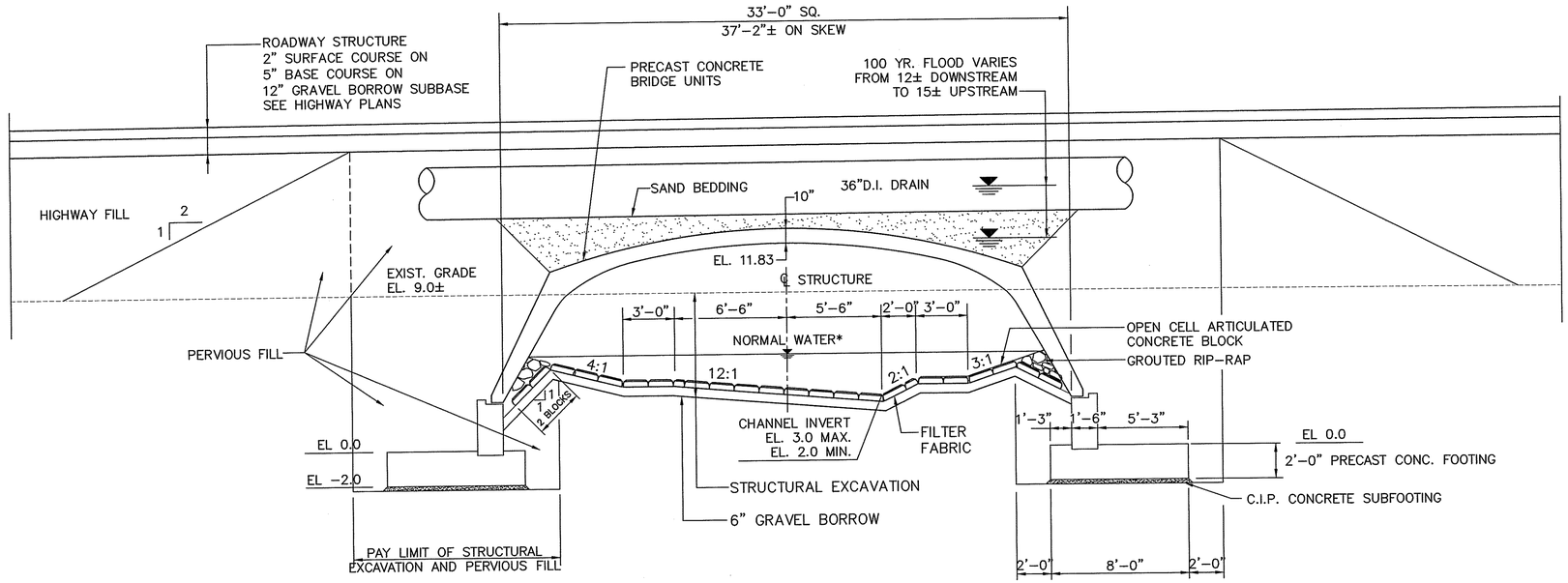
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			90	91

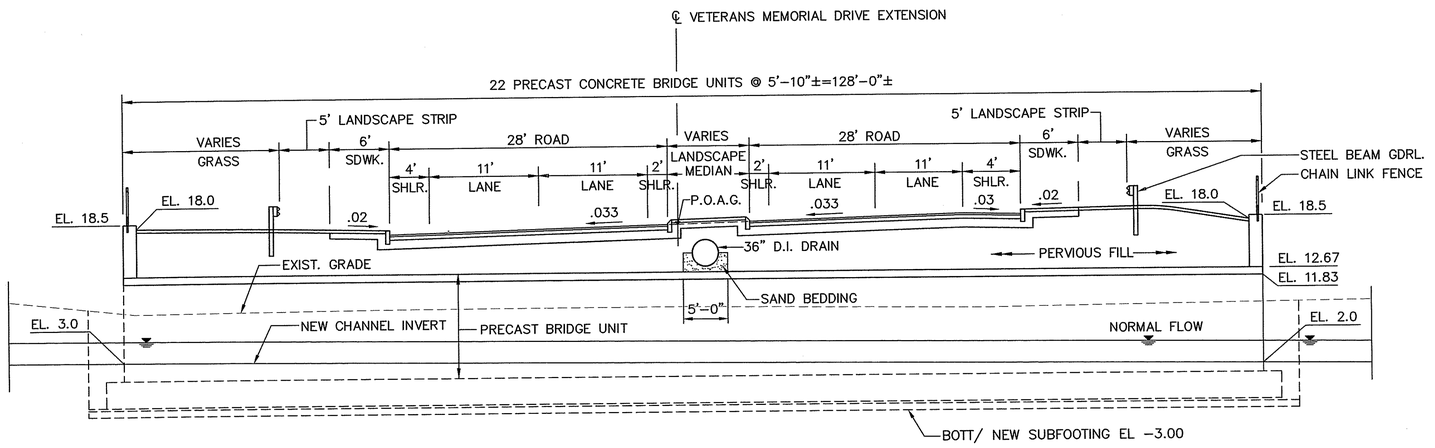


LOOKING NORTH UPSTREAM

LONGITUDINAL SECTION (A)

SCALE: ¼"=1'-0"

* NORMAL WATER
EL. 5.4± UPSTREAM.
EL. 4.4± DOWNSTREAM



LOOKING EAST

TRANSVERSE SECTION (B)

SCALE: ⅛"=1'-0"

NOTE: DIMENSIONS SHOWN ARE SQUARE TO CENTERLINE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 14 2014 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

RECEIVED
NOV 03 2014
Department of Environmental Management
Office of Customer & Technical Assistance

NOV - 3 2014

REVISIONS		
NO.	DATE	BY
1	10/31/14	TAR

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

APPONAUG RIVER BRIDGE NO. 1038

TYPICAL BRIDGE SECTIONS

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 90 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			1	91

INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	STANDARD PLAN SYMBOLS & STANDARD LEGEND
3 & 4	STANDARD NOTES - 1 & 2
5	JOB SPECIFIC PLAN SYMBOLS, LEGEND & NOTES
6	KEY PLAN
7 - 9	TYPICAL SECTION 1 - 3
10	DRAINAGE OVERVIEW PLAN
11	WETLAND OVERVIEW PLAN
12	APPONAUG RIVER RELOCATION SEQUENCE PLAN
13 - 34	DRAINAGE & UTILITY PLANS 1 - 22
35	GORTONS POND SEDIMENT PLAN
36& 37	BASIN GRADING PLANS 1 & 2
38 - 46	DRAINAGE DETAILS 1 - 9
47 - 51	GRADING PLANS 1 - 5
52 - 62	PROFILES PLANS 1 - 11
63 - 84	LANDSCAPE PLANS 1 - 22
85 - 89	LANDSCAPE DETAILS 1 - 5

VOLUME 3	BRIDGE NO. 1038
90	TYPICAL BRIDGE SECTIONS
91	BRIDGE GENERAL PLAN

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, 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.

STATE OF RHODE ISLAND

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF TRANSPORTATION

PLAN, PROFILE AND SECTIONS OF PROPOSED

STATE HIGHWAY

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

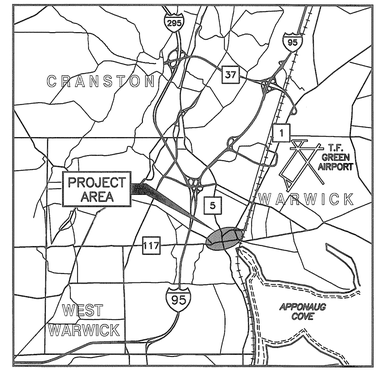
VOLUME 1 OF 4
HIGHWAY PLANS

CITY OF WARWICK
COUNTY OF KENT

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

PAVEMENT STRUCTURE
2" BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT
5" BITUMINOUS BASE COURSE, CLASS 19.0 HOT MIX ASPHALT
12" (MINIMUM) GRAVEL BORROW SUBBASE COURSE

2.32 MILES



LOCATION MAP
SCALE: 1" = 1 Mile

DESIGN DESIGNATION

CENTERVILLE ROAD

2006 AADT	24,200 V.P.D.
2032 AADT	30,600 V.P.D.
D	50%/50%
K	8%
T	4%
DDHV	1,224 V.P.H.
DHV	2,448 V.P.H.
DESIGN SPEED	35 M.P.H.

VETERANS MEMORIAL DRIVE

2006 AADT	23,800 V.P.D.
2032 AADT	48,500 V.P.D.
D	45%/55%
K	8%
T	5%
DDHV	2,134 V.P.H.
DHV	3,880 V.P.H.
DESIGN SPEED	35 M.P.H.

POST ROAD
(VILLAGE)

2006 AADT	24,500 V.P.D.
2032 AADT	5,300 V.P.D.
D	100%
K	7%
T	2%
DDHV	371 V.P.H.
DHV	371 V.P.H.
DESIGN SPEED	30 M.P.H.

VETERANS MEMORIAL DRIVE EXT.

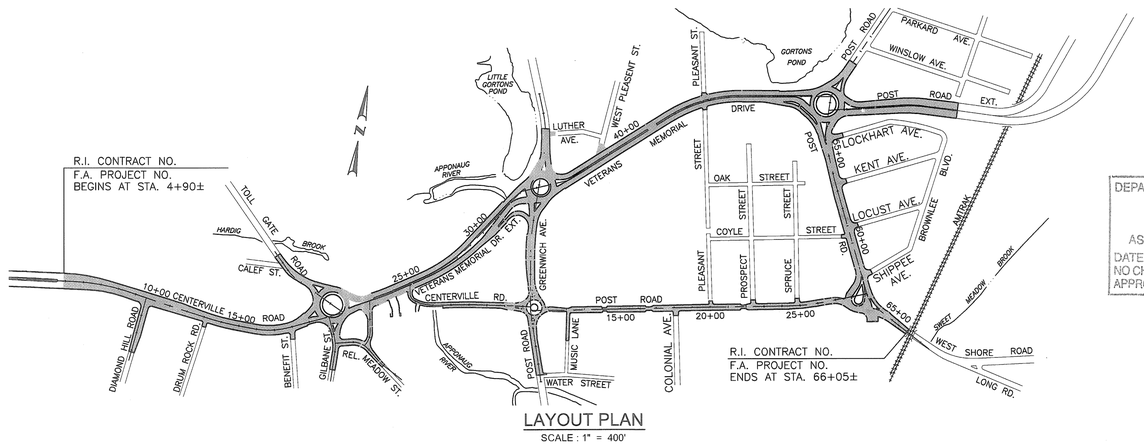
2006 AADT	N.A.
2032 AADT	39,300 V.P.D.
D	57%/43%
K	8%
T	4%
DDHV	1,792 V.P.H.
DHV	3,144 V.P.H.
DESIGN SPEED	35 M.P.H.

GREENWICH AVENUE
(VETERANS MEMORIAL DR. - CENTERVILLE ROAD)

2006 AADT	24,100 V.P.D.
2032 AADT	26,600 V.P.D.
D	41%/59%
K	8%
T	3%
DDHV	1,256 V.P.H.
DHV	2,128 V.P.H.
DESIGN SPEED	35 M.P.H.

POST ROAD
(WEST SHORE RD - POST ROAD EXT.)

2006 AADT	24,000 V.P.D.
2032 AADT	28,700 V.P.D.
D	40%/60%
K	11%
T	8%
DDHV	1,894 V.P.H.
DHV	3,157 V.P.H.
DESIGN SPEED	35 M.P.H.



LAYOUT PLAN
SCALE : 1" = 400'

SCALES OF DRAWINGS

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

BASE OF LEVELS
NGVD 29

Gordon R. Archibald, Inc.
Professional Engineers

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 09 2013 FILE # 11-0099
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TODD A. RAVENELLE
No. 9826
REGISTERED PROFESSIONAL ENGINEER

Contract Number _____
Number of Sheet 1
Total Sheets 91

HURRICANE EVACUATION ROUTE

This project includes work on and relocation of a designated Hurricane Evacuation and Diversionary Route as follows:
The existing route consists of:
- Post Road between Water Street and Centerville Road
- Intersection of Post Road and Centerville Road
- Centerville Road between Post Road and Diamond Hill Road

The revised route will consist of:
- Post Road between Water Street and Centerville Road
- Centerville Road / Post Road / Greenwich Avenue Roundabout
- Greenwich Avenue between Centerville Road and Veterans Memorial Drive
- Greenwich Avenue / Veterans Memorial Drive Roundabout
-Veterans Memorial Drive Extension between Greenwich Avenue and Toll Gate Road
- Veterans Memorial Drive Extension / Toll Gate Road / Centerville Road Roundabout
- Centerville Road between Toll Gate Road and Diamond Hill Road

Refer to Note 18 on Sheet 3 and Note 2 on Sheet 5 for related Contractor requirements.
Refer to Sheet 5 for graphic delineation of Hurricane routes.

WETLAND SUBMISSION
JANUARY 11, 2013
REVISED MAY 10, 2013
JULY 8, 2013

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

PLAN FOR NOTICE

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			2	91

EXISTING

	EDGE OF PAVEMENT
	BERM
	CURB
	GUARDRAIL
MB	MAILBOX
NO.	UTILITY POLE
	POLE GUY
	LUMINARE
SIGN	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
P	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.	BORINGS
TYPE	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
00.00	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

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

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

AB	ADJUST CATCH BASIN TO GRADE
ABM	ADJUST CATCH BASIN TO MANHOLE
AC	ADJUST CURB STOP TO GRADE
AD	ADJUST DRAINAGE MANHOLE TO GRADE
AE	ADJUST ELECTRIC MANHOLE TO GRADE
AFC	ADJUST FRAME AND COVER TO GRADE
AFG	ADJUST FRAME AND GRATE TO GRADE
AG	ADJUST GAS GATE BOX TO GRADE
AHH	ADJUST HANDHOLE TO GRADE
AS	ADJUST SANITARY SEWER MANHOLE TO GRADE
AT	ADJUST TELEPHONE MANHOLE TO GRADE
AW	ADJUST WATER GATE BOX TO GRADE
BCD	BITUMINOUS CONCRETE DRIVEWAY 3" BITUMINOUS CONCRETE TYPE I-2 8" GRAVEL BORROW SUBBASE COURSE
BPS	BUILD NEW STRUCTURE OVER EXISTING PIPE
CCB	CLEAN CATCH BASIN
CCP	CUT AND CAP PIPE WITH RESTRAINT (ALL SIZES)
CFP	CLEAN AND FLUSH PIPE
CG	CLEARING AND GRUBBING
CMH	CLEAN MANHOLE
CP (DEPTH)	COLD PLANE
CPP	CUT AND PLUG PIPE (ALL TYPES, ALL SIZES)
DB	REMOVE AND DISPOSE BITUMINOUS CURB
DC	REMOVE AND DISPOSE CONCRETE CURB
DCB	REMOVE AND DISPOSE CATCH BASIN
DDI	REMOVE AND DISPOSE DROP INLET
DF	REMOVE AND DISPOSE FENCE
DFC	REMOVE AND DISPOSE FRAME AND COVER
DFE	REMOVE AND DISPOSE FLARED END SECTION
DFG	REMOVE AND DISPOSE FRAME AND GRATE
DFH	REMOVE AND DISPOSE FIRE HYDRANT
DFP	REMOVE AND DISPOSE FLEXIBLE PAVEMENT
DG	REMOVE AND DISPOSE GUARDRAIL
DH	REMOVE AND DISPOSE HEADWALL
DHB	REMOVE AND DISPOSE HIGHWAY BOUND
DHH	REMOVE AND DISPOSE HANDHOLE
DL	REMOVE AND DISPOSE LIGHT AND FOUNDATION
DMB	REMOVE AND DISPOSE MEDIAN BARRIER
DMH	REMOVE AND DISPOSE MANHOLE
DMM	REMOVE AND DISPOSE MEDIAN MARKER
DOW	REMOVE AND DISPOSE OBSERVATION WELL
DP	REMOVE AND DISPOSE PIPE
DPB	REMOVE AND DISPOSE PAVEMENT AND RIGID BASE
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

NFH	NEW FIRE HYDRANT WITH GATE VALVE
NIC	NOT IN THIS CONSTRUCTION CONTRACT
NWB	FURNISH AND INSTALL NEW WATER GATE VALVE BOX
NWVB	FURNISH AND INSTALL NEW WATER GATE VALVE AND BOX
NWCB	FURNISH AND INSTALL NEW WATER CURB STOP BOX
NWSB	FURNISH AND INSTALL NEW WATER CURB STOP AND BOX
PCD	PERMANENT CHECK DAM
PS	4" PLANTABLE SOIL AND SEED
RCB	RECONSTRUCT TYPE "D" CATCH BASIN, TO CATCH BASIN WITH GUTTER INLET
RCM	R.I.D.O.T. COMMUNICATIONS MANHOLE
RHH	REMOVE, HANDLE, HAUL, TRIM, RESET CURB EDGING, STRAIGHT, CIRCULAR (ALL TYPES)
RLP	RELOCATE LAMP POST
RMB	RELOCATE MAILBOX (BY OTHERS)
RPM	REMOVE PAVEMENT MARKINGS
RRP	RIP-RAP PAD (SEE DETAIL)
RRS	REMOVE AND RELOCATE SIGN
RUP	RELOCATE UTILITY POLE (BY OTHERS)
SB	STONE BAFFLE
SBAE	STEEL BEAM BRIDGE CONNECTION APPROACH END (W/O NESTED RAIL)
SBTE	STEEL BEAM BRIDGE CONNECTION TRAILING END (W/NESTED RAIL)
SD-	STRUCTURAL DISPOSITION - SEE CS PAGES OF SPECIFICATION
SF	REMOVE AND STOCKPILE FENCE
SGA	SPECIAL GRADED AGGREGATE
SGC	REMOVE AND STOCKPILE GRANITE CURB
SGR	REMOVE AND STOCKPILE GUARDRAIL
SH	REMOVE AND STOCKPILE HYDRANT
SS	REMOVE AND STOCKPILE SIGN
STS	REMOVE AND STOCKPILE TRAFFIC SIGNAL SYSTEM
TB	CONCRETE THRUST BLOCK
TEP	TIE EXISTING PIPE INTO NEW STRUCTURE
TNP	TIE NEW PIPE INTO EXISTING STRUCTURE
TBT	THRIE BEAM TRANSITION
TBBC	THRIE BEAM BRIDGE CONNECTION
TT	TREE TRIMMING
WCM	4" WOOD CHIP MULCH
4DY	4" EPOXY RESIN PAVEMENT MARKINGS - DOUBLE YELLOW
6W	6" EPOXY RESIN PAVEMENT MARKINGS - WHITE
12W	12" EPOXY RESIN PAVEMENT MARKINGS - WHITE
6WT	6" PREFORMED PATTERNED MARKING (HIGH PERFORMANCE TAPE)
4Y	4" EPOXY RESIN PAVEMENT MARKINGS - YELLOW
6Y	6" EPOXY RESIN PAVEMENT MARKINGS - YELLOW
P.G.L.	PROFILE GRADE LINE

Environmental Management
JUL 10 2013
Office of Water Resources

TODD A. RAYNELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

THIS PLAN SHALL NOT BE ALTERED

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY
1	6/07	TRB

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

STANDARD PLAN SYMBOLS & STANDARD LEGEND

CHECKED BY _____ DATE _____ SCALE _____

R.I.D.E.M. APPLICATION SHEET NO. 2 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_002_STDSYM

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			3	91

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 IS THE R.I. STANDARD GRID SYSTEM, NAD 83. THE VERTICAL CONTROL IS NGVD 29.
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.
   a. SEEDING TYPE I.
   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.

    ANY VEGETATIVE CLEARING SHALL BE LIMITED TO BRUSH AND TREES LESS THAN 3" DIAMETER.

    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 RESPONSIBILTY 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.

Environmental Management
JUL 10 2013
Office of Water Resources

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.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

THIS PLAN SHALL NOT BE ALTERED

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

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

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

STANDARD NOTES - 1

CHECKED BY _____ DATE _____ SCALE NO SCALE

R.I.D.E.M. APPLICATION SHEET NO. 3 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			4	91

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.

Environmental Management
JUL 10 2013
Office of Water Resources

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.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

THIS PLAN SHALL NOT BE ALTERED

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY
1	4/07	TRB
2	11/07	TRB
3	3/10	RBH

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS
WARWICK, RHODE ISLAND

STANDARD NOTES - 2

CHECKED BY _____ DATE _____ SCALE NO SCALE

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 4 OF 91

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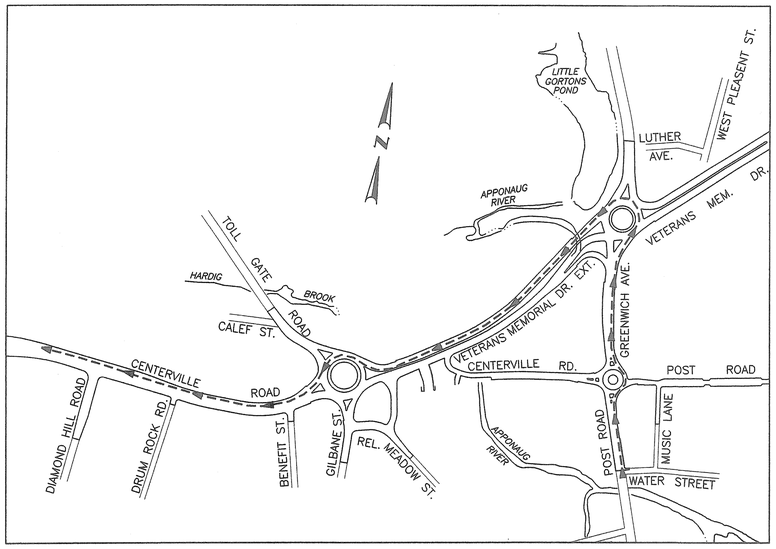
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			5	91



HURRICANE EVACUATION ROUTE

SCALE : 1" = 300'

HURRICANE EVACUATION NOTES

1. THE REVISED ROUTE WILL CONSIST OF:
   - POST ROAD BETWEEN WATER STREET AND CENTERVILLE ROAD
   - CENTERVILLE ROAD / POST ROAD / GREENWICH AVENUE ROUNDABOUT
   - GREENWICH AVENUE BETWEEN CENTERVILLE ROAD AND VETERANS MEMORIAL DRIVE
   - GREENWICH AVENUE / VETERANS MEMORIAL DRIVE ROUNDABOUT
   -VETERANS MEMORIAL DRIVE EXTENSION BETWEEN GREENWICH AVENUE AND TOLL GATE ROAD
   - VETERANS MEMORIAL DRIVE EXTENSION / TOLL GATE ROAD / CENTERVILLE ROAD ROUNDABOUT
   - CENTERVILLE ROAD BETWEEN TOLL GATE ROAD AND DIAMOND HILL ROAD
2. 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.
3. SEE SIGNING AND STRIPING PLANS FOR HURRICANE EVACUATION ROUTE SIGN LOCATIONS.

JOB SPECIFIC GENERAL NOTES

1. THE CONTRACTOR SHALL LAYOUT AND TIE DOWN THE BASELINE IN 50' STATION INCREMENTS (MAX. INCREMENT). THIS SHALL INCLUDE ALL POINTS OF CURVATURE, TANGENTS, EQUATION STATIONS, TEMPORARY BENCH MARKS, ETC. THE POINTS AND STATIONS SHALL BE MAINTAINED THROUGHOUT THE PROJECT. THIS WILL REQUIRE REMARKING, REPAINTING AND TYING DOWN TO OFFSETS AS REQUIRED AND AS CONSTRUCTION DEMANDS TEMPORARY OFFSET LOCATIONS. ONCE INTERMEDIATE AND/OR PERMANENT PAVEMENT COURSES ARE ESTABLISHED STATIONS AND POINTS WILL BE TRANSFERRED BACK TO THE ACTUAL LOCATIONS AND MAINTAINED. BOTH HORIZONTAL AND VERTICAL CONTROL AND ALL STATION MARKINGS ARE FOR THE USE OF THE CONTRACTOR, THE ENGINEER, CONSTRUCTION INSPECTORS, FOREMAN AND SUB-CONTRACTORS.
2. IN LOCATIONS OF CUT/FILL AREAS SUCH AS THE VETERAN MEMORIAL DRIVE EXTENSION, THE CONTRACTOR WILL ESTABLISH ORIGINAL GROUND CROSS SECTIONS BEFORE EARTH WORK BEGINS AND FINAL CROSS SECTIONS ONCE THE PROJECT IS COMPLETE.
3. AS-BUILT PLANS/RECORD WILL BE GENERATED AT THE COMPLETION OF THE PROJECT. THIS SHOULD INCLUDE BUT NOT BE LIMITED TO: FINAL CROSS SECTIONS, RIM ELEVATIONS, DRAINAGE STRUCTURE INVERT ELEVATIONS, OUTFALL LOCATIONS AND INVERT ELEVATIONS. ALL OR ANY CHANGES TO HORIZONTAL AND OR VERTICAL ALIGNMENT OR CONTROL SHOULD BE DOCUMENTED ON/IN THE AS-BUILT RECORD.
4. THE COST OF TRIMMING AND FINE GRADING FOR CURB INSTALLATION WILL BE INCLUDED IN THE COST OF THE CURB. THE TRIMMING AND FINE GRADING LIMITS SHALL BE A MINIMUM 1'-0" IN FRONT OF AND 1'-0" IN BACK OF THE NEW CURB OR TO A SUFFICIENT DISTANCE IN FRONT AND/OR IN BACK OF THE NEW CURB FOR PROPER CURB INSTALLATION.

JOB SPECIFIC UTILITY NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH THE "DIG SAFE LAW" ENACTED BY R.I. LEGISLATURE BILL NO. 79S-291, WHICH BECAME EFFECTIVE JULY 1, 1979 AND 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.

JOB SPECIFIC SIGNING NOTES

1. ALL SIGN POST MOUNTINGS SHALL BE R.I. STD. 24.2.0 (U-CHANNEL POSTS) UNLESS OTHERWISE SPECIFIED.
2. ALL SIGNS WITH ANY PORTION EXTENDING OVER A SIDEWALK AREA SHALL HAVE A MINIMUM 7'-0" CLEARANCE FROM THE SIDEWALK TO THE BOTTOM OF THE SIGN.
3. ALL SIGNS MOUNTED IN SIDEWALKS OR PROTRUDING OVER SIDEWALKS SHALL BE PLACED SUCH THAT MAXIMUM SIDEWALK CLEARANCE IS ACHIEVED FOR ADA COMPLIANCE.
4. PRIOR TO INSTALLATION, ALL SIGNS, MOUNTINGS AND LOCATIONS SHALL BE APPROVED OR MODIFIED BY THE ENGINEER.

JOB SPECIFIC TRAFFIC SIGNAL NOTES

1. MAST ARMS SHALL BE BOLTED WITH A MINIMUM OF SIX ANCHOR BOLTS AT THE FOUNDATION IN ACCORDANCE WITH AASHTO SPECIFICATIONS.
2. THE CONTRACTOR IS DIRECTED TO SECTION T.11 TRAFFIC SIGNAL STANDARDS AND POSTS, FOR FOUNDATION DESIGN REQUIREMENTS.
3. ALL SIGNS INSTALLED AT PROPOSED PEDESTRIAN PUSH BUTTONS SHALL BE MUTCD CODE R10-3e (LEFT OR RIGHT) AND SHALL BE INSTALLED SUCH THAT THE CROSSING ASSIGNED TO EACH BUTTON IS CLEARLY INDICATED.
4. THE CONTRACTOR SHALL PROVIDE SURVEYED CROSS SECTIONS AT EACH NEW MAST ARM LOCATION IN ACCORDANCE WITH THE RHODE ISLAND STANDARD SPECIFICATIONS.
5. FOUNDATION DESIGN AND DIMENSIONS SHOWN ON R.I. STANDARDS 19.5.0 AND 19.5.1 ARE NO LONGER APPLICABLE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A DESIGN FOR ALL MAST ARM AND SPAN POLE STRUCTURES.
6. THE TOP OF THE FOUNDATION SHALL BE SET TO FINISHED GRADE AND FINISHED LEVEL.

JOB SPECIFIC MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY SECTION OPEN TO TRAFFIC.
2. ANY CONE WEIGHTS REQUIRED ON RI STD. 26.1.0 "FLUORESCENT TRAFFIC CONES" SHALL BE INCIDENTAL TO THE CONTRACT.
3. PAVEMENT REMOVAL/COLD PLANE TRANSVERSE DROP-OFFS LEFT OPEN TO TRAFFIC SHALL BE A MINIMUM OF 10 FEET HORIZONTAL TO 1 INCH VERTICAL.
4. THE INTENDED VEHICLE PATH SHALL BE CLEARLY MARKED AT ALL TIMES AND NEW PAVEMENT MARKINGS (PAINT) SHALL BE PLACED AT THE END OF THE WORK DAY WHERE THE ROADWAY HAS BEEN MICROMILLED OR PAVED.

JOB SPECIFIC WETLAND NOTES

1. ALL WETLAND AREAS AND THEIR EDGES DEPICTED OUTSIDE OF THE PROJECT LIMIT OF DISTURBANCE HAVE NOT BEEN VERIFIED AS PART OF APPLICATION NO. 11-0099.
2. THE CONTRACTOR SHALL NOTIFY THE RIDOT RESIDENT PRIOR TO REMOVAL OF ANY TREE GREATER THAN 24-INCH DIAMETER TO DETERMINE WHETHER THE EXISTING TREE CAN BE PRESERVED WITHOUT MODIFICATION TO THE DESIGN.

JOB SPECIFIC LEGEND

ACBC	ARTICULATED CONCRETE BLOCK (CLOSED CELL)
ACBO	ARTICULATED CONCRETE BLOCK (OPEN CELL)
BRD1	BIKE LANE EXIT RAMP DETAIL (SEE DETAIL)
BRD2	BIKE LANE ENTRANCE RAMP DETAIL (SEE DETAIL)
BRD3	WHEELCHAIR AND BIKE LANE RAMP DETAIL (SEE DETAIL)
CFS	COMPOST FILTER SOCK
DCS	REMOVE AND DISPOSE CONCRETE SLAB
DFHT	REMOVE AND DISPOSE FIRE HYDRANT AND TEE
ETR	EXISTING TO REMAIN
GRR	GROUTED RIP-RAP (COARSE GROUT, SECTION 807.02.7)
LI	LANDSCAPED ISLAND
MR	2" CHIP STONE (KEYSTONE, SECTION M.01.06) 2" GRADED SCREENED AGGREGATE 8" GRAVEL BORROW SUBBASE COURSE
MM (DEPTH)	MICRO MILL EXISTING PAVEMENT
NUP	NEW UTILITY POLE (BY OTHERS)
RD	REMOVE AND DISPOSE
RDW	REMOVE AND DISPOSE WALL
RFH	RELOCATE FIRE HYDRANT
RPB	RELOCATE PAPER BOX (BY OTHERS)
RSS	REMOVE AND SALVAGE TRAFFIC SIGNAL
SST-1	STAMPED SURFACE TREATMENT 2" COLORED STAMPED BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT 5" BITUMINOUS BASE COURSE, CLASS 12.5 HOT MIX ASPHALT GRAVEL BORROW SUBBASE COURSE 12" IN FILL 18" IN CUT
SST-2	STAMPED SURFACE TREATMENT 4" COLORED & STAMPED CEMENT CONCRETE 8" GRAVEL BORROW SUBBASE COURSE
SST-3	STAMPED SURFACE TREATMENT 8" COLORED & STAMPED CEMENT CONCRETE 8" MIN. GRAVEL BORROW SUBBASE COURSE
ST	SPEED TABLE (SEE DETAIL)
STWC	SPEED TABLE WHEELCHAIR RAMP - R.I. STD. 7.3.1 3'-0" GRANITE TRANSITION CURB (2), R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM (SEE DETAIL)
TRM	TURF REINFORCEMENT MAT
WCR1	R.I. STD. 7.3.2 6'-0" GRANITE TRANSITION CURB, R.I. STD. 7.3.3 GRANITE WHEELCHAIR RAMP TRANSITION CURB, R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
WCR2	R.I. STD. 7.3.2 6'-0" GRANITE TRANSITION CURB (2), R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
WCR3	R.I. STD. 7.3.1 3'-0" GRANITE TRANSITION CURB (2), R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
WCR4	R.I. STD. 7.3.3 GRANITE WHEELCHAIR RAMP TRANSITION CURB, R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.1 WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY, R.I. STD. 48.1.0 (4') DETECTABLE WARNING SYSTEM
WCR5	R.I. STD. 7.4.1 6'-0" SLOPE FACE GRANITE TRANSITION CURB (2), R.I. STD. 7.3.9 GRANITE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
WCR6	R.I. STD. 7.1.2 6'-0" PRECAST CONCRETE TRANSITION CURB, R.I. STD. 7.1.3 PRECAST CONCRETE WHEELCHAIR RAMP TRANSITION CURB, R.I. STD. 7.1.9 PRECAST CONCRETE RAMP STONE, R.I. STD. 43.3.0 WHEELCHAIR RAMP, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
WCR7	R.I. STD. 7.1.3 PRECAST CONCRETE WHEELCHAIR RAMP TRANSITION CURB, R.I. STD. 7.1.9 PRECAST CONCRETE RAMP STONE, R.I. STD. 43.3.1 WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY, R.I. STD. 48.1.0M DETECTABLE WARNING SYSTEM
YFH	YARD FIRE HYDRANT

Environmental Management
JUL 10 2013
Office of Water Resources

JOB SPECIFIC LEGEND (CONT.)

7.1.3	PRECAST CONCRETE WHEELCHAIR RAMP TRANSITION CURB
7.1.9	PRECAST CONCRETE RAMP STONE
7.2.3	PRECAST CONCRETE LOT CURB
7.3.9	GRANITE RAMP STONE
48.1.0M	CAST IRON DETECTABLE WARNING PLATES R.I. STANDARD 48.1.0 MODIFIED

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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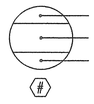
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER



TYPICAL SIGN DESIGNATION SYMBOL

DRAINAGE STRUCTURE DESIGNATIONS

A	CATCH BASIN R.I. STD. 4.4.0 W/ R.I.STD. 6.3.4 FRAME AND GRATE OR 6.3.2 @ L.P., AND R.I. STD. 7.3.8 GRANITE APRON STONE.
B	ROUND CATCH BASIN W/ GUTTER INLET R.I.STD. 3.4.1, R.I. STD. 6.3.4 FRAME AND GRATE, R.I. STD. 6.1.0 FRAME AND COVER, AND R.I. STD. 7.3.6 GRANITE INLET STONE.
C	MANHOLE R.I. STD. 4.2.0, 4.2.1 OR 4.2.2 W/ R.I. STD. 6.2.1 FRAME AND COVER.
D	DROP INLET R.I. STD. 4.5.0 OR 4.5.1 W/ R.I. STD. 6.3.4 FRAME AND GRATE AND R.I. STD. 7.3.8 GRANITE APRON STONE.
E	CATCH BASIN R.I. STD. 4.4.0 W/ R.I. STD. 6.2.1 FRAME AND COVER.
F	CATCH BASIN R.I. STD. 4.4.0 W/ R.I. STD. 6.1.0 SQUARE FRAME AND ROUND COVER AND R.I. STD. 7.3.6 GRANITE INLET STONE.
G	CATCH BASIN R.I. STD. 4.4.0 W/ R.I. STD. 6.3.4 FRAME AND GRATE.
H	CATCH BASIN R.I. STD. 4.4.0 W/ R.I. STD. 6.4.0 FRAME AND GRATE.
I	MANHOLE R.I. STD. 4.3.0 W/ R.I. STD. 6.2.1 FRAME AND COVER.
K	CATCH BASIN R.I. STD. 4.4.0 W/ R.I. STD. 6.3.4 FRAME AND GRATE AND R.I. STD. 7.3.7 GRANITE APRON STONE.

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

JOB SPECIFIC
PLAN SYMBOLS, LEGEND & NOTES

CHECKED BY _____ DATE _____ SCALE NO SCALE

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			6	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

KEY PLAN

CHECKED BY _____ DATE _____ SCALE 1" = 200'

R.I.D.E.M. APPLICATION SHEET NO. 6 OF 91

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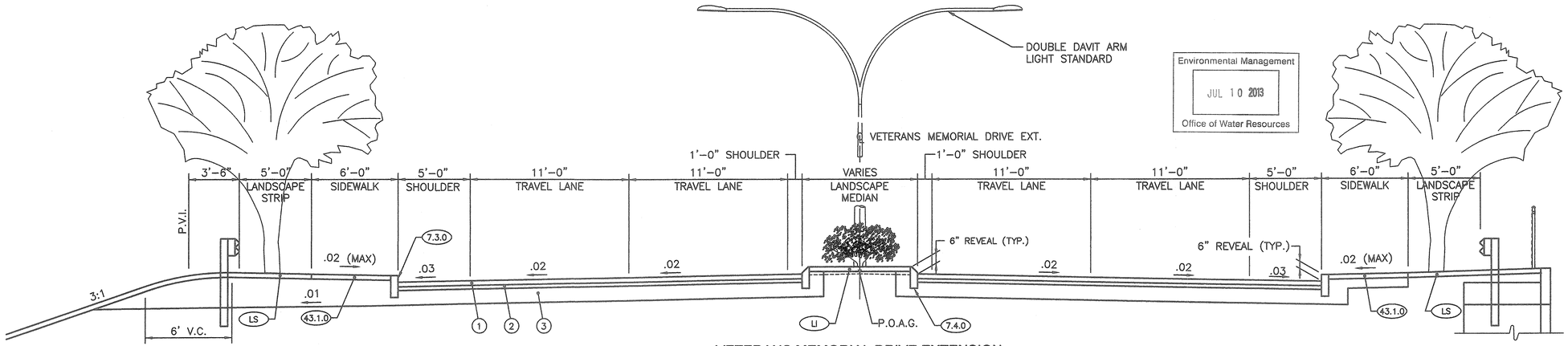
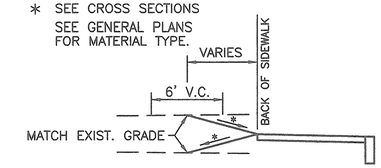
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			7	91



Environmental Management
JUL 10 2013
Office of Water Resources

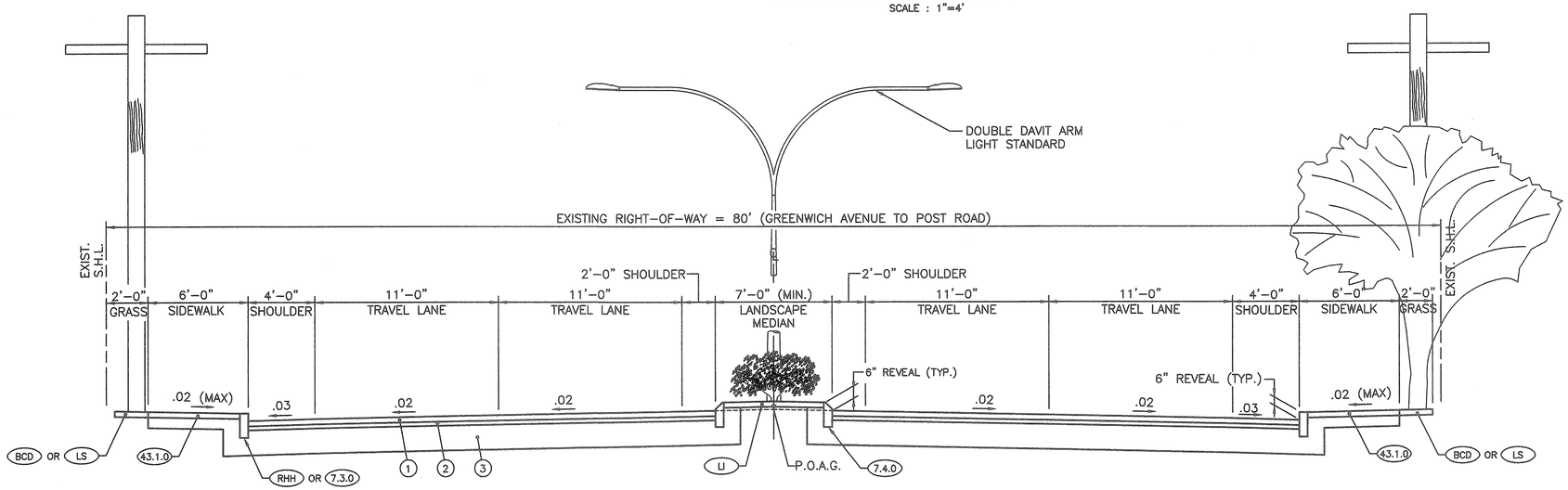
* SEE CROSS SECTIONS
SEE GENERAL PLANS FOR MATERIAL TYPE.



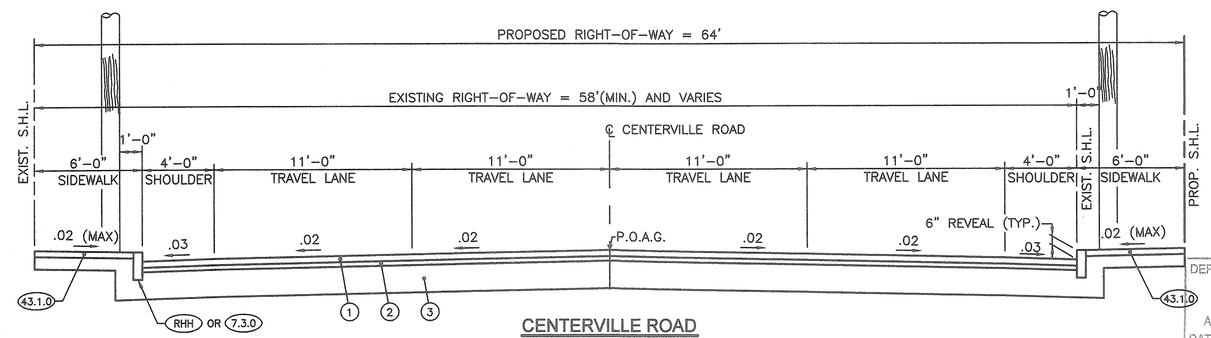
** VERTICAL CURVES IN DRIVEWAYS SHALL BE 6' IN LENGTH AND SHALL BE PLACED AT BOTH BACK OF SIDEWALK AND THE MATCH POINT.

