

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	BHO-0882(002)	2009	1	31

INDEX OF DRAWINGS

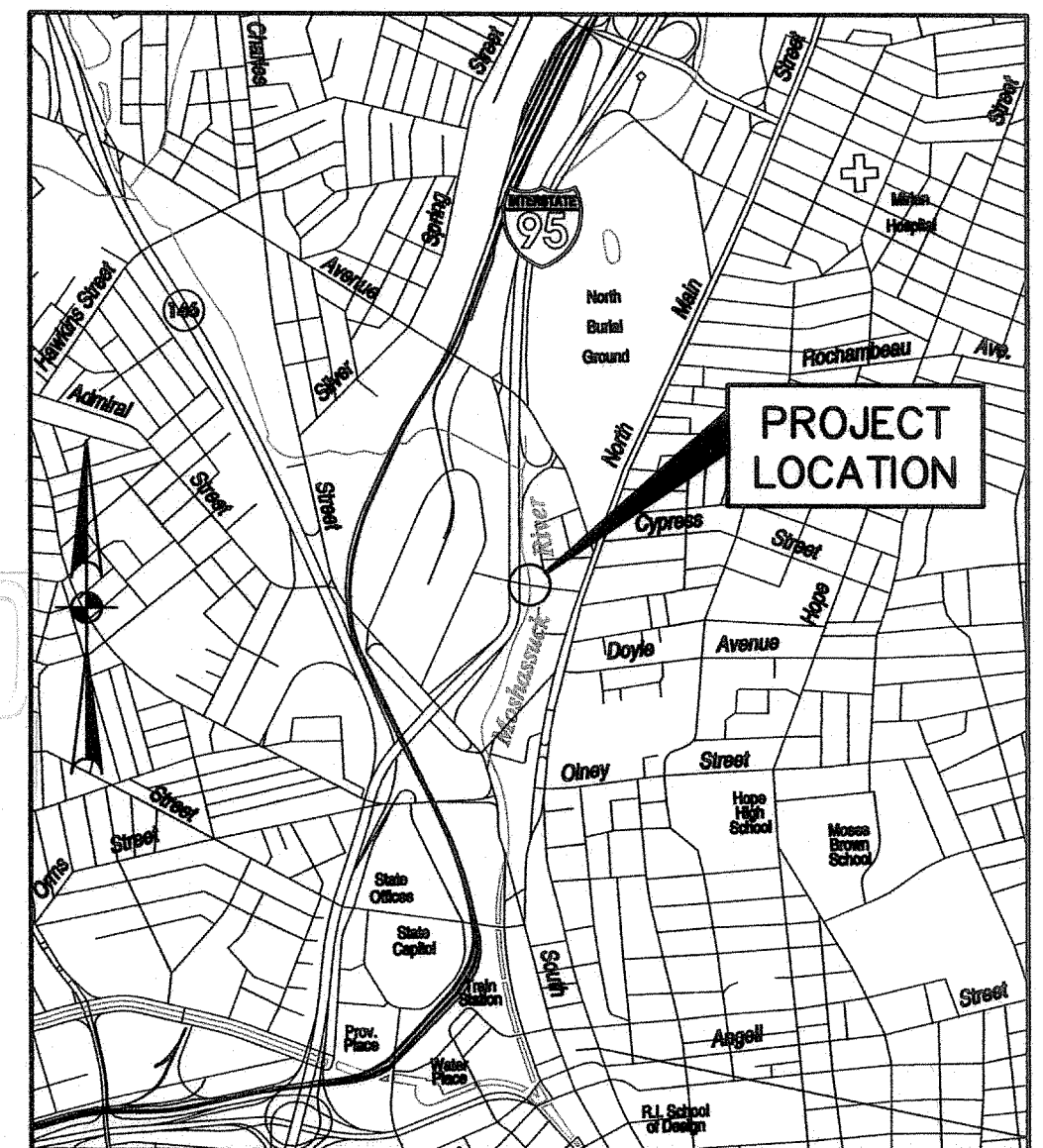
SHEET NO.	DESCRIPTION
1	COVER
2	STANDARD PLAN SYMBOLS & STANDARD LEGEND
3	STANDARD NOTES - 1
4	STANDARD NOTES - 2
5	JOB-SPECIFIC PLAN SYMBOLS, LEGEND & NOTES
6	HIGHWAY GENERAL PLAN
7	DETOUR AND TRAFFIC CONTROL PLAN
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30	BORING LOG 2
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**STATE OF RHODE ISLAND
DEPARTMENT OF TRANSPORTATION**

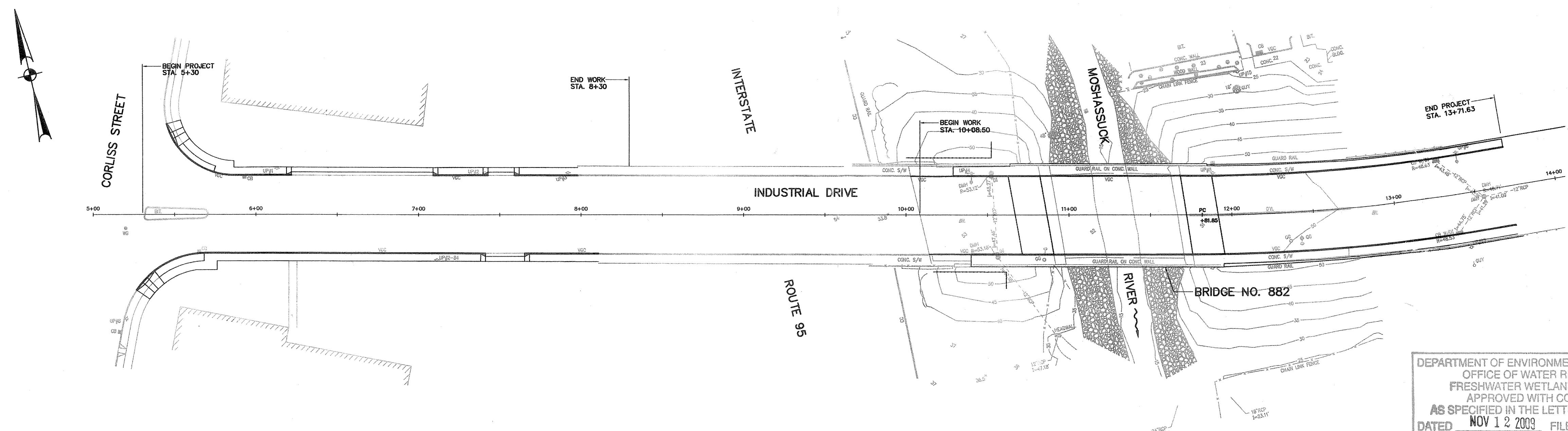
**PLAN OF PROPOSED
BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

CITY OF PROVIDENCE
COUNTY OF PROVIDENCE

R.I. CONTRACT NO. 2009-CB-044
R.I. FEDERAL AID PROJECT NO. BHO-0882(002)
PROJECT LENGTH 0.069 MILE



LOCATION MAP
SCALE: 1" = 2000'



LAYOUT MAP
SCALE: 1" = 40'

DESIGN DATA

SPECIFICATIONS

SEVENTEENTH EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), DATED 2002.
THE LATEST REVISION OF AND MODIFICATIONS TO THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

DESIGN MANUAL

THE LATEST EDITION OF THE STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, INCLUDING ALL REVISIONS TO DATE.

DESIGN LOADING

AASHTO HS20-44 LOADING (BASED ON EXISTING STRUCTURE)

MATERIALS

STRUCTURAL STEEL AND PLATES

A709 (GRADE 50)
f_y = 50 K.S.I.

REINFORCING STEEL

A615 (GRADE 60) DEFORMED
f_s = 24,000 P.S.I.

ALUMINUM

6061 - T6
f_y = 36 K.S.I.

CAST-IN-PLACE CONCRETE

CLASS HP f'_c = 5,000 P.S.I.

CLASS XX f'_c = 4,000 P.S.I.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 09-0260
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

RI DEPARTMENT OF TRANSPORTATION	
APPROVED	8/26/09
DEPUTY CHIEF ENGINEER	DATE
APPROVED	8/28/09
CHIEF ENGINEER	DATE
APPROVED	8/28/09
DIRECTOR	DATE
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED	
DIVISION ADMINISTRATOR	DATE

HURRICANE EVACUATION ROUTE

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

TRAFFIC DESIGN DATA

VPH	340 VPH
D	63% WB
K	8.5%
T	3%
DESIGN SPEED	30 MPH
2009 ADT	4,000 VPD

BASE OF LEVELS
N.G.V.D. 29 & N.A.D. 88

SCALE OF DRAWINGS
AS SHOWN

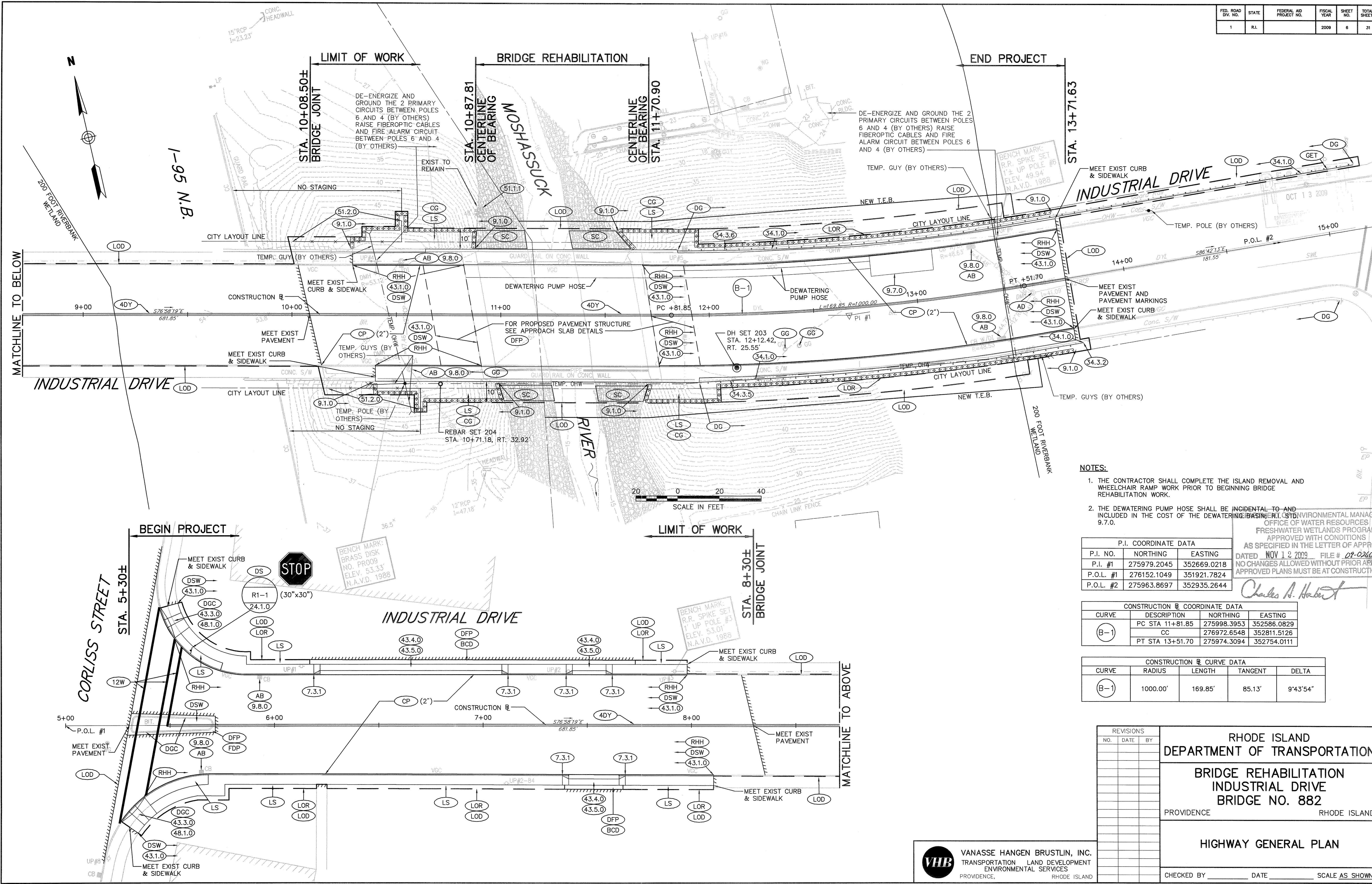
Thomas W. Hennessy
No. 7819
REGISTERED PROFESSIONAL ENGINEER
CIVIL
8/26/09

Contract Number 2009-CB-044
Number of Sheet 1
Total Sheets 31

RHODE ISLAND SPECIFICATIONS AND STANDARD DETAILS

SPECIFICATIONS TO GOVERN THIS PROJECT ARE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, THE 1998 STANDARD DETAILS, 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



- NOTES:**
- THE CONTRACTOR SHALL COMPLETE THE ISLAND REMOVAL AND WHEELCHAIR RAMP WORK PRIOR TO BEGINNING BRIDGE REHABILITATION WORK.
 - THE DEWATERING PUMP HOSE SHALL BE INCIDENTAL TO AND INCLUDED IN THE COST OF THE DEWATERING WORK.
- OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 02-0260
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
- Charles A. Herbert*

P.I. COORDINATE DATA			
P.I. NO.	NORTHING	EASTING	
P.I. #1	275979.2045	352669.0218	
P.O.L. #1	276152.1049	351921.7824	
P.O.L. #2	275963.8697	352935.2644	

CONSTRUCTION CURVE COORDINATE DATA			
CURVE	DESCRIPTION	NORTHING	EASTING
B-1	PC STA 11+81.85	275998.3953	352586.0829
	CC	276972.6548	352811.5126
	PT STA 13+51.70	275974.3094	352754.0111

CONSTRUCTION CURVE DATA				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
B-1	1000.00'	169.85'	85.13'	9°43'54"

REVISIONS		
NO.	DATE	BY

**RHODE ISLAND
DEPARTMENT OF TRANSPORTATION**

**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

HIGHWAY GENERAL PLAN

CHECKED BY _____ DATE _____ SCALE AS SHOWN

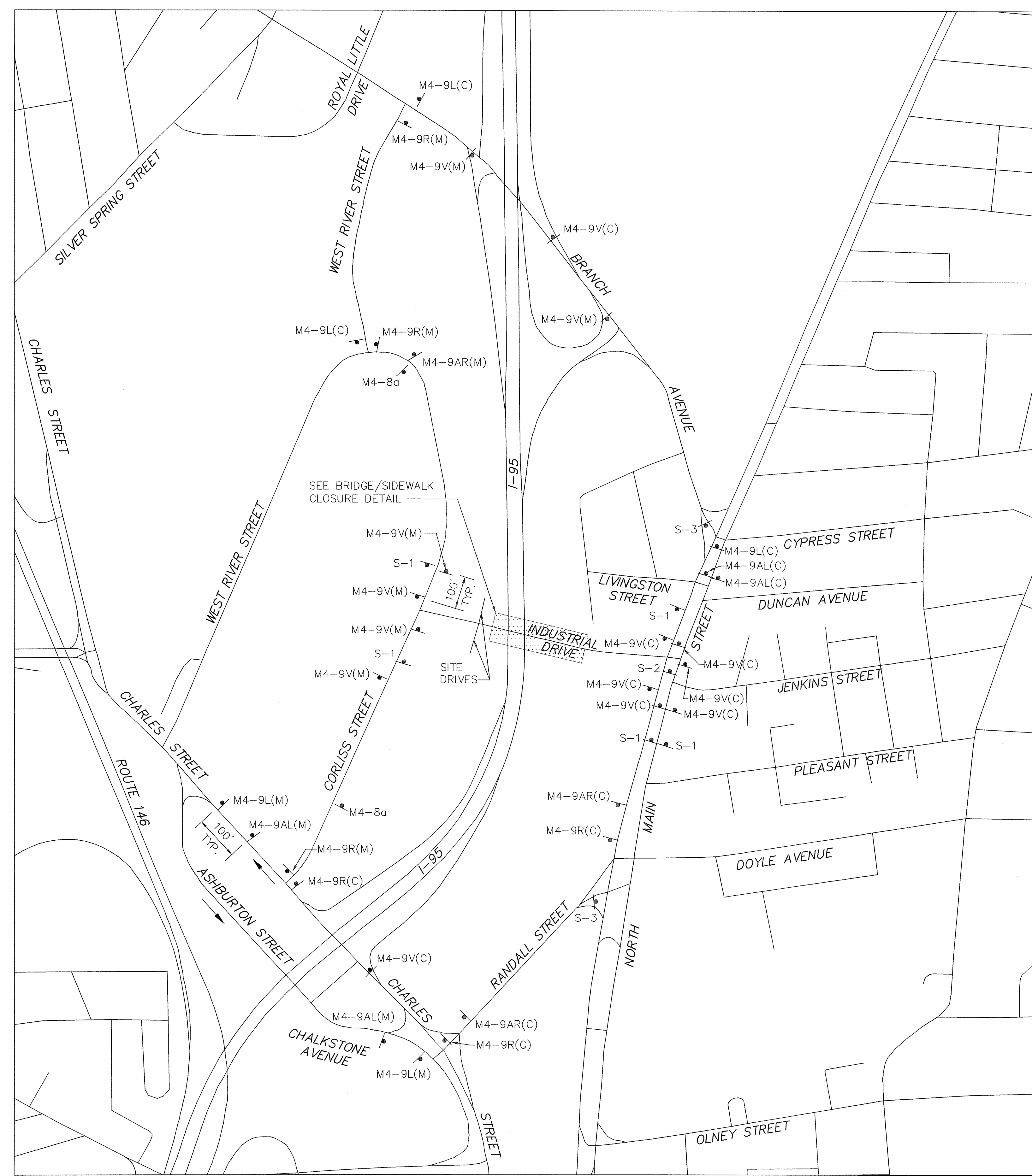
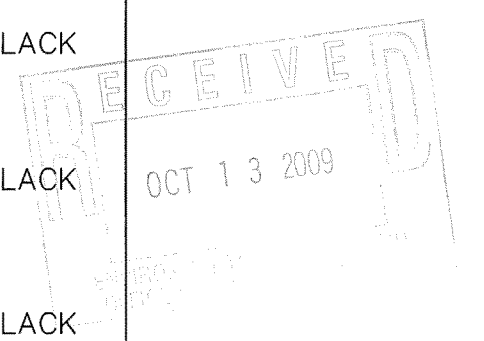
VHB VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

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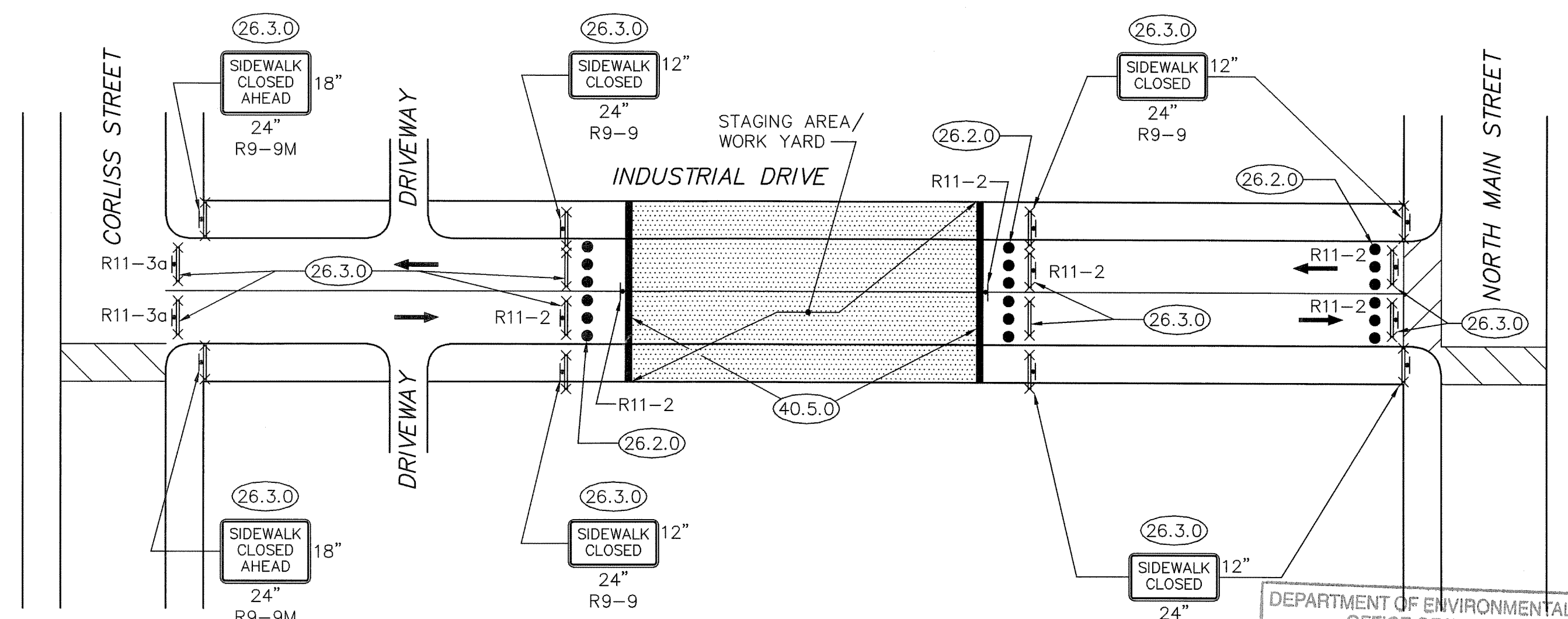
TEMPORARY SIGNS

SIGN DESIGNATION	LEGEND	WIDTH	HEIGHT	COLOR
M4-9AL	(C) CORLISS ST DETOUR (M) N. MAIN ST DETOUR	48"	48"	ORANGE/BLACK
M4-9L	(C) CORLISS ST DETOUR (M) N. MAIN ST DETOUR	48"	48"	ORANGE/BLACK
M4-9AR	(C) CORLISS ST DETOUR (M) N. MAIN ST DETOUR	48"	48"	ORANGE/BLACK
M4-9R	(C) CORLISS ST DETOUR (M) N. MAIN ST DETOUR	48"	48"	ORANGE/BLACK
M4-9V	(C) CORLISS ST DETOUR (M) N. MAIN ST DETOUR	48"	48"	ORANGE/BLACK
S-1	INDUSTRIAL DRIVE CLOSED	36"	36"	ORANGE/BLACK
S-2*	LEFT LANE U-TURN ONLY	30"	30"	ORANGE/BLACK
S-3	N. MAIN ST	30"	24"	ORANGE/BLACK
M4-8a	END DETOUR	24"	18"	ORANGE/BLACK
R11-2	ROAD CLOSED	48"	30"	BLACK/WHITE
R11-3a	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	60"	30"	BLACK/WHITE

* COVER EXISTING LEFT LANE MUST TURN LEFT (R3-7L) SIGN



DETOUR ROUTES & SIGNAGE
NOT TO SCALE



BRIDGE/SIDEWALK CLOSURE DETAIL
NOT TO SCALE

LEGEND

- CONSTRUCTION SIGN
- CONCRETE BARRIER, R.I. STD. 40.5.0
- TYPE III BARRICADE, R.I. STD. 26.3.0
- WORK AREA PUBLIC ACCESS RESTRICTED

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

**DETOUR AND
TRAFFIC CONTROL PLAN**

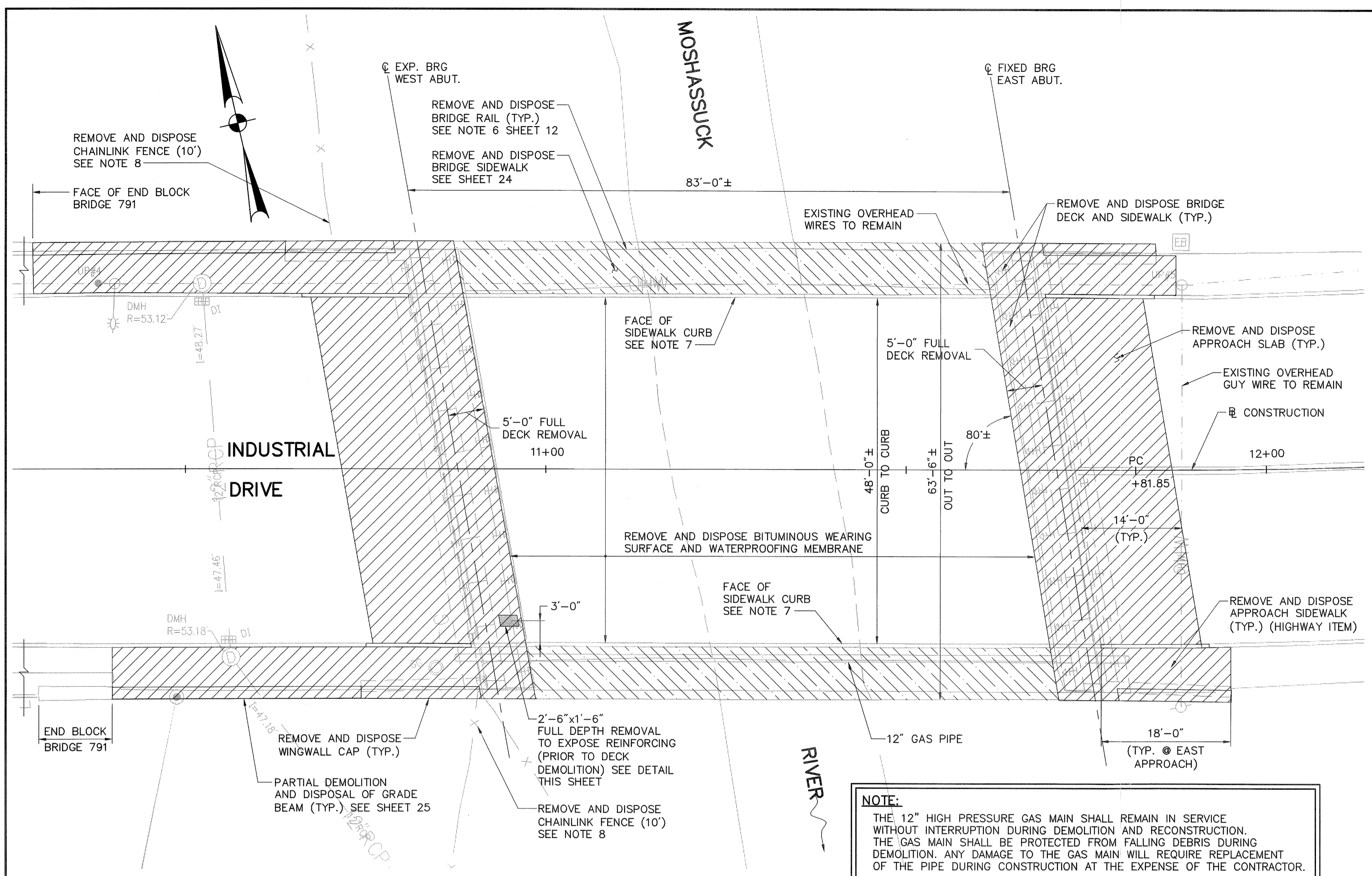
CHECKED BY _____ DATE _____ SCALE AS SHOWN

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

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 08-020
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

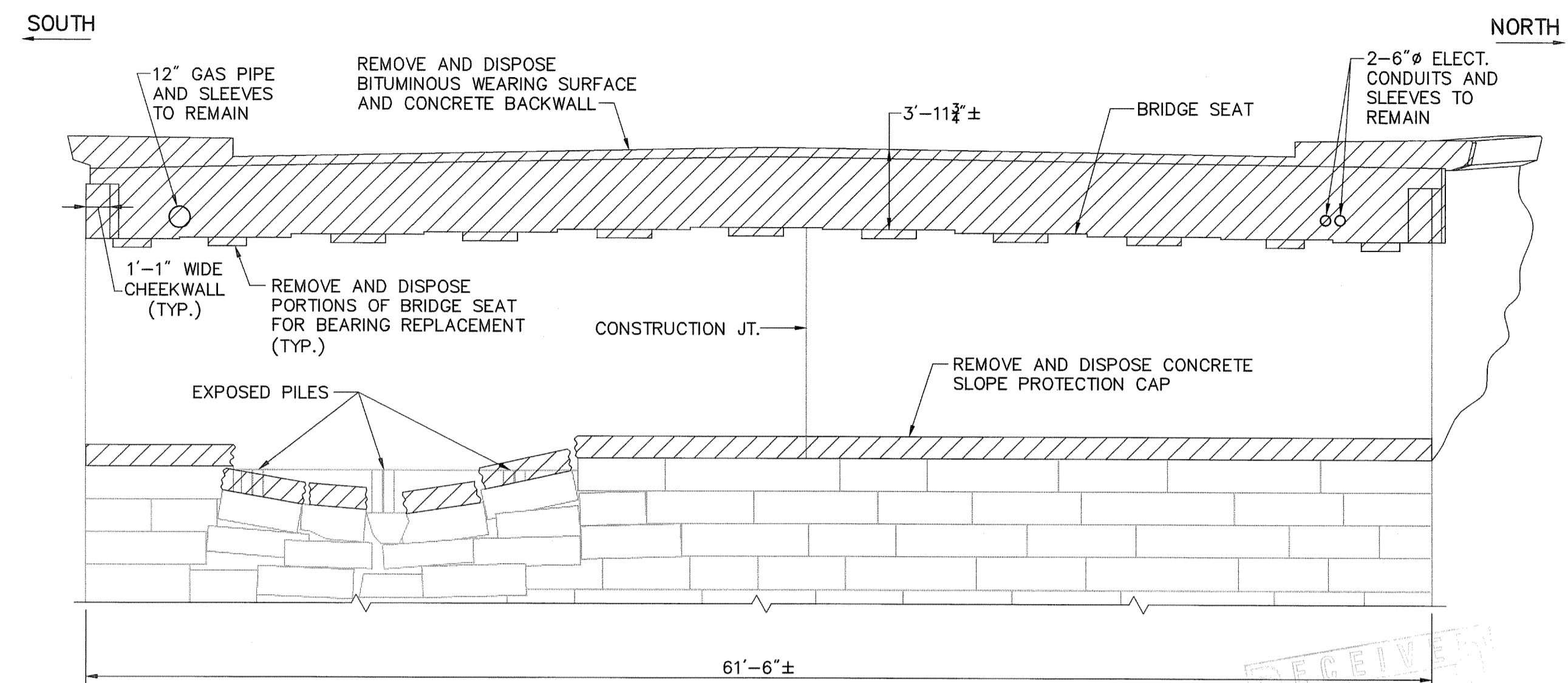
Charles A. Harkin

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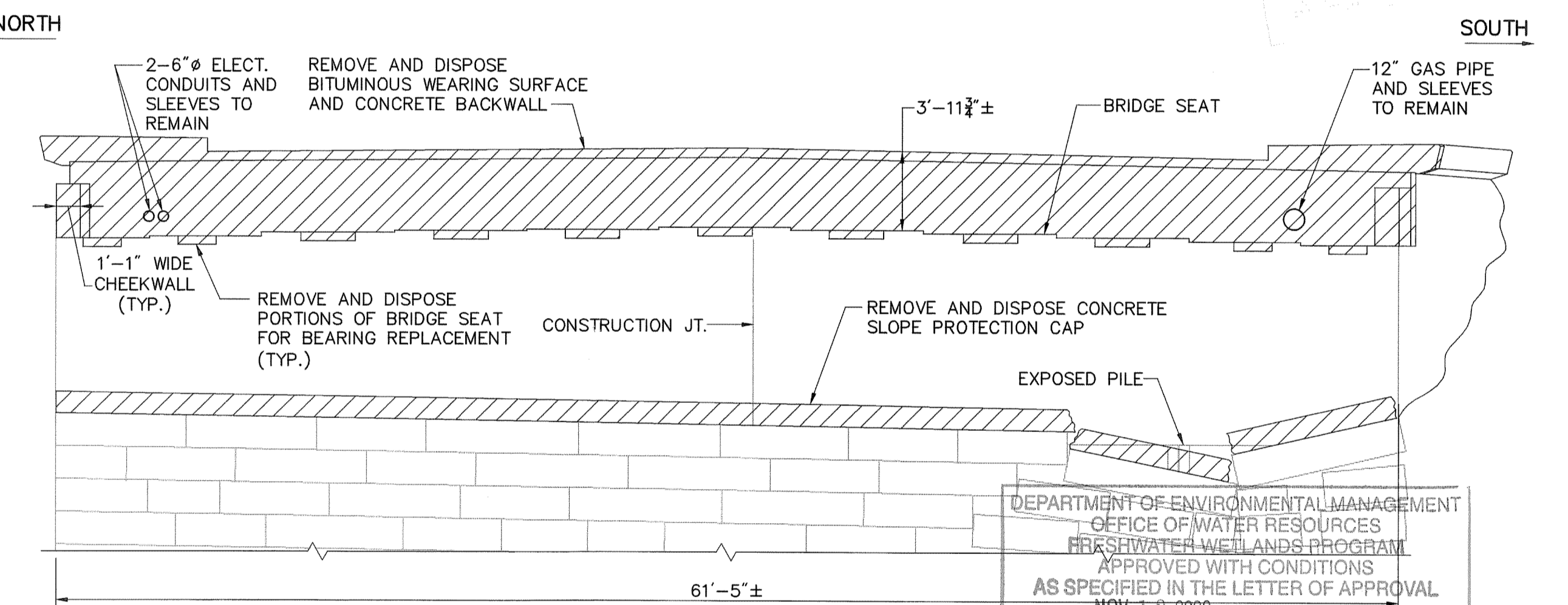


PLAN
SCALE: 1"=10'

NOTE:
THE 12" HIGH PRESSURE GAS MAIN SHALL REMAIN IN SERVICE WITHOUT INTERRUPTION DURING DEMOLITION AND RECONSTRUCTION. THE GAS MAIN SHALL BE PROTECTED FROM FALLING DEBRIS DURING DEMOLITION. ANY DAMAGE TO THE GAS MAIN WILL REQUIRE REPLACEMENT OF THE PIPE DURING CONSTRUCTION AT THE EXPENSE OF THE CONTRACTOR.



