FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	RI			1	16

INDEX

STATE OF RHODE ISLAND

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

STATE HIGHWAY

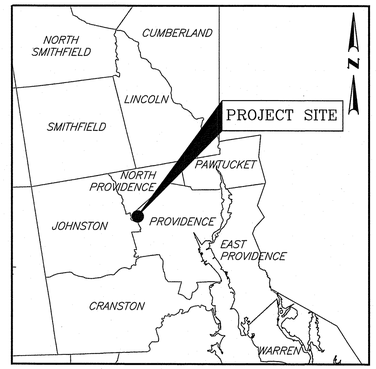
STORMWATER TREATMENT RETROFIT

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
PRIORITY 1 STORMWATER TREATMENT UNITS

CITY OF PROVIDENCE AND TOWN OF JOHNSTON

COUNTY OF PROVIDENCE

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



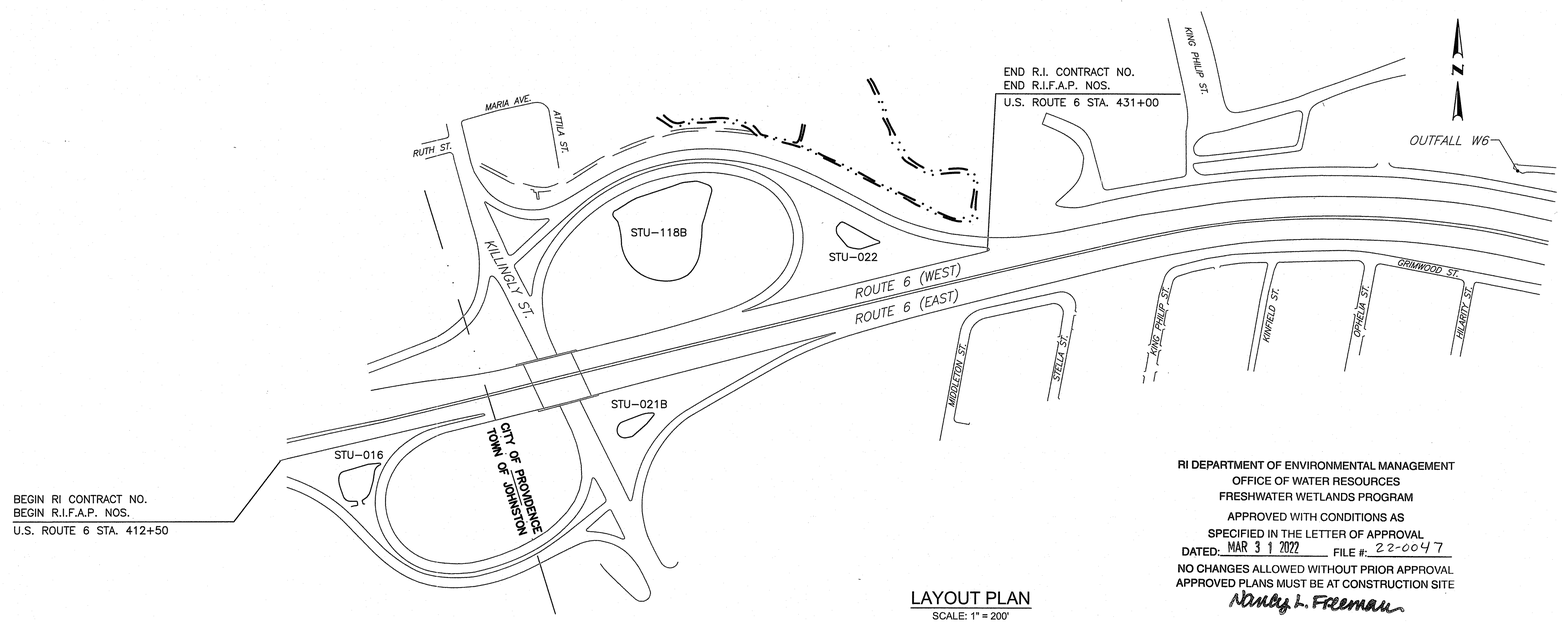
LOCATION MAP
NOT TO SCALE

DESIGN DESIGNATION (ROUTE 6)

2019 AADT	56,689 V.P.D.
D	53% EB / 47% WB
K	8%

DESIGN DESIGNATION (RI ROUTE 128)

2019 AADT	18,862 V.P.D.
D	48% NB / 52% SB
K	8%



LAYOUT PLAN
SCALE: 1" = 200'

SCALES OF DRAWINGS
PLANS: 1" = 20'

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: MAR 3 1 2022 FILE #: 22-0047
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman

STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
ENGINEER'S STAMP 3-17-22

HURRICANE EVACUATION ROUTE

This project does not include work on a designated Hurricane Evacuation and Diversionary Route.

Environmental Management
MAR 18 2022
Office of Water Resources

RIDEM SUBMISSION
REVISED MARCH 2022

R.I. DEPARTMENT OF TRANSPORTATION

APPROVED

DEPUTY CHIEF ENGINEER — DATE

APPROVED

CHIEF ENGINEER — DATE

APPROVED

DIRECTOR — DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR — DATE

SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED 2013, 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.
R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS

BASE OF LEVELS
AS NOTED

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

Contract Number _____
Number of Sheet 1
Total Sheets 16

0130L_V1_001_COVER

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			2	16

EXISTING

- EDGE OF PAVEMENT
- BERM
- CURB
- GUARDRAIL
- MB — MAILBOX
- NO. — UTILITY POLE
- POLE GUY
- LUMINARE
- SIGN
- (SIZE)SD — SUBDRAIN
- (SIZE)D — STORMDRAIN
- (SIZE)S — SANITARY SEWER
- (SIZE)W — WATER MAIN
- (SIZE)G — GAS MAIN
- (SIZE)T — TELEPHONE DUCT
- (SIZE)E — ELECTRIC DUCT
- PLUG AND CAP PIPE
- ABANDONED UTILITY
- FLARED END SECTION
- HEADWALL
- WG OR GG — WATER OR GAS GATE
- CB — CATCH BASIN
- MH — MANHOLE
- HYD — HYDRANT
- 1+00 — BASELINE OR CENTERLINE
- EXIST. S.H.L. PLAT NO. XX — STATE HIGHWAY LINE
- EXIST. S.F.L. PLAT NO. XX — STATE FREEWAY LINE
- EXIST. P.E.B. — PERMANENT EASEMENT LINE
- EXIST. T.E.B. — TEMPORARY EASEMENT LINE
- PROPERTY LINE
- CITY NAME / TOWN NAME — CITY OR TOWN LINE
- PWW — PAVED WATERWAY
- ELEV. — CONTOUR LINE
- OPEN DITCH
- R.I.H.B. — R.I. HIGHWAY BOUND
- S.B. — STONE BOUND
- RETAINING WALL
- FIELD STONE WALL
- NO. / TYPE — BORINGS
- FENCE
- WOOD OR BRUSH LINE
- TREES
- (NAME) — RIVER OR STREAM
- WETLAND AREA
- NO. / TYPE / MATERIAL — BUILDING
- FOUNDATION
- BUILDING TO BE REMOVED
- RAILROAD TRACKS
- CUT AND MATCH
- RIP-RAP
- CUT SLOPE
- FILL SLOPE
- ROCK CUT
- 00x00 — SPOT GRADE
- AREA GRADED TO DRAIN
- BALED HAY RI STD 9.1.0
- BALED HAY & SILT FENCE RI STD. 9.3.0
- 123 124 125 — EDGE OF WETLAND
- WETLAND PERIMETER
- ASSF — AREA SUBJECT TO STORM FLOW
- 100 YR. FLOOD BOUNDARY — 100-YEAR FLOOD PLAIN
- LIMIT OF DISTURBANCE
- LIMIT OF CLEARING

NEW

- NO. / GUY
- N(SIZE)SD (Length — Size)
- (Length — Size)
- N(SIZE)W
- N(SIZE)G
- N-#(SIZE)T
- N-#(SIZE)E
- 1+00 — NEW S.H.L. PLAT NO. XX
- NEW S.F.L. PLAT NO. XX
- NEW P.E.B.
- NEW T.E.B.
- ELEV.
- NO.
- ROADWAY / TOP OF SLOPE
- ROADWAY / TOE OF SLOPE
- ROCK SHELF / ROCK CUT
- 00.00 ELEV.
- LIMIT OF DISTURBANCE
- LIMIT OF CLEARING