TYPICAL MATCH
NOT TO SCALE

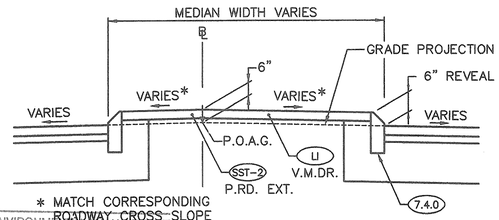
VETERANS MEMORIAL DRIVE EXTENSION
FROM TOLL GATE ROAD TO GREENWICH AVENUE
SCALE : 1"=4'



VETERANS MEMORIAL DRIVE
FROM GREENWICH AVENUE TO POST ROAD
SCALE : 1"=4'



CENTERVILLE ROAD
FROM 7+90± TO TOLL GATE ROAD
SCALE : 1"=4'



* MATCH CORRESPONDING ROADWAY CROSS SLOPE

TYPICAL MEDIAN ISLAND DETAIL
NOT TO SCALE

LEGEND

(1)	2" BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT
(2)	5" BITUMINOUS BASE COURSE, CLASS 19.0 HOT MIX ASPHALT (IN TWO–2 1/2" LIFTS)
(3)	GRAVEL BORROW SUBBASE COURSE 12" IN FILL 18" IN CUT
P.O.A.G.	POINT OF APPLICATION OF CENTERLINE PROFILE GRADE
(7.3.0)	GRANITE CURB, R.I. STD. 7.3.0
(7.4.0)	GRANITE SLOPED FACE CURB
(43.1.0)	CEMENT CONCRETE SIDEWALK, R.I. STD. 43.1.0
(BCD)	BITUMINOUS CONCRETE DRIVEWAY 3" BITUMINOUS CONCRETE TYPE I–2 8" GRAVEL BORROW SUBBASE COURSE
(LI)	LANDSCAPE ISLAND
(LS)	4" LOAM BORROW AND SEED
(RHH)	REMOVE, HANDLE, HAUL, TRIM, RESET CURB EDGING, STRAIGHT, CIRCULAR (ALL TYPES)

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

LIMITS OF SUPERELEVATED SECTIONS

LOCATION	RUNOFF/RUNOUT STA. TO STA.	FULL RATE (FT/FT)	SUPERELEVATION STA. TO STA.	RUNOFF/RUNOUT STA. TO STA.
CENTERVILLE ROAD	5+00 – 6+50	0.030	6+50 – 8+00	8+00 – 10+50
CENTERVILLE ROAD	11+50 – 13+75	0.029	13+75 – 14+50	14+50 – 15+25
CENTERVILLE ROAD	15+25 – 16+25	0.039	16+25 – 17+50	17+50 – 19+00
VETERANS MEMORIAL DRIVE EXT.	23+50 –26+00	0.033	26+00 –28+75	28+75 – 30+00
VETERANS MEMORIAL DRIVE	40+25 – 42+75	0.034	42+75 – 46+25	46+25 – 48+75

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

TYPICAL SECTION - 1

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 7 OF 91

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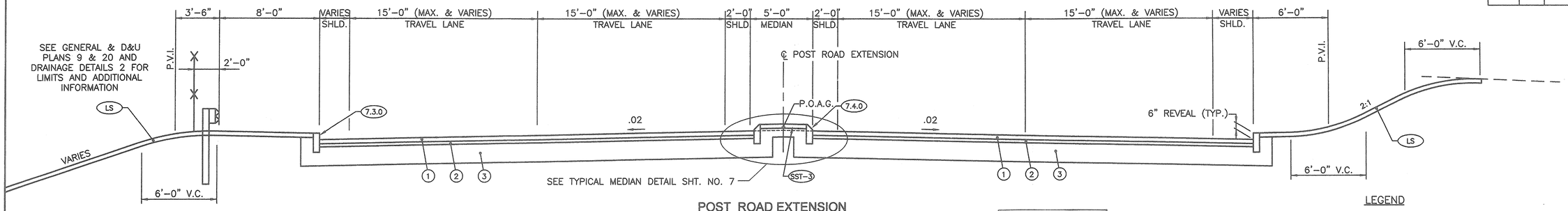
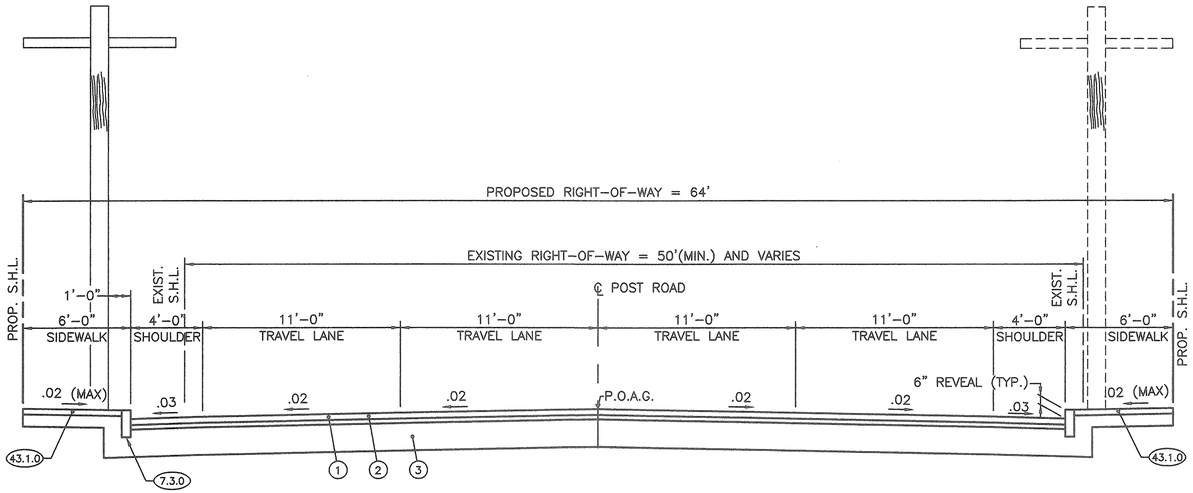
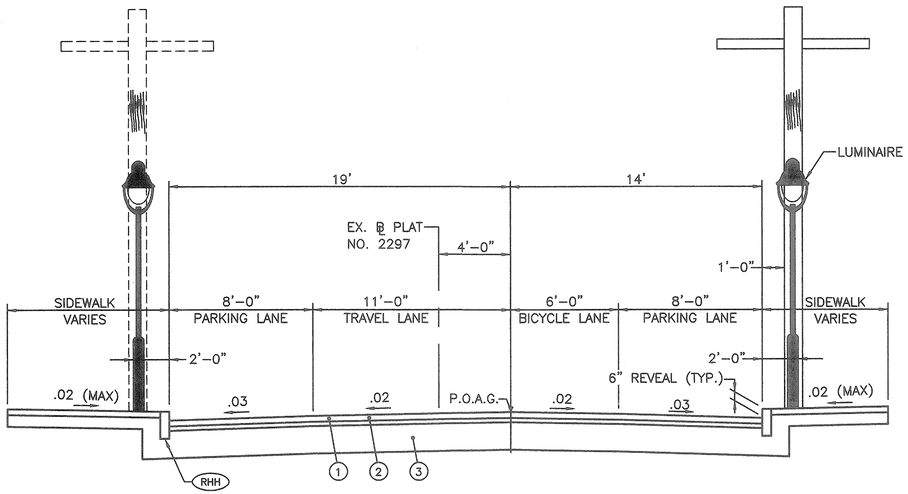
1	R.I.			8	91



POST ROAD EXTENSION
FROM STA. 602+00 TO 605+40±
SCALE : 1"=4'

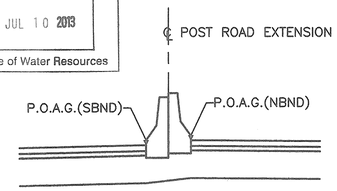


POST ROAD
FROM VETERANS MEMORIAL DRIVE TO WEST SHORE ROAD
SCALE : 1"=4'

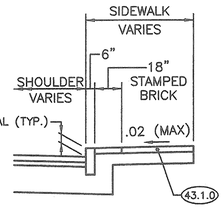


POST ROAD
FROM GREENWICH AVENUE TO WEST SHORE ROAD
SCALE : 1"=4'

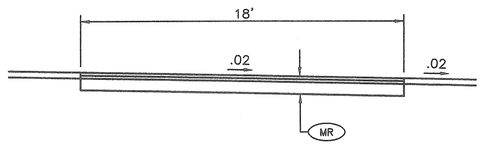
Environmental Management
JUL 10 2013
Office of Water Resources



POST ROAD EXTENSION
FROM STA. 605+40± TO 607+18±
SCALE : 1"=4'



POST ROAD
GREENWICH AVENUE TO WEST SHORE ROAD
SIDEWALK WITH STAMPED BRICK
SCALE : 1"=4'



MAINTENANCE ROAD
NOT TO SCALE

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

(1)	2" BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT
(2)	5" BITUMINOUS BASE COURSE, CLASS 19.0 HOT MIX ASPHALT (IN TWO–2 1/2" LIFTS)
(3)	GRAVEL BORROW SUBBASE COURSE 12" IN FILL 18" IN CUT
P.O.A.G.	POINT OF APPLICATION OF CENTERLINE PROFILE GRADE
(7.3.0)	GRANITE CURB, R.I. STD. 7.3.0
(7.4.0)	GRANITE SLOPED FACE CURB
(43.1.0)	CEMENT CONCRETE SIDEWALK, R.I. STD. 43.1.0
(BCD)	BITUMINOUS CONCRETE DRIVEWAY 3" BITUMINOUS CONCRETE TYPE I–2 8" GRAVEL BORROW SUBBASE COURSE
(LI)	LANDSCAPE ISLAND
(LS)	4" LOAM BORROW AND SEED
(RHH)	REMOVE, HANDLE, HAUL, TRIM, RESET CURB EDGING, STRAIGHT, CIRCULAR (ALL TYPES)
(SST–3)	STAMPED SURFACE TREATMENT 4" COLORED & STAMPED CEMENT CONCRETE 8" MIN. GRAVEL BORROW SUBBASE COURSE
(MR)	2" CHIP STONE (KEYSTONE, SECTION M.01.06) 2" GRADED SCREENED AGGREGATE 8" GRAVEL BORROW SUBBASE COURSE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

TYPICAL SECTION - 2

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 8 OF 91

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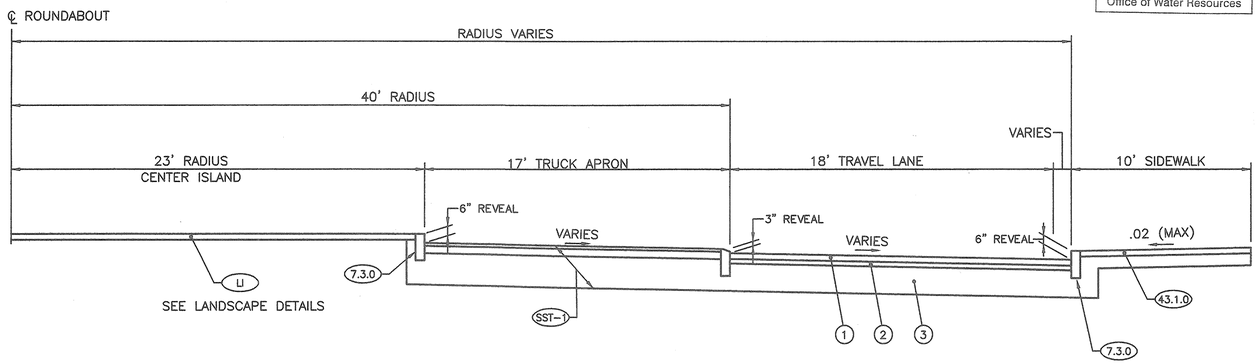
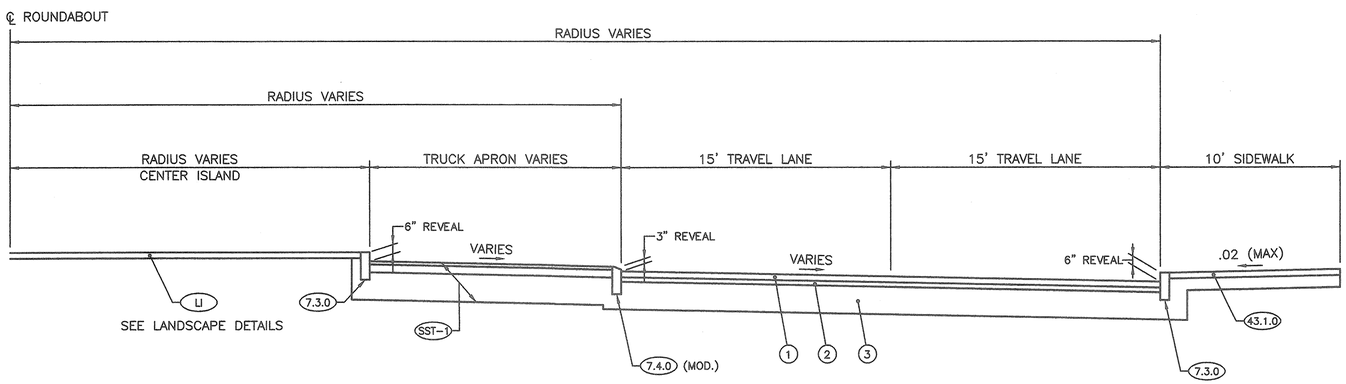
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			9	91

Environmental Management
JUL 10 2013
Office of Water Resources



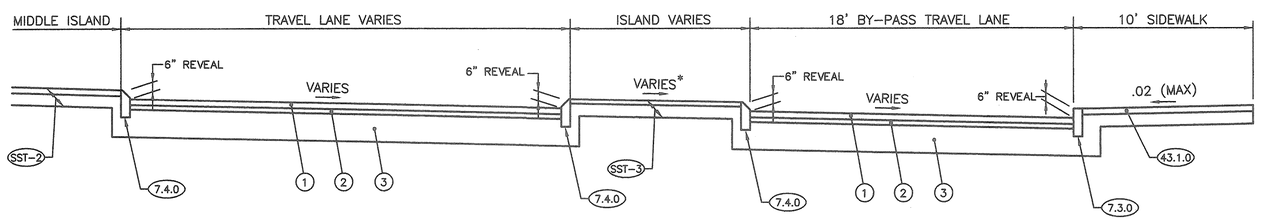
TYPICAL ONE LANE ROUNDABOUT

SCALE : 1"=4'



TYPICAL TWO LANE ROUNDABOUT

SCALE : 1"=4'



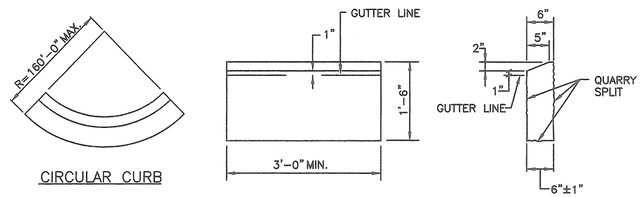
* MATCH CORRESPONDING ROADWAY CROSS SLOPE

TYPICAL BY-PASS TRAVEL LANE
POST ROAD EXTENSION ROUND ABOUT

SCALE : 1"=4'

LEGEND

(1)	2" BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT
(2)	5" BITUMINOUS BASE COURSE, CLASS 19.0 HOT MIX ASPHALT (IN TWO–2 1/2" LIFTS)
(3)	GRAVEL BORROW SUBBASE COURSE 12" IN FILL 18" IN CUT
P.O.A.G.	POINT OF APPLICATION OF CENTERLINE PROFILE GRADE
(7.3.0)	GRANITE CURB, R.I. STD. 7.3.0
(7.4.0)	GRANITE SLOPED FACE CURB
(43.1.0)	CEMENT CONCRETE SIDEWALK, R.I. STD. 43.1.0
(LI)	LANDSCAPE ISLAND
(LS)	4" LOAM BORROW AND SEED
(SST–1)	STAMPED SURFACE TREATMENT 2" COLORED STAMPED BITUMINOUS SURFACE COURSE, MODIFIED CLASS 12.5 HOT MIX ASPHALT 5" BITUMINOUS BASE COURSE, CLASS 12.5 HOT MIX ASPHALT GRAVEL BORROW SUBBASE COURSE 12" IN FILL 18" IN CUT
(SST–2)	STAMPED SURFACE TREATMENT 4" COLORED & STAMPED CEMENT CONCRETE 8" GRAVEL BORROW SUBBASE COURSE
(SST–3)	STAMPED SURFACE TREATMENT 8" COLORED & STAMPED CEMENT CONCRETE 8" MIN. GRAVEL BORROW SUBBASE COURSE



CIRCULAR CURB

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR PIECES TO BE 3'–0".
4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADII OF 160'–0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'–0" RADIUS.

(7.4.0) (MOD.) MOUNTABLE GRANITE SLOPED FACE TRUCK APRON CURB

NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

TYPICAL SECTION - 3

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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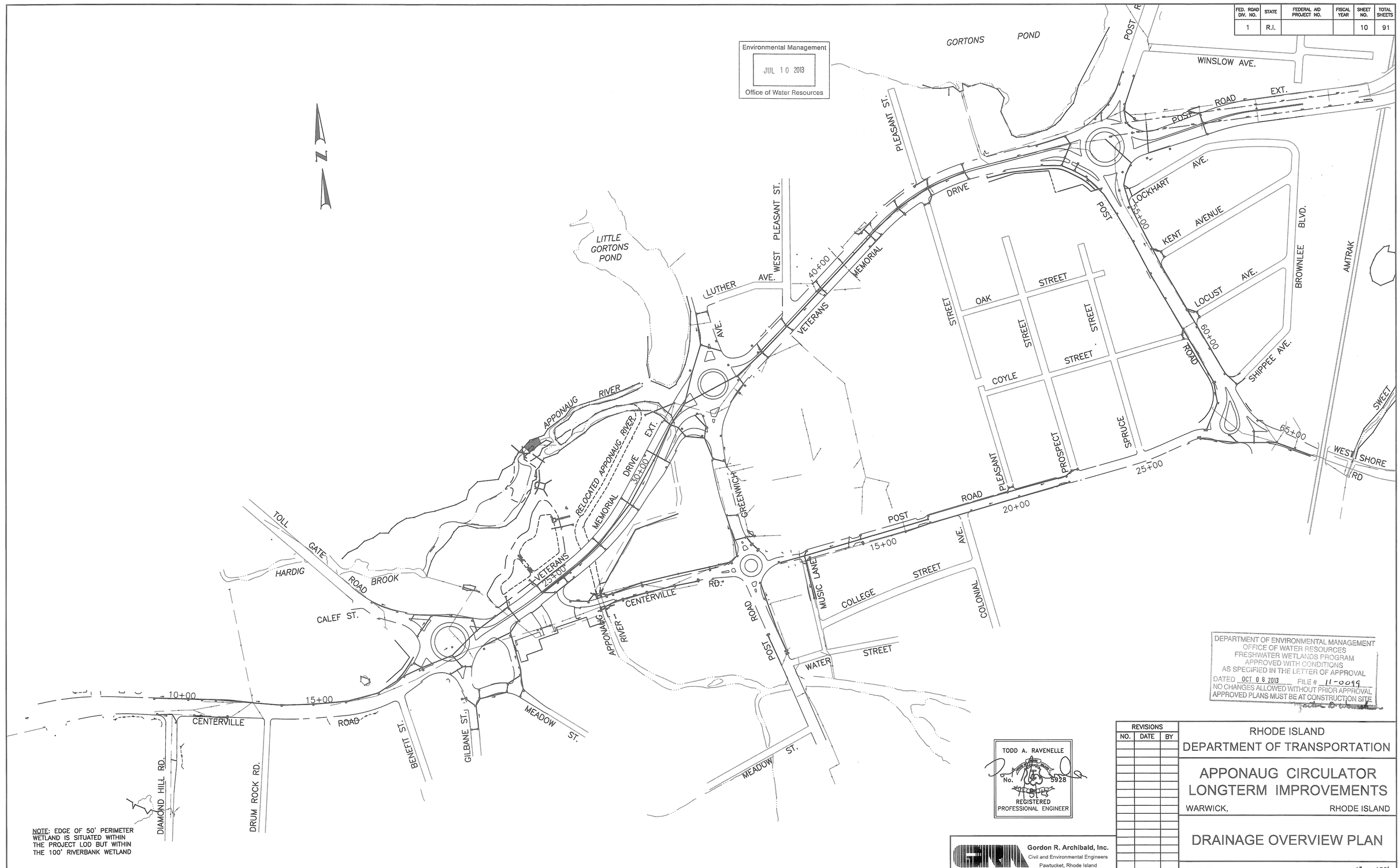
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			10	91

Environmental Management
JUL 10 2013
Office of Water Resources



NOTE: EDGE OF 50' PERIMETER WETLAND IS SITUATED WITHIN THE PROJECT LOD BUT WITHIN THE 100' RIVERBANK WETLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 9928
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE OVERVIEW PLAN

CHECKED BY _____ DATE _____ SCALE 1" = 150'

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.F.M. APPLICATION SHEET NO. 10 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			11	91

Environmental Management
JUL 10 2013
Office of Water Resources

N

GORTON POND

AREA "F"
9,285 S.F. (PERIMETER WETLAND IMPACT)
11,327 S.F. (BIOLOGICAL WETLAND IMPACT)

LITTLE GORTONS POND

PROPOSED 200' RIVERBANK WETLAND EDGE FROM PROPOSED RELOCATED RIVER

AREA "D"
386,286 S.F. (PERIMETER WETLAND IMPACT)
14,388 S.F. (BIOLOGICAL WETLAND IMPACT)

AREA "B / C"
103,613 S.F. (PERIMETER WETLAND IMPACT)
1,077 S.F. (BIOLOGICAL WETLAND IMPACT)

AREA "A"
1,660 S.F.

APPROX. 50' PERIMETER WETLAND

MARSH

STREAM

100' RIVERBANK WETLAND

NOTE: EDGE OF 50' PERIMETER WETLAND IS SITUATED WITHIN THE PROJECT LOD BUT WITHIN THE 100' RIVERBANK WETLAND

AREA "E"
9,920 S.F.
(PERIMETER WETLAND IMPACT)

PROPOSED 200' RIVERBANK WETLAND EDGE FROM PROPOSED RELOCATED RIVER

WINSLOW AVE.
POST ROAD EXT.
WEST PLEASANT ST.
PLEASANT ST.
LUTHER AVE.
MEMORIAL DRIVE
VETERANS 40-00
DRIVE
POST
LOCKHART AVE.
55+00
KENT AVENUE
BROWNLEE BLVD.
AMTRAK
OAK STREET
COYLE STREET
LOCUST AVE.
90+00
SHIPPEE AVE.
ROAD
PROSPECT STREET
SPRUCE STREET
65+00
SWEET MEADOW BROOK
WEST SHORE ROAD
25+00
20+00
5+00
POST ROAD
PLEASANT AVE.
STREET
MUSIC LANE
COLLEGE
COLONIAL
WATER STREET
POST ROAD
MEADOW ST.
BENEFIT ST.
GILBANE ST.
MEADOW ST.
CENTERVILLE ROAD
DIAMOND HILL RD.
DRUM ROCK RD.
10+00
5+00
APPONAUG RIVER
APPONAUG RIVER RELOCATED
RELOCATED APPONAUG RIVER
MEMORIAL DRIVE
GREENWICH
VETERANS
CALEF ST.
TOLL GATE ROAD
HARDIG BROOK
CENTERVILLE ROAD

LEGEND

- FLAGGED WETLAND EDGE
- EDGE OF WATER
- 50' PERIMETER WETLAND
- 100' RIVERBANK WETLAND
- 200' RIVERBANK WETLAND
- LIMIT OF DISTURBANCE
- PERIMETER/RIVERBANK WETLAND IMPACT
- BIOLOGICAL WETLAND IMPACT

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

WETLAND OVERVIEW PLAN

CHECKED BY _____ DATE _____ SCALE 1" = 150'

R.I.D.E.M. APPLICATION SHEET NO. 11 OF 91

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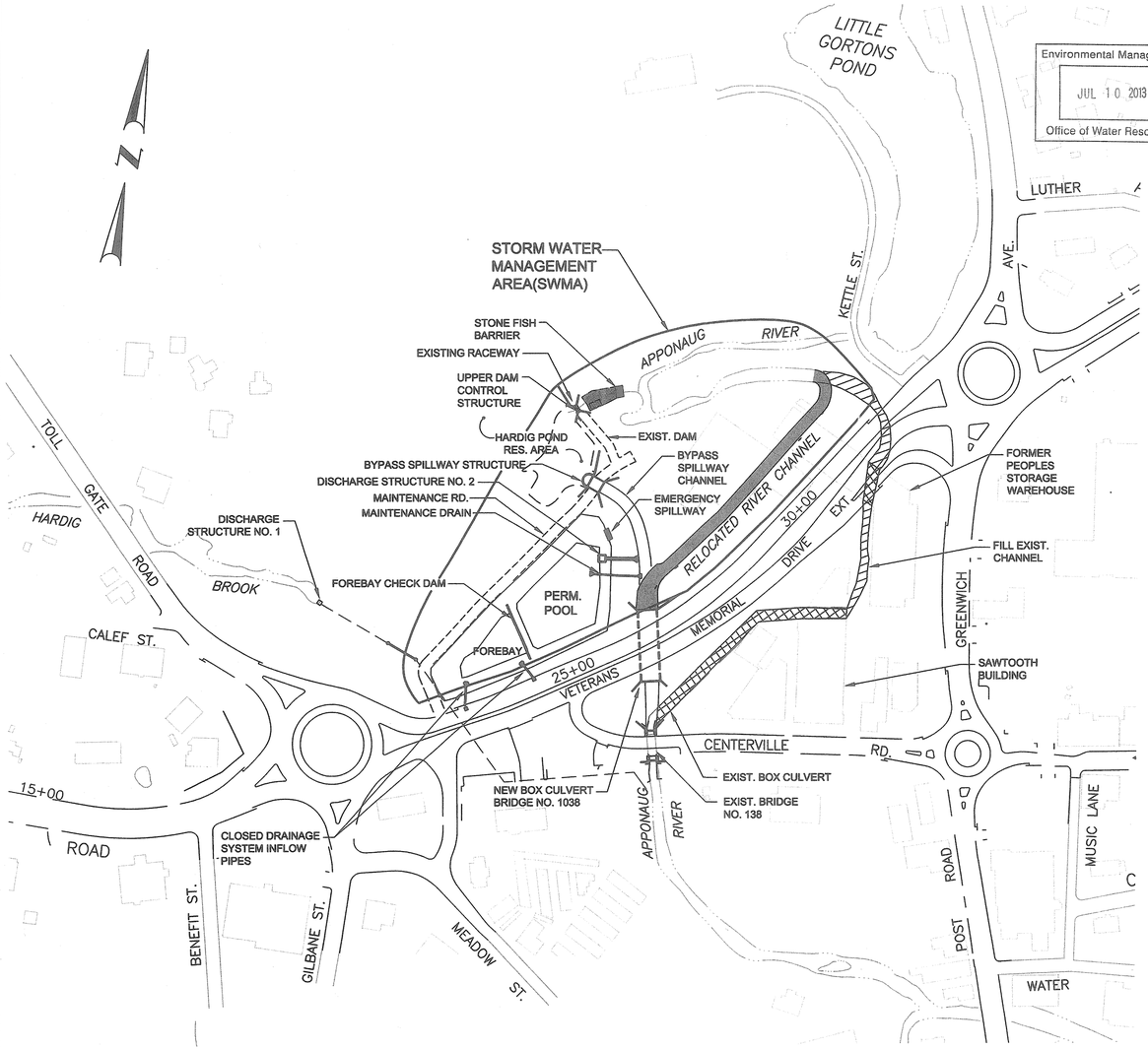
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			12	91



PLAN
N.T.S.

LEGEND
- SWMA
- NEW RIVER CHANNEL
- EXIST. OPEN CHANNEL TO BE FILLED
- EXIST. CLOSED CHANNEL TO BE FILLED

Environmental Management
JUL 10 2013
Office of Water Resources

SUGGESTED SEQUENCE OF CONSTRUCTION

THE WORK OUTLINED IN THE FOLLOWING SEQUENCE DEFINES THE MAJOR ACTIVITIES REQUIRED FOR THE RELOCATION OF THE APPONAUG RIVER, CONSTRUCTION OF THE STORMWATER MANAGEMENT AREA AND THE HARDIG POND RESTORATION AREA. THE SEQUENCE IS ONLY SUGGESTED TO OUTLINE THE MAJOR CONSTRUCTION REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING THERE OWN DETAILED SEQUENCE OF CONSTRUCTION. THE WORK AREA IS LOCATED ON THE SITE FORMERLY OCCUPIED BY THE ORIENTAL PRINT WORKS. NO ATTEMPT IS MADE HEREIN TO ADDRESS THE SEQUENCE OF WORK FOR THE ROUTINE HIGHWAY CONSTRUCTION ITEMS THAT WILL TAKE PLACE OUTSIDE OF THIS AREA. THE PORTION OF VETERANS MEMORIAL DRIVE WITHIN THESE LIMITS SHALL BE CONSTRUCTED FOLLOWING RELOCATION OF THE APPONAUG RIVER AND COMPLETION OF THE STORM WATER MANAGEMENT AREA.

RELOCATION OF THE APPONAUG RIVER.

THE APPONAUG RIVER SHALL REMAIN IN THE EXISTING CHANNEL UNTIL THE NEW BOX CULVERT AND THE NEW RIVER CHANNEL ARE COMPLETE. THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE RIVER RELOCATION IS AS FOLLOWS.

1. CONSTRUCT NEW BOX CULVERT AND WING WALLS. OPEN CUT AND DEWATER THE SITE OF THE NEW BOX AS REQUIRED TO CONSTRUCT THE CULVERT IN THE DRY.
2. EXCAVATE AND SHAPE NEW CHANNEL FROM THE NORTH END OF THE NEW CULVERT NORTH TO THE EXISTING RIVER CHANNEL.
3. BUILD A TEMPORARY SANDBAG DIKE AT THE NORTH END OF THE NEW CHANNEL ALONG THE SOUTH SIDE OF THE EXISTING RIVER TO MAINTAIN FLOW IN THE EXISTING RIVER CHANNEL.
4. PLACE ARTICULATED CONCRETE BLOCK (ACB MATS) ALONG THE NEW CHANNEL. PLACE TURF REINFORCEMENT MAT ABOVE THE ACB MATS AS DETAILED. BACKFILL THE MATS AND SEED TO ESTABLISH VEGETATIVE GROWTH. EXCAVATING, SHAPING AND PLACING THE ACB MATS WILL REQUIRE DEWATERING TO PLACE THE MATS ON A STABLE SUBGRADE.
5. REMOVE APPROXIMATELY 60' OF THE SOUTH END OF THE APPONAUG RIVER BOX CULVERT. REMOVAL WILL ENTAIL BOTH SIDE WALLS OF THE BOX AND THE ROOF STRUCTURE.
6. CONSTRUCT THE NEW RIVER CHANNEL AND SLOPE WORK BETWEEN THE NEW BOX CULVERT AND THE EXISTING BRIDGE ON CENTERVILLE ROAD.
7. STABILIZE THE SLOPES WITH ACB MATS AND TURF REINFORCEMENT MATS. END ACB MATS APPROXIMATELY 30' NORTH OF THE NORTH FACE OF THE EXISTING BRIDGE TO ALLOW FOR THE CONSTRUCTION OF THE NEW WING WALLS DURING BRIDGE RECONSTRUCTION.
8. REMOVE THE TEMPORARY SANDBAG DIKE FROM THE NORTH END OF THE NEW RIVER CHANNEL AND REBUILD THE DIKE ACROSS THE EXISTING RIVER CHANNEL THEREBY DIVERTING THE RIVER FLOW TO THE NEW RIVER CHANNEL.
9. REMOVE THE ROOF OF THE EXISTING BOX CULVERT FROM CENTERVILLE ROAD TO THE SAW TOOTH BUILDING. REMOVE ABANDONED UTILITIES WITHIN THE CULVERT, PLUG PIPES AND BACKFILL THE CULVERT CHANNEL TO GRADE WITH CLEAN FILL. EXISTING PIERS WITHIN THE CHANNEL MAY REMAIN.
10. SAW CUT AND REMOVE THE FLOOR SLAB COVERING THE CULVERT WITHIN THE LIMITS OF THE FORMER PEOPLES STORAGE WAREHOUSE BUILDING. REMOVE THE ABANDONED UTILITIES WITHIN THE CULVERT, PLUG PIPES.
11. FILL THE REMAINING PORTION OF THE EXISTING RIVER CHANNEL WITH CLEAN FILL FROM THE EAST SIDE OF THE SAW TOOTH BUILDING TO THE SANDBAG DIKE AT THE NORTH END OF THE RELOCATED RIVER CHANNEL. FILL THE OLD CHANNEL TO ELEVATION 10+/-.
12. SAW CUT THE FLOOR COVERING THE CULVERT WITHIN THE SAW TOOTH BUILDING. REMOVE THE SLAB AND ABANDONED UTILITIES WITHIN THE CULVERT, PLUG PIPES AND BACKFILL THE CULVERT CHANNEL TO APPROXIMATELY 6" BELOW THE EXISTING FLOOR SLAB, PLACE WELDED WIRE MESH AND POUR THE NEW CONCRETE FLOOR SLAB.
13. COMPLETE SLOPE WORK AND PLACEMENT OF THE ACB MATS AT THE NORTHERLY END OF THE NEW RIVER CHANNEL.

STORM WATER MANAGEMENT AREA

THE STORM WATER MANAGEMENT AREA, SWMA, CONSISTS OF A FOREBAY AND PERMANENT POOL EXCAVATED TO THE GRADES SHOWN ON THE DRAWINGS. THE PERMANENT POOL HAS A PROPOSED WATER DEPTH OF 4' AND IS SEPARATED FROM THE FOREBAY BY A PERMEABLE GABION CHECK DAM. THE SWMA SHALL RECEIVE AND TREAT SURFACE RUNOFF FROM VETERANS MEMORIAL DRIVE AND THE PORTIONS OF CENTERVILLE ROAD TO THE WEST OF THE SWMA INCLUDING GILBANE AND MEADOW STREETS. A DISCHARGE STRUCTURE REGULATES THE RATE OF FLOW FROM THE SWMA. AN EMERGENCY SPILLWAY IS PROVIDED TO HANDLE FLOWS THAT EXCEED THE CAPACITY OF THE DISCHARGE CHAMBER. THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR CONSTRUCTION OF THE SWMA IS AS FOLLOWS.

1. CONSTRUCT THE DISCHARGE STRUCTURE NO. 2. REQUIRES EXCAVATION BELOW THE WATER TABLE. DEWATERING IS REQUIRED TO CONSTRUCT THE STRUCTURE IN THE DRY.
2. CLEAR AND GRUB THE AREA PROPOSED FOR THE SWMA.
3. EXCAVATE THE PERMANENT POOL TO THE LINES AND GRADES SHOWN ON THE DRAWINGS IN TWO PHASES. NOTE THAT THE ORIFICE IN THE DISCHARGE STRUCTURE IS SET AT ELEVATION 10.0 WHICH WILL CONTROL THE MAXIMUM WATER SURFACE ELEVATION DURING THE EXCAVATION OPERATION.
   - PHASE 1: EXCAVATE FROM EXISTING GRADE TO APPROXIMATELY ONE FOOT ABOVE THE WATER TABLE. ACTUAL ELEVATION SHALL BE DETERMINED BY THE CONTRACTOR BASED ON WHAT IS REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT. MATERIAL EXCAVATED DURING THIS PHASE SHALL BE PLACED DIRECTLY IN THE PROPOSED HIGHWAY EMBANKMENT BETWEEN STATIONS 23+00 AND 32+00.
   - PHASE 2: CONTINUE EXCAVATING, IN THE WET, TO THE BOTTOM OF THE PERMANENT POOL, ELEVATION 6.0. MATERIAL EXCAVATED DURING THIS PHASE SHALL BE TEMPORARILY STOCKPILED ON SITE AND ALLOWED TO DRY TO AN ACCEPTABLE MOISTURE CONTENT BEFORE BEING PLACED IN THE HIGHWAY EMBANKMENT.
4. EXCAVATE THE FOREBAY TO THE LINES AND GRADES SHOWN ON THE DRAWINGS IN TWO PHASES.
   - PHASE 1: EXCAVATE FROM EXISTING GRADE TO APPROXIMATELY ONE FOOT ABOVE THE WATER TABLE. ACTUAL ELEVATION SHALL BE DETERMINED BY THE CONTRACTOR BASED ON WHAT IS REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT. MATERIAL EXCAVATED DURING THIS PHASE SHALL BE PLACED DIRECTLY IN THE PROPOSED HIGHWAY EMBANKMENT BETWEEN STATIONS 23+00 AND 32+00.
   - PHASE 2: CONTINUE EXCAVATING, IN THE WET, TO THE BOTTOM OF THE FOREBAY, ELEVATION 10.0. MATERIAL EXCAVATED DURING THIS PHASE SHALL BE TEMPORARILY STOCKPILED ON SITE AND ALLOWED TO DRY TO AN ACCEPTABLE MOISTURE CONTENT BEFORE BEING PLACED IN THE HIGHWAY EMBANKMENT.
5. INSTALL THE GABION FOREBAY CHECK DAM BETWEEN THE PERMANENT POOL AND THE FOREBAY.
6. COMPLETE EMBANKMENTS SURROUNDING THE SWMA, INCLUDING THE EMERGENCY SPILLWAY. FINE GRADE AND PLANT SLOPES.
7. CONSTRUCT THE MAINTENANCE ACCESS ROAD ALONG THE NORTHWEST SIDE OF THE SWMA.

HARDIG POND RESTORATION AREA.

THE HARDIG POND RESTORATION AREA IS LOCATED ADJACENT TO AND NORTHWESTERLY OF THE SWMA. THE MAJOR CONSTRUCTION ACTIVITIES IN RESTORING HARDIG POND INCLUDE CONSTRUCTION OF A NEW UPPER STREAM CONTROL STRUCTURE ON THE HARDIG BROOK AND CONSTRUCTION OF A BYPASS SPILLWAY. THE WATER LEVEL IN THE NEW IMPOUNDMENT AREA WILL BE CONTROLLED BY WEIR BOARDS WITHIN THE NEW UPPER STREAM CONTROL STRUCTURE. WHEN COMPLETED THE IMPOUNDMENT AREA CREATED BY THE NEW UPPER DAM CONTROL STRUCTURE WILL RESEMBLE THE AREA PRIOR TO THE DEVELOPMENT OF THE MILL SITE IN THE 20TH CENTURY. THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE HARDIG POND RESTORATION AREA IS AS FOLLOWS.

1. THE CONTRACTOR SHALL MAINTAIN STREAM FLOWS THROUGH PHASED CONSTRUCTION OF NORTHERLY AND SOUTHERLY PORTIONS OF THE STRUCTURE (INCLUDING FOUNDATIONS AND WINGWALLS) AND PROVISION OF A TEMPORARY BYPASS (MINIMUM 36-INCH DIA. PIPE WITH MANHOLE RISER INLET, RIPRAP OUTLET PROTECTION). THE FOLLOWING SHALL BE COMPLETED BEFORE CONSTRUCTION MAY COMMENCE:
   - CLEAN AND FLUSH EXISTING 48-INCH DRAIN LINE AND INLET (SEE DRAINAGE & UTILITY PLANS 4, 21). THIS 48-INCH LINE IS TO REMAIN OPEN DURING CONSTRUCTION OF THE UPPER DAM CONTROL STRUCTURE.
   - INSTALL ALL PERIMETER EROSION AND SEDIMENTATION CONTROLS AND DEMOLISH EXISTING CONCRETE RACEWAY STRUCTURE DURING A DRY PERIOD (I.E., WHEN ALL HARDIG BROOK FLOWS ARE CONVEYED VIA THE EXISTING 48" DRAIN LINE / NO FLOW THROUGH RACEWAY).
   - MOBILIZE ALL EQUIPMENT REQUIRED FOR TEMPORARY DEWATERING DURING CONSTRUCTION OF UPPER DAM CONTROL STRUCTURE (PUMPS, WELLPOINTS, TEMPORARY PIPING/HOSE, ETC.) AND ESTABLISH DEWATERING BASIN.
2. CONSTRUCT THE NEW UPPER DAM CONTROL STRUCTURE, MANAGING GROUNDWATER AND STREAM FLOWS FOR THE DURATION OF CONSTRUCTION.
3. REMOVE AN EXISTING REINFORCED CONCRETE VALVE BOX INCLUDING THREE GATE VALVES AND CAST IRON PIPING. PLUG PIPES.
4. CONSTRUCT THE NEW BY-PASS SPILLWAY STRUCTURE, RETAINING WALLS AND BOX CULVERT IMMEDIATELY TO THE SOUTH OF THE EXISTING VALVE BOX.
5. CLEAR TREES AND BRUSH FROM THE EXISTING DAM. ADD ADDITIONAL EMBANKMENT ON THE DOWNSTREAM SIDE OF THE EXISTING DAM.
6.
7. EXTEND MAINTENANCE ROAD FROM THE NEW BYPASS SPILLWAY STRUCTURE TO THE NEW UPPER DAM CONTROL STRUCTURE.
8. CONSTRUCT A NEW BYPASS SPILLWAY CHANNEL FROM THE NEW BYPASS SPILLWAY STRUCTURE TO THE RELOCATED APPONAUG RIVER.
9. PLACE ARTICULATED CONCRETE BLOCK, BACKFILL AND SEED.

THE PORTION OF VETERANS MEMORIAL DRIVE EXTENSION BETWEEN CENTREVILLE ROAD AND GREENWICH AVENUE MAY BE CONSTRUCTED FOLLOWING RELOCATION OF THE APPONAUG RIVER AND PLACEMENT OF THE MATERIAL EXCAVATED FROM THE STORM WATER MANAGEMENT AREA IN THE HIGHWAY EMBANKMENT. CONSTRUCTION OF THE HIGHWAY IN THIS AREA MAY BE DONE CONCURRENTLY WITH THE WORK OUTLINED FOR THE HARDIG POND RESTORATION AREA.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS
WARWICK, RHODE ISLAND

APPONAUG RIVER RELOCATION
SEQUENCE OF CONSTRUCTION

CHECKED BY _____ DATE _____ SCALE AS SHOWN

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			13	91

E 336,300 E 336,400 E 336,500 E 336,600 E 336,700 N 224,100 E 336,800 E 336,900

Environmental Management
JUL 10 2013
Office of Water Resources

CENTERVILLE ROAD

MATCH TO PLAN 2

NEW S.H.L. PLAT NO. 2710

NEW S.H.L. PLAT NO. 2710

P.C. 5+46.12 PC-13

P.T. 8+42.49

#227 3 STY. W/F

#246 3 STY. W/F

#236 WASHINGTON TRUST BANK

PARKING AREA

PARKING BLOCKS

STONE RET. WALL

BRICK WALL

GUARD RAIL

POLE #16

N 224,000

N 223,900

N 223,800

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 1

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 13 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			14	91

Environmental Management
JUL 10 2013
Office of Water Resources

E 336,800 E 336,900 E 337,000 N 224,000 E 337,100 E 337,200 E 337,300

N 223,900 N 223,800 N 223,700

MATCH TO PLAN 1

MATCH TO PLAN 3

CENTERVILLE ROAD

ROCK RD.

DRUM

NEW S.H.L. PLAT NO. 2710

EXIST. S.H.L., PLAT 1047

GRAPHIC EXIST. S.H.L., MODIFIED

NEW P.A.B.

NEW P.A.B

STA. 9+00
RIM 57.55
INV. 53.76

STA. 9+13
RIM 57.28
INV. 51.30

STA. 9+90, 55' RT.
RIM 55.35
INV. 51.35

STA. 10+25
RIM 56.05
INV. 52.55 E,W

STA. 10+50
RIM 55.89
INV. 51.89

STA. 10+75
RIM 55.86
INV. 51.78 W
INV. 51.66 E

STA. 10+75
RIM 55.82
INV. 52.32 E,W

STA. 11+25
RIM 56.05
INV. 52.09 E,W

STA. 11+70
RIM 56.32
INV. 51.22 W
INV. 51.12 NE

STA. 13+65
RIM 56.54
INV. 50.65 W
INV. 49.90 E

STA. 151+95
RIM 51.15
INV. 47.15

INV. 48.80 W
INV. 51.05 S
INV. 43.12 (EXIST)

INV. 51.08 SW (EXIST)
INV. 43.65

INV. 46.95 E
INV. 44.50 (EXIST)

P.C. 13+40.53

#236 WASHINGTON TRUST BANK

#220 3 STY. W/F

#181 2 STY. W/F

#171 2 STY. W/F

#172 2 STY. W/F

#7 1 STY. W/F

200 CENTERVILLE PLACE

NOTE: EDGE OF 50' PERIMETER WETLAND IS SITUATED WITHIN THE PROJECT LOD BUT WITHIN THE 100' RIVERBANK WETLAND

100' RIVERBANK WETLAND

APPROX. 50' PERIMETER WETLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5828
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 2

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 14 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			15	91

Environmental Management
JUL 10 2013
Office of Water Resources

E 337,200 E 337,300 E 337,400 E 337,500 E 337,600 E 337,700 E 337,800

N 223,900 N 224,000 N 223,800

NEW S.H.L. PLAT NO. 2710

#181 2 STY. W/F
#171 2 STY. W/F
#172 2 STY. W/F
#164 2 STY. W/F
#151 2 STY. W/F
CROSSMAN ENG.
#32 BAGEL FACTORY 1 STY. W/F
#142 BOYLE FUNERAL HOME

A STA. 14+80 RIM 53.45 INV. 47.68 W INV. 47.58 E
A STA. 16+00 RIM 47.49 INV. 42.94 W INV. 42.84 E
A STA. 17+30 RIM 40.31 INV. 35.82 W INV. 35.72 E
A STA. 18+42 RIM 36.18 INV. 31.38 W INV. 31.28 E

SPECIAL AQUATIC SITE
100 ABS 101 ABS 102 ABS 103 ABS 104 ABS

EXIST. S.H.L., PLAT 1047
MATCH TO PLAN 4
MATCH TO PLAN 2

CENTERVILLE ROAD
BENEFIT STREET

111'-12" 116'-12" 117'-12" 106'-12" 70'-18"

P.C. 15+79.41
P.T. 14+73.41
P.C. 16+00
P.T. 17+99.58 BACK = 18+00 AHEAD
P.T. 17+95.44

LOD NEW P.A.B. PARKING AREA

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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KEY MAP

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Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 3

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 15 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			16	91

E 337,700 E 337,800 E 337,900 E 338,000 N 224,300 E 338,100 E 338,200 E 338,300

MATCH TO PLAN 21

MATCH TO PLAN 16

MATCH TO PLAN 3

MATCH TO PLAN 5

MATCH TO PLAN 12

MATCH TO PLAN 17

N 224,300

N 224,200

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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A STA. 302+50
RIM 29.20
INV. 25.70

A STA. 302+55
RIM 28.80
INV. 25.50 S
INV. 25.40 E

A STA. 303+18, 68' LT.
RIM 28.80
INV. 21.00 S
INV. 24.75 W
INV. 20.90 E

1.3.0
STA. 22+10, 180' LT.
INV. 12.84 (EX.)

SEE BASIN GRADING PLAN 1

4.3.0 6.2.1 6' SQ.
STA. 22+53, 141' LT.
RIM 20.0±
INV. 9.4± (EX.)
INV. 11.70 W

A STA. 21+75, 80' LT.
RIM 26.50
INV. 20.17 N
INV. 20.07 S

C STA. 21+58, 35' LT.
RIM 27.60
INV. 19.84 N
INV. 19.50 W
INV. 19.40 E

2.3.0 RRP
STA. 24+22 60' LT.
INV. 12.40

2.3.0 RRP
STA. 23+17 66' LT.
INV. 14.42

I 6' SQ.
STA. 24+30
RIM 17.64
INV. 12.50 E,S,N

I 6' SQ.
STA. 24+30, 4' RT.
RIM 18.80
INV. 12.59 E,S,N

A STA. 23+00
RIM 21.40 W
INV. 15.26 S
INV. 14.63 N
INV. 14.53

A STA. 303+04, 9' LT.
RIM 29.80
INV. 21.90 S
INV. 21.30 N

A STA. 302+95, 25' RT.
RIM 30.50
INV. 22.50

C STA. 20+30, 10' LT.
RIM 32.8±
INV. 25.88 S
INV. 26.84 W
INV. 25.78 E

A STA. 19+00, 58' LT.
RIM 33.0
INV. 29.43

C STA. 19+15, 29' LT.
RIM 35.0
INV. 29.28 N,S
INV. 29.18 W
INV. 29.08 E

A STA. 19+15, 22' LT.
RIM 34.40
INV. 29.40

A STA. 19+90, 45' RT.
RIM 32.40
INV. 28.40

A STA. 20+73, 60' RT.
RIM 29.90
INV. 28.51

A STA. 20+43, 43' RT.
RIM 30.90
INV. 26.90 W
INV. 26.36 E
INV. 26.26 N

A STA. 21+38, 20' RT.
RIM 27.50
INV. 23.50

A STA. 22+50, 45' RT.
RIM 23.00
INV. 19.10 W
INV. 15.38 S
INV. 15.28 E

A STA. 23+00, 30' RT.
RIM 21.50
INV. 15.03
INV. 14.93

A STA. 23+48, 104' RT.
RIM 17.90
INV. 14.10 W
INV. 14.00 E

TEP
A STA. 23+86, 117'±RT.
RIM 16.0
INV. 12.0 W
INV. 9.80 (EXIST) E

NEW S.H.L. PLAT NO. 2710

NEW S.H.L. PLAT NO. 2772

EXIST. S.H.L. PLAT 1047

EXIST. S.H.L. PLAT 2679

NEW P.A.B.

TOLL GATE ROAD

MEMORIAL DRIVE EXT.

VETERANS

GILBANE ST.

