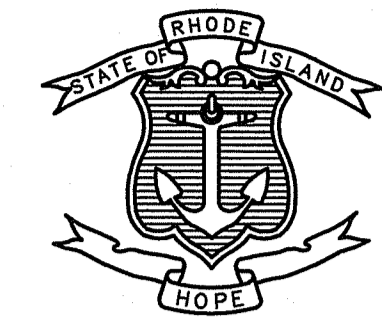


FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	RI	XXX-XXX-XXX	2022	1	28

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STATE OF RHODE ISLAND



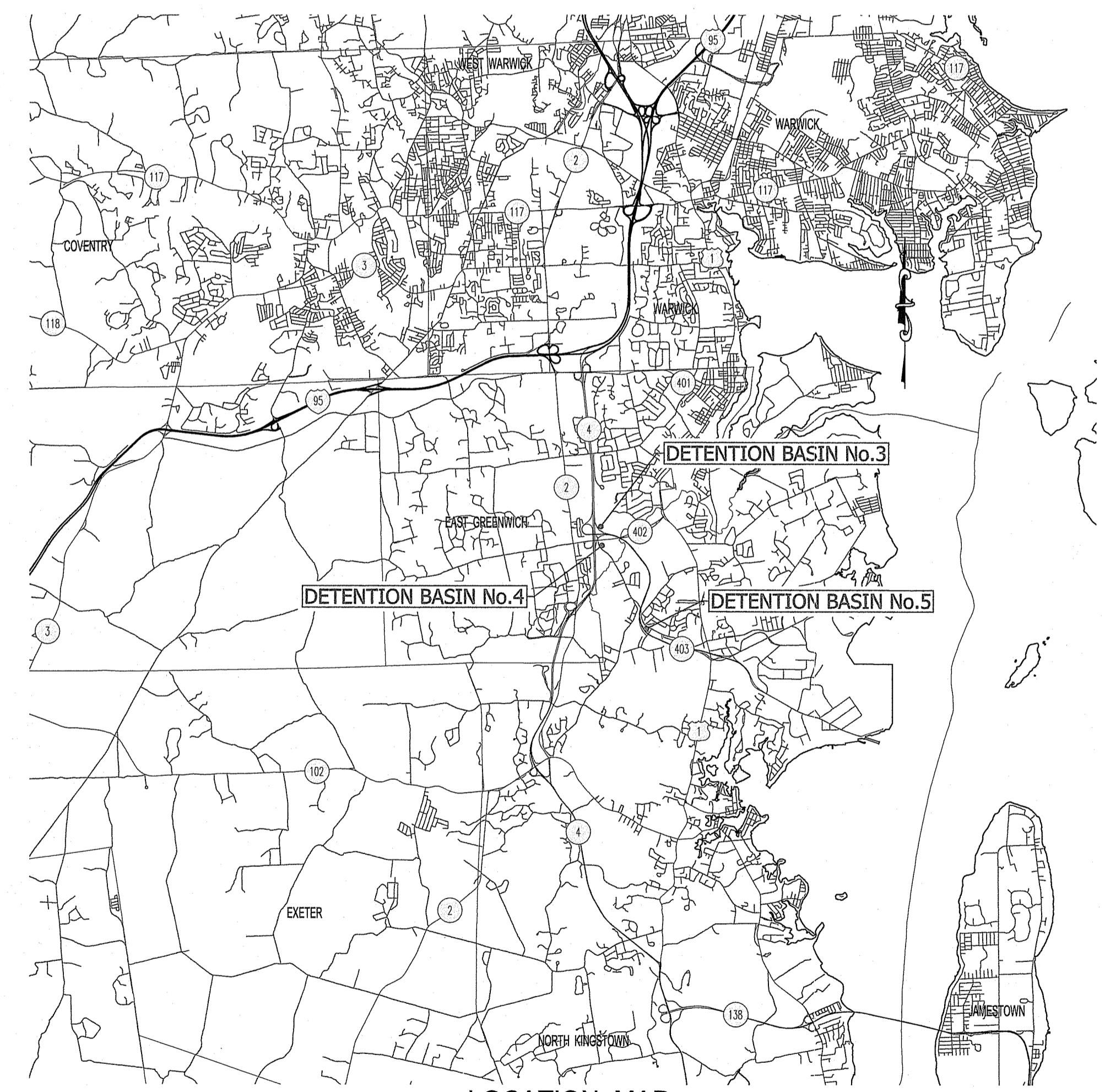
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

RI ROUTE 403 STORMWATER IMPROVEMENTS

EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
KENT & WASHINGTON COUNTY

R.I. CONTRACT NO. 2020-CH-XXX F.A. PROJECT NO. XXX-XXX-XXX



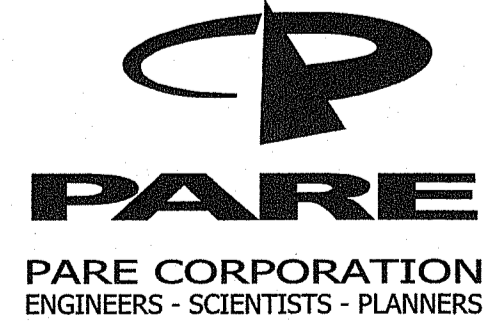
LOCATION MAP  
SCALE: N.T.S.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS  
SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 08 2022 FILE #: 22-0081  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Martin D. Wenzel*

R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS

SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION (AMENDED MARCH 2018), 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.



8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-4100  
10 LINCOLN ROAD, SUITE 210 FOWBROOK, MA 02035 508-549-1755  
14 BOBOLA ROAD, SUITE 2B HOLYOKE, MA 01104 413-307-3448

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

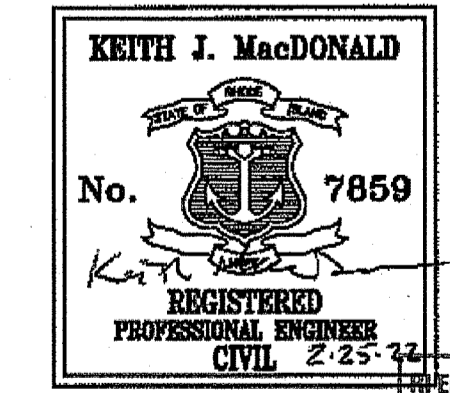
SCALES OF DRAWINGS

PLANS: 1 INCH = 20 FEET

BASE OF LEVELS

VERTICAL DATUM USED: NAVD-88

HORIZONTAL DATUM: RHODE ISLAND STATE PLANE, NAD-83 (2011) (2002.00)



Environmental Management  
MAR 01 2022  
Office of Water Resources

Contract Number 2020-CH-XXX

Number of Sheet 1

Total Sheets 28

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



**GENERAL NOTES:**

1. ANY DAMAGE TO EXISTING PAVEMENT, BRIDGES, CONDUIT, SIDEWALK, FENCES, ETC., CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
2. 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 106.06 OF THE R.I.D.O.T. STANDARD SPECIFICATION, LATEST EDITION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EXISTING CONDITIONS ARE NOT OBLITERATED BEFORE CONTROL POINTS ARE LOCATED AND CONSTRUCTION LAYOUT IS ESTABLISHED. THE CONSTRUCTION LAYOUT SHALL BE PROVIDED IN SUFFICIENT DETAIL, THEREBY ENABLING HIM TO CONSTRUCT THE PROJECT IN CONFORMITY WITH THE PLANS AND SPECIFICATIONS. SURVEY WILL BE PROVIDED BY THE CONTRACTOR. THE RESIDENT ENGINEER WILL NOT AUTHORIZE CONSTRUCTION ACTIVITIES TO BEGIN UNTIL HE IS SATISFIED THAT ALL GROUND CONTROL HAS BEEN ESTABLISHED, TIED DOWN, AND DULY RECORDED IN STANDARD FIELD BOOKS.
4. ALL R.I. STD. 9.9.0 CONSTRUCTION ACCESS ROADS SHALL BE CONSTRUCTED PRIOR TO ANY ROADWAY ACCEPTING CONSTRUCTION TRAFFIC.
5. THE FREQUENCY AND APPLICATION RATES FOR THE DUST CONTROL ITEMS WILL BE AS DIRECTED BY THE ENGINEER.
6. ALL SIDEWALK AND DRIVEWAYS DESIGNATED FOR REPLACEMENT SHALL BE CUT AND MATCHED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
7. ASPHALT EMULSION TACK COAT SHALL BE PLACED PRIOR TO PAVEMENT PLACEMENT ON THE CONCRETE BASE OR COLD PLAINED PAVEMENT, AND ON ANY NEW COURSE WHICH HAS BEEN OPEN TO TRAFFIC, OR ANY NEW COURSE WHICH HAS BEEN EXPOSED FOR MORE THAN 3 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 PAID FOR UNDER THE CONTRACT UNIT BID PRICE FOR CODE 403.0300 "ASPHALT EMULSION TACK COAT."
8. THE LIMITS OF CLEARING AND SURFACE DISTURBANCE MUST 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 HIS 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 WITH THE PERMISSION OF THE ENGINEER.
9. UNDER NO CIRCUMSTANCE WILL THE CONTRACTOR BE ALLOWED TO STOCKPILE REMOVED PAVEMENT MATERIALS WITHIN THE PROJECT LIMITS.
10. 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.
11. PRIOR TO INSTALLATION, ALL SIGNS, MOUNTINGS AND LOCATIONS SHALL BE APPROVED OR MODIFIED BY THE ENGINEER.
12. THE COORDINATE SYSTEM, IF SHOWN, IS THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM.
13. 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 SKI-TYPE DEVICE FOR AUTOMATIC GRADE CONTROL, BUT WILL BE ALLOWED TO MANUALLY ADJUST THE BITUMINOUS PAVER FOR CONTROLLING GRADE.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROADWAYS FREE OF DEBRIS RESULTING FROM THEIR CONSTRUCTION OPERATIONS. ALL DEBRIS SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
15. 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.
16. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT AT THE END OF FINAL PAVING OPERATIONS, FLOW TO EXISTING DRAINAGE STRUCTURES HAS BEEN REESTABLISHED AND THAT NO ISOLATED DEPRESSIONS REMAIN. THERE SHALL BE NO SEPARATE PAYMENT FOR THIS PROVISION; IT SHALL BE CONSIDERED INCIDENTAL TO PAVING AND COLD PLANING OPERATIONS.
17. 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.
18. 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.
19. 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).
20. 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 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).
21. 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.
22. 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:**

1. FOR ALL PROJECTS WITH AT LEAST ONE(1) ACRE OF SOIL DISTURBANCE, R.I.D.O.T. IS REQUIRED TO DEVELOP AND ENFORCE A SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ORDER TO REMAIN IN COMPLIANCE WITH THE RIDPES 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. COPIES OF THESE DOCUMENTS ARE INCLUDED IN THE CS PAGES OF THE CONTRACT DOCUMENTS. ALL COSTS ASSOCIATED WITH ADHERENCE TO THE SWPPP SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND INCLUDED WITH THE COST FOR THE ASSOCIATED BID ITEM(S).
2. NO UNDISTURBED AREAS SHALL BE CLEARED 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 SEED 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 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 RESTABILIZED 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.
3. 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 SEED AND RINGED WITH R.I. STD. 9.1.0 TO STABILIZE.
4. 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. OFFICE OF ENVIRONMENTAL PROGRAMS.
5. JUTE MESH 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.
6. SEEDING ON ALL SLOPES 3 TO 1 OR STEEPER SHALL CONSIST OF THE FOLLOWING APPLICATIONS UNLESS CHANGED IN THE CONTRACT.
  - a. SEEDING TYPE 1.
  - b. ADHESIVE MULCH STABILIZER
7. UNVEGETATED SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR PERIODS IN EXCESS OF 2 WEEKS OR THROUGH THE INACTIVE WINTER SEASON.
8. PRIOR TO DRAINAGE AND UTILITY CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR 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 PRIOR TO DRAINAGE AND UTILITY CONSTRUCTION. WORK CAN COMMENCE ONLY UPON THE ENGINEER'S AUTHORIZATION.
9. ALL DRAINAGE AND UTILITY STRUCTURES WITHIN THE PAVED ROADWAY SHALL BE ADJUSTED TO GRADE WITH THE SURROUNDING PAVEMENT PRIOR TO THE WINTER SHUTDOWN.
10. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING STORMS AND PERIODS OF RAINFALL THROUGHOUT THE WORK AREA.
11. CATCH BASIN RIM GRADES 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.
12. PROVISIONS FOR CLEARING TO ACCESS OUTFALLS DURING THE CLEANING AND FLUSHING OF THE CLOSED DRAINAGE SYSTEM SHALL BE KEPT TO A MINIMUM.
  - a. ANY VEGETATIVE CLEARING SHALL BE LIMITED TO BRUSH AND TREES LESS THAN 3" DIAMETER.
  - b. NO HEAVY EQUIPMENT MAY ENCRoACH UPON VEGETATED PERIMETER OR RIVERBANK WETLANDS AS WELL AS BIOLOGICAL WETLANDS.
13. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL DEVICES FOR OUTLET PROTECTION PRIOR TO CLEANING AND FLUSHING STORM WATER DRAINAGE. 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.
14. R.I. STD. 9.8.0 BALED HAY 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.
15. WHERE BALED HAY 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):**

16. 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 ELIMINATED, FINAL ROADSIDE VEGETATION IS ESTABLISHED AND USE OF TEMPORARY BASINS IS NO LONGER REQUIRED AS DIRECTED BY THE ENGINEER. 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 REQUIRED TO RESOLVE SUCH ISSUES SHALL BE COMPLETED BY THE CONTRACTOR.
17. 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.
18. 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.
19. ALL HAY 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.
20. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE STATE.
21. THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE SPECIFIED IN SUBSECTION L.02.03 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
22. ADDITIONAL EROSION CONTROLS, SHALL BE INSTALLED AS DIRECTED BY THE RESIDENT ENGINEER. THESE ADDITIONAL ITEMS WILL BE PAID AT THE UNIT PRICE FOR THAT BID ITEM.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
00	RI		2022	3	28

**UTILITY NOTES:**

1. 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.
2. 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 TO NOTIFY ALL UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN 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.
3. ALL EXISTING UTILITIES TO BE ABANDONED SHALL BE CAPPED.
4. EXISTING WATER SERVICES SHALL BE RECONNECTED TO THE NEW WATER MAINS.
5. UTILITY SERVICE CONNECTIONS SHALL BE MAINTAINED TO ALL EXISTING FACILITIES TO REMAIN.
6. FIRE HYDRANTS SHALL NOT BE REMOVED FROM SERVICE WITHOUT WRITTEN AUTHORIZATION FROM THE FIRE DEPARTMENT OR THE WATER AUTHORITY.
7. ALL NEW WATER LINES SHALL BE DISINFECTED TO THE SATISFACTION OF THE WATER AUTHORITY IN ACCORDANCE WITH THE SPECIFICATIONS.
8. ALL UTILITY POLE RELATED WORK SHALL BE BY OTHERS.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
 SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: APR 08 2022 FILE # 22-0091  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Justin D. Wamack*

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

Environmental Management  
 MAR 01 2022  
 Office of Water Resources



RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 3  
 OF: 28

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	4/07	TRB			
2	3/10	RBH			
3	4/14	MLP			

RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND

**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.
- A R.I.D.O.T. LANDSCAPE REPRESENTATIVE MUST BE ON SITE TO APPROVE 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.

**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, OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (THE "SPECIFICATIONS"), 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.
- 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 DELAY 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.
- A BARE 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 SHALL BE 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 NOT FLAGPERSONS) SHALL BE UTILIZED WHEN WORK WILL IMPACT SIGNALIZED INTERSECTIONS AND LIMITED ACCESS HIGHWAYS.
- 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 30' 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. WATERBORNE 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.

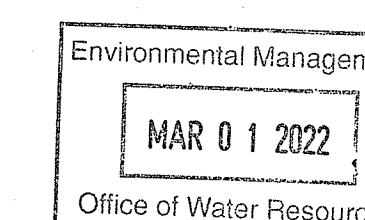
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 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS  
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*Justin D. Wenzel*

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 DEPARTMENT OF TRANSPORTATION

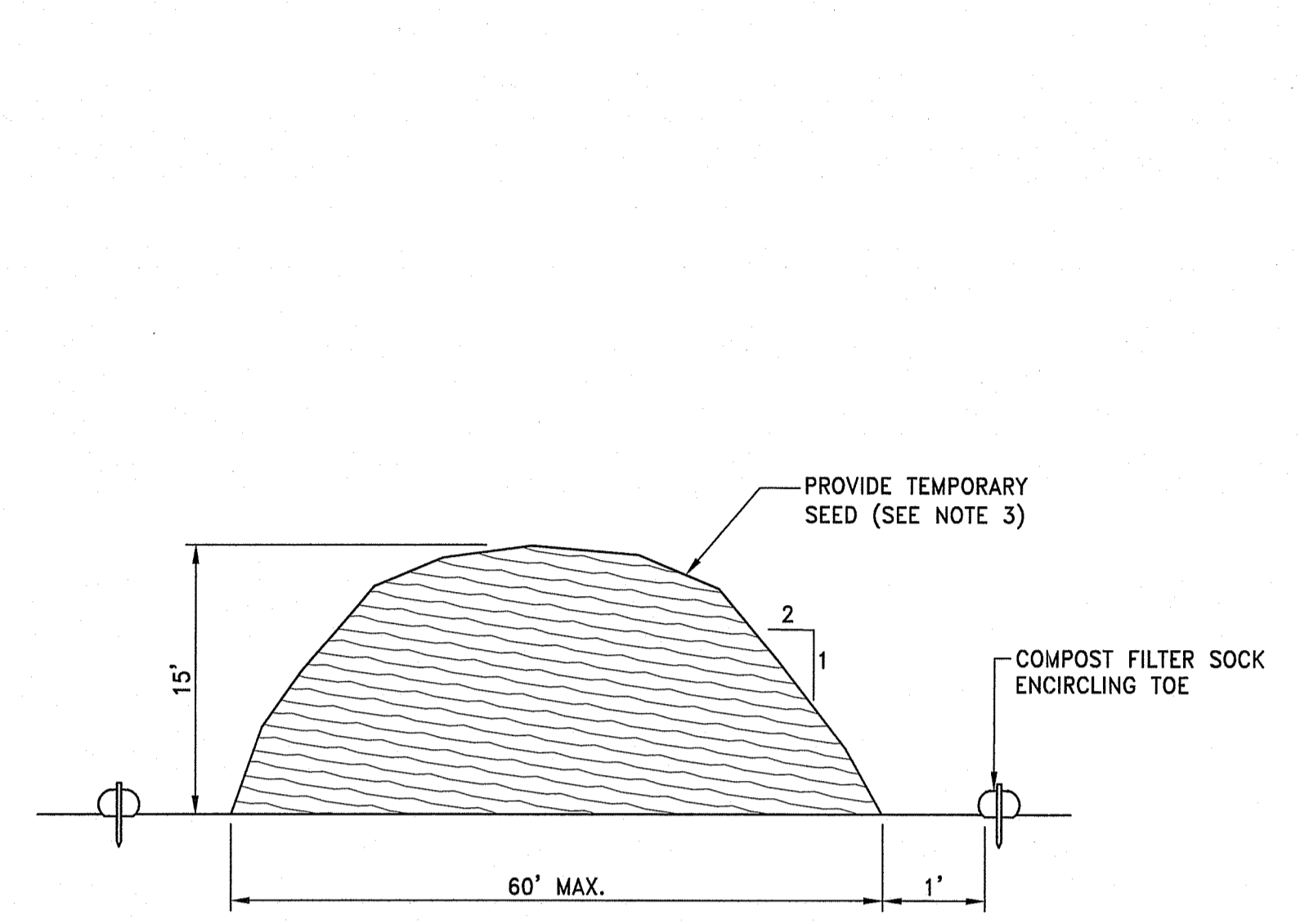
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RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND

