FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI		2015	1	12

INDEX
VOLUME 1 - BIKEWAY

STATE OF RHODE ISLAND

DEPARTMENT OF TRANSPORTATION

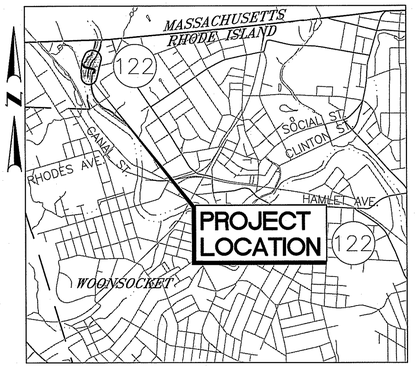
PLAN, PROFILE AND SECTIONS OF PROPOSED

BLACKSTONE RIVER BIKEWAY BRIDGE ON SEGMENT 8C

VOLUME 1

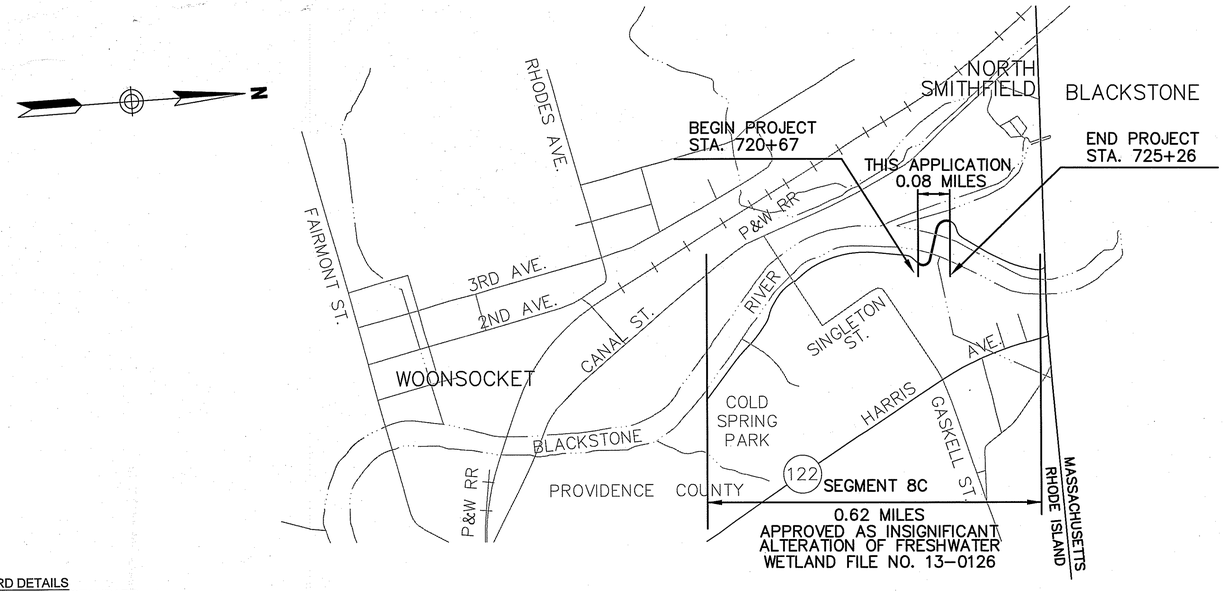
CITY OF WOONSOCKET
TOWN OF NORTH SMITHFIELD
COUNTY OF PROVIDENCE

R.I. CONTRACT NO. 2015-XX-XXX F.A. PROJECT NO. XXX-XXXX (XXX)



LOCATION PLAN

2000 0 2000 4000
SCALE IN FEET



LAYOUT
SCALE: 1"= 500'

BASE OF LEVELS
NGVD 1929

SCALES OF DRAWINGS
AS SHOWN

PAVEMENT STRUCTURE

BIKEWAY PAVEMENT
1" CLASS 4.75 HOT MIX ASPHALT
3" CLASS 12.5 HOT MIX ASPHALT (2 LIFTS)
6" GRAVEL BORROW SUBBASE COURSE

BIKEWAY OVERLAY PAVEMENT
2" CLASS 4.75 HOT MIX ASPHALT (2 LIFTS)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0027
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 23 2015
Office of Water Resources

RECEIVED
FEB 23 2015
Department of Environmental Management
Office of Customer & Technical Assistance

PERMIT SUBMISSION
FEBRUARY 2015

R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS
SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED 2010, WITH ALL REVISIONS, AND THE STATE AND FEDERAL SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS. STANDARD DETAILS FOR THIS PROJECT ARE R.I. STANDARD DETAILS, 1998 EDITION, WITH ALL REVISIONS.

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

SCOTT A. D'AMELIO
No. 8584
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
FEBRUARY 19, 2015

Contract Number 2015-XX-XXX
Number of Sheet 1
Total Sheets 12

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

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			2	12

EXISTING		NEW
	EDGE OF PAVEMENT	
	BERM	
	CURB	
	GUARDRAIL	
MB	MAILBOX	
NO.	UTILITY POLE	NO.
	POLE GUY	GUY
	LUMINARE	
SIGN	SIGN	
(SIZE)SD	SUBDRAIN	N(SIZE)SD– (Length → Size)
(SIZE)D	STORMDRAIN	(Length → Size)
(SIZE)S	SANITARY SEWER	
(SIZE)W	WATER MAIN	N(SIZE)W
(SIZE)G	GAS MAIN	N(SIZE)G
(SIZE)T	TELEPHONE DUCT	N–#(SIZE)T
(SIZE)E	ELECTRIC DUCT	N–#(SIZE)E
	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	1+00
EXIST. S.H.L. PLAT NO. XX	STATE HIGHWAY LINE	*NEW S.H.L. PLAT NO. XX*
EXIST. S.F.L. PLAT NO. XX	STATE FREEWAY LINE	*NEW S.F.L. PLAT NO. XX*
EXIST. P.E.B.	PERMANENT EASEMENT LINE	NEW P.E.B.
EXIST. T.E.B.	TEMPORARY EASEMENT LINE	NEW T.E.B.
P	PROPERTY LINE	
CITY NAME / TOWN NAME	CITY OR TOWN LINE	
PWW	PAVED WATERWAY	
ELEV.	CONTOUR LINE	ELEV
	OPEN DITCH	
R.I.H.B.	R.I. HIGHWAY BOUND	
S.B.	STONE BOUND	
	RETAINING WALL	
	FIELD STONE WALL	
NO.	BORINGS	NO.
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	ROADWAY / TOP OF SLOPE
	FILL SLOPE	ROADWAY / TOE OF SLOPE
	ROCK CUT	ROCK SHELF / ROCK CUT
00x00	SPOT GRADE	x00.00
	AREA GRADED TO DRAIN	ELEV. x→
	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 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

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 0 9 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 2 3 2015

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

STANDARD PLAN SYMBOLS & STANDARD LEGEND

CHECKED BY ________ DATE ________ SCALE NO SCALE

0021U_V1_002_STDSYM

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			3	12

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.
   a. ANY VEGETATIVE CLEARING SHALL BE LIMITED TO BRUSH AND TREES LESS THAN 3" DIAMETER.
   b. NO HEAVY EQUIPMENT MAY ENCROACH UPON VEGETATED PERIMETER OR RIVERBANK WETLANDS AS WELL AS BIOLOGICAL WETLANDS.
13. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL DEVICES FOR OUTLET PROTECTION PRIOR TO CLEANING AND FLUSHING STORM WATER DRAINAGE. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL ALL FLUSHED SEDIMENTS ARE REMOVED. AT ALL OUTFALL LOCATIONS WHERE PIPES ARE TO BE CLEANED AND FLUSHED, OUTLET PROTECTION (R.I. STD. 9.1.0 OR 9.3.0) SHALL BE INSTALLED TO TRAP SEDIMENTS. THESE SEDIMENTS SHALL THEN BE REMOVED AND DISPOSED OF LEGALLY BEFORE THE OUTLET PROTECTION DEVICES ARE REMOVED. IF OUTLET PROTECTION AT THE OUTFALL IS NOT FEASIBLE, THEN THE OUTLET PIPE OF THE LAST DRAINAGE STRUCTURE TO BE CLEANED SHALL BE PLUGGED TO CAPTURE ALL MATERIALS FLUSHED FROM PIPES. AFTER THE MATERIALS ARE REMOVED FROM THE DRAINAGE STRUCTURE, THE OUTLET SHALL BE UNPLUGGED TO RESUME NORMAL FUNCTIONING.
14. R.I. STD. 9.8.0 BALED HAY INLET PROTECTION SHALL BE INSTALLED AT ALL CATCH BASINS AND INLETS WHENEVER SUBBASE IS EXPOSED, AND SHALL REMAIN IN PLACE UNTIL THE ABUTTING GROUND SURFACES ARE STABILIZED.
15. WHERE BALED HAY INLET PROTECTION AND SILT FENCES ARE USED AT CATCH BASINS, THEY SHALL BE REMOVED AT THE END OF THE PROJECT OR AS DIRECTED BY THE ENGINEER IN ORDER TO PREVENT CLOGGING OF THE INLET.

DRAINAGE AND EROSION CONTROL NOTES (CONTINUED):

16. DETENTION AND RETENTION BASINS MAY BE ROUGH GRADED AND STABILIZED WITH VEGETATION AND/OR OTHER EROSION CONTROL MEASURES AS REQUIRED BY THE ENGINEER PRIOR TO USE AS TEMPORARY SEDIMENTATION BASINS DURING PROJECT CONSTRUCTION. FINAL BASIN CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL SOURCES OF SEDIMENT HAVE BEEN ELIMINATED, FINAL ROADSIDE VEGETATION IS ESTABLISHED AND USE OF TEMPORARY BASINS IS NO LONGER REQUIRED AS DIRECTED BY THE ENGINEER. ANY ISSUES RELATING TO EROSION AND/OR SEDIMENT TRANSPORT INTO WETLAND AREAS RESULTING FROM SUCH USE OF SEDIMENTATION BASINS DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY CORRECTIVE ACTION REQUIRED TO RESOLVE SUCH ISSUES SHALL BE COMPLETED BY THE CONTRACTOR.
17. THE TOE OF ANY FILL SLOPE IS TO REMAIN AT LEAST 1' INSIDE OF ALL EROSION CONTROLS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR COVER ANY PORTION OF THE EROSION CONTROL MEASURES WITH MATERIAL. ANY MATERIAL THAT IS PLACED ON ANY EROSION CONTROLS BY THE CONTRACTOR, OR ANY AGENT OF THE CONTRACTOR, SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR, AND ANY NECESSARY REPAIRS TO THE EROSION CONTROLS ACCOMPLISHED.
18. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THOSE AREAS INDICATED ON THE PLANS. CLEARING MAY OCCUR PRIOR TO INSTALLATION OF SUCH CONTROLS, HOWEVER NO GRUBBING, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO INSTALLATION. THE LIMITS OF CLEARING AND SURFACE DISTURBANCE MUST BE STRICTLY ADHERED TO IN ALL AREAS.
19. ALL HAY BALES, SILT FENCE OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS IS ESTABLISHED. IF NEEDED, TEMPORARY SEEDING CAN HELP TO MINIMIZE EROSION. TEMPORARY SEED WILL CONFORM TO R.I.D.O.T. STANDARD TEMPORARY SEED MIX.
20. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE STATE.
21. THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE SPECIFIED IN SUBSECTION L.02.03 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
22. ADDITIONAL EROSION CONTROLS, SHALL BE INSTALLED AS DIRECTED BY THE RESIDENT ENGINEER. THESE ADDITIONAL ITEMS WILL BE PAID AT THE UNIT PRICE FOR THAT BID ITEM.

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 MAR 09 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

STANDARD NOTES - 1

CHECKED BY _____ DATE _____ SCALE NO SCALE

VHB VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

0021U_V1_003_STDNOTES01

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			4	12

LANDSCAPE NOTES:

1. ALL PLANT MATERIAL MUST BE TAGGED AT THE NURSERY (A RECOGNIZED GROWER OF PLANT MATERIAL) IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION. ALL PLANT MATERIAL MUST BE NURSERY GROWN; NO PLANTATION GROWN PLANT MATERIAL WILL BE ACCEPTED.
2. ALL PLANT SUBSTITUTIONS AND/OR CHANGES IN PLANT LOCATION MUST BE APPROVED IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
3. ALL PLANT MATERIAL IS TO BE FIELD LOCATED BY A REPRESENTATIVE FROM THE R.I.D.O.T. LANDSCAPE ARCHITECTURE UNIT.
4. A R.I.D.O.T. LANDSCAPE REPRESENTATIVE MUST BE ON SITE TO APPROVE ALL TRIMMING AND CLEARING NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS.
5. ANY TOPSOIL USED AS PLANTABLE SOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS, AND SHALL CONFORM TO SECTION M.18 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
6. ALL TREES AND SHRUBS SHALL BE MULCHED WITH PINE BARK MULCH IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
7. ALL TREES AND/OR SHRUBS THAT ARE PLANTED AS A BED SHALL BE MULCHED AS A BED.
8. PROVIDE A MINIMUM 6'-8" BRANCHING STANDARD ON ALL TREES INSTALLED ADJACENT TO SIDEWALKS AND/OR PEDESTRIAN ACCESS AREAS.

STRUCTURAL NOTES FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS:

GENERAL

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

CONSTRUCTION DRAWINGS AND DETAILS

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

TRAFFIC SIGNAL NOTES:

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

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

1. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELIZING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. ALL SIGN MOUNTINGS FOR TEMPORARY AND CONSTRUCTION SIGNS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
3. THE CONTRACTOR SHALL COVER ALL EXISTING AND/OR TEMPORARY SIGNS THAT ARE NOT RELEVANT TO THE TRAFFIC CONTROL REQUIRED DURING ANY PARTICULAR STAGE OF THE CONTRACT.
4. ADVANCE FLAGPERSON SIGNS (W20-7A) SHALL BE USED IN ADVANCE OF ANY POINT AT WHICH A FLAGPERSON OR A POLICE OFFICER HAS BEEN STATIONED TO CONTROL TRAFFIC. WHEN NEEDED, AN APPROPRIATE DISTANCE MESSAGE MAY BE DISPLAYED ON A SUPPLEMENTAL PLATE (24"x18") BELOW THE FLAGPERSON SYMBOL SIGN. THE SIGN SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE FLAGPERSON IS NOT AT THE STATION.
5. POLICE OFFICERS (AND NOT FLAGPERSONS) SHALL BE UTILIZED WHEN WORK WILL IMPACT SIGNALIZED INTERSECTIONS AND LIMITED ACCESS HIGHWAYS.
6. POLYETHYLENE DRUMS SHALL BE UTILIZED AS A CHANNELIZING DEVICE WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN BEYOND WORKING HOURS WHEN NO WORKERS ARE PRESENT. CONES SHALL BE UTILIZED WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN ONLY DURING WORKING HOURS AND IS SUBSEQUENTLY BROKEN DOWN AT THE END OF THE WORKDAY.
7. ARROW PANELS SHALL BE SET IN THE FLASHING FOUR CORNERS CAUTION MODE UNLESS UTILIZED FOR A MERGING TAPER. ARROW PANELS SET IN THE FLASHING ARROW MODE SHALL NOT BE UTILIZED FOR LANE SHIFTS.
8. TEMPORARY CONSTRUCTION SIGNS AND OTHER WORKZONE TRAFFIC CONTROL DEVICES THAT ARE DAMAGED OR REQUIRE RELOCATION SHALL BE REPLACED AND / OR RELOCATED UNDER THE PAY ITEM FOR "MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION."
9. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED ON THE TRAVEL LANES OR SHOULDERS. THEY MAY BE PARKED WITHIN THE STATE RIGHT-OF-WAY ONLY IN AREAS 30' BEYOND THE OUTSIDE EDGE OF THE TRAVEL LANES AND/OR IN AREAS APPROVED BY THE ENGINEER.
10. TEMPORARY CONSTRUCTION SIGNS AND OTHER TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC, AND SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER APPROPRIATE.
11. THE INTENDED VEHICLE PATHS THROUGH EACH WORK ZONE SHALL BE CLEARLY MARKED AT ALL TIMES. WATERBORNE PAVEMENT MARKINGS SHALL BE INSTALLED BEFORE THE END OF THE WORK SHIFT ON ALL COLD-PLANED AND NEW ROADWAY SURFACES THAT WILL BE OPENED TO TRAFFIC AT THE END OF THE SHIFT.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

STANDARD NOTES - 2

CHECKED BY _____ DATE _____ SCALE _____

0021U_V1_004_STDNOTES02

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			5	12

JOB SPECIFIC GENERAL LEGEND

7.3.9	GRANITE RAMP STONE, R.I. STD. 7.3.9
9.1.0M	12" DIAMETER COMPOST FILTER SOCK
31.1.0M	BLACK POLYVINYL CHLORIDE (PVC) COATED CHAIN LINK FENCE – 3' HIGH
AMH	ADJUST MANHOLE TO GRADE
BB	BITUMINOUS BERM (SEE DETAIL PLAN NO. 2)
BGR	BIAXIAL GRID REINFORCEMENT
BOL	STEEL BOLLARD (SEE DETAIL PLAN NO. 1)
BR	SPLIT RAIL BICYCLE RAILING (SEE DETAIL PLAN NO. 2)
BWP	BIKEWAY PAVEMENT 2" CLASS 4.75 HOT MIX ASPHALT 2" CLASS 12.5 HOT MIX ASPHALT 6" GRAVEL BORROW SUBBASE COURSE
BWP1	BIKEWAY PAVEMENT 2" CLASS 4.75 HOT MIX ASPHALT
CW	CROSSWALK
DGA	REMOVE AND DISPOSE GATE
DGC	REMOVE AND DISPOSE GRANITE CURB
DT	REMOVE AND DISPOSE TREE
GB	GRANITE BENCH (SEE DETAIL PLAN NO. 1)
SGF	NEW SWING GATE AND FOUNDATION
GM	GRANITE MILE MARKER (SEE DETAIL PLAN NO. 2)
PSR	PLACED STONE RIPRAP R–6, R–7, R–8
RRB	REMOVE AND RELOCATE BOULDER (SEE DETAIL PLAN NO. 1)
SDP	STONE DUST PATH – 10' WIDE 3" STONE DUST 8" GRAVEL BORROW SUBBASE (SEE DETAIL PLAN NO. 2)
SID	STATE IDENTIFICATION GRANITE BOLLARD (SEE DETAIL PLAN NO. 2)
SIP	STONE INLET PROTECTION (SEE DETAIL PLAN NO. 1)
STCN	STAMPED PORTLAND CEMENT CONCRETE (SEE DETAIL PLAN NO. 1)
4BYL	4" EPOXY RESIN PAVEMENT MARKINGS – BROKEN YELLOW LINE
	200' RIVERBANK WETLAND
	100' RIVERBANK WETLAND
165	PROPOSED CONTOUR

JOB SPECIFIC GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION FROM AERIAL SURVEY AND FIELD SURVEY BY
   AERIAL: CHARLES H. SELLS, INC.
   FIELD: VANASSE HANGEN BRUSTLIN, INC.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
3. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
4. INTERSECTING ROADS SHALL BE RECONSTRUCTED TO THE LIMITS SHOWN ON THE PLANS AND CROSS SECTIONS OR AS DIRECTED BY THE ENGINEER. THE PAVEMENT MAKE–UP SHALL BE THE SAME AS THE BIKEWAY PAVEMENT UNLESS OTHERWISE SHOWN ON THE PLANS AND TYPICAL DETAILS.
5. ALL EXISTING MANHOLES, CATCH BASINS, ROADWAY BOXES, AND SIDEWALK CURB STOPS FOR ALL UTILITIES WITHIN THE PROJECT WORK LIMITS SHALL BE ADJUSTED TO GRADE AS REQUIRED EXCEPT WHERE REPLACEMENT IS CALLED FOR ON THE PLANS OR DIRECTED BY THE ENGINEER.

JOB SPECIFIC GENERAL NOTES - DRAINAGE

1. ALL CEMENT CONCRETE FOR DRAINAGE STRUCTURES SHALL BE CLASS XX (AE).
2. ALL CATCH BASINS SHALL PROVIDE A 3 FOOT SUMP.
3. ALL CATCH BASINS SHALL BE 4 FOOT DIAMETER UNLESS OTHERWISE NOTED.

JOB SPECIFIC GENERAL NOTES - PAVEMENT MARKINGS

1. ALL PAVEMENT MARKINGS FOR THIS PROJECT SHALL BE EPOXY RESIN PAVEMENT MARKINGS UNLESS OTHERWISE INDICATED.
2. THE LOCATION OF PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED.
3. ALL PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY AN APPROVED METHOD.

JOB SPECIFIC GENERAL NOTES - LANDSCAPING

1. ALL PLANT MATERIAL MUST BE TAGGED AT THE NURSERY (RECOGNIZED LICENSED GROWER OF PLANT MATERIAL) IN ACCORDANCE WITH R.I. STANDARD SPECIFICATIONS.

   ALL PLANT MATERIAL IS TO BE FIELD LOCATED BY A RIDOT LANDSCAPE REPRESENTATIVE.

JOB SPECIFIC GENERAL NOTES - SIGNS

1. PRIOR TO INSTALLATION, ALL SIGNS, MOUNTING AND LOCATIONS SHALL BE APPROVED OR MODIFIED BY THE ENGINEER.
2. TEMPORARY CONSTRUCTION SIGN PANELS SHALL BE 3/4" THICK EXTERIOR GRADE PLYWOOD CONFORMING TO SECTION M–19 OF THE STANDARD SPECIFICATIONS.
3. ALL SIGN RADII AND BORDERS SHALL BE AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION WITH ALL REVISIONS.

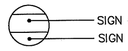
JOB SPECIFIC GENERAL NOTES - CONCRETE

1. THE ALLOWABLE WORKING STRESSES FOR PORTLAND CEMENT CONCRETE AND REINFORCING STEEL SHALL BE AS REQUIRED BY THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS AMENDED.

JOB SPECIFIC ABBREVIATIONS

U.P.	UTILITY POLE
DIP	DUCTILE IRON PIPE

JOB SPECIFIC TYPICAL SIGN DESIGNATION SYMBOL



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0622
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

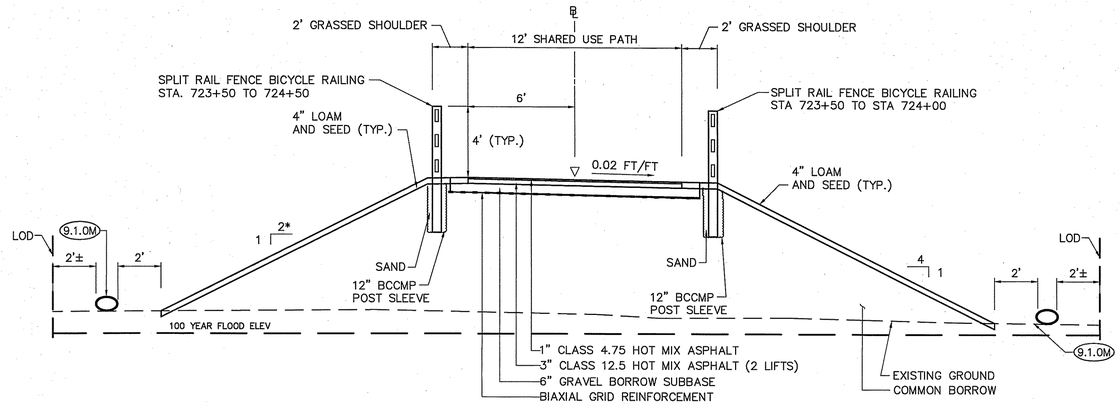
JOB SPECIFIC PLAN SYMBOLS, LEGEND & NOTES

CHECKED BY _____ DATE _____ SCALE _____

VHB
VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

0021U_V1_005_JSNOTSYM

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			6	12



BIKEWAY ON TOP OF FILL

STA. 723+39 TO STA. 725+00

*4:1 SLOPE FROM STA. 720+67 TO STA. 721+35

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

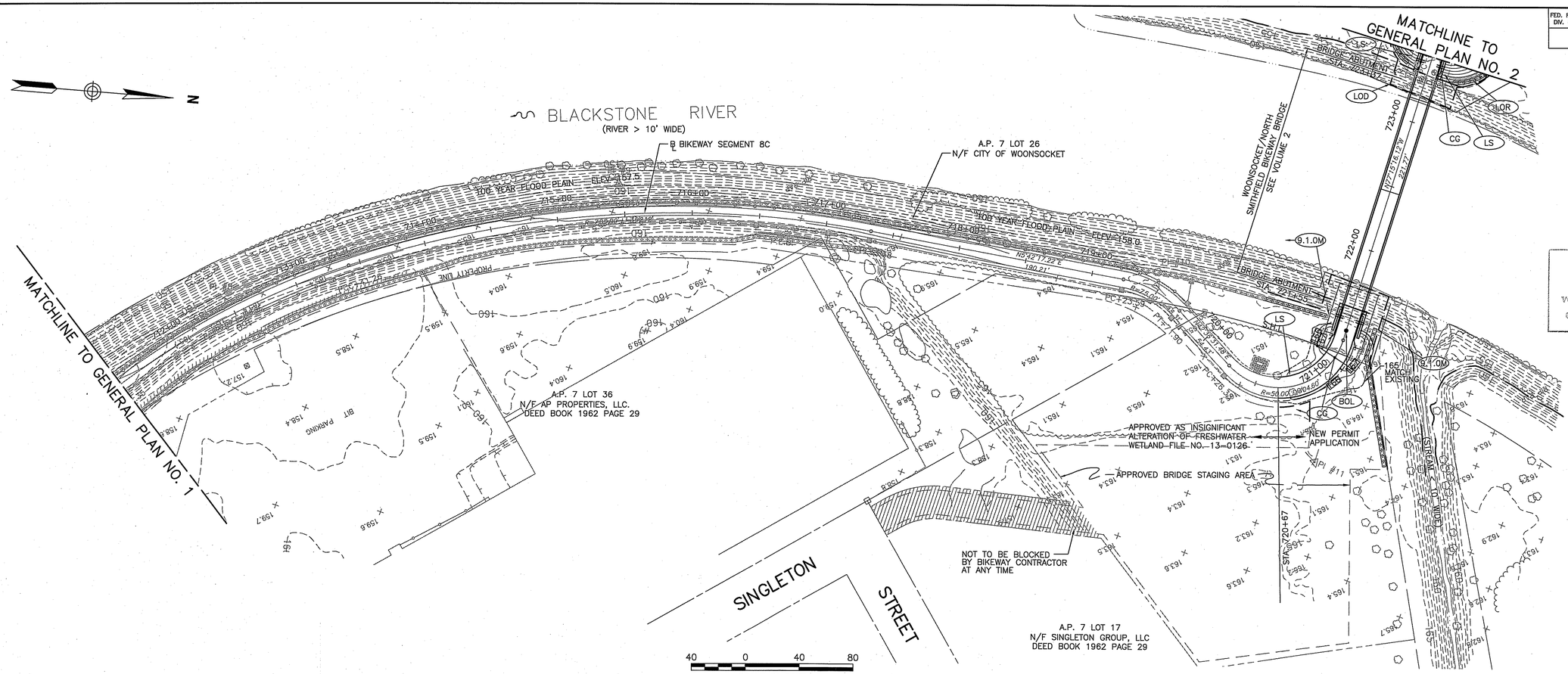
TYPICAL SECTIONS

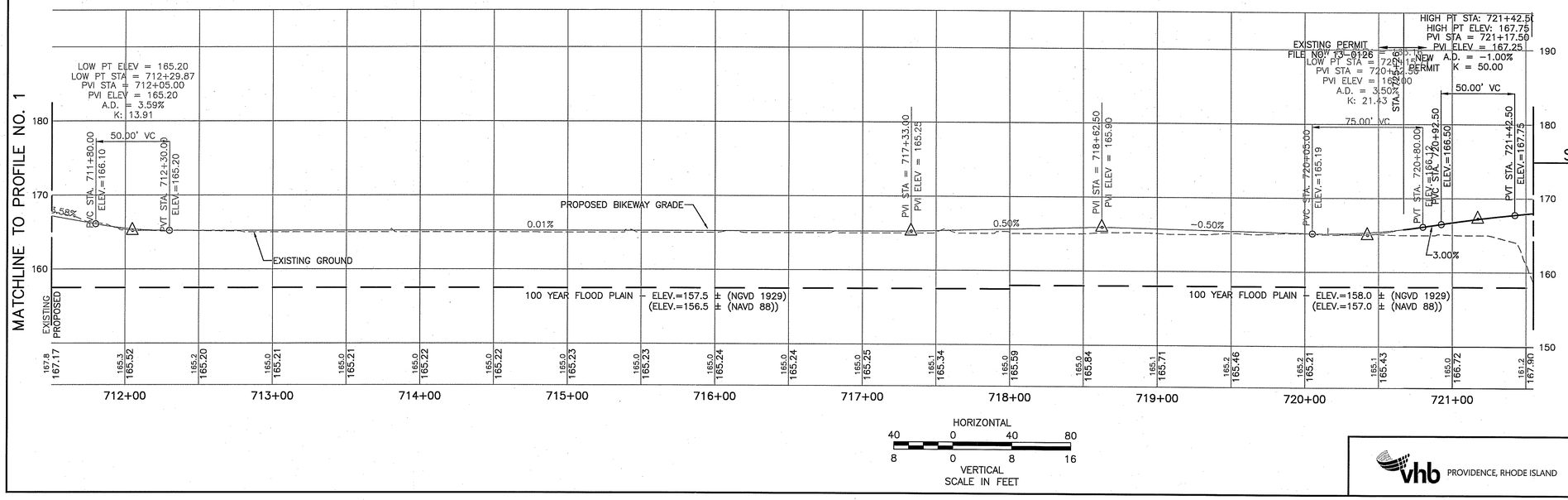
CHECKED BY _____ DATE _____ SCALE _____

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

0021U_V1_006_TYPSEC001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			7	26