MEADOW STREET

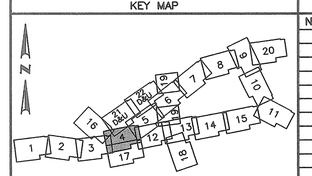
200' RIVERBANK WETLAND

PROP. 100 YR FLOOD BOUNDARY

EXIST. 100 YR FLOOD BOUNDARY

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 4

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 16 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			17	91

Environmental Management
JUL 10 2013
Office of Water Resources

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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E 338,200 N 224,500 E 338,300 N 224,600 E 338,400 E 338,500 N 224,700 E 338,700 N 224,700 E 338,800 N 224,600

MATCH TO PLAN 21

MATCH TO PLAN 22

MATCH TO PLAN 4

MATCH TO PLAN 12

MATCH TO PLAN 6

ROAD MAINTENANCE

PROP. 100 YR FLOOD BOUNDARY

EMERGENCY SPILLWAY

BASIN 6:1 ACCESS

DISCHARGE STRUC. NO. 2 (SEE DRAINAGE DETAILS) EL. 11.4

ANTI SEEP COLLAR

48"—12"D.I.

2.3.0 STA. 26+03 155' LT. INV. 6.0

A STA. 25+25 RIM 16.74 INV. 13.15 E,W,

C.I. VALVE RIM 16.0 INV. 5.75 (SEE DETAIL)

(SEE DETAIL)

A STA. 24+96 RIM 16.83 INV. 13.00

A STA. 25+54 RIM 16.78 INV. 13.30

PROP. 100 YR FLOOD BOUNDARY

PROP. 100 YR FLOOD BOUNDARY

PROP. 100 YR FLOOD BOUNDARY

62'—18" 25'—12" 25'—12"

VETERANS MEMORIAL DRIVE

ACBC (SEE DETAIL)

2.3.0 STA. 27+00 144' LT. INV. 8.28

ACBO (SEE DETAIL)

ACBO (SEE DETAIL)

EXIST. 100 YR FLOOD BOUNDARY

200' RIVERBANK WETLAND

APPONAUG RIVER

RELOCATED

LOW FLOW CHANNEL (SEE SECTION)

2.3.0 STA. 26+86 114' LT. INV. 5.5

EXTENSION

A STA. 28+80 RIM 18.00 INV. 14.35

29+00 P.T. 29+03.45

197'—36"

30+00

6' DIA. C STA. 28+80, 6' RT. RIM 19.70 INV. 15.48 S INV. 14.00 N INV. 13.72 E,W

A STA. 28+80, 18' RT. RIM 19.67 INV. 15.74 S INV. 15.64 N

A STA. 28+80 RIM 20.28 INV. 16.22

E STA. 406+90, 216' LT. RIM 8.70 INV. 3.62 N,W

EXIST. SAWTOOTH BLDG.

R&D SLAB PORTION OF BOX CULVERT, BACKFILL AND POUR NEW SLAB. SEE DRAINAGE DETAILS 2.

APPONAUG RIVER

BACKFILL GRAVEL BORROW

EXIST. 100 YR FLOOD BOUNDARY

PROP. 100 YR FLOOD BOUNDARY

H STA. 408+50, 230' LT. RIM 7.75 INV. 4.28

REGRADE TO BASIN

APPROXIMATE LOCATION OF EXISTING APPONAUG RIVER CULVERT

160'—18"D.I.

R&D EXISTING APPONAUG RIVER CULVERT, AND BACKFILL WITH GRAVEL BORROW. SEE DRAINAGE DETAILS 2.

A STA. 27+00, 10' RT. RIM 18.47 INV. 14.70 S INV. 14.60 N

A STA. 27+00 RIM 19.15 INV. 15.18

A STA. 27+00 RIM 17.20 INV. 13.66

6' DIA. C STA. 27+00, 3' RT. RIM 18.80 INV. 13.52 N INV. 14.54 S INV. 13.37 E,W

6' DIA. C STA. 26+00 RIM 18.30 INV. 13.08 E,W

94'—36"D.I.

164'—36" P.C. 25+84.12

25+00 26+00

A STA. 24+96, 7'RT RIM 17.53 INV. 14.03

45'—24"

A STA. 24+65 RIM 17.70 INV. 13.11

A STA. 25+25 RIM 17.78 INV. 13.77 E INV. 13.67 E,W

A STA. 25+25 RIM 17.50 INV. 13.90 E,W INV. 13.80 S

A STA. 25+54 RIM 18.05 INV. 14.02

A STA. 25+54, 7' RT RIM 17.62 INV. 14.11

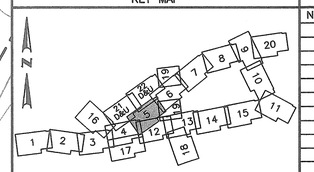
210'—18"D.I.

P.C. 403+43.93

R&D EXISTING APPONAUG RIVER CULVERT, AND BACKFILL WITH GRAVEL BORROW. SEE DRAINAGE DETAILS 2.

NOTE:
PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN THE APPONAUG MILL AREA (BOUNDED CENTERVILLE ROAD TO THE SOUTH, TOLLGATE ROAD TO THE WEST, APPONAUG RIVER AND HARDIG BROOK TO THE NORTH AND GREENWICH AVENUE TO THE EAST), THE CONTRACTOR IS REQUIRED TO PLACE AND MAINTAIN RI STD. 9.3.0 EROSION PROTECTION FOR THE ENTIRE LIMITS OF THE EXISTING APPONAUG RIVER ADJACENT TO ALL CONSTRUCTION AND ACCESS AREAS. PAYMENT FOR THIS IS INCLUDED IN THE APPROPRIATE PAY ITEMS.

KEY MAP



REVISIONS

NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 5

CHECKED BY _____ DATE _____ SCALE 1" = 20'

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R.I.D.E.M. APPLICATION SHEET NO. 17 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			18	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

E 338,600 N 224,900 E 338,700 N 225,000 E 338,800 N 225,100 E 338,900 E 339,000 N 225,200

N 225,200 E 339,100 N 225,000 E 339,200

MATCH TO PLAN 22 MATCH TO PLAN 19 MATCH TO PLAN 5 MATCH TO PLAN 7

APPONAUG RIVER (GORTON POND TRIBUTARY)

KETTLE ST.

LITTLE GORTONS POND

200' RIVERBANK WETLAND

EXIST./PROP. 100 YR FLOOD BOUNDARY

RELOCATED APPONAUG RIVER

LOW FLOW CHANNEL (SEE SECTION)

PROP. 100 YR FLOOD BOUNDARY

EXIST. 100 YR FLOOD BOUNDARY

50' PERIMETER WETLAND

EXIST. S.H.L. PLAT 2679

EXIST. S.H.L. PLAT 2297

NEW S.H.L. PLAT NO. 2710

VETERANS MEMORIAL EXT.

VETERANS MEMORIAL DRIVE

GREENWICH AVENUE

TIDY CAR WASH #1290

CHRISTOPHER MOTORS #1125

DUNKIN DONUTS #1348

RELOCATE 8" G @ FLAG POLE

(C) STA. 32+77, 29'LT.
RIM 25.98
INV. 11.60 E(EX.)
INV. 11.60 W

(A) STA. 52+40
RIM 26.70
INV. 16.87 N
INV. 16.77 S

(C) STA. 32+93, 5'RT.
RIM 27.40
INV. 16.19 N
INV. 14.55 E,W

(A) STA. 32+08
RIM 23.70
INV. 19.70

(A) STA. 30+80
RIM 20.10
INV. 16.10

(C) STA. 32+00, ℄
6'DIA.
RIM 25.70
INV. 19.42 S
INV. 17.23 S
INV. 14.37 E,W

(A) STA. 32+05, 28'RT.
RIM 24.90
INV. 17.46 S
INV. 17.36 W

(A) STA. 30+80, 40' RT.
RIM 20.40
INV. 15.90 S
INV. 15.80 N

(C) STA. 30+80, 5' RT.
6'DIA.
RIM 21.30
INV. 15.75 N
INV. 15.50 S
INV. 14.14 E,W

(A) STA. 30+80, 60'RT.
RIM 20.10
INV. 16.10

(A) STA. 31+90, 65'RT.
RIM 23.90
INV. 17.75 E
INV. 17.65 N

(A) STA. 49+95, 40' LT.
RIM 26.10
INV. 21.48 E
INV. 18.23 S
INV. 18.13 W

(B) STA. 50+40, 30'LT.
RIM 26.90
INV. 21.98 N
INV. 21.88 W

(A) STA. 50+85, 67' LT.
RIM 26.50
INV. 22.50

(C) STA. 34+90, 68' RT.
RIM 27.00
INV. 19.8± (EX)S
INV. 22.15 W
INV. 19.60 E

(A) STA. 34+50, 90' RT.
RIM 26.60
INV. 22.60

(A) STA. 53+35
RIM 25.50
INV. 17.45 N
INV. 20.90 S
INV. 17.35 S

(A) STA. 53+05
RIM 25.70
INV. 21.30

(C) STA. 35+15, 13' RT.
RIM 27.10
INV. 17.14 S
INV. 15.08 E
INV. 14.98 W

(C) STA. 36+37, CL
6'DIA.
RIM 26.15
INV. 19.90 N
INV. 20.39 S
INV. 15.54 E
INV. 15.44 W

(A) STA. 36+45
RIM 25.30
INV. 20.20

(B) STA. 35+20, 50' RT.
RIM 26.10
INV. 19.30 W
INV. 17.50 N

(A) STA. 36+37± (TEP)
RIM 25.00
INV. 20.70 E (EX)
INV. 20.65 N

P.I. 33+11.15
P.I. 35+73.07

NOTE:
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS

NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 6

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 18 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			19	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0899
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

N 225,600 E 339,5000

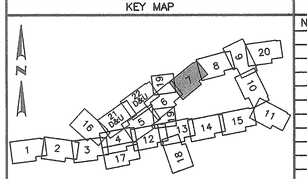
E 339,100 N 225,300 E 339,200 N 225,400 E 339,300 N 225,500 E 339,400

LUTHER AVENUE
WEST PLEASANT ST.
VETERANS MEMORIAL DRIVE
WARWICK FIRE DEPT. HEADQUARTERS #111
HONEY DEW DONUTS #141
NEW S.H.L. PLAT NO. 2710
EXIST. S.H.L., PLAT 2297
NEW P.A.B.
NEW P.O.B.
6' ELEC. EASEMENT
RELOCATE 8" WATER
MATCH TO PLAN 6
MATCH TO PLAN 8

(C) STA. 37+65 RIM 25.26 INV. 19.70 N INV. 20.33 S INV. 15.85 E INV. 15.78 W
(A) STA. 37+70 RIM 23.96 INV. 19.96
(A) STA. 37+70 RIM 23.96 INV. 20.46
(C) STA. 39+40± RIM 22.78 INV. 18.54 W(EXIST.) INV. 18.40 E
(A) STA. 39+57 RIM 22.56 INV. 18.30 W INV. 18.20 S
(C) STA. 39+50 RIM 23.88 INV. 17.92 N INV. 19.06 S INV. 16.49 E INV. 16.39 W
(A) STA. 39+50 RIM 22.60 INV. 19.20
(A) STA. 41+87 RIM 20.90 INV. 17.70
(A) STA. 41+80 RIM 20.93 INV. 17.69
(G) STA. 42+10 RIM 20.88 INV. 17.65 W INV. 17.65 E INV. 17.55 S
(C) STA. 42+10 RIM 22.15 INV. 17.40 S INV. 17.40 N INV. 17.39 E INV. 17.29 W
(A) STA. 42+10 RIM 20.88 INV. 17.56 E,W,N
(A) STA. 42+40 RIM 20.93 INV. 17.78 E,W
(A) STA. 42+40 RIM 20.93 INV. 17.69
(A) STA. 42+45 RIM 20.95 INV. 17.80

AD CMH INV. 14.60 E(EXIST.)
PC-12
PC-37
P.C. 42+43.28
254'—24"
179'—24"
136'—24"
120'—30"
2-4" CONDUITS

KEY MAP



REVISIONS

NO.	DATE	BY

TODD A. RAVENELLE
5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 7

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 19 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			20	91

Environmental Management
JUL 10 2013
Office of Water Resources

A STA. 44+90
RIM 22.18
INV. 18.71 W,E
INV. 18.61 S

D STA. 44+95
RIM 22.20
INV. 18.80

C STA. 44+80
RIM 23.40
INV. 18.47 N
INV. 18.50 S
INV. 18.71 E
INV. 18.37 W

A STA. 46+25
RIM 22.86
INV. 19.50 E,S

D STA. 46+30
RIM 22.88
INV. 19.60

A STA. 44+45
RIM 21.95
INV. 18.95

A STA. 43+60
RIM 21.53
INV. 18.03

C STA. 43+50
RIM 22.75
INV. 17.90 S
INV. 17.90 N
INV. 17.99 E
INV. 17.80 W

C STA. 46+25
RIM 24.13
INV. 19.37 N
INV. 19.37 S
INV. 19.27 W

D STA. 44+85
RIM 22.15
INV. 18.75

A STA. 44+80
RIM 22.13
INV. 18.73 S,E
INV. 18.63 N

A STA. 46+30
RIM 22.88
INV. 19.50 E,N

A STA. 44+35, 46' RT.
RIM 22.80
INV. 18.96

A STA. 44+60, 50' RT.
RIM 23.0
INV. 18.86 W,E

D STA. 46+35
RIM 22.90
INV. 19.60

B STA. 43+60
RIM 21.53
INV. 18.03

PLEASANT ST.
VETERANS MEMORIAL DRIVE
PLEASANT STREET
GORTONS POND
EXIST. S.H.L., PLAT 1625
EXIST. S.H.L., PLAT 2297
NEW P.A.B.
P.C.B.
P.C.-11
P.C.-10
P.T. 46+69.41
RELOCATE WATER
RELOCATE 8" GAS
NEW S.H.L. PLAT NO. 2707 ALONG EXIST. PROPERTY LINE
NEW S.H.L. PLAT NO. 2707
#2022 1 STY. BRICK
PENNSYLVANIA AVE.
MATCH TO PLAN 7
MATCH TO PLAN 9
PENELEC WETLAND
WOOD PACKING
CONC. PARKING BLOCKS (14)
CONC. PARKING BLOCKS (33)
STONE PLANTERS (4)
WOOD FENCE
CONC. RET. WALL WITH FENCE
RAIL
PARKING AREA
BIT. PARKING AREA
GRAN. CURB
CONC. CURB
BIT. BERM
LOD
9.1.0
9.3.0

E 339,600 E 339,700 E 339,800 N 225,700 E 339,900 E 340,000 E 340,100
N 225,600 N 225,500 N 225,700 E 340,200

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS

NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 8

CHECKED BY _____ DATE _____ SCALE 1" = 20'

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 20 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			21	91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
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Environmental Management
JUL 10 2013
Office of Water Resources

N 226,000 N 225,900 E 340,500 N 225,700 E 340,600 N 225,600 N 225,500 N 225,400 E 340,600 N 225,300 E 340,500

(A) STA. 140+15, 25' RT.
RIM 21.50
INV. 17.84 N
INV. 17.74 S

DISCHARGE STRUCTURE NO. 3, SEE DRAINAGE DETAILS.

MATCH TO PLAN 20

POST ROAD EXT.

(A) STA. 139+45, 80' RT.
RIM 20.90
INV. 17.63

(A) STA. 601+30
RIM 22.70
INV. 19.20 E,N

(I) STA. 600+57 (6'SQ)
RIM 22.35
INV. 16.96 S,W

(A) STA. 53+55 (5'DIA)
RIM 22.50
INV. 18.24 E
INV. 17.72 S
INV. 17.62 N

(D) STA. 53+70, 55' LT.
RIM 23.10
INV. 19.60

(A) STA. 53+70, 50' LT.
RIM 23.00
INV. 19.50 E
INV. 18.74 S
INV. 18.64 W

(B) STA. 54+20, 53' LT.
RIM 23.10
INV. 19.00

(A) STA. 54+50, LT.(5'DIA)
RIM 23.10
INV. 18.05 S
INV. 17.95 N

NEW S.F.L. PLAT NO. 2708

(A) STA. 53+18 (6'DIA)
RIM 22.20
INV. 17.51 S
INV. 17.08 N

NEW S.H.L. PLAT NO. 2710

LOCKHART AVE

PAYLESS AUTO GLASS 1966

EXIST. S.H.L., PLAT 1625

50' PERIMETER WETLAND

(A) STA. 140+00, 35' LT.
RIM 21.10
INV. 17.50 N
INV. 17.40 S

(A) STA. 139+60, 50' LT.
RIM 20.85
INV. 17.06 N
INV. 17.14 S
INV. 16.90 E

TNP
RIM. 21.60
INV. 16.64 N
INV. 16.30 W(EXIST)

(A) STA. 139+35, 63' LT.
RIM 20.90
INV. 17.40

ABM CCB 6.2.1 TNP
RIM 21.30
INV. 17.58 N
INV. 17.30 S
INV. 16.45 E
INV. 16.30 W (EXIST)

140+00 P.T. 139+68.45

POST ROAD

EDGE OF WATER 2754

EXIST. S.H.L., PLAT 2297

NEW S.H.L. PLAT NO. 2707

NEW S.H.L. PLAT NO. 2707 ALONG EXIST. PROPERTY LINE

EX. S.H.L., PLAT NO. 104

NEW P.A.B.

NEW S.H.L. PLAT NO. 2710

(A) STA. 53+80, 43' RT.
RIM 22.30
INV. 18.42 S
INV. 18.32 N

1 STY. BRICK NATIONAL GRID SUBSTATION

(A) STA. 54+50
RIM 23.10
INV. 19.08 S
INV. 18.98 N

(A) STA. 50+45, 130' RT.
RIM 22.05
INV. 17.65 E
INV. 17.55 W

(A) STA. 50+10, 100' RT.
RIM 21.85
INV. 18.15 N
INV. 17.20 E
INV. 17.10 W

(A) STA. 49+90, 45' RT.
RIM 22.55
INV. 16.42 S
INV. 16.32 N

(A) STA. 49+70, 70' RT.
RIM 22.00
INV. 17.82 W
INV. 16.74 E
INV. 16.64 N

(A) STA. 49+05, 53' RT.
RIM 22.48
INV. 18.90 W
INV. 18.50 E

(D) STA. 49+00, 53' RT.
RIM 22.50
INV. 19.00

(A) STA. 50+30, 77' RT.
RIM 22.40
INV. 18.40

(A) STA. 50+10
RIM 22.00
INV. 17.88
INV. 17.76

(A) STA. 49+00
RIM 22.90
INV. 18.90

TNP STA. 50+20±
RIM. 23.20
INV. 17.46 N
INV. 16.21 S
INV. 15.00 W(EXIST)

(A) STA. 139+80, 52' RT.
RIM 20.80
INV. 17.50 S,N

P.I. 53+97.15

MATCH TO PLAN 8

MATCH TO PLAN 22

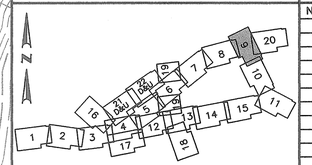
GORTON POND

VETERANS MEMORIAL DRIVE

PC-38 PC-5

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 9

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 21 OF 91

F:\FILES\CAD\11804\01\95A HIGHWAY PLANS\VOLUME 1\01\95A_V1_XXX_DRAINUTL009.dwg, WETLAND, 8/5/2013 9:37:18 AM, USER01, Canon\HPDJ-SLK-MWT.pc3, 1:1

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			22	91

Environmental Management
JUL 10 2013
Office of Water Resources

NOTE:
NEW WATER AND GAS SERVICE CONNECTIONS ARE REQUIRED WHERE WATER AND GAS MAINS ARE BEING RELOCATED.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

N 225,400 E 340,700 N 225,300 N 225,200 E 340,800 N 225,100 N 225,000 N 224,900 E 340,900

E 340,900 N 224,800 E 340,800 E 340,700

MATCH TO PLAN 9

MATCH TO PLAN 11

NEW S.H.L. PLAT NO. 2710

EXIST. S.H.L., PLAT 2297

NEW P.A.B.

POST ROAD

KENT AVENUE

LOCUST AVENUE

COYLE STREET

OAK STREET

SPRUCE STREET

PAYLESS AUTO GLASS #3066

2 1/2 STY. W/F #3070

1 STY. W/F #3076

1 STY. W/F #3086

1 STY. W/F #3090

1 STY. CONC. #3096

WILLIAMS AUTO SALES
BRICK

2 STY. W/F #3087

1 STY. W/F #3081

2 STY. W/F #3103

1 STY. W/F #3127

1 STY. W/F #3135

2 STY. W/F #3143

(D) STA. 56+70, 54' LT.
RIM 25.70
INV. 22.20

(D) STA. 56+45, 54' LT.
RIM 25.70
INV. 22.20 S

(A) STA. 56+45, 50' LT.
RIM 25.50
INV. 22.00 E
INV. 21.26 S
INV. 21.16 W

(A) STA. 56+70, 50' LT.
RIM 25.50
INV. 22.00 E
INV. 21.50 N

(A) STA. 56+20
(5' DIA)
RIM 24.11
INV. 20.26 E
INV. 19.31 S
INV. 19.21 N

(A) STA. 56+95
RIM 24.46
INV. 19.84 S
INV. 19.74 N

(D) STA. 58+98, 54' LT.
RIM 26.70
INV. 23.20

(G) STA. 58+98, 50' LT.
RIM 26.50
INV. 23.00 E
INV. 22.26 S
INV. 22.16 W

(A) STA. 58+72
RIM 25.40
INV. 21.56 E
INV. 21.00 S
INV. 20.90 N

(B) STA. 59+22, 50' LT.
RIM 26.50
INV. 22.70 W
INV. 22.50 N

(D) STA. 59+22, 46' LT.
RIM 26.40
INV. 22.90

(A) STA. 59+45
RIM 25.71
INV. 21.77
INV. 21.67

(A) STA. 60+35
RIM 26.20
INV. 22.30 S
INV. 22.20 N

(A) STA. 55+65
RIM 23.81
INV. 19.74 S
INV. 19.64 N

(A) STA. 56+95
RIM 24.46
INV. 20.47 S
INV. 20.37 N

(A) STA. 58+00
RIM 24.99
INV. 21.08 S
INV. 20.98 N

(A) STA. 59+27
RIM 25.65
INV. 22.51 W
INV. 21.70 S,N

(G) STA. 59+60,40'RT.
RIM 27.00
INV. 23.00

(G) STA. 59+40,37'RT.
RIM 27.00
INV. 22.85 S
INV. 22.75 E

(A) STA. 60+30
RIM 26.18
INV. 22.00 S,N

P.O.B.

P.C.-34

P.I. 56+33.32

P.C.-4

56+00 57+00 58+00 59+00 60+00 61+00

111'—24" 166'—24" 71'—24" 73'—24" 101'—18" 123'—18" 69'—18" 86'—18" 99'—18" 106'—18" 116'—18" 126'—24"

24'—12" 1'-12"

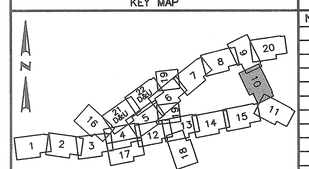
N1 1/2"W

N6°G

10'—6"D.I.

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 10

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 22 OF 91

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			23	91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
JUL 10 2013
Office of Water Resources

E 340,800 E 340,900 N 224,800 E 341,000 N 224,700 E 341,100 E 341,200 E 341,300

N 224,500 N 224,400 N 224,300 E 341,300 E 341,200

SHIPPEE AVENUE
MATCH TO PLAN 10
POST ROAD
NEW S.H.L. PLAT NO. 2710
EXIST. S.H.L., PLAT 2297
EXIST. S.H.L., PLAT 496
EXIST. P.D.B., SEP 2033
100' RIVERBANK WETLAND
SWEET MEADOW BROOK
AMTRAK
WEST SHORE ROAD
STATION STREET
NEW P.A.B.
2 STY. BRICK #3661
2 STY. W/F #3670
3 STY. W/F #3155
2 STY. W/F #3143

A STA. 61+43
RIM 26.80
INV. 22.93 S
INV. 22.83 N

G STA. 61+98, 40' LT.
RIM 27.0±
INV. 23.19

B STA. 61+50
RIM 25.90
INV. 22.58 S,N

D STA. 63+65
RIM 21.90
INV. 18.40
INV. 18.00 W
INV. 16.50 S (EX.)

A STA. 62+20, 55' RT.
RIM 26.40
INV. 22.93

A STA. 27+40
RIM 31.50
INV. 28.00 W
INV. 23.93 N

D STA. 27+35
RIM 31.60
INV. 28.10

B STA. 27+05
RIM 32.80
INV. 28.05 W
INV. 27.95 E

D STA. 27+00
RIM 32.80
INV. 28.10

A STA. 28+05, 53' RT.
RIM 27.00
INV. 23.00

A STA. 28+20, 93' RT.
RIM 26.00
INV. 22.20 NW
INV. 22.20 W
INV. 22.10 E

C STA. 63+86, 55' RT.
RIM 22.70
INV. 18.60 N
INV. 18.50 W,E

A STA. 63+70
RIM 23.50
INV. 19.00

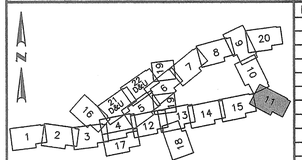
A STA. 64+60
RIM 17.70
INV. 15.65 (EX. 8"D)
INV. 13.70± NW (EXIST)
INV. 13.60 E,W

B STA. 65+30
RIM 13.90
INV. 11.95 N (EX. 8"D)
INV. 11.60 W
INV. 11.50 E

F STA. 65+85
RIM 11.40
INV. 9.90 W
INV. 9.80 E(ASSUMED)

P.T. 63+81.66
P.C. 62+93.65

KEY MAP



REVISIONS		
NO.	DATE	BY

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 11

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 23 OF 91

P:\FILES\CAD\11064\01BIA HIGHWAY PLANS\VOLUME TWO\BIA_VT_XXX_DRAINAGE\11064_01BIA_WETLAND_11.dwg, WETLAND, 9/6/2013 3:53:29 PM, HERRICK, CanonIPD-BLK/WHT.pcs, 11

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			24	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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NOTE:
PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN THE APPONAUG MILL AREA (BOUNDED CENTERVILLE ROAD TO THE SOUTH, TOLLGATE ROAD TO THE WEST, APPONAUG RIVER AND HARDING BROOK TO THE NORTH AND GREENWICH AVENUE TO THE EAST), THE CONTRACTOR IS REQUIRED TO PLACE AND MAINTAIN RI STD. 9.3.0 EROSION PROTECTION FOR THE ENTIRE LIMITS OF THE EXISTING APPONAUG RIVER ADJACENT TO ALL CONSTRUCTION AND ACCESS AREAS. PAYMENT FOR THIS IS INCLUDED IN THE APPROPRIATE PAY ITEMS.

E 338,300 N 224,300 | E 338,400 | E 338,500 | E 338,600 | E 338,700 | E 338,800 | N 224,900 | N 224,200 | N 224,100

R&D EXISTING APPONAUG RIVER CULVERT, REPLACE WITH GRAVEL BORROW. SEE DRAINAGE DETAILS 2.

ACBO (SEE DETAIL)

(A) STA. 404+60
RIM 10.90
INV. 7.50 W
INV. 7.40 N

(A) STA. 403+90
RIM 14.59
INV. 11.00

(E) STA. 405+42
RIM 8.80
INV. 2.78 N,W

(B) STA. 405+30
RIM 8.73
INV. 5.27 S,E

2.3.0
STA. 405+20 65' LT.
INV. 2.70

(B) STA. 405+54
RIM 8.53
INV. 5.47 E,W

(G) STA. 406+65, 26' LT.
RIM 10.0±
INV. 6.65 N
INV. 6.45 E
INV. 6.35 W

(A) STA. 406+65
RIM 9.16
INV. 6.70

(C) STA. 408+00, 25' LT.
RIM 11.4±
INV. 7.50

(E) STA. 409+15, 23' LT.
RIM 15.70
INV. 11.90 S
INV. 11.70 E
INV. 11.60 W

(B) STA. 409+15
RIM 15.12
INV. 12.00

(A) STA. 406+75
RIM 9.43
INV. 6.08 E
INV. 5.98 W

(A) STA. 407+80
RIM 10.40
INV. 6.98 E
INV. 6.88 W

(D) STA. 408+70
RIM 12.90
INV. 9.40

(B) STA. 408+65
RIM 12.78
INV. 9.20 E
INV. 8.64 W

(A) STA. 405+54
RIM 8.53
INV. 4.75 E
INV. 4.65 W

(A) STA. 405+88
RIM 8.73
INV. 5.15 E
INV. 5.05 W

(G) STA. 404+29, 37'± RT.
RIM 12.0±
INV. 8.0± (EXIST)

STA. 405+20, 30' RT.
INV. 4.25

MATCH TO PLAN 5
MATCH TO PLAN 4
MATCH TO PLAN 17
MATCH TO PLAN 13

EXIST. 100 YR FLOOD BOUNDARY
PROP. 100 YR FLOOD BOUNDARY
EXIST./PROP. 100 YR FLOOD BOUNDARY
EXIST./PROP. 100 YR FLOOD BOUNDARY

TYPE II SILT FENCE
INV. 5.0
TYPE II SILT FENCE
TYPE II SILT FENCE
TYPE II SILT FENCE
TEMP. POLE & GUY
TEMP. POLE & GUY

EX. P.O.E. PLAT 2297
EXIST. S.H.L., PLAT 2679
EXIST. S.H.L., PLAT 1047
EXIST. S.H.L., PLAT 2297
EXIST. S.H.L., PLAT 2679
EXIST. S.H.L., PLAT 1047
EXIST. S.H.L., PLAT 2297

RELOCATE 12"G
RELOCATE 6"G
RELOCATE 6"G
NEW P.A.B.

CENTERVILLE ROAD

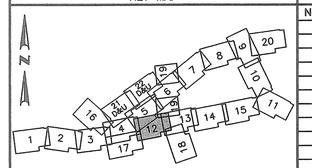
P.C. 404+60.51
P.T. 405+40.15
P.C. 406+45.36
P.T. 407+08.04

20'—18"D.I.
30'—18"D.I.
83'—12"D.I.
100'—12"D.I.
4'—6"D.I.
83'—12"D.I.
131'—18"
110'—18"
111'—12"
75'—12"
2'—12"
5'—12"

18"D CMP
18"D RCP
24"D RCP
12"D
15"D
18"D

#15 APPONAUG MILL
#15 2 STY. CALEB GREENE HOUSE HISTORICAL SITE
#1 CELL ONE 1 STY.
CAPT. CATCH SEAFOOD 1 STY.
#36 PUMP STATION
20 2 STY. BRICK
#3327 GULF STATION
PRESS. REG. STATION
APPONAUG RIVER
FLOW
200' RIVERBANK WETLAND
PARKING AREA
SELF STORAGE
CONC. SLAB
BRICK PILLAR
CONC. RET. WALL W/ H.R. FENCE
CONC. RET. WALL W/H C/L FENCE
PLANTERS (2)
TREE & FLOWERS
BIT. BERM
CONS. CURB
CONC. CURB
GRASS
WOOD CHIPS
WOODS
BRUSH
TREE WELL
ELEC. BOX
UTILITY POLE
SIGN
LIGHT
METER
STUMP
DMH
SMH
CB
MH
DP
DCB
DUP
NUP
RUP
AG
AS
AW
AC
CFP
GRR
NFH
RFH
DFHT
LOD
TEP
9.3.0

KEY MAP



REVISIONS

NO.	DATE	BY

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 12

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 24 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DRAINUTL012.dwg WETLAND, 9/6/2013 3:39:39 PM, USER33, Canon/WPG-BLK/HIT.pc3, 1:1

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			25	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
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TODD R. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS

NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 13

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 25 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DRAINUTL013.dwg WETLAND, 10/8/2013 7:51:18 AM, USER3, Default\PUBLIC\WHT.pc3, 1:1

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			26	91

E 340,000

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
JUL 10 2013
Office of Water Resources

E 339,500 N 224,500 E 339,600 E 339,700 E 339,800 E 339,900 N 224,500 N 224,400 E 340,100 N 224,300

MATCH TO PLAN 13

MATCH TO PLAN 15

PARKING AREA

LIBRARY #3267

2 STY. BRICK #3259

ST. BARNABA'S CHURCH 1 STY. STONE #3257

2 STY. W/F #3239

2 STY. W/F #3235

2 STY. W/F #3227

UNITED STATES POST OFFICE

PLEASANT STREET

(A) STA. 16+85, 13' LT.
RIM 29.10
INV. 25.70 E
INV. 25.60 S

(C) STA. 16+80
RIM 29.30
INV. 25.50 N
INV. 25.30 W

(D) STA. 20+10, 26' LT.
RIM 39.30
INV. 35.80

(G) STA. 19+90, 25' LT.
RIM 39.20
INV. 35.32 E
INV. 33.05 SW

(G) STA. 19+83, 12' LT.
RIM 37.90
INV. 32.90 NE
INV. 33.72 E
INV. 32.80 W

RELOCATE 4" GAS

RELOCATE 4" GAS

250'—18" POST

294'—12"

218'—12"

176'—12"

183'—12"

95'—12"

151'—12"

ROAD

P.I. 20+02.53

EXISTING STONE WALL

NEW GUY STONES

INV. 23.10

(A) STA. 16+85
RIM 29.30
INV. 25.56 E
INV. 25.46 W

#3252 2 STY. BRICK ST. CATHERINE RECTORY

ST. CATHERINE CHURCH

#3270 WARWICK CENTRAL BAPTIST CHURCH

(A) STA 18+40
RIM 34.40
INV. 30.64 E
INV. 30.54 W

#3228 1 STY. CONC. BLOCK PLACE JEWELLERS

(A) STA. 20+20
RIM 38.86
INV. 35.14 E
INV. 35.04 W

2 STY. W/F #3226

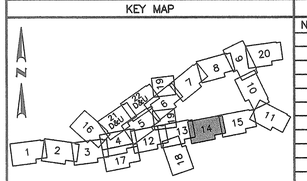
2 STY. W/F #3220

2 STY. W/F #3214

COLONIAL AVENUE

COLLEGE STREET

KEY MAP



REVISIONS

NO.	DATE	BY

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 14

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 26 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DRAINUTL014.dwg, WETLAND, 1/7/2013 7:54:00 AM, USER3, Cam4WP-BLK-WHT.pcs, 1:1

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DRAINUTL014

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			27	91

Environmental Management
JUL 10 2013
Office of Water Resources

N 224,600 E 340,100 E 340,200 E 340,300 E 340,400 E 340,500 N 224,700

N 224,700 N 224,600 N 224,500 N 224,400

UNITED STATES POST OFFICE
2 STY. BRICK #3205
UNITED STATES POST OFFICE
PARKING AREA
POST ROAD
PROSPECT STREET
SPRUCE STREET
COLLEGE STREET
MATCH TO PLAN 14
MATCH TO PLAN 16

(G) STA. 22+27, 23'LT.
RIM 45.00
INV. 39.24 E
INV. 39.14 SW

(A) STA. 22+03, 11'LT.
RIM 43.64
INV. 38.18 NE
INV. 38.08 W

RELOCATE WATER
2 STY. W/F #3191

(G) STA. 22+52, 23'LT.
RIM 45.10
INV. 39.64

RELOCATE 8" GAS

(A) STA. 22+07
RIM 43.72
INV. 39.90

EXIST. S.H.L. PLAT 2297

2 STY. W/F #3181
2 STY. W/F #3187
3 STY. W/F #3155
2 STY. W/F #3165
3 STY. BRICK #3159
2 STY. W/F #3220
2 STY. W/F #3214
1 STY. W/F #3210
2 STY. W/F #3200
3 STY. W/F #3198
2 STY. BRICK #3192 #3190
3196
GARAGE
1 STY. W/F #3194
2 STY. W/F
2 STY. W/F #3188
2 STY. W/F #3174
3 STY. W/F #3166
2 STY. W/F #3160

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 15

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 27 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			28	91

MATCH TO DRAINAGE & UTILITY PLAN 21

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 12-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

E 337,400 E 337,500 N 224,600 E 337,600 N 224,500 E 337,700 N 224,400 E 337,800 N 224,300

N 224,200 N 224,100 N 224,000 E 337,700 E 337,800

MATCH TO PLAN 4

TOLL GATE ROAD

STREET

CALEF

HARDIG

BROOK

FLOW

100' YEAR FLOOD BOUNDARY

EXIST/PROP. 100' YEAR FLOOD BOUNDARY

EXISTING S.H.L. PLAT NO. 2679

NEW S.H.L. PLAT NO. 2710

EXISTING S.H.L. PLAT NO. 1047

50' PERIMETER WETLAND

200' RIVERBANK WETLAND

B-1J B-1H B-1I B-1J

A STA. 300+90
RIM 28.37
INV. 23.90 E
INV. 23.78 W(EXIST)

A STA. 302+00
RIM 28.55
INV. 24.55

P.C. 8+28.17 P.T. 9+27.97

P.C. 300+00.00 P.T. 301+86.54

#7 2 STY. STONE

#62 2 STY. W/F

#58 2 STY. W/F

#48 WIZ KIDS EARLY LEARNING CENTER 1 STY. BRICK

#40 1 STY. CONC. BLOCK

NEW P.A.B.

EXISTING S.H.L. PLAT NO. 1047

PARKING BLOCKS (6)

PARKING BLOCKS (24)

STONE RET. WALL WITH CYL. FENCE

STONE RET. PLANTER

STEEL BEAM G/R

CONC. RAIL

CONC. CURB

CONC. PARKING BLOCKS

WOOD FENCE

STONE WALL

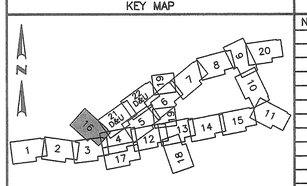
GRASS

GRAVEL

ROCK

UTILITY POLE ON GROUND

KEY MAP



REVISIONS		
NO.	DATE	BY

TODD A. RAVENELLE
NO. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 16

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 28 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			29	91

Environmental Management
JUL 18 2013
Office of Water Resources

E 337,800 E 337,900 E 338,000 N 224,000 E 338,100 E 338,200 E 338,300

NEW S.H.L. PLAT NO. 2710

MATCH TO PLAN 4

MATCH TO PLAN 12

(A) STA. 201+48
RIM 31.0
INV. 26.90 W
INV. 25.95 E

(G) STA. 201+45, 25' RT.
RIM 31.15
INV. 27.00

(A) STA. 250+42
RIM 30.00
INV. 26.00

(G) STA. 251+43
RIM 23.86
INV. 18.59
INV. 18.49

(G) STA. 276+74
RIM 21.73
INV. 16.12 S
INV. 16.02 N

(G) STA. 276+99
RIM 21.59
INV. 16.87 W
INV. 16.33 S
INV. 16.23 N

(G) STA. 251+43
RIM 23.86
INV. 19.29
INV. 19.19

(G) STA. 250+35
RIM 30.20
INV. 25.70 N
INV. 25.15 W
INV. 25.05 E

(G) STA. 201+85
RIM 31.45
INV. 25.50 W
INV. 25.50 S
INV. 25.40 E

(G) STA. 252+00
RIM 20.28
INV. 16.80

(G) STA. 251+95
RIM 20.24
INV. 16.67
INV. 16.57

(A) STA. 202+67
RIM 32.40
INV. 27.40

(G) STA. 202+67
RIM 32.40
INV. 26.00 W
INV. 25.90 N

GILBANE STREET
MEADOW STREET
STREET

P.C. 201+11.34
P.T. 201+84.34
P.C. 202+47.76
P.T. 203+00
P.C. 250+88.07
251+00
P.C. 276+71.88
P.T. 277+28.30
P.T. 251+35.67
P.C. 253+04.01
253+00
254+00

RIP-RAP
RELOCATE 4" WATER
RELOCATE 2" GAS
200' RIVERBANK WETLAND
EXIST./PROP. 100 YR. FLOOD BOUNDARY

#120 POINT CENTER 1 STY. BRICK
#100 2 STY. BRICK
#70 BURGER KING
#135 1 STY. W/F
#28 AGNANT CARPETS 1 STY. W/F
#132 BEACON PRESS
#119/121 2 STY. W/F
1 STY. BARN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 17

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 29 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			30	91

N 223,500 N 223,600 E 339,000 N 223,700 N 223,800 N 223,900 E 338,900 N 224,000 N 224,100

E 338,900 E 339,000 E 339,100 N 224,200

CUMBERLAND FARMS

#3351 2 STY W/F

#3349 WARWICK CLEANERS

#3333/3335

#3327 GULF STATION

#3376 THE REMINGTON HOUSE INN

#3356 EAGLE LUMBER

#3336 WALGREENS

#SMITHMACK & ASSOCIATES

MEADOW STREET

MUSIC LANE

WATER STREET

POST ROAD

RIVER

APPONAUG

200' RIVERBANK WETLAND

EXIST. SHL PLAT 2307A

EXIST. SHL PLAT 2297

EXIST. SHL PLAT 2345

EXIST./PROP. 100 YR FLOOD BOUNDARY

BOUNDARY

Environmental Management
JUL 10 2013
Office of Water Resources

B STA. 100+80
RIM 9.20
INV. 5.20 N,E,S

B STA. 101+60
RIM 11.78
INV. 8.30

CCB TNP
INV. 4.70 N
INV. 3.7± S(EXIST)
INV. 4.0± E(EXIST)

F STA. 101+60
RIM 11.90
INV. 8.40 N
INV. 8.30 S

B STA. 100+70
RIM 8.94
INV. 5.00 N
INV. 4.9± S(EXIST)

MATCH TO PLAN 13

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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TODD A. RAVENELLE
5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 18

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 30 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			31	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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NOTE:
PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN THE APPONAUG MILL AREA (BOUNDED CENTERVILLE ROAD TO THE SOUTH, TOLLGATE ROAD TO THE WEST, APPONAUG RIVER AND HARDIG BROOK TO THE NORTH AND GREENWICH AVENUE TO THE EAST), THE CONTRACTOR IS REQUIRED TO PLACE AND MAINTAIN RI STD. 9.3.0 EROSION PROTECTION FOR THE ENTIRE LIMITS OF THE EXISTING APPONAUG RIVER ADJACENT TO ALL CONSTRUCTION AND ACCESS AREAS. PAYMENT FOR THIS IS INCLUDED IN THE APPROPRIATE PAY ITEMS.

N 224,400 N 224,500 N 224,600 N 225,000 N 225,100 N 225,200
E 338,800 E 338,900 N 225,300 N 224,700 E 339,000 E 339,100

H STA. 408+50, 230' LT.
RIM 7.75
INV. 4.26

EXIST. S.H.L., PLAT 2679
APPONAUG FLOW RIVER
EXIST. 100 YEAR FLOOD BOUNDARY
PROP. 100 YEAR FLOOD BOUNDARY
EXIST./PROP. 100 YEAR FLOOD BOUNDARY
MATCH TO PLAN 5
MATCH TO PLAN 6
200' RIVERBANK WETLAND
200' RIVERBANK WETLAND
200' PERIMETER WETLAND
NEW S.H.L. PLAT NO. 2710
NEW S.H.L. PLAT NO. 2709
LITTLE GORTONS POND
EXIST. S.H.L., PLAT 2679
EXIST. S.H.L., PLAT 44
EXIST. S.H.L., PLAT 2679

A STA. 108+20
RIM 26.60
INV. 19.08 E
INV. 18.98 N
RELOCATE 3"G

A STA. 108+13
RIM 23.08
INV. 16.50 E,S

A STA. 106+13
RIM 22.88
INV. 16.70

A STA. 108+05
RIM 26.50
INV. 22.80 N
INV. 19.70 S
INV. 19.50 W

D STA. 108+10
RIM 26.50
INV. 23.00

CCB ABM TNP
STA. 107+85, 24'± RT.
RIM 26.50
INV. 20.9± S(EX)
INV. 20.0± NE(EX)
INV. 19.90 N

A STA. 54+50
RIM 21.90
INV. 18.20 E,N
INV. 18.00 S

A STA. 54+55
RIM 21.90
INV. 18.25

D STA. 54+35
RIM 22.00
INV. 18.50

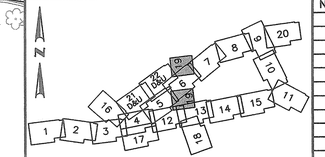
A STA. 54+50
RIM 21.90
INV. 18.40 S,W

P.C. 106+97.96
P.C. 53+76.16

GREENWICH AVENUE
LUTHER AVENUE
CHAIN LINK FENCE
CONC. SLAB
GRAVEL
STEEL POSTS
WOOD POSTS
STONE RET. WALL
BRICK WALL W/2 PLANTERS
WOOD PLANTER
#1364 2 STY. W/F THE COLOR SHOP
#3319 1 1/2 STY. W/F PAWTUCKET CREDIT UNION
#1286 2 STY. W/F
TIDY CAB WASH #1290
#1 T. CATCH SEAFOOD 1STY.
CHRISTOPHER MOLDOVAN #35

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP



REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 19

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 31 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			32	91

BASIN MAINTENANCE NOTES

MAINTENANCE RESPONSIBILITIES OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT) MAINTENANCE DIVISION SHALL INCLUDE BUT NOT BE LIMITED TO:

1. MEASURE DEPTH OF ACCUMULATED SILT IN BOTTOM OF BASINS ON A YEARLY CYCLE.
2. REMOVE ACCUMULATED SILT AND SEDIMENT FROM THE BASINS, INLETS AND DISCHARGE STRUCTURES EVERY TEN (10) YEARS, OR MORE FREQUENTLY IF ACCUMULATED DEPTH OF SEDIMENT EXCEEDS 3-INCHES.
3. ALL TRASH, LITTER, DEBRIS AND FOREIGN MATERIALS SHALL BE REMOVED FROM BASINS, INLET AND DISCHARGE STRUCTURES ON AN "AS NEEDED" BASIS AND AT LEAST DURING EACH YEARLY INSPECTION.
4. ALL REMOVED SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS INCOMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
5. SIDE-SLOPES, EMBANKMENTS AND BOTTOM OF BASINS SHOULD BE MOWED AT LEAST ONCE PER GROWING SEASON.
6. INSPECTORS SHALL FILE A REPORT SHEET FOLLOWING EACH YEARLY SITE INSPECTION. SAID SHEET SHALL BE KEPT ON FILE WITH RIDOT, AND SHALL BE SIGNED AND DATED BY PERSONNEL CONDUCTING ON-SITE INVESTIGATIONS. INSPECTION REPORTS SHALL CONTAIN COMMENTS ON THE FOLLOWING: DEM FILE NO. 11-0099, EMBANKMENT INTEGRITY, EROSION, TREE GROWTH, INLET AND CONDITIONS, SEDIMENT ACCUMULATIONS, SLOPE STABILITY, AND DISCHARGE STRUCTURE.
7. ANY DEFICIENCIES NOTED DURING AN INSPECTION SHALL BE REPAIRED OR REPLACED WITHIN 30 DAYS OF DEFICIENCY REPORT. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR MUST BE DONE IMMEDIATELY.