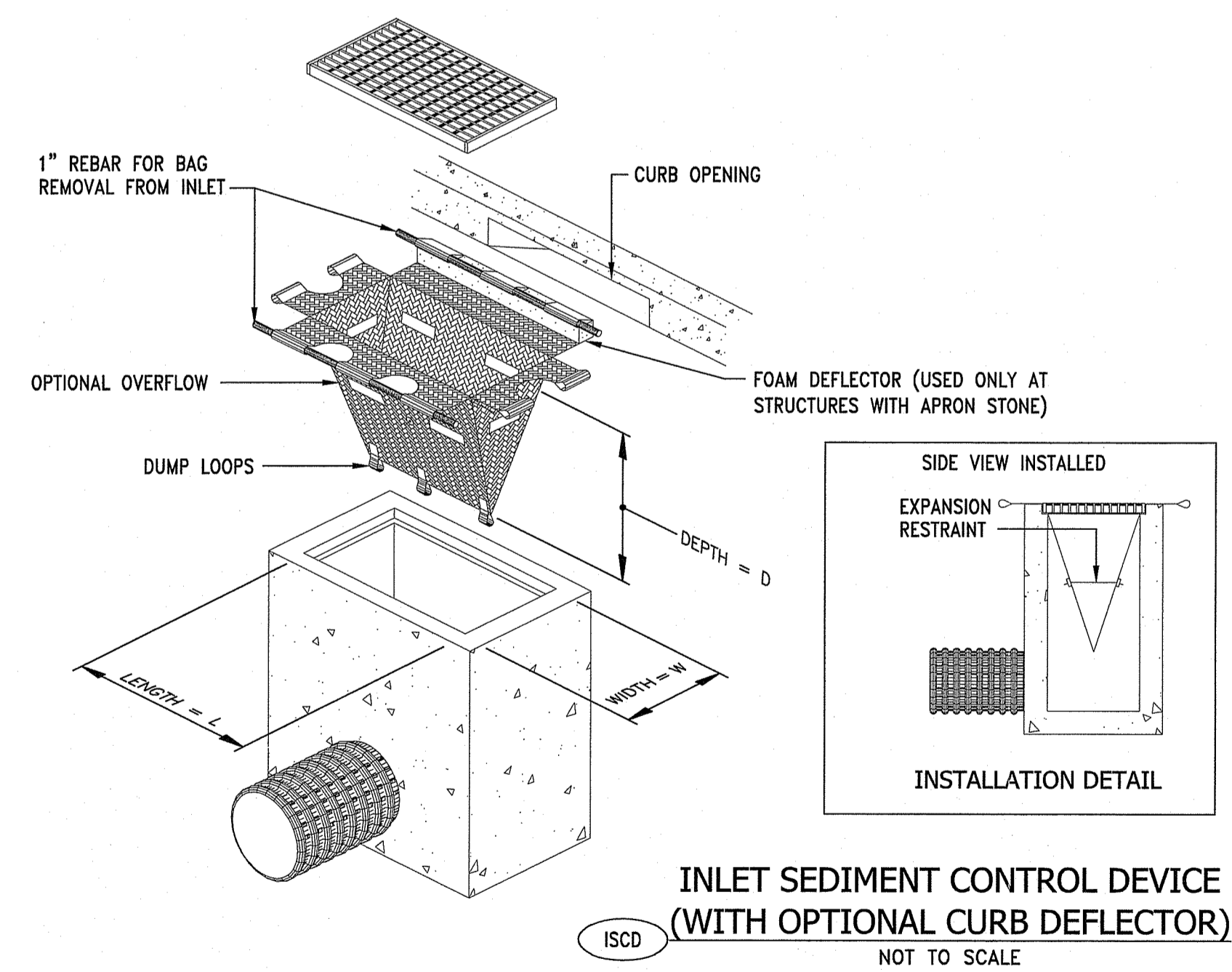
STANDARD NOTES - 2



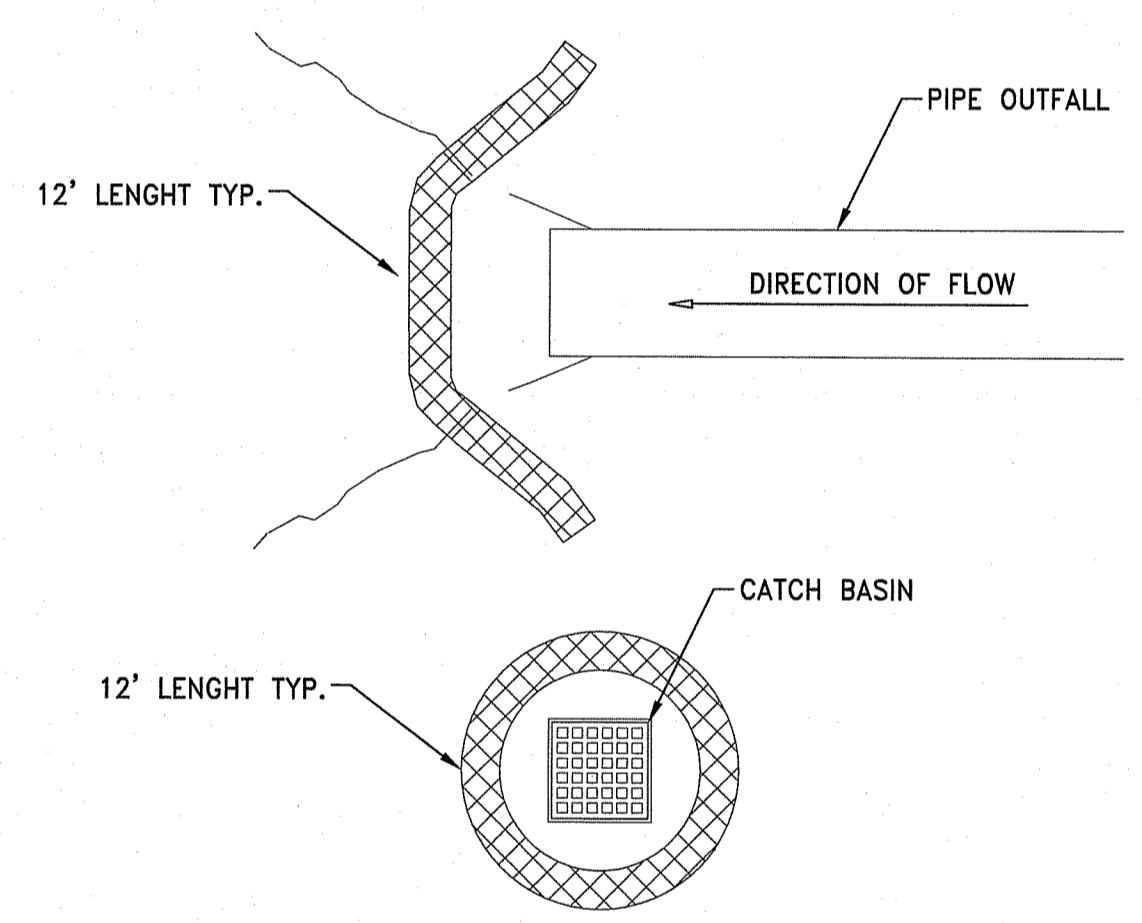
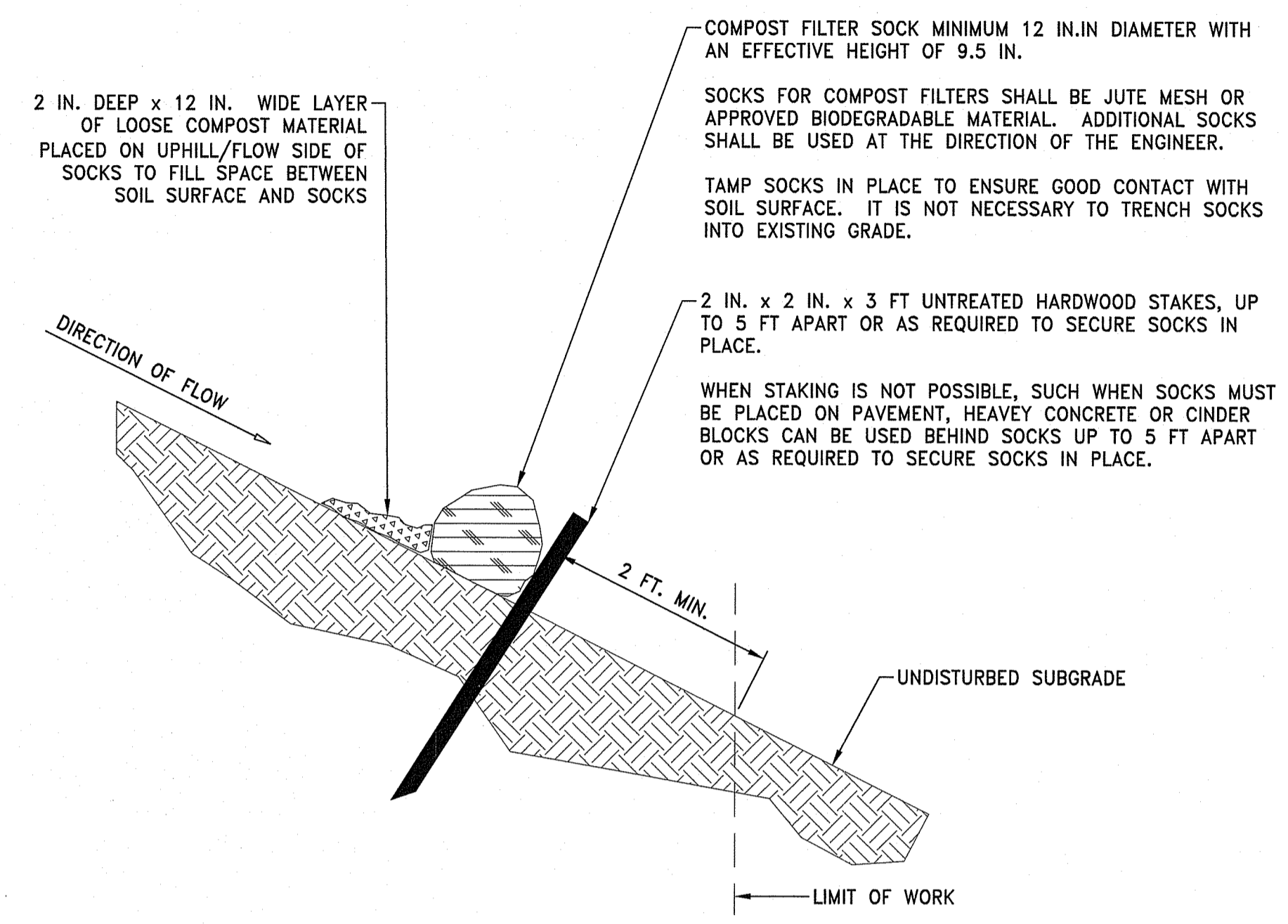


- NOTES:**
1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE PROPOSED LOCATION OF ALL STOCKPILE AREAS.
  2. STOCKPILE AREA SHALL NOT EXCEED SPECIFIED DIMENSIONS WITHOUT APPROVAL FROM ENGINEER.
  3. STOCKPILED ERODIBLE MATERIAL THAT WILL NOT BE USED FOR GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEED IMMEDIATELY FOLLOWING PLACEMENT.

**ERODIBLE MATERIAL STOCKPILE**  
NOT TO SCALE

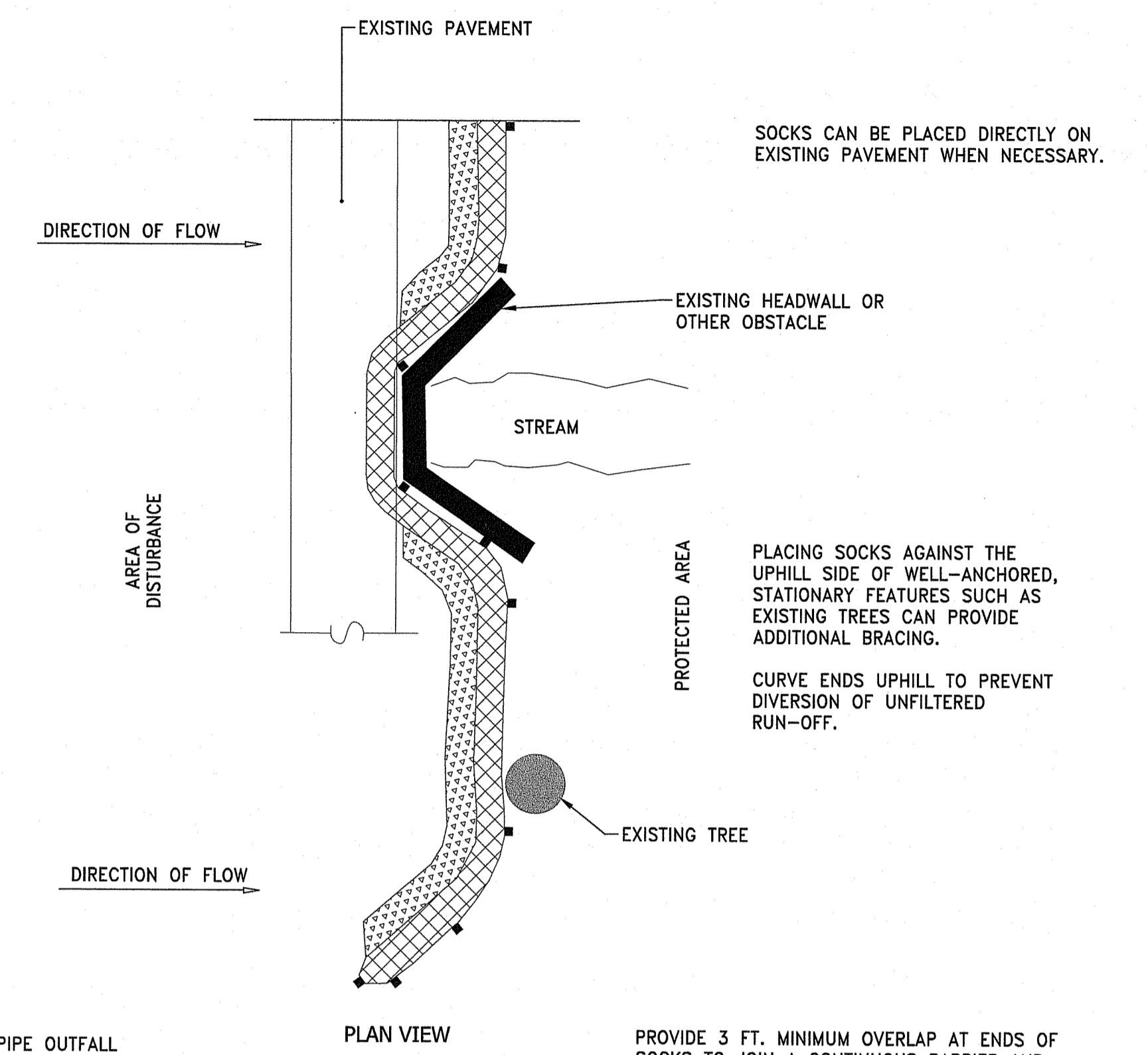


**INLET SEDIMENT CONTROL DEVICE (WITH OPTIONAL CURB DEFLECTOR)**  
ISCD NOT TO SCALE

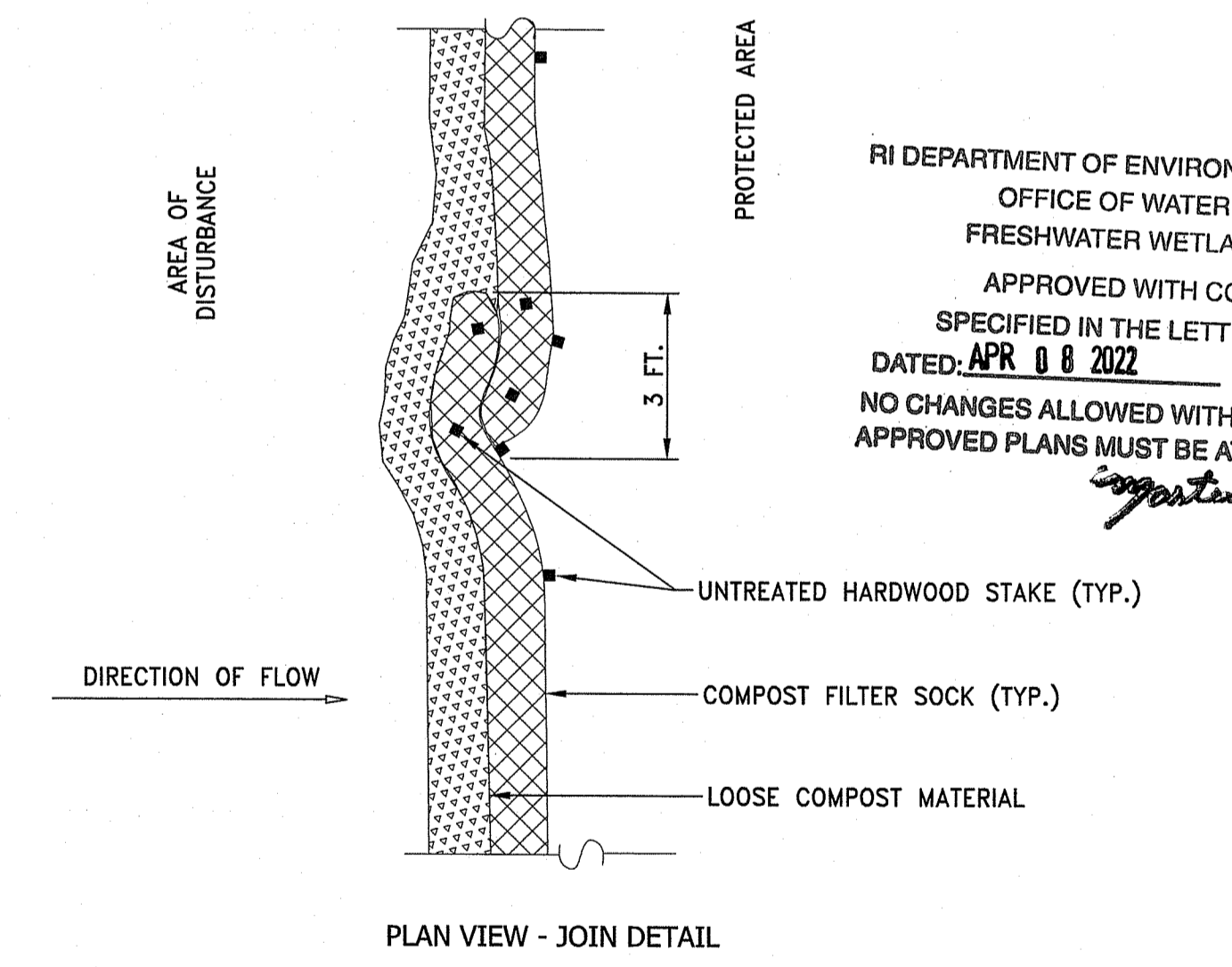


- NOTES:**
1. PROVIDE A MINIMUM SOCK DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER SOCK DIAMETER OR ADDITIONAL COURSING OF FILTER SOCKS TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
  2. INSTALL SOCKS ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
  3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
  4. CONFIGURE SOCKS AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

**CFS COMPOST FILTER SOCK DETAIL**  
NOT TO SCALE



- SOCKS CAN BE PLACED DIRECTLY ON EXISTING PAVEMENT WHEN NECESSARY.
- PLACING SOCKS AGAINST THE UPHILL SIDE OF WELL-ANCHORED, STATIONARY FEATURES SUCH AS EXISTING TREES CAN PROVIDE ADDITIONAL BRACING.
- CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.
- PROVIDE 3 FT. MINIMUM OVERLAP AT ENDS OF SOCKS TO JOIN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING SOCKS SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.
- SECURE ENDS OF SOCKS WITH STAKES SPACED 18 IN. APART THROUGH TOPS OF SOCKS.



**PLAN VIEW - JOIN DETAIL**

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*Stephen D. Wasek*

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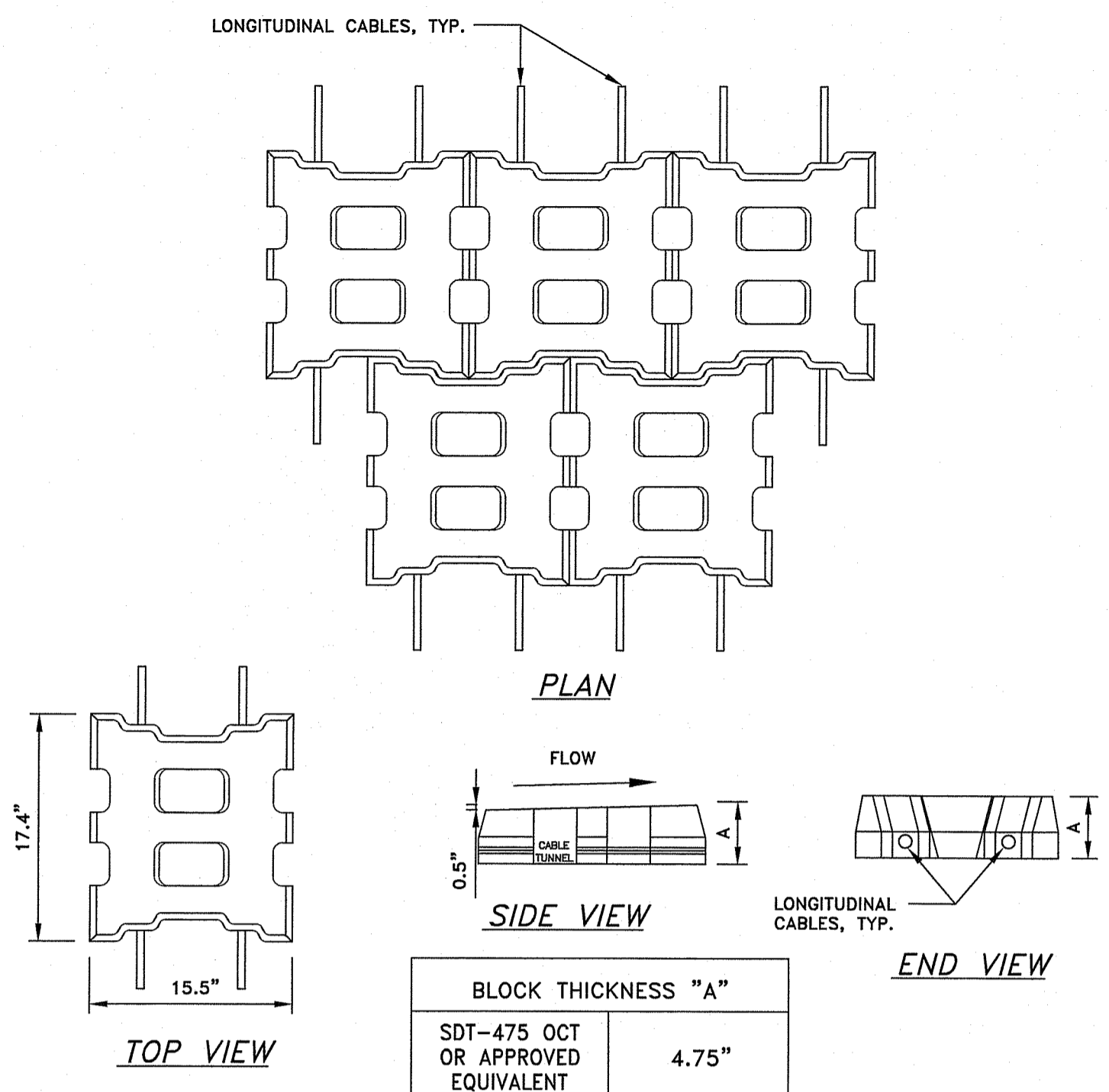
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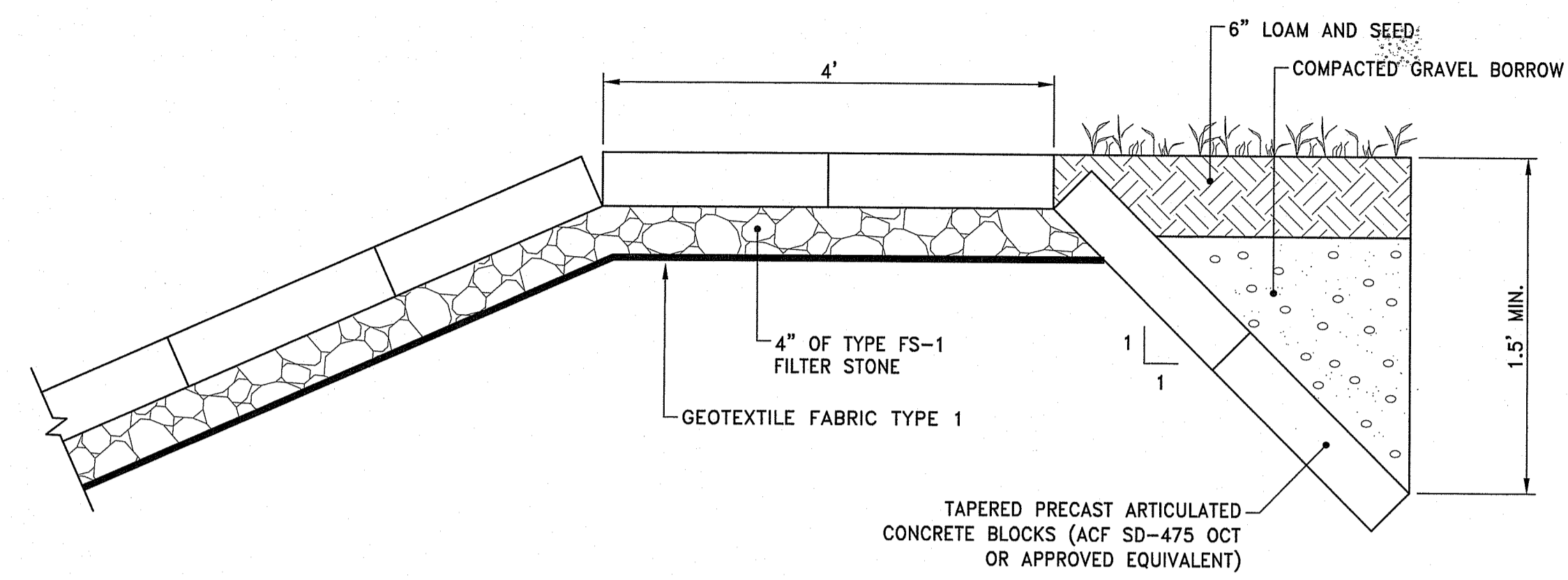
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**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
EAST GREENWICH & NORTH KINGSTOWN  
RHODE ISLAND  
**SEDIMENT AND EROSION CONTROL DETAILS**



