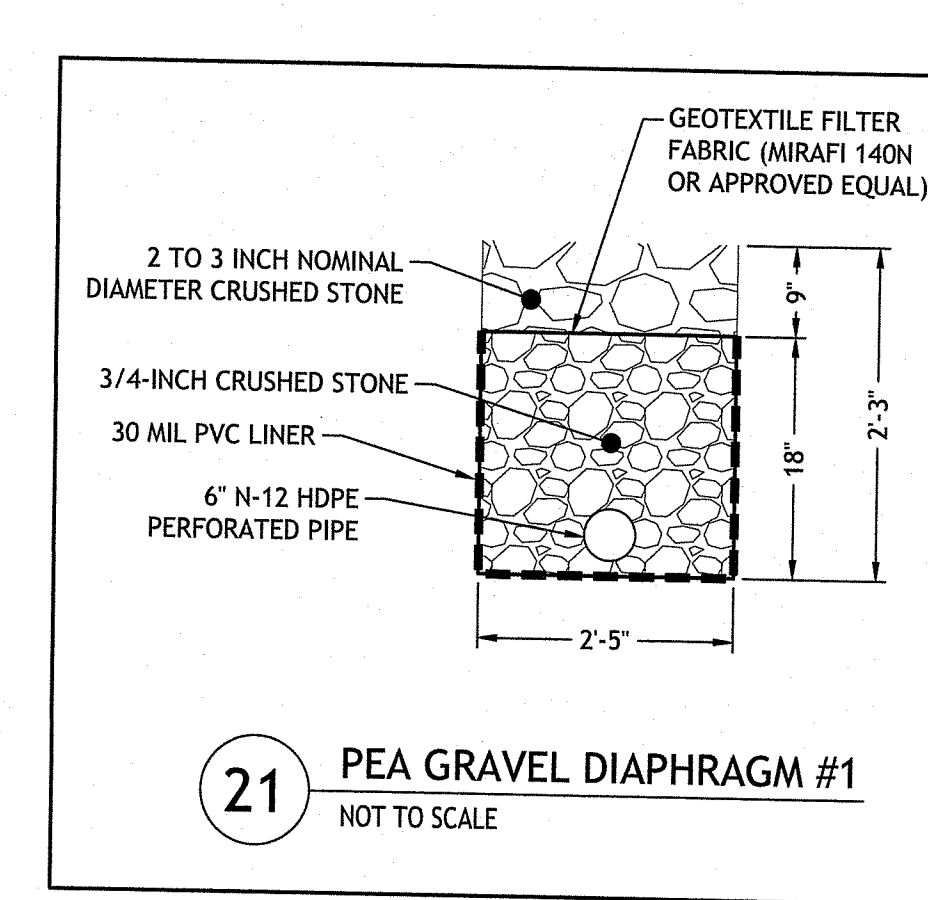
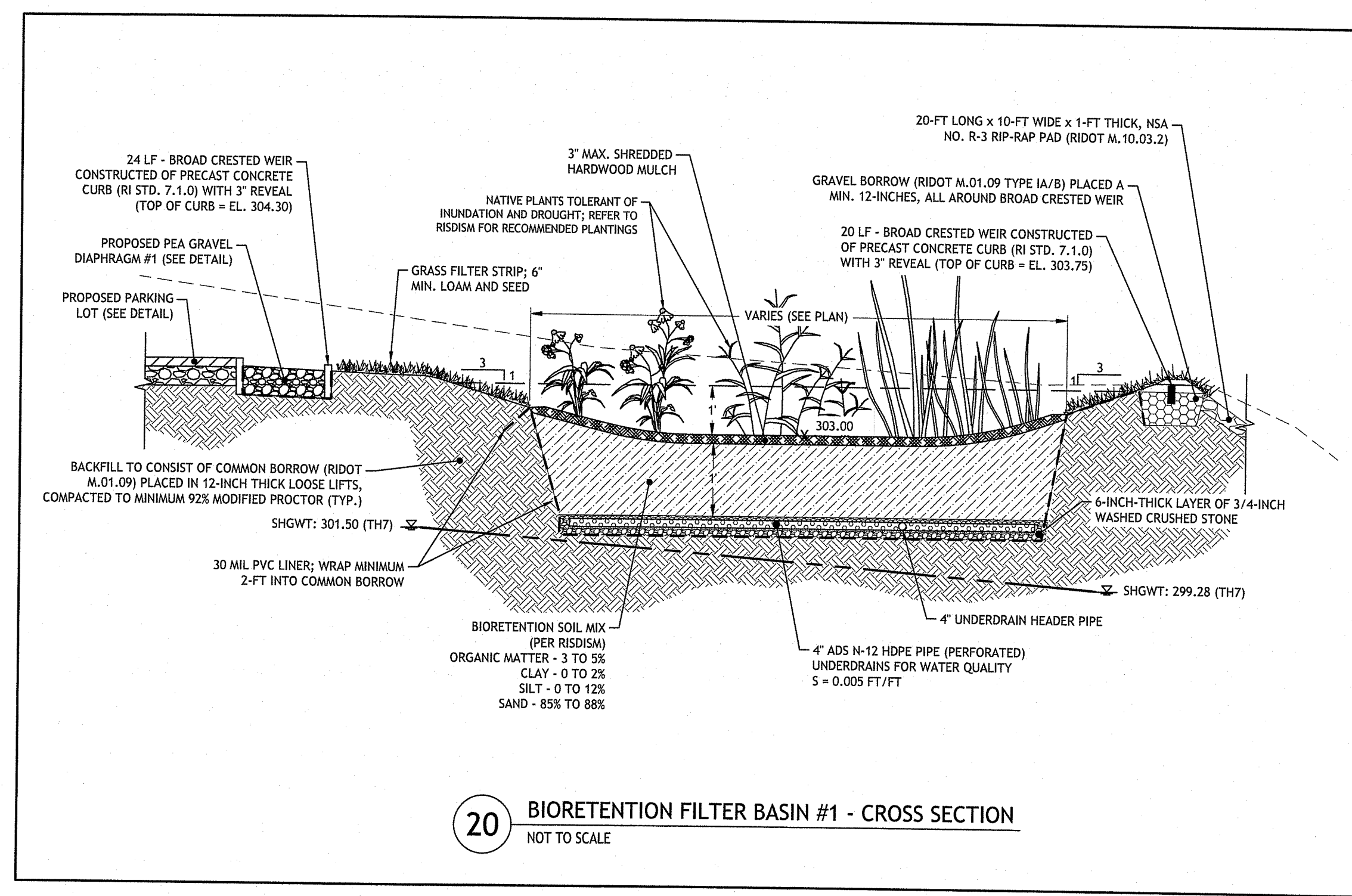
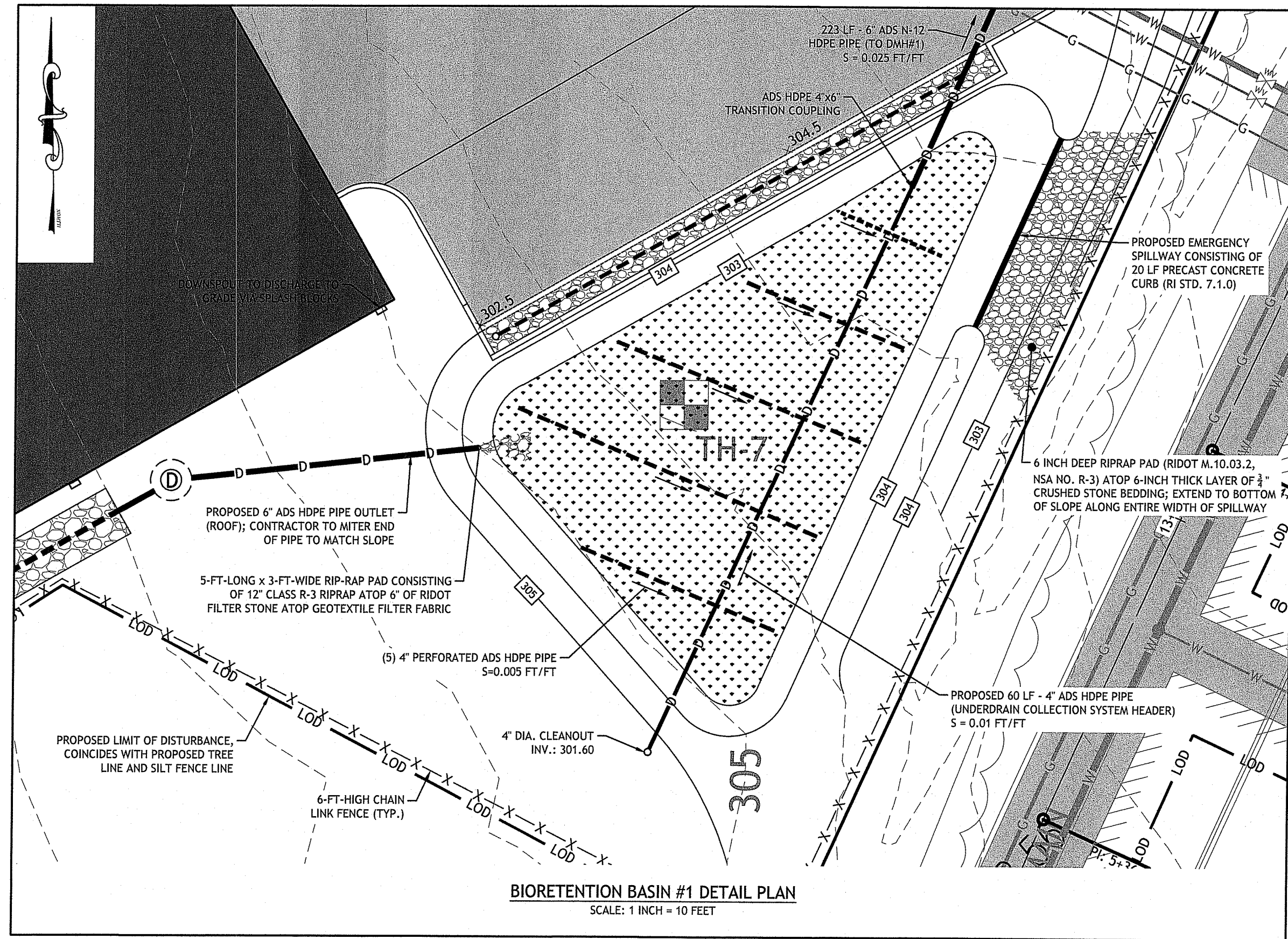
NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEF/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL DETAILS II**

**SHEET 11 OF 15**



RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS:  
SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 2 2024 FILE #: 32-0450

NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DESIGNED BY: DRD  
DRAWN BY: SEPSD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - ISDS - TRAFFIC - FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
401.844.1302 www.jceca.com

