

**INDEX**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	STANDARD SYMBOLS
3-4	GENERAL NOTES
5	EXISTING CONDITIONS PLAN
6	SITE PREPARATION PLAN
7	SITE PLAN
8-10	DETAILS

STATE OF RHODE ISLAND



DEPARTMENT OF TRANSPORTATION  
 PLAN OF PROPOSED  
 STORMWATER TREATMENT UNIT (STU)  
 SMITHFIELD HIGH SCHOOL

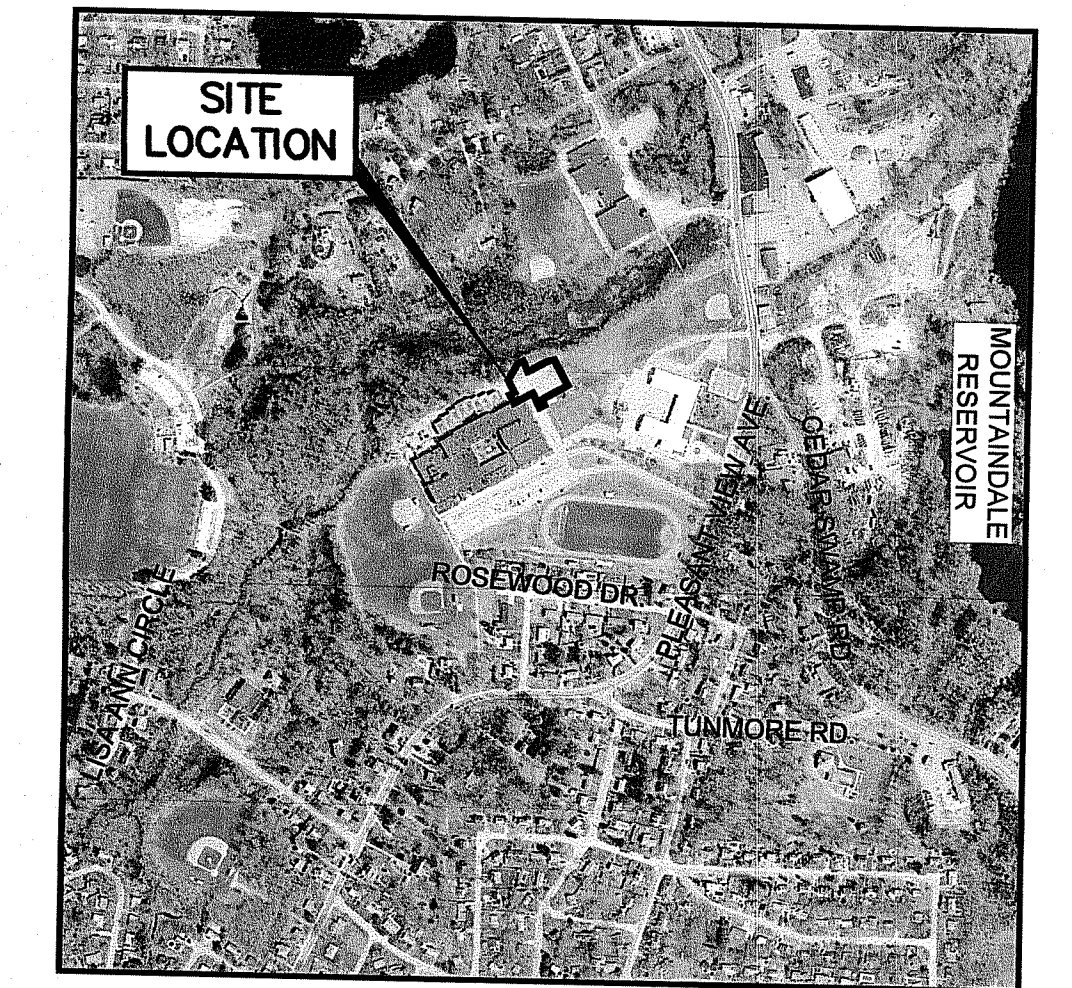
UPPER WOONASQUATUCKET RIVER  
 STILLWATER RIVER & TRIBUTARIES (WBID #RI0002007R-09)

TOWN OF SMITHFIELD  
 COUNTY OF PROVIDENCE

R.I. CONTRACT NO. F.A. PROJECT NO.

RI CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2023-XX-XXX	2023	1	10

Environmental Management  
 NOV 15 2023  
 Office of Water Resources



LOCATION MAP  
 SCALE: 1"= 800'

R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS

SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DECEMBER 2022, WITH ALL REVISIONS AND THE STATE AND FEDERAL SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.

STANDARD DETAILS FOR THIS PROJECT ARE R.I. STANDARD DETAILS, 1998 EDITION, WITH ALL REVISIONS.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: JAN - 9 2024 FILE #: 23-0241  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

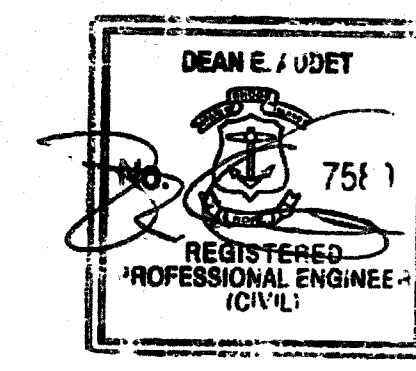
*Randy Clapperton*

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

NOTE PER DEM:

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

**SUBMISSION STAGE FOR PERMITTING**

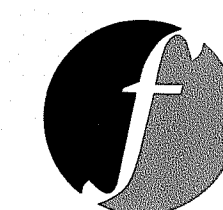


R.I. DEPARTMENT OF TRANSPORTATION	
APPROVED	
ADMINISTRATOR, PROJECT MANAGEMENT	DATE
APPROVED	
CHIEF ENGINEER OF INFRASTRUCTURE	DATE
APPROVED	
DIRECTOR	DATE
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED	
DIVISION ADMINISTRATOR	DATE

**SCALES OF DRAWINGS**

Plans	1 inch = 20 feet
Profiles	1 inch = 20 feet Horizontal
Profiles	1 inch = 4 feet Vertical
Cross Sections	1 inch = 4 feet Horizontal
Cross Sections	1 inch = 4 feet Vertical

BASE OF LEVELS  
 NAVD88



**FUSS & O'NEILL**

146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fando.com

Contract Number \_\_\_\_\_

Number of Sheet 1

Total Sheets 10



**GENERAL NOTES:**

- ANY DAMAGE TO EXISTING PAVEMENT, BRIDGES, DRAINAGE STRUCTURES, DRAINAGE PIPES, INFILTRATION AREAS, ROADSIDE, CONDUIT, SIDEWALK, FENCES, ETC., CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
- THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND MATERIAL AS FAR AWAY AS POSSIBLE FROM THE EDGE OF THE TRAVEL LANE SO AS NOT TO CAUSE A SAFETY HAZARD, IN ACCORDANCE WITH SECTION 106.05 OF THE R.I.D.O.T. STANDARD SPECIFICATION, LATEST EDITION. EQUIPMENT AND MATERIAL SHALL NOT BE STORED IN AREAS DESIGNATED FOR STORMWATER INFILTRATION OR OUTSIDE THE L.O.D. WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EXISTING CONDITIONS ARE NOT DISTURBED OR BLTERATED BEFORE SURVEY GROUND CONTROL POINTS ARE LOCATED, VERIFIED, AND DEEMED ADEQUATE FOR CONSTRUCTION LAYOUT. THE CONSTRUCTION LAYOUT SHALL BE PROVIDED IN SUFFICIENT DETAIL, THEREBY ENABLING THE CONTRACTOR TO CONSTRUCT THE PROJECT IN CONFORMITY WITH THE PLANS AND SPECIFICATIONS. SURVEY WILL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION ACTIVITIES UNTIL ADEQUATE SURVEY GROUND CONTROL POINTS HAVE BEEN ESTABLISHED, TIED DOWN, AND VERIFIED IN WRITING BY THE CONTRACTOR'S PROFESSIONAL LAND SURVEYOR.
- ALL R.I. STD. 9.9.0 CONSTRUCTION ACCESS ROADS SHALL BE CONSTRUCTED PRIOR TO ANY ROADWAY ACCEPTING CONSTRUCTION TRAFFIC.
- THE FREQUENCY AND APPLICATION RATES FOR THE DUST CONTROL ITEMS WILL BE DETERMINED BY THE CONTRACTOR TO MEET THE REQUIREMENTS OF SECTION 907.
- ALL SIDEWALK AND DRIVEWAYS DESIGNATED FOR REPLACEMENT SHALL BE CUT AND MATCHED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- ASPHALT EMULSION TACK COAT SHALL BE PLACED PRIOR TO PAVEMENT PLACEMENT ON THE CONCRETE BASE OR COLD PLANNED PAVEMENT, AND ON ANY NEW COURSE WHICH HAS BEEN OPEN TO TRAFFIC, OR ANY NEW COURSE WHICH HAS BEEN EXPOSED FOR MORE THAN 7 DAYS, AND/OR AS DIRECTED BY THE ENGINEER. IT SHALL ALSO BE APPLIED TO VERTICAL PAVEMENT FACES BETWEEN ADJOINING PAVEMENT SECTIONS. ALL APPLICATIONS ON BOTH HORIZONTAL AND VERTICAL SURFACES SHALL BE INCIDENTAL TO THE APPLICABLE PAVEMENT ITEMS.
- THE LIMITS OF CLEARING AND SURFACE DISTURBANCE SHALL BE STRICTLY ADHERED TO IN ALL AREAS. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND PLACING, AT ITS OWN EXPENSE, PLANTABLE SOIL AND SEED IN AREAS WHICH ARE OUTSIDE OF THE PROJECT'S AREAS OF DISTURBANCE AND WHICH ARE IMPACTED BY CONSTRUCTION OPERATIONS INCLUDING THOSE AREAS WHERE VEHICLES, EQUIPMENT AND MATERIALS ARE STORED.
- THE CONTRACTOR WILL NOT BE ALLOWED TO STOCKPILE REMOVED PAVEMENT MATERIALS WITHIN THE PROJECT LIMITS.
- CLEANING AND SWEEPING OF PAVEMENT WILL INCLUDE REMOVAL OF ALL PAVEMENT DEBRIS PRIOR TO THE PLACEMENT OF EACH BITUMINOUS PAVEMENT LIFT. ALL CLEANING AND SWEEPING SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER. CLEANING WITH COMPRESSED AIR SHALL ONLY BE ALLOWED WITH THE APPROVAL OF THE ENGINEER.
- PRIOR TO INSTALLATION, ALL SIGNS, MOUNTINGS AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS AND SHOP DRAWINGS OR AS MODIFIED BY THE ENGINEER.
- THE COORDINATE SYSTEM, IF SHOWN, IS THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM.
- PAVEMENT OPERATIONS FOR CURBED SECTIONS: IN AREAS WHERE CURBING IS SET TO FINISH LINE AND GRADE, THE CONTRACTOR WILL NOT BE REQUIRED TO UTILIZE THE SENSOR AND SKY-TYPE DEVICE FOR AUTOMATIC GRADE CONTROL, BUT WILL BE ALLOWED TO MANUALLY ADJUST THE BITUMINOUS PAVER FOR CONTROLLING GRADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROADWAYS FREE OF DEBRIS RESULTING FROM THEIR CONSTRUCTION OPERATIONS. ALL DEBRIS SHALL BE REMOVED TO MAINTAIN THE SAFE TRAVEL OF THE PUBLIC AT NO ADDITIONAL COST TO THE STATE.
- NO FUEL STORAGE, VEHICLE REFUELING, OR EQUIPMENT STORAGE SHALL TAKE PLACE IN DESIGNATED WETLANDS, NOR WITHIN 100' OF ANY WATER BODY. THIS REQUIREMENT SHALL NOT SUPERSEDE ANY FEDERAL, STATE OR LOCAL LAW, ORDINANCE, RULE OR REGULATION THAT APPLIES TO THE SAME, UNLESS THIS REQUIREMENT IS MORE STRINGENT THAN SAID LAW, ORDINANCE, RULE OR REGULATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT AT THE END OF FINAL PAVING OPERATIONS, FLOW TO NEW AND EXISTING DRAINAGE STRUCTURES HAS BEEN PROPERLY ESTABLISHED AND THAT NO ISOLATED DEPRESSIONS REMAIN. THERE SHALL BE NO SEPARATE PAYMENT FOR THIS PROVISION; ANY CORRECTIVE ACTION SHALL BE CONSIDERED INCIDENTAL TO PAVING AND COLD PLANING OPERATIONS.
- ALL EMBANKMENTS SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 12" (AFTER COMPACTION) AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED. ALSO, EMBANKMENT CONSTRUCTION SHALL CONFORM TO SECTION 202.03.2 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- IF THIS PROJECT IS ON A HURRICANE EVACUATION AND DIVERSIONARY ROUTE, AS DESIGNATED ON THE COVERSHEET, THE CONTRACTOR IS ADVISED THAT UPON 12 (TWELVE) HOURS NOTICE THE ROADWAY SHALL BE OPEN TO EVACUEES AND EMERGENCY PERSONNEL. ANY EXTRA WORK NECESSARY TO COMPLY WITH THIS REQUIREMENT WILL BE REIMBURSED UNDER FORCE ACCOUNT PROCEDURES.
- THE CONTRACTOR SHALL READ, BECOME FAMILIAR WITH, AND ADHERE TO ALL OF THE PROVISIONS, CONDITIONS, AND STIPULATIONS STATED IN THE ENVIRONMENTAL APPROVALS ISSUED FOR THE PROJECT FROM THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (RIDEM), AND/OR THE ARMY CORPS OF ENGINEERS (ACOE), AND/OR THE COASTAL RESOURCES MANAGEMENT COUNCIL (CRMC). COPIES OF EACH OF THESE PERMITS ARE INCLUDED IN THE CS PAGES OF THE CONTRACT DOCUMENTS. ALL COSTS ASSOCIATED WITH THESE CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND INCLUDED WITH THE COST FOR THE ASSOCIATED BID ITEM(S).

**GENERAL NOTES (CONTINUED):**

- FOR ALL PROJECTS INVOLVING KNOWN SITE REMEDIATION ISSUES, THE CONTRACTOR SHALL READ, BECOME FAMILIAR WITH, AND ADHERE TO ALL OF THE CONSTRUCTION RELATED PROVISIONS, CONDITIONS, AND STIPULATIONS OF ANY REMEDIAL ACTION WORK AND/OR SOIL MANAGEMENT PLANS DEVELOPED FOR THE PROJECT. COPIES OF THESE DOCUMENTS ARE INCLUDED IN THE CS PAGES OF THE CONTRACT DOCUMENTS. ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THESE DOCUMENTS SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND INCLUDED WITH THE COST FOR THE ASSOCIATED BID ITEM(S).
- NO UNPROTECTED CONSTRUCTED FEATURE MAY PROJECT MORE THAN 4 INCHES ABOVE THE FINISHED GRADE OF A TRAVERSABLE SLOPE IN A CLEAR ZONE, e.g. HEADWALL, DRAINAGE INLET, ETC.
- THE REMAINING SECTION OR STUB OF A BREAKAWAY BASE MAY NOT PROJECT MORE THAN 4 INCHES ABOVE THE FINISHED GRADE OF A TRAVERSABLE SLOPE IN A CLEAR ZONE, e.g. SIGN POSTS, LIGHT POLES, FIRE HYDRANTS, ETC.

**DRAINAGE AND EROSION CONTROL NOTES:**

- THE CONTRACTOR IS REQUIRED TO ADHERE WITH THE A SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ORDER TO REMAIN IN COMPLIANCE WITH THE RIPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL READ, BECOME FAMILIAR WITH, AND ADHERE TO ALL OF THE PROVISIONS, CONDITIONS, AND STIPULATIONS OF THE GENERAL PERMIT AND THE SITE-SPECIFIC SWPPP FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AS SITE CONDITIONS WARRANT. A COPY OF THE SWPPP MUST BE ON-SITE AT ALL TIMES. COPIES OF THESE DOCUMENTS ARE INCLUDED IN THE CS PAGES OF THE CONTRACT DOCUMENTS.
- NO UNDISTURBED AREAS SHALL BE GRUBBED OF EXISTING VEGETATION AFTER OCTOBER 15 OF ANY CALENDAR YEAR OR DURING ANY PERIOD OF FULL OR LIMITED WINTER SHUTDOWN. ALL DISTURBED SOILS EXPOSED PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR SHALL BE SEEDED OR PROTECTED BY THAT DATE. ANY SUCH AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION, AS DETERMINED BY THE RESIDENT ENGINEER OR ENVIRONMENTAL INSPECTOR, BY NOVEMBER 15 OF ANY CALENDAR YEAR, MUST BE STABILIZED THROUGH THE USE OF EROSION CONTROL MATTING OR HAY MULCH, IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK. IF WORK CONTINUES WITHIN ANY OF THESE AREAS DURING THE PERIOD FROM OCTOBER 15 THROUGH APRIL 15, CARE MUST BE TAKEN TO ENSURE THAT ONLY THE AREA REQUIRED FOR THAT DAY'S WORK IS EXPOSED, AND ALL ERODIBLE SOIL MUST BE REESTABLISHED WITHIN 5 WORKING DAYS. ANY WORK TO CORRECT PROBLEMS RESULTING FROM FAILURE TO COMPLY WITH THIS PROVISION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THERE WILL BE NO SEPARATE PAYMENT FOR THIS PROVISION, IT SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OPERATIONS. STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN 2 WEEKS OF FINAL GRADING.
- STOCKPILES OF MATERIAL SHALL NOT BE LOCATED WITHIN REGULATED WETLANDS OR BUFFER ZONE AREAS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 30% AND STOCKPILES OF ERODIBLE MATERIAL SHALL ALSO BE SEEDED AND RINGED WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES TO STABILIZE. STOCKPILES OF CONTAMINATED MATERIALS MUST BE PLACED ON TOP OF A POLY-ETHYLENE SHEET AND COVERED AT ALL TIMES UNLESS IT IS AN ACTIVE WORKING PILE.
- IF THE PLANS INCLUDE SPECIFIC AREAS FOR PLACEMENT OF CONSTRUCTION DEWATERING BASINS AND/OR EQUIPMENT AND MATERIALS STORAGE AND STOCKPILING, AND IF THE CONTRACTOR ELECTS TO UTILIZE ANY OTHER AREAS FOR THESE PURPOSES, THIS SHALL BE APPROVED BY THE ENGINEER ONLY AFTER OBTAINING ANY NECESSARY PERMITS AND/OR PERMIT MODIFICATIONS FROM THE APPROPRIATE REGULATORY AUTHORITY(IES). ANY PERMITTING REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED AT NO COST TO THE STATE. THE ENGINEER WILL COORDINATE SUBMISSION OF ANY REQUIRED PERMIT APPLICATION MATERIALS WITH THE R.I.D.O.T. ENVIRONMENTAL DIVISION.
- SURFACE EROSION CONTROL MATTING SHALL BE USED TO STABILIZE PLANTABLE SOIL AND/OR LOAM IN ALL DITCHES, ON ALL SLOPES ADJACENT TO WETLANDS AND WETLAND PERIMETERS, AND ON ALL SLOPES WITHIN WATER QUALITY BASINS. JUTE MESH IN DITCHES SHALL EXTEND TO AN ELEVATION 2 FEET ABOVE THE BOTTOM OF THE DITCH.
- SEEDING ON ALL SLOPES 3 TO 1 OR STEEPER SHALL CONSIST OF THE FOLLOWING APPLICATIONS UNLESS CHANGED IN THE CONTRACT.
  - SEEDING TYPE I.
  - ADHESIVE MULCH STABILIZER
- UNVEGETATED SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR PERIODS IN EXCESS OF 2 WEEKS OR THROUGH THE INACTIVE WINTER SEASON.
- PRIOR TO CONSTRUCTION OPERATIONS, THE CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL CATCH BASINS AND FLUSHING THE PIPES, AND THEN VERIFYING THE LOCATION (HORIZONTAL AND VERTICAL) OF ALL EXISTING PIPES AND/OR STRUCTURES WHICH ARE TO BE CONNECTED. ANY VARIATION FOUND FROM THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION.
- ALL DRAINAGE AND UTILITY STRUCTURES WITHIN THE PAVED ROADWAY SHALL BE ADJUSTED TO GRADE WITH THE SURROUNDING PAVEMENT PRIOR TO THE WINTER SHUTDOWN.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EFFICACY OF THE DRAINAGE SYSTEM. ONCE CONSTRUCTION IS COMPLETED THE CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL CATCH BASINS AND FLUSHING ALL PIPES OF ANY CONSTRUCTION RELATED DEBRIS AT NO ADDITIONAL COST.
- CATCH BASIN RIM GRADES FOR STRUCTURES NOT IN A TRAVEL LANE NOTED ON PLANS ARE DEPRESSED 0.1' LOWER THAN THE GUTTER GRADE. RIM ELEVATIONS SHOWN ARE FINAL GRADES. THE CONTRACTOR SHALL PLACE FRAMES AND GRATES 0.1' BELOW THE GRADE CONSTRUCTED IN THIS CONTRACT OR AS DIRECTED BY THE ENGINEER.
- PROVISIONS FOR CLEARING TO ACCESS OUTFALLS DURING THE CLEANING AND FLUSHING OF THE CLOSED DRAINAGE SYSTEM SHALL STRICTLY ADHERE TO THE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL INSTALL ALL SEDIMENT AND EROSION CONTROL DEVICES FOR OUTLET PROTECTION PRIOR TO CLEANING AND FLUSHING STORM WATER DRAINAGE. SEDIMENT AND EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL ALL FLUSHED SEDIMENTS ARE REMOVED. AT ALL OUTFALL LOCATIONS WHERE PIPES ARE TO BE CLEANED AND FLUSHED, OUTLET PROTECTION (R.I. STD. 9.1.0 OR 9.3.0) SHALL BE INSTALLED TO TRAP SEDIMENTS. THESE SEDIMENTS SHALL THEN BE REMOVED AND DISPOSED OF LEGALLY BEFORE THE OUTLET PROTECTION DEVICES ARE REMOVED. IF OUTLET PROTECTION AT THE OUTFALL IS NOT FEASIBLE, THEN THE OUTLET PIPE OF THE LAST DRAINAGE STRUCTURE TO BE CLEANED SHALL BE PLUGGED TO CAPTURE ALL MATERIALS FLUSHED FROM PIPES. AFTER THE MATERIALS ARE REMOVED FROM THE DRAINAGE STRUCTURE, THE OUTLET SHALL BE UNPLUGGED TO RESUME NORMAL FUNCTIONING.
- R.I. STD. 9.8.0 BALED STRAW INLET PROTECTION SHALL BE INSTALLED AT ALL CATCH BASINS AND INLETS WHENEVER SUBBASE IS EXPOSED, AND SHALL REMAIN IN PLACE UNTIL THE ABUTTING GROUND SURFACES ARE STABILIZED.
- WHERE BALED STRAW INLET PROTECTION AND SILT FENCES ARE USED AT CATCH BASINS, THEY SHALL BE REMOVED AT THE END OF THE PROJECT OR AS DIRECTED BY THE ENGINEER IN ORDER TO PREVENT CLOGGING OF THE INLET.