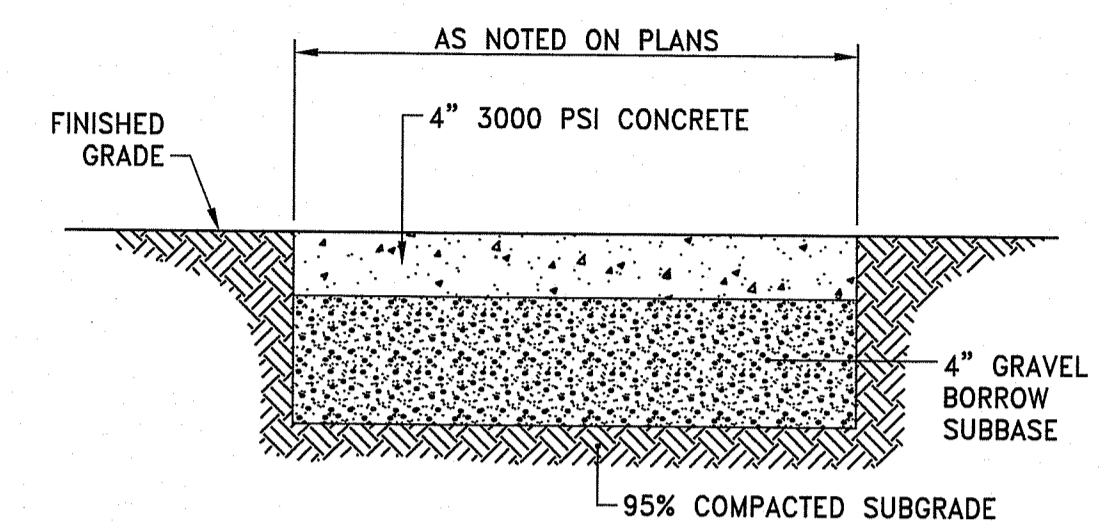
**ARTICULATED CONCRETE BLOCKS**  
NOT TO SCALE

**NOTE:**  
PRECAST ARTICULATED CONCRETE BLOCK VOIDS SHALL BE FILLED WITH FILTER STONE AND CRUSHED STONE SHALL BE SWEEPED INTO THE JOINTS BETWEEN BLOCKS, FLUSH WITH THE TOP OF THE BLOCKS, OVER THE ENTIRE SURFACE, TO PROVIDE A TIGHT STABLE INSTALLATION.



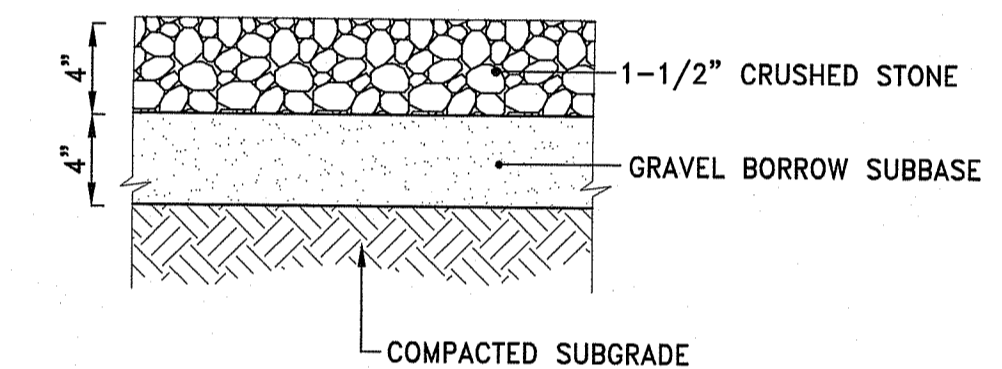
**NOTE:**  
1. ANCHOR TRENCH SHALL BE PROVIDED AT DOWNSTREAM END OF ARTICULATED PAVERS.

**ARTICULATED CONCRETE BLOCKS ANCHOR DETAIL**  
NOT TO SCALE

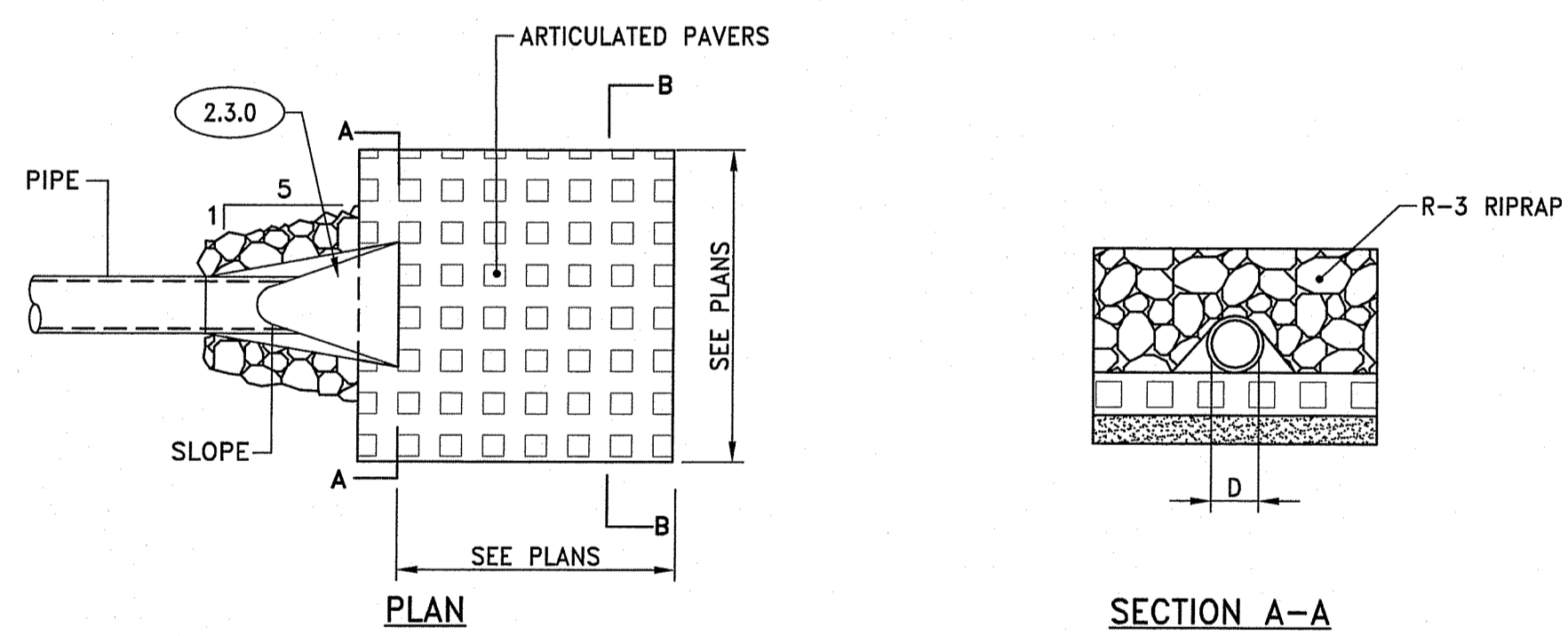


**NOTE:**  
1. CONCRETE PAD SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 905 OF THE RI STANDARD SPECIFICATIONS.

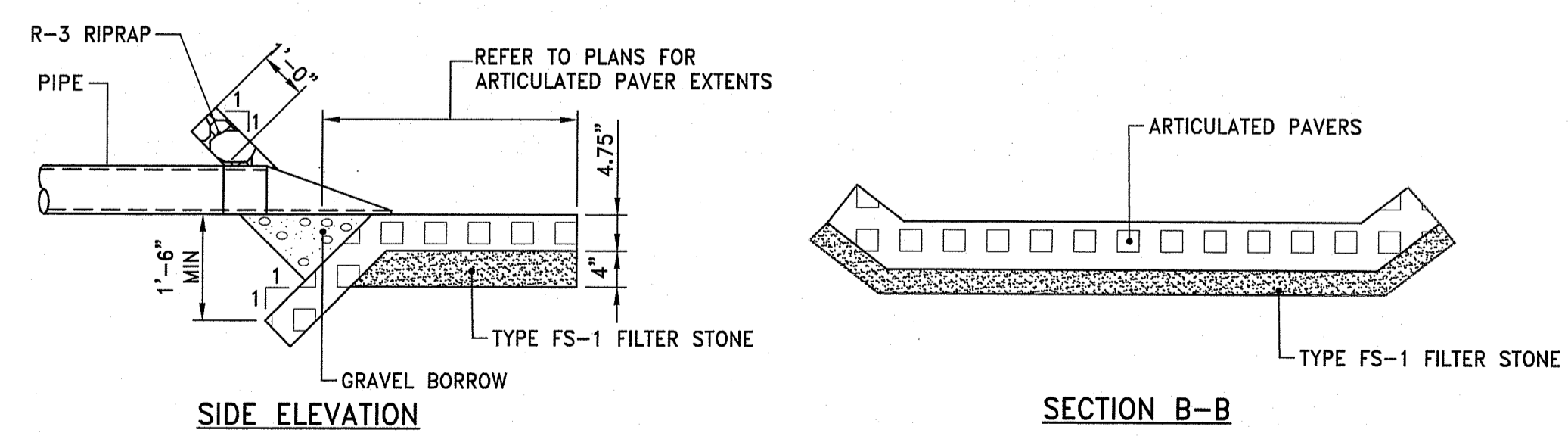
**CONCRETE PAD**  
NOT TO SCALE



**GRAVEL DRIVE DETAIL**  
NOT TO SCALE



**SECTION A-A**



**ARTICULATED PAVER ANCHOR AT FES**  
NOT TO SCALE

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*Stephen D. Wemack*

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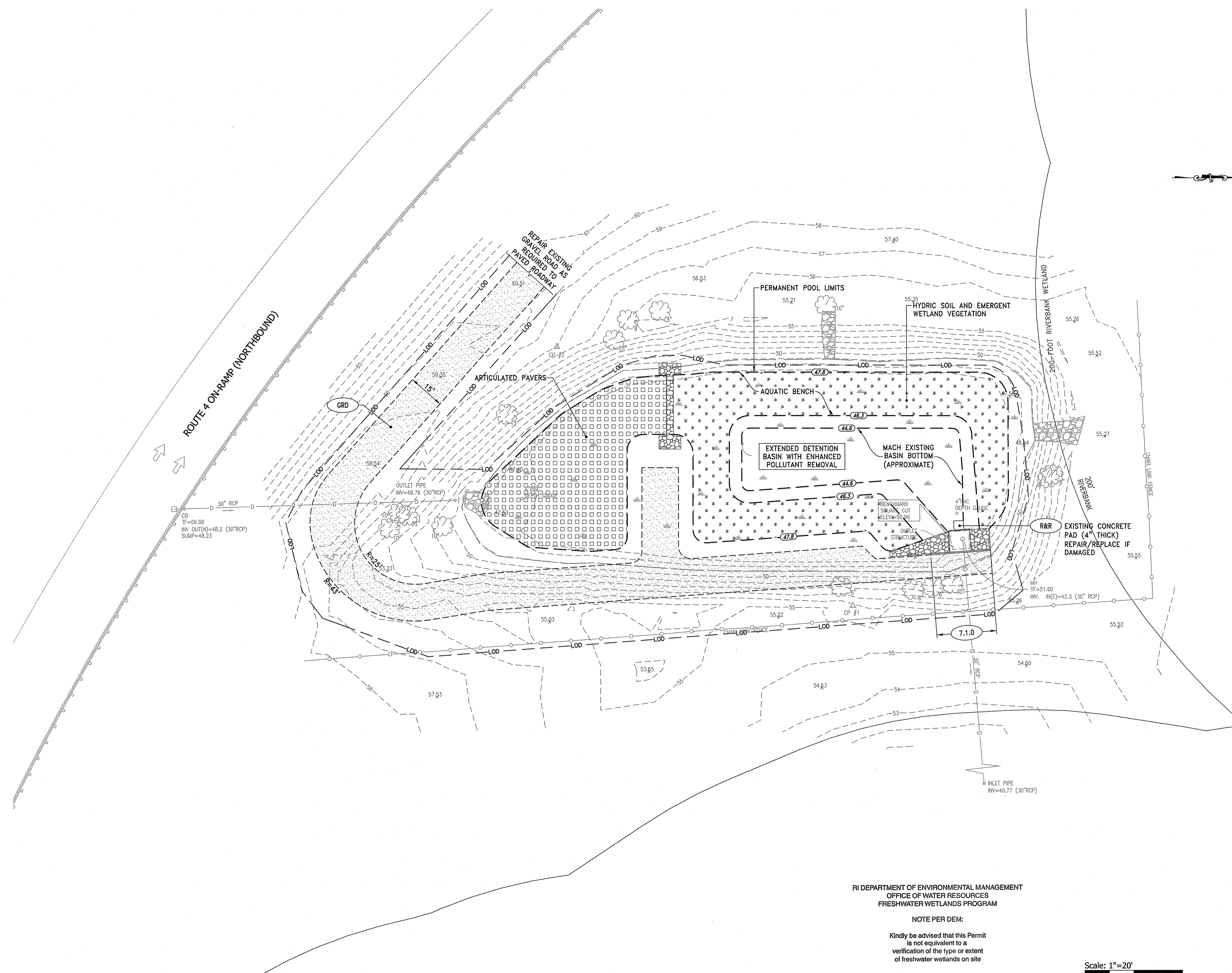
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RI ROUTE 403 STORMWATER IMPROVEMENTS	
EAST GREENWICH & NORTH KINGSTOWN	RHODE ISLAND
DETAILS	



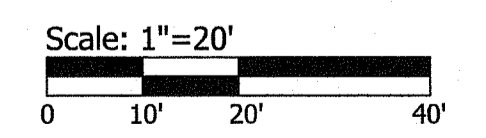


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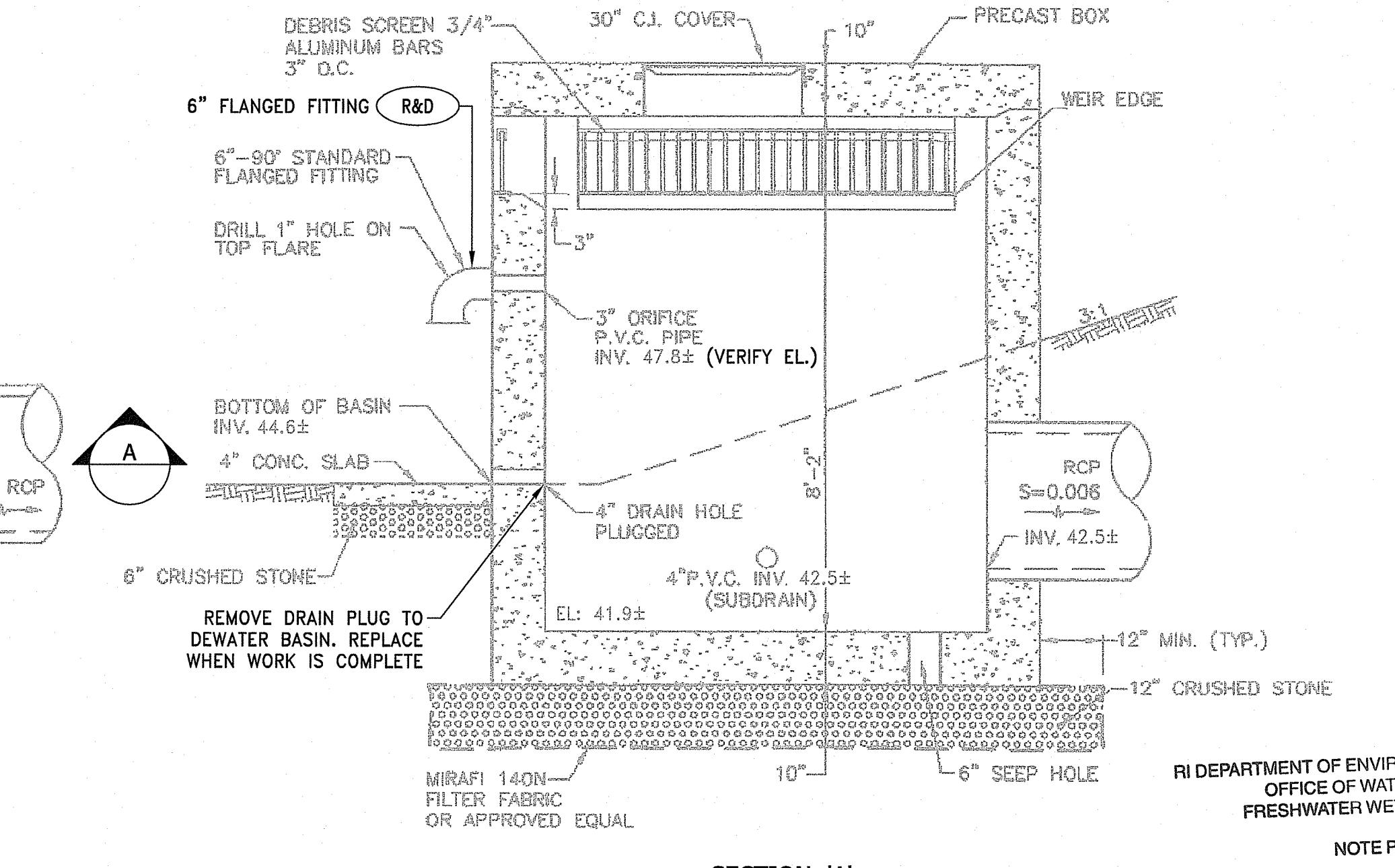
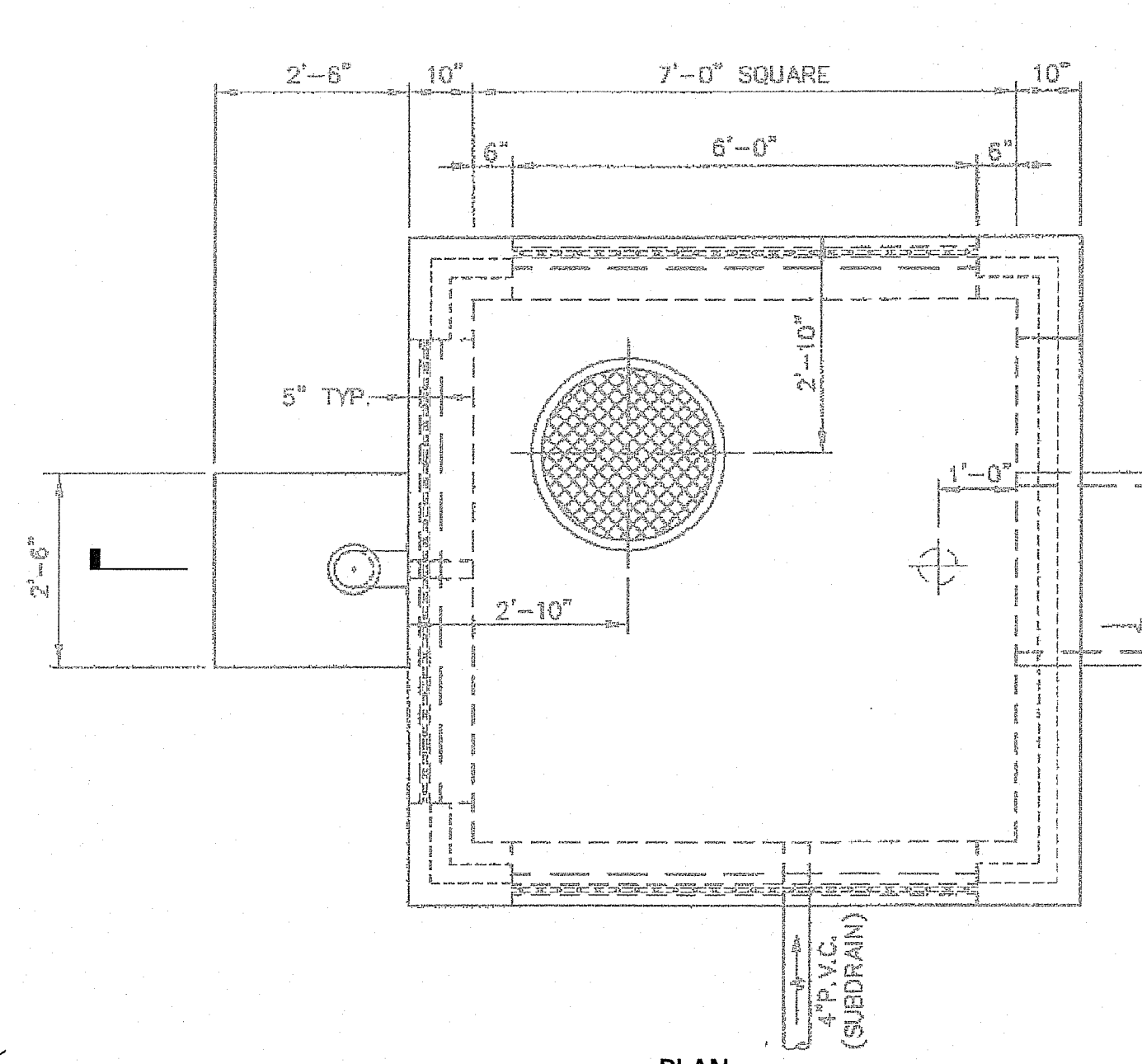
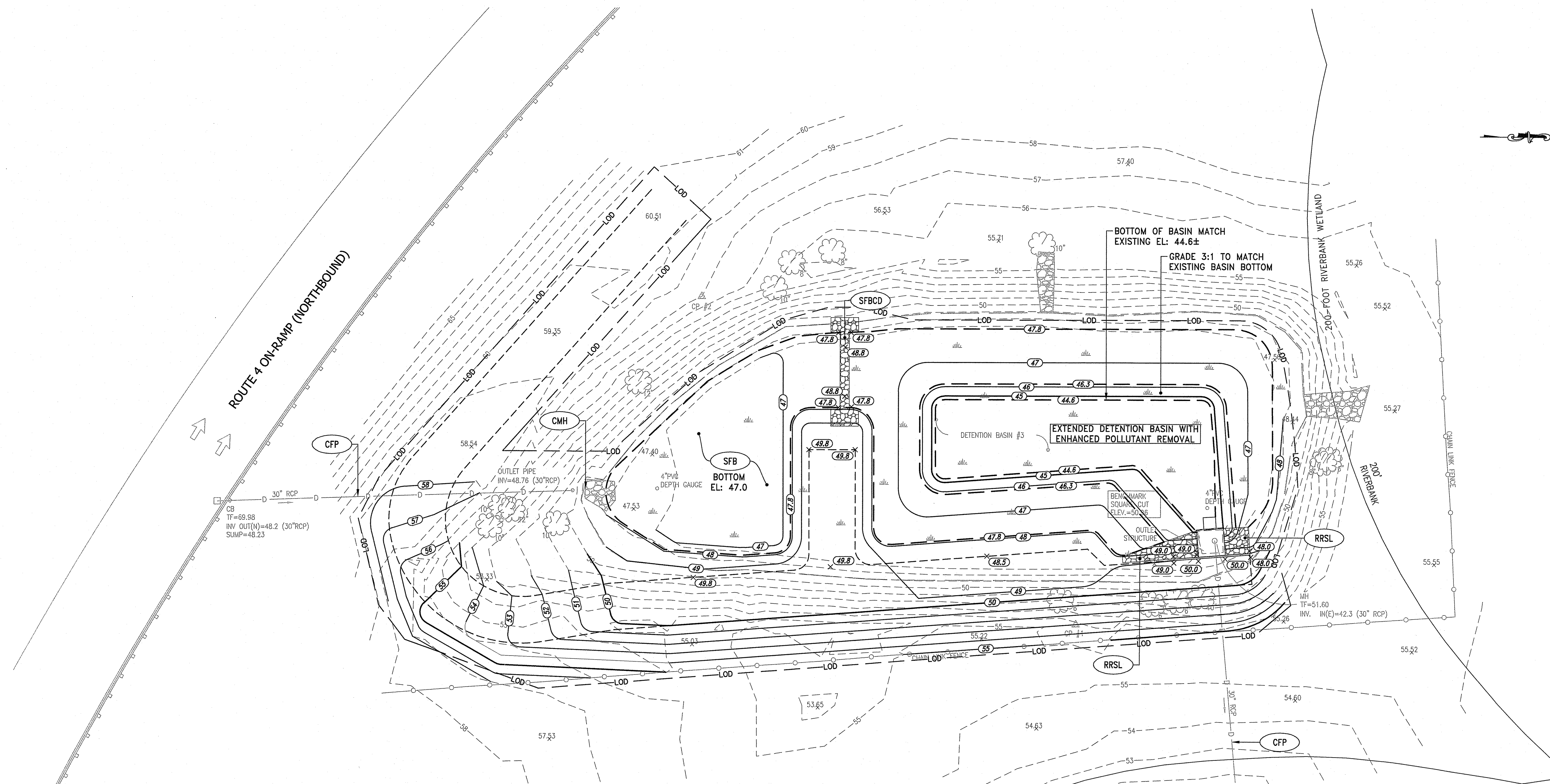
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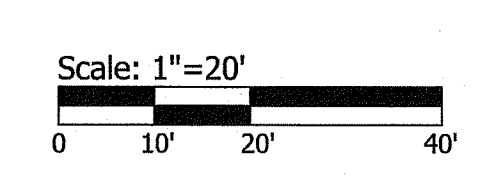
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 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
 DETENTION BASIN No. 3  
 GENERAL PLAN