Environmental Management
BLOCK #3016
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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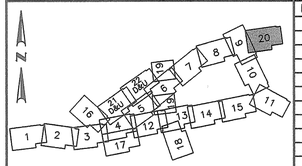
TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 20

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO: 32 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			33	91

Environmental Management
JUL 10 2013
Office of Water Resources

N 224,500 E 337,700 E 337,800 N 224,600 E 337,900 E 338,000 N 224,700 E 338,100 E 338,200 N 224,800 E 338,300 N 224,600

B-1F B-1E B-1D B-1C B-1B B-1A B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10

EXIST./PROP. 100 YR FLOOD BOUNDARY

50' PERIMETER WETLAND

100' RIVERBANK WETLAND

200' RIVERBANK WETLAND

100' RIVERBANK WETLAND

APPROX. STREAM

MARSH

APPROX. LIMIT OF PROPOSED HARDIG BROOK IMPOUNDING EL. 13.5

MATCH TO PLAN 6

MATCH TO PLAN 22

INSTALL BARRIER TO PROTECT PLANT SPECIES OF CONCERN. REFERENCE JOB SPECIFIC SPECIFICATION (RARE PLANT SPECIES SPECIFICATION).

330 331 332 333 334 335 329 328 327 326 325 324 323 336

HARDIG BROOK

EXIST./PROP. 100 YEAR FLOOD BOUNDARY

PROPOSED DISCHARGE STRUCTURE NO. 1
TOLL GATE ROAD STA. 302+54, 192' LT.
(SEE DRAINAGE DETAILS)

LOD CFP 40' 9.3.0 PS DF MR 2:1 3:1 10% ROAD MAINTENANCE PROP. 100 YEAR FLOOD BOUNDARY CONC. RET. WALL PILE

MATCH TO PLAN 4

MATCH TO PLAN 5

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 21

CHECKED BY _____ DATE _____ SCALE 1" = 20'

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			34	91

E 338,100 | E 338,200 N 224,900 | E 338,300 | N 225,000 | E 338,400 | N 225,100 E 338,500 | E 338,600

Environmental Management
JUL 10 2013
Office of Water Resources

MATCH TO PLAN 21

MATCH TO PLAN 5

MATCH TO PLAN 6

N 225,100

N 225,000

E 338,800

200' RIVERBANK WETLAND

50' PERIMETER WETLAND

CONTROL STRUCTURE NO. 2

TEMPORARY DEWATERING BASIN LOCATION

GRADED RIVER STONE

EXISTING DAM TO REMAIN EL. 16.8 EL. 19.8

MARSH

APPROX. LIMIT OF PROPOSED HARDIG BROOK IMPOUNDING EL. 13.5

R&D VALVES PLUG & CAP PIPES

RB-408 POTENTIAL ENDANGERED SPECIES

PERMANENT STEEL SHEETING

SPECIAL AQUATIC SITE

EXIST./PROP. 100 YEAR FLOOD BOUNDARY

APPONAUG RIVER

(GORTON POND TRIBUTARY)

FLOW

(FENCE)

(12' GATE)

ROAD

MAINTENANCE ACCESS

PROP. 100 YEAR FLOOD BOUNDARY

FOUNDATION

EXISTING 100 YEAR FLOOD BOUNDARY

CONTROL STRUCTURE NO. 1

RAILROAD TIES & RAILS

200' RIVERBANK WETLAND (BURIED)

PLACE SIGN AT START OF ROAD NEAR EXIT OF F.O.P. PARKING LOT.

DEAD END

391 W14-1 36"X36" 24.2.0

389,390 OM4-2 36"X36" 24.2.0

387,388 OM4-2 36"X36" 24.2.0

FOR KETTLE STREET LOCATION AND GRADING INFORMATION SEE LOCATION PLAN 22

KETTLE ST.

LITTLE GORTONS POND

NOTE:
PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN THE APPONAUG MILL AREA (BOUNDED CENTERVILLE ROAD TO THE SOUTH, TOLLGATE ROAD TO THE WEST, APPONAUG RIVER AND HARDIG BROOK TO THE NORTH AND GREENWICH AVENUE TO THE EAST), THE CONTRACTOR IS REQUIRED TO PLACE AND MAINTAIN RI STD. 9.3.0 EROSION PROTECTION FOR THE ENTIRE LIMITS OF THE EXISTING APPONAUG RIVER ADJACENT TO ALL CONSTRUCTION AND ACCESS AREAS. PAYMENT FOR THIS IS INCLUDED IN THE APPROPRIATE PAY ITEMS.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

KEY MAP

REVISIONS		
NO.	DATE	BY
1	5/22/13	TAR

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE & UTILITY PLAN - 22

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 34 OF 91

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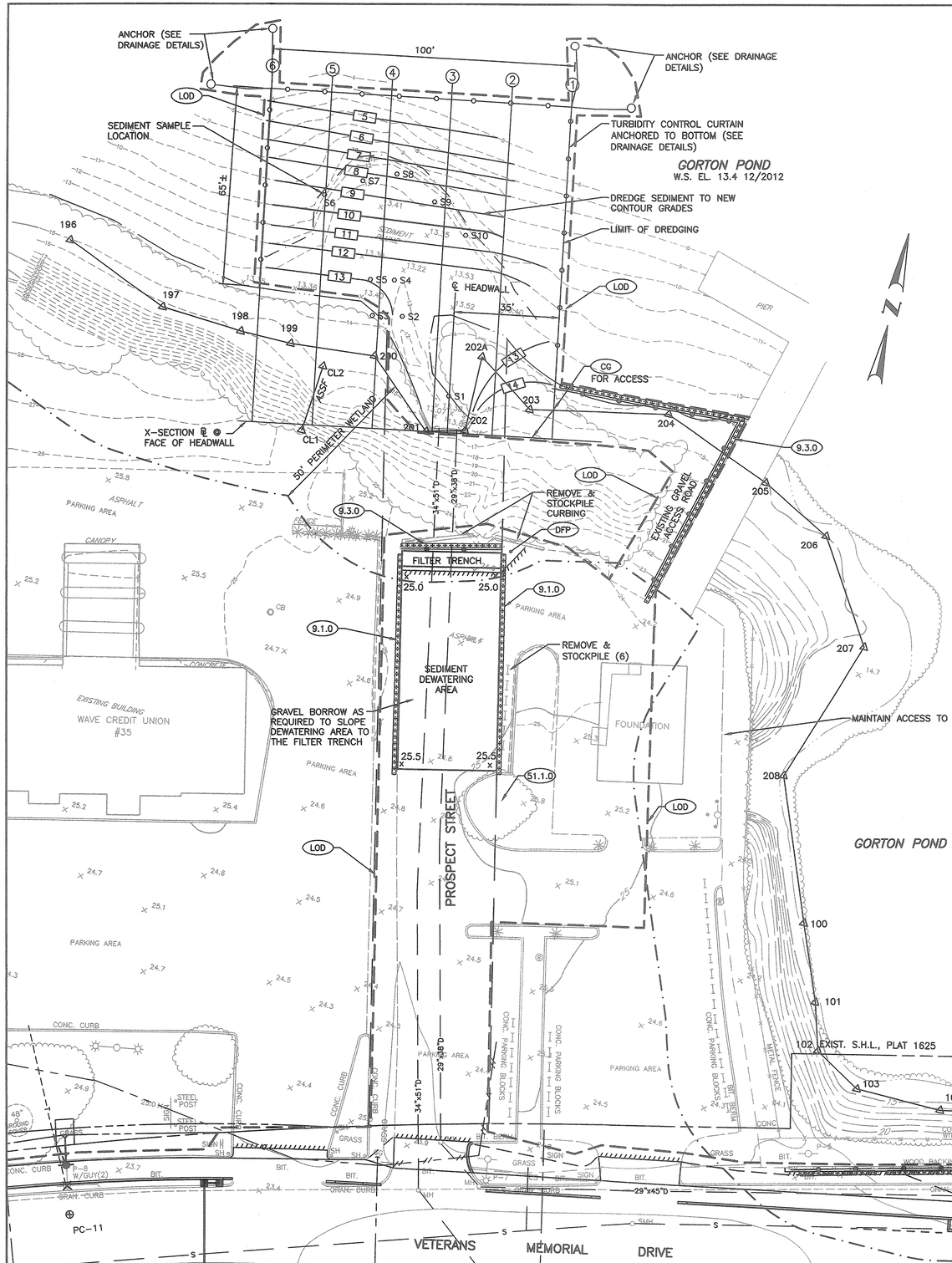
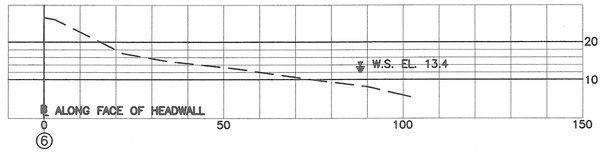
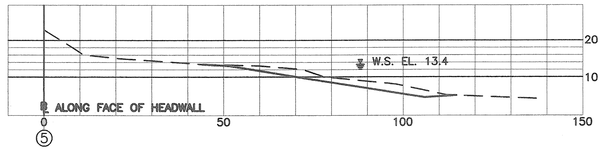
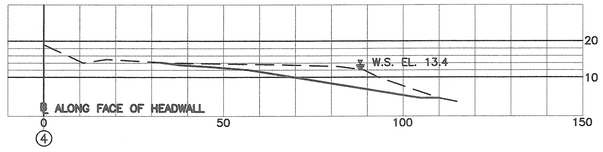
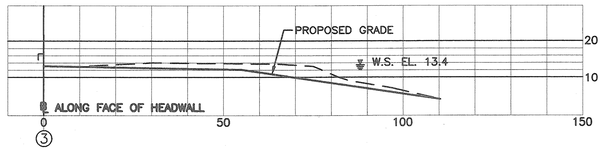
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			35	91

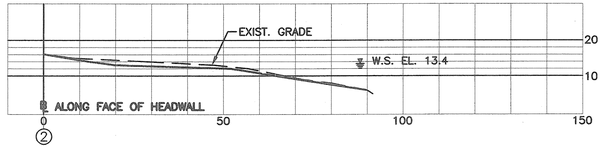


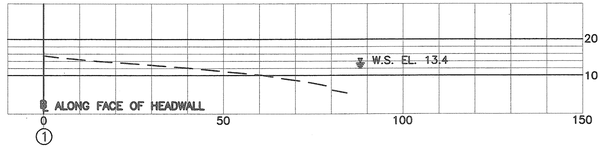






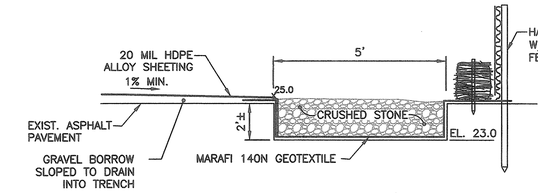






DREDGING SECTIONS

SCALE: 1"=20'



FILTER TRENCH DETAIL

N.T.S.

DEWATERING NOTES:

1. REMOVE AND STOCKPILE PRECAST CONCRETE CURB STOPS.
2. SAWCUT PAVEMENT AS REQUIRED TO EXCAVATE FILTER TRENCH / INSTALL HAY BALES.
3. EXCAVATE FILTER TRENCH.
4. PLACE GEOTEXTILE LINER IN TRENCH. OVERLAP GEOTEXTILE LINER ON PAVEMENT AND COVER WITH CRUSHED STONE TO ANCHOR.
5. USE STAKED HAY BALES TO ANCHOR THE GEOTEXTILE ON THE POND SIDE OF THE FILTER TRENCH.
6. PLACE GRAVEL BORROW OVER THE EXISTING PAVEMENT TO CREATE SLOPE TO THE FILTER TRENCH.
7. PLACE 20 MIL HDPE ALLOY SHEETING OVER THE GRAVEL BORROW.
8. PLACE SEDIMENT ON DEWATERING PAD. DISPOSE DRY MATERIAL OFF-SITE.

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SEDIMENT REMOVAL NOTES

1. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROLS INCLUDING TURBIDITY CONTROL CURTAINS WITHIN GORTON POND PRIOR TO SEDIMENT REMOVAL.
2. SEDIMENT REMOVAL SHALL NOT BE PERFORMED DURING RAINFALL EVENTS OR 24 HOURS AFTER A RAINFALL EVENT EXCEEDING 1/8-INCH.
3. WORK WITHIN GORTON'S POND TO REMOVE SEDIMENT SHALL BE PERFORMED IN A TIMELY AND CONTINUOUS MANNER. OPERATIONS SHALL ONLY BE SUSPENDED AT THE END OF A NORMAL WORKDAY, HOLIDAYS, WEEKENDS, WEATHER CONDITIONS, RAINFALL, OR EQUIPMENT FAILURE.
4. SEDIMENT REMOVAL EQUIPMENT SHALL BE STATIONED UPLAND OR ALONG THE SHORELINE OR ON CRIBBING OR MATTING WHEN STATIONED WITHIN THE POND.
5. THE CONTRACTOR SHALL ACHIEVE THE PROPOSED SEDIMENT REMOVAL LIMITS TO WITHIN 6-INCHES ABOVE AND 18-INCHES BELOW THE PROPOSED REMOVAL LIMIT.
6. THE CONTRACTOR SHALL RESTORE ALL DISTURBED UPLAND AREAS WITH 4-INCHES OF LOAM AND SEED.
7. THE CONTRACTOR SHALL PERFORM FIELD SURVEY SOUNDINGS UPON COMPLETION OF SEDIMENT REMOVAL TO ENSURE REMOVAL LIMITS HAVE BEEN ACHIEVED. THE CONTRACTOR SHALL SUBMIT AS-BUILT PLANS, STAMP BY A PROFESSIONAL LAND SURVEYOR FOR APPROVAL BY THE RIDOT. PAYMENT FOR SURVEY SHALL BE INCLUDED IN THE CUBIC YARD UNIT PRICE FOR SEDIMENT REMOVAL FROM GORTON'S POND.
8. SEDIMENT REMOVAL MAY BE PERFORMED DURING OR OUTSIDE OF THE LOW FLOW PERIOD. THERE ARE NO SEASONAL RESTRICTIONS FOR WORK.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED OCT 06 2013 FILE # 11-0099
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GORTON POND SEDIMENT PLAN

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 35 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			36	91

Environmental Management
JUL 10 2013
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OFFICE OF WATER RESOURCES
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MATCH TO BASIN PLAN -2

APPROX. LIMIT OF PROPOSED HARDIG BROOK IMPOUNDING EL. 13.5

CONTROL STRUCTURE NO. 1 (SEE DETAILS)

50' PERIMETER WETLAND

PROP. 100 YR FLOOD BOUNDARY

LOD

20' MAINTENANCE ROAD

100' RIVERBANK WETLAND

200' RIVERBANK WETLAND

EXIST. / PROP. 100 YR FLOOD BOUNDARY

10' AQUATIC BENCH

BASIN ACCESS

EMERGENCY SPILLWAY

OVERFLOW (SEE DETAIL ACBO)

ANTI SEEP COLLAR (SEE DETAILS)

2.3.0 RRP
STA. 27+00 144' LT.
INV. 8.28

DISCHARGE STRUCTURE NO. 2, SEE DETAIL

BASIN SHALL BE MOWED ABOVE ELEVATION 12.5

2.3.0
STA. 26+03 155' LT.
INV. 6.0

PERMANENT POOL

FOREBAY

GABION CHECK DAM

2.3.0 RRP
STA. 23+17 66' LT.
INV. 14.42

2.3.0 RRP
STA. 24+22 60' LT.
INV. 12.40

PROP. 100 YR FLOOD BOUNDARY

C.I. VALVE
RIM 16.0
INV. 5.75
(SEE DETAIL)

LOW FLOW CHANNEL (SEE SECTION)

APPONAUG RIVER

RELOCATED

2.3.0
STA. 26+86 114' LT.
INV. 5.5

BRIDGE NO. 1038

EXIST. 100 YR FLOOD BOUNDARY

VETERANS MEMORIAL DRIVE EXTENSION

MATCH TO BASIN PLAN -2

TABLE 1

WELL NUMBER	GROUND SURFACE ELEVATION (FEET,NGVD)	GROUNDWATER ELEVATION (FEET, NGVD)					
		18-May-11	3-Jun-11	21-Jun-11	27-Jun-11	2-Oct-12	25-Oct-12
GW-1	16.3	13.0	12.8	12.4	12.4		11.9
GW-2	16.0	11.1	10.9	10.6	10.7		10.6
GW-3	9.1	5.6	5.3	5.1	5.1		4.7
GW-4	14.5	10.8	10.5	10.0	10.1		9.8
GW-6	8.6	3.8	3.4	3.3	3.3		3.3
GW-53	16.7					11.3	11.5
GW-57	16.9					5.6	5.5

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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

BASIN GRADING PLAN - 1

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 36 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			37	91

Environmental Management
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BASIN MAINTENANCE NOTES

MAINTENANCE RESPONSIBILITIES OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT) MAINTENANCE DIVISION SHALL INCLUDE BUT NOT BE LIMITED TO:

1. MEASURE DEPTH OF ACCUMULATED SILT IN BOTTOM OF BASINS ON A YEARLY CYCLE.
2. REMOVE ACCUMULATED SILT AND SEDIMENT FROM THE BASINS, INLETS AND DISCHARGE STRUCTURES EVERY TEN (10) YEARS, OR MORE FREQUENTLY IF ACCUMULATED DEPTH OF SEDIMENT EXCEEDS 3-INCHES.
3. ALL TRASH, LITTER, DEBRIS AND FOREIGN MATERIALS SHALL BE REMOVED FROM BASINS, INLET AND DISCHARGE STRUCTURES ON AN "AS NEEDED" BASIS AND AT LEAST DURING EACH YEARLY INSPECTION.
4. ALL REMOVED SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS INCOMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
5. SIDE-SLOPES, EMBANKMENTS AND THE UPPER STAGE OF BASINS SHOULD BE MOWED AT LEAST ONCE PER GROWING SEASON. THE BASIN SHALL BE MOWED ABOVE ELEVATION 12.5 AS DEPICTED ON BASIN GRADING PLAN 1.
6. INSPECTORS SHALL FILE A REPORT SHEET FOLLOWING EACH YEARLY SITE INSPECTION. SAID SHEET SHALL BE KEPT ON FILE WITH RIDOT, AND SHALL BE SIGNED AND DATED BY PERSONNEL CONDUCTING ON-SITE INVESTIGATIONS. INSPECTION REPORTS SHALL CONTAIN COMMENTS ON THE FOLLOWING: DEM FILE NO. 11-0099, EMBANKMENT INTEGRITY, EROSION, TREE GROWTH, INLET AND CONDITIONS, SEDIMENT ACCUMULATIONS, SLOPE STABILITY, AND DISCHARGE STRUCTURE.
7. ANY DEFICIENCIES NOTED DURING AN INSPECTION SHALL BE REPAIRED OR REPLACED WITHIN 30 DAYS OF DEFICIENCY REPORT. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR MUST BE DONE IMMEDIATELY.

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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

BASIN GRADING PLAN - 2

CHECKED BY _____ DATE _____ SCALE 1" = 20'

TODD A. RAVENELLE
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REGISTERED PROFESSIONAL ENGINEER

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Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 37 OF 91

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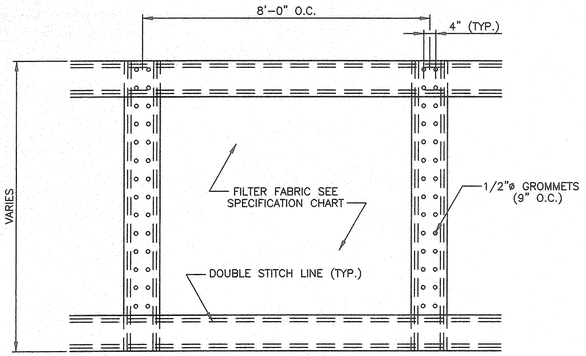
1	R.I.			38	91



FILTER FABRIC DETAIL TYPE II SILT FENCE

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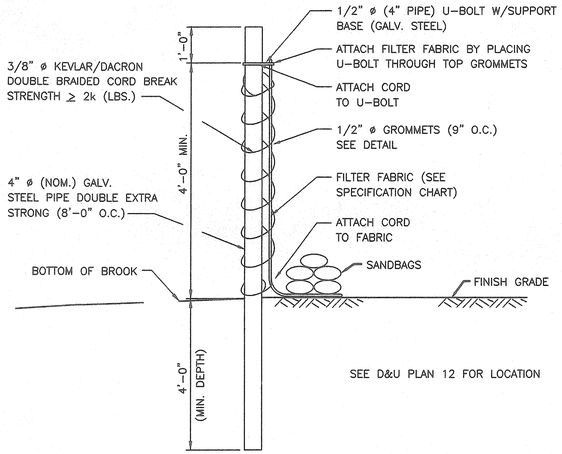
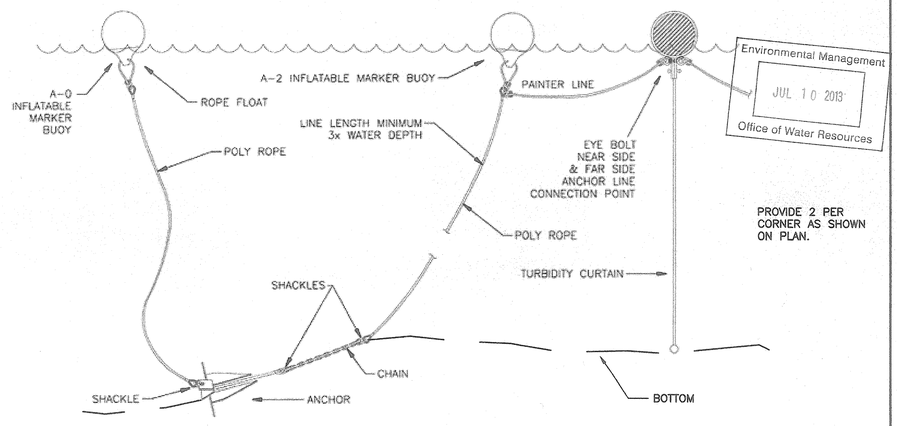


SILT FENCE DETAIL (TYPE II)

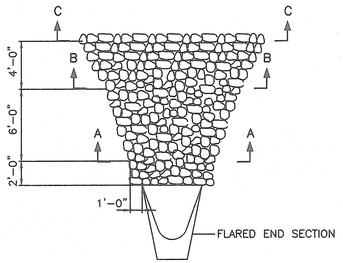
NOT TO SCALE



TYPICAL TURBIDITY CURTAIN ANCHOR SYSTEM

SILT FENCE GEOTEXTILE FABRIC SPECIFICATION CHART				
PROPERTY	UNIT	TEST METHOD	(TYPE I)	(TYPE II)
WEIGHT	oz/sy	ASTM D-3776-79	2.5	6.5
GRAB STRENGTH	lbs	ASTM D-1682-64 (1)	100	400X250
GRAB ELONGATION	%	ASTM D-1682-64 (1)	30(MAX)	35(MAX)
MODULUS (10% ELONGATION)	lbs	ASTM D-1682-64 (1)		
TRAPEZOID SHEAR STRENGTH	lbs	ASTM D-1117-80	65	110X55
MULLEN BURAT STRENGTH	psi	ASTM D-3786-80 (2)	210	490
PUNCTURE STRENGTH	lbs	ASTM D-3787-80 (3)		130
ABRASION RESISTANCE	lbs	ASTM D-3884-80 (4) & D-1682-64		155
THICKNESS	mils	ASTM D-1777-64	17	19
COEFF. OF PERMEABILITY, K	cm/sec	CFMC GET-2	0.0009	0.0150
WATER FLOW RATE	gal/min/sf	CFMC GET-2	40	60
AIR FLOW RATE	cf/min/sf	ASTM D-737-75		115
EQUIVALENT OPENING SIZE (EOS)	US STD. seive	COE CW-02215-77	20	70-100
OPEN AREA	%	COE METHOD		4
SEDIMENT RETENTION EFFICIENCY	%	VIRGINIA DOH / VTM-51	75	
SLURRY FLOW RATE	gal/min/sf	VIRGINIA DOH / VTM-51	0.5000	
ULTRAVIOLET STABILITY	%	ASTM G-26 (5) & D-1682-64	90	90

1. CONSTANT RATE OF EXTENSION OF 12 IN/MIN.
2. DIAPHRAGM BURSTING TESTER.
3. TENSION TESTING MACHINE WITH RING CLAMP; STEEL BALL REPLACED WITH A 5/16 INCH DIAMETER SOLID STEEL CYLINDER CENTERED WITHIN THE RING CLAMP.
4. ASTM D-1682 AS ABOVE AFTER ABRASION AS REQUIRED BY ASTM D-3884 ROTARY PLATFORM, DOUBLE HEAD METHOD USING CS 17 "CALIBRASE" WHEELS, 1 KG. LOAD PER WHEEL, 1000 REVOLUTIONS.)
5. ASTM D-1682 AS ABOVE AFTER 250 CYCLES IN A XENON-ARC WEATHEROMETER (TYPE BH OR TYPE C). ONE CYCLE CONSISTS OF 102 MINUTES OF LIGHT FOLLOWED BY 18 MINUTES OF LIGHT WITH WATER SPRAY.

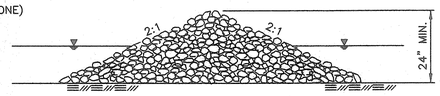


RIP-RAP PAD DETAIL (RRP)

N.T.S.

NOTES:

1. RIP-RAP AND BEDDING SHALL BE IN ACCORDANCE WITH SECTION M.10 OF THE RI STD. SPECIFICATIONS FOR BRIDGE AND HIGHWAY. RIP-RAP SHALL BE MODIFIED NSA NO. R-4, BEDDING SHALL BE MODIFIED NSA NO. FS-2.
2. DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
3. UNLESS OTHERWISE SPECIFIED, DUMPED RIP-RAP SHALL BE USED.



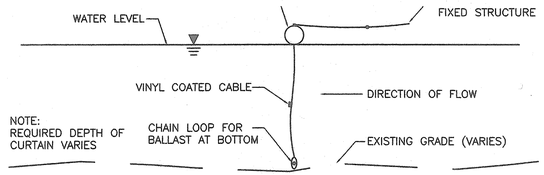
SIDE VIEW FOR AT GRADE STONE BAFFLE

STONE BAFFLE (SB)

N.T.S.

NOTES

1. STONE SHALL MEET THE REQUIREMENTS FOR CRUSHED STONE IN SECTION M.01 BORROW AND AGGREGATES OF THE RIDOT STANDARD SPECIFICATION OR CONSIST ENTIRELY OF 2"-3" STONE.
2. HAND OR MECHANICAL PLACEMENT WILL BE NECESSARY TO CONSTRUCT BAFFLE.



SEE GORTONS POND SEDIMENT PLAN FOR LOCATION.

TURBIDITY CONTROL CURTAIN

TURBIDITY CONTROL CURTAIN DETAILS

NOT TO SCALE

Environmental Management
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TODD A. RAVENELLE — No. 5928 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
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APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 1

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 38 OF 91

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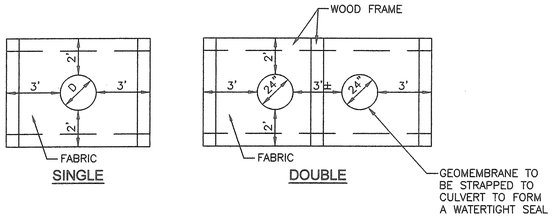
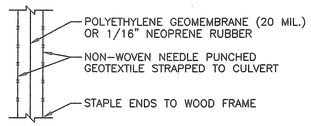




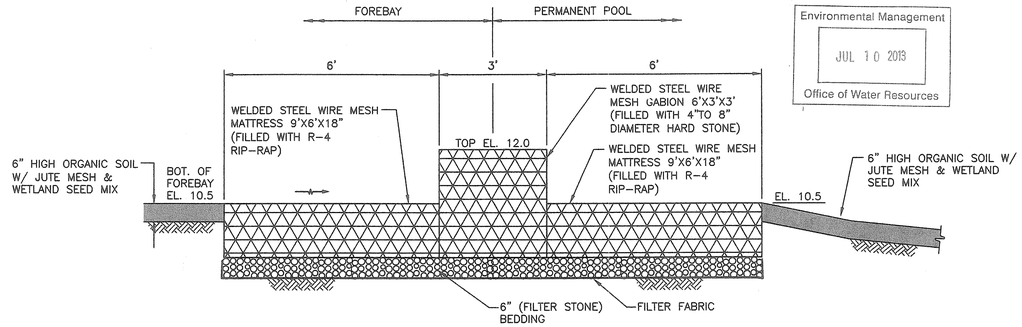
FABRIC DETAIL

NOTES:

1. THE STRAP SHALL BE SUBJECT TO ENGINEERS APPROVAL. THE STRAP MAY BE A POLYPROPYLENE CORD WITH A TENSILE STRENGTH OF 200 POUNDS AND SHALL PROVIDE A PERMANENT NON-SLIP, TIE.

ANTI-SEEP COLLAR DETAILS

N.T.S.

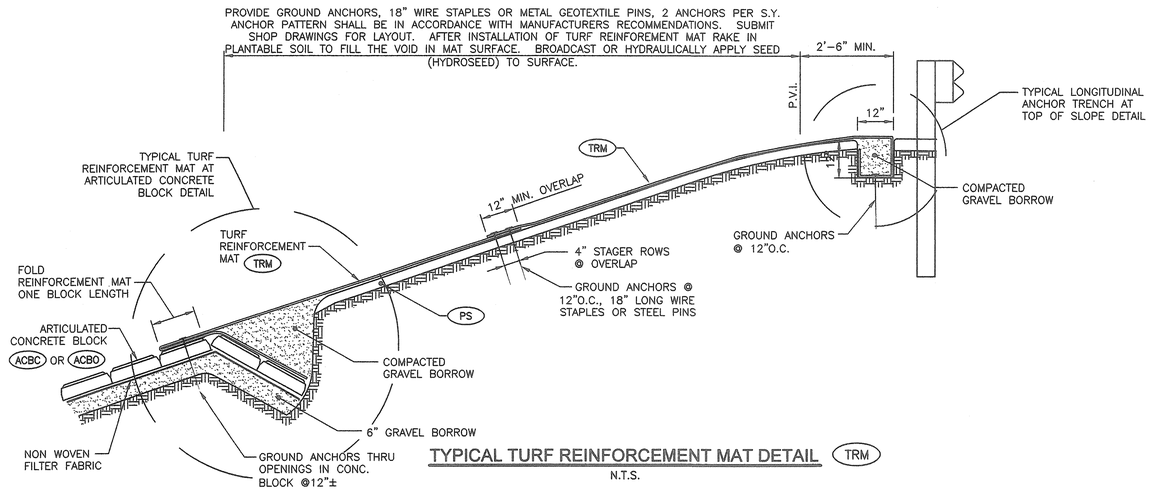


GABION CHECK DAM

N.T.S.

Environmental Management
JUL 10 2013
Office of Water Resources

PROVIDE GROUND ANCHORS, 18" WIRE STAPLES OR METAL GEOTEXTILE PINS, 2 ANCHORS PER S.Y. ANCHOR PATTERN SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. SUBMIT SHOP DRAWINGS FOR LAYOUT. AFTER INSTALLATION OF TURF REINFOREMENT MAT RAKE IN PLANTABLE SOIL TO FILL THE VOID IN MAT SURFACE. BROADCAST OR HYDRAULICALLY APPLY SEED (HYDROSEED) TO SURFACE.



TYPICAL TURF REINFORCEMENT MAT DETAIL TRM

N.T.S.

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LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 2

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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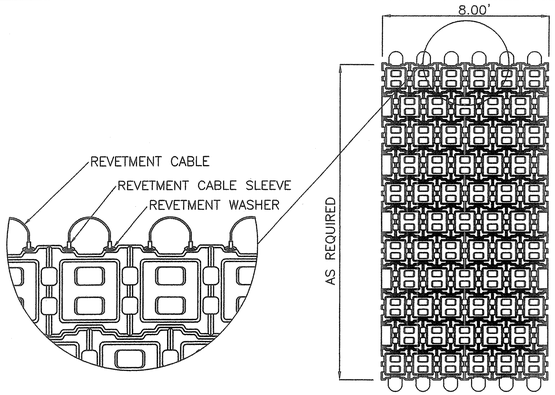
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 39 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DETAIL017.dwg, WETLAND, 7/10/2013 10:03:00 AM, USER3S, ColorHPGL4.MNT, pc3, 1:1

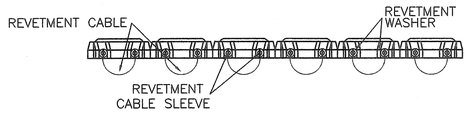
F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DETAIL017

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			40	91



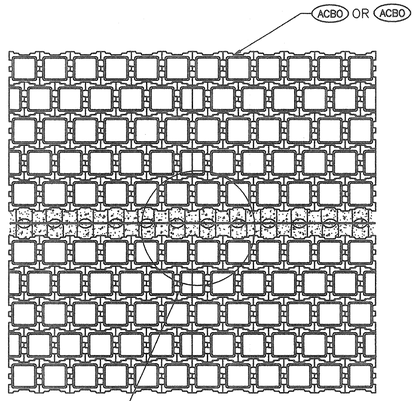
NOTE: OPEN CELL BLOCKS ARE SHOWN.

PLAN



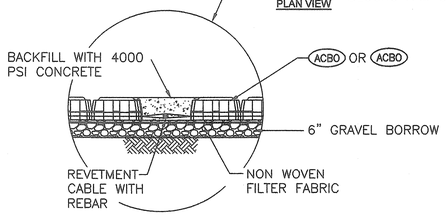
TYPICAL ARTICULATED OPEN/CLOSED BLOCK MAT

NOT TO SCALE



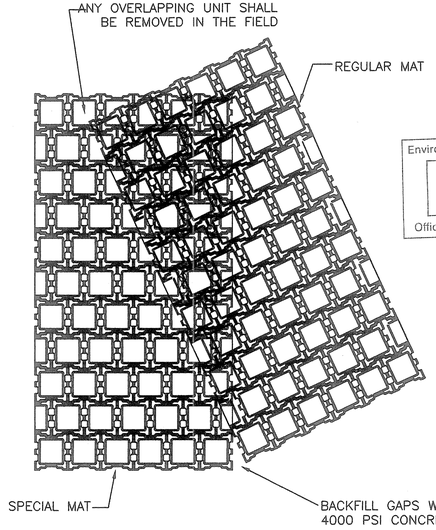
NOTE: CLOSED CELL BLOCKS ARE SHOWN.

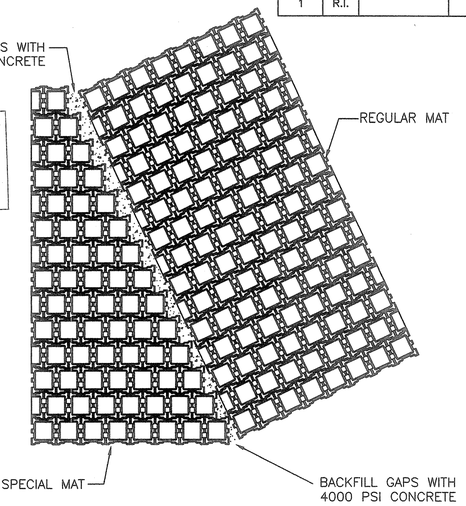
PLAN VIEW



CELL GROUTING DETAIL WITH REBAR

NOT TO SCALE



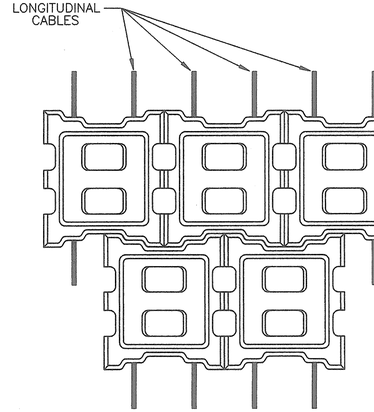


SPECIAL MATS

NOT TO SCALE

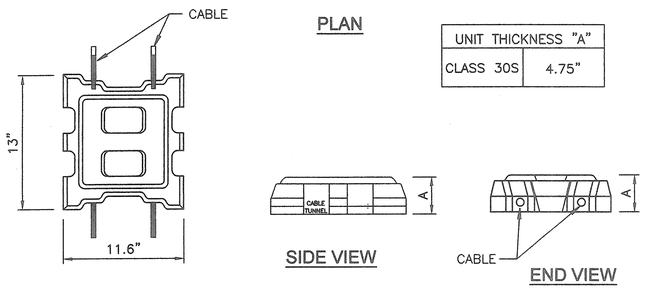
NOTE:
SPECIAL MATS SHALL BE CONSTRUCTED BY OMITTING THE REQUIRED UNITS SO THE REQUIRED MAT DIMENSIONS CAN BE OBTAINED.

Environmental Management
JUL 10 2013
Office of Water Resources



PLAN

UNIT THICKNESS "A"	
CLASS 30S	4.75"



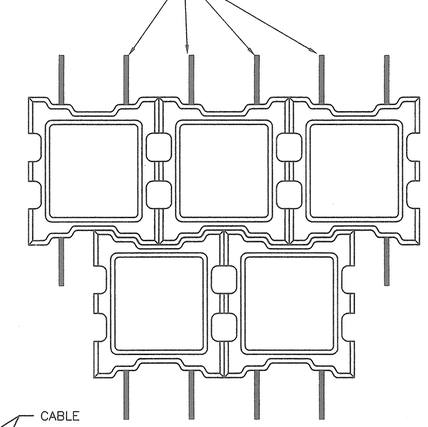
SIDE VIEW

END VIEW

TOP VIEW

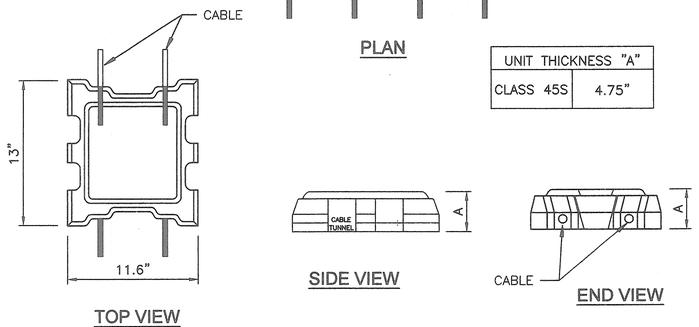
ARTICULATED CONCRETE BLOCK OPEN CELL (ACBO)

NOT TO SCALE



PLAN

UNIT THICKNESS "A"	
CLASS 45S	4.75"



SIDE VIEW

END VIEW

TOP VIEW

ARTICULATED CONCRETE BLOCK CLOSED CELL (ACBC)

NOT TO SCALE

LEGEND

(ACBC) ARTICULATED CONCRETE BLOCK (CLOSED CELL)

(ACBO) ARTICULATED CONCRETE BLOCK (OPEN CELL)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 3
OPEN & CLOSED CELL BLOCK

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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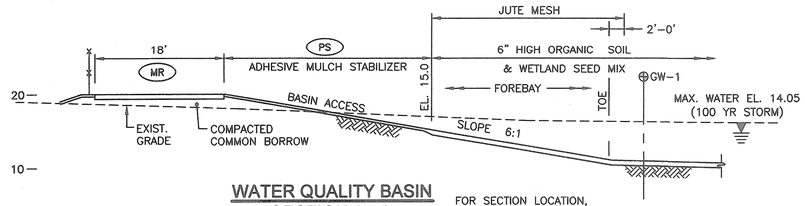
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			41	91

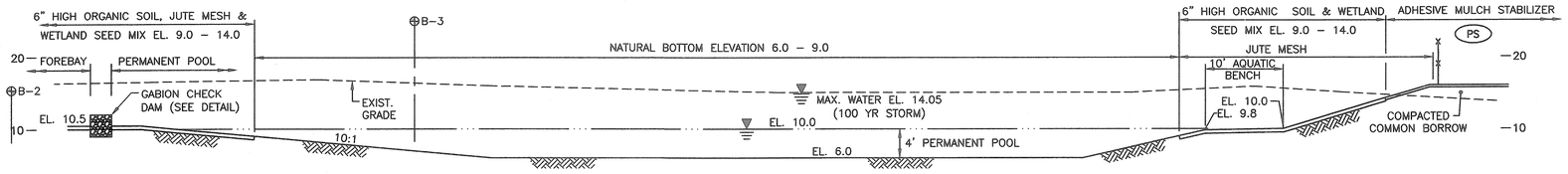


WATER QUALITY BASIN SECTION A - A

SCALE : 1"=10'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.

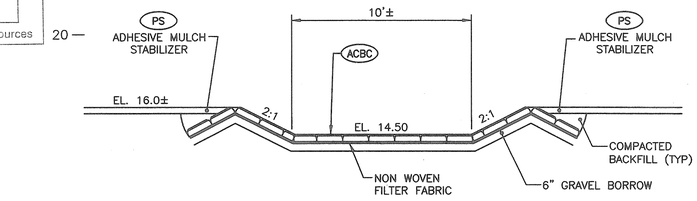
Environmental Management
JUL 10 2013
Office of Water Resources



WATER QUALITY BASIN SECTION B - B

SCALE : 1"=10'

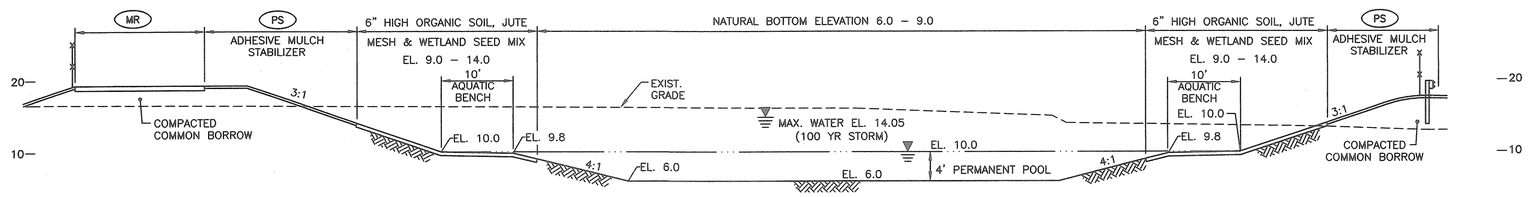
FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.



EMERGENCY SPILLWAY WATER QUALITY BASIN SECTION F - F

SCALE : 1"=4'

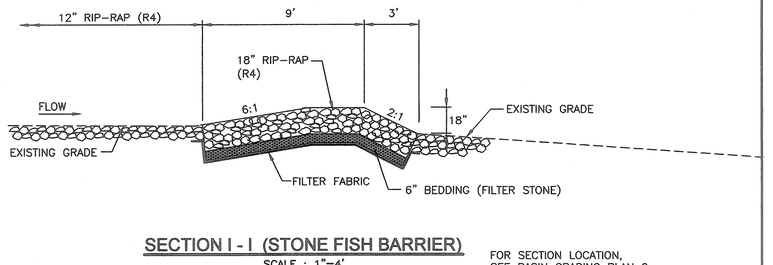
FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.



WATER QUALITY BASIN SECTION C - C

SCALE : 1"=10'

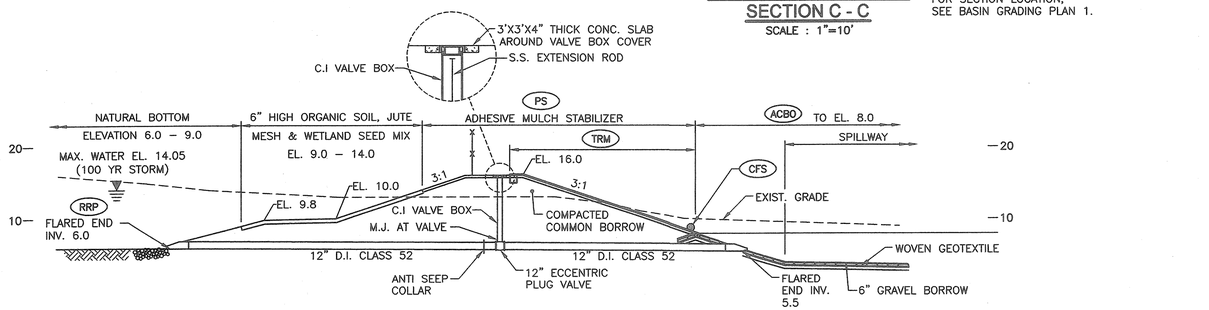
FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.



SECTION I - I (STONE FISH BARRIER)

SCALE : 1"=4'

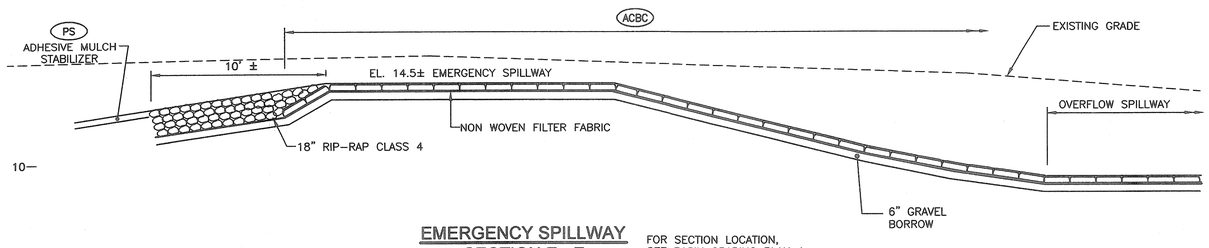
FOR SECTION LOCATION, SEE BASIN GRADING PLAN 2.



WATER QUALITY BASIN SECTION D - D

SCALE : 1"=10'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.