**DRAINAGE AND EROSION CONTROL NOTES (CONTINUED):**

- DETENTION AND RETENTION BASINS MAY BE ROUGH GRADED AND STABILIZED WITH VEGETATION AND/OR OTHER EROSION CONTROL MEASURES AS REQUIRED BY THE ENGINEER PRIOR TO USE AS TEMPORARY SEDIMENTATION BASINS DURING PROJECT CONSTRUCTION. FINAL BASIN CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL SOURCES OF SEDIMENT HAVE BEEN REMOVED AND INFILTRATION IS REESTABLISHED. FINAL ROADSIDE VEGETATION IS ESTABLISHED AND USE OF TEMPORARY BASINS IS NO LONGER REQUIRED TO COMPLY WITH THE PLANS, SPECIFICATIONS, AND PERMITS. ANY ISSUES RELATING TO EROSION AND/OR SEDIMENT TRANSPORT INTO WETLAND AREAS RESULTING FROM SUCH USE OF SEDIMENTATION BASINS DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY CORRECTIVE ACTION AND COSTS REQUIRED TO RESOLVE SUCH ISSUES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE TOE OF ANY FILL SLOPE IS TO REMAIN AT LEAST 1' INSIDE OF ALL EROSION CONTROLS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR COVER ANY PORTION OF THE EROSION CONTROL MEASURES WITH MATERIAL. ANY MATERIAL THAT IS PLACED ON ANY EROSION CONTROLS BY THE CONTRACTOR, OR ANY AGENT OF THE CONTRACTOR, SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR, AND ANY NECESSARY REPAIRS TO THE EROSION CONTROLS ACCOMPLISHED.
- PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THOSE AREAS INDICATED ON THE PLANS. CLEARING MAY OCCUR PRIOR TO INSTALLATION OF SUCH CONTROLS, HOWEVER NO GRUBBING, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO INSTALLATION. THE LIMITS OF CLEARING AND SURFACE DISTURBANCE MUST BE STRICTLY ADHERED TO IN ALL AREAS.
- ALL COMPOST FILTER SOCK, STRAW BALES, SILT FENCE OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS IS ESTABLISHED. IF NEEDED, TEMPORARY SEEDING CAN HELP TO MINIMIZE EROSION. TEMPORARY SEED WILL CONFORM TO R.I.D.O.T. STANDARD TEMPORARY SEED MIX.
- THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE STATE.
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE SPECIFIED IN SUBSECTION L.02.03 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- ALL COSTS ASSOCIATED WITH ADHERENCE TO THE SWPPP SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND INCLUDED WITH THE COST FOR THE ASSOCIATED BID ITEMS. ADDITIONAL SEDIMENT AND EROSION CONTROLS, SHALL BE INSTALLED IN ACCORDANCE WITH THE SWPPP REPORT. THESE ADDITIONAL ITEMS WILL BE PAID AT THE UNIT PRICE FOR THAT BID ITEM.
- ANY OBSERVATIONS OF ILLICIT CONNECTIONS OR DISCHARGES TO RIDOT'S DRAINAGE NETWORK OR OUTFALLS SHALL BE REPORTED TO THE RIDOT STORMWATER UNIT IMMEDIATELY.

**UTILITY NOTES:**

- EXISTING UTILITIES HAVE BEEN SHOWN ON THE PLANS USING THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. BUILDING SERVICE CONNECTIONS (ELECTRIC, GAS, TELEPHONE, WATER AND SANITARY) ARE NOT SHOWN. CONTRACTOR IS TO ASSUME SERVICES ARE PRESENT TO ALL BUILDINGS.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH CHAPTER 39-1.2 OF THE R.I. GENERAL LAWS ENTITLED "EXCAVATION NEAR UNDERGROUND UTILITY FACILITIES", WITH AMENDMENTS EFFECTIVE AS OF NOVEMBER 1, 2009 AND, WHEN NECESSARY, BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY APPLICABLE CITY, TOWN, STATE OR FEDERAL AGENCY. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE DIG SAFE PROGRAM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING THEIR WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE STATE.
- ALL EXISTING UTILITIES TO BE ABANDONED SHALL BE CAPPED.
- EXISTING WATER SERVICES SHALL BE RECONNECTED TO THE NEW WATER MAINS.
- UTILITY SERVICE CONNECTIONS SHALL BE MAINTAINED TO ALL EXISTING FACILITIES TO REMAIN.
- FIRE HYDRANTS SHALL NOT BE REMOVED FROM SERVICE WITHOUT WRITTEN AUTHORIZATION FROM THE FIRE DEPARTMENT OR THE WATER AUTHORITY.
- ALL NEW WATER LINES SHALL BE DISINFECTED TO THE SATISFACTION OF THE WATER AUTHORITY IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL UTILITY POLE RELATED WORK SHALL BE BY OTHERS.
- THE CONTRACTOR SHALL PROVIDE 72-HOUR ADVANCE NOTICE TO THE RIDOT TMC (401-222-2378) FOR WORK AROUND RIDOT OWNED INFRASTRUCTURE (DRAINAGE, LIGHTING, ITS EQUIPMENT, TOLL GANTRIES, COUNTING STATIONS, ETC.). ANY DAMAGE TO THIS INFRASTRUCTURE MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT RIDOT IN ADVANCE, SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE STATE.

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

NOTE PER DEM:

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


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

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: JAN - 9 2024 FILE #: 23-0241  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

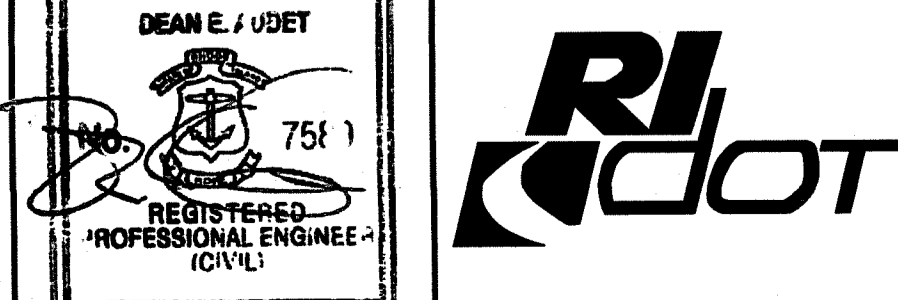
*[Signature]*

RI Environmental Management  
NOV 15 2023  
Office of Water Resources

**THIS PLAN SHALL NOT BE ALTERED**



**FUSS & O'NEILL**  
146 HARTFORD ROAD  
MANCHESTER, CONNECTICUT 06040  
860.646.2469  
www.fandoo.com



DEAN E. VOET  
7581  
REGISTERED PROFESSIONAL ENGINEER - CIVIL

DESIGNED BY: SDA	SCALE: NOT TO SCALE	UPPER WOONASQUATUCKET RIVER STU SMITHFIELD HIGH SCHOOL	
CHECKED BY: DEA		SMITHFIELD VOLUME: # RHODE ISLAND	
DATE: 10/18/2023		STANDARD NOTES - 1	
SHEET: 3			
OF: 10			

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RI CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2023-XX-XXX	2023	4	10

**LANDSCAPE NOTES:**

- ALL PLANT MATERIAL MUST BE TAGGED AT THE NURSERY (A RECOGNIZED GROWER OF PLANT MATERIAL) IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION. ALL PLANT MATERIAL MUST BE NURSERY GROWN; NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
- ALL PLANT SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATION MUST BE APPROVED IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- ALL PLANT MATERIAL IS TO BE FIELD LOCATED BY A REPRESENTATIVE FROM THE R.I.D.O.T. LANDSCAPE ARCHITECTURE UNIT.
- COORDINATE WITH THE R.I.D.O.T. CONSTRUCTION MANAGER PRIOR TO ALL TRIMMING AND CLEARING NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS.
- ANY TOPSOIL USED AS PLANTABLE SOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS, AND SHALL CONFORM TO SECTION M.18 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- ALL TREES AND/OR SHRUBS THAT ARE PLANTED AS A BED SHALL BE MULCHED AS A BED.
- PROVIDE A MINIMUM 6"-8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS AND/OR PEDESTRIAN ACCESS AREAS.
- THE CONTRACTOR SHALL PROVIDE CERTIFICATION THAT THERE ARE NO CONTAMINANTS THAT EXCEED THE R.I.D.E.M. PERMISSIBLE LEVELS IN THE SOILS USED AS LOAM OR PLANTABLE SOIL.

**STRUCTURAL NOTES FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS:**

**GENERAL**

- ALL SUPPORT DESIGNS AND ASSOCIATED SHOP DRAWING REVIEWS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION AND REVISIONS, OF THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, INCLUDING THE LATEST INTERIM SPECIFICATIONS, EXCEPT AS MODIFIED HEREIN.

**CONSTRUCTION DRAWINGS AND DETAILS**

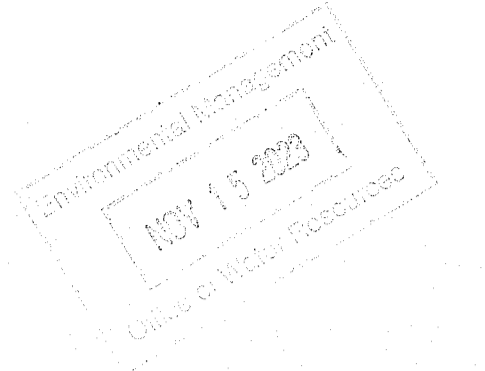
- THE FOLLOWING NOTES SHALL BE INCLUDED ON ALL PLANS AND/OR SHOP DRAWINGS IN REFERENCE TO ANCHOR BOLTS:
  - "PRETENSIONING OF ALL ANCHOR NUTS IS REQUIRED, AND SHALL BE ACCOMPLISHED BY TIGHTENING TO 1/6TH TURN BEYOND THE SNUG-TIGHT POSITION."
  - "THE MAXIMUM CLEARANCE BETWEEN THE BOTTOM OF THE LEVELING NUTS AND THE TOP OF THE CONCRETE IS CRITICAL, AND SHALL NOT EXCEED THE AMOUNT SPECIFIED ON THIS DRAWING."
- THE USE OF GROUT UNDER BASE PLATES SHALL GENERALLY NOT BE PERMITTED. IF SPECIFIC CONDITIONS WARRANT ITS USE, THE GROUT SHALL NOT BE CONSIDERED LOAD CARRYING; LOADS SHALL BE DIRECTLY SUPPORTED BY THE ANCHOR BOLTS. ADEQUATE DRAINAGE SHALL BE PROVIDED.
- THE DAMPENING EFFECTS OF VIBRATION MITIGATION DEVICES SHALL NOT BE CONSIDERED IN THE DESIGN OF STRUCTURAL SUPPORTS FOR SIGNS AND TRAFFIC SIGNALS. IF THE CONTRACTOR CHOOSES TO USE THESE DEVICES FOR WARRANTY PURPOSES, THE TYPE OF DEVICES PROPOSED SHALL BE APPROVED BY THE DEPARTMENT PRIOR TO FABRICATION OF SUPPORTS.

**TRAFFIC SIGNAL NOTES:**

- ALL SALVAGED TRAFFIC SIGNAL EQUIPMENT SHALL BE DELIVERED TO THE R.I.D.O.T. MAINTENANCE HEADQUARTERS, 360 LINCOLN AVENUE, WARWICK, RHODE ISLAND, 02888. THE COST FOR DELIVERY IS CONSIDERED INCIDENTAL TO THE WORK.
- BACK PLATES SHALL BE INSTALLED ON ALL TRAFFIC SIGNAL HEADS.
- THE CONTRACTOR SHALL SUPPLY AND INSTALL ON THE UPPER LEFT HAND CORNER OF THE BACK OF THE CONTROLLER CABINET DOOR A LAMINATED INTERSECTION GRAPHIC AND TABLE DEPICTING THE TRAFFIC DETECTOR RELAY CHANNEL ASSIGNMENTS. THE DIAGRAM SHALL BE A GRAPHIC OF THE INDIVIDUAL INTERSECTION ORIENTED SIMILAR TO THE PLANS SHOWING THE LOCATIONS OF EACH OF THE LOOP DETECTORS. THE DIAGRAM SHALL, AT A MINIMUM, INCLUDE DETECTOR NUMBERS, STREET NAME LABELS, NORTH ARROW, AND CONTROLLER CABINET LOCATION. THE ASSIGNMENT INFORMATION SHALL BE INCLUDED IN A TABLE WHICH SHALL INCLUDE, AT A MINIMUM, THE APPROACH NAME, DETECTOR NUMBER, TERMINAL NUMBER, DETECTOR RACK SLOT NUMBER, RELAY NUMBER, RELAY CHANNEL NUMBER, AND PHASE ASSOCIATED WITH EACH DETECTOR.
- TRAFFIC CONTROLLER CABINETS, UNLESS OTHERWISE NOTED, SHALL BE NEMA TS2 TYPE 1 CABINET SIZE 6 ("P" TYPE) WITH NOMINAL DIMENSIONS OF 52"Hx44"Wx24"D.
- ALL LOOP AND EXTENSION TIMES, AS CALLED FOR ON THE PLANS, FOR PROPOSED LOOP DETECTORS SHALL BE PROGRAMMED IN THE TRAFFIC SIGNAL CONTROLLER AND NOT THE DETECTOR RELAY.
- INSULATED GROUND WIRE SHALL BE PLACED IN ALL PVC CONDUITS AND SHALL BE BONDED TO GROUND RODS IN ACCORDANCE WITH SECTION T.03 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- THE FINAL POSITION OF SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, DETECTORS, AND STOP LINE AND CROSSWALK PAVEMENT MARKINGS SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD ACCORDING TO ACTUAL INTERSECTION CHARACTERISTICS.
- A 2' MINIMUM BUFFER SHALL BE PROVIDED BETWEEN THE CURB AND ALL LATERAL OBSTRUCTIONS (INCLUDING ALL SIGNAL POLES AND TRAFFIC/PEDESTRIAN SIGNAL HEADS) TO PROVIDE ADEQUATE CLEARANCE FOR TURNING VEHICLES.
- ALL FOUNDATIONS MUST HAVE CONES OR BARRELS BOLTED TO FOUNDATION BASES UNTIL ACTUAL POLE IS INSTALLED.
- WHEN PLACING TRAFFIC SIGNAL HANDHOLES OR CONDUIT IN EXISTING PORTLAND CEMENT CONCRETE SIDEWALKS, THE ENTIRE SIDEWALK SQUARE OF CONCRETE SHALL BE REPLACED IN ACCORDANCE WITH R.I. STD. 43.1.0. NO PATCHES WILL BE ALLOWED.
- ALL PEDESTRIAN PUSHBUTTONS SHALL BE COMPLIANT WITH "THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES" (ADAAG) AND SHALL INCLUDE A PRESSURE-ACTIVATED (NON-MOVING) BUTTON. SIGNS APPLICABLE TO PUSHBUTTON ACTUATION SHALL BE INSTALLED SUCH THAT THE CROSSING ASSIGNED TO EACH BUTTON IS CLEARLY INDICATED. IF SITE CONDITIONS DO NOT ALLOW PEDESTRIAN PUSHBUTTONS TO BE INSTALLED WHERE CALLED FOR ON THE PLANS, THE R.I.D.O.T. TRAFFIC ENGINEERING UNIT SHALL BE CONSULTED WITH THROUGH AN R.F.I. PRIOR TO INSTALLING THE PUSHBUTTONS. THE FINAL PLACEMENT OF ALL PEDESTRIAN PUSHBUTTONS SHALL BE IN ACCORDANCE WITH ADAAG AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- ALL LOOP DETECTORS SHALL BE CENTERED WITHIN EACH LANE AS DELINEATED, UNLESS OTHERWISE DIMENSIONED ON PLANS.
- ALL LOOP DETECTORS SHALL BE CUT INTO THE FINAL PAVEMENT SURFACE COURSE.
- TRAFFIC SIGNAL CONTROLLERS AND CABINETS SHALL BE PROGRAMMED AND WIRED SO THAT ANY FIRE PRE-EMPTION SHALL OVERRIDE MANUAL (PUSH BUTTON) OPERATION.
- THE CONTRACTOR SHALL WORK CONTINUOUSLY TO RESTORE TRAFFIC SIGNAL OPERATION TO ITS INTENDED PURPOSE WHEN REPLACING THE TRAFFIC SIGNAL EQUIPMENT. A POLICE DETAIL IS REQUIRED TO DIRECT TRAFFIC AT THE INTERSECTION AT ALL TIMES WHEN THE TRAFFIC SIGNAL IS INOPERATIVE. AT NO TIME SHALL THE CONTRACTOR LEAVE THE SITE BEFORE RESTORING FULL TRAFFIC OPERATIONS.

**MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:**

- ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELIZING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- ALL SIGN MOUNTINGS FOR TEMPORARY AND CONSTRUCTION SIGNS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- THE CONTRACTOR SHALL COVER ALL EXISTING AND/OR TEMPORARY SIGNS THAT ARE NOT RELEVANT TO THE TRAFFIC CONTROL REQUIRED DURING ANY PARTICULAR STAGE OF THE CONTRACT.
- ADVANCE FLAGPERSON SIGNS (W20-7A) SHALL BE USED IN ADVANCE OF ANY POINT AT WHICH A FLAGPERSON OR A POLICE OFFICER HAS BEEN STATIONED TO CONTROL TRAFFIC. WHEN NEEDED, AN APPROPRIATE DISTANCE MESSAGE MAY BE DISPLAYED ON A SUPPLEMENTAL PLATE (24"x18") BELOW THE FLAGPERSON SYMBOL SIGN. THE SIGN SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE FLAGPERSON IS NOT AT THE STATION.
- POLICE OFFICERS AND FLAGPERSONS SHALL BE UTILIZED AS OUTLINED IN SECTIONS 913 & 914 OF THE RI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- POLYETHYLENE DRUMS SHALL BE UTILIZED AS A CHANNELIZING DEVICE WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN BEYOND WORKING HOURS WHEN NO WORKERS ARE PRESENT. CONES SHALL BE UTILIZED WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN ONLY DURING WORKING HOURS AND IS SUBSEQUENTLY BROKEN DOWN AT THE END OF THE WORKDAY.
- ARROW PANELS SHALL BE SET IN THE FLASHING FOUR CORNERS CAUTION MODE UNLESS UTILIZED FOR A MERGING TAPER. ARROW PANELS SET IN THE FLASHING ARROW MODE SHALL NOT BE UTILIZED FOR LANE SHIFTS.
- TEMPORARY CONSTRUCTION SIGNS AND OTHER WORKZONE TRAFFIC CONTROL DEVICES THAT ARE DAMAGED OR REQUIRE RELOCATION SHALL BE REPLACED AND / OR RELOCATED UNDER THE PAY ITEM FOR "MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION."
- THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED ON THE TRAVEL LANES OR SHOULDERS. THEY MAY BE PARKED WITHIN THE STATE RIGHT-OF-WAY ONLY IN AREAS BEYOND THE OUTSIDE EDGE OF THE TRAVEL LANES AND/OR IN AREAS APPROVED BY THE ENGINEER.
- TEMPORARY CONSTRUCTION SIGNS AND OTHER TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC, AND SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER APPROPRIATE.
- THE INTENDED VEHICLE PATHS THROUGH EACH WORK ZONE SHALL BE CLEARLY MARKED AT ALL TIMES. APPROVED PAVEMENT MARKINGS SHALL BE INSTALLED BEFORE THE END OF THE WORK SHIFT ON ALL COLD-PLANNED AND NEW ROADWAY SURFACES THAT WILL BE OPENED TO TRAFFIC AT THE END OF THE SHIFT. FAILURE TO COMPLY WILL RESULT IN AN ASSESSMENT OF A CHARGE AS OUTLINED IN SECTION 937 OF THE RI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.



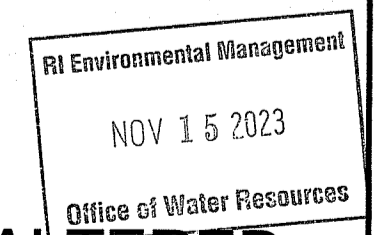
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: JAN - 9 2024 FILE #: 23-084  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Andy Chapman*

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

NOTE PER DEM:

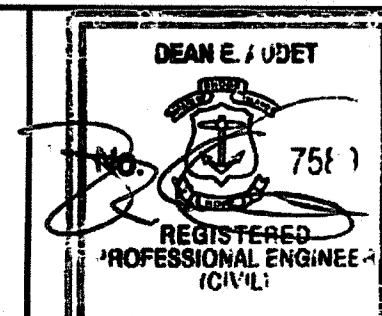
Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site



**THIS PLAN SHALL NOT BE ALTERED**

UPPER WOONASQUATUCKET RIVER STU  
 SMITHFIELD HIGH SCHOOL  
 SMITHFIELD VOLUME: # RHODE ISLAND

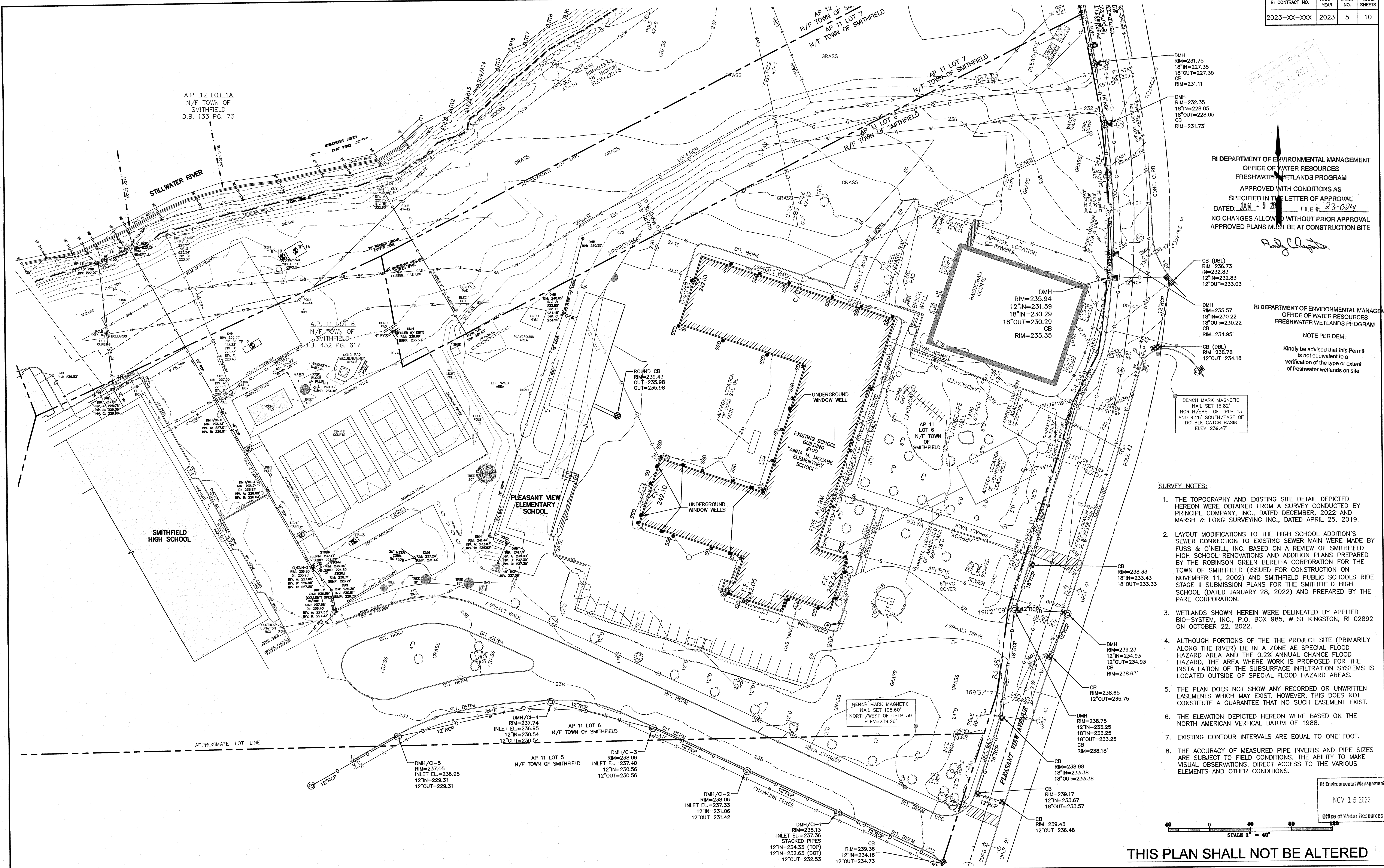
STANDARD NOTES - 2



DESIGNED BY: SDA  
 CHECKED BY: DEA  
 DATE: 10/18/2023  
 SHEET: 4  
 OF: 10

SCALE: NOT TO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY



RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: JAN - 9 2024 FILE # 23-024  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Andy Chapman*

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 NOTE PER DEM:  
 Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site

**SURVEY NOTES:**

1. THE TOPOGRAPHY AND EXISTING SITE DETAIL DEPICTED HEREON WERE OBTAINED FROM A SURVEY CONDUCTED BY PRINCIPLE COMPANY, INC., DATED DECEMBER, 2022 AND MARSH & LONG SURVEYING INC., DATED APRIL 25, 2019.
2. LAYOUT MODIFICATIONS TO THE HIGH SCHOOL ADDITION'S SEWER CONNECTION TO EXISTING SEWER MAIN WERE MADE BY FUSS & O'NEILL, INC. BASED ON A REVIEW OF SMITHFIELD HIGH SCHOOL RENOVATIONS AND ADDITION PLANS PREPARED BY THE ROBINSON GREEN BERETTA CORPORATION FOR THE TOWN OF SMITHFIELD (ISSUED FOR CONSTRUCTION ON NOVEMBER 11, 2002) AND SMITHFIELD PUBLIC SCHOOLS RIDE STAGE II SUBMISSION PLANS FOR THE SMITHFIELD HIGH SCHOOL (DATED JANUARY 28, 2022) AND PREPARED BY THE PARE CORPORATION.
3. WETLANDS SHOWN HEREIN WERE DELINEATED BY APPLIED BIO-SYSTEM, INC., P.O. BOX 985, WEST KINGSTON, RI 02892 ON OCTOBER 22, 2022.
4. ALTHOUGH PORTIONS OF THE THE PROJECT SITE (PRIMARILY ALONG THE RIVER) LIE IN A ZONE AE SPECIAL FLOOD HAZARD AREA AND THE 0.2% ANNUAL CHANCE FLOOD HAZARD, THE AREA WHERE WORK IS PROPOSED FOR THE INSTALLATION OF THE SUBSURFACE INFILTRATION SYSTEMS IS LOCATED OUTSIDE OF SPECIAL FLOOD HAZARD AREAS.
5. THE PLAN DOES NOT SHOW ANY RECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENT EXIST.
6. THE ELEVATION DEPICTED HEREON WERE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
7. EXISTING CONTOUR INTERVALS ARE EQUAL TO ONE FOOT.
8. THE ACCURACY OF MEASURED PIPE INVERTS AND PIPE SIZES ARE SUBJECT TO FIELD CONDITIONS. THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER CONDITIONS.

RI Environmental Management  
 NOV 15 2023  
 Office of Water Resources

SCALE 1" = 40'

**THIS PLAN SHALL NOT BE ALTERED**

UPPER WOONASQUATUCKET RIVER STU  
 SMITHFIELD HIGH SCHOOL  
 VOLUME: #  
 SMITHFIELD RHODE ISLAND  
**EXISTING CONDITIONS PLAN**

DESIGNED BY: SDA  
 CHECKED BY: DEA  
 DATE: 10/18/2023  
 SHEET: 5  
 OF: 10

SCALE: NOT TO SCALE

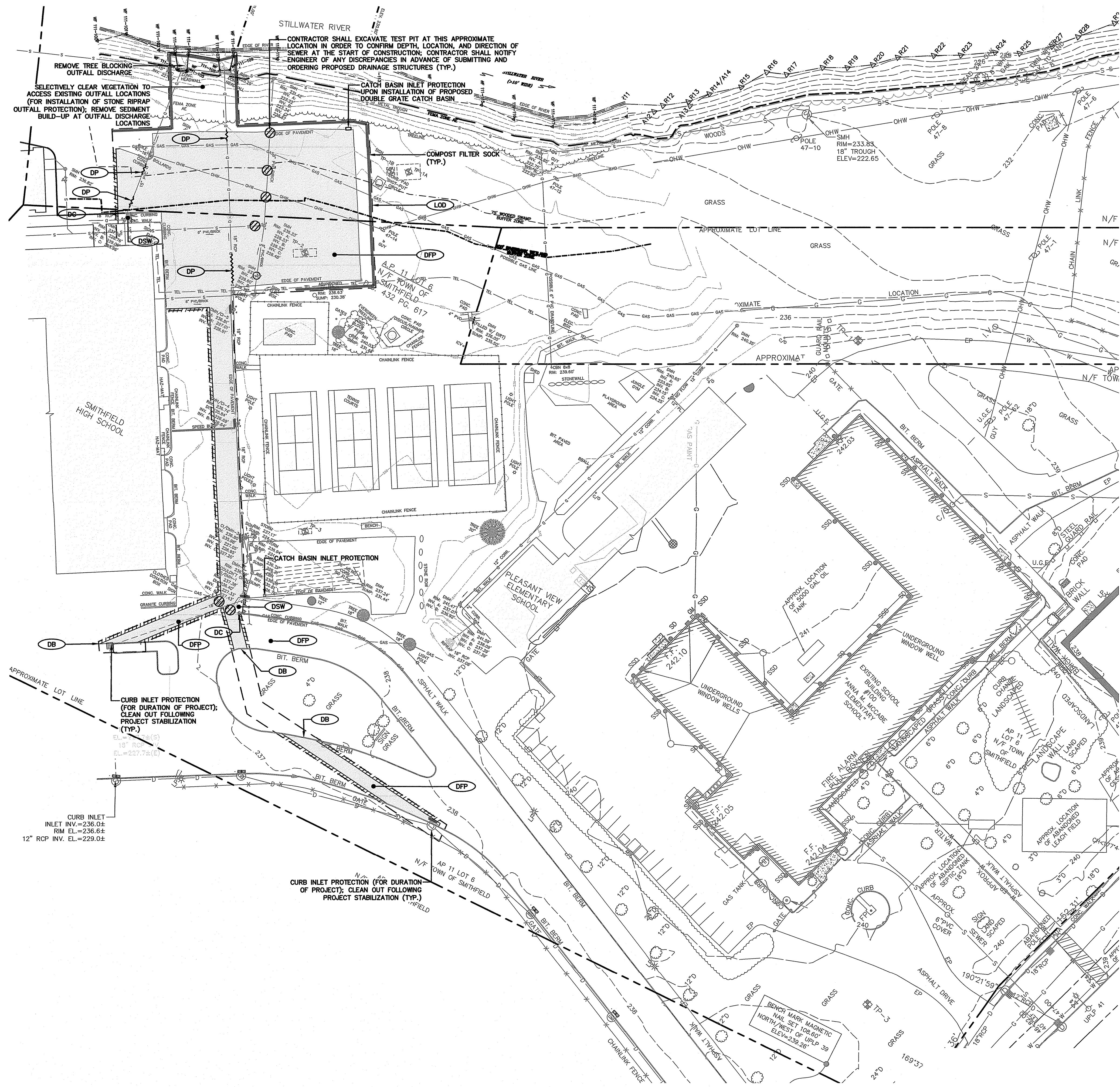
REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

**f** **FUSS & O'NEILL**  
 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fando.com

DEAN E. UDET  
 7511  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL

**RI DOT**

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**ADDITIONAL EROSION CONTROL NOTES:**

- ALL INSTALLED EROSION CONTROLS SHALL ADHERE TO THE LATEST EDITION OF THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
- EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA.
- EROSION CONTROLS SHALL BE MAINTAINED AND KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES AND DISTURBED AREAS HAVE BEEN PAVED, ADEQUATELY STABILIZED, OR HAVE ACHIEVED A HEALTHY STAND OF VEGETATIVE COVER AS INDICATED ON THE PLANS. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
- EXISTING VEGETATION SHALL BE PROTECTED AND SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE ON THE PLANS.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING. AN AREA SHALL BE CONSIDERED STABLE WHEN THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN PAVED AREAS.
  - A MINIMUM OF 85% OF VEGETATIVE GROWTH/COVER HAS BEEN ESTABLISHED.
  - A MINIMUM OF 3" OF STONE OR RIP RAP MATERIAL HAS BEEN INSTALLED.
  - EROSION CONTROL BLANKETS, JUTE MESH, OR TURF REINFORCEMENT MATTING HAVE BEEN PROPERLY INSTALLED.
- ALL DISTURBED AREAS NOT TO RECEIVE PAVEMENT OR OTHER HARD SURFACE SHALL HAVE A MINIMUM OF 4" OF LOAM OR PLANTABLE SOIL INSTALLED WITH THE FOLLOWING SEED MIXES AND APPLICATION RATES UNLESS SPECIFIED OTHERWISE:
  - TYPE 1 PERMANENT SEED MIX (RIDOT M.10.2 FOR FLAT AREAS AND RIDOT M.10.3 FOR SLOPED AREAS) APPLIED AT 150 LBS. PER ACRE.
  - TYPE 3 TEMPORARY SEED MIX (RIDOT M.18.10.5) APPLIED AT 75 LBS. PER ACRE.
- SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
- HAY MULCH, JUTE MATTING, OR EROSION CONTROL BLANKETING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING AND EROSION CONTROL BLANKETING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- THE LAND AREA EXPOSED SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME AND SHALL NOT REMAIN EXPOSED MORE THAN 45 DAYS FROM INITIAL DISTURBANCE.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- ALL CONTRIBUTING WATERSHED AREAS MUST BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THE ONSITE INFILTRATION AREAS.
- PHOSPHATE-BASED FERTILIZERS ARE NOT ALLOWED DUE TO SITE PROXIMITY TO STILLWATER RIVER.

**EROSION CONTROL MAINTENANCE NOTES:**

- THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE PER WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF ALL STORMS WITH RAINFALL AMOUNTS GREATER THAN 0.25 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPs SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION. COMPLETED INSPECTION FORMS SHALL BE KEPT ON-SITE FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR IS REQUIRED TO INSPECT AND MAINTAIN (CLEAN) ANY EXISTING AND PROPOSED STORMWATER MANAGEMENT SYSTEM FOLLOWING FINAL PAVING, STABILIZATION OF THE SITE, AND PRIOR TO THE STORMWATER SYSTEM BECOMING OPERATIONAL.
- PERIMETER EROSION CONTROLS AND EROSION CONTROLS SURROUNDING SOIL STOCKPILE AREAS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
- SEDIMENT DEPOSITS COLLECTED BY PERIMETER EROSION CONTROLS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AT THESE LOCATIONS (AFTER THE FABRIC HAS BEEN REMOVED) SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.
- ALL CATCH BASIN STRUCTURES AND CURB INLET OPENINGS SHALL BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM THE TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAX. OF 1/2 THE DEPTH OF THE TRAP OR HAS SIGNIFICANTLY RESTRICTED INFILTRATION SUCH THAT PONDING IS OCCURRING DURING RAINFALL EVENTS. THE SEDIMENT SHALL BE DISPOSED OF LEGALLY OFF-SITE OR TEMPORARILY STORED ON-SITE IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS UNTIL IT CAN BE LEGALLY DISPOSED OF OFF-SITE.