**OCS OUTLET CONTROL STRUCTURE**  
NOT TO SCALE

**SECTION 'A'**

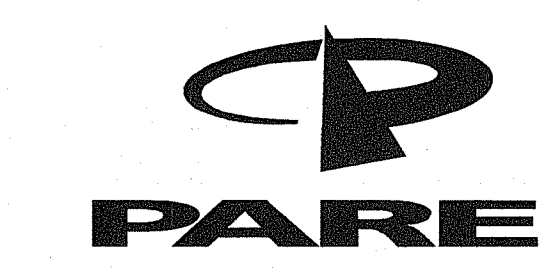
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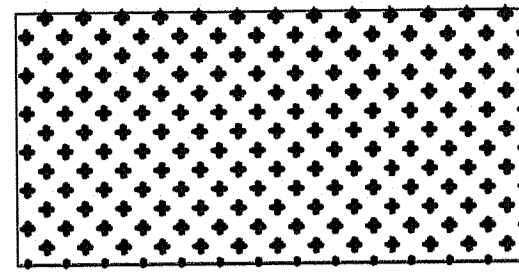
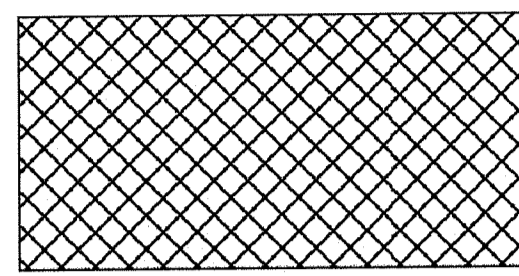
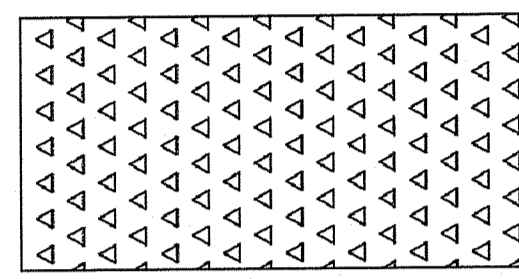
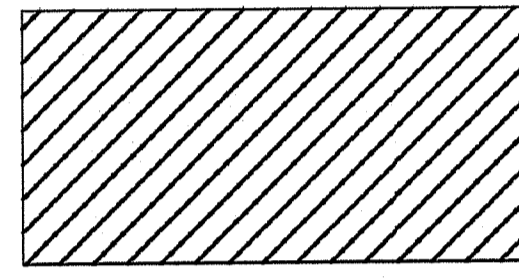
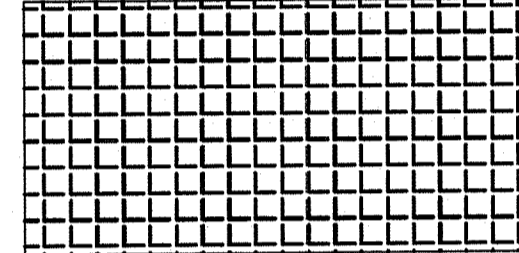


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**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
EAST GREENWICH & NORTH KINGSTOWN  
RHODE ISLAND  
**DETENTION BASIN No. 3**  
**GRADING AND DRAINAGE PLAN**

### KEY

- LIMITS OF STOCKPILED HYDRIC SOIL 
- ZONE 2 
- RESTORATION LIMITS 
- EXISTING HYDRIC SOIL TO REMAIN 
- PROPOSED EROSION CONTROL MAT 

### DETENTION BASIN NO. 3 SEEDING PLAN

SEED FURNISHED BY NEW ENGLAND WETLAND PLANTS, INC.  
820 West Street, Amherst, MA  
www.newp.com OR APPROVED EQUAL

ZONE	BOTANICAL NAME	COMMON NAME	INDICATOR
2	<b>NEW ENGLAND WETMIX</b>		
	ALISMA PLANTAGO-AQUATICA	MUD PLANTAIN	OBL
	ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
	ASTER NOVY-BELGII	NEW YORK ASTER	FACW
	BIDENS CERNUA	NOODING BUR MARIGOLD	OBL
	CAREX COMOSA	BRISTLYCOSMOS SEDGE	OBL
	CAREX CRINITA	FRINGED SEDGE	OBL
	CAREX LUPULINA	HOP SEDGE	OBL
	CAREX LURIDA	LURID SEDGE	OBL
	CAREX SCOPARIA	BLUNT BROCOM SEDGE	FACW
	CAREX VULPINOIDEA	FOX SEDGE	OBL
	EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACW
	EUPATORIUM PERFORIATUM	BONESET	OBL
	GLYCERIA CANADENSIS	RATTLESNAKE GRASS	OBL
GLYCERIA STRIATA	FOWL MANNAGRASS	OBL	
JUNCUS EFFLUSUS	SOFT RUSH	FACW	
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL	
ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW	

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 18 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

RESTORATION LIMITS	BOTANICAL NAME	COMMON NAME	INDICATOR
	<b>NEW ENGLAND CONSERVATION/WILDLIFE MIX</b>		
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW
	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
	ANDROPOGON GERARDII	BIG BLUESTEM	FAC
	FESTUCA RUBRA	RED FESCUE	FACU
	SORGHASTRUM NUTANS	INDIAN GRASS	UPL
	PANICUM VIRGATUM	SWITCH GRASS	FAC
	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
	DESMODIUM CANADENSE	SHOWY TICK TREEFOIL	FAC
	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
	BIDENS FRONDOSA	BEGGAR TICKS	FACW
	EUPATORIUM PURPUREUM	PURPLE JOE PYE WEED	FAC
	RUBECKIA HIRTA	BLACK EYED SUSAN	FACU
	ASTER PILOSUS	HEATH OR HAIRY ASTER	UPL
	SOLIDAGO JUNCEA	EARLY GOLDENROD	

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 25 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: MAR 01 2022 FILE #: 22-0091  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE


*Martin D. Wonnack*

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



NOTE PER DEM:

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Environmental Management  
MAR 01 2022  
Office of Water Resources



Proud Member and Participant of:  
www.eastcoasterosion.com  
443 Bricker Road Bernville, PA 19506  
1.800.582.4005 +1.610.488.8496 Fax +1.610.488.8494

Material and Performance Specification

#### ECS-2® Double Net Straw Rolled Erosion Control Product

**Description:**  
The ECS-2® is made with uniformly distributed 100% agricultural straw and two polypropylene nets securely sewn together with degradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECS-2® has functional longevity of approximately 12 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 2:1 or less and low to medium flow channels. The ECS-2® meets Type 2-D specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Matrix:	1	2
100% Straw		

Netting:	Top	Middle	Bottom
Top: Lightweight Photodegradable Polypropylene			
Middle: None			
Bottom: Lightweight Photodegradable Polypropylene			


Net Opening:	Top	Middle	Bottom
Top: 0.5" x 0.5"			
Middle: 0.5" x 0.5"			
Bottom: 0.5" x 0.5"			

Thread:	Type	Color
Degradable Thread/	White	

Roll Sizes:	Standard	A Size	Mega
Width:	7.5 ft 2.3 m	3.75 ft 1.1 m	15 ft 4.6 m
Length:	120 ft 36.6 m	240 ft 73.2 m	120 ft 36.6 m
Weight ±10%:	58 lbs 24.0 kg	50 lbs 22.0 kg	106 lbs 48.1 kg
Area:	100 yd² 83.6 m²	100 yd² 83.6 m²	200 yd² 167.2 m²
#/Pallet:	20	9	16

Index Value Properties		Bench Scale Testing (NTP/EP/ASTM)	
Property	Test Method	Parameters	Results
Mass/Unit Area	ASTM D5475	50mm (2in) / hr-30 min	SLR**=5.84
Thickness	ASTM D5525	100mm (4in) / hr-30 min	SLR**=6.87
Tensile Strength-MD	ASTM D6818	150mm (6in) / hr-30 min	SLR**=8.09
Elongation-MD	ASTM D6818	Shear at 50 lb soil loss	1.61 lb/ft
Tensile Strength-TD	ASTM D6818	Top soil, Fescue; 21 day incubation	455%
Elongation-TD	ASTM D6818	*Bench scale tests should not be used for design purposes.	
Light Penetration	ASTM D6567	**Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP=1/C-Factor	
Density / Specific Gravity	ASTM D792	***The preceding test data excerpts were reproduced with the permission of ASTM; however, this does not constitute endorsement or approval of the product, material or device by ASTM.	
Water Absorption	ASTM D1117	*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory	

Slope Performance Design Values:		Channel Performance Design Values:	
Property	Test Method	Property	Test Method
C-Factors	ASTM D6459	Unvegetated Shear Stress	ASTM D 6460
Slope Length (L)	≤ 84	Unvegetated Velocity	ASTM D 6460
< 50 ft (15 m)	0.014	Vegetated Shear Stress	NA
50 ft - 100 ft	0.048	Vegetated Velocity	NA
>100 ft (30 m)	0.086	Manning's N (Value Represents 4 Range)	0.029



Diane C. Soule & Associates, ASLA  
Landscape Architecture



RHODE ISLAND  
DEPARTMENT OF TRANSPORTATION

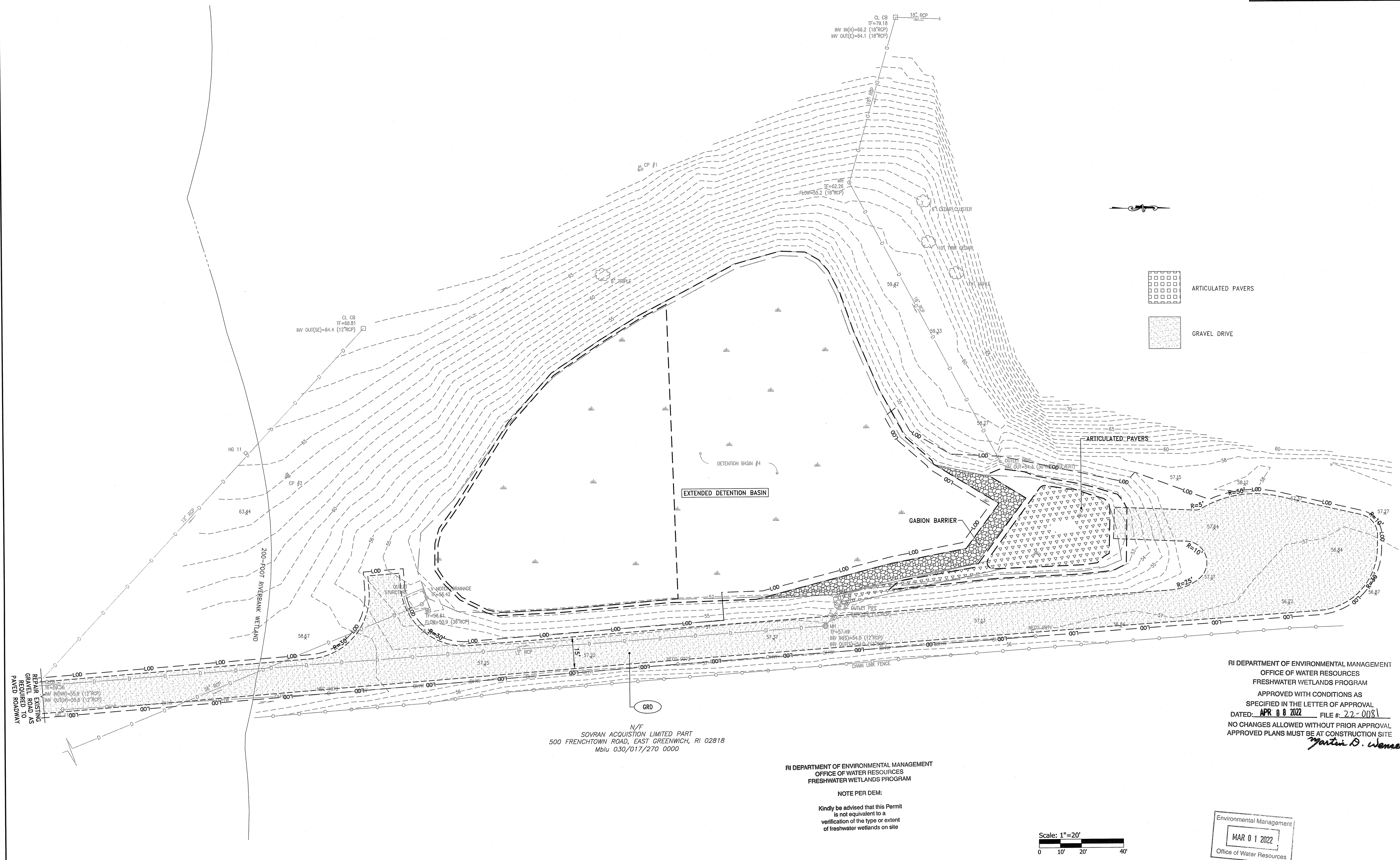
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OF: 28

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RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN  
RHODE ISLAND

DETENTION BASIN No. 3  
LANDSCAPE PLAN

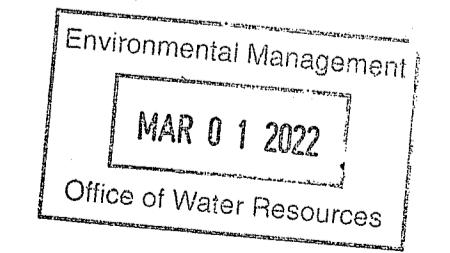
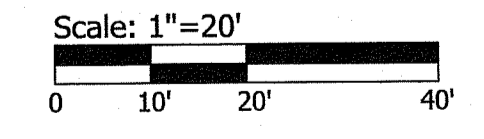




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 APPROVED WITH CONDITIONS AS  
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 DATED: APR 08 2022 FILE #: 22-0081  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Martin D. Wenzel*

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N/F  
 SOVRAN ACQUISITION LIMITED PART  
 500 FRENCHTOWN ROAD, EAST GREENWICH, RI 02818  
 Mblu 030/017/270 0000

REPAIR EXISTING ROAD AS REQUIRED TO PAVED ROADWAY

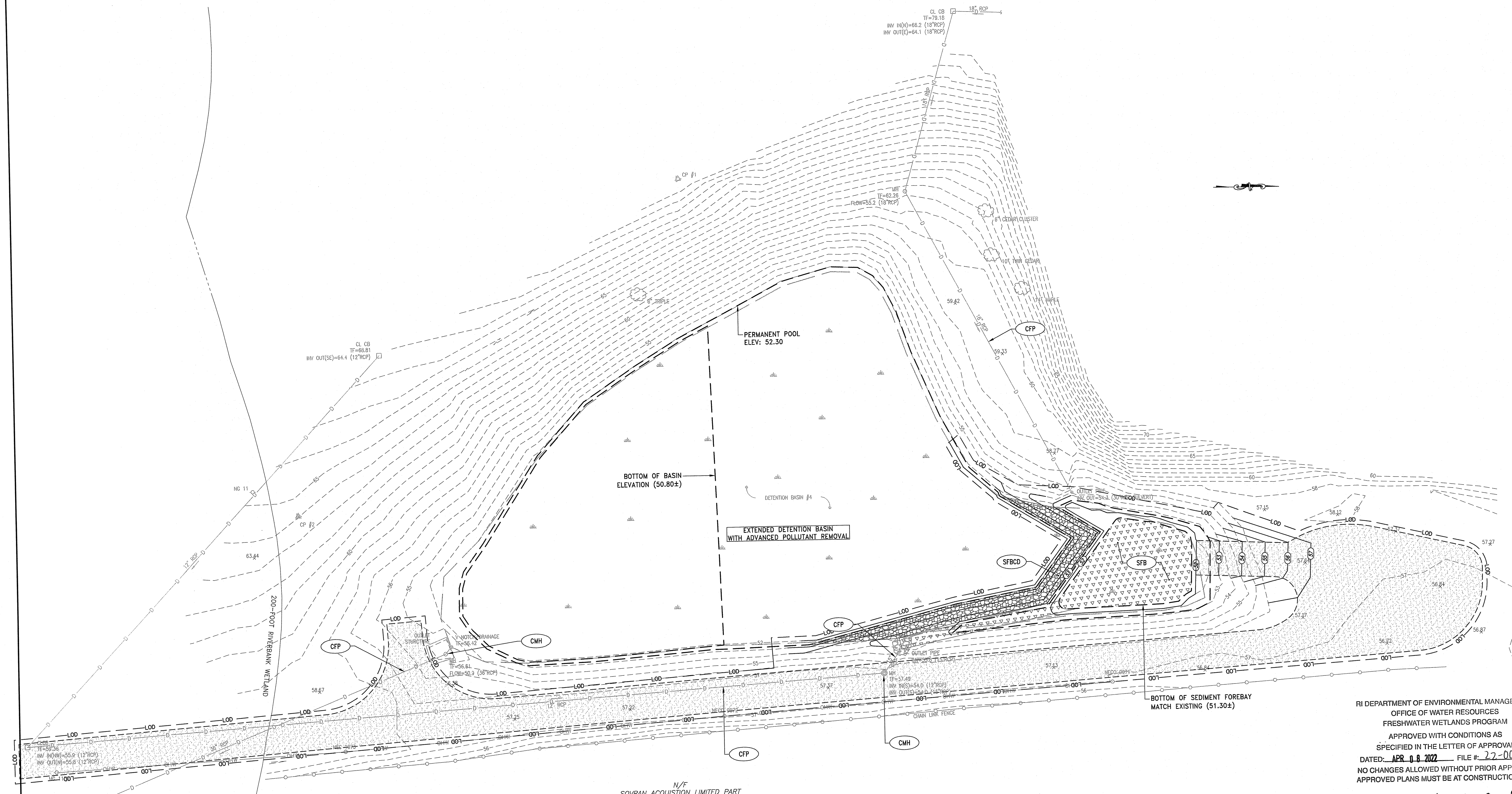


**RI DOT** RHODE ISLAND DEPARTMENT OF TRANSPORTATION

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 OF: 28

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RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
**DETENTION BASIN No. 4**  
 GENERAL PLAN



