

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



RECONSTRUCTION OF I-95 OVER WEST RIVER  
IN THE TOWNS OF  
NEW HAVEN AND WEST HAVEN  
STATE PROJECT NUMBER 092-522

VOLUME 3 : SUBSET 3

BRIDGE 00164



\* THIS SIGNATURE BLOCK IS DEDICATED TO THE PRIME DISCIPLINE PRINCIPAL ENGINEER/ARCHITECT THAT IS RESPONSIBLE FOR CERTIFYING PLANS

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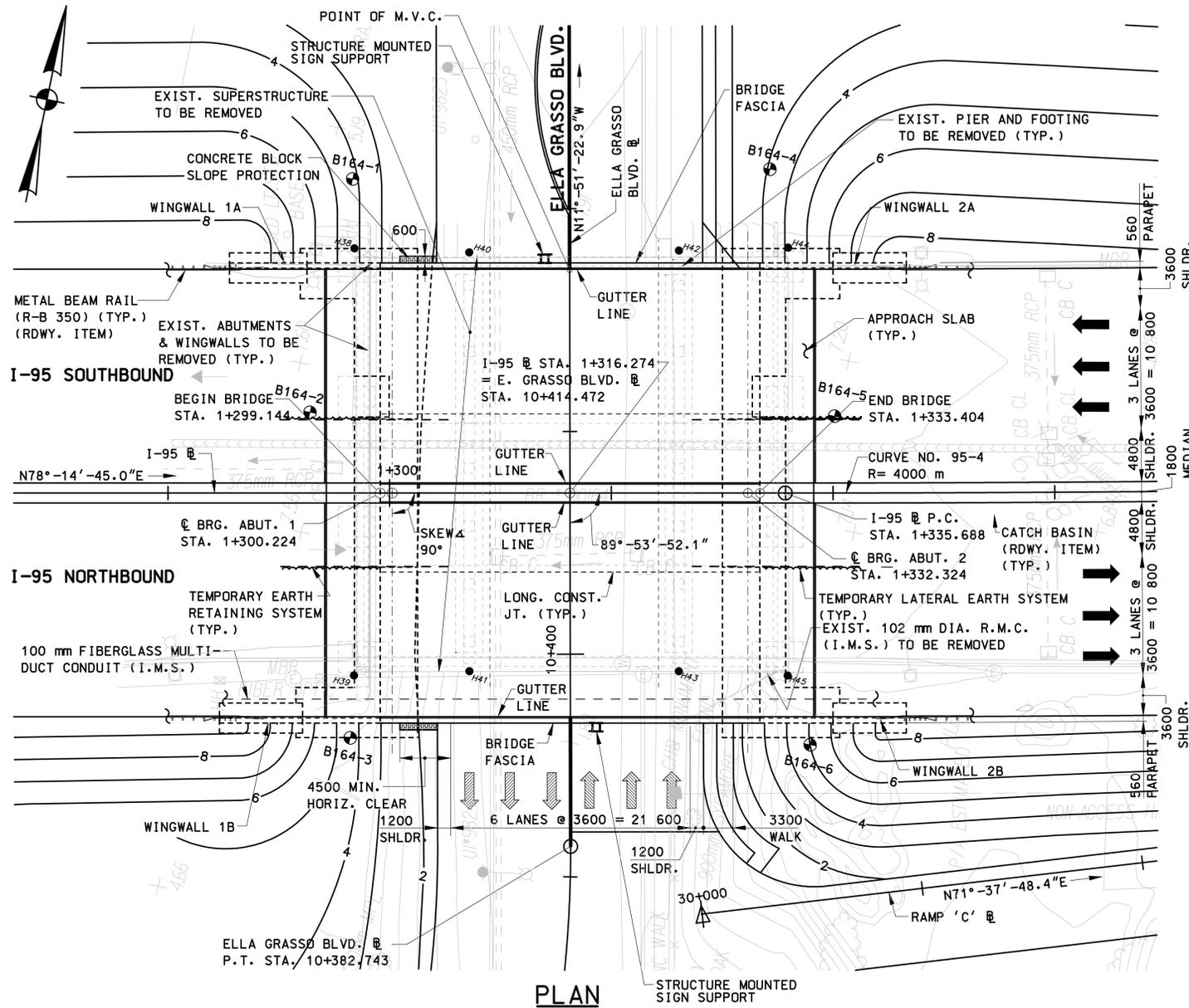
DESIGNER: R. P. TALBOT		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT TITLE:	TOWN:	PROJECT NO.:
DRAFTER: M.C. DEEGAN			RECONSTRUCTION OF I-95 OVER WEST RIVER	NEW HAVEN / WEST HAVEN	92-522
CHECKED BY:		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE:	SUBSET COVER BRIDGE 00164	DRAWING NO.:
DATE CHECKED:		APPROVED BY:			SSC-03.03
REV.	DATE	DESCRIPTION	CADD ssc-03-092522.dgn	PLOTTED 11/13/2012	SHEET NO.:
		REVISIONS			

### LIST OF STRUCTURE DRAWINGS

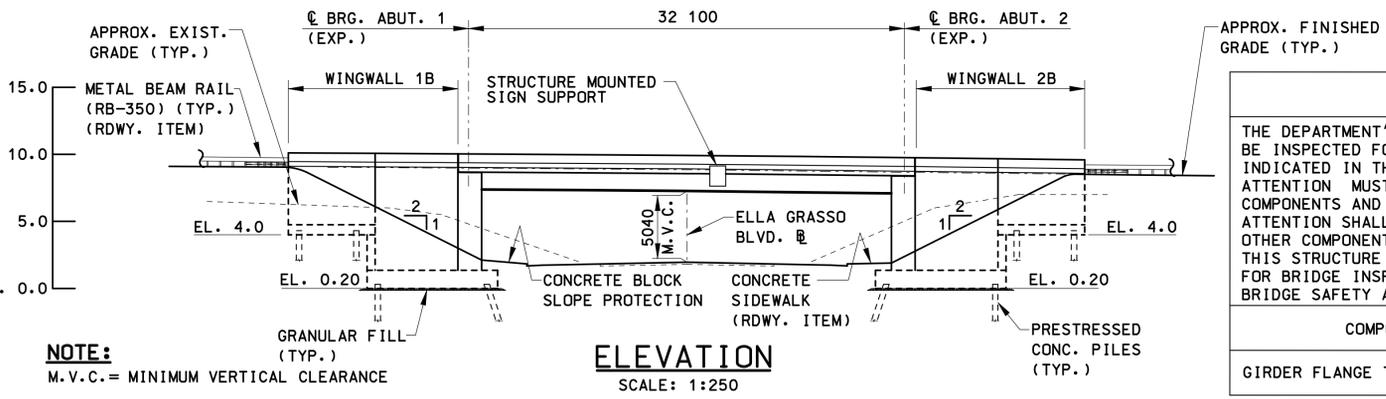
DWG. NO.	DRAWING TITLE	DWG. NO.	DRAWING TITLE
STR-01	LIST OF DRAWINGS	STR-22	ABUTMENT 1
STR-02	GENERAL PLAN	STR-23	ABUTMENT 2
STR-03	TYPICAL BRIDGE CROSS SECTIONS AND QUANTITIES	STR-24	WINGWALLS
STR-04	PROFILES	STR-25	TYPICAL SECTIONS
STR-05	LAYOUT PLAN	STR-26	ABUTMENT DETAILS
STR-06	EXISTING BORINGS	STR-27	SUBSTRUCTURE DETAILS - SHEET 1 OF 3
STR-07	BORINGS - B164-1	STR-28	SUBSTRUCTURE DETAILS - SHEET 2 OF 3
STR-08	BORINGS - B164-2	STR-29	SUBSTRUCTURE DETAILS - SHEET 3 OF 3
STR-09	BORINGS - B164-3	STR-30	FRAMING PLAN
STR-10	BORINGS - B164-4	STR-31	STRUCTURAL STEEL DETAILS
STR-11	BORINGS - B164-5	STR-32	I.M.S. CONDUIT SUPPORT DETAILS
STR-12	BORINGS - B164-6	STR-33	BEARING
STR-13	TYPICAL STAGING SECTIONS - SHEET 1 OF 2	STR-34	SLAB PLAN
STR-14	TYPICAL STAGING SECTIONS - SHEET 2 OF 2	STR-35	SLAB SECTIONS AND DETAILS
STR-15	STAGE CONSTRUCTION DETAILS	STR-36	SLAB DETAILS - SHEET 1 OF 2
STR-16	TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)	STR-37	SLAB DETAILS - SHEET 2 OF 2
STR-17	ABUTMENT DEMOLITION PLAN	STR-38	EXPANSION JOINT DETAILS
STR-18	PIER DEMOLITION PLAN	STR-39	PARAPET ELECTRICAL DETAILS
STR-19	PILE PLAN - ABUTMENT 1	STR-40	MEDIAN ELECTRICAL DETAILS
STR-20	PILE PLAN - ABUTMENT 2	STR-41	EXPANSION FITTINGS
STR-21	PILE DETAILS		

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		SCALE AS NOTED	DESIGNER: DRAFTER: CHECKED BY: DATE CHECKED:	 <p style="margin: 0;"><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	ENGINEER: PB AMERICAS, INC. APPROVED BY:	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
						DRAWING TITLE: LIST OF DRAWINGS		DRAWING NO.: STR-01
REV.	DATE	DESCRIPTION REVISIONS	SHEET NO.					



**PLAN**  
SCALE: 1:250



**ELEVATION**  
SCALE: 1:250

**NOTE:**  
M.V.C. = MINIMUM VERTICAL CLEARANCE

**CURVE DATA**

I-95 @ CURVE NO. 95-4	
P.C.	STA. 1+335.688
	N 202465.429
P.T.	STA. 1+435.379
	N 202486.951
Δ	E 289360.746
	E 289458.084
R (m)	4000.000
T (m)	49.848
L (m)	99.691

**BORING LEGEND**

- ⊙ - 2002 BORING
- - EXISTING BORING

**NOTE:** EXISTING BORING INFORMATION IS REFERENCED FROM ORIGINAL CONTRACT PLANS FOR STATE PROJECT NO. 316A-01, DATED 1955.

**CONCRETE DISTRIBUTION**

SUPERSTRUCTURE	600 m <sup>3</sup>
SUBSTRUCTURE	1310 m <sup>3</sup>
FOOTINGS	890 m <sup>3</sup>
<b>TOTAL</b>	<b>2800 m<sup>3</sup></b>

**INSPECTION OF FIELD WELDS**

METHOD	UNITS	QUANTITY
ULTRASONIC	mm	0
MAGNETIC PARTICLE	m	0

**GIRDER SHIPPING DATA (MAXIMUM)**

MEMBER	SHIPPING LENGTH (mm)	SHIPPING HEIGHT (mm)	SHIPPING WIDTH (mm)	SHIPPING MASS (kg)
G-1	32 600	1275	400	11 200

**NOTICE TO BRIDGE INSPECTORS**

THE DEPARTMENT'S BRIDGE SAFETY PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING FOR COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE MANAGER OF BRIDGE SAFETY AND EVALUATION.

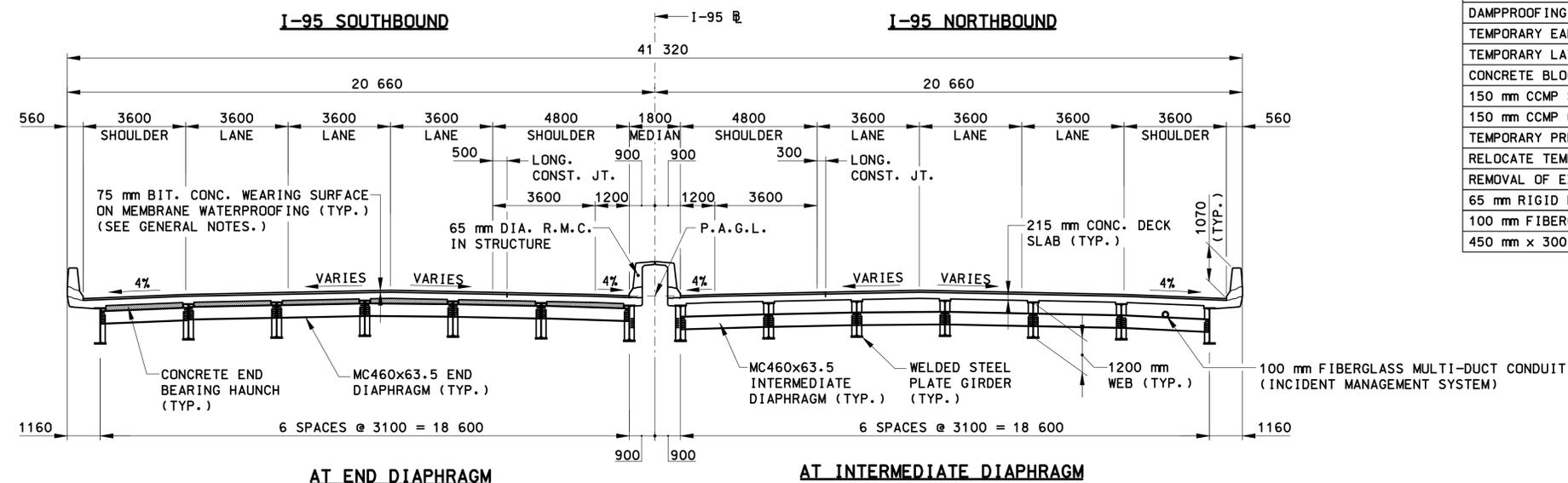
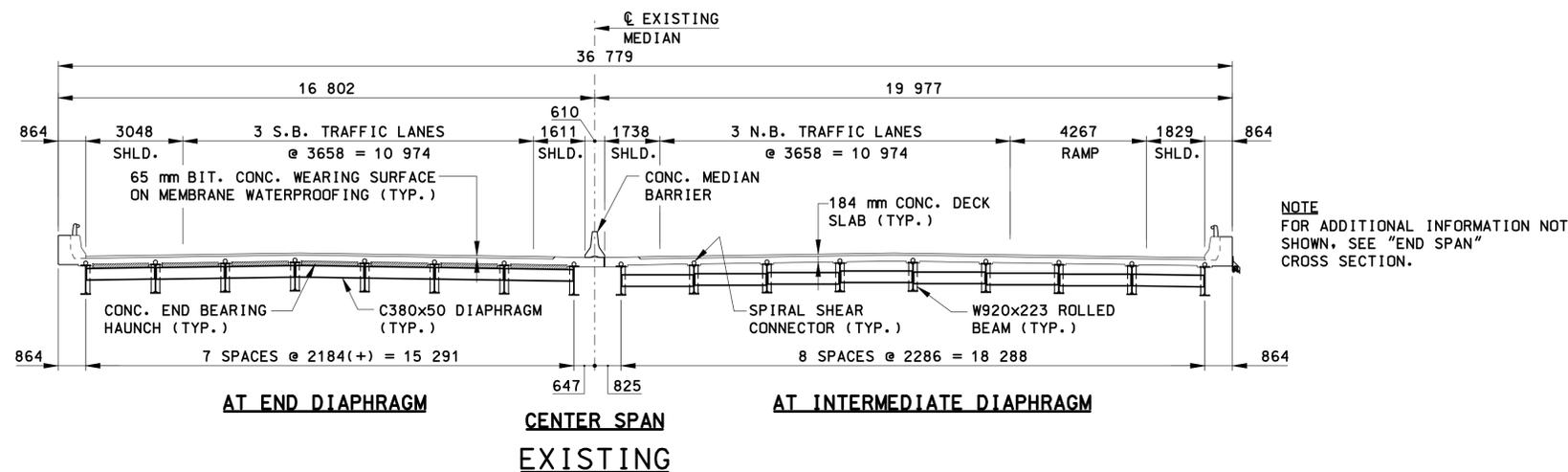
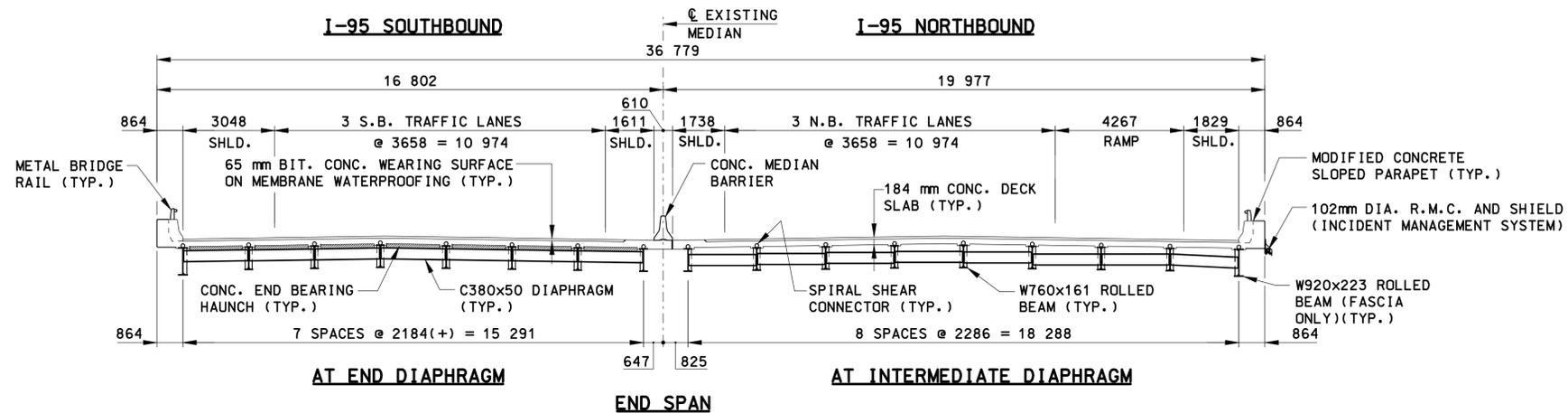
COMPONENT OR DETAIL	STRUCTURE REFERENCE SHEET
GIRDER FLANGE TRANSITION WELDS	