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL DETAILS III**

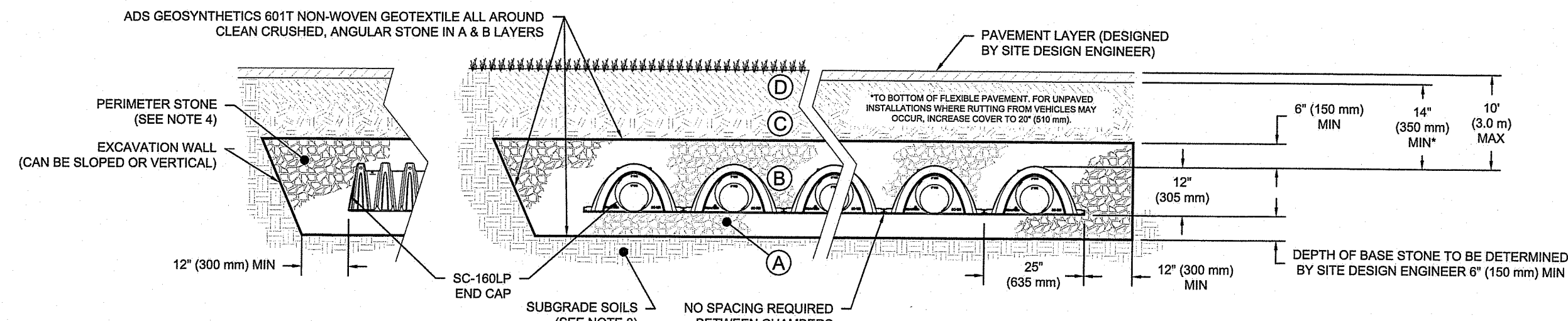
**SHEET 12 OF 15**

Q:\21-103 Material Sampling Technologies\ACAD\MST - Central Street (RIDEAN RTC) - RI [Elev. Changes].dwg, Mar. 28, 2023 2:57pm

**ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS**

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('A' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (55 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY TAMPING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
  - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



**NOTES:**

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5"
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/(IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

**SC-160LP STORMTECH CHAMBER SPECIFICATIONS**

- CHAMBERS SHALL BE STORMTECH SC-160LP.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/(IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

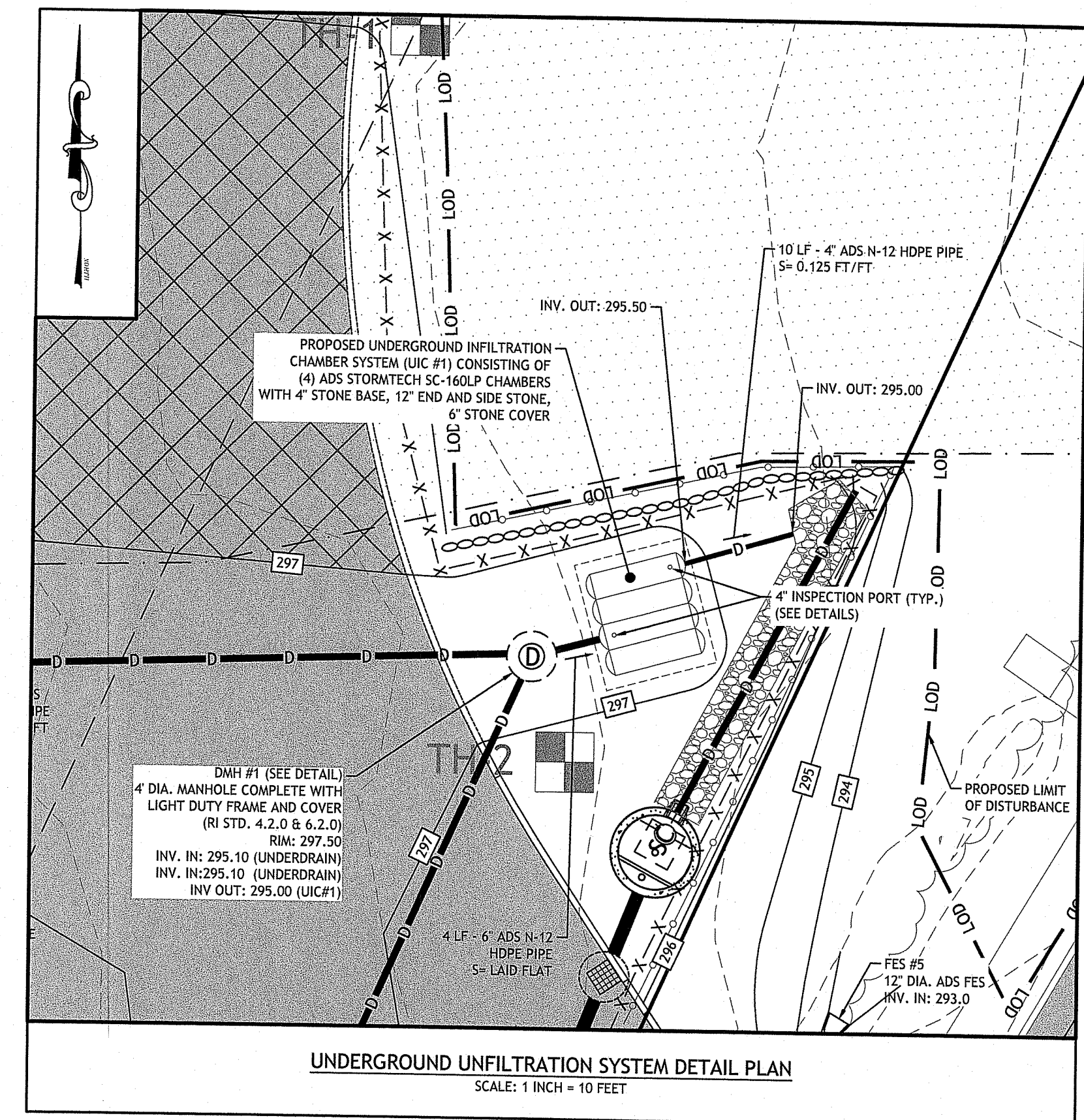
**IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-160LP SYSTEM**

- STORMTECH SC-160LP CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-160LP CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
- FOUNDATION STONE AND EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- THE DEPTH OF FOUNDATION STONE SHALL BE DETERMINED BASED ON THE SUBGRADE BEARING CAPACITY PROVIDED BY THE SITE DESIGN ENGINEER.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES CONCERNING CHAMBER FOUNDATION DESIGN AND SUBGRADE BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- CHAMBERS SHALL BE INSTALLED "TOE TO TOE". NO ADDITIONAL SPACING BETWEEN ROWS IS REQUIRED.
- STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

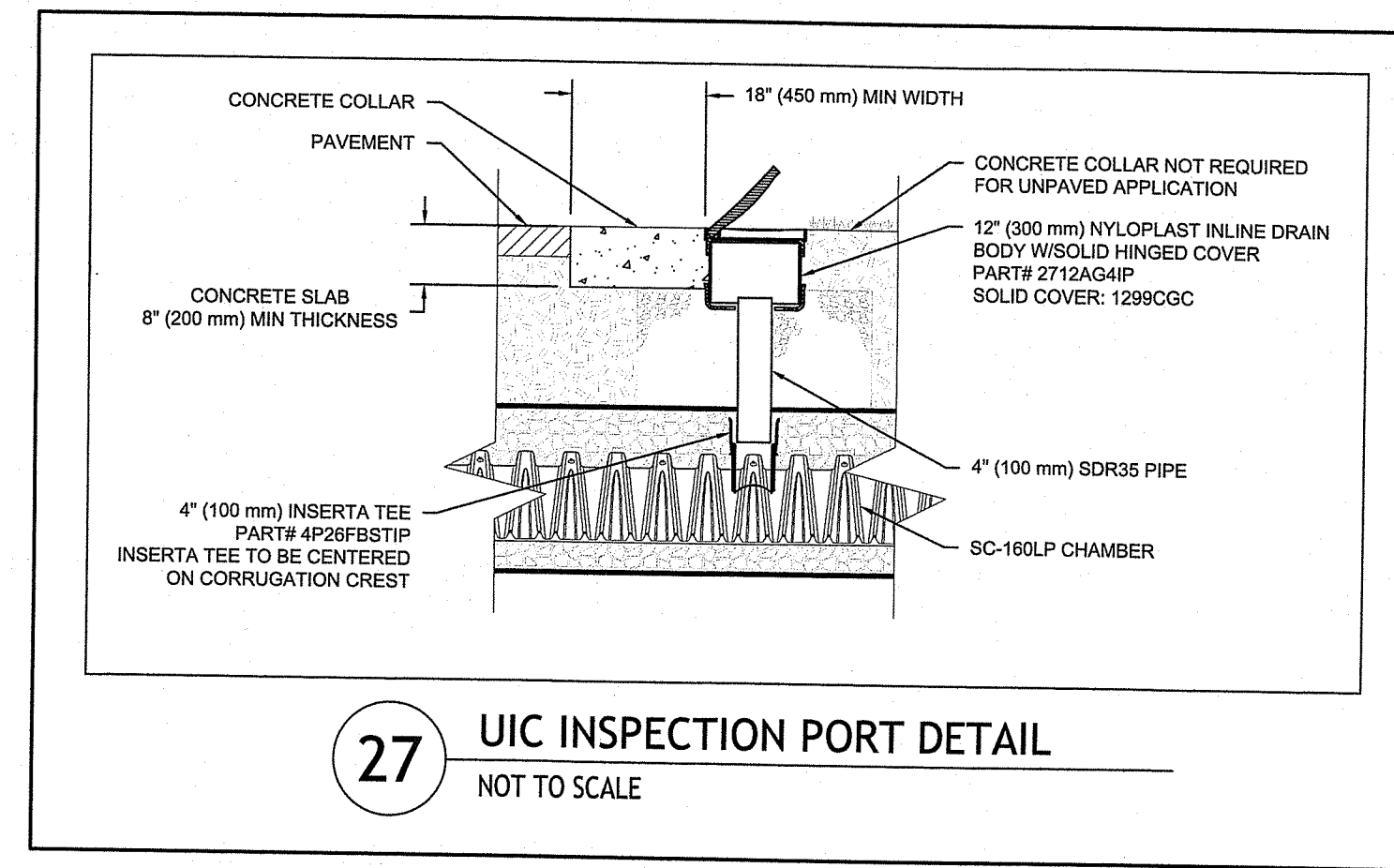
**NOTES FOR CONSTRUCTION EQUIPMENT**

- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-160LP CHAMBERS IS LIMITED:
    - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
    - NO RUBBER TREADED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
    - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
  - FULL 3/8" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- CONTACT STORMTECH AT 1-888-892-2894 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