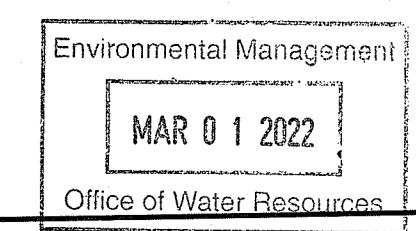
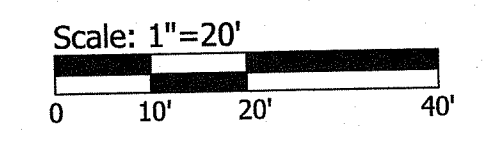
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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*Martin D. Wemack*

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 500 FRENCHTOWN ROAD, EAST GREENWICH, RI 02818  
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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
 DETENTION BASIN No. 4  
 GRADING AND DRAINAGE PLAN

**DETENTION BASIN NO. 4 SEEDING PLAN**  
 SEED FURNISHED BY NEW ENGLAND WETLAND PLANTS, INC.  
 820 West Street, Amherst, MA  
 www.newp.com OR APPROVED EQUAL

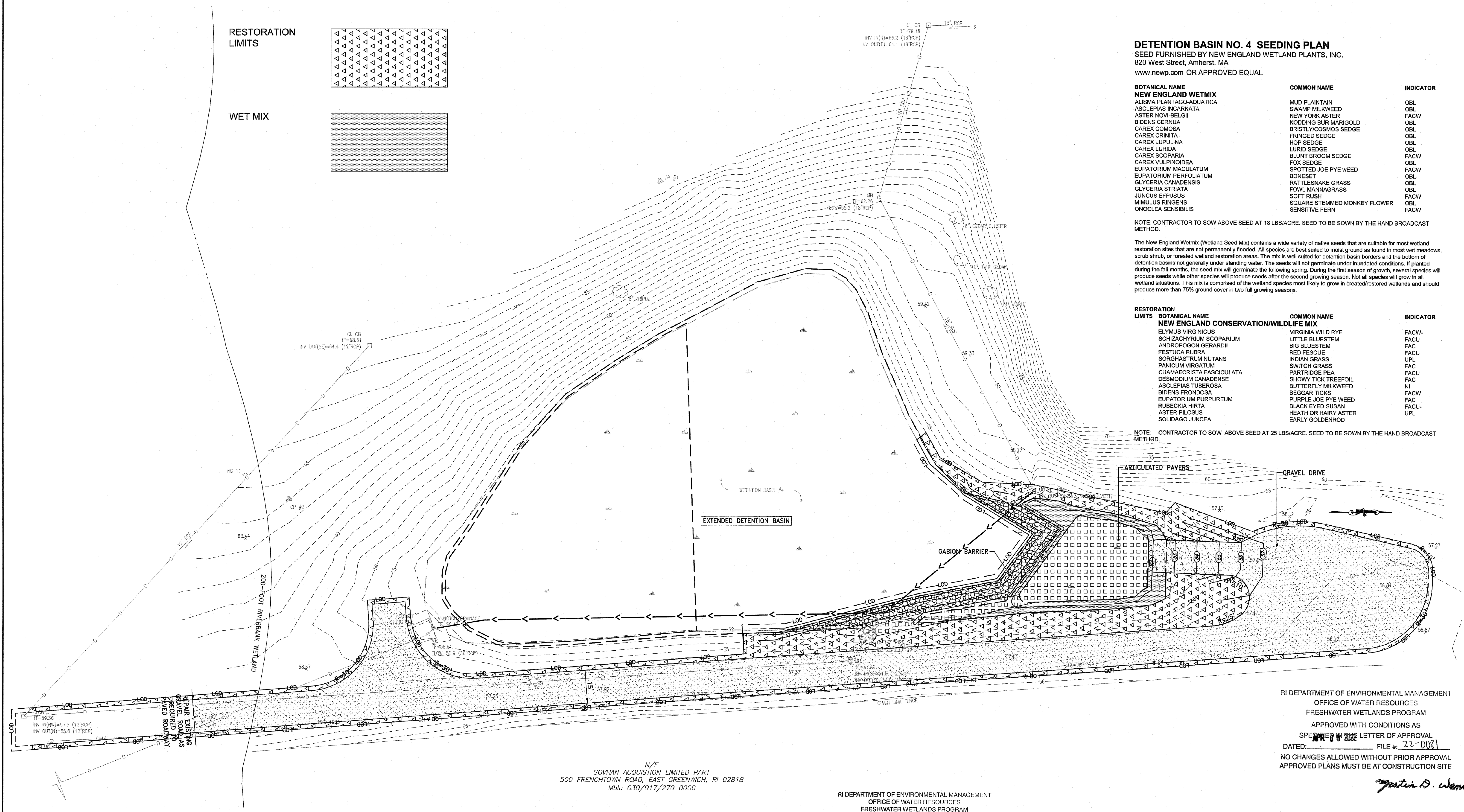
BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND WETMIX</b>		
ALISMA PLANTAGO-AQUATICA	MUD PLANTAIN	OBL
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
ASTER NOVI-BELGII	NEW YORK ASTER	FACW
BIDENS GERNUA	NODDING BUR MARIGOLD	OBL
CAREX COMOSA	BRISTLYCOSMOS SEDGE	OBL
CAREX CRINITA	FRINGED SEDGE	OBL
CAREX LUPULINA	HOP SEDGE	OBL
CAREX LURIDA	LURID SEDGE	OBL
CAREX SCOPARIA	BLUNT BROOM SEDGE	FACW
CAREX VULPINOIDEA	FOX SEDGE	OBL
EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACW
EUPATORIUM PERFOLIATUM	BONESET	OBL
GLYCERIA CANADENSIS	RATTLESNAKE GRASS	OBL
GLYCERIA STRIATA	FOWL MANNA GRASS	OBL
JUNCUS EFFUSUS	SOFT RUSH	FACW
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL
ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 18 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

RESTORATION LIMITS	BOTANICAL NAME	COMMON NAME	INDICATOR
	<b>NEW ENGLAND CONSERVATION/WILDLIFE MIX</b>		
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW
	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
	ANDROPOGON GERARDII	BIG BLUESTEM	FAC
	FESTUCA RUBRA	RED FESCUE	FACU
	SORGHASTRUM NUTANS	INDIAN GRASS	UPL
	PANICUM VIRGATUM	SWITCH GRASS	FAC
	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
	DESMODIUM CANADENSE	SHOWY TICK TREEFOIL	FAC
	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
	BIDENS FRONDOSA	BEGGAR TICKS	FACW
	EUPATORIUM PURPUREUM	PURPLE JOE PYE WEED	FAC
	RUBECKIA HIRTA	BLACK EYED SUSAN	FACU
	ASTER PILOSUS	HEATH OR Hairy ASTER	UPL
	SOLIDAGO JUNCEA	EARLY GOLDENROD	

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 25 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.



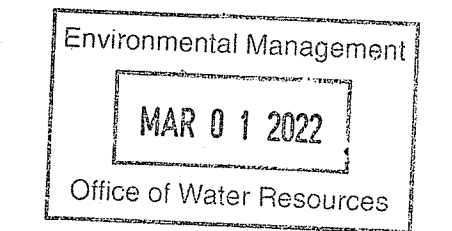
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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
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*Matthew D. Womack*

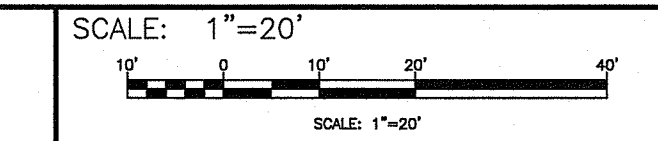


Diane C. Soule & Associates, ASLA  
 Landscape Architecture



RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

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 OF: 28



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NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND

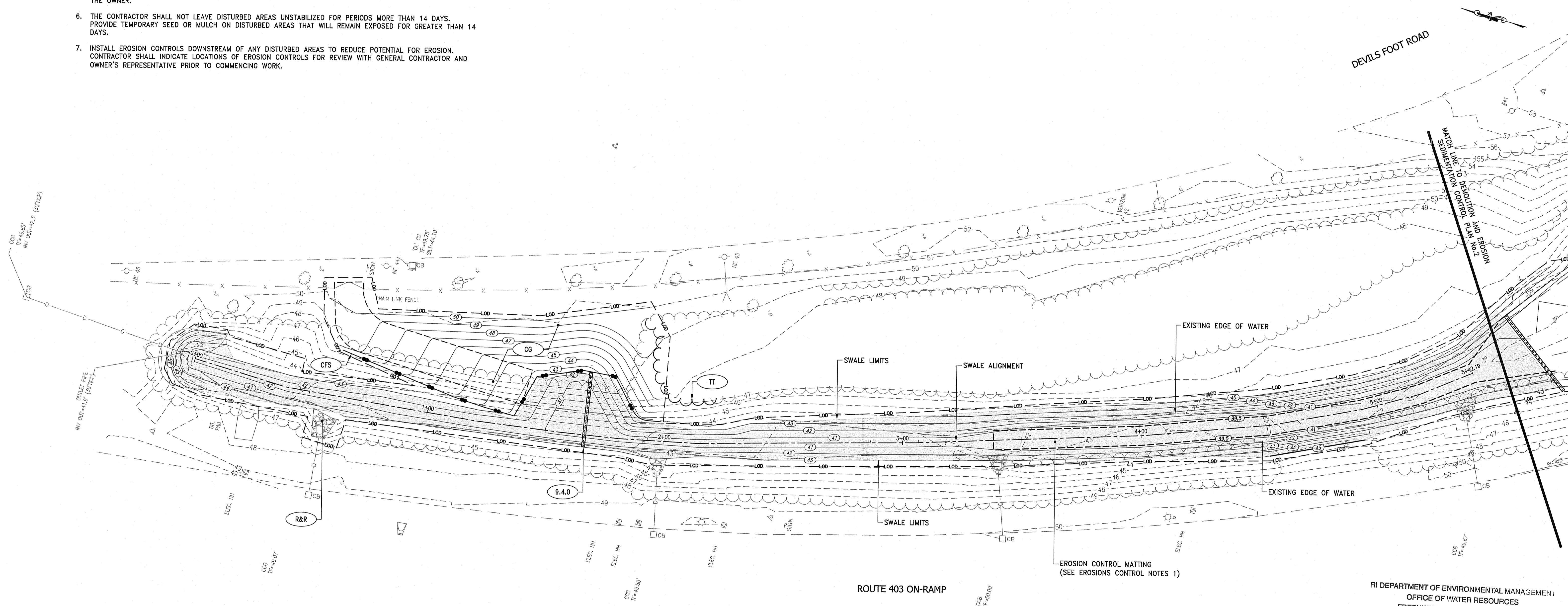
DETENTION BASIN No. 4  
 LANDSCAPE PLAN

**EROSION CONTROL NOTES:**

1. PLACE EROSION CONTROL MATTING ON ALL DISTURBED AREAS WITHIN THE SWALE LIMITS. IF MATTING IS NOT IN PLACE AT THE END OF THE WORKDAY TEMPORARY DRAINAGE MUST BE INSTALLED. PLACE EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER.
2. THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE PLANS ARE INTENDED TO REPRESENT THE MINIMUM CONTROLS NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SILT SACKS IN ALL EXISTING AND NEWLY INSTALLED CATCH BASINS UNTIL THE UPSTREAM AREA IS STABILIZED.
4. CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION ENTRANCES AT ALL POINTS OF EGRESS FROM THE SITE THROUGHOUT CONSTRUCTION.
5. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROLS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL REPLACE DAMAGED EROSION CONTROLS AT THE OWNER AND ENGINEER'S REQUEST AT NO ADDITIONAL EXPENSE TO THE OWNER.
6. THE CONTRACTOR SHALL NOT LEAVE DISTURBED AREAS UNSTABILIZED FOR PERIODS MORE THAN 14 DAYS. PROVIDE TEMPORARY SEED OR MULCH ON DISTURBED AREAS THAT WILL REMAIN EXPOSED FOR GREATER THAN 14 DAYS.
7. INSTALL EROSION CONTROLS DOWNSTREAM OF ANY DISTURBED AREAS TO REDUCE POTENTIAL FOR EROSION. CONTRACTOR SHALL INDICATE LOCATIONS OF EROSION CONTROLS FOR REVIEW WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK.

**DEMOLITION NOTES:**

1. ALL UTILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING UTILITIES OR STRUCTURES WITHIN THE PROJECT AREA DEPICTED AND NOT DEPICTED ON THE PLANS. ANY DAMAGE TO EXISTING WORKING UTILITIES OR STRUCTURES NOT INTENDED TO BE REMOVED SHALL BE RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
3. PRIOR TO ANY UTILITY AND/OR DRAINAGE SYSTEM DEMOLITION, PROVISIONS FOR MAINTAINING THE UTILITY SHALL BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE BEFORE ANY RELATED WORK MAY COMMENCE.
4. ALL TEMPORARILY CUT UTILITIES SHALL BE PROTECTED FROM SEDIMENTATION UNTIL IT IS CONNECTED IN ITS POST-CONSTRUCTION POSITION.
5. HAYBALE CHECKDAMS SHALL BE PROVIDED AT OUTLET OF SEDIMENT FOREBAYS UNTIL THE ARTICULATED PAVERS ARE INSTALLED.
6. REFER TO "NOTES AND LEGEND" FOR ADDITIONAL NOTES.

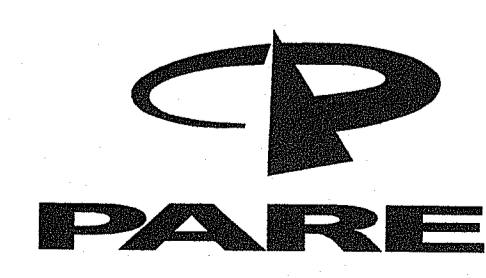
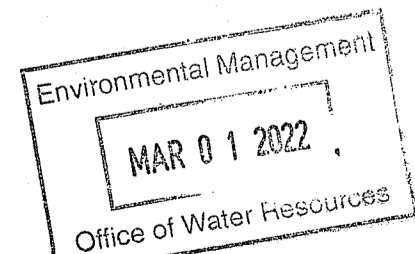
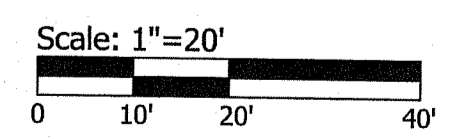


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 FRESHWATER WETLANDS PROGRAM  
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*Stephen D. Wamack*

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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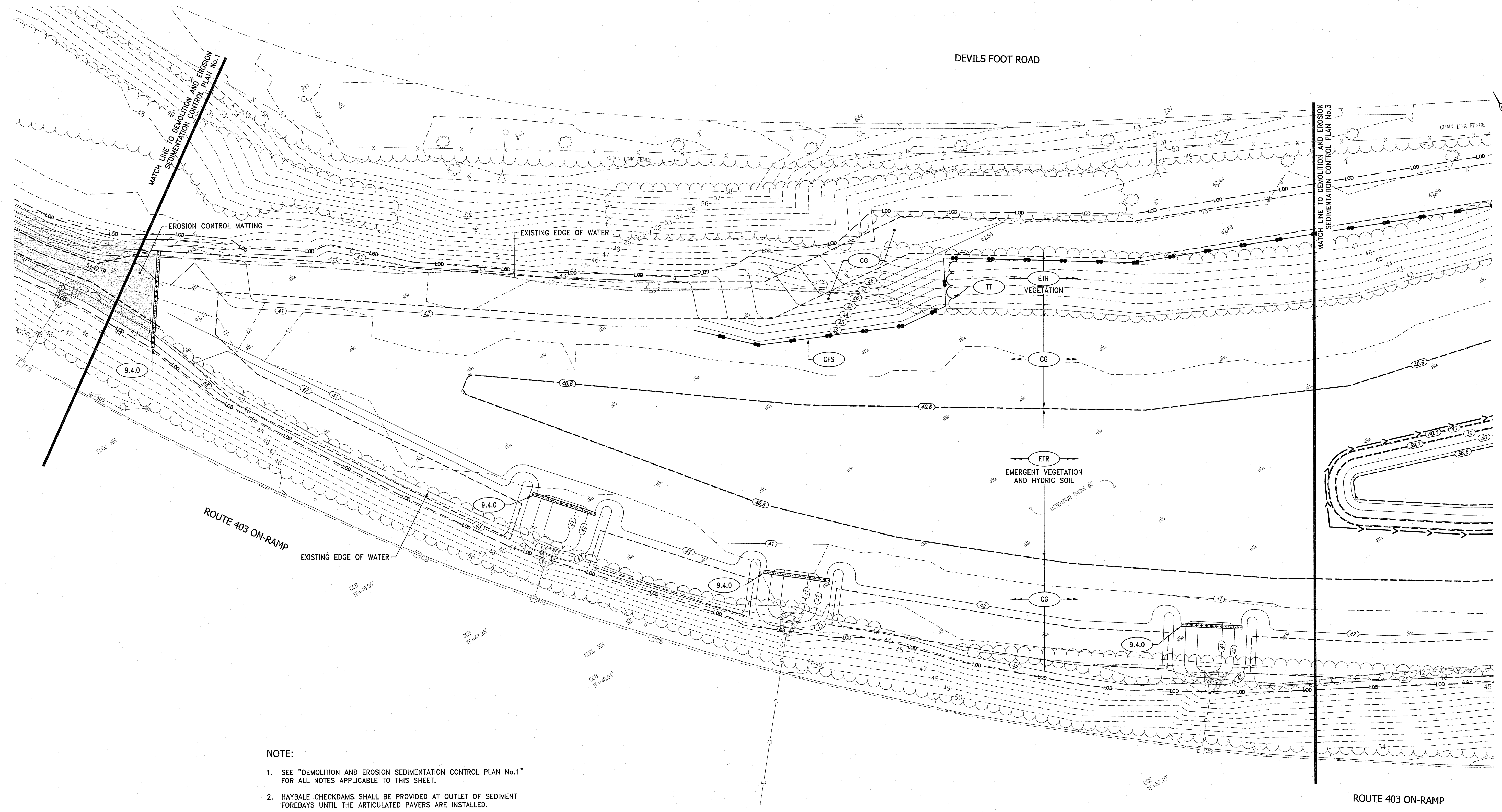
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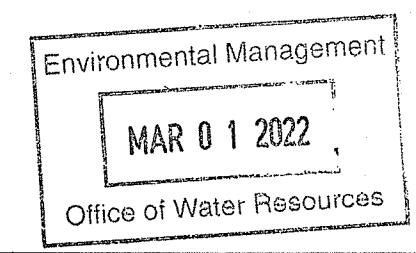
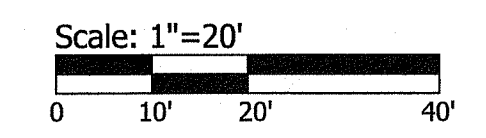
**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
 EAST GREENWICH & NORTH KINGSTOWN  
 DETENTION BASIN No. 5  
 DEMOLITION AND EROSION SEDIMENTATION CONTROL PLAN No.



- NOTE:**
- SEE "DEMOLITION AND EROSION SEDIMENTATION CONTROL PLAN No.1" FOR ALL NOTES APPLICABLE TO THIS SHEET.
  - HAYBALE CHECKDAMS SHALL BE PROVIDED AT OUTLET OF SEDIMENT FOREBAYS UNTIL THE ARTICULATED PAVERS ARE INSTALLED.

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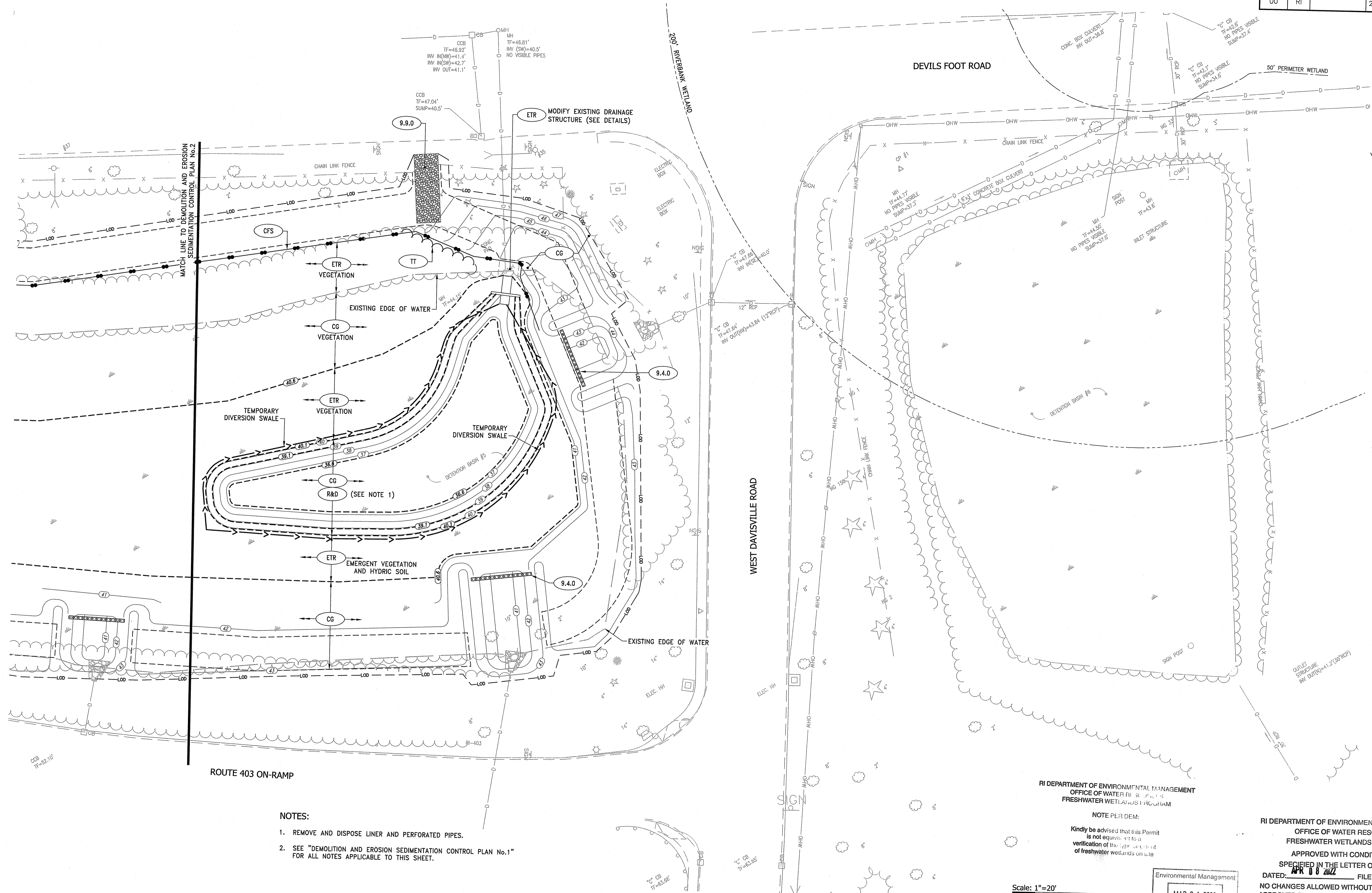


RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

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**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
**DETENTION BASIN No. 5**  
 DEMOLITION AND EROSION SEDIMENTATION CONTROL PLAN No.2



- NOTES:
1. REMOVE AND DISPOSE LINER AND PERFORATED PIPES.
  2. SEE "DEMOLITION AND EROSION SEDIMENTATION CONTROL PLAN No.1" FOR ALL NOTES APPLICABLE TO THIS SHEET.