**GENERAL NOTES**

- SPECIFICATIONS:** CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATION DATED JANUARY 2010 AND SPECIAL PROVISIONS.
- DESIGN SPECIFICATIONS:** AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FOURTH EDITION, 2007 WITH INTERIM SPECIFICATIONS UP TO AND INCLUDING 2009 AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003).
- ALLOWABLE DESIGN STRESSES:**  
 CLASS "A" CONCRETE..... BASED ON  $f'c = 21 \text{ MPa}$   
 CLASS "F" CONCRETE..... BASED ON  $f'c = 28 \text{ MPa}$   
 REINFORCEMENT (ASTM A615M GRADE 420).....  $f_y = 414 \text{ MPa}$   
 STRUCTURAL STEEL (AASHTO M270 GRADE 345).....  $F_y = 345 \text{ MPa}$
- LIVE LOAD:** HL-93
- FUTURE PAVING ALLOWANCE:** NONE
- STRUCTURAL STEEL:** SEE STRUCTURE SHEET NOTES FOR DESIGNATIONS AND REQUIREMENTS.
- PAINT:** PAINT SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIAL PROVISION, "STRUCTURAL STEEL (SITE NO. 2)." THE COLOR OF THE TOPCOAT MATERIAL ON THE STRUCTURAL STEEL SHALL CONFORM TO THE FEDERAL STANDARD COLOR NO. 24172 (GREEN).
- BITUMINOUS CONCRETE OVERLAY:** THIS SHALL CONSIST OF TWO LIFTS. THE FIRST SHALL BE 25 mm HMA SO.25 AND THE SECOND SHALL BE 50 mm HMA SO.5.
- FOUNDATION PRESSURES AND PILE LOADS:** THE VARIOUS GROUP LOADINGS NOTED ON THE SUBSTRUCTURE PLAN SHEETS REFER TO THE GROUP LOADS AS GIVEN IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- DIMENSIONS:** ALL DIMENSIONS SHOWN ON THE PLANS ARE GIVEN IN MILLIMETERS (mm) EXCEPT IF NOTED OTHERWISE. ALL ELEVATIONS ARE GIVEN IN METERS. WHEN ELEVATIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZERO.
- STATIONING:** STATIONS ARE GIVEN IN METERS (m).
- EXISTING DIMENSIONS AND ELEVATIONS:** DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND LIMITED FIELD SURVEY AND ARE NOT GUARANTEED. THE EXISTING DIMENSIONS AND ELEVATIONS HAVE BEEN CONVERTED FROM ENGLISH UNITS TO ITS METRIC EQUIVALENT AND ROUNDED TO THE NEAREST MILLIMETER. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.
- EXISTING PLAN NOTE:** BRIDGE NO. 00164 WAS ORIGINALLY CONSTRUCTED UNDER CONTRACT NO. 316A-01 DATED 1955. SUBSEQUENT REPAIRS AND MODIFICATIONS TO THE EXISTING BRIDGE HAVE BEEN PERFORMED UNDER SEPARATE CONTRACTS. PLANS FOR THESE PROJECTS ARE AVAILABLE TO THE CONTRACTOR AT THE CONNECTICUT DEPARTMENT OF TRANSPORTATION MAP ROOM, 160 PASCOENE PLACE, NEWINGTON, CONNECTICUT, 06111.
- REMAIN-IN-PLACE FORMS:** THE USE OF REMAIN-IN-PLACE FORMS ON THIS STRUCTURE SHALL BE ALLOWED FOR BRIDGE DECK CONSTRUCTION IN ALL BUT THE FOLLOWING LOCATIONS:  
 - UNDER CANTILEVER SLABS AT DECK OVERHANGS  
 - UNDER LONGITUDINAL DECK JOINTS FOR STAGE CONSTRUCTION.
- THE GIRDERS HAVE BEEN DESIGNED FOR THE ADDITIONAL WEIGHT OF 70 kg/m<sup>2</sup> FOR THE REMAIN-IN-PLACE FORMS.
- COMPOSITE CONSTRUCTION:** NO TEMPORARY INTERMEDIATE SUPPORTS SHALL BE USED DURING THE PLACING AND SETTING OF THE CONCRETE DECK SLAB. TEMPORARY SUPPORTS MAY BE USED FOR STRUCTURAL STEEL ERECTION ONLY. CONSTRUCTION LOADS AND DEAD LOADS WILL BE PERMITTED WHEN DIRECTED BY THE ENGINEER BUT ONLY WHEN THE CONCRETE HAS REACHED A STRENGTH OF  $f'c = 24 \text{ MPa}$ . LIVE LOADS (TRAFFIC) WILL BE PERMITTED ON THE STRUCTURE AFTER THE CONCRETE HAS REACHED A STRENGTH OF  $f'c = 28 \text{ MPa}$ .
- CLASS "A" CONCRETE:** CLASS "A" CONCRETE SHALL BE USED FOR THE ENTIRE SUBSTRUCTURE AND THE PARAPETS OF U-TYPE WINGS WITH THE EXCEPTION OF THE CLASS "F" CONCRETE USED FOR THE BEARING PADS AND KEEPER BLOCKS.
- CLASS "F" CONCRETE:** CLASS "F" CONCRETE SHALL BE USED FOR BRIDGE DECKS INCLUDING PARAPETS AND APPROACH SLABS.
- JOINT SEAL:** SEE SPECIAL PROVISIONS.
- PARAFFIN:** THE COST OF FURNISHING AND APPLYING PARAFFIN IS INCLUDED IN THE ITEM CLASS 'F' CONCRETE.
- EXPOSED EDGES:** EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 25 mm X 25 mm UNLESS DIMENSIONED OTHERWISE.
- CONCRETE COVER:** ALL REINFORCEMENT SHALL HAVE 50 mm COVER UNLESS DIMENSIONED OTHERWISE.
- REINFORCEMENT:** ALL REINFORCEMENT SHALL BE ASTM A615M GRADE 420.
- EPOXY COATED REINFORCING BARS:** ALL REINFORCEMENT IN THE SUPERSTRUCTURE INCLUDING THE CONCRETE DECK SLAB AND PARAPETS SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED. THESE BARS SHALL BE INCLUDED IN THE ITEM "DEFORMED STEEL BARS (EPOXY COATED)". ALL REINFORCEMENT IN THE CONCRETE APPROACH SLABS SHALL BE EPOXY COATED. THESE BARS SHALL BE INCLUDED IN THE ITEM "DEFORMED STEEL BARS (EPOXY COATED)".
- FELT:** THE COST OF FURNISHING AND PLACING 7 kg ROOFING FELT IS INCLUDED IN THE ITEM FOR "CLASS 'A' CONCRETE".
- PREFORMED EXPANSION JOINT FILLER:** THE COST OF FURNISHING AND INSTALLING PREFORMED EXPANSION JOINT FILLER SHALL BE INCLUDED IN THE COST OF THE ITEM "CLASS 'A' CONCRETE".
- CLOSED CELL ELASTOMER:** THE COST OF FURNISHING AND INSTALLING CLOSED CELL ELASTOMER SHALL BE INCLUDED IN THE COST OF THE ITEM "CLASS 'A' CONCRETE".
- CONSTRUCTION JOINTS:** CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: D. BAGDASARIAN DRAFTER: G. LEE CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522 DRAWING NO.: STR-02 SHEET NO.:
REV. DATE DESCRIPTION REVISIONS SHEET NO.	APPROVED BY: _____ DATE: _____	ENGINEER: PB AMERICAS, INC.	CADD	PLOTTED 11/13/2012	DRAWING TITLE: GENERAL PLAN



**PROPOSED**  
**TYPICAL BRIDGE CROSS SECTIONS**  
 SCALE: 1:100

P.A.G.L. = POINT OF APPLICATION OF GRADE LINE

TABLE OF QUANTITIES		
ITEM	UNIT	QUANTITY
REMOVAL OF BITUMINOUS WEARING SURFACE	SQ.M	150
STRUCTURE EXCAVATION - EARTH (COMPLETE)	CU.M	4,700
GRANULAR FILL	CU.M	130
PERVIOUS STRUCTURE BACKFILL	CU.M	5,500
HMA SO.25	MET.T	100
HMA SO.5	MET.T	200
REMOVAL OF SUPERSTRUCTURE (SITE NO. 2)	L.S.	L.S.
SHEAR CONNECTORS (SITE NO. 2)	L.S.	L.S.
38 mm POLYVINYL CHLORIDE PLASTIC PIPE	M	20
STEEL-LAMINATED ELASTOMERIC BEARINGS	CU. DM	600
CLASS "A" CONCRETE	CU.M	2,200
CLASS "F" CONCRETE	CU.M	600
ASPHALTIC PLUG EXPANSION JOINT SYSTEM	M	85
SAW CUTTING CONCRETE	M	35
DEFORMED STEEL BARS	kg	100,000
DEFORMED STEEL BARS - EPOXY COATED	kg	103,500
DOWEL BAR SPLICER SYSTEM	EA.	160
DOWEL BAR SPLICER SYSTEM - EPOXY COATED	EA.	480
STRUCTURAL STEEL (SITE NO. 2)	L.S.	L.S.
TEMPORARY SUPPORT SYSTEM (NO. 1)	L.S.	L.S.
TEMPORARY SUPPORT SYSTEM (NO. 2)	L.S.	L.S.
TEMPORARY SUPPORT SYSTEM (NO. 3)	L.S.	L.S.
TEMPORARY SUPPORT SYSTEM (NO. 4)	L.S.	L.S.
DRIVING 406 mm SQUARE PRESTRESSED CONCRETE PILES (PRETENSIONED)	M	7,600
FURNISHING 406 mm SQUARE PRESTRESSED CONCRETE PILES (PRETENSIONED)	M	7,600
TEST PILE (406 mm SQUARE PRESTRESSED CONCRETE PILES (PRETENSIONED) - 24.5	EA.	3
TEST PILE (406 mm SQUARE PRESTRESSED CONCRETE PILES (PRETENSIONED) - 27.5	EA.	3
DYNAMIC PILE DRIVING ANALYSIS (P.D.A.) TEST	EA.	6
PILE LOADING TEST	EA.	2
REMOVAL OF EXISTING STEEL PILES	EA.	127
MEMBRANE WATERPROOFING (WOVEN GLASS FABRIC)	SQ.M	1,800
DAMP PROOFING	SQ.M	900
TEMPORARY EARTH RETAINING SYSTEM	SQ.M	500
TEMPORARY LATERAL EARTH SUPPORT	SQ.M	XXX
CONCRETE BLOCK SLOPE PROTECTION	SQ.M	150
150 mm CCMP STRUCTURE UNDERDRAIN	M	150
150 mm CCMP OUTLET FOR UNDERDRAIN	M	5
TEMPORARY PRECAST CONCRETE BARRIER CURB (STR.)	M	110
RELOCATE TEMPORARY PRECAST CONC. BARRIER CURB (STR.)	M	150
REMOVAL OF EXISTING MASONRY	CU.M	770
65 mm RIGID METAL CONDUIT IN STRUCTURE	M	40
100 mm FIBERGLASS MULTI-DUCT CONDUIT - EXTRA HEAVY WALL	M	35
450 mm x 300 mm x 200 mm CAST IRON JUNCTION BOX	EA.	2

NOTE  
 FOR ADDITIONAL INFORMATION NOT SHOWN, SEE "END SPAN" CROSS SECTION.

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REV.	DATE	DESCRIPTION	SHEET NO.