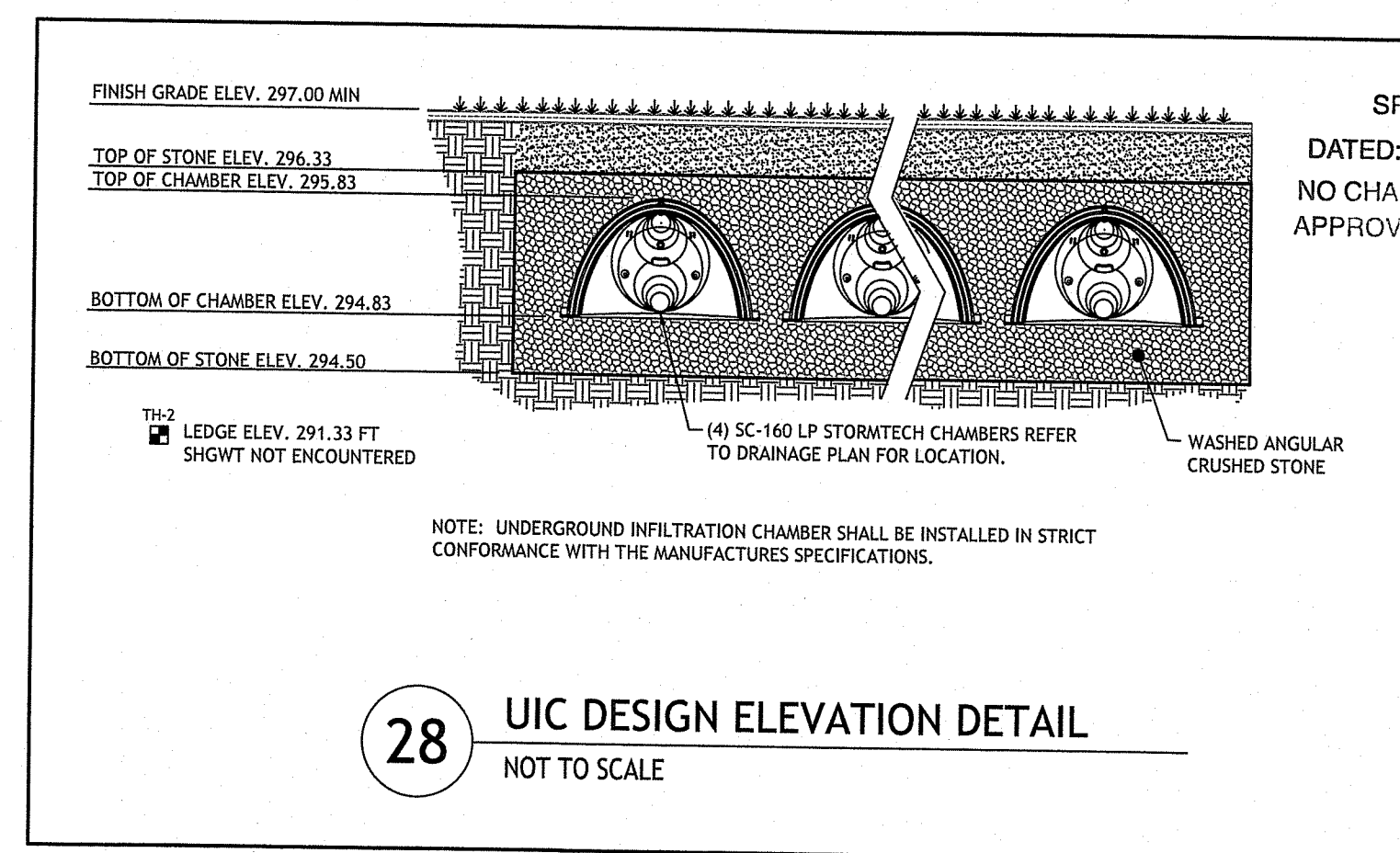
**26** STORMTECH SC-160 LP CROSS SECTION DETAIL  
NOT TO SCALE



**UNDERGROUND INFILTRATION SYSTEM DETAIL PLAN**  
SCALE: 1 INCH = 10 FEET



**27** UIC INSPECTION PORT DETAIL  
NOT TO SCALE



**28** UIC DESIGN ELEVATION DETAIL  
NOT TO SCALE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: **APR 02 2024** FILE #: **20-0450**

NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Signature*

**JOE CASALI ENGINEERING, INC.**  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - I&DS - TRAFFIC - FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
401 844-1300, 401 844-1374, WWW.JOECSALI.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

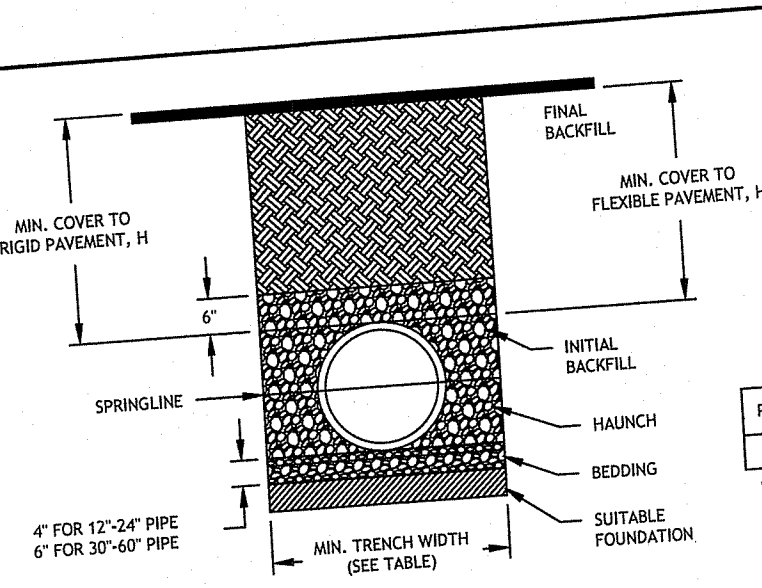
REVISIONS:  
NO. DATE DESCRIPTION  
1 3/24/23 RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL DETAILS PLAN IV**

**SHEET 13 OF 15**



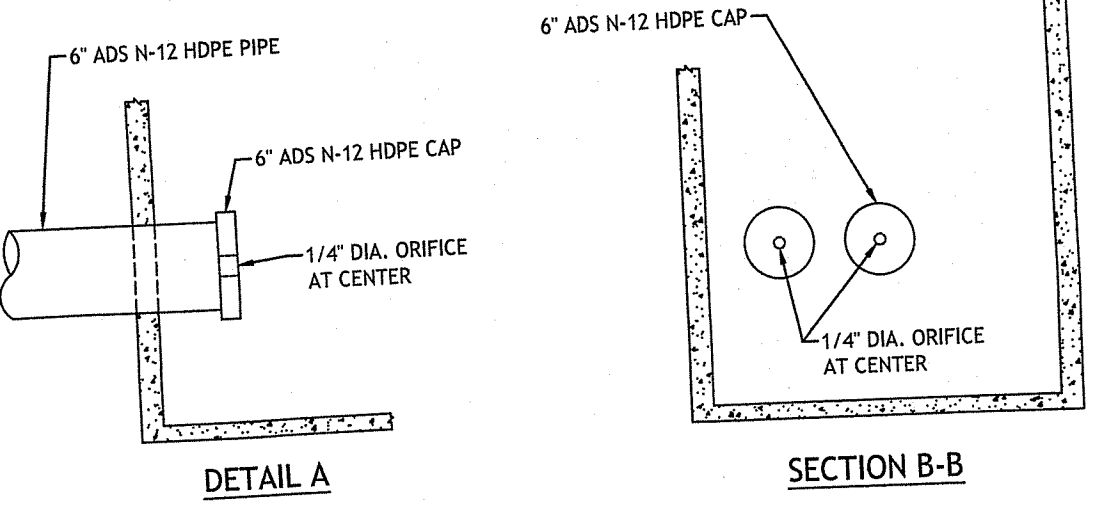
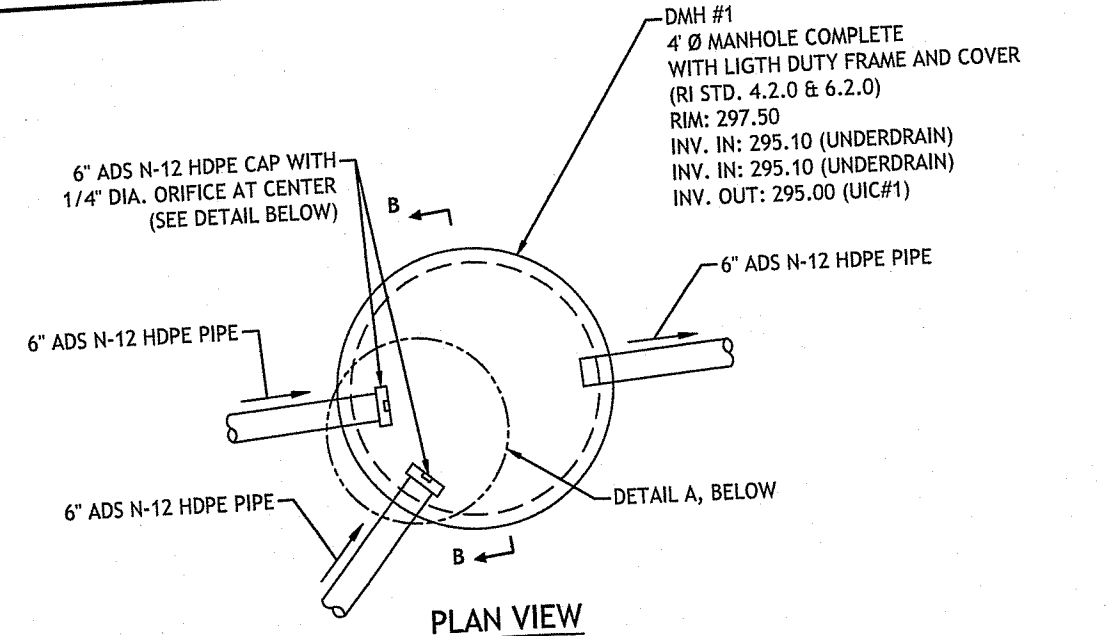
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"

PIPE DIAM.	MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS	
	SURFACE LEVEL CONDITION	HEAVY CONSTRUCTION (57.5T AXLE LOAD)*
12" - 48"	12"	48"