**POTENTIAL UTILITY CONFLICT NOTES:**

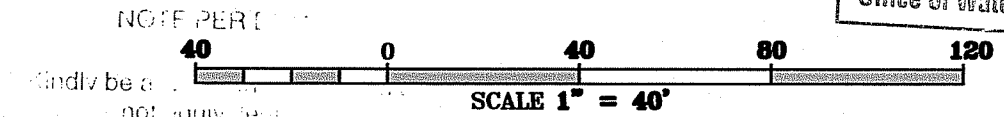
- BEFORE BEGINNING SITE WORK, THE CONTRACTOR SHALL INVESTIGATE AND VERIFY THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND OTHER CONSTRUCTION AFFECTING THE WORK. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS (INCLUDING TEST PITS AT POTENTIAL UTILITY CONFLICT LOCATIONS AS INDICATED ON THIS PLAN) AND LOCATE EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF NECESSARY.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: JAN - 9 2024 FILE #: 23-0241  
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*[Signature]*

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 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM

RI Environmental Management  
 NOV 15 2023  
 Office of Water Resources



**THIS PLAN SHALL NOT BE ALTERED**

**f FUSS & O'NEILL**  
 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
 www.fand.o.com

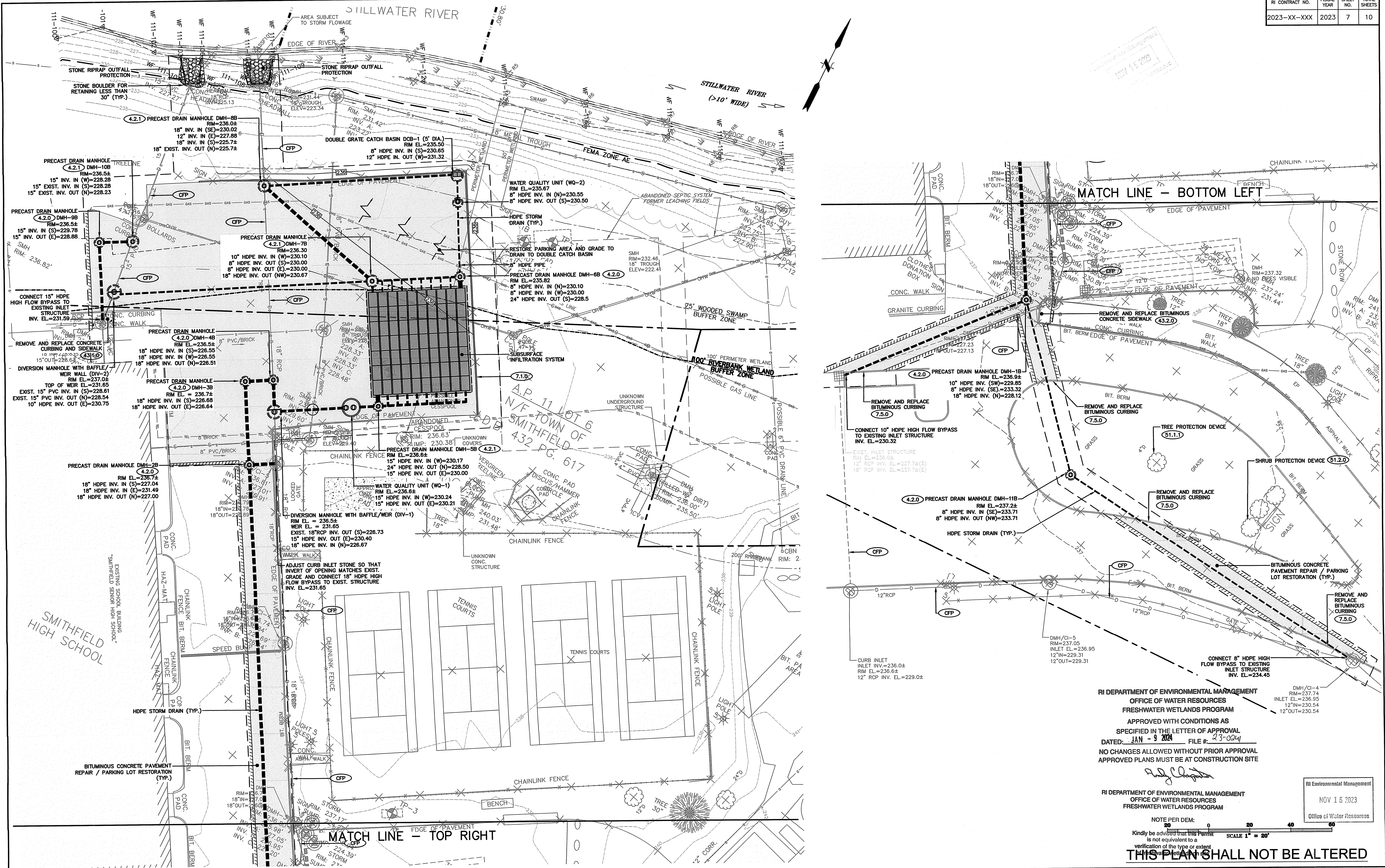
DEAN E. JUDET  
 7541  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

DESIGNED BY: SDA  
 CHECKED BY: DEA  
 DATE: 10/18/2023  
 SHEET: 6  
 OF: 10

SCALE: NOT TO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

UPPER WOONASQUATUCKET RIVER ST  
 SMITHFIELD HIGH SCHOOL  
 SMITHFIELD VOLUME: # RHODE ISLAND  
**SITE PREPARATION PLAN**



RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 NOV 15 2023  
 Office of Water Resources

NOTE PER DEM:  
 Kindly be advised that this Permit is not equivalent to a verification of the type or extent of work shown on this plan.

**THIS PLAN SHALL NOT BE ALTERED**

**f FUSS & O'NEILL**  
 146 HARTFORD ROAD  
 MANCHESTER, CONNECTICUT 06040  
 860.646.2469  
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DEAN E. J. UDET  
 751 1  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL

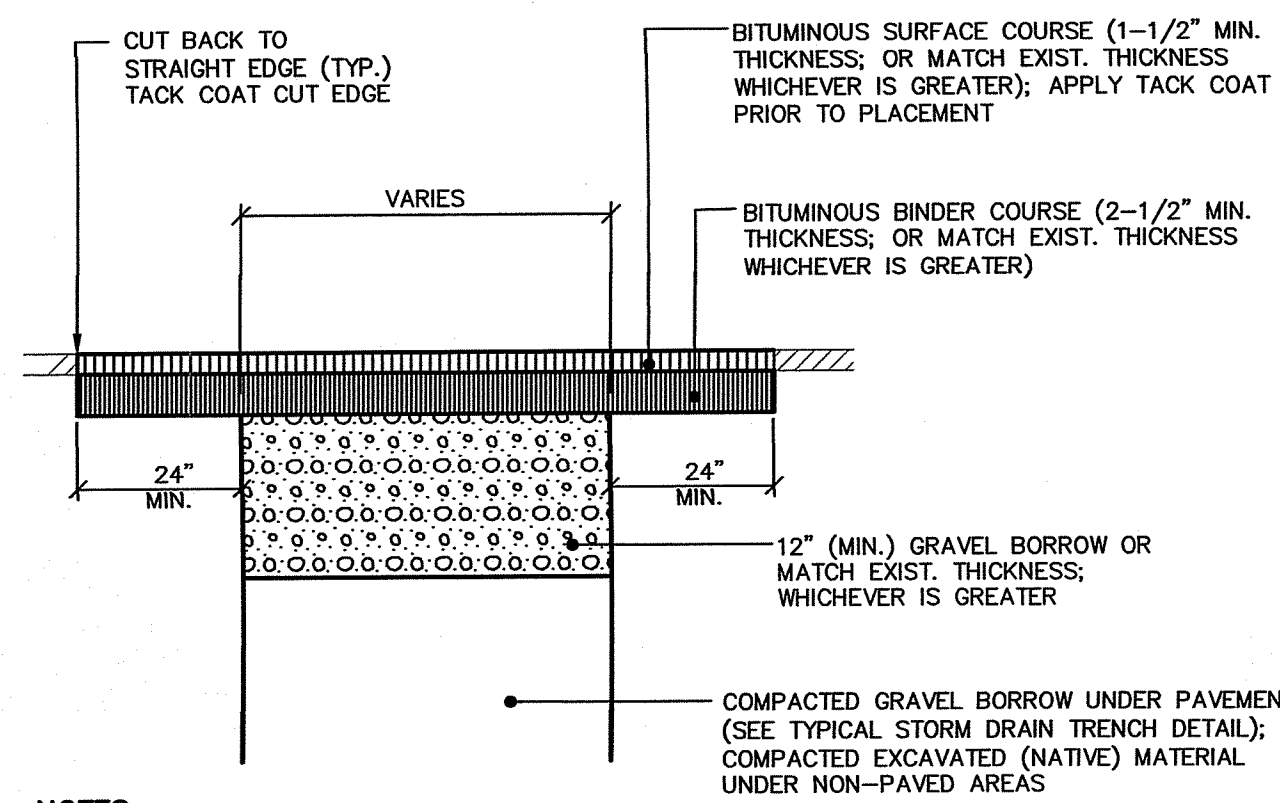


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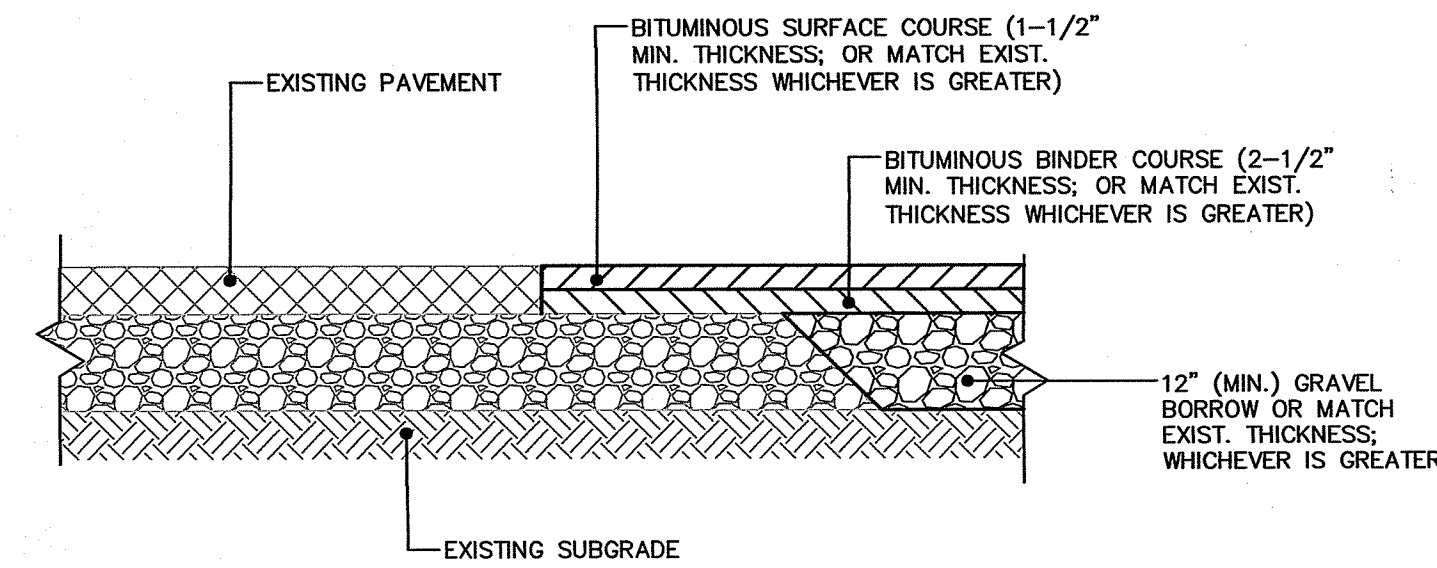
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UPPER WOONASQUATUCKET RIVER STU  
 SMITHFIELD HIGH SCHOOL  
 VOLUME: #  
 SMITHFIELD RHODE ISLAND  
 SITE, GRADING, AND DRAINAGE PLAN

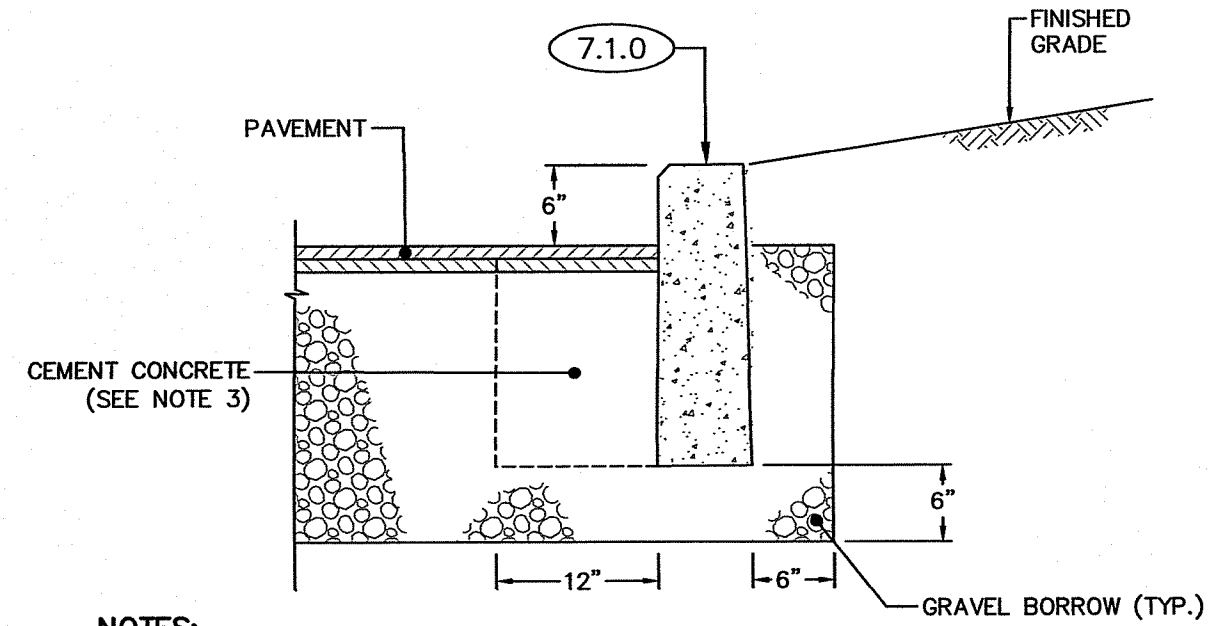


- NOTES:**
- HOT MIX ASPHALTS (HMAs) SHALL BE BASED ON AASHTO "SUPERPAVE" ASPHALT DESIGNATIONS, AS ADOPTED BY RIDOT PER SECTION 401 OF THE RIDOT STANDARD SPECIFICATIONS. SURFACE COURSE SHALL CONSIST OF CLASS 9.5 HMA. BINDER COURSE SHALL CONSIST OF CLASS 19.0 HMA.
  - ALL OTHER ROADWAY MATERIALS, INCLUDING GRAVEL, CONCRETE AND CURBING SHALL CONFORM TO THE LATEST EDITION OF THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

**BITUMINOUS CONCRETE PAVEMENT REPAIR/  
PARKING LOT RESTORATION**  
NOT TO SCALE

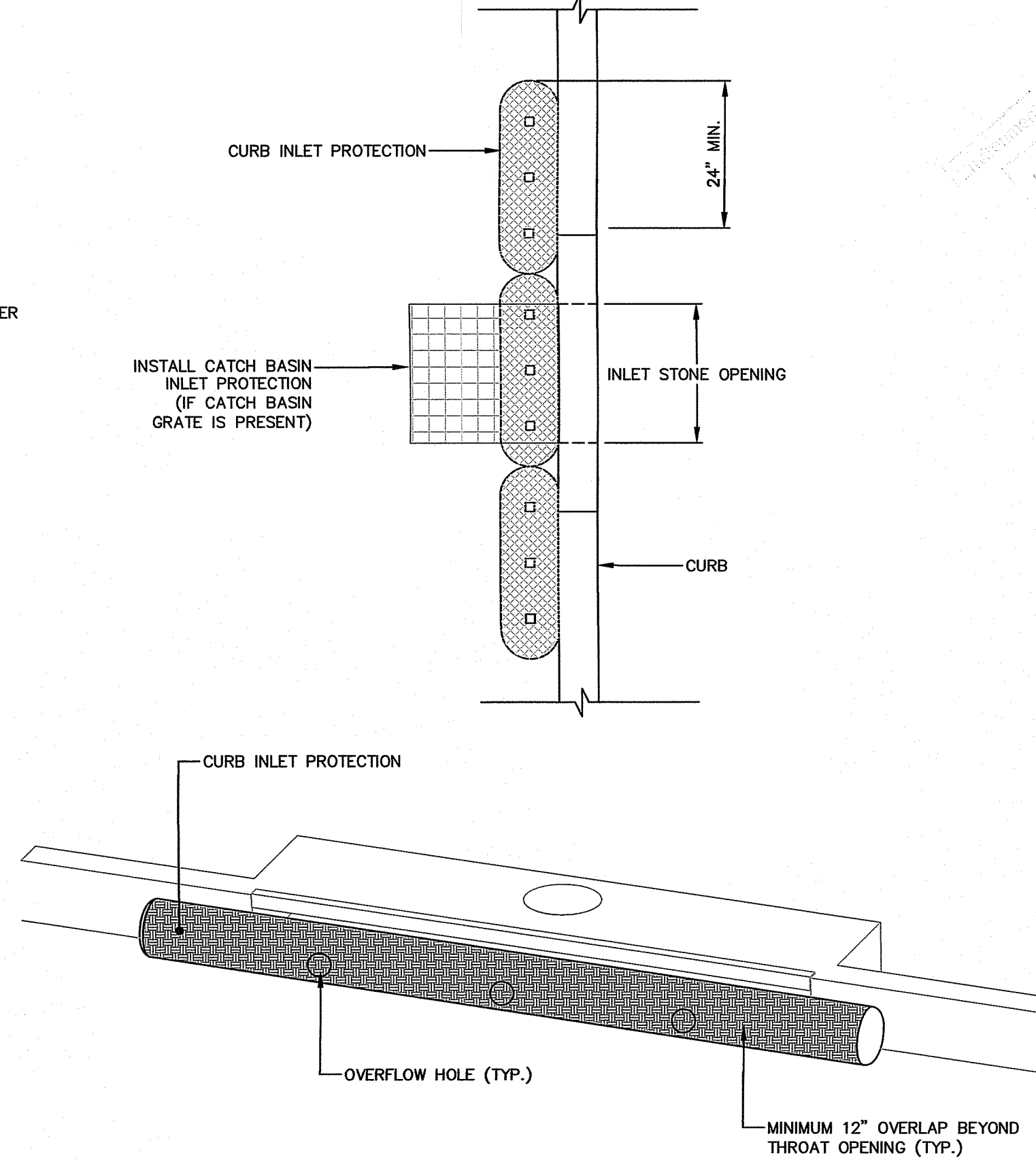


**SAWCUT AND MATCH EXISTING PAVEMENT**  
NOT TO SCALE

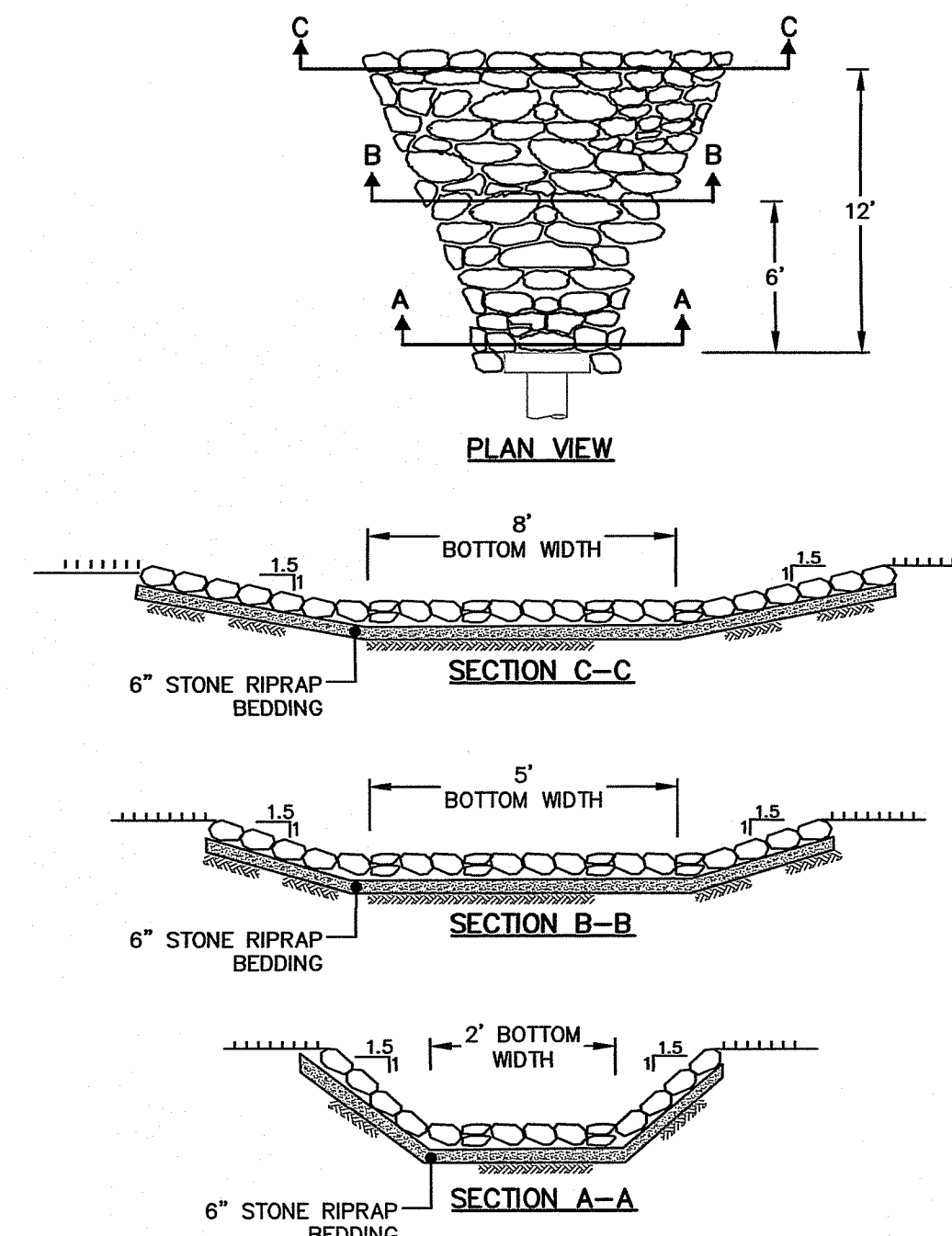


- NOTES:**
- CONCRETE CURB SHALL BE IN ACCORDANCE WITH RIDOT STD. 7.1.0.
  - INSTALL IN ACCORDANCE WITH RIDOT STD. 7.6.0 AND SECTION 906 OF THE RIDOT STANDARD SPECIFICATIONS.
  - CEMENT CONCRETE SHALL BE USED ONLY WHEN THE CURB IS SET AFTER THE BASE AND/OR BINDER COURSES ARE IN PLACE; OTHERWISE, THE CEMENT CONCRETE WILL BE ELIMINATED AND THE GRAVEL BROUGHT UP TO BOTTOM OF THE BASE COURSE.