1.1.0	UNDERDRAIN	7.4.2	GRANITE TRANSITION CURB (VERTICAL FACE TO SLOPE FACE)
1.3.0	CONCRETE CONNECTING COLLAR	7.5.0	BITUMINOUS CONCRETE LIP CURB
2.1.0	CONCRETE HEADWALLS FOR PIPE CULVERTS	7.5.1A	BITUMINOUS BERM (CONSTRUCTION METHOD A)
2.2.0	STANDARD HEADWALLS FOR MULTIPLE 3'-6" TO 7'-0" PIPE CULVERTS	7.5.1B	BITUMINOUS BERM (CONSTRUCTION METHOD B)
2.3.0 (DIA.)	PRECAST CONCRETE FLARED END SECTION	7.6.0	CURB SETTING DETAIL
3.2.0	BRICK/SOLID BLOCK 4'-0" ROUND MANHOLE	8.2.0	BITUMINOUS CONCRETE DITCH
3.2.1 (DIA.)	BRICK/SOLID BLOCK 5'-0" OR 6'-0" ROUND MANHOLE	8.3.0	RIP-RAP DITCH
3.3.0	BRICK/SOLID BLOCK TYPE "D" SQUARE CATCH BASIN	8.4.0	PAVED WATERWAY
3.3.2	BRICK/SOLID BLOCK TYPE "F" SQUARE CATCH BASIN	9.1.0	BALED HAY EROSION CHECK
3.3.3	SOLID BLOCK FLUSH SQUARE CATCH BASIN	9.2.0	SILT FENCE DETAIL
3.4.0	BRICK/SOLID BLOCK TYPE "D" ROUND CATCH BASIN	9.3.0	BALED HAY DITCH EROSION CHECK AND SILT FENCE COMBINED
3.4.1	BRICK/SOLID BLOCK ROUND CATCH BASIN WITH GUTTER INLET	9.4.0	BALED HAY DITCH AND SWALE EROSION CHECK
3.4.2	BRICK/SOLID BLOCK TYPE "F" ROUND CATCH BASIN	9.5.0	LOG AND HAY CHECK DAM
3.4.3	BRICK/SOLID BLOCK TYPE "R" CATCH BASIN	9.7.0	DEWATERING BASIN
3.4.4	SOLID BLOCK FLUSH ROUND CATCH BASIN	9.8.0	BALED HAY CATCH BASIN INLET PROTECTION
3.4.5 (DIA.)	BRICK/SOLID BLOCK 5'-0" OR 6'-0" ROUND CATCH BASIN	9.9.0	CONSTRUCTION ACCESS
3.5.0	SOLID BLOCK SHALLOW TYPE "F" SQUARE CATCH BASIN	10.1.0	WET STONE MASONRY RETAINING WALL
3.5.1 (SIZE)	SOLID BLOCK SHALLOW 5'-0" OR 6'-0" SQUARE CATCH BASIN	10.2.0	RUBBLE MASONRY WALL
3.6.0	BRICK/SOLID BLOCK DROP INLET	10.3.0	CONCRETE RETAINING WALL
3.7.0 (DIA.)	BRICK/SOLID BLOCK ROUND MANHOLE OR CATCH BASIN GREATER THAN 12'-0"	10.4.0	STONE MASONRY STEPS
4.2.0	PRECAST 4'-0" ROUND MANHOLE	14.1.0	CONCRETE HIGHWAY BOUND
4.2.1	PRECAST 5'-0" ROUND MANHOLE	15.1.0	POST AND MOUNTINGS FOR RURAL MAILBOX
4.2.2	PRECAST 6'-0" ROUND MANHOLE	15.2.0 (NO.)	POST AND MULTIPLE MOUNTINGS FOR RURAL MAILBOXES
4.3.0 (SIZE)	PRECAST 4'-0" OR 6'-0" SQUARE MANHOLE OR CATCH BASIN	18.2.0	PRECAST TYPE "A" HANDHOLE
4.4.0 (DIA.)	PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN	18.2.2	HEAVY DUTY TYPE "H" HANDHOLE
4.5.0	PRECAST CONCRETE DROP INLET	18.3.0	ALUMINUM LIGHTING STANDARDS
4.5.1	PRECAST CONCRETE DROP INLET LATERAL OUTLET	20.2.0	BI-DIRECTIONAL CONTROL DEVICE
4.5.2	PRECAST CONCRETE DROP INLET LONGITUDINAL OUTLET	24.6.1	STREET SIGN MOUNTING DETAIL
5.3.0	CATCH BASIN AND MANHOLE STEP	26.2.0	POLYETHYLENE DRUM WITH MARKINGS
5.4.0	CONCRETE COLLARS	26.3.0	PVC PLASTIC PIPE TYPE III BARRICADE
6.1.0	LIGHT-DUTY SQUARE FRAME AND ROUND COVER	31.1.0	CHAIN LINK FENCE 3'-0" TO 4'-0"
6.1.1	HEAVY DUTY SQUARE FRAME AND ROUND COVER	31.2.0	CHAIN LINK FENCE 5'-0" TO 6'-0"
6.2.0	LIGHT-DUTY ROUND FRAME AND COVER	31.2.1	CHAIN LINK FENCE 5'-0" TO 6'-0" INTERMEDIATE POST
6.2.1	HEAVY-DUTY ROUND FRAME AND COVER	31.3.0	WOVEN WIRE RIGHT-OF-WAY FENCE (STEEL POST)
6.3.0	SQUARE FRAME AND GRATE	34.1.0	TYPICAL GUARDRAIL INSTALLATION
6.3.1	SQUARE FRAME AND GRATE	34.2.0	STEEL BEAM GUARDRAIL
6.3.2	SQUARE FRAME AND GRATE (BICYCLE SAFE)	34.2.1	STEEL BEAM GUARDRAIL DETAILS
6.3.3	HIGH CAPACITY FRAME AND GRATE	34.2.2	STEEL BEAM GUARDRAIL DOUBLE FACED ASSEMBLY
6.3.4	HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)	34.2.3	STEEL BEAM GUARDRAIL FIXTURES
6.4.0	ROUND FRAME AND GRATE	34.2.5	STEEL BEAM GUARDRAIL REFLECTORIZED TRIANGULAR DELINEATOR
7.1.0S	PRECAST CONCRETE CURB (STRAIGHT)	34.3.1	GUARDRAIL END SECTION
7.1.0C	PRECAST CONCRETE CURB (CIRCULAR)	34.3.2	TERMINAL END SECTION (SINGLE FACE)
7.1.1	3'-0" PRECAST CONCRETE TRANSITION CURB	34.3.3	ANCHORAGE DETAILS APPROACH END SECTION
7.1.2	6'-0" PRECAST CONCRETE TRANSITION CURB	34.3.4	ANCHORAGE DETAILS TRAILING END SECTION
7.1.4	PRECAST 2'-0" RADIUS CORNER	34.4.0	STEEL BACKED TIMBER GUARDRAIL
7.1.5	PRECAST CONCRETE INLET STONE (FOR SQUARE CATCH BASIN)	34.4.1	STEEL BACKED TIMBER GUARDRAIL TERMINAL SECTION-TYPE 1
7.1.6	PRECAST CONCRETE INLET STONE (FOR ROUND CATCH BASIN)	40.1.0	DOUBLE-FACED PRECAST MEDIAN BARRIER
7.1.7	PRECAST CONCRETE APRON STONE (FOR SQUARE CATCH BASIN)	40.2.0	SINGLE-FACED PRECAST MEDIAN BARRIER
7.1.8	PRECAST CONCRETE APRON STONE (FOR ROUND CATCH BASIN)	40.2.1	SINGLE-FACED PRECAST MEDIAN BARRIER
7.2.0S	PRECAST CONCRETE SLOPED FACE CURB (STRAIGHT)	40.3.0	PRECAST MEDIAN BARRIER TRANSITION UNIT
7.2.0C	PRECAST CONCRETE SLOPED FACE CURB (CIRCULAR)	40.5.0	PRECAST MEDIAN BARRIER FOR TEMPORARY TRAFFIC CONTROL
7.2.1	PRECAST CONCRETE SLOPED FACE TRANSITION CURB	43.1.0	CEMENT CONCRETE SIDEWALK
7.2.2	PRECAST CONCRETE TRANSITION CURB (VERTICAL FACE TO SLOPED FACE)	43.2.0	BITUMINOUS CONCRETE SIDEWALK
7.3.0S	GRANITE CURB (STRAIGHT)	43.3.0	WHEELCHAIR RAMP
7.3.0C	GRANITE CURB (CIRCULAR)	43.3.1	WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY AREAS
7.3.1	3'-0" GRANITE TRANSITION CURB	43.4.0	DRIVEWAY DEVELOPMENT FOR 3'-0" TRANSITION CURB
7.3.2	6'-0" GRANITE TRANSITION CURB	43.4.1	DRIVEWAY DEVELOPMENT FOR 6'-0" TRANSITION CURB
7.3.3	GRANITE WHEELCHAIR RAMP TRANSITION CURB	43.5.0	CEMENT CONCRETE DRIVEWAYS
7.3.4	GRANITE 2'-0" RADIUS CORNER	48.1.0	DETECTABLE WARNING SYSTEM
7.3.5	GRANITE INLET STONE (FOR SQUARE CATCH BASIN)	51.1.0	TREE PROTECTION DEVICE
7.3.6	GRANITE INLET STONE (FOR ROUND CATCH BASIN)	51.1.1	DRIP LINE TREE PROTECTION DEVICE FOR EXISTING TREES
7.3.7	GRANITE APRON STONE (FOR SQUARE CATCH BASIN)	51.2.0	SHRUB PROTECTION DEVICE
7.3.8	GRANITE APRON STONE (FOR ROUND CATCH BASIN)	51.3.0	TREE WELL
7.4.0	GRANITE SLOPED FACE CURB	51.4.0	TREE WALL
7.4.1	GRANITE SLOPED FACE TRANSITION CURB		

AB	ADJUST CATCH BASIN TO GRADE	NFH	NEW FIRE HYDRANT WITH GATE VALVE
ABM	ADJUST CATCH BASIN TO MANHOLE	NIC	NOT IN THIS CONSTRUCTION CONTRACT
AC	ADJUST CURB STOP TO GRADE	NWB	FURNISH AND INSTALL NEW WATER GATE VALVE BOX
AD	ADJUST DRAINAGE MANHOLE TO GRADE	NWVB	FURNISH AND INSTALL NEW WATER GATE VALVE AND BOX
AE	ADJUST ELECTRIC MANHOLE TO GRADE	NWCB	FURNISH AND INSTALL NEW WATER CURB STOP BOX
AFC	ADJUST FRAME AND COVER TO GRADE	NWSB	FURNISH AND INSTALL NEW WATER CURB STOP AND BOX
AFG	ADJUST FRAME AND GRATE TO GRADE	PCD	PERMANENT CHECK DAM
AG	ADJUST GAS GATE BOX TO GRADE	PS	4" PLANTABLE SOIL AND SEED
AHH	ADJUST HANDHOLE TO GRADE	RCB	RECONSTRUCT TYPE "D" CATCH BASIN, TO CATCH BASIN WITH GUTTER INLET
AS	ADJUST SANITARY SEWER MANHOLE TO GRADE	RCM	R.I.D.O.T. COMMUNICATIONS MANHOLE
AT	ADJUST TELEPHONE MANHOLE TO GRADE	RHH	REMOVE, HANDLE, HAUL, TRIM, RESET CURB EDGING, STRAIGHT, CIRCULAR (ALL TYPES)
AW	ADJUST WATER GATE BOX TO GRADE	RLP	RELOCATE LAMP POST
BCD	BITUMINOUS CONCRETE DRIVEWAY 3" BITUMINOUS CONCRETE TYPE I-2 8" GRAVEL BORROW SUBBASE COURSE	RMB	RELOCATE MAILBOX (BY OTHERS)
BPS	BUILD NEW STRUCTURE OVER EXISTING PIPE	RPM	REMOVE PAVEMENT MARKINGS
CCB	CLEAN CATCH BASIN	RRP	RIP-RAP PAD (SEE DETAIL)
CCP	CUT AND CAP PIPE WITH RESTRAINT (ALL SIZES)	RRS	REMOVE AND RELOCATE SIGN
CFP	CLEAN AND FLUSH PIPE	RUP	RELOCATE UTILITY POLE (BY OTHERS)
CG	CLEARING AND GRUBBING	SB	STONE BAFFLE
CMH	CLEAN MANHOLE	SBAE	STEEL BEAM BRIDGE CONNECTION APPROACH END (W/O NESTED RAIL)
CP (DEPTH)	COLD PLANE	SBTE	STEEL BEAM BRIDGE CONNECTION TRAILING END (W/NESTED RAIL)
CPP	CUT AND PLUG PIPE (ALL TYPES, ALL SIZES)	SD-	STRUCTURAL DISPOSITION - SEE CS PAGES OF SPECIFICATION
DB	REMOVE AND DISPOSE BITUMINOUS CURB	SF	REMOVE AND STOCKPILE FENCE
DC	REMOVE AND DISPOSE CONCRETE CURB	SGA	SPECIAL GRADED AGGREGATE
DCB	REMOVE AND DISPOSE CATCH BASIN	SGC	REMOVE AND STOCKPILE GRANITE CURB
DDI	REMOVE AND DISPOSE DROP INLET	SGR	REMOVE AND STOCKPILE GUARDRAIL
DF	REMOVE AND DISPOSE FENCE	SH	REMOVE AND STOCKPILE HYDRANT
DFC	REMOVE AND DISPOSE FRAME AND COVER	SS	REMOVE AND STOCKPILE SIGN
DFE	REMOVE AND DISPOSE FLARED END SECTION	STS	REMOVE AND STOCKPILE TRAFFIC SIGNAL SYSTEM
DFG	REMOVE AND DISPOSE FRAME AND GRATE	TB	CONCRETE THRUST BLOCK
DFH	REMOVE AND DISPOSE FIRE HYDRANT	TEP	TIE EXISTING PIPE INTO NEW STRUCTURE
DFP	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	TNP	TIE NEW PIPE INTO EXISTING STRUCTURE
DG	REMOVE AND DISPOSE GUARDRAIL	TBT	THRIE BEAM TRANSITION
DH	REMOVE AND DISPOSE HEADWALL	TBBC	THRIE BEAM BRIDGE CONNECTION
DHB	REMOVE AND DISPOSE HIGHWAY BOUND	TT	TREE TRIMMING
DHH	REMOVE AND DISPOSE HANDHOLE	WCM	4" WOOD CHIP MULCH
DL	REMOVE AND DISPOSE LIGHT AND FOUNDATION	4DY	4" EPOXY RESIN PAVEMENT MARKINGS - DOUBLE YELLOW
DMB	REMOVE AND DISPOSE MEDIAN BARRIER	6W	6" EPOXY RESIN PAVEMENT MARKINGS - WHITE
DMH	REMOVE AND DISPOSE MANHOLE	12W	12" EPOXY RESIN PAVEMENT MARKINGS - WHITE
DMM	REMOVE AND DISPOSE MEDIAN MARKER	6WT	6" PREFORMED PATTERNED MARKING (HIGH PERFORMANCE TAPE)
DOW	REMOVE AND DISPOSE OBSERVATION WELL	4Y	4" EPOXY RESIN PAVEMENT MARKINGS - YELLOW
DP	REMOVE AND DISPOSE PIPE	6Y	6" EPOXY RESIN PAVEMENT MARKINGS - YELLOW
DPB	REMOVE AND DISPOSE PAVEMENT AND RIGID BASE	P.G.L.	PROFILE GRADE LINE
DRB	REMOVE AND DISPOSE RIGID BASE		
DS	REMOVE AND DISPOSE SIGN		
DSS	REMOVE AND DISPOSE TRAFFIC SIGNAL SYSTEM		
DSW	REMOVE AND DISPOSE SIDEWALK		
DTD	REMOVE AND DISPOSE TELEPHONE DUCT BANKS		
DUP	REMOVE AND DISPOSE UTILITY POLE		
DWW	REMOVE AND DISPOSE PAVED WATERWAY		
FF	FILTER FABRIC RIPRAP FLARED END UNDERLAYMENT		
GET	FLARED GUARDRAIL END TREATMENT		
IA	IMPACT ATTENUATOR		
IDL	IMPERVIOUS DITCH LINER		
LOD	LIMIT OF DISTURBANCE		
LOR	LIMIT OF REGRADING		
LS	4" LOAM AND SEED		

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

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: MAR 31 2022 FILE #: 22-0047

NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy A. Freeman

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 18 2022
Office of Water Resources

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

SCALE: NO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

STANDARD PLAN SYMBOLS & STANDARD LEGEND

PTSNO_V1_002_STDSYM

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			3	16

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 PLANED 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 SKY-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 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. 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 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 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 ERODABLE MATERIAL SHALL ALSO BE SEEDED 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.