SCALE AS NOTED

DESIGNER: O. JAMBOTKAR  
 DRAFTER: G. LEE  
 CHECKED BY: T. LALIBERTE  
 DATE CHECKED: 11-12-12

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

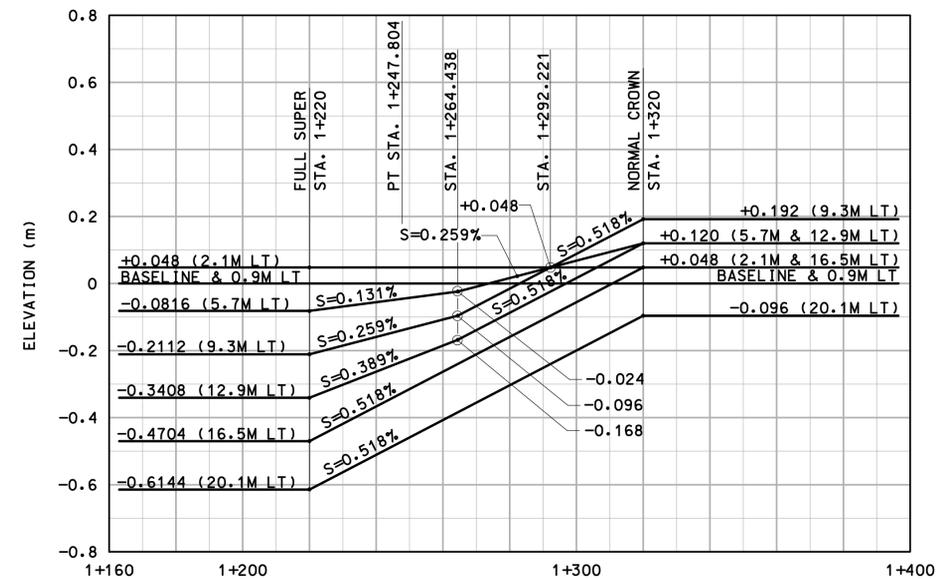
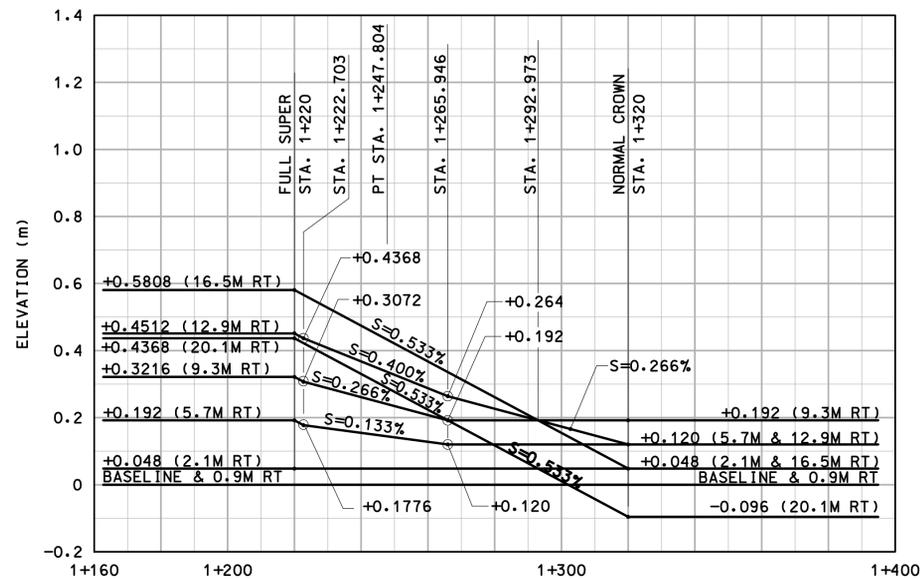
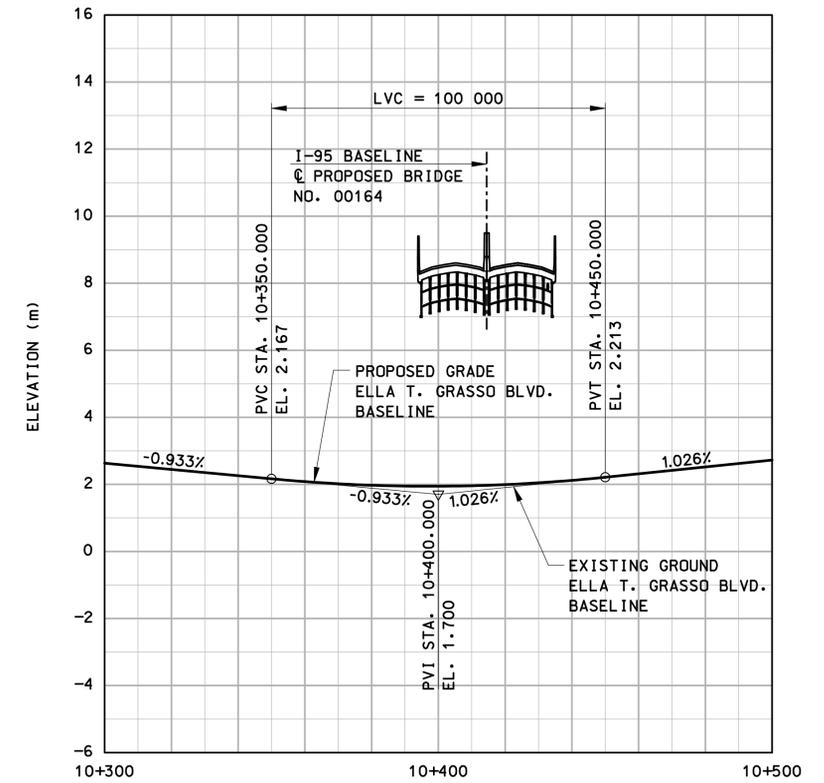
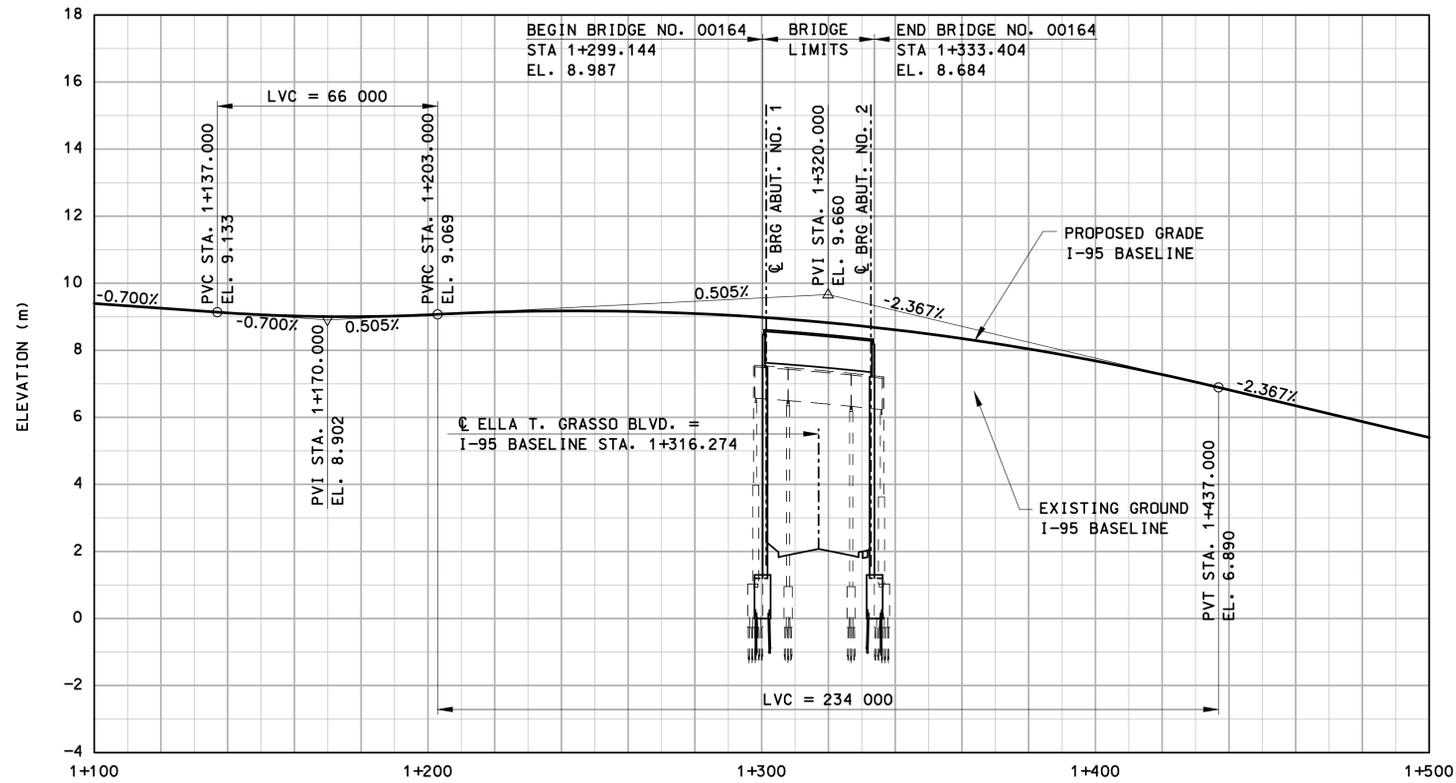
ENGINEER: PB AMERICAS, INC.  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT TITLE:  
 RECONSTRUCTION OF I-95 OVER  
 ELLA T. GRASSO BOULEVARD  
 (BRIDGE NO. 00164)

TOWN:  
 NEW HAVEN / WEST HAVEN

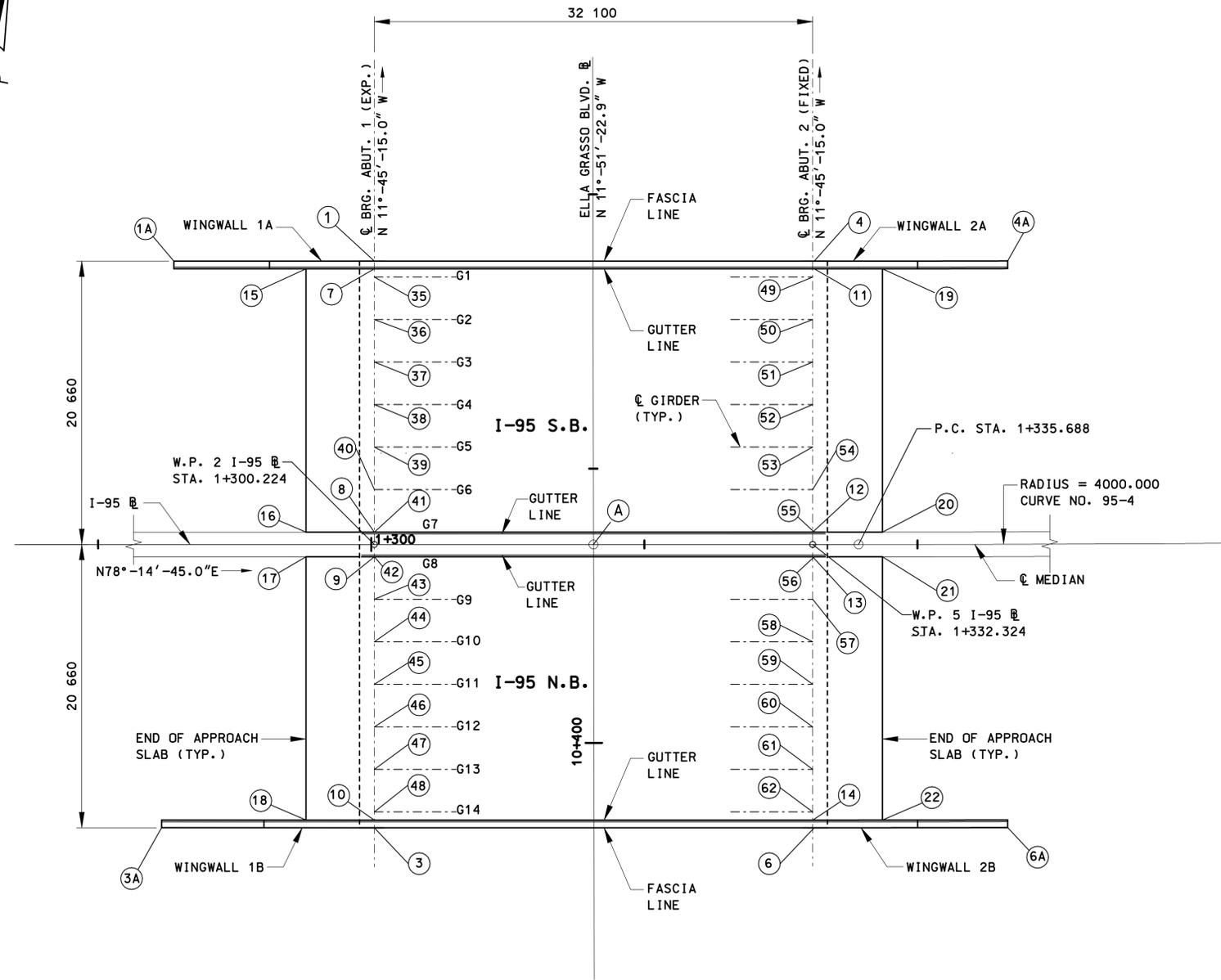
DRAWING TITLE:  
 TYPICAL BRIDGE CROSS SECTIONS  
 AND QUANTITIES

PROJECT NO.: 92-522  
 DRAWING NO.: STR-03  
 SHEET NO.: \_\_\_\_\_



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REVISIONS REV. DATE DESCRIPTION SHEET NO.		SCALE AS NOTED		DESIGNER: T. LALIBERTE DRAFTER: T. LALIBERTE /G. LEE CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION ENGINEER: PB AMERICAS, INC. APPROVED BY:		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)		TOWN: NEW HAVEN / WEST HAVEN		PROJECT NO.: 92-522	
								DRAWING TITLE: PROFILES		DRAWING NO.: STR-04		SHEET NO.:	
								CADD		PLOTTED 11/13/2012			



**PLAN**  
SCALE: 1:200

WORKING POINT COORDINATES		
W.P. NO.	NORTHING	EASTING
1	202478.431	289321.817
1A	202475.440	289307.445
2	202458.204	289326.026
3	202437.977	289330.234
3A	202434.803	289314.981
4	202484.970	289353.244
4A	202487.894	289367.221
5	202464.743	289357.452
6	202444.516	289361.661
6A	202447.440	289375.639

GIRDER COORDINATES							
ABUTMENT 1				ABUTMENT 2			
GIRDER	NO.	NORTH	EAST	GIRDER	NO.	NORTH	EAST
G1	35	202477.295	289322.053	G1	49	202483.834	289353.480
G2	36	202474.260	289322.685	G2	50	202480.799	289354.116
G3	37	202471.225	289323.316	G3	51	202477.764	289354.743
G4	38	202468.190	289323.948	G4	52	202474.729	289355.375
G5	39	202465.155	289324.579	G5	53	202471.694	289356.006
G6	40	202462.120	289325.211	G6	54	202468.659	289356.638
G7	41	202459.085	289325.842	G7	55	202465.624	289357.269
G8	42	202457.323	289326.209	G8	56	202463.862	289357.636
G9	43	202454.288	289326.840	G9	57	202460.827	289358.267
G10	44	202451.253	289327.472	G10	58	202457.792	289358.899
G11	45	202448.218	289328.103	G11	59	202454.757	289359.530
G12	46	202445.183	289328.735	G12	60	202451.722	289360.162
G13	47	202442.148	289329.366	G13	61	202448.687	289360.793
G14	48	202439.113	289329.998	G14	62	202445.652	289361.425

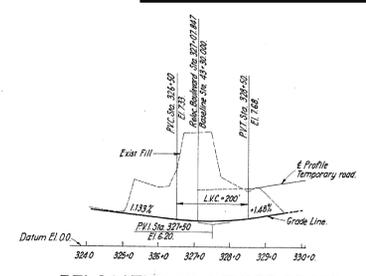
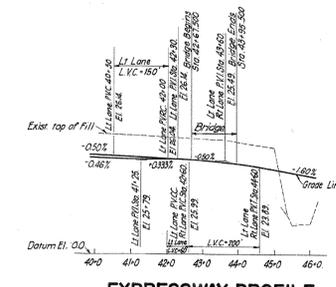
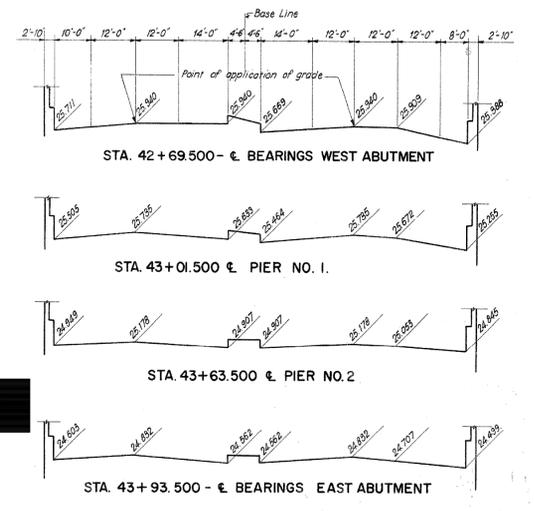
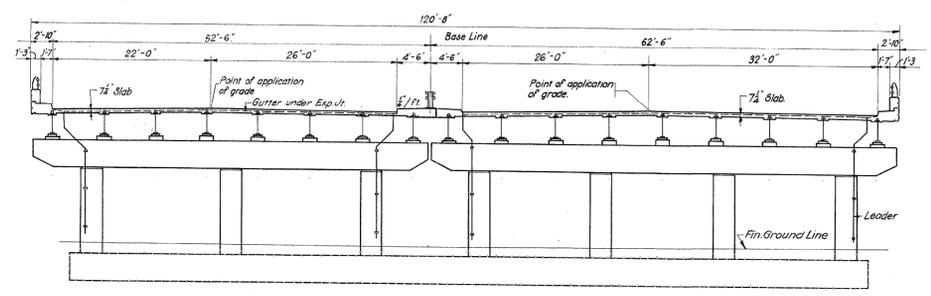
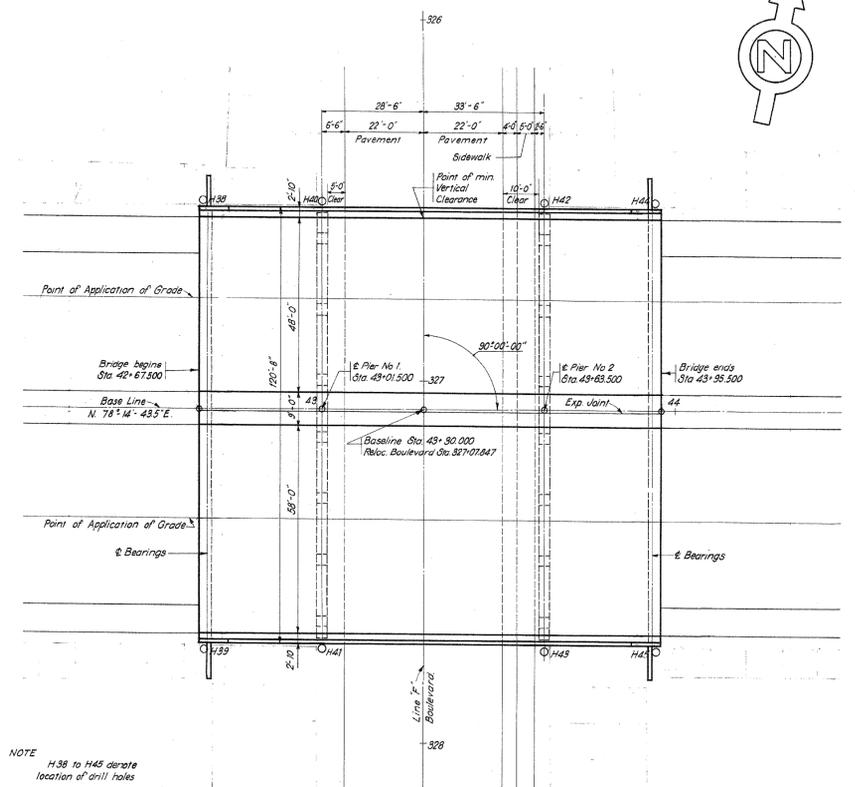
GUTTER LINE COORDINATES			
LOCATION	NO.	NORTH	EAST
I-95 S.B. NORTH @ C.BRG. ABUT. 1	7	202477.887	289321.931
I-95 S.B. SOUTH @ C.BRG. ABUT. 1	8	202459.085	289325.842
I-95 N.B. NORTH @ C.BRG. ABUT. 1	9	202457.323	289326.210
I-95 N.B. SOUTH @ C.BRG. ABUT. 1	10	202438.526	289330.120
I-95 S.B. NORTH @ C.BRG. ABUT. 2	11	202484.422	289353.358
I-95 S.B. SOUTH @ C.BRG. ABUT. 2	12	202465.624	289357.269
I-95 N.B. NORTH @ C.BRG. ABUT. 2	13	202463.862	289357.636
I-95 N.B. SOUTH @ C.BRG. ABUT. 2	14	202445.065	289361.547