**CONCRETE CURB**  
NOT TO SCALE

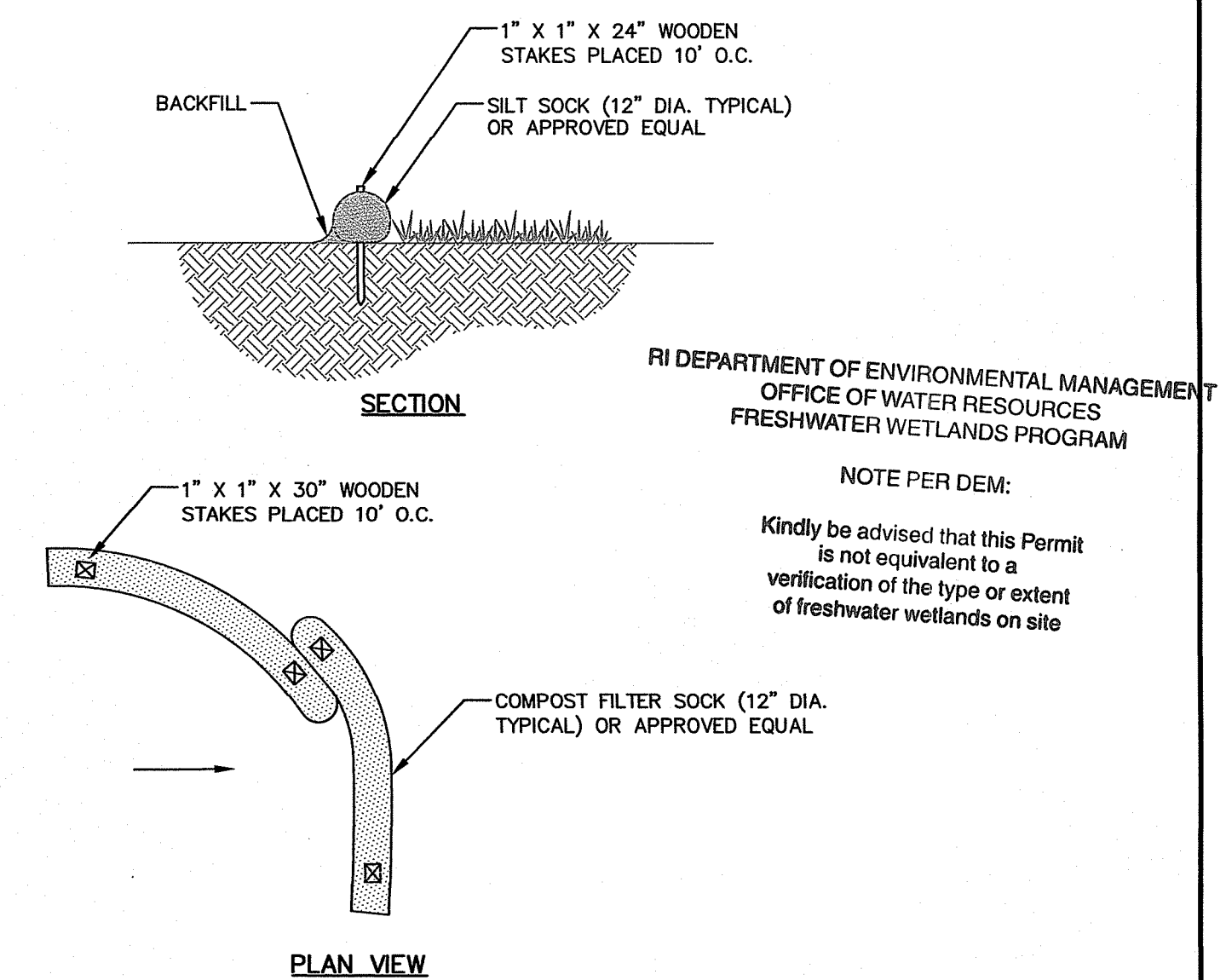


**CURB INLET PROTECTION**  
NOT TO SCALE



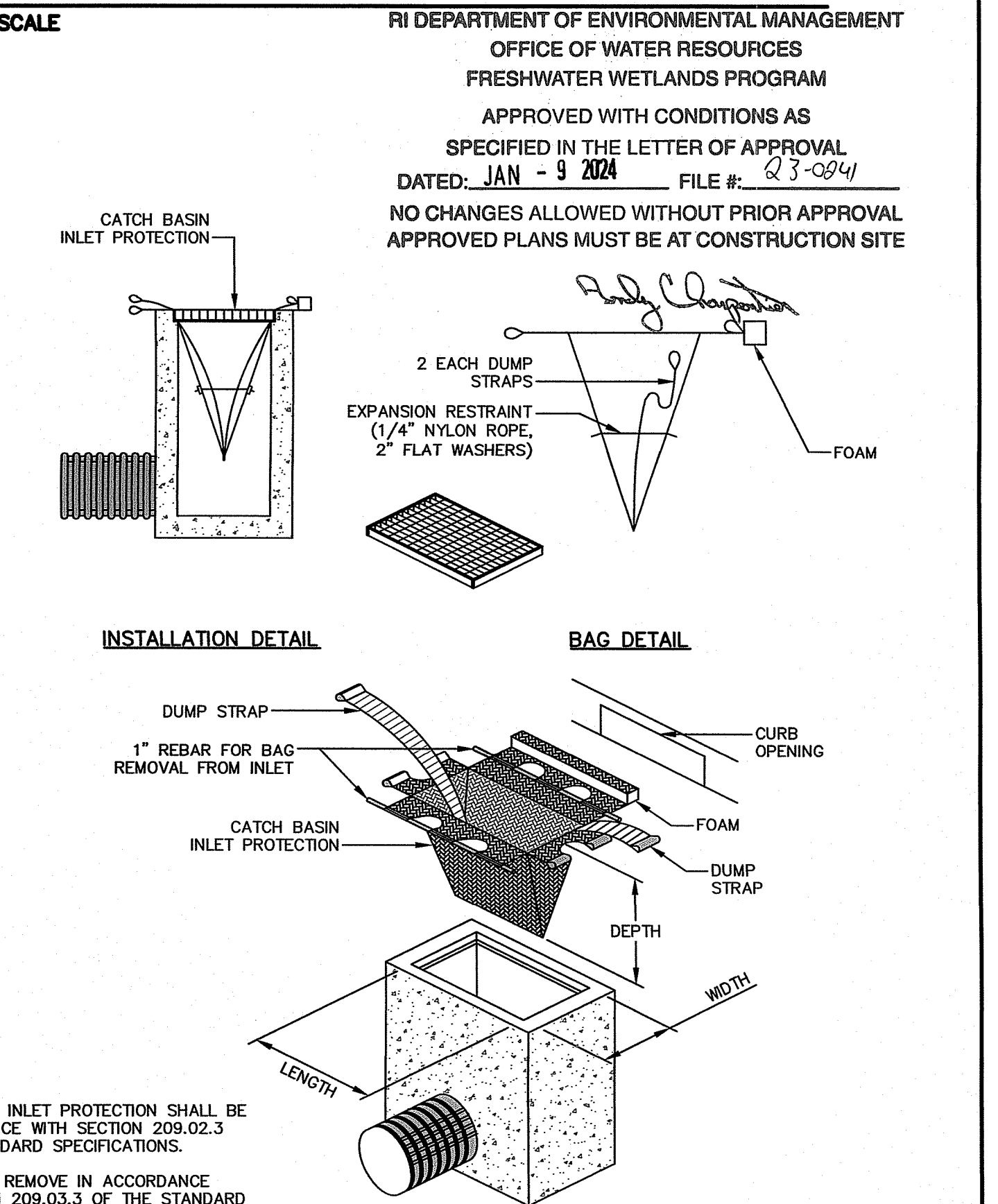
- STONE RIPRAP SHALL CONSIST OF RE-USED EXIST. RIPRAP STONE SUPPLEMENTED WITH IMPORTED RIPRAP IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION (NSA) NO. "R-5" RIP-RAP AS SPECIFIED BY RIDOT M.10.03.2.
- STONE RIPRAP BEDDING SHALL CONSIST OF A 6" LAYER OF FILTER STONE IN ACCORDANCE WITH NSA NO. FS-2 AS SPECIFIED BY RIDOT M.10.03.1.
- DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
- UNLESS OTHERWISE SPECIFIED, RIP-RAP SHALL BE PLACED.
- SIDE SLOPES SHALL NOT EXCEED 1.5(H):1(V). REFER TO SITE, GRADING, AND DRAINAGE PLAN FOR SLOPE LIMITS.

**STONE RIPRAP OUTFALL PROTECTION**  
NOT TO SCALE



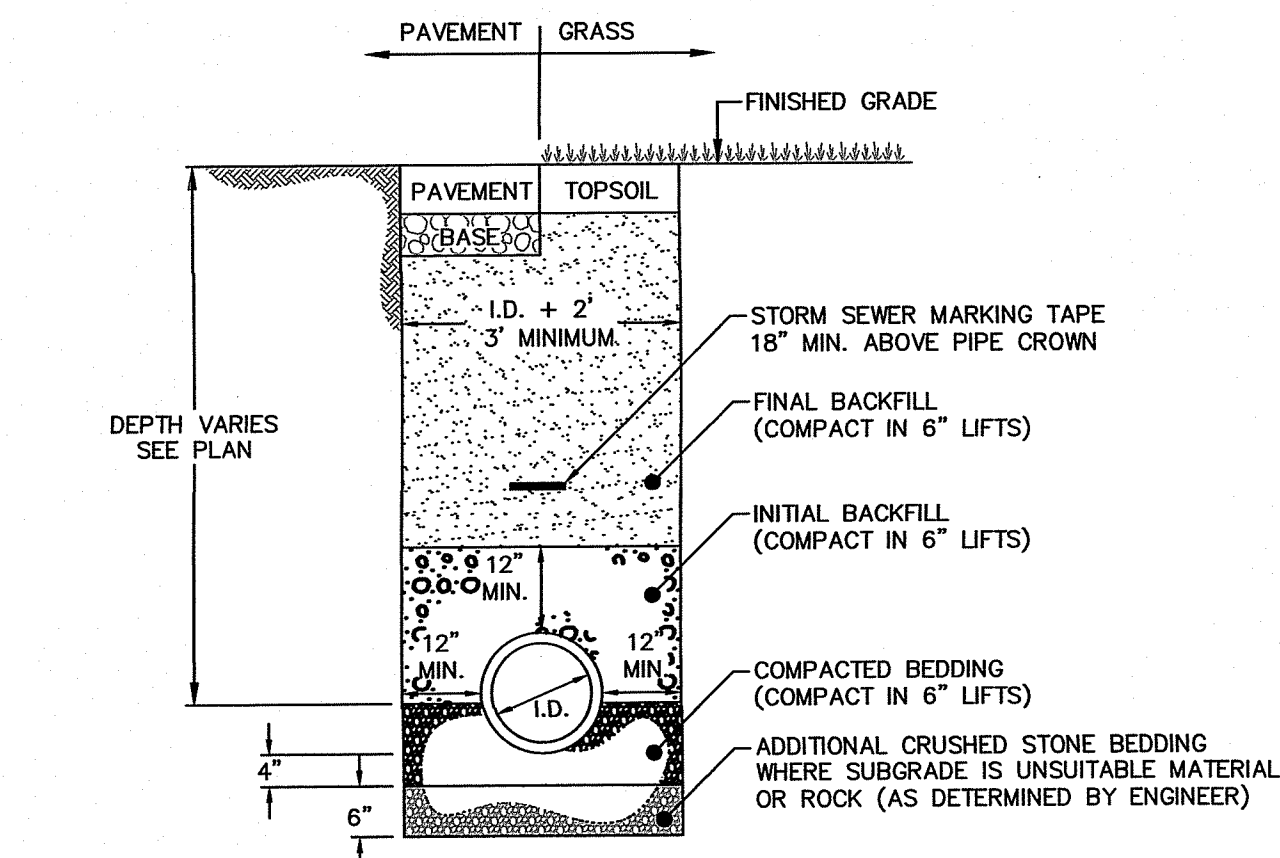
- NOTES:**
- COMPOST FILTER SOCK MATERIAL SHALL CONTAIN COMPOSTED ORGANIC MATTER ACCORDING TO AASHTO DESIGNATION R 51-13 AND MEET ALL APPLICABLE FEDERAL AND STATE REGULATIONS.
  - AT THE ENDS OF FILTER SOCKS, CREATE A 2-FT OVERLAP. STAKE THE OVERLAP AND ENSURE THAT THE INTERSECTING OVERLAPS DO NOT ALLOW STORMWATER TO BREAK THROUGH.
  - BEFORE REMOVAL, REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS IN ACCORDANCE WITH SECTION 206.3.4 OF THE STANDARD SPECIFICATIONS. CUT OPEN THE MESH FILTER SOCK MATERIAL, REMOVE THE MESH, RAKE THE COMPOST MATERIAL OUT LEVEL TO THE SURROUNDING GRADES, AND THEN SEED.

**COMPOST FILTER SOCK**  
NOT TO SCALE



- NOTES:**
- CATCH BASIN INLET PROTECTION SHALL BE IN ACCORDANCE WITH SECTION 209.02.3 OF THE STANDARD SPECIFICATIONS.
  - INSTALL AND REMOVE IN ACCORDANCE WITH SECTION 209.03.3 OF THE STANDARD SPECIFICATIONS.

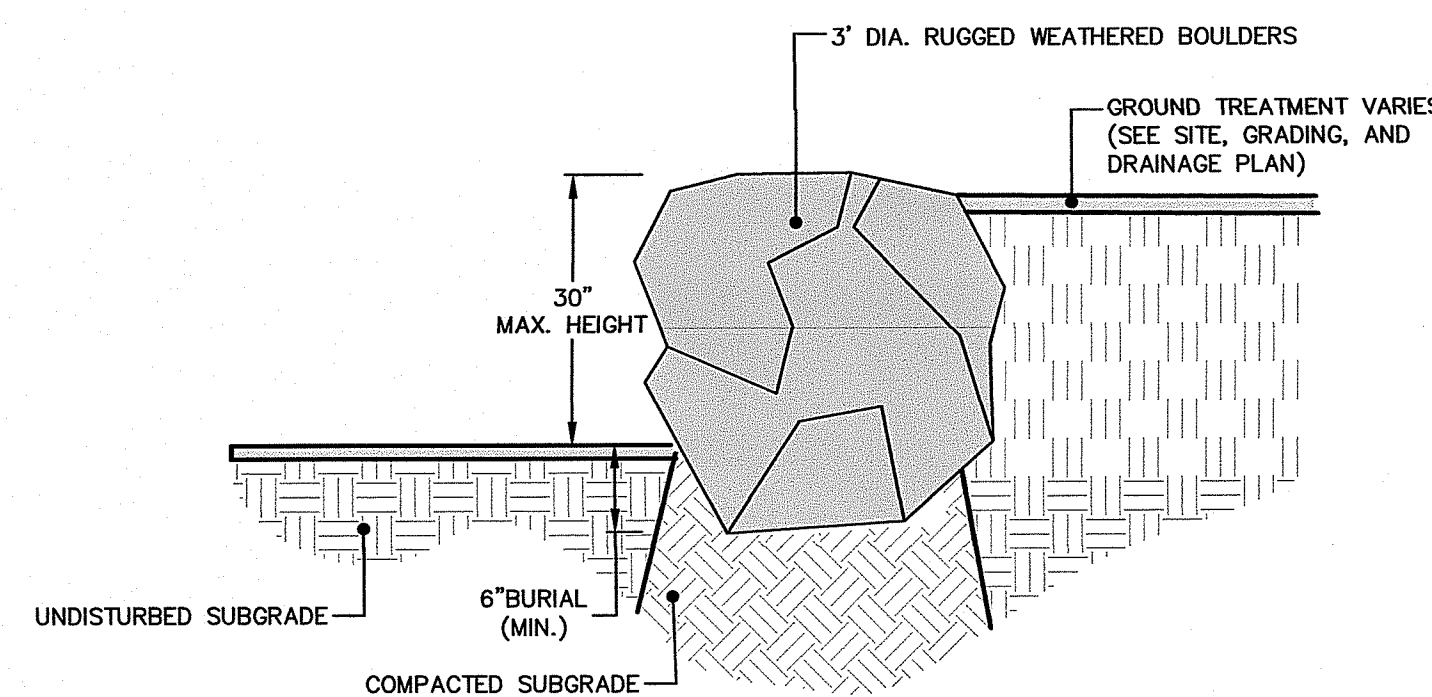
**CATCH BASIN INLET PROTECTION**  
NOT TO SCALE



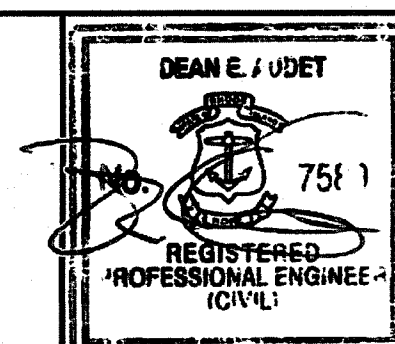
- NOTES:**
- FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, CONTRACTOR SHALL EXCAVATE TO DEPTH REQUIRED BY THE ENGINEER (6" MIN.) AND REPLACE CRUSHED STONE BEDDING IN ACCORDANCE WITH SUBSECTION M.01.04 OF THE RIDOT STANDARD SPECIFICATIONS.
  - BEDDING:** GRAVEL BORROW BEDDING CONFORMING TO SUBSECTION M.01.04 AND THE GRADATION OF COLUMN I, TABLE I OF SUBSECTION M.01.09 OF THE RIDOT STANDARD SPECIFICATIONS WITH 100% BY WEIGHT PASSING THE 1 1/2-INCH SIEVE.
  - HAUNCHING AND INITIAL BACKFILL:** IN-SITU OR IMPORTED BACKFILL CONFORMING TO SUBSECTION M.01.02 AND THE GRADATION OF COLUMN I, TABLE I OF SUBSECTION M.01.09 OF THE RIDOT STANDARD SPECIFICATIONS.
  - MINIMUM COVER:** THE MINIMUM RECOMMENDED DEPTH OF COVER FOR H25 LIVE LOADING CONDITIONS FOR SMOOTH-LINED INTERIOR HDPE IS 12 INCHES. THIS IS THE MINIMUM DEPTH FROM THE TOP OF PIPE TO THE GROUND SURFACE.
  - FINAL BACKFILL:** IN-SITU OR IMPORTED BACKFILL CONFORMING TO SUBSECTION M.01.02 UNDER PAVED AREAS AND SUBSECTION M.01.03 UNDER NON-PAVED AREAS OF THE RIDOT STANDARD SPECIFICATIONS.