   SEEDING TYPE I.

   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.

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.

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 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.
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: MAR 3 1 2022 FILE #: 22-0047
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 18 2022
Office of Water Resources

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

SCALE: NO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

STANDARD NOTES - 1

PTSNO_V1_003_STDNOTES01

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			4	16

LANDSCAPE NOTES:

1. 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.
2. 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.
3. ALL PLANT MATERIAL IS TO BE FIELD LOCATED BY A REPRESENTATIVE FROM THE R.I.D.O.T. LANDSCAPE ARCHITECTURE UNIT.
4. 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.
5. 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.
6. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
7. ALL TREES AND/OR SHRUBS THAT ARE PLANTED AS A BED SHALL BE MULCHED AS A BED.
8. 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

1. 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

1. 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."
2. 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.
3. 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:

1. ALL SALVAGED TRAFFIC SIGNAL EQUIPMENT SHALL BE DELIVERED TO THE R.I.D.O.T. MAINTENANCE HEADQUARTERS, 360 LINCOLN AVENUE, WARWICK, RHODE ISLAND, 02888.
2. BACK PLATES SHALL BE INSTALLED ON ALL TRAFFIC SIGNAL HEADS.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. ALL FOUNDATIONS MUST HAVE CONES OR BARRELS BOLTED TO FOUNDATION BASES UNTIL ACTUAL POLE IS INSTALLED.
10. 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.
11. 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.
12. ALL LOOP DETECTORS SHALL BE CENTERED WITHIN EACH LANE AS DELINEATED, UNLESS OTHERWISE DIMENSIONED ON PLANS.
13. ALL LOOP DETECTORS SHALL BE CUT INTO THE FINAL PAVEMENT SURFACE COURSE.
14. TRAFFIC SIGNAL CONTROLLERS SHALL BE WIRED SO THAT ANY FIRE PRE–EMPTION SHALL OVERRIDE MANUAL (PUSH BUTTON) OPERATION.
15. 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:

1. 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.
2. ALL SIGN MOUNTINGS FOR TEMPORARY AND CONSTRUCTION SIGNS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
3. 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.
4. 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.
5. POLICE OFFICERS (AND NOT FLAGPERSONS) SHALL BE UTILIZED WHEN WORK WILL IMPACT SIGNALIZED INTERSECTIONS AND LIMITED ACCESS HIGHWAYS.
6. 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.
7. 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.
8. 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."
9. 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.
10. 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.
11. 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–PLANED AND NEW ROADWAY SURFACES THAT WILL BE OPENED TO TRAFFIC AT THE END OF THE SHIFT.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 18 2022
Office of Water Resources

DESIGNED BY:
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DATE:
SHEET:
OF:

SCALE: NO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

STANDARD NOTES - 2

PTSNO_V1_004_STDNOTES02

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			5	

GENERAL NOTES

1. PROPERTY LINES, STATE RIGHT-OF-WAY LINES, AND BASELINES SHOWN ON THIS PLAN ARE APPROXIMATE AND WERE GRAPHICALLY PRODUCED BASED UPON EXISTING HIGHWAY PLATS AND PLANS.
2. AT THE ROUTE 6/KILLINGLY STREET INTERCHANGE, SOME TOPOGRAPHIC DATA WAS OBTAINED FROM PLANS OF PREVIOUS R.I.D.O.T. CONSTRUCTION CONTRACTS NOS. 6376, 6782, 9852, 9931, 2002-CH-022 AND SUPPLEMENTED WITH MANUAL SURVEY BY CROSSMAN ENGINEERING, INC. IN FEBRUARY 2019.
3. IN THE AREAS OF OVERHEAD WIRES, THE CONTRACTOR SHALL KEEP ALL EQUIPMENT A MINIMUM OF 10 FEET FROM POWER LINES.
4. ALL ITEMS NOT IDENTIFIED FOR MODIFICATION WILL BE "EXISTING TO REMAIN" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIALS WITHIN THE ROOT ZONE OF ANY TREES OR SHRUBS WITHIN THE PROJECT LIMITS.
6. NO GUARDRAIL SHALL BE REMOVED UNLESS IT IS REPLACED BY NEW GUARDRAIL AT THE END OF THE SAME WORKING DAY OR REPLACED BY A TEMPORARY PRECAST MEDIAN BARRIER. IF THE CONTRACTOR ELECTS TO UTILIZE TEMPORARY PRECAST MEDIAN BARRIER, THE TEMPORARY MEDIAN BARRIER AND ANY APPROACH PROTECTION SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
7. CONSTRUCTION OF ALL EMBANKMENTS AND BACKFILL FOR THE STORMWATER PONDS SHALL CONFORM TO SUBSECTIONS 202.03.2 AND 202.03.3 OF THE SPECIFICATIONS. UNLESS OTHERWISE NOTED, EMBANKMENTS AND BACKFILL SHALL BE CONSTRUCTED USING SUITABLE EARTH EXCAVATION MATERIAL THAT CONFORMS TO SUBSECTION M.01.01 AND IS FREE FROM ORGANIC SOIL, VEGETATIVE MATTER, AND ROCK OR ROCK FRAGMENTS GREATER THAN 6 INCHES.

DRAINAGE AND EROSION CONTROL NOTES:

1. WETLAND EDGE FLAGS AT THE NORTHEAST QUADRANT OF THE ROUTE 6/KILLINGLY STREET INTERCHANGE WERE PLACED IN THE FIELD BY APPLIED BIOSYSTEMS, INC. ON FEBRUARY 8, 2018 AND LOCATED BY CROSSMAN ENGINEERING, INC.
2. ANY DRAINAGE STRUCTURES, PIPES OR CULVERTS DAMAGED BY THE CONTRACTOR WHILE CARRYING OUT THIS CONTRACT SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

FLOOD ZONE NOTE:

1. PROPOSED WORK AT THE ROUTE 6/KILLINGLY STREET INTERCHANGE IS SHOWN TO BE WITHIN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN) ON THE FEMA FLOOD INSURANCE RATE MAP FOR PROVIDENCE COUNTY, RHODE ISLAND, PANEL 303 OF 451, MAP NO. 44007C0303H, REVISED OCTOBER 2, 2015; AND ALSO ON THE FEMA FLOOD INSURANCE RATE MAP FOR PROVIDENCE COUNTY, RHODE ISLAND, PANEL 304 OF 451, MAP NO. 44007C0304J, REVISED OCTOBER 2, 2015.

NATIONAL GRID GAS NOTES:

1. THE LOCATIONS OF ALL NATIONAL GRID GAS FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BEFORE ANY DIGGING COMMENCES.
2. SEE UTILITY NOTES ON STANDARD NOTES-1 (SHEET 3).

DRAINAGE SYSTEM MAINTENANCE NOTES

UPON PROJECT COMPLETION, THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION SHALL ADHERE TO THE FOLLOWING MAINTENANCE RECOMMENDATIONS:

1. MOWING:

   THE STORMWATER POND SIDESLOPES AND EMBANKMENT MUST BE MOWED ANNUALLY TO PREVENT WOODY GROWTH AND TO CONTROL WEEDS. AS A PART OF THE MOWING OPERATION, ALL LITTER AND DEBRIS MUST BE REMOVED FROM THE SWALES.

2. INSPECTIONS:

   AN INSPECTION MUST OCCUR ON AN ANNUAL BASIS BY QUALIFIED PERSONNEL TO ENSURE PROPER OPERATION. THE INSPECTION SHOULD CONCENTRATE ON THE FOLLOWING:

   - EROSION
   - OUTLET STABILIZATION
   - DEBRIS AND SEDIMENT ACCUMULATION
   - STRUCTURAL CONDITION (CRACKING, ALIGNMENT, SETTLEMENT, ETC.)
   - FLOW RESTRICTIONS
   - ENCROACHMENTS
   - DAMAGE TO COVERS AND GRATES
   - EVIDENCE OF STANDING WATER
   - STRUCTURAL ALIGNMENT/INTEGRITY

   ANY DEFICIENCY NOTED IS TO BE REPAIRED TO THE ORIGINAL DESIGN CONDITION.

3. SEDIMENT REMOVAL:

   FOLLOWING CONSTRUCTION, A SCHEDULE FOR CLEANING THE PROPOSED STORMWATER TREATMENT UNIT (STU) SHALL BE ESTABLISHED BASED UPON ONGOING INSPECTIONS. THE STU SHALL BE CLEANED OF ACCUMULATED SEDIMENT AT LEAST ONCE EVERY TEN YEARS. THE SWALES ARE TO BE DEWATERED PRIOR TO SEDIMENT REMOVAL, AND ALL DEWATERING FLOW MUST BE ADEQUATELY FILTERED PRIOR TO FLOWING INTO WETLANDS OR PERIMETER WETLANDS. THE RESULTING SWALE CONDITIONS AFTER SEDIMENT REMOVAL MUST BE THE ORIGINAL DESIGN CONDITIONS. ALL REMOVED SEDIMENT IS TO BE TESTED TO DETERMINE POLLUTANT CONTENT. THE SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS BASED UPON THE TEST RESULTS AND LOCAL, STATE, AND FEDERAL REGULATIONS.

4. CATCH BASIN, MANHOLES AND DRAIN LINES:

   AN INSPECTION MUST OCCUR ON AN ANNUAL BASIS BY QUALIFIED PERSONNEL TO ENSURE PROPER OPERATION. THE INSPECTION SHOULD, AS A MINIMUM, CONCENTRATE ON THE FOLLOWING:

   - DAMAGE TO GRATE/COVER
   - EVIDENCE OF STANDING WATER
   - DEBRIS REMOVAL
   - STRUCTURAL ALIGNMENT/INTEGRITY

   ANY DEFICIENCY NOTED DURING THE INSPECTION WILL BE IMMEDIATELY REPAIRED OR REPLACED. CATCH BASINS MUST BE CLEANED ON AN ANNUAL BASIS.