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

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
FEB 23 2015

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

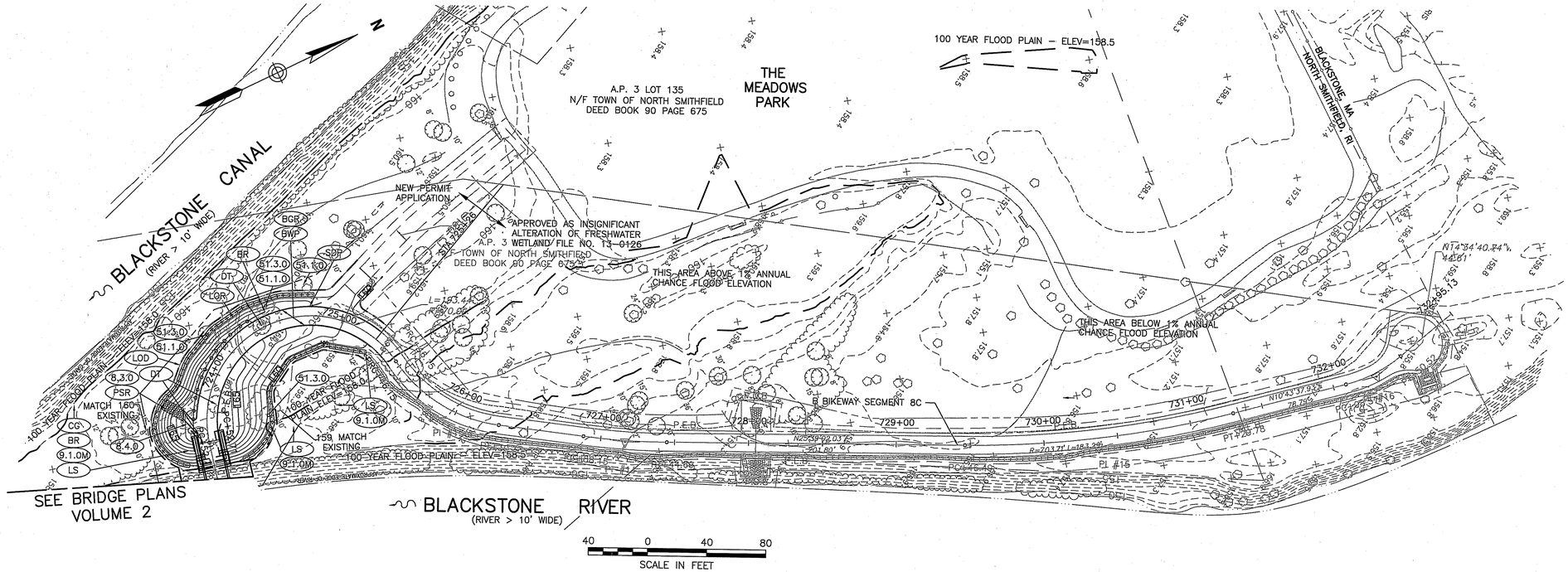
GENERAL PLAN & PROFILE NO. 1

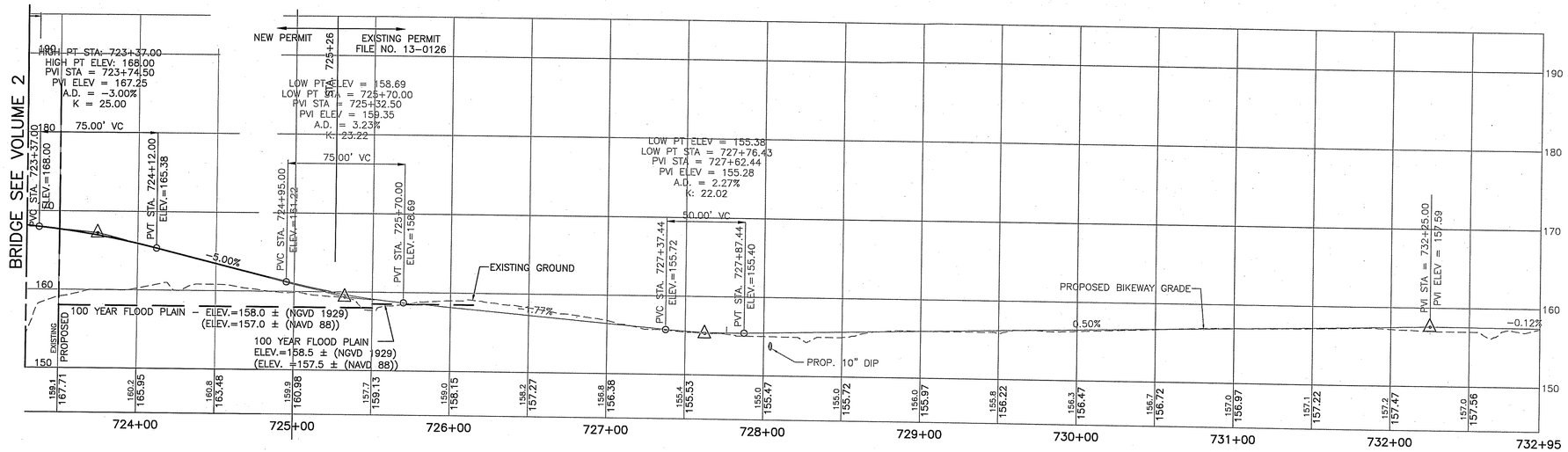
CHECKED BY _____ DATE _____ SCALE _____

vhb PROVIDENCE, RHODE ISLAND

0021U_V1_007_GENERAL.002

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			8	12





HORIZONTAL
40 0 40 80
8 0 8 16
VERTICAL
SCALE IN FEET

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

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 0 9 2015 FILE # 15-0072
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 2 3 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

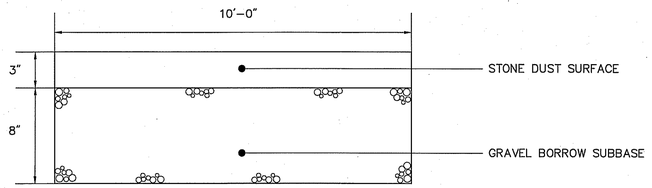
GENERAL PLAN & PROFILE NO. 2

CHECKED BY _____ DATE _____ SCALE _____

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

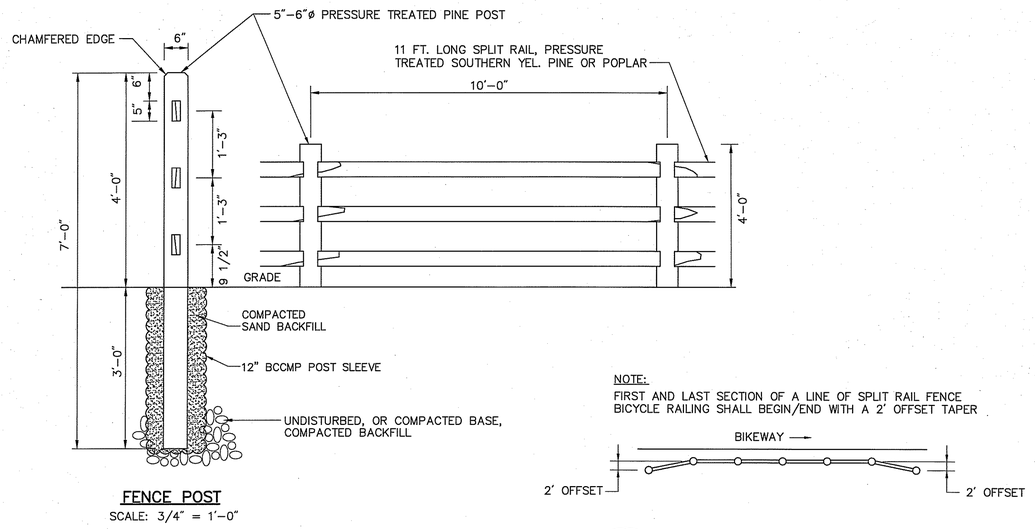
0021U_V1_008_GENERAL003

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			9	12



STONE DUST PATH (SDP)

NOT TO SCALE



FENCE POST

SCALE: 3/4" = 1'-0"

NOTE:
FIRST AND LAST SECTION OF A LINE OF SPLIT RAIL FENCE BICYCLE RAILING SHALL BEGIN/END WITH A 2' OFFSET TAPER

SPLIT RAIL FENCE BICYCLE RAILING (BR)

SCALE: 1/2" = 1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
BRIDGE SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

DETAIL PLAN NO. 1

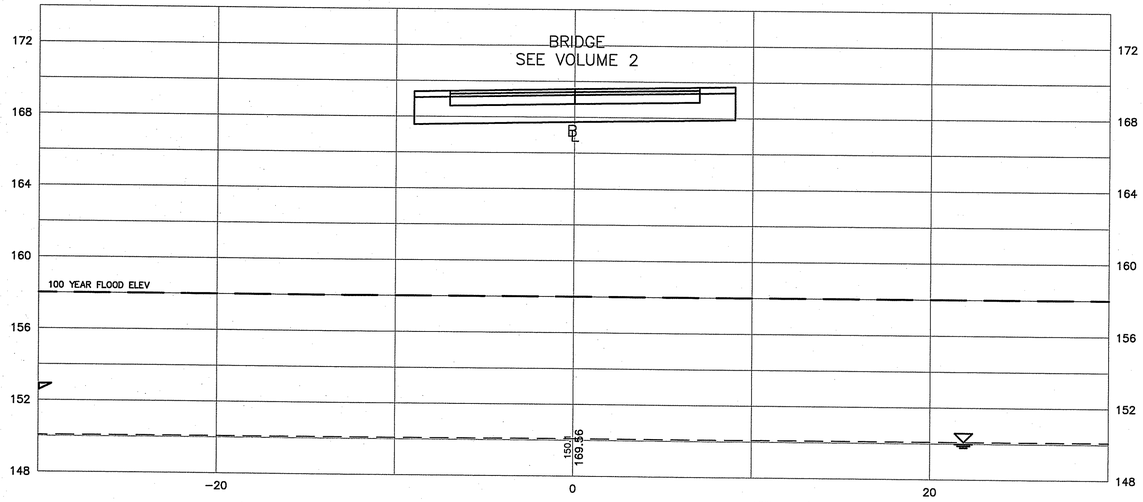
CHECKED BY _____ DATE _____ SCALE _____

VHB
VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

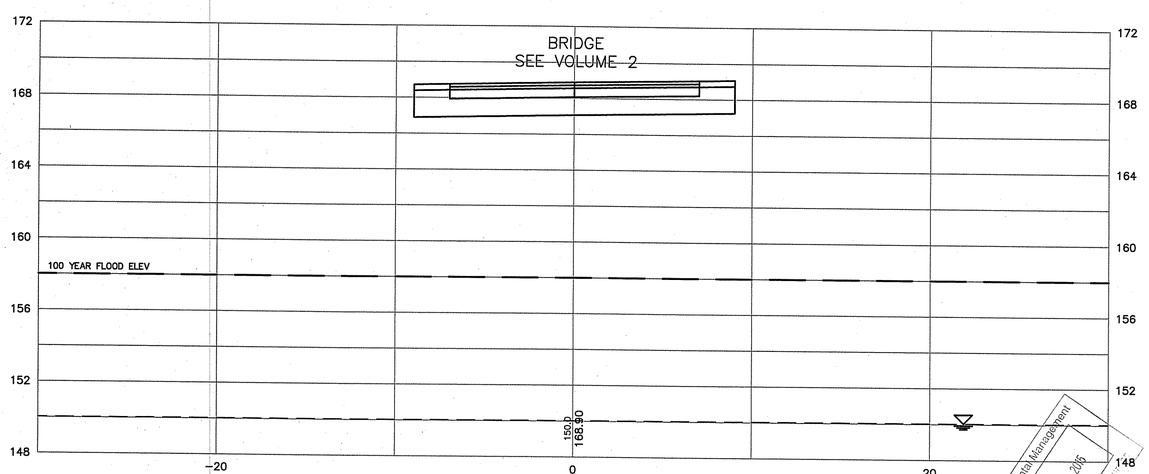
00211_V1_000_DETAIL001

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			10	12

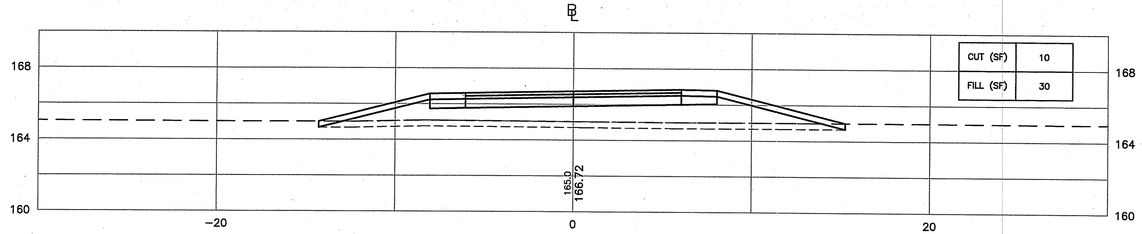
722+50



722+00



721+00



REVISIONS		
NO.	DATE	BY

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

BLACKSTONE RIVER BIKEWAY SEGMENT 8C

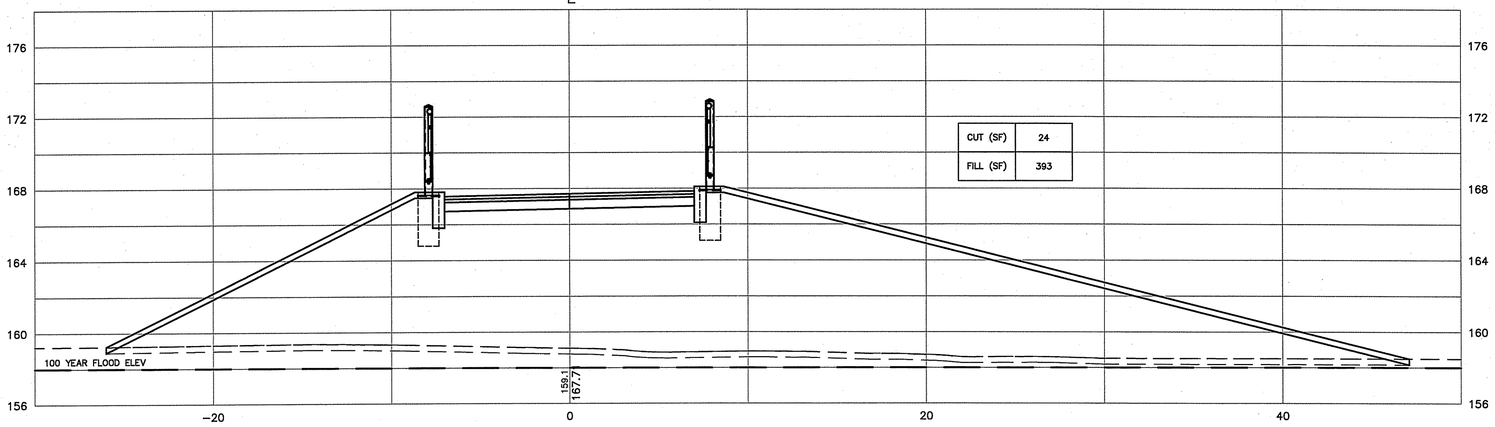
WOONSOCKET, RHODE ISLAND

CHECKED BY _____ DATE _____ SCALE 1"=4'

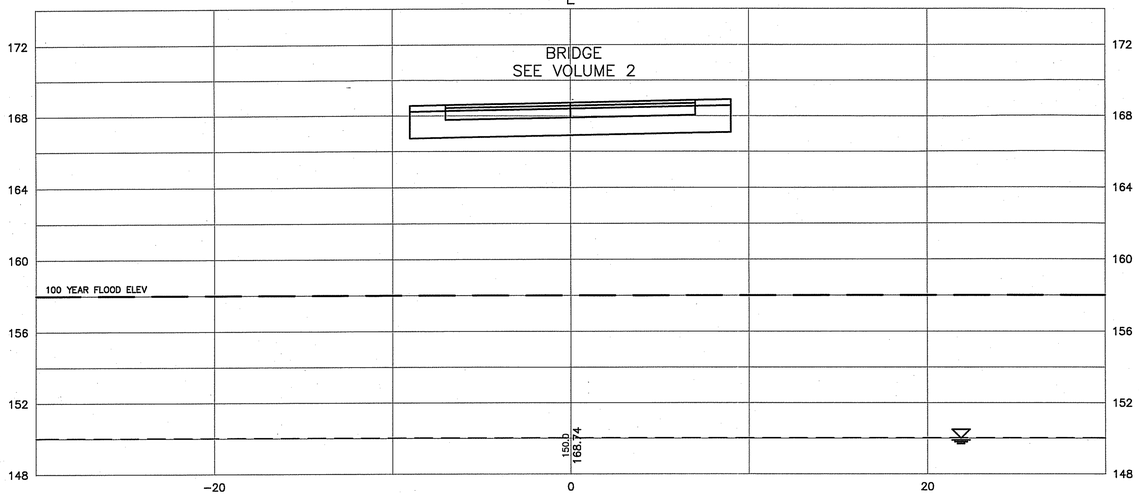
70464.02 – XS_90% progress

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			11	12

723+50



723+00



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

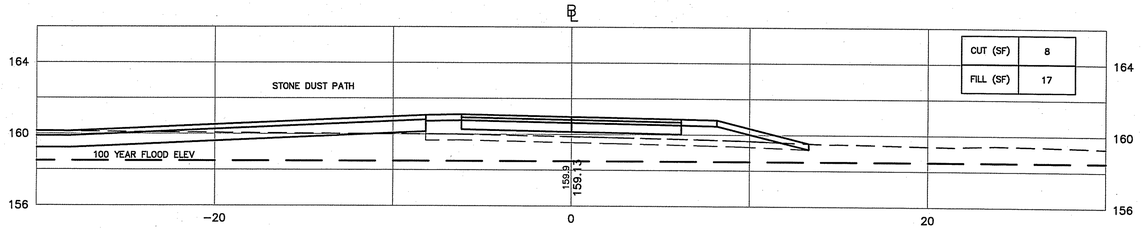
WOONSOCKET, RHODE ISLAND

CHECKED BY _____ DATE _____ SCALE 1"=4'

70464.02 – XS_90% progress

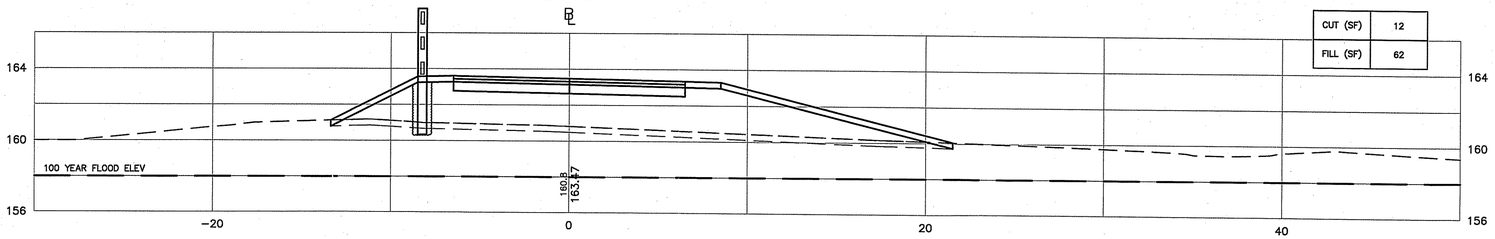
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			12	12

725+00



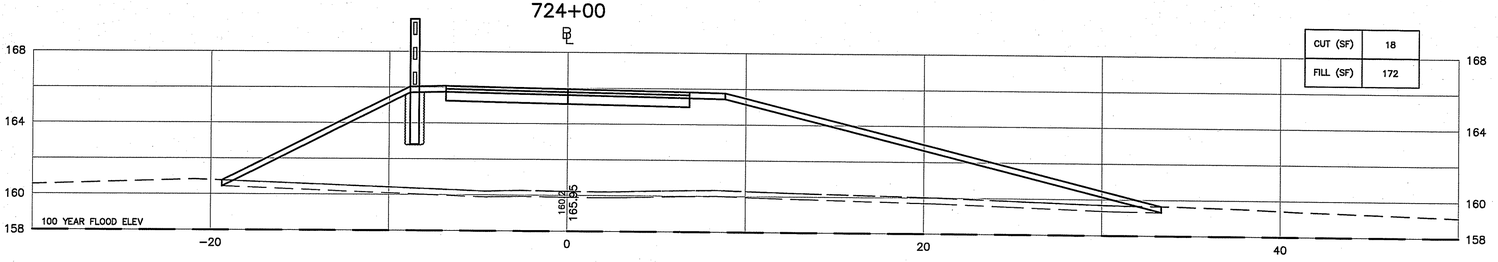
CUT (SF)	8
FILL (SF)	17

724+50



CUT (SF)	12
FILL (SF)	62

724+00



CUT (SF)	18
FILL (SF)	172

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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Environmental Management
FEB 23 2015
Water Resources

REVISIONS		
NO.	DATE	BY

VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET, RHODE ISLAND

CHECKED BY _____ DATE _____ SCALE 1"=4'

70464.02 – XS_90% progress

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

INDEX

VOLUME 1 - BIKEWAY PLANS
FOR BIKEWAY PLANS, SEE "VOLUME 1 - BIKEWAY"

VOLUME 2 - BRIDGE PLANS

STATE OF RHODE ISLAND

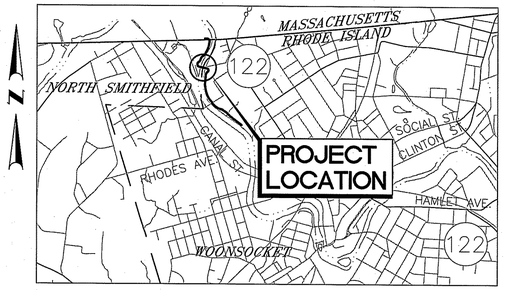
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C
WOONSOCKET/NORTH SMITHFIELD BIKEWAY BRIDGE
BRIDGE NO. 1054
VOLUME 2

CITY OF WOONSOCKET/TOWN OF NORTH SMITHFIELD
COUNTY OF PROVIDENCE

R.I. CONTRACT NO. 2014-XX-XXX R.I. FEDERAL AID PROJECT NO. XXX-XXXX (XXX)
LENGTH 0.62 MILES



LOCATION PLAN

2000 0 2000 4000
SCALE IN FEET

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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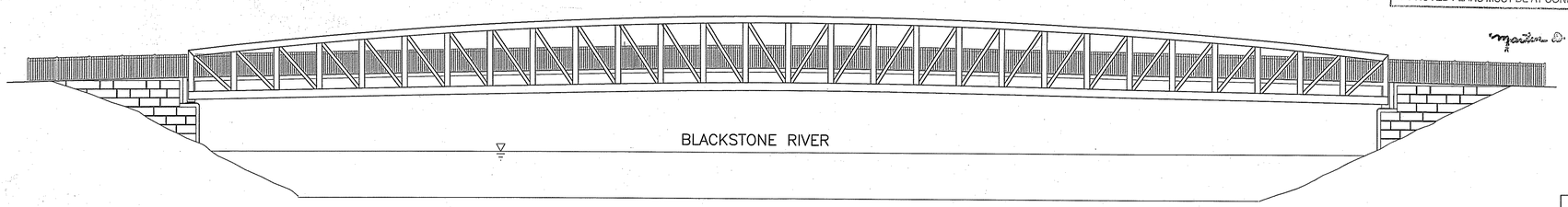


ELEVATION
SCALE: 1"= 10'

RECEIVED
FEB 23 2015
Department of Environmental Management
Office of Customer & Technical Assistance

JEFFREY T. KLEIN
No. 9718
2/19/15
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS
SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED AUGUST 2013, WITH ALL REVISIONS AND THE STATE AND FEDERAL SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS. STANDARD DETAILS FOR THIS PROJECT ARE R.I. STANDARD DETAILS, 1998 EDITION, WITH ALL REVISIONS.