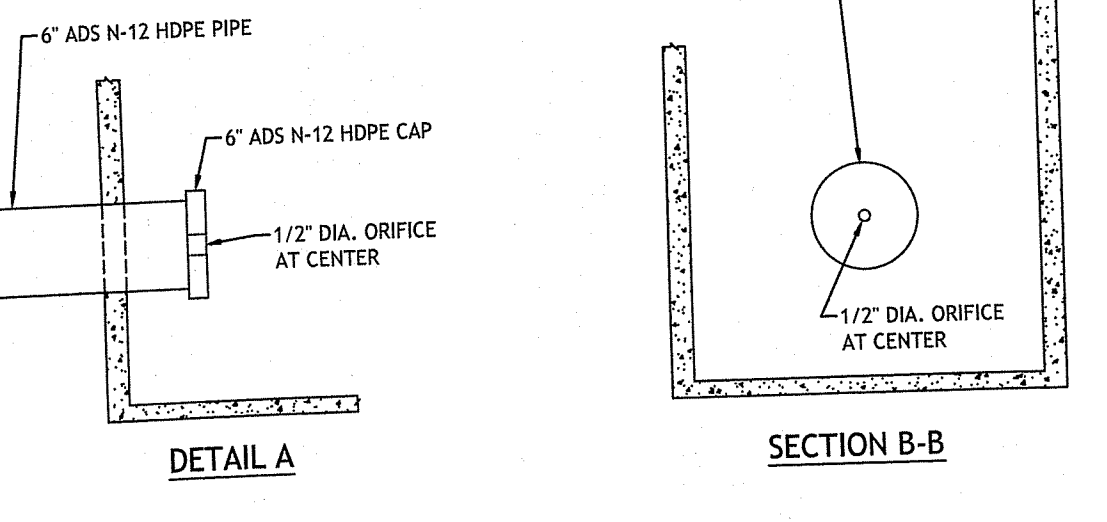
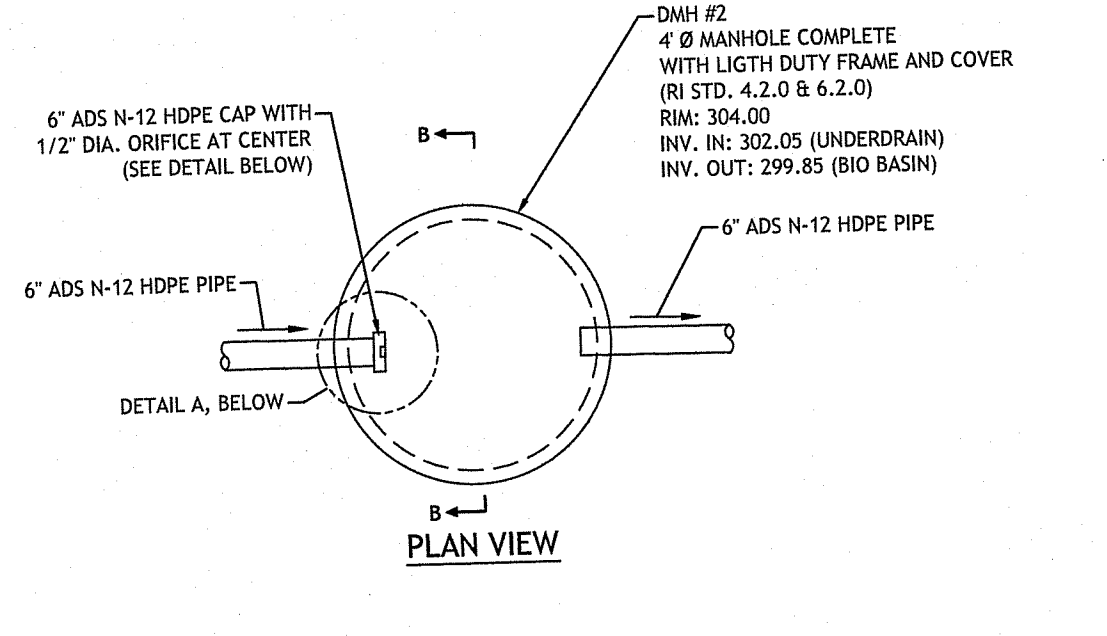
\*VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
  - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
  - FOUNDATIONS:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
  - BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
  - INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  - MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FRICTION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

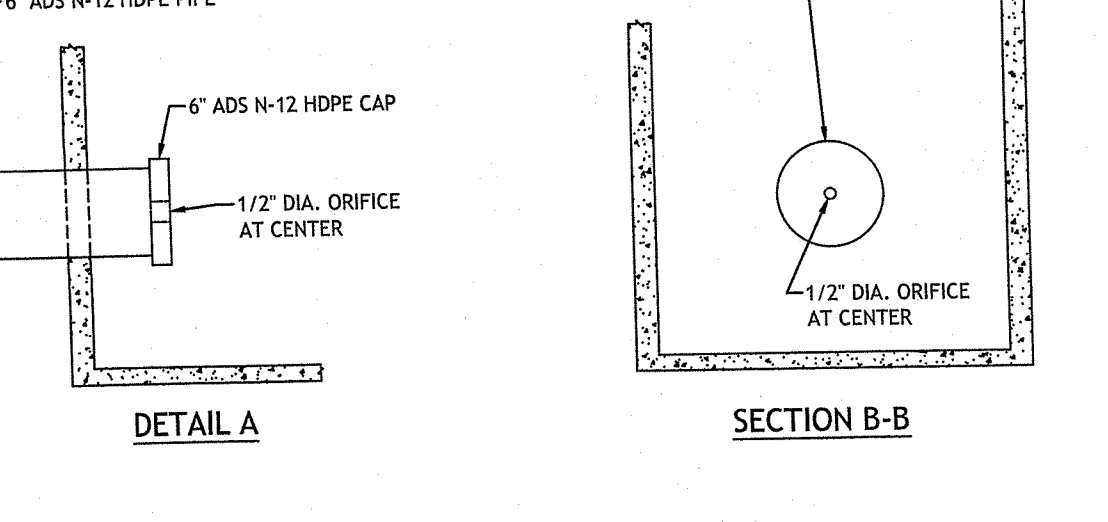
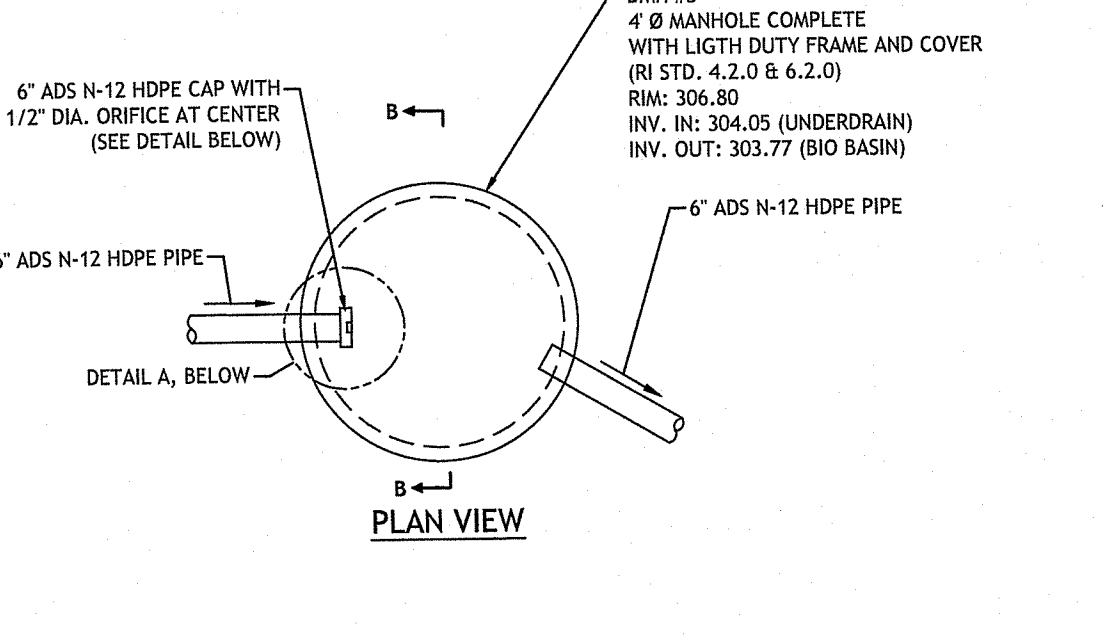
**29 DRAIN PIPE TRENCH INSTALLATION DETAIL**  
NOT TO SCALE



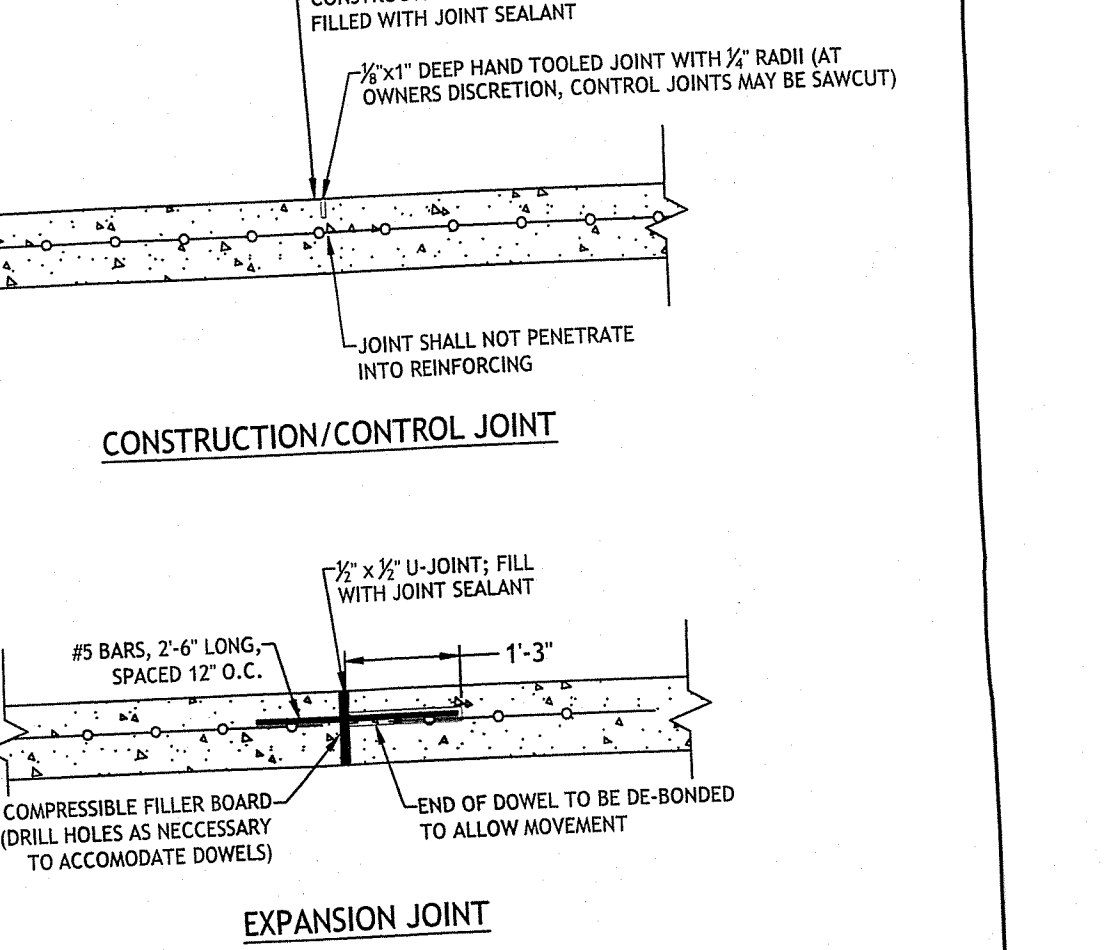
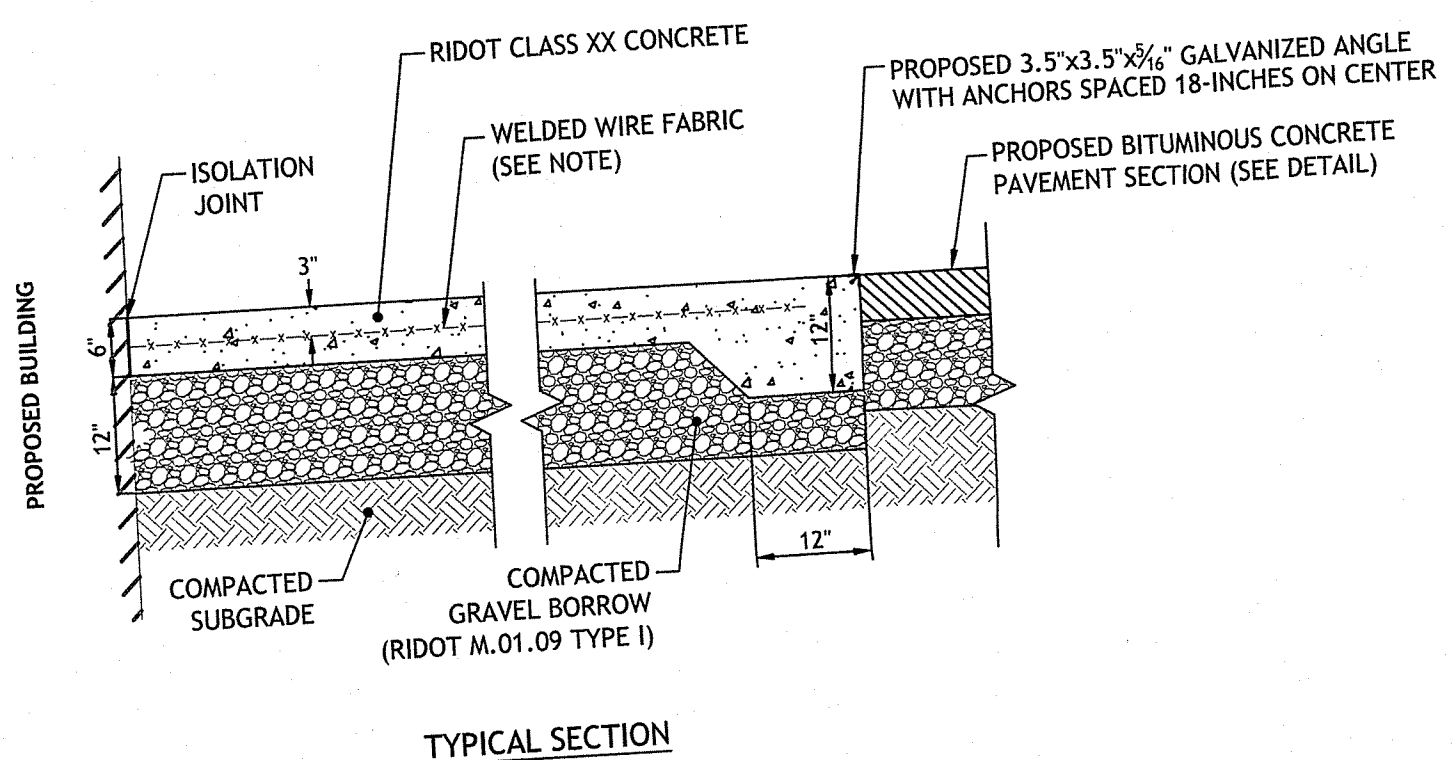
**30 DMH#1 - WATER QUALITY DISCHARGE PIPE DETAIL**  
NOT TO SCALE