5. REFER TO SITE SPECIFIC REQUIREMENTS OUTLINED IN THE PROJECT'S OPERATION & MAINTENANCE MANUAL

JOB SPECIFIC LEGEND

CFS — COMPOST FILTER SOCK

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

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: MAR 31 2022 FILE #: 22-0047
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 18 2022
Office of Water Resources

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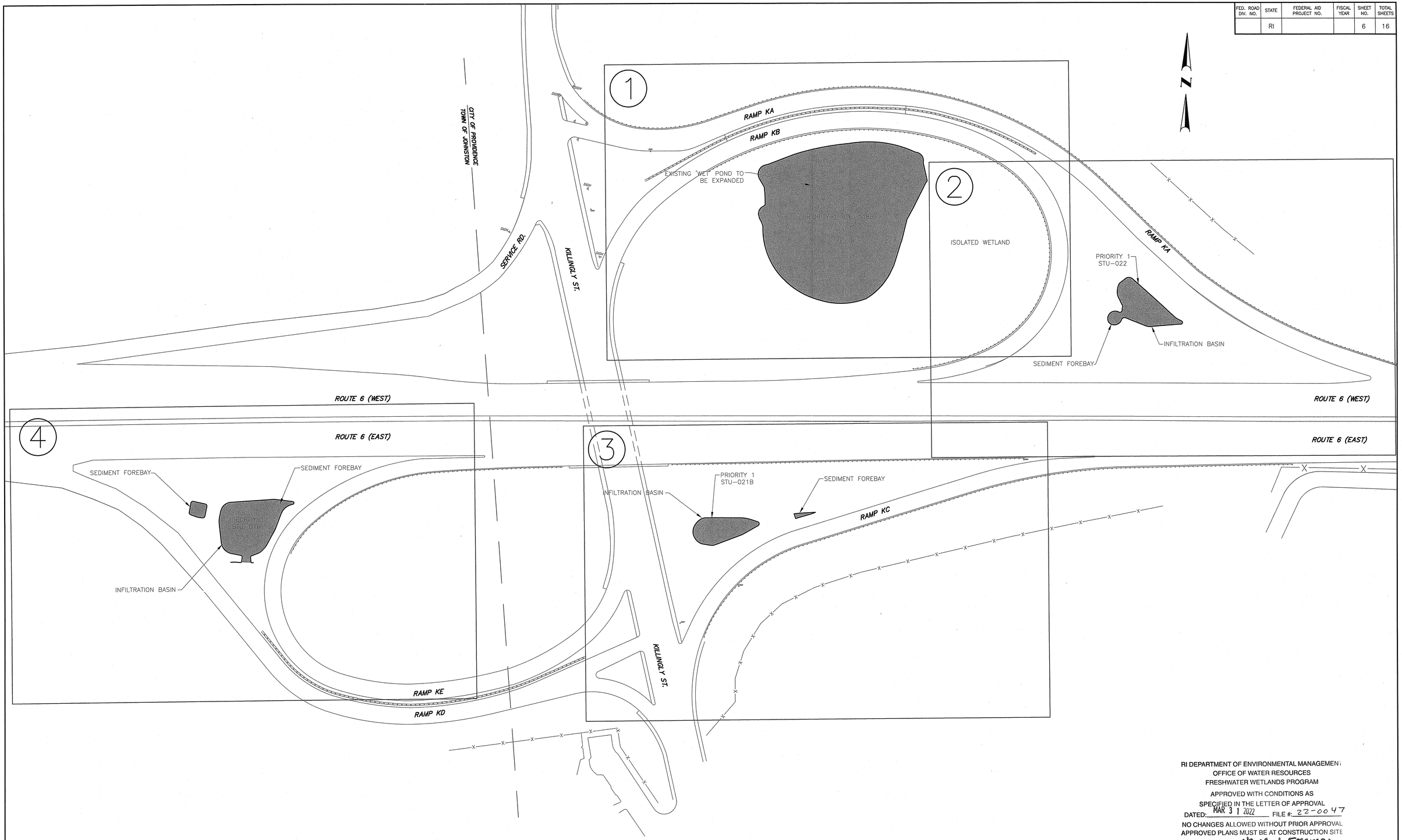
STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

JOB SPECIFIC
PLAN SYMBOLS, LEGEND & NOTES

PTSNO_V1_005_JSNOTSYMC

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			6	16



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RHODE ISLAND
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MAR 18 2022
Office of Water Resources

DESIGNED BY:
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OF:

SCALE: 1"=60'
GRAPHIC SCALE 30 0 15 30 60 120

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1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

KEY PLAN

PTSNO_V1_006_KEYPLAN

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			7	16

MATCHLINE TO RIGHT
R-4 RIP-RAP ON FS-2 BEDDING (8'x8')
15' WIDE OVERFLOW WEIR WITH R-4 RIP-RAP EL.=83.80
KILLINGLY ST OFF-RAMP
KILLINGLY ST ON-RAMP TO ROUTE 6 WESTBOUND
RIVERBANK WETLAND
INTERMITTENT STREAM
RESET EXISTING GUARDRAIL
REMOVE AND RESET CURB
SAWCUT AND MATCH PAVEMENT (TYP.)
R-4 RIP-RAP ON FS-2 BEDDING
EXPAND EXISTING "WET POND" REFER TO CROSS-SECTION PLAN NO.1 (STU-118B) BOTTOM EL.=78.00
REMOVE AND DISPOSE EXISTING CONCRETE WEIR. INSTALL 10' WIDE OVERFLOW WEIR AT EL.=80.0 AND RIP-RAP. SEE DETAIL.
LIMIT OF DISTURBANCE (TYP.)
Existing Wet Pond
ISOLATED WETLAND
126' LONG GABION BAFFLE (TOP EL.=81.0)
GABION MATTRESS (REFER TO DRAINAGE & UTILITY DETAILS)
MIN. TOP WIDTH 5'
120'± TO KILLINGLY STREET
MAINTENANCE ACCESS ROAD
CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO AVOID IMPACTS TO MATURE TREES
3:1 MAX SIDE SLOPES (TYP.)
LIMIT OF DISTURBANCE (TYP.)
CONSTRUCTION ENTRANCE AND MAINTENANCE ACCESS ROAD
DMH 1
DMH 2
WQC 1
WQC 2
R&D SEDIMENT
MATCHLINE TO LEFT
MATCHLINE TO DRAINAGE & UTILITY PLAN No. 2 (STU-022)

DRAINAGE STRUCTURE DATA

	STRUCTURE	RIM	INVERT
DMH 1	6.2.1, 4.2.1(5')	85.0	81.20(24") IN, 81.20(24") OUT, 80.30(12") OUT
DMH 2	6.2.1, 4.2.1(5')	88.5	84.30±(EX. 24") IN, 83.20(12") OUT, 84.30±(EX. 24") OUT
WQC 1	STORMCEPTOR STC-16000	85.0	80.15(12") IN, 79.90(12") OUT
WQC 2	STORMCEPTOR STC-11000	88.0	83.00(12") IN, 82.75(12") OUT

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151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 1 8 2022
Office of Water Resources

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SCALE: 1"=20'
GRAPHIC SCALE

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STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

DRAINAGE & UTILITY PLAN NO. 1 (STU-118B)

PTSNO_V1_007_D&U001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			8	16

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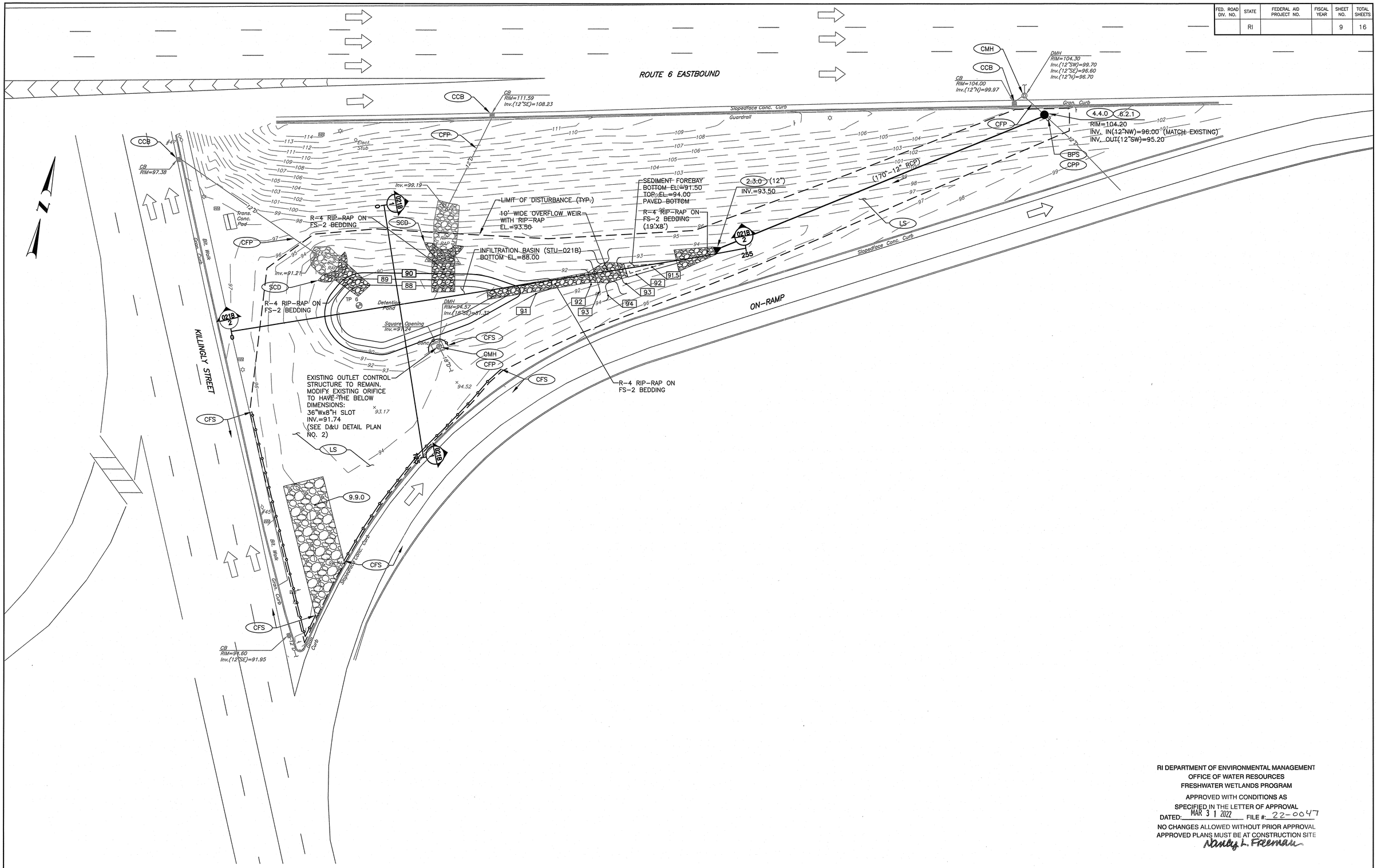
STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE
RHODE ISLAND

DRAINAGE & UTILITY
PLAN NO. 2 (STU-022)