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

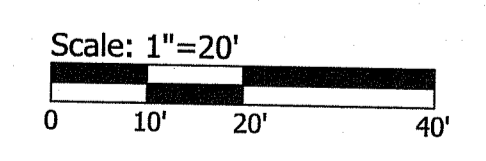
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*Walter D. Wozniak*



Environmental Management  
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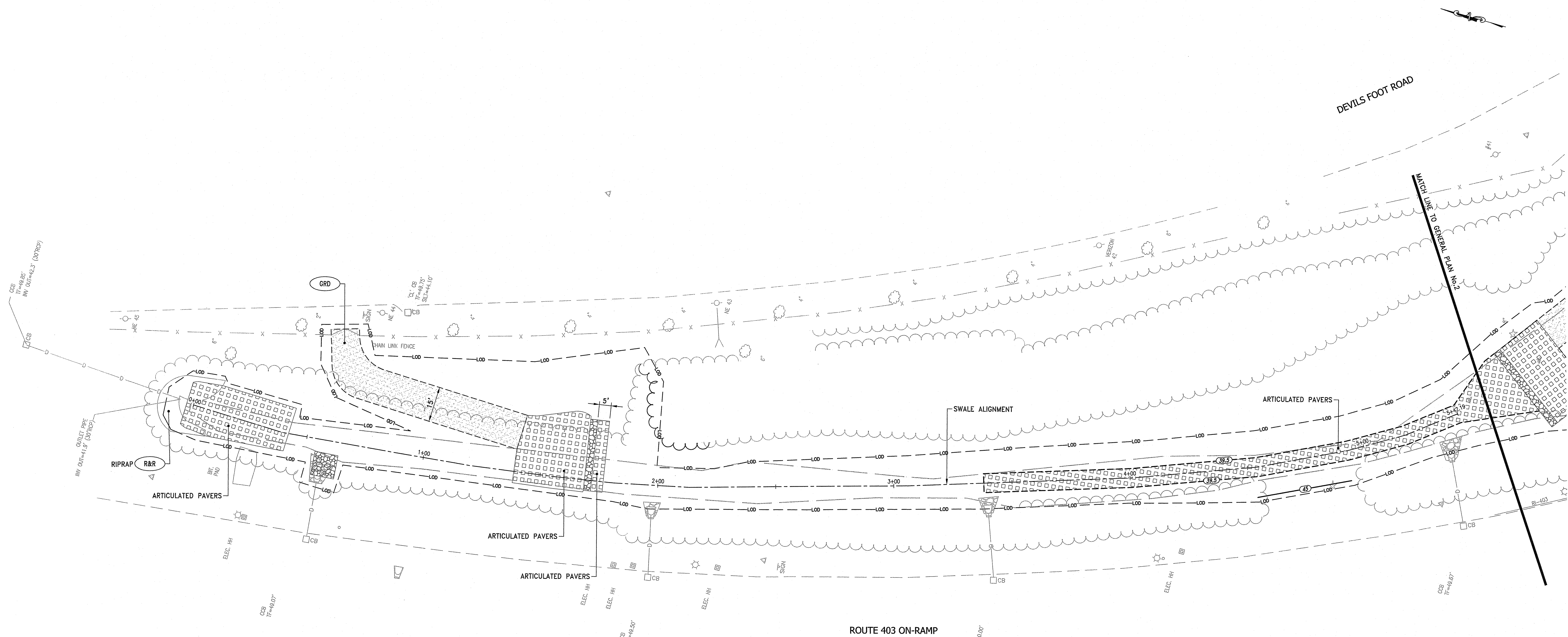
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**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
 DETENTION BASIN No. 5  
 DEMOLITION AND EROSION SEDIMENTATION CONTROL PLAN No.3

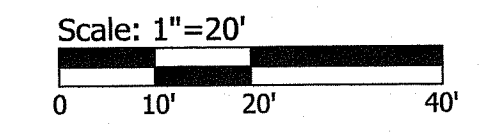
**NOTES:**

1. CONTRACTOR SHALL PROVIDE LOAM AND SEED ON ALL DISTURBED AREAS UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL EMPLOY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF RHODE ISLAND TO ESTABLISH CONTROL ON THE SITE AND TO PERFORM FIELD MEASUREMENTS AS REQUIRED TO LAYOUT THE PROPOSED IMPROVEMENTS.



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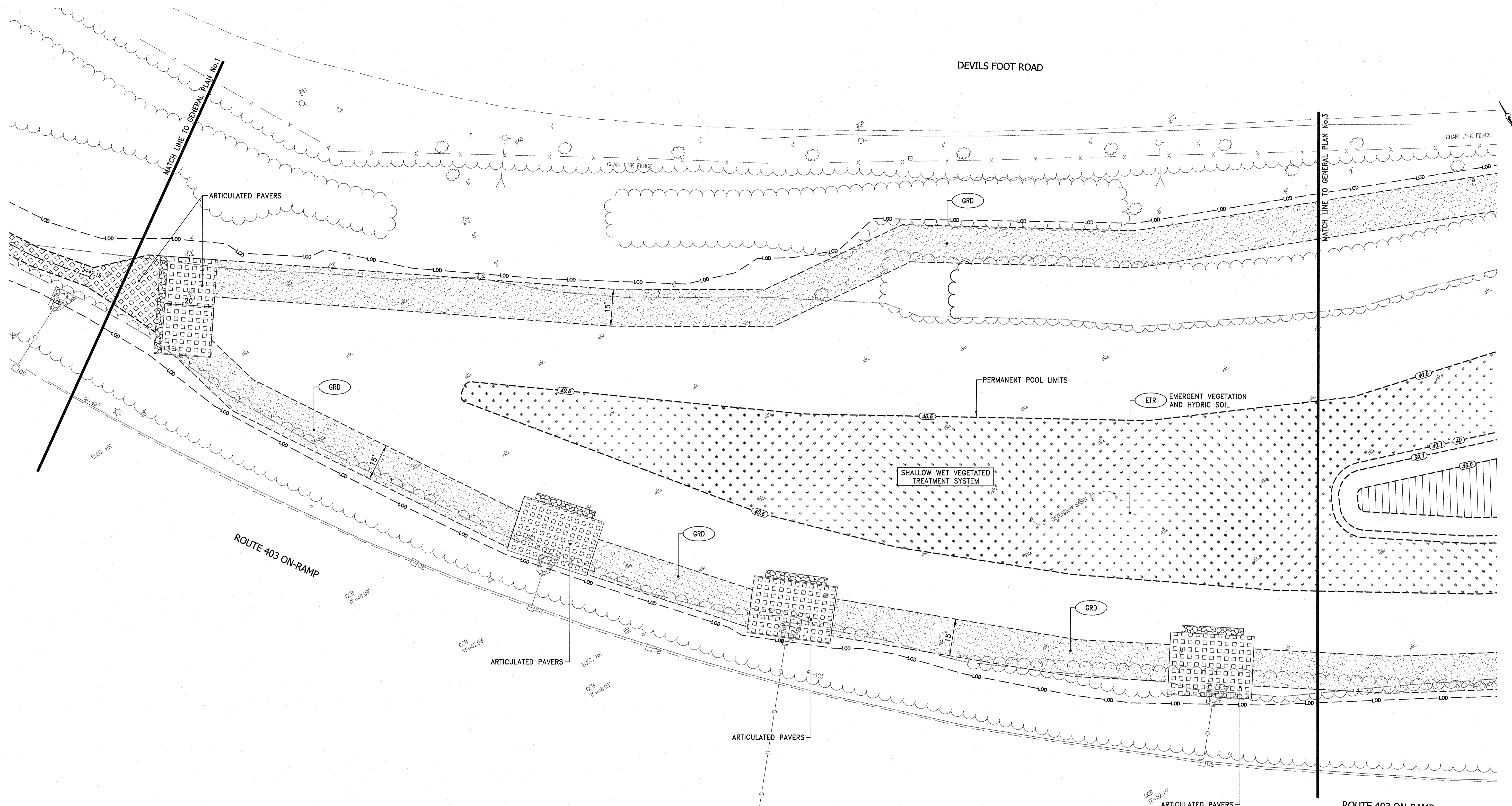
*Stephen D. Senack*



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RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
DETENTION BASIN No. 5  
GENERAL PLAN No.1



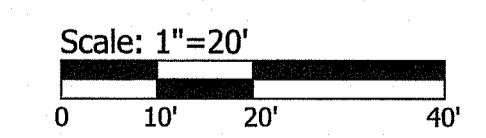
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 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM

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  
 DATE: APR 08 2022 FILE #: 22-0081  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management  
 MAR 01 2022  
 Office of Water Resources



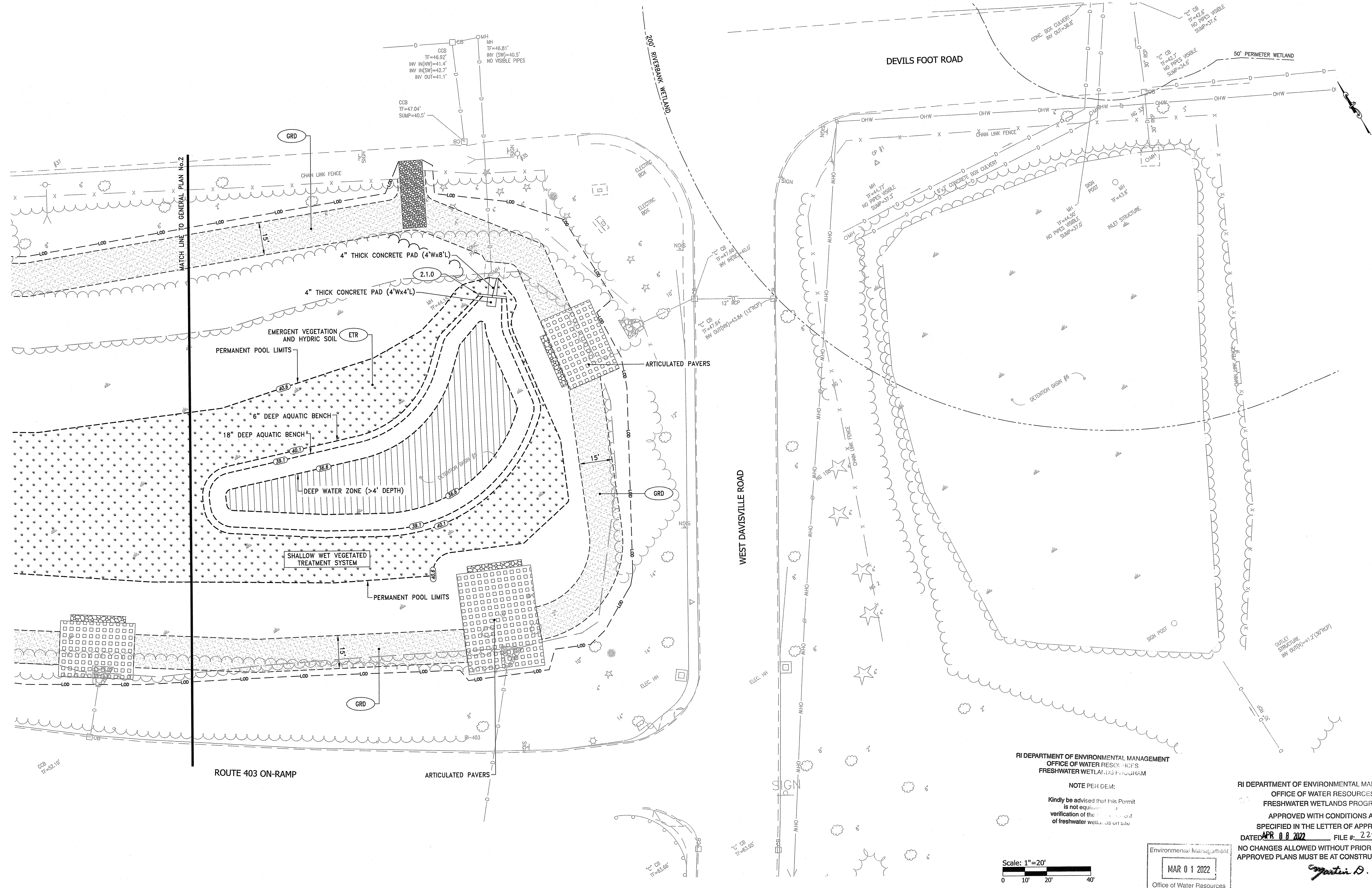
*Martin D. Wenzel*



DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 20  
 OF: 28

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
 DETENTION BASIN No. 5  
 GENERAL PLAN No. 2

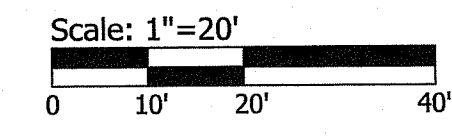


RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM

NOTE PER DEM:  
Kindly be advised that this Permit is not equivalent to a final verification of the project and 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 APR 08 2022 FILE #: 2-2-0081  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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Environmental Management  
MAR 01 2022  
Office of Water Resources

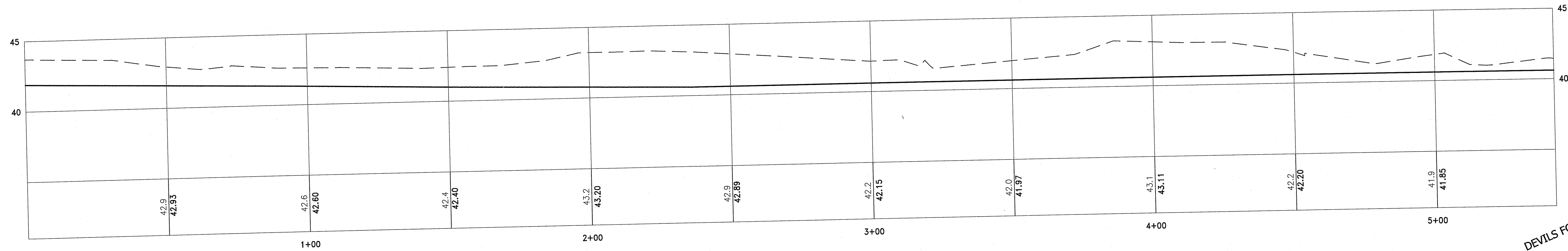


DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET: 21  
OF: 28

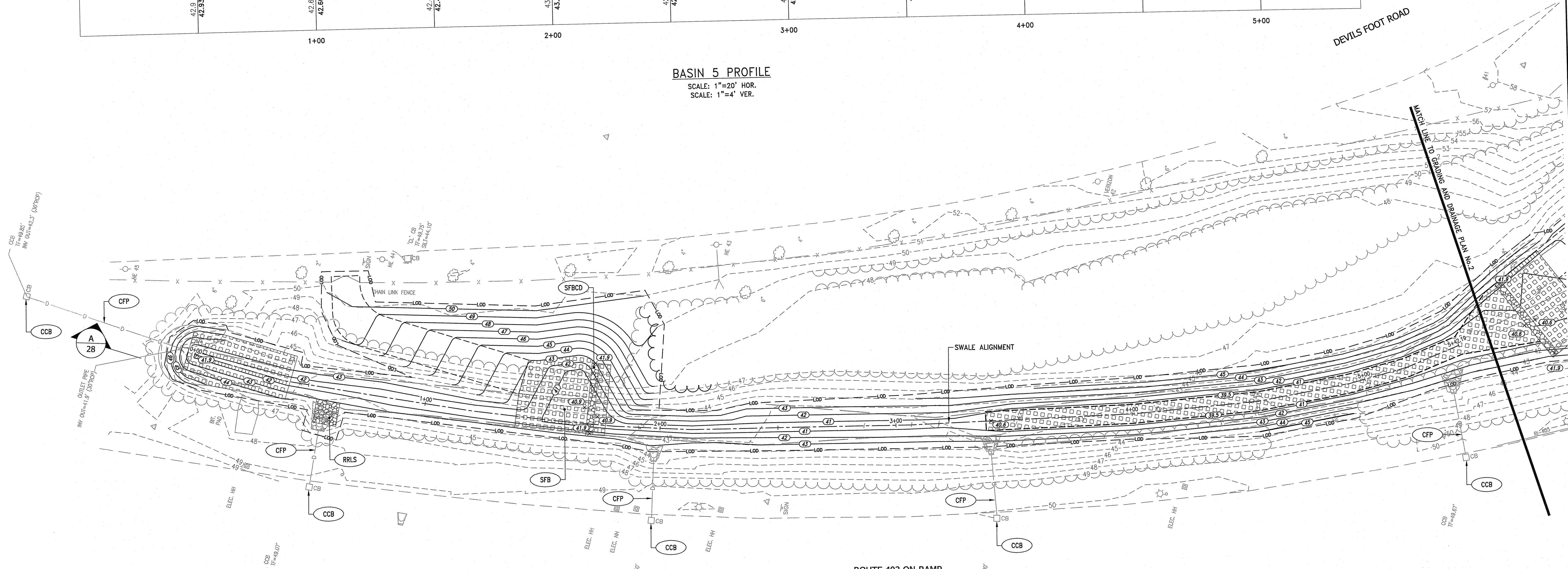
REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
DETENTION BASIN No. 5  
GENERAL PLAN No.3

*Matthew D. Wenzel*  
Office of Water Resources



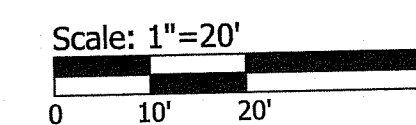
**BASIN 5 PROFILE**  
 SCALE: 1"=20' HOR.  
 SCALE: 1"=4' VER.



**NOTE:**  
 1. CLEAN AND FLUSH ALL DRAINAGE STRUCTURES, PIPES AND RIPRAP LEVEL SPREADERS WITH THE VICINITY OF THE PROJECT. CLEANING AND FLUSHING SHALL BE PERFORMED AFTER UPSTREAM AREAS ARE STABILIZED.

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

**NOTE PER DEM:**  
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Environmental Management  
 MAR 01 2022  
 Office of Water Resources

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: MAR 08 2022 FILE #: 22-0071  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Stephen D. Wenzel*

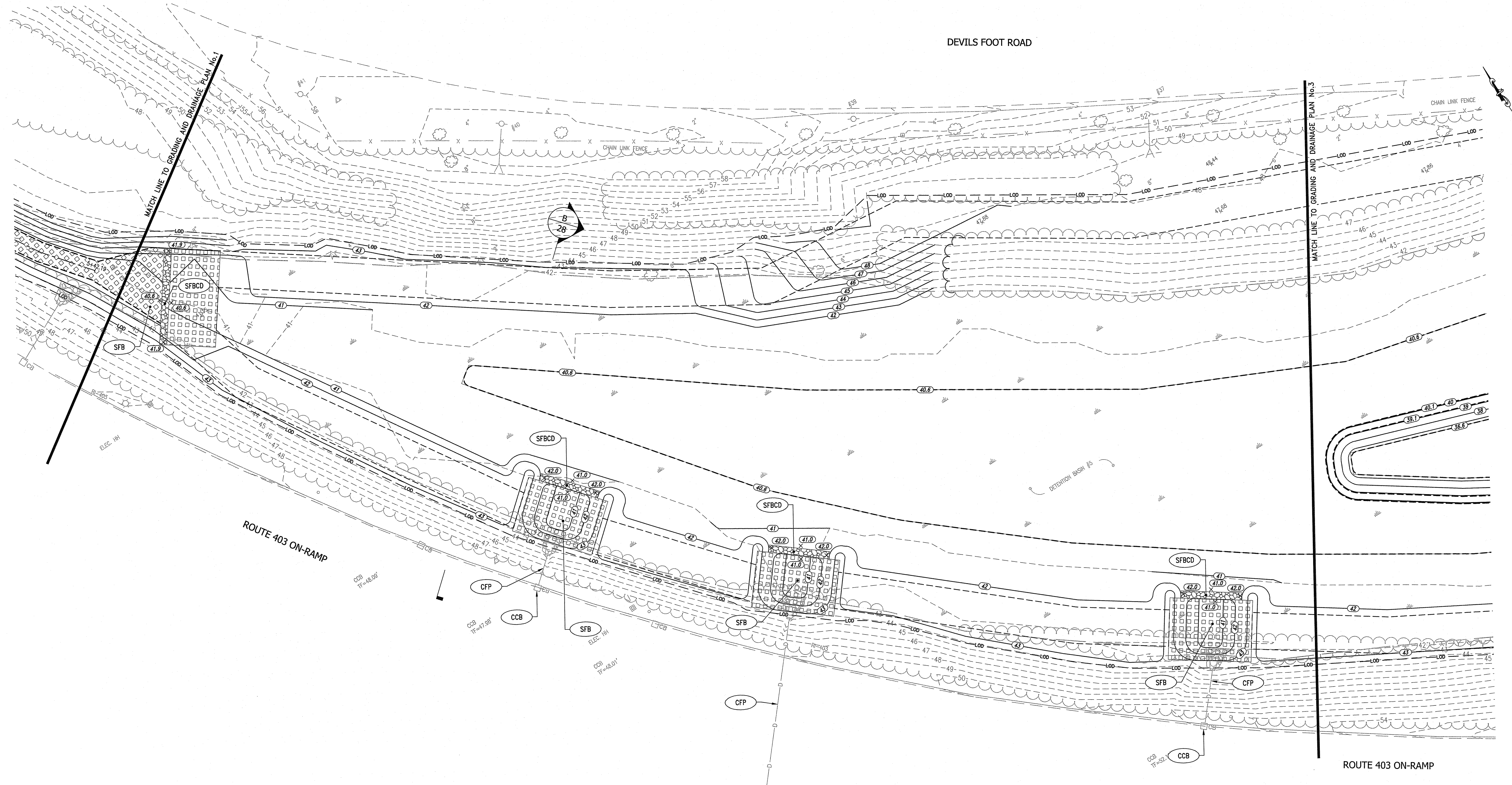


RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 22  
 OF: 28

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

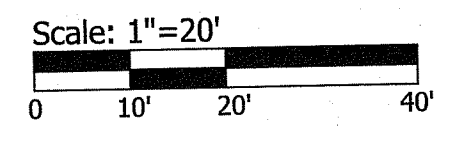
**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND  
**DETENTION BASIN No. 5**  
**GRADING AND DRAINAGE PLAN No.1**



**NOTE:**  
 1. CLEAN AND FLUSH ALL DRAINAGE STRUCTURES, PIPES AND RIPRAP LEVEL SPREADERS WITH THE VICINITY OF THE PROJECT. CLEANING AND FLUSHING SHALL BE PERFORMED AFTER UPSTREAM AREAS ARE STABILIZED.