EMERGENCY SPILLWAY SECTION E - E

SEE BASIN GRADING PLAN

SCALE : 1"=4'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

FOR GROUNDWATER INFORMATION SEE TABLE 1 – BASIN GRADING PLAN –1

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 4
BASIN SECTIONS

CHECKED BY _____ DATE _____ SCALE AS SHOWN

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 41 OF 91

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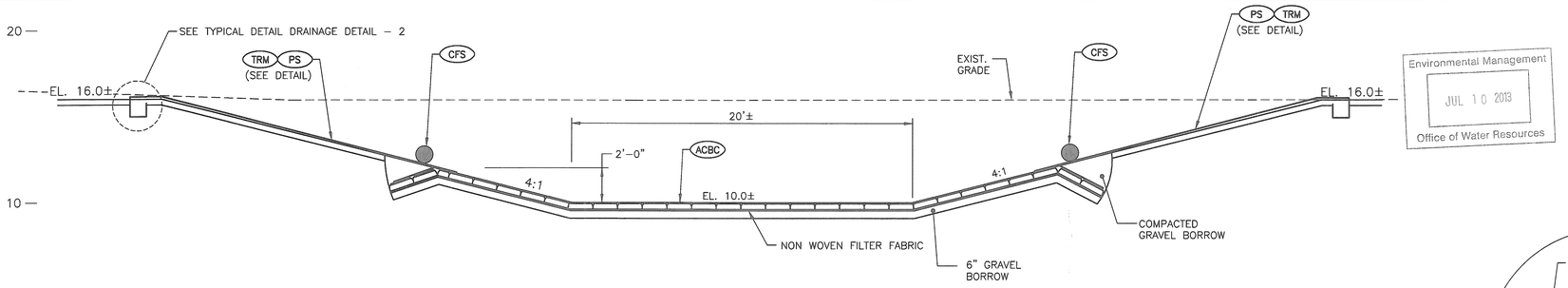
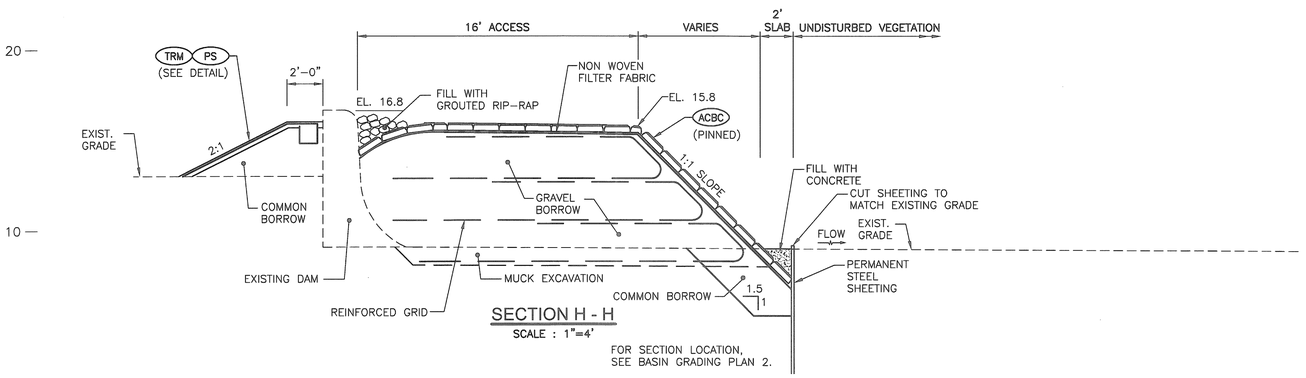
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			42	91



OVERFLOW SPILLWAY
SECTION G - G
SCALE : 1"=4'

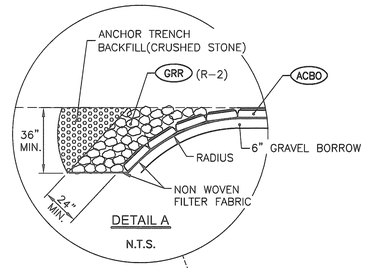
FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.

Environmental Management
JUL 10 2013
Office of Water Resources

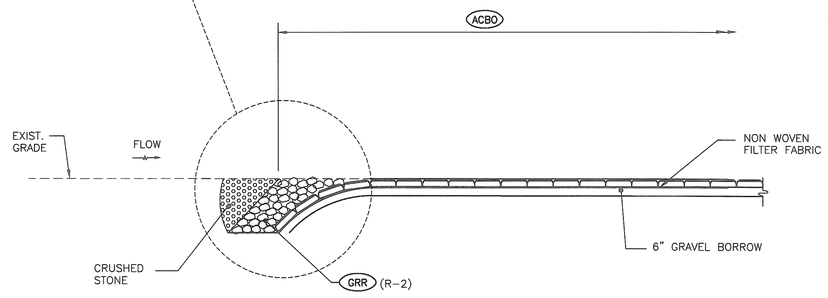


SECTION H - H
SCALE : 1"=4'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 2.

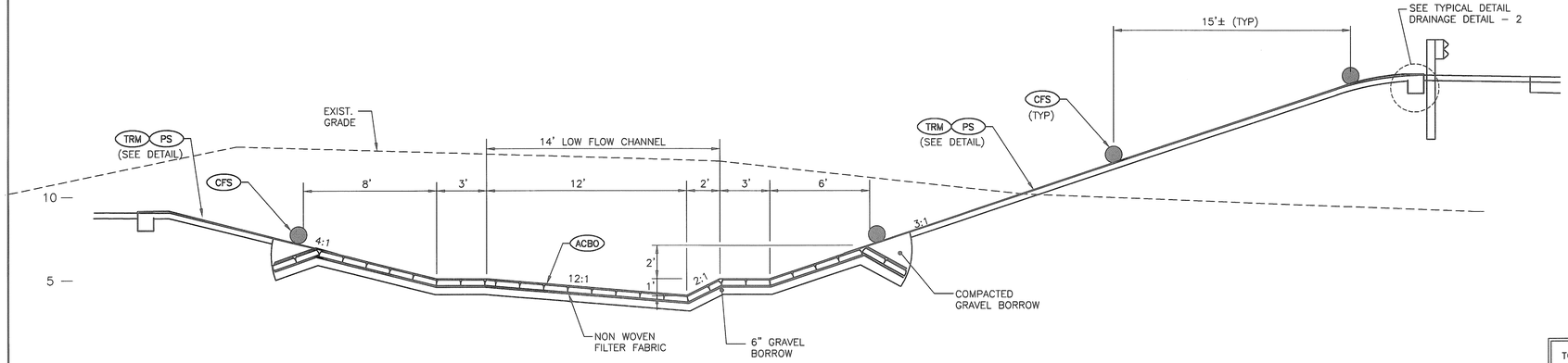


DETAIL A
N.T.S.



SECTION J - J
SCALE : 1"=4'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 2.



RELOCATED APPONAUG RIVER CHANNEL
SECTION K - K
SCALE : 1"=4'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 1.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED OCT 08 2013 FILE # 11-0099
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FOR GROUNDWATER INFORMATION SEE TABLE 1 – BASIN GRADING PLAN –1

TODD A. RAVENELLE
No. 9428
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY
1	5/22/13	TAR

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 5
BASIN SECTIONS

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 42 OF 91

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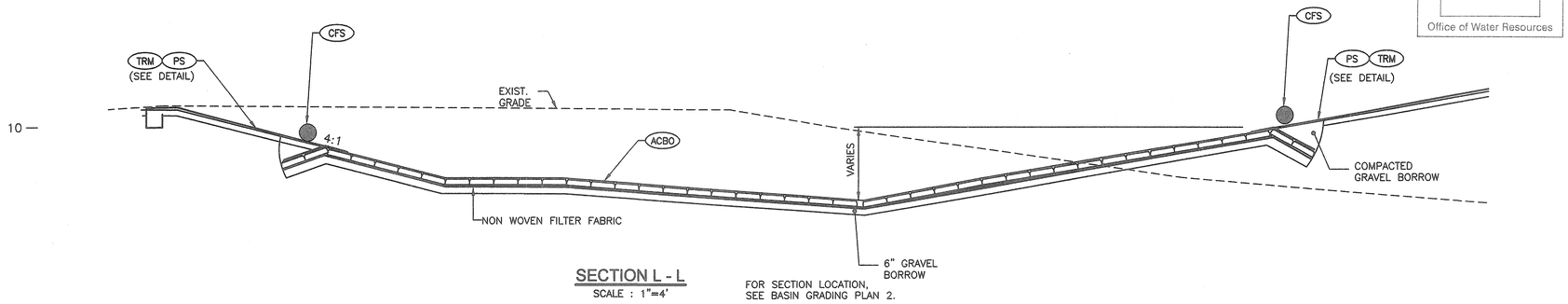
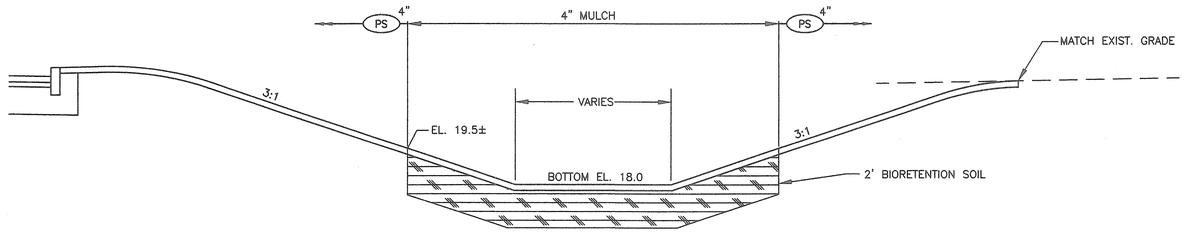
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			43	91

Environmental Management
JUL 10 2013
Office of Water Resources



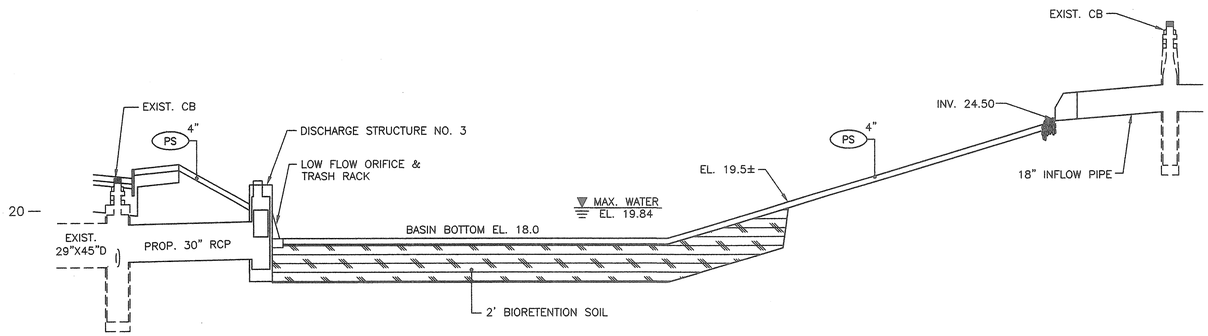
SECTION L - L
SCALE : 1"=4'

FOR SECTION LOCATION, SEE BASIN GRADING PLAN 2.



POST RD. EXTENSION BIO-RETENTION BASIN SECTION A-A
N.T.S.

FOR SECTION LOCATION, SEE DRAINAGE & UTILITY PLAN 20.



POST ROAD EXTENSION BIO-RETENTION BASIN LONGITUDINAL SECTION B-B
SCALE: HOR. 1"=20'
VERT. 1"=4'

FOR SECTION LOCATION, SEE DRAINAGE & UTILITY PLANS 9 & 20.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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FOR GROUNDWATER INFORMATION SEE TABLE 1 – BASIN GRADING PLAN –1

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

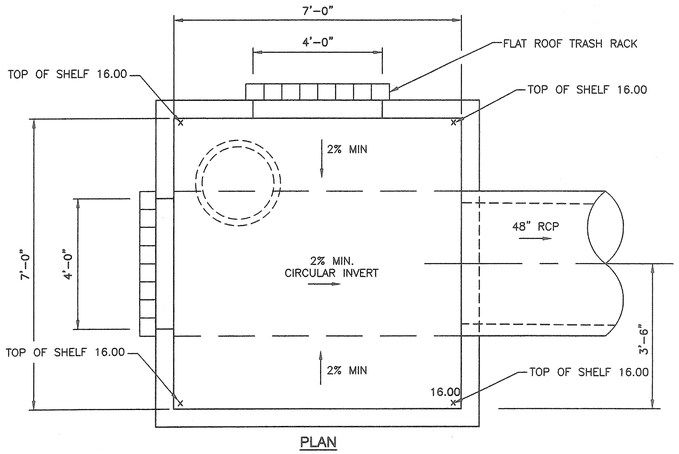
WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 6
BASIN SECTIONS

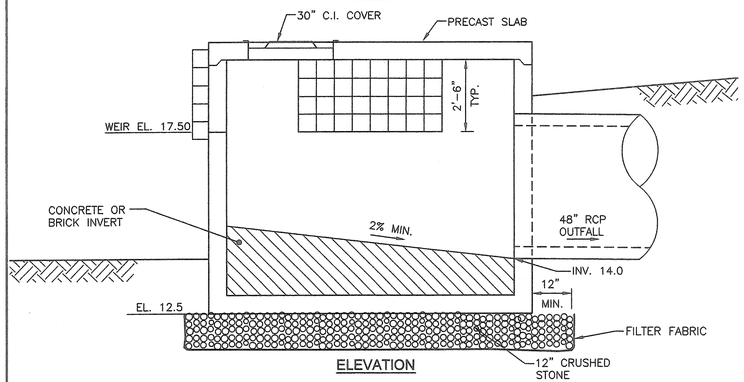
CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 43 OF 91

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			44	91



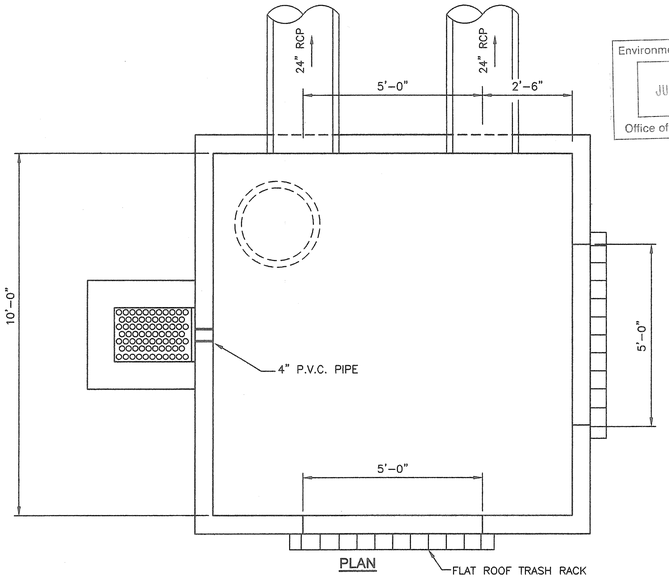
PLAN



ELEVATION

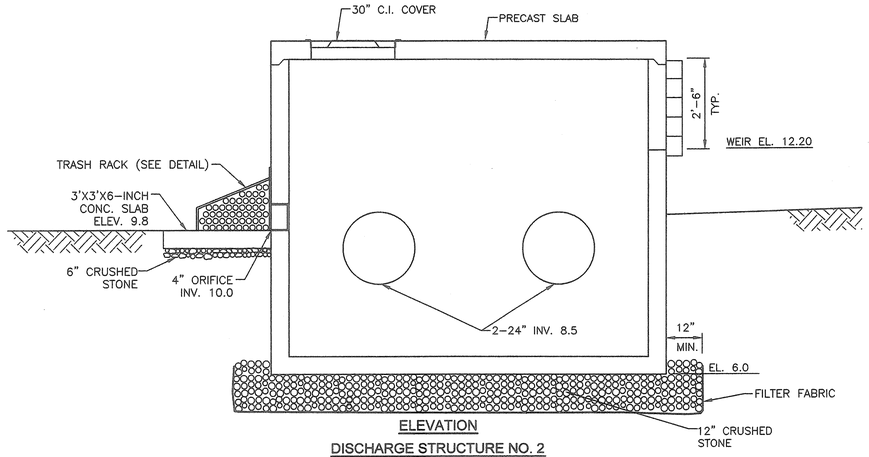
DISCHARGE STRUCTURE NO. 1
TOLL GATE ROAD STA. 302+54, 192' LT.

N.T.S.



PLAN

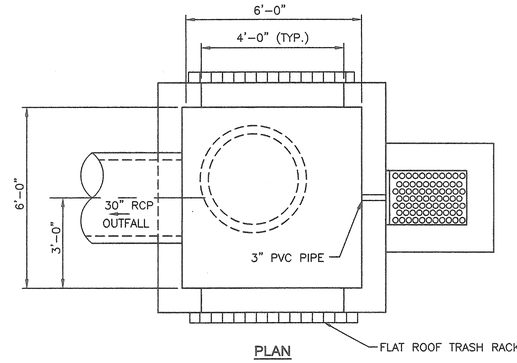
FLAT ROOF TRASH RACK



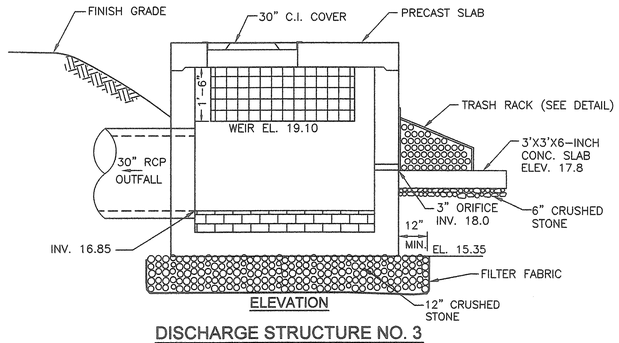
ELEVATION

DISCHARGE STRUCTURE NO. 2
VETERANS MEMORIAL DRIVE EXTENSION STA. 26+37, 173' LT±

N.T.S.



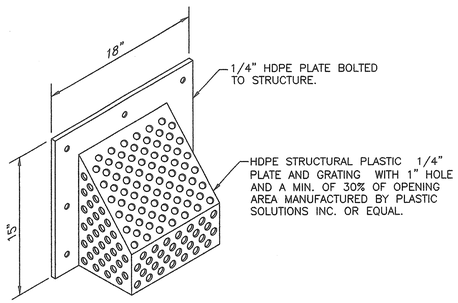
PLAN



ELEVATION

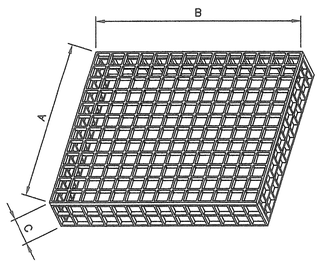
DISCHARGE STRUCTURE NO. 3
POST ROAD EXTENSION STA. 601+20, 100'LT. ±

N.T.S.



TRASH RACK DETAIL
DISCHARGE STRUCTURE NO. 2 & 3

N.T.S.



FLAT ROOF TRASH RACK DETAIL

N.T.S.

TRASH RACK DIMENSIONS				
UNIT NAME	A	B	C	NO. UNITS
DISCHARGE STRUCTURE NO. 1	54 3/8"	38 1/4"	7 1/2"	2
DISCHARGE STRUCTURE NO. 2	65 5/8"	38 1/4"	7 1/2"	2
DISCHARGE STRUCTURE NO. 3	54 3/8"	22 1/8"	7 1/2"	2

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED OCT 0 8 2013 FILE # 11-0099
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TODD A. RAVENELLE
5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 7
DISCHARGE STRUCTURES

CHECKED BY _____ DATE _____ SCALE AS SHOWN

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 44 OF 91

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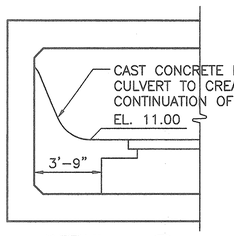
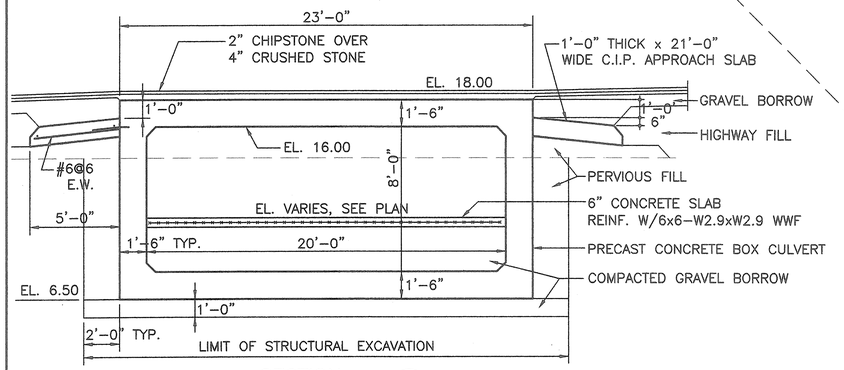
F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_DETAIL005

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			45	91

Environmental Management
JUL 10 2013
Office of Water Resources



DETAIL C
SCALE: 1/4"=1'-0"



SECTION A
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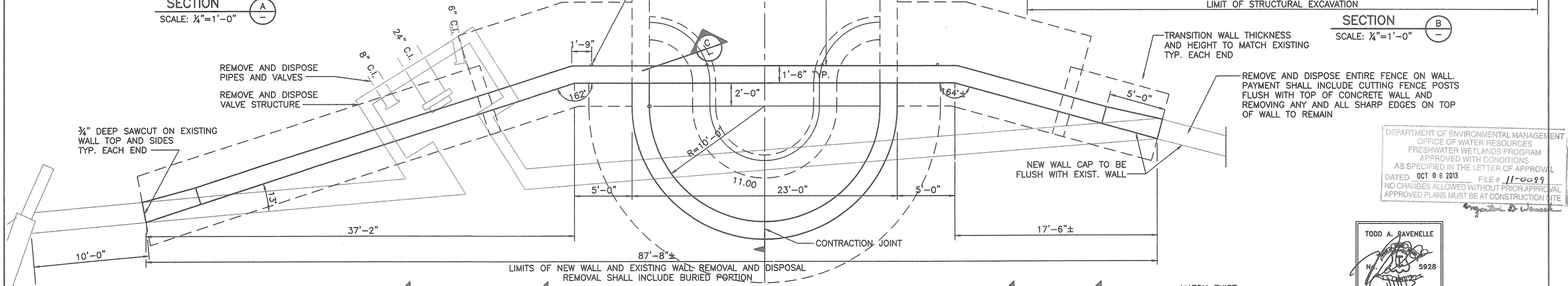

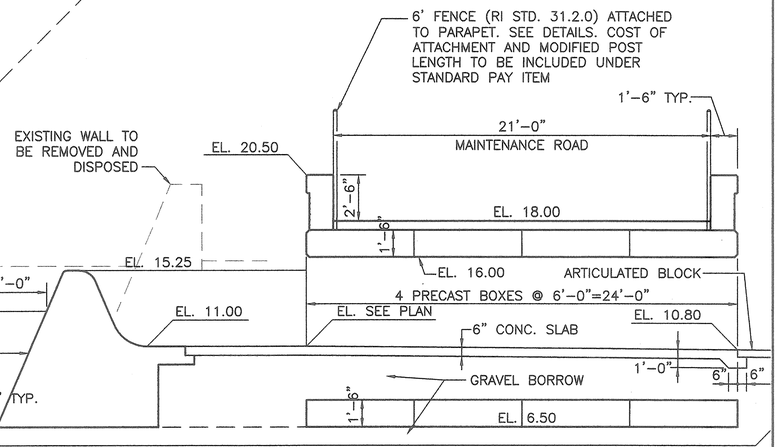

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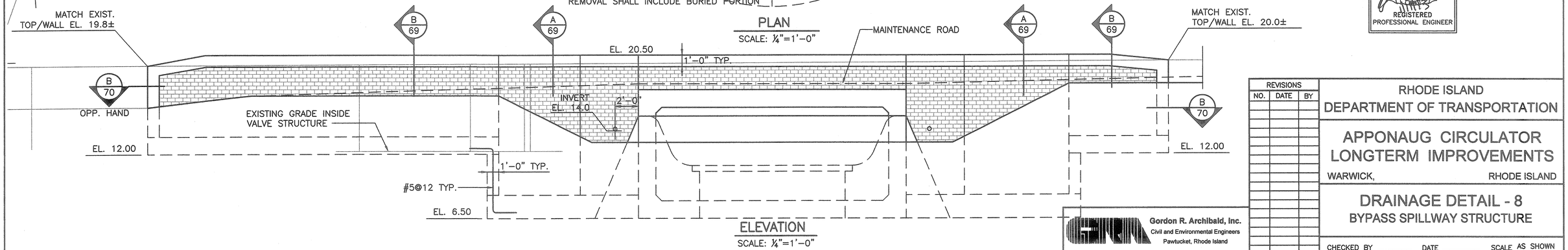
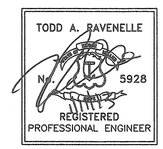


PLAN
SCALE: 1/4"=1'-0"

ELEVATION
SCALE: 1/4"=1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAIL - 8
BYPASS SPILLWAY STRUCTURE

CHECKED BY _____ DATE _____ SCALE AS SHOWN

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 45 OF 91

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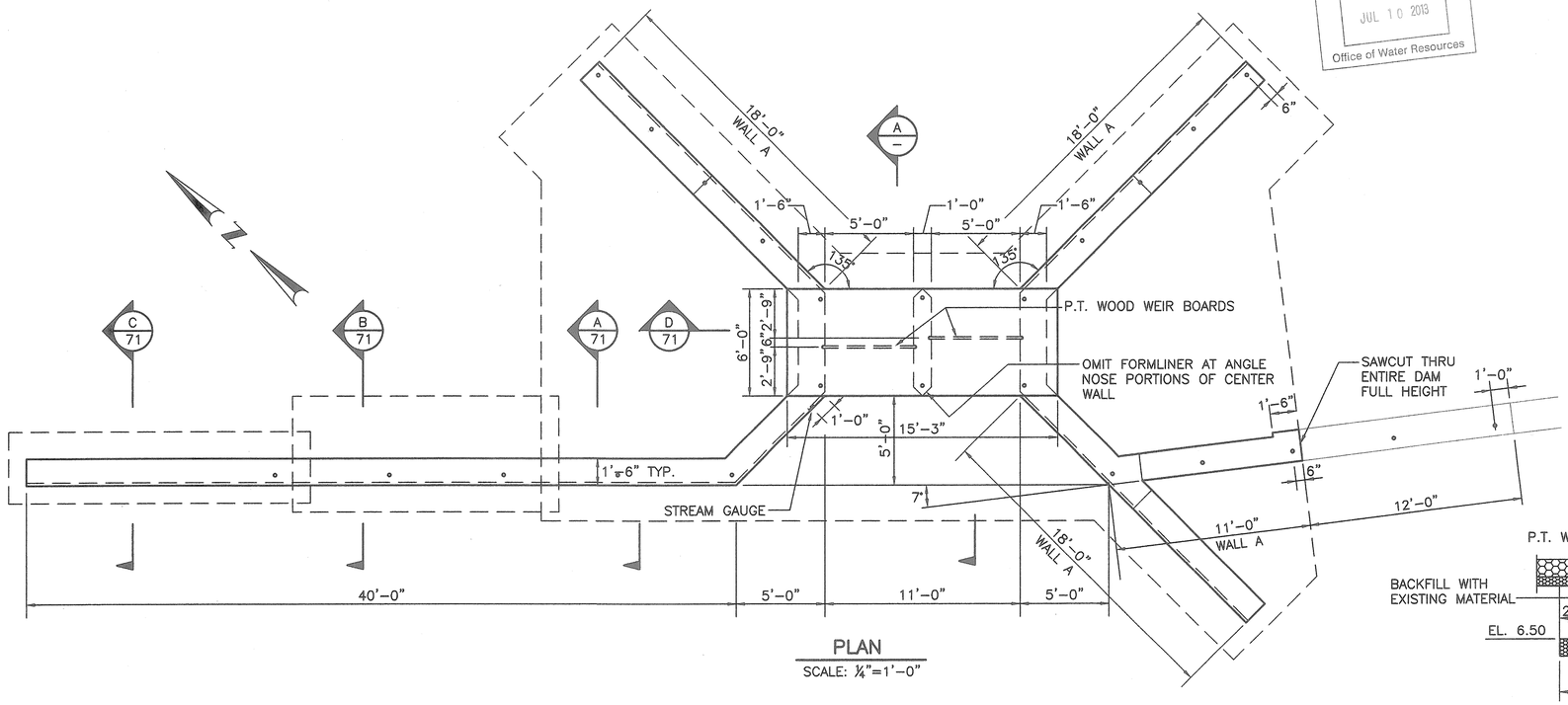
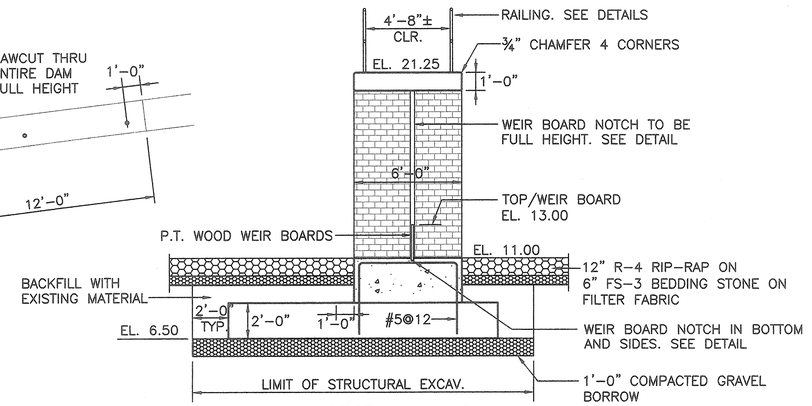
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			46	91

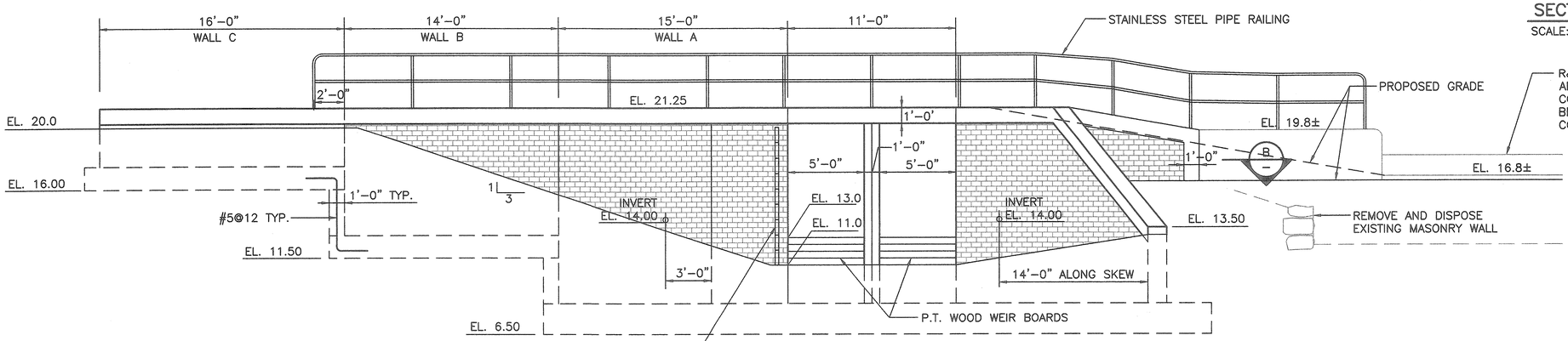
Environmental Management
JUL 10 2013
Office of Water Resources



PLAN
SCALE: ¼"=1'-0"



SECTION A
SCALE: ¼"=1'-0"



LOOKING EAST

ELEVATION
SCALE: ¼"=1'-0"

STREAM GAUGE GRADUATED TO HUNDREDTHS AND MARKED AT EVERY FOOT AND EVERY TENTH. NUMBERING IN FEET SHALL START AT 11 AND END AT 20. GAUGE SHALL BE WATERMARK STYLE C FROM FORESTRY SUPPLIERS INC. GAUGE SHALL BE INSTALLED TO COINCIDE WITH NGVD ELEVATION. GAUGE TO BE ANCHORED WITH ¼"x1¼" S.S. TAPCON SCREWS AT LOCATIONS DESIGNATED BY THE MANUFACTURER

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DRAINAGE DETAILS - 9
UPPER DAM STRUCTURE

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			47	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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TOLL GATE ROAD
CENTERVILLE ROAD
MAINTENANCE ROAD
BASIN ACCESS
VETERANS MEMORIAL DRIVE EXT.
CENTERVILLE RD.
GILBANE STREET
MEADOW STREET
LOR
P.C. 276+71.88
P.T. 277+28.30
P.C. 250+88.07
P.C. 201+11.34
P.C. 403+43.91
P.C.C. 404+04.91

REVISIONS		
NO.	DATE	BY

TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GRADING PLAN - 1

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 47 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			48	91

Environmental Management
JUL 10 2013
Office of Water Resources

N

VETERANS MEMORIAL DRIVE EXT.

GREENWICH AVENUE

LOR

P.I. 33+11.15

P.I. 35+73.07

L.P.C. 53+76.79

P.T. STA. 49+97.54 G. AVE.

T.P. STA. 108+97.54 G. AVE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GRADING PLAN - 2

CHECKED BY _____ DATE _____ SCALE 1" = 20'

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 48 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_GRADING002.dwg, WETLAND, 11/7/2013 9:05:59 AM, USER03, Canon MFP3-BLK-MAT.pc3, 1:1

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			49	91

Environmental Management
JUL 10 2013
Office of Water Resources

LOR

POST ROAD

VETERANS MEMORIAL DRIVE

LOCKHART AVENUE

POST ROAD EXT.

140+00 P.I. 139+68.71

P.I. 53+92.15

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GRADING PLAN - 3

CHECKED BY _____ DATE _____ SCALE 1" = 20'

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

R.I.D.E.M. APPLICATION SHEET NO. 49 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_GRADING003.dwg, WETLAND, 11/5/2013 10:04:09 AM, dkERSS, CasioWP-BLK-INFT.pc3, 1:1

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			50	91

Environmental Management
JUL 10 2013
Office of Water Resources

POST ROAD

SHOPPEE AVENUE

AMTRAK

WEST SHORE ROAD

LOR

B-20

B-21

P.C. 62+93.65

P.T. 63+81.66

PC-33

61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			51	91

Environmental Management
JUL 10 2013
Office of Water Resources

GREENWICH AVENUE

CENTERVILLE ROAD

POST ROAD

MUSIC LANE

LOR

P.I. 409+53.09

P.I. 12+49.64

106+00 105+00 104+00 103+00 408+00 409+00 410+00 11+00 12+00 13+00

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GRADING PLAN - 5

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 51 OF 91

F:\FILES\CAD\1064\0185A HIGHWAY PLANS\VOLUME 1\0185A_V1_XXX_GRADING005.dwg, WETLAND, 11/5/2013 10:13:24 AM, USER3, CanoWPP-BLK.WPT pc3, 1:1

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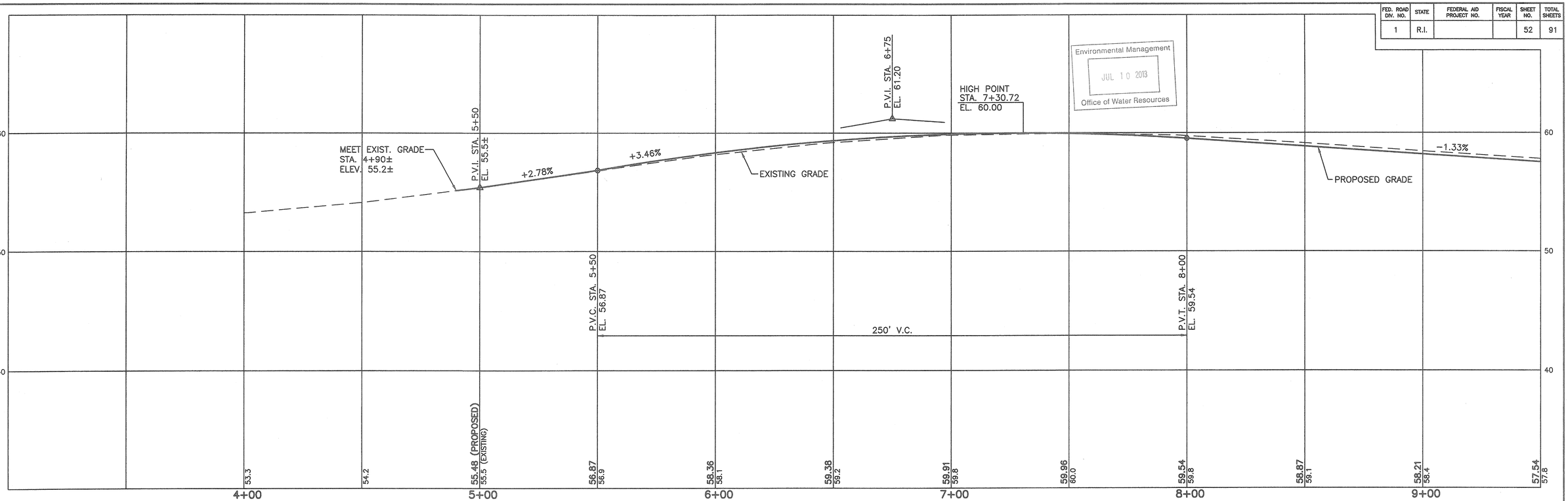
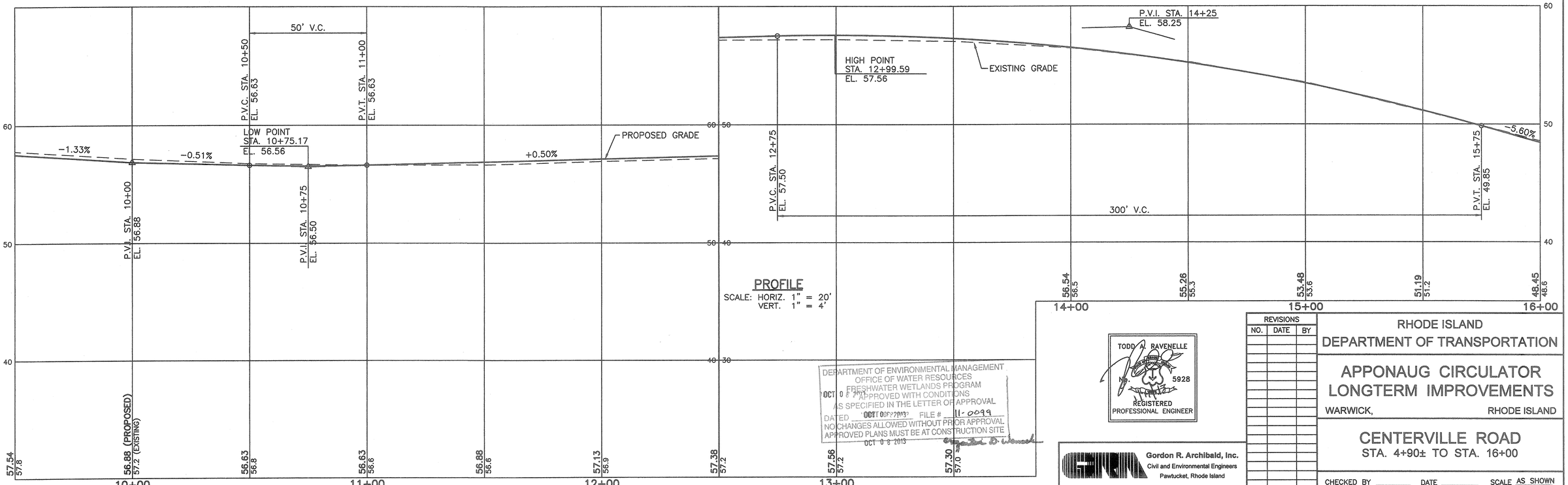
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			52	91





PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
OCT 08 2013 APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE
OCT 08 2013

TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

CENTERVILLE ROAD
STA. 4+90± TO STA. 16+00

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 52 OF 91

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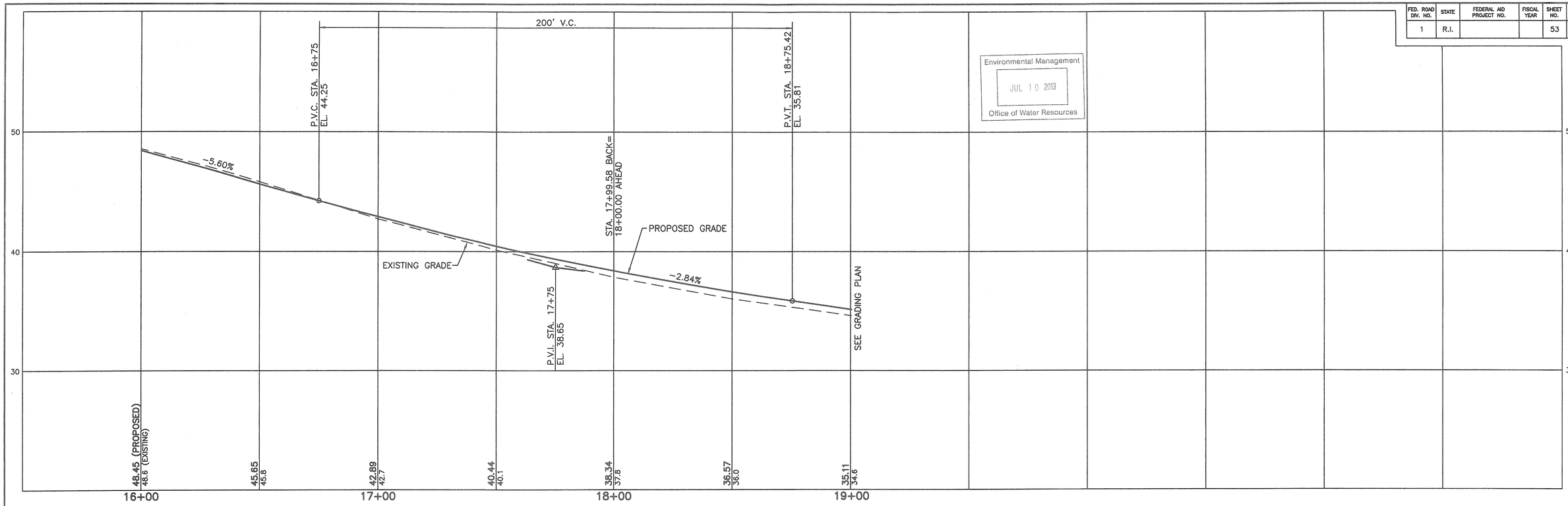
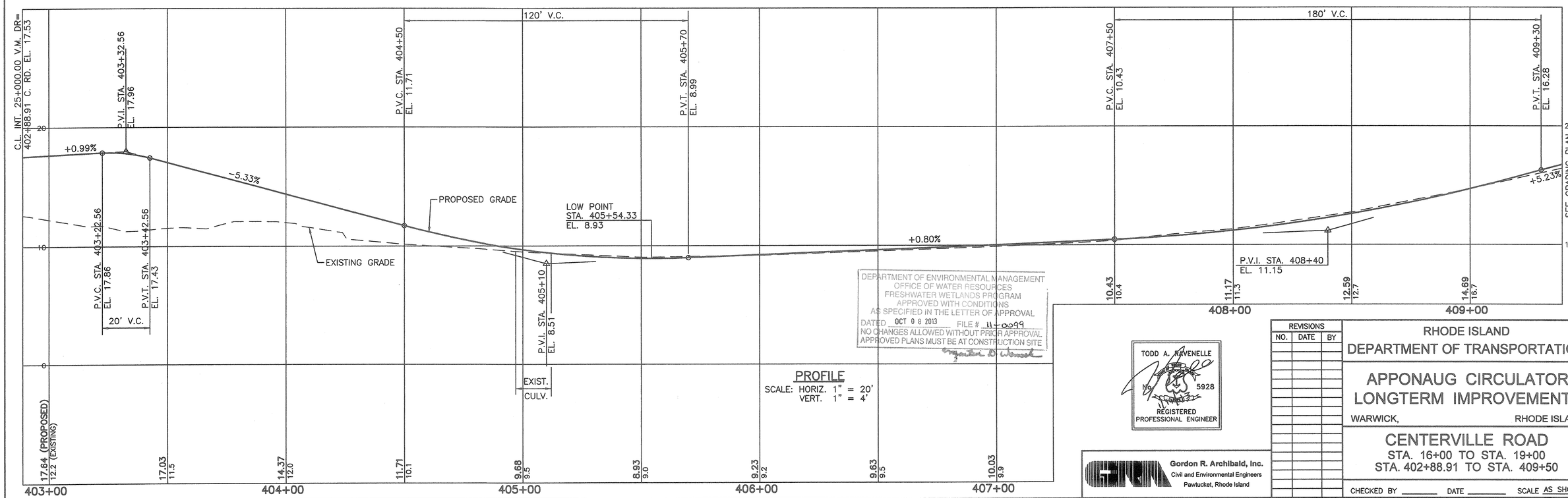
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			53	91