**31 DMH#2 - WATER QUALITY DISCHARGE PIPE DETAIL**  
NOT TO SCALE

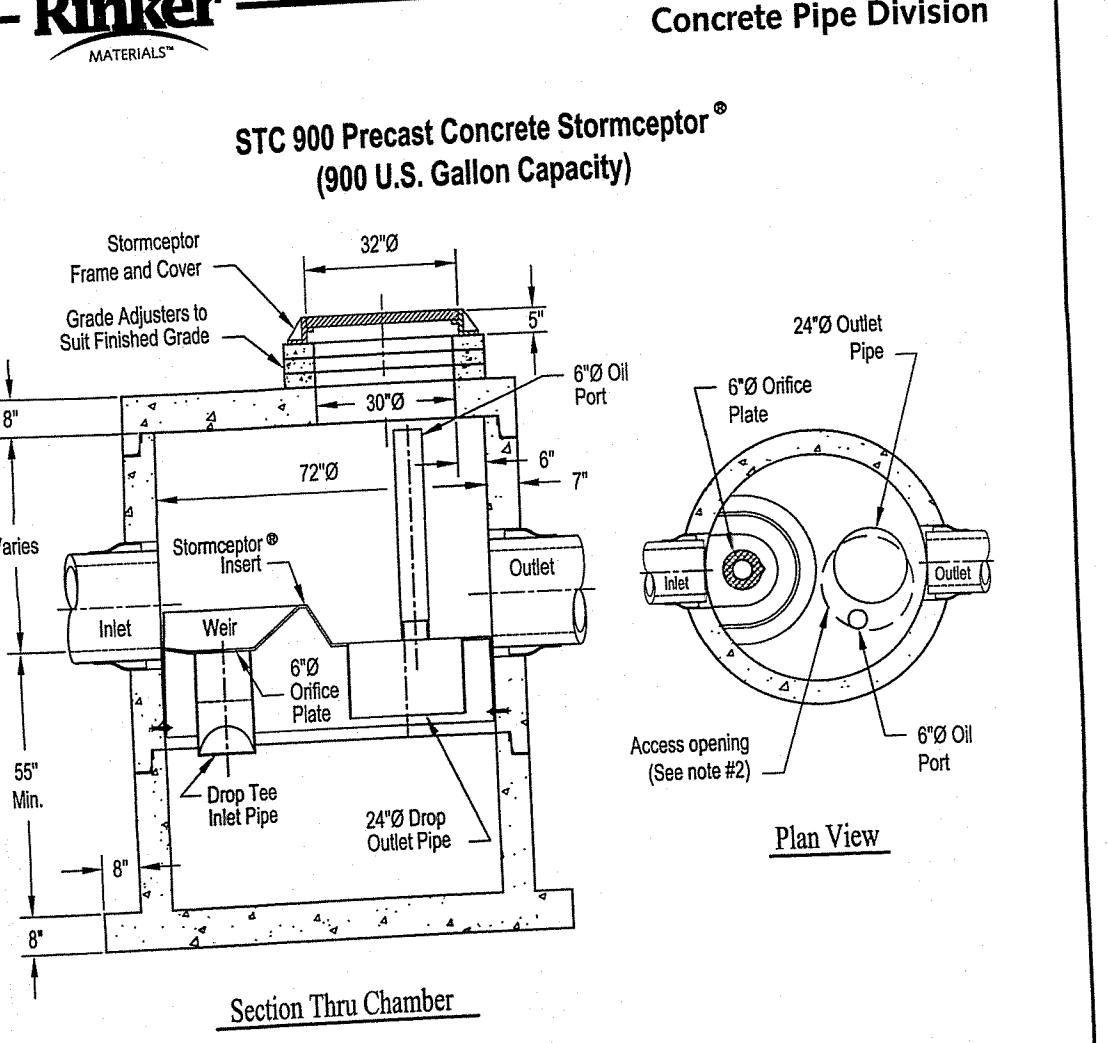


**32 DMH#3 - WATER QUALITY DISCHARGE PIPE DETAIL**  
NOT TO SCALE



- CONCRETE NOTES:**
- ALL CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD DETAILS, FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION WITH LATEST AMENDMENTS AND RHODE ISLAND STATE BUILDING CODE.
  - PRIOR TO PLACEMENT OF CONCRETE, SUBGRADE SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.
  - ALL CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-05 AND SHALL HAVE A MINIMUM 28-DAY COMPRESSION STRENGTH OF 4,000 PSI WITH AIR ENTRAINMENT OF 4 TO 6 PERCENT.
  - AT A MINIMUM, REINFORCING STEEL SHALL BE GRADE 60, 6"x6", W2.0xW2.0 WELDED WIRE FABRIC.
  - CURE CONCRETE PER RIDOT SPECIFICATIONS. TEST CYLINDERS SHALL BE MADE FOR EVERY 20 CY OF CONCRETE PLACED IN A SINGLE POUR.
  - CONCRETE PAVEMENT SHOULD HAVE EXPANSION JOINTS AT A MAXIMUM SPACING OF 30 FEET WITH A JOINT FILLER. ALL EXPANSION JOINTS SHOULD BE SEALED WITH AN AASHTO APPROVED ELASTOMERIC JOINT SEALER.
  - SLABS SEPARATED BY AN EXPANSION JOINT SHOULD BE TIED TOGETHER WITH EPOXY COATED #6 DOWELS THAT ARE A MINIMUM 18-INCHES LONG, SPACED 12-INCHES ON CENTER. DOWELS SHOULD BE SLEEVED ON ONE SIDE OF THE JOINT.
  - CONTROL JOINTS SHOULD BE CONSTRUCTED AT A SPACING OF 10 FEET IN EACH DIRECTION.
  - SLAB SHOULD BE HAUNCHED TO 12-INCH THICKNESS WHERE ABUTTING BITUMINOUS CONCRETE PAVEMENT OR LANDSCAPING.

**33 CONCRETE PAVEMENT DETAILS**  
NOT TO SCALE



- Notes:**
- The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
  - The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
  - The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5755115, #5849101, #6085745, #6371696.
  - Contact a Concrete Pipe Division representative for further details not listed on this drawing.

**34 STORMCEPTOR STC 900 DETAIL**  
NOT TO SCALE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: **APR 02 2024** FILE #: **23-0450**  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

**JCE**  
JOE CASALI ENGINEERING INC.  
CIVIL ENGINEERING CORPORATION  
DRAINAGE - WATER RESOURCES - TRAFFIC - FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
(401) 944-1300 (401) 944-1313 FAX WWW.JCEINC.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

**REVISIONS:**

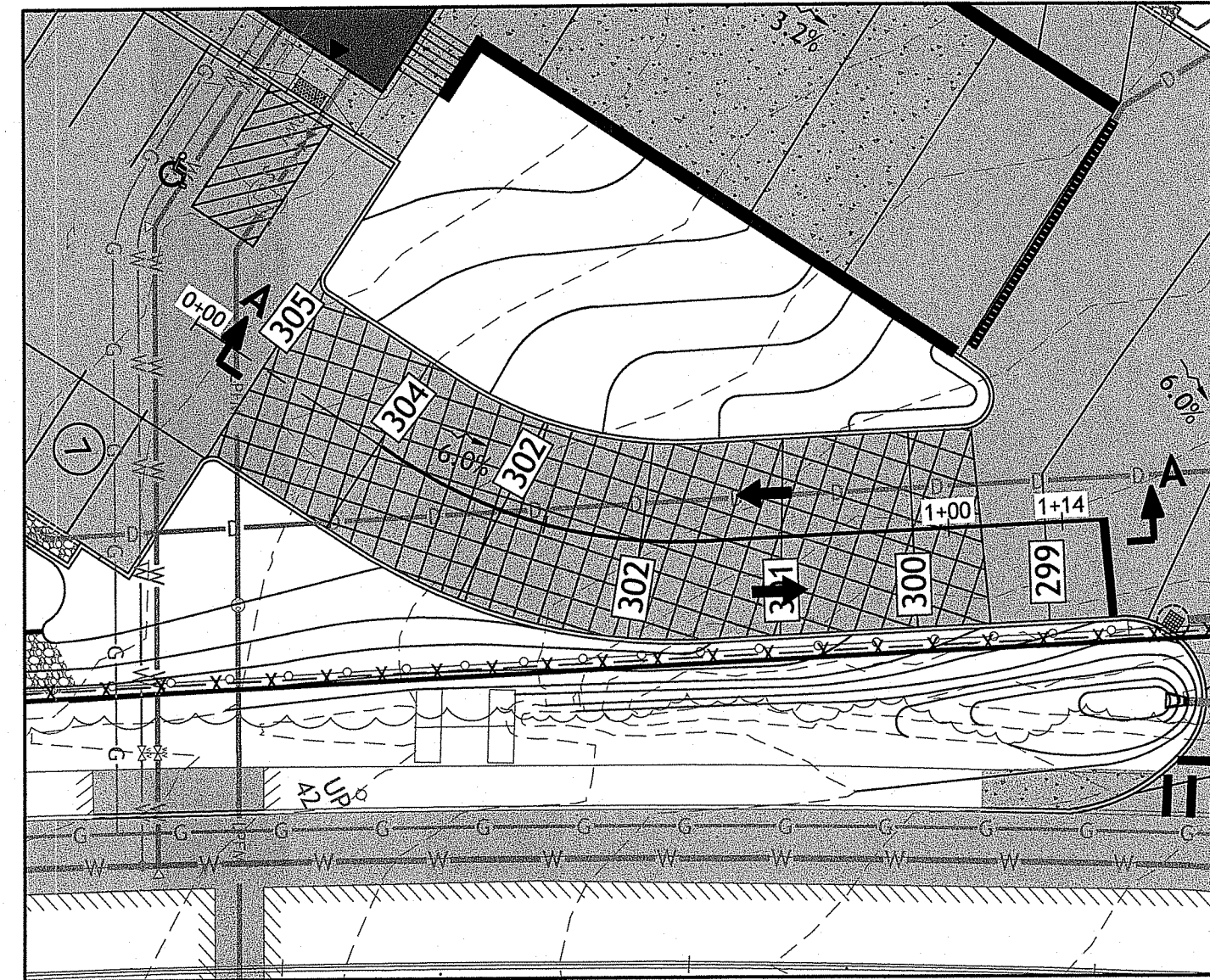
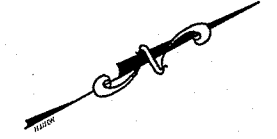
NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