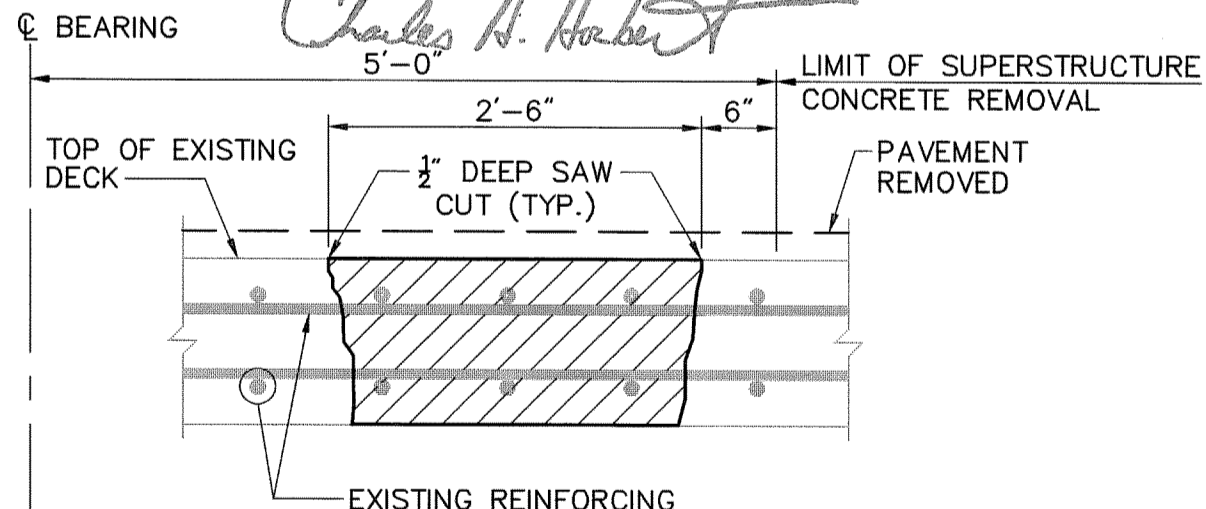
WEST ABUTMENT ELEVATION
SCALE: 3/16"=1'-0"



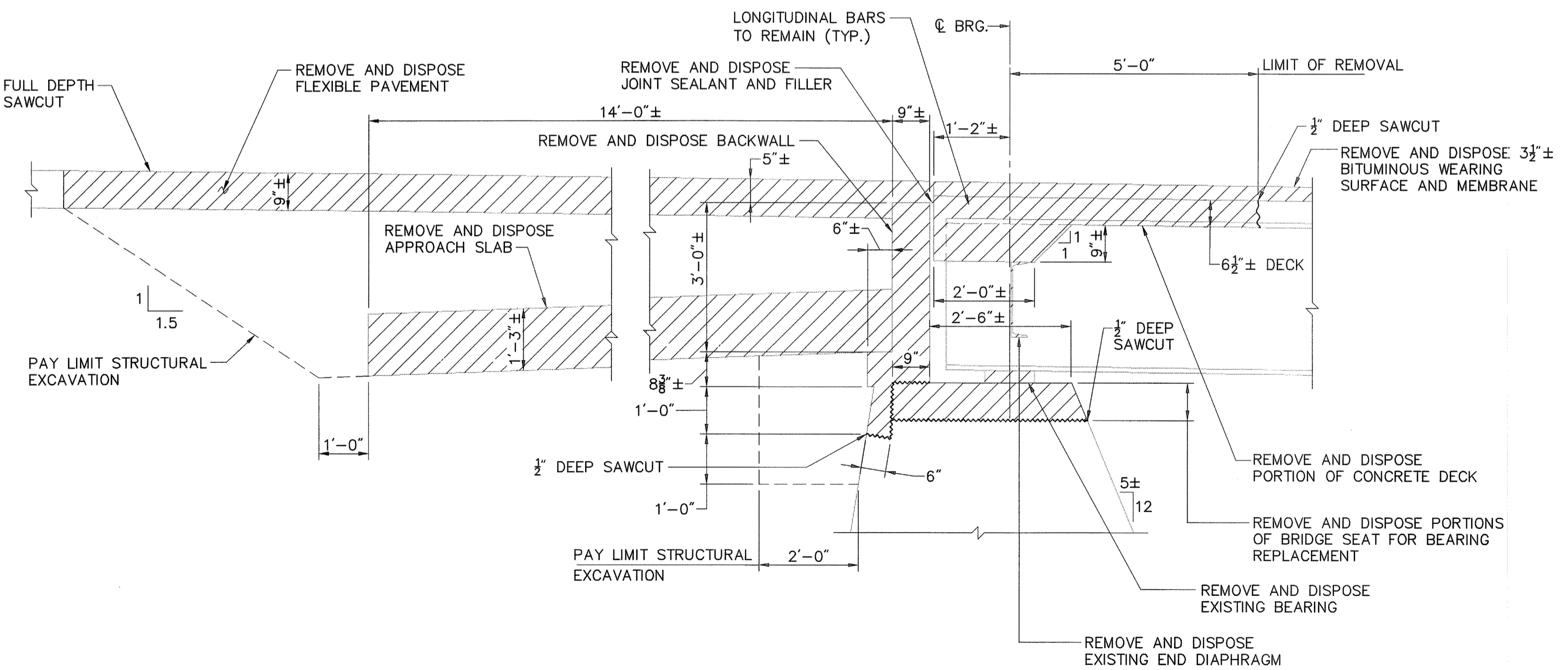
EAST ABUTMENT ELEVATION
SCALE: 3/16"=1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 09-0280
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Harbert
5'-0"



FULL DEPTH REMOVAL TO EXPOSE REINFORCING DETAIL
NOT TO SCALE



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

LEGEND:
 - REMOVE AND DISPOSE
 - REMOVE AND DISPOSE BRIDGE SIDEWALK

- NOTES:**
- ALL WORK SHALL PROCEED IN ACCORDANCE WITH THESE PLANS AND THE CONTRACT DOCUMENTS.
 - THE CONTRACTOR SHALL EXERCISE EXTREME CARE SO AS NOT TO DAMAGE THE EXISTING STRUCTURE DESIGNATED TO REMAIN. IF ANY DAMAGE TO THE EXISTING STRUCTURE DOES OCCUR AS A RESULT OF THE CONTRACTOR'S OPERATIONS, IT SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
 - EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY DEMOLITION AND CONSTRUCTION DEBRIS FROM FALLING INTO THE MOSHASSUCK RIVER. THE CONTRACTOR SHALL PROVIDE A METHOD FOR PREVENTING DEBRIS, RESULTING FROM THE DEMOLITION AND CONSTRUCTION OPERATIONS, FROM FALLING INTO THE WATERWAY. SUCH METHOD SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING ANY DEMOLITION OF THE EXISTING STRUCTURE. IF ANY MATERIAL/ EQUIPMENT FALLS IN THE RIVER, IT SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
 - DETAILS ARE DEVELOPED FROM FIELD SURVEY AND ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS TO VERIFY ALL DEMOLITION QUANTITIES SHOWN.
 - THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF HIS SCHEDULE FOR THE FULL DEPTH REMOVAL TO EXPOSE THE REINFORCING. THE CONTRACTOR SHALL PROVIDE ACCESS TO THE LOCATION FOR VERIFICATION MEASUREMENTS. PHASE 1 DECK DEMOLITION SHALL PROCEED AFTER VERIFICATION MEASUREMENTS HAVE BEEN RECORDED BY THE ENGINEER.
 - TEMPORARY PROTECTIVE SHIELD SHALL BE INSTALLED AT THE ABUTMENTS UNDER THE BRIDGE DECK ENDS, UNDER THE BRIDGE DECK OVERHANGS AND UNDER THE WINGWALL COPES PRIOR TO CONCRETE REMOVAL OPERATIONS. THE PROTECTIVE SHIELD SHALL BE IN ACCORDANCE WITH ITEM CODE 800.9901 "FURNISH FABRICATE INSTALL AND REMOVE TEMPORARY PROTECTIVE SHIELD".
 - THE EXISTING BRIDGE CURB SHALL REMAIN IN PLACE. THE CONTRACTOR SHALL RESET BRIDGE CURB THAT IS DISPLACED BY HIS OPERATIONS. RESETTING OF BRIDGE CURB SHALL BE INCIDENTAL AND INCLUDED IN THE COST OF DEMOLITION OF THE SUPERSTRUCTURE.
 - REMOVAL AND DISPOSAL OF CHAIN LINK FENCE SHALL BE INCIDENTAL TO THE COST OF DEMOLITION OF THE SUBSTRUCTURE.

REVISIONS		
NO.	DATE	BY

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRIDGE REHABILITATION INDUSTRIAL DRIVE BRIDGE NO. 882

PROVIDENCE RHODE ISLAND

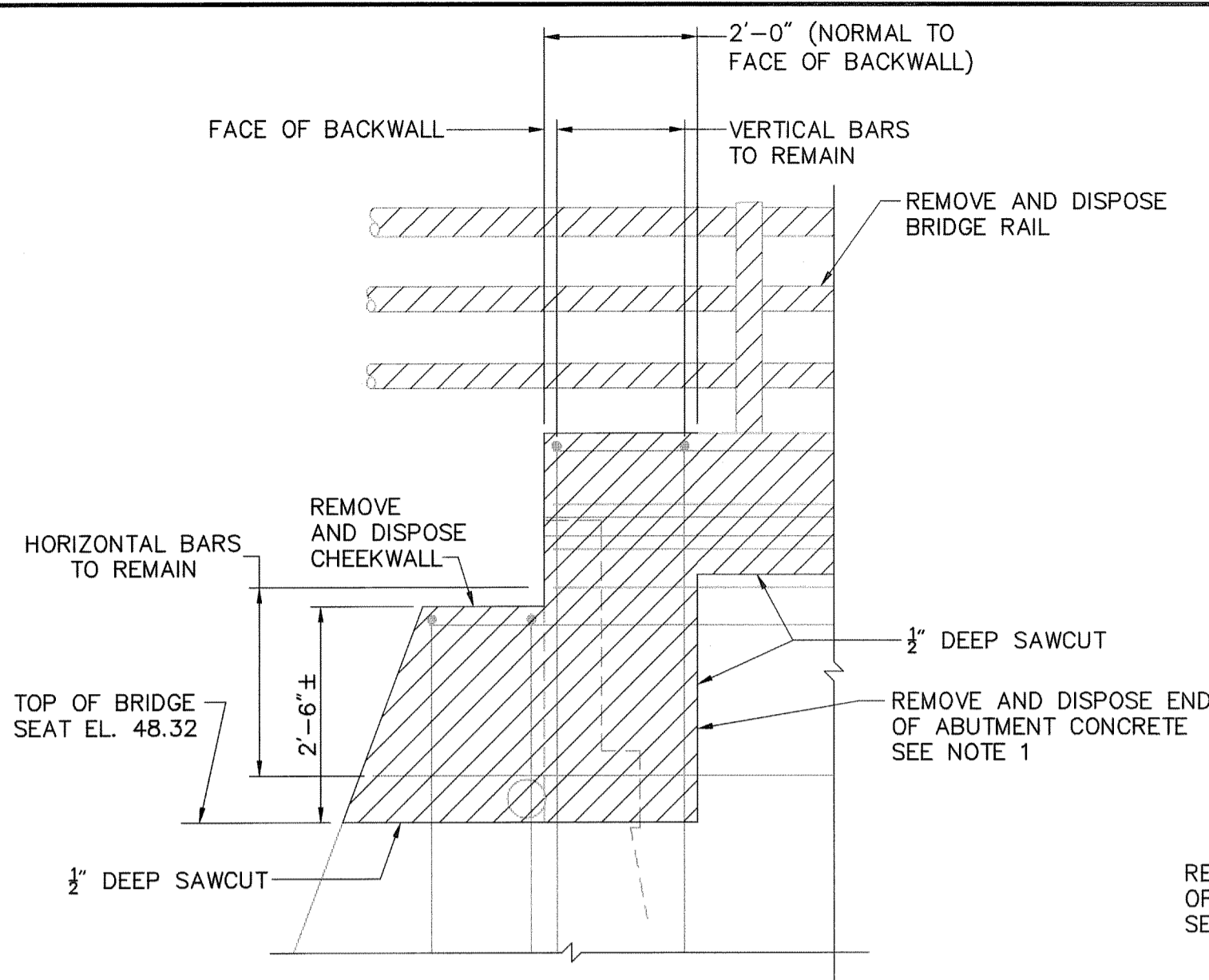
DEMOLITION DETAILS 1

CHECKED BY _____ DATE _____ SCALE AS SHOWN

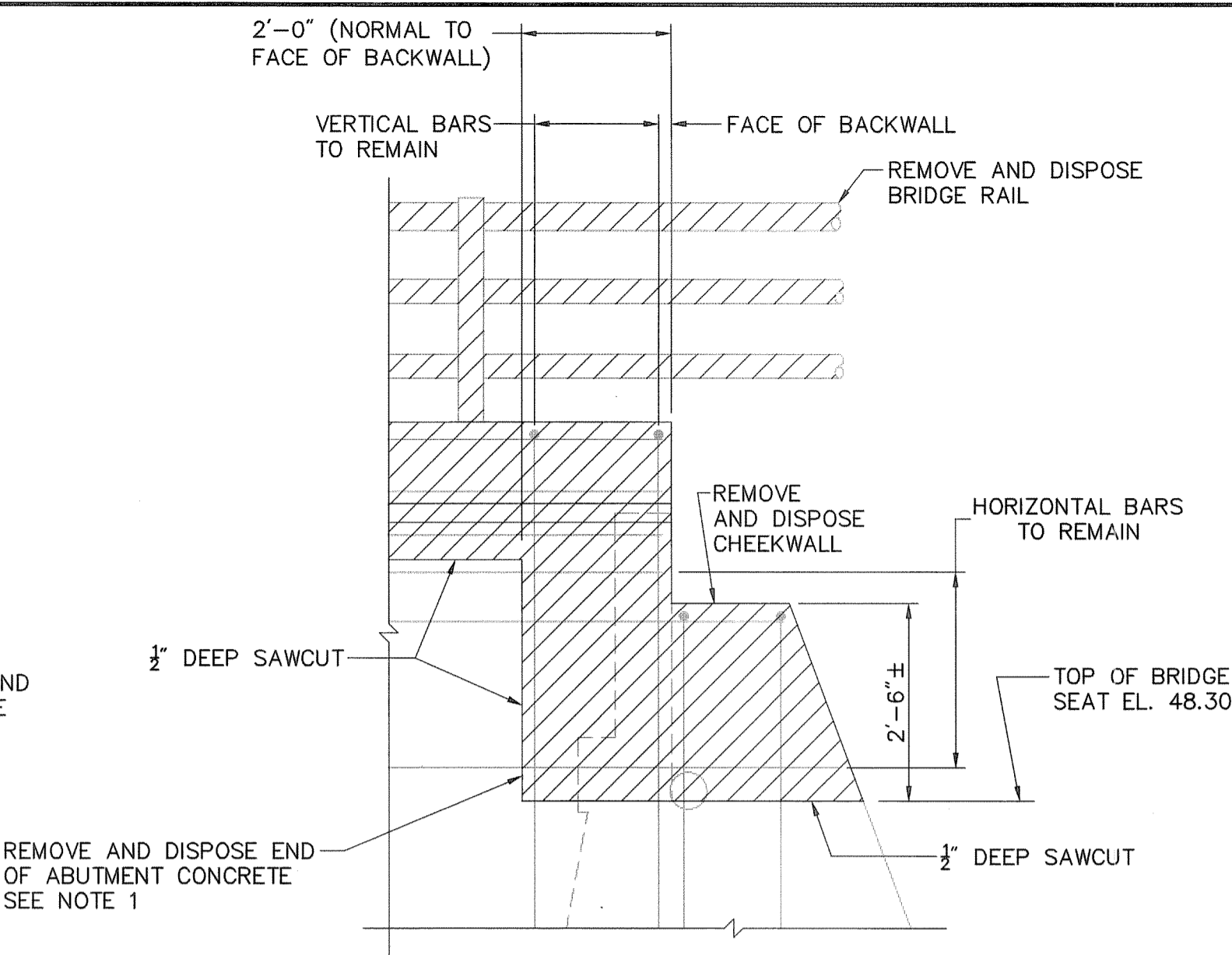
VHB VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION LAND DEVELOPMENT ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

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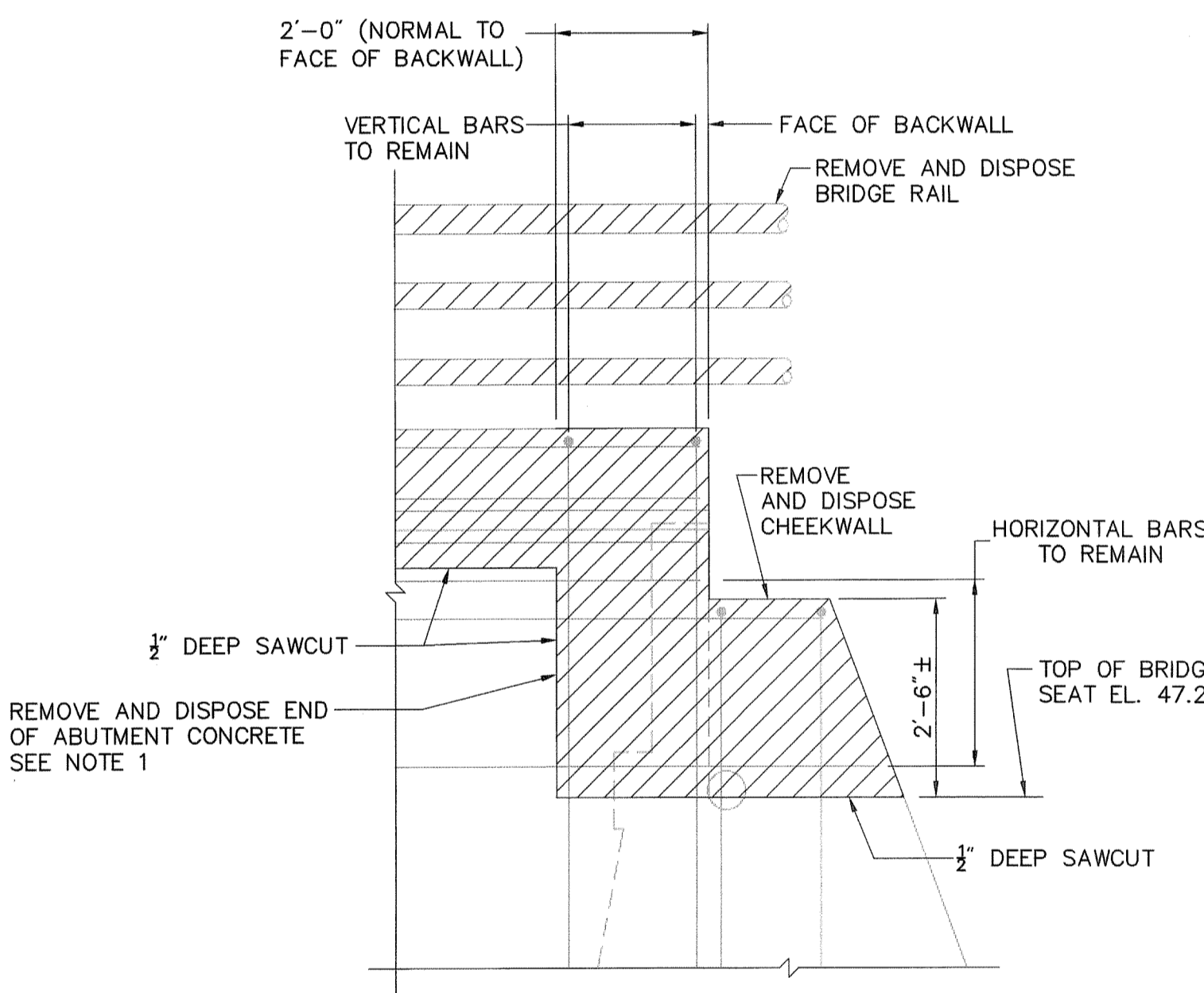
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2009	12	31



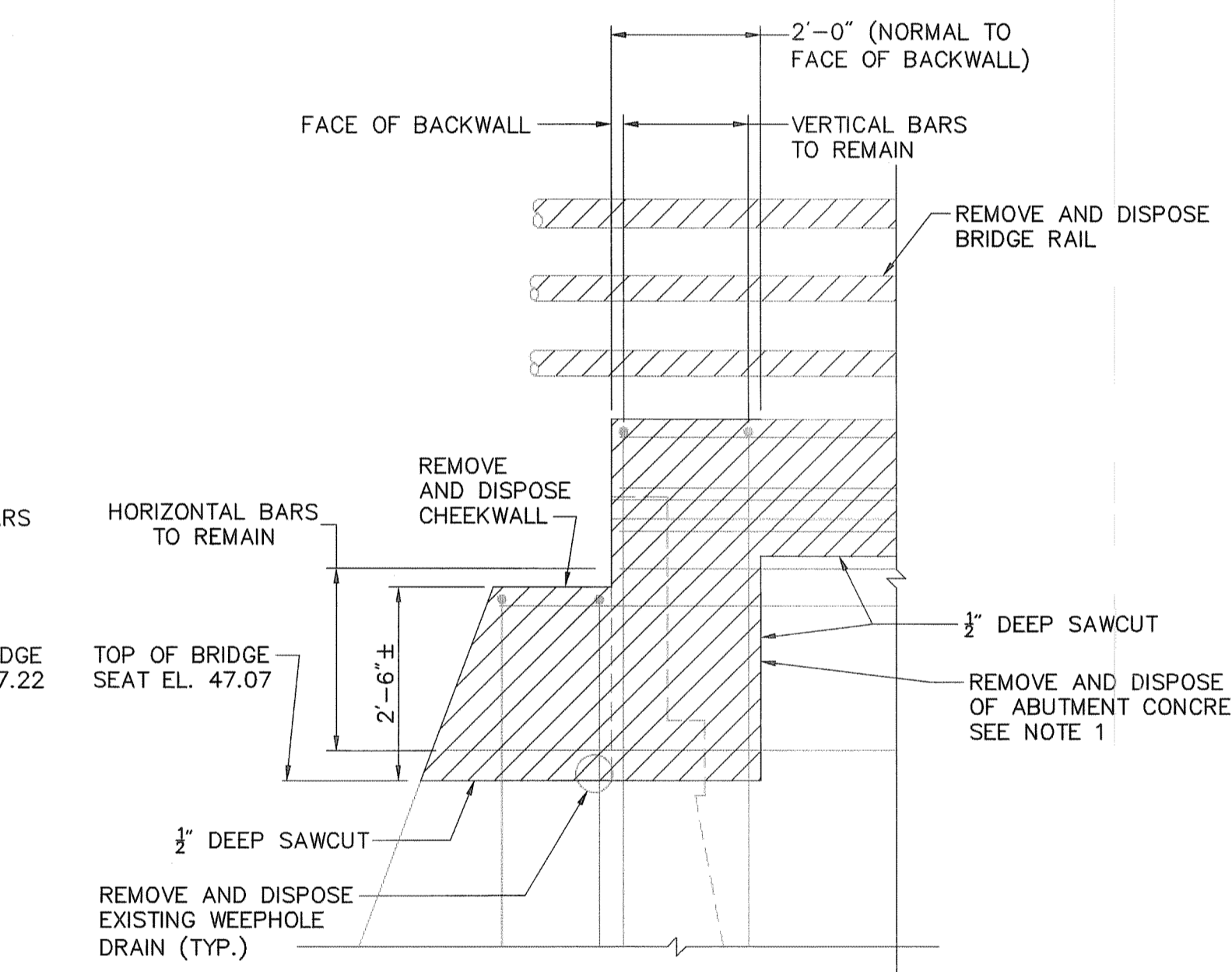
NORTHWEST WINGWALL ELEVATION
SCALE: 1/2"=1'-0"



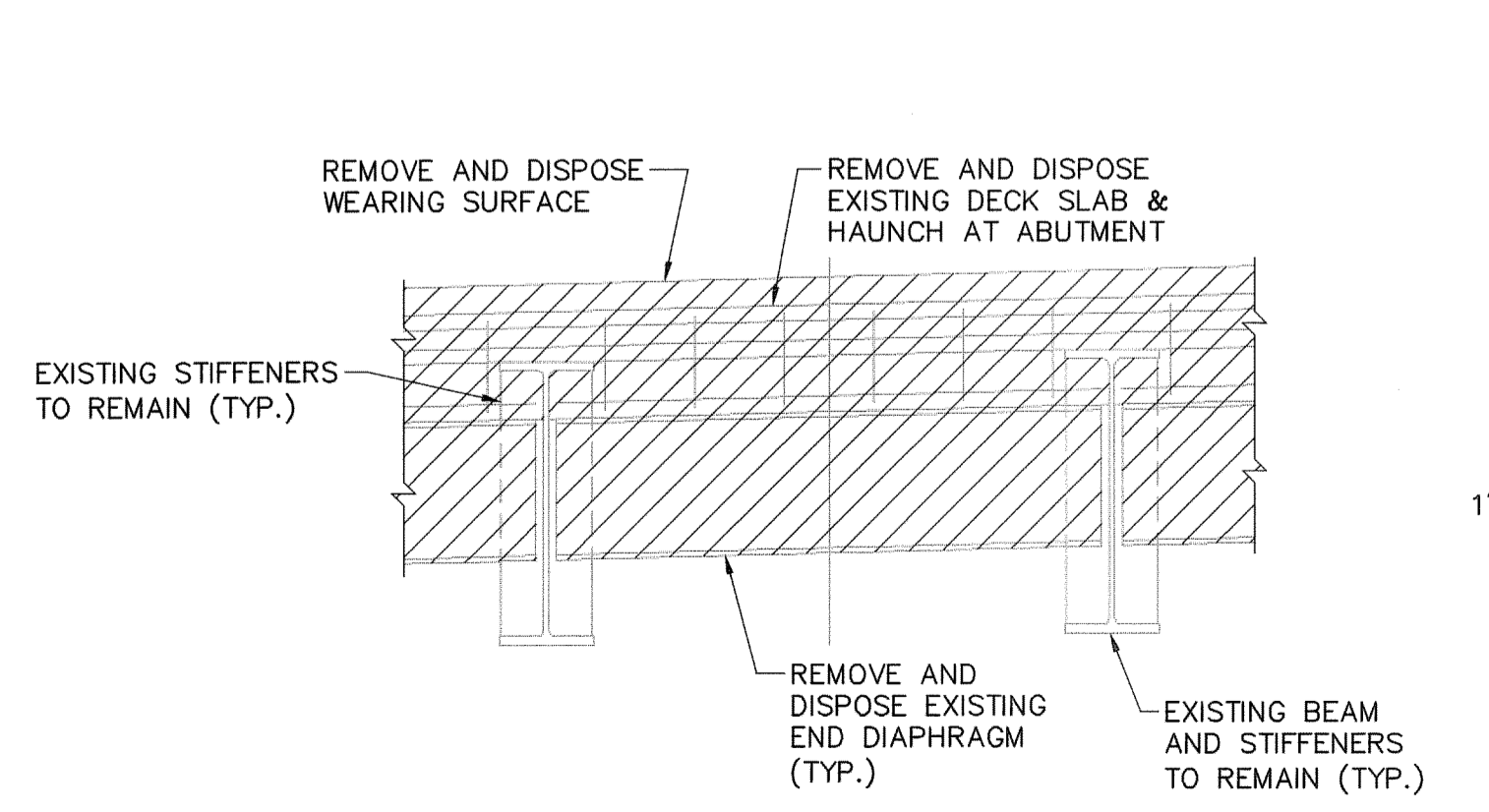
SOUTHWEST WINGWALL ELEVATION
SCALE: 1/2"=1'-0"



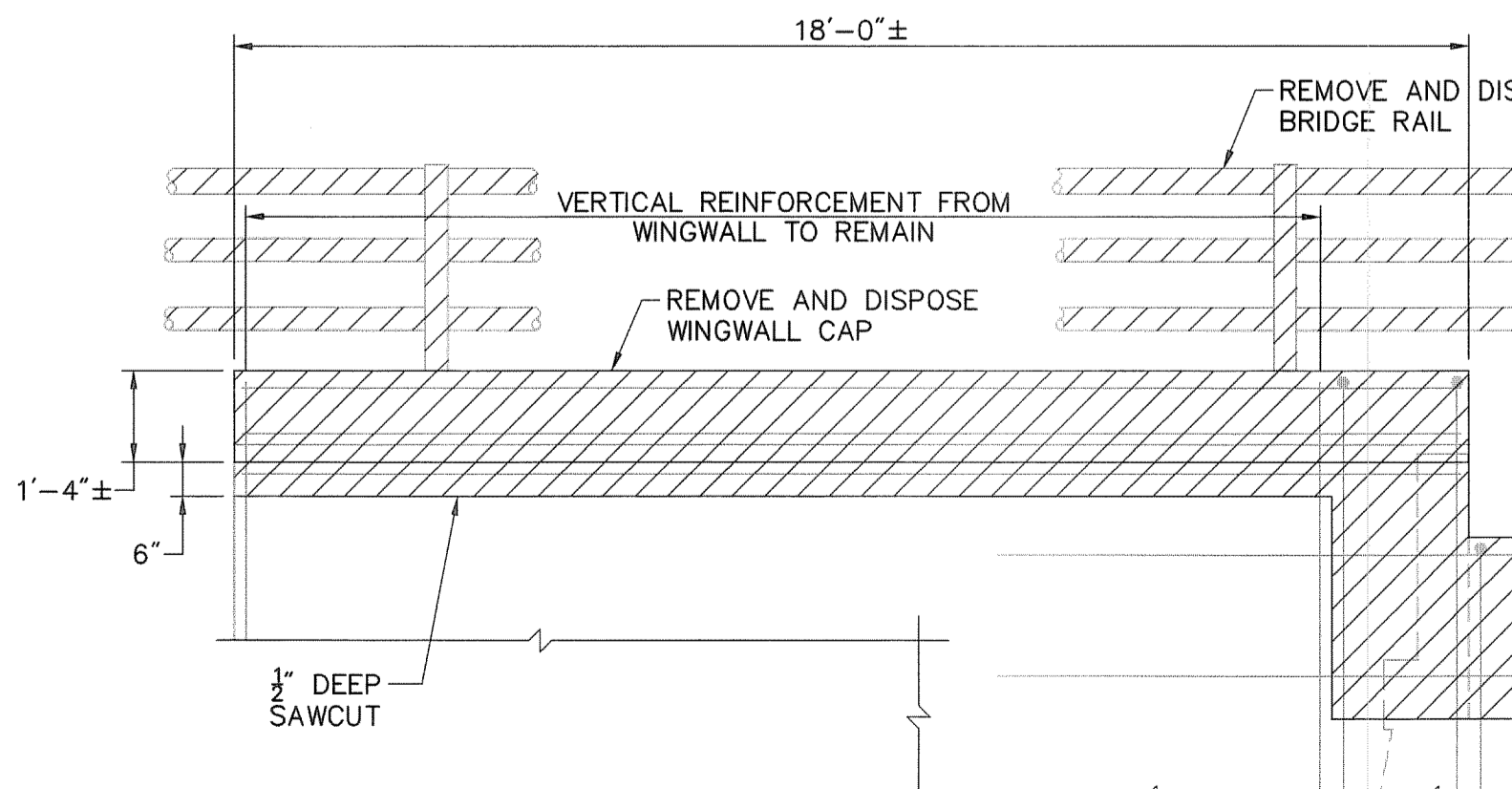
NORTHEAST WINGWALL ELEVATION
SCALE: 1/2"=1'-0"



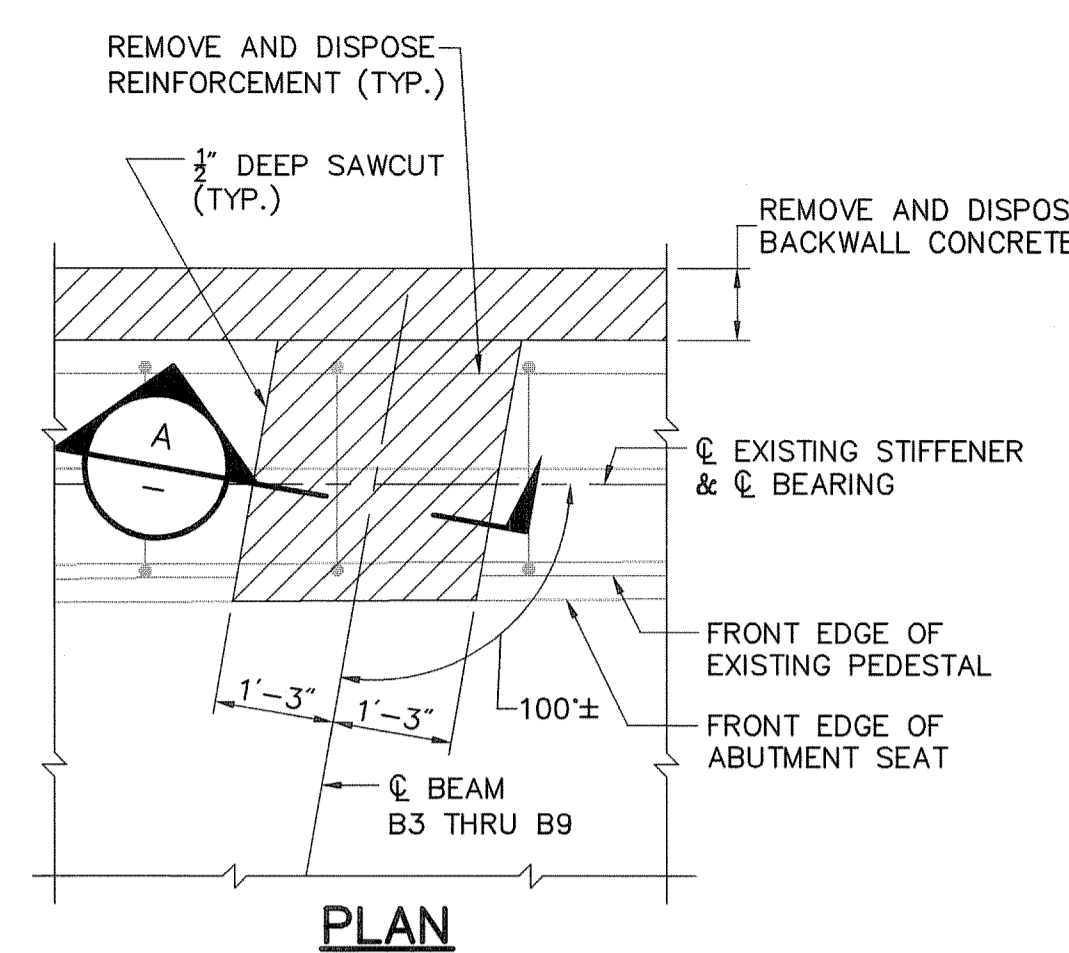
SOUTHEAST WINGWALL ELEVATION
SCALE: 1/2"=1'-0"



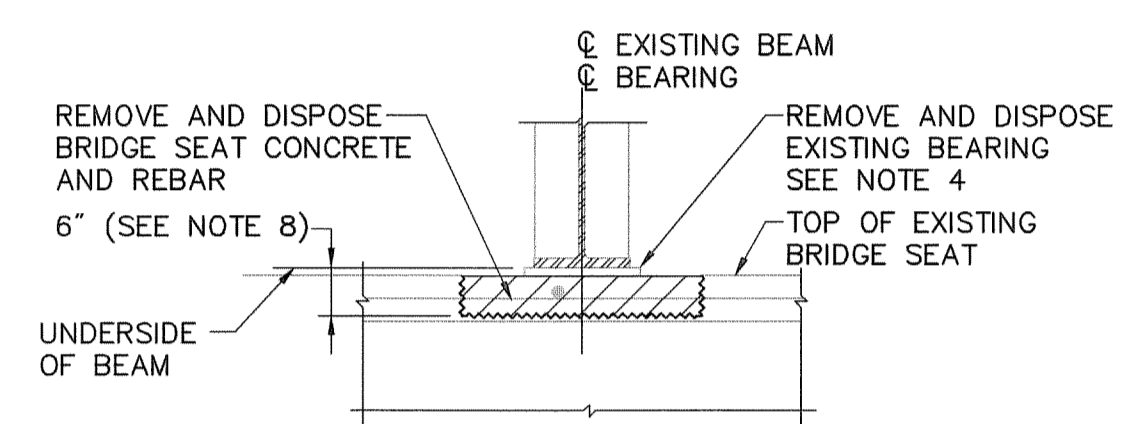
END DIAPHRAGM ELEVATION
SCALE: 1/2"=1'-0"



TYPICAL WINGWALL CAP
SCALE: 3/8"=1'-0"

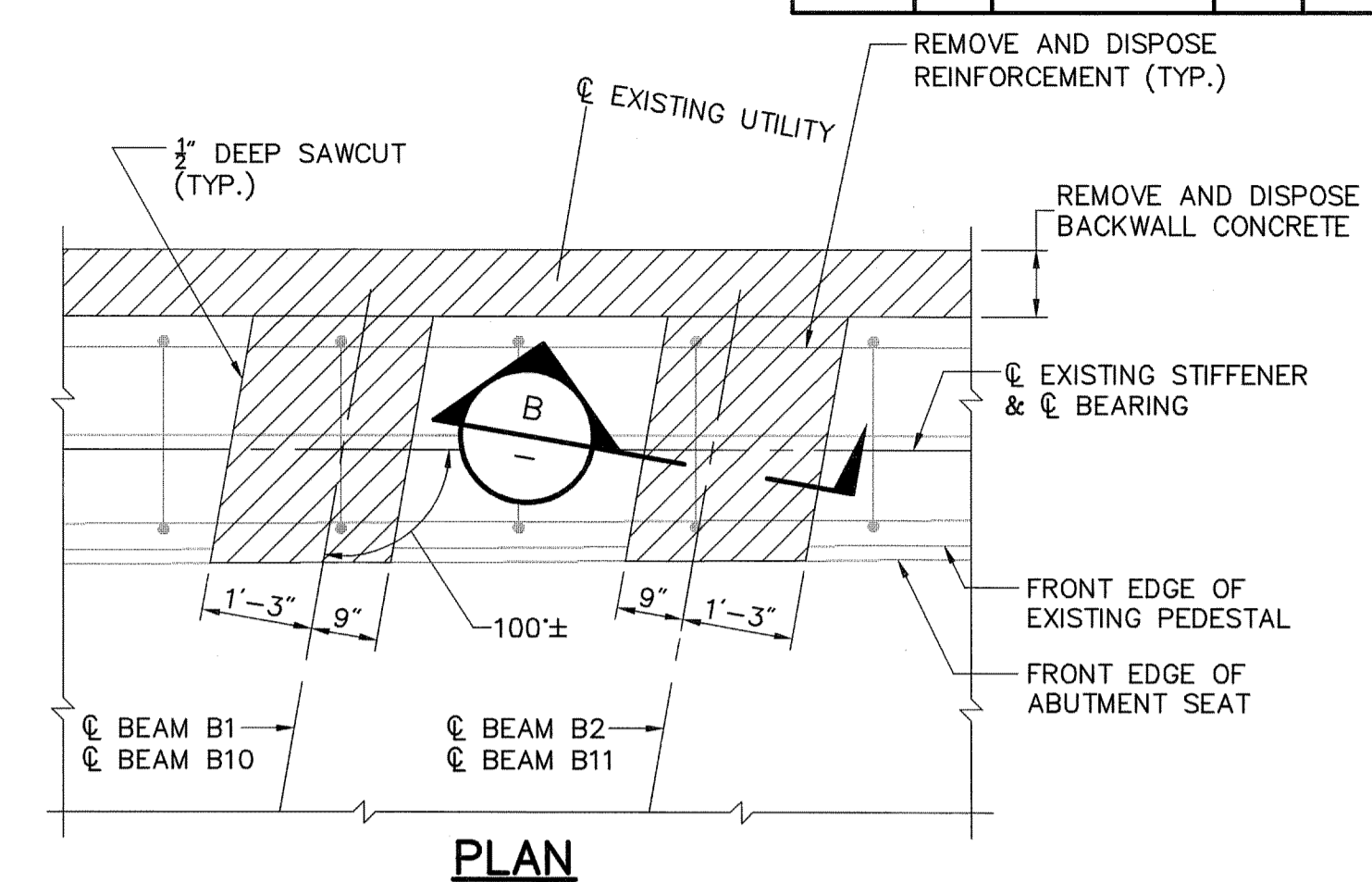


PLAN

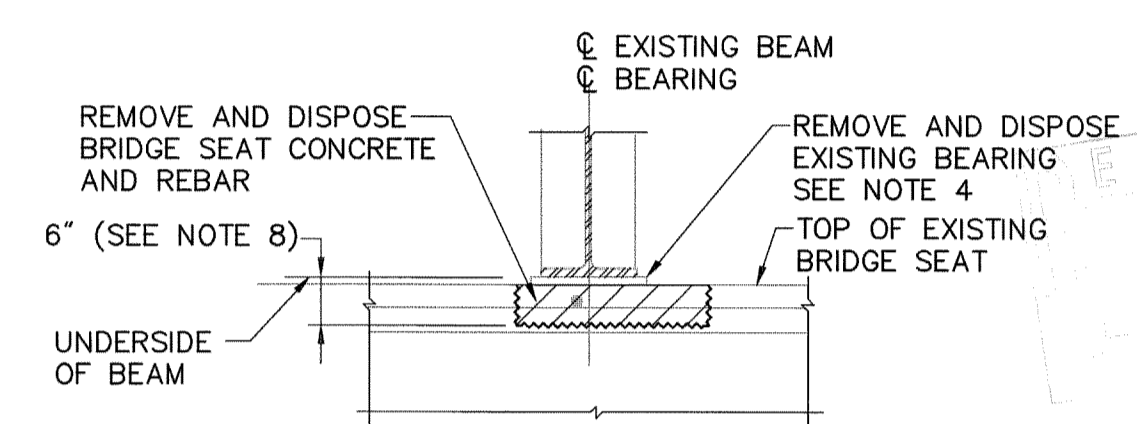


SECTION A
SCALE: 1/2"=1'-0"