Environmental Management
JUL 10 2013
Office of Water Resources



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

CENTERVILLE ROAD
STA. 16+00 TO STA. 19+00
STA. 402+88.91 TO STA. 409+50

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 53 OF 91

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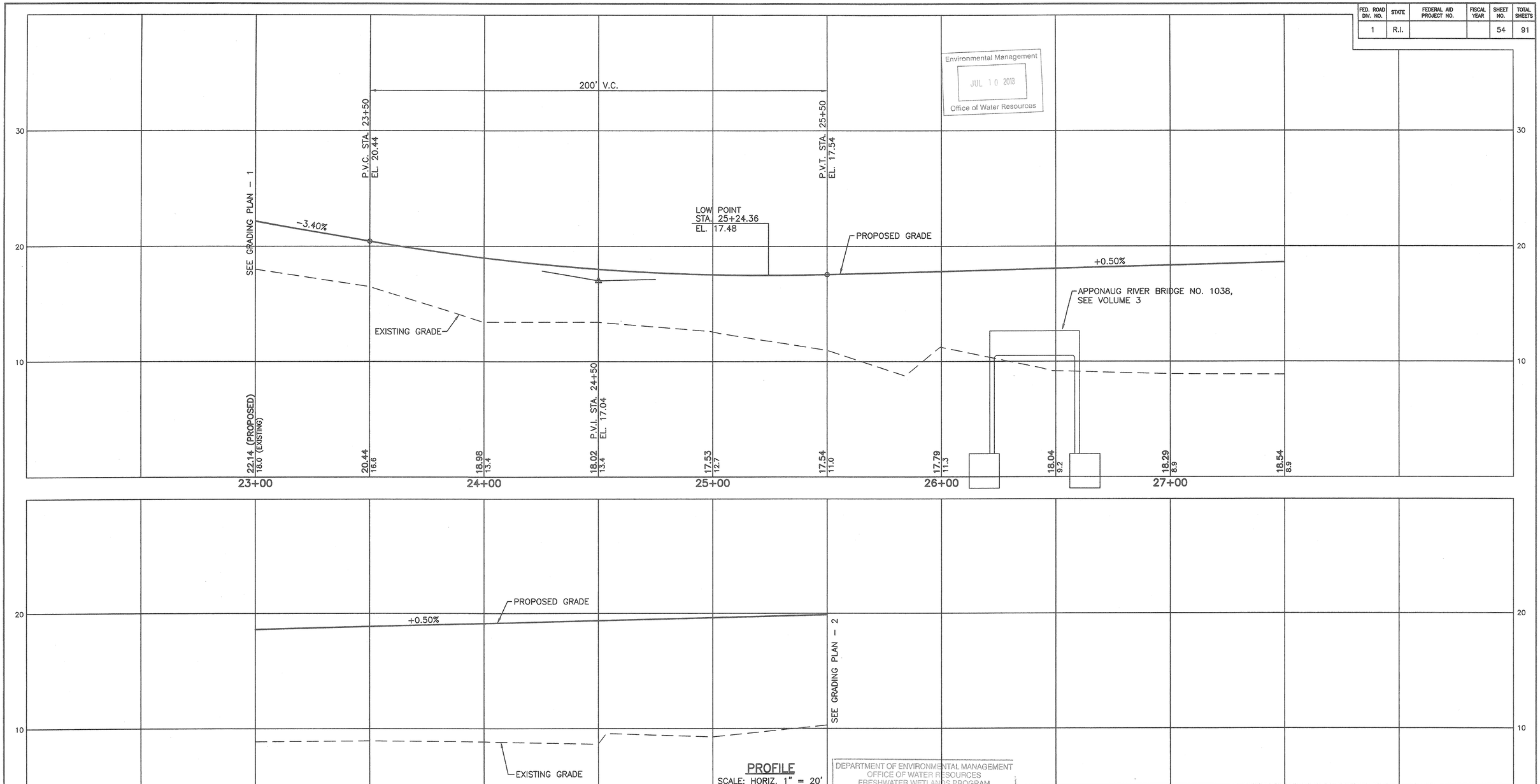
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			54	91



Environmental Management
JUL 10 2013
Office of Water Resources

PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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REGISTERED
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Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

VETERANS MEMORIAL DRIVE EXTENSION

STA. 22+00 TO STA. 32+50

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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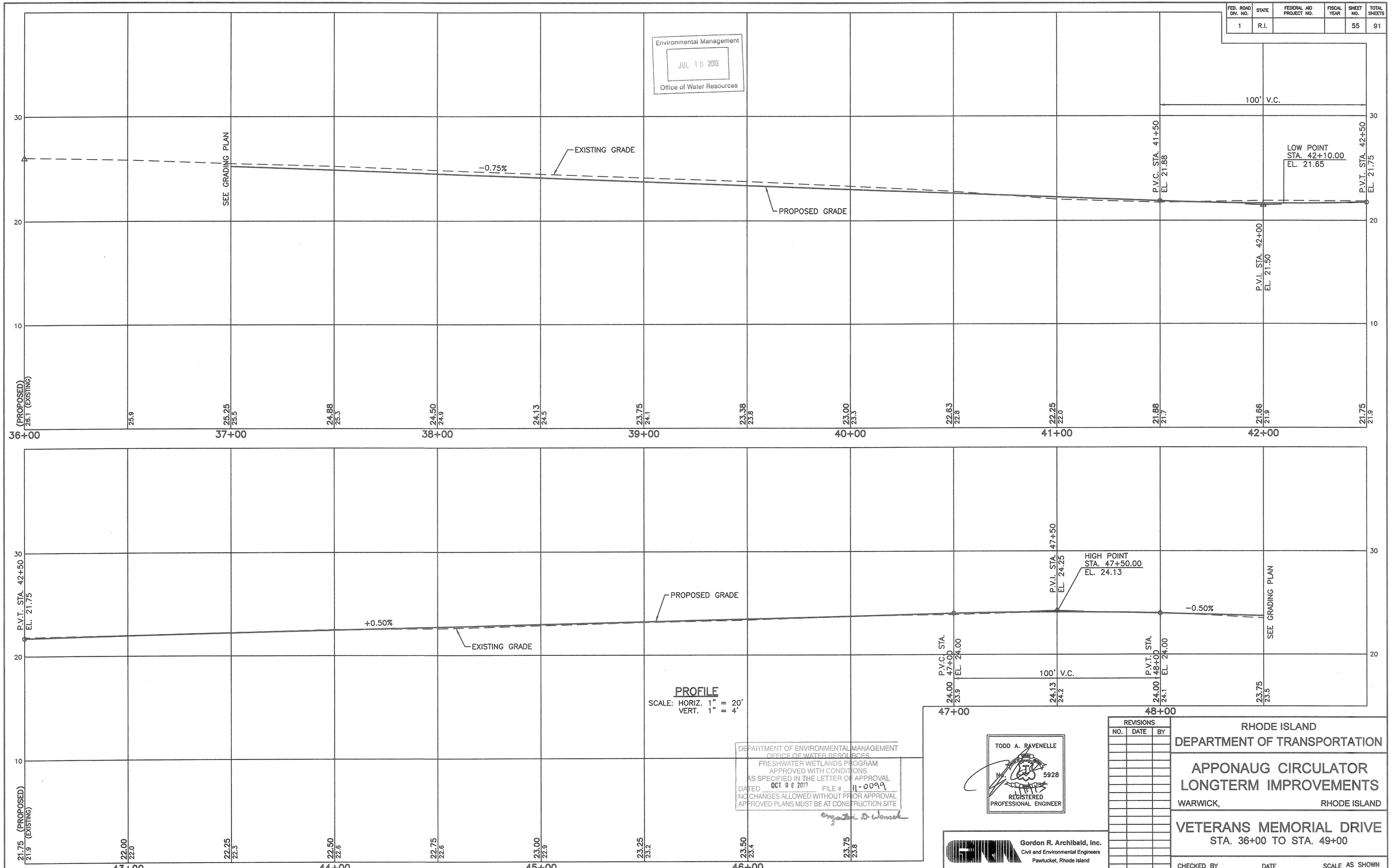
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			55	91

Environmental Management
JUL 10 2013
Office of Water Resources



PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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TODD A. RAVENELLE
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REGISTERED
PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

VETERANS MEMORIAL DRIVE
STA. 36+00 TO STA. 49+00

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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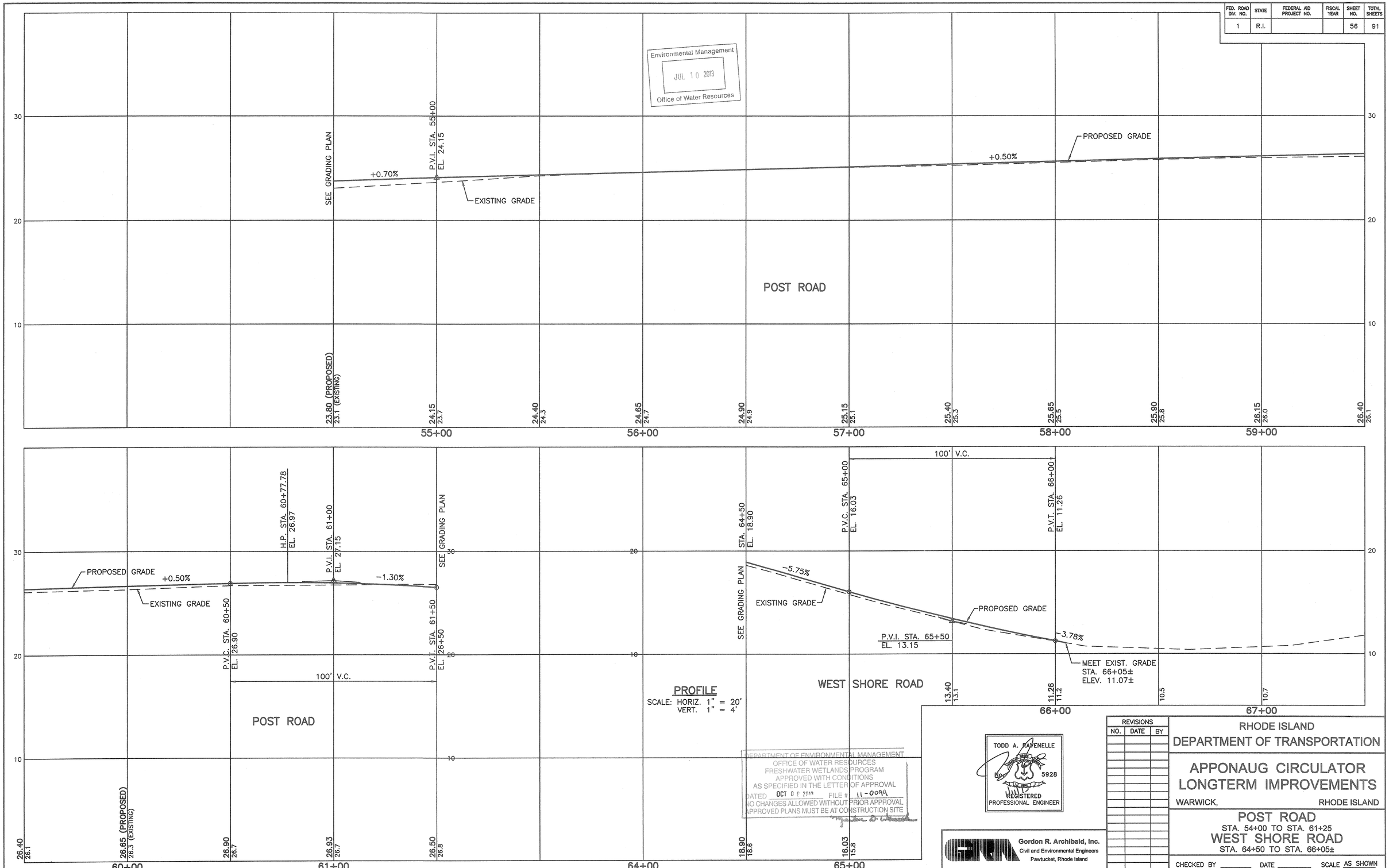
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			56	91

Environmental Management
JUL 10 2013
Office of Water Resources



PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

POST ROAD
STA. 54+00 TO STA. 61+25
WEST SHORE ROAD
STA. 64+50 TO STA. 66+05±

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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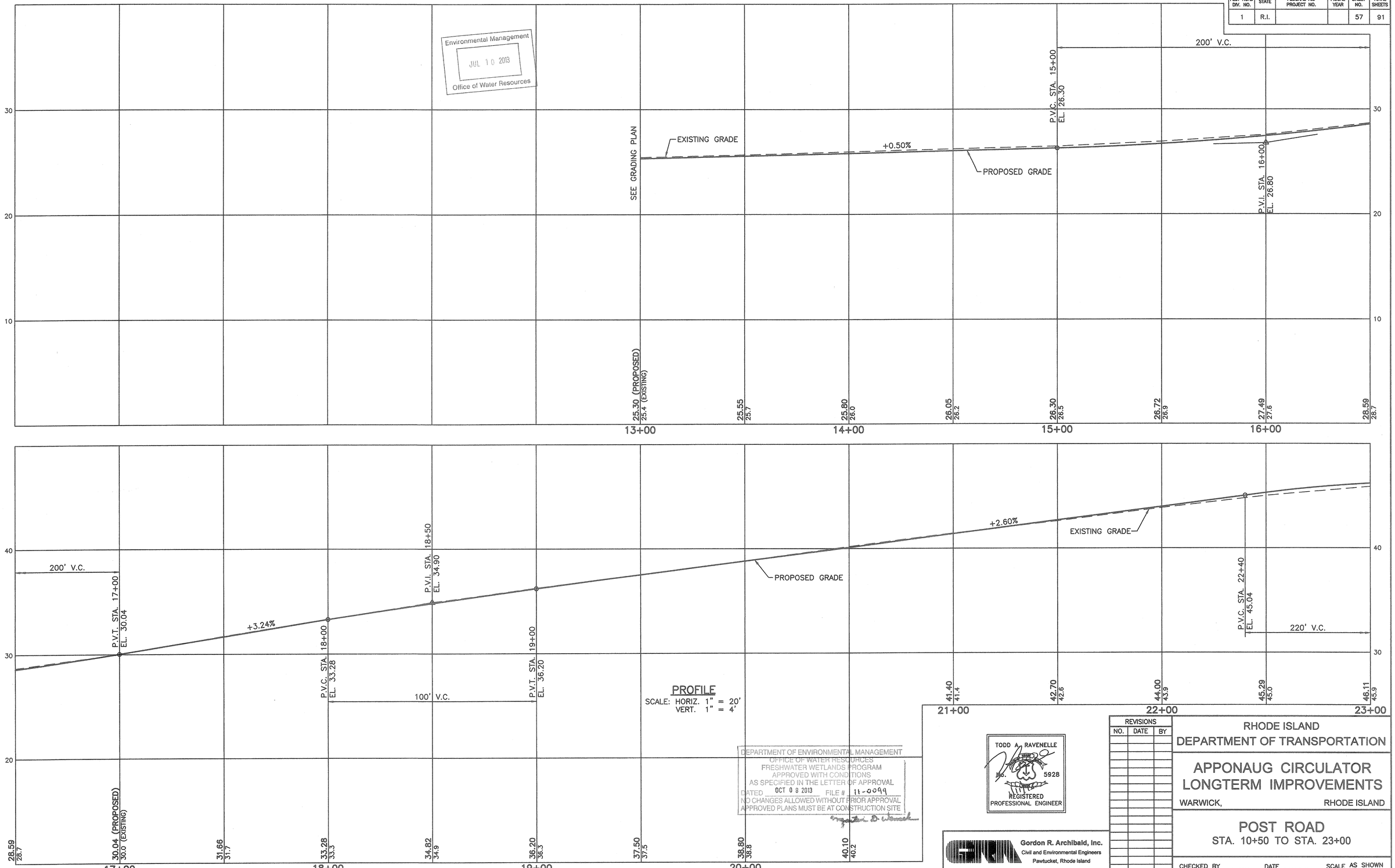
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			57	91

Environmental Management
JUL 10 2013
Office of Water Resources



	13+00	14+00	15+00	16+00
(PROPOSED)	25.30	25.55	25.80	26.05	26.30	26.72	27.49	28.59
(EXISTING)	25.4	25.7	26.0	26.2	26.5	26.9	27.6	28.7

	17+00	18+00	19+00	20+00	21+00	22+00	23+00
(PROPOSED)	28.59	30.04	31.66	33.28	34.82	36.20	37.50	38.80	40.10	41.40	42.70	44.00	45.29	46.11
(EXISTING)	28.7	30.0	31.7	33.3	34.9	36.3	37.5	38.8	40.2	41.4	42.6	43.9	45.0	45.9

PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TODD A. RAVENELLE
No. 5928
REGISTERED
PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

POST ROAD
STA. 10+50 TO STA. 23+00

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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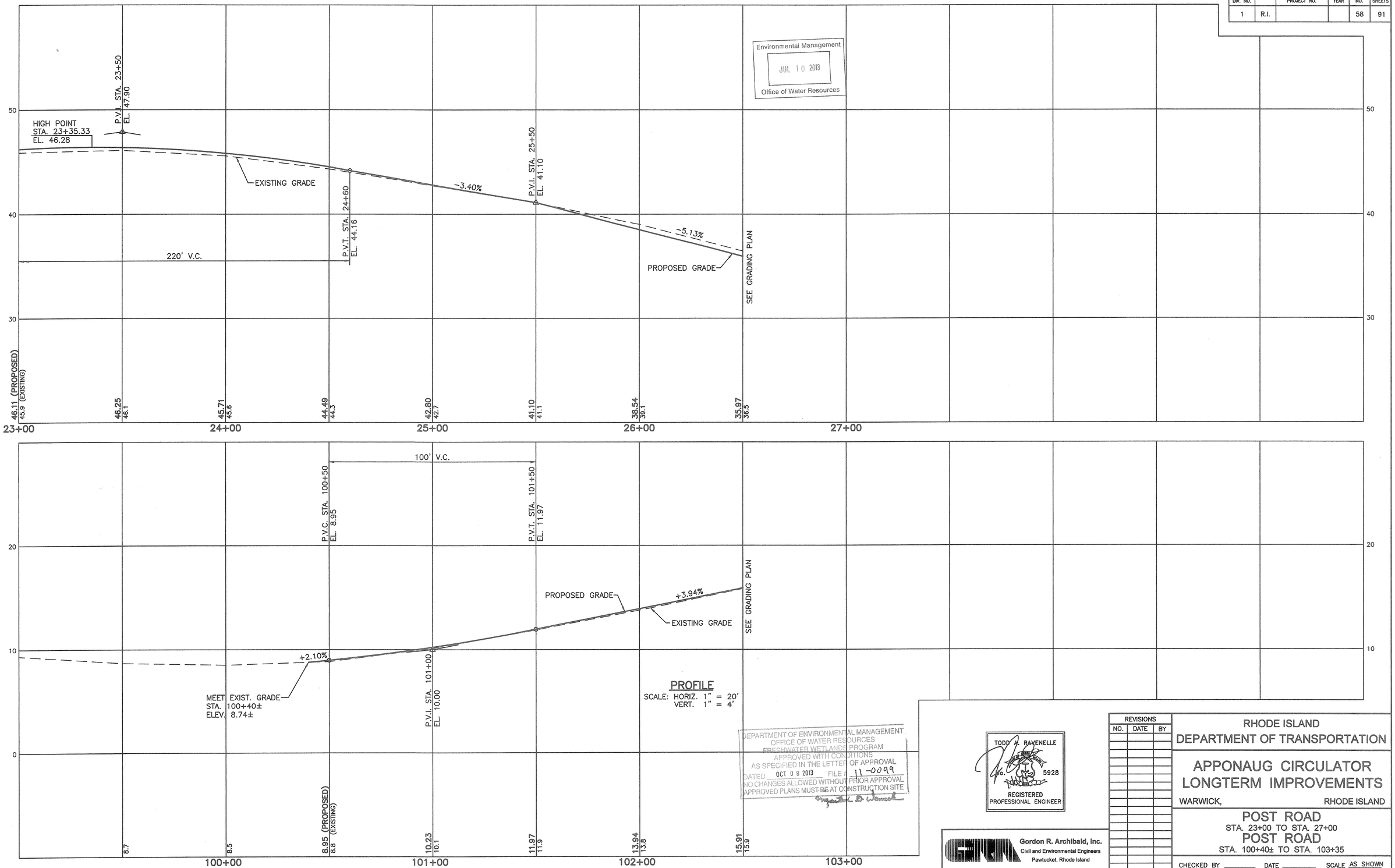
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			58	91

Environmental Management
JUL 10 2013
Office of Water Resources



PROFILE
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

POST ROAD
STA. 23+00 TO STA. 27+00
POST ROAD
STA. 100+40± TO STA. 103+35

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 58 OF 91

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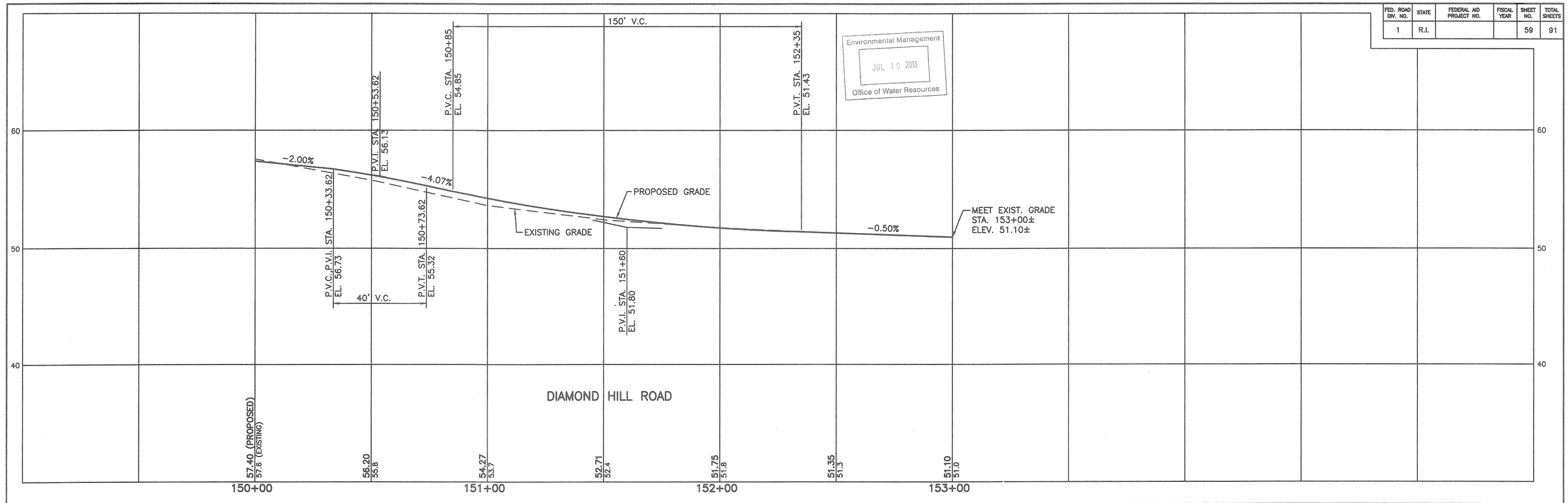
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			59	91



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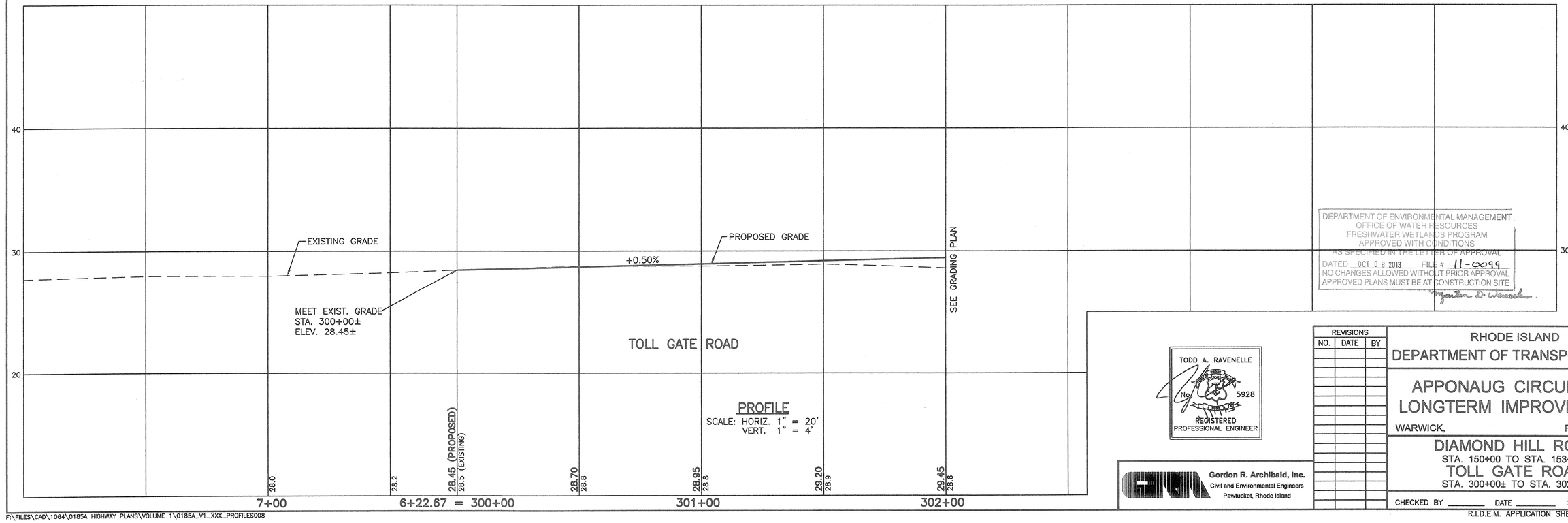
Office of Water Resources



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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

DIAMOND HILL ROAD
STA. 150+00 TO STA. 153+00±
TOLL GATE ROAD
STA. 300+00± TO STA. 302+00

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 59 OF 91

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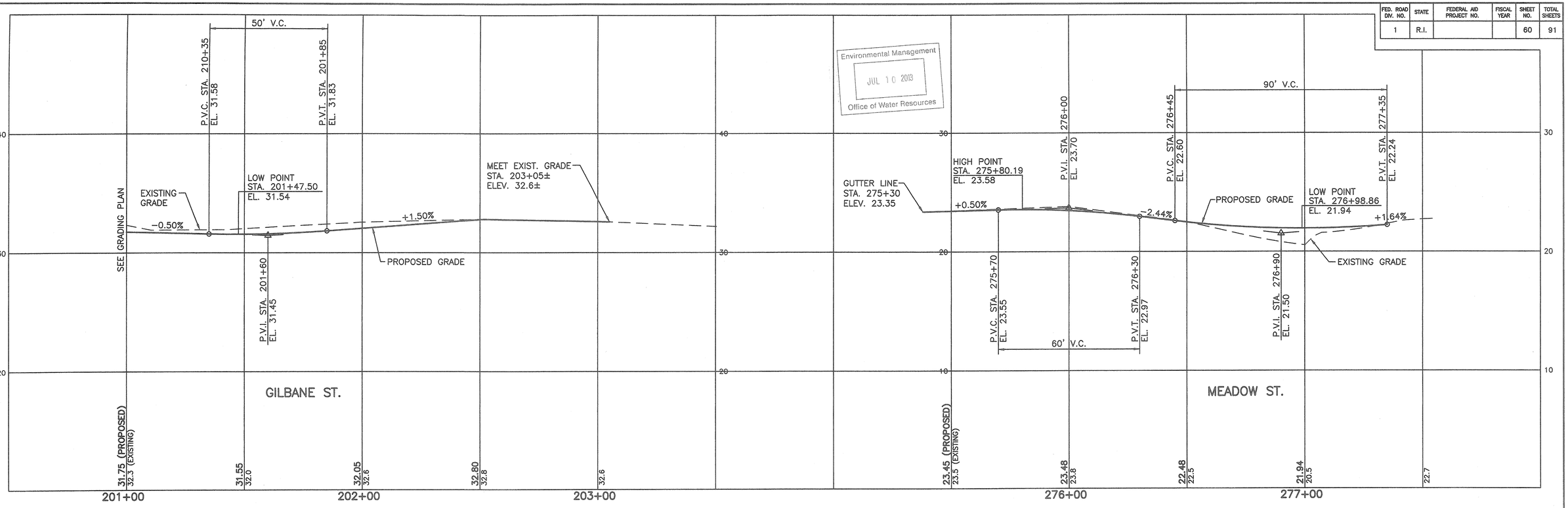
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			60	91



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GILBANE STREET
STA. 200+50 TO STA. 20+60±
MEADOW STREET
STA. 275+55 TO STA. 277+35±
RELOCATED MEADOW STREET
STA. 250+00 TO STA. 253+20±

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 60 OF 91

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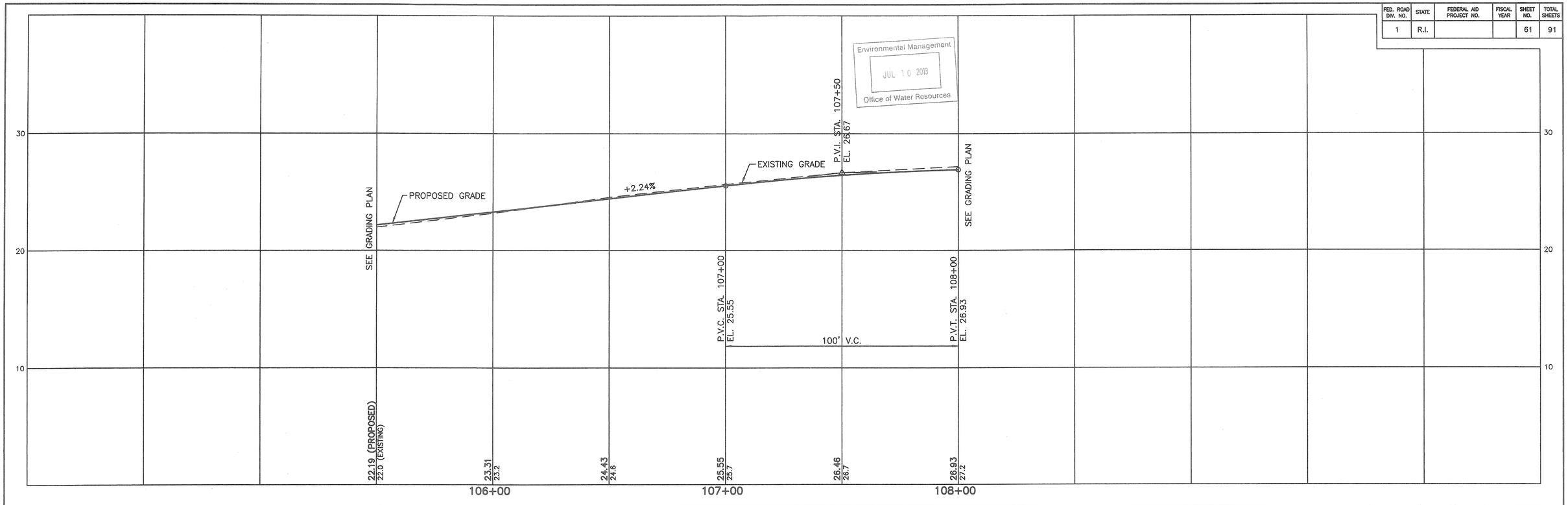
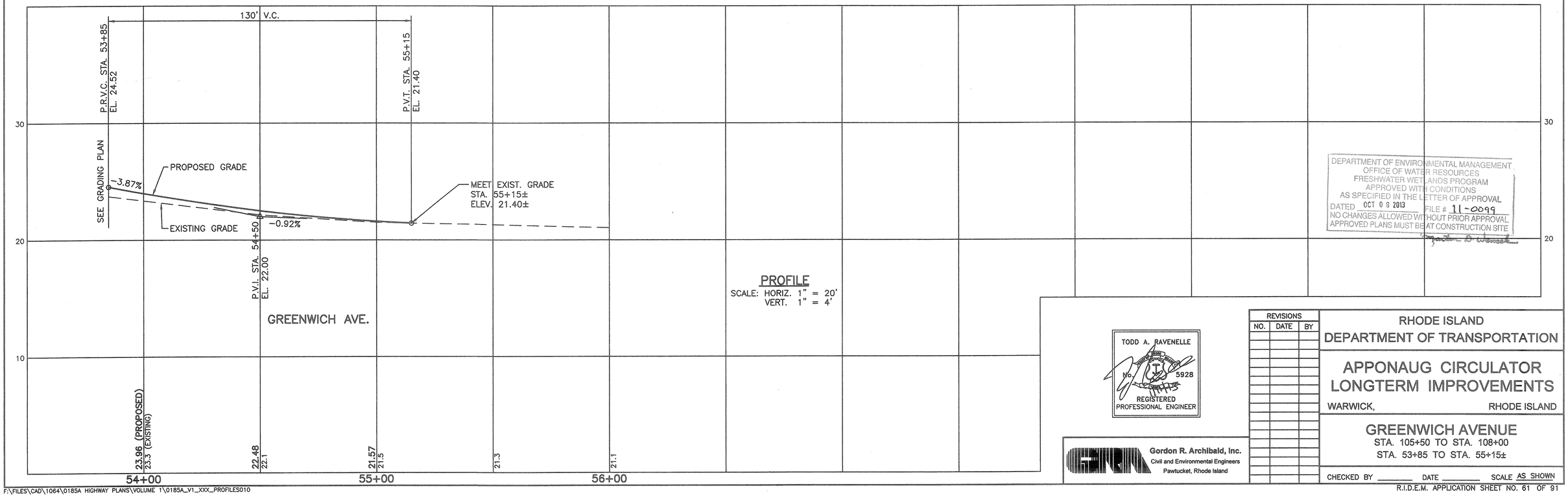
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			61	91

Environmental Management
JUL 10 2013
Office of Water Resources





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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Civil and Environmental Engineers
Pawtucket, Rhode Island

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

GREENWICH AVENUE

STA. 105+50 TO STA. 108+00
STA. 53+85 TO STA. 55+15±

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 61 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			62	91

Environmental Management
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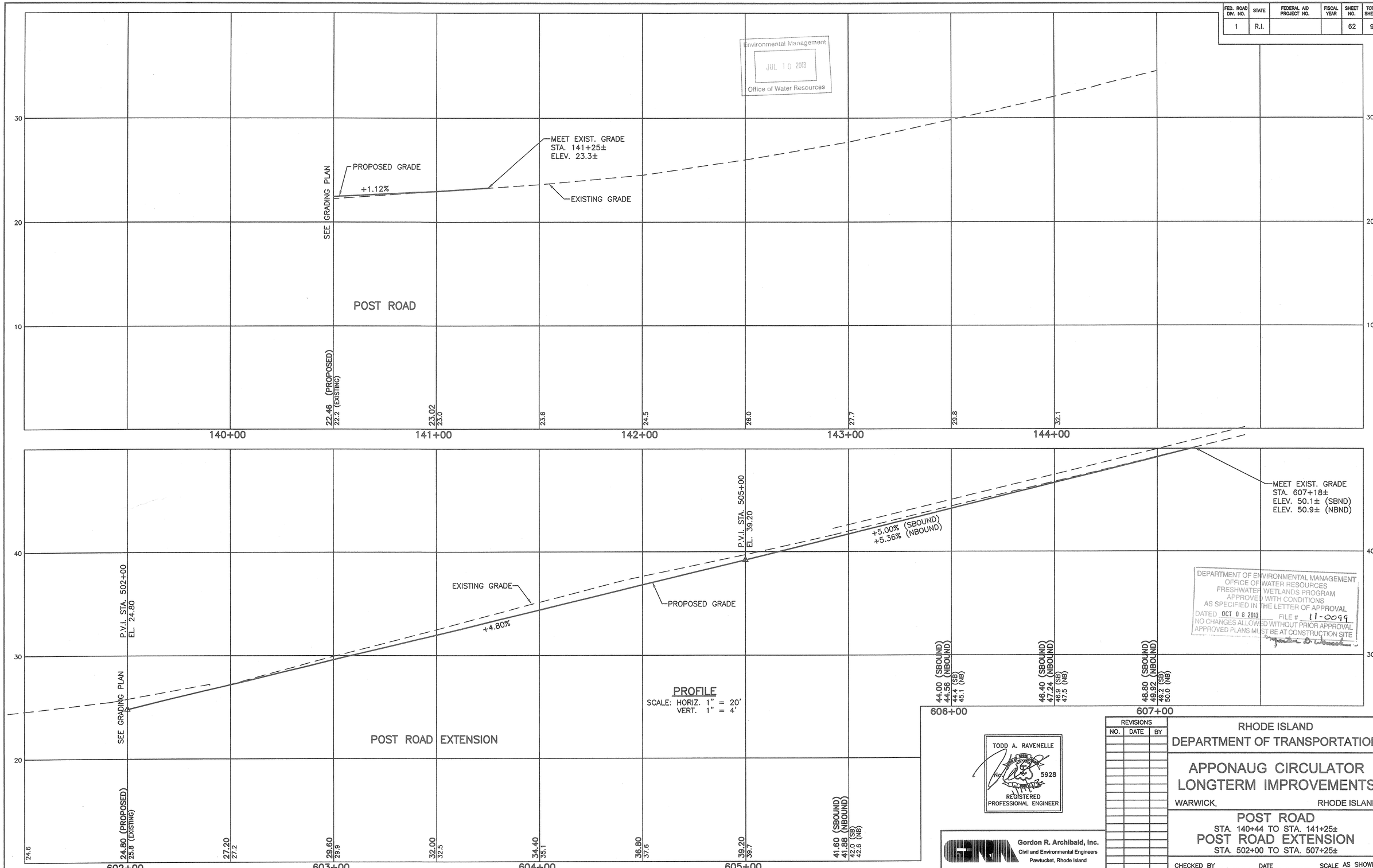

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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

POST ROAD
STA. 140+44 TO STA. 141+25±
POST ROAD EXTENSION
STA. 502+00 TO STA. 507+25±

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 62 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			63	91

TOTAL PROJECT PLANT LIST

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACT	Amelanchier canadensis–Clump (Tallest Height) 'Shadblow Serviceberry–Clump	21	7'–8' Ht.	B&B	Matched	As Shown
ACS	Amelanchier canadensis–Clump (Shortest Height) 'Shadblow Serviceberry–Clump	42	4'–5' Ht.	B&B	Matched	As Shown
AF	Acer x freemanii 'Armstrong' Armstrong Red Maple	55	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
AR	Acer rubrum 'October Glory' October Glory Red Maple	29	2"–2.5" Cal.	B&B	Matched	As Shown
BNT	Betula nigra 'Cully'–Clump (Tallest Height) Heritage River Birch–Clump	14	14'–16' Ht.	B&B	Matched	As Shown
BNM	Betula nigra 'Cully'–Clump (Medium Height) Heritage River Birch–Clump	13	12'–14' Ht.	B&B	Matched	As Shown
BNS	Betula nigra 'Cully'–Clump (Shortest Height) Heritage River Birch–Clump	16	10'–12' Ht.	B&B	Matched	As Shown
GT	Gleditsia tricanthos var. inermis 'Shademaster' Shademaster Honeylocust	10	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
LT	Liriodendron tulipifera Tulip Tree	24	2"–2.5" Cal.	B&B	Matched	As Shown
NS	Nyssa sylvatica Black Tupelo	15	2"–2.5" Cal.	B&B	Matched	As Shown
UC	Ulmus hybrida 'Commendation' Commendation Hybrid Elm	52	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
UH	Ulmus hybrida 'Homestead' Homestead Hybrid Elm	64	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
UP	Ulmus americana 'Princeton' Princeton American Elm	23	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
ZS	Zelkova serrata 'Musashino' Musashino Columnar Japanese Zelkova	13	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Evergreen Trees					
AB	Abies concolor White Fir	3	7'–8' Ht.	B&B	Matched	As Shown
JV	Juniperus virginiana Eastern Red Cedar	43	5'–6' Ht.	B&B	Matched	As Shown
PS	Pinus strobus Eastern White Pine	17	7'–8' Ht.	B&B	Matched	As Shown
TC	Tsuga canadensis Canadian Hemlock	5	5'–6' Ht.	B&B	Matched	As Shown
	Shrubs					
CA	Clethra alnifolia Sweet Pepperbush	121	24"–30" Ht.	Cont.	Matched	5' O.C.
CS	Cornus sericea 'Cardinal' Cardinal Red Twig Dogwood	299	24"–30" Ht.	Cont.	Matched	5' O.C.
IG	Ilex glabra 'Shamrock' Shamrock Inkberry	575	18"–24" Ht.	Cont.	Matched	3' O.C.
IV	Ilex verticillata 'Winter Red' Winter Red Winterberry	226	24"–30" Ht.	Cont.	Matched	5' O.C.
JG	Juniperus virginiana 'Grey Owl' Grey Owl Juniper	45	24"–30" Ht.	B&B	Matched	5' O.C.
MP	Myrica pensylvanica Northern Bayberry	281	24"–30" Ht.	Cont.	Matched	5' O.C.
PM	Prunus maritima Beach Plum	49	24"–30" Ht.	B&B	Matched	5' O.C.
TB	Taxus baccata 'Repandens' Spreading English Yew	186	18"–24" Sp.	B&B	Matched	3' O.C.
VD	Viburnum dentatum Arrowwood Viburnum	283	24"–30" Ht.	Cont.	Matched	5' O.C.
	Ornamental Grasses and Perennials					
CM	Carex morrowii 'Ice Dance' Ice Dance Japanese Sedge	5,419	#1	Cont.	Matched	1.5' O.C.
FG	Festuca glauca 'Elijah Blue' Elijah Blue Fescue	8,817	#1	Cont.	Matched	1' O.C.
HH	Hedera helix 'Baltica' Baltic Ivy	1,344	Flat	Cont.	Matched	0.75' O.C.
MC	Muhlenbergia capillaris Pink Hair Grass	2,553	#2	Cont.	Matched	2.5' O.C.
PH	Pennisetum alopecuroides 'Hameln' Hameln Fountain Grass	1,764	#2	Cont.	Matched	2' O.C.
PL	Pennisetum alopecuroides 'Little Bunny' Little Bunny Dwarf Fountain Grass	3,938	#1	Cont.	Matched	1' O.C.

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
2. ALL PLANT MATERIAL SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
3. ALL PLANT MATERIAL SHALL BE FIELD LOCATED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED

NO PLANTING ON THIS SHEET

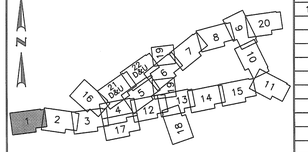
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT MICHAEL J. LEMANSKI JR. No. 329 9/23/2013

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
Fifth Floor
Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

KEY MAP



REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 1

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 63 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			64	91

Environmental Management
JUL 10 2013
Office of Water Resources

E 336,800 E 336,900 E 337,000 N 224,000 E 337,100 E 337,200 E 337,300

N 223,900 N 223,800 N 223,700

MATCH TO PLAN 1 MATCH TO PLAN 3

CENTERVILLE ROAD

DIAMOND HILL RD.

DRUM ROCK RD.

GRAPHIC EXIST. S.H.L., MODIFIED

EXIST. S.H.L., PLAT. 1047

10+00 11+00 12+00 13+00 P.C. 13+40.53

151+00 152+00 153+00

#236 WASHINGTON TRUST BANK

#200 CENTERVILLE PLACE

#181 2 STY. W/F

#171 2 STY. W/F

#172 2 STY. W/F

#7 1 STY. W/F

NO PLANTING ON THIS SHEET

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veriwaterman.com
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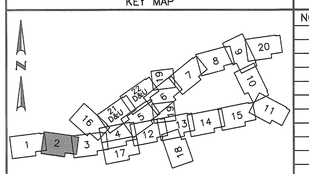
KEY MAP



REVISIONS

NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

07.03.13

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 2

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 64 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE002

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	R.I.			65	91

E 337,200 E 337,300 E 337,400 E 337,500 E 337,600 E 337,700 E 337,800

N 224,000 N 223,900 N 223,800

#1B1 2 STY. W/F

#171 2 STY. W/F

#172 2 STY. W/F

#164 2 STY. W/F

CROSSMAN ENG. #151 2 STY. W/F

#40 1 STY. CONC. BLOCK

#32 BAGEL FACTORY

#142 BOYLE FUNERAL HOME

Environmental Management W/F JUL 10 2013 Office of Water Resources

EXIST. S.H.L., PLAT 1047

MATCH TO PLAN 2

MATCH TO PLAN 4

CENTERVILLE ROAD

BENEFIT STREET

14+00 P.T. 14+73.41 15+00 P.C. 15+79.41 16+00 17+00

17+99.58 BACK=18+00 AHEAD P.T. 17+95.44

PARKING AREA

BIT PARKING AREA

LANDSCAPE NOTES:

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2. ALL PLANT MATERIAL SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
3. ALL PLANT MATERIAL SHALL BE FIELD LOCATED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'-8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
UC	Ulmus hybrida 'Commendation' / Commendation Hybrid Elm	8	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Shrubs					
IG	Ilex glabra 'Shamrock' / Shamrock Inkberry	27	18"–24" Ht.	Cont.	Matched	3' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
Fifth Floor
Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 3

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 65 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE003

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			66	91

E 337,700 E 337,800 E 337,900 E 338,000 N 224,300 E 338,100 E 338,200 E 338,300

N 224,300 N 224,200 N 224,100

MATCH TO PLAN 21

MATCH TO PLAN 16

MATCH TO PLAN 3

MATCH TO PLAN 5

MATCH TO PLAN 17

EXIST. S.H.L., PLAT NO. 2679

TOLL GATE ROAD

VETERANS MEMORIAL DRIVE EXT.

GILBANE ST.

MEADOW STREET

100 2 STY. BRICK

WALL-MOUNTED LETTERING (℄ AT STA. 20+09.5± LEFT). SEE DETAIL SHEET 1

Environmental Management
JUL 10 2013
Office of Water Resources

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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PLANT LIST - THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACT	Amelanchier canadensis-Clump (Tallest Height) / Shadblow Serviceberry-Clump	3	7'-8' Ht.	B&B	Matched	As Shown
AF	Acer x freemani 'Armstrong' / Armstrong Red Maple	6	3"-3.5" Cal.	B&B	6'-8" Std.	As Shown
AR	Acer rubrum 'October Glory' / October Glory Red Maple	1	2"-2.5" Cal.	B&B	Matched	As Shown
BNT	Betula nigra 'Cully'-Clump (Tallest Height) / Heritage River Birch-Clump	6	14'-16' Ht.	B&B	Matched	As Shown
BNM	Betula nigra 'Cully'-Clump (Medium Height) / Heritage River Birch-Clump	6	12'-14' Ht.	B&B	Matched	As Shown
BNS	Betula nigra 'Cully'-Clump (Shortest Height) / Heritage River Birch-Clump	7	10'-12' Ht.	B&B	Matched	As Shown
NS	Nyssa sylvatica / Black Tupelo	1	2"-2.5" Cal.	B&B	Matched	As Shown
UC	Ulmus hybrida 'Commendation' / Commendation Hybrid Elm	15	3"-3.5" Cal.	B&B	6'-8" Std.	As Shown
UH	Ulmus hybrida 'Homestead' / Homestead Hybrid Elm	15	3"-3.5" Cal.	B&B	6'-8" Std.	As Shown

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Evergreen Trees					
JV	Juniperus virginiana / Eastern Red Cedar	5	5'-6' Ht.	B&B	Matched	As Shown
PS	Pinus strobus / Eastern White Pine	4	7'-8' Ht.	B&B	Matched	As Shown
	Shrubs					
IG	Ilex glabra 'Shamrock' / Shamrock Inkberry	219	18"-24" Ht.	Cont.	Matched	3' O.C.
IV	Ilex verticillata 'Winter Red' / Winter Red Winterberry	3	24"-30" Ht.	Cont.	Matched	5' O.C.
	Ornamental Grasses and Perennials					
CM	Carex morrowii 'Ice Dance' / Ice Dance Japanese Sedge	2,489	#1	Cont.	Matched	1.5' O.C.
FG	Festuca glauca 'Elijah Blue' / Elijah Blue Fescue	2,974	#1	Cont.	Matched	1' O.C.
MC	Muhlenbergia capillaris / Pink Hair Grass	236	#2	Cont.	Matched	2.5' O.C.
PH	Pennisetum alopecuroides 'Hameln' / Hameln Fountain Grass	32	#2	Cont.	Matched	2' O.C.
PL	Pennisetum alopecuroides 'Little Bunny' / Little Bunny Dwarf Fountain Grass	1,366	#1	Cont.	Matched	1' O.C.