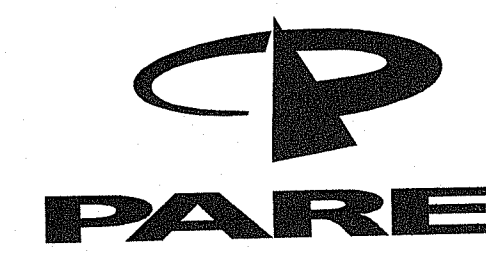
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM

NOTE PER DEM:  
 Kindly be advised that this Permit is not equivalent to the verification of the Department of freshwater wetlands and land



Environmental Management  
 MAR 01 2022  
 Office of Water Resources

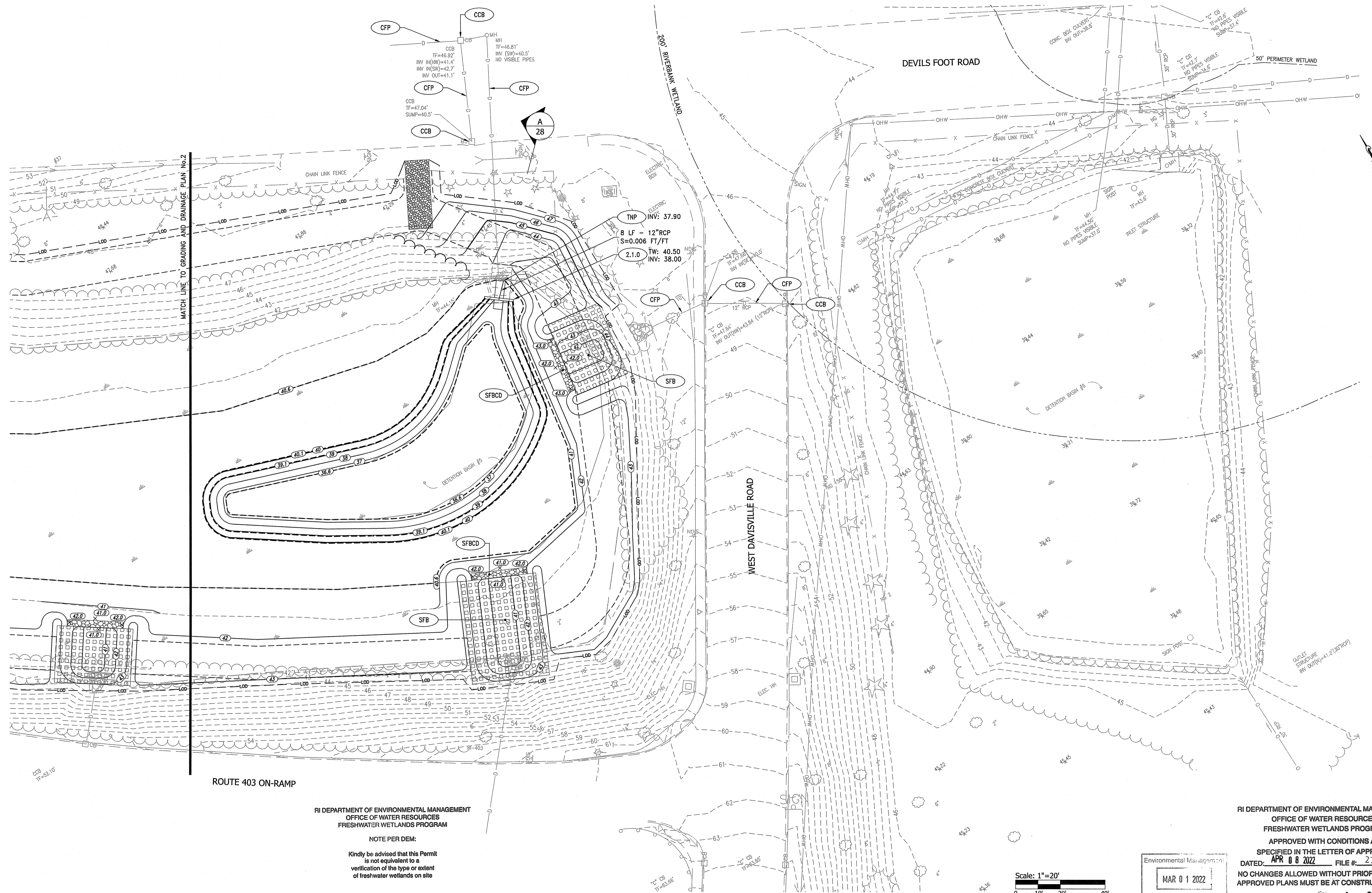
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: MAR 01 2022 FILE #: 22-0081  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Stephen B. Wemack*



DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 23  
 OF: 28

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

**RI ROUTE 403 STORMWATER IMPROVEMENTS**  
 EAST GREENWICH & NORTH KINGSTOWN  
**DETENTION BASIN No. 5**  
**GRADING AND DRAINAGE PLAN No.2**



MATCH LINE TO GRADING AND DRAINAGE PLAN No.2

ROUTE 403 ON-RAMP

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

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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
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Environmental Management  
MAR 01 2022  
Office of Water Resources

Scale: 1"=20'  
0 10' 20' 40'

*Jonathan D. Wenzel*



DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET: 24  
OF: 28

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
DETENTION BASIN No. 5  
GRADING AND DRAINAGE PLAN No.3

**DETENTION BASIN NO. 5 SEEDING PLAN**  
 SEED FURNISHED BY NEW ENGLAND WETLAND PLANTS, INC.  
 820 West Street, Amherst, MA  
 www.newp.com OR APPROVED EQUAL

BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND WETMIX</b>		
ALISMA PLANTAGO-AQUATICA	MUD PLANTAIN	OBL
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
ASTER NOV-BELGII	NEW YORK ASTER	FACW
BIDENS CERNUIA	NODDING BUR MARIGOLD	OBL
CAREX COMOSA	BRISTLYCOSMOS SEDGE	OBL
CAREX CRINITA	FRINGED SEDGE	OBL
CAREX LUPULINA	HOP SEDGE	OBL
CAREX LURIDA	LURID SEDGE	OBL
CAREX SCOPARIA	BLUNT BROOM SEDGE	FACW
CAREX VULPINOIDEA	FOX SEDGE	OBL
EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACW
EUPATORIUM PERFOLIATUM	BONESET	OBL
GLYCERIA CANADENSIS	RATTLESNAKE GRASS	OBL
GLYCERIA STRIATA	FOWL MANNA GRASS	OBL
JUNCUS EFFUSUS	SOFT RUSH	FACW
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL
ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 18 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

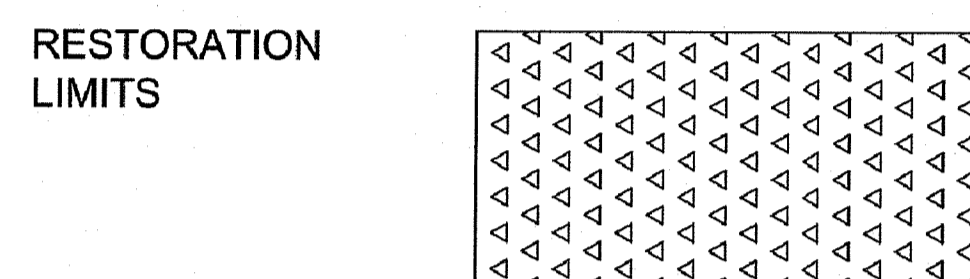
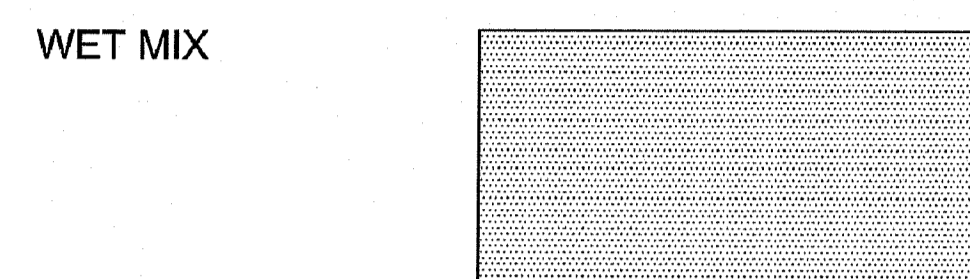
BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND CONSERVATION/WILDLIFE MIX</b>		
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
ANDROPOGON GERARDII	BIG BLUESTEM	FAC
FESTUCA RUBRA	RED FESCUE	FACU
SORGHASTRUM NUTANS	INDIAN GRASS	UPL
PANICUM VIRGATUM	SWITCH GRASS	FAC
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
DESMODIUM CANADENSE	SHOWY TICK TREFFOIL	FAC
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
BIDENS FRONDOSA	BEGGAR TICKS	FACW
EUPATORIUM PURPUREUM	PURPLE JOE PYE WEED	FAC
RUBECIA HIRTA	BLACK EYED SUSAN	FACU
ASTER PILOSUS	HEATH OR HAIRY ASTER	UPL
SOLIDAGO JUNCEA	EARLY GOLDENROD	UPL

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 25 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

LANDSCAPE NOTES:

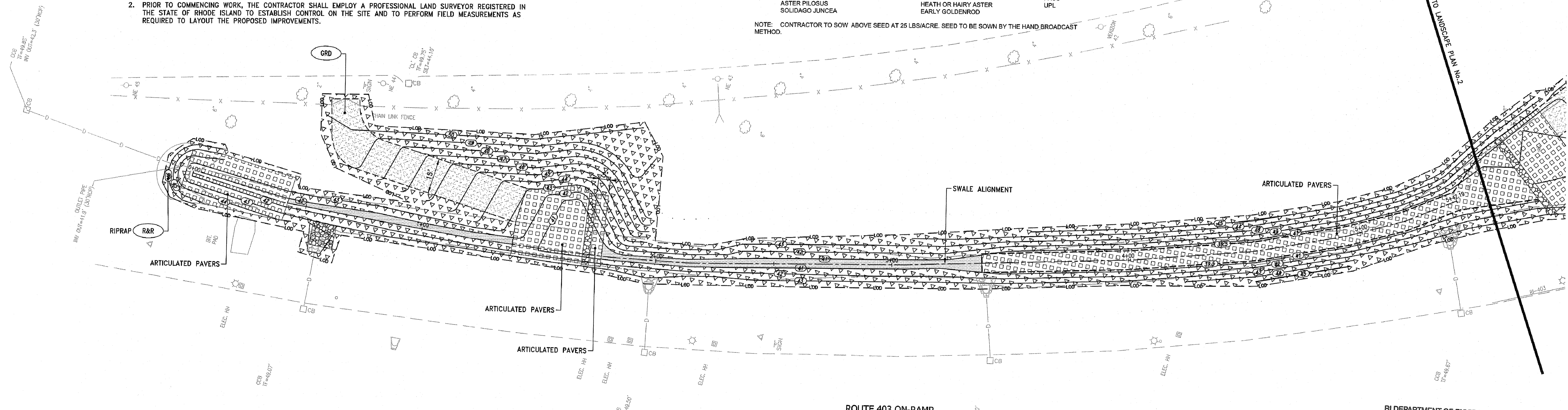
- ALL PLANT MATERIALS MUST BE TAGGED AT THE NURSERY BY RIDOT'S LANDSCAPE ARCHITECT IN ACCORDANCE WITH SECTION L.06.03.3 OF THE R.I. STANDARD SPECIFICATIONS.
- ALL PLANT SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED BY RIDOT'S LANDSCAPE ARCHITECT IN ACCORDANCE WITH SECTION L.06.03.4 AND L.06.03.5 OF THE R.I. STANDARD SPECIFICATIONS.

KEY



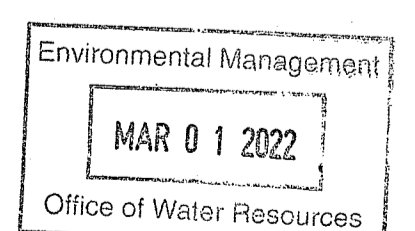
NOTES:

- CONTRACTOR SHALL PROVIDE LOAM AND SEED ON ALL DISTURBED AREAS UNLESS NOTED OTHERWISE.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL EMPLOY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF RHODE ISLAND TO ESTABLISH CONTROL ON THE SITE AND TO PERFORM FIELD MEASUREMENTS AS REQUIRED TO LAYOUT THE PROPOSED IMPROVEMENTS.



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

NOTE PER DEM:  
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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
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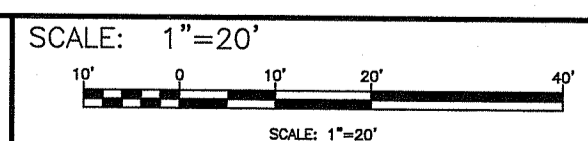


Diane C. Soule & Associates, ASLA  
 Landscape Architecture



RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 25  
 OF: 28



REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND  
 DETENTION BASIN No. 5  
 LANDSCAPE PLAN No. 1

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
00	RI		2022	26	28

**DETENTION BASIN NO. 5 SEEDING PLAN**  
 SEED FURNISHED BY NEW ENGLAND WETLAND PLANTS, INC.  
 820 West Street, Amherst, MA  
 www.newp.com OR APPROVED EQUAL

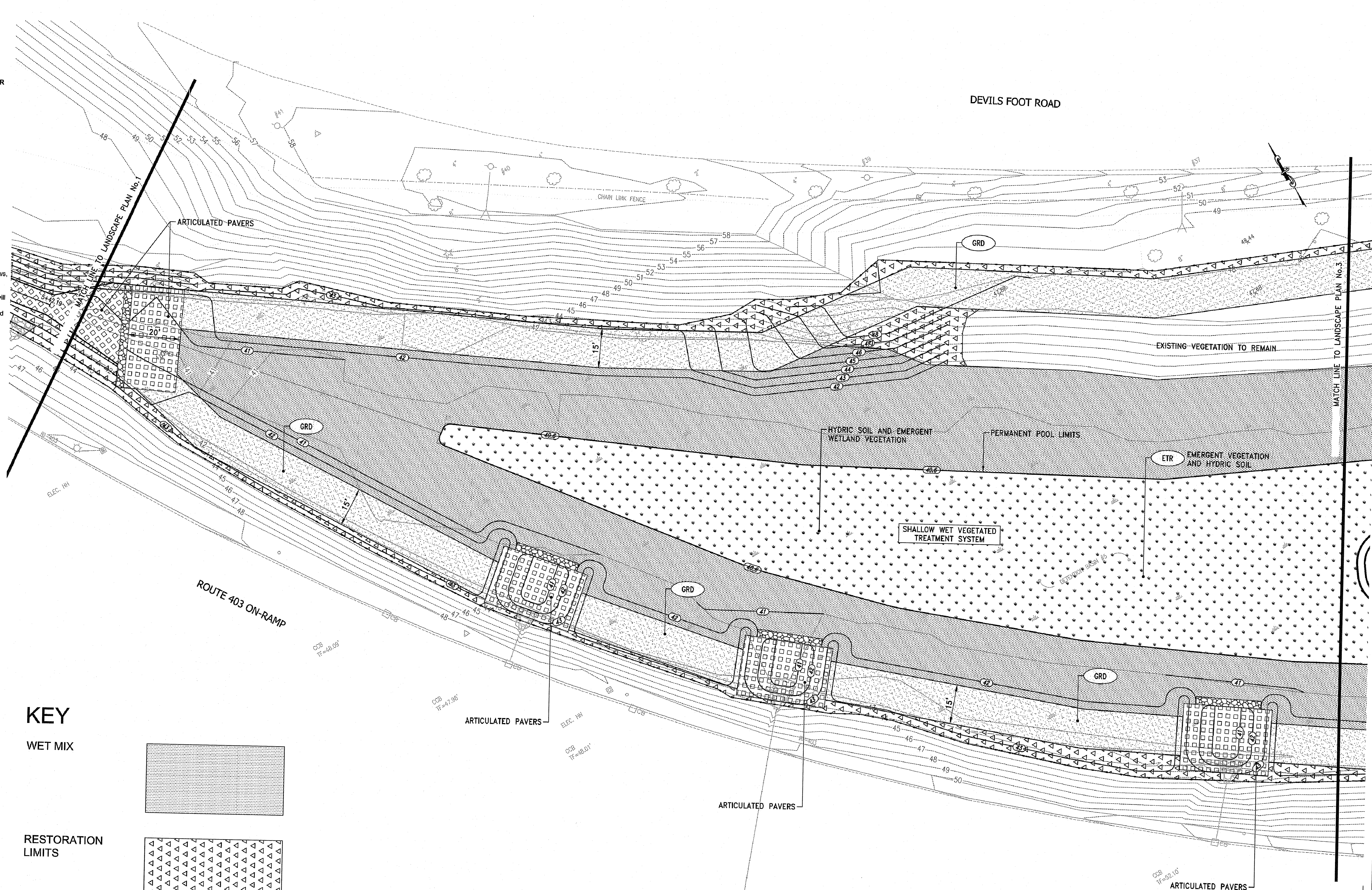
BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND WETMIX</b>		
ALISMA PLANTAGO-AQUATICA	MUD PLANTAIN	OBL
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
ASTER NOVI-BELGII	NEW YORK ASTER	FACW
BIDENS CERNUA	NODDING BUR MARIGOLD	OBL
CAREX COMOSA	BRISTLY/COSMOS SEDGE	OBL
CAREX CRINITA	FRINGED SEDGE	OBL
CAREX LUPULINA	HOP SEDGE	OBL
CAREX LURIDA	LURID SEDGE	OBL
CAREX SCOPARIA	BLUNT BROOM SEDGE	FACW
CAREX VULPINOIDEA	FOX SEDGE	OBL
EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACW
EUPATORIUM PERFOLIATUM	BONESET	OBL
GLYCERIA CANADENSIS	RATTLESNAKE GRASS	OBL
GLYCERIA STRIATA	FOWL MANNAGRASS	OBL
JUNCUS EFFUSUS	SOFT RUSH	FACW
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL
ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 18 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

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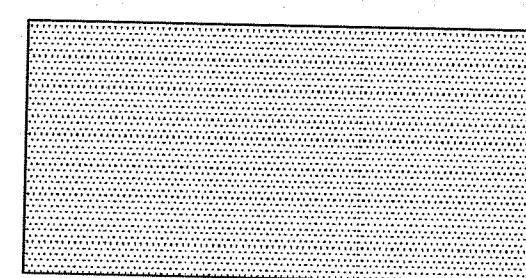
RESTORATION LIMITS	BOTANICAL NAME	COMMON NAME	INDICATOR
	<b>NEW ENGLAND CONSERVATION/WILDLIFE MIX</b>		
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW-
	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
	ANDROPOGON GERARDII	BIG BLUESTEM	FAC
	FESTUCA RUBRA	RED FESCUE	FACU
	SORGHASTRUM NUTANS	INDIAN GRASS	UPL
	PANICUM VIRGATUM	SWITCH GRASS	FAC
	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
	DESMODIUM CANADENSE	SHOWY TICK TREEFOIL	FAC
	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
	BIDENS FRONDOSA	BEGGAR TICKS	FACW
	EUPATORIUM PURPUREUM	PURPLE JOE PYE WEED	FAC
	RUBECKIA HIRTA	BLACK EYED SUSAN	FACU-
	ASTER PILOSUS	HEATH OR HAIRY ASTER	UPL
	SOLIDAGO JUNCEA	EARLY GOLDENROD	

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 25 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

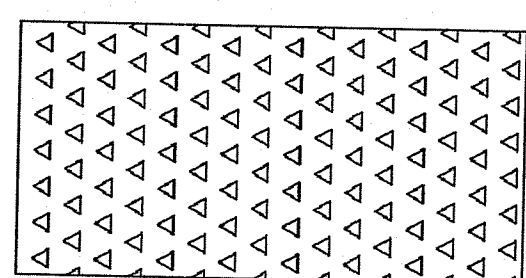


**KEY**

WET MIX

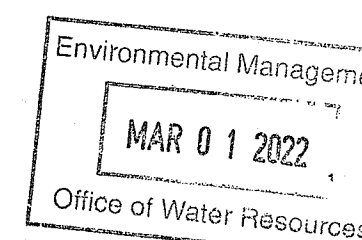


RESTORATION LIMITS



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

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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
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*Martin D. Wemer*