BASE OF LEVELS
NGVD 1929

SCALES OF DRAWINGS
AS SHOWN

PERMIT SUBMISSION
FEBRUARY 2015

vhb PROVIDENCE, RHODE ISLAND

Contract Number 2014-XX-XXX
Number of Sheet 1
Total Sheets 20

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

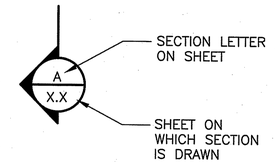
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			2	20

LIST OF ABBREVIATIONS

A	
ABANDONED	= ABD.
ABUTMENT	= ABUT.
ALTERNATE	= ALT.
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	= AASHTO
ANCHOR BOLT	= A.B.
APPROVED	= APPD.
APPROXIMATE	= APPROX.
AT	= @
AVERAGE	= AVG.
B	
BASELINE OF CONSTRUCTION	= ℄
BACK TO BACK	= B TO B
BEAM	= BM.
BEARING	= BRG.
BEND POINT	= B.P.
BETWEEN	= BTWN
BITUMINOUS	= BIT.
BITUMINOUS COATED CORRUGATED METAL PIPE	= B.R.C.M.P.
BUILDING	= BLDG.
BUILDING LINE	= B.L.
BOLT CIRCLE	= B.C.
BOTH SIDES	= B.S.
BOTTOM	= BOT.
BOTTOM OF FOOTING	= B.O.F.
C	
CENTER TO CENTER	= C TO C, C/C
CENTERLINE	= ℄
CIRCLE	= CIR.
CONTROLLED LOW STRENGTH MATERIAL	= CLSM
CLEARANCE	= CLR.
COLUMN	= COL.
CONCRETE	= CONC.
CONDUIT	= COND.
CONNECTION	= CONN.
CONSTRUCTION	= CONST.
CONTINUOUS	= CONT.
CONTRACTION	= CONTR.
CORRUGATED METAL PIPE	= CMP
COUNTERSINK	= CSK.
COUPLING	= CPLG.
D	
DETAIL	= DET.
DIAGONAL	= DIAG.
DIAPHRAGM	= DIAPHM.
DIAMETER	= DIA.
DIMENSION	= DIM.
DRAIN	= DR.
DRAWING	= DWG.
DRILL & GROUT	= D&G
E	
EACH	= EA.
EACH FACE	= E.F.
EACH WAY	= E.W.
EAST	= E.
EASTBOUND	= EB
ELECTRIC	= ELEC.
ELEVATION	= EL.
EXISTING	= EXIST.
EXPANSION	= EXP.
EQUAL	= EQ.
F	
FABRICATE	= FAB.
FACE TO FACE	= F TO F
FAR FACE	= F.F.
FAR SIDE	= F.S.
FEET PER SECOND	= F.P.S.
FLANGE	= FLG.
FLAT HEAD	= F.H.
FOOTING	= FTG.
FOUNDATION	= FDN.
FURNISH, FABRICATE & ERECT	= F.F. & E.
G	
GAGE	= GA.
GALVANIZED	= GALV.
GRADE	= GR.
GRATING	= GRTG.
GROUND	= GND.
H	
HEIGHT	= HGT., HT.
HEXAGON	= HEX.
HIGH STRENGTH	= HS
HOLLOW STRUCTURAL SECTION	= HSS
HORIZONTAL	= HORIZ.

I	
INCH	= IN.
INFORMATION	= INFO.
INSIDE DIAMETER	= I.D.
INTELLIGENT TRANSPORTATION SYSTEMS	= I.T.S.
INVERT	= INV.
J	
JOINT	= JT.
L	
LEFT	= LT.
LENGTH	= LGTH.
LIGHTING	= LTG.
LONG	= LG.
LONGITUDINAL	= LONGIT.
M	
MATERIAL	= MATL.
MAXIMUM	= MAX.
MEAN HIGH WATER	= M.H.W.
MEAN LOW WATER	= M.L.W.
MEAN SEA LEVEL	= M.S.L.
MINIMUM	= MIN.
MISCELLANEOUS	= MISC.
N	
NEAR FACE	= N.F.
NEAR SIDE	= N.S.
NORTH	= N.
NORTHBOUND	= NB
NOT IN CONTRACT	= N.I.C.
NOT TO SCALE	= N.T.S.
NUMBER	= NO.
O	
ON CENTER	= O.C.
OPENING	= OPNG.
OUTSIDE DIAMETER	= O.D.
OPTIONAL	= OPT.
OVERHEAD WIRE	= O.H.W.
OPPOSITE	= OPP.
P	
PARALLEL	= PRL.
PEDESTRIAN	= PED.
PLATE	= PL
POINT OF VERTICAL CURVATURE	= P.V.C.
POINT OF VERTICAL TANGENCY	= P.V.T.
POINT	= PT.
POINT OF CURVATURE	= PC
POINT OF TANGENCY	= PT
POLYVINYL CHLORIDE	= PVC
POUNDS PER SQUARE INCH	= P.S.I.
PRECAST CONCRETE INSTITUTE	= PCI
PRECAST	= P/C
PRESTRESSED	= P/S
PROFILE GRADE LINE	= PGL
PROPOSED	= PROP.
R	
RADIUS	= RAD., R
RAILROAD	= RR.
REHABILITATION	= REHAB.
REINFORCED CONCRETE PIPE	= RCP
REINFORCING	= REINF.
RELOCATED	= RELOC.
REMOVE & DISPOSE	= R&D
REMOVE & RESET	= R&R
REQUIRED	= REQD.
RETAINING	= RET.
RHODE ISLAND	= R.I.
RIGHT	= RT.
RIGID STEEL CONDUIT	= R.S.C.
ROAD WEATHER INFORMATION SYSTEM	= RWIS
S	
SECTION	= SECT.
SCHEDULE	= SCH.
SCHEMATIC	= SCHEM.
SHEET	= SH., SHT.
SIMILAR	= SIM.
SOLDIER PILE & LAGGING	= SPL
SOUTH	= S.
SOUTHBOUND	= SB
SPACES	= SP.
SPACING	= SPC.
SQUARE MILES	= SQ. MI.
STANDARD	= STD.
STAY-IN-PLACE STANDARD	= SIP = STD.
STATION	= STA.
STAINLESS STEEL	= S.S.
STIFFENER	= STIFF.
SUPPORT OF EXCAVATION	= SOE, S.O.E.
SYMMETRICAL	= SYM.

T	
TANGENT	= TAN.
TEMPORARY	= TEMP.
TOP	= T
TOP AND BOTTOM	= T&B
TOP OF WALL	= T.O.W.
TRANSVERSE	= TRANSV.
TUBE SECTION	= TS
TYPICAL	= TYP.
U	
UNLESS NOTED OTHERWISE	= U.N.O.
V	
VARIES	= VAR.
VERTICAL CURVE	= V.C.
VERTICAL	= VERT.
W	
WELDED WIRE FABRIC	= W.W.F.
WEST	= W.
WESTBOUND	= WB
WITH	= W/
WIDE FLANGE	= W
WORKING POINT	= W.P.



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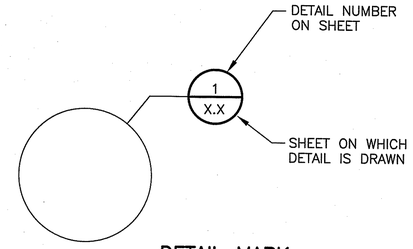

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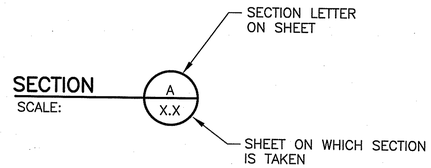

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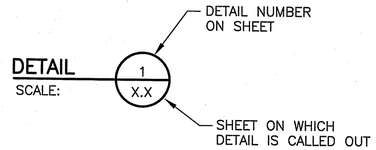

DETAIL TITLE

SECTION & DETAIL DESIGNATIONS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-003-A
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

LIST OF ABBREVIATIONS

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			3	20

GENERAL NOTES

1. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH:
   - * THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED 2010 INCLUDING ALL REVISIONS OR SUPPLEMENTS TO DATE.
   - * THE 2007 EDITION OF THE STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION LRFD BRIDGE DESIGN MANUAL, INCLUDING ALL REVISIONS OR SUPPLEMENTS TO DATE.
   - * 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, INCLUDING LATEST INTERIMS TO DATE.
   - * THE SPECIFICATIONS ACCOMPANYING THESE PLANS.

   IN CASE OF CONFLICT, THE SPECIAL PROVISIONS OF THE SPECIFICATIONS ACCOMPANYING THESE PLANS SHALL GOVERN.
2. DIMENSIONS, STATIONS, AND ELEVATIONS ARE SHOWN TO THE NEAREST ONE–HUNDREDTH OF A FOOT OR ONE–EIGHTH OF AN INCH, EXCEPT STRUCTURAL STEEL DIMENSIONS WHICH ARE TO THE NEAREST ONE–SIXTEENTH OF AN INCH.
3. ANGLES ARE SHOWN TO THE NEAREST SECOND.
4. ALL ABUTMENTS AND WALLS ARE DRAWN LOOKING AT THE EXPOSED FACES.
5. ALL ELEVATIONS ARE REFERENCED TO NGVD 1929.
6. ANY DAMAGE TO EXISTING STATE OR PRIVATE PROPERTY CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST THE STATE.
7. THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND MATERIAL IN HIS FIELD YARD OR AT A SITE APPROVED BY THE ENGINEER. THE EQUIPMENT AND MATERIAL SHALL BE PLACED IN A STORAGE AREA SO AS NOT TO CAUSE A SAFETY HAZARD.
8. THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTION TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS DURING ALL PHASES OF CONSTRUCTION UNTIL THE TOTAL STRUCTURE IS IN PLACE.
9. CONTRACTOR SHALL CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO STARTING THE WORK TO VERIFY LOCATIONS OF EXISTING UTILITIES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH UTILITY COMPANIES.
11. COORDINATES USED ON THESE PLANS ARE BASED ON THE STATEWIDE COORDINATE SYSTEM, THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
12. TOPOGRAPHIC CONDITIONS WERE OBTAINED FROM AERIAL PHOTOGRAMMETRY. ACCURACY OF VERTICAL TOPOGRAPHY IS WITHIN 10% OF ONE–HALF THE CONTOUR INTERVAL.
13. FOR BENCH MARKS AND TIES SEE BIKEWAY LOCATION PLANS (VOLUME 1).
14. ALL FOOTINGS SHALL BE APPROVED BY ENGINEER AS TO DIMENSIONS, ELEVATIONS, AND SUITABILITY OF FOUNDATION MATERIAL BEFORE THE PLACING OF CONCRETE.
15. ALL WORKING POINTS ARE SHOWN AT THE CENTERLINES OF ABUTMENT BEARING, UNLESS OTHERWISE NOTED.

DESIGN DATA

DESIGN SPECIFICATIONS:

- * THE 2010 EDITION OF STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, INCLUDING ALL REVISIONS TODATE.
- * ALL OTHER APPLICABLE DESIGN SPECIFICATIONS ARE REFERENCED IN SECTION 1 OF THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL DATED 2010.
- * THE 2007 EDITION OF THE STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION LRFD BRIDGE DESIGN MANUAL, INCLUDING ALL REVISIONS OR SUPPLEMENTS TO DATE.
- * 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, INCLUDING LATEST INTERIMS TO DATE.
- * IN CASE OF CONFLICT, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL SHALL GOVERN.

LOAD MODIFIERS:

THE LOAD MODIFIERS FOR THIS PROJECT ARE AS FOLLOWS:

- * THE LOAD MODIFIER FOR DUCTILITY SHALL BE TAKEN AS 1.0 FOR ALL LIMIT STATES.
- * THE LOAD MODIFIER FOR REDUNDANCY SHALL BE TAKEN AS 1.0.
- * THE LOAD MODIFIER FOR OPERATIONAL IMPORTANCE SHALL BE TAKEN AS 1.0.

LOAD FACTORS:

ALL LOAD FACTORS SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, EXCEPT AS MODIFIED IN THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL

- * THE LOAD FACTOR FOR LIVE LOAD FOR THE EXTREME EVENT I SHALL BE TAKEN AS 0.0.
- * THE LOAD FACTOR FOR DEAD LOAD FOR THE EXTREME EVENT I AND EXTREME EVENT II SHALL BE TAKEN AS 1.0.
- * THE LOAD FACTOR FOR SETTLEMENT FOR ALL LIMIT STATES SHALL BE TAKEN AS 1.0

LIVE LOADS:

- * THE DESIGN LIVE LOAD SHALL BE THE AASHTO H15–44 TRUCK OR 90 PSF PEDESTRIAN LIVE LOAD NOT APPLIED SIMULTANEOUSLY. THE DYNAMIC LOAD ALLOWANCE SHALL NOT BE CONSIDERED.
- * DEFLECTIONS DUE TO DESIGN LIVE LOAD SHALL BE LIMITED TO 1/1100 OF THE SPAN.

WIND LOADING DESIGN DATA:

THE WIND LOADING DESIGN SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL, AND AS MODIFIED HEREIN.

- * EXCEPT DURING CONSTRUCTION, THE DESIGN WIND PRESSURE IS BASED ON A DESIGN WIND SPEED OF 120 MPH.
- * THE DESIGN WIND PRESSURES DURING CONSTRUCTION SHALL BE AS SPECIFIED UNDER THE NOTES TITLED "GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS".

TRAFFIC DATA:

N/A – PEDESTRIAN BRIDGE

THERMAL DESIGN FORCE DATA:

UNIFORM TEMPERATURE EFFECTS HAVE BEEN TAKEN INTO CONSIDERATION IN ACCORDANCE WITH THE PROCEDURE B OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE MINIMUM DESIGN TEMPERATURE SHALL BE –10 DEGREES F, AND THE MAXIMUM TEMPERATURE SHALL BE 105 DEGREES F.

SEISMIC DESIGN DATA:

N/A – PEDESTRIAN BRIDGE

HYDRAULIC DATA:

DESIGN FLOW DRAINAGE AREA	368.0 SQ. MI.
FLOODWAY WIDTH	158.0 FEET
100 YEAR FLOOD EL.	158.0 (NGVD 1929) 157.0 (NAVD 1988)
MEAN VELOCITY	8.0 F.P.S.

FOUNDATION DESIGN DATA:

DEEP FOUNDATIONS:

THE FACTORED AXIAL UPLIFT RESISTANCE FOR THE VARIOUS DEEP FOUNDATION TYPES ARE AS FOLLOWS:

		FACTORED UPLIFT RESISTANCE (KIPS)	
LOCATION	PILE TYPE	STRENGTH LIMIT STATES	EXTREME LIMIT STATES
ABUTMENTS AND RETURN WALLS	HP14x73	35	70

* PILES WILL BE DRIVEN TO A FACTORED RESISTANCE EQUAL OR GREATER THAN THE FACTORED PILE DEMAND VALUES INDICATED BELOW.

		FACTORED AXIAL RESISTANCE (KIPS)*			
		GEOTECHNICAL		STRUCTURAL	
LOCATION	PILE TYPE	STRENGTH LIMIT STATES	EXTREME/SERVICE LIMIT STATES	STRENGTH LIMIT STATES	EXTREME/SERVICE LIMIT STATES
ABUTMENTS AND RETURN WALLS	H-PILE	195	300	370	745

* THE FACTORED DESIGN AXIAL RESISTANCE AT EACH LOCATION IS THE LESSER VALUE OF THE FACTORED GEOTECHNICAL AND THE FACTORED STRUCTURAL RESISTANCES INDICATED.

* THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE USING THE NORDLUND METHOD AND A RESISTANCE FACTOR OF 0.65.

* THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE USING THE NORDLUND METHOD AND A RESISTANCE FACTOR OF 1.00.

* THE FACTORED GEOTECHNICAL UPLIFT RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE USING THE NORDLUND METHOD AND A RESISTANCE FACTOR OF 0.50.

* THE FACTORED GEOTECHNICAL UPLIFT RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE USING THE NORDLUND METHOD AND A RESISTANCE FACTOR OF 1.00.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

JOB SPECIFIC
GENERAL NOTES 1

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			4	20

MATERIALS

STRUCTURAL STEEL:

* AASHTO DESIGNATION M 270 (ASTM DESIGNATION A 709) GRADE 50 PAINTED.

REINFORCING STEEL:

* AASHTO DESIGNATION M 31 (ASTM DESIGNATION A 615) GRADE 60.
* ASTM DESIGNATION A706 GRADE 60

CONCRETE:

* CLASS HP f'c = 5,000 PSI
  BRIDGE DECK, ABUTMENT, BACKWALL, RETURN WALL STEM, BRIDGE SEATS.
* CLASS MC f'c = 5,000 PSI
  ABUTMENT STEMS.
* CLASS XX f'c = 4,000 PSI
  APPROACH SLABS, APPROACH RAILING FOOTING, FOOTINGS (ABUTMENTS, RETURN WALLS) ALL OTHER CONCRETE.

CONCRETE NOTES

1. CLASSES OF CONCRETE SHALL BE HP, MC AND XX, AS DESCRIBED IN THE LATEST REVISION OF TABLES (1) AND (2) UNDER SECTION 601 "PORTLAND CEMENT CONCRETE" OF THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE SPECIAL PROVISIONS OF THE SPECIFICATIONS.

2. THE CONTRACTOR MAY, AT THE APPROVAL OF THE ENGINEER, PROPOSE THE USE OF SELF-CONSOLIDATING CONCRETE FOR ANY CLASS OF CONCRETE ON THIS PROJECT. SECTION 606 "SELF CONSOLIDATING CONCRETE (SCC)", CONTAINS THE REQUIREMENTS FOR MODIFYING ALL CLASSES OF CONCRETE MIX DESIGN FOR SELF-CONSOLIDATING APPLICATIONS.

3. ALL PORTLAND CEMENT CONCRETE SHALL BE AIR-ENTRAINED PORTLAND CEMENT CONCRETE.

4. EXCEPT FOR FOOTINGS CAST BELOW GRADE, ALL REINFORCING STEEL SHALL BE GALVANIZED. ALL WIRE TIES AND MISCELLANEOUS HARDWARE USED FOR PLACEMENT OF GALVANIZED REINFORCING SHALL BE NON-METALIC. REINFORCING STEEL SHALL BE GALVANIZED PER ASTM A767 CLASS I (GALVANIZED STEEL).

5. ALL LAP SPLICES NOT SHOWN ON THE PLANS SHALL BE LAPPED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR CLASS C LAP SPLICES.

6. UNLESS OTHERWISE SPECIFIED ALL REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVER:

		MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH (FOOTINGS, ABUTMENT AND WALL FACES, BACKWALLS)		3"
DECK SLABS (EXPOSED DECKS)	TOP	$2\frac{1}{2}$" ($+\frac{1}{4}$", -0")
	BOTTOM	1" ($+\frac{1}{8}$", -0")
ALL OTHER BARS		2"

   COVER TO TIES AND STIRRUPS MAY BE 0.5 INCH LESS THAN ABOVE VALUES SPECIFIED FOR MAIN REINFORCING, BUT IN NO CASE LESS THAN 2 INCHES.

7. UNLESS OTHERWISE NOTED ON THE PLANS, ALL ANCHOR BOLTS SHALL BE ASTM DESIGNATION F 1554 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO DESIGNATION M 232. SWEDGED RODS SHALL BE AASHTO DESIGNATION M 270 GRADE 36 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO DESIGNATION M 232.

8. ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATES PRIOR TO PLACEMENT OF CONCRETE UNLESS OTHERWISE INDICATED ON THE PLANS OR AS AUTHORIZED BY THE ENGINEER.

CONCRETE NOTES (CONTINUED)

9. HORIZONTAL CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON PLANS WILL NOT BE PERMITTED WITHOUT A WRITTEN REQUEST BY THE CONTRACTOR AND PRIOR AUTHORIZATION BY THE ENGINEER.

10. THE ENTIRE TOPSIDE SURFACES OF ABUTMENT BEAM SEATS, AS WELL AS VERTICAL FACES OF BACKWALLS, SHALL BE PROVIDED WITH A FILM-FORMING SEALER (M12.03.1) CONCRETE SURFACE TREATMENT-PROTECTIVE COATING IN ACCORDANCE WITH SECTION 820 OF THE RI STANDARD SPECIFICATIONS.

11. ALL EXPOSED EDGES AND REENTRANT CORNERS NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM $\frac{3}{4}$" CHAMFER.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME AS THE SURFACES ARE APPROVED AND ACCEPTED BY THE ENGINEER. ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

13. ALL JOINT SEALANT SHALL BE POLYURETHANE, POLYURETHANE ELASTOMERIC, OR SILICONE SEALANT AS DESIGNATED ON THE PLANS. THE COLOR OF THE JOINT SEALANT, WHERE EXPOSED, SHALL BE NEUTRAL (LIGHT GRAY OR TAN). COLOR OF THE SEALANT WHERE NOT EXPOSED, WILL BE AT THE DISCRETION OF THE CONTRACTOR.

14. UNLESS OTHERWISE NOTED ON THE PLANS, JOINT FILLER IS TO BE PREFORMED NON-EXPANSIVE, NON-EXTRUDING TYPE IN ACCORDANCE WITH SECTION M.02.11.1 OF THE RI STANDARD SPECIFICATIONS.

15. PLACEMENT AND CURING OF BRIDGE DECK CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 814 OF THE RI STANDARD SPECIFICATIONS.

16. IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS, ALL METAL TIES OR ANCHORAGES WHICH ARE REQUIRED FOR CONCRETE FORMWORK SHALL BE SO CONSTRUCTED THAT THEY CAN BE REMOVED TO AT LEAST TWO INCHES BELOW THE EXPOSED SURFACE OF THE CONCRETE WITHOUT CAUSING DAMAGE TO THE CONCRETE SURFACE. SNAP TIES MAY BE USED ONLY IF APPROVED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO USE THEM, A CATALOG CUT AND OTHER NECESSARY INFORMATION MUST BE SUBMITTED TO THE ENGINEER TO DEMONSTRATE THAT THE TIES WILL SNAP-OFF FAR ENOUGH INTO THE CONCRETE TO ALLOW FOR PROPER PATCHING. SNAP TIES MUST PROVIDE ADEQUATE STRENGTH TO SUPPORT THE FORMS. ALL CAVITIES SHALL BE FILLED WITH AN APPROVED CEMENT MORTAR MEETING THE REQUIREMENTS OF ASTM C 928.

17. HAND-HELD VIBRATORS SHALL BE EQUIPPED WITH RUBBER TIPPED HEADS WHEN USED TO CONSOLIDATE CONCRETE AROUND REINFORCEMENT AND EMBEDMENT.

18. THE ENTIRE BRIDGE DECK SHALL RECEIVE A BROOM FINISH.

19. WATER STOPS ARE REQUIRED FOR HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ABUTMENTS AND WALLS WHEN EXPOSED TO BACKFILL EARTH MATERIAL. WATER STOPS SHALL BE INSTALLED AT THE LOCATIONS DETAILED ON THE PLANS, AT THE LOCATIONS AS SPECIFIED ABOVE AND AT ALL LOCATIONS AS DIRECTED BY THE ENGINEER, ALL IN ACCORDANCE WITH SECTION 812 OF THE RI STANDARD SPECIFICATIONS.

20. UNLESS OTHERWISE DIMENSIONED ON THE PLANS, ALL REINFORCEMENT BENDS SHOWN ARE STANDARD HOOKS.

21. ALL EXPOSED FACES OF ABUTMENTS FROM THE BRIDGE SEATS TO THE GROUND SURFACE AND EXPOSED WALL SURFACES SHALL RECEIVE AN ANTI-GRAFFITI COATING.

22. UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CONCRETE SURFACES VISIBLE IN ELEVATION TO ONE FOOT BELOW FINAL GROUND LINE SHALL RECEIVE CONCRETE SURFACE RUBBED FINISH IN ACCORDANCE WITH THE R.I. STANDARD SPECIFICATIONS.

REINFORCEMENT NOTE

THE CONTRACTOR'S BAR FABRICATOR SHALL VERIFY THE CORRECTNESS IN PREPARING HIS ORDER LISTS AND BENDING DIAGRAMS. ANY INCIDENTAL EXPENSE REQUIRING REVISION OF MATERIALS AS SHOWN ON THE ORDER LISTS AND BENDING DIAGRAMS IN ORDER TO MAKE IT COMPLY WITH THE DESIGN DRAWINGS SHALL BE BORNE BY THE CONTRACTOR. SHOP DRAWINGS FOR ALL REINFORCEMENT DETAILS AND SCHEDULE SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

JOB SPECIFIC
GENERAL NOTES 2

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			5	20

STRUCTURAL STEEL NOTES

1. FRAMING DIMENSIONS ARE GIVEN ALONG CENTERLINES OF GIRDERS AND ALONG CENTERLINES OF BEARINGS ON ABUTMENTS. THE FABRICATOR IS RESPONSIBLE FOR INCORPORATING THE CAMBER, CROSS SLOPE, AND OTHER EFFECTS THAT MAY IMPACT THE OVERALL GIRDER LENGTHS, DIMENSIONS AND/OR THE DETAILING.

2. THE SHOPS FABRICATING THE STRUCTURAL STEEL (EXCEPT FOR EXPANSION JOINTS, RAILINGS AND BEARINGS), MUST BE CERTIFIED FOR "MAJOR STEEL BRIDGES (CBR)" IN ACCORDANCE WITH THE AISC QUALITY CERTIFICATION PROGRAM OR EQUIVALENT. SHOPS FABRICATING THE EXPANSION JOINTS, RAILINGS AND BEARINGS SHALL, AT A MINIMUM, BE CERTIFIED FOR "SIMPLE STEEL BRIDGE STRUCTURES (SBR)".

   THE SHOPS SHALL ALSO BE CERTIFIED UNDER THE AISC "SOPHISTICATED PAINT ENDORSEMENT (SPE)" QUALITY PROGRAM OR THE SSPC–QP3 PAINT CERTIFICATION PROGRAM.

   THE FABRICATOR MUST SUBMIT PROOF OF CURRENT CERTIFICATION AS SPECIFIED.

3. THE STEEL ERECTOR/CONTRACTOR FOR THIS PROJECT SHALL BE CERTIFIED FOR "ADVANCED CERTIFIED STEEL ERECTOR (ASCE)" IN ACCORDANCE WITH THE AISC QUALITY CERTIFICATION PROGRAM. THE ERECTOR/CONTRACTOR OF THE STRUCTURAL STEEL SHALL BE REQUIRED TO SUBMIT PROOF OF CURRENT CERTIFICATION AS SPECIFIED, INCLUDING THE QUALITY CONTROL PLAN AND SAFETY PLAN THAT IS REQUIRED TO OBTAIN THE CERTIFICATION.

4. FRACTURE CRITICAL MEMBERS (FCM) IF ANY, HAVE BEEN DESIGNATED ON THE STEEL FRAMING AND/OR THE STEEL DETAIL SHEETS.

5. SHOP DRAWINGS FOR ALL FABRICATED STEEL INCLUDING BEARINGS, EXPANSION JOINTS, RAILINGS AND FALSEWORK SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING PRIOR TO FABRICATION.

6. INSPECTION OF WELDS INCLUDING RADIOGRAPHIC TESTING (RT) AND MAGNETIC PARTICLE TESTING (MT) SHALL BE IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS AND THE AASHTO/AWS BRIDGE WELDING CODE, EXCEPT THAT THE REMAINING PERCENTAGE OF ALL GROOVE WELDS NOT RT TESTED SHALL BE MT.

7. STRUCTURAL STEEL SHAPES AND PLATES FOR TRUSSES SHALL CONFORM TO THE LATEST PROVISIONS OF AASHTO DESIGNATION M 270, GRADE 50, AS DESIGNATED ON THE PLANS. STRUCTURAL STEEL TUBULAR MEMBERS FOR TRUSSES SHALL CONFORM TO ASTM DESIGNATION A 500 (GRADE C). UNLESS OTHERWISE NOTED ALL STRUCTURAL STEEL SHALL BE GRADE 50.

8. STRUCTURAL STEEL SHAPES AND PLATES FOR RAILING SHALL CONFORM TO THE LATEST PROVISIONS OF AASHTO DESIGNATION M 270, GRADE 36, AS DESIGNATED ON THE PLANS. STRUCTURAL STEEL TUBULAR MEMBERS FOR RAILING SHALL CONFORM TO ASTM DESIGNATION A 500 (GRADE B).