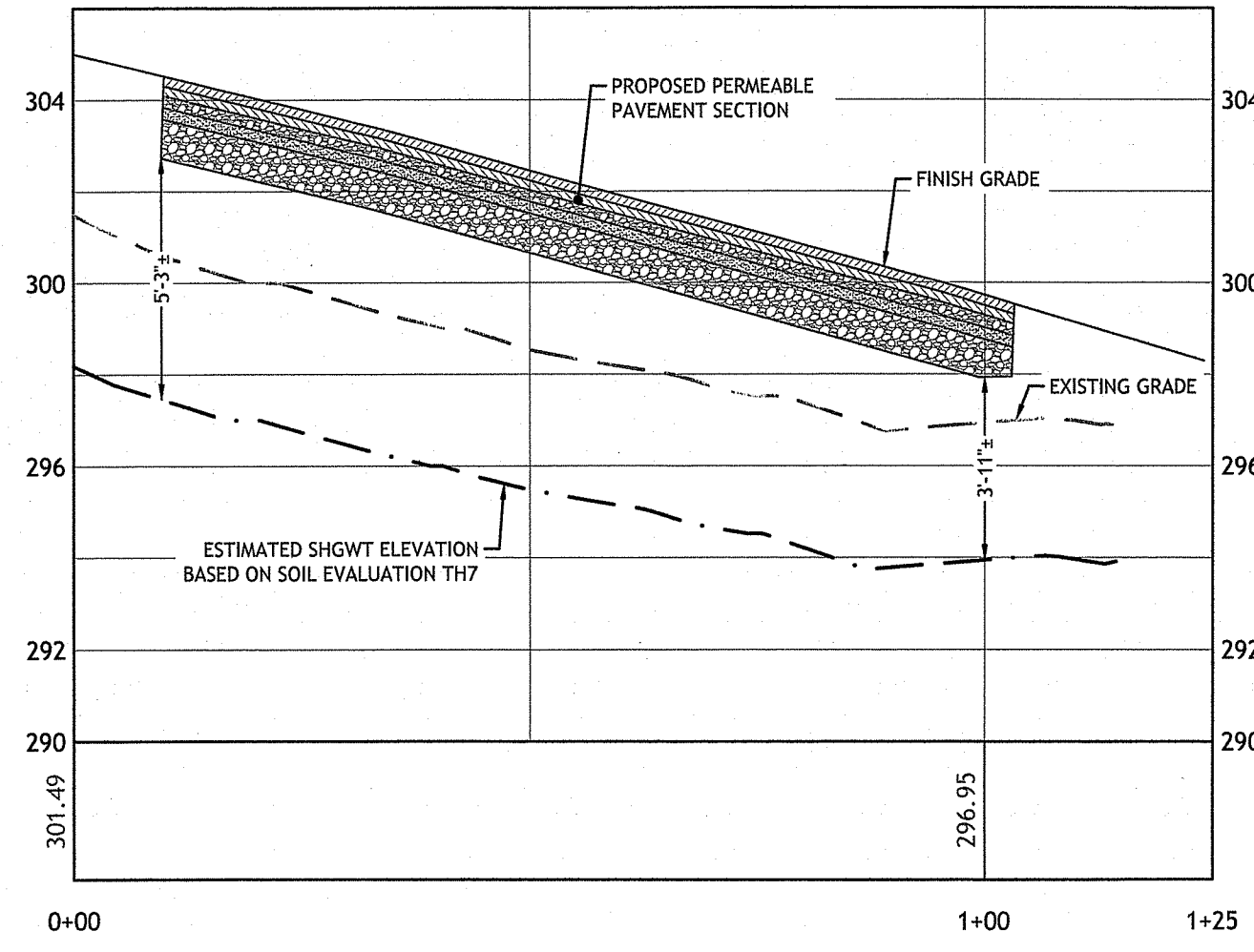
PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL DETAILS V**