PTSNO_V1_008_D&U002

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			9	16



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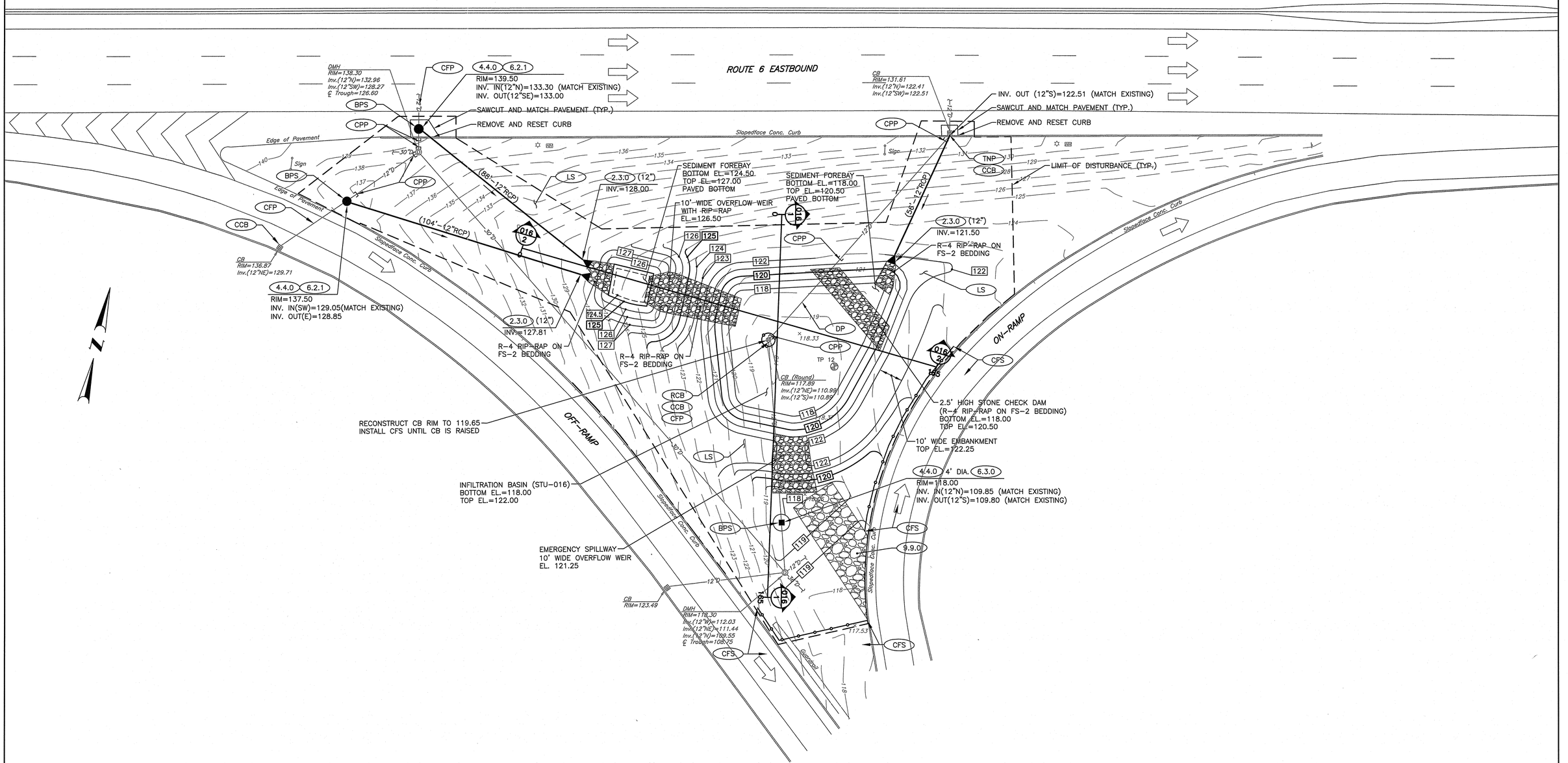
STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

DRAINAGE & UTILITY PLAN NO. 3 (STU-021B)

PTSNO_V1_009_D&U003

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			10	16



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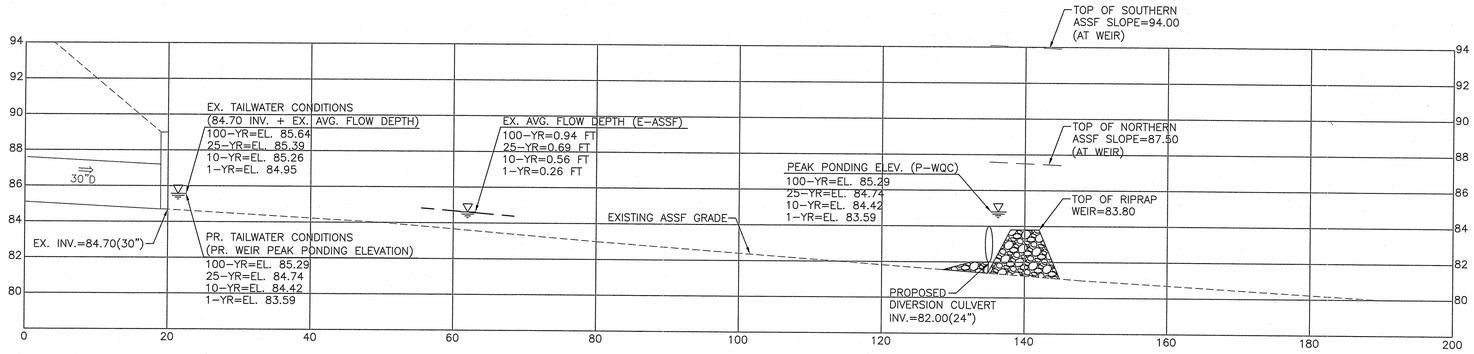
STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

DRAINAGE & UTILITY PLAN NO. 4 (STU-016)

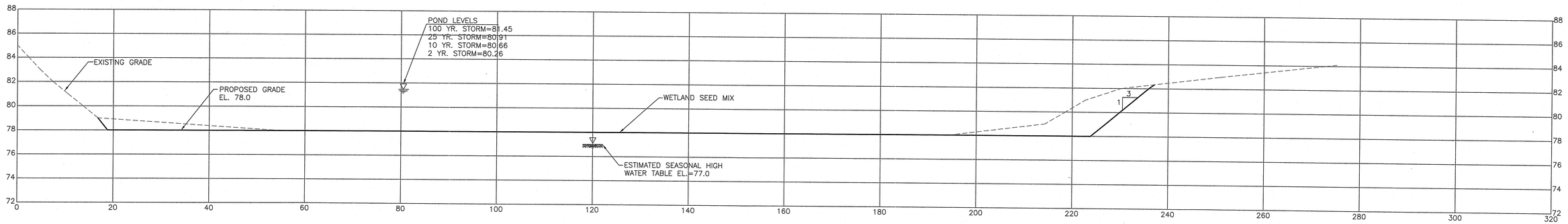
PTSNO_V1_010_D&U004

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			1.1	1.6



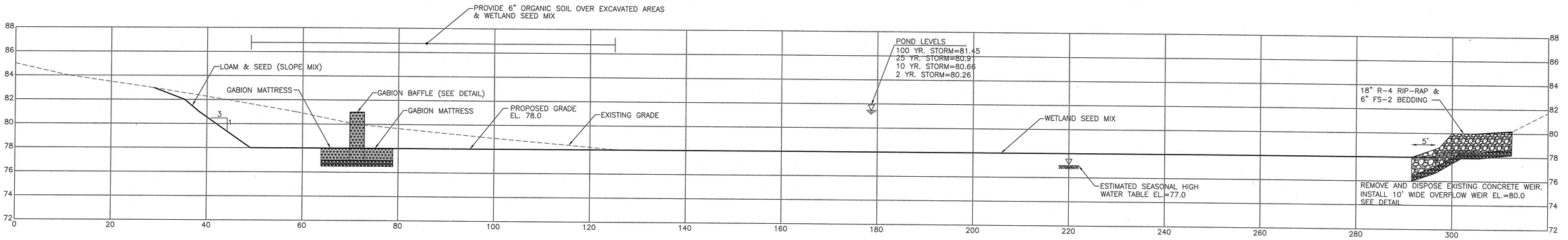
ASSF PROFILE FROM EX. 30" OUTFALL TO PROPOSED WATER QUALITY WEIR

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



STU-118B EXPANDED 'WET' POND – SECTION 1-1

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



STU-118B EXPANDED 'WET' POND – SECTION 2-2

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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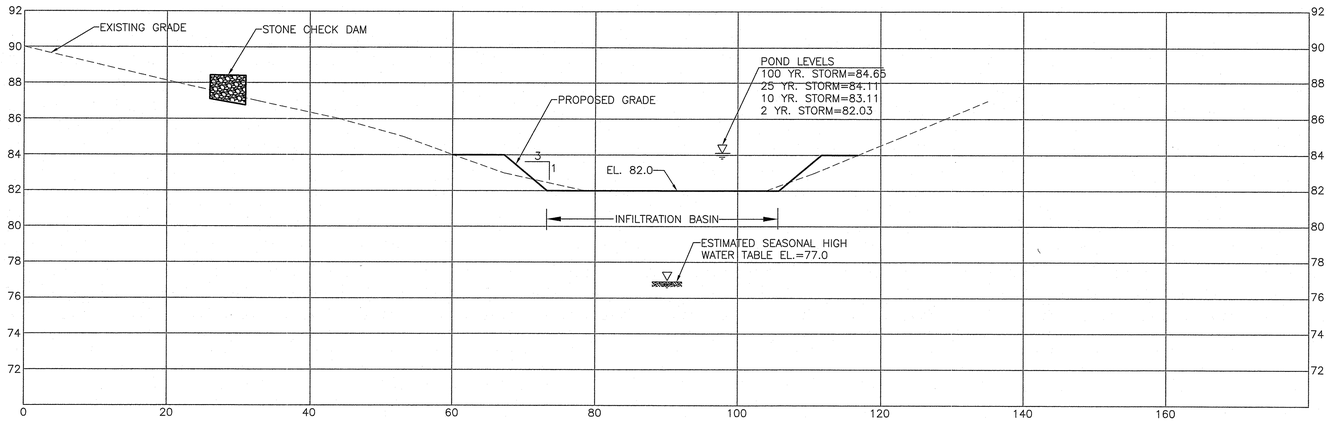
STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

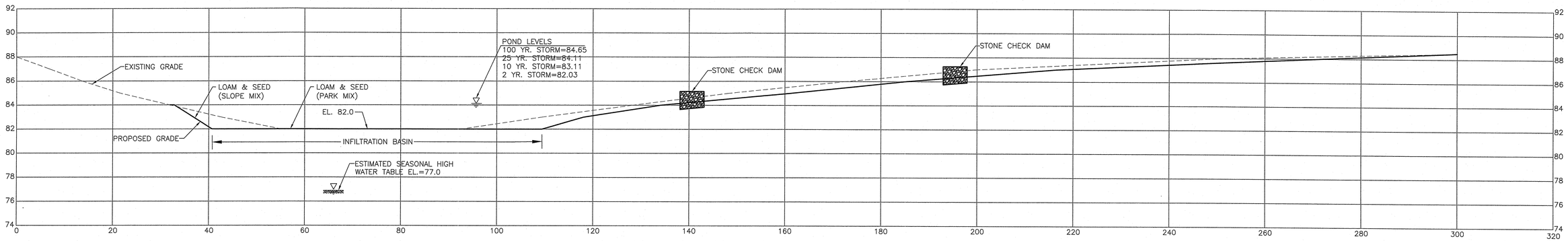
CROSS-SECTION 1
STU-118B

PTSNO_V1_011_SECTION001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			12	16



STU-022 INFILTRATION BASIN – SECTION 1-1
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



STU-022 INFILTRATION BASIN – SECTION 2-2
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