BEAM B3 THRU B9



PLAN



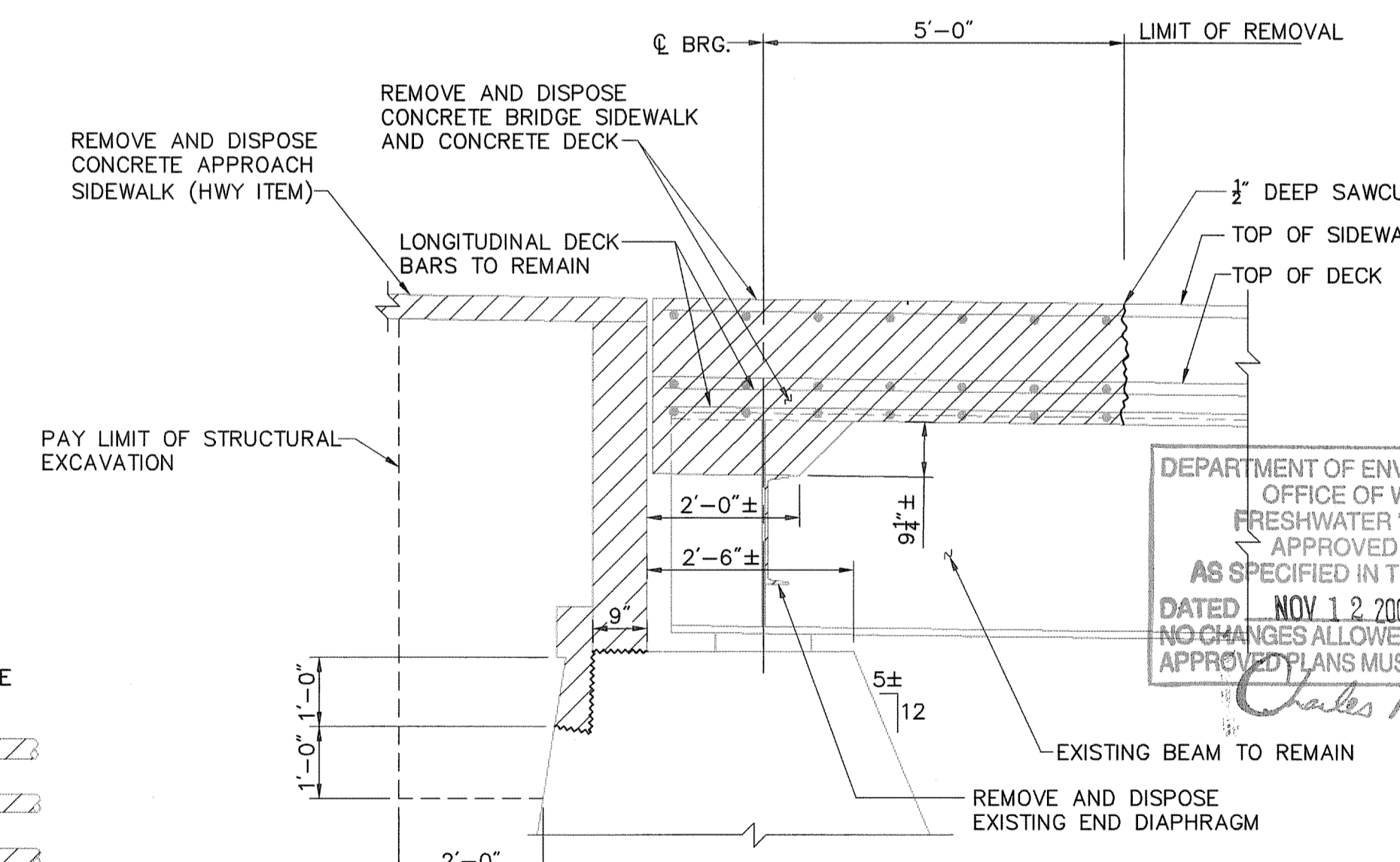
SECTION B
SCALE: 1/2"=1'-0"

BEAM B1, B2, B10 AND B11

BEAM SEAT DEMOLITION DETAILS

NOTES:

- PRESSURE GROUTING VOIDS BELOW FLYING WINGWALLS SHALL BE COMPLETED PRIOR TO DEMOLITION OF END OF ABUTMENT CONCRETE. SEE SHEET 18 FOR DETAILS.
- PRIOR TO ANY DEMOLITION AT THE BRIDGE SEAT, THE EXISTING BEAMS SHALL BE SHORED AND BLOCKED.
- REMOVAL OF WEEPHOLES AND REMOVAL OF BRIDGE GRANITE CURB SHALL BE INCLUDED IN THE COST OF ITEM 803.9901 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUPERSTRUCTURE".
- BEAM ANCHOR BOLTS SHALL BE CUT OFF AT THE BOTTOM SURFACE OF THE BRIDGE SEAT DEMOLITION.
- SAWCUTS IN THE BRIDGE DECK AND BRIDGE SIDEWALK FOR REMOVAL OF CONCRETE SHALL BE INCLUDED IN THE COST OF ITEM 803.9901 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUPERSTRUCTURE". SAWCUTS IN THE BRIDGE ABUTMENT SHALL BE INCLUDED IN THE COST OF ITEM 803.9902 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUBSTRUCTURE".
- REMOVAL AND DISPOSAL OF BRIDGE RAIL AND ANCHORAGE IN THE BRIDGE DECK SHALL BE INCLUDED IN THE COST OF ITEM 803.9901 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUPERSTRUCTURE". REMOVAL AND DISPOSAL OF BRIDGE RAIL AND ANCHORAGE IN THE WINGWALL CAPS AND GRADES BEAMS SHALL BE INCLUDED IN THE COST OF ITEM 803.9902 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUBSTRUCTURE". NO MEASUREMENT FOR THE RAIL IS REQUIRED.
- DEMOLITION LIMITS OF THE BRIDGE SEAT SHALL BE SURVEY VERIFIED AT EACH BEARING LOCATION. THE SURVEY VERIFICATION SHALL BE FORWARDED TO THE RESIDENT ENGINEER.
- DEMOLITION OF THE BRIDGE SEAT SHALL NOT BEGIN UNTIL SHOP DRAWINGS FOR NEW BEARING ASSEMBLIES HAVE BEEN APPROVED AND THE DEMOLITION LIMITS HAVE BEEN VERIFIED BY THE RESIDENT ENGINEER.



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

LEGEND:
[Hatched Area] - REMOVE AND DISPOSE

DEPARTMENT OF ENVIRONMENTAL SUPERSTRUCTURE
OFFICE OF WATER RESOURCES AND ANCHORAGE IN THE WINGWALL CAPS AND GRADES BEAMS SHALL BE INCLUDED IN THE COST OF ITEM 803.9902 "REMOVE AND DISPOSE EXISTING CONCRETE MASONRY SUBSTRUCTURE". NO MEASUREMENT FOR THE RAIL IS REQUIRED.
DATED NOV 12 2009 FILE # 07-0260
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT COST DEMOLITION LIMITS OF THE BRIDGE SEAT SHALL BE SURVEY VERIFIED AT EACH BEARING LOCATION. THE SURVEY VERIFICATION SHALL BE FORWARDED TO THE RESIDENT ENGINEER.
Charles H. Huber

REVISIONS		
NO.	DATE	BY

**RHODE ISLAND
DEPARTMENT OF TRANSPORTATION**

**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

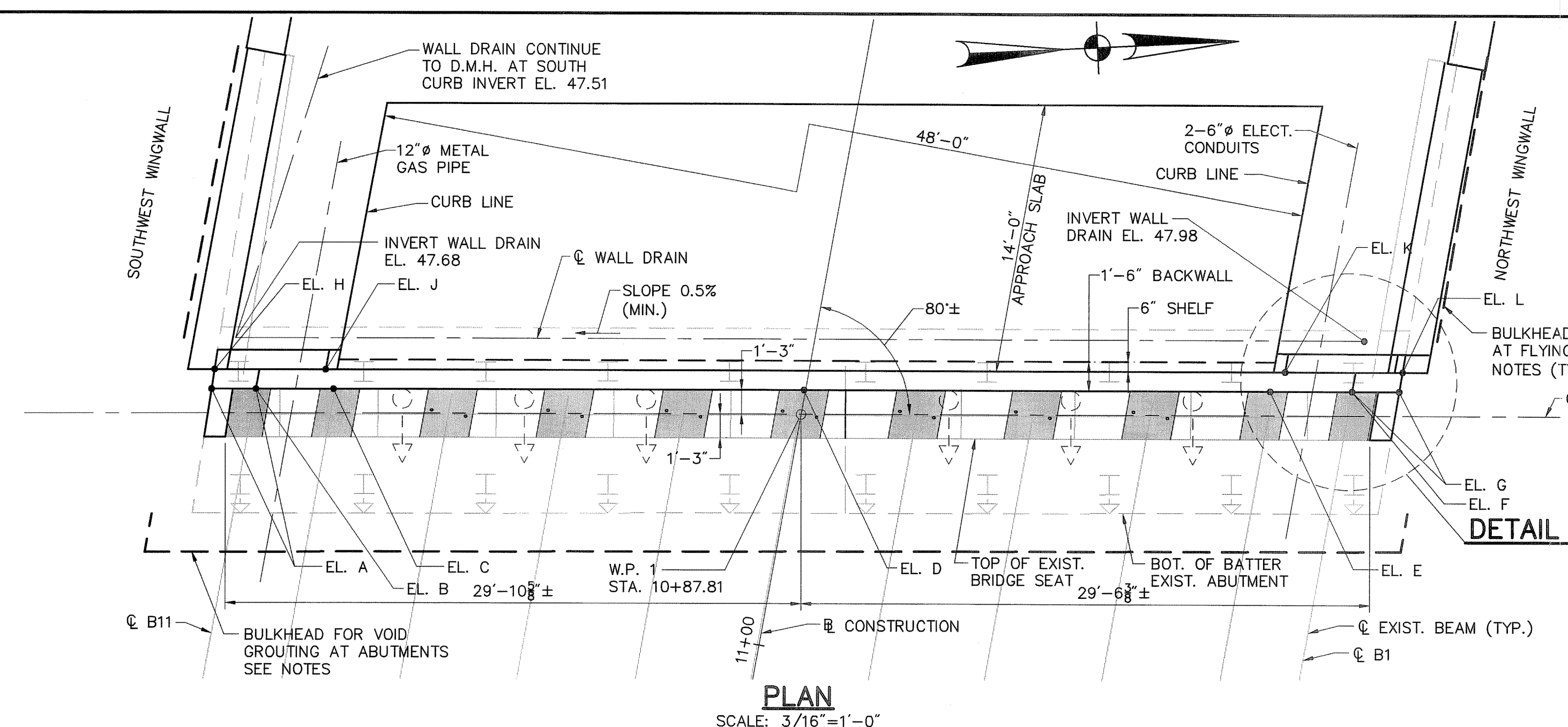
DEMOLITION DETAILS 2

CHECKED BY _____ DATE _____ SCALE AS SHOWN

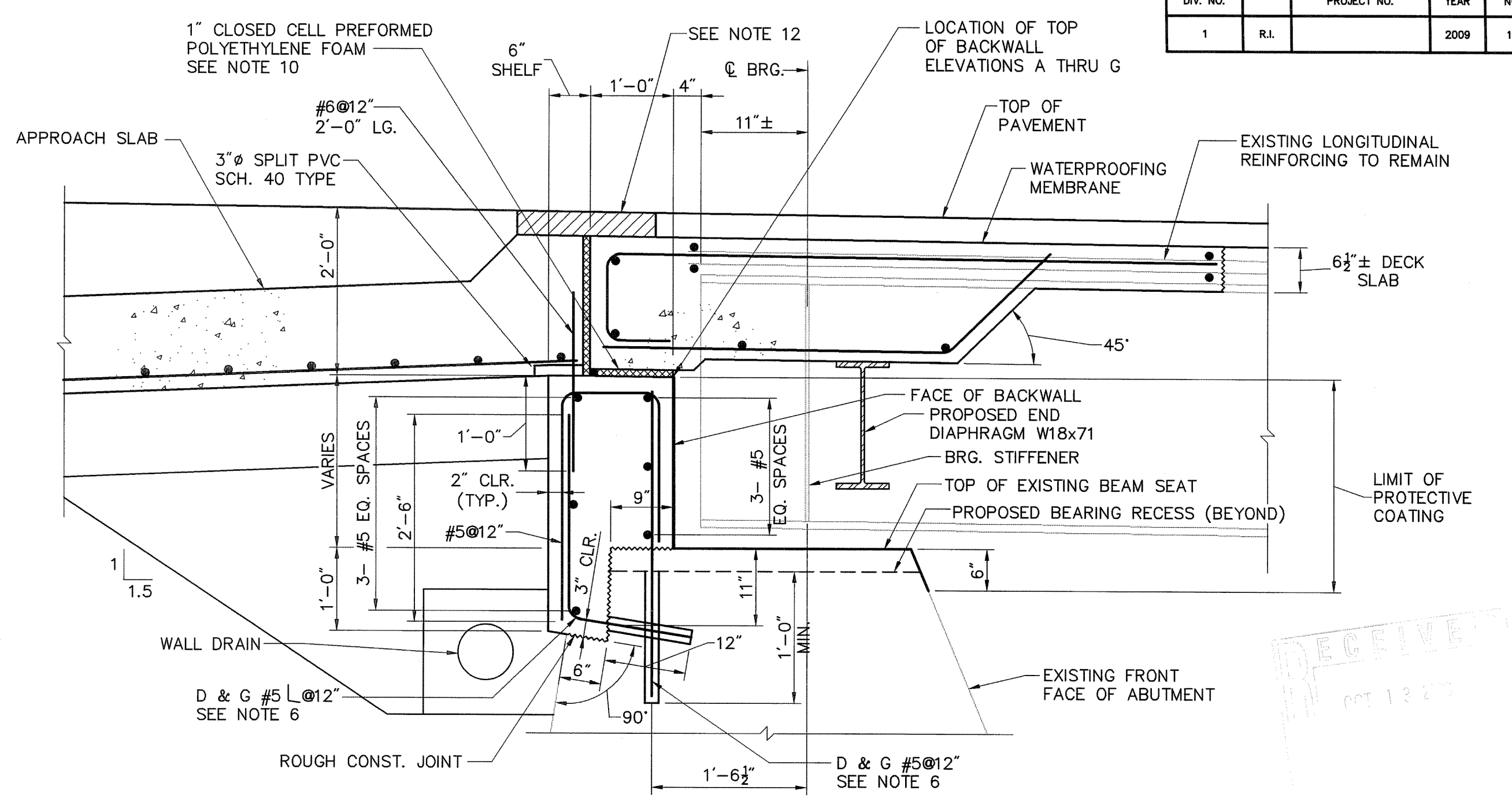
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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2009	14	31

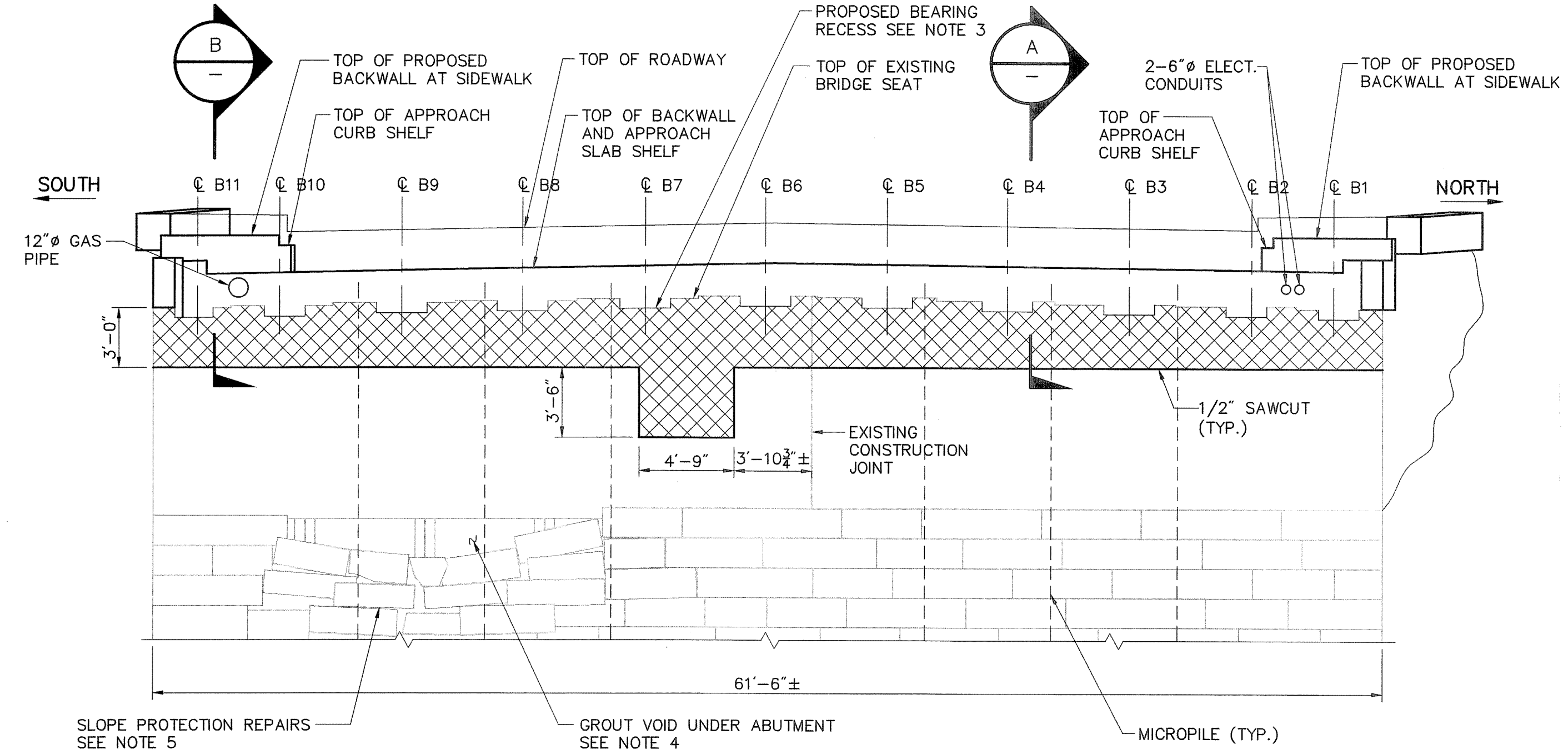
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B	50.06
C	50.13
D	50.55
E	50.24
F	50.19
G	51.24
H	52.03
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K	52.09
L	52.17



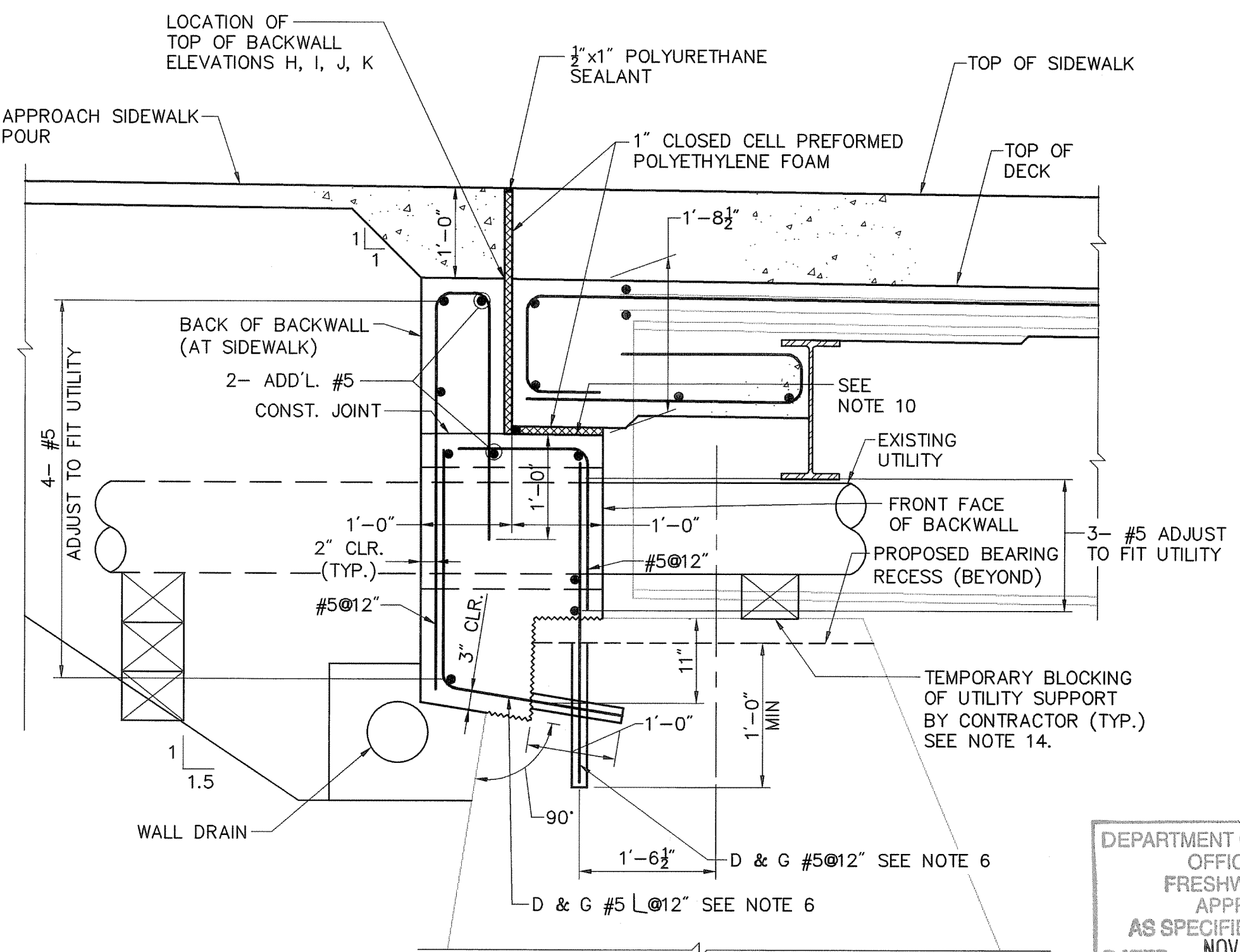
PLAN
SCALE: 3/16"=1'-0"



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



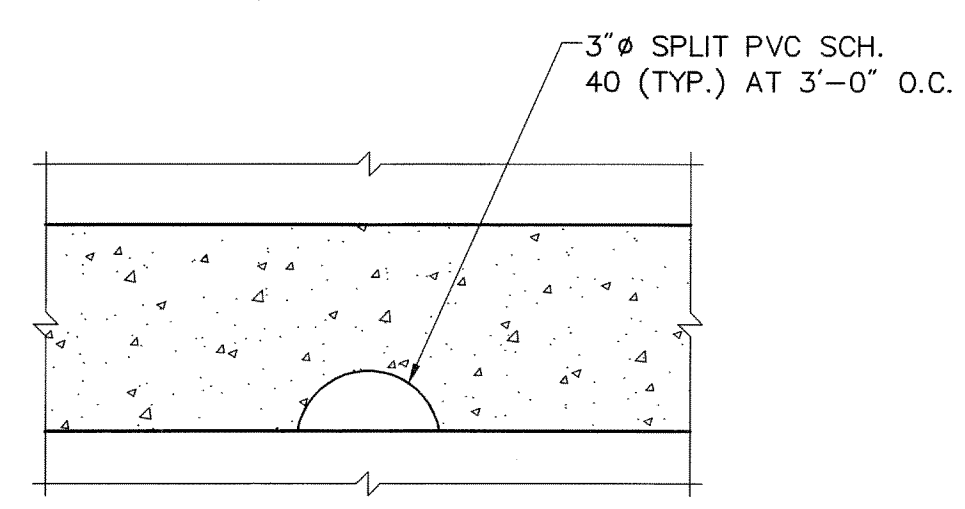
ELEVATION
SCALE: 3/16"=1'-0"



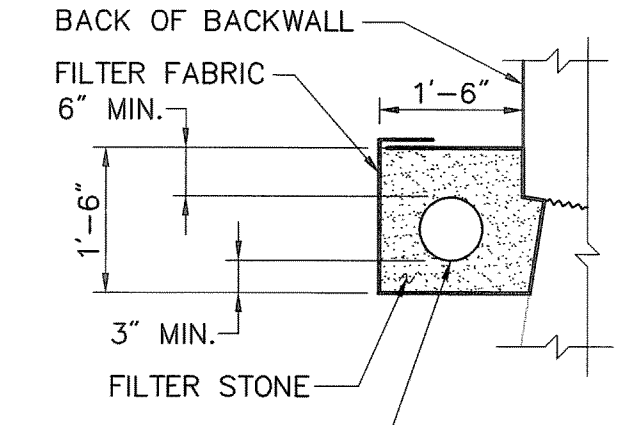
SECTION
SCALE: 3/4"=1'-0"

- NOTES:**
- FOR WALL FACE REPAIR DETAILS SEE SHEET 27.
 - FOR DECK JOINT AND APPROACH SLAB DETAILS SEE SHEET 22.
 - FOR BEARING RECESS DETAILS SEE SHEET 20.
 - FOR GROUTING VOIDS UNDER ABUTMENT AND WINGWALLS DETAILS SEE SHEET 15 & 17.
 - FOR SLOPE PROTECTION REPAIR DETAILS SEE SHEET 28.
 - ALTERNATE DRILL AND GROUT BARS AT FRONT FACE WITH DRILL AND GROUT BARS AT BACK FACE. SPACE FRONT FACE BACKWALL DRILL AND GROUT BARS SO THAT BACK FACE DRILL AND GROUT BARS AVOID MICROPILE CORE HOLE.
 - BACKWALL ELEVATIONS A-E ARE AT FRONT FACE OF BACKWALL. BACKWALL ELEVATIONS F-J ARE AT CENTERLINE OF JOINT IN SIDEWALK.
 - VOID GROUTING AT ABUTMENTS SHALL BE CONDUCTED BEFORE MICROPILES HAVE BEEN INSTALLED.
 - FOR ADDITIONAL VOID GROUTING NOTES SEE SHEET 15.
 - SLOPE TOP OF BACKWALL TO MATCH PROFILE GRADE.
 - ALL REINFORCING SHALL BE EPOXY COATED.
 - WEST ABUTMENT JOINT APPROACH SLAB SHOWN EAST ABUTMENT (FIXED JOINT) SIMILAR.
 - ALL WORK SHALL PROCEED IN ACCORDANCE WITH THESE PLANS AND THE CONTRACT DOCUMENTS.
 - THE COST FOR TEMPORARY BLOCKING OF UTILITY SUPPORT SHALL BE PAID FOR UNDER ITEM CODE 203.0110 "STRUCTURAL EXCAVATION".

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER QUALITY
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 09-0260
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE



PIPE DRAIN DETAIL
SCALE: 3"=1'-0"



WALL DRAIN DETAIL
SCALE: 1/2"=1'-0"

- LEGEND:**
- DELAMINATED/SPALL AREA REPAIR
 - D & G - DRILL AND GROUT

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

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

WEST ABUTMENT REPAIRS

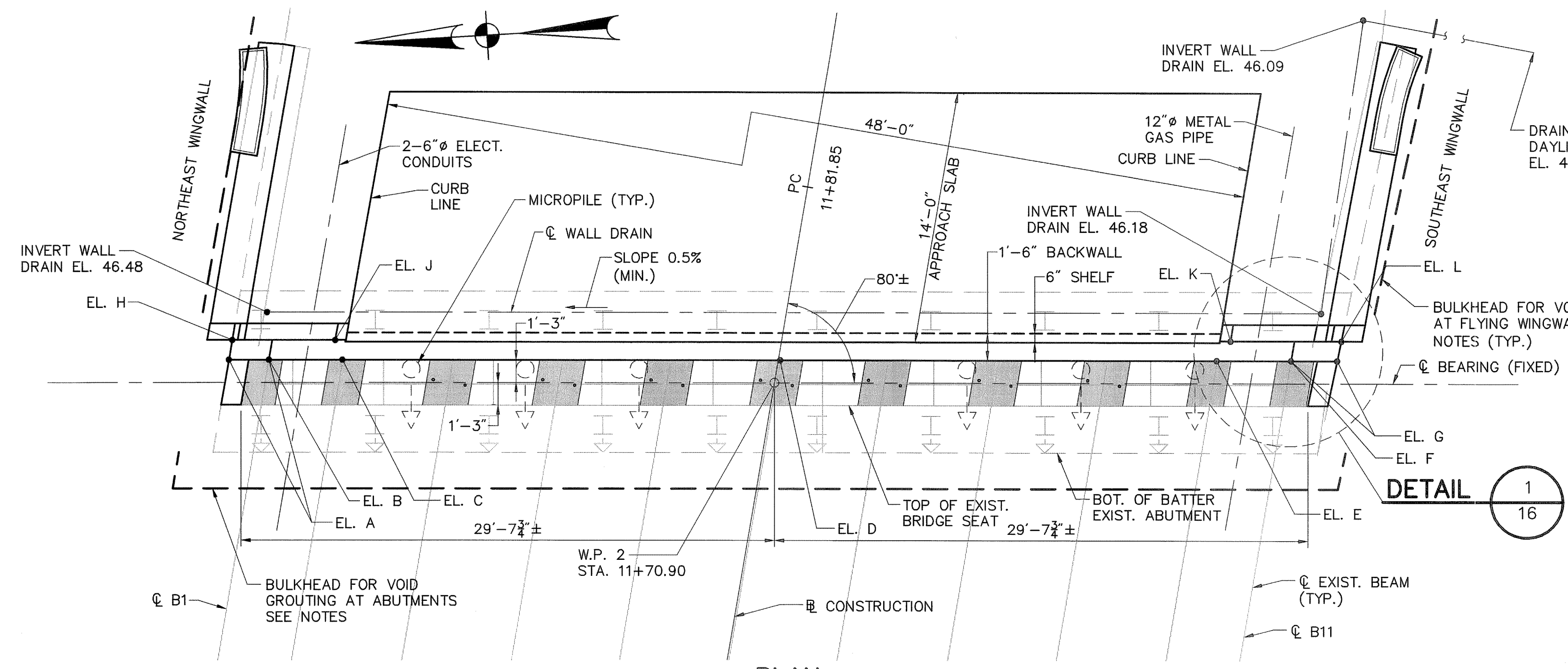
CHECKED BY _____ DATE _____ SCALE AS SHOWN

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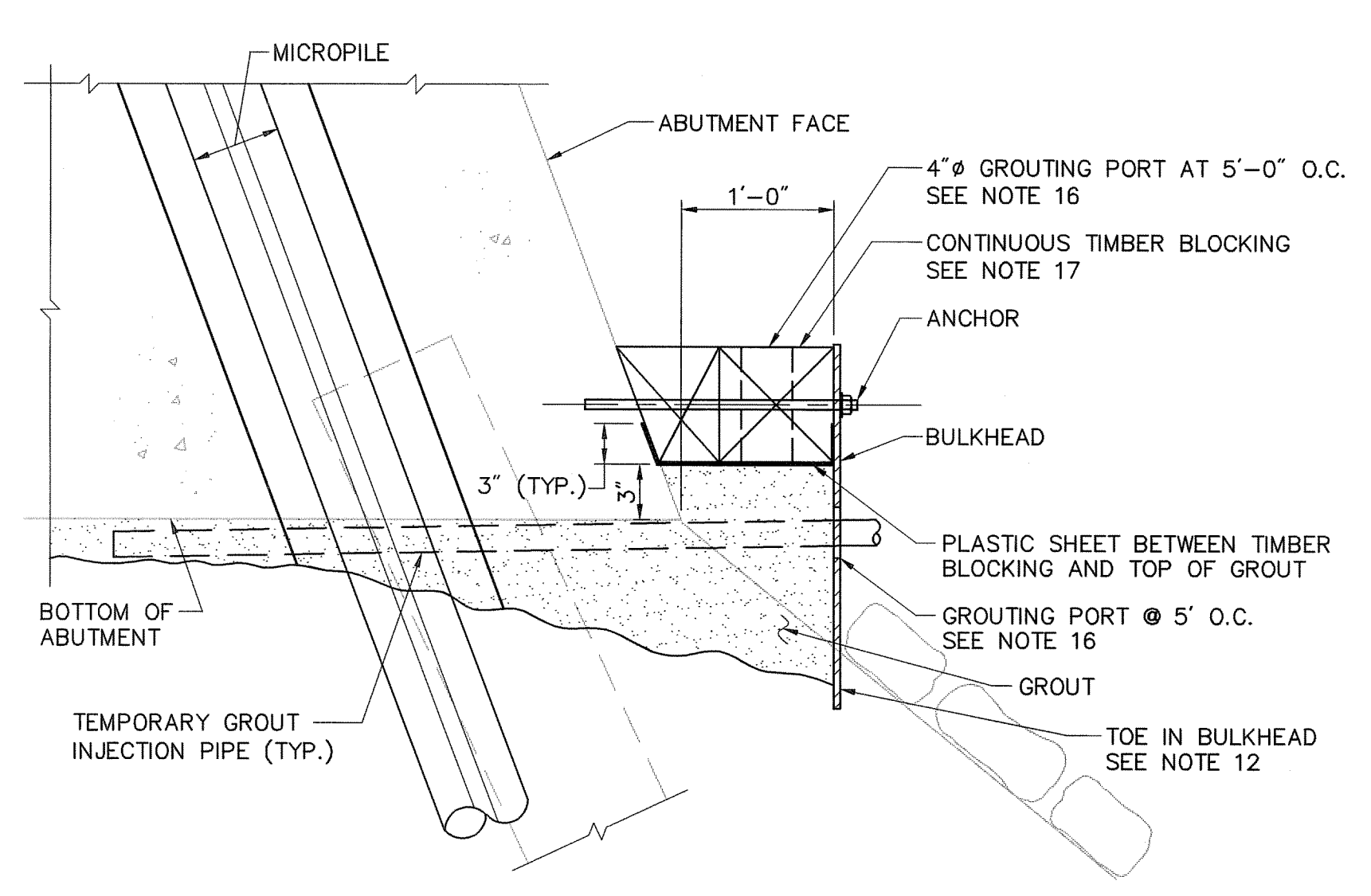
TABLE OF BACKWALL ELEVATIONS