9. ALL AASHTO M 270 STRUCTURAL STEEL USED IN GIRDERS (INCLUDING CONNECTION PLATES AND STIFFENERS), SHALL MEET THE ZONE 2 CHARPY V–NOTCH FRACTURE TOUGHNESS TEST REQUIREMENTS AS SPECIFIED IN TABLE 6.6.2–2 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR "NONFRACTURE–CRITICAL" COMPONENTS. THE ZONE 2 FRACTURE TOUGHNESS REQUIREMENTS ARE AS FOLLOWS:

   NONFRACTURE–CRITICAL

GRADE 36	15 FT–LBS @ 40°F (UP TO 4 INCHES THICK)
GRADE 50	15 FT–LBS @ 40°F (UP TO AND INCLUDING 2 INCHES THICK)
GRADE 50	20 FT–LBS @ 40°F (FROM 2 INCHES THICK UP TO AND INCLUDING 4 INCHES THICK)

   FRACTURE–CRITICAL

GRADE 36	25 FT–LBS @ 40°F (UP TO 4 INCHES THICK)
GRADE 50	25 FT–LBS @ 40°F (UP TO AND INCLUDING 2 INCHES THICK)
GRADE 50	30 FT–LBS @ 40°F (FROM 2 INCHES THICK UP TO AND INCLUDING 4 INCHES THICK)

   SAMPLING AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO T243. THE FREQUENCY OF TESTING SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

   THE CHARPY V–NOTCH FRACTURE TOUGHNESS TEST REQUIREMENT IS NOT MANDATORY FOR THE FOLLOWING STEEL COMPONENTS:

   - BEARINGS, MASONRY PLATES AND SOLE PLATES
   - EXPANSION JOINTS SYSTEMS
   - DRAINAGE MATERIAL
   - RAILINGS
   - FOUNDATION MICROPILES, H–PILES AND PIPE PILES
   - SUPPORT OF EXCAVATION COMPONENTS

10. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST STRUCTURAL WELDING CODE AASHTO/AWS D1.1 (PREFABRICATED TRUSS, ORNAMENTAL RAILING) AND D1.5 (ALL OTHERS) AND APPLICABLE SUPPLEMENTAL AWS PUBLICATIONS.

11. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO DESIGNATION M164 (ASTM A325, TYPE 1), AND SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695 CLASS 50. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 824 OF THE RI STANDARD SPECIFICATIONS. ALL NUTS AND WASHERS SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH M05.04.4 OF THE RI STANDARD SPECIFICATIONS. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL CONNECTIONS ARE "SLIP CRITICAL" WITH CLASS B SURFACE CONDITIONS.

12. WASHERS MEETING AASHTO DESIGNATION M 293 ARE TO BE USED OVER ALL HOLES THAT ARE MORE THAN $\frac{1}{16}$" IN DIAMETER GREATER THAN THE BOLT DIAMETER AND UNDER ALL PARTS TURNED DURING ASSEMBLY.

13. WELDING ELECTRODES SHALL HAVE THE SAME CORROSION RESISTANCE AS THE BASE METAL AND SHALL BE FREE OF MOISTURE AT THE TIME OF USE.

14. UNLESS OTHERWISE SPECIFIED, STRUCTURAL STEEL SHALL BE PREPARED AND PAINTED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.

15. NOTE NOT USED.

STRUCTURAL STEEL NOTES (CONTINUED)

16. PRIOR TO FABRICATION, ALL MATERIALS SHALL BE BLAST–CLEANED TO AT LEAST SSPC–SP6 TO REMOVE ALL OIL, DIRT, GREASE, MILL SCALE AND OTHER DELETERIOUS MATERIALS FROM THE SURFACES OF THE STEEL TO BE FABRICATED.

17. PRIOR TO SHOP COATING AS SPECIFIED IN SECTION 825 OF THE RI STANDARD SPECIFICATIONS, ALL CORNERS AND EDGES OF STEEL WHICH HAVE BEEN FLAME CUT OR OTHERWISE HARDENED SHALL BE SOFTENED BY GRINDING OR BLAST–CLEANING TO PROVIDE A SURFACE SUITABLE FOR APPLICATION OF THE SPECIFIED PAINT SYSTEM.

18. WELDING OF ATTACHMENTS TO GIRDER FLANGES OR WEBS FOR CONSTRUCTION PURPOSES IS NOT PERMITTED EXCEPT WHEN APPROVED BY THE ENGINEER.

19. THE ENDS OF ALL GIRDERS SHALL BE VERTICAL AFTER ALL DEAD LOADS HAVE BEEN PLACED.

20. INTERMEDIATE STIFFENERS SHALL BE PLACED ON THE INTERIOR SIDE OF THE FASCIA PLATE GIRDER WEBS AND ON BOTH SIDES OF ALL INTERIOR PLATE GIRDER WEBS.

21. BEARING STIFFENERS SHALL BE FABRICATED AS SHOWN ON THE PLANS AND SHALL BE PLACED ON BOTH SIDES OF ALL PLATE GIRDER WEBS.

22. INTERMEDIATE STIFFENERS AND CONNECTION PLATES SHALL BE SET PERPENDICULAR TO THE FLANGES OF THE GIRDERS.

23. END BEARING STIFFENERS AT GIRDER ENDS SHALL BE PLUMB.

24. BOLTED CONNECTIONS SHALL BE DESIGNED AS SLIP–CRITICAL CONNECTIONS. THE FAYING SURFACES SHALL SATISFY CLASS B SURFACE CONDITION AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

25. THE TRUSSES SHALL BE CAMBERED TO THE AMOUNTS SHOWN ON THE PLANS. THE FABRICATOR'S SHOP DRAWINGS SHALL INCLUDE, IN ADDITION TO ANY CUTTING OR CAMBER DIAGRAMS NECESSARY FOR THEIR PURPOSES, A SHOP ASSEMBLY DIAGRAM WHICH PROVIDES CAMBER OFFSETS CALCULATED BY THE FABRICATOR AT THE REFERENCE POINTS PROVIDED BY THE ENGINEER (USUALLY TENTH POINTS OF THE SPAN). THE INFORMATION PROVIDED SHALL BE SUFFICIENT ENOUGH FOR THE ENGINEER TO EVALUATE WHETHER THE CAMBER HAS BEEN CORRECTLY INTERPRETED.

   AT THE TIME AND PLACE OF ERECTION, TRUSSES SHALL HAVE THE REQUIRED AMOUNT OF CAMBER. THE ERECTED VERTICAL ALIGNMENT (CAMBER) SHALL NOT DEVIATE FROM THE THEORETICAL ERECTED VERTICAL ALIGNMENT BY MORE THAN FOLLOWING: –0, +$\frac{1}{4}$" x (TOTAL LENGTH, IN FEET, FROM THE NEAREST SUPPORT)/10. THE MAXIMUM DEVIATION IS 1$\frac{1}{2}$" BETWEEN SUPPORTS.

26. ALL SHOP CONNECTIONS AND SPLICES SHALL BE WELDED. WELDING PROCEDURES AND TECHNIQUES TO BE USED IN FABRICATION AND ERECTION OF THE GIRDERS SHALL BE AS SHOWN ON THE SHOP DRAWINGS AND SHALL INCORPORATE THE FOLLOWING:

   - BOTH FLANGES AND THE WEB SHALL BE COMPLETELY FABRICATED FOR THEIR ENTIRE LENGTHS BEFORE THE WELDING OF THE FLANGES TO THE WEB IS PERFORMED.
   - ALL WEB AND FLANGE SPLICES OTHER THAN THOSE SHOWN ON THE PLANS MUST BE APPROVED BY THE ENGINEER. ALTERNATE OR ADDITIONAL SPLICES ARE TO BE LOCATED AND DESIGNED BY THE FABRICATOR AND SHOWN ON THE SHOP DRAWINGS. THESE SPLICES ARE TO FULLY DEVELOP THE STRENGTH OF THE WEB AND FLANGE PLATES. WEB SPLICES, IF USED, SHALL BE LOCATED 2'–0" MINIMUM FROM ANY STIFFENER.
   - NO MORE THAN TWO SHOP WEB SPLICES WILL BE PERMITTED BETWEEN FIELD SPLICES. SPLICING OF GIRDERS BY FIELD WELDING WILL NOT BE PERMITTED.

27. NO SHOP FILLET WELD SHALL BE LESS THAN $\frac{1}{4}$".

28. NOTE NOT USED.

29. WHEN STEEL DIE STAMPS ARE USED TO IDENTIFY PIECES AND MEMBERS, FABRICATORS SHALL UTILIZE LOW STRESS STAMPS.

30. FOR SIZE AND LOCATION OF ANCHOR BOLTS, SEE ABUTMENT AND BEARING DRAWINGS.

31. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EXPANSION JOINT SYSTEM PROVIDED WILL BE COMPATIBLE WITH BOTH THE END OF DECK HAUNCHES AND/OR THE STRUCTURAL STEEL FRAMING CONFIGURATION. THAT IS, THE EXPANSION JOINT SYSTEM AND ALL ITS INHERENT COMPONENTS AND ATTACHMENT DEVICES SHALL BE SIZED OR ARRANGED TO BE COMPATIBLE WITH THE GIRDER AND DIAPHRAGM FLANGES, CONNECTION PLATES, BOLTS, SHEAR STUDS AND REINFORCING STEEL THAT SHARE THE END HAUNCH REGION.

32. THE DESIGN OF THE STRUCTURE IS BASED ON THE SELF–WEIGHT OF THE STRUCTURAL STEEL IN ITS COMPLETELY ERECTED CONFIGURATION ONLY. DEFLECTION INCURRED DURING THE VARIOUS STAGES OF THE ERECTION PROCESS ARE NOT CONSIDERED. THEREFORE, THE ACTUAL ERECTION METHODS AND SEQUENCES EMPLOYED BY THE CONTRACTOR MAY HAVE A SUBSTANTIAL EFFECT ON (1) THE TOTAL STRESS, I.E. THE DESIGN PLUS ERECTION STRESS, AND/OR (2) THE STEEL PROFILE AS ERECTED. THE CONTRACTOR SHALL SUBMIT AN ERECTION PROCEDURE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 824.03.10 ERECTION, OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE CALCULATIONS FOR ALL PHASES AND ERECTION CONDITIONS WHICH DEMONSTRATE THAT THE ALLOWABLE STRESSES ARE NOT EXCEEDED AND THAT THE GEOMETRY AS ERECTED (HORIZONTAL AND VERTICAL) WILL BE CONSISTENT WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. ANY CORRECTIVE WORK NECESSARY TO REPOSITION PREVIOUSLY ERECTED STEEL TO ACHIEVE ACCEPTABLE ALIGNMENT AND PROFILE MUST BE APPROVED BY THE ENGINEER AND SHALL BE PERFORMED AT NO EXTRA COST TO THE STATE.

SHOP DRAWING SUBMITTALS

1. PREFABRICATED TRUSS
2. CONCRETE: MIX DESIGNS, PLACING, METHODS, EQUIPMENT, CURING PLAN AND METHODS, PERSONNEL RESOURCES
3. REINFORCING STEEL, SPLICES AND INSERTS
4. STRUCTURAL STEEL
5. BRIDGE BEARING ASSEMBLY
6. BRIDGE NAME/SEAL TABLETS
7. FIXED AND EXPANSION JOINT ASSEMBLIES
8. CONCRETE SUBCONTRACTOR'S QUALIFICATIONS AND EXPERIENCE
9. STRUCTURAL COMPUTATIONS
10. DETAILED SEQUENCE OF WORK
11. FOUNDATION PILES; INSTALLATION AND LOAD TESTING PROCEDURES, EQUIPMENT AND DETAIL INCLUDING WEAP ANALYSIS
12. PILE POINTS AND SPLICES
13. EARTH SUPPORT SYSTEMS/COFFERDAMS (SHEETING, ETC.)
14. TEMPORARY PROTECTION SHIELDS FOR CONSTRUCTION
15. ARCHITECTURAL TREATMENTS (SPECIAL FORMLINERS, ETC.)
16. CONCRETE FORMS; STAY–IN–PLACE, SPECIALTY FORMWORK
17. ERECTION PROCEDURES (INCLUDING STEEL ERECTOR'S QUALITY CONTROL PLAN); EQUIPMENT (TYPE/SIZE AND PLACEMENT), DETAILED SEQUENCE OF WORK
18. BRIDGE AND APPROACH RAILINGS
19. PAINTING
20. WELDING PROCEDURES; WELD SPLICES
21. DEWATERING

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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FEB 23 2015
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NECESSARY SUBMITTALS MAY NOT BE LIMITED TO THE ABOVE LIST AND MAY REQUIRE OTHER SUBMITTALS AT THE RESIDENT ENGINEER'S REQUEST FOR; SHOP DRAWINGS, CERTIFICATE OF COMPLIANCE, PRODUCT INFORMATION, CATALOG CUTS, TEST DATA OR OTHER.

vhb PROVIDENCE, RHODE ISLAND

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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

JOB SPECIFIC
GENERAL NOTES 3

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			6	20

GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS

1. DESIGN WIND PRESSURES FOR CONSTRUCTION:

   MINIMUM WIND PRESSURES TO BE USED BY THE CONTRACTOR FOR DESIGN DURING THE CONSTRUCTION CONTRACT (WITH THE EXCEPTION OF SIGNS) SHALL BE FROM THE FOLLOWING TABLE:

HEIGHT ABOVE GROUND (FEET)	WIND PRESSURE (PSF)
UP TO 17'	23
OVER 17' AND UP TO 33'	27
OVER 33' AND UP TO 50'	30
OVER 50' AND UP TO 75'	34
OVER 75' AND UP TO 100'	37

   TABLE NOTES

   APPLICATION OF THE TABULAR PRESSURE:
   - BRIDGE COMPONENTS DURING CONSTRUCTION, PRIOR TO THE INSTALLATION OF THE PERMANENT BRACING SYSTEMS, NOT INCLUDING CRANE LIFTING.
   - FALSE WORK, SHORING, AND SCAFFOLDING AS DEFINED IN FHWA "GUIDE DESIGN SPECIFICATION FOR BRIDGE TEMPORARY WORKS", EXCLUDING 3–DIMENSIONAL LATTICED OR TRUSSED FRAMES OR TOWERS;
   - TEMPORARY SHIELDING.

   WIND PRESSURES FOR ALL OTHER STRUCTURES SHALL BE CALCULATED BASED ON ASCE "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION", SEI/ASCE 37–02 (ALL REFERENCES TO THE ASCE 7 IN THE SEI/ASCE 37–02 PUBLICATION, SHALL BE THE LATEST REVISION OF ASCE 7). THE EXPOSURE CATEGORY SHALL BE B.

2. ERECTION OF BRIDGE COMPONENTS:

   FOR THE ERECTION OF STRUCTURES, THE FOLLOWING SHALL APPLY:

   - THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN THAT PROVIDES COMPLETE DETAILS OF THE PROCESS INCLUDING, BUT NOT LIMITED TO, TEMPORARY SUPPORTS, SCHEDULING AND OPERATION SEQUENCING, CRANE PLACEMENT, AND ASSUMED LOADS AND CALCULATED STRESSES DURING VARYING STAGES OF LIFTING. THIS APPLIES TO STRUCTURES OF ANY KIND. THE CAPACITY OF THE CRANE AND ALL LIFTING AND CONNECTING DEVICES SHALL BE ADEQUATE FOR 125 PERCENT OF THE TOTAL PICK LOAD INCLUDING SPREADERS AND OTHER MATERIALS. THIS FACTOR OF SAFETY SHALL BE IN ADDITION TO ALL MANUFACTURERS' PUBLISHED FACTORS OF SAFETY.

   - A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF RHODE ISLAND, WILL BE REQUIRED TO STAMP THE CONTRACTOR'S ERECTION PLAN.

   - THE CONTRACTOR'S PROFESSIONAL ENGINEER WILL BE REQUIRED TO INSPECT AND PROVIDE WRITTEN APPROVAL OF EACH PHASE OF A TRUSS INSTALLATION, PRIOR TO ALLOWING VEHICLES OR PEDESTRIANS ON OR BELOW THE STRUCTURE. THE PROFESSIONAL ENGINEER MUST ALSO STAMP ALL CHANGES TO THE CONTRACTOR'S ERECTION PLAN. ADDITIONALLY, ALL PROPOSED CHANGES MUST BE SUBMITTED TO RIDOT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.

   - A MANDATORY PRE–ERECTION CONFERENCE WILL BE HELD AT LEAST TWO WEEKS PRIOR TO THE START OF THE TRUSS INSTALLATION TO DISCUSS THE PLAN AND PROCEDURES, WORK SCHEDULES, CONTINGENCY PLANS, SAFETY REQUIREMENTS AND TRAFFIC CONTROL. THE CONTRACTOR'S PROFESSIONAL ENGINEER AND ERECTION SUBCONTRACTOR WILL BE REQUIRED TO ATTEND THIS MEETING, AS WILL THE RIDOT RESIDENT ENGINEER, THE DESIGN PROJECT ENGINEER AND THE DESIGN CONSULTANT. BASED UPON DISCUSSIONS AT THIS MEETING AND A REVIEW OF THE CONTRACTOR'S ERECTION PLAN, RIDOT MAY ORDER THE CONTRACTOR TO MODIFY AND RESUBMIT THE ERECTION PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

   - THE COST OF PREPARING AND STAMPING THE ERECTION PLAN, COMPUTATIONS, AND REPORTS, RESPONDING TO RIDOT'S COMMENTS AND MAKING THE NECESSARY REVISIONS, AND ATTENDANCE AT MEETINGS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SUPERSTRUCTURE PAY ITEM, BE IT CONCRETE, STEEL OR TIMBER.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION, CONSTRUCTION, OPERATION AND SAFETY OF ALL EQUIPMENT AND PROCEDURES.
2. THE CONTRACTOR SHALL SUBMIT WORKING DOCUMENTS SHOWING PROPOSED METHODS OF LIFTING, SEQUENCING OF LIFTING, LOCATION OF CRANES, CRANE CAPACITIES, LOCATION OF THE LIFTING POINTS ON THE BRIDGE COMPONENTS, WEIGHTS OF THE COMPONENTS, LIFTING DEVICES AND LOAD DISTRIBUTION DEVICE DETAIL. THE METHOD AND ALL SUBMISSIONS SHALL BE PREPARED AND STAMPED BY A RHODE ISLAND REGISTERED PROFESSIONAL ENGINEER.
3. COORDINATE ALL CONSTRUCTION ACTIVITIES WITHIN THE WORKING AREA WITH RIDOT REGARDING UTILITIES, AND SCHEDULE.
4. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING STRUCTURES. ALL STRUCTURES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
5. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING AS NOT TO DELAY THE PROJECT.
6. ALL RIGGING IS TO BE IN EXCELLENT WORKING CONDITION.
7. UNLOADED CRANES ARE ALLOWED TO TRAVEL IN THE BRIDGE WORKING AREA.
8. CRANE DELIVERY LOCATIONS MAY VARY AS LONG AS MAXIMUM CRANE RADIUS IS NOT EXCEEDED.
9. FORMWORK FOR CONCRETE SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS ATTAINED 3500 PSI COMPRESSIVE STRENGTH AS INDICATED BY COMPRESSION TEST OF FIELD CURED CYLINDERS.
10. THE CONTRACTOR SHALL NOT BE ALLOWED TO USE RIVER WATER AT ALL TIMES. IN ADDITION, DIRECT DISCHARGE TO THE RIVER FROM THE CONSTRUCTION ACTIVITIES SHALL NOT BE PERMITTED.
11. THE CRANE SHALL BE PLACED ON TIMBER CRIBBING TO DISTRIBUTE LOADS TO SOIL. LOADS DISTRIBUTED TO SOIL SHALL NOT EXCEED 3,000 PSF MAXIMUM ALLOWABLE BEARING PRESSURE.

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Environmental Management
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Office of Water Resources

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vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

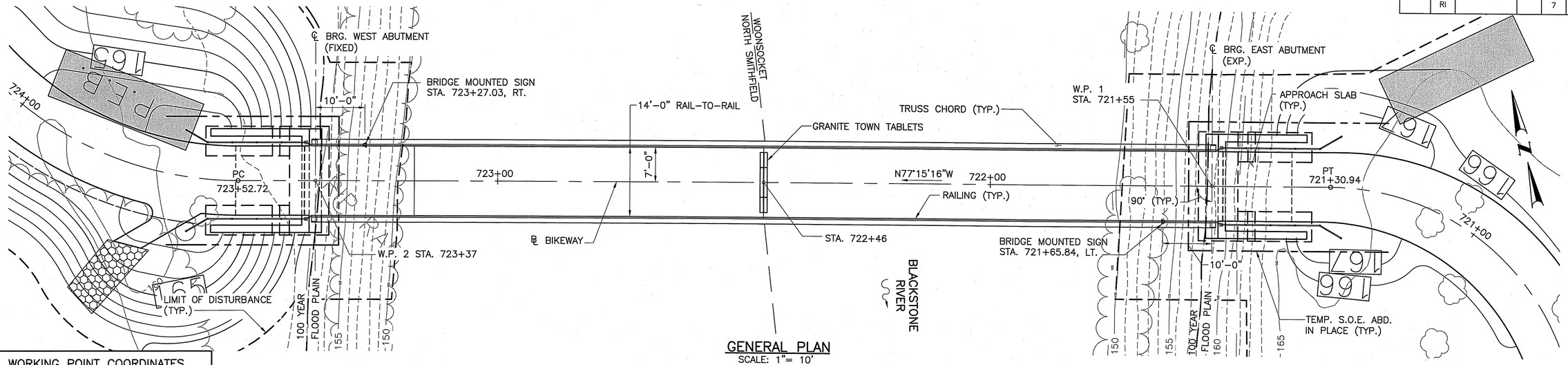
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

JOB SPECIFIC
GENERAL NOTES 4

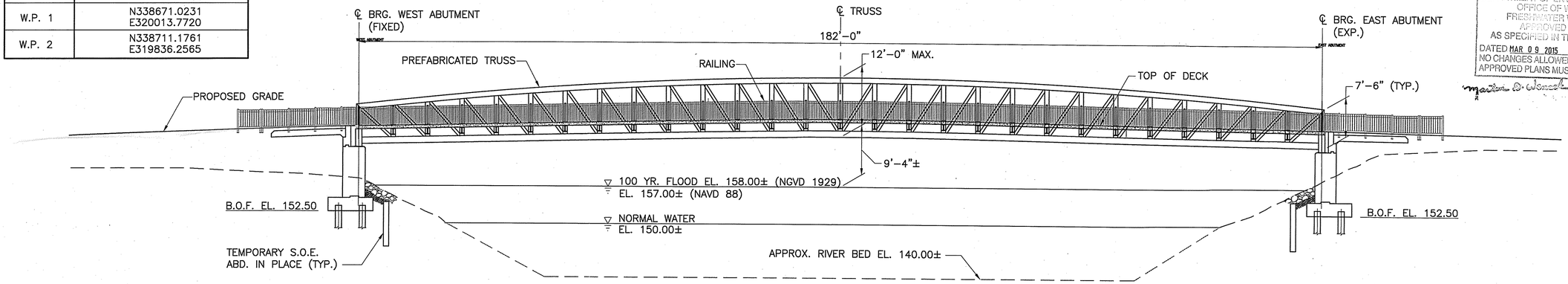
CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			7	20

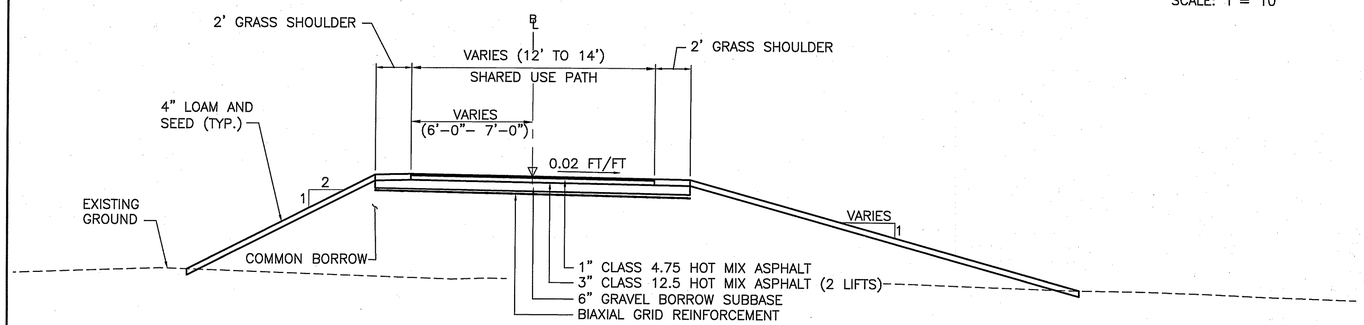


GENERAL PLAN
SCALE: 1"= 10'

WORKING POINT COORDINATES	
W.P.	COORDINATES
W.P. 1	N338671.0231 E320013.7720
W.P. 2	N338711.1761 E319836.2565



LONGITUDINAL SECTION
SCALE: 1"= 10'



TYPICAL APPROACH SECTION (LOOKING WEST)
SCALE: 3"=10'
WEST APPROACH SHOWN, EAST APPROACH SIMILAR

LEGEND

DEWATERING BASIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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NOTES

1. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A DEWATERING BASIN, R.I. STD. 9.7.0. THE LOCATION OF THE BASIN SHALL ADHERE TO ALL RESTRICTIONS AS STATED OR IMPLIED BY THE APPROVED RIDEM PERMIT AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE BASIN.
2. FOR BRIDGE MOUNTED SIGN DETAILS, SEE PREFABRICATED TRUSS DETAILS.