END OF APPROACH SLAB COORDINATES			
LOCATION	NO.	NORTH	EAST
I-95 S.B. NORTH G.L. @ ABUT. 1	15	202476.675	289316.125
I-95 S.B. SOUTH G.L. @ ABUT. 1	16	202457.877	289320.037
I-95 N.B. NORTH G.L. @ ABUT. 1	17	202456.115	289320.403
I-95 N.B. SOUTH G.L. @ ABUT. 1	18	202437.318	289324.315
I-95 S.B. NORTH G.L. @ ABUT. 2	19	202485.631	289359.163
I-95 S.B. SOUTH G.L. @ ABUT. 2	20	202466.833	289363.075
I-95 N.B. NORTH G.L. @ ABUT. 2	21	202465.071	289363.441
I-95 N.B. SOUTH G.L. @ ABUT. 2	22	202446.274	289367.353

BASELINE INTERSECTION POINTS			
POINT	DESCRIPTION	NORTH	EAST
A	I-95 @ ELLA GRASSO BLVD. @ STA. EQUATION: I-95 @ STA. 1+316.274 = ELLA GRASSO BLVD. @ STA. 10+414.472	202461.474	289341.739

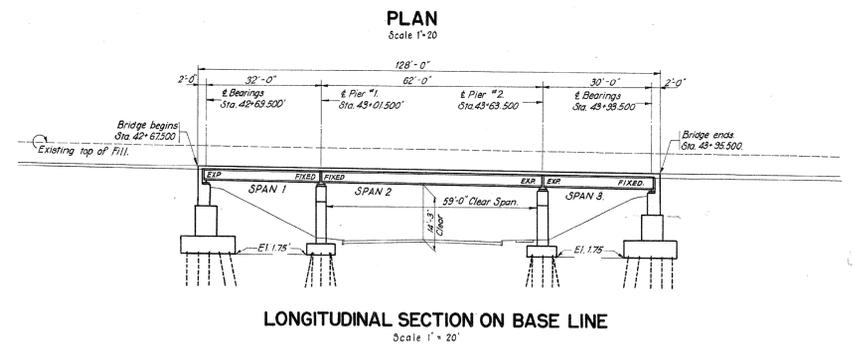
12:52 PM 11/13/2012 T:\82400\Projects\9818735\CD\Structures\Contract\_Sheets\92016A\str-05-09252-0016.dgn

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: B. SULLIVAN	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
	DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: LAYOUT PLAN	DRAWING NO.: STR-05
REV. DATE DESCRIPTION REVISIONS SHEET NO.	CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12	APPROVED BY: DATE:	CADD	PLOTTED 11/13/2012	SHEET NO.:



**GENERAL NOTES (cont'd)**  
 The elevations shown on the plans are to bottom of steel masonry piers. Pile caps should be finished sufficiently lower to accommodate 3 layers of duck swabbed with red-lead paint.

**GENERAL NOTES**  
 Specifications: Connecticut State Highway Department Specification Form 808 Design Specifications: A.A.S.H.O. 1953 as modified by Connecticut State Highway Department Specifications.  
 Live Loading: H-20-S16-44.  
 Composite Design: Superstructure designed for composite action for live load and superimposed dead load. For live load  $n=10$  and for superimposed dead load including future wearing surface of 25 p.s.f.  $n=30$ .  
 Construction of deck to be done without the use of temporary supports under the steel stringers.  
 Concrete shall have a minimum compressive strength of 3000 p.s.i. after 28 days and shall be classified as follows:  
 Class A concrete to be used in bearings and substructures.  
 Class B pre-entrained concrete to be used in bridge deck, safety walk and parapet.  
 Class C concrete to be used in cast-in-place concrete piles.  
 Cast of formwork and placing joint seal and 3-ply tarpaper shall be paid for under concrete item.  
 All corners or exposed edges of concrete shall be chamfered 1" unless otherwise dimensioned.  
 Reinforcing bars under bearing surfaces shall be placed to clear anchor bolts. Unless otherwise shown on the plans lengths of splices of reinforcing bars shall be as follows:  
 20 diameters for bars in slabs, longitudinal bars in pier shafts and longitudinal bars in abutments and wingwalls except in heels and under bridge seats where they shall be 35 diameters.  
 35 diameters for all others.  
 Unless otherwise shown on the plans, the minimum cover of reinforcing bars shall be as follows:  
 3" in abutment and wingwall footings and in piers.  
 2" in walls of abutments and wingwalls.  
 1 1/2" in top of slabs.  
 1" in bottom of slabs.  
 Structural Steel: Structural steel for plated rolled beams shall conform to A.S.T.M. - A373. All other structural steel shall conform to A.S.T.M. - A7 unless otherwise noted.  
 Paint: All exposed surfaces of structural steel and metal bridge rail shall be painted with one shop coat and one field coat of red lead and an unseeded oil and two field coats of color as directed by the engineer. Surfaces not in contact but inaccessible after assembly or erection shall be painted with three coats of shop paint.  
 Quantities: Quantities are approximate and shall be checked by the contractor in preparing his bid.  
 Rebar: Rebar are to be placed slightly higher than shown on contract plans and manufactured with pair caps and abutment stems and are to be brought down to proper elevation by bushhammering or grinding.  
 (GENERAL NOTES cont'd above)



Station	H38	H39	H40	H41	H42	H43	H44	H45
22	16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31	32
34	35	36	37	38	39	40	41	42
42	43	44	45	46	47	48	49	50
50	51	52	53	54	55	56	57	58
60	61	62	63	64	65	66	67	68
70	71	72	73	74	75	76	77	78
80	81	82	83	84	85	86	87	88
90	91	92	93	94	95	96	97	98
100	101	102	103	104	105	106	107	108

ITEM	UNIT QUANTITY
Structure Excavation (Complete)	Cy 1407
Structure Excavation Complete for Abutment Columns	Cy 1140
6" Perf. A.C.C.M. Pipe	L.F. 268
Pipe Pile Sleeves 24" Diam.	L.F. 66
12 BP 53 Control Pile (95')	EA 3
Special 12 BP 53 Test Pile (65')	EA 1
Special 12 BP 53 Test Pile (93')	EA 1
Pile Loading Test (110 Ton)	EA 2
Class A Concrete	Cy 1438
1" Premoulded Bituminous Joint Filler for Bridges	S.F. 22
2" Premoulded Bituminous Joint Filler for Bridges	S.F. 162
3" Premoulded Bituminous Joint Filler for Bridges	S.F. 149
4" Premoulded Bituminous Joint Filler for Bridges	S.F. 30
Furnishing Steel Piles	Lbs. 1403546
Deformed Steel Bars	Lbs. 289634
Structural Steel	Lbs. 38830
Spiral Shear Connectors 6 Bars	Lbs. 2328
Copper Gutters and Leaders (20 oz)	Lbs. 210
Dampproofing	Sq. 282
Metal Bridge Rail	L.F. 216
Perforated Structure Backfill	Cy 731
Portland Cement	bbbl 3023
Natural Cement	bbbl 534
Driving Steel Piles	L.F. 26482
Splicing Steel Piles	EA 18
Junction Box (18" x 18" x 10")	EA 8
2" Rigid Steel Conduit	L.F. 20
2 1/2" Rigid Steel Conduit	L.F. 336
6" A.C.C.M. Pipe	L.F. 84

CONCRETE DISTRIBUTION	Quantity
Footings	504 C.Y.
Substructure	495 C.Y.
Superstructure	439 C.Y.
Total	1438 C.Y.

**BORINGS**  
 REDUCED DRAWING NOT TO SCALE

**LEGEND**

NO.	DATE	DESCRIPTION

**CONNECTICUT STATE HIGHWAY DEPARTMENT TOWN OF NEW HAVEN GREENWICH KILLINGLY EXPRESSWAY OVER RELOCATED BOULEVARD**

**GENERAL PLAN AND ELEVATIONS**  
 # 00164  
 DESIGNED BY KING AND GAVARIS  
 SCALES As noted  
 MADE BY R.L.A., L.H. DATE 7-12-55  
 CHECKED BY M.A.S. DATE 8-10-55  
 APPROVED [Signature] DATE 8-26-55

**NOTE:**  
 THE "BORINGS" DRAWING SHOWN ON THIS SHEET HAS BEEN REPRODUCED FROM THE ORIGINAL DESIGN DRAWINGS OF STATE PROJECT NO. 316A-01, DATED 1955. ELEVATIONS ARE BASED ON NGVD 1929 VERTICAL DATUM.

12:29:38 PM 11/13/2002 T:\WB\CADD\Projects\316A\316A-01\Structures\Contract\_Sheets\316A-01\316A-01.dwg

DESIGNER: R. BORJESON		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
DRAFTER: T. LAUBERTE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: EXISTING BORINGS	DRAWING NO.: STR-06
CHECKED BY: T. LAUBERTE	APPROVED BY:	DATE:	CADD	PLOTTED 11/13/2002
DATE CHECKED: 10-11-02				

REV.	DATE	DESCRIPTION	SHEET NO.

**BORING B164-1 (1 OF 3)**

**BORING B164-1 (2 OF 3)**

**BORING B164-1 (3 OF 3)**

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc. SOILS ENGINEER		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										Hole No. B164-1 Line & Station I-95 1+296.7 Offset 28.2 LT N. Coordinate 202485.1 E. Coordinate 289316.8 Parsons Brinckerhoff Quade & Douglas, Inc. PRIME DESIGNER	
Surface Elevation: 5.52		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/23/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/23/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
@ _____ m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
D Casing		SAMPLE		BLOWS		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,	
E per		DEPTH		NO.		PEN.		REC.		CHANGE:		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		Type		DEPTH,		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60		ELEV.			
H													
		0.00 - 0.60		1		0.60		0.15		D		8 8 10 13	
		1.52 - 2.12		2		0.60		0.36		D		19 17 17 15	
		3.05 - 3.65		3		0.60		0.38		D		9 6 6 18	
5		4.57 - 5.17		4		0.60		0.20		D		11 20 23 22	
		6.10 - 6.70		5		0.60		0.20		D		7 8 10 14	
		7.62 - 8.22		6		0.60		0.25		D		8 16 11 10	
		9.14 - 9.74		7		0.60		0.15		D		8 8 8 8	
10		10.67 - 11.27		8		0.60		0.46		D		3 2 2 3	
		12.19 - 12.79		9		0.60		0.48		D		2 3 3 2	
		13.72 - 14.32		10		0.60		0.36		D		7 7 6 4	
15													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		Rock							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-1											
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 1 of 3											

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc. SOILS ENGINEER		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										Hole No. B164-1 Line & Station I-95 1+296.7 Offset 28.2 LT N. Coordinate 202485.1 E. Coordinate 289316.8 Parsons Brinckerhoff Quade & Douglas, Inc. PRIME DESIGNER	
Surface Elevation: 5.52		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/23/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/23/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
@ _____ m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
D Casing		SAMPLE		BLOWS		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,	
E per		DEPTH		NO.		PEN.		REC.		CHANGE:		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		Type		DEPTH,		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60		ELEV.			
H													
		15-24 - 15.84		11		0.60		0.60		D		4 5 7 7	
		16.76 - 17.36		12		0.60		0.60		D		7 9 14 17	
		18.29 - 18.89		13		0.60		0.03		D		WOR WOR WOR 6	
20		19.81 - 20.41		14		0.60		0.30		D		13 14 17 19	
		21.34 - 21.94		15		0.60		0.60		D		8 15 19 20	
		22.86 - 23.46		16		0.60		0.03		D		11 17 6 7	
		24.38 - 24.98		17		0.60		0.05		D		3 2 4 2	
25		25.91 - 26.51		18		0.60		0.41		D		18 15 21 21	
		27.43 - 28.03		19		0.60		0.36		D		WOR WOR 10 18	
		28.96 - 29.56		20		0.60		0.36		D		22 28 30 34	
30													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		Rock							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-1											
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 2 of 3											

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc. SOILS ENGINEER		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										Hole No. B164-1 Line & Station I-95 1+296.7 Offset 28.2 LT N. Coordinate 202485.1 E. Coordinate 289316.8 Parsons Brinckerhoff Quade & Douglas, Inc. PRIME DESIGNER	
Surface Elevation: 5.52		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/23/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/23/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
@ _____ m after _____ hours		Fall (m)		0.6		0.6		0.6		0.6		80 mm	
D Casing		SAMPLE		BLOWS		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,	
E per		DEPTH		NO.		PEN.		REC.		CHANGE:		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		Type		DEPTH,		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60		ELEV.			
H													
		30.48 - 31.08		21		0.60		0.15		D		15 16 20 23	
		32.00 - 32.60		22		0.60		0.23		D		4 3 6 5	
		33.53 - 34.13		23		0.60		0.51		D		6 10 16 19	
35		35.05 - 35.65		24		0.60		0.51		D		21 32 37 45	
												35.65	
												-30.13	
												Bottom of Boring 35.65 m.	
40													
45													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		Rock							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-1											
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 3 of 3											

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REV.	DATE	DESCRIPTION	SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: R. BORJESON	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		REVISIONS		DATE CHECKED: 10-11-02	DRAFTER: T. LAIBERTE		DRAWING TITLE: BORINGS - B164-1	DRAWING NO.: STR-07	SHEET NO.: 3 of 3
				ENGINEER: PB AMERICAS, INC.	APPROVED BY:	DATE:	CADD	PLOTTED 11/13/2012	

**BORING B164-2 (1 OF 3)**

**BORING B164-2 (2 OF 3)**

**BORING B164-2 (3 OF 3)**

M. Jennett DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION										Hole No. B164-2 Line & Station I-95 1+292.8 Offset 7.3 LT				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		TOWN: New Haven / West Haven, CT										N. Coordinate 202463.8				
SOILS ENGINEER		PROJECT NAME: Reconstruction I-95 Over West River										E. Coordinate 289317.3				
PROJECT NUMBER: 92-533		BORING CONTRACTOR: General Borings, Inc.										PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.				
Surface Elevation: 7.58		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@	-4.11 m after	hours	Hammer (kg)	136	136	136	136		Bit	63.5		Type		Diamond		
@		m after	hours	Fall (m)	0.6	0.6	0.6		80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE				BLOWS				STRATA		FIELD IDENTIFICATION OF SOIL,				
E	blows	DEPTH				PER 0.15 METERS				CHANGE:		REMARKS (INCL. COLOR, LOSS				
P	per	IN METERS				ON SAMPLER				DEPTH,		OF WASH WATER, ETC.)				
T	half	FROM - TO				0 - 0.15 - 0.30 - 0.45 -				ELEV.						
H	meter					0.15 0.30 0.45 0.60										
		1	0.60	0.36	D	8	16	27	30			Brown f-c SAND, mostly f, little silt, trace f-c gravel.				
		2	0.60	0.20	D	22	34	33	34			Light brown f SAND, trace to little silt, trace f gravel.				
		3	0.60	0.51	D	10	8	9	19			Red brown / brown f SAND, trace to little silt.				
5		4	0.60	0.20	D	4	5	7	37			Top 0.13m: Brown SILT, some f sand, wet. Bottom 0.08m: Red brown / brown f SAND, little silt. (Piece of gravel wedged in tip.)				
		5	0.60	0.25	D	12	20	28	34			Brown f SAND, trace silt, trace c sand, wet.				
		6	0.60	0.20	D	12	14	12	12			Brown gray f SAND, trace silt, trace c sand, wet.				
10		7	0.60	0.36	D	5	10	13	17			Top 0.20m: Gray SILT, some f sand, little clayey silt seams (very thin).				
		8	0.60	0.46	D	9	6	7	6	-2.63		Bottom 0.15m: Red brown f SAND, little silt, wet. Black organic SILT and f SAND, little shells, trace fibers. (Sample soaked in black creosote.)				
		9	0.60	0.46	D	3	4	5	5			Gray organic SILT, little to some clay, trace f sand, trace shells, stiff. pp= 1.25, 1.25, 1.25 tons / ft <sup>2</sup>				
		10	0.38	0.60	D	4	3	3	5			Gray organic SILT, trace to little clay, trace f sand, trace shells. pp= 0.25, 0.25, 0.25 tons / ft <sup>2</sup>				
15		1	0.60	0.00	UP							Piston - no recovery.				
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100 mm	0	15.00	35.66													
No. of Samples																
23D/2UP																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test												Hole No. B164-2				
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%												Sheet 1 of 3				