A	50.09
B	49.04
C	49.09
D	49.39
E	48.98
F	48.90
G	49.93
H	51.00
J	50.91
K	50.79
L	50.85

SEE NOTE 5

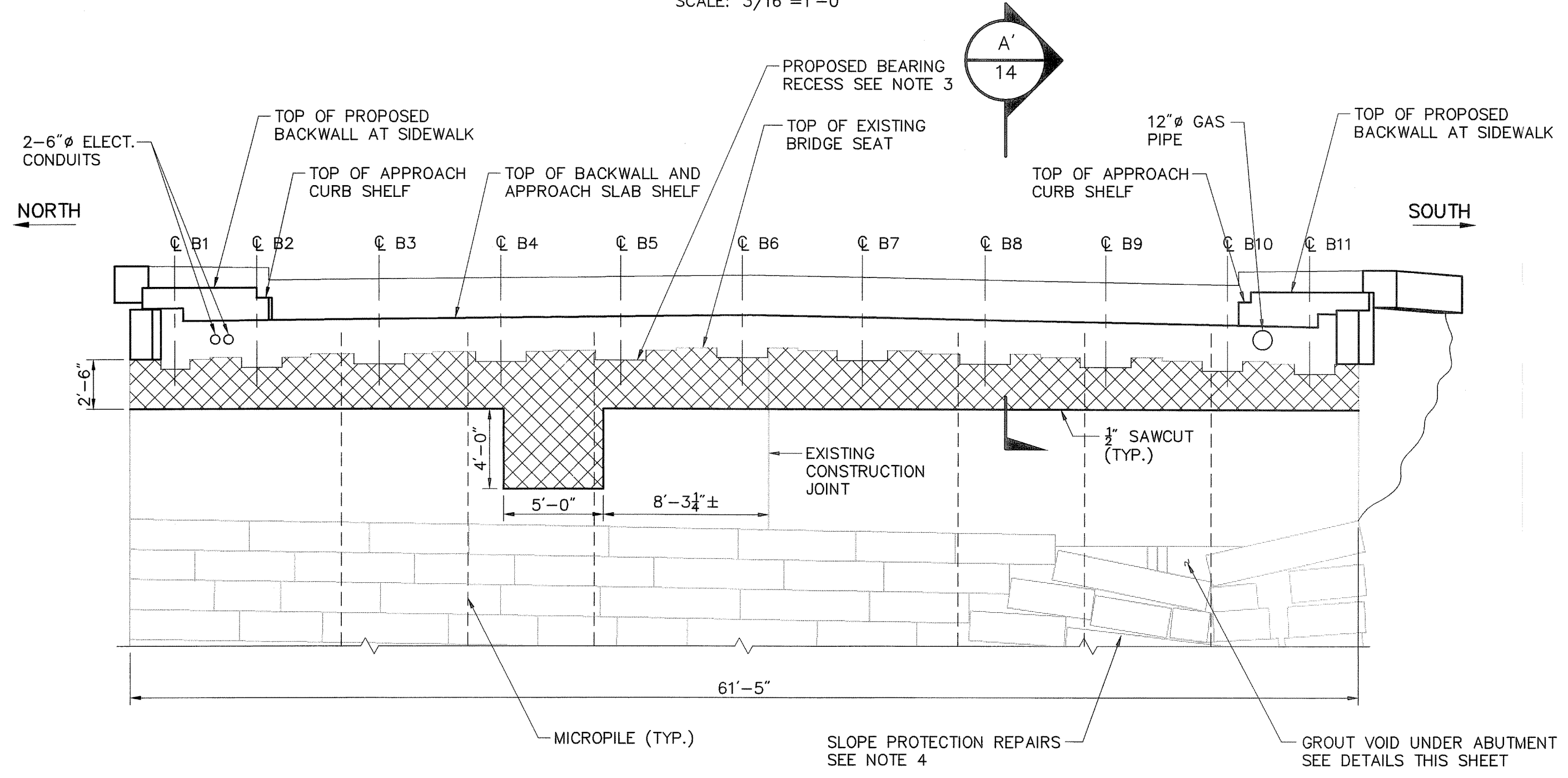


PLAN
SCALE: 3/16"=1'-0"

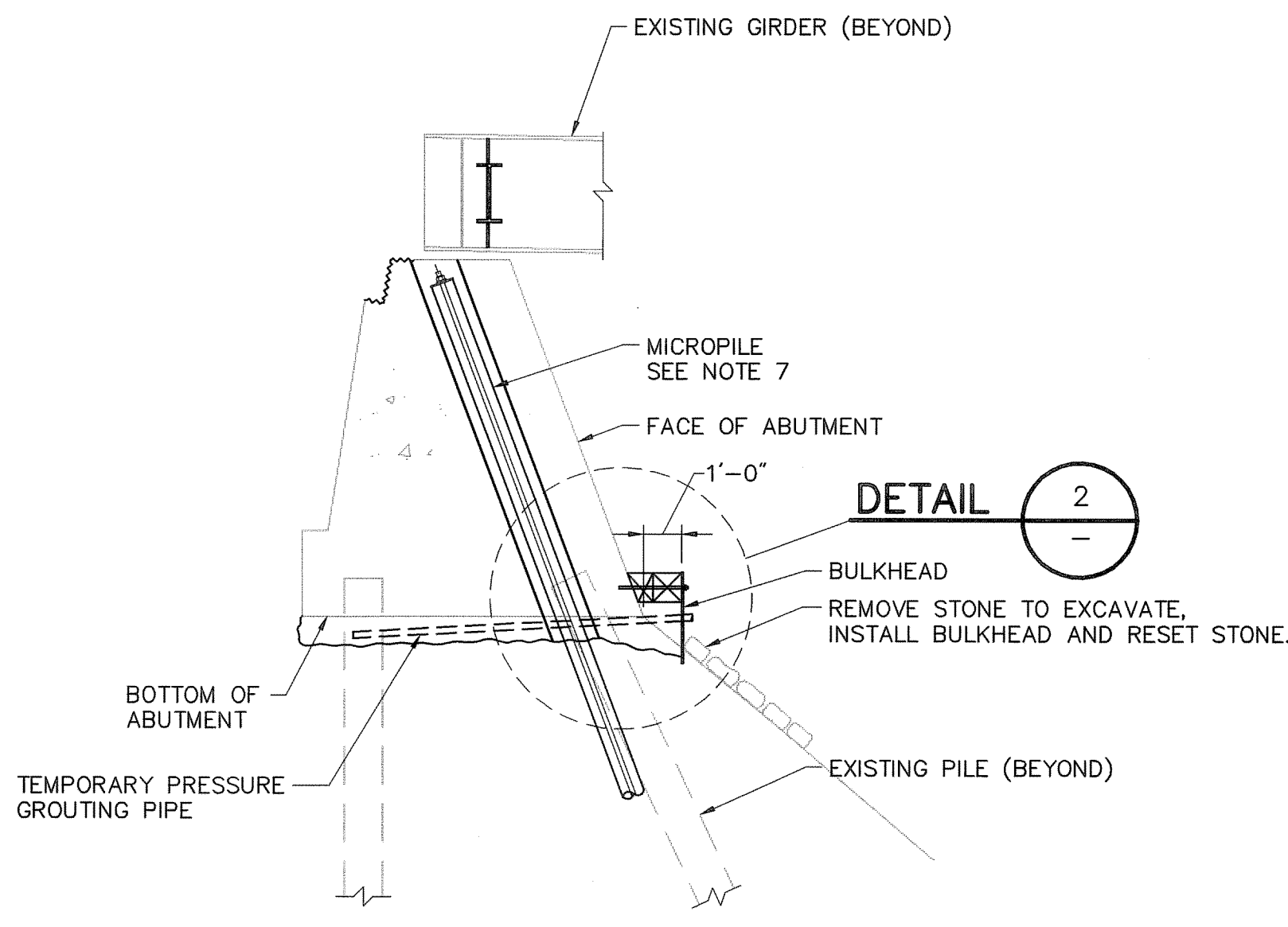


DETAIL 2
SCALE: 1"=1'-0"

- NOTES:**
- FOR WALL FACE REPAIR DETAILS SEE SHEET 27.
 - FOR DECK JOINT AND APPROACH SLAB DETAILS SEE SHEET 22.
 - FOR BEARING RECESS DETAILS SEE SHEET 20.
 - FOR SLOPE PROTECTION REPAIR DETAILS SEE SHEET 28.
 - BACKWALL ELEVATIONS A-E ARE AT FRONT FACE OF BACKWALL. BACKWALL ELEVATIONS F-J ARE AT CENTERLINE OF JOINT IN SIDEWALK.
 - FOR WALL DRAIN DETAIL SEE SHEET 14.
 - VOID GROUTING AT ABUTMENTS SHALL BE CONDUCTED BEFORE MICROPILES HAVE BEEN INSTALLED.
 - PRIOR TO GROUTING, THE CONTRACTOR SHALL REMOVE ALL LOOSE MATERIAL AND DEBRIS FROM UNDER THE ABUTMENTS AND WINGWALLS.
 - THE VOID UNDER THE ABUTMENTS AND WINGWALLS SHALL BE FILLED BY PUMPING GROUT THROUGH PREPOSITIONED INJECTION PIPES.
 - UPON COMPLETION OF THE GROUTING OPERATION THE BULKHEAD SHALL BE CUT OFF AT TOP OF GROUT AND BEVELED SMOOTH AT 45 DEGREES. SEE DETAILS SHEET 28.
 - FOR WINGWALL VOID GROUTING DETAILS SEE SHEET 17.
 - THE INTENT OF THE BULKHEAD IS TO SUFFICIENTLY RETAIN THE GROUT MATERIAL. ABUTMENT AND WINGWALL BULKHEADS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION ITEM CODES 817.9901 "ABUTMENT BULKHEAD FOR VOID GROUTING" AND 817.9902 "WINGWALL BULKHEAD FOR VOID GROUTING" RESPECTIVELY.
 - PLACEMENT OF GROUT SHALL BE IN ONE CONTINUOUS OPERATION. THE GROUT SHALL BE PLACED BY PUMPING THROUGH A GROUTING INJECTION PIPE, WITHDRAWING THE PIPE FROM THE BACK TO THE FRONT OF THE ABUTMENT AT EACH PORT HOLE TO INSURE THE ENTIRE VOID IS FILLED.
 - INJECTION OF GROUT INTO EACH GROUTING PORT HOLE SHALL BEGIN AT THE INJECTION HOLE AT THE SOUTH END OF THE ABUTMENT. INJECTION SHALL CONTINUE AT THE FIRST INJECTION HOLE UNTIL THE GROUT BEGINS TO FLOW OUT OF THE INJECTION HOLE. THE FIRST INJECTION HOLE SHALL BE PLUGGED AND THE INJECTION STARTED AT THE SECOND HOLE UNTIL THE GROUT FLOWS FROM THE NEXT HOLE. THIS SEQUENCE SHALL BE FOLLOWED UNTIL THE ENTIRE VOID IS FILLED. THE WINGWALL VOID GROUTING SHALL FOLLOW THE ABUTMENT VOID GROUTING.
 - GROUTING PORTS SHALL BE SEALED AS WORK PROGRESSES TO PREVENT LEAKAGE OF THE MATERIAL DURING PUMPING OPERATIONS.
 - TIMBER BLOCKING AND ANCHOR SHALL BE REMOVED ONCE THE VOID GROUT HAS ATTAINED THE 7 DAY CURE STRENGTH. THE ANCHOR SHALL BE REMOVED TO 1" BELOW THE SURFACE OF THE CONCRETE AND THE CONCRETE SURFACE SHALL BE REPAIRED.
 - SEE SECTION A SHEET 26 FOR TREATMENT OF GROUTED SURFACE AT TOE OF ABUTMENT.



ELEVATION
SCALE: 3/16"=1'-0"



PRESSURE GROUTING ABUTMENT VOID DETAIL
SCALE: 1/4"=1'-0"

LEGEND:
 - DELAMINATED/SPALL AREA REPAIR

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 APPROVED REVISIONS
 AS SPECIFIED IN THE SYSTEM OF APPROVAL
 DATED NOV 12 2009 BY [Signature]
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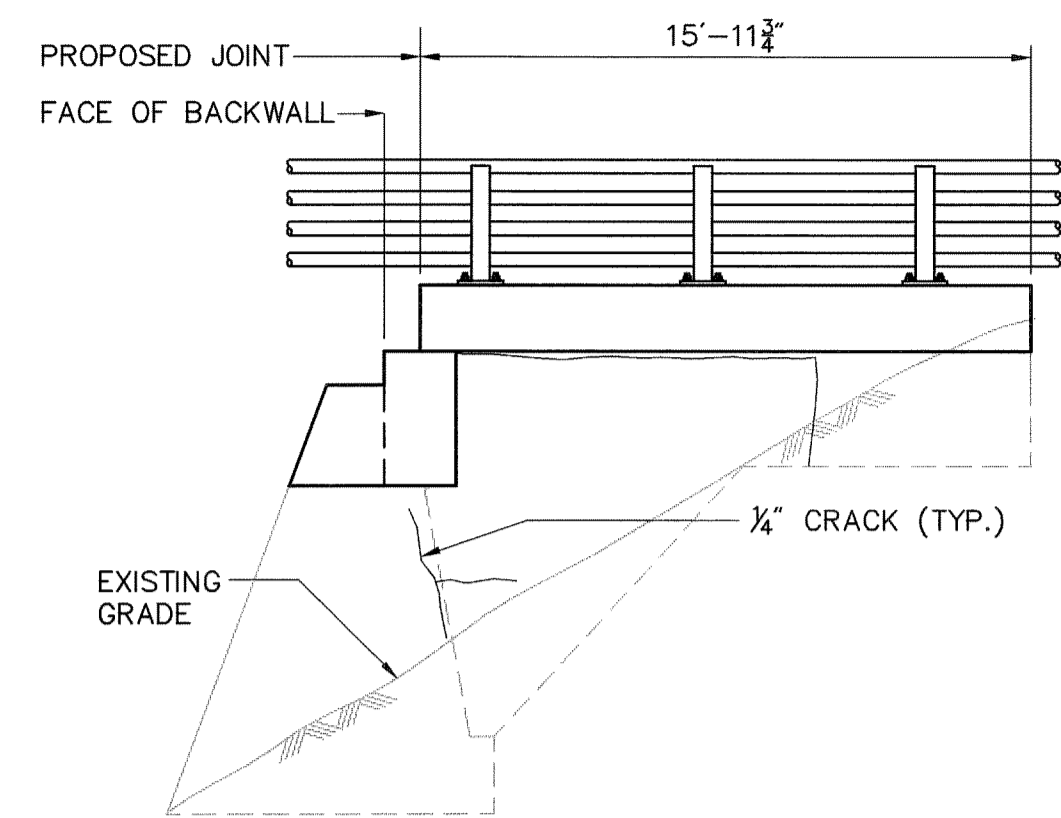
RHODE ISLAND
 DEPARTMENT OF TRANSPORTATION
 BRIDGE REHABILITATION
 INDUSTRIAL DRIVE
 BRIDGE NO. 882
 PROVIDENCE RHODE ISLAND

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

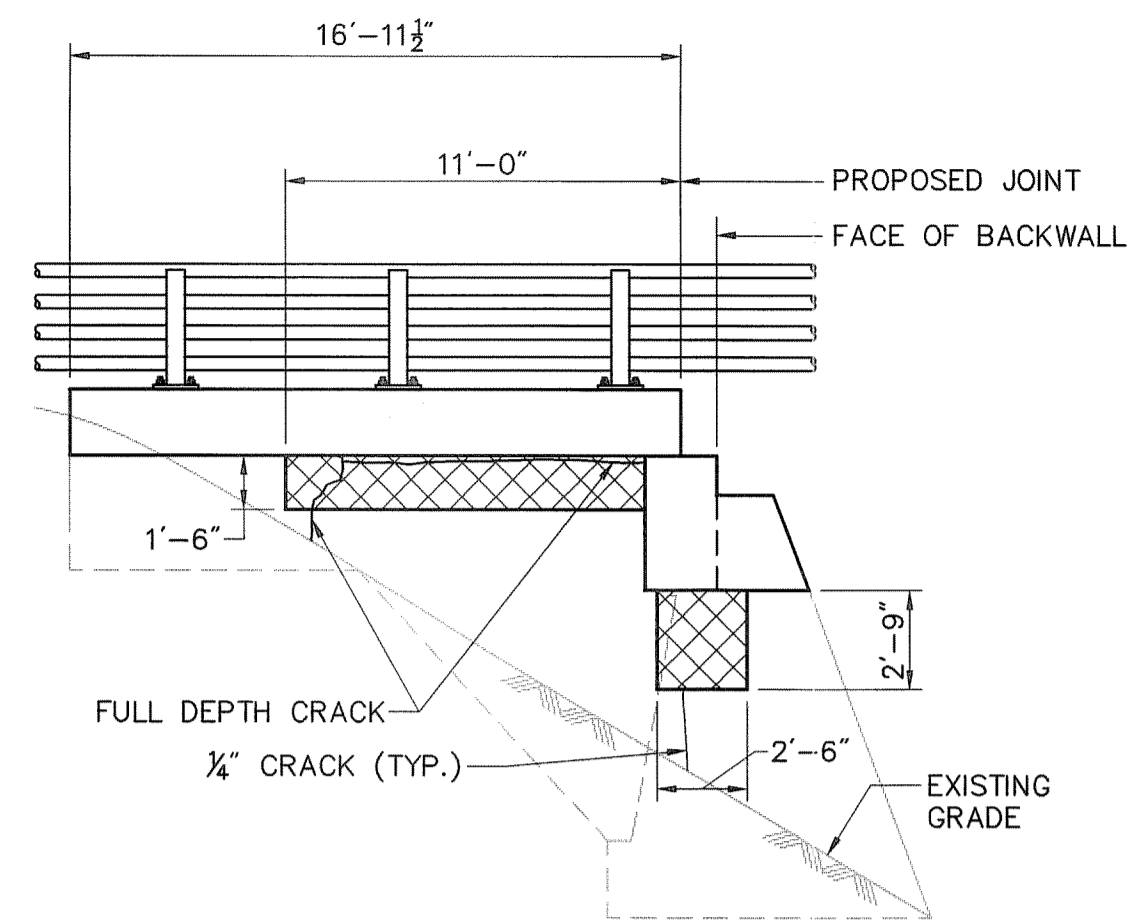
EAST ABUTMENT REPAIRS
 CHECKED BY _____ DATE _____ SCALE AS SHOWN

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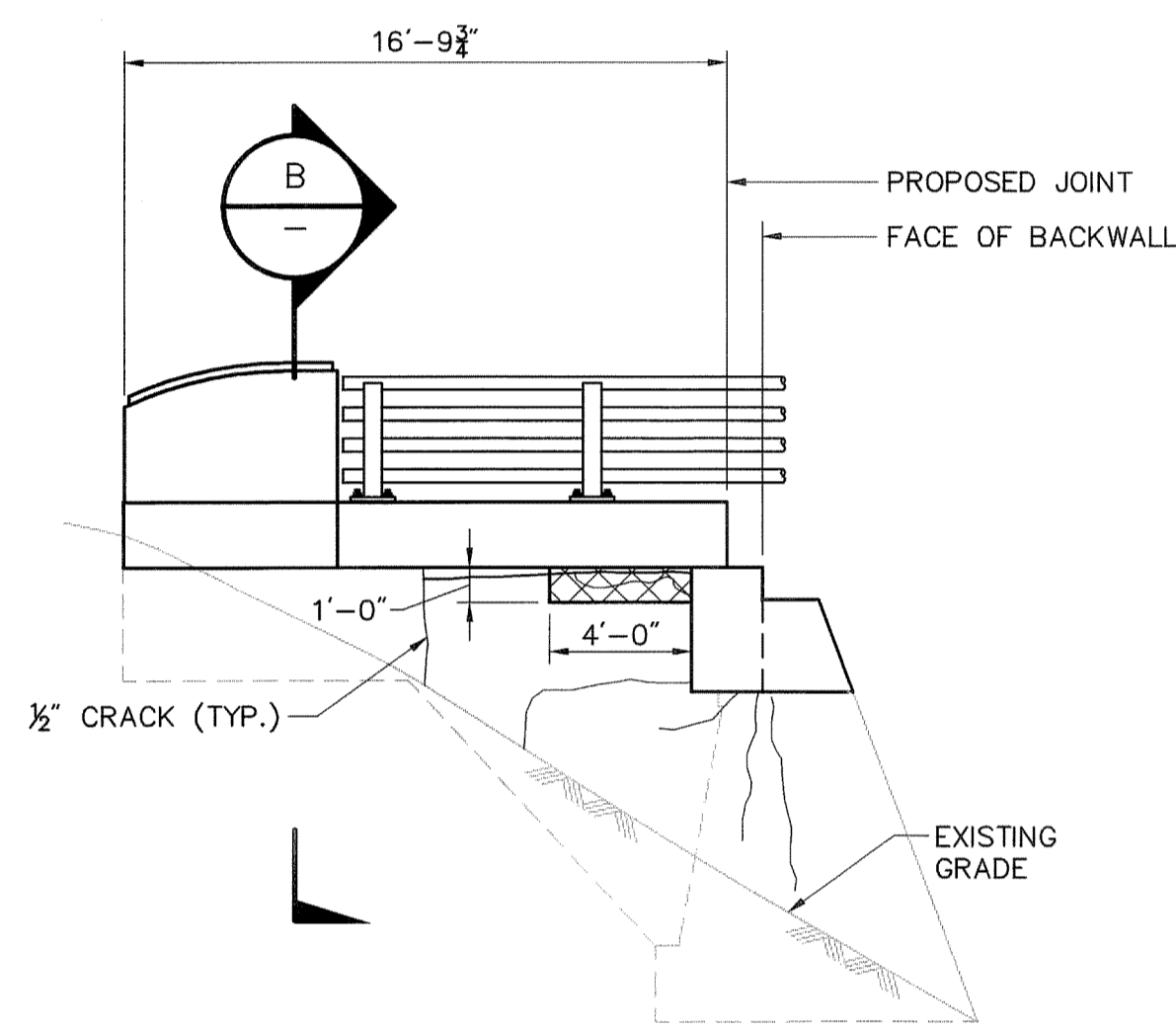
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	RI		2009	17	31



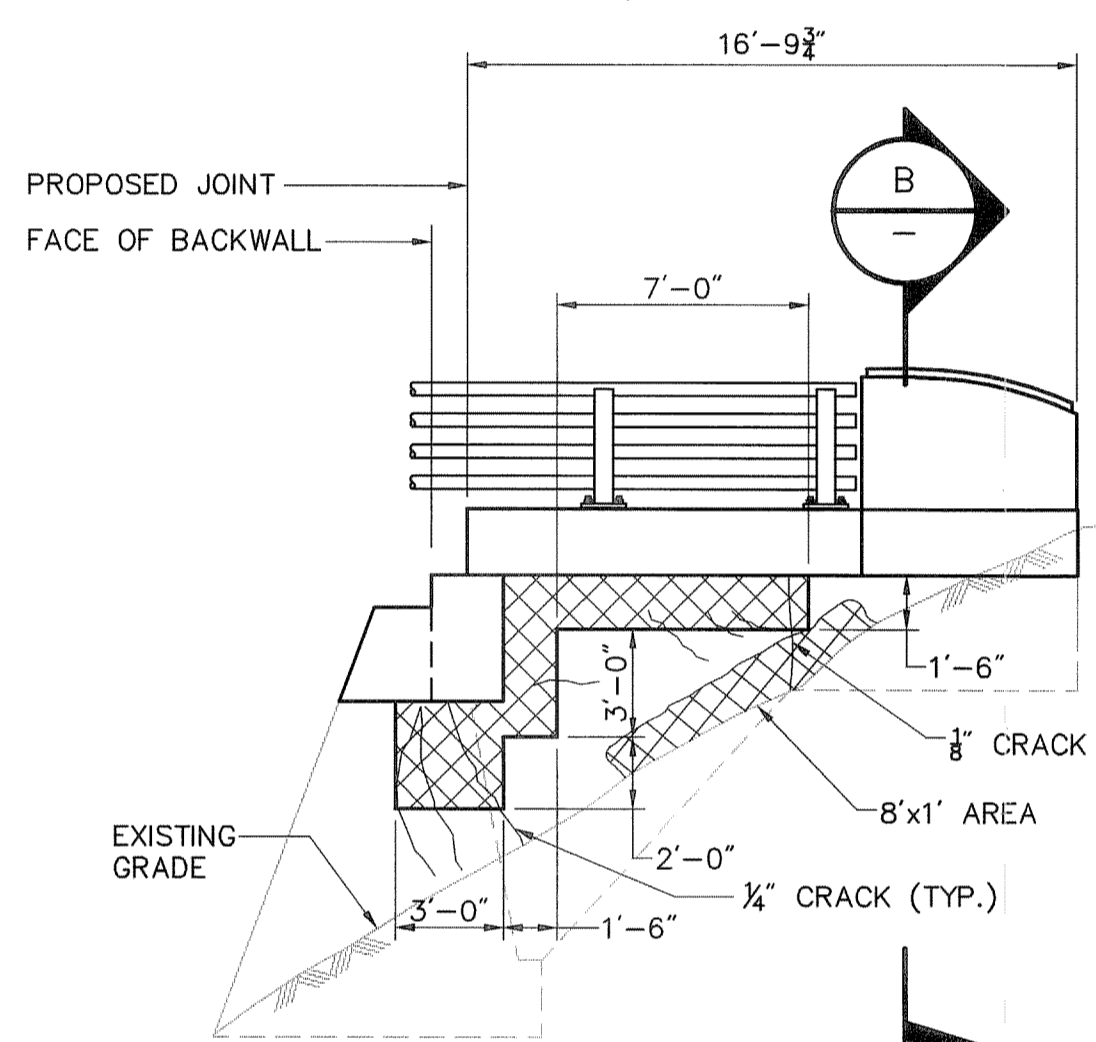
NORTHWEST WINGWALL ELEVATION
SCALE: 3/16"=1'-0"



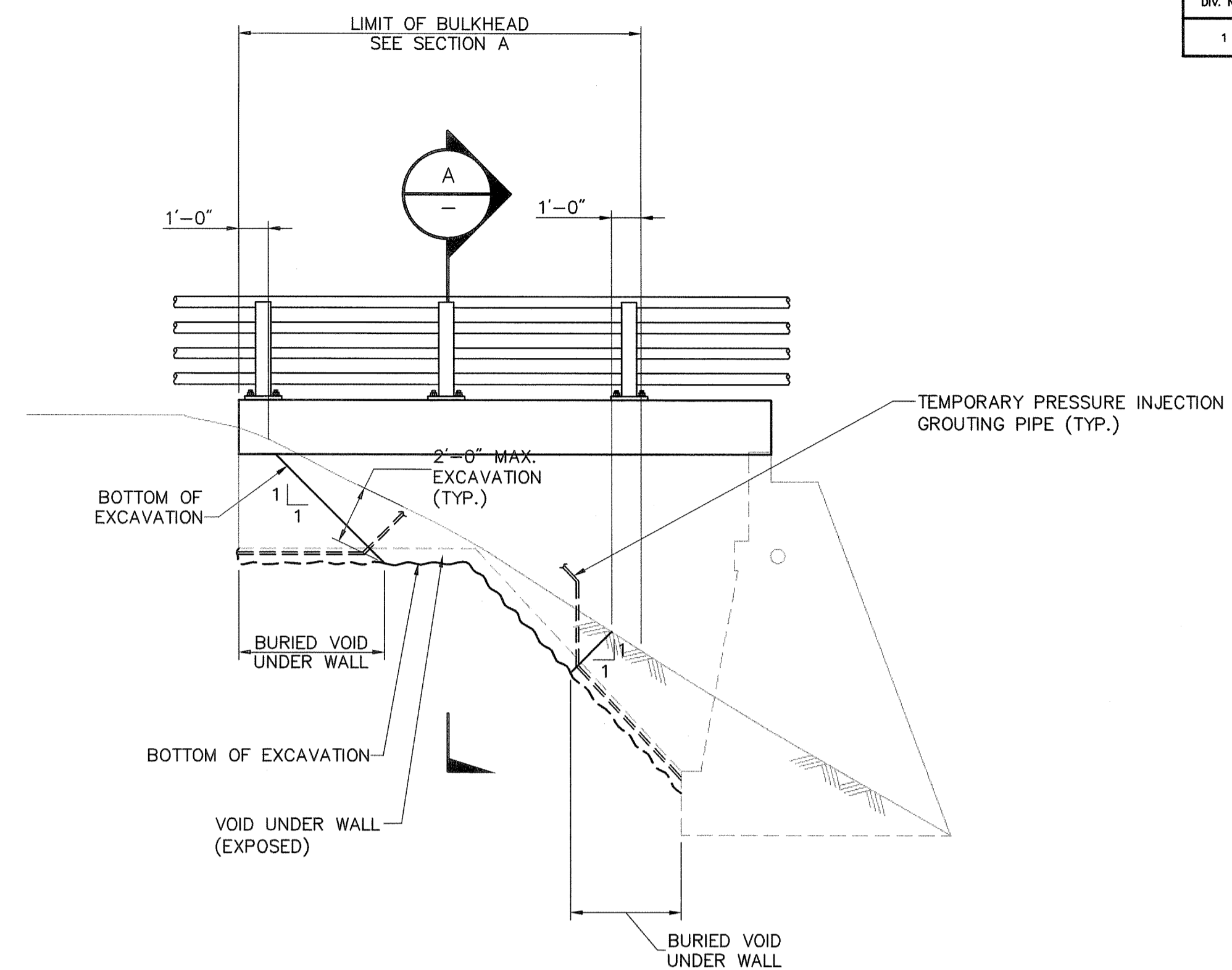
SOUTHWEST WINGWALL ELEVATION
SCALE: 3/16"=1'-0"



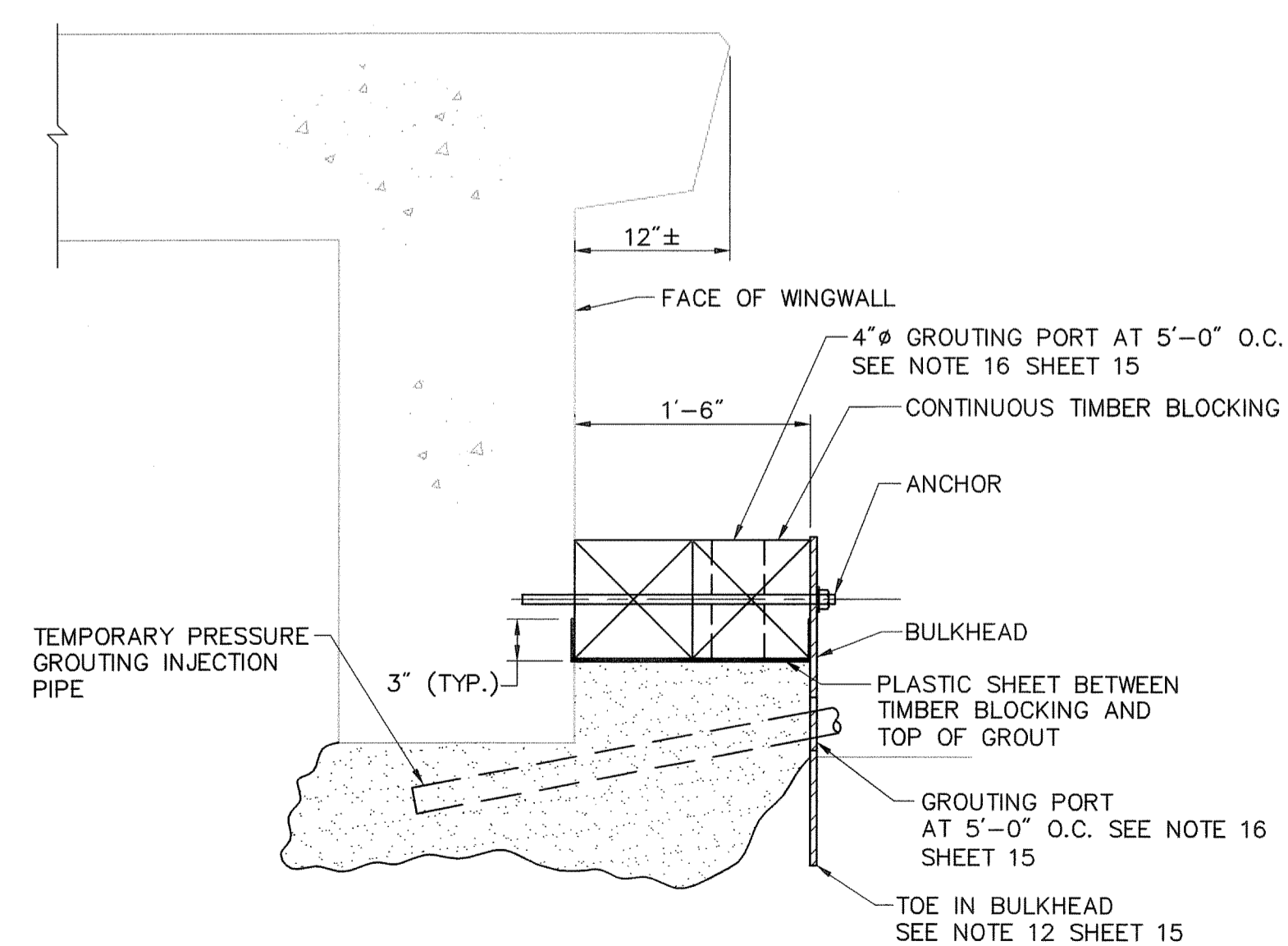
NORTHEAST WINGWALL ELEVATION
SCALE: 3/16"=1'-0"



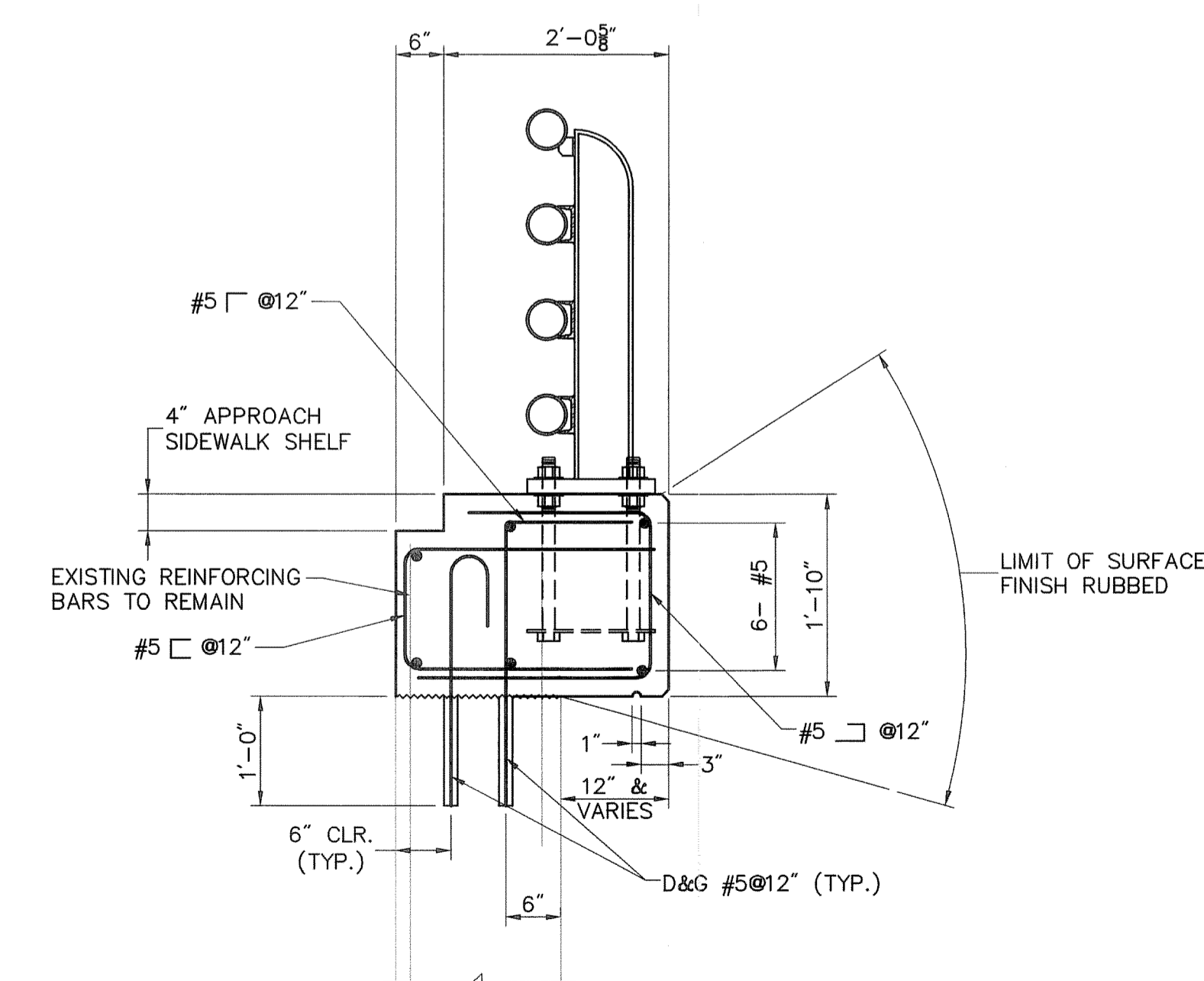
SOUTHEAST WINGWALL ELEVATION
SCALE: 3/16"=1'-0"



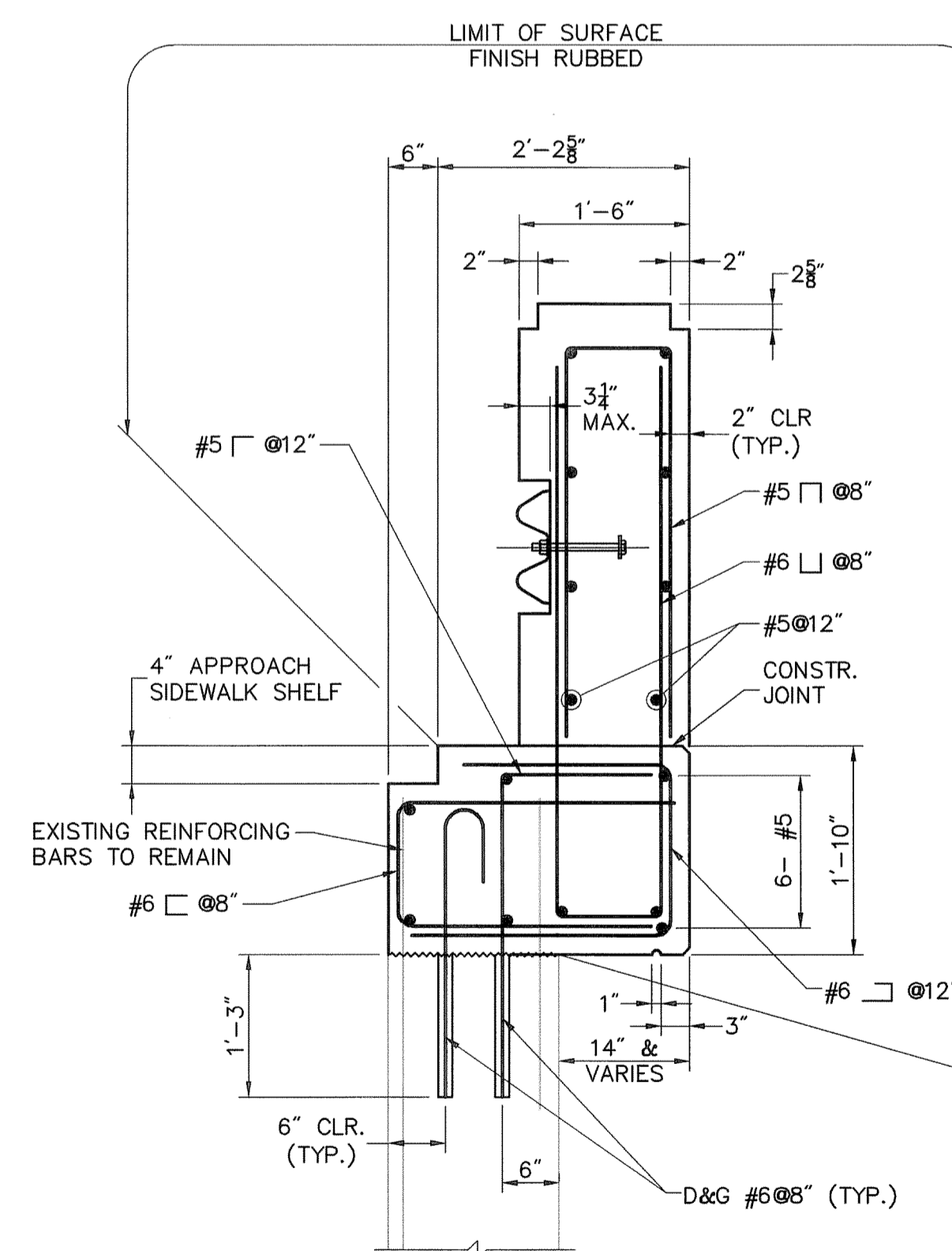
TYPICAL PRESSURE GROUTING OF WINGWALL VOID DETAIL
SCALE: 1/4"=1'-0"



SECTION A
SCALE: 1"=1'-0"



WINGWALL CAP DETAIL
SCALE: 3/4"=1'-0"



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

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Charles A. Harker

- NOTES:**
- FOR DELAMINATION/SPALL AREA REPAIR AND CRACK REPAIR DETAILS SEE SHEET 27.
 - FOR VOID GROUTING AND BULKHEAD NOTES SEE SHEET 15.
 - FOR ADDITIONAL END POST DETAILS SEE SHEET 26.