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SEGMENT 8C

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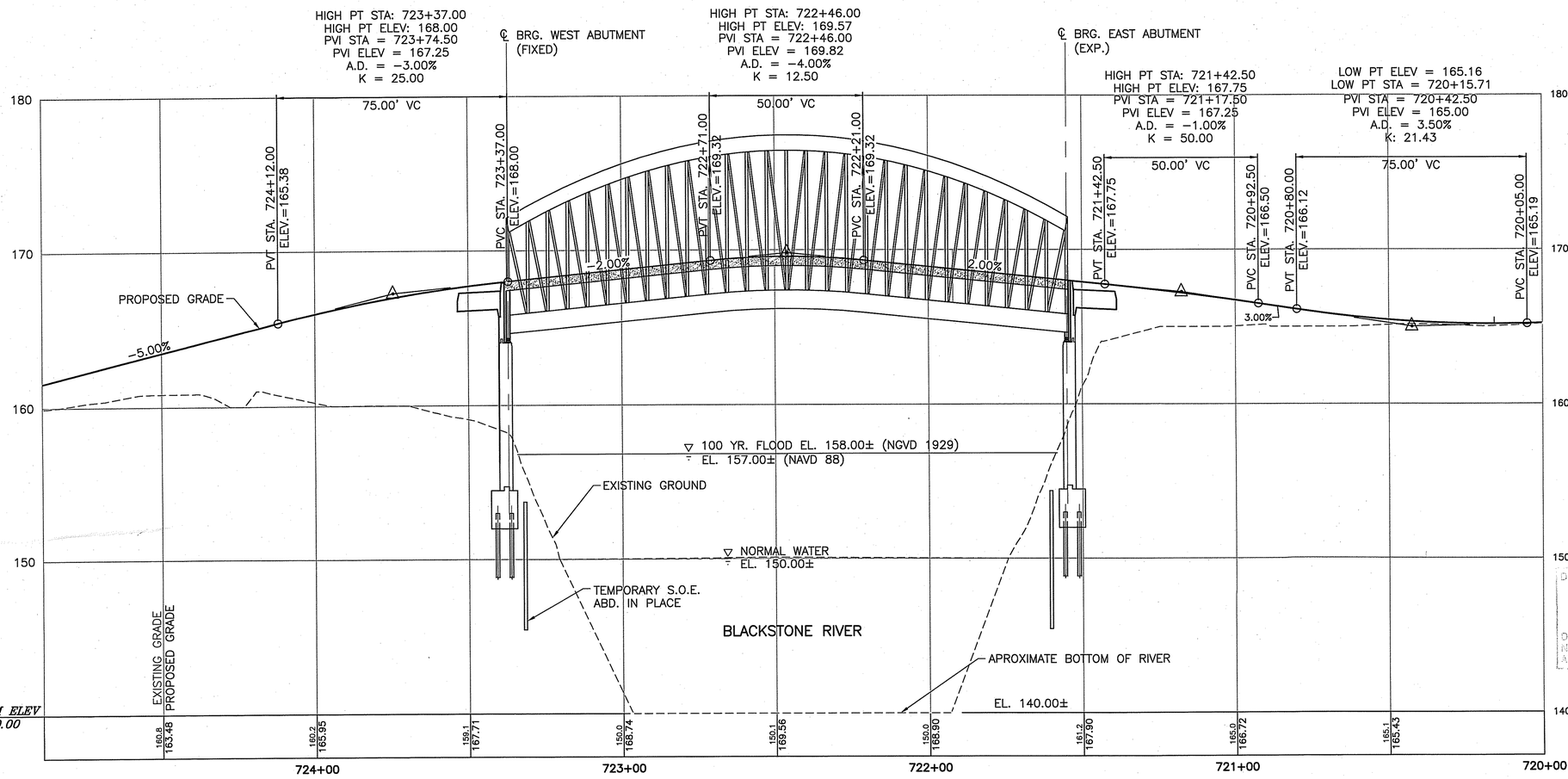
GENERAL PLAN AND LONGITUDINAL SECTION

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			8	20



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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PROFILE

SCALE: HORIZONTAL 1"= 20'
VERTICAL 1"= 4'

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DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
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PROFILE

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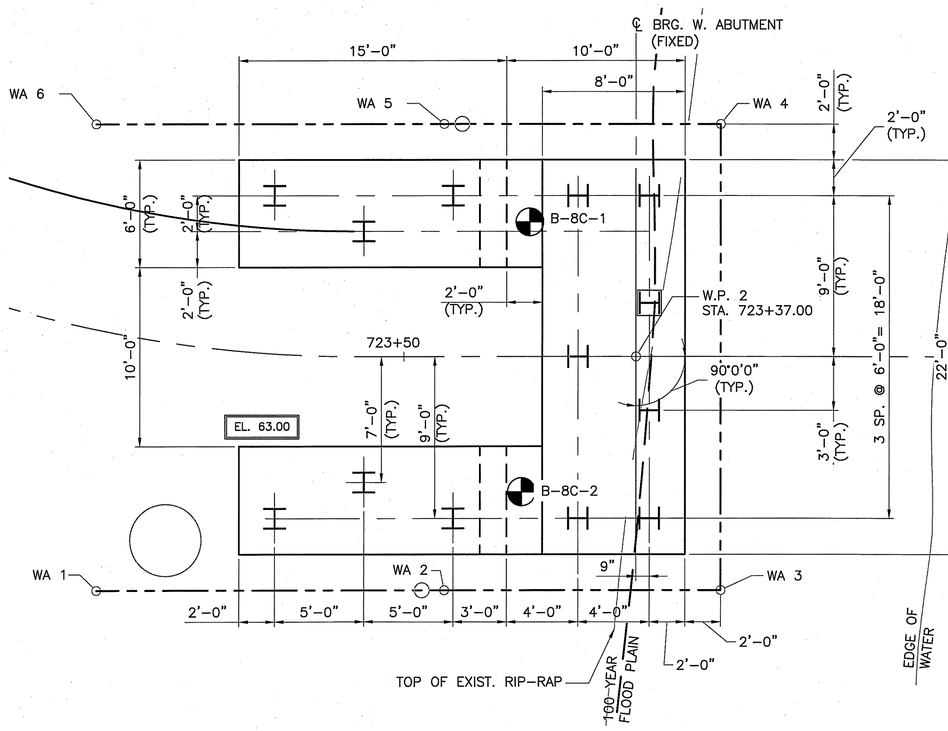
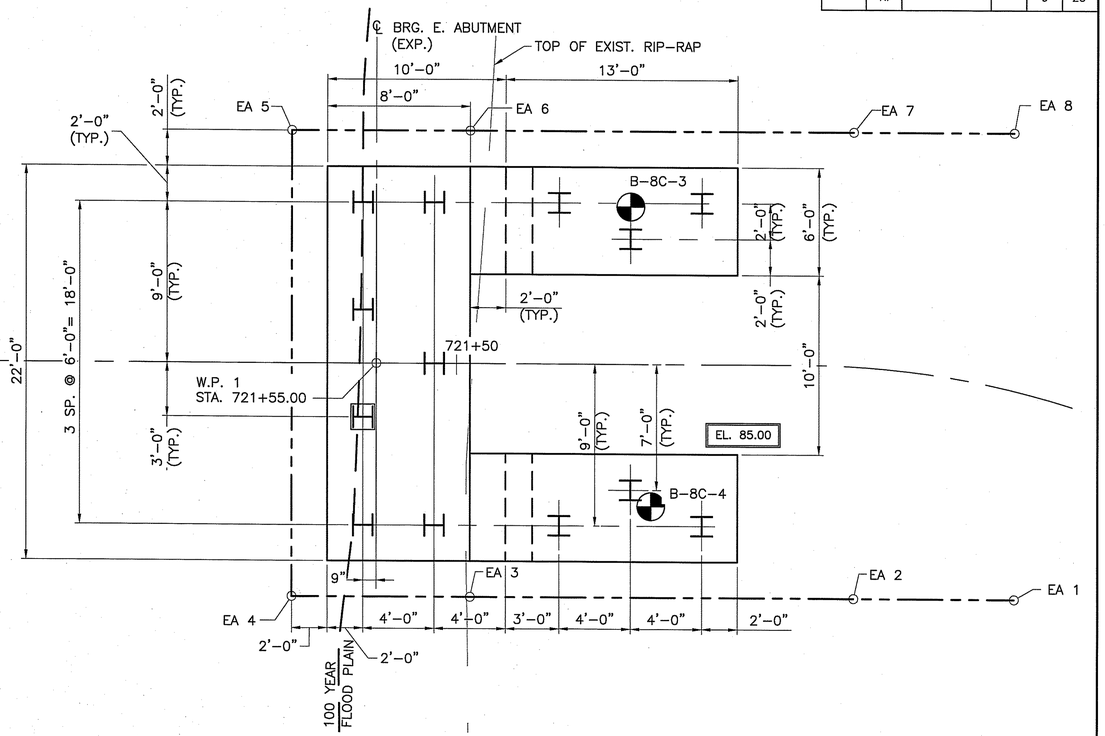
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			9	20



WEST ABUTMENT



EAST ABUTMENT

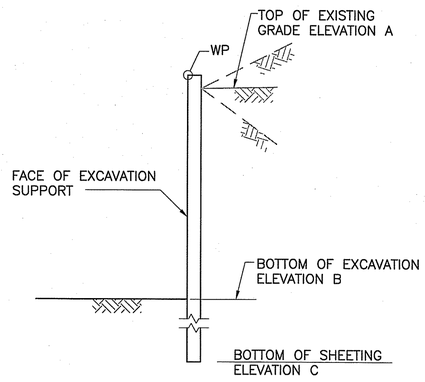
FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

EAST ABUTMENT S.O.E. ELEVATION TABLE

LOCATION			CONSTRUCTION ELEVATIONS (FT)		
WORKING POINT	STATION	OFFSET (FT)	A	B	C
EA 1	721+15.63	11.19 LT.	165.00±	155.00	143.00
EA 2	721+27.30	12.90 LT.	165.00±	152.50	138.00
EA 3	721+49.74	13.00 LT.	162.00±	151.50	138.00
EA 4	721+59.74	13.00 LT.	158.00±	151.50	142.00
EA 5	721+59.74	13.00 RT.	158.00±	151.50	142.00
EA 6	721+49.74	13.00 RT.	162.00±	151.50	138.00
EA 7	721+28.80	13.06 RT.	165.00±	152.50	138.00
EA 8	721+21.76	14.08 RT.	165.00±	155.00	143.00

WEST ABUTMENT S.O.E. ELEVATION TABLE

LOCATION			CONSTRUCTION ELEVATIONS (FT)		
WORKING POINT	STATION	OFFSET (FT)	A	B	C
WA 1	723+64.84	14.26 LT.	159.00±	152.50	146.00
WA 2	723+47.74	13.00 LT.	159.00±	152.50	142.00
WA 3	723+32.24	13.00 LT.	159.00±	151.50	142.00
WA 4	723+32.24	13.00 RT.	159.00±	151.50	142.00
WA 5	723+47.74	13.00 RT.	159.00±	152.50	142.00
WA 6	723+70.18	11.18 RT.	159.00±	152.50	146.00



TYPICAL SOE SECTION
NOT TO SCALE

SOE GENERAL CONSTRUCTION NOTES

1. ALL SOE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SECTION 203 "STRUCTURE EXCAVATION AND BACKFILL" AND SECTION 805 "EARTH RETAINING SYSTEMS" OF THE RIDOT STANDARD SPECIFICATIONS.
2. EXCAVATION BELOW THE ELEVATIONS SHOWN IN TABLES WILL NOT BE ALLOWED, UNLESS DIRECTED BY THE ENGINEER.
3. INTERPOLATION BETWEEN CONSECUTIVE BOTTOM OF SHEETING ELEVATIONS IS PERMITTED ALONG SLOPING GROUND. SHEETING SHALL EXTEND BELOW THE INTERPOLATED LINE.
4. ALL SOE WILL BE TEMPORARY SHEETING (ABANDONED IN PLACE) SHALL BE INSTALLED TO THE ELEVATIONS GIVEN IN THE S.O.E. ELEVATIONS TABLE. THE SHEETING SHALL BE CUT OFF A MINIMUM OF 1'-6" BELOW THE TOP OF FINISHED GRADE UNLESS OTHERWISE INDICATED DURING ABUTMENT BACKFILL OPERATIONS.
5. ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE EXCAVATION LIMITS AND REPLACED WITH SUITABLE FILL, AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO STARTING THE WORK TO VERIFY LOCATIONS OF EXISTING UTILITIES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH UTILITY COMPANIES.
8. SOE HAS BEEN DESIGNED WITH A CONSTRUCTION SURCHARGE OF 400 PSF IN ACCORDANCE WITH RIDOT LRFD BRIDGE MANUAL.
9. EXTREME CAUTION SHOULD BE TAKEN WHEN OPERATING CONSTRUCTION EQUIPMENT AROUND THE SOE.
10. THE MAXIMUM ALLOWABLE SOE DISPLACEMENT AT GROUND SURFACE AFTER PRELOADING SHALL BE 1 INCH.
11. SHEET PILING SHALL BE INSTALLED WITH A HIGH FREQUENCY VIBRATORY HAMMER.
12. SHEETING SHALL BE ASTM A572, GR 50 AND SECTION CAPACITY SHALL BE EQUIVALENT OR GREATER THAN PZ-40.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 09 2015 FILE # 15-0022
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
FEB 13 2015

LEGEND

- B-8C-X BORING LOCATION
- PROPOSED STEEL HP 14x73 PILE
- PROPOSED STEEL HP 14x73 INDICATOR PILE
- FACE OF TEMPORARY S.O.E. ABD. IN PLACE
- EL. XX.XX — ESTIMATED PILE TIP ELEVATION (FOR ESTIMATING PURPOSES ONLY)

vhb PROVIDENCE, RHODE ISLAND

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

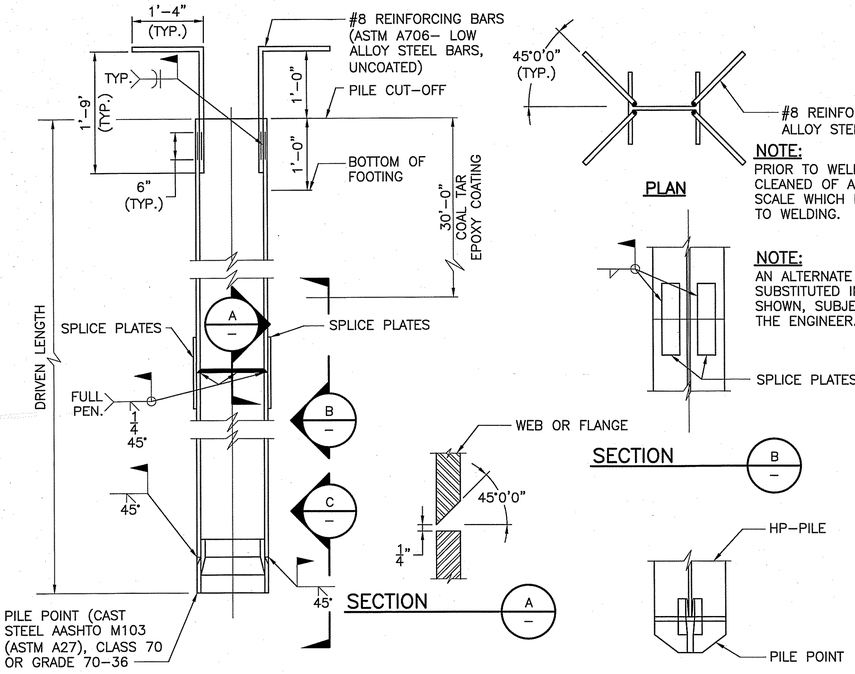
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

FOUNDATION AND PILE PLAN

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			10	20



NOTE:
PRIOR TO WELDING, BARS SHALL BE CLEANED OF ANY RUST OR MILL SCALE WHICH MAY BE DETRIMENTAL TO WELDING.

NOTE:
AN ALTERNATE PILE SPLICE MAY BE SUBSTITUTED IN LIEU OF THE DETAIL SHOWN, SUBJECT TO APPROVAL BY THE ENGINEER.

STEEL H-PILE
NOT TO SCALE

PILE NOTES

1. ALL STEEL SHALL CONFORM TO AASHTO M270, GRADE 50.
2. ALL NEW PILES SHALL BE HP14x73 INCLUDING PILE SPLICES, PILE CUTOFFS AND WELDED REINFORCING PILE ANCHORAGE.
3. THE CONTRACTOR SHALL SUBMIT TO THE STATE, INFORMATION ON THE TYPE OF EQUIPMENT PROPOSED TO BE USED, METHODS OF OPERATION, SEQUENCE OF PILE DRIVING, AND DETAILS OF ALL PILE DRIVING EQUIPMENT AND ACCESSORIES.
4. SEE "GEOTECHNICAL INTERPRETIVE REPORT" FOR REFERENCE.
5. ALL WELDING SHALL BE IN ACCORDANCE WITH THE LATEST ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE AND STRUCTURAL WELDING CODE – REINFORCING STEEL (AWS D1.4).
6. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING STRUCTURES TO REMAIN. ANY STRUCTURE DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
7. CONTRACTOR SHALL CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO STARTING THE WORK TO VERIFY LOCATIONS OF EXISTING UTILITIES.
8. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, INFORMATION ON THE TYPE OF EQUIPMENT PROPOSED TO BE USED, PROPOSED METHODS OF OPERATION, PROPOSED SEQUENCE OF DRIVING, AND DETAILS OF ALL PILE DRIVING EQUIPMENT AND ACCESSORIES FOR EACH PILE TYPE SPECIFIED, ALL IN ACCORDANCE WITH SECTION 804 OF THE R.I. STANDARD SPECIFICAITONS.
9. PILE SPLICE SHALL BE LOCATED AT THE LOWER HALF OF THE PILE LENGTH.

REVISIONS		
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DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

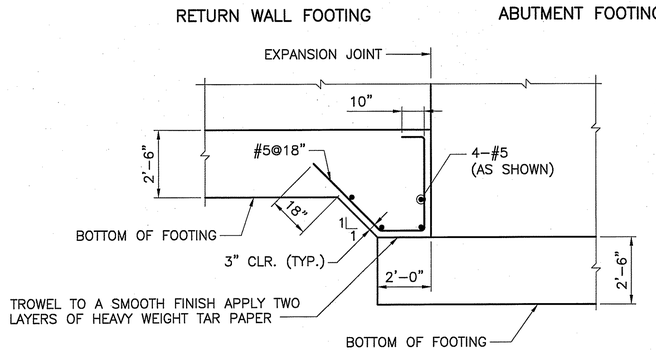
WOONSOCKET TO N. SMITHFIELD

PILE DETAILS

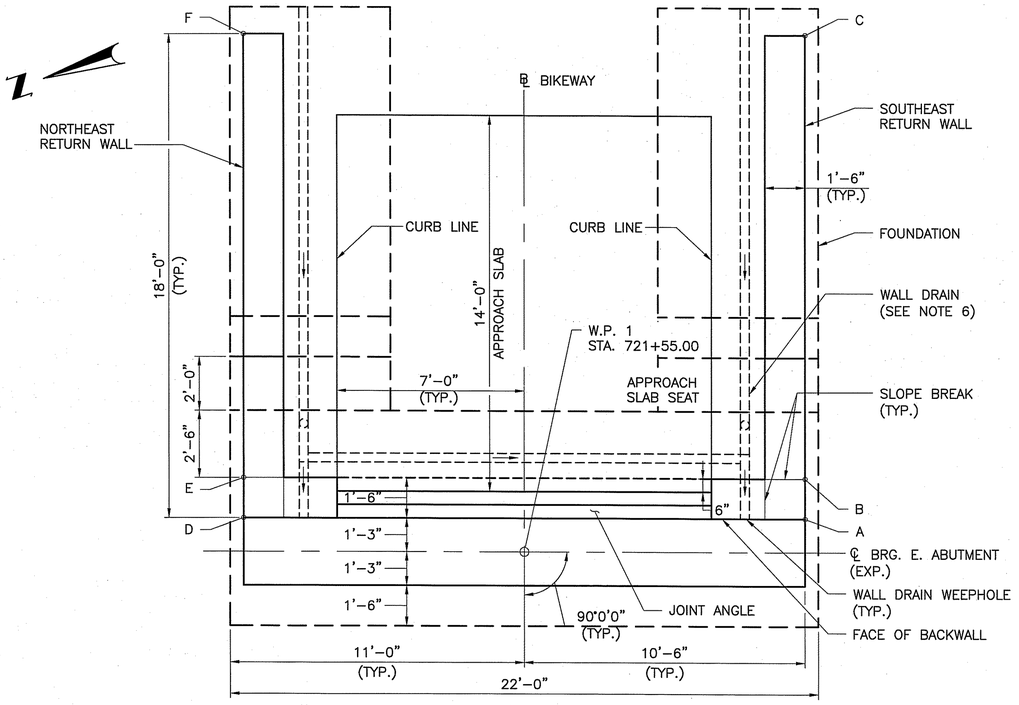
CHECKED BY _____ DATE _____ SCALE _____

vhb PROVIDENCE, RHODE ISLAND

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			11	20



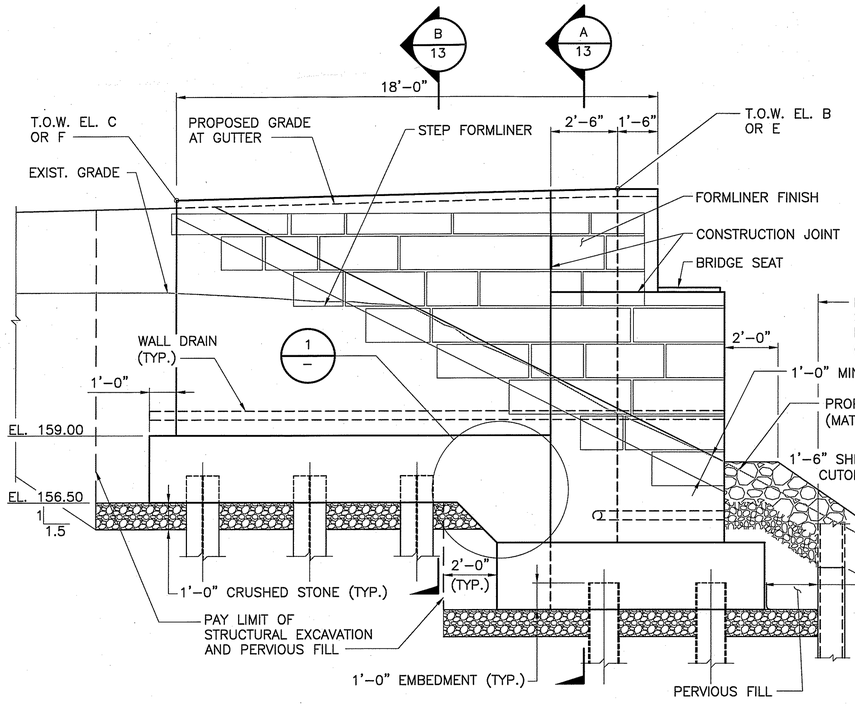
DETAIL 1/–
SCALE: 3/8"=1'-0"



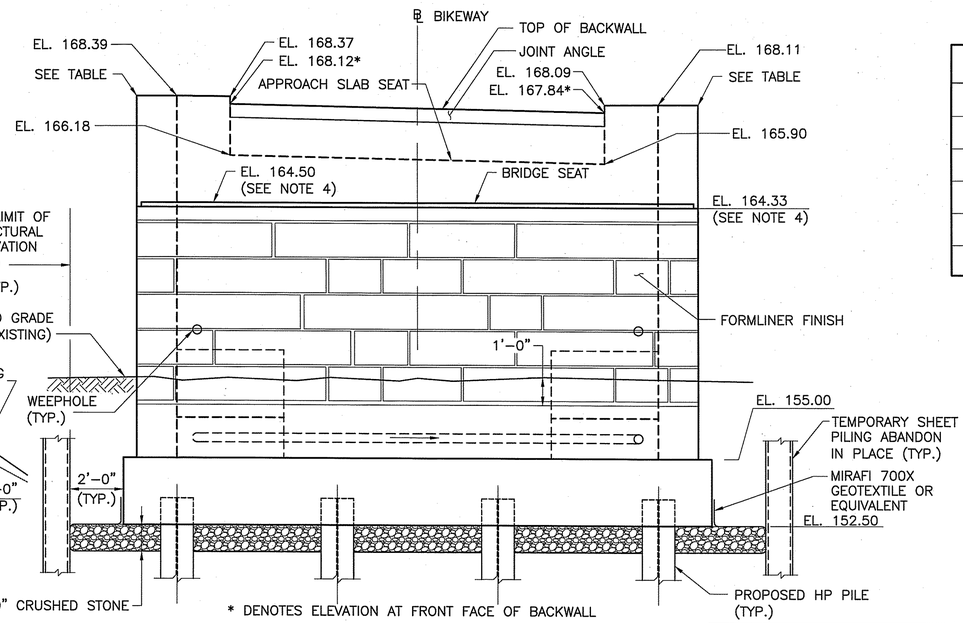
PLAN
NOTE: PILES NOT SHOWN FOR CLARITY
SCALE: 3/8"= 1'-0"

NOTES

1. FINAL GEOMETRY OF BACKWALL, SEAT, AND JOINT ARE SUBJECT TO THE PREFABRICATED TRUSS MANUFACTURER'S DESIGN. THE CONTRACTOR SHALL OBTAIN FINAL DIMENSIONS FROM THE PREFABRICATED TRUSS MANUFACTURER'S SHOP DRAWINGS AFTER APPROVAL BY THE ENGINEER AND PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL INSTALL TRUSS BEARINGS AND ANCHOR BOLTS IN ACCORDANCE WITH THE PREFABRICATED TRUSS MANUFACTURER'S DESIGN AND DIMENSIONAL REQUIREMENTS.
3. SUPPORT OF EXCAVATION SHALL BE CUT OFF 18" MIN. BELOW PROPOSED FINISHED GRADE UNLESS OTHERWISE NOTED IN THE PLANS.
4. THE CONTRACTOR SHALL VERIFY THE ABUTMENT SEAT ELEVATION WITH THE PREFABRICATED TRUSS MANUFACTURER PRIOR TO CONSTRUCTION OF THE ABUTMENT STEM.
5. WRAP GEOTEXTILE UNDER, ALONG SIDE AND ON TOP OF CRUSHED STONE 1'-0" MIN.
6. MINIMUM SLOPE OF WALL DRAIN PIPE SHALL BE 0.5%. SEE ABUTMENT DETAILS 2 FOR WALL DRAIN DETAIL.