Diane C. Soule & Associates, ASLA  
 Landscape Architecture



RHODE ISLAND  
 DEPARTMENT OF TRANSPORTATION

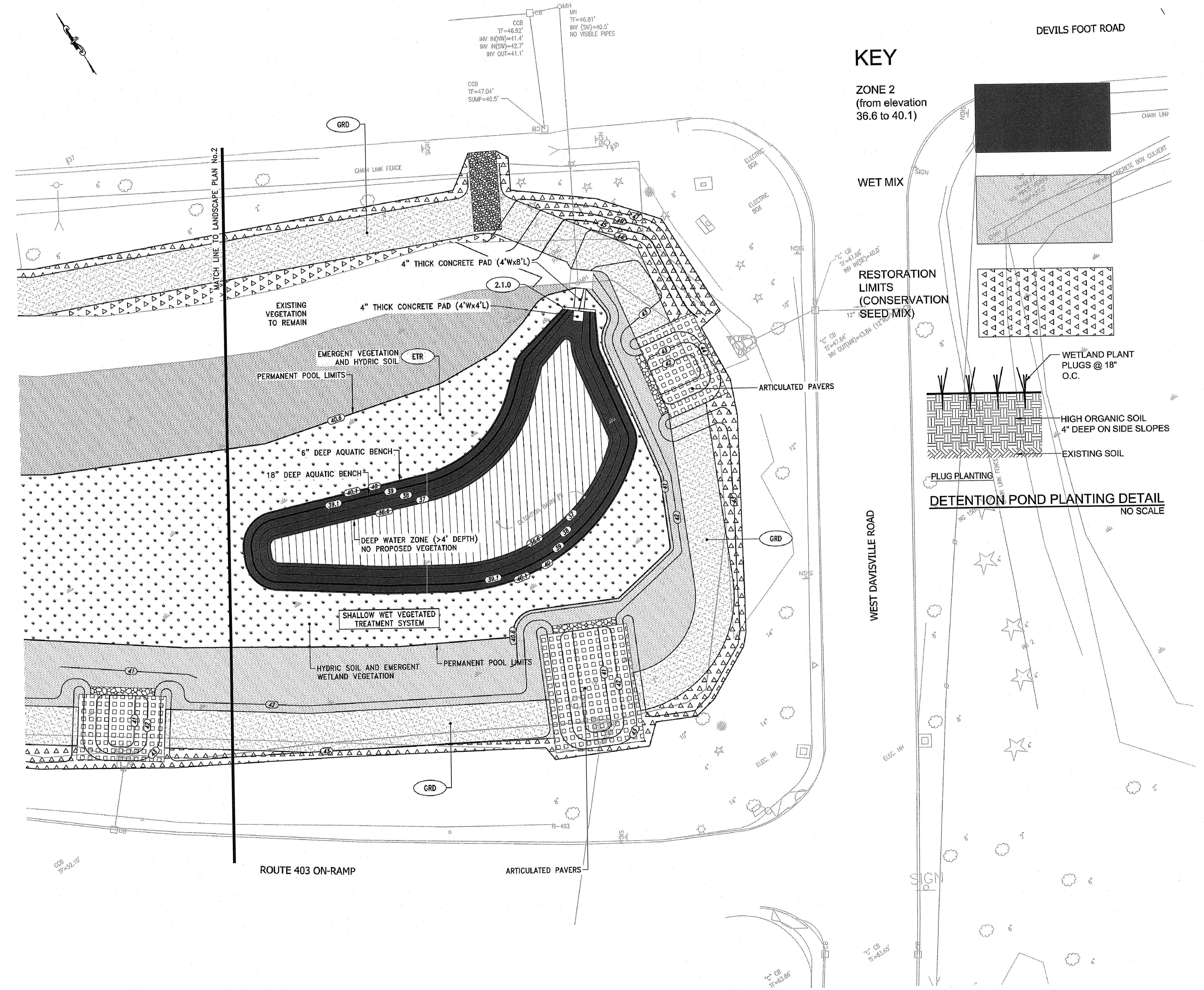
DESIGNED BY:  
 CHECKED BY:  
 DATE:  
 SHEET: 26  
 OF: 28

SCALE: 1"=20'

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
 EAST GREENWICH & NORTH KINGSTOWN  
 RHODE ISLAND

DETENTION BASIN No. 5  
 LANDSCAPE PLAN No.2



### KEY

**ZONE 2**  
(from elevation 36.6 to 40.1)

**WET MIX**

**RESTORATION LIMITS (CONSERVATION SEED MIX)**

### DETENTION POND PLANTING DETAIL

NO SCALE

### DETENTION BASIN NO. 5 SEEDING PLAN

SEED FURNISHED BY NEW ENGLAND WETLAND PLANTS, INC.  
820 West Street, Amherst, MA  
www.newwp.com OR APPROVED EQUAL

ZONE	BOTANICAL NAME	COMMON NAME	QUANTITY*	INDICATOR
2	Potamogeton nodosus	Long-leaf Pondweed	695	OBL
	Potamogeton pectinatus	Pondweed, Sago	695	OBL+
	Vallisneria americana	Wild Celery	695	OBL

\*2 inch plug; 18 inches on center

Potamogeton nodosus (Long-leaf Pondweed)  
A good food source for waterfowl as well as muskrat, beaver, and moose.

Potamogeton pectinatus (Pondweed, Sago)  
A very good source of food for waterfowl. This plant also provides good cover for small fish. Provides water quality benefits.

Vallisneria americana (Wild Celery)  
A perennial submerged aquatic plant. Provides excellent cover for small fish and food for waterfowl and adult fish. Excellent in wet detention basins.

BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND WETMIX</b>		
ALISMA PLANTAGO-AQUATICA	MUD PLANTAIN	OBL
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
ASTER NOVI-BELGII	NEW YORK ASTER	FACW
BIDENS CERNUA	NODDING BUR MARI GOLD	OBL
CAREX COMOSA	BRISTLY COSMOS SEDGE	OBL
CAREX CRINITA	FRINGED SEDGE	OBL
CAREX LUPULINA	HOP SEDGE	OBL
CAREX LURIDA	LURID SEDGE	OBL
CAREX SCOPARIA	BLUNT BROOM SEDGE	FACW
CAREX VULPINOIDEA	FOX SEDGE	OBL
EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACW
EUPATORIUM PERFOLIATUM	BONASET	OBL
GLYCERIA CANADENSIS	RATTLESNAKE GRASS	OBL
GLYCERIA STRIATA	FOWL MANNAGRASS	OBL
JUNCUS EFFUSUS	SOFT RUSH	FACW
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL
ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW

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RESTORATION LIMITS	BOTANICAL NAME	COMMON NAME	INDICATOR
<b>NEW ENGLAND CONSERVATION/WILDLIFE MIX</b>	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW-
	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACW
	ANDROPOGON GERARDII	BIG BLUESTEM	FACW
	FESTUCA RUBRA	RED FESCUE	UPL
	SORGHASTRUM NUTANS*	INDIAN GRASS	FACW
	PANICUM VIRGATUM	SWITCH GRASS	FACW
	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACW
	DESMODIUM CANADENSE	SHOWY TICK TREEFOIL	FACW
	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
	BIDENS FRONDOSA	BEGGAR TICKS	FACW
	EUPATORIUM PURPUREUM	PURPLE JOE PYE WEED	FACW
	RUBECKIA HIRTA	BLACK EYED SUSAN	FACW-
	ASTER PILOSUS	HEATH OR HAIRY ASTER	UPL
	SOLIDAGO JUNCEA	EARLY GOLDENROD	

NOTE: CONTRACTOR TO SOW ABOVE SEED AT 25 LBS/ACRE. SEED TO BE SOWN BY THE HAND BROADCAST METHOD.

#### LANDSCAPE NOTES:

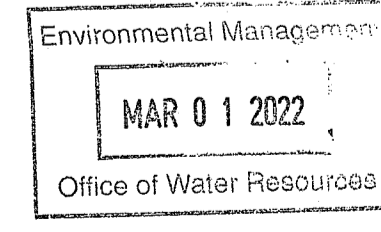
- ALL PLANT MATERIALS MUST BE TAGGED AT THE NURSERY BY RIDOT'S LANDSCAPE ARCHITECT IN ACCORDANCE WITH SECTION L.06.03.3 OF THE R.I. STANDARD SPECIFICATIONS.
- ALL PLANT SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED BY RIDOT'S LANDSCAPE ARCHITECT IN ACCORDANCE WITH SECTION L.06.03.4 AND L.06.03.5 OF THE R.I. STANDARD SPECIFICATIONS.

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: MAR 01 2022 FILE # 22-0081  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.



*Martin D. Senack*



Diane C. Soule & Associates, ASLA  
Landscape Architecture

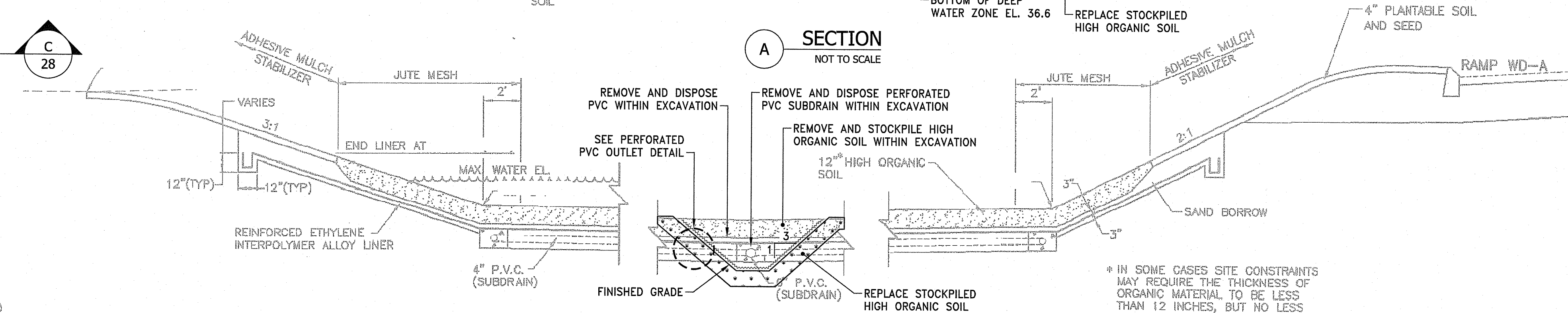
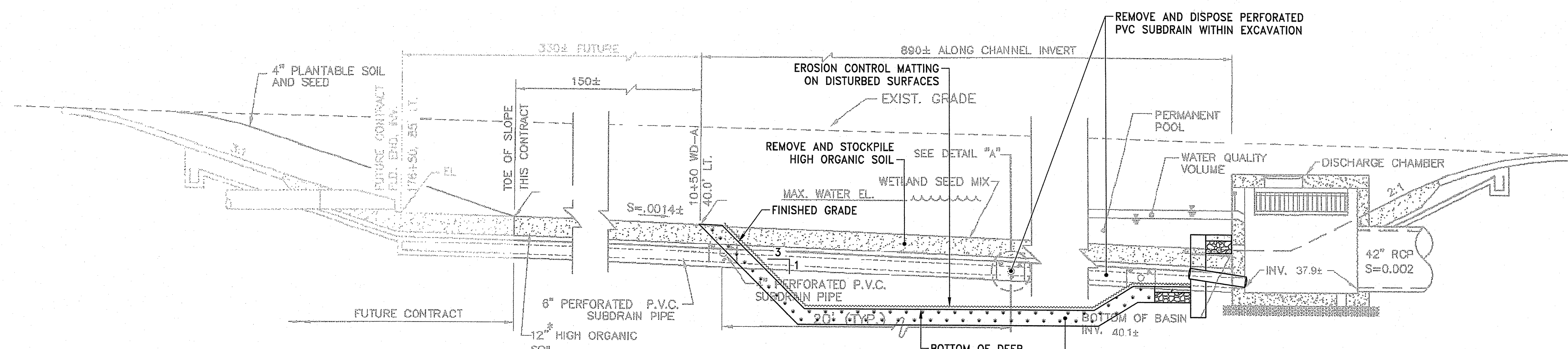
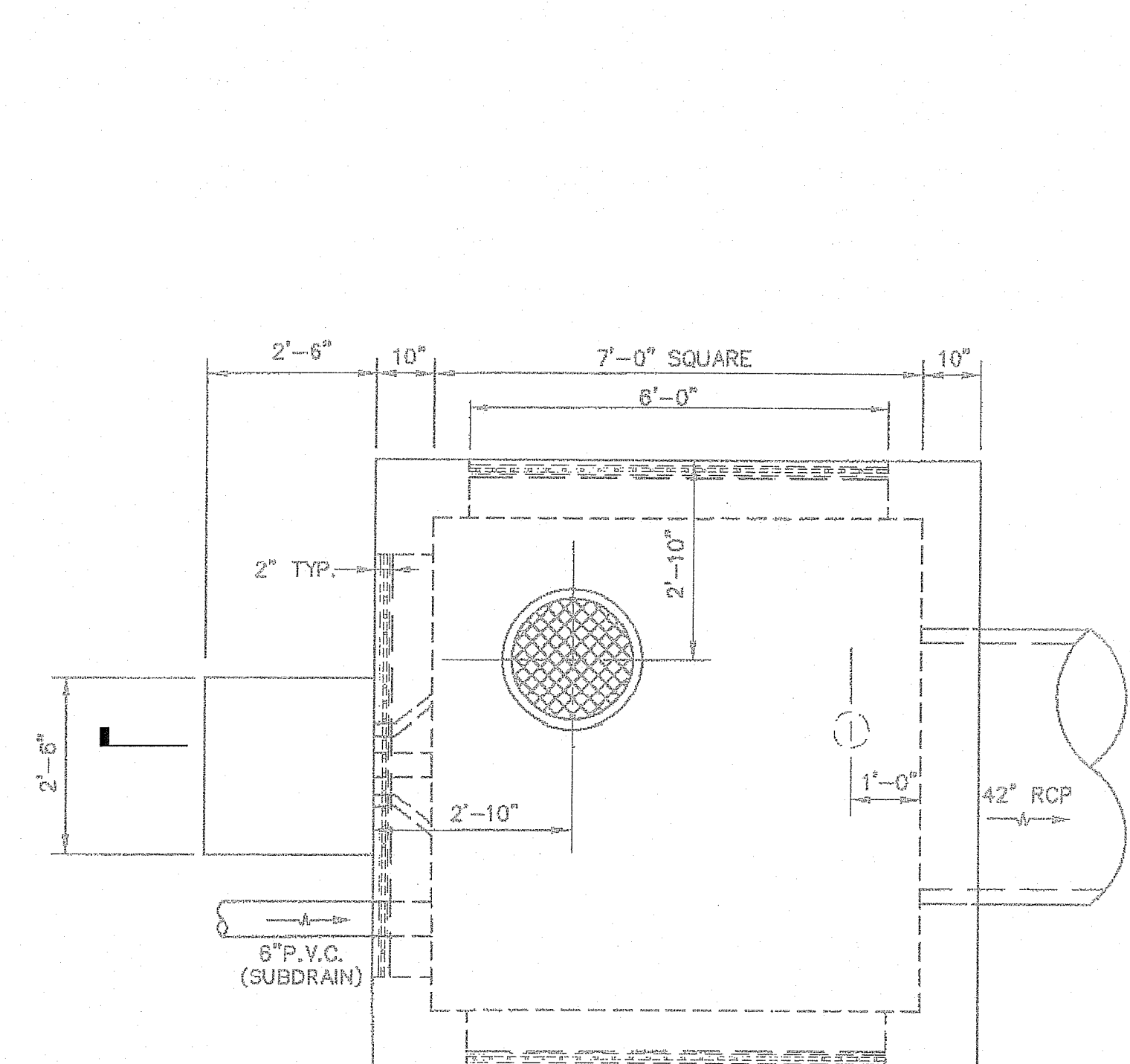


DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET: 27  
OF: 28

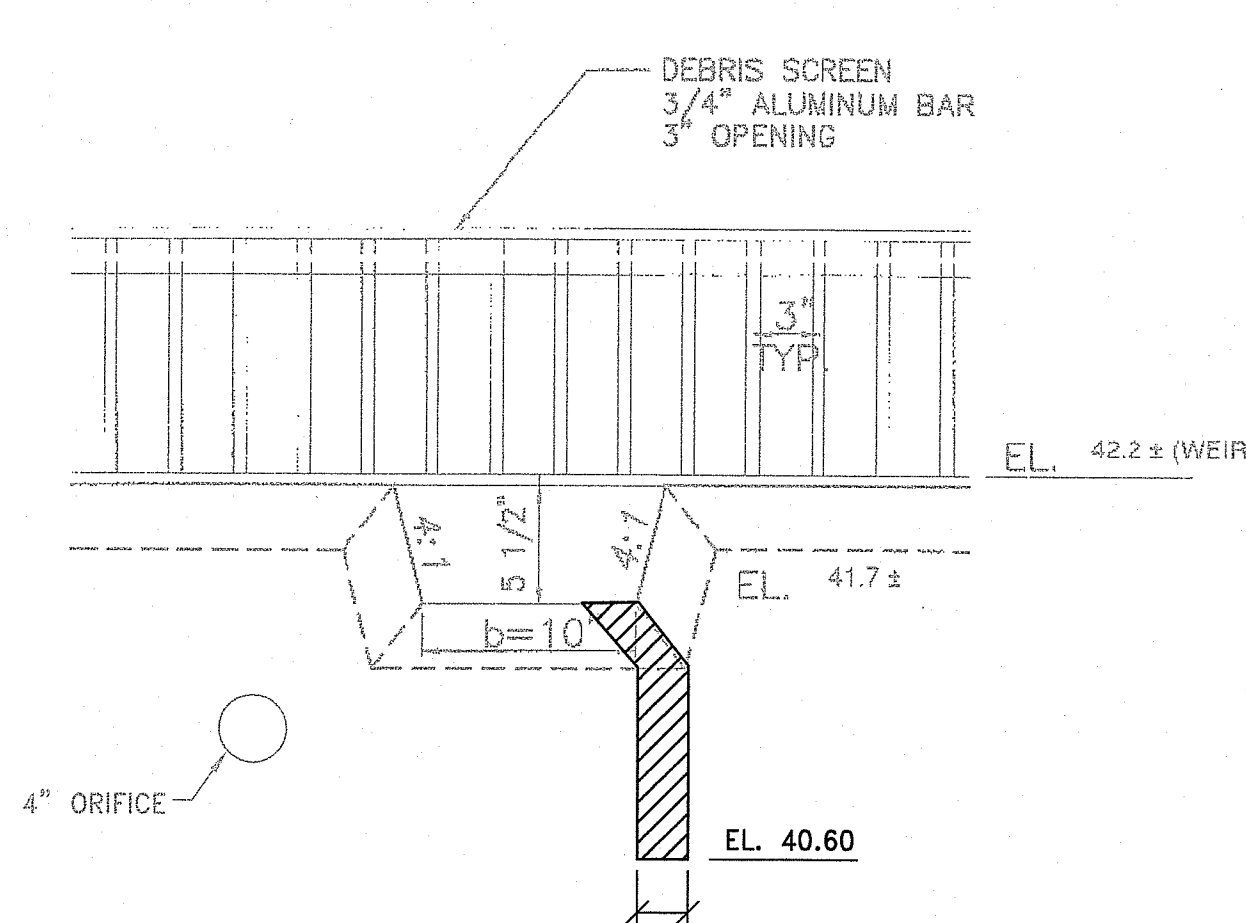
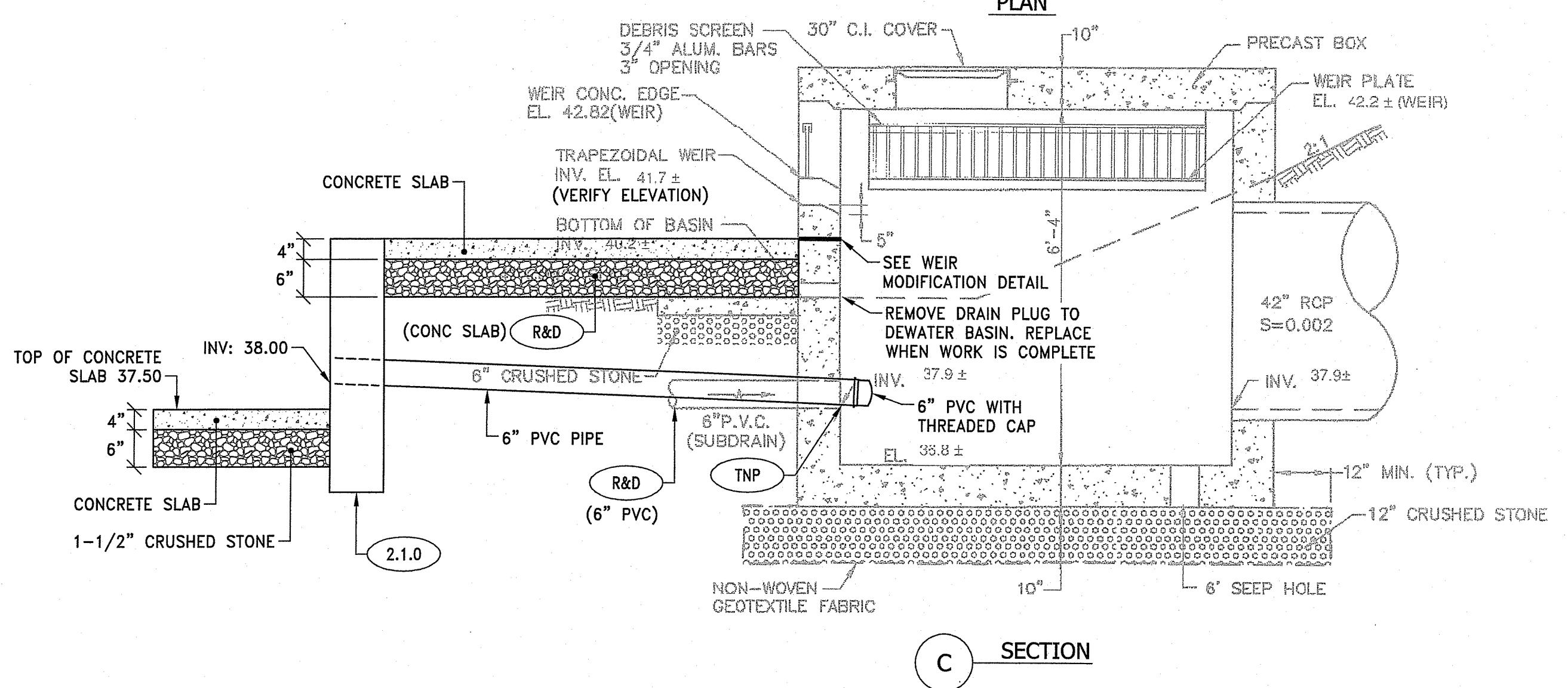
SCALE: 1"=20'

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN  
RHODE ISLAND  
DETENTION BASIN No. 5  
LANDSCAPE PLAN No. 3



\* IN SOME CASES SITE CONSTRAINTS MAY REQUIRE THE THICKNESS OF ORGANIC MATERIAL TO BE LESS THAN 12 INCHES, BUT NO LESS THAN 6 INCHES MINIMUM.



**OUTLET CONTROL STRUCTURE**  
NOT TO SCALE

**WEIR MODIFICATION DETAIL**  
NOT TO SCALE

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

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RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: APR 08 2022 FILE #: 22-0081  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Stephen D. Weneck*

Environmental Management  
MAR 01 2022  
Office of Water Resources



DESIGNED BY:	
CHECKED BY:	
DATE:	
SHEET:	28
OF:	28

RI ROUTE 403 STORMWATER IMPROVEMENTS  
EAST GREENWICH & NORTH KINGSTOWN RHODE ISLAND  
DETENTION BASIN No. 5  
DETAILS