- LEGEND:**
- ⊠ - DELAMINATED/SPALL AREA REPAIRS
 - - CRACK (CR)
 - D & G - DRILL AND GROUT

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

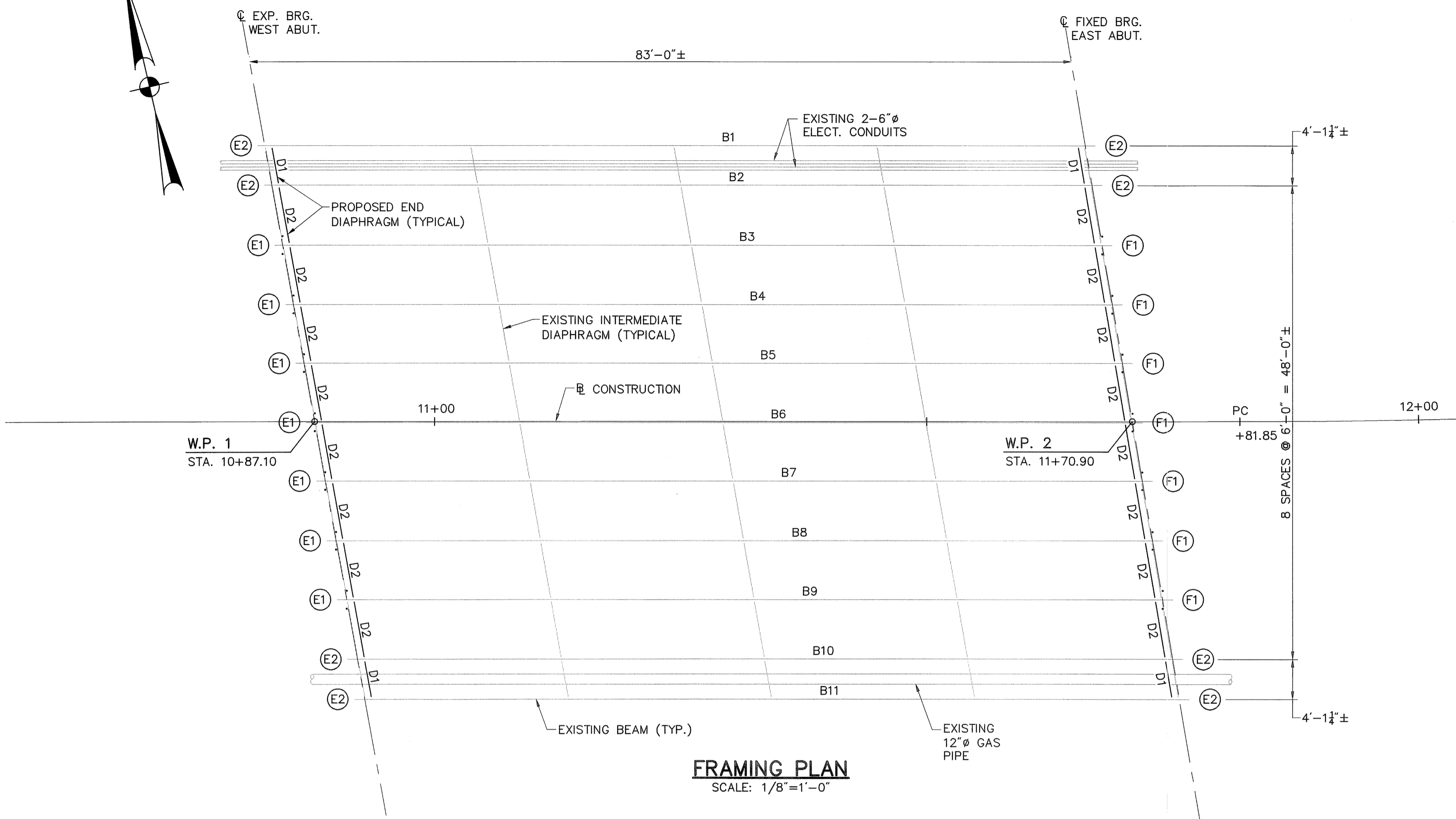
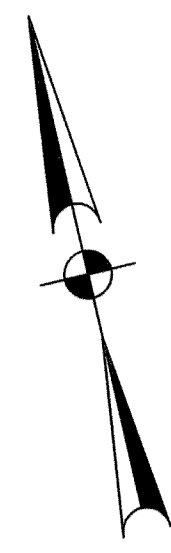
BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882
PROVIDENCE RHODE ISLAND

WINGWALL REPAIRS

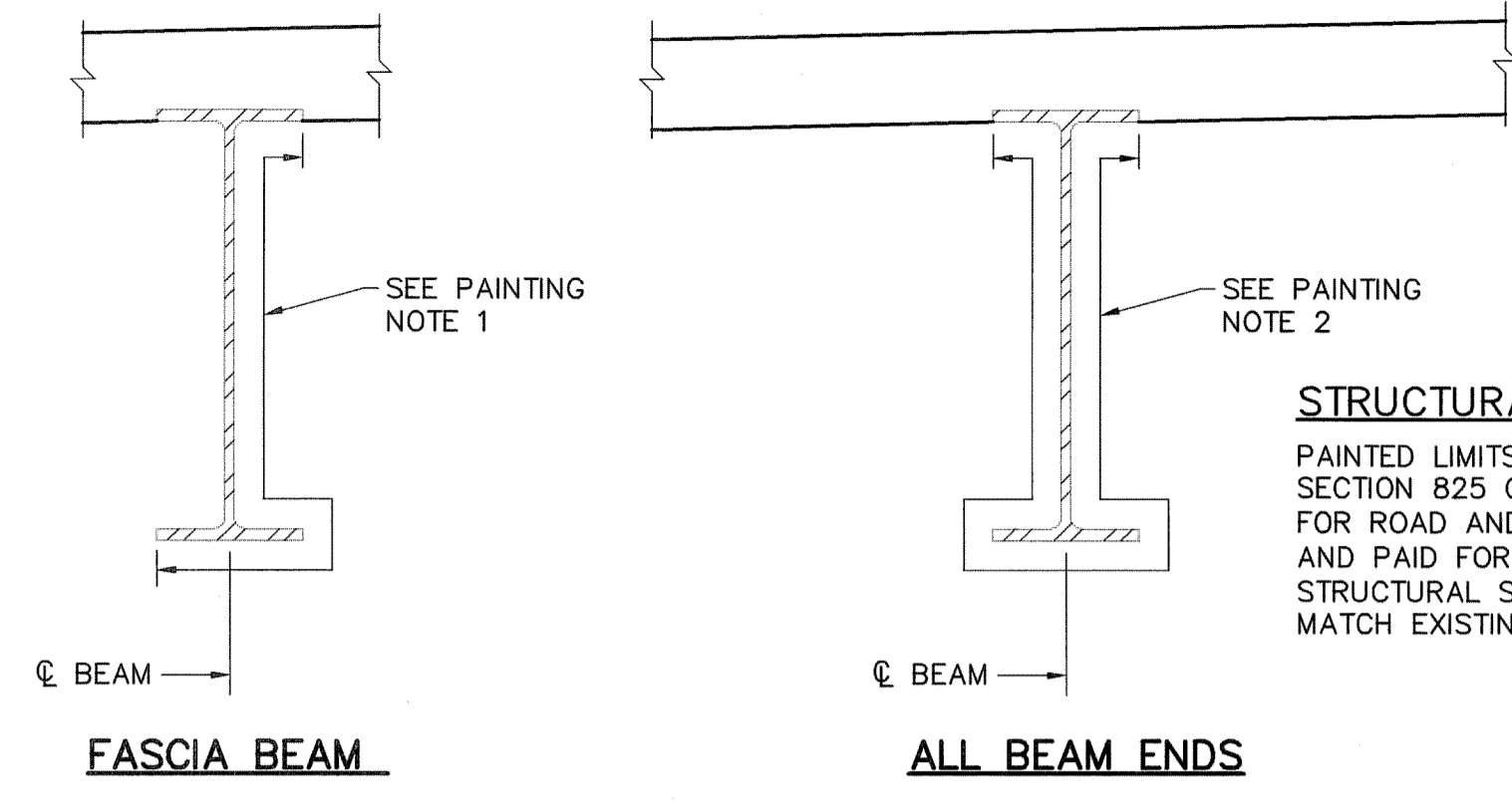
CHECKED BY _____ DATE _____ SCALE AS SHOWN

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TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND

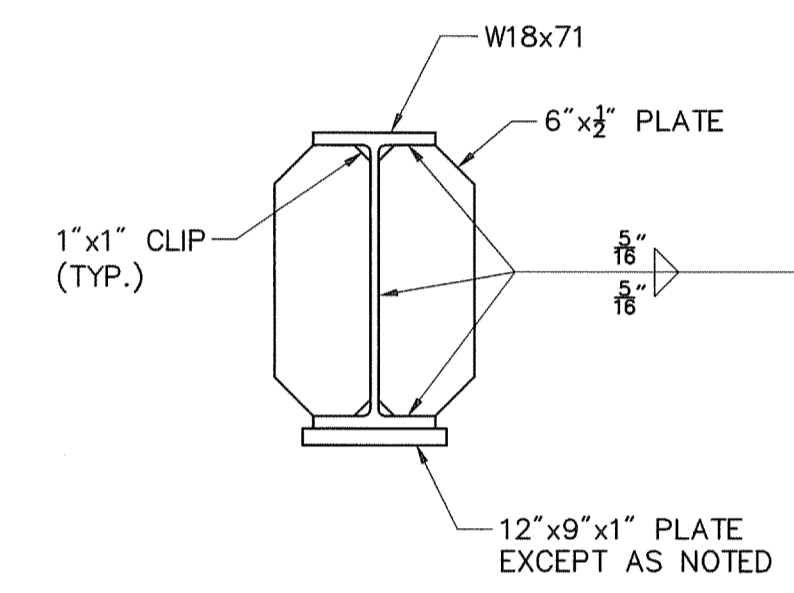
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1	R.I.		2009	18	31



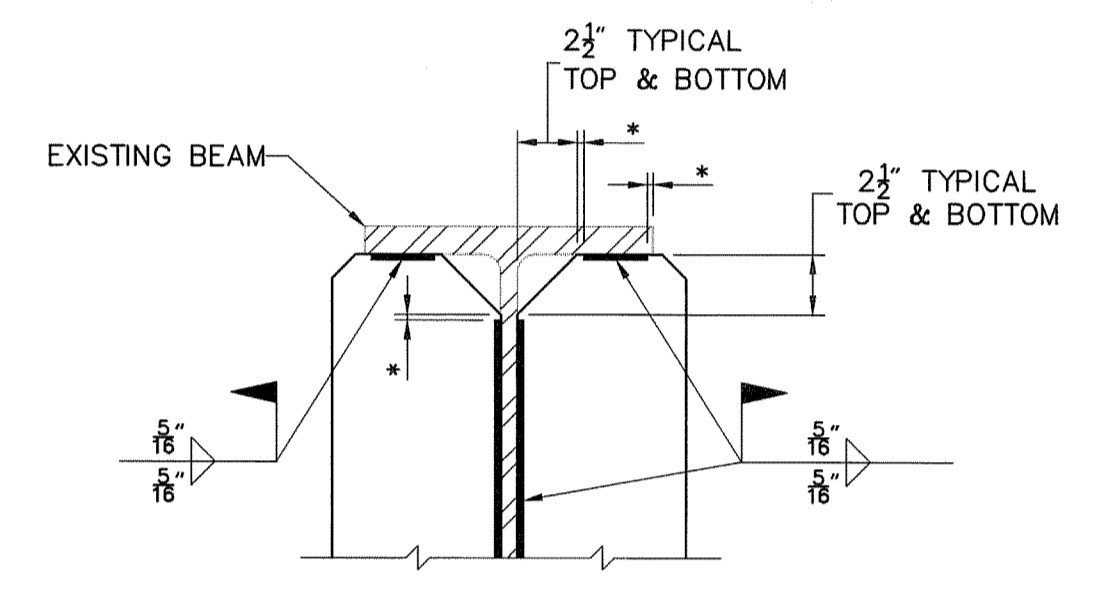
FRAMING PLAN
SCALE: 1/8"=1'-0"



PAINT LIMIT DETAIL
N.T.S.



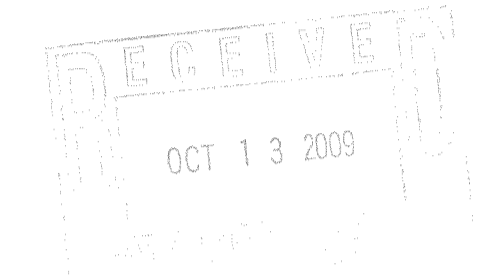
END DIAPHRAGM
SCALE: 1"=1'-0"



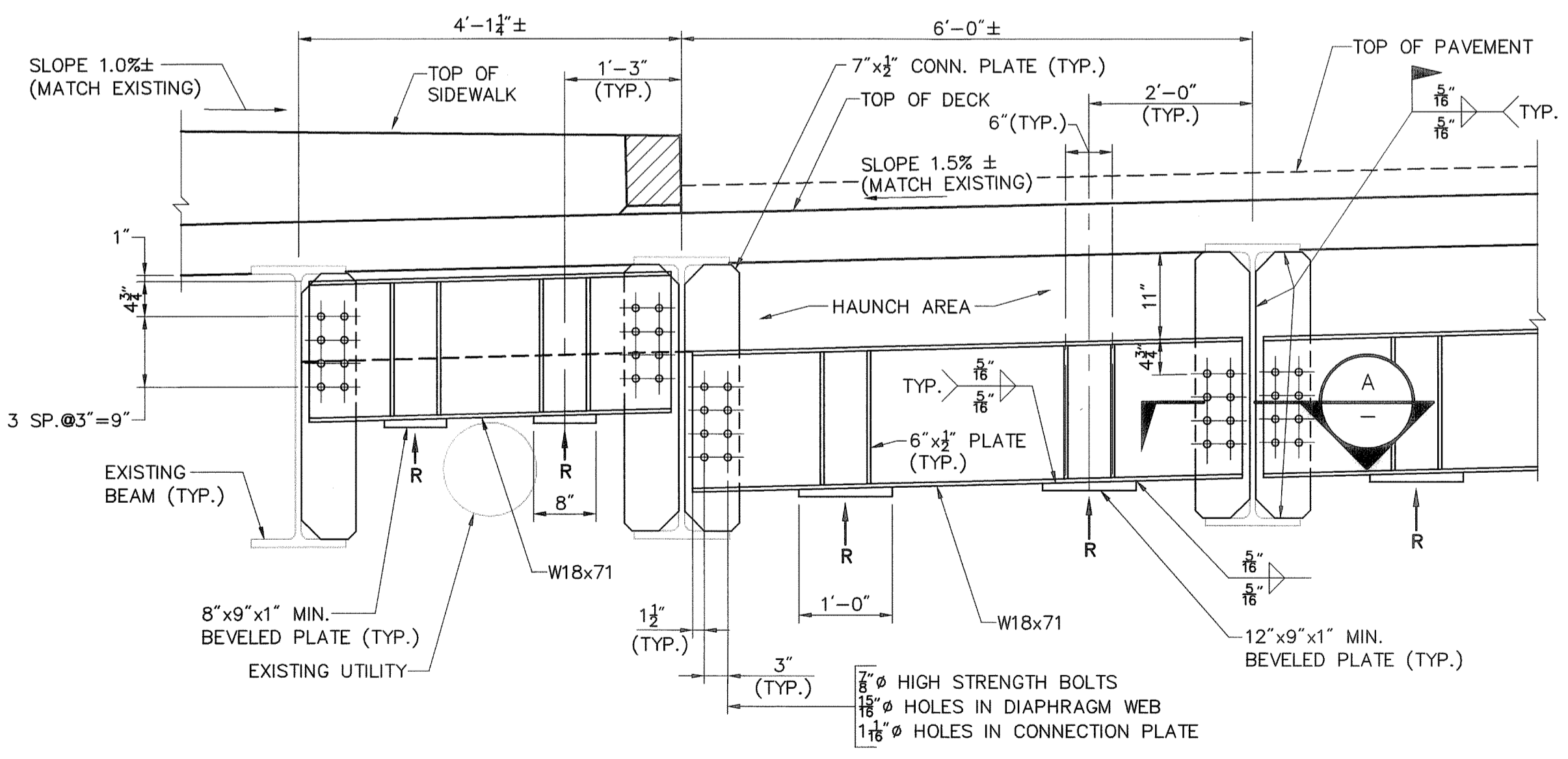
CONNECTION PLATE DETAIL
SCALE: 1 1/2"=1'-0"

- PAINTING NOTES**
- EXTERIOR FACE FASCIA BEAMS SHALL BE PAINTED TO THE LIMITS SHOWN.
 - PAINT ALL BEAM ENDS, END DIAPHRAGMS AND STIFFENERS WITHIN 4 FT. FROM \bar{C} BEARING.

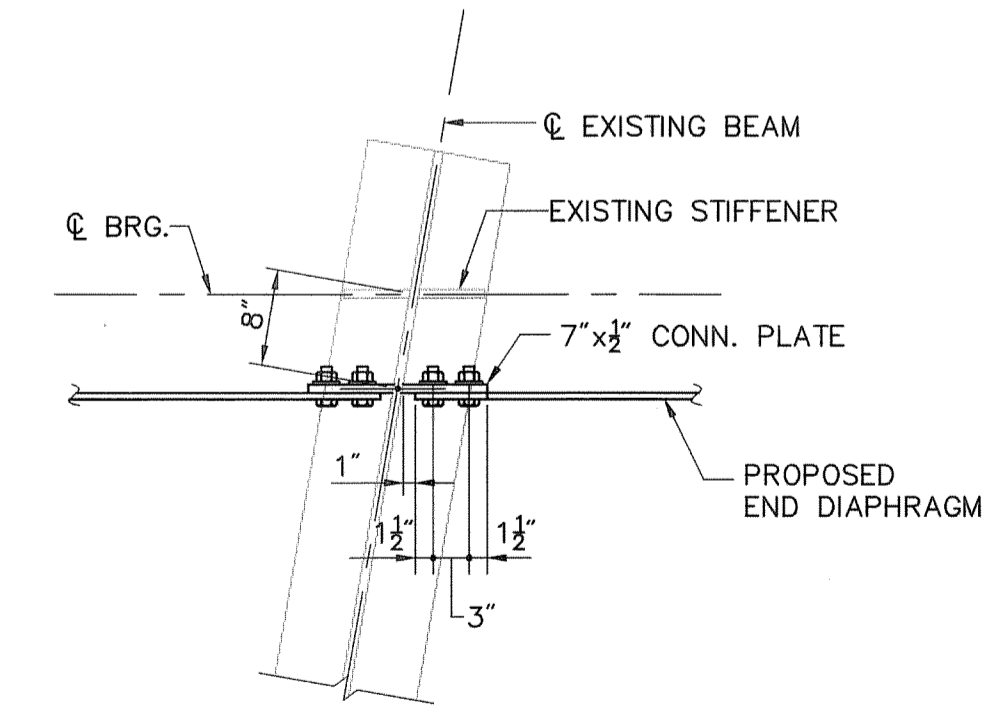
STRUCTURAL STEEL PAINTING NOTE
PAINTED LIMITS SHOWN SHALL BE IN ACCORDANCE WITH SECTION 825 OF THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION "PAINTING STRUCTURAL STEEL" AND PAID FOR UNDER CODE 825.8040 "PAINTING EXISTING STRUCTURAL STEEL". THE COLOR OF THE FINAL COAT SHALL MATCH EXISTING.



- NOTES:**
- FOR ELASTOMERIC BEARING DETAILS SEE SHEET 20.
 - THE CONTRACTOR SHALL FIELD MEASURE BEAM SPACING AND MAKE NECESSARY ADJUSTMENTS (IF REQUIRED) PRIOR TO PREPARING FABRICATION DRAWINGS FOR THE DIAPHRAGMS.
 - PRIOR TO FIELD WELDING OF CONNECTION PLATES, THE EXISTING GIRDERS SHALL BE BLAST-CLEANED TO AT LEAST SSPC-SP6 TO REMOVE ALL RUST, PAINT, OIL, DIRT, MILL SCALE AND OTHER DELETERIOUS MATERIALS FROM THE SURFACES OF THE STEEL TO BE WELDED. ALL COSTS SHALL BE INCLUDED UNDER ITEM CODE 825.8020.
 - JACKING SHALL PROCEED SIMULTANEOUSLY AT ALL END DIAPHRAGM BEARING LOCATIONS UNTIL A MAXIMUM $\frac{1}{2}$ " LIFT OF THE EXISTING BEAMS AT THE BEARING LOCATIONS HAS BEEN ACHIEVED AND BLOCKING IS INSTALLED. THE MAXIMUM LOAD IN EACH JACK SHALL NOT EXCEED THE MAXIMUM DEAD LOAD GIRDER REACTION SHOWN IN THE TABLE AFTER ALL BLOCKINGS ARE FULLY SHIMMED, THE JACK PRESSURE SHALL BE RELEASED.
 - FOR BEAM REPAIRS AT END DIAPHRAGMS SEE SHEET 19.



TYPE D1 **TYPE D2**
END DIAPHRAGM DETAIL
SCALE: 3/4"=1'-0"



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

MAXIMUM JACKING LOAD (R) FOR BEARING REPLACEMENT (SERVICE LOAD)	
DEAD LOAD	22.3 KIPS
LIVE LOAD + IMPACT	21.5 KIPS

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- LEGEND:**
- (E1) - BEARING TYPE
 - R - JACKING/SHORING LOCATION

REVISIONS		
NO.	DATE	BY

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRIDGE REHABILITATION INDUSTRIAL DRIVE BRIDGE NO. 882

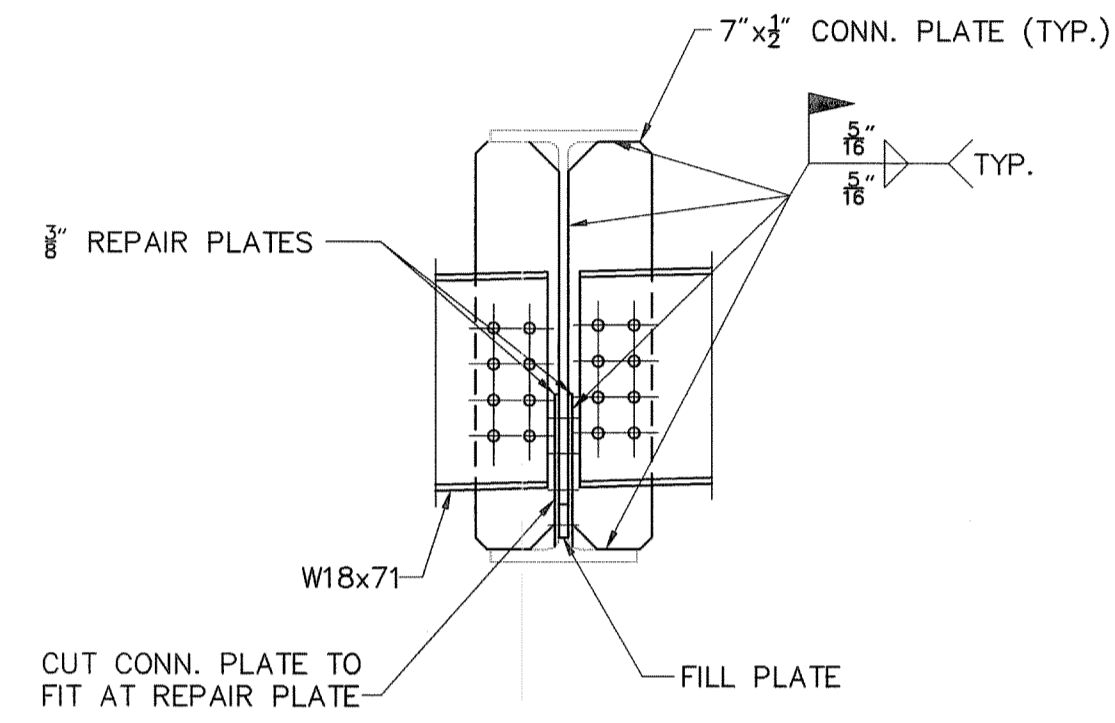
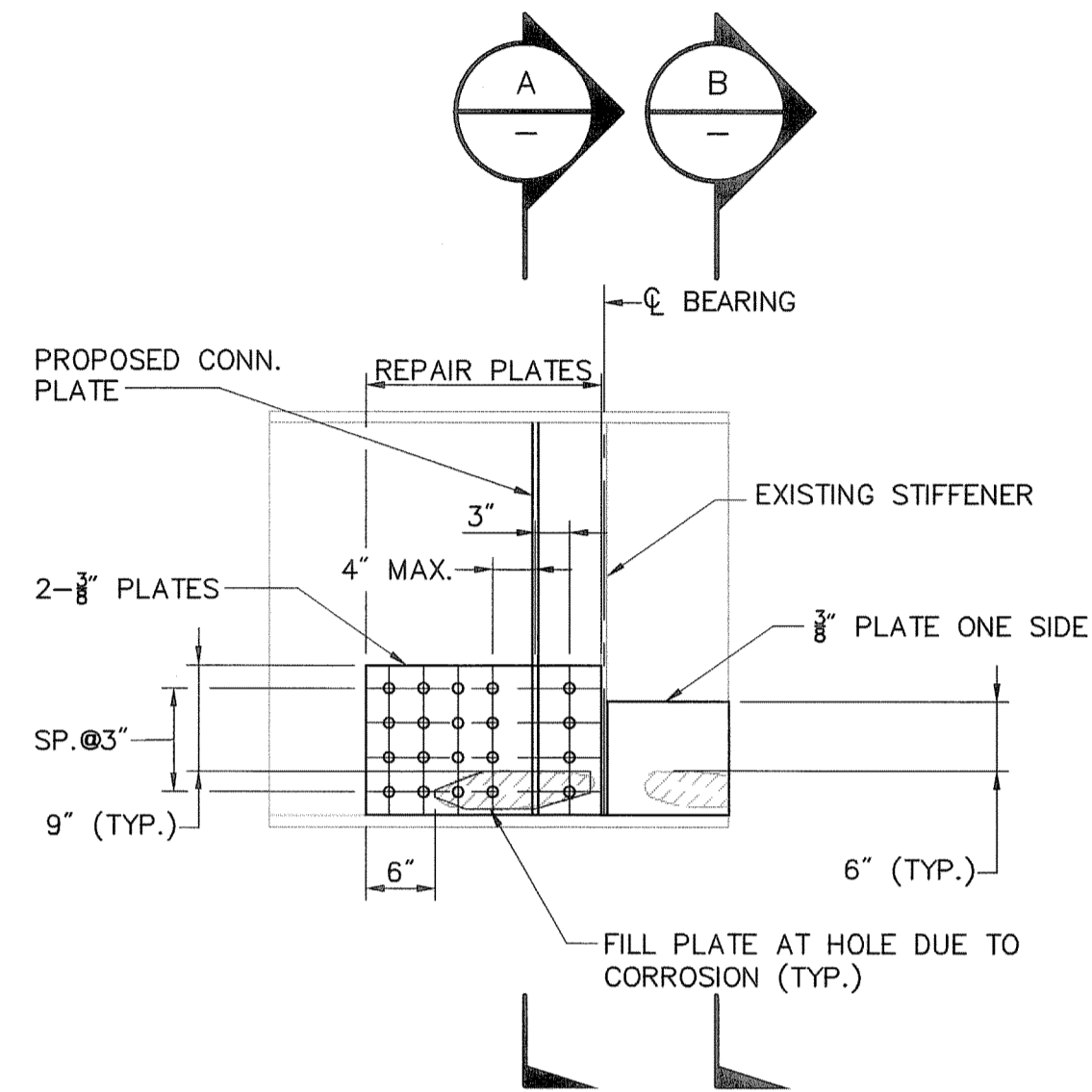
PROVIDENCE RHODE ISLAND

FRAMING PLAN

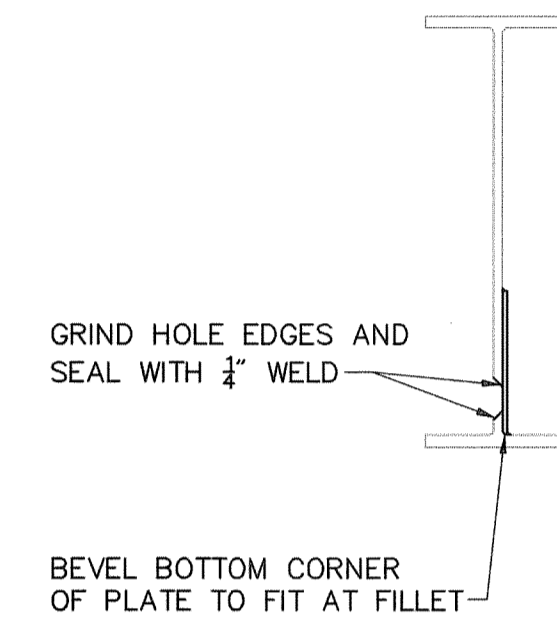
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PROVIDENCE, RHODE ISLAND

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SECTION A



SECTION B

STEEL REPAIR AT CORROSION HOLE
NOT TO SCALE

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STRUCTURAL STEEL REPAIR NOTES:

1. STRUCTURAL STEEL REPAIR SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION ITEM CODE 824.9901.
2. ALL REPAIR AREAS SHALL BE THOROUGHLY CLEANED TO REMOVE RUST, DELAMINATIONS, CORROSIONS AND OTHER FOREIGN MATTER PRIOR TO PERFORMING ANY REPAIR.
3. THE CONTRACTOR SHALL OBTAIN ALL FIELD MEASUREMENT AS MAY BE DEEMED NECESSARY FOR THE PROPER FABRICATION AND FIT OF STEEL COMPONENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE FABRICATION AND FIT OF HIS WORK. FIELD MEASUREMENTS (HEIGHT AND WIDTH) OF HOLE AREAS SHALL BE FIELD VERIFIED BY RESIDENT ENGINEER AND SHALL BE SUBMITTED WITH SHOP DRAWINGS OF REPAIR PLATES.
4. ALL BOLTS SHALL BE 7/8" DIAMETER HIGH STRENGTH BOLTS CONFORMING TO ASTM A-325.
5. STRUCTURAL STEEL FOR REPAIRS SHALL CONFORM TO AASHTO DESIGNATION M270 GRADE 36.
6. ALL FIELD DRILLED AND SHOP BOLT HOLES SHALL HAVE A DIAMETER OF 1 1/8".
7. BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH THE RIDOT STANDARD SPECIFICATIONS, EXCEPT AT HEAVILY CORRODED PORTIONS, WHERE THE BOLTS SHALL BE SNUG TIGHTENED.
8. STRUCTURAL REPAIR STEEL SHALL BE PRIMED IN THE SHOP.
9. ALL EXISTING STEEL REPAIR AREAS SHALL BE PRIMED AFTER BLAST CLEANING. EXISTING AND NEW STEEL SHALL BE TOUCH-UP PRIMED AFTER DRILLING AND WELDING.
10. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO REDUCE THE NET STEEL SECTION.
11. ALL REPAIRS TO STRUCTURAL STEEL SHALL BE PERFORMED WITH EXTREME CARE TO AVOID ANY DAMAGE TO EXISTING STRUCTURAL DESIGNATED TO REMAIN. IN THE EVENT THAT THE CONTRACTOR DAMAGES EXISTING STRUCTURAL STEEL DESIGNATED TO REMAIN, AS A RESULT OF THE CONTRACTOR OPERATION, THE CONTRACTOR SHALL REPAIR OR REPLACE THE DAMAGED STRUCTURAL STEEL TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
12. FOR PAINTING LIMITS SEE SHEET 18.
13. THE COST FOR THE STEEL REPAIRS (INCLUDING FIELD MEASUREMENTS) SHALL BE PAID FOR UNDER ITEM CODE 824.9901 "STRUCTURAL STEEL REPAIRS".