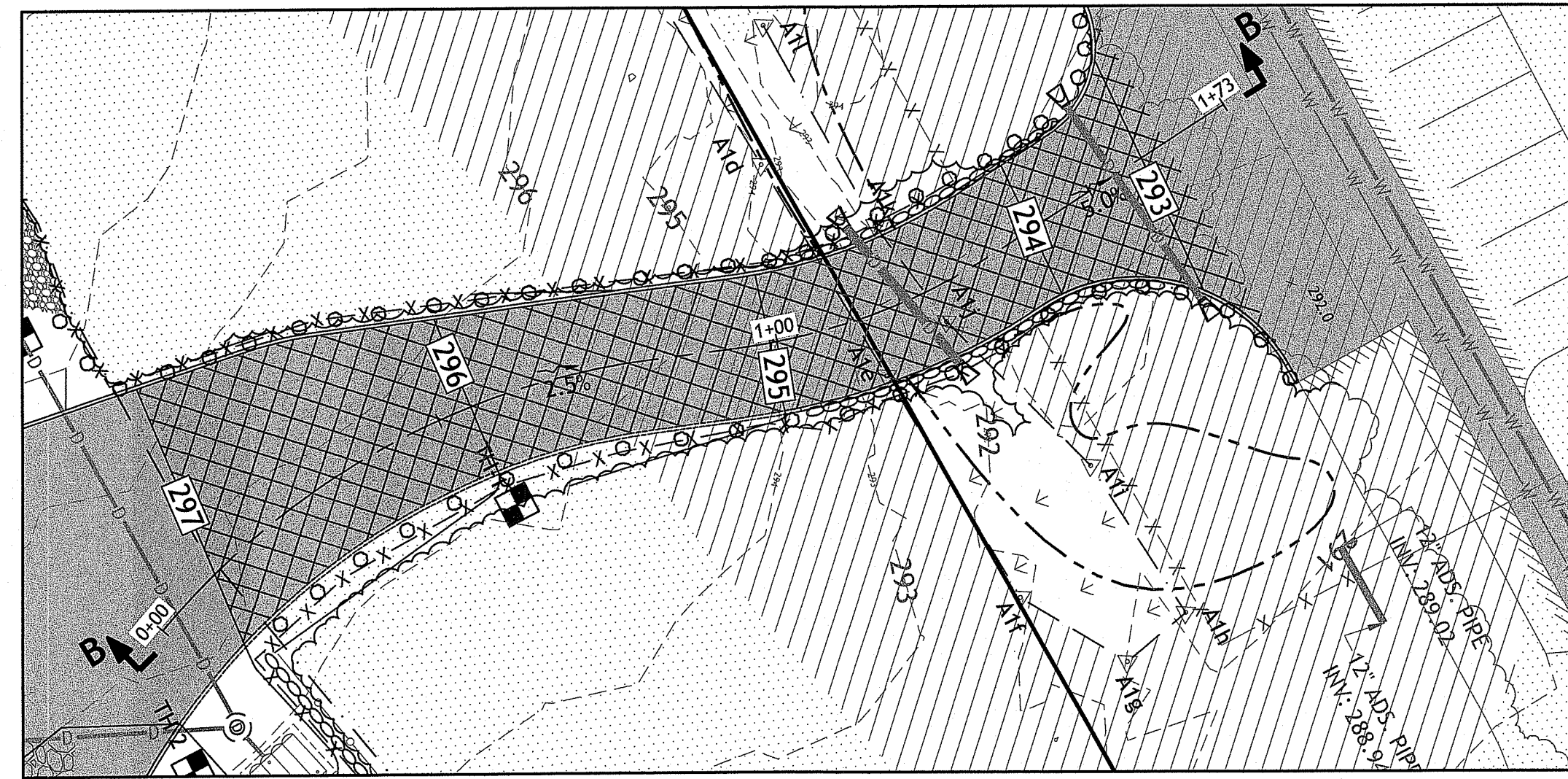
**SHEET 14 OF 15**



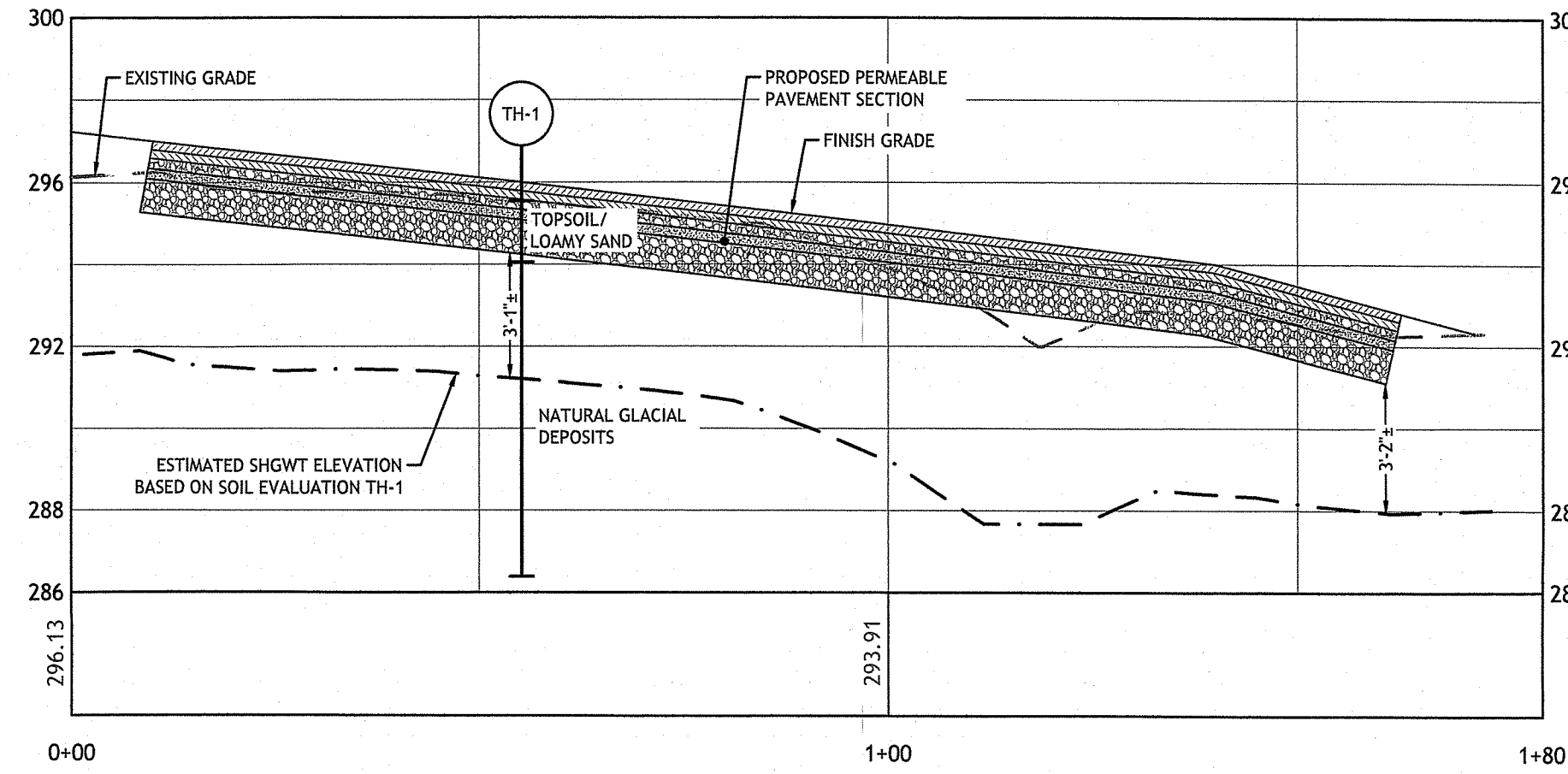
**PROPOSED PERVIOUS PAVEMENT - SECTION A-A**  
SCALE: 1 INCH = 20 FEET



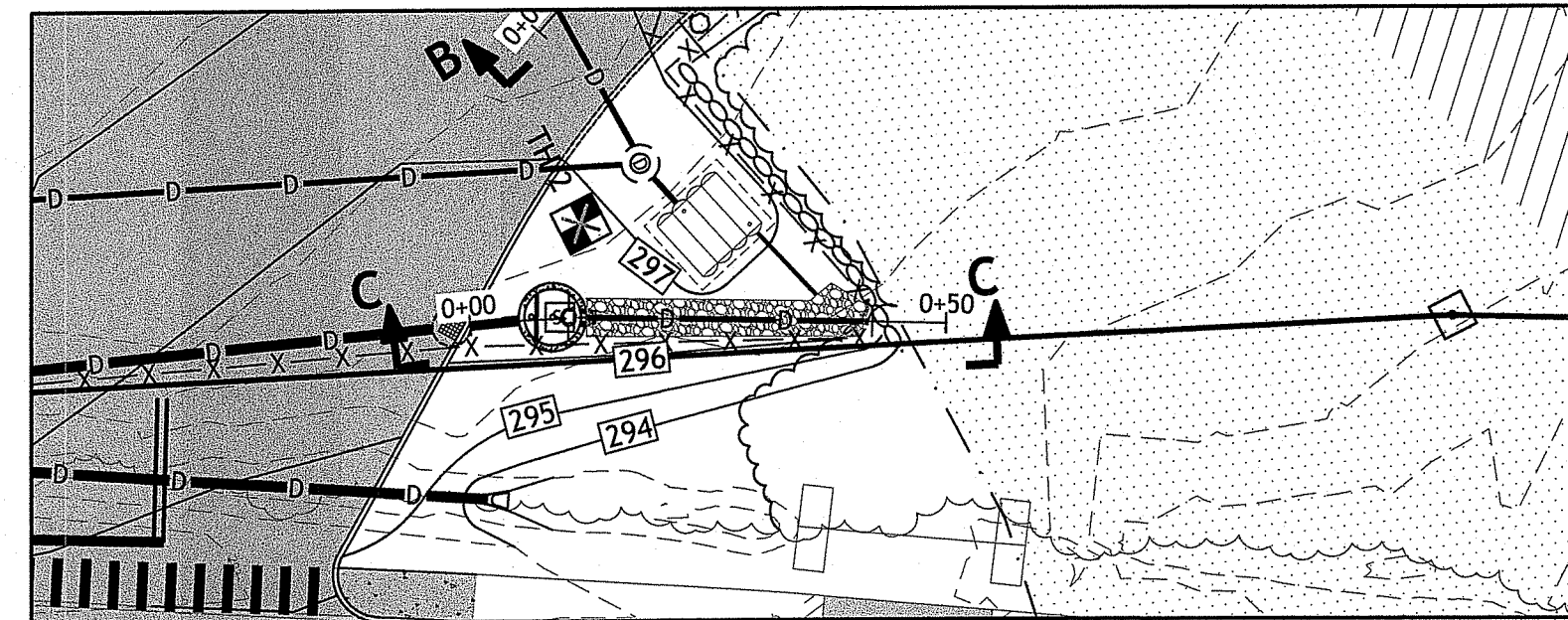
**PROPOSED PERVIOUS PAVEMENT - SECTION A-A**  
HORIZONTAL: 1 INCH = 10 FEET  
VERTICAL: 1 INCH = 2 FEET  
(5x VERTICAL EXAGGERATION)



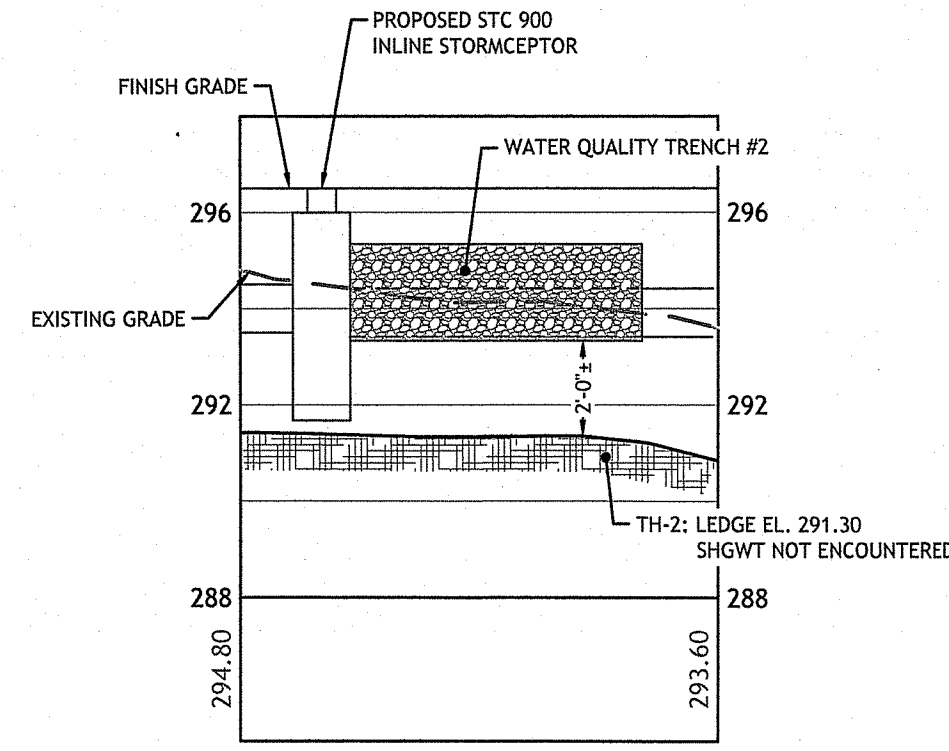
**PROPOSED PERVIOUS PAVEMENT - SECTION B-B**  
SCALE: 1 INCH = 20 FEET



**PROPOSED PERVIOUS PAVEMENT - SECTION B-B**  
HORIZONTAL: 1 INCH = 10 FEET  
VERTICAL: 1 INCH = 2 FEET  
(5x VERTICAL EXAGGERATION)



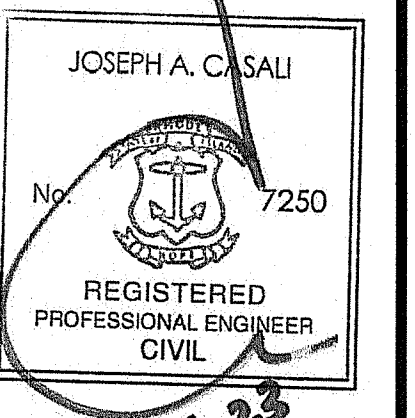
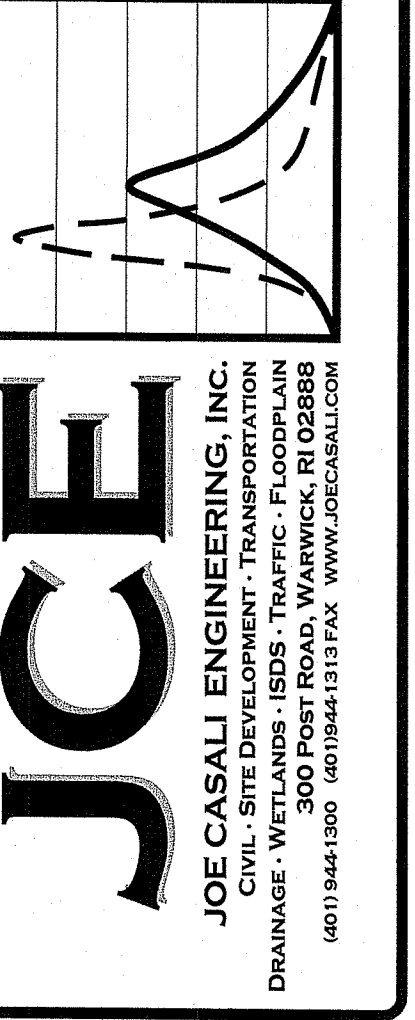
**WATER QUALITY DRAINAGE TRENCH #2**  
SCALE: 1 INCH = 20 FEET



**WATER QUALITY TRENCH #2 - SECTION C-C**  
HORIZONTAL: 1 INCH = 10 FEET  
VERTICAL: 1 INCH = 2 FEET  
(5x VERTICAL EXAGGERATION)

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS  
SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 12 2024 FILE #: 22-0450  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Joseph A. Casali*



**MATERIAL SAMPLING TECHNOLOGIES**  
CENTRAL STREET  
NORTH SMITHFIELD, RHODE ISLAND  
AP 1, LOTS 17 & 461

REVISIONS:

NO.	DATE	DESCRIPTION
1	3/24/23	RIDEM RTC

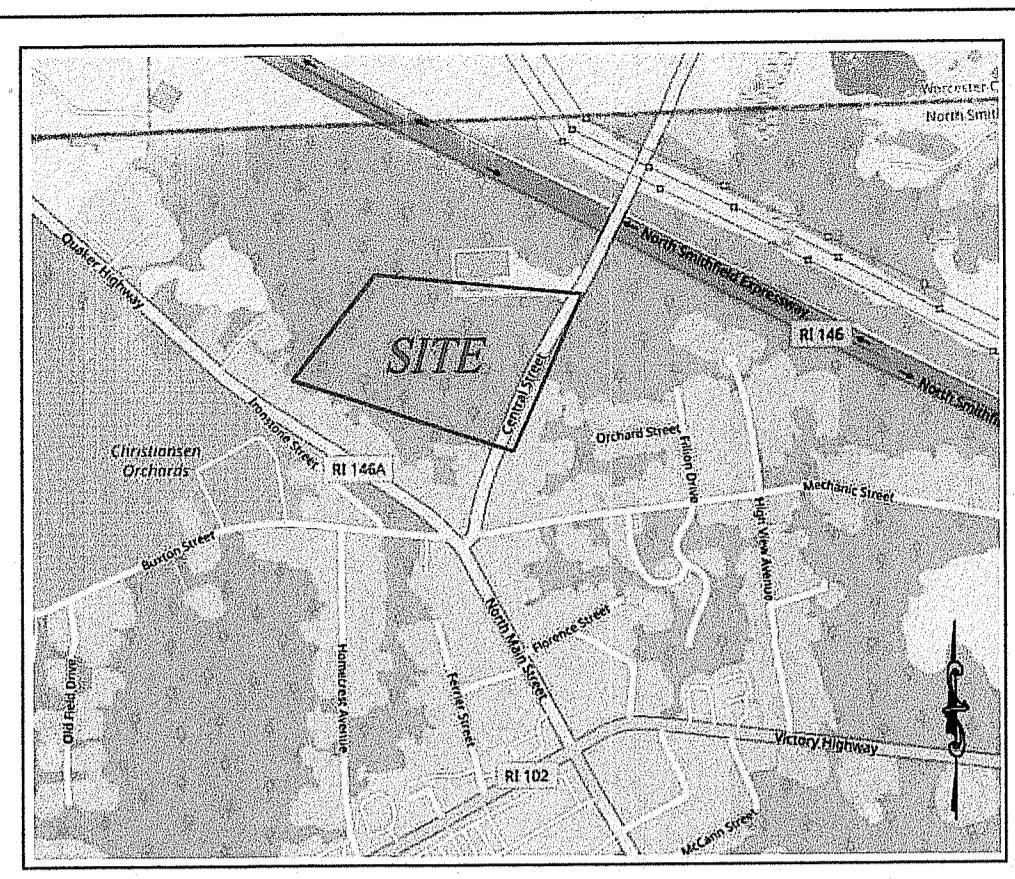
DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: AUGUST 2022  
PROJECT NO: 21-103

PRELIMINARY, NOT FOR CONSTRUCTION

**DRAINAGE PROFILES**

**SHEET 15 OF 15**

Q:\21-103-Material Sampling Technologies\ACAD\MST - Central Street [RIDEA RTC] - RI [Elev. Changes].dwg Mar. 28, 2023 2:57pm



LOCUS PLAN (NOT TO SCALE)



DEEDS

A.P. 1, LOT 461: BK 900, PG 22  
 A.P. 1, LOT 123: BK 785, PG 182  
 A.P. 1, LOT 20: BK 173, PG 163  
 A.P. 1, LOT 19: BK 839, PG 76  
 A.P. 1, LOT 321: BK 622, PG 45  
 A.P. 1, LOT 18: BK 601, PG 150  
 A.P. 1, LOT 198: BK 684, PG 259  
 A.P. 1, LOT 199: BK 789, PG 109  
 A.P. 1, LOT 204: BK 265, PG 398  
 A.P. 1, LOT 328: BK 647, PG 173  
 A.P. 1, LOT 459: BK 497, PG 151  
 A.P. 1, LOT 17: BK 686, PG 289

REFERENCES

PLANS

(1) PLAN ENTITLED: "ADMINISTRATIVE SUBDIVISION FOR JAMES CHACHARONE PLAT 1, LOTS 17 & 459, NORTH SMITHFIELD, RHODE ISLAND, FEBRUARY 4, 2004, REVISED: APRIL 23 & JUNE 7, 2004, SCALE: 1"=60', MARC N. NYBERG ASSOCIATES, INC.", WHICH PLAT IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF NORTH SMITHFIELD IN CAB AT PAGE 94-B.  
 (2) PLAN ENTITLED: "PRELIMINARY / FINAL PLAT 83, 85, 87 QUAKER HIGHWAY NORTH SMITHFIELD, RHODE ISLAND, OWNED BY KATHLEEN M. STAND & NORMA J. COON, SCALE 1"=50', 06-14-04, ANDREWS SURVEY & ENGINEERING, INC.", WHICH PLAT IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF NORTH SMITHFIELD IN CAB AT PAGE 95-B.  
 (3) STATE HIGHWAY PLATS NUMBERS 136, 363, 369, 1033, 1036 & 1329 FURNISHED TO THIS OFFICE BY THE RHODE ISLAND STATE DEPARTMENT OF TRANSPORTATION, WHICH PLAT IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF

ZONED: MU2

MINIMUM DISTANCE FROM R-ZONES - 100 FT  
 MINIMUM LOT WIDTH - 50 FT  
 MINIMUM LOT DEPTH - 100 FT  
 MINIMUM FRONT YARD SETBACK - 40 FT  
 MINIMUM SIDE YARD SETBACK - 40 FT  
 MINIMUM YEAR YARD SETBACK - 40 FT  
 MAXIMUM BUILDING HEIGHT - 35 FT  
 MAXIMUM BUILDING HEIGHT (ACCESSORY) - 20 FT  
 MAXIMUM BUILDING FLOOR AREA (RATIO) - 1.00

CERTIFICATION

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON JANUARY 1, 2016, AS FOLLOWS:  
 TYPE OF BOUNDARY SURVEY: COMPREHENSIVE BOUNDARY SURVEY  
 MEASUREMENT / ACCURACY SPECIFICATIONS: I  
 OTHER TYPE OF SURVEY: III  
 DATA ACCUMULATION SURVEY: T-3  
 TOPOGRAPHIC SURVEY: T-3  
 THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS:  
 BOUNDARY SURVEY TO ESTABLISH THE LOCATION OF THE PROPERTY LINES IN RELATION TO THE EXISTING IMPROVEMENTS

BY: *John D. Andrews* 1836 02/25/2022  
 JOHN D. ANDREWS, P.L.S. REG. NO. DATE  
 DOUGLAS DESIGN GROUP (L.S.000A354-00A)

NOT FOR CONSTRUCTION

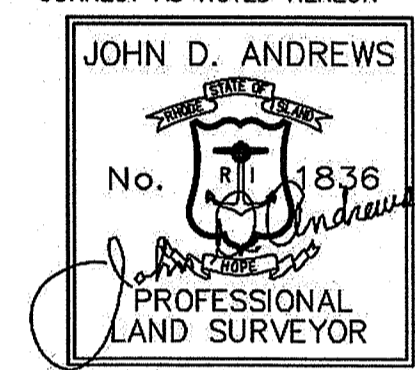
REVISIONS:

REV	DATE	COMMENT
1		
2		
3		
4		
5		

OWNER:

DRAWN BY: BSA  
 CHECK BY: JDA

SEAL: TO THE BEST OF MY KNOWLEDGE & BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON



JOHN D. ANDREWS, P.L.S. NO. 1836

PREPARED FOR:

EXISTING CONDITIONS SURVEY OF LAND  
 PREPARED FOR  
**A.P. 1, LOT 461 & CENTRAL STREET**

NORTH SMITHFIELD  
 RHODE ISLAND  
 RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESH WATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: APR 12 2022 FILE # 22-0450  
 NO CHANGES TO BE MADE WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE



SHEET: 1 OF 2

COMPREHENSIVE BOUNDARY AND EXISTING CONDITIONS SURVEY

DDG PROJECT #: 01.22.1739

DATE: 02/25/2022

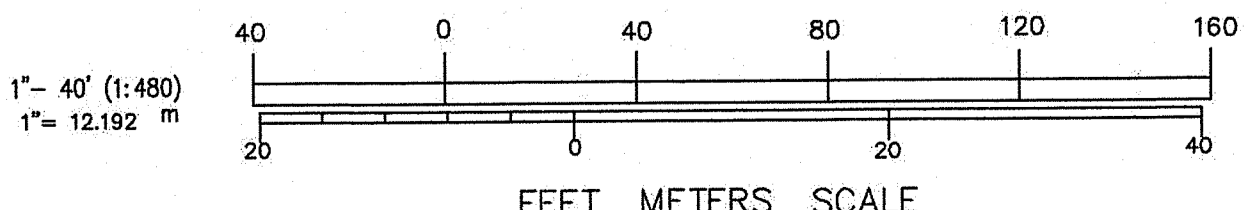


LEGEND

- CB CATCH BASIN
- POLE #1 UTILITY POLE
- STREET SIGN
- SMH SEWER MANHOLE
- DMH DRAIN MANHOLE
- EMH ELECT MANHOLE
- TMH TELEPHONE MANHOLE
- OU OVERHEAD UTILITIES
- E ELECTRIC
- T TELEPHONE
- W WATER LINES
- D STORM DRAIN
- S SANITARY LINE
- G GAS LINE
- AG ABANDONED GAS LINE
- DSYL DOUBLE SOLID YELLOW LINE
- SWL SOLID WHITE LINE
- DWL DASHED WHITE LINE
- RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF WATER RESOURCES
- FRESH WATER WETLANDS PROGRAM
- APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
- DATED: APR 12 2022 FILE # 22-0450
- NO CHANGES TO BE MADE WITHOUT PRIOR APPROVAL
- APPROVED PLANS MUST BE AT CONSTRUCTION SITE
- Light
- Fence
- Monitoring Well
- WG WATER GATE
- GG GAS GATE
- HH HAND HOLE
- HYD FIRE HYDRANT
- EXISTING CONTOURS
- SPOT ELEVATION (NAVD-88)
- POINT OF APPLICATION
- TREE
- PINE TREE
- TREE LINE
- L.O.C.
- LEDGE OUT CROP
- D.H.(DRILL HOLE) OR RE-BAR
- PROPERTY LINE (EXISTING OR NEW)
- GRANITE BOUND W/ DRILL HOLE
- PROPERTY CORNER W/ MONUMENT
- (TBS) TO BET SET



UTILITY NOTE:  
 UNDERGROUND UTILITIES SHOWN ARE PLOTTED FROM PLANS FURNISHED TO THIS OFFICE BY THE LOCAL UTILITY AND CITY ENGINEERING DEPARTMENTS. WE ASSUME NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION SHOWN. THESE PLANS ARE AND SHOULD BE ASSUMED AS APPROXIMATE. THE APPROPRIATE PUBLIC UTILITY COMPANIES AND "DIG SAFE" SHOULD BE CONSULTED BEFORE ANY WORK IS DONE.



SHEET 1 SHEET 2 SHEET 1 SHEET 2