**TYPICAL STORM DRAIN TRENCH DETAIL  
(FOR RCP AND HDPE PIPE)**  
NOT TO SCALE

**STORM DRAIN AND SEWER PIPE CROSSINGS  
(WHEN 18" OF VERTICAL SEPARATION CANNOT BE MET)**  
NOT TO SCALE



**STONE BOULDER (FOR RETAINAGE OF <30 INCHES)**  
NOT TO SCALE

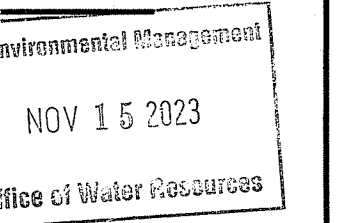


DESIGNED BY: SDA  
CHECKED BY: DEA  
DATE: 10/18/2023  
SHEET: 8  
OF: 10

SCALE: NOT TO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

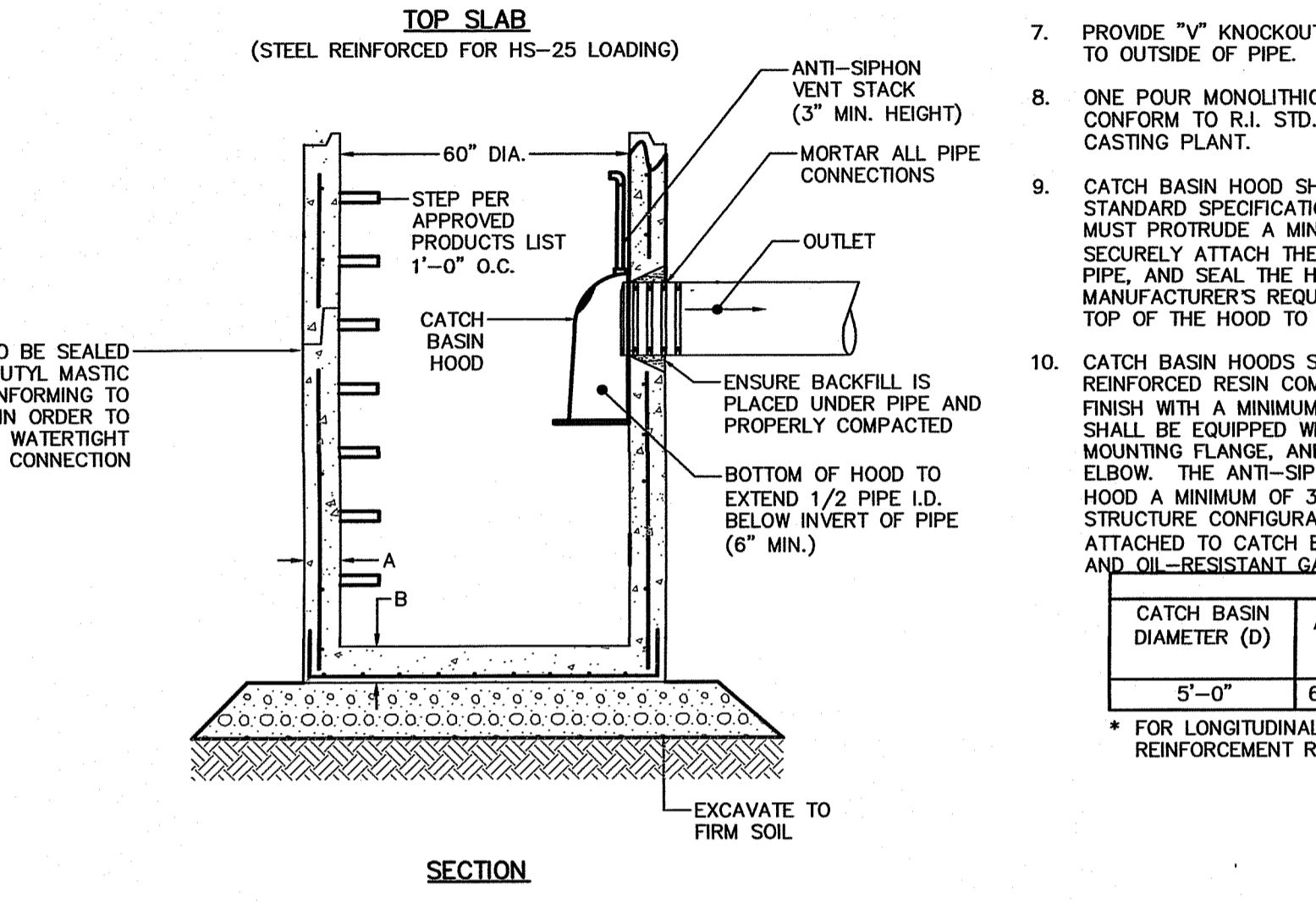
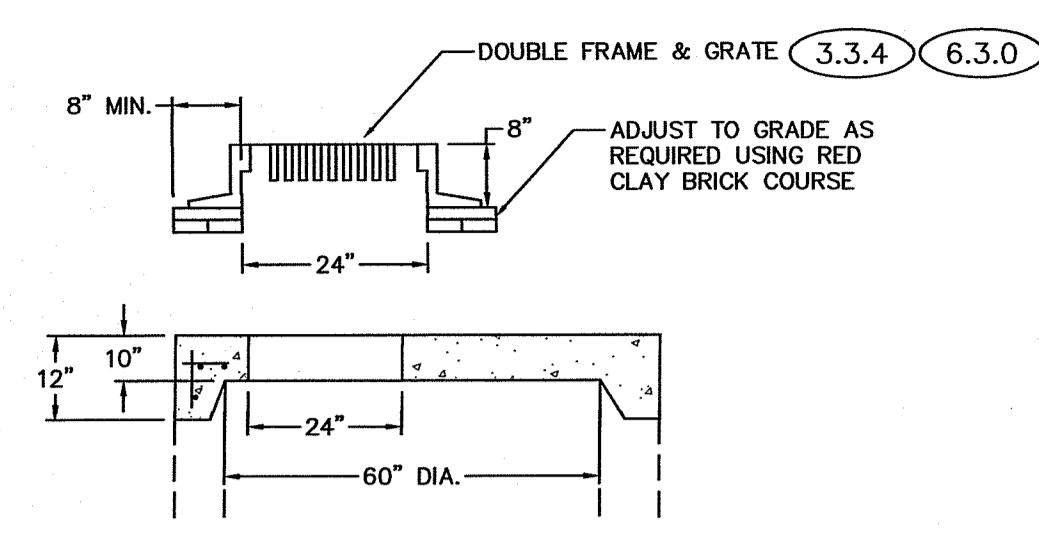
UPPER WOONASQUATUCKET RIVER STU  
SMITHFIELD HIGH SCHOOL  
VOLUME: #  
SMITHFIELD RHODE ISLAND  
DETAILS



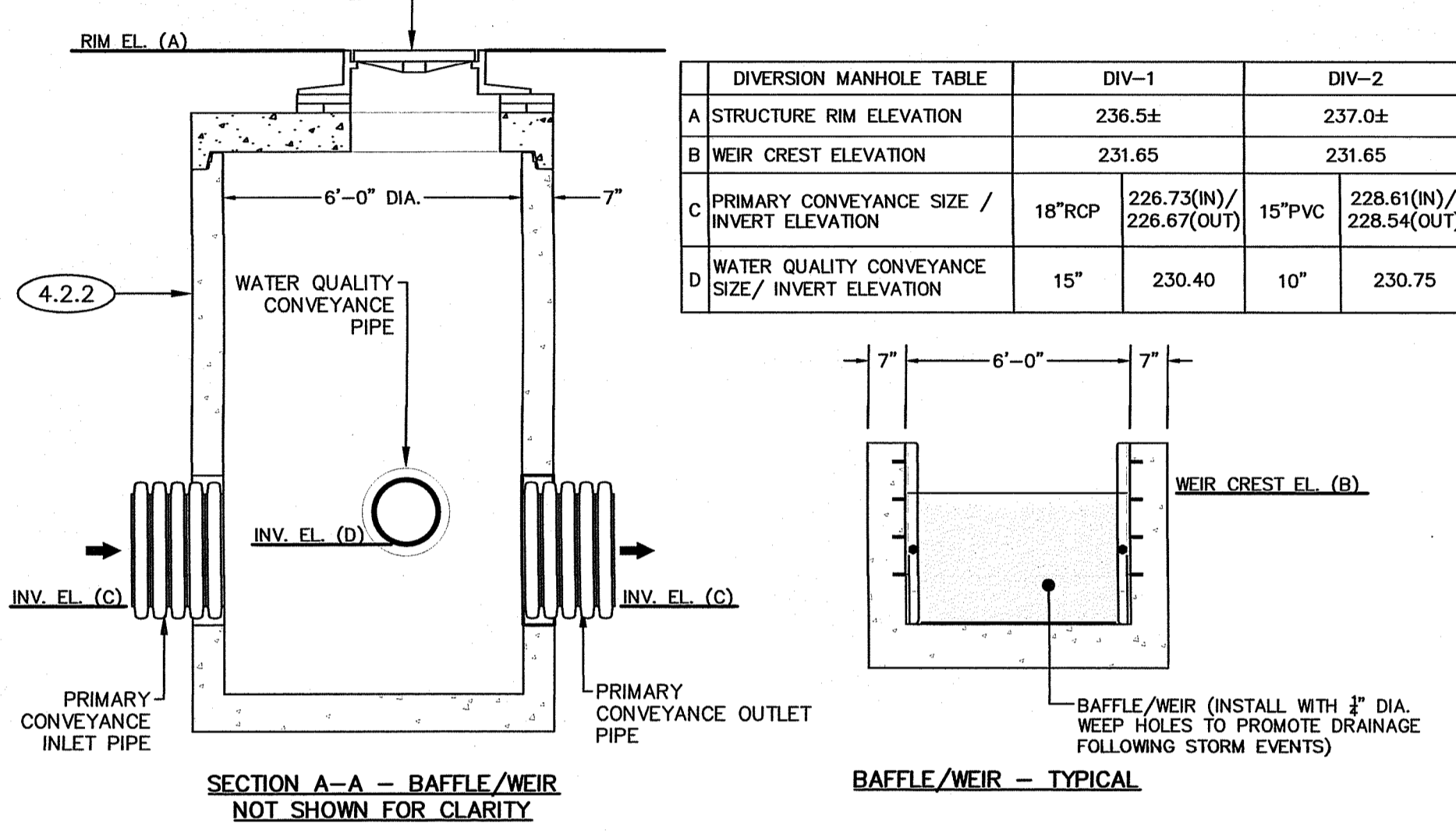
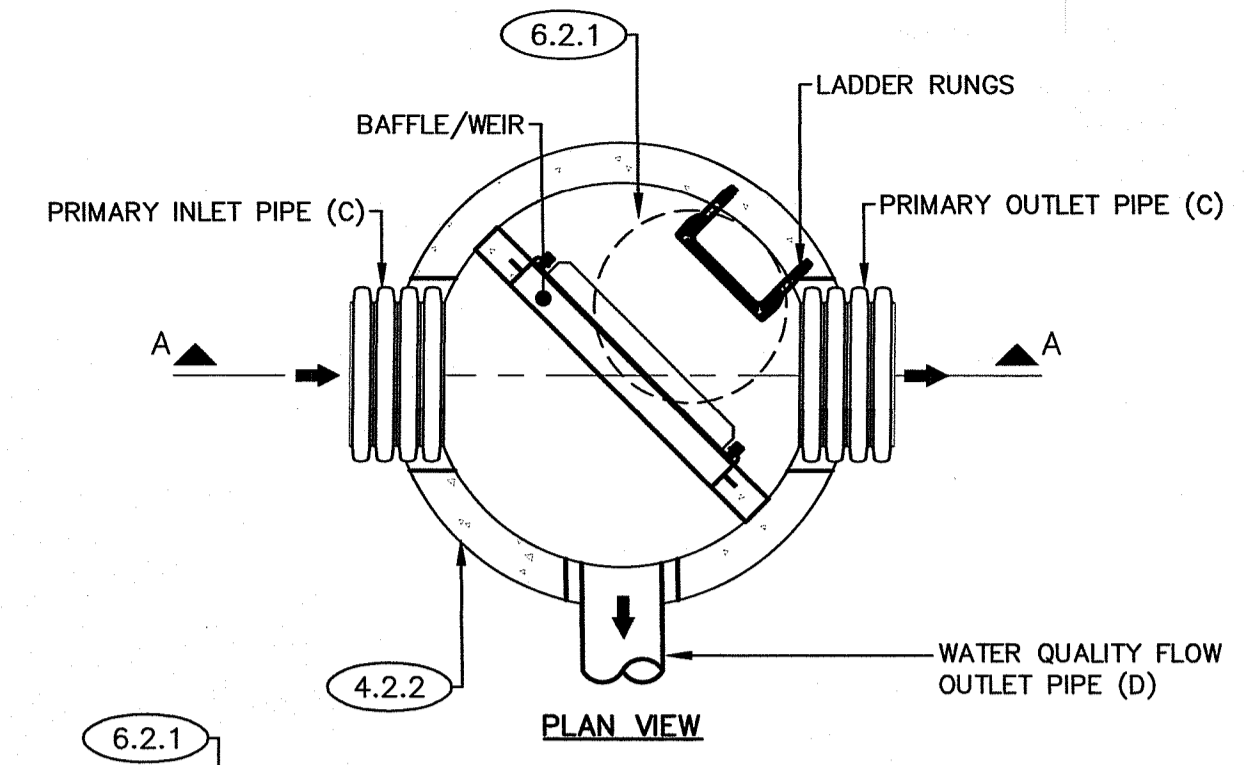
**THIS PLAN SHALL NOT BE ALTERED**

**GENERAL NOTES:**

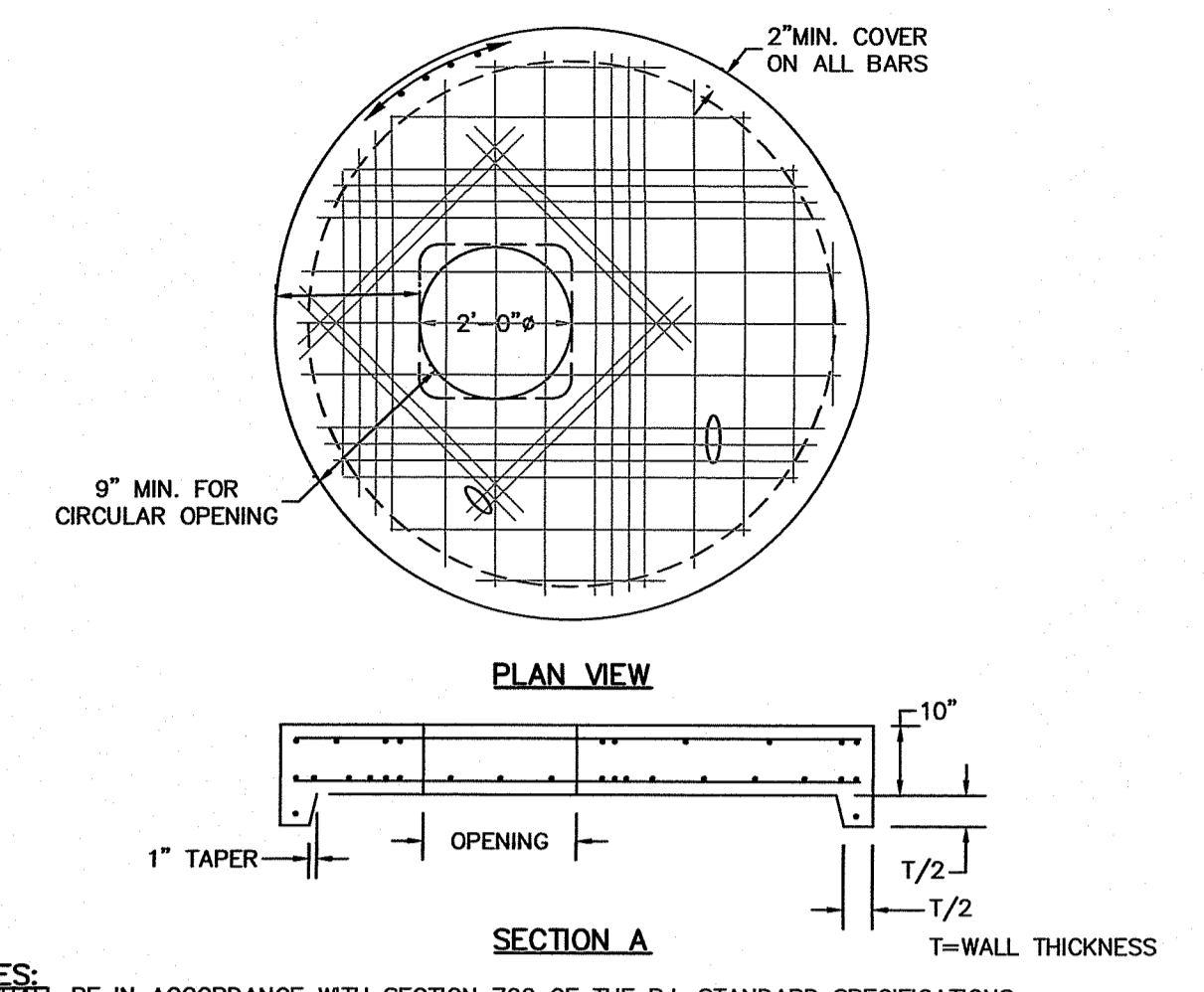
- FOR CATCH BASIN: FRAME TO BE 3-FLANGE WITH 8-INCH HEIGHT, EJ MODEL NO. 0R1544000001 OR APPROVED EQUAL IN ACCORDANCE WITH RIDOT STD. 3.3.4; GRATES TO HAVE SQUARE HOLES, EJ MODEL 0R1552000002 OR APPROVED EQUAL, IN ACCORDANCE WITH RIDOT STD. 6.3.0.
- SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
- SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
- STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS) FOR 4' DIA. BASINS, 0.15 SQ. IN./LIN. FT. (BOTH WAYS) FOR 5' DIA. BASINS, AND 0.18 SQ. IN./LIN. FT. (BOTH WAYS) FOR 6' DIA. BASINS.
- CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI TYPE II CEMENT.
- CATCH BASIN DESIGN SHALL CONFORM TO ASTM C-478 FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
- PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
- ONE POUR MONOLITHIC BASE SECTION. 9. STEPS SHALL CONFORM TO R.I. STD. 5.3.0 AND SHALL BE INSTALLED AT CASTING PLANT.
- CATCH BASIN HOOD SHALL CONFORM TO 701.02.7 OF THE RIDOT STANDARD SPECIFICATIONS. THE DRAINAGE STRUCTURE HOOD MUST PROTRUDE A MINIMUM OF 6 IN. BELOW THE INVERT. SECURELY ATTACH THE HOOD TO THE CATCH BASIN AND/OR PIPE, AND SEAL THE HOOD TO THE STRUCTURE PER THE MANUFACTURER'S REQUIREMENTS. PROVIDE VENT HOLES AT THE TOP OF THE HOOD TO ALLOW AIRFLOW.
- CATCH BASIN HOODS SHALL BE CONSTRUCTED OF GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM OF 0.125" LAMINATE THICKNESS; AND SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE THE HOOD A MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION. THE HOOD SHALL BE SECURELY ATTACHED TO CATCH BASIN WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER.