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RHODE ISLAND
DEPARTMENT OF TRANSPORTATION
BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882

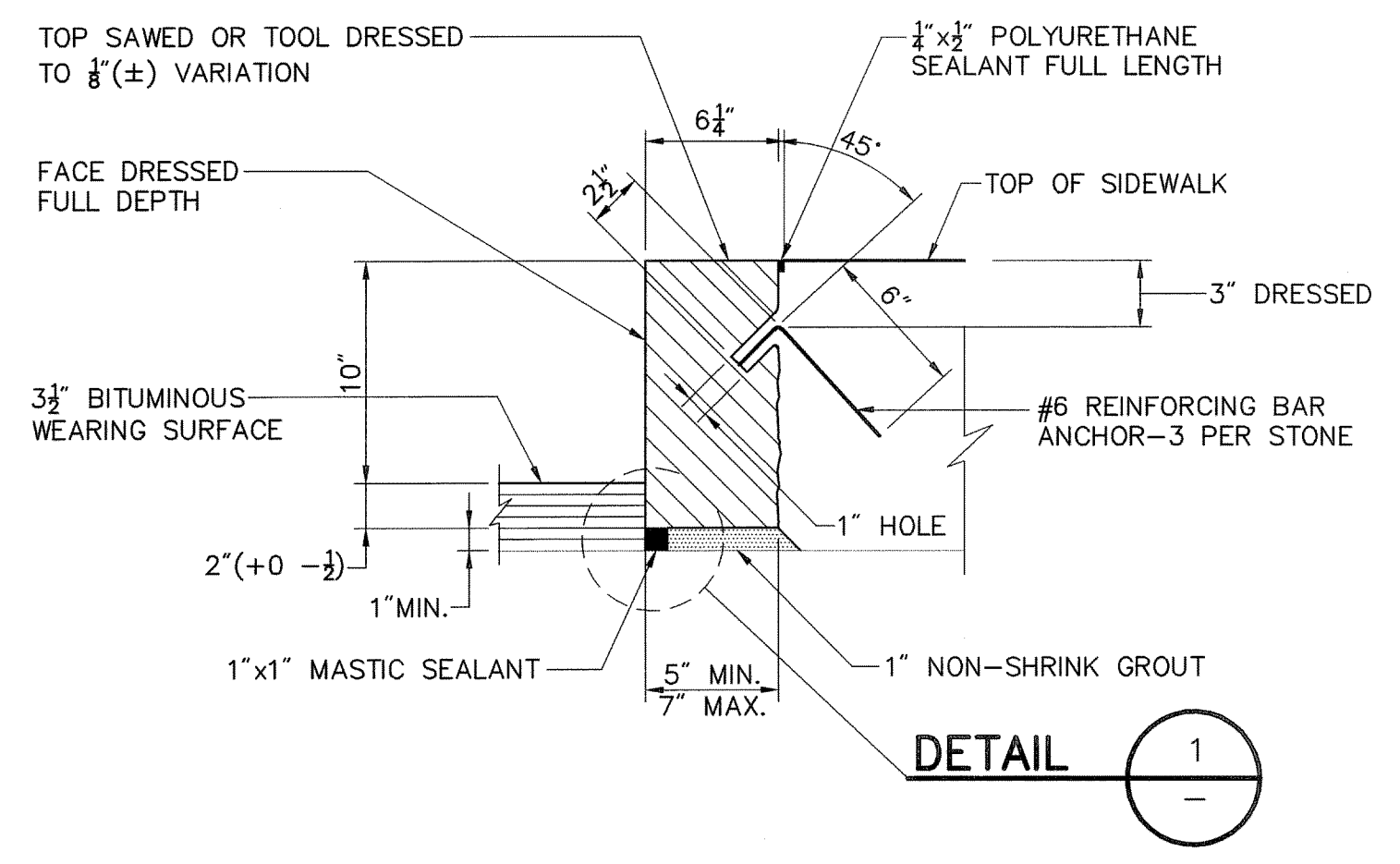
Charles A. Herbert

PROVIDENCE RHODE ISLAND

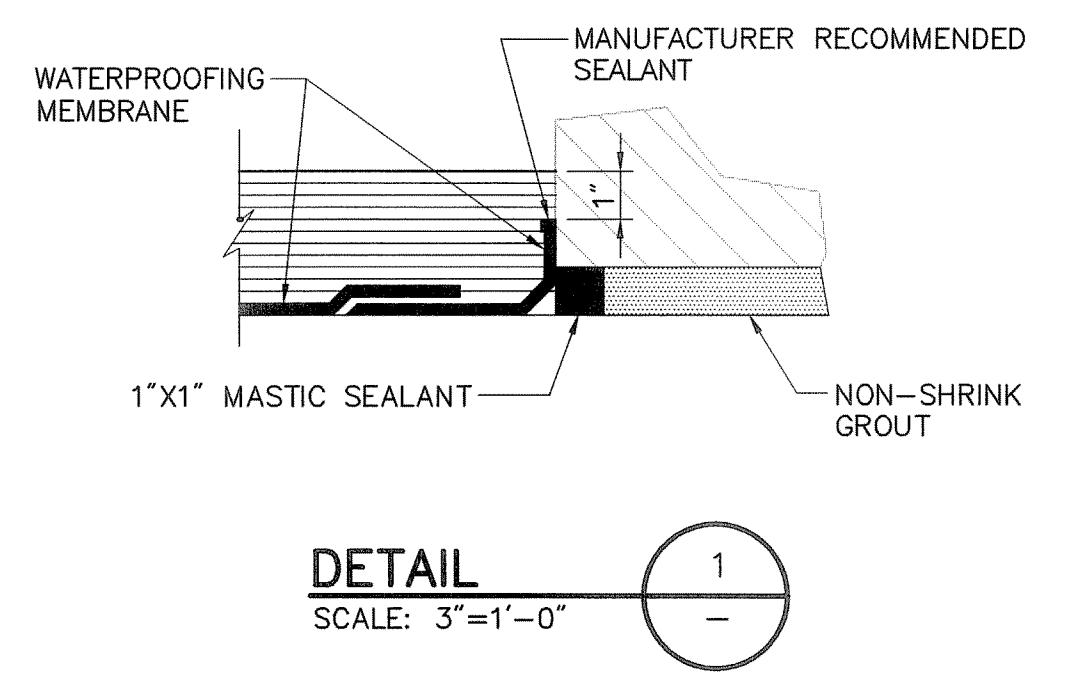
STEEL REPAIRS

CHECKED BY _____ DATE _____ SCALE AS SHOWN

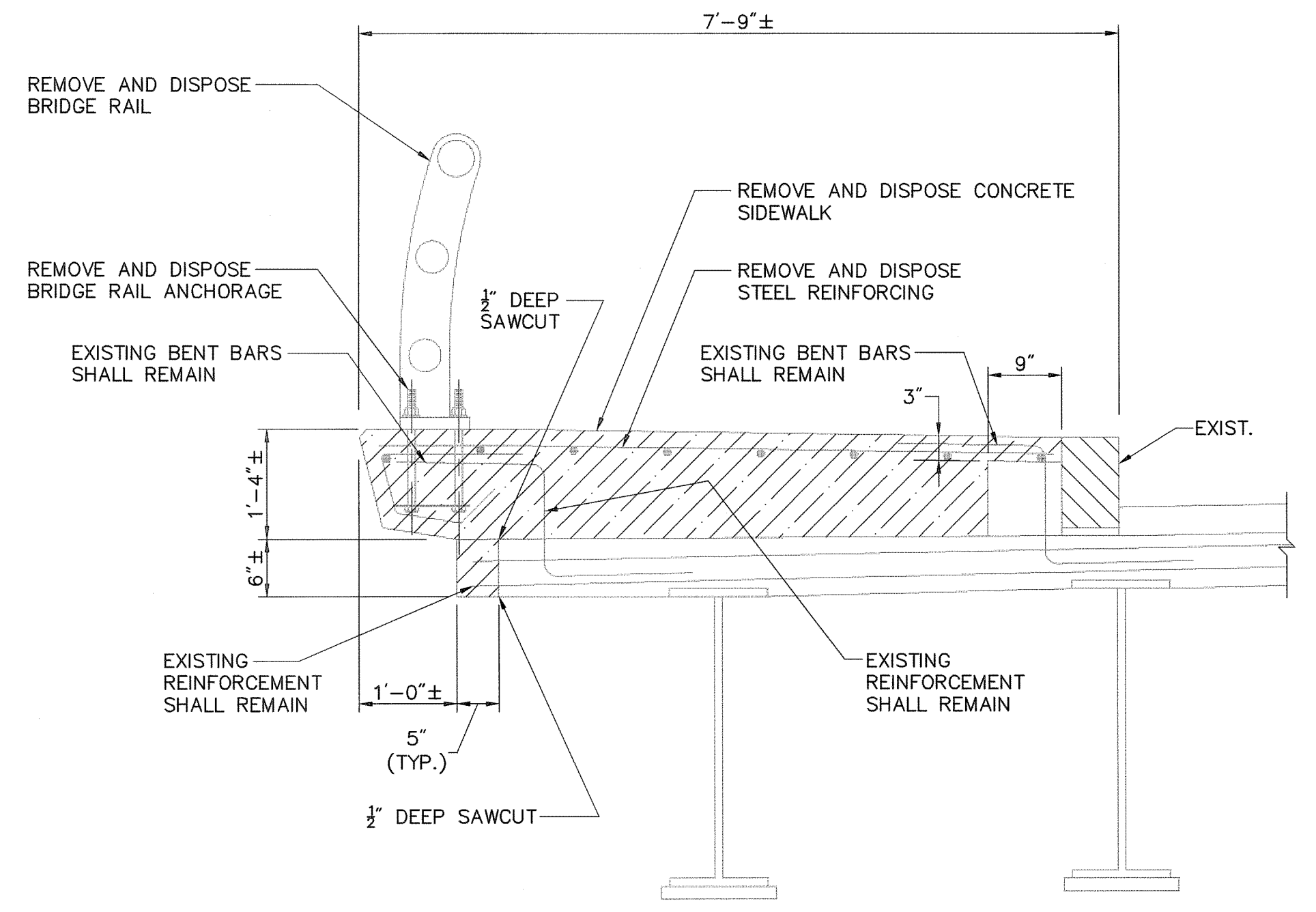
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TRANSPORTATION LAND DEVELOPMENT
ENVIRONMENTAL SERVICES
PROVIDENCE, RHODE ISLAND



6"x12" VERTICAL FACE GRANITE CURB DETAIL (BITUMINOUS WEARING SURFACE)
SCALE: 1 1/2"=1'-0"

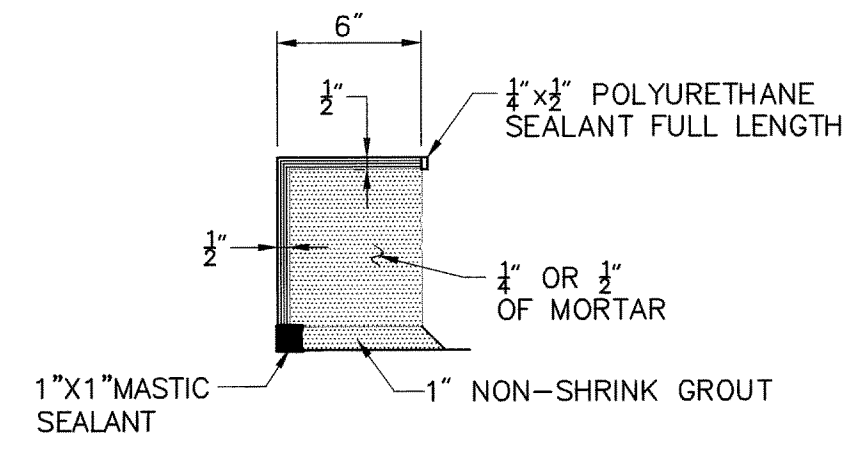
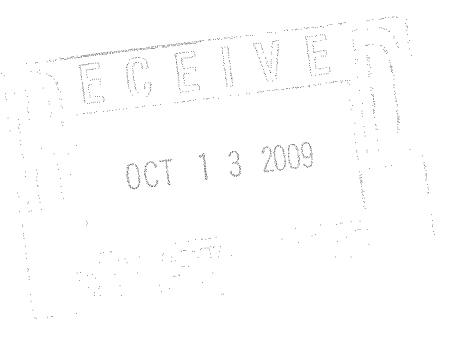


DETAIL 1
SCALE: 3"=1'-0"

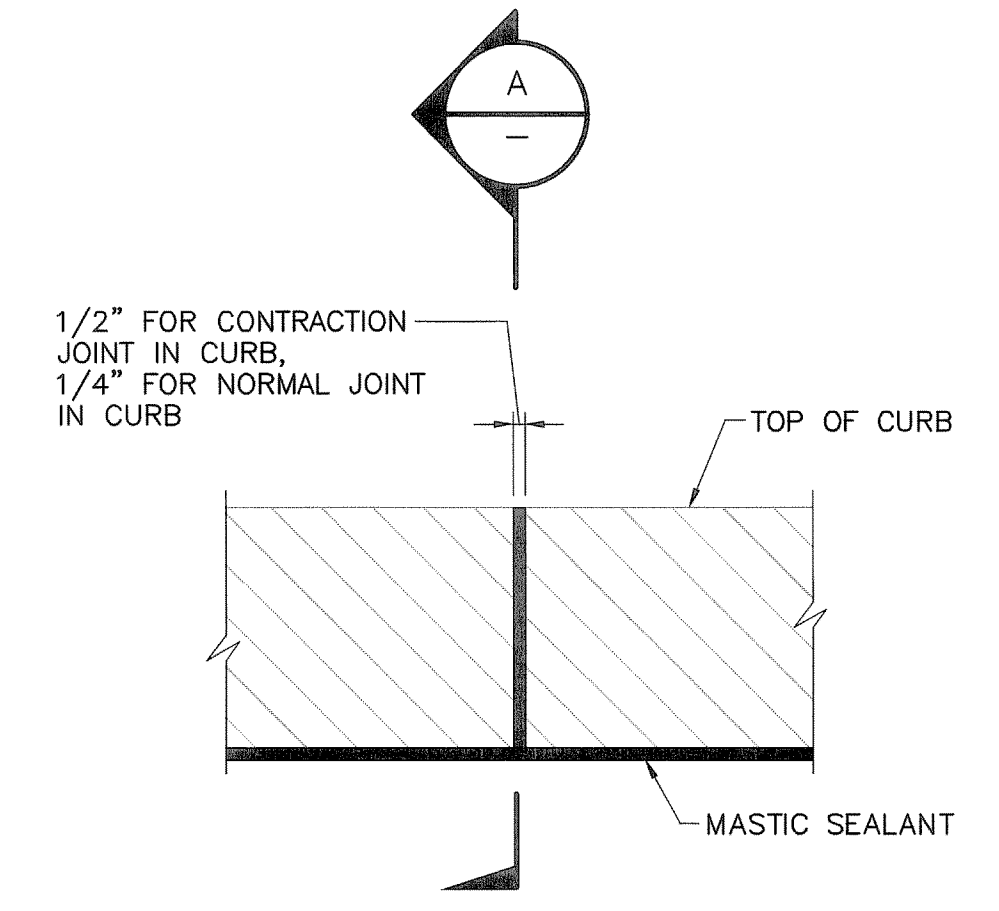


SIDEWALK DEMOLITION
SCALE: 3/4"=1'-0"

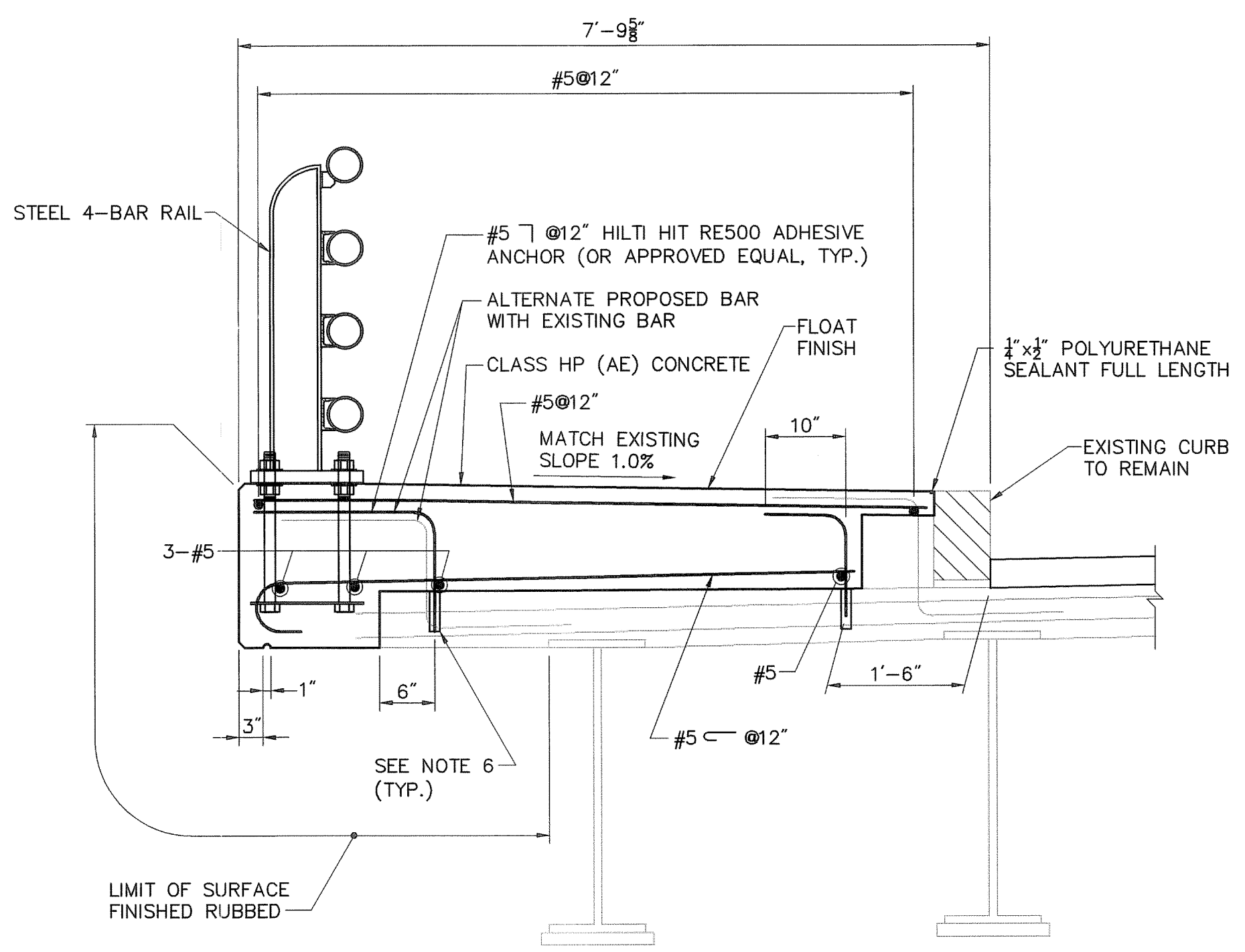
LEGEND:
[Hatched Box] - REMOVE AND DISPOSE



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



ELEVATION AT FACE OF CURB



PROPOSED SIDEWALK SECTION D D
SCALE: 3/4"=1'-0"

- CURB NOTES**
- FOR CUTTING TOLERANCES ON GRANITE CURB SEE R.I. STANDARD SPECIFICATION M-09.05.
 - STRAIGHT CURB SHALL BE FURNISHED IN LENGTHS OF NOT LESS THAN 6 FEET OR GREATER THAN 10 FEET. (5 FOOT LENGTHS MAY BE ALLOWED UNDER UNUSUAL CIRCUMSTANCES, BUT ONLY WITH THE APPROVAL OF THE BRIDGE ENGINEER).
 - CURB WHICH IS SET ON A RADIUS BETWEEN 160 FEET AND 300 FEET MAY BE FURNISHED STRAIGHT IN LENGTHS NOT TO EXCEED 6 FEET.
 - CURB TO BE SET ON A RADIUS OF 160 FEET OR LESS SHALL BE CUT TO THE CURVE REQUIRED.
 - THE COST TO REMOVE AND DISPOSE EXISTING MASTIC SEALANT SHALL BE INCLUDED IN THE COST OF ITEM 803.9903 "REMOVE AND DISPOSE BRIDGE DECK BITUMINOUS CONCRETE PAVEMENT".
 - DOWELING #5 INTO EXISTING BRIDGE DECK SHALL BE PAID FOR UNDER ITEM 819.9001 "ADHESIVE ANCHOR FOR DOWEL BARS (8) PROVIDE 1/2" HOLE FOR #5 REINFORCEMENT. BOND TO EXISTING CONCRETE WITH HILTI HIT RE 500 (OR APPROVED EQUAL).

DEPARTMENT OF ENVIRONMENT & LAND DEVELOPMENT
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Charles A. Harker

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRIDGE REHABILITATION INDUSTRIAL DRIVE BRIDGE NO. 882

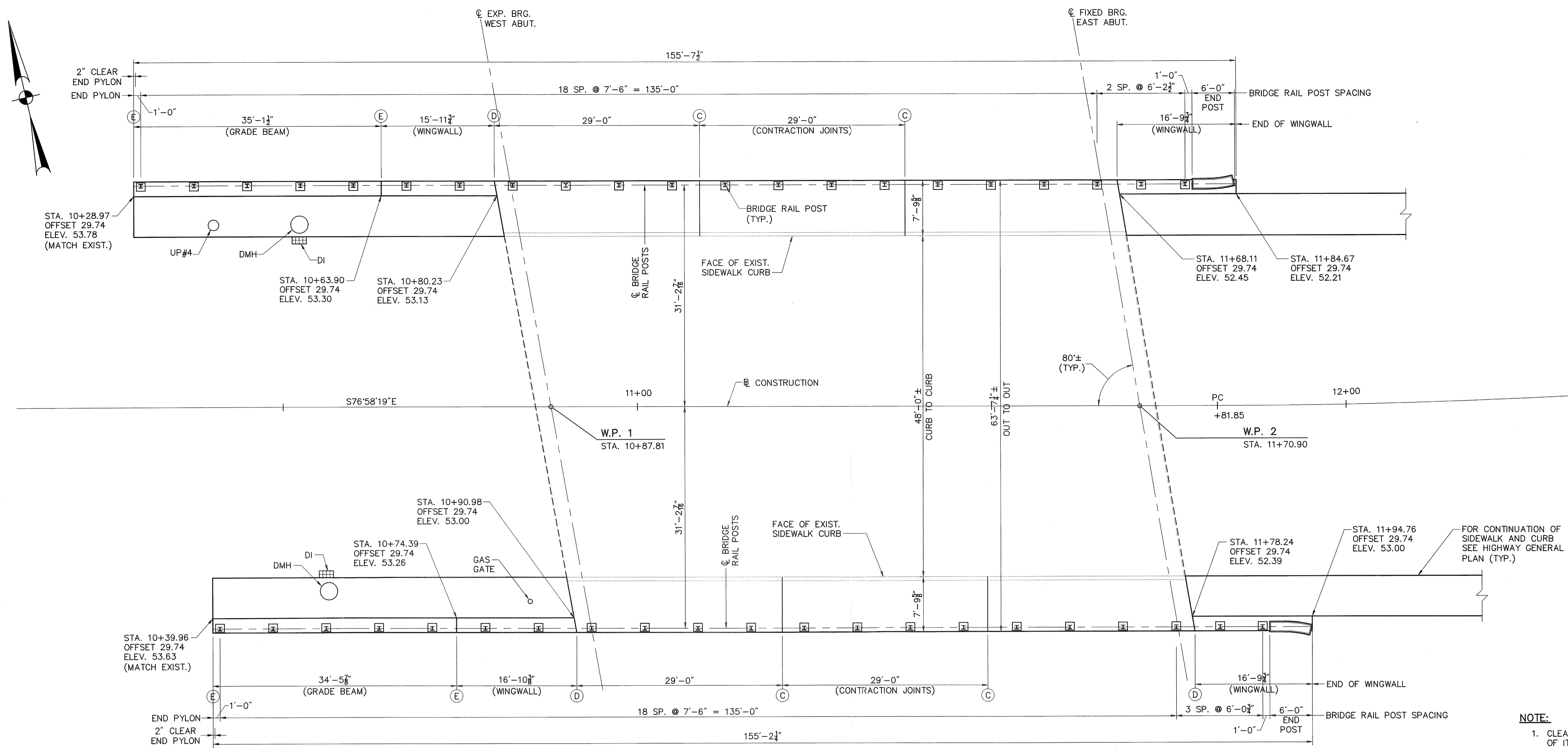
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BRIDGE CURB AND SIDEWALK DETAILS

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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OCT 13 2009

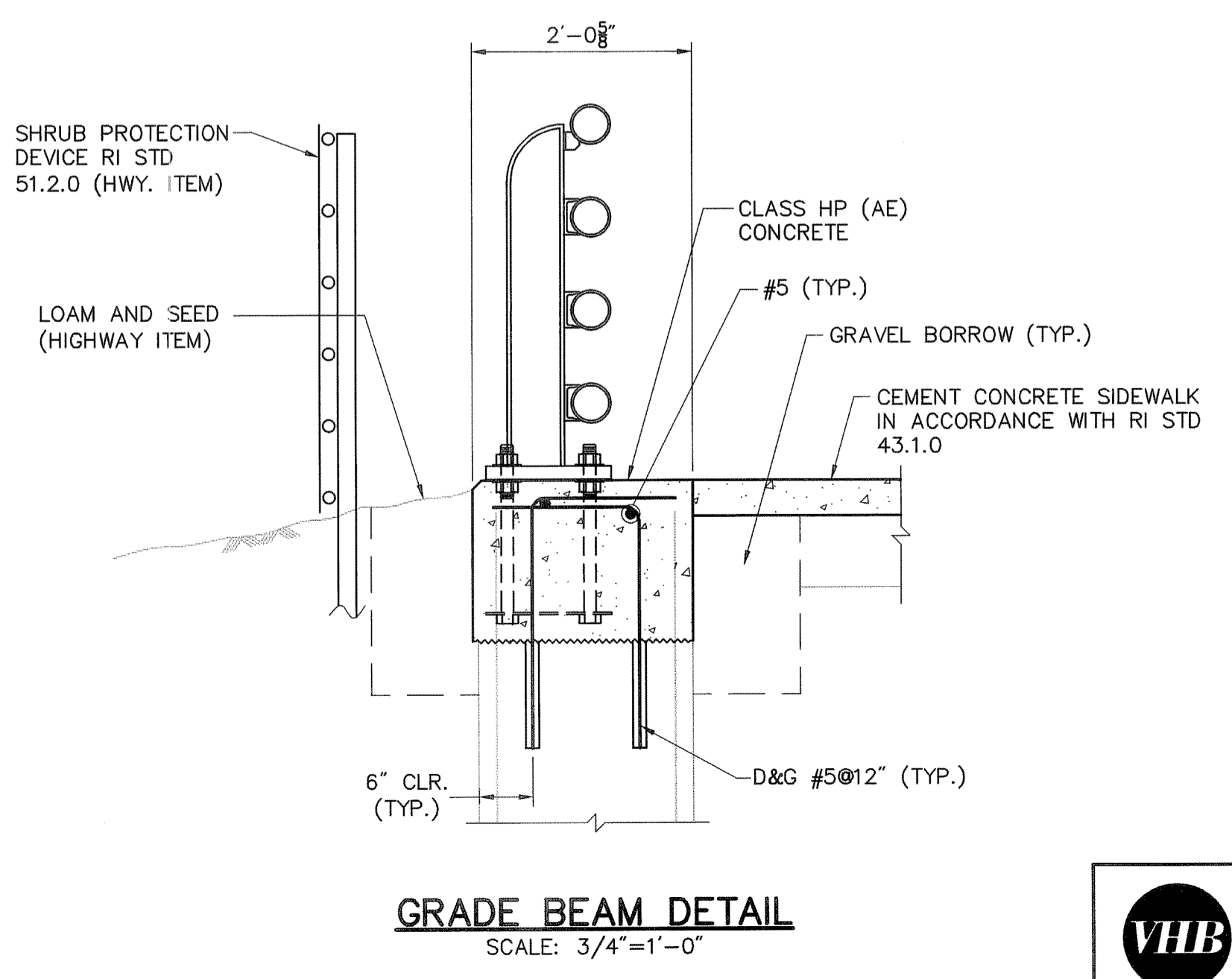
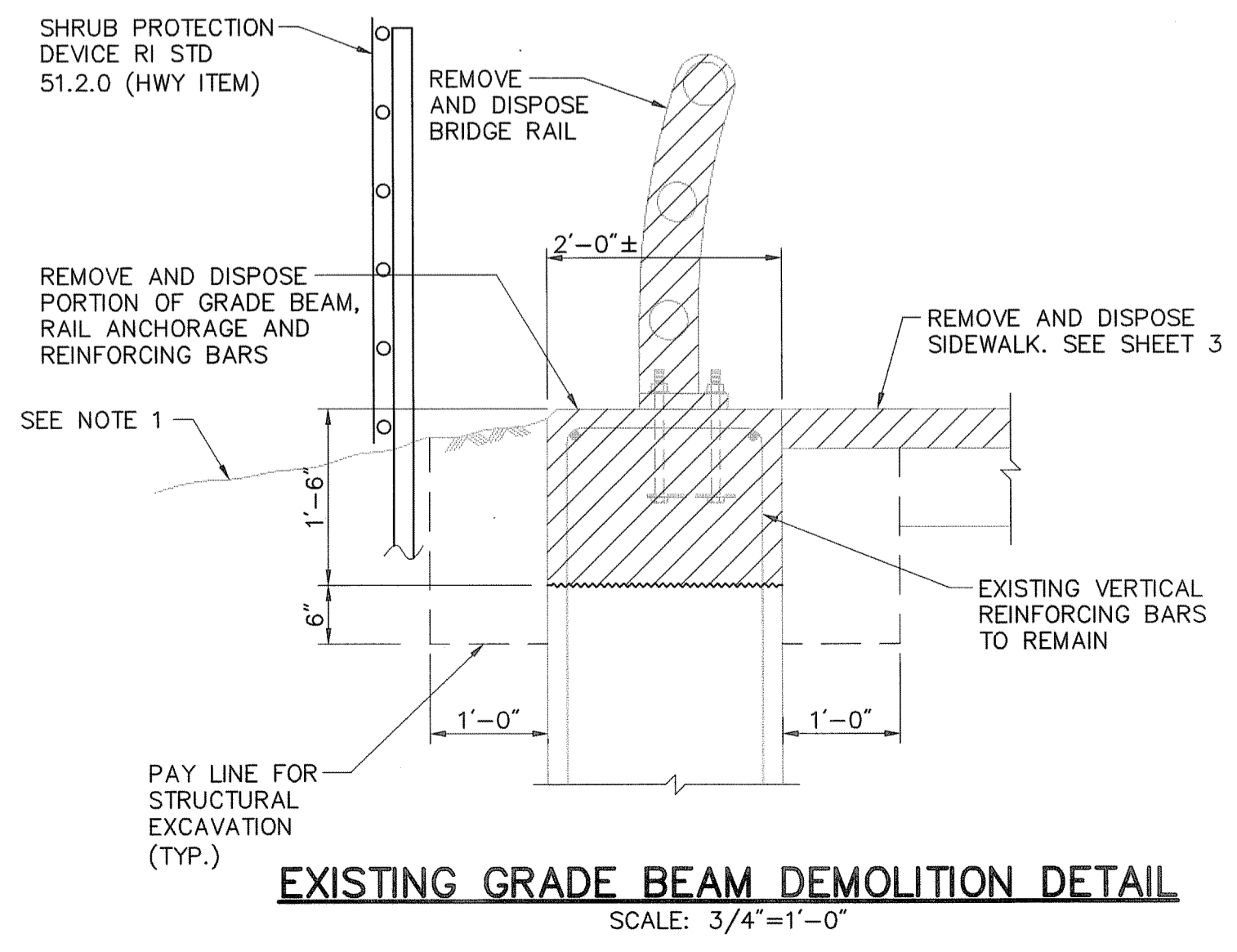
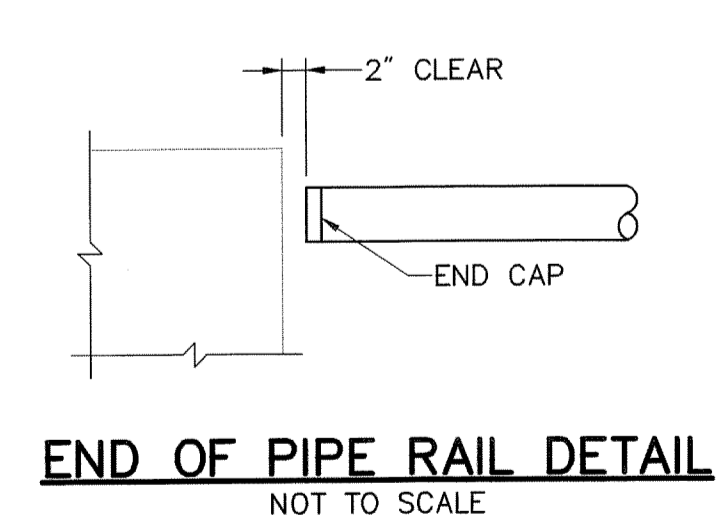
PLAN
SCALE: 1/8"=1'-0"

NOTE:
1. CLEARING AND GRUBBING SHALL BE INCLUDED IN THE COST OF ITEM 203.0100 "STRUCTURAL EXCAVATION EARTH DRY"

- LEGEND:**
- (C) - CONTRACTION JOINT IN SIDEWALK
 - (D) - DECK JOINT
 - (E) - EXPANSION JOINT
 - DI - DRAIN INLET
 - DMH - DRAIN MANHOLE
 - UP - UTILITY POLE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 09-0260-UP
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. [Signature]



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

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

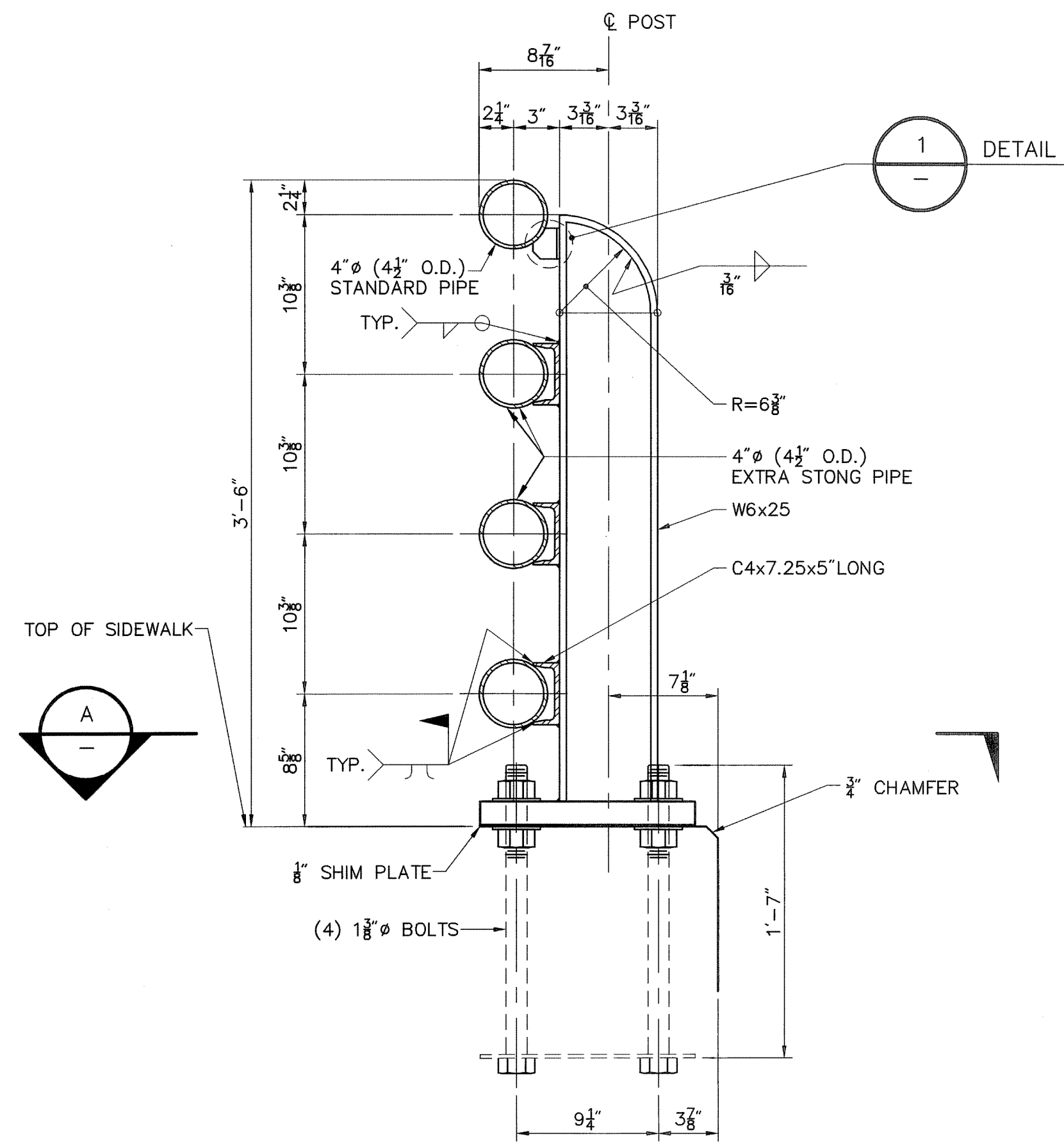
**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