RETURN WALL ELEVATION
(NOTE: NORTHEAST RETURN SHOWN, SOUTHEAST RETURN SIMILAR)
SCALE: 3/8"= 1'-0"



* DENOTES ELEVATION AT FRONT FACE OF BACKWALL

ELEVATION
SCALE: 3/8"= 1'-0"

LOCATION	TOP OF WALL ELEVATION (FT)
A	168.11
B	168.11
C	167.74
D	168.39
E	168.39
F	168.02

vhb PROVIDENCE, RHODE ISLAND

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

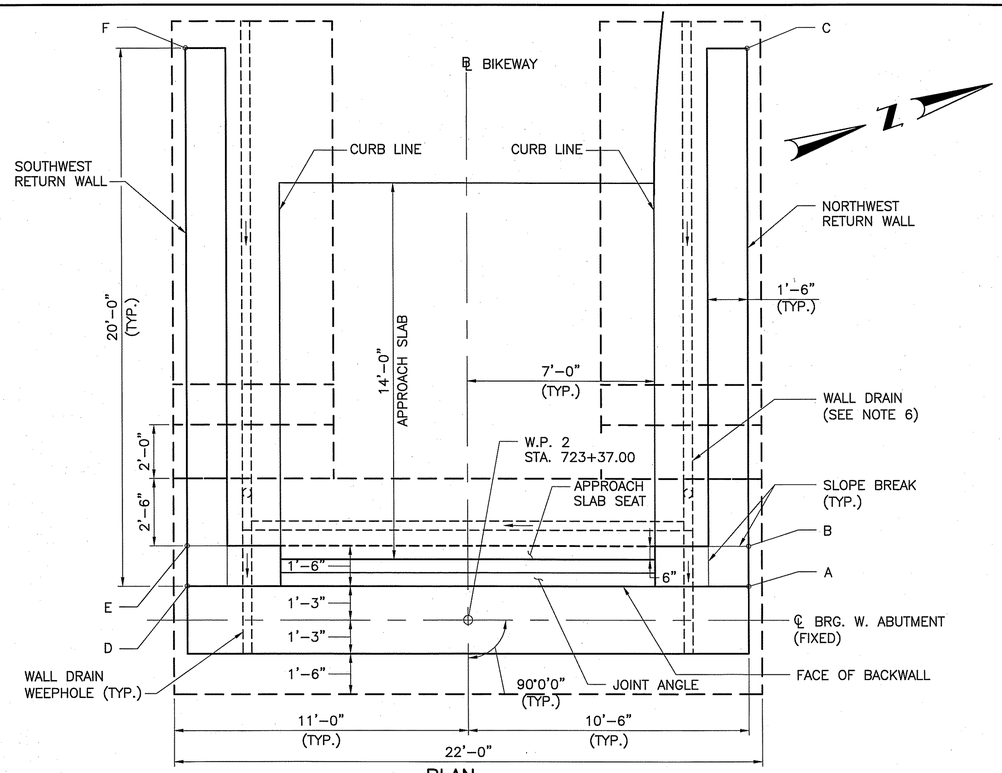
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

EAST ABUTMENT PLAN AND ELEVATION

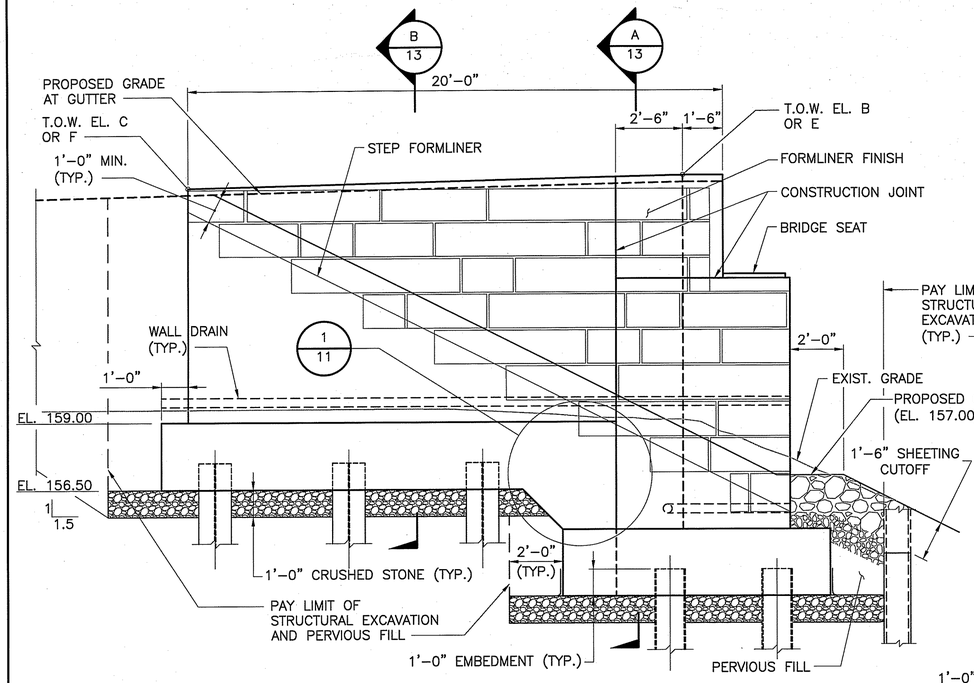
CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			12	20



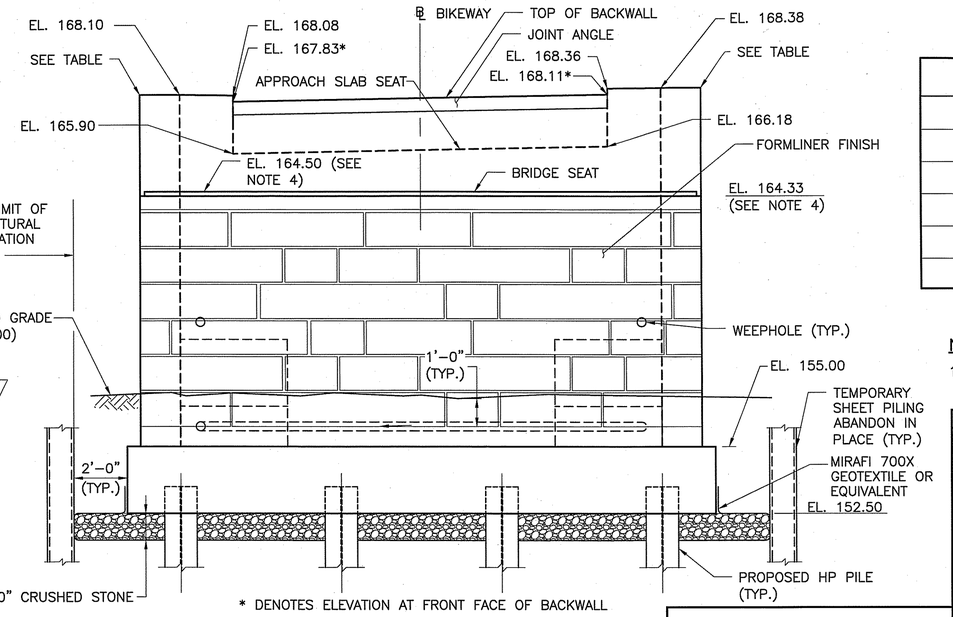
PLAN

NOTE: PILES NOT SHOWN FOR CLARITY
SCALE: 3/8"= 1'–0"



RETURN WALL ELEVATION

(NOTE: SOUTHWEST RETURN SHOWN, NORTHWEST RETURN SIMILAR)
SCALE: 3/8"= 1'–0"



* DENOTES ELEVATION AT FRONT FACE OF BACKWALL

ELEVATION

SCALE: 3/8"= 1'–0"

LOCATION	TOP OF WALL ELEVATION (FT)
A	168.38
B	168.38
C	167.86
D	168.10
E	168.10
F	167.63

NOTES

1. SEE EAST ABUTMENT PLAN AND ELEVATION FOR NOTES.

vhb PROVIDENCE, RHODE ISLAND

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

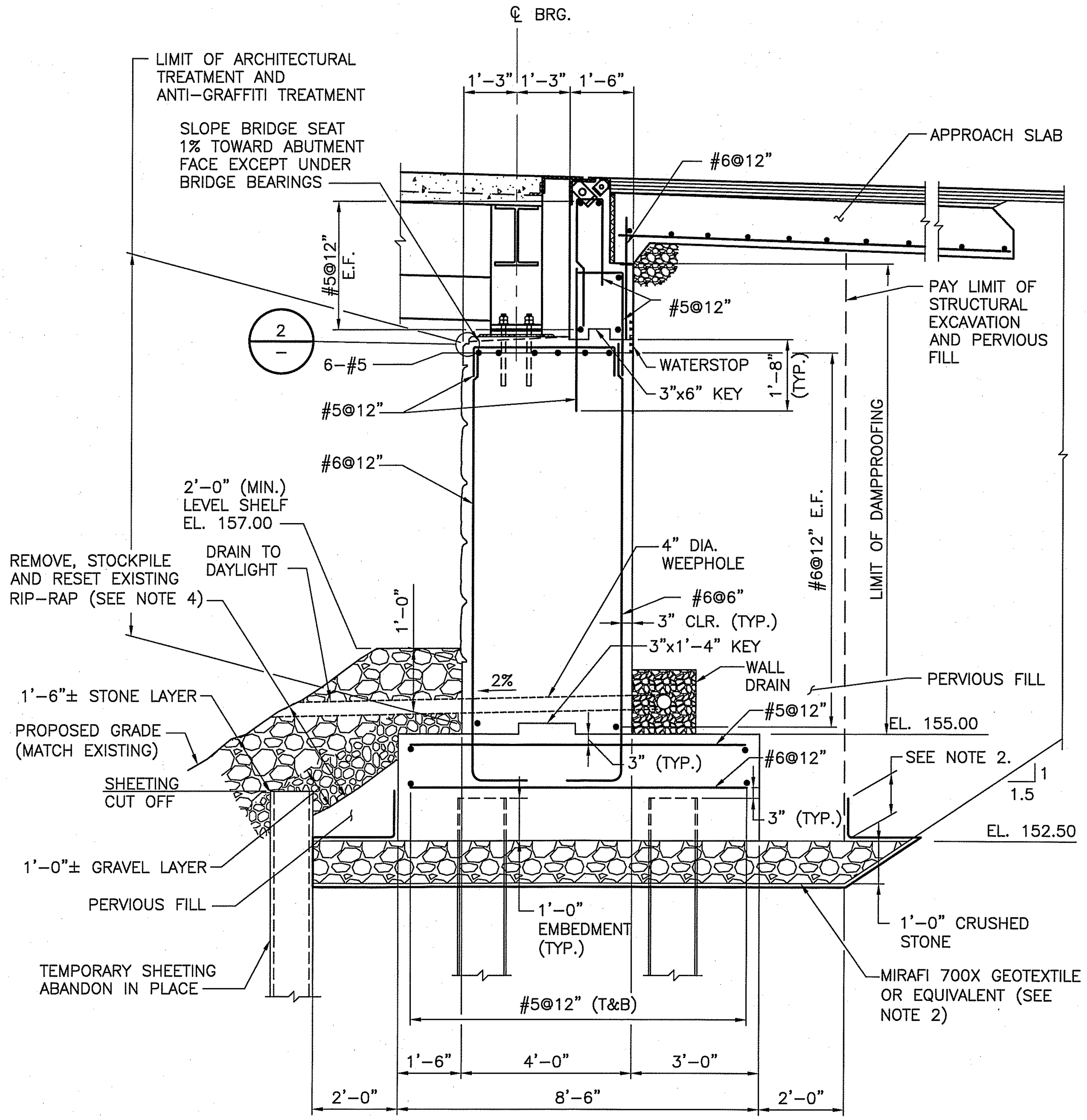
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

WEST ABUTMENT PLAN AND ELEVATION

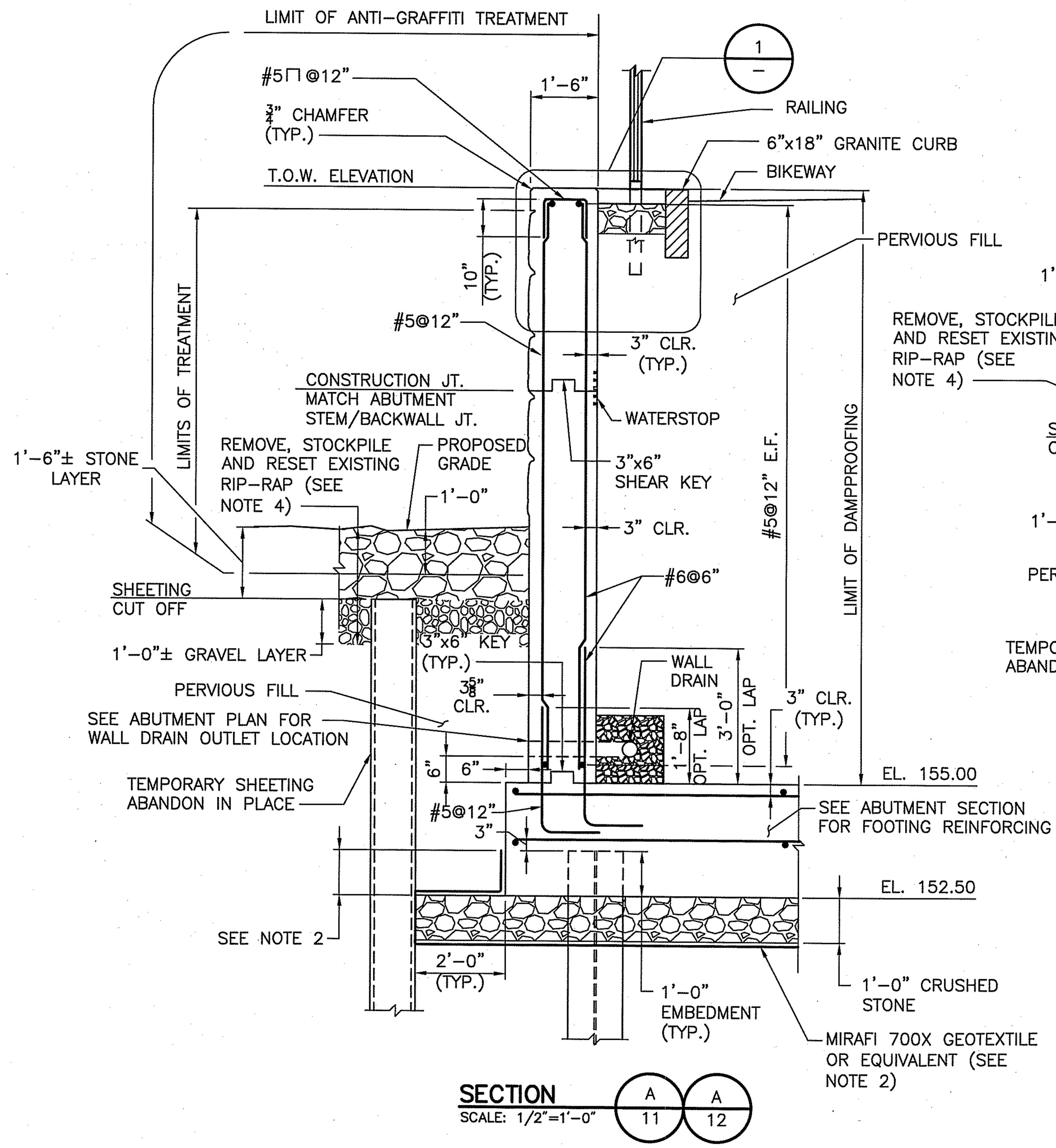
CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			13	20

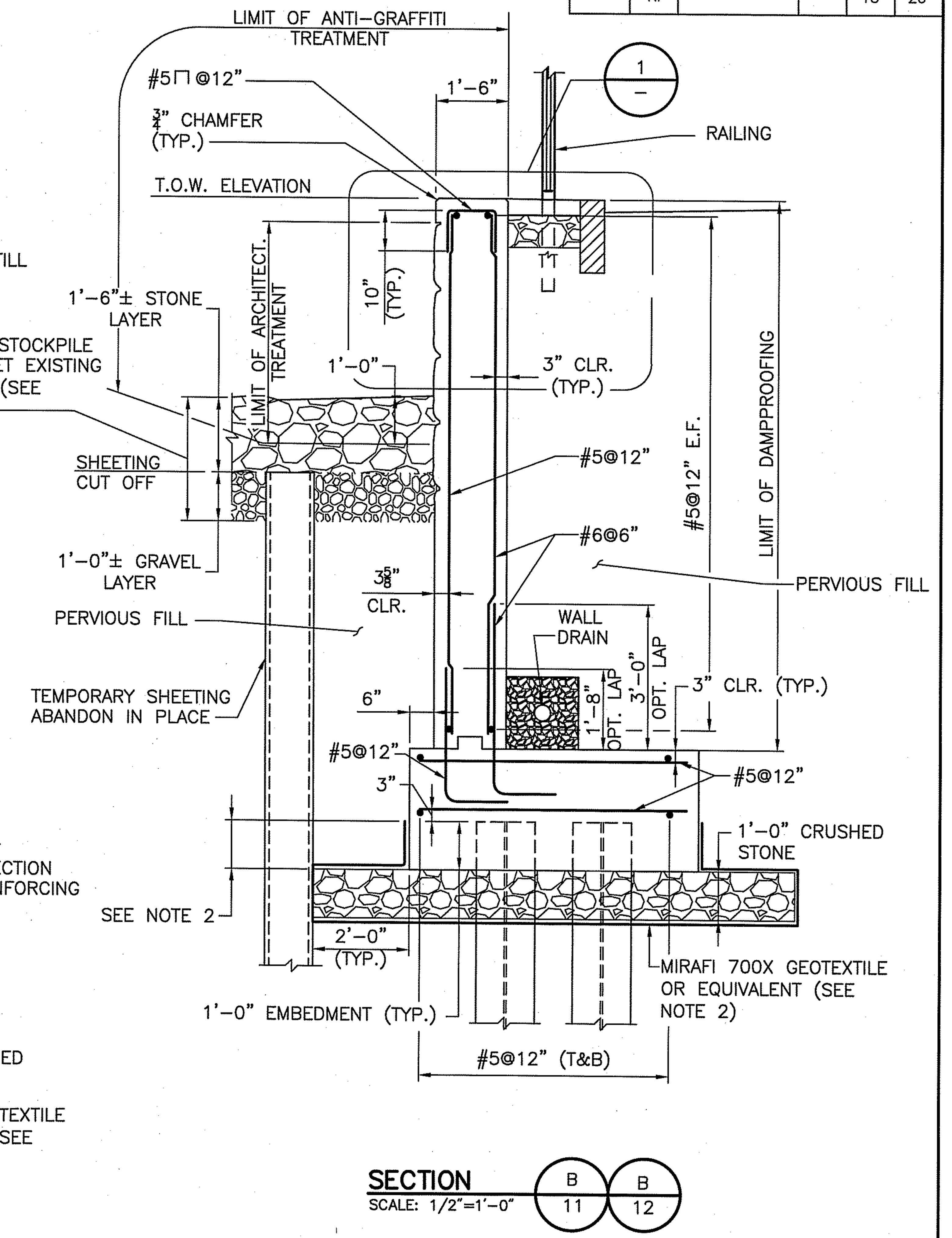


ABUTMENT SECTION
SCALE: 1/2"=1'-0"

NOTE:
WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR

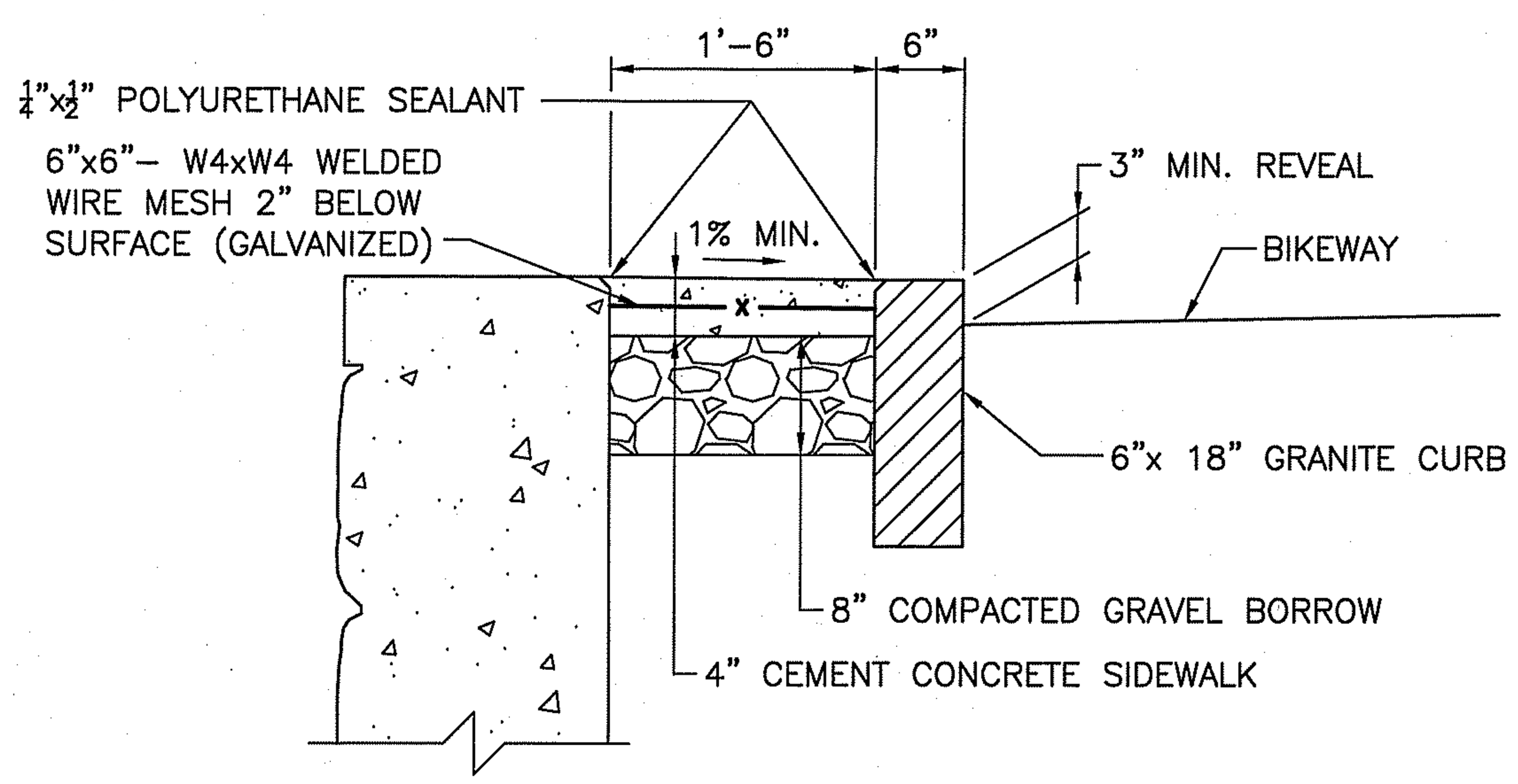


SECTION A/11 A/12
SCALE: 1/2"=1'-0"

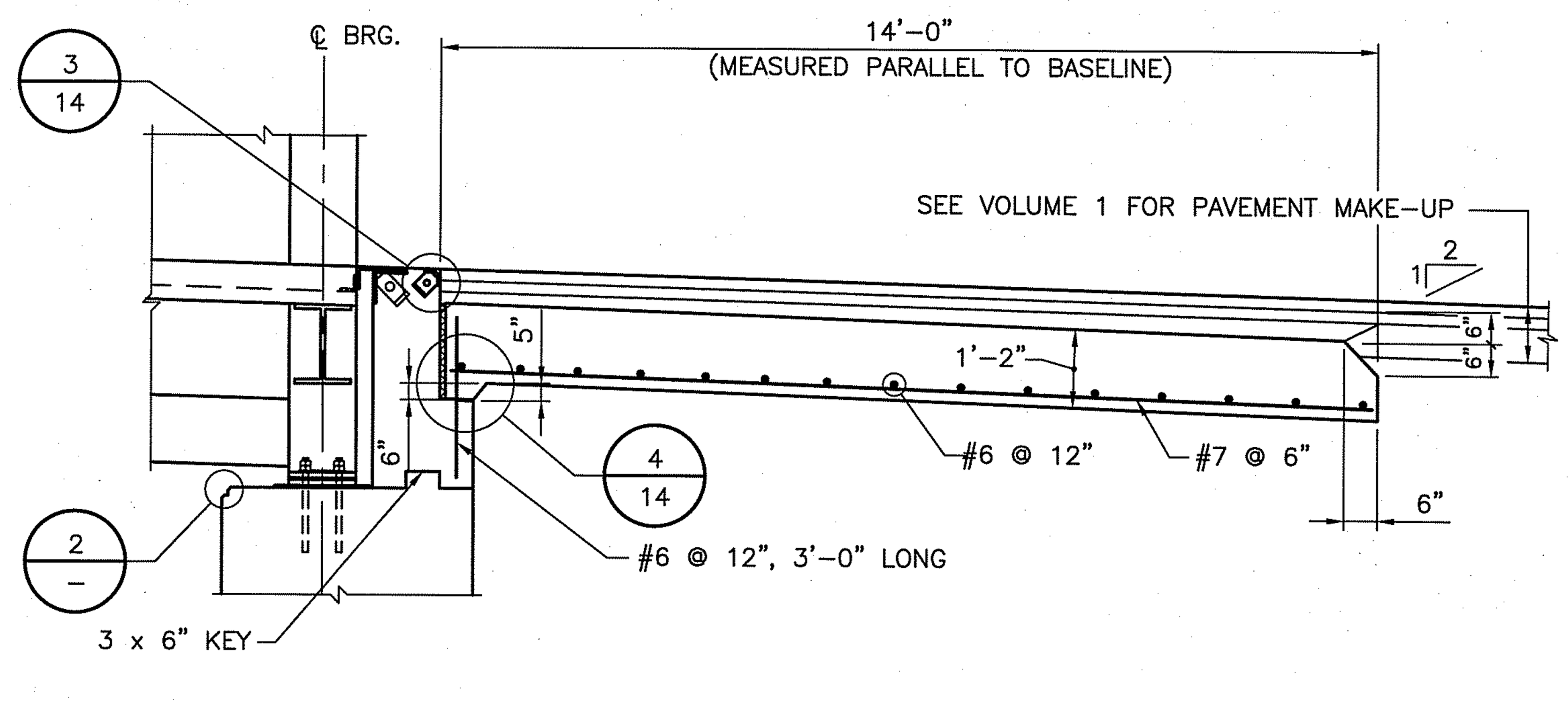


SECTION B/11 B/12
SCALE: 1/2"=1'-0"

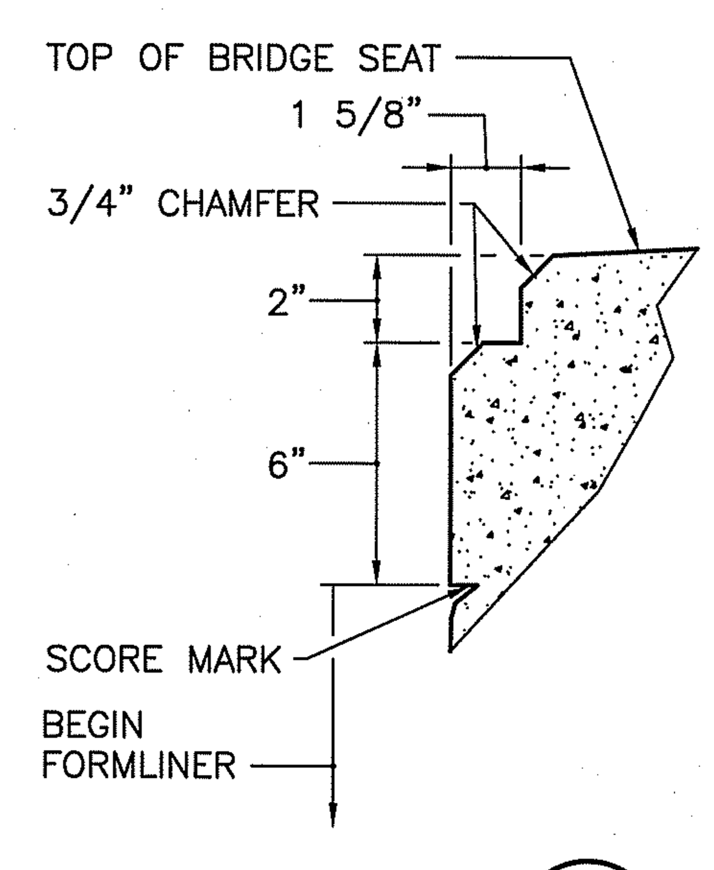
NOTE:
1. FOR PILE LAYOUT, SEE FOUNDATION & PILE PLAN.
2. UPON COMPLETION OF FOUNDATION, WRAP GEOTEXTILE UP SIDE OF FOUNDATION A MIN. OF 1'-0".
3. BACKWALL SHALL BE POURED AFTER PREFABRICATED TRUSS BRIDGE IS SET INTO PLACE.
4. EXISTING RIP RAP SHALL BE REMOVED TO FACILITATE INSTALLATION OF SHEET PILING AND ABUTMENT FOUNDATIONS. THE EXISTING RIP RAP SHALL BE STOCKPILED WITHIN THE LIMITS OF DISTURBANCE IN AN AREA APPROVED BY THE ENGINEER. AFTER THE ABUTMENT STEMS ARE CONSTRUCTED AND THE SHEET PILING HAS BEEN INSTALLED AND CUT OFF, THE EXISTING RIP RAP SHALL BE REINSTALLED TO ORIGINAL LIMITS OUTSIDE THE ABUTMENT FOOTPRINT.