M. Jennett DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION										Hole No. B164-2 Line & Station I-95 1+292.8 Offset 7.3 LT				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		TOWN: New Haven / West Haven, CT										N. Coordinate 202463.8				
SOILS ENGINEER		PROJECT NAME: Reconstruction I-95 Over West River										E. Coordinate 289317.3				
PROJECT NUMBER: 92-533		BORING CONTRACTOR: General Borings, Inc.										PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.				
Surface Elevation: 7.58		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@	-4.11 m after	hours	Hammer (kg)	136	136	136	136		Bit	63.5		Type	X	Diamond		
@		m after	hours	Fall (m)	0.6	0.6	0.6		80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE				BLOWS				STRATA		FIELD IDENTIFICATION OF SOIL,				
E	blows	DEPTH				PER 0.15 METERS				CHANGE:		REMARKS (INCL. COLOR, LOSS				
P	per	IN METERS				ON SAMPLER				DEPTH,		OF WASH WATER, ETC.)				
T	half	FROM - TO				0 - 0.15 - 0.30 - 0.45 -				ELEV.						
H	meter					0.15 0.30 0.45 0.60										
		11	0.60	0.60	D	4	3	4	7			Gray organic SILT, trace f sand, stiff.				
		2	0.60	0.00	UP							Piston - No recovery.				
		12	0.60	0.60	D	4	5	7	9			Gray organic SILT, little f sand, trace clay, trace shells, stiff. (Driller drilled past 18.28m-18.89m, noted change at 19.20m.)				
20		13	0.60	0.30	D	7	12	13	17	-11.62		Top 0.13m: Red brown f SAND and SILT, saturated. Bottom 0.18m: Red brown f SAND, some silt, saturated, rapid dilatancy.				
		14	0.60	0.51	D	12	20	21	20			Red brown f SAND and SILT, saturated, rapid dilatancy.				
		15	0.60	0.46	D	10	16	19	23			Red brown f SAND, some silt, saturated, rapid dilatancy.				
25		16	0.60	0.30	D	15	24	25	27			Red brown f SAND and SILT.				
		17	0.60	0.51	D	14	20	24	25			Red brown f SAND and SILT, saturated, rapid dilatancy.				
		18	0.60	0.36	D	16	20	23	22			Red brown SILT and f SAND.				
		19	0.60	0.43	D	17	19	20	24			Red brown f SAND and SILT.				
30																
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100 mm	0	15.00	35.66													
No. of Samples																
23D/2UP																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test												Hole No. B164-2				
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%												Sheet 2 of 3				

M. Jennett DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION										Hole No. B164-2 Line & Station I-95 1+292.8 Offset 7.3 LT				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		TOWN: New Haven / West Haven, CT										N. Coordinate 202463.8				
SOILS ENGINEER		PROJECT NAME: Reconstruction I-95 Over West River										E. Coordinate 289317.3				
PROJECT NUMBER: 92-533		BORING CONTRACTOR: General Borings, Inc.										PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.				
Surface Elevation: 7.58		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@	-4.11 m after	hours	Hammer (kg)	136	136	136	136		Bit	63.5		Type		Diamond		
@		m after	hours	Fall (m)	0.6	0.6	0.6		80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE				BLOWS				STRATA		FIELD IDENTIFICATION OF SOIL,				
E	blows	DEPTH				PER 0.15 METERS				CHANGE:		REMARKS (INCL. COLOR, LOSS				
P	per	IN METERS				ON SAMPLER				DEPTH,		OF WASH WATER, ETC.)				
T	half	FROM - TO				0 - 0.15 - 0.30 - 0.45 -				ELEV.						
H	meter					0.15 0.30 0.45 0.60										
		20	0.60	0.41	D	22	28	30	27			Top 0.10m: Red brown f SAND, little to some silt. Bottom 0.30m: Red brown f SAND and SILT, trace clayey silt seams (very thin).				
		21	0.60	0.36	D	8	14	23	21			Red brown SILT, some f sand, saturated, rapid dilatancy.				
		22	0.60	0.46	D	15	22	27	34			Red brown SILT, some f sand, trace clayey silt seams (very thin).				
35		23	0.60	0.51	D	17	23	25	29			Red brown SILT, some f sand, trace clayey silt seams (very thin).				
										35.65						
										-28.07		Bottom of Boring 35.65m.				
40																
45																
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100 mm	0	15.00	35.66													
No. of Samples																
23D/2UP																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test												Hole No. B164-2				
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%												Sheet 3 of 3				

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REV.	DATE	DESCRIPTION	SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: R. BORJESON	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
				DESIGNER: G. LEE	ENGINEER: PB AMERICAS, INC.		DRAWING TITLE: BORINGS - B164-2	DRAWING NO.: STR-08	
				CHECKED BY: D. BAGDASARIAN	APPROVED BY:				SHEET NO.:
				DATE CHECKED: 10-11-02			CADD	PLOTTED 11/13/2012	



**BORING B164-4 (1 OF 3)**

**BORING B164-4 (2 OF 3)**

**BORING B164-4 (3 OF 3)**

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		SM - 001 - M REV. 1/94 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										BORING REPORT Hole No. B164-4 Line & Station I-95 1+334.3 Offset 29.1 LT N. Coordinate 202493.6 E. Coordinate 289353.5 PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.	
Surface Elevation: 5.05		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/25/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/26/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after		hours		0.6		0.6		0.6		0.6		80 mm	
@		m after		0.6		0.6		0.6		0.6		0.76	
D Casing		blows		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,			
E per		DEPTH		NO.		PEN.		REC.		DEPTH,		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		m		ELEV.		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60					
H		meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -					
		0.00 - 0.60		1		0.60		0.25		D		6 7 10 12	
		1.52 - 2.12		2		0.60		0.18		D		7 11 16 19	
		3.05 - 3.65		3		0.60		0.30		D		7 8 9 12	
5		4.57 - 5.17		4		0.60		0.43		D		7 7 7 6	
		6.10 - 6.70		5		0.60		0.56		D		9 11 11 13	
		7.62 - 8.22		6		0.60		0.03		D		2 2 3 5	
		9.14 - 9.74		7		0.60		0.51		D		2 2 3 3	
10		10.67 - 11.27		8		0.60		0.60		D		2 1 2 2	
		12.19 - 12.79		9		0.60		0.60		D		3 2 3 3	
		13.72 - 14.32		10		0.60		0.36		D		10 10 12 14	
15													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		accomplished using a wire winch.							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-4		Sheet 1 of 3									
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%													

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		SM - 001 - M REV. 1/94 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										BORING REPORT Hole No. B164-4 Line & Station I-95 1+334.3 Offset 29.1 LT N. Coordinate 202493.6 E. Coordinate 289353.5 PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.	
Surface Elevation: 5.05		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/25/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/26/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after		hours		0.6		0.6		0.6		0.6		80 mm	
@		m after		0.6		0.6		0.6		0.6		0.76	
D Casing		blows		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,			
E per		DEPTH		NO.		PEN.		REC.		DEPTH,		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		m		ELEV.		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60					
H		meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -					
		15.24 - 15.84		11		0.60		0.46		D		4 7 15 22	
		16.76 - 17.36		12		0.60		0.08		D		5 8 10 10	
		18.29 - 18.89		13		0.60		0.23		D		5 4 5 7	
20		19.81 - 20.41		14		0.60		0.30		D		10 11 14 14	
		21.34 - 21.94		15		0.60		0.41		D		13 15 13 15	
		22.86 - 23.46		16		0.60		0.30		D		5 2 3 10	
		24.38 - 24.98		17		0.60		0.30		D		11 14 7 13	
25		25.91 - 26.51		18		0.60		0.46		D		3 2 4 4	
		27.43 - 28.03		19		0.60		0.15		D		10 21 27 24	
		28.96 - 29.56		20		0.60		0.30		D		7 3 9 16	
30													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		accomplished using a wire winch.							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-4		Sheet 2 of 3									
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%													

M. Jennett DRILLER E. Fulton INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		SM - 001 - M REV. 1/94 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN: New Haven / West Haven, CT PROJECT NAME: Reconstruction I-95 Over West River PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.										BORING REPORT Hole No. B164-4 Line & Station I-95 1+334.3 Offset 29.1 LT N. Coordinate 202493.6 E. Coordinate 289353.5 PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.	
Surface Elevation: 5.05		Utilized		Casing		Auger		Mud		Sampler		Core Barrel	
Date Started: 7/25/2002		Type		BW		NW		HW		Pipe		Solid	
Date Finished: 7/26/2002		Size I.D. (mm)		60		76		100		64		150	
Groundwater Observations		Hammer (kg)		136		136		136		136		Bit	
@ ~5.64 m after		hours		0.6		0.6		0.6		0.6		80 mm	
@		m after		0.6		0.6		0.6		0.6		0.76	
D Casing		blows		PER 0.15 METERS		ON SAMPLER		STRATA		FIELD IDENTIFICATION OF SOIL,			
E per		DEPTH		NO.		PEN.		REC.		DEPTH,		REMARKS (INCL. COLOR, LOSS	
P half		IN METERS		m		m		m		ELEV.		OF WASH WATER, ETC.)	
T meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -		0.15 0.30 0.45 0.60					
H		meter		FROM - TO		Type		0 - 0.15 - 0.30 - 0.45 -					
		30.48 - 31.08		21		0.60		0.51		D		3 13 23 24	
		32.00 - 32.60		22		0.60		0.41		D		5 8 21 24	
		33.53 - 34.13		23		0.60		0.30		D		2 3 8 4	
35		35.05 - 35.65		24		0.60		0.46		D		6 7 22 31	
												35.65	
												-30.60	
												Bottom of Boring 35.65 m.	
40													
45													
Casing		Meters of		NOTES:		Raising and dropping of the 140-lb (63.5kg) safety hammer was							
Size		From To		Earth		accomplished using a wire winch.							
100 mm		0 15.00		35.66									
				No. of Samples									
				24D									
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-4		Sheet 3 of 3									
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%													

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REV.	DATE	DESCRIPTION	SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: R. BORJESON	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		REVISIONS		DATE CHECKED: 10-11-02	DRAFTER: G. LEE		DRAWING TITLE: BORINGS - B164-4	DRAWING NO.: STR-10	SHEET NO.: 3 of 3
				ENGINEER: PB AMERICAS, INC.	APPROVED BY:	DATE:	CADD	PLOTTED 1/13/2012	

**BORING B164-5 (1 OF 3)**

**BORING B164-5 (2 OF 3)**

**BORING B164-5 (3 OF 3)**

W. Conroy DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION New Haven / West Haven, CT										Hole No. B164-5 Line & Station I-95 1+340.2 Offset 6.9 LT N. Coordinate 202473.1 E. Coordinate 289363.7				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		PROJECT NAME: Reconstruction I-95 Over West River										PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.				
SOILS ENGINEER		PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.														
Surface Elevation: 7.18		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@ ~5.64 m after _____ hours		Hammer (kg)	136	136	136	136			Bit	63.5		Type		Diamond		
@ _____ m after _____ hours		Fall (m)	0.6	0.6	0.6	0.6			80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE										BLOWS		FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)		
E	blows	DEPTH		PEN.		REC.		PER 0.15 METERS ON SAMPLER		STRATA CHANGE: DEPTH, ELEV.						
P	per	IN METERS	NO.	m	m	m	m	0 - 0.15	0.15 - 0.30	0.30 - 0.45	0.45 - 0.60					
T	half	FROM - TO														
H	meter															
		0.30 - 0.68	1	0.38	0.23	D	28	36	50/0.08m	0-0.30: Asphalt. Top 0.08m: Dark brown f-c SAND, mostly f, trace f gravel, trace silt. Middle 0.08m: Brown f-c SAND, mostly f, trace f-c gravel, trace silt. Bottom 0.08m: Crushed c gravel. Brown f-c SAND, mostly f, little silt, trace f-c gravel.						
		1.52 - 2.12	2	0.60	0.15	D	28	26	24 24	No Recovery. Brown f SAND, little silt, moist.						
		3.05 - 3.65	3	0.60	0.00	D	15	15	16 17	Top 0.08m: Brown f SAND, trace silt, moist. Bottom 0.23m: Light brown f SAND, moist.						
		3.66 - 4.26	4	0.60	0.03	D	13	17	24 20	Brown gray f SAND, trace c sand, trace silt, wet.						
5		4.57 - 5.17	5	0.60	0.30	D	11	13	5 3	Brown gray f SAND, trace c sand, trace silt, wet. (7.92m: Black cressote came out of hole, while rollerbitting.)						
		6.10 - 6.70	6	0.60	0.20	D	2	6	10 13	Black f SAND, trace c sand, little silt, little shells.						
		7.62 - 8.22	7		0.15	D	11	13	7 7	Gray organic SILT, trace clay, trace f sand, trace shells.						
		9.14 - 9.74	8	0.60	0.20	D	12	10	9 9	Piston. Gray organic SILT, some clay, trace f sand, trace shells. pp = 1.75, 1.5, 1.5 tons / ft <sup>2</sup>						
10		10.67 - 11.27	9	0.60	0.41	D	3	5	5 5	Gray organic SILT, some clay, little f sand, trace shells. pp = 1.0, 1.25, 1.0 tons / ft <sup>2</sup> Piston - No Recovery.						
		11.58 - 12.18	1	0.60	0.60	UP										
		12.19 - 12.79	10	0.60	0.51	D	3	3	5 5							
		13.72 - 14.32	11	0.60	0.60	D			1/0.30m 3 4							
15		14.63 - 15.23	2	0.60	0.00	UP										
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100mm	0	20.00	36.55													
No. of Samples																
25D																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-5														
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 1 of 3														

W. Conroy DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION New Haven / West Haven, CT										Hole No. B164-5 Line & Station I-95 1+340.2 Offset 6.9 LT N. Coordinate 202473.1 E. Coordinate 289363.7				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		PROJECT NAME: Reconstruction I-95 Over West River										PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.				
SOILS ENGINEER		PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.														
Surface Elevation: 7.18		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@ ~5.64 m after _____ hours		Hammer (kg)	136	136	136	136			Bit	63.5		Type	X	Diamond		
@ _____ m after _____ hours		Fall (m)	0.6	0.6	0.6	0.6			80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE										BLOWS		FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)		
E	blows	DEPTH		PEN.		REC.		PER 0.15 METERS ON SAMPLER		STRATA CHANGE: DEPTH, ELEV.						
P	per	IN METERS	NO.	m	m	m	m	0 - 0.15	0.15 - 0.30	0.30 - 0.45	0.45 - 0.60					
T	half	FROM - TO														
H	meter															
		15.24 - 15.84	12	0.60	0.60	D	13	14	15 15	15.39	Top 0.15m: Gray organic SILT, little clay, little f sand, trace shells.					
		16.76 - 17.36	13	0.60	0.25	D	9	12	13 15	-8.21	Middle 0.15m: Gray f SAND and SILT. Bottom 0.30m: Red brown f SAND, little silt. Red brown f SAND, little silt.					
		18.29 - 18.89	14	0.60	0.51	D	10	11	14 16		Red brown f SAND, some silt.					
20		19.81 - 20.41	15	0.60	0.25	D	9	8	10 10		Red brown f SAND, some silt.					
		21.34 - 21.94	16	0.60	0.36	D	14	18	23 26		Red brown f SAND, some silt.					
		22.86 - 23.46	17	0.60	0.30	D	12	15	21 25		Red brown f SAND and SILT.					
		24.38 - 24.98	18	0.60	0.46	D	11	10	13 15		Red brown f SAND and SILT.					
25		25.91 - 26.51	19	0.60	0.36	D	13	15	14 14		Red brown SILT and f SAND, trace clayey silt seams.					
		27.43 - 28.03	20	0.60	0.20	D	15	15	17 19		Red brown SILT and f SAND.					
		28.96 - 29.56	21	0.60	0.30	D	15	14	16 18		Red brown f SAND, some silt.					
30																
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100mm	0	20.00	36.55													
No. of Samples																
25D																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-5														
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 2 of 3														