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STORMWATER CONTROL PLAN
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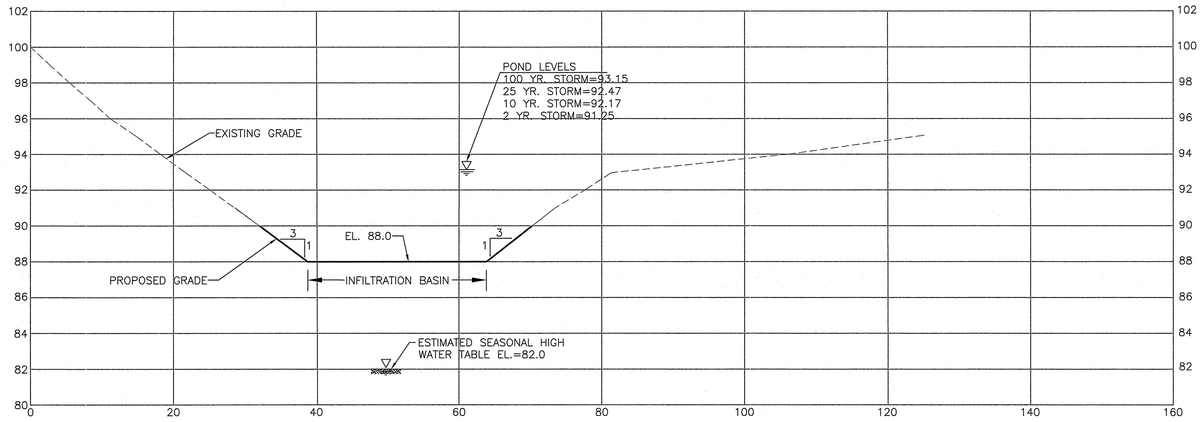
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

CROSS-SECTION 2
STU-022

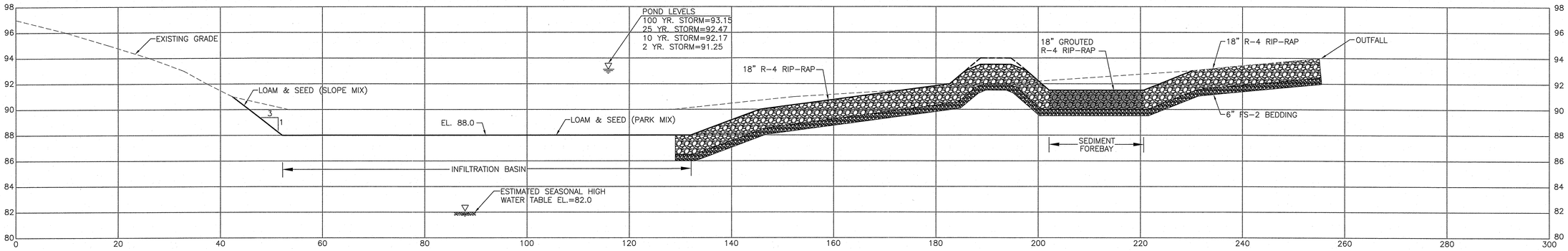
PTSNO_V1_012_SECTION002

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			13	16



STU-021B INFILTRATION BASIN – SECTION 1-1

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



STU-021B INFILTRATION BASIN – SECTION 2-2

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

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STORMWATER CONTROL PLAN
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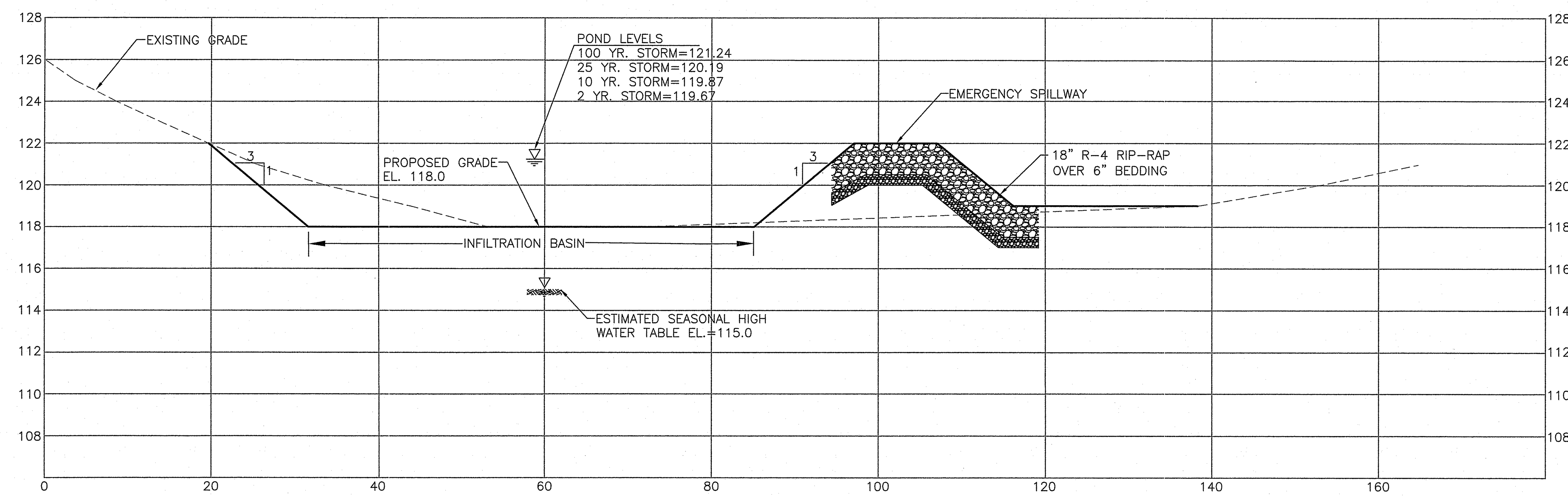
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

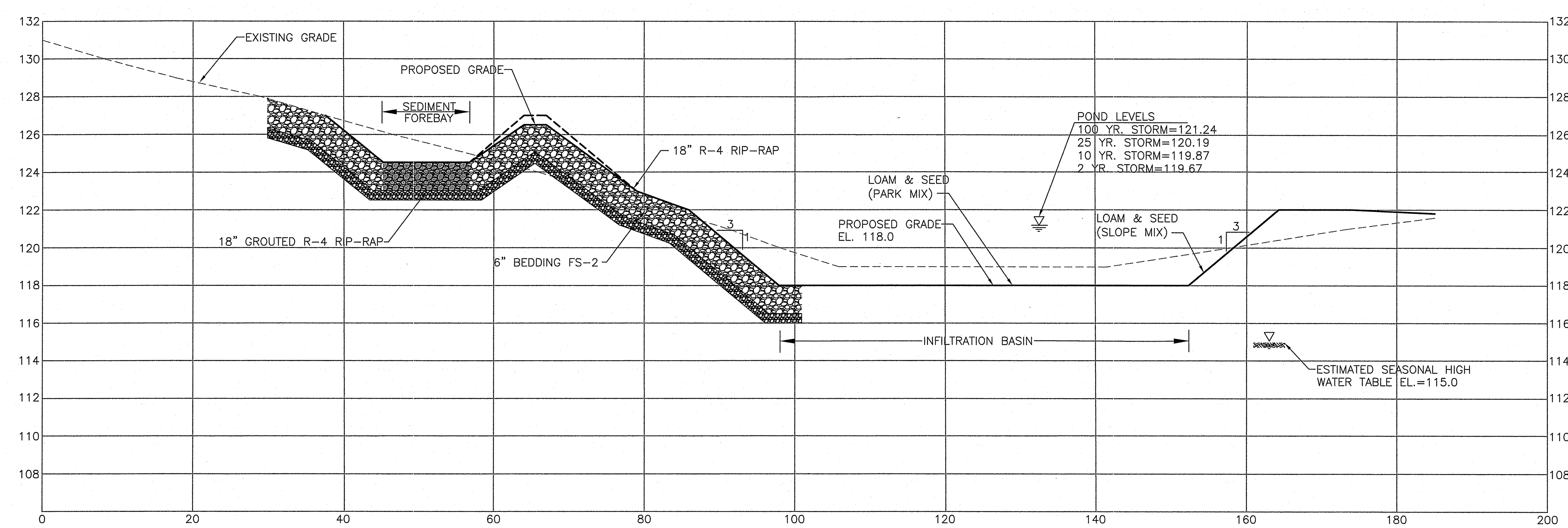
CROSS-SECTION 3
STU-021B

PTSNO_V1_013_SECTION003

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			14	16



STU-016 INFILTRATION BASIN – SECTION 1-1
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



STU-016 INFILTRATION BASIN – SECTION 2-2
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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SPECIFIED IN THE LETTER OF APPROVAL
DATED: MAR 3 1 2022 FILE #: 22-0047
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RI dot
RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 1 8 2022
Office of Water Resources

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

SCALE: AS SHOWN

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

CROSS-SECTION 4
STU-016

PTSNO_V1_014_SECTION004

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			15	16

DUST CONTROL NOTES

ON AN AS–NEEDED BASIS OR AS DIRECTED BY RIDOT, RIDEM, THE CITY OF PROVIDENCE OR JOHNSTON, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS TO CONTROL DUST:

A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

INSPECTION AND MAINTENANCE NOTES

1. PRIOR TO COMMENCING EARTHWORK, COMPOST FILTER SOCK (FILTERSOXX OR EQUAL) SHALL BE PLACED INSIDE SAWCUT EDGE TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, WETLAND AREAS AND ABUTTING PROPERTIES. PERIMETER EROSION CONTROLS SHALL BE INSTALLED ALONG THE LIMITS OF DISTURBANCE AND WHERE SHOWN ON THE SITE PLANS.
2. R.I. STD. 9.9.0 CONSTRUCTION ACCESS MUST BE INSTALLED AT ALL ENTRANCE LOCATIONS INTO THE CONSTRUCTION SITE. THE LOCATION OF THESE ACCESS POINTS MAY VARY THROUGHOUT THE CONSTRUCTION PROCESS DUE TO THE SIZE AND SCOPE OF THE PROJECT. THE CONDITION AND LOCATIONS OF THE CONSTRUCTION ACCESS PADS MUST BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. ALL CONSTRUCTION ACCESSES SHALL BE INSTALLED PRIOR TO ANY VEHICLE TRAFFIC.
3. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM.
4. ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSIVE TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION – SUCH AS EROSION CONTROL BLANKETS OR RIP–RAP.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
6. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL, AND WEEKLY DURING NON–CONSTRUCTION PERIODS, AND REPLACE AS NEEDED.
7. ADDITIONAL SILT FENCE, COMPOST FILTER SOCK (FILTERSOXX OR EQUAL), OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
8. THE LATEST VERSION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE R.I. STATE CONSERVATION COMMITTEE, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT–DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.

GENERAL PROJECT-WIDE NOTES

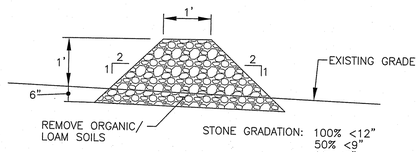
1. CONTRACTOR SHALL INSTALL TEMPORARY MEASURES SUCH AS; FIBER MATTING, CRUSHED STONE, HAY OR STRAW IN AREAS WHERE SLOPES OR STABILIZATION HAS FAILED.
2. IF SEDIMENT IS TRACKED OR ERODED INTO THE ROADWAY, THE CONTRACTOR WILL BE REQUIRED TO INSTALL SILT SACK OR APPROVED EQUAL UNDER THE EXISTING CATCH BASIN GRATES. REMOVE AFTER CONSTRUCTION.
3. SILT FENCE OR COMPOST FILTER SOCK (FILTREXX FILTER SOXX OR APPROVED EQUAL) SHALL BE INSTALLED AROUND THE PERIMETER OF THE AREA TO BE DISTURBED BY CONSTRUCTION. ADDITIONAL APPLICATIONS OF THESE CONTROLS MEASURES MAY BE REQUIRED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL INSPECT THE SITE AT A MINIMUM OF ONCE PER WEEK OR WITHIN 24 HOURS AFTER A STORM EVENT.
4. IF EROSION OR EROSIVE TENDENCIES ARE APPARENT ON THE SITE, THE CONTRACTOR IS RESPONSIBLE TO INSTALL ADDITIONAL CONSTRUCTION BMP'S SUCH AS SAND BAGS AS DIRECTED BY RIDEM, RIDOT, OR ENGINEER DURING CONSTRUCTION.
5. IF SEDIMENT OR DEBRIS IS TRACKED ONTO EXISTING PAVED AREAS ADJACENT TO THE CONSTRUCTION AREA, THE CONTRACTOR IS REQUIRED TO SWEEP THE PAVEMENT ON A DAILY BASIS. THE AREA SHALL BE INSPECTED DAILY.
6. THE CONTRACTOR IS RESPONSIBLE TO KEEP THE SITE CLEAN OF TRASH. RECOMMENDED DAILY PATROL OF THE CONSTRUCTION SHOULD BE CONDUCTED TO PICK–UP TRASH. THE OPERATOR SHALL REQUIRE THE CONTRACTOR TO HAVE PORTABLE SANITARY FACILITIES ON SITE. ROUTINE CLEANING AND WASTE DISPOSAL OF THESE PORTABLE SANITARY FACILITIES IS REQUIRED.