DETAIL 1/–
SCALE: 1"=1'-0"



BACKWALL AND APPROACH SLAB SECTION
SCALE: 1/2" = 1'-0"



DETAIL 2/–
SCALE: 1/4"=1'-0"

vhb PROVIDENCE, RHODE ISLAND

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

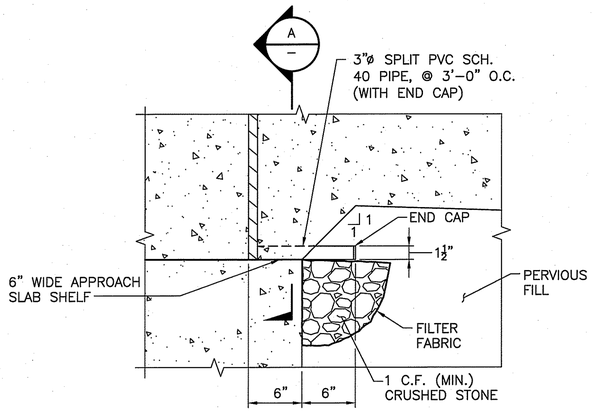
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

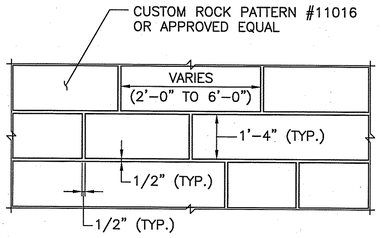
ABUTMENT DETAILS 1

CHECKED BY ________ DATE ________ SCALE ________

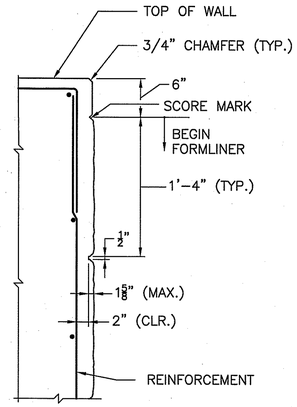
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			14	20



DETAIL (4 / 13)
SCALE: 1 1/2"= 1'–0"

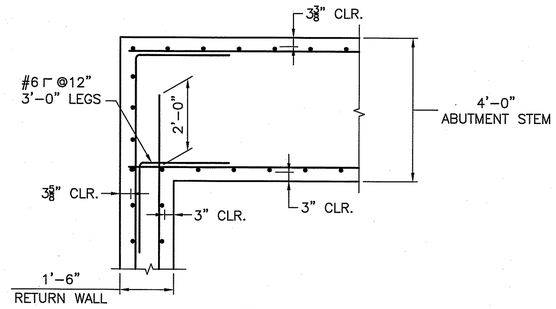


ELEVATION

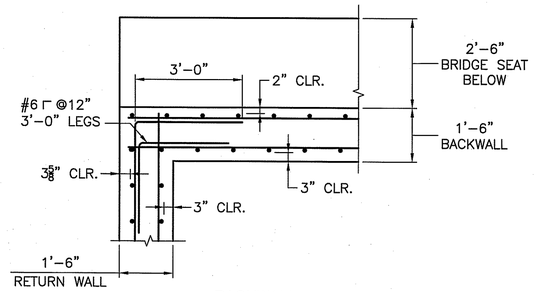


SECTION

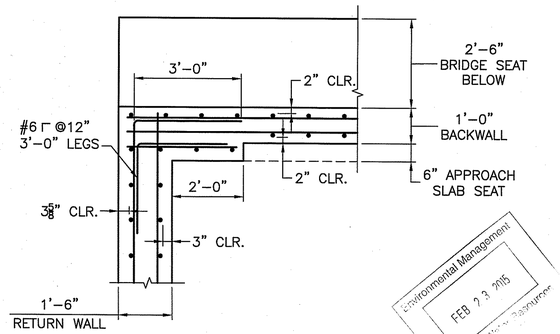
FORMLINER DETAIL
NOT TO SCALE



STEM

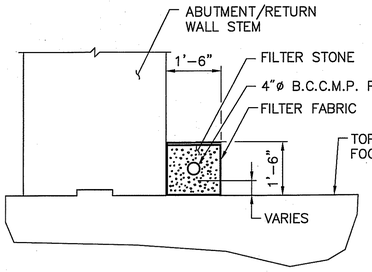


BACKWALL

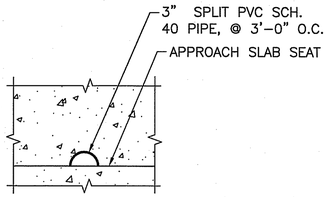


BACKWALL AT APPROACH SLAB

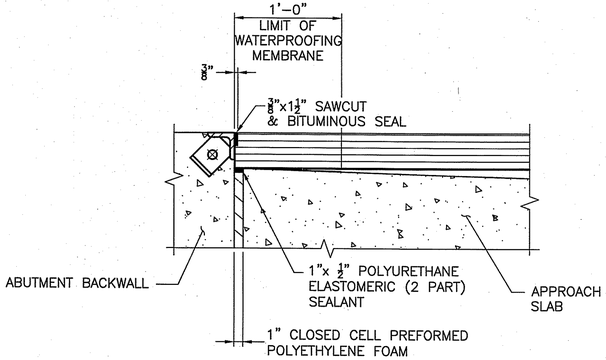
REINFORCEMENT AT WALL CORNER DETAIL
SCALE: 1/2"=1'–0"



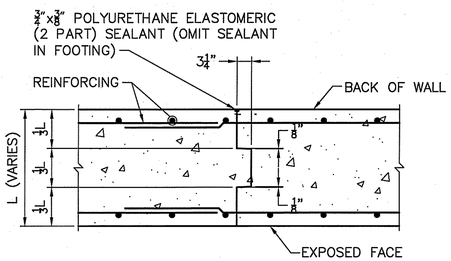
WALL DRAIN
SCALE: 1/2"=1'–0"



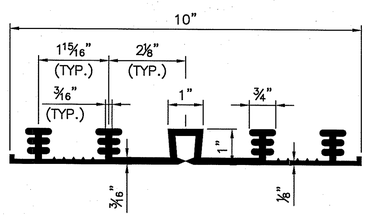
SECTION (A / –)
SCALE: 1 1/2"= 1'–0"



DETAIL (3 / 13)
SCALE: 1/4"= 1'–0"



CONSTRUCTION JOINT IN WALLS AND ABUTMENT
NOT TO SCALE



NOTE: WATER STOP SHALL BE ONE ENTIRE LENGTH WRAPPING CONTINUOUSLY FROM START OF RETURN WALL TO THE ABUTMENT STEM AND TERMINATE AT THE OPPOSITE RETURN WALL.

WATERSTOP DETAIL
NOT TO SCALE

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

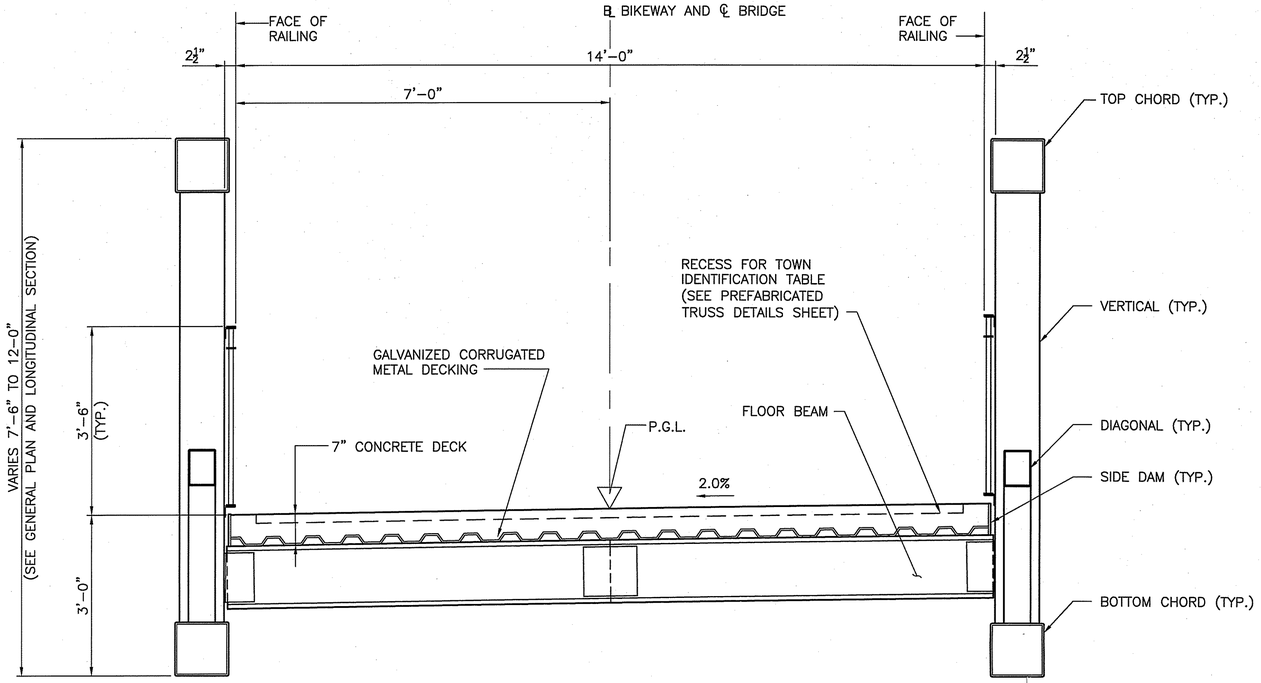
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

ABUTMENT DETAILS 2

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			15	20



TYPICAL TRUSS SECTION

(LOOKING UPSTATION)
SCALE: 3/4" = 1'–0"

NOTE TO PREFABRICATED TRUSS MANUFACTURER

DETAILS OF FLOORBEAMS, STRINGERS, JOINT ANGLES, DECK, RAILING AND SIGN POST CONNECTIONS AND BEARINGS ARE SCHEMATIC ONLY. ACTUAL DETAILS AND CALCULATIONS SPECIFIC TO THE TRUSS MANUFACTURER SHALL BE SUBMITTED WITH A RHODE ISLAND P.E. STAMP FOR REVIEW AND APPROVAL BY THE ENGINEER.

PREFABRICATED TRUSS NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TRUSS CONFIGURATIONS AS SHOWN ON THE PLANS, THE PREFABRICATED TRUSS MANUFACTURER'S APPROVED SHOP DRAWINGS AND SPECIFICATIONS AND IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION CODE 824.9901 "PREFABRICATED TUBULAR STEEL TRUSS" OF THE PROJECT SPECIFICATIONS.
2. LOCATION OF ANCHOR BOLTS, FACE OF BACKWALL, AND BEARING ASSEMBLY IS DEPENDENT ON SPECIFIC PREFABRICATED TRUSS DIMENSIONS. THE CONTRACTOR SHALL NOT COMMENCE THE ASSOCIATED CONSTRUCTION ACTIVITIES UNTIL SHOP DRAWINGS OF THE PREFABRICATED TRUSS ARE RECEIVED AND APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE PREFABRICATED TRUSS MANUFACTURER WITH ALL APPROPRIATE DESIGN/CONSTRUCTION INFORMATION INCLUDING BUT NOT LIMITED TO A COMPLETE PLAN SET AND THE CONTRACT BOOK FOR THE PROJECT.
4. THE PREFABRICATED TRUSS MANUFACTURER SHALL DESIGN/DETAIL THE TRUSS BEARING ASSEMBLY SUCH THAT ANCHOR BOLTS ARE PROVIDED WITH 6" MINIMUM CONCRETE COVER.
5. THE CONTRACTOR SHALL INSTALL THE ANCHOR BOLTS IN ACCORDANCE WITH THE DIMENSIONAL REQUIREMENTS OF THE PREFABRICATED TRUSS MANUFACTURER AND IN ACCORDANCE WITH THE LIMITATIONS SHOWN OR SPECIFIED ON THESE PLANS.
6. DESIGN LOADS, LOAD COMBINATIONS, AND DESIGN ALLOWABLE FOR THE PREFABRICATED TRUSS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012, WITH LATEST INTERIMS, EXCEPT AS OTHERWISE NOTED IN SPECIAL PROVISION CODE 824.9901 "PREFABRICATED TUBULAR STEEL TRUSS".
7. WELDED TUBULAR STRUCTURE DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE, CHAPTER 10 TUBULAR STRUCTURES WHERE APPLICABLE.
8. INSPECTION OF WELDS SHALL MEET, AS A MINIMUM, THE REQUIREMENTS OF THE RHODE ISLAND STANDARD SPECIFICATIONS, INCLUDING ALL REVISIONS OR SUPPLEMENTS UP TO YEAR 2012. WHEN THE REQUIREMENTS OF THE 2004 EDITION OF THE PREFABRICATED TRUSS MANUFACTURER FOR INSPECTION OF WELDS EXCEEDS THE REQUIREMENTS OF THE ABOVE SPECIFICATION, THEY SHALL GOVERN.
9. ALL TRUSS MEMBERS SHALL BE STRUCTURAL STEEL, TUBULAR SECTIONS SATISFYING THE REQUIREMENTS OF ASTM A500, GRADE C. THE MINIMUM THICKNESS OF TUBULAR SECTIONS SHALL BE 1/4 INCH NOMINAL.
10. ALL OTHER STRUCTURAL SHAPES AND PLATES SHALL BE FABRICATED FROM MATERIAL MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M270 GRADE 50.
11. FLOOR BEAMS MAY BE EITHER STRUCTURAL STEEL TUBULAR SECTIONS OR STANDARD WIDE FLANGE SECTIONS.
12. BOTTOM CHORD SHALL BE PARALLEL TO PROPOSED PROFILE.
13. THE ENTIRE PREFABRICATED TUBULAR STEEL TRUSS SYSTEM, RAILING, AND APPURTENANCES SHALL BE SHOP PAINTED IN ACCORDANCE WITH SECTION 825 "PAINTING STRUCTURAL STEEL". THE COLOR OF THE TOP COAT SHALL BE DARK GREEN TO MATCH MUNSELL COLOR NUMBER 10G 2/4 18627. ALL DAMAGED MEMBERS SHALL BE FIELD TOUCH–UP PER PAINT MANUFACTURER RECOMMENDATIONS. COST OF ALL PAINTING, SURFACE PREPARATIONS, AND FIELD TOUCH–UP SHALL BE INCLUDED UNDER ITEM CODE 800.9901.
14. JOINT ANGLES SHALL BE ASSEMBLED, ERECTED, AND SET TO GRADE PRIOR TO POURING BACKWALL CONCRETE. JOINT ANGLES SHALL BE CONSTRUCTED TO FOLLOW BIKEWAY PROFILE AND CROSS SLOPE.
15. CONCRETE DECK, CLASS HP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISIONS 808.9901 AND DESIGNED BY THE CONTRACTOR. CONCRETE DECK SURFACE SHALL HAVE A BROOM FINISH. ALL DESIGN AND REINFORCEMENT STEEL SHALL BE INCLUDED UNDER PAID ITEM CODE 800.9901.
16. SEE JOB SPECIFIC GENERAL NOTES SHEETS 1–4 FOR ADDITIONAL NOTES.
17. FOR RAILING DETAILS SEE RAILING DETAILS 1–2.

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

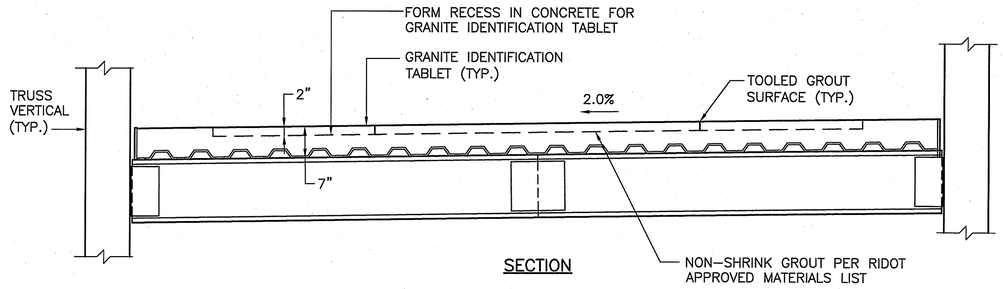
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

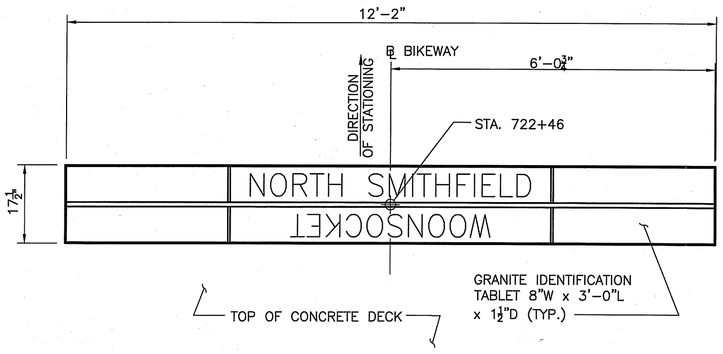
PREFABRICATED TRUSS SECTION

CHECKED BY _____ DATE _____ SCALE _____

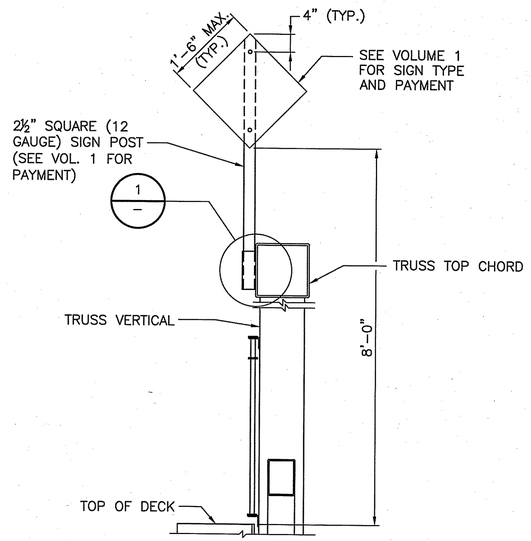
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			16	20



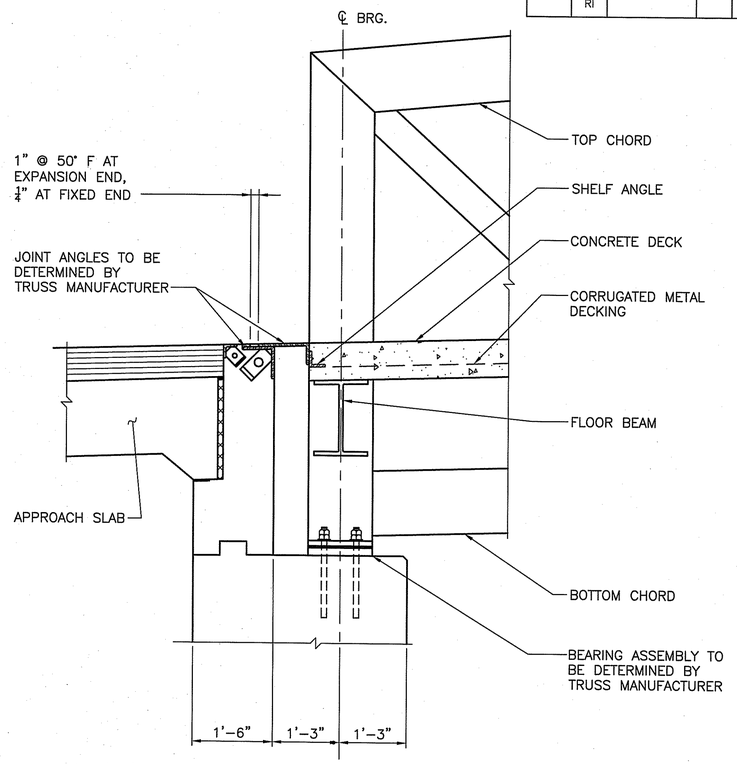
SECTION



PLAN

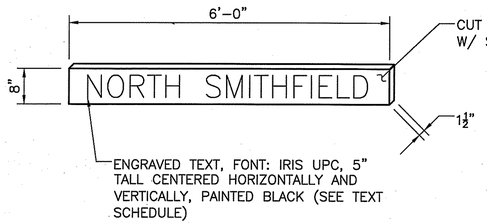


SIGN POST CONNECTION TO BRIDGE
SCALE: 3/4" = 1'-0"



NOTE: JOINT ANGLES SHALL BE ASSEMBLED, ERECTED, AND SET TO GRADE PRIOR TO POURING BACKWALL CONCRETE. JOINT ANGLES SHALL BE CONSTRUCTED TO FOLLOW BIKEWAY PROFILE AND CROSS SLOPE.

TYPICAL JOINT AT ABUTMENT DETAIL
SCALE: 3/4" = 1'-0"

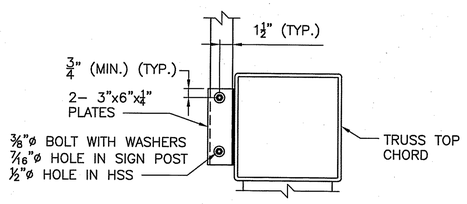


GRANITE TABLET DETAIL

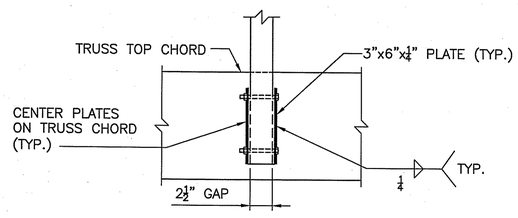
TEXT SCHEDULE

1. WOONSOCKET (EASTERLY SIDE)
2. NORTH SMITHFIELD (WESTERLY SIDE)

GRANITE TOWN TABLET DETAILS
SCALE: 3/4" = 1'-0"



SECTION



ELEVATION

DETAIL 1/– SCALE: 1 1/2"=1'-0"

NOTE

SIGN POST ATTACHMENTS AND POSTS SHALL BE PAINTED TO MATCH THE COLOR OF THE PREFABRICATED TRUSS.

Environmental Management
FEB 2 3 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

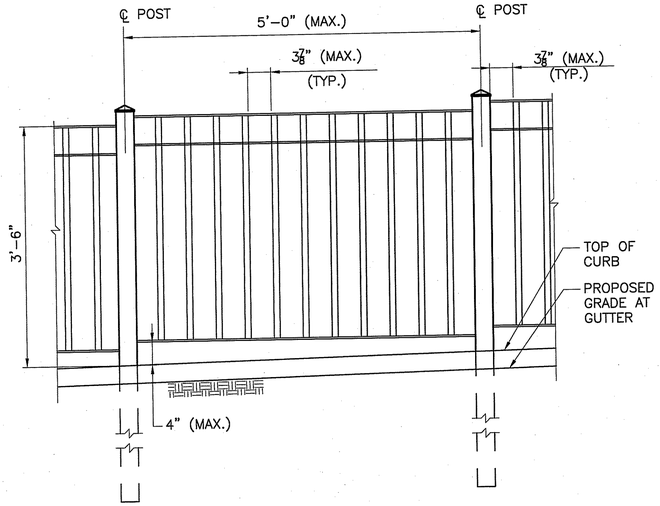
BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

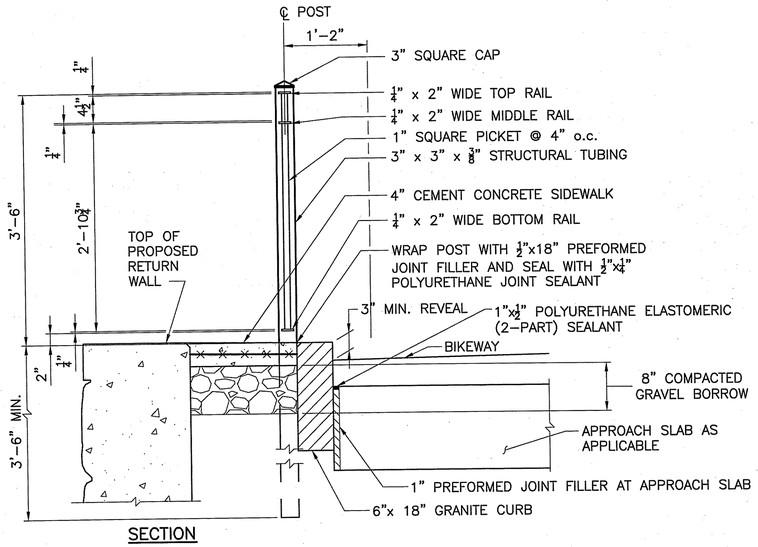
PREFABRICATED TRUSS DETAILS

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			17	20



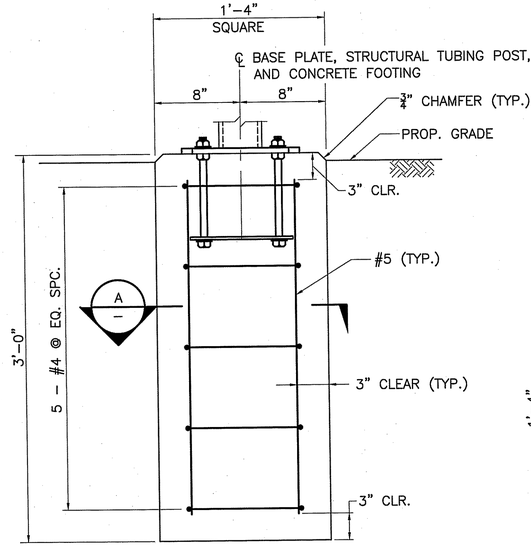
ELEVATION



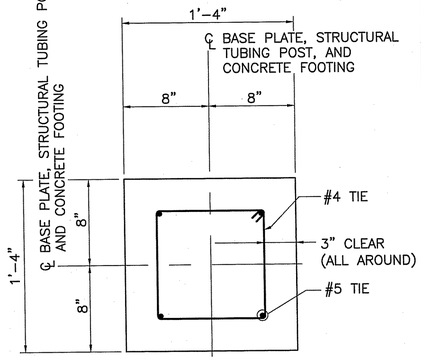
SECTION

APPROACH RAILING DETAILS

SCALE: 1" = 1'–0"



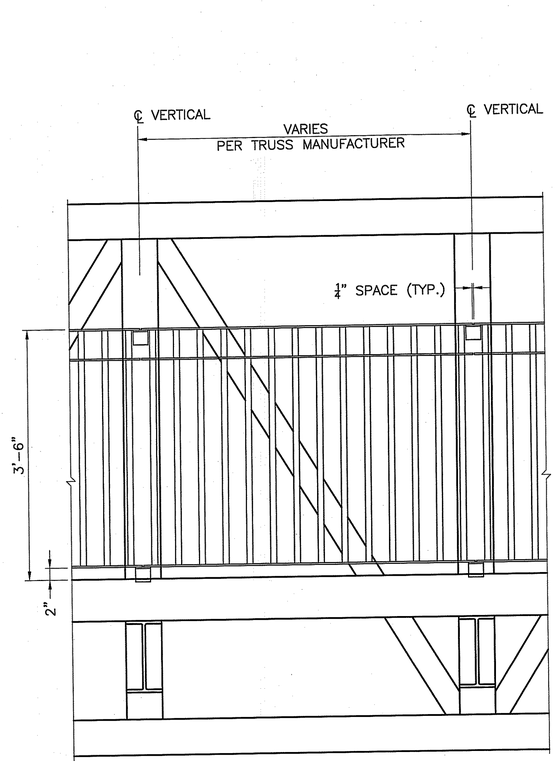
ELEVATION



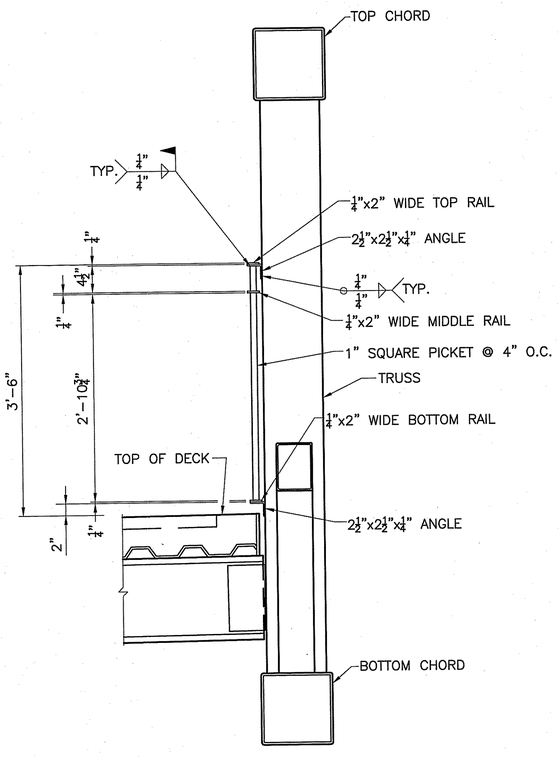
SECTION A – –

CONCRETE FOOTING DETAILS

SCALE: N.T.S.