**DOUBLE GRATE CATCH BASIN WITH HOOD (5' DIAMETER)**  
NOT TO SCALE

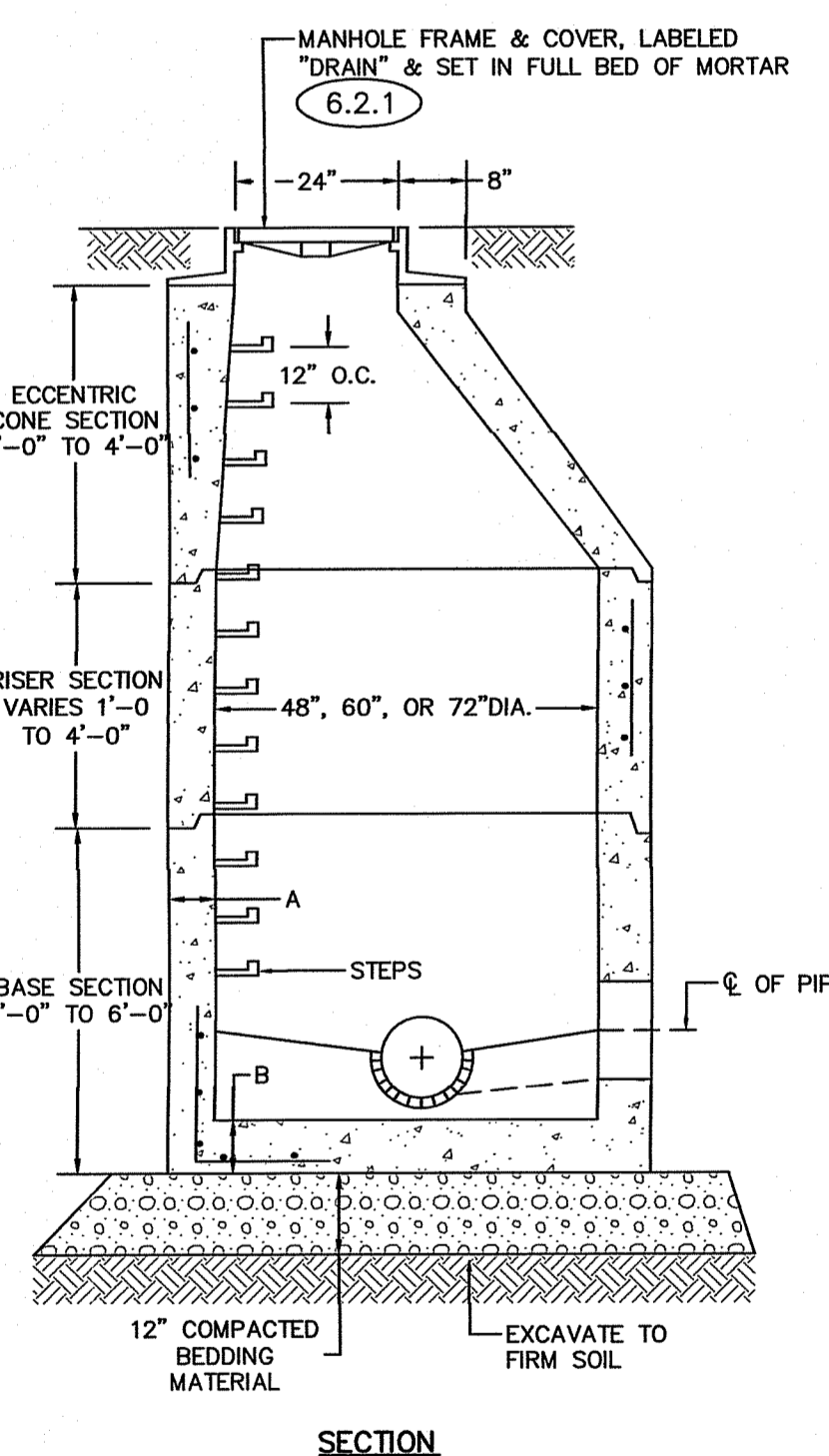


**DIVERSION MANHOLE WITH BAFFLE/WEIR WALL**  
NOT TO SCALE

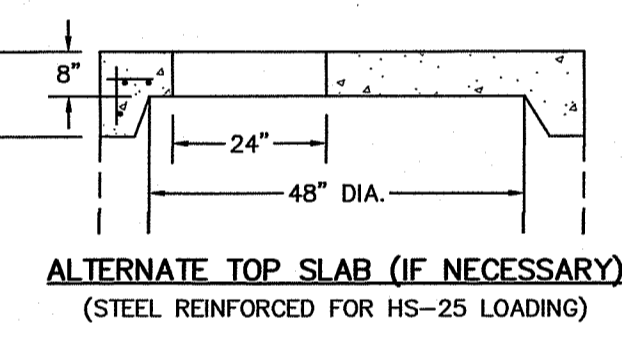


- NOTES:**
- SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
  - ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
  - THE CENTER LINE OF THE OPENING MUST BE WITHIN 2" FROM STEPS.
  - ALTERNATE TOP COVER IS STEEL REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADING WITH EARTH PRESSURE INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
  - ALL REBAR SHALL HAVE A MINIMUM OF 2" CLEARANCE FROM OPENING.
  - ALL REBARS IN THE BOTTOM MAT ARE #5 @ 2", BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO OPENING. THESE BARS SHALL BE (3)-#5 SHOWN WITH A HEAVY LINE FOR CLARITY. REBARS IN THE TOP MAT ARE #5 @ 1'-0", BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE BARS SHALL BE (2)-#5 BARS.

**ALTERNATE TOP COVER FOR ROUND PRECAST MANHOLES AND CATCH BASINS (R.I. STD. 4.7.2)**  
NOT TO SCALE



**PRECAST DRAIN MANHOLE (R.I. STD. 4.2.0, R.I. STD. 4.2.1, OR R.I. STD. 4.2.2)**  
NOT TO SCALE

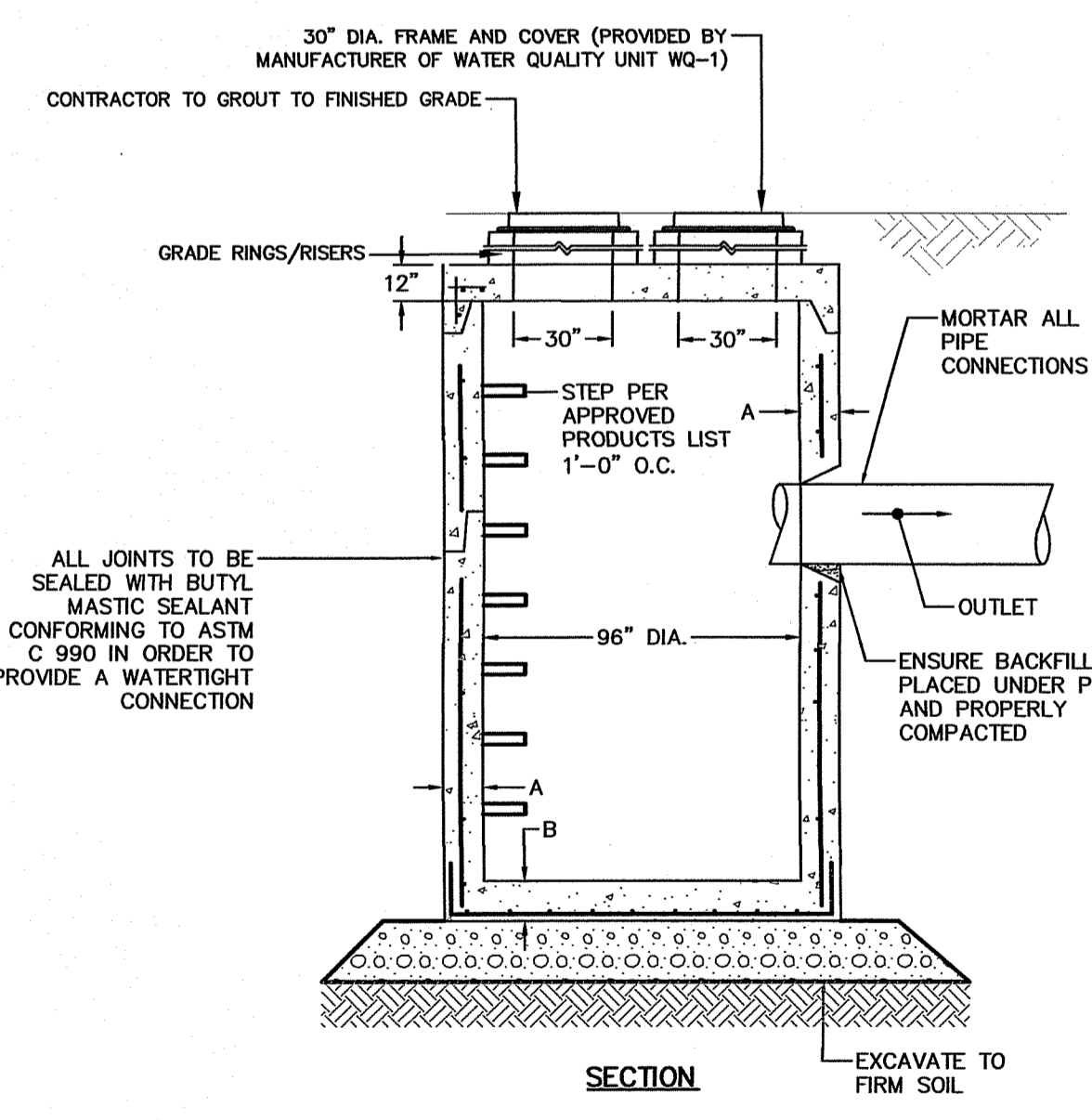


**ALTERNATE TOP SLAB (IF NECESSARY)**  
(STEEL REINFORCED FOR HS-25 LOADING)

- NOTES:**
- FRAME AND COVER TO BE R.I. STD. 6.2.1 OR APPROVED EQUAL. LETTERING: "DRAIN"
  - FRAMES SHALL BE SET IN FULL BED OF MORTAR. ADJUST TO GRADE WITH RED CLAY BRICKS AND MORTAR.
  - REINFORCING STEEL SHALL CONFORM TO ASTM A-185:
    - 0.12 SQ. IN./LIN. FT. CIRCUMFERENTIAL
    - 0.18 SQ. IN./FT. (BOTH WAYS) BASE BOTTOM
  - CONCRETE SHALL BE COMPRESSIVE STRENGTH 4,000 PSI TYPE II CEMENT.
  - ONE POUR MONOLITHIC BASE SECTION.
  - PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
  - JOINT SEALANT SHALL BE PREFORMED BUTYL RUBBER MASTIC TYPE SEAL THAT COMPLIES WITH AASHTO M198 OR SYNTHETIC RUBBER GASKET THAT COMPLIES WITH ASTM C-443 OR C-361.
  - MANHOLE DESIGN SHALL CONFORM TO ASTM C-478 FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
  - MANHOLE STEPS SHALL BE ASTM A 615/A615M, DEFORMED, 1/2-INCH STEEL REINFORCED RODS ENCASED IN ASTM D 4101, POLYPROPYLENE PLASTIC. THE CENTERLINE OF OPENING MUST BE WITHIN 2'-0" FROM STEPS.
  - ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
  - INVERT CONSTRUCTED OF BRICK OR CEMENT CONCRETE, CLASS D.

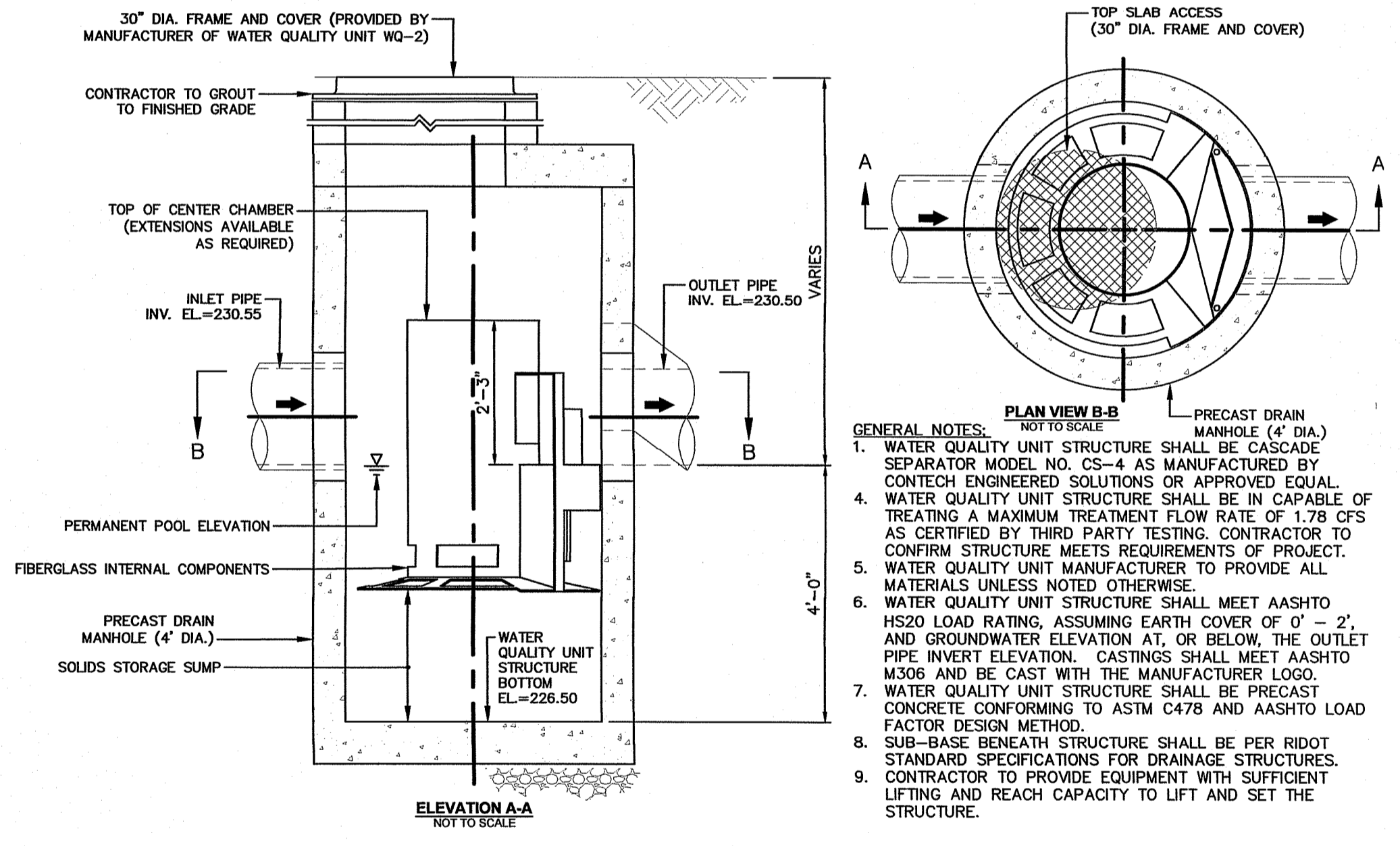
DRAIN MANHOLE DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*
4'-0"	5"	6"	.12 SQ. IN. / LIN. FT.
5'-0"	6"	7"	.15 SQ. IN. / LIN. FT.
6'-0"	7"	8"	.18 SQ. IN. / LIN. FT.

\* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2



**PRECAST DRAIN MANHOLE (8' DIAMETER)**  
NOT TO SCALE

- GENERAL NOTES:**
- STRUCTURE SHALL BE USED FOR WATER QUALITY UNIT 1 (WQ-1).
  - SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
  - STEEL REINFORCEMENT SHALL CONFORM TO ASTM A185 AND SHALL BE 0.18 SQ. IN./LINEAL FOOT AND 0.18 SQ. IN./LIN. FT. (BOTH WAYS) FOR BASE BOTTOM.
  - CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI TYPE II CEMENT.
  - MANHOLE DESIGN SHALL CONFORM TO ASTM C-478 FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
  - PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR AND GROUT ALL PIPE CONNECTIONS.
  - ONE POUR MONOLITHIC BASE SECTION.
  - STEPS SHALL CONFORM TO R.I. STD. 5.3.0 AND SHALL BE INSTALLED AT CASTING PLANT.



**WATER QUALITY UNIT (WQ-2)**  
NOT TO SCALE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN LETTER OF APPROVAL  
DATED: JAN - 9 2024 FILE #: 23-0941  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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

**THIS PLAN SHALL NOT BE ALTERED**

RI Environmental Management  
NOV 15 2023

**f FUSS & O'NEILL**  
146 HARTFORD ROAD  
MANCHESTER, CONNECTICUT 06040  
860.646.2469  
www.fandoo.com

DEAN E. J. UDET  
751  
REGISTERED PROFESSIONAL ENGINEER  
(CIVIL)

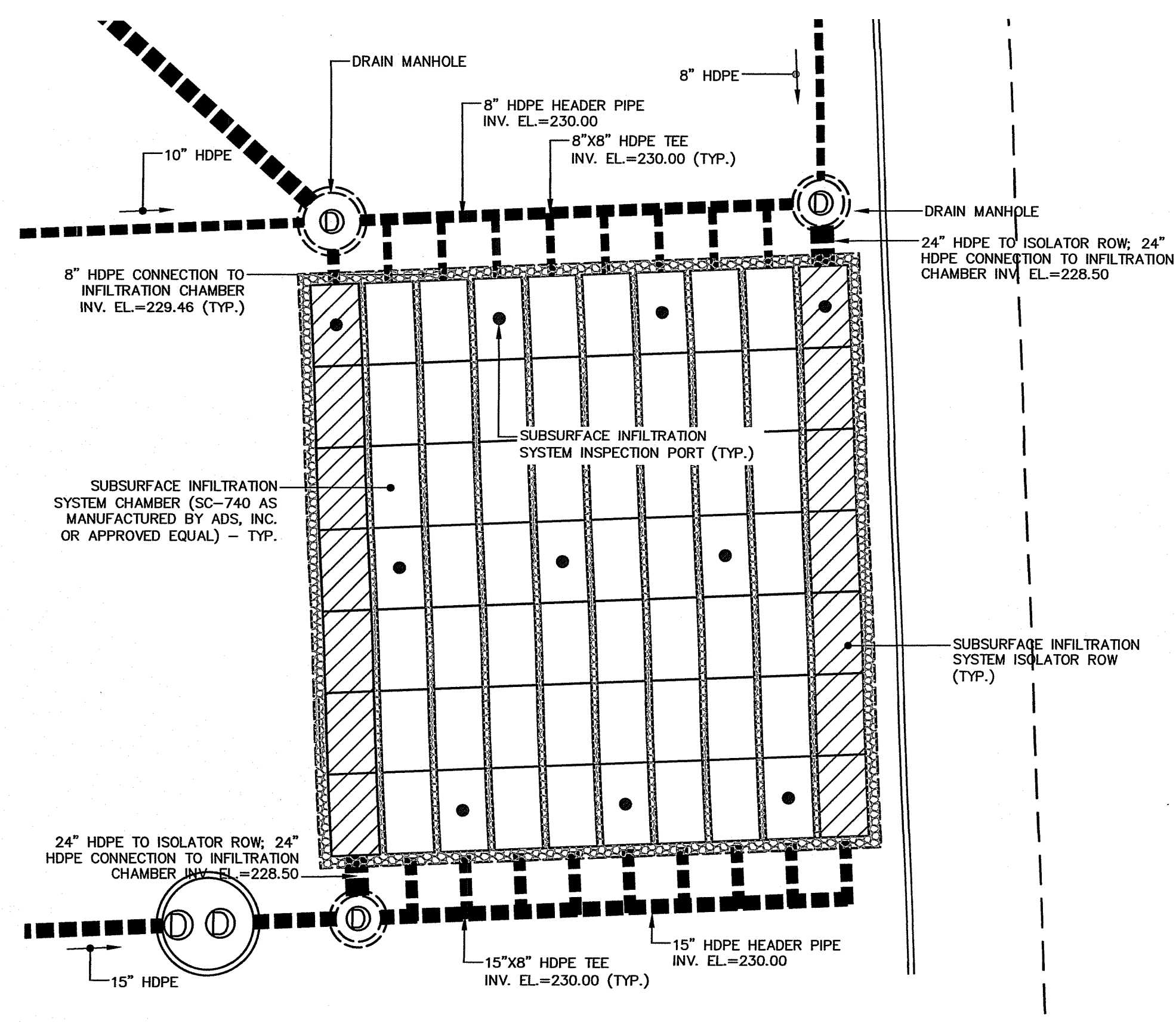
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DESIGNED BY: SDA  
CHECKED BY: DEA  
DATE: 10/18/2023  
SHEET: 9  
OF: 10