W. Conroy DRILLER E. Fulton		SM - 001 - M REV. 1/94 BORING REPORT STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION New Haven / West Haven, CT										Hole No. B164-5 Line & Station I-95 1+340.2 Offset 6.9 LT N. Coordinate 202473.1 E. Coordinate 289363.7				
INSPECTOR Parsons Brinckerhoff Quade & Douglas, Inc.		PROJECT NAME: Reconstruction I-95 Over West River										PROJECT NUMBER: 92-533 BORING CONTRACTOR: General Borings, Inc.				
SOILS ENGINEER		PRIME DESIGNER Parsons Brinckerhoff Quade & Douglas, Inc.														
Surface Elevation: 7.18		Casing		Auger		Mud		Sampler		Core Barrel						
Date Started: 8/7/2002		Utilized		X		X		X		X						
Date Finished: 8/8/2002		Type	BW	NW	HW	Pipe	Solid	Hollow	Bentonite	SS	Piston	B (st)	B (dt)	NX (st)	NV II (dt)	
Groundwater Observations		Size I.D. (mm)	60	76	100	64		150	X	36	76	35	35	55	55	
@ ~5.64 m after _____ hours		Hammer (kg)	136	136	136	136			Bit	63.5		Type		Diamond		
@ _____ m after _____ hours		Fall (m)	0.6	0.6	0.6	0.6			80 mm	0.76		of Bit		Carbide		
D	Casing	SAMPLE										BLOWS		FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)		
E	blows	DEPTH		PEN.		REC.		PER 0.15 METERS ON SAMPLER		STRATA CHANGE: DEPTH, ELEV.						
P	per	IN METERS	NO.	m	m	m	m	0 - 0.15	0.15 - 0.30	0.30 - 0.45	0.45 - 0.60					
T	half	FROM - TO														
H	meter															
		30.48 - 31.08	22	0.60	0.25	D	14	16	16 19		Red brown f SAND, some silt.					
		32.00 - 32.60	23	0.60	0.20	D	18	24	24 24		Red brown SILT and f SAND.					
		33.53 - 34.13	24	0.60	0.30	D	22	18	19 22		Red brown SILT and f SAND.					
35		35.05 - 35.65	25	0.60	0.25	D	28	23	24 26	35.65	Red brown SILT and f SAND.					
										-28.47	Bottom of Boring 35.65 m.					
40																
45																
Casing		Meters of		NOTES: Raising and dropping of the 140-lb (63.5kg) safety hammer was accomplished using a wire winch.												
Size	From	To	Earth	Rock												
100mm	0	20.00	36.55													
No. of Samples																
25D																
SAMPLE TYPE CODING: D=Driven C=Core A=Auger UP=Undisturbed Piston V=Vane Test		Hole No. B164-5														
PROPORTIONS USED: Trace = 1 -10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%		Sheet 3 of 3														

13:39 PM 11/13/2012 T:\82400\Projects\92535\Drawings\Structures\Contract\_Sheets\B00016\B164-5-1-02-25D-016.dwg

REV.	DATE	DESCRIPTION	SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: R. BORJESON	DRAFTER: G. LEE	CHECKED BY: D. BAGDASARIAN	DATE CHECKED: 10-11-02	ENGINEER: PB AMERICAS, INC.	APPROVED BY:	DATE:	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
					STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION				PROJECT NO.: 92-522		DRAWING TITLE: BORINGS - B164-5		DRAWING NO.: STR-11	
					CADD		PLOTTED 11/13/2012						SHEET NO.:	

BORING B164-6 (1 OF 3)

BORING B164-6 (2 OF 3)

BORING B164-6 (3 OF 3)

Table for Boring B164-6 (1 of 3) containing project details, logs, and notes.

Table for Boring B164-6 (2 of 3) containing project details, logs, and notes.

Table for Boring B164-6 (3 of 3) containing project details, logs, and notes.

12:40:08 PM 11/13/2002 T:\08\000\Projects\981735\Drawings\Structures\Contract\_Sheets\00016\A-12-092522-0016-A.dwg

Project information block including State of Connecticut logo, project title 'RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD', and drawing title 'BORINGS - B164-6'.

## SUGGESTED SEQUENCE OF CONSTRUCTION

IN ORDER TO PROVIDE FOR TRAFFIC OPERATIONS AS SPECIFIED IN THE SPECIAL PROVISION "MAINTENANCE AND PROTECTION OF TRAFFIC", THE CONTRACTOR SHALL FOLLOW THE SUGGESTED SEQUENCE OF OPERATIONS AS OUTLINED BELOW AND AS FURTHER DETAILED IN THE SPECIAL PROVISION "PROSECUTION AND PROGRESS".

THE CONSTRUCTION OF CRITICAL STRUCTURE ELEMENTS SHALL BE COMPLETED AS DESIGNATED IN THE SEQUENCE OF OPERATIONS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

THE CONTRACTOR MAY INITIATE ANY PORTION OF THE PROPOSED WORK, WITH APPROVAL OF THE ENGINEER, PROVIDED THAT HIS OPERATIONS DO NOT CONFLICT WITH THE INTENDED MAINTENANCE AND PROTECTION OF TRAFFIC OPERATIONS FOR THIS PROJECT OR RELATED ADJACENT PROJECTS.

### STAGE 1A CONSTRUCTION

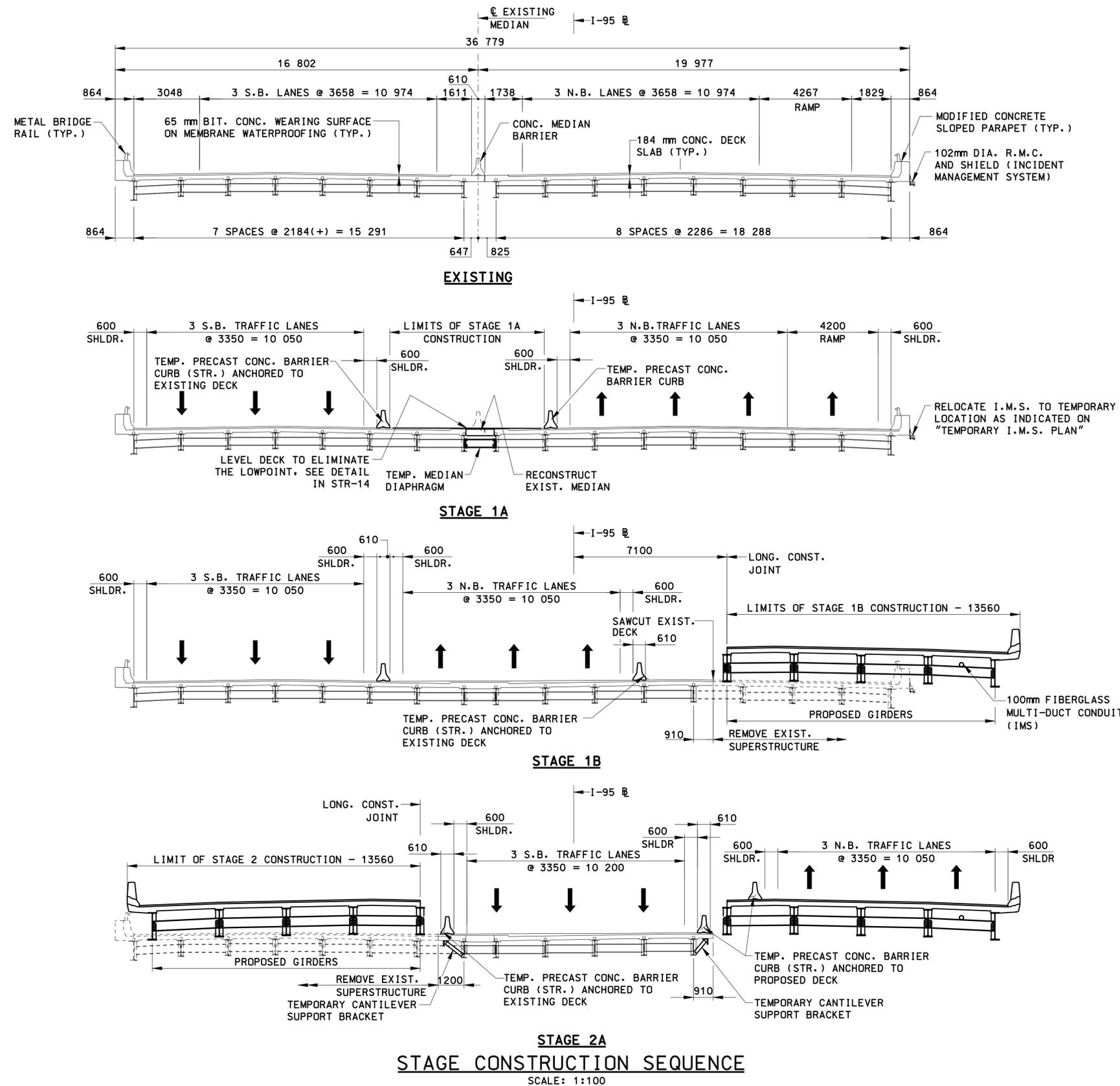
1. PLACE "TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)" AND RELATED TRAFFIC CONTROL DEVICES AS SHOWN ON THE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS. TEMPORARY CONCRETE BARRIERS SHALL BE ANCHORED TO THE EXISTING BRIDGE DECK.
2. TEMPORARILY RELOCATE EXISTING 102mm DIA. R.M.C. (INCIDENT MANAGEMENT SYSTEM) AS SHOWN ON THE I.M.S. PLANS. (SEE HIGHWAY SHEETS)
3. REMOVE EXISTING CONCRETE MEDIAN BARRIER, DECK AND BITUMINOUS OVERLAY WITHIN THE LIMITS SHOWN ON THE PLANS OR AS DIRECTED BY ENGINEER.
4. INSTALL TEMPORARY MEDIAN DIAPHRAGMS AS INDICATED ON THE PLANS. SEE DWG. NO. STR-14 FOR TEMPORARY MEDIAN DIAPHRAGM DETAILS.
5. CONSTRUCT NEW MEDIAN SLAB WITHIN LIMITS SHOWN ON THE PLANS.
6. PLACE BITUMINOUS CONCRETE OVERLAY AS DIRECTED BY THE ENGINEER TO PROVIDE A UNIFORM & LEVEL RIDING SURFACE FOR PROPOSED STAGE 1B NORTHBOUND TRAFFIC.

### STAGE 1B CONSTRUCTION

1. PLACE "TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)" AND RELATED TRAFFIC CONTROL DEVICES AS SHOWN ON THE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS. TEMPORARY CONCRETE BARRIERS SHALL BE ANCHORED TO THE EXISTING BRIDGE DECK.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT ABUTMENTS AS SHOWN ON THE PLANS. INSTALL TEMPORARY SUPPORT SYSTEM (NO. 1) AT PIER 1 & PIER 2 AS SHOWN ON PLANS.
3. SAWCUT AND REMOVE EXISTING BRIDGE DECK AND STRUCTURAL STEEL FRAMING WITHIN THE LIMITS SHOWN ON THE PLANS.
4. REMOVE THE EXISTING ABUTMENTS, WINGWALLS AND PIERS TO THE LIMITS SHOWN ON THE PLANS.
5. CONSTRUCT THE PROPOSED ABUTMENTS AND WINGWALLS WITHIN THE LIMITS SHOWN ON THE PLANS.
6. CONSTRUCT THE PROPOSED SUPERSTRUCTURE WITHIN THE LIMITS SHOWN ON THE PLANS.

### STAGE 2 CONSTRUCTION

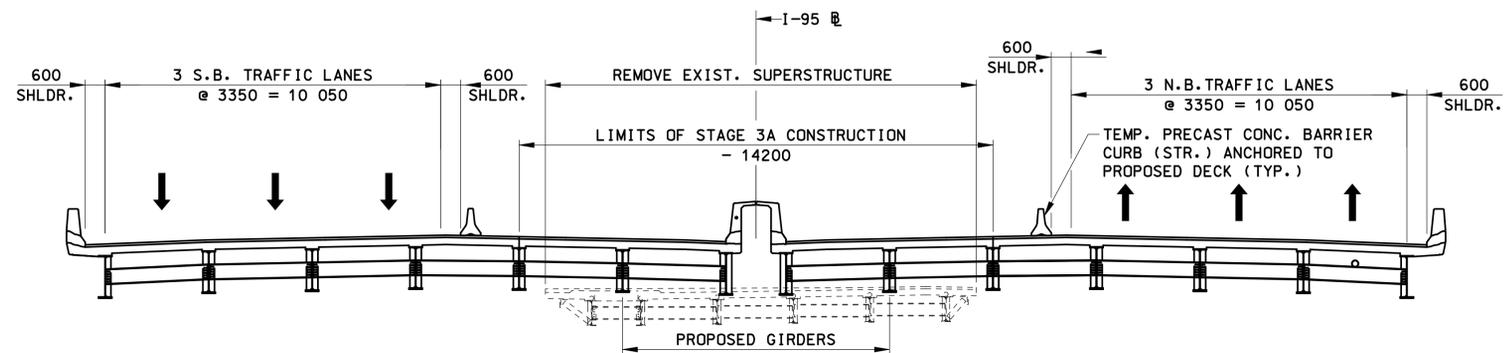
1. PLACE "TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)" AND RELATED TRAFFIC CONTROL DEVICES AS SHOWN ON THE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS. TEMPORARY CONCRETE BARRIERS SHALL BE ANCHORED TO THE PROPOSED BRIDGE DECK.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT ABUTMENTS AS SHOWN ON THE PLANS. INSTALL TEMPORARY SUPPORT SYSTEM (NO. 1) AT PIER 1 & PIER 2 AS SHOWN ON PLANS.
3. SAWCUT AND REMOVE EXISTING BRIDGE DECK AND STRUCTURAL STEEL FRAMING WITHIN THE LIMITS SHOWN ON THE PLANS.
4. REMOVE THE EXISTING ABUTMENTS AND PIERS TO THE LIMITS SHOWN ON THE PLANS.
5. CONSTRUCT THE PROPOSED ABUTMENTS WITHIN THE LIMITS SHOWN ON THE PLANS.
6. CONSTRUCT THE PROPOSED SUPERSTRUCTURE WITHIN THE LIMITS SHOWN ON THE PLANS.