Prepared by:

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Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

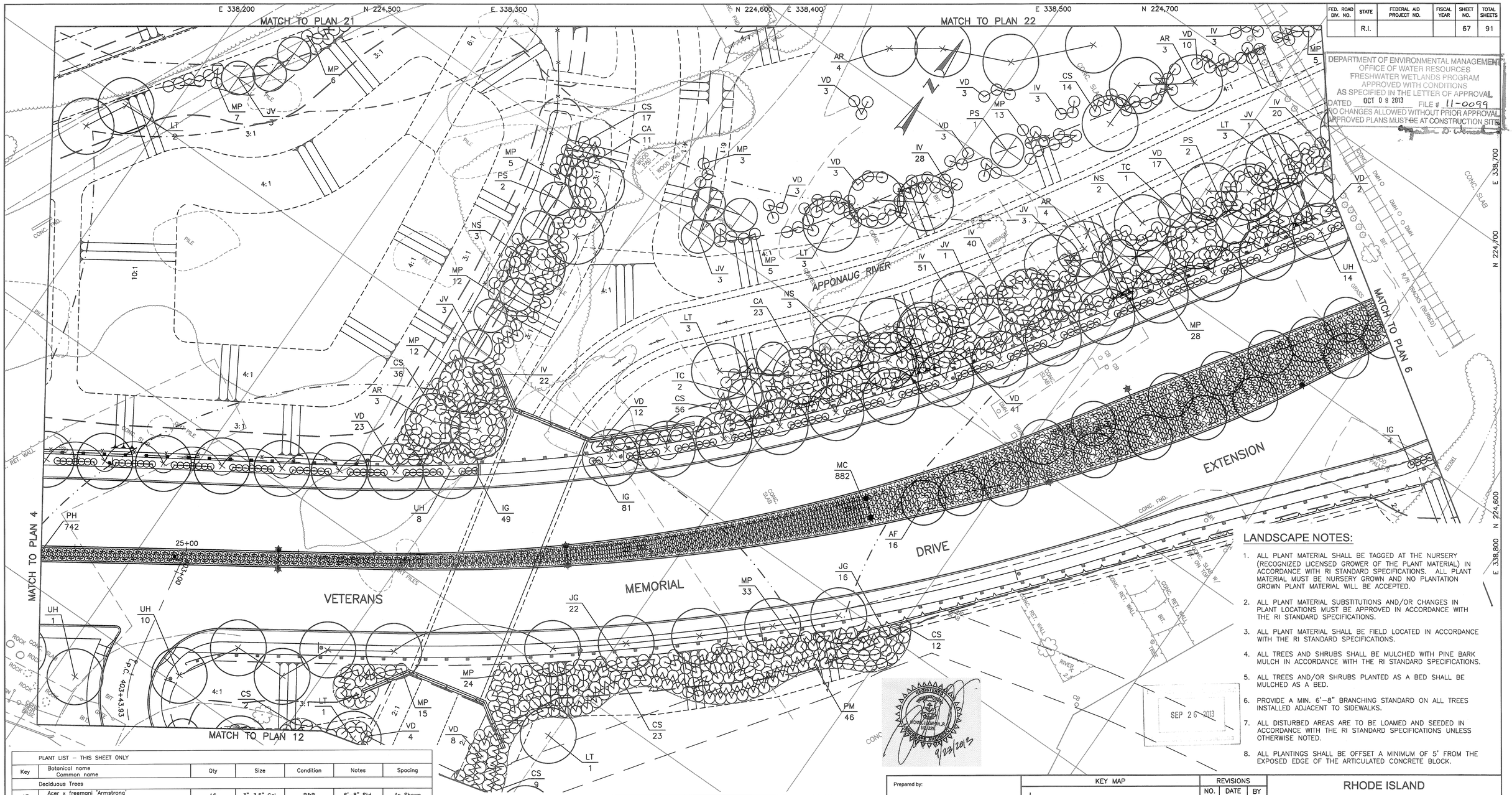
WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 4

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 66 OF 91

J:\CADD\RI0015 - Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE004



FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			67	91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
AF	Acer x freemani 'Armstrong' / Armstrong Red Maple	16	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
AR	Acer rubrum 'October Glory' / October Glory Red Maple	14	2"–2.5" Cal.	B&B	Matched	As Shown
LT	Liriodendron tulipifera / Tulip Tree	13	2"–2.5" Cal.	B&B	Matched	As Shown
NS	Nyssa sylvatica / Black Tupelo	8	2"–2.5" Cal.	B&B	Matched	As Shown
UH	Ulmus hybrida 'Homestead' / Homestead Hybrid Elm	33	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Evergreen Trees					
JV	Juniperus virginiana / Eastern Red Cedar	14	5'–6' Ht.	B&B	Matched	As Shown
PS	Pinus strobus / Eastern White Pine	5	7'–8' Ht.	B&B	Matched	As Shown
TC	Tsuga canadensis / Canadian Hemlock	3	5'–6' Ht.	B&B	Matched	As Shown
	Shrubs					
CA	Clethra alnifolia / Sweet Pepperbush	34	24"–30" Ht.	Cont.	Matched	5' O.C.
CS	Cornus sericea 'Cardinal' / Cardinal Red Twig Dogwood	169	24"–30" Ht.	Cont.	Matched	5' O.C.
IG	Ilex glabra 'Shamrock' / Shamrock Inkberry	134	18"–24" Ht.	Cont.	Matched	3' O.C.
IV	Ilex verticillata 'Winter Red' / Winter Red Winterberry	167	24"–30" Ht.	Cont.	Matched	5' O.C.
JG	Juniperus virginiana 'Grey Owl' / Grey Owl Juniper	38	24"–30" Ht.	Cont.	Matched	5' O.C.
MP	Myrica pensylvanica / Northern Bayberry	168	24"–30" Ht.	Cont.	Matched	5' O.C.
PM	Prunus maritima / Beach Plum	46	24"–30" Ht.	Cont.	Matched	5' O.C.
VD	Viburnum dentatum / Arrowwood Viburnum	132	24"–30" Ht.	Cont.	Matched	5' O.C.
	Ornamental Grasses and Perennials					
MC	Muhlenbergia capillaris / Pink Hair Grass	882	#2	Cont.	Matched	2.5' O.C.
PH	Pennisetum alopecuroides 'Hameln' / Hameln Fountain Grass	742	#2	Cont.	Matched	2' O.C.

SEE SHEET 63 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
8. ALL PLANTINGS SHALL BE OFFSET A MINIMUM OF 5' FROM THE EXPOSED EDGE OF THE ARTICULATED CONCRETE BLOCK.

REGISTERED LANDSCAPE ARCHITECT — THOMAS J. CORREIA JR. — 9/23/2013

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
Fifth Floor
Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

KEY MAP

REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 5

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 67 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE005

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			68	91

E 339,000 N 225,200

PLANT LIST – THIS SHEET ONLY						
Key	Botanical name Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
AF	Acer x freemani 'Armstrong' Armstrong Red Maple	13	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
AR	Acer rubrum 'October Glory' October Glory Red Maple	7	2"–2.5" Cal.	B&B	Matched	As Shown
BNT	Betula nigra 'Cully'–Clump (Tallest Height) Heritage River Birch–Clump	3	14'–16' Ht.	B&B	Matched	As Shown
BNM	Betula nigra 'Cully'–Clump (Medium Height) Heritage River Birch–Clump	2	12'–14' Ht.	B&B	Matched	As Shown
BNS	Betula nigra 'Cully'–Clump (Shortest Height) Heritage River Birch–Clump	3	10'–12' Ht.	B&B	Matched	As Shown
LT	Liriodendron tulipifera Tulip Tree	6	2"–2.5" Cal.	B&B	Matched	As Shown
NS	Nyssa sylvatica Black Tupelo	5	2"–2.5" Cal.	B&B	Matched	As Shown
UH	Ulmus hybrida 'Homestead' Homestead Hybrid Elm	11	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
UP	Ulmus americana 'Princeton' Princeton American Elm	1	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Evergreen Trees					
JV	Juniperus virginiana Eastern Red Cedar	24	5'–6' Ht.	B&B	Matched	As Shown
PS	Pinus strobus Eastern White Pine	6	7'–8' Ht.	B&B	Matched	As Shown
TC	Tsuga canadensis Canadian Hemlock	2	5'–6' Ht.	B&B	Matched	As Shown
	Shrubs					
CA	Clethra alnifolia Sweet Pepperbush	75	24"–30" Ht.	Cont.	Matched	5' O.C.
CS	Cornus sericea 'Cardinal' Cardinal Red Twig Dogwood	89	24"–30" Ht.	Cont.	Matched	5' O.C.
IG	Ilex glabra 'Shamrock' Shamrock Inkberry	94	18"–24" Ht.	Cont.	Matched	3' O.C.
IV	Ilex verticillata 'Winter Red' Winter Red Winterberry	39	24"–30" Ht.	Cont.	Matched	5' O.C.
MP	Myrica pensylvanica Northern Bayberry	69	24"–30" Ht.	Cont.	Matched	5' O.C.
VD	Viburnum dentatum Arrowwood Viburnum	82	24"–30" Ht.	Cont.	Matched	5' O.C.
	Ornamental Grasses and Perennials					
CM	Carex morrowii 'Ice Dance' Ice Dance Japanese Sedge	1,303	#1	Cont.	Matched	1.5' O.C.
FG	Festuca glauca 'Elijah Blue' Elijah Blue Fescue	2,328	#1	Cont.	Matched	1' O.C.
MC	Muhlenbergia capillaris Pink Hair Grass	692	#2	Cont.	Matched	2.5' O.C.
PH	Pennisetum alopecuroides 'Hameln' Hameln Fountain Grass	415	#2	Cont.	Matched	2' O.C.
PL	Pennisetum alopecuroides 'Little Bunny' Little Bunny Dwarf Fountain Grass	1,021	#1	Cont.	Matched	1' O.C.

SEE SHEET 63 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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SEP 26 2013

Prepared by:
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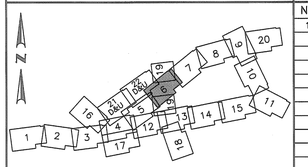
KEY MAP



Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 6

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 68 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE006

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			69	91

E 339,100 N 225,300 E 339,200 N 225,400 E 339,300 N 225,500 E 339,400 N 225,600 E 339,500

N 225,600 E 339,600 N 225,500 E 339,700 N 225,400

MATCH TO PLAN 6

MATCH TO PLAN 8

LUTHER AVENUE

WEST PLEASANT ST.

VETERANS MEMORIAL DRIVE

EXIST. S.H.L., PLAT 229?

HONEY DEW DONUTS #141

WARWICK FIRE DEPT. HEADQUARTERS #111

WARV 1 STY WTF #19

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
JUL 10 2013
Office of Water Resources

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
AF	Acer x freemani 'Armstrong' / Armstrong Red Maple	11	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
UP	Ulmus americana 'Princeton' / Princeton American Elm	18	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Ornamental Grasses and Perennials					
MC	Muhlenbergia capillaris / Pink Hair Grass	409	#2	Cont.	Matched	2.5' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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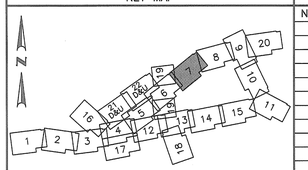
KEY MAP



Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

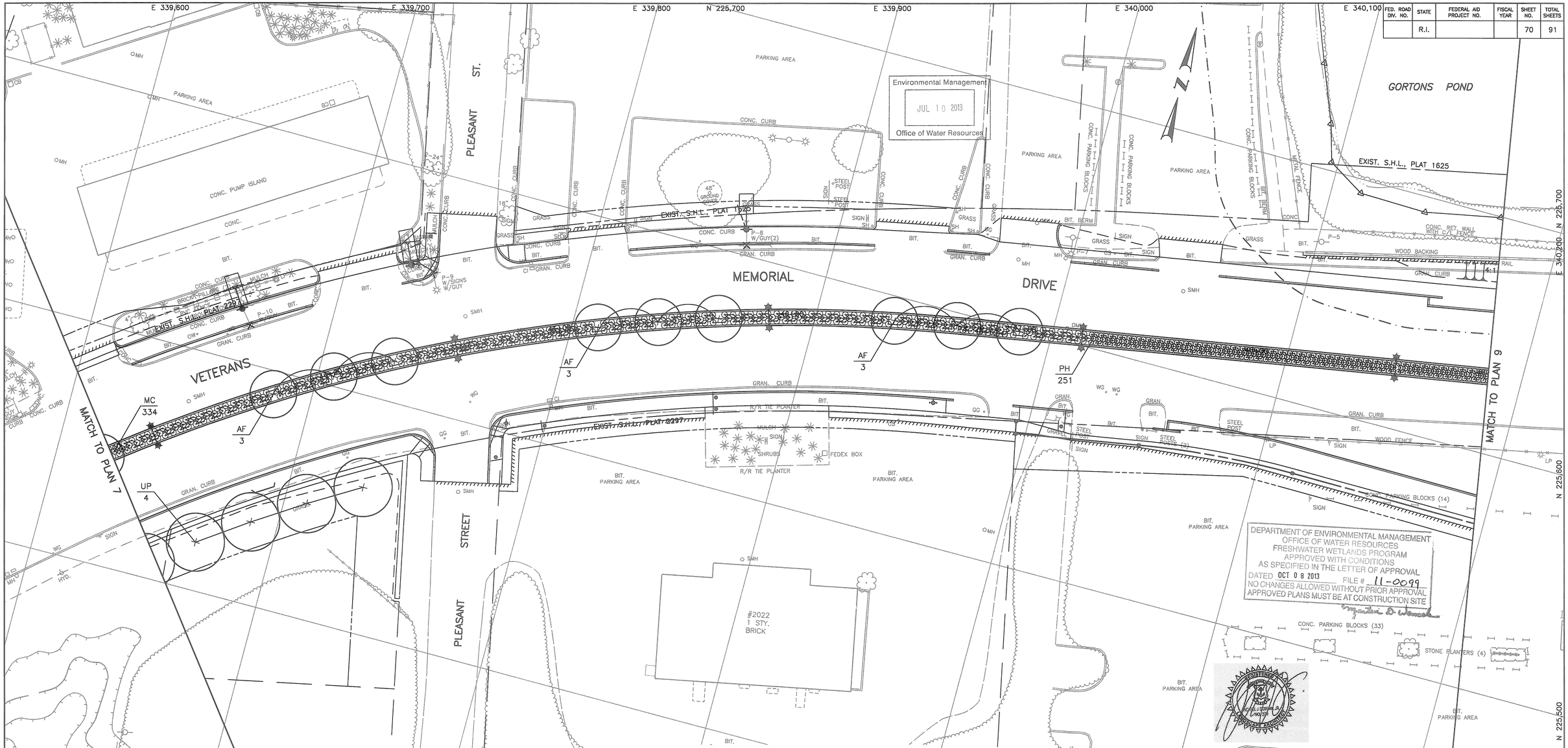
LANDSCAPE PLAN - 7

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 69 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE007

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			70	91



Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
AF	Acer x freemani 'Armstrong' Armstrong Red Maple	9	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
UP	Ulmus americana 'Princeton' Princeton American Elm	4	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Ornamental Grasses and Perennials					
MC	Muhlenbergia capillaris Pink Hair Grass	334	#2	Cont.	Matched	2.5' O.C.
PH	Pennisetum alopecuroides 'Hameln' Hameln Fountain Grass	251	#2	Cont.	Matched	2' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
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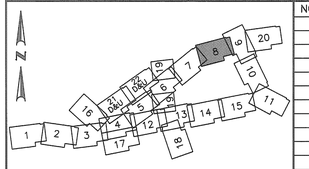
3. ALL PLANT MATERIAL SHALL BE FIELD LOCATED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED

Prepared by:
VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
Fifth Floor
Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP



Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 8

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 70 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE008

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			71	91

N 226,000 N 225,900 E 340,500 N 225,800 N 225,700 E 340,600 N 225,600 N 225,500

MATCH TO PLAN 20

MATCH TO PLAN 8

MATCH TO PLAN 10

POST ROAD

POST ROAD EXT.

VETERANS MEMORIAL DRIVE

LOCKHART AVENUE

EXIST. S.H.L., PLAT 1625

EDGE OF WATER 2/54 (S.H.P. #625)

EX. S.H.L., PLAT NO. 104

EXIST. S.H.L., PLAT 2297

GORTONS POND

WALL-MOUNTED LETTERING (℄ AT STA. 52+10.0± LEFT). SEE DETAIL SHEET 1

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

1 STY. BRICK NATIONAL GRID SUBSTATION #3065

PAYLESS AUTO GLASS #3066

LANDSCAPE NOTES:

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7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
BNT	Betula nigra 'Cully'–Clump (Tallest Height) Heritage River Birch–Clump	5	14'–16' Ht.	B&B	Matched	As Shown
BNM	Betula nigra 'Cully'–Clump (Medium Height) Heritage River Birch–Clump	5	12'–14' Ht.	B&B	Matched	As Shown
BNS	Betula nigra 'Cully'–Clump (Shortest Height) Heritage River Birch–Clump	6	10'–12' Ht.	B&B	Matched	As Shown
UC	Ulmus hybrida 'Commendation' Commendation Hybrid Elm	6	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Shrubs					
IG	Ilex glabra 'Shamrock' Shamrock Inkberry	41	18"–24" Ht.	Cont.	Matched	3' O.C.
MP	Myrica pensylvanica Northern Bayberry	5	24"–30" Ht.	Cont.	Matched	5' O.C.
	Ornamental Grasses and Perennials					
CM	Carex morrowii 'Ice Dance' Ice Dance Japanese Sedge	1,627	#1	Cont.	Matched	1.5' O.C.
FG	Festuca glauca 'Elijah Blue' Elijah Blue Fescue	2,719	#1	Cont.	Matched	1' O.C.
PH	Pennisetum alopecuroides 'Hameln' Hameln Fountain Grass	324	#2	Cont.	Matched	2' O.C.
PL	Pennisetum alopecuroides 'Little Bunny' Little Bunny Dwarf Fountain Grass	1,232	#1	Cont.	Matched	1' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

Prepared by:
VERI | WATERMAN ASSOCIATES, INC.
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veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP

REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 9

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 71 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE009

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			72	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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N 225,400 E 340,700 N 225,300 N 225,200 E 340,800 N 225,100 N 225,000 N 224,900 E 340,900

E 340,900 N 224,800 E 340,800 E 340,700

PAYLESS AUTO GLASS #3066
2 1/2 STY. W/F #3070
1 STY. STONE #3076
1 STY. W/F #3086
1 STY. W/F #3090
1 STY. CONC. #3096
1 STY. W/F #3100
#3126 ROGER WILLIAMS AUTO SALES 2 STY. BRICK
2 STY. W/F #3087
1 STY. W/F #3081
2 STY. W/F #3103
1 STY. W/F #3127
1 STY. W/F #3135
2 STY. W/F #3143

KENT AVENUE
LOCUST AVENUE
POST ROAD
COYLE STREET
OAK STREET
SPRUCE STREET

MATCH TO PLAN 9
MATCH TO PLAN 11

EXIST. S.H.L., PLAT 2297

P.I. 56+33.32

56+00 57+00 58+00 59+00 60+00 61+00

NO PLANTING ON THIS SHEET

LANDSCAPE NOTES:

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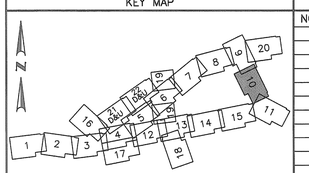
KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 10

CHECKED BY _____ DATE _____ SCALE 1" = 20'

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE010

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			73	91

E 340,800 E 340,900 N 224,800 E 341,000 N 224,700 E 341,100 E 341,200 E 341,300

N 224,500 N 224,400

MATCH TO PLAN 10

MATCH TO PLAN 15

POST ROAD

SHIPPEE AVENUE

WEST SHORE ROAD

COLLEGE STREET

BROOK MEADOW FLOW SWEET

AMTRAK

62+00 63+00 64+00 65+00 66+00 67+00 27+00

P.C. 62+93.65

P.T. 63+81.66

2 STY. BRICK #3661

1 STY. BRICK #3145

2 STY. W/F #3143

3 STY. W/F #3155

2 STY. W/F #3670

TB 64

TB 122

ACT 7

GT 10

B

EXIST. S.H.L., PLAT 2297

EXIST. S.H.L., PLAT 496

CORRECTED EXPL 2/05/07

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
JUL 10 2013
Office of Water Resources

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACT	Amelanchier canadensis–Clump (Tallest Height) / Shadblow Serviceberry–Clump	7	7'–8' Ht.	B&B	Matched	As Shown
GT	Gleditsia triacanthos var. inermis 'Shademaster' / Shademaster Honeylocust	10	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Shrubs					
TB	Taxus baccata 'Repandens' / Spreading English Yew	186	18"–24" Sp.	B&B	Matched	3' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
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A Division of Waterman Design Associates, Inc., Westborough, MA

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

KEY MAP

REVISIONS NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 11

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 73 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE011

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			74	91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
LT	Liriodendron tulipifera Tulip Tree	4	3"–3.5" Cal.	B&B	Matched	As Shown
ZS	Zelkova serrata 'Musashino' Musashino Columnar Japanese Zelkova	9	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Evergreen Trees					
AB	Abies concolor White Fir	3	7'–8' Ht.	B&B	Matched	As Shown
	Shrubs					
CA	Clethra alnifolia Sweet Pepperbush	5	24"–30" Ht.	Cont.	Matched	5' O.C.
CS	Cornus sericea 'Cardinal' Cardinal Red Twig Dogwood	38	24"–30" Ht.	Cont.	Matched	5' O.C.
MP	Myrica pensylvanica Northern Bayberry	22	24"–30" Ht.	Cont.	Matched	5' O.C.
VD	Viburnum dentatum Arrowwood Viburnum	55	24"–30" Ht.	Cont.	Matched	5' O.C.

SEE SHEET 63 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. NORMILE, JR.
9/23/2013

SEP 26 2013

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
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Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 12

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 74 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE012

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			75	91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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Environmental Management
JUL 10 2013
Office of Water Resources

PLANT LIST – THIS SHEET ONLY						
Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACT	Amelanchier canadensis–Clump (Tallest Height) / Shadblow Serviceberry–Clump	8	7'–8' Ht.	B&B	Matched	As Shown
ACS	Amelanchier canadensis–Clump (Shortest Height) / Shadblow Serviceberry–Clump	10	4'–5' Ht.	B&B	Matched	As Shown
	Ornamental Grasses and Perennials					
FG	Festuca glauca 'Elijah Blue' / Elijah Blue Fescue	796	#1	Cont.	Matched	1' O.C.
HH	Hedera helix 'Baltica' / Baltic Ivy	320	Flat	Cont.	Matched	0.75' O.C.
PL	Pennisetum alopecuroides 'Little Bunny' / Little Bunny Dwarf Fountain Grass	319	#1	Cont.	Matched	1' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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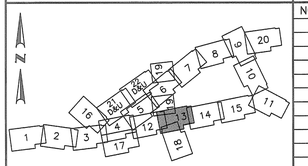
KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 13

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 75 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE013

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			76	91

E 339,500 N 224,500 E 339,600 E 339,700 E 339,800 E 339,900 E 340,000

N 224,500

PARKING AREA

LIBRARY #3267

2 STY. BRICK #3259

ST. BARNABA'S CHURCH 1 STY. STONE #3257

Environmental Management
JUL 10 2013
Office of Water Resources

2 STY. W/F #3239

2 STY. W/F #3235

2 STY. W/F #3227

2 STY. W/F #3225

PLEASANT STREET

UNITED STATES POST OFFICE

MONUMENT

EDGES

GRASS

GRAN. CURB

BRICK PAVERS

BRICK STEPS

CONC. STEPS

STONE RET. WALL

CONC. PLANTER

BRICK PLANTER

SPRINKLERS

ELEC. BOX

CONC. RET. WALL

BRICK PILLARS(2)

USM9(4)

EXISTING H.H.E. PLAT. 2237

MATCH TO PLAN 13

MATCH TO PLAN 15

POST ROAD

15+00 16+00 17+00 18+00 19+00 20+00

P.I. 20+02.53

ACS 1 | ACS 4 | ACS 5 | ACS 3 | ACS 2 | ACS 3 | ACS 3

HH 32

P-332 P-331 P-555 P-327

W/SIGN

STONES

WOOD FENCE

WOOD PLANTER

2 STY. W/F #3220

2 STY. W/F #3214

#3228 1 STY. CONC. BLOCK PLACE JEWELLERS

2 STY. W/F #3226

ZS 4

COLONIAL AVENUE

#3252 2 STY. BRICK ST. CATHERINE RECTORY

ST. CATHERINE CHURCH

#3270 WARWICK CENTRAL BAPTIST CHURCH

COLLEGE STREET

E 340,100

N 224,300

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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PLANT LIST – THIS SHEET ONLY						
Key	Botanical name Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACS	Amelanchier canadensis–Clump (Shortest Height) Shadblow Serviceberry–Clump	24	4'–5' Ht.	B&B	Matched	As Shown
ZS	Zelkova serrata 'Musashino' Musashino Columnar Japanese Zelkova	4	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Ornamental Grasses and Perennials					
HH	Hedera helix 'Baltica' Baltic Ivy	768	Flat	Cont.	Matched	0.75' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

LANDSCAPE NOTES:

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4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
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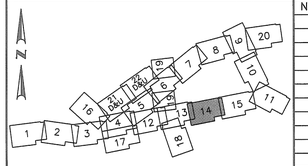
Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 14

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 76 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE014

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			77	91

N 224,600 E 340,100 E 340,200 E 340,300 E 340,400 E 340,500 N 224,700

N 224,700 N 224,600 N 224,500 N 224,400

PARKING AREA

UNITED STATES POST OFFICE

2 STY. BRICK #3205

UNITED STATES POST OFFICE

CONC. RAMP

PROSPECT STREET

SPRUCE STREET

2 STY. W/F #3191

2 STY. W/F #3187

2 STY. W/F #3181

3 STY. W/F #3155

2 STY. W/F #3165

2 STY. BRICK #3159

PLASTIC PLANTER

EXIST. S.H.L., PLAT 2297

BRICK PILLARS(2)

CONC. STEPS

CONC. RET. WALL

STONE RET. WALL

BRICK STEPS

GRASS

GRAN CURB

STONE CURB

C/L FENCE

CONC. STEPS W/ METAL RAIL

P-657 LP USMB(4)

P-651 W/SIGN

P-120 W/SIGNS

MATCH TO PLAN 14

MATCH TO PLAN 14

21+00 22+00 23+00 24+00 25+00 26+00

P.C. 24+40.53

P.T. 26+19.46

POST ROAD

ACS 3 HH 32 HH 32 HH 32

ACS 1 HH 32

ACS 4 HH 32 HH 32 HH 32 HH 32

P-324 W/SIGNS P-325 W/SIGNS P-323 W/SIGNS P-322(3) W/SIGN & GUY P-321(2) W/SIGN

EXIST. S.H.L., PLAT 2297

IL W/PED.'CS

LP W/SIGN

HYD.

ELEC. BOX

CONC. STEPS

3196

2 STY. BRICK #3192 #3190

2 STY. W/F #3220

2 STY. W/F #3214

2 STY. W/F #3200

3 STY. W/F #3198

1 STY. W/F #3210

GARAGE

1 STY. W/F #3194

2 STY. W/F

2 STY. W/F #3188

2 STY. W/F #3174

3 STY. W/F #3166

2 STY. W/F #3160

WOOD PLANTER

BRICK PLANTER

C/L FENCE

OHH

GUY

COLLEGE STREET

NG AREA

Environmental Management

JUL 10 2013

Office of Water Resources

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
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7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.

PLANT LIST – THIS SHEET ONLY						
Key	Botanical name Common name	Qty	Size	Condition	Notes	Spacing
Deciduous Trees						
ACS	Amelanchier canadensis–Clump (Shortest Height) Shadblow Serviceberry–Clump	8	4'–5' Ht.	B&B	Matched	As Shown
Ornamental Grasses and Perennials						
HH	Hedera helix 'Baltica' Baltic Ivy	256	Flat	Cont.	Matched	0.75' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 09 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Prepared by:

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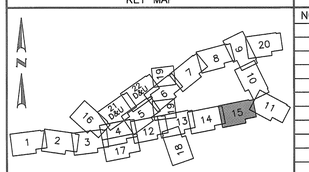

REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 15

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 77 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE015

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			78	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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E 337,400 E 337,500 N 224,600 E 337,600 N 224,500 E 337,700 N 224,400 E 337,800 N 224,300

MATCH TO PLAN 21

MATCH TO PLAN 4

B-1J B-1H B-1I B-1J

EXISTING S.H.L., PLAT NO. 2679

EXISTING S.H.L., PLAT NO. 1047

TOLL GATE ROAD

HARDING STREET

CALEF STREET

BROOK FLOW

#77 2 STY. STONE

#62 2 STY. W/F

#58 2 STY. W/F

#48 WIZ KIDS EARLY LEARNING CENTER 1 STY. BRICK

#40 1 STY. CONC. BLOCK

P.T. 9+27.97 PC. 8+28.17 P.T. 301+86.54 PC. 301+00.00

UC 2 IG 32 IG 17 UC 2

N 224,100 E 337,800 N 224,000 E 337,700

LANDSCAPE NOTES:

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PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
UC	Ulmus hybrida 'Commendation' / Commendation Hybrid Elm	4	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Shrubs					
IG	Ilex glabra 'Shamrock' / Shamrock Inkberry	49	18"–24" Ht.	Cont.	Matched	3' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

Prepared by:
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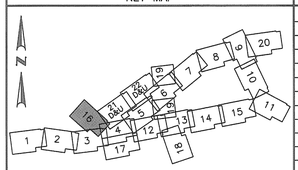
KEY MAP



Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 16

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 78 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE016

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			79	91

E 337,800 E 337,900 E 338,000 N 224,000 E 338,100 E 338,200 E 338,300 E 338,400 N 224,000 N 223,900

MATCH TO PLAN 4

MATCH TO PLAN 12

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
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REGISTERED LANDSCAPE ARCHITECT — RICHARD J. LEDDY, R.L.A. — No. 1551

PLANT LIST – THIS SHEET ONLY

Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
ACT	Amelanchier canadensis–Clump (Tallest Height) / Shadblow Serviceberry–Clump	3	7'–8' Ht.	B&B	Matched	As Shown

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

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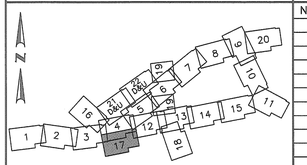

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 17

CHECKED BY _____ DATE _____ SCALE 1" = 20'

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			80	91

N 223,500 N 223,600 E 339,000 N 223,700 N 223,800 N 223,900 E 338,900 N 224,000 N 224,100

E 338,800 E 339,000 E 339,100 N 224,200

CUMBERLAND FARMS

PARKING AREA

MEADOW STREET

RIVER

#3351
2 STY W/F

#3349
WARWICK
CLEANERS

#3341/3343/3345

#3333/3335

#3327
GULF STATION

EXIST. SHL PLAT 2307A

EXIST. SHL PLAT 2297

EXIST. SHL PLAT 2345

Environmental Management
JUL 10 2013
Office of Water Resources

PARKING AREA
CONC. PAD W/PUMPS
BIT. BERM
STONE RET. WALL
CONC. CURB
BRICK PAVERS
GRAN. CURB
BRIDGE RAIL
CONC. RET. WALL
IRON FENCE
WOOD STEPS
STEEL MOORING
SPOT LIGHTS
SHRUBS
GRASS
GRAVEL
CONC. STEPS
MULCH
PUMP ISLAND
CONC. APRON
TELEPHONE BOOTH
VERIZON
RIP-RAP
IRRIGATION BOX
Cercis canadensis 1.5"cal. B&B
Cornus florida 1.5"cal. B&B

99+00 100+00 101+00 102+00 103+00

POST ROAD

MATCH TO PLAN 13

SMITHMACK & ASSOCIATES

#3376
THE REMINGTON
HOUSE INN

#3356
EAGLE LUMBER

#3336
WALGREENS

APPONAUG WATER STREET

MUSIC LANE

NO PLANTING ON THIS SHEET

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 8 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

LANDSCAPE NOTES:

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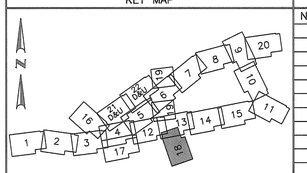
KEY MAP



REVISIONS		
NO.	DATE	BY

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

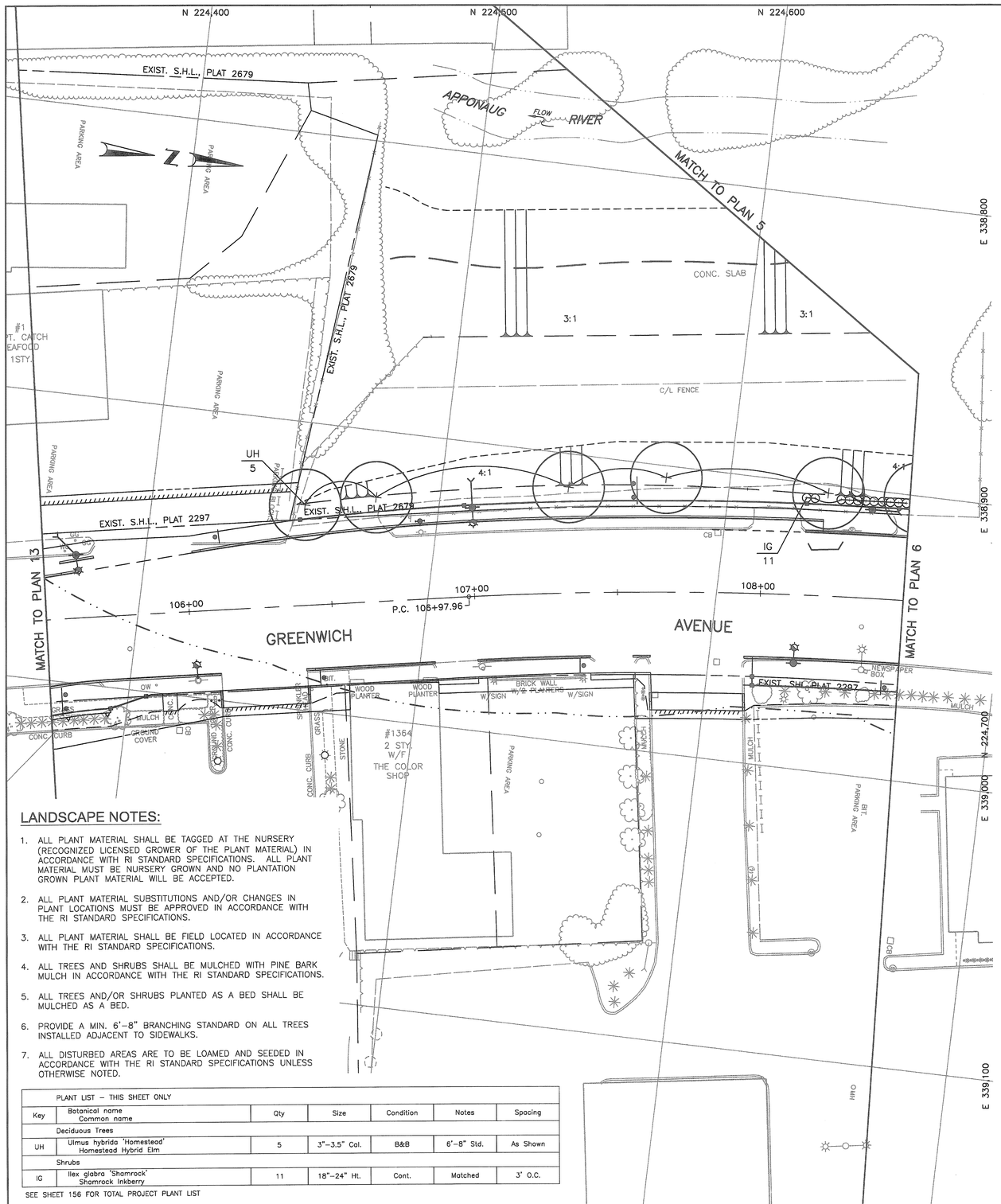
WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 18

CHECKED BY _____ DATE _____ SCALE 1" = 20'

J:\CADD\RI0015 - Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE018

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			81	91



LANDSCAPE NOTES:

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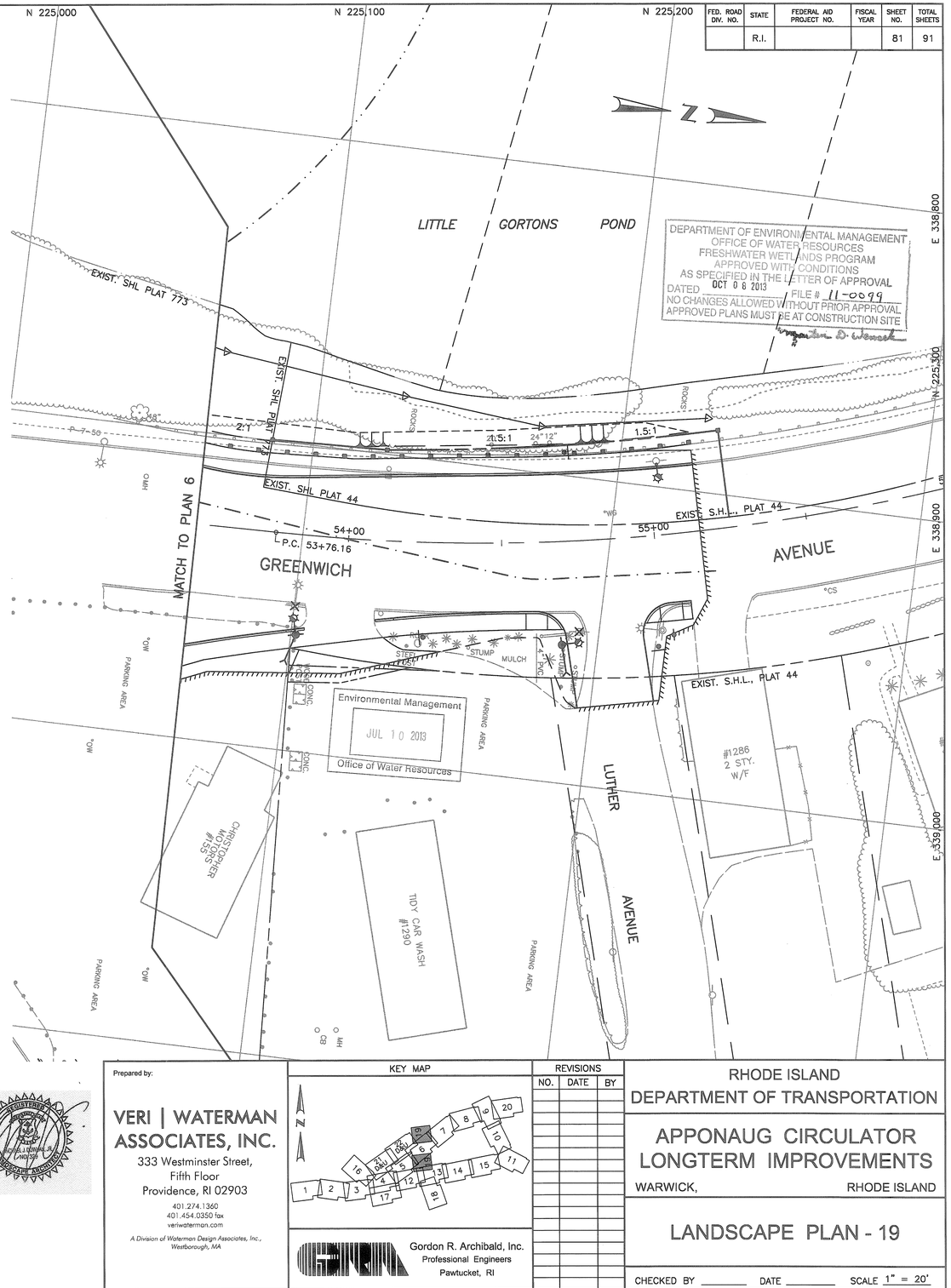
PLANT LIST – THIS SHEET ONLY						
Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
UH	Ulmus hybrida 'Homestead' / Homestead Hybrid Elm	5	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
	Shrubs					
IG	Ilex glabra 'Shamrock' / Shamrock Inkberry	11	18"–24" Ht.	Cont.	Matched	3' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED OCT 0 8 2013 FILE # 11-0099
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
JUL 1 0 2013
Office of Water Resources

REGISTERED LANDSCAPE ARCHITECT

Prepared by:

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Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 19

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 81 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE019

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			82	91

Environmental Management
JUL 10 2013
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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PLANT LIST – THIS SHEET ONLY						
Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
Deciduous Trees						
AR	Acer rubrum 'October Glory' / October Glory Red Maple	3	2"–2.5" Cal.	B&B	Matched	As Shown
UC	Ulmus hybrida 'Commendation' / Commendation Hybrid Elm	19	3"–3.5" Cal.	B&B	6'–8" Std.	As Shown
Shrubs						
JG	Juniperus virginiana 'Grey Owl' / Grey Owl Juniper	7	24"–30" Ht.	B&B	Matched	5' O.C.
MP	Myrica pensylvanica / Northern Bayberry	17	24"–30" Ht.	B&B	Matched	5' O.C.
PM	Prunus maritima / Beach Plum	3	24"–30" Ht.	B&B	Matched	5' O.C.

SEE SHEET 156 FOR TOTAL PROJECT PLANT LIST

Prepared by:

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Pawtucket, RI

KEY MAP

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 20

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 82 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE020

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			83	91

N 224,500 E 337,700 E 337,800 N 224,600 E 337,900 E 338,000 N 224,700 E 338,100 E 338,200 N 224,800 E 338,300 N 224,600

MATCH TO PLAN 16

MATCH TO PLAN 22

MATCH TO PLAN 4

MATCH TO PLAN 5

APPROX. STREAM

APPROX. STREAM

APPROX. STREAM

HARDING

BROOK

CONC. END

CONC. R.P. WALL

PILE

PILE

SEP 26 2013

VD 8

CA 7

NS 1

IV 11

CS 3

LT 1

IV 6

PS 2

3:1

3:1

3:1

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
2. ALL PLANT MATERIAL SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
3. ALL PLANT MATERIAL SHALL BE FIELD LOCATED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.

PLANT LIST – THIS SHEET ONLY

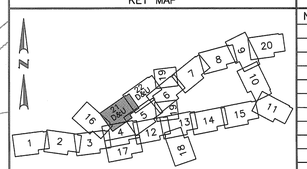
Key	Botanical name / Common name	Qty	Size	Condition	Notes	Spacing
	Deciduous Trees					
LT	Liriodendron Tulipifera / Tulip Tree	1	2"–2.5" Cal.	B&B	Matched	As Shown
NS	Nyssa sylvatica / Black Tupelo	1	2"–2.5" Cal.	B&B	Matched	As Shown
	Evergreen Trees					
PS	Pinus strobus / Eastern White Pine	2	7'–8' Ht.	B&B	Matched	As Shown
	Shrubs					
CA	Clethra alnifolia / Sweet Pepperbush	7	24"–30" Ht.	Cont.	Matched	5' O.C.
CS	Cornus sericea 'Cardinal' / Cardinal Red Twig Dogwood	3	24"–30" Ht.	Cont.	Matched	5' O.C.
IV	Ilex verticillata 'Winter Red' / Winter Red Winterberry	17	24"–30" Ht.	Cont.	Matched	5' O.C.
VD	Viburnum dentatum / Arrowwood Viburnum	8	24"–30" Ht.	Cont.	Matched	5' O.C.

SEE SHEET 63 FOR TOTAL PROJECT PLANT LIST

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

REGISTERED LANDSCAPE ARCHITECT
MICHAEL J. DOMINA, JR.
9/23/2013

KEY MAP



REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

Prepared by:

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333 Westminster Street,
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veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 21

CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 83 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE021

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			84	91

E 338,100 E 338,200 N 224,900 E 338,300 N 225,000 E 338,400 N 225,100 E 338,500 E 338,600

N 225,100

N 225,000

E 338,800

MATCH TO PLAN 21

MATCH TO PLAN 5

MATCH TO PLAN 6

APPONAUG RIVER

APPONAUG RIVER

APPONAUG RIVER

KETTLE ST.

LITTLE GORTONS POND

AR 2

AR 2

VD 3

VD 3

6:1

4:1

2:1

1:1

PILE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED OCT 0 8 2013 FILE # 111-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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SEP 26 2013

CRMC

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF THE PLANT MATERIAL) IN ACCORDANCE WITH RI STANDARD SPECIFICATIONS. ALL PLANT MATERIAL MUST BE NURSERY GROWN AND NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
2. ALL PLANT MATERIAL SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATIONS MUST BE APPROVED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
3. ALL PLANT MATERIAL SHALL BE FIELD LOCATED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
4. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
5. ALL TREES AND/OR SHRUBS PLANTED AS A BED SHALL BE MULCHED AS A BED.
6. PROVIDE A MIN. 6'–8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS.
7. ALL DISTURBED AREAS ARE TO BE LOAMED AND SEEDED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.

PLANT LIST – THIS SHEET ONLY						
Key	Botanical name Common name	Qty	Size	Condition	Notes	Spacing
Deciduous Trees						
AR	Acer rubrum 'October Glory' October Glory Red Maple	4	2"–2.5" Cal.	B&B	Matched	As Shown
Shrubs						
VD	Viburnum dentatum Arrowwood Viburnum	6	24"–30" Ht.	Cont.	Matched	5' O.C.