SCALE: NOT TO SCALE

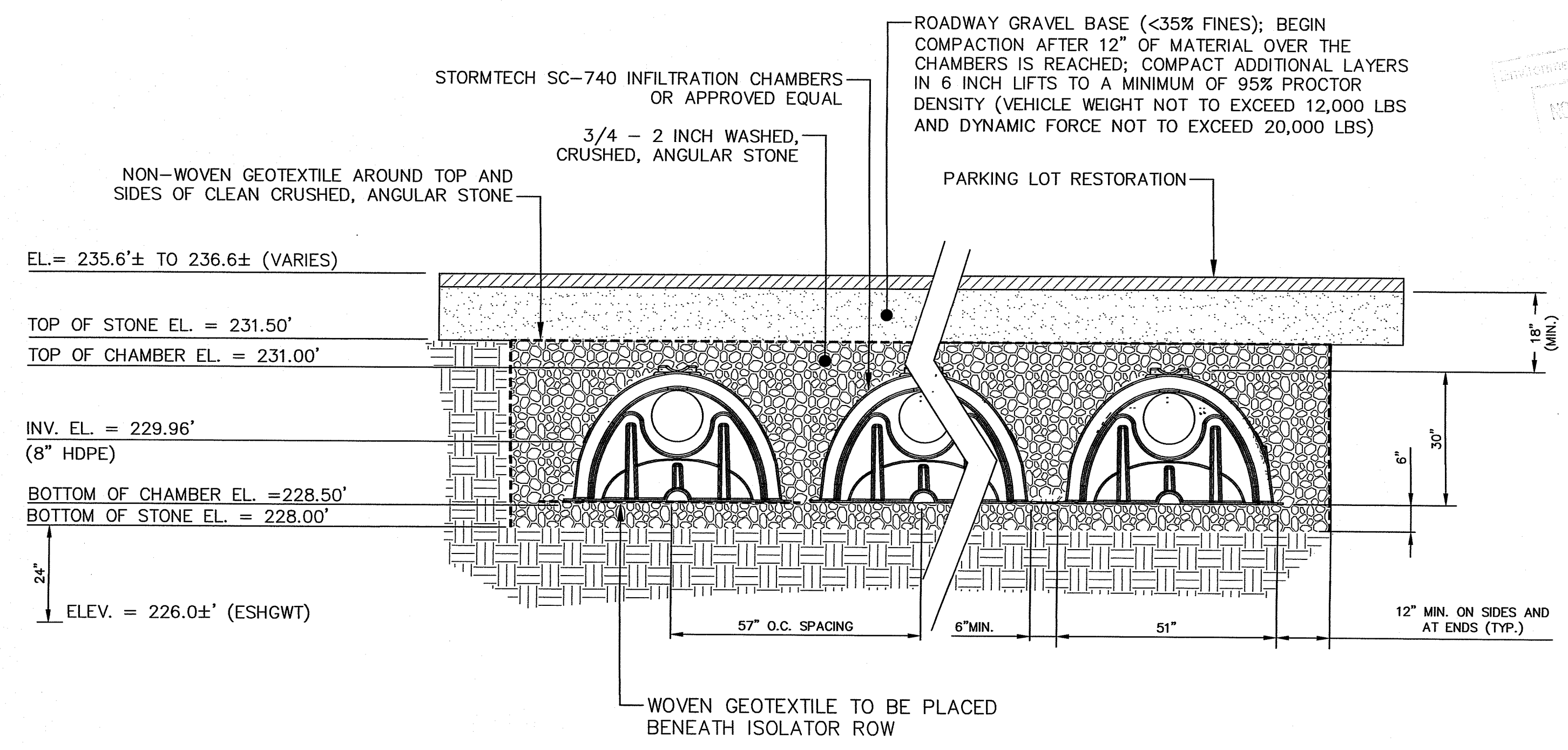
REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

UPPER WOONASQUATUCKET RIVER STUDY  
SMITHFIELD  
VOLUME: #  
RHODE ISLAND  
**DETAILS**

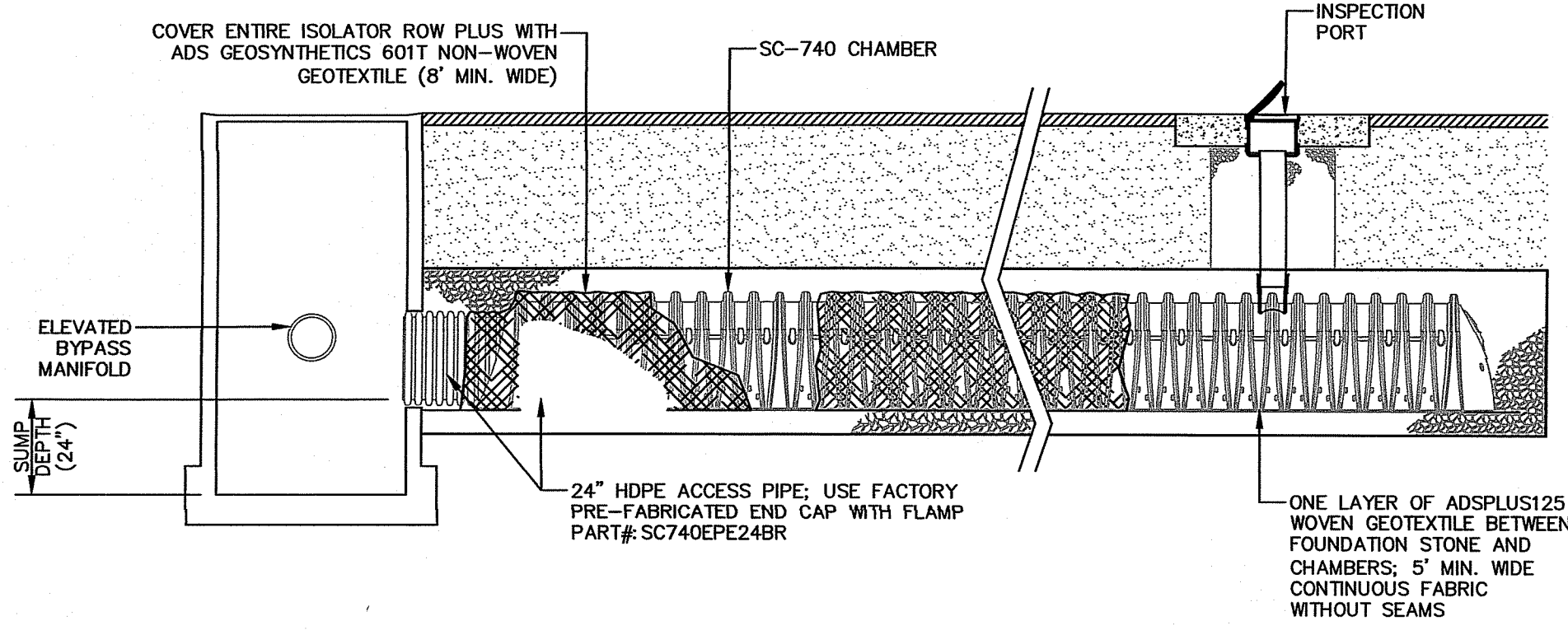


SUBSURFACE INFILTRATION SYSTEM

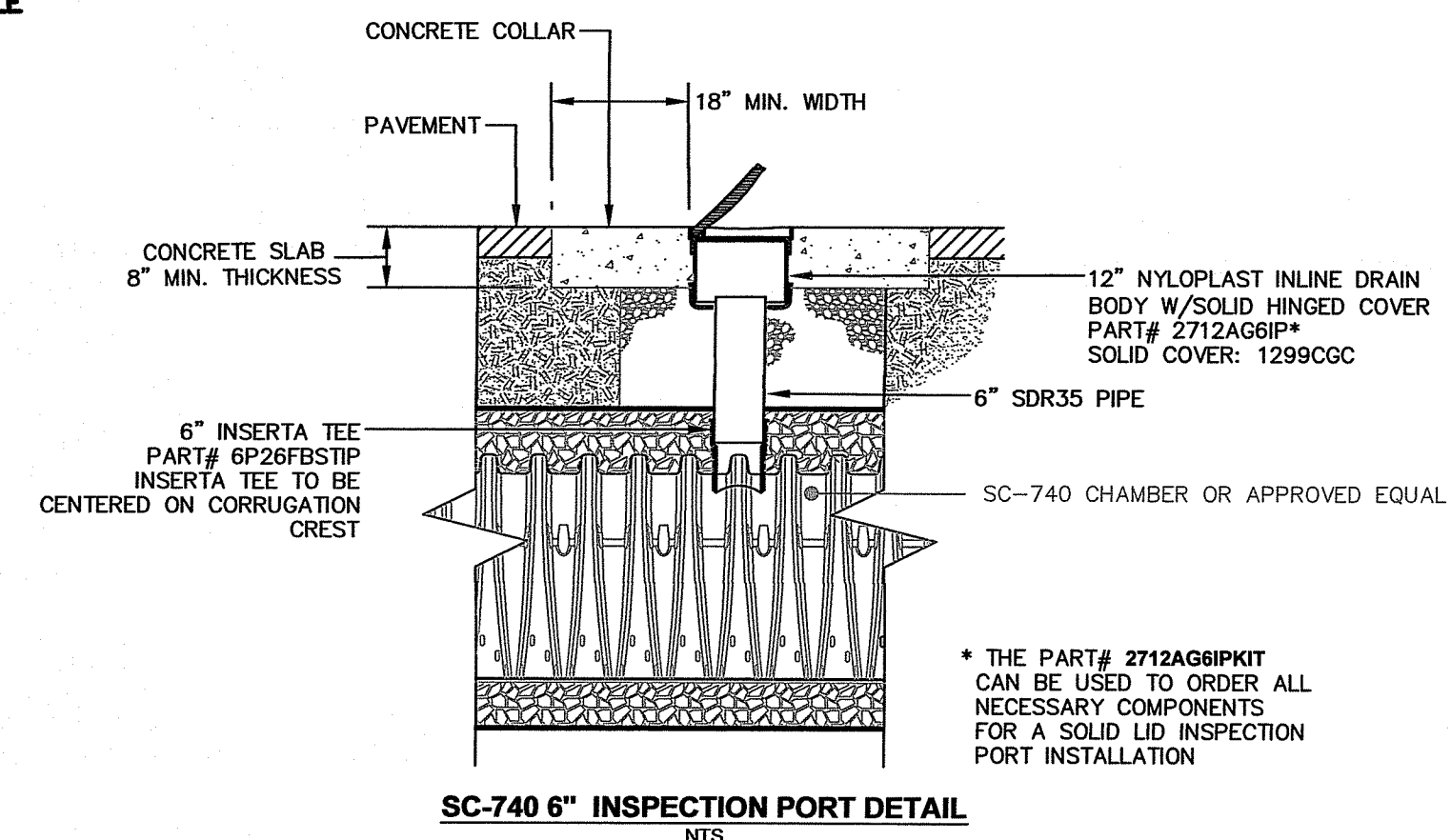
SUBSURFACE INFILTRATION SYSTEM PLAN VIEW  
NOT TO SCALE



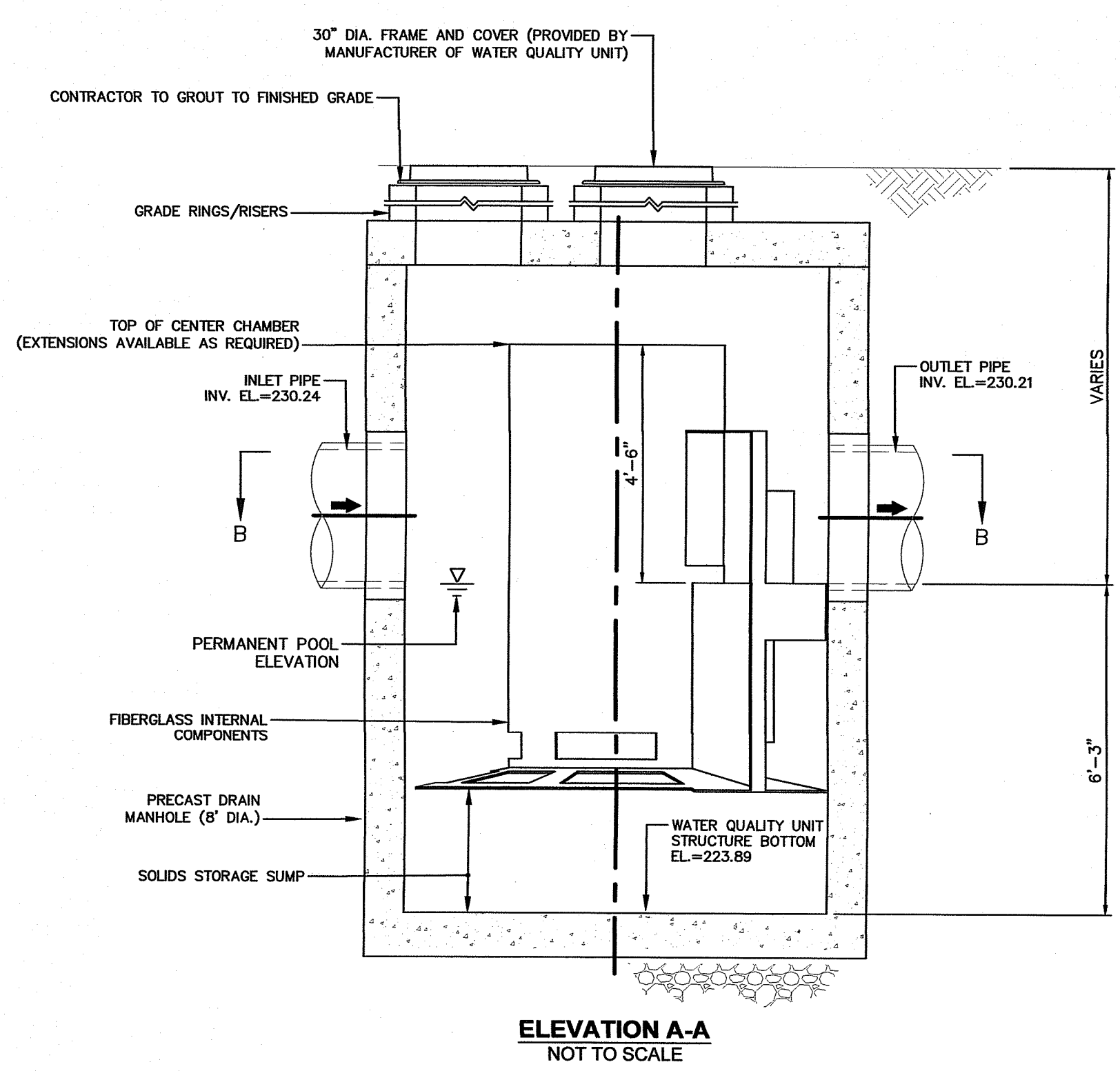
SUBSURFACE INFILTRATION SYSTEM ELEVATION VIEW  
NOT TO SCALE



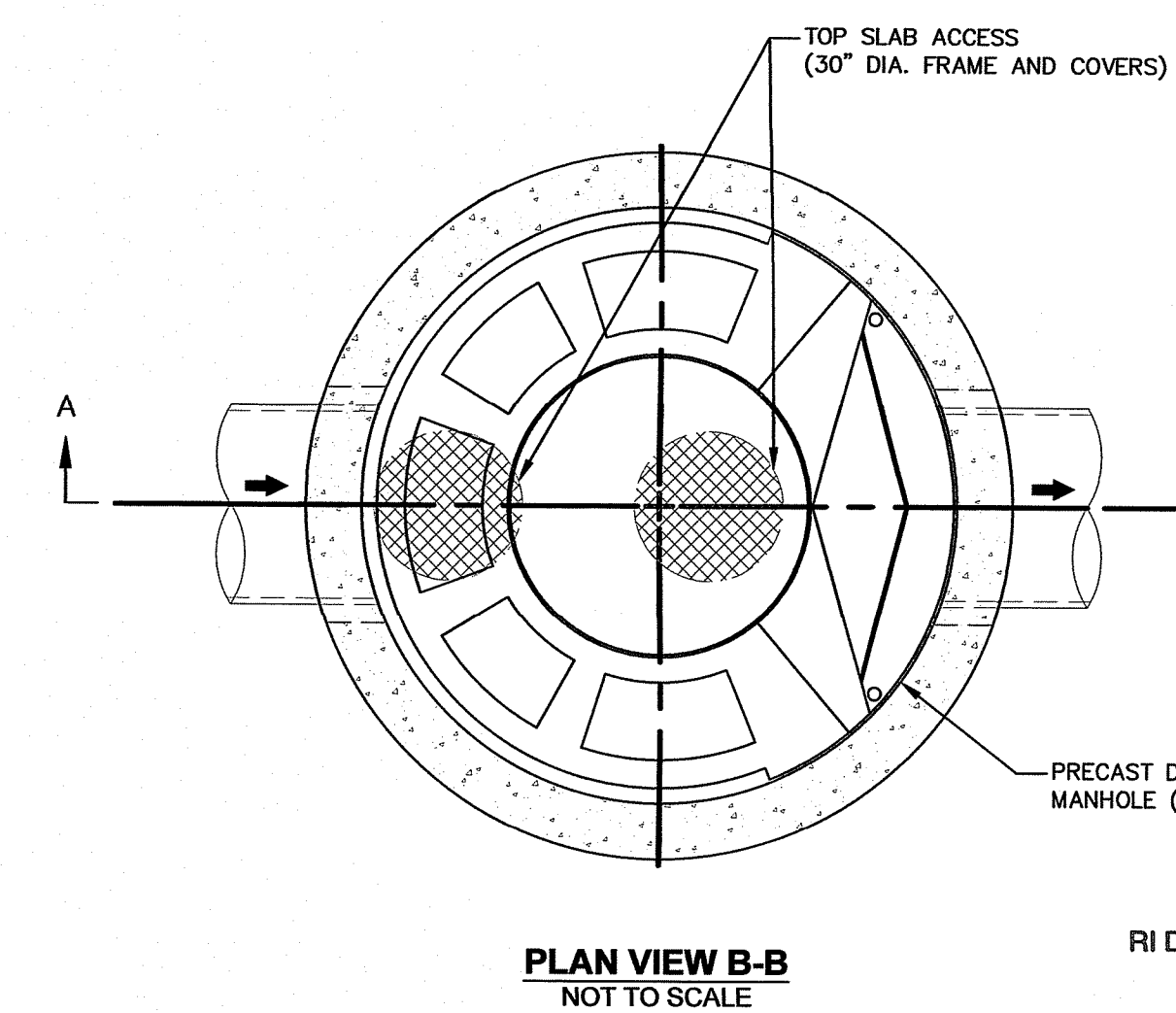
SUBSURFACE INFILTRATION SYSTEM ISOLATOR ROW  
NOT TO SCALE



SUBSURFACE INFILTRATION SYSTEM INSPECTION PORT DETAIL  
NOT TO SCALE



WATER QUALITY UNIT (WQ-1)  
NOT TO SCALE



- GENERAL NOTES:
1. WATER QUALITY UNIT STRUCTURE SHALL BE CASCADE SEPARATOR MODEL NO. CS-8 AS MANUFACTURED BY CONTECH ENGINEER SOLUTIONS OR APPROVED EQUAL.
  2. WATER QUALITY UNIT STRUCTURE SHALL BE IN CAPABLE OF TREATING A MAXIMUM TREATMENT FLOW RATE OF 6.80 CFS AS CERTIFIED BY THIRD PARTY TESTING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
  3. WATER QUALITY UNIT MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
  4. WATER QUALITY UNIT STRUCTURE SHALL MEET AASHTO H20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE MANUFACTURER LOGO.
  5. WATER QUALITY UNIT STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
  6. SUB-BASE BENEATH STRUCTURE SHALL BE PER RIDOT STANDARD SPECIFICATIONS FOR DRAINAGE STRUCTURES.
  7. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.

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

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

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

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: JAN - 9 2024 FILE #: 23-0241  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*[Signature]*

RI Environmental Management  
NOV 15 2023  
Office of Water Resources

THIS PLAN SHALL NOT BE ALTERED

**f**  
**FUSS & O'NEILL**  
146 HARTFORD ROAD  
MANCHESTER, CONNECTICUT 06040  
860.646.2469  
www.fandoc.com

DEAN E. UDET  
75  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**RI**  
**dot**

DESIGNED BY: SDA  
CHECKED BY: DEA  
DATE: 10/18/2023  
SHEET: 10  
OF: 10

SCALE: NOT TO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

UPPER WOONASQUATUCKET RIVER STU  
SMITHFIELD HIGH SCHOOL  
SMITHFIELD  
VOLUME: #  
RHODE ISLAND  
DETAILS