**STAGE CONSTRUCTION SEQUENCE**  
SCALE: 1:100

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REVISIONS REV. DATE DESCRIPTION SHEET NO.		SCALE AS NOTED		DESIGNER: O. JAMBOTKAR DRAFTER: G. LEE CHECKED BY: T. LALIBERTE DATE CHECKED: 11-12-12		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)		TOWN: NEW HAVEN / WEST HAVEN		PROJECT NO.: 92-522	
				ENGINEER: PB AMERICAS, INC. APPROVED BY:				DRAWING TITLE: TYPICAL STAGING SECTIONS SHEET 1 OF 2		DRAWING NO.: STR-13		SHEET NO.:	
								CADD		PLOTTED 11/13/2012			

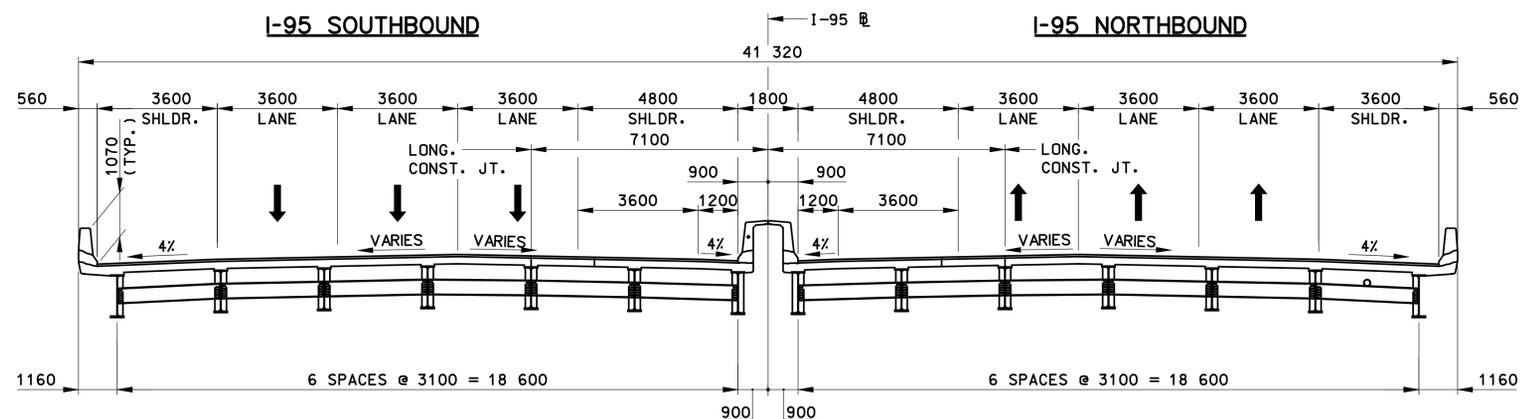


**STAGE 3**

**SUGGESTED SEQUENCE OF CONSTRUCTION (CONT.)**

**STAGE 3 CONSTRUCTION**

1. PLACE "TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)" AND RELATED TRAFFIC CONTROL DEVICES AS SHOWN ON THE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS. TEMPORARY CONCRETE BARRIERS SHALL BE ANCHORED TO THE PROPOSED BRIDGE DECK.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT ABUTMENTS AS SHOWN ON THE PLANS.
3. REMOVE EXISTING BRIDGE DECK AND STRUCTURAL STEEL FRAMING WITHIN THE LIMITS SHOWN ON THE PLANS.
4. REMOVE THE EXISTING ABUTMENTS, WINGWALLS AND PIERS TO THE LIMITS SHOWN ON THE PLANS. REMOVE TEMPORARY SUPPORT SYSTEM (NO. 1) & (NO. 2) AT PIERS.
5. CONSTRUCT THE PROPOSED ABUTMENTS AND WINGWALLS WITHIN THE LIMITS SHOWN ON THE PLANS.
6. CONSTRUCT THE PROPOSED SUPERSTRUCTURE WITHIN THE LIMITS SHOWN ON THE PLANS.



**PROPOSED**  
**STAGE CONSTRUCTION SEQUENCE**  
SCALE: 1:100

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REV.	DATE	DESCRIPTION	SHEET NO.

SCALE AS NOTED

DESIGNER: O. JAMBOTKAR
DRAFTER: G. LEE
CHECKED BY: T. LALIBERTE
DATE CHECKED: 11-12-12

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

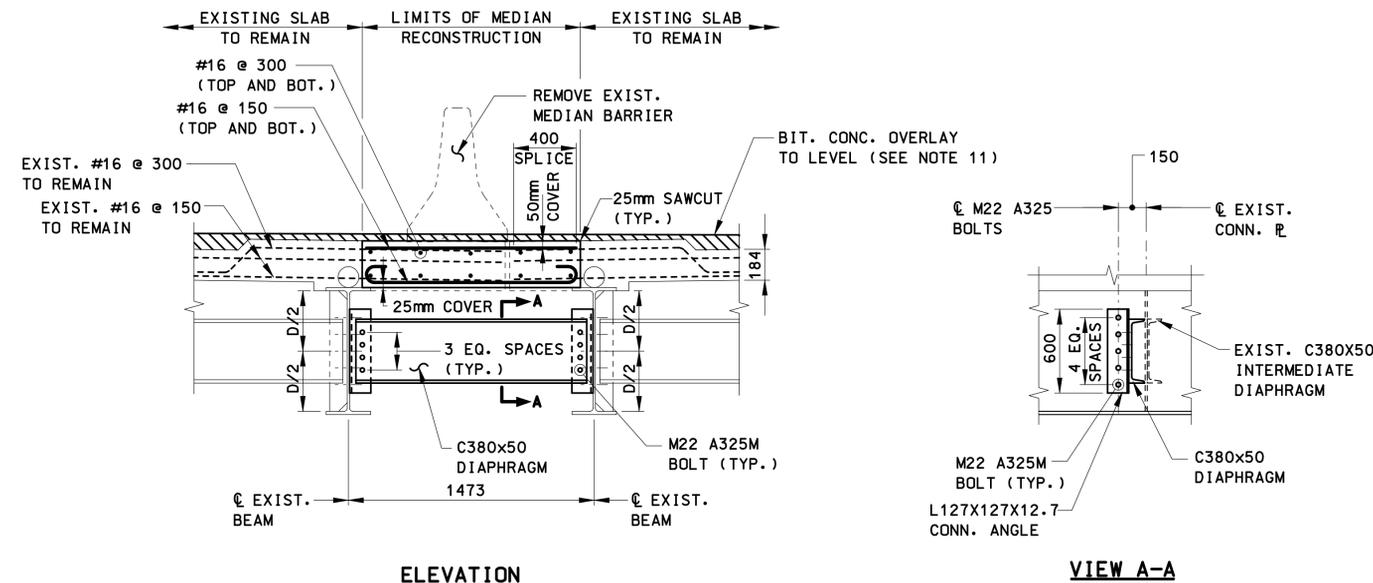
ENGINEER: PB AMERICAS, INC.

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)
CADD

TOWN: NEW HAVEN / WEST HAVEN
DRAWING TITLE: TYPICAL STAGING SECTIONS SHEET 2 OF 2

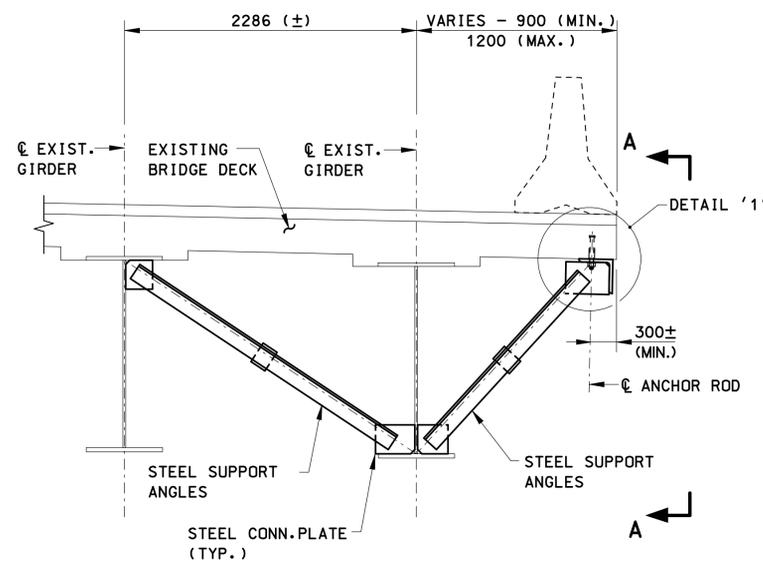
PROJECT NO.: 92-522
DRAWING NO.: STR-14
SHEET NO.:



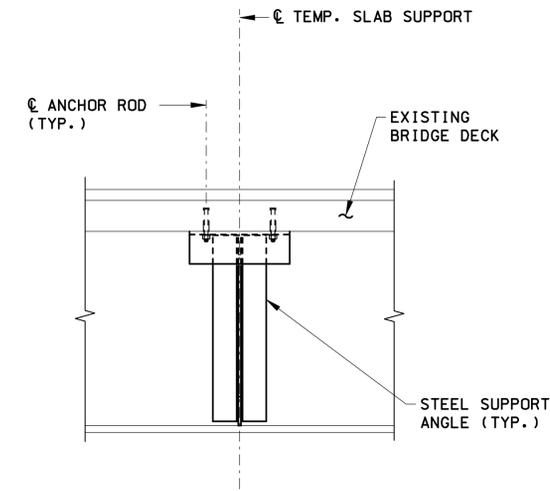
**ELEVATION**  
**VIEW A-A**  
**TEMPORARY MEDIAN RECONSTRUCTION**  
 SCALE: 1:20

**MEDIAN RECONSTRUCTION NOTES**

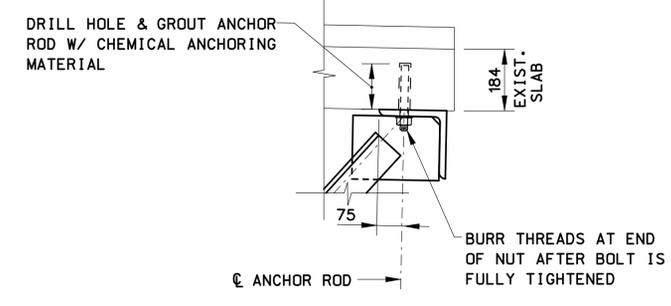
1. THE EXISTING MEDIAN SHALL BE RECONSTRUCTED FOR THE ENTIRE LENGTH OF THE BRIDGE DURING STAGE 1A OR AS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO DETERMINE THE FINAL LOCATION AND DIMENSIONS OF ALL MEDIAN RECONSTRUCTION MEMBERS.
3. DURING SLAB REMOVAL, CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING REINFORCEMENT TO REMAIN. REMOVAL OF THE EXISTING MEDIAN SLAB SHALL BE INCLUDED UNDER THE ITEM "REMOVAL OF SUPERSTRUCTURE (SITE NO. 2)".
4. REINFORCEMENT TO REMAIN SHALL BE THOROUGHLY CLEANED PRIOR TO NEW CONCRETE PLACEMENT.
5. WHERE EXISTING REINFORCEMENT IS DAMAGED, NOT PRESENT AND/OR FOUND UNSUITABLE TO REMAIN IN PLACE, NEW REINFORCEMENT SHALL BE DRILLED AND GROUTED IN PLACE AS DIRECTED BY THE ENGINEER.
6. TEMPORARY DIAPHRAGMS SHALL BE PLACED ADJACENT TO EXISTING INTERMEDIATE DIAPHRAGMS OR AS DIRECTED BY THE ENGINEER (SEE VIEW A-A).
7. TEMPORARY DIAPHRAGMS SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT FOR NEW MEDIAN SLAB.
8. ALL STRUCTURAL STEEL MEMBERS FOR THE MEDIAN RECONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709M, GRADE 345. STRUCTURAL STEEL SHALL BE INCLUDED UNDER THE ITEM "STRUCTURAL STEEL (SITE NO. 2)".
9. CLASS 'F' CONCRETE SHALL BE USED FOR THE NEW MEDIAN SLAB AND SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE".
10. ALL CONCRETE REINFORCEMENT SHALL BE ASTM A615M GRADE 420 AND SHALL BE PAID FOR UNDER THE ITEM "DEFORMED STEEL BARS - EPOXY COATED".
11. BITUMINOUS CONCRETE OVERLAY SHALL BE LAID TO PROVIDE A LEVEL SURFACE BETWEEN THE EXISTING BEAMS.



**ELEVATION**  
 NOT TO SCALE



**VIEW A-A**  
 SCALE: 1:20  
**TEMPORARY SLAB SUPPORTS**  
 SCALE AS NOTED



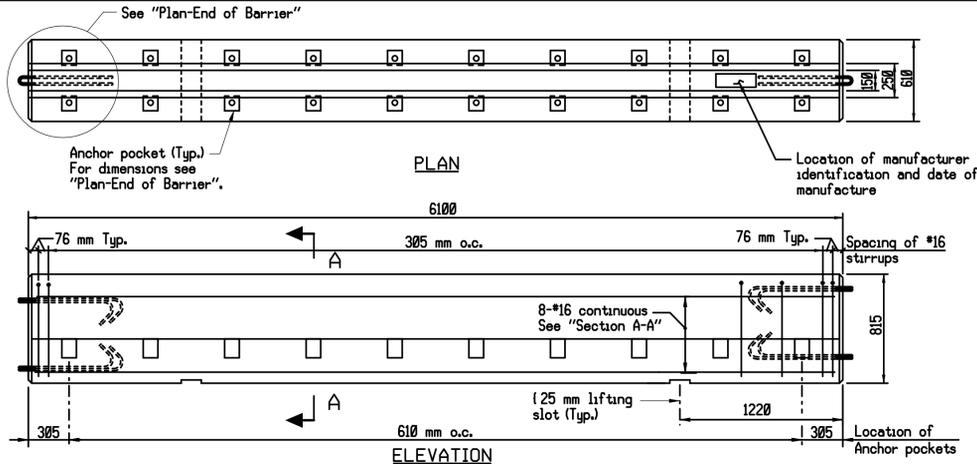
**DETAIL '1'**  
 SCALE: 1:10

**TEMPORARY SLAB SUPPORT NOTES**

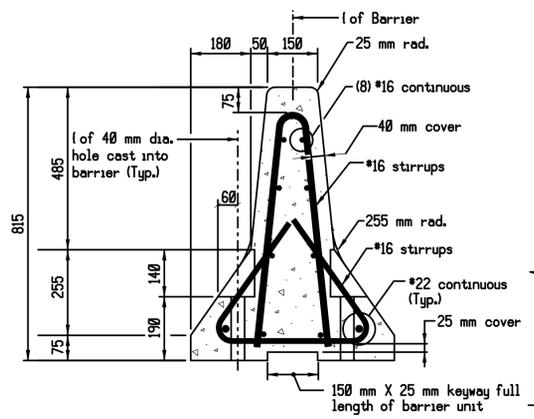
1. TEMPORARY SLAB SUPPORT SHOWN IS CONCEPTUAL AND FOR INFORMATION ONLY. ACTUAL TEMPORARY SLAB SUPPORT TO BE DESIGNED BY CONTRACTOR.
2. TEMPORARY SLAB SUPPORTS SHALL BE PLACED AT EXISTING SLAB OVERHANGS WITHIN THE LIMITS SHOWN ON THE STAGE CONSTRUCTION PLANS AND AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO DETERMINE THE FINAL LOCATION AND DIMENSIONS OF THE SLAB SUPPORTS REQUIRED.
4. TEMPORARY SLAB SUPPORTS SHALL BE IN PLACE PRIOR TO DEMOLITION OF THE EXISTING BRIDGE DECK AND ESTABLISHING CONSTRUCTION STAGE 1A TRAFFIC.
5. TEMPORARY SLAB SUPPORTS, INCLUDING FIELD MEASUREMENTS TO ASSURE PROPER FIT OF THE FINISHED WORK, SHALL BE INCLUDED UNDER THE ITEM "TEMPORARY SLAB SUPPORT (SITE NO. 1)" (SEE SPECIAL PROVISIONS).