SOIL EROSION AND SEDIMENT CONTROL PLAN NOTES

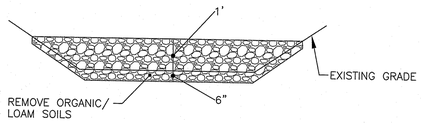
1. THE CONTRACTOR SHALL REFER TO THE DRAINAGE & UTILITY PLANS FOR THE SOIL EROSION AND SEDIMENT CONTROL MEASURES. ALL EXISTING AND PROPOSED DRAINAGE STRUCTURES WITHIN THE PROJECT LIMITS REQUIRE INLET PROTECTION. RIDEM AND RIDOT RESERVE THE RIGHT TO REQUIRE THE CONTRACTOR TO INSTALL ADDITIONAL EROSION CONTROL MEASURES WHERE DEEMED NECESSARY.
2. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM, WETLAND AREAS, ADJACENT PROPERTIES, AND ROADWAYS.
3. TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE OWNER.
4. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000–4,000 LBS/ACRE.
5. STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY 12–INCH COMPOST FILTER SOCK OR SILT FENCE.
6. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW OR FIBER MATTING.
7. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
8. ADDITIONAL EROSION CONTROLS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY RIDOT, THE ENGINEER, OR MUNICIPAL REPRESENTATIVES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DUST CONTROL AT NO ADDITIONAL COST TO THE OWNER.
10. ALL CATCH BASINS ADJACENT TO AND WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED BY SILT SACKS. ALL CATCH BASINS IN AREAS WITH EXPOSED SUBSOILS SHALL RECEIVE R.I. STD. 9.8.0 BAILED HAY INLET PROTECTION.
11. THE COMPOST FILTER SOCK (FILTREXX FILTER SOXX OR EQUAL) MAY BE INSTALLED ON THE EXISTING PAVEMENT AND OTHER IMPERVIOUS AREAS WITHOUT STAKES. CONTRACTOR SHALL INSPECT DAILY, IF SOIL EROSION OR SEDIMENT IS OBSERVED IN THESE AREAS, THE CONTRACTOR SHALL RELOCATE OR INSTALL ADDITIONAL COMPOST FILTER SOCKS IN LOCATIONS THAT CAN BE STAKED.
12. THE CONTRACTOR SHALL MAINTAIN (AND CLEAN) THE EXISTING DRAINAGE INFRASTRUCTURE ON AN AS NEEDED BASIS TO MAINTAIN STORMWATER RUNOFF FLOWS IN A POSITIVE DIRECTION.

INFILTRATION BASIN CONSTRUCTION NOTES

1. THE CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH BOTH THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL (RISDISM), MARCH 2015, AND THE RIDOT LINEAR STORMWATER MANUAL.
2. WITHIN THE INFILTRATION BASIN/SYSTEM, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SUBSOIL AREAS (A AND B HORIZONS) AND ANY EXISTING SOILS THAT YIELD A PERMEABILITY RATE <2.41 INCHES/HOUR. CONTRACTOR SHALL COORDINATE A BOTTOM BED INSPECTION WITH OWNER AND ENGINEER. IF NECESSARY THE AREA SHALL BE PREPARED WITH SAND FILL SOIL MEETING THE MEDIA REQUIREMENTS OF SAND FILTERS, AS DESCRIBED IN THE RISDISM SECTION 5.5 (ASTM C–33 SAND). THE DEPTH OF EXISTING SOIL REMOVAL SHALL BE VERIFIED BY THE ENGINEER. PLACEMENT OF THE SAND FILL (ASTM C–33 SAND), SHALL BE USED TO BRING THE BOTTOM OF BASIN TO THE DESIGN ELEVATIONS.
3. INFILTRATION SYSTEM CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE RISDISM, APPENDIX F.3.2 CONSTRUCTION NOTES AND SPECIFICATIONS FOR INFILTRATION BASINS. AFTER CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE FINAL INSPECTIONS WITH THE OWNER IN ACCORDANCE WITH TABLE F–5 IN APPENDIX F.3.
4. THE CONTRACTOR IS REQUIRED TO SUBMIT A LIST OF MATERIALS, GRADATIONS AND THE NAME AND ADDRESS OF THE SUPPLIERS TO THE ENGINEER FOR APPROVAL PRIOR TO BRINGING MATERIAL ON SITE. MATERIAL CERTIFICATIONS SHALL ALSO BE REQUIRED FOR REVIEW AND APPROVAL.
5. GREAT CARE MUST BE TAKEN TO PREVENT THE INFILTRATION AREA FROM COMPACTION BY MARKING OFF THE INFILTRATION UNDERGROUND SYSTEM LOCATION BEFORE THE START OF CONSTRUCTION, AND BY CONNECTING UPSTREAM DRAINAGE AREAS ONLY AFTER CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
6. IF LARGE ROCKS OR BOULDERS ARE FOUND WITHIN 36" BELOW THE INFILTRATION SYSTEMS, OR WITHIN A 10' PERIMETER AROUND SYSTEM, THE CONTRACTOR SHALL REMOVE THE ROCKS/BOULDERS AND REPLACE WITH GRAVEL BORROW. CONTRACTOR SHALL COORDINATE WITH ENGINEER.



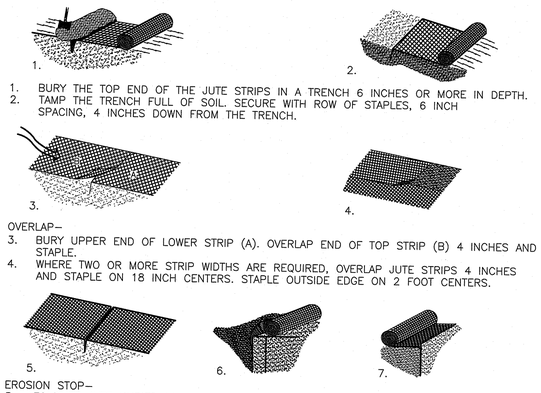
PROFILE



SECTION

NOTE:
HIEGHT OF CHECK DAM AT STU–016 IS 2.5 FT HIGH.

TYPICAL STONE CHECK DAM DETAIL
NOT TO SCALE



1. BURY THE TOP END OF THE JUTE STRIPS IN A TRENCH 6 INCHES OR MORE IN DEPTH.
2. TAMP THE TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES, 6 INCH SPACING, 4 INCHES DOWN FROM THE TRENCH.

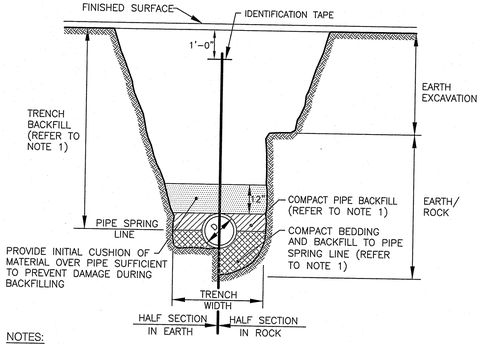
OVERLAP–

3. BURY UPPER END OF LOWER STRIP (A). OVERLAP END OF TOP STRIP (B) 4 INCHES AND STAPLE.
4. WHERE TWO OR MORE STRIP WIDTHS ARE REQUIRED, OVERLAP JUTE STRIPS 4 INCHES AND STAPLE ON 18 INCH CENTERS. STAPLE OUTSIDE EDGE ON 2 FOOT CENTERS.

EROSION STOP–

5. FOLD OF JUTE BURIED IN SILT TRENCH AND TAMPED; DOUBLE ROW OF STAPLES ANCHORING ENDS AT STRUCTURES.
6. PLACE THE END OF THE NET IN A 6 INCH SLOT ON THE UP–CHANNEL SIDE OF THE STRUCTURE. FILL THE TRENCH AND TAMP FIRMLY. 7. ROLL THE NET UP THE CHANNEL. PLACE STAPLES AT 12 INCH INTERVALS ALONG THE ANCHOR OF THE NET.

FIGURE 5-1 DETAIL FOR INSTALLATION OF JUTE NETTING
R.I. SOIL EROSION and SEDIMENT CONTROL HANDBOOK
NOT TO SCALE



NOTES:

1. PIPE BEDDING AND BACKFILL TO SPRING LINE SHALL CONSIST OF CRUSHED STONE–3/4" MINUS. PIPE BACKFILL SHALL CONSIST OF CRUSHED STONE (WRAPPED IN FILTER FABRIC) OR GRAVEL (3" MINUS, WITH SIEVE ANALYSIS APPROVED BY ENGINEER), OR OTHER APPROVED MATERIAL. TRENCH BACKFILL SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL OR OTHER APPROVED MATERIAL. ALL BEDDING/BACKFILL TO BE COMPACTED TO 95% DRY DENSITY, MODIFIED PROCTOR METHOD.
2. ALL TRENCH EXCAVATION AND ANY SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND OSHA REGULATIONS.
3. MINIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 12". MAXIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 24".

TRENCH DETAIL
NOT TO SCALE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
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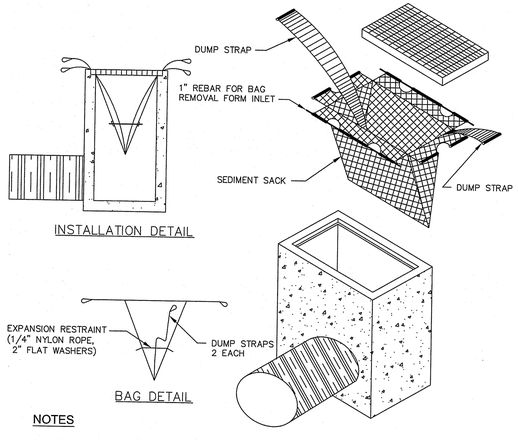
Nancy L. Freeman



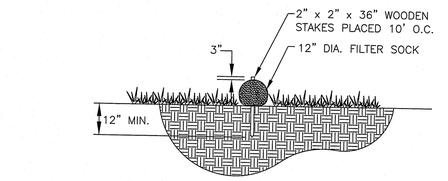
INSTALLATION DETAIL

BAG DETAIL

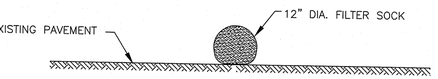
NOTES

1. INSTALL SILT SACK AT CATCH BASINS IN VICINITY OF CONSTRUCTION.
2. CONTRACTOR SHALL SUBMIT SILT SACK PRODUCT TO ENGINEER FOR APPROVAL.