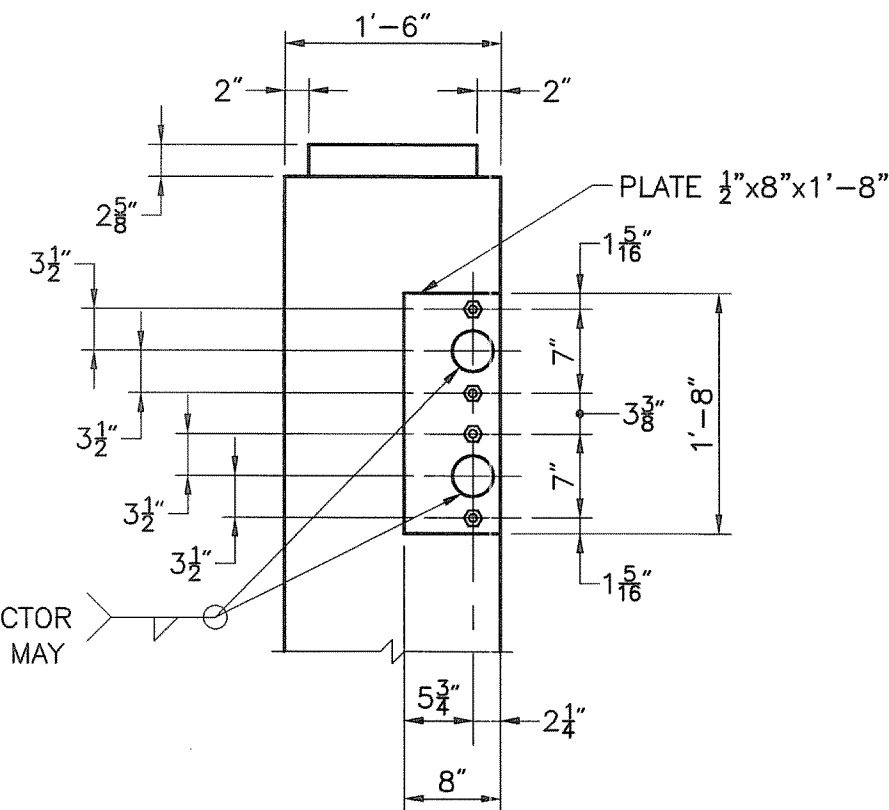
**BRIDGE RAILING SPACING
AND GRADE BEAM DETAILS**

CHECKED BY _____ DATE _____ SCALE AS SHOWN

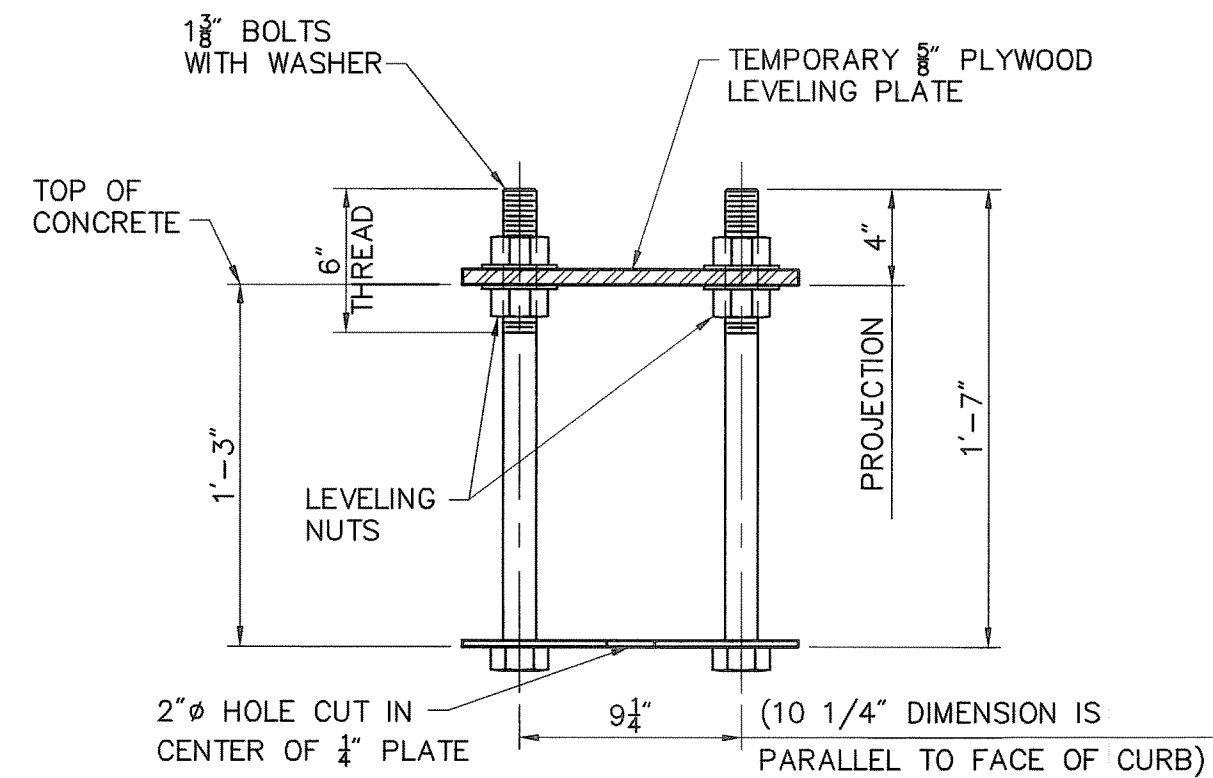
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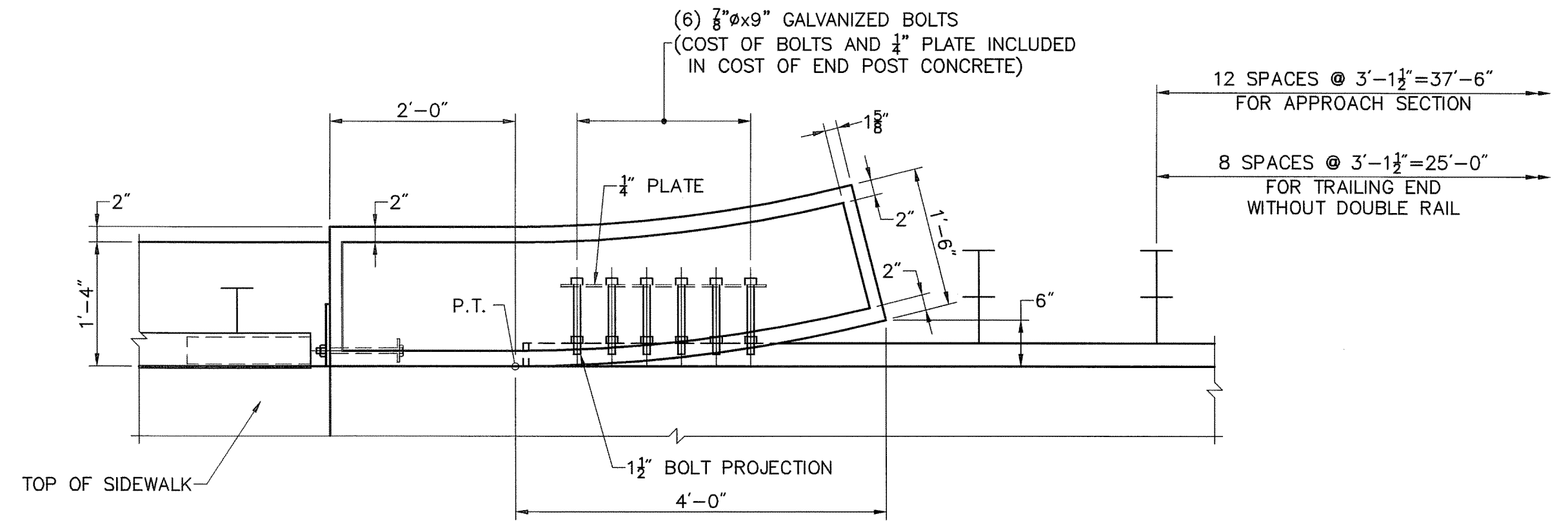
STEEL 4-BAR RAIL
SCALE: 1 1/2"=1'-0"



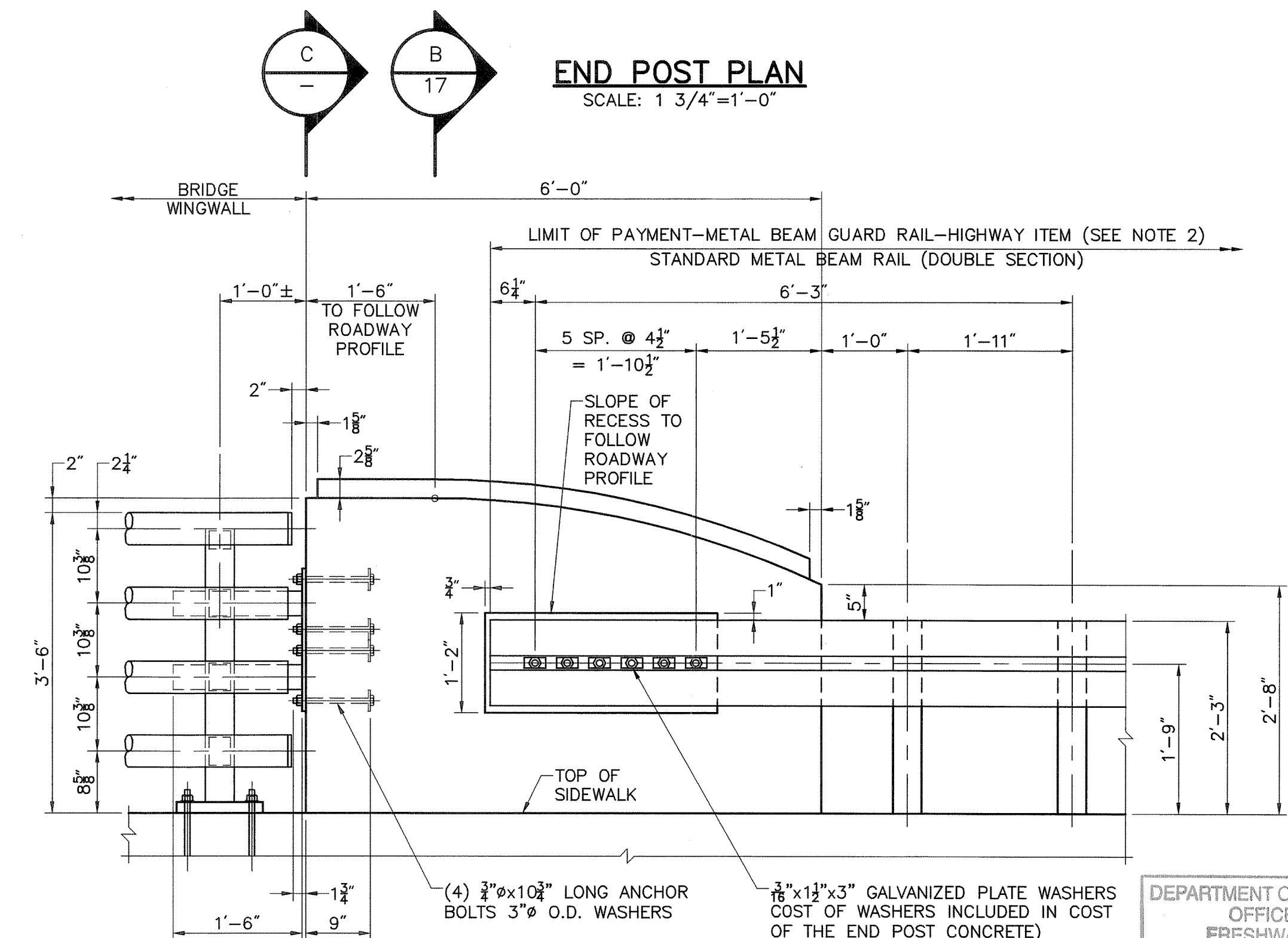
SECTION C
SCALE: 3/4"=1'-0"



ANCHOR BOLT DETAIL FOR 4-BAR RAIL
SCALE: 1 1/2"=1'-0"



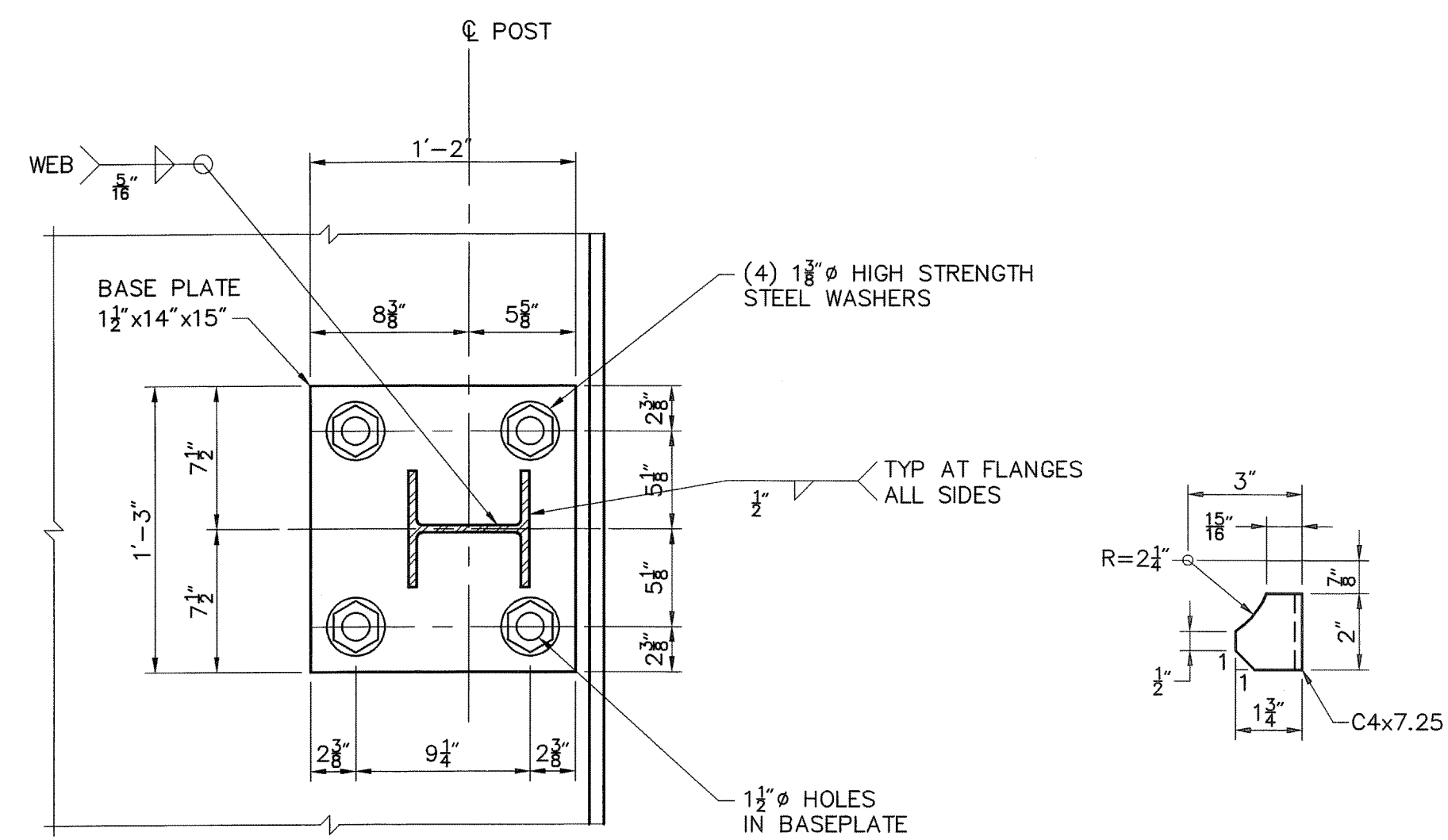
END POST PLAN
SCALE: 1 3/4"=1'-0"



END POST ELEVATION
SCALE: 1 3/4"=1'-0"

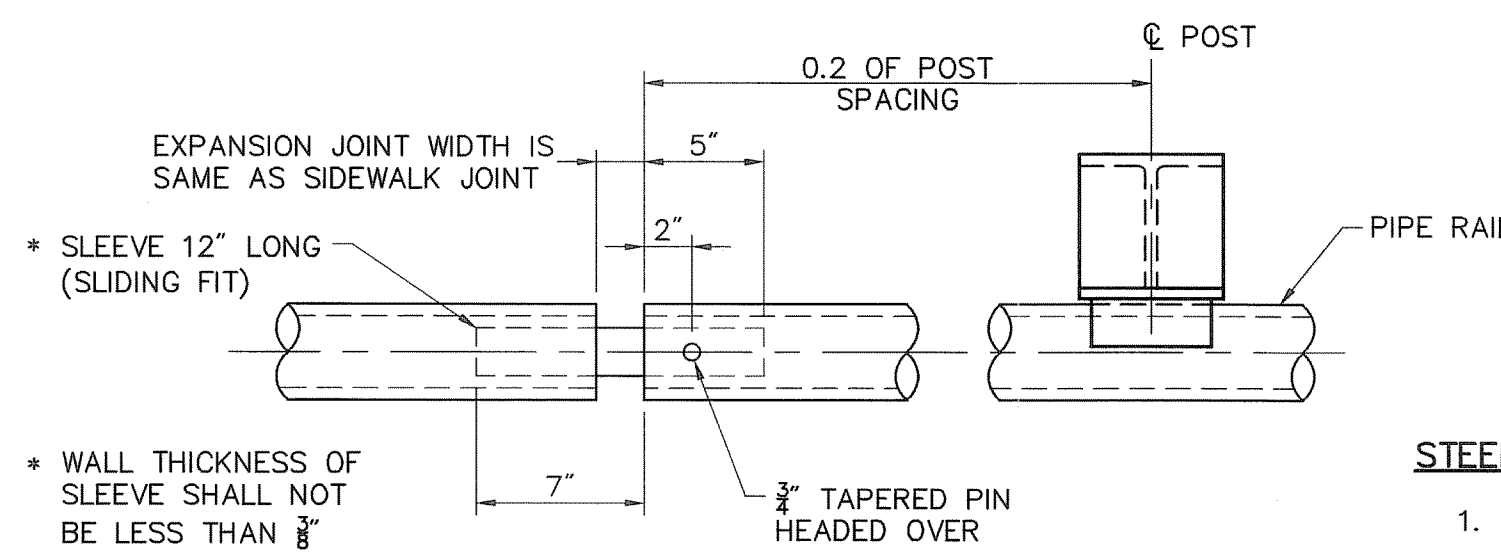
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 09-0260
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Haber

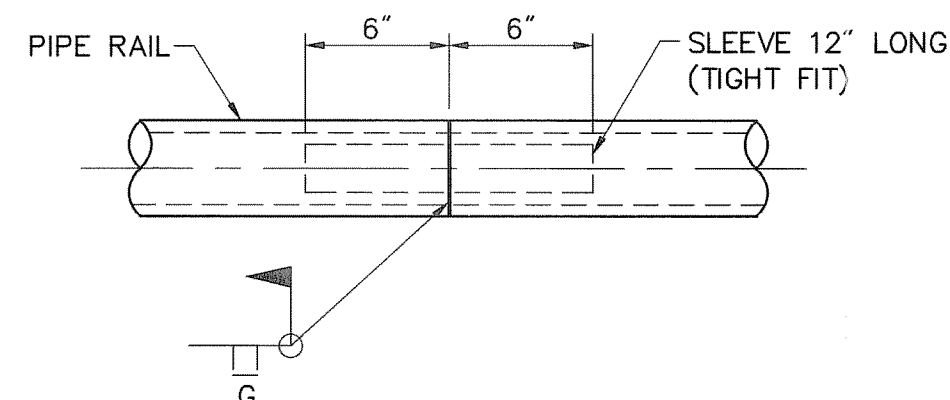


SECTION A
SCALE: 1 1/2"=1'-0"

DETAIL 1
SCALE: 3"=1'-0"



TYPICAL EXPANSION JOINT DETAIL
SCALE: 1 1/2"=1'-0"



TYPICAL STEEL RAIL JOINT
SCALE: 1 1/2"=1'-0"

STEEL RAILING NOTES:

1. THE ENTIRE RAILING SYSTEM SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO DESIGNATION M 111 AND PAINTED IN ACCORDANCE WITH SECTION 825 OF THE RHODE ISLAND STANDARD SPECIFICATIONS.
2. STANDARD AND EXTRA STRONG STEEL PIPES SHALL CONFORM TO THE LATEST REQUIREMENTS OF ASTM DESIGNATION A 53, GRADE B.
3. STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M 270 GRADE 36.
4. ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A 307.
5. THE ENTIRE ANCHOR BOLT ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO DESIGNATION M 111.
6. RAIL 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 ACTUAL SLOPE OF THE SIDEWALK OR BRUSH CURB.
7. MAXIMUM POST SPACING SHALL BE 8'-0".
8. THE RAILS SHALL BE WELDED PARALLEL TO THE ACTUAL SLOPE OF THE SIDEWALK OR BRUSH CURB.
9. RAILINGS SHALL BE SPLICED OVER EXPANSION JOINT.

END POST NOTES:

1. TO INSURE PROPER GUARD RAIL ANCHORAGE, THE GUARD RAIL INSTALLATION SHALL BEGIN AT EACH END OF THE BRIDGE AND WORK INTO THE APPROACHES.
2. THE COST OF THE GUARD RAIL TRANSITION TO BRIDGE END POSTS ARE HIGHWAY ITEMS. APPROACH SECTIONS AND TRAILING SECTIONS ARE SEPARATE ITEMS IN THE PROPOSAL.
3. THE COST OF ANCHORAGE (PLATE, ANCHOR BOLTS AND 3 1/2" Ø STEEL PIPE) IS INCLUDED IN COST OF END POST CONCRETE.

REVISIONS		
NO.	DATE	BY

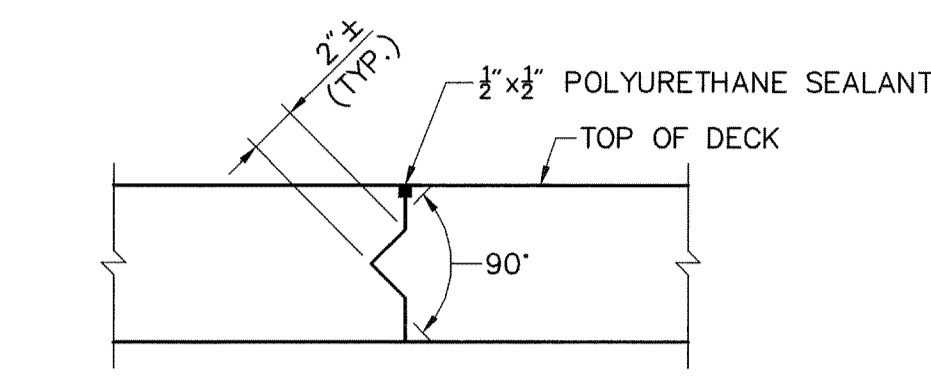
RHODE ISLAND
DEPARTMENT OF TRANSPORTATION
**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**
PROVIDENCE RHODE ISLAND

RAILING DETAILS

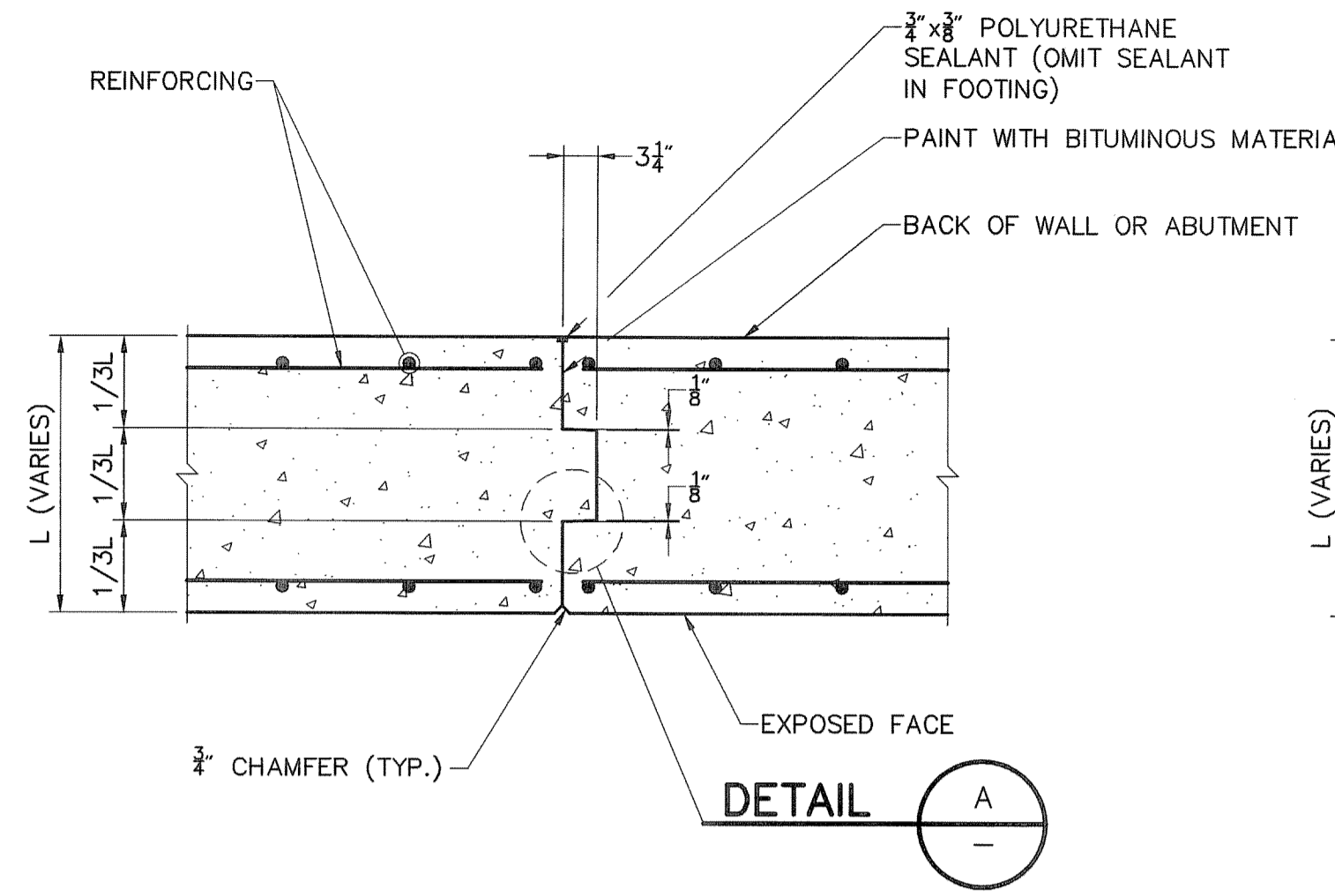
CHECKED BY _____ DATE _____ SCALE AS SHOWN

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

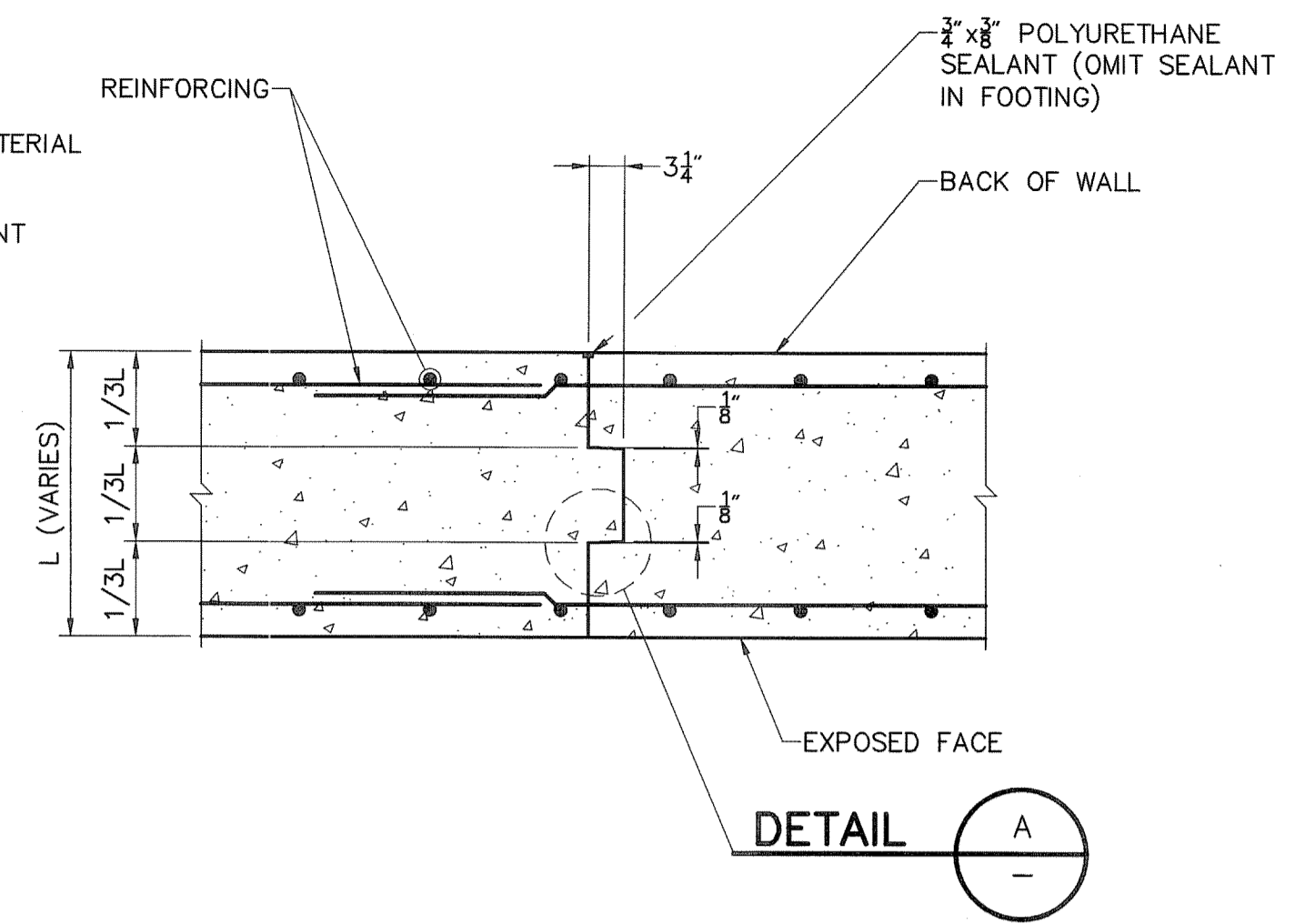
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2009	27	31



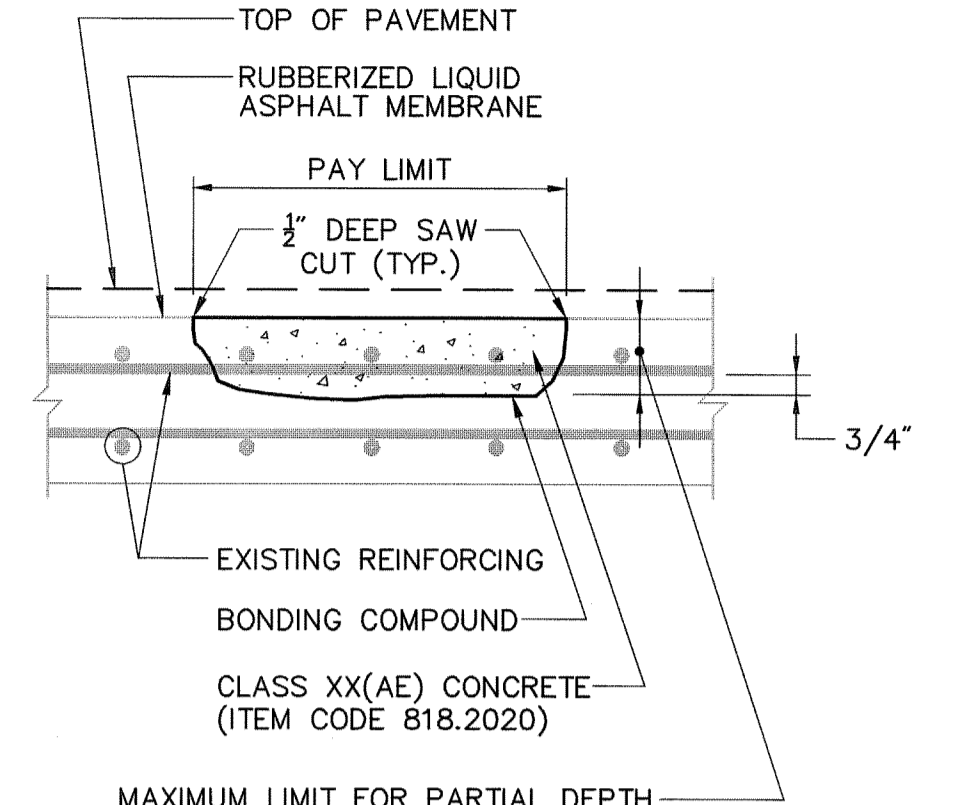
CONSTRUCTION JOINT IN DECK
SCALE: 1 1/2" = 1'-0"



CONTRACTION JOINT IN WALLS
SCALE: 3/4" = 1'-0"



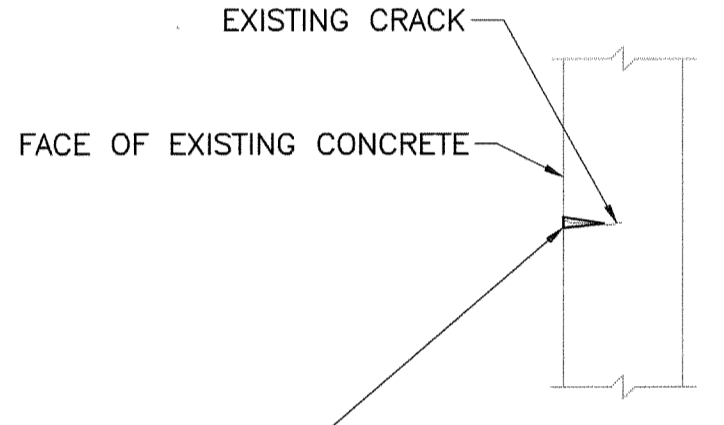
CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"



PARTIAL DEPTH REMOVAL
CONCRETE DECK REPAIR DETAILS
NOT TO SCALE

NOTE:

CRACK REPAIR SHALL BE PERFORMED UPON COMPLETION AND CURING OF ALL OTHER CONCRETE REPAIR WORK.



DRILL HOLE AND INSTALL INJECTION PORTS AT ADHESIVE MANUFACTURER'S RECOMMENDED SPACING (2 PORTS MIN. PER CRACK). SEAL SURFACE OF CRACK WITH MATERIAL RECOMMENDED BY THE ADHESIVE MANUFACTURER. AFTER SEALER HAS CURED, INJECT WITH EPOXY ADHESIVE UNTIL THE EPOXY ADHESIVE FLOWS OUT OF ADJACENT PORT.

SECTION THRU CONCRETE SURFACE

USE FOR SEALING CRACKS > 1/16" WIDTH AT LOCATIONS NOT SPALLED OR DELAMINATED

CRACK REPAIR DETAIL
NOT TO SCALE

REPAIR GENERAL NOTES:

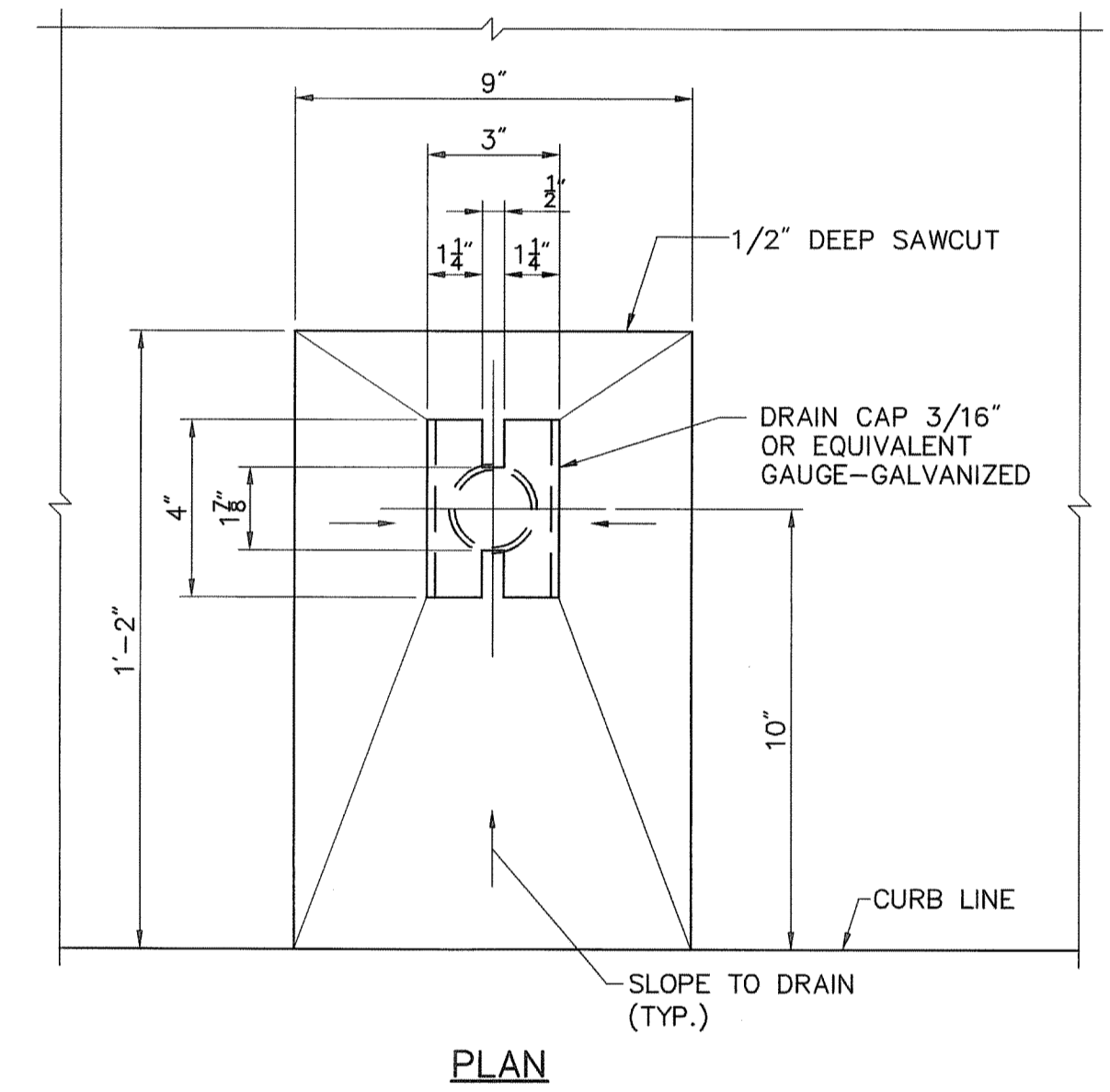
1. THE REPAIR AREA IS FOR THE CONTRACTOR'S GUIDANCE ONLY AND IS NOT INTENDED TO REPRESENT THE ENTIRE SCOPE OF REPAIR WORK TO BE PERFORMED.
2. ALL REPAIR AREAS, IN ADDITION TO THOSE AS SHOWN, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ADDITIONAL REPAIR AREAS WILL BE PAID FOR AT THE UNIT BID PRICE.