ELEVATION



TYPICAL SECTION

BRIDGE RAILING DETAILS

SCALE: 1" = 1'–0"

RAILING NOTES:

1. BRIDGE RAILING AND BRIDGE MOUNTED TRANSITION RAILING SHALL BE PAID UNDER ITEM CODE 800.9901.
2. STEEL RAILING MAY BE DISCONTINUOUS BETWEEN APPROACH RAILING AND BRIDGE RAILING, BUT AT NO POINT SHALL THE OPENING BETWEEN PICKETS BE GREATER THAN ⅜" CLEAR.
3. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A500, GRADE B, STRUCTURAL TUBING.
4. STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270, GRADE 36.
5. ALL BOLTS AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION F1554 GR 50, EXCEPT THAT ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO AASHTO DESIGNATION M164.
6. THE ENTIRE ANCHOR BOLT ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO DESIGNATION M111.
7. APPROACH POSTS SHALL BE SET VERTICAL IN THE FIELD. LEAD SHIMS SHALL BE PROVIDED UNDER THE BASE PLATES TO MAKE UP THE DIFFERENCE BETWEEN THE FABRICATED POST UNIT AND THE CONCRETE FINISH.
8. ALL PICKETS SHALL BE SET IN THE VERTICAL POSITION.
9. THE ENTIRE RAILING SYSTEM SHALL BE SHOP PAINTED IN ACCORDANCE WITH SECTION 825 "PAINTING STRUCTURAL STEEL". THE COLOR OF THE TOP COAT SHALL BE DARK GREEN TO MATCH MUNSELL COLOR NUMBER 10G 2/4. ALL DAMAGED MEMBERS SHALL BE FIELD TOUCH–UP PER PAINT MANUFACTURER RECOMMENDATIONS. COST OF ALL PAINTING, SURFACE PREPARATIONS, AND FIELD TOUCH–UP SHALL BE INCLUDED UNDER PAID ITEM CODE 800.9901.

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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

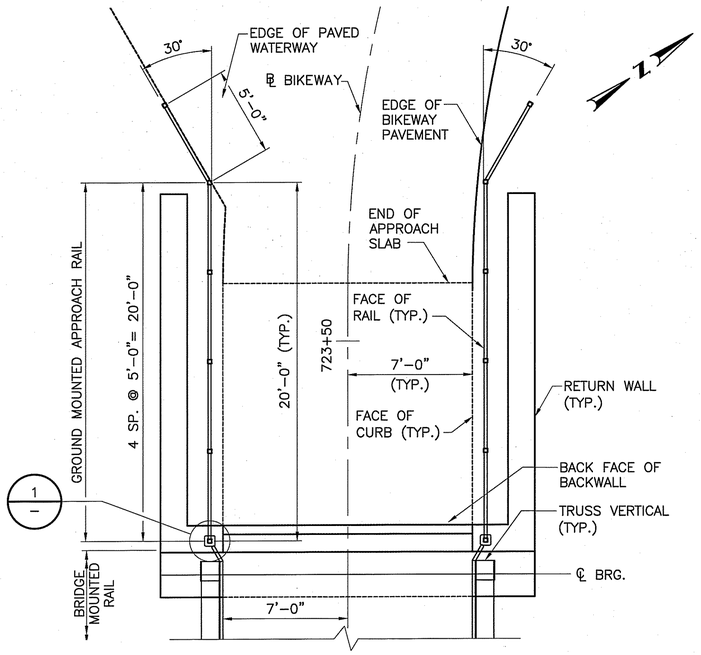
WOONSOCKET TO N. SMITHFIELD

RAILING DETAILS 1

CHECKED BY _____ DATE _____ SCALE _____

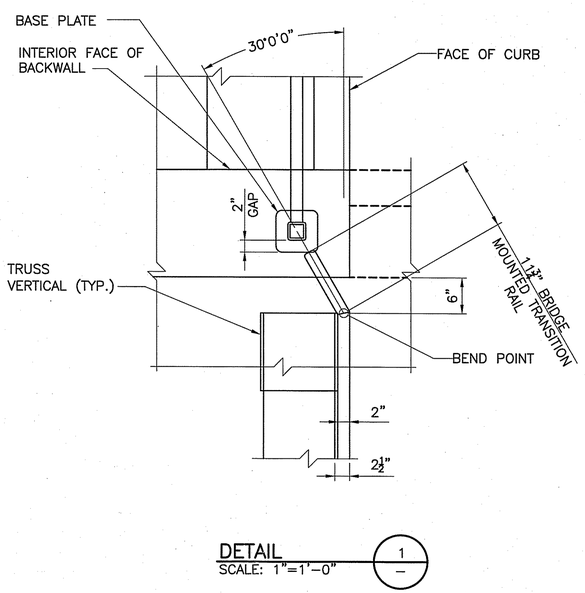
vhb PROVIDENCE, RHODE ISLAND

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			18	20

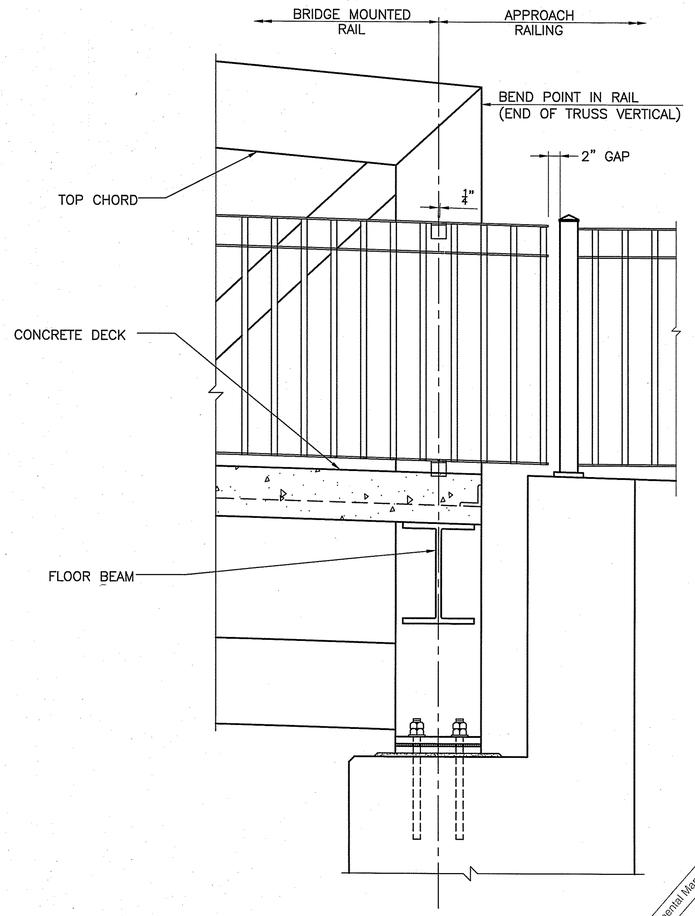


APPROACH RAILING POST FOOTING LOCATION PLAN

NOTE: WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR
N.T.S.

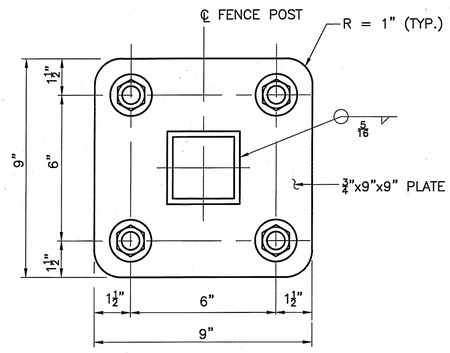


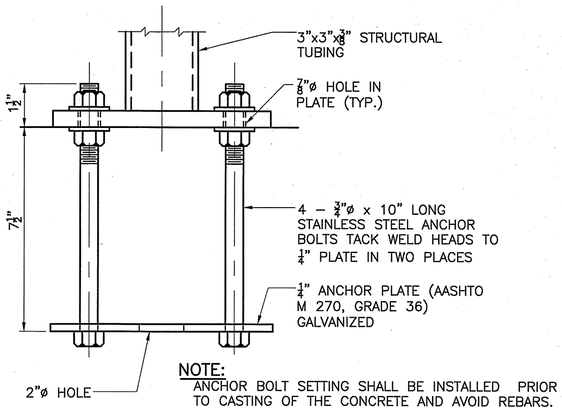
DETAIL 1/–
SCALE: 1"=1'–0"



BRIDGE MOUNTED TRANSITION RAILING

SCALE: 1" = 1'–0"





NOTE:
ANCHOR BOLT SETTING SHALL BE INSTALLED PRIOR TO CASTING OF THE CONCRETE AND AVOID REBARS.

BASE PLATE ANCHORAGE DETAIL

NOT TO SCALE

Environmental Management
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NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

RAILING DETAILS 2

CHECKED BY _____ DATE _____ SCALE _____

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			19	20

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-1
SHEET: 1 of 1
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338719.6 319833.2
Ground Surface Elev. (ft.): 158.2
Final Boring Depth (ft.): 27
Date Start - Finish: 10/11/2013 - 10/15/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/15/2013	10:30	11.2	30 Min

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
0		S-1	0-2	24	16	7 5 8 5	13	S-1 : Top 7": Dark brown, fine to medium SAND, little Silt, fine to coarse Gravel, trace Organic Matter Bottom 9": Brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt					
		S-2	2-4	24	17	5 4 3 4	7	S-2 : Loose, brown, fine to medium SAND, trace fine Gravel, trace Silt					
5		S-3	4-6	24	14	5 3 5 7	8	S-3 : Top 6" Dark brown, fine SAND, some Silt, trace Roots Bottom 8" Brown, fine to medium SAND, trace Silt					
		S-4	6-8	24	6	10 9 13 19	22	S-4 : Medium dense, brown, fine to medium SAND, little fine to coarse Gravel, trace coarse Sand, trace Silt	1			SAND AND GRAVEL FILL	
		S-5	8-10	24	10	15 11 18 19	29	S-5 : Medium dense, brown, fine to coarse GRAVEL and fine to coarse SAND, trace Silt					
10		S-6	10-12	24	10	22 20 22 12	42	S-6 : Dense, brown, fine to coarse GRAVEL, and fine to coarse Sand, trace Silt					
		S-7	12-14	24	17	7 7 7 7	14	S-7 : Medium dense, brown, fine SAND, trace Silt			14		144.2
15		S-8	14-16	24	12	6 4 4 4	8	S-8 : Loose, brown, fine SAND, little Silt					
		S-9	16-18	24	16	5 6 5 8	11	S-9 : Medium dense, brown, fine SAND, little Silt					
		S-10	18-20	24	8	3 3 5 6	8	S-10 : Loose, brown, fine SAND, little Silt					
20												SILTY SAND	
25		S-11	25-27	24	12	5 8 12 15	20	S-11 : Medium dense, brown, fine to medium SAND, trace Silt			27		131.2
								End of exploration at 27 feet.					
30													

B.O.F. EL. 152.5

REMARKS
1 - Boring location moved ±6ft. parallel and ±5ft. perpendicular to Blackstone River from the original location.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-1

GZA TEMPLATE TEST BORING, 11/20/2013, 2:36:10 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-2
SHEET: 1 of 4
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338704.2 319828.1
Ground Surface Elev. (ft.): 159
Final Boring Depth (ft.): 102
Date Start - Finish: 10/10/2013 - 10/11/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/11/2013	07:13	9.87	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
0		S-1	0-2	24	11	6 13 9 9	22	S-1 : Top 6": Dark brown, fine to medium SAND, little Silt, trace Organic Matter Bottom 5": Brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt			0.5	TOPSOIL	158.5
		S-2	2-4	24	12	6 3 4 4	7	S-2 : Loose, light brown, fine SAND, trace Silt					
5		S-3	4-6	24	10	10 6 5 5	11	S-3 : Medium dense, brown, fine to medium SAND, trace Silt					
		S-4	6-8	24	12	7 6 6 16	12	S-4 : Medium dense, brown, fine to medium SAND, little fine to coarse Gravel, trace coarse Sand, trace Silt	1				
		S-5	8-10	24	9	21 20 23 19	43	S-5 : Dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt					
10		S-6	10-12	24	9	19 14 13 26	27	S-6 : Medium dense, brown, fine to coarse GRAVEL and fine to coarse SAND, trace Silt				SAND AND GRAVEL FILL	
		S-7	14-16	24	8	8 4 9 12	13	S-7 : Medium dense, brown, fine to coarse GRAVEL and fine to coarse SAND, trace Silt					
15		S-8	16-18	24	5	9 7 8 9	15	S-8 : Medium dense, brown, fine to coarse GRAVEL and fine to coarse SAND, trace Silt					
		S-9	19-21	24	10	4 5 6 8	11	S-9 : Medium dense, brown, fine to medium SAND, little coarse Sand, little fine to coarse Gravel, trace Silt					
20													
											24		135.0
25		S-10	24-26	24	9	3 3 6 9	9	S-10 : Loose, brown, fine to medium SAND, trace Silt				SILTY SAND	
30		S-11	29-31	24	14	2 2		S-11 : Loose, brown, fine SAND and Silt					

B.O.F. EL. 152.5

REMARKS
1 - Boring offset ±7' perpendicular to Blackstone River from original location.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-2

GZA TEMPLATE TEST BORING, 11/20/2013, 2:35:24 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-2
SHEET: 2 of 4
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338704.2 319828.1
Ground Surface Elev. (ft.): 159
Final Boring Depth (ft.): 102
Date Start - Finish: 10/10/2013 - 10/11/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/11/2013	07:13	9.87	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
35		S-12	34-36	24	10	4 3 5 5	8	S-12 : Loose, brown, fine to medium SAND, some Silt					
40		S-13	39-41	24	13	4 5 8 7	13	S-13 : Medium dense, brown, fine SAND, some Silt					
45		S-14	44-46	24	15	3 3 5 6	8	S-14 : Loose, brown, fine SAND, little Silt				SILTY SAND	
50		S-15	49-51	24	11	7 9 12 11	21	S-15 : Medium dense, brown, fine SAND, little Silt					
55		S-16	54-56	24	14	3 5 6 7	11	S-16 : Medium dense, brown, fine SAND, little Silt					
60		S-17	59-61	24	9	2 4		S-17 : Loose, brown, fine SAND, some Silt					

REMARKS

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-2

GZA TEMPLATE TEST BORING, 11/20/2013, 2:36:22 PM

NOTES

1. GROUND WATER LEVELS INDICATED ON THESE DRAWINGS ARE THOSE EXISTING AT THE TIME SUBSURFACE INVESTIGATIONS WERE MADE AND DO NOT NECESSARILY REPRESENT PERMANENT GROUND WATER LEVELS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ANNUAL AND SEASONAL VARIATIONS IN GROUND WATER LEVEL WHICH MAY EFFECT HIS WORK. VARIATIONS IN EXISTING GROUND WATERS FROM THOSE INDICATED ON THE DRAWINGS SHALL UNDER NO CONDITIONS CONSTITUTE GROUNDS FOR REVISION IN CONTRACT PRICE OR COMPLETION DATE.
2. BORINGS WERE TAKEN FOR THE PURPOSE OF DESIGN AND INDICATE SUBSURFACE CONDITIONS ONLY AT THE LOCATIONS SHOWN. THE CONTRACTOR SHALL BE AWARE THAT SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION MAY VARY FROM THOSE SHOWN ON THE PLANS.

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-2
SHEET: 3 of 4
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338704.2 319828.1
Ground Surface Elev. (ft.): 159
Final Boring Depth (ft.): 102
Date Start - Finish: 10/10/2013 - 10/11/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/11/2013	07:13	9.87	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
						11 12	17					SILT	
											92.5		66.5
65		S-18	64-66	24	15	7 7 7 7	14	S-18 : Medium dense, brown, fine SAND,some Silt, stratified with layers of gray fine to medium Sand with Silt (1/32 to 1/16 inch thickness)				SILTY SAND	
		S-24	94-96	24	15	31 40 33 60	73	S-24 : Very dense, gray, fine to coarse SAND, some fine Gravel, some Silt	3			GLACIAL TILL	
70		S-19	69-71	24	3	4 3 3 5	6	S-19 : Loose, brown, fine SILT, trace fine Sand			69		90.0
		C-1	97-102	60	60	2.25 Min. 2.75 Min. 1.75 Min. 2.25 Min. 2.50 Min.	0	C-1 : Moderately hard, slight to moderate weathering, moderately to slightly fractured, amorphous to fine grained, gray SCHIST, close shallow fractures. REC=100%, RQD=86%	4 5 6			BEDROCK	
75		S-20	74-76	24	22	4 3 4 7	7	S-20 : Loose, brown, SILT, trace fine Sand					
								End of exploration at 102 feet.			102		57.0
80		S-21	79-81	24	20	4 6 5 7	11	S-21 : Medium dense, brown, SILT, trace fine Sand	2			SILT	
85		S-22	84-86	24	21	4 4 7 7	11	S-22 : Medium dense, brown, fine SILT, trace fine Sand					
90		S-23	89-91	24	21	7 6		S-23 : Medium dense, gray, SILT, trace fine Sand					
95													
100													
105													
110													
115													
120													

REMARKS
2 - Driller mixed Varifio QD drillers mud to stabilize the bore hole at ±74' bgs; open hole from 74' to 97'.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-2

GZA TEMPLATE TEST BORING, 11/20/2013, 2:34:50 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-2
SHEET: 4 of 4
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338704.2 319828.1
Ground Surface Elev. (ft.): 159
Final Boring Depth (ft.): 102
Date Start - Finish: 10/10/2013 - 10/11/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/11/2013	07:13	9.87	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
120													
125													
130													
135													
140													
145													
150													
155													
160													
165													
170													
175													
180													
185													
190													
195													
200													

REMARKS
3 - Rods chattering at ±92.5'bgs.
4 - Rollerbit ±1' into rock.
5 - Telescoped 3" casing to ±97' bgs.
6 - Cored at 375 psi down pressure.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-2

GZA TEMPLATE TEST BORING, 11/20/2013, 2:36:29 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc.
Blackstone River Bike Way Segment 8C
North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-3
SHEET: 1 of 1
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338676.1 320030.3
Ground Surface Elev. (ft.): 164.5
Final Boring Depth (ft.): 30
Date Start - Finish: 10/16/2013 - 10/16/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)			
Date	Time	Water Depth	Stab. Time
10/16/2013	15:00	10	30 Min

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
0		S-1	0-2	24	11	10 10 6 5	16	S-1 : Top 3": Medium dense, dark brown, fine to medium SAND, some Silt, trace fine Gravel, trace Roots Bottom 8": Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt					
		S-2	4-6	24	3	19 21 23 18	44	S-2 : Dense, brown, fine to coarse GRAVEL, some fine to coarse Gravel, some fine to coarse Sand, little Silt					
5													
10		S-3	9-11	24	0	8 9 8 8	17	S-3 : NO RECOVERY					
		S-4	14-16	24	9	9 8 13 20	21	S-4 : Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt				SAND AND GRAVEL FILL	
15		S-5	16-18	24	12	25 20 12 16	32	S-5 : Dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt					
		S-6	18-20	24	8	16 15 10 6	25	S-6 : Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt	1				
20		S-7	20-22	24	3	8 10 21 21	31	S-7 : Dense, brown, fine to coarse GRAVEL, little coarse Sand					
		S-8	22-24	24	8	27 23 18 13	41	S-8 : Dense, brown, fine to coarse SAND, some fine GRAVEL, trace Silt					
25		S-9	24-26	24	5	12 18 24 17	42	S-9 : Dense, brown, fine to coarse SAND, little fine GRAVEL, trace Silt					
		S-10	26-28	24	8	15 6 5 6	11	S-10 : Medium dense, brown, fine to coarse SAND, little fine GRAVEL, trace Silt					
		S-11	28-30	24	11	3 4 8 5	12	S-11 : Medium dense, brown, fine to medium SAND, trace Silt, trace fine Gravel			28		136.5
30								End of exploration at 30 feet.			30	SAND	134.5

B.O.F. EL. 152.5

REMARKS
1 - Boring location moved ±16ft. perpendicular to Blackstone River from original location.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-3

GZA TEMPLATE TEST BORING, 11/20/2013, 2:36:20 PM

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

BORING LOGS
SHEET 1

CHECKED BY _____ DATE _____ SCALE _____

vhb PROVIDENCE, RHODE ISLAND

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI			20	20

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc. Blackstone River Bike Way Segment 8C North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-4
SHEET: 1 of 3
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338659.7 320026.9
Ground Surface Elev. (ft.): 165
Final Boring Depth (ft.): 86
Date Start - Finish: 10/15/2013 - 10/16/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
10/16/2013	7:15	9.5	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		S-1	0-2	24	16	6 7 7 9	14	S-1 : Top 4": Medium dense, dark brown, fine SAND, little Silt, trace fine Gravel, trace Roots Bottom 12" Medium dense, brown, fine to coarse SAND, little fine Gravel, little Silt	1				
		S-2	2-4	24	12	6 8 6 5	14	S-2 : Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt					
5		S-3	4-6	24	7	8 7 9 11	16	S-3 : Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt					
		S-4	6-8	24	15	15 15 12 6	27	S-4 : Top 4": Medium dense, brown, fine SAND, little Silt, trace fine Gravel, trace Roots Bottom 12" Medium dense, brown, fine to coarse SAND, little fine Gravel, little Silt					
		S-5	8-10	24	9	4 5 6 6	11	S-5 : Medium dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt					
10		S-6	10-12	24	8	6 6 5 6	11	S-6 : Dense, brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt					
		S-7	12-14	24	12	11 9 10 11	19	S-7 : Medium dense, brown, fine SAND, little Silt				SAND AND GRAVEL FILL	
15		S-8	14-16	24	9	8 16 19 14	35	S-8 : Dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt					
		S-9	16-18	24	17	22 14 19 24	33	S-9 : Dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt					
		S-10	18-20	24	8	19 10 7 7	17	S-10 : Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt					
20		S-11	20-22	24	6	6 5 9 7	14	S-11 : Medium dense, brown, fine to coarse GRAVEL, little fine to coarse Sand					
		S-12	22-24	24	4	14 11 7 8	18	S-12 : Medium dense, brown, fine to coarse GRAVEL, little fine to coarse Sand					
25		S-13	25-27	24	12	6 8 7 5	15	S-13 : Medium dense, brown, fine Sand, some Silt			25		140.0
												SILTY SAND	
30		S-14	29-31	24	9	3 4		S-14 : Medium dense, brown, fine Sand, some Silt					

REMARKS

1 - Boring location moved to top of slope at ± 10 ft. perpendicular to Blackstone River from original location.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-4

GZA TEMPLATE TEST BORING, 11/20/2015, 3:36:33 PM

B.O.F. EL. 152.5

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc. Blackstone River Bike Way Segment 8C North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-4
SHEET: 2 of 3
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338659.7 320026.9
Ground Surface Elev. (ft.): 165
Final Boring Depth (ft.): 86
Date Start - Finish: 10/15/2013 - 10/16/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
10/16/2013	7:15	9.5	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
						6 7	10						
35		S-15	34-36	24	0	6 5 7 6	12	S-15 : NO RECOVERY					
40		S-16	39-41	24	8	3 3 5 5	8	S-16 : Loose, brown, SILT and fine SAND					
45		S-17	44-46	24	10	8 8 9 11	17	S-17 : Medium dense, brown, fine to medium SAND, some Silt				SILTY SAND	
50		S-18	49-51	24	14	8 8 8 11	16	S-18 : Medium dense, brown, fine SAND, some Silt					
55		S-19	54-56	24	12	6 6 8 9	14	S-19 : Medium dense, brown, fine SAND, some Silt					
60		S-20	59-61	24	14	6 4		S-20 : Medium dense, brown, fine SAND, some Silt			59	SILT	106.0

REMARKS

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-4

GZA TEMPLATE TEST BORING, 11/20/2015, 3:36:33 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Vanasse Hangen Brustlin, Inc. Blackstone River Bike Way Segment 8C North Smithfield, Rhode Island

EXPLORATION NO.: B-8C-4
SHEET: 3 of 3
PROJECT NO: 32002.50
REVIEWED BY: William Ladd

Logged By: Tom Bjartmarz
Drilling Co.: Geologic Inc.
Foreman: Dave Sheldon

Type of Rig: Truck
Rig Model: CME-75
Drilling Method: Drive & Wash

Boring Location: 338659.7 320026.9
Ground Surface Elev. (ft.): 165
Final Boring Depth (ft.): 86
Date Start - Finish: 10/15/2013 - 10/16/2013

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4"3"

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Water Depth	Stab. Time
10/16/2013	7:15	9.5	16 Hours

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
						7 7	11						
65		S-21	64-66	24	15	8 8 11 10	19	S-21 : Medium dense, brown, SILT, trace fine Sand				SILT	
70		S-22	69-71	24	15	7 5 9 12	14	S-22 : Medium dense, brown, SILT, trace fine Sand		2			
75		S-23	74-76	24	15	19 30 34 24	64	S-23 : Very dense, brown, fine to coarse SAND, some Silt			74	GLACIAL TILL	91.0
80		S-24	79-80.3	16	24	20 20 100/4"	R	S-24 : Very dense, gray, Clayey SILT and fine to coarse SAND, some fine to coarse Gravel			80	BEDROCK	85.0
		C-1	81-86	60	60	2.5 Min. 2.0 Min. 3.0 Min. 6.0 Min. 4.5 Min.	0	C-1 : Moderately hard, moderate weathering, moderately to extremely fractured, amorphous to fine grained, gray SCHIST, close shallow fractures. REC=100%, RQD=7%		3 4 5			
85								End of exploration at 86 feet.			86		79.0
90													

REMARKS

2 - Drillers mixed Varilo QD drilling mud to stabilize the borehole at ±70 bgs; 4 inch casing set to ±70ft bgs.
3 - Rock fragments in sample at ±80ft bgs; advanced with rollerbit to ±81ft. bgs.
4 - Telescoped 3 inch casing to ±81ft. bgs.
5 - Cored at 375 psi down pressure.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-8C-4

GZA TEMPLATE TEST BORING, 11/20/2015, 3:36:34 PM

NOTES:

1. SEE NOTES ON BORING LOGS SHEET 1.

Environmental Management
FEB 23 2015
Office of Water Resources

REVISIONS		
NO.	DATE	BY

vhb PROVIDENCE, RHODE ISLAND

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BLACKSTONE RIVER BIKEWAY
SEGMENT 8C

WOONSOCKET TO N. SMITHFIELD

BORING LOGS
SHEET 2

CHECKED BY _____ DATE _____ SCALE _____