SEE SHEET 63 FOR TOTAL PROJECT PLANT LIST

REGISTERED LANDSCAPE ARCHITECT EDWARD C. HARRIS, JR. 9/23/2013

Prepared by:

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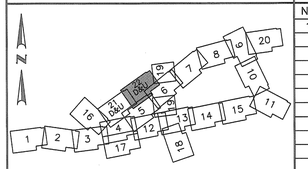
A Division of Waterman Design Associates, Inc., Westborough, MA

KEY MAP



Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY
1.	9.23.13	ECV

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE PLAN - 22

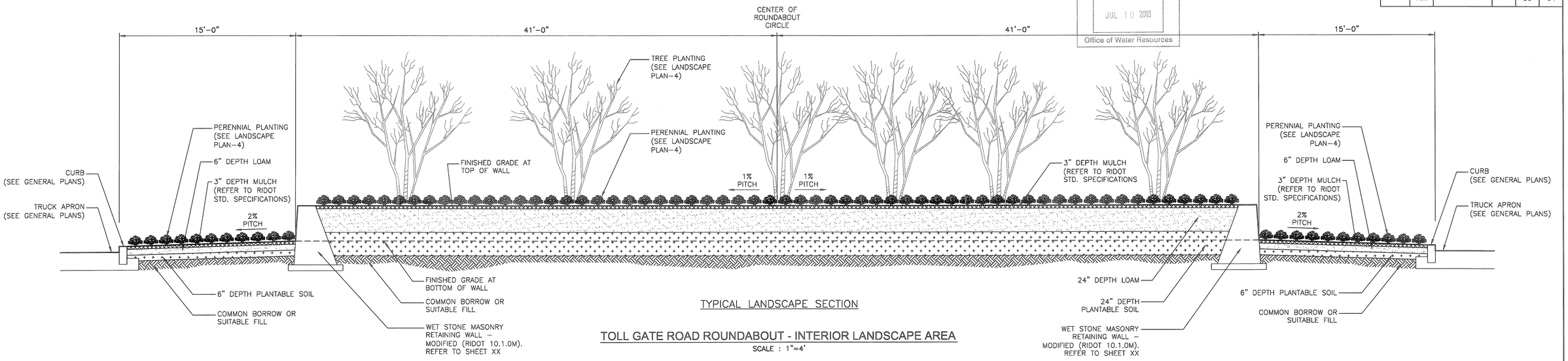
CHECKED BY _____ DATE _____ SCALE 1" = 20'

R.I.D.E.M. APPLICATION SHEET NO. 84 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDSCPE022

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			85	91

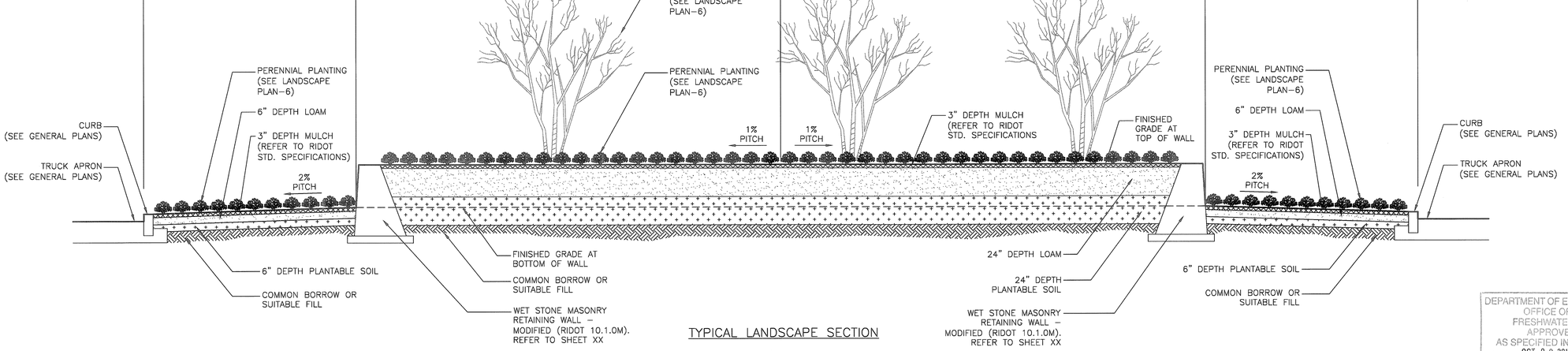
Environmental Management
JUL 10 2013
Office of Water Resources



TYPICAL LANDSCAPE SECTION

TOLL GATE ROAD ROUNDABOUT - INTERIOR LANDSCAPE AREA

SCALE : 1"=4'



TYPICAL LANDSCAPE SECTION

GREENWICH AVENUE ROUNDABOUT - INTERIOR LANDSCAPE AREA

SCALE : 1"=4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Prepared by:
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Pawtucket, RI

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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

LANDSCAPE SECTIONS - 1

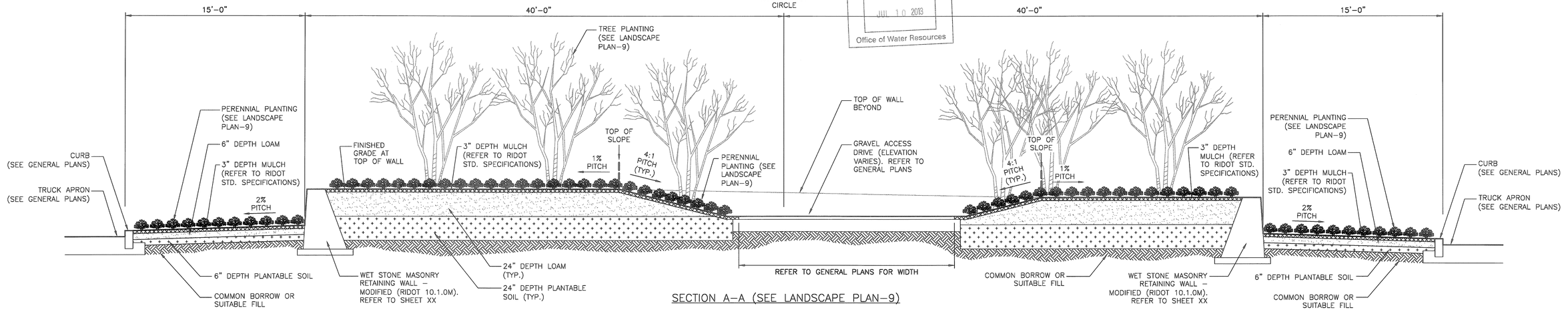
CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 85 OF 91

J:\CADD\RI0015 - Apponaug Circulator\dwg\0185A_V1_XXX_LANDDETL001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			86	91

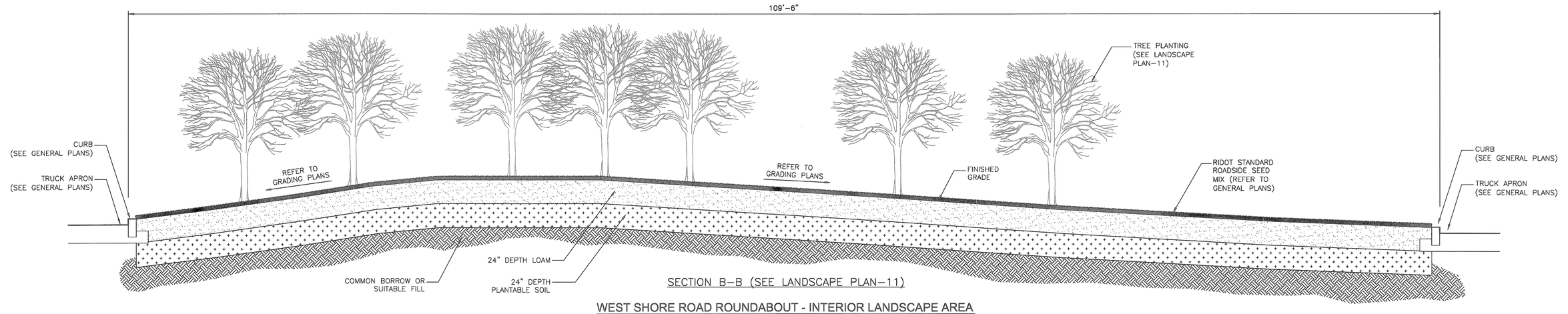
Environmental Management
JUL 10 2013
Office of Water Resources



SECTION A-A (SEE LANDSCAPE PLAN-9)

POST ROAD EXTENSION ROUNDABOUT - INTERIOR LANDSCAPE AREA

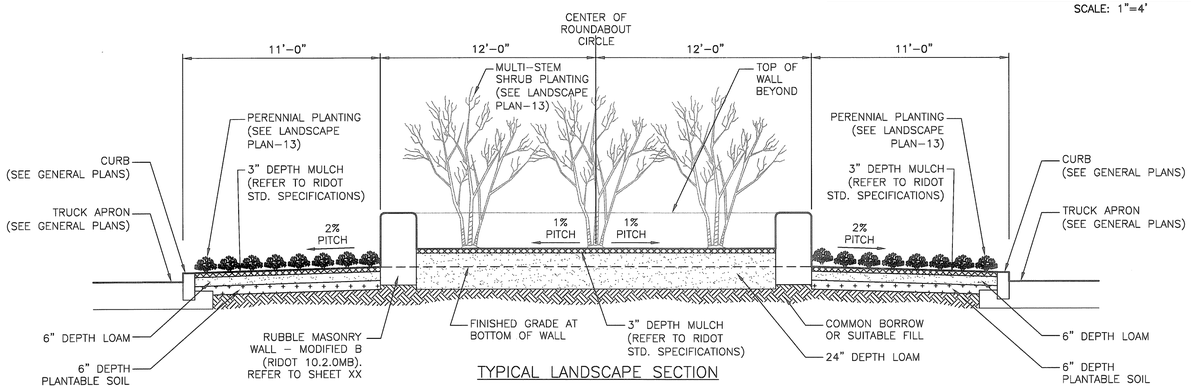
SCALE: 1"=4'



SECTION B-B (SEE LANDSCAPE PLAN-11)

WEST SHORE ROAD ROUNDABOUT - INTERIOR LANDSCAPE AREA

SCALE: 1"=4'



TYPICAL LANDSCAPE SECTION

APPONAUG FOUR CORNERS ROUNDABOUT - INTERIOR LANDSCAPE AREA

SCALE: 1"=4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 08 2013 FILE # 11-0099
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Prepared by:

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Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

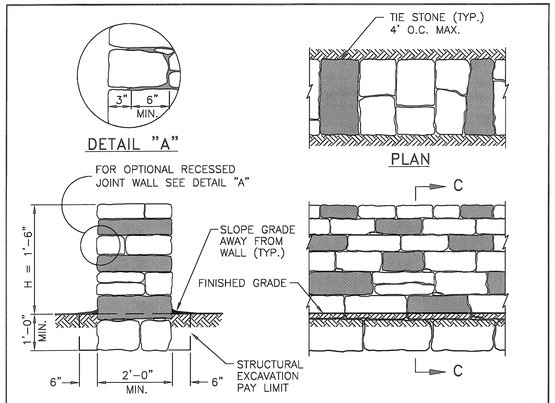
LANDSCAPE SECTIONS - 2

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 86 OF 91

J:\CADD\RI0015 - Apponaug Circulator\dwg\0185A_V1_XXX_LANDDETL002

FED. ROAD DW. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			87	91



NOTES:
1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 912–MODIFIED OF THE R.I. STANDARD SPECIFICATIONS.
2. JOINTS SHALL NOT EXCEED 1" IN WIDTH.
3. JOINTS ON THE FACE OF WALL SHALL BE POINTED TO THE FACE LINE OF THE WALL UNLESS RECESSED JOINTS ARE CALLED FOR ABOVE GRADE.
4. POINTING OF JOINTS ON TOP OF WALL SHALL BE FLUSH AND PITCHED TO DEFLECT WATER OFF OF THE WALL.
5. DRESS 6" BELOW GRADE FOR FRONT FACE OF WALL.
6. TIE STONES SHALL BE PLACED A MAXIMUM OF 4'–0" O.C.

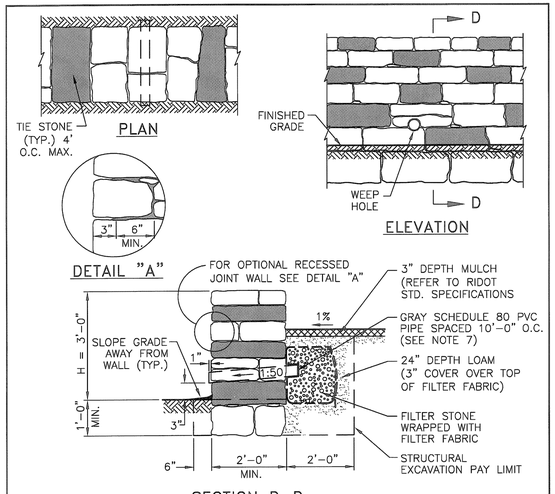
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

RUBBLE MASONRY WALL – MODIFIED A
(STA. 38+16± RIGHT TO STA. 44+24± RIGHT AND AT PLEASANT STREET – REFER TO GENERAL PLANS)

CHIEF ENGINEER TRANSPORTATION | CHIEF DESIGN ENGINEER TRANSPORTATION | JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 10.2.0 MA



NOTES:
1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 912–MODIFIED OF THE R.I. STANDARD SPECIFICATIONS.
2. JOINTS SHALL NOT EXCEED 1" IN WIDTH.
3. JOINTS ON THE FACE OF WALL SHALL BE POINTED TO THE FACE LINE OF THE WALL UNLESS RECESSED JOINTS ARE CALLED FOR ABOVE GRADE.
4. POINTING OF JOINTS ON TOP OF WALL SHALL BE FLUSH AND PITCHED TO DEFLECT WATER OFF OF THE WALL.
5. DRESS 6" BELOW GRADE FOR FRONT FACE OF WALL.
6. TIE STONES SHALL BE PLACED A MAXIMUM OF 4'–0" O.C.
7. WEEP HOLES SHALL BE CONSTRUCTED OF 3" GRAY SCHEDULE 80 PVC PIPE WHEN H ≤ 5'–0" AND 4" GRAY SCHEDULE 80 PIPE WHEN H > 5'–0". CONTRACTOR TO ENSURE A WEEP HOLE IS INSTALLED AT LOW POINT BEHIND WALL (STA. 104+15.3± RIGHT). ALL PIPE IS TO BE SOLID.

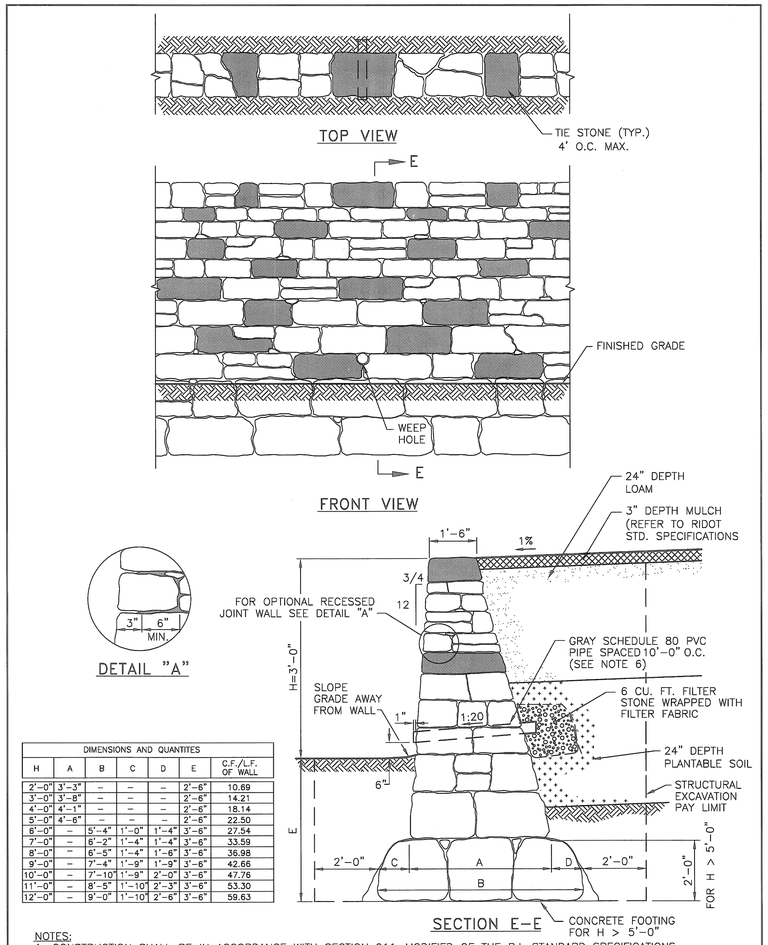
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

RUBBLE MASONRY WALL – MODIFIED B
(STA. 104+16± RIGHT – REFER TO GENERAL PLANS)

CHIEF ENGINEER TRANSPORTATION | CHIEF DESIGN ENGINEER TRANSPORTATION | JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 10.2.0 MB



DIMENSIONS AND QUANTITES						
H	A	B	C	D	E	C.F./L.F. OF WALL
2'–0"	3'–3"	–	–	–	2'–6"	10.69
3'–0"	3'–8"	–	–	–	2'–6"	14.21
4'–0"	4'–1"	–	–	–	2'–6"	18.14
5'–0"	4'–6"	–	–	–	2'–6"	22.50
6'–0"	–	5'–4"	1'–0"	1'–4"	3'–6"	27.54
7'–0"	–	6'–2"	1'–4"	1'–4"	3'–6"	33.59
8'–0"	–	6'–5"	1'–4"	1'–6"	3'–6"	36.98
9'–0"	–	7'–4"	1'–9"	1'–9"	3'–6"	42.66
10'–0"	–	7'–10"	1'–9"	2'–0"	3'–6"	47.76
11'–0"	–	8'–5"	1'–10"	2'–3"	3'–6"	53.30
12'–0"	–	9'–0"	1'–10"	2'–6"	3'–6"	59.63

NOTES:
1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 911–MODIFIED OF THE R.I. STANDARD SPECIFICATIONS.
2. JOINTS SHALL NOT EXCEED 1" IN WIDTH.
3. JOINTS ON THE FACE OF WALL SHALL BE POINTED TO THE FACE LINE OF THE WALL UNLESS RECESSED JOINTS ARE CALLED FOR ABOVE GRADE.
4. POINTING OF JOINTS ON TOP OF WALL SHALL BE FLUSH AND PITCHED TO DEFLECT WATER OFF OF THE WALL.
5. DRESS 6" BELOW GRADE FOR FRONT FACE OF WALL.
6. WEEP HOLES SHALL BE CONSTRUCTED OF 3" GRAY SCHEDULE 80 PVC PIPE WHEN H ≤ 5'–0" AND 4" GRAY SCHEDULE 80 PIPE WHEN H > 5'–0". ALL PIPE IS TO BE SOLID.
7. TIE STONES SHALL BE PLACED A MAXIMUM OF 4'–0" O.C.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

WET STONE MASONRY RETAINING WALL – MODIFIED

CHIEF ENGINEER TRANSPORTATION | CHIEF DESIGN ENGINEER TRANSPORTATION | JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 10.1.0 M

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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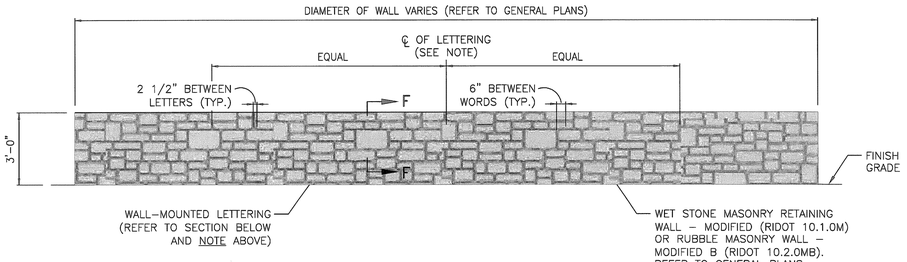
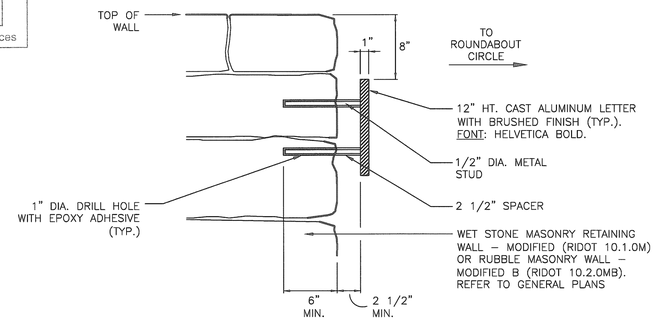
NOTE:
1. WALL–MOUNTED LETTERING SHALL FACE TOWARD ROUNDABOUT CIRCLE (REFER TO LANDSCAPE PLANS 4, 6, 9 & 13 FOR LOCATION AND STATIONING).



Environmental Management
JUL 10 2013
Office of Water Resources



WALL-MOUNTED LETTERING WITH SPACERS
SCALE: N.T.S.

Prepared by:

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REVISIONS NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR
LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

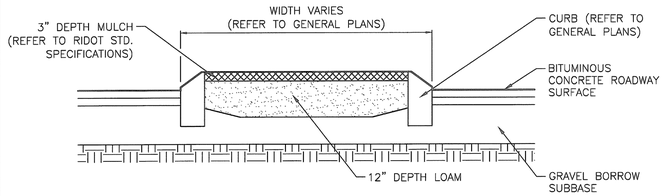
LANDSCAPE DETAILS - 1

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 87 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDDETL003

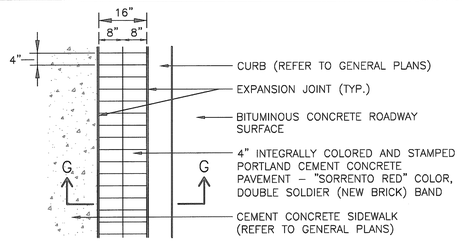
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			88	91



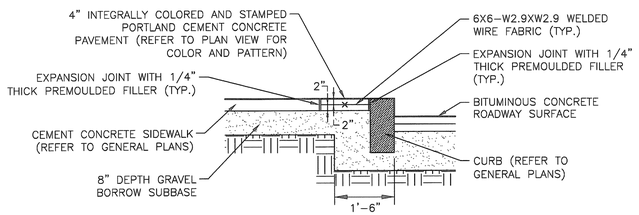
SECTION

TYPICAL PLANT BED WITHIN MEDIAN OR DEFLECTOR ISLAND

SCALE: 1"=2'



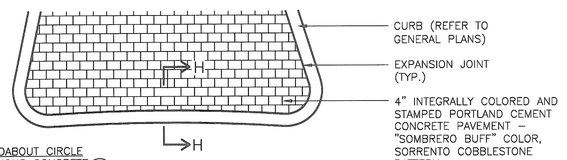
PLAN VIEW



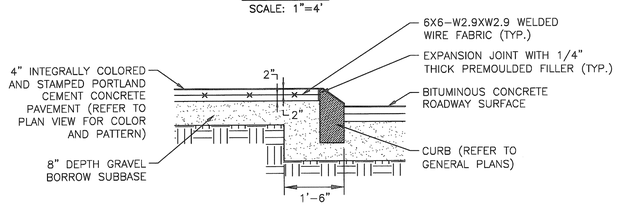
SECTION G–G

STAMPED CONCRETE SIDEWALK BAND AT POST ROAD (STA. 11+76± TO STA. 27+15±)

SCALE: 1"=2'



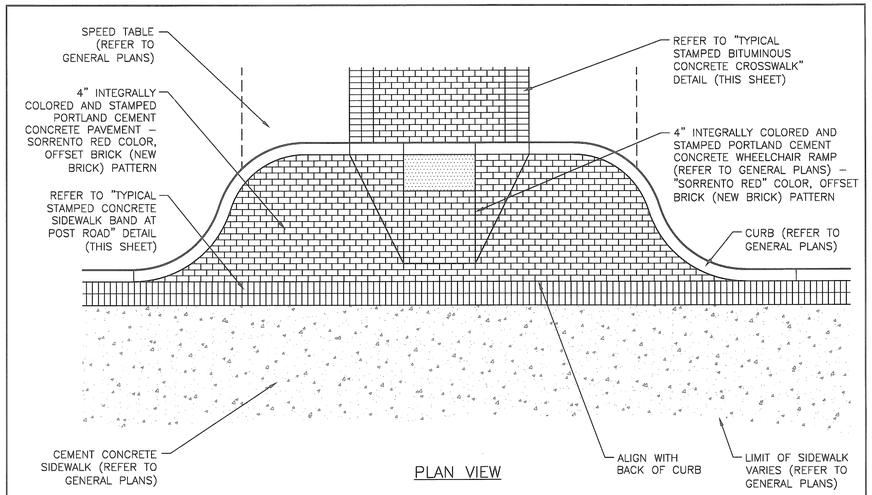
PLAN VIEW
SCALE: 1"=4'



SECTION H–H
SCALE: 1"=2'

TYPICAL STAMPED CONCRETE DEFLECTOR ISLAND

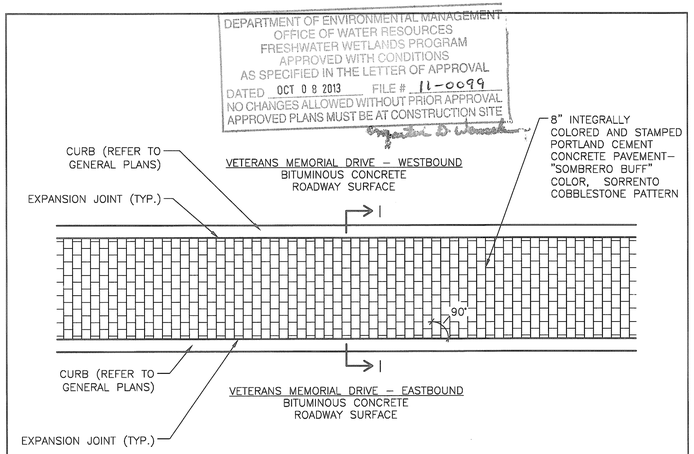
SCALE: AS SHOWN



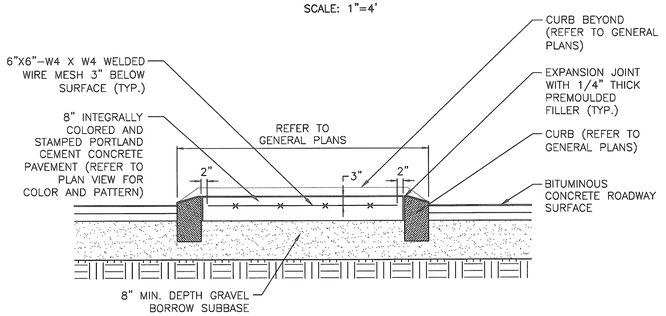
PLAN VIEW

TYPICAL STAMPED CONCRETE SIDEWALK EXTENSION AT SPEED TABLE

SCALE: 1"=4'



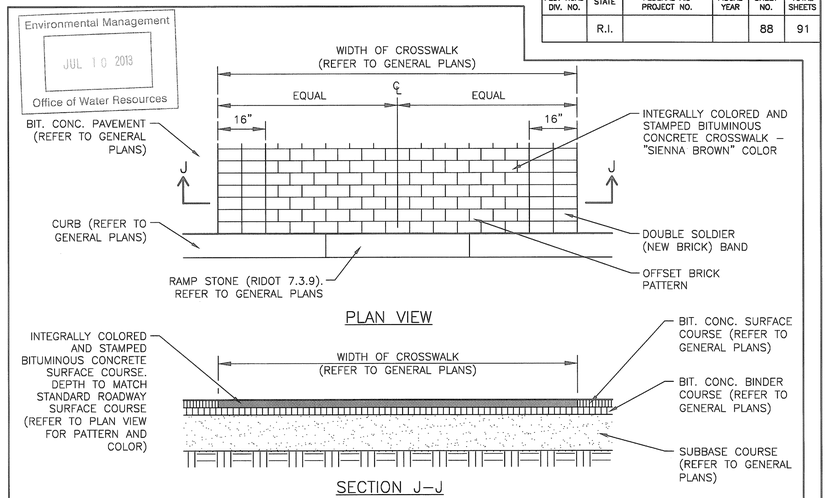
PLAN VIEW
SCALE: 1"=4'



SECTION I–I
SCALE: 1"=2'

STAMPED CONCRETE EMERGENCY ACCESS APRON AT VETERANS MEMORIAL DRIVE (STA. 41+22± TO STA. 41+93±)

SCALE: AS SHOWN

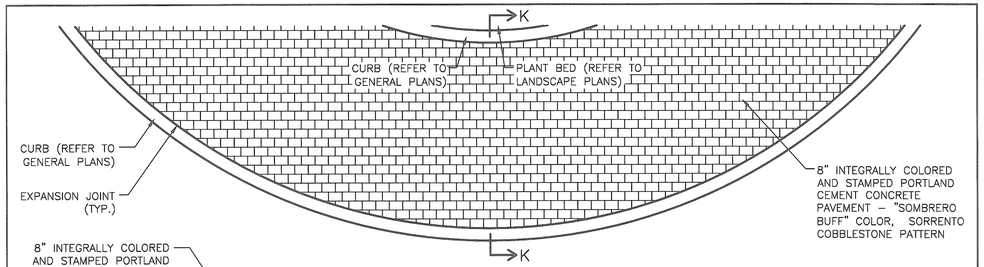


PLAN VIEW

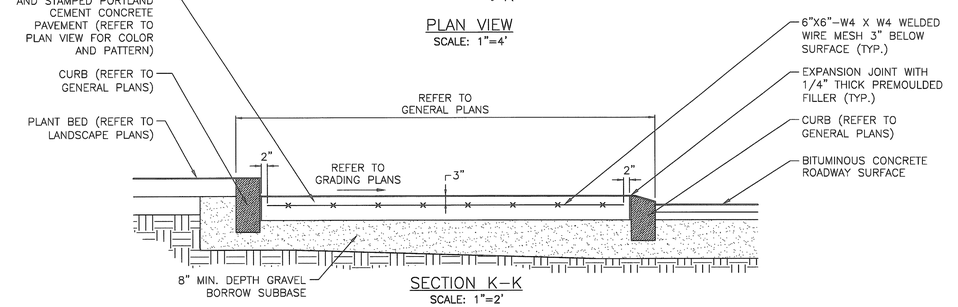
SECTION J–J

TYPICAL STAMPED BITUMINOUS CONCRETE CROSSWALK

SCALE: 1"=2'



PLAN VIEW
SCALE: 1"=4'



SECTION K–K
SCALE: 1"=2'

TYPICAL STAMPED CONCRETE TRUCK APRON AT ROUNDABOUTS

SCALE: AS SHOWN

Prepared by:

VERI | WATERMAN ASSOCIATES, INC.
333 Westminster Street,
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Providence, RI 02903
401.274.1360
401.454.0350 fax
veriwaterman.com
A Division of Waterman Design Associates, Inc., Westborough, MA

Gordon R. Archibald, Inc.
Professional Engineers
Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

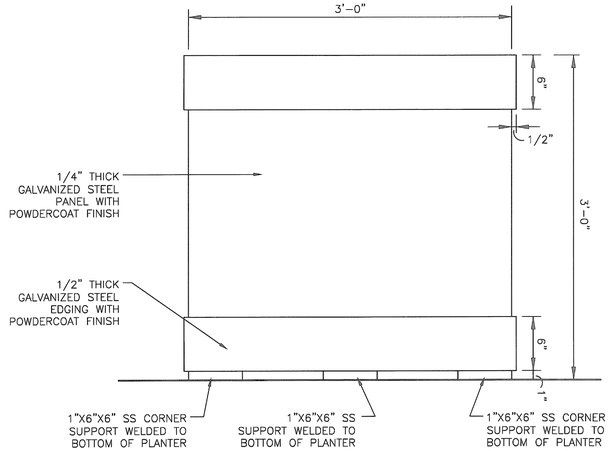
LANDSCAPE DETAILS - 2

CHECKED BY _____ DATE _____ SCALE AS SHOWN

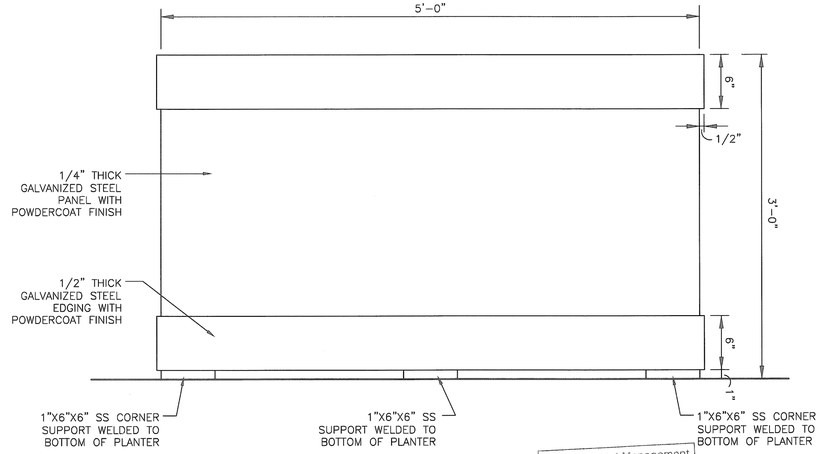
R.I.D.E.M. APPLICATION SHEET NO. 88 OF 91

J:\CADD\RI0015 – Apponaug Circulator\dwg\0185A_V1_XXX_LANDDETL004

FED. ROAD DW. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	R.I.			89	91

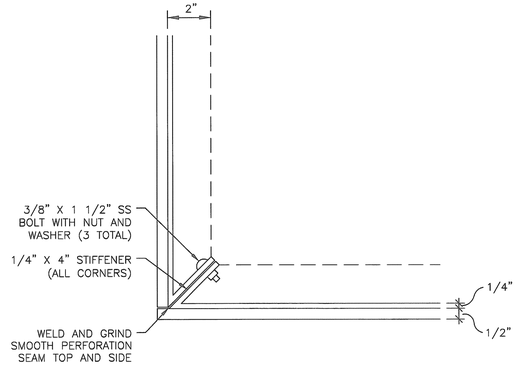


SIDE ELEVATION
SCALE: 1 1/2"=1'

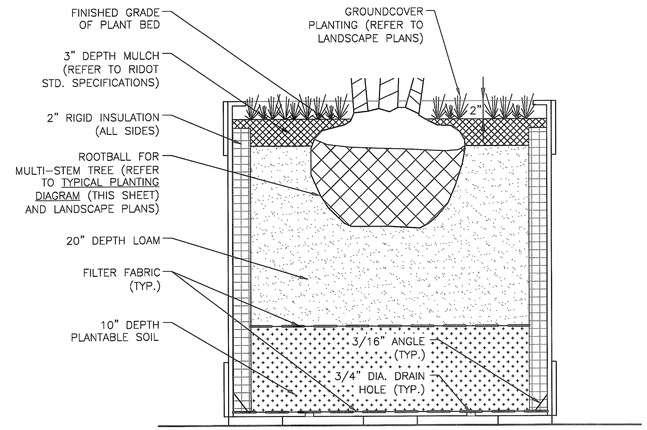


FRONT ELEVATION
SCALE: 1 1/2"=1'

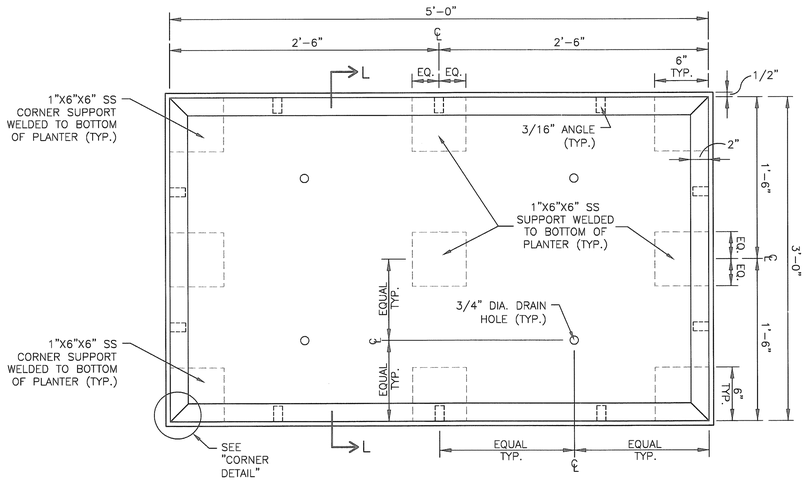
Environmental Management
JUL 10 2013
Office of Water Resources



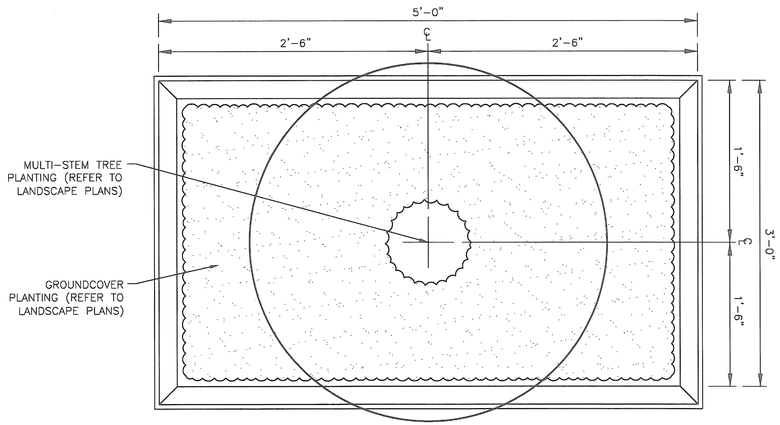
CORNER DETAIL
PLAN VIEW
NOT TO SCALE



SECTION L-L
SCALE: 1 1/2"=1'



PLAN VIEW
SCALE: 1 1/2"=1'



TYPICAL PLANTING DIAGRAM
SCALE: 1 1/2"=1'

GALVANIZED STEEL PLANTER WITH POWDERCOAT FINISH
SCALE: AS SHOWN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 0 6 2013 FILE # 11-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Prepared by:
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Pawtucket, RI

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

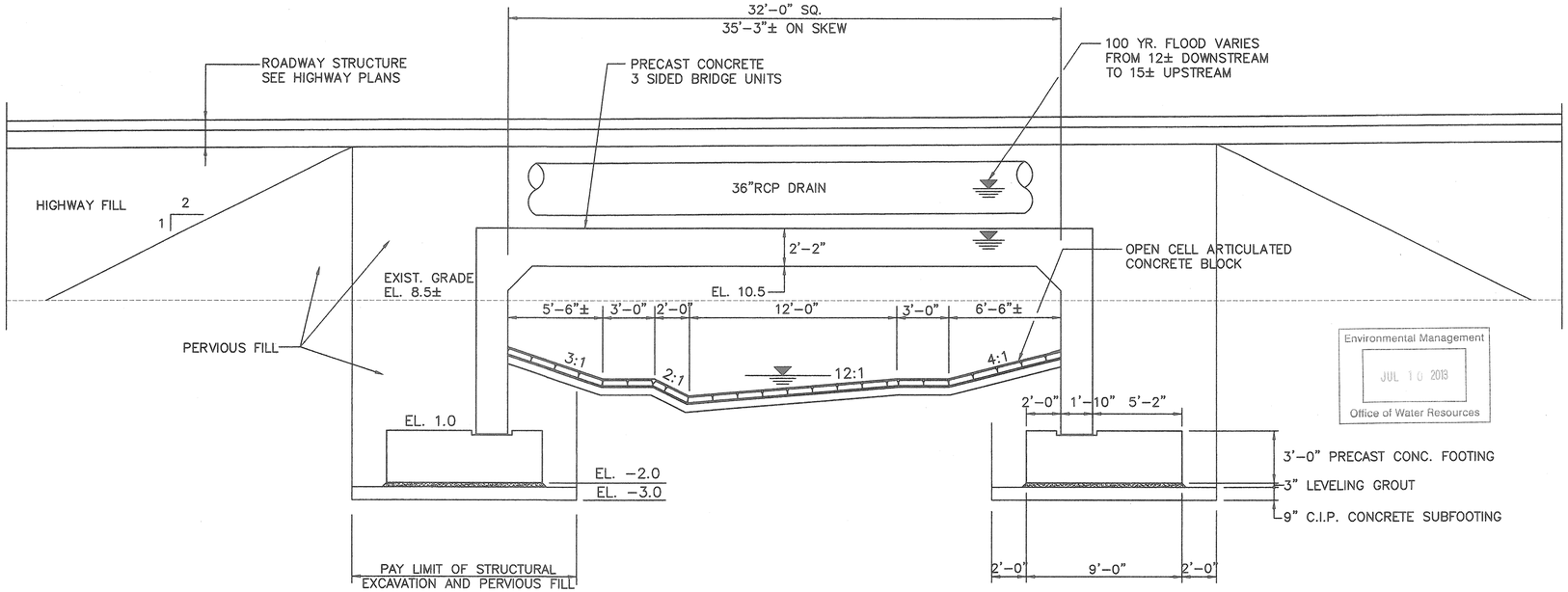
LANDSCAPE DETAILS - 3

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 89 OF 91

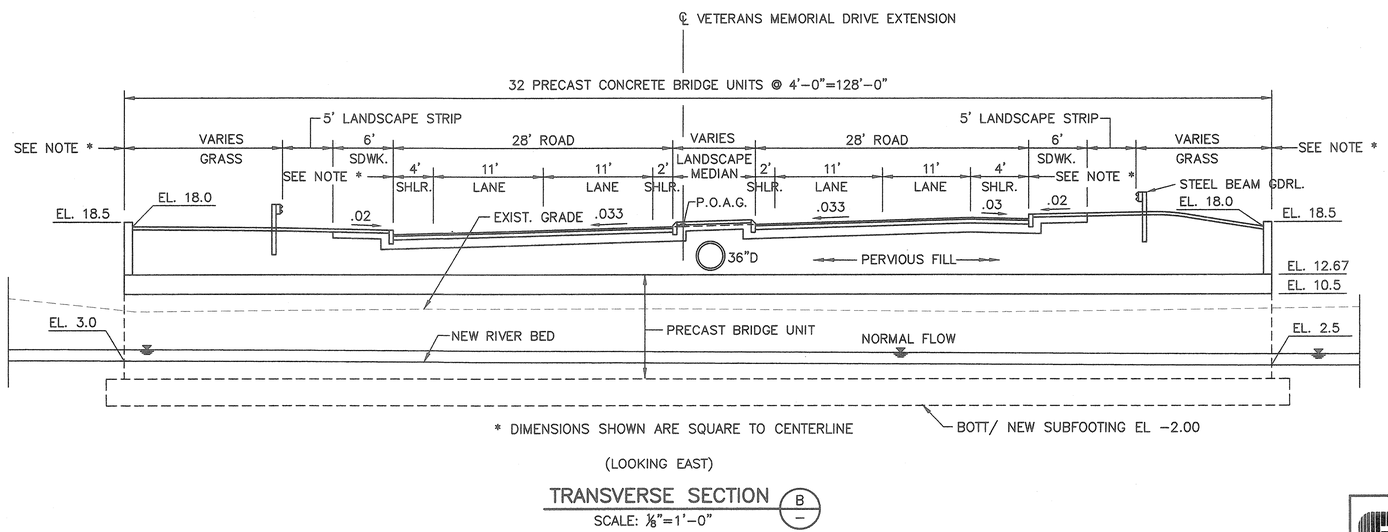
J:\CADD\RI0015 - Apponaug Circulator\dwg\0185A_V1_XXX_LANDDETL005

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			90	91



LONGITUDINAL SECTION (A)
SCALE: ¼"=1'-0"

Environmental Management
JUL 10 2013
Office of Water Resources



(LOOKING EAST)

TRANSVERSE SECTION (B)
SCALE: ⅛"=1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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TODD A. RAVENELLE
No. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

APPONAUG RIVER BRIDGE NO. 1038

TYPICAL BRIDGE SECTIONS

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE AS SHOWN

R.I.D.E.M. APPLICATION SHEET NO. 90 OF 91

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.			91	91

VETERANS MEMORIAL DRIVE EXT.

NEW S.H.L. PLAT NO. XXXX

174'-36" RCP DRAIN

3'-12" RCP DRAIN

24'-12" RCP DRAIN

27'-00"

28'-12" RCP DRAIN

170'-36" RCP DRAIN

R=804.20'

APPROXIMATE LOCATION OF EXISTING APPONAUG RIVER BOX CULVERT (TO BE REMOVED)

PROP. 100 YEAR FLOOD BOUNDARY

W.P. 1
26+58.33
INSIDE FACE OF PRECAST UNIT

26+40.73

128'-0" LONG PRECAST BRIDGE
CENTERLINE OF PROPOSED RELOCATED RIVER
65°20'50"

W.P. 2
26+23.12
INSIDE FACE OF PRECAST UNIT

32'-0" CLEAR

RELOCATED APPONAUG RIVER

200' RIVERBANK WETLAND

PROP. 100 YEAR FLOOD BOUNDARY

B-4 B-5 B-6 B-9 B-9A B-26 B-27 B-29 GW-3 TP-1 TP-3

A/4 B/4

IRON FENCE ON CONC. RET. WALL

EX. P.D.E., PLAT 229

SIGN

18"D

8"PIPE

CONC. BRIDGE RAIL

CURB INLET

12" GUARD RAIL

CONC. CURB

SIGN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Environmental Management
JUL 10 2013
Office of Water Resources

DIRT PILES

11' TRAVEL LANE
2' SHOULDER
4' SHOULDER
6' SIDEWALK
5' LANDSCAPE STRIP
LANDSCAPE/MEDIAN VARIES
P.C. STA. 25+84.12
26+00

3:1 2:1 10 16 17 18 19

WORKING POINT COORDINATES		
W.P. 1	STA. 26+58.33	NORTH 224342.4147 EAST 338447.9482
W.P. 2	STA. 26+23.12	NORTH 224320.9785 EAST 338420.0166

TODD A. RAVENELLE
NO. 5928
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

APPONAUG CIRCULATOR LONGTERM IMPROVEMENTS

WARWICK, RHODE ISLAND

APPONAUG RIVER BRIDGE NO. 1038

BRIDGE GENERAL PLAN

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

CHECKED BY _____ DATE _____ SCALE 1"=8'

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