ABUTMENT REPAIR NOTES:

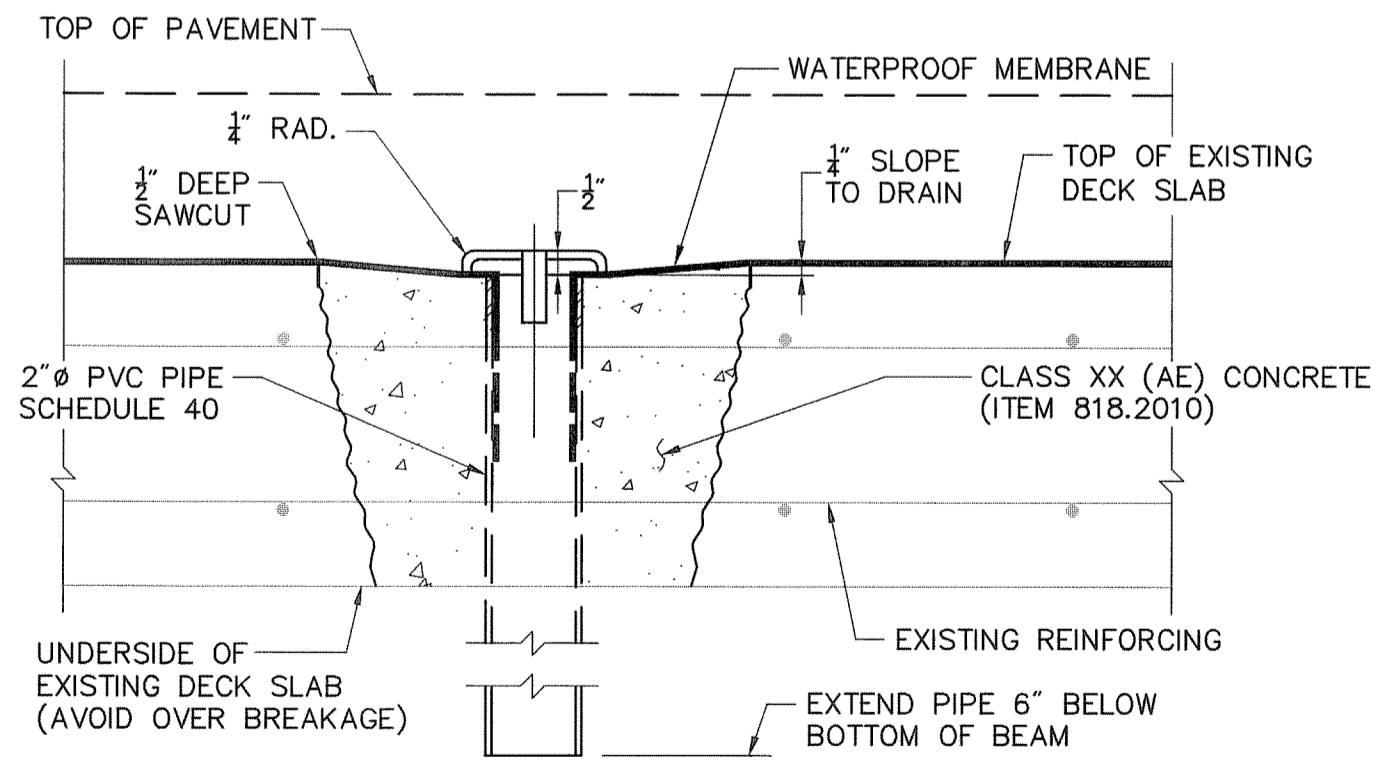
1. ALL AREAS TO BE REPAIRED SHALL BE IDENTIFIED AND MARKED BY THE CONTRACTOR. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER THAT ALL REPAIR AREAS ARE CORRECTLY MARKED PRIOR TO REMOVAL OF ANY CONCRETE.
2. ALL DETERIORATED, SPALLED, LOOSE AND HOLLOW AREAS TO BE REPAIRED ARE TO BE OUTLINED WITH 1/2" (MAX.) DEEP SAW-CUTS ON A RECTANGULAR SHAPE AROUND THE PERIPHERY OF THE DEFECT.
3. UNSOUND CONCRETE SHALL BE REMOVED ONLY TO THE DEPTH NECESSARY TO EXPOSE A BONDING SURFACE OF SOUND CONCRETE MATERIAL, BUT NOT LESS THAN 1" DEEP.
4. WHEN REMOVAL OF UNSOUND CONCRETE EXPOSES THE EXISTING REINFORCING, THE REMOVAL SHALL EXTEND TO 1" BEYOND THE EXPOSED REINFORCING.
5. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS SECTION 817 "PATCHING MORTAR". PAYMENT SHOULD BE MADE UNDER ITEM CODE 817.2110 "REPAIRS TO STRUCTURAL CONCRETE MASONRY (PATCHING MORTAR)."
6. ALL NEW CONCRETE REPAIRS SHALL BE RESTORED TO ORIGINAL CONTOUR.
7. WHERE REPAIR DEPTH EXCEEDS 1/2" WIRE MESH SHALL BE USED.
8. THE CONTRACTOR SHALL LOCATE EXISTING REINFORCING PRIOR TO DEMOLITION OF REPAIR AREA. THE EXISTING REINFORCING SHALL NOT BE DAMAGED.
9. DURING REMOVAL OF DETERIORATED CONCRETE, IF THE CONTRACTOR'S OPERATIONS CAUSE ANY DAMAGE TO THE EXISTING STRUCTURE TO REMAIN, HE SHALL BE REQUIRED TO REPAIR THE AREA TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
10. A BONDING COMPOUND SHALL BE APPLIED TO ALL PREPARED SURFACES.
11. CRACK REPAIRS SHALL BE PERFORMED ON CRACK GREATER THAN OR EQUAL TO 1/8" INCH WIDTH ONLY. I.E. HAIRLINE CRACKS ARE NOT TO BE REPAIRED.
12. THOROUGHLY CLEAN SPALL AREA IN ACCORDANCE WITH SECTION 817 OF THE STANDARD SPECIFICATIONS.

CONCRETE DECK REPAIR NOTES:

1. ALL AREAS TO BE REPAIRED SHALL BE IDENTIFIED AND MARKED BY THE CONTRACTOR. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER THAT ALL REPAIR AREAS ARE CORRECTLY MARKED PRIOR TO REMOVAL OF ANY CONCRETE.
2. UPON REMOVAL OF BITUMINOUS PAVEMENT, THE CONTRACTOR SHALL CHAIN DRAG THE CONCRETE DECK TO LOCATE DECK REPAIR AREAS. THE COST FOR CHAIN DRAGGING THE DECK SHALL BE INCLUDED IN "ITEM 803.9901 "REMOVE AND DISPOSE BRIDGE DECK BITUMINOUS CONCRETE PAVEMENT"
3. ALL DETERIORATED, SPALLED, LOOSE AND HOLLOW AREAS TO BE REPAIRED ARE TO BE OUTLINED WITH 1/2" DEEP SAW-CUTS ON A RECTANGULAR SHAPE AROUND THE PERIPHERY OF THE DEFECT.
4. ALL NEW CONCRETE REPAIRS SHALL BE RESTORED TO ORIGINAL CONTOUR.
5. DECK REPAIR CONCRETE CLASS XX(AE) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 600.



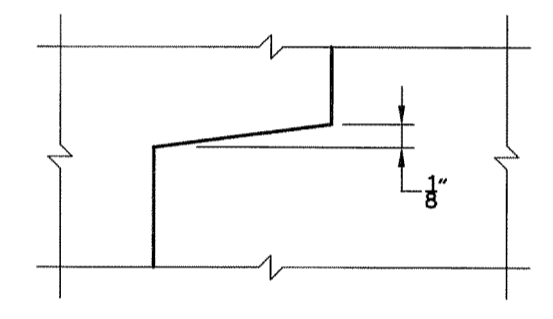
PLAN



SECTION

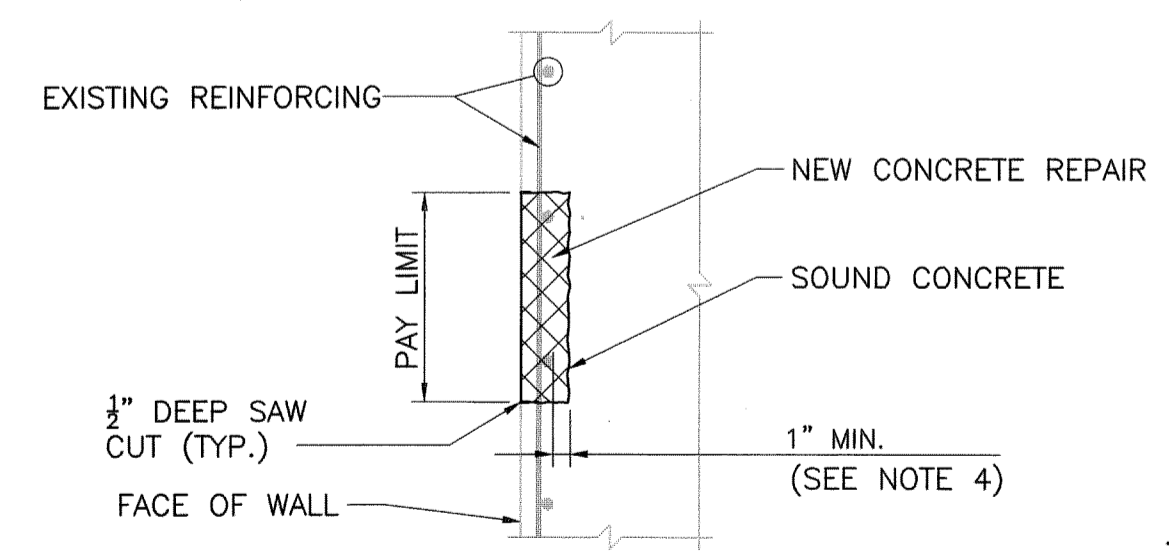
SUBPAVEMENT DRAIN DETAILS
SCALE: 3" = 1'-0"

1. SUBPAVEMENT DRAINS SHALL BE IN CONFORMANCE WITH SECTION 811 OF THE STANDARD SPECIFICATIONS. FOR LOCATIONS OF SUBPAVEMENT DRAINS SEE SHEET 21
2. SUBPAVEMENT DRAINS WILL NOT BE MEASURED SEPARATELY FOR PAVEMENT BUT SHALL BE INCLUDED IN THE COST OF ITEM 818.2010 "PORTLAND CEMENT CONCRETE DECK REPAIRS (FULL DEPTH REMOVAL)"



TYPICAL KEY TAPER

DETAIL
NOT TO SCALE



SECTION

TYPICAL WALL REPAIR
SCALE: 3/4" = 1'-0"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 12 2009 FILE # 06010
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Harber

REVISIONS		
NO.	DATE	BY

**RHODE ISLAND
DEPARTMENT OF TRANSPORTATION**

**BRIDGE REHABILITATION
INDUSTRIAL DRIVE
BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

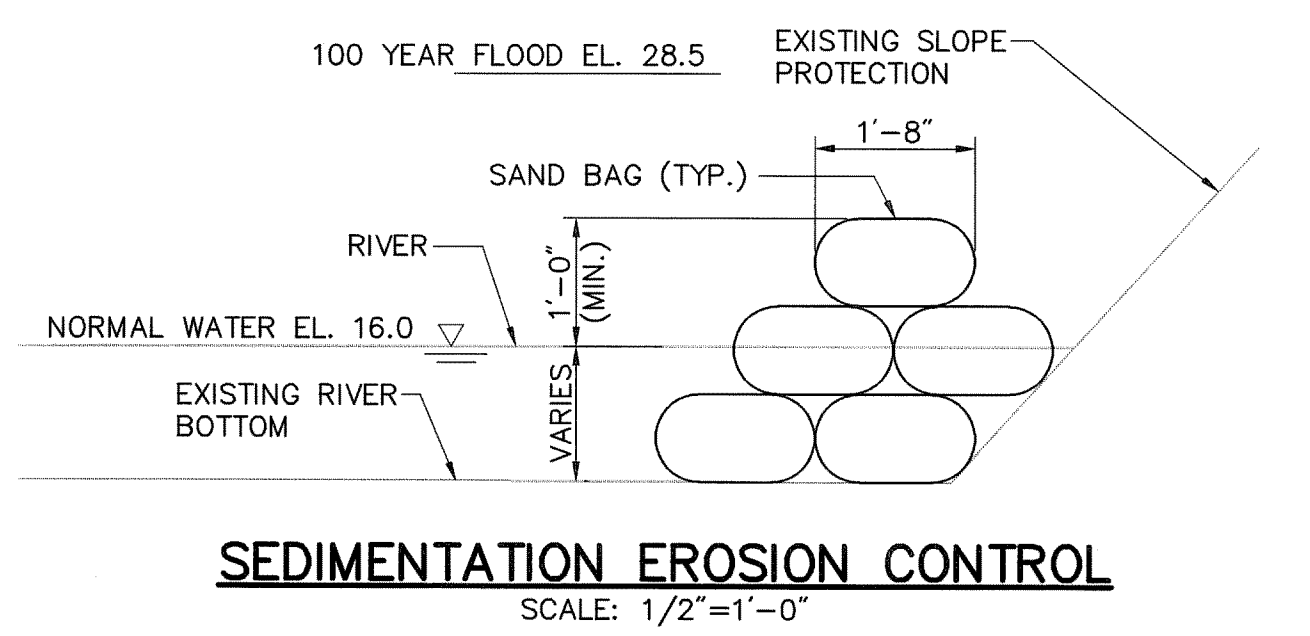
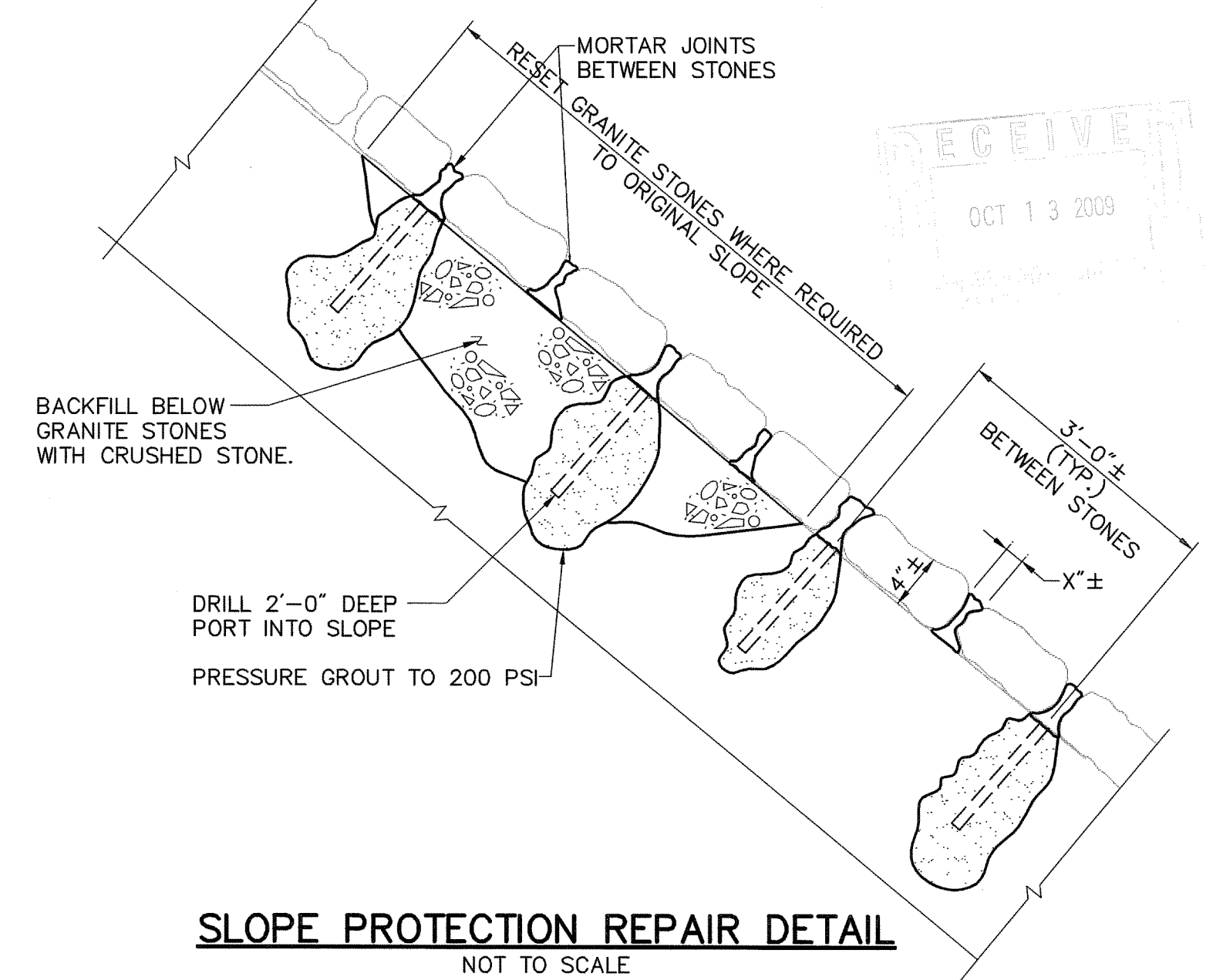
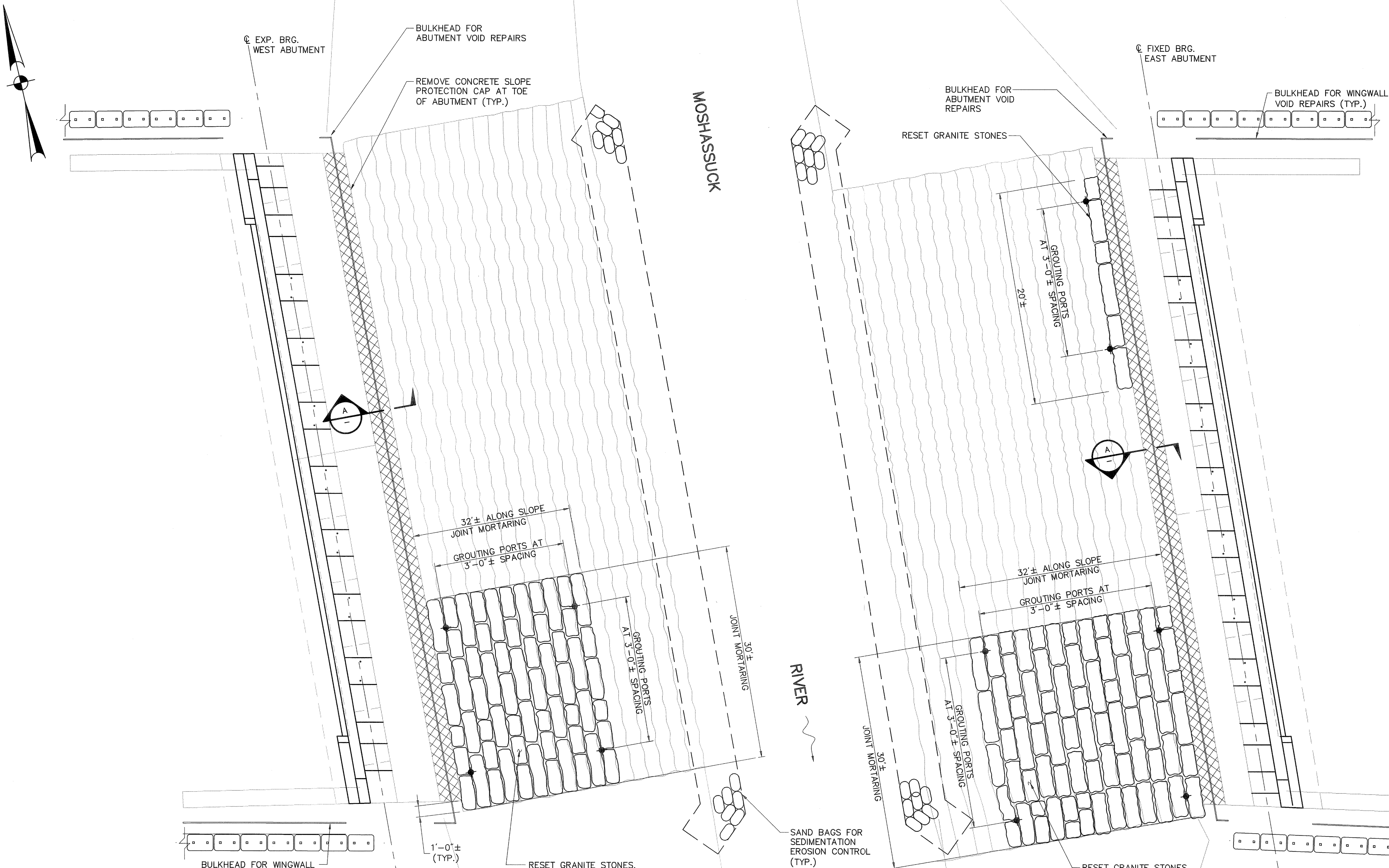
MISCELLANEOUS DETAILS

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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

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FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2009	28	31

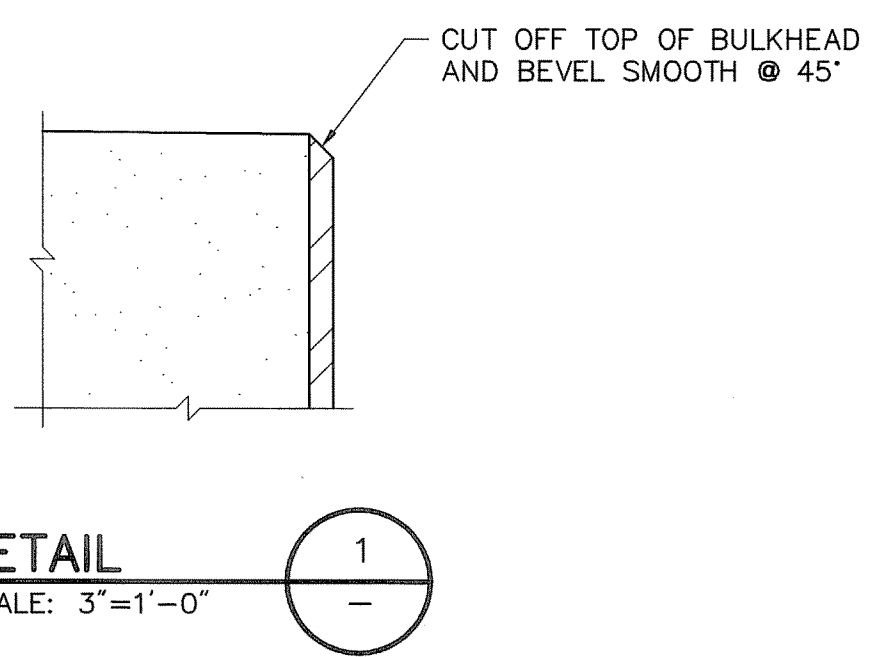
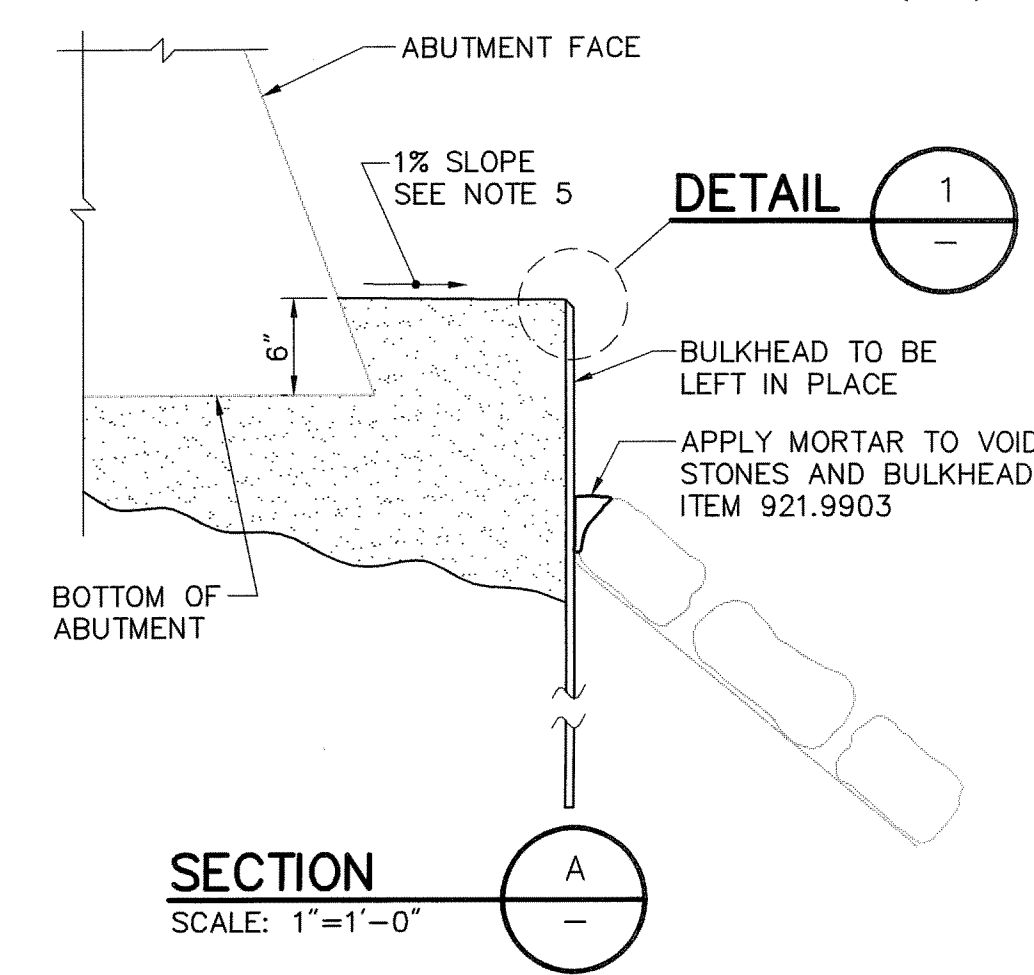


- NOTES:**
1. GROUTING PORTS SHALL BE AT THE JOINTS SPACED ON A 3'-0" ± GRID PATTERN AND SHALL BE LOCATED BETWEEN THE STONES.
 2. SAND BAG AND EROSION CONTROL MUST BE IN PLACE PRIOR TO START OF ANY WORK. SAND BAG & EROSION CONTROL SHALL BE REMOVED UPON SATISFACTORY COMPLETION OF THE WORK. REMOVAL SHALL BE PAID FOR UNDER ITEM CODE 207.0206 "SAND BAG EROSION DIKE STANDARD 9.6.0.
 3. ENTIRE PROJECT IS WITHIN 200' RIVERBANK WETLAND.
 4. NO CHANGES TO EXISTING GRADES ARE PROPOSED.
 5. THE CONTRACTOR SHALL SUBMIT MEANS AND METHODS OF PROVIDING 1% SLOPE AT THE GROUTED SURFACE AT THE TOE OF ABUTMENT.

LEGEND:

- SLOPE GROUTING PORT
- REMOVE AND DISPOSE CONCRETE CAP

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED NOV 12 2009 FILE # 07-0250 STAKED HAYBALES IN ACCORDANCE WITH
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL STD 9.1.0-SEE HIGHWAY GENERAL PLAN
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE



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

REVISIONS

NO.	DATE	BY

RHODE ISLAND
 DEPARTMENT OF TRANSPORTATION

**BRIDGE REHABILITATION
 INDUSTRIAL DRIVE
 BRIDGE NO. 882**

PROVIDENCE RHODE ISLAND

**SOIL EROSION, SEDIMENT CONTROL &
 SLOPE PROTECTION PLAN & DETAILS**

CHECKED BY _____ DATE _____ SCALE AS SHOWN

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GZA GEOTECHNICAL INC.				PROJECT		REPORT OF BORING NO.																						
140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECHNICAL CONSULTANTS GEOTECHNICAL BORING LOG				Industrial Drive Bridge Providence, Rhode Island		S-5 SHEET 3 OF 3 FILE NO. 09-0260 CHKD BY: BJR																						
BORING NO.	GZA Boring Inc.	BORING LOCATION	See Elevation Location Plan	DATE START	1/22/02	DATE END	1/24/02																					
FORNMAN	P. Wood	GROUND SURFACE ELEV.	152.8'	DATUM	NGVD																							
GZA ENG.	B. Norton	SAMPLER - UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 LB. HAMMER FALLING 30 IN. CASING - UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB. HAMMER FALLING 24 IN. CASING SIZE - 3" ID (MIN.) OTHER																										
DATE		TIME		WATER		CASING	STABILIZATION TIME																					
DEPTH (FT)	CASING NO.	NO.	PEN/REC	DEPTH (FT)	BLOWS*	SAMPLE DESCRIPTION	STRATUM DESCRIPTION																					
5	S-1	244	1-3	1-13	7-13	Medium dense, brown, SILT, some fine Sand, trace fine Gravel	11' ASPHALT/CONCRETE																					
10	S-2	247	3-7	6-8	8-12	Medium dense, brown, fine SAND and SILT, trace Gravel, trace SILT	FILL																					
15	S-3	241/1	9-11	26-16	25-26	Dense brown, fine to medium SAND, little fine to coarse Gravel, trace (+) SILT																						
20	S-4	247	14-14	14-14	13-13	Dense brown, fine to medium SAND, little fine to coarse Gravel, trace (+) SILT																						
25	S-5	24/10	19-21	26-18	16-20	Dense, brown, fine to coarse SAND, trace fine Gravel, trace SILT																						
30	S-6	24/13	24-26	10-6	5-8	Medium dense, brown to black, fine to medium SAND and SILT, trace Gravel, trace Clusters, trace Organics																						
35	S-7	247	29-31	7-7	4-7	Medium dense, brown to black, fine to coarse SAND, little Gravel, little SILT, trace Clusters and Ash																						
<table border="1"> <tr> <th>GRANULAR SOILS BLOWSF/DENSITY</th> <th>COHESIVE SOILS BLOWSF/DENSITY</th> <th>REMARKS</th> </tr> <tr> <td>0-4 VERY LOOSE</td> <td><2 VERY SOFT</td> <td></td> </tr> <tr> <td>4-10 LOOSE</td> <td>2-4 SOFT</td> <td></td> </tr> <tr> <td>10-30 MEDIUM DENSE</td> <td>4-8 M. STIFF</td> <td></td> </tr> <tr> <td>30-50 DENSE</td> <td>8-15 STIFF</td> <td></td> </tr> <tr> <td>>50 VERY DENSE</td> <td>15-30 V. STIFF</td> <td></td> </tr> <tr> <td></td> <td>>30 HARD</td> <td></td> </tr> </table>								GRANULAR SOILS BLOWSF/DENSITY	COHESIVE SOILS BLOWSF/DENSITY	REMARKS	0-4 VERY LOOSE	<2 VERY SOFT		4-10 LOOSE	2-4 SOFT		10-30 MEDIUM DENSE	4-8 M. STIFF		30-50 DENSE	8-15 STIFF		>50 VERY DENSE	15-30 V. STIFF			>30 HARD	
GRANULAR SOILS BLOWSF/DENSITY	COHESIVE SOILS BLOWSF/DENSITY	REMARKS																										
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>50 VERY DENSE	15-30 V. STIFF																											
	>30 HARD																											
NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL. 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.																												
GZA BORING NO. S-5																												

GZA GEOTECHNICAL INC.				PROJECT		REPORT OF BORING NO.																						
140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECHNICAL CONSULTANTS GEOTECHNICAL BORING LOG				Industrial Drive Bridge Providence, Rhode Island		S-6 SHEET 3 OF 3 FILE NO. 09-0260 CHKD BY: BJR																						
DEPTH	CASING	NO.	PEN/REC	DEPTH (FT)	BLOWS*	SAMPLE DESCRIPTION	STRATUM DESCRIPTION																					
75	S-16	244	74-76	10-20	23-22	Dense, gray, fine to coarse SAND, some Gravel, little SILT	GLACIAL TILL																					
80	S-17	243	79-81	26-20	13-19	Dense, gray GRAVEL, little fine to coarse Sand, little SILT																						
90	S-18	243	84-86	31-33	30-36	Very dense, gray GRAVEL, little fine to coarse Sand, little SILT																						
90	S-19	30	89-81.3	100.0*		NO RECOVERY																						
END OF BORING AT 88.3'																												
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GZA BORING NO. S-6																												

GZA GEOTECHNICAL INC.				PROJECT		REPORT OF BORING NO.																						
140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECHNICAL CONSULTANTS GEOTECHNICAL BORING LOG				Industrial Drive Bridge Providence, Rhode Island		S-6A SHEET 2 OF 3 FILE NO. 09-0260 CHKD BY: BJR																						
DEPTH	CASING	NO.	PEN/REC	DEPTH (FT)	BLOWS*	SAMPLE DESCRIPTION	STRATUM DESCRIPTION																					
35	S-6	242	34-36	5-2	3-4	Loose brown, fine to coarse SAND, little SILT, trace fine Gravel	FILL																					
40	S-9	240	39-41	12-11	20-20	Top 4" Dense dark brown, fine to medium SAND, trace Organics Bot. 4" (BA): Dense black, organic SILT, trace fine Sand Medium dense, black to dark brown, fine to coarse SAND, trace organic SILT, trace Wood Debris	139.2' 141.1' ORGANIC SILT/WOOD																					
45	S-11	240	45-47	13-20	19-19	NO RECOVERY	SAND																					
50	S-12	244	47-49	17-25	38-29	Very dense, grayish brown, fine to coarse SAND, trace (+) SILT																						
END OF BORING AT 40'																												
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GZA BORING NO. S-6A																												

60	S-13	24/10	69-51	15-15	15-18	Dense, light brown, fine to coarse SAND, trace Gravel, trace SILT																						
65	S-14	247	64-66	6-8	10-13	Medium dense, grayish brown, fine to coarse SAND, trace SILT																						
70	S-15	240	69-71	14-13	17-22	NO RECOVERY																						
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GZA BORING NO. S-5																												

10	S-4	24/10	18-18	19-27	34-38	Very dense, brown, fine to medium SAND, little SILT	FILL																					
20	S-5	24/13	19-21	18-31	27-27	Very dense, brown, fine to medium SAND, little SILT, trace Gravel																						
25	S-6	24/13	24-26	10-10	17-22	Medium dense, brown, fine to medium SAND, little SILT, trace (+) Rock Fragments																						
30	S-7	24/11	29-31	13-13	12-12	Medium dense, brown, fine to medium SAND, trace Gravel, trace SILT, trace (+) Coal Fragments																						
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED NOV 12 2009 FILE # 09-0260
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE
 Charles A. Harker

REVISIONS			RHODE ISLAND DEPARTMENT OF TRANSPORTATION	
NO.	DATE	BY		
			BRIDGE REHABILITATION INDUSTRIAL DRIVE BRIDGE NO. 882	
			PROVIDENCE	RHODE ISLAND
			BORING LOG 3	
			CHECKED BY _____	DATE _____
			SCALE AS SHOWN	

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