SILT SACK INLET PROTECTION DETAILS
NOT TO SCALE



FILTER SOCK SECTION ON PERVIOUS SURFACE

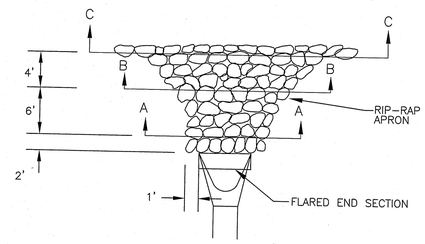


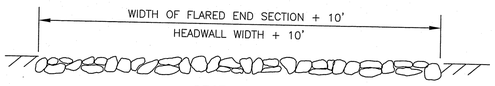
FILTER SOCK SECTION ON PAVED SURFACE

NOTES:

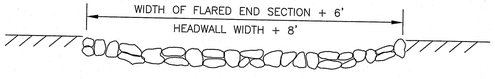
1. COMPOST FILTER SOCK (FILTREXX FILTER SOXX OR APPROVED EQUAL) MAY BE USED IN PLACE OF SILT FENCE.
2. CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT.
3. ALL MATERIAL SHALL MEET FILTREXX (OR EQUAL) SPECIFICATIONS.
4. AFTER USE, COMPOST MATERIAL TO BE DISPERSED ON SITE AS DETERMINED BY ENGINEER.

FILTER SOCK DETAILS
NOT TO SCALE

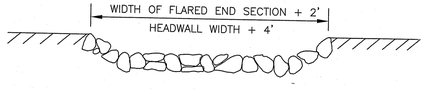




SECTION C–C



SECTION B–B



SECTION A–A

NOTES:

1. UNLESS OTHERWISE SPECIFIED, PLACED RIP–RAP SHALL BE USED.
2. DIMENSIONS MAY BE SHOWN OTHERWISE ON THE PLANS AND MAY BE MODIFIED BY THE ENGINEER TO MEET FIELD CONDITIONS.
3. RIP–RAP APRONS SHALL CONSIST OF 18" DEEP NSA NO. R–4 STONE WITH A 6" THICK FS–2 BEDDING.
4. PLACE A LAYER OF FILTER FABRIC AND GEOMEMBRANE BETWEEN THE STONE AND BEDDING.
5. CONCRETE HEADWALLS SHALL CONSIST OF CLASS XX CONCRETE.
5. ALL OTHER RIPRAP SHALL PROVIDE THE ABOVE–NOTED DEPTHS.

TYPICAL LAYOUT OF RIP-RAP DITCH & RIP-RAP OUTLET PROTECTION AT FLARED END SECTIONS AND HEADWALLS
NOT TO SCALE

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RI Environmental Management
MAR 1 8 2022
Office of Water Resources

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

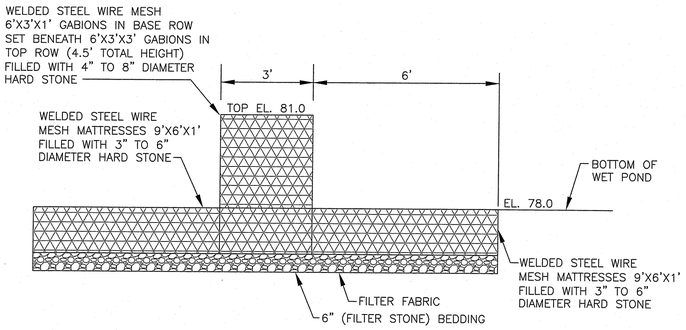
REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

DRAINAGE & UTILITY DETAILS NO. 1

PTSNO_V1_015_DETAIL001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			16	16



GABION BAFFLE DETAIL
NOT TO SCALE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED: MAR 3 1 2022 FILE #: 22-0647
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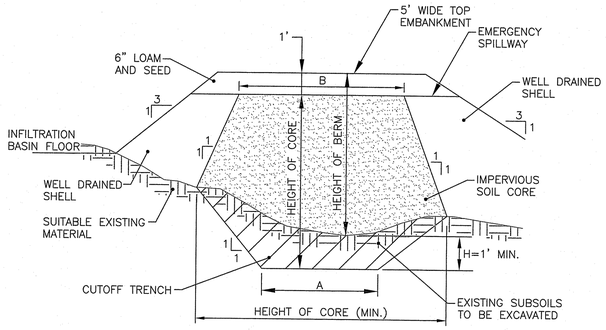
Nancy L. Freeman

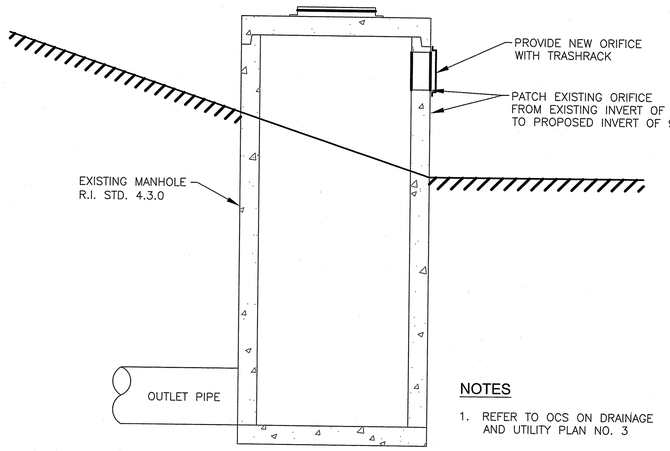
EMBANKMENT NOTES

1. IMPERVIOUS SOIL CORE TO BE PROVIDED FOR ALL INFILTRATION BASIN EMBANKMENTS.
2. IMPERVIOUS SOIL CORE TO BE CONSTRUCTED OF A MATERIAL WITH A MINIMUM OF 55% PASSING THE #200 SIEVE AND A MAXIMUM PERMEABILITY OF 0.00005 CM/S.
3. WELL DRAINED SHELL TO BE CONSTRUCTED OF GRAVEL AND/OR SAND WITH LESS THAN 5% PASSING THE #200 SIEVE.
4. MINIMUM DEPTH OF CUTOFF TRENCH (H) SHALL BE 3/4 OF THE TOTAL BERM HEIGHT.
5. THE IMPERVIOUS CORE AT A MINIMUM SHALL EXTEND UP BOTH ABUTMENTS TO THE EMERGENCY SPILLWAY ELEVATION.
6. THE MINIMUM BOTTOM WIDTH (A) SHALL BE 5'-8", AND WIDE ENOUGH TO PERMIT OPERATIONS OF COMPACTION EQUIPMENT.
7. SIDE SLOPES OF THE TRENCH SHALL BE NO STEEPER THAN 1:1.
8. COMPACTION REQUIREMENTS FOR THE SHELL AND IMPERVIOUS CORE TO BE 95% OF THE MODIFIED PROCTOR PER ASTM D1557. ALL FILL TO BE PLACED IN 12" MAX LIFTS.
9. SIDE SLOPES OF EMBANKMENT TO BE A 3:1 MAXIMUM.
10. THE IMPERVIOUS CORE SHALL BE KEPT FREE FROM STANDING WATER DURING BACKFILLING OPERATIONS.



INFILTRATION BASIN EMBANKMENT DETAIL
NOT TO SCALE

OUTLET CONTROL STRUCTURE						
STRUCTURE DETAILS		ORIFICE			OUTLET PIPE	
STRUCTURE NUMBER	RIM	RISE	SPAN	INVERT	SIZE AND TYPE	INVERT
OCS	94.57	8"	36"	91.74	18" RCP	81.3±

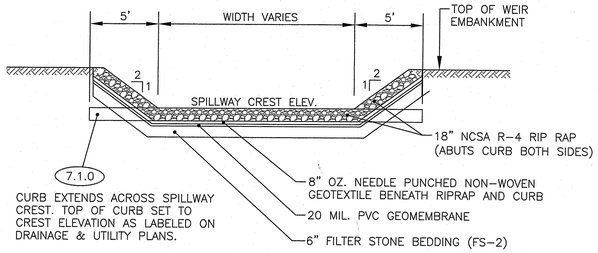


OCS

OUTLET CONTROL STRUCTURE DETAIL
NOT TO SCALE

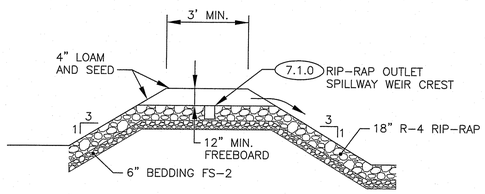
NOTES

1. REFER TO OCS ON DRAINAGE AND UTILITY PLAN NO. 3



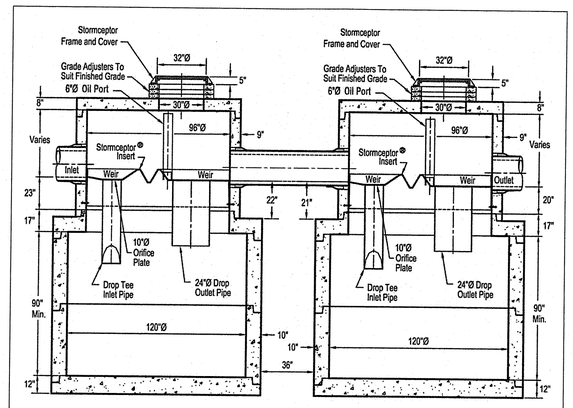
NOTE:
RIP RAP SHALL CONTINUE ON UPSTREAM AND DOWNSTREAM SIDES OF SLOPE BELOW OUTLET SPILLWAY WEIR LOCATIONS.

SECTION



PROFILE

TYPICAL OVERFLOW WEIR DETAIL
NOT TO SCALE

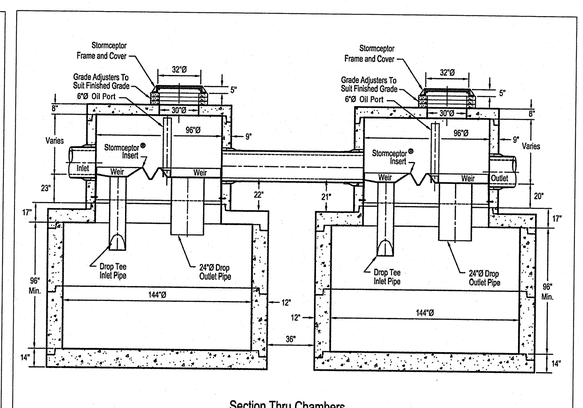


Section Thru Chambers

Notes:

1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. Contact a Rinker Materials representative for further details not listed on this drawing.

STC 11000s PRECAST CONCRETE STORMCEPTOR
(11000 GALLON CAPACITY)



Section Thru Chambers

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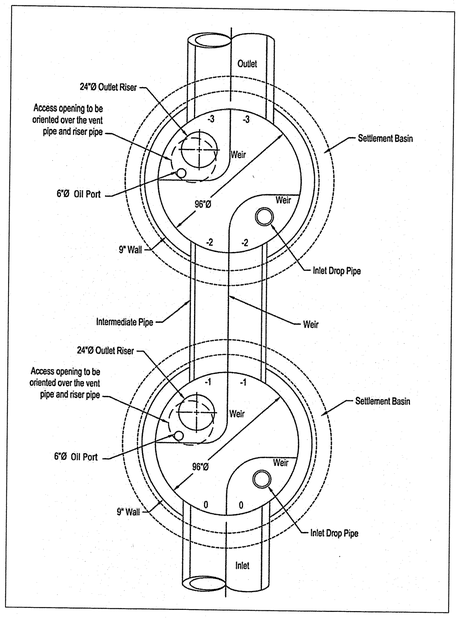
STC 16000s PRECAST CONCRETE STORMCEPTOR
(16000 GALLON CAPACITY)

STORMCEPTOR TYPICAL DETAILS
NOT TO SCALE



PLAN VIEW
STC 11000s, STC 13000s AND STC 16000s

RI Environmental Management
MAR 1 8 2022
Office of Water Resources

CROSSMAN ENGINEERING
151 Centerville Road | Warwick, Rhode Island 02886

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

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

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	3/22	DBJ			

STORMWATER CONTROL PLAN
WOONASQUATUCKET RIVER (RI0002007R-10C)
STORMWATER TREATMENT RETROFIT
PROVIDENCE/NORTH PROVIDENCE RHODE ISLAND

DRAINAGE & UTILITY DETAILS NO. 2

PTSNO_V1_016_DETAIL002