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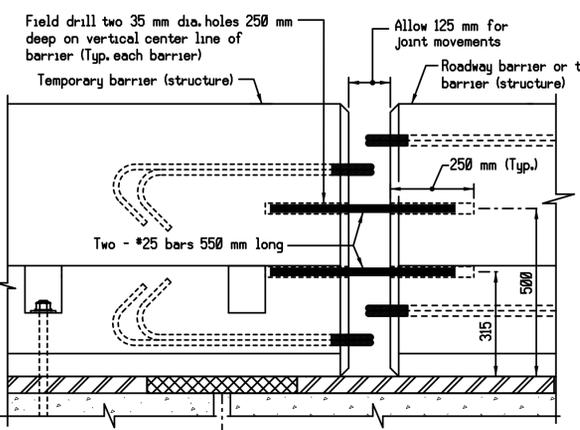
SCALE AS NOTED		DESIGNER: O. JAMBOTKAR	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: STAGE CONSTRUCTION DETAILS	DRAWING NO.: STR-15
REV.	DATE	DESCRIPTION REVISIONS	APPROVED BY:	CADD	PLOTTED 11/13/2012	



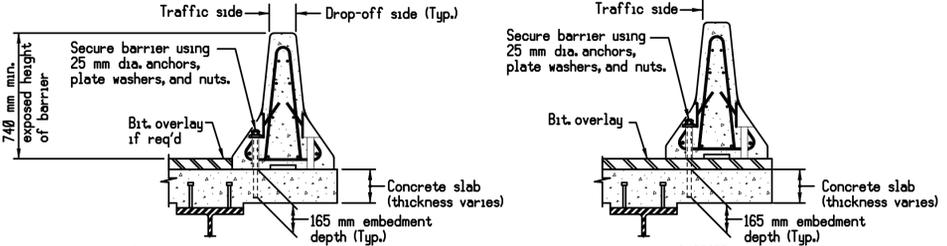
**PRECAST BARRIER UNIT (STRUCTURE)**  
Scale: 1:25



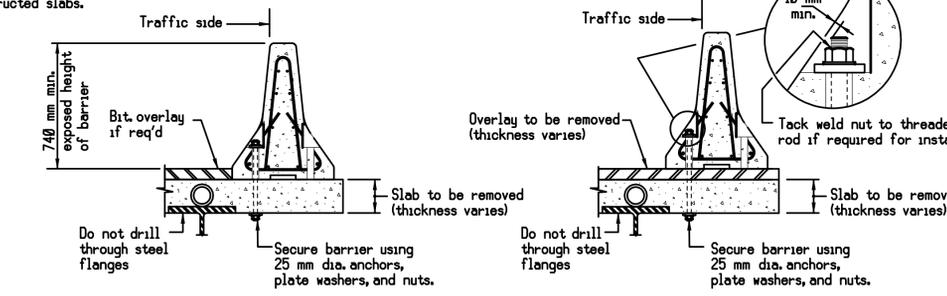
**SECTION A-A**  
Scale: 1:10



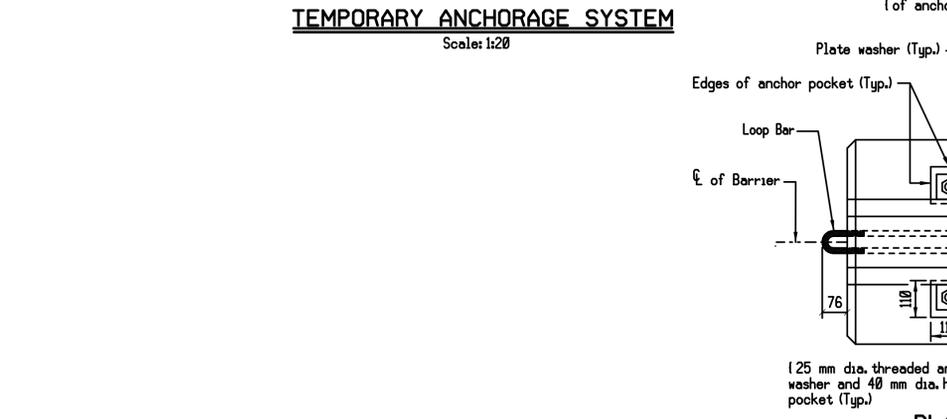
**BARRIER CONNECTION DETAILS AT EXPANSION JOINTS (CASE II SHOWN)**  
Scale: 1:10



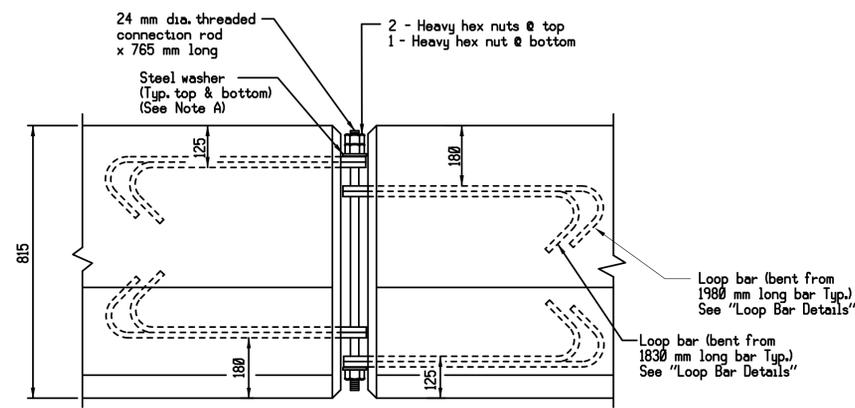
**CHEMICAL ANCHORING OPTION**  
(See Note 1b)



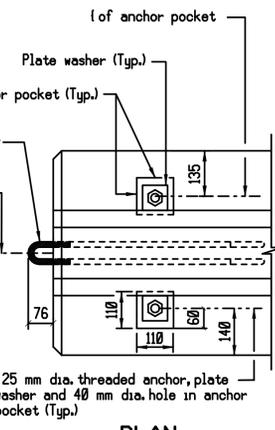
**THRU-BOLTING OPTION**  
(See Note 1c)



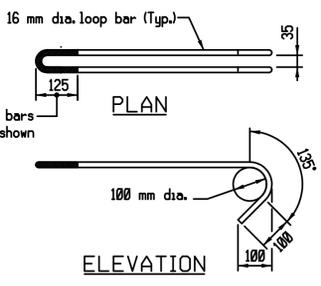
**TEMPORARY ANCHORAGE SYSTEM**  
Scale: 1:20



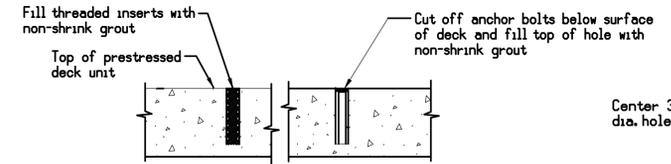
**BARRIER CONNECTION DETAILS**  
Scale: 1:10



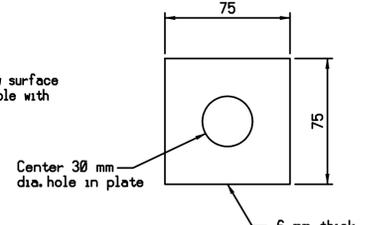
**PLAN END OF BARRIER**  
Scale: 1:10



**LOOP BAR DETAILS**  
Scale: 1:10



**FILLING OF ANCHOR HOLES**  
Scale: 1:10



**PLATE WASHER**  
Scale: 1:2

**NOTES**

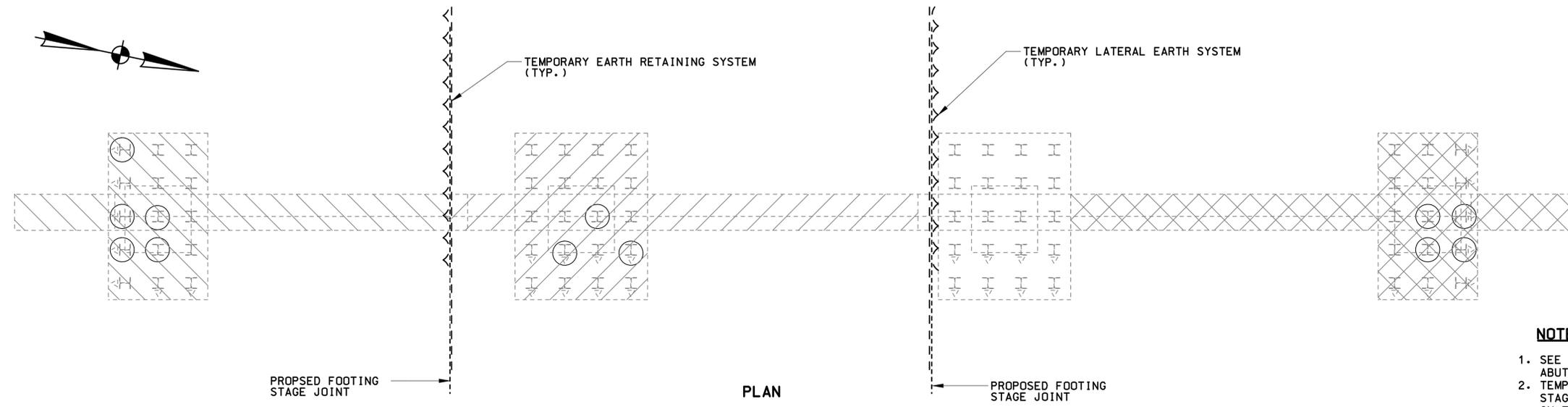
- The temporary barrier shown on this sheet shall be anchored onto bridge decks (see "Temporary Anchorage System") when it is used to protect a vertical drop-off. The temporary anchorage system shall conform to the following:
  - Prestressed Deck Units: Threaded inserts shall be used for securing temporary barrier (structure) to prestressed deck units. The threaded inserts shall be cast into the deck units during fabrication and shall be located as required to accommodate the stage construction. See special provisions for additional information.
  - Chemical Anchoring: This consists of drilling holes in new or existing concrete, placing threaded anchors in the holes, and securing the anchors with a pre-approved chemical anchor material which conforms to M.63.01-15 of the Standard Specifications. Hole diameter shall be determined by the manufacturer of the chemical anchoring material.
  - Through-Bolting: This consists of drilling through deck slabs and securing removable anchors on the underside with plate washers and nuts. Through-bolting is not permitted on new construction or prestressed concrete. Maximum hole size in slab = 40 mm.
- Number of Anchors: On the traffic side of a typical barrier, anchors shall be installed in all pockets. At barrier units which straddle bridge expansion joints the anchor and connection details shall conform to Table "A".

TABLE "A": BARRIER UNITS AT EXP. JOINTS			
Case	Span Length Contributing to Movement at the Expansion Joint.	Method of End Connection to Abutting Barrier Unit. (Where movement will occur)	Anchor Requirements for the Barrier Unit which Straddles the Bridge Joint
I.	Up to 30 meters	Use 24 mm connection rod but do not over tighten the nuts and allow room for expansion around the rod and loops.	On one side of the joint only, install as many anchors as possible on the traffic side of the barrier. On the other side of the joint do not install anchors.
II.	30 to 130 meters	Field drill holes in ends of both units and connect with 2-#25 bars. For details see "Barrier Connection Details".	On one side of the joint only, install a total of 10 anchors. Fill the pockets on the traffic side before filling the pockets on the drop-off side. If this cannot be achieved see III below.
III.	Over 130 meters and barrier layouts which do not satisfy II.	To be designed by Contractor and reviewed by Engineer. Cost of designing and furnishing special barrier units or attachments paid for under "TPCBC (Structure)".	To be designed by Contractor and reviewed by Engineer. Cost of designing and furnishing special barrier units or attachments paid for under "TPCBC (Structure)".

- The work done on this sheet, with the exception of the delineators, shall be paid for under the item "Temporary Precast Concrete Barrier Curb (Structure)".
  - Delineators for Temporary Precast Barrier Curb shall conform to the requirements shown on DOT Standard Sheet M1205A "Typical Delineation, Delineator and Object Marker Details".
- NOTES FOR CONNECTION ROD DETAILS**  
(SEE "ELEVATION-BARRIER CONNECTION DETAILS")
- Plain circular steel washers shall be manufactured with the following dimensions:  
 Outside diameter = 70 mm (+6 mm, -0 mm)  
 Inside diameter = 30 mm (+2 mm)  
 Thickness = 5 mm
  - The nuts on the connection rod shall be turned until the bottom washer is drawn up against the loop bar. The loop bars shall not be bent due to the tightening process.
  - For ease of removal the threads on the connection rods and nuts shall be waxed.

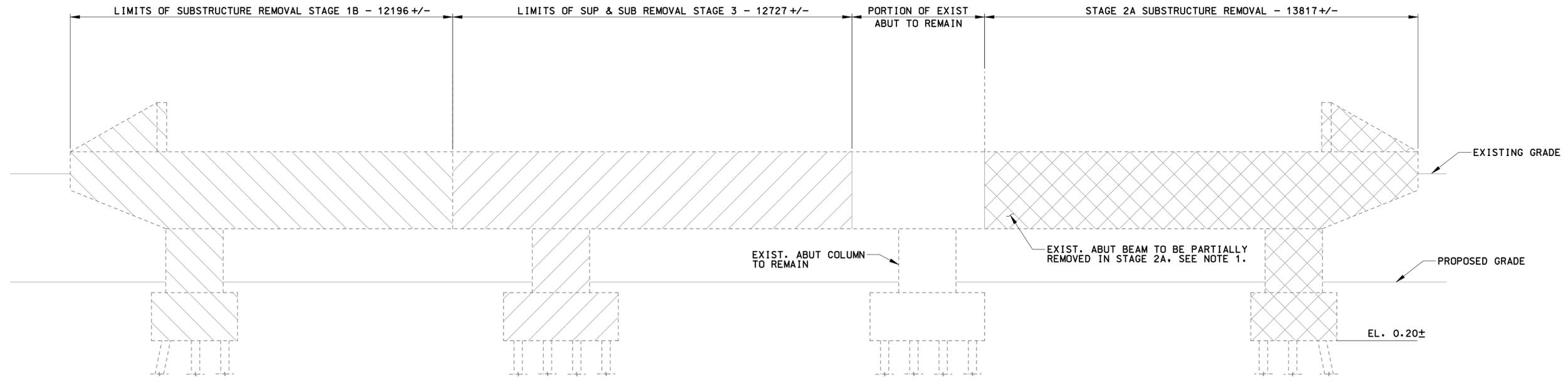
11/13/2012 11:08:00 AM Proj: Jct 95/16735V7D Structures Contract - Sheets, GR0016A, sub-16-092522-0016A.dgn

DESIGNER: O. JAMBOTKAR	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522			
DRAFTER: G. LEE			DRAWING TITLE: TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)	DRAWING NO.: STR-16			
CHECKED BY: T. LALIBERTE		ENGINEER: PB AMERICAS, INC.			SHEET NO.:		
DATE CHECKED: 11-12-12		APPROVED BY:	CADD	PLOTTED: 11/13/2012			
SCALE AS NOTED							
REV.	DATE	DESCRIPTION	REVISIONS	SHEET NO.			



**NOTES:**

1. SEE "ABUTMENT DETAILS" SHEET FOR DETAILS OF EXIST. ABUT COLUMN TO REMAIN.
2. TEMPORARY LATERAL EARTH SYSTEM IN A PREVIOUS STAGE SHALL EXTEND BELOW THE BOTTOM OF EXCAVATION IN THE SUBSEQUENT STAGE.



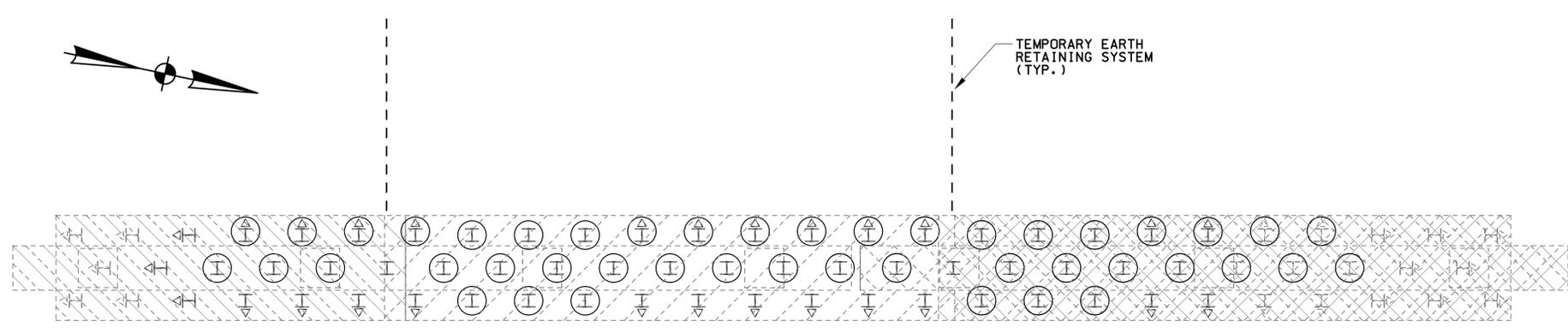
**ELEVATION**  
**ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR**

**DEMOLITION LEGEND**

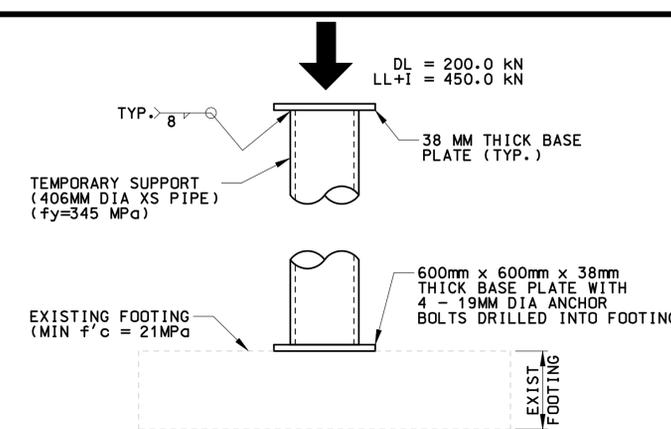
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.
- DENOTES EXISTING VERTICAL PILE.
- DENOTES EXISTING BATTERED PILE.
- DENOTES EXISTING PILE TO BE REMOVED.

13:06 PM 11/13/2012 T:\08\0400\Projects\0818735\7D Structures\Contract\_Sheets\0016\A\str-17-09252-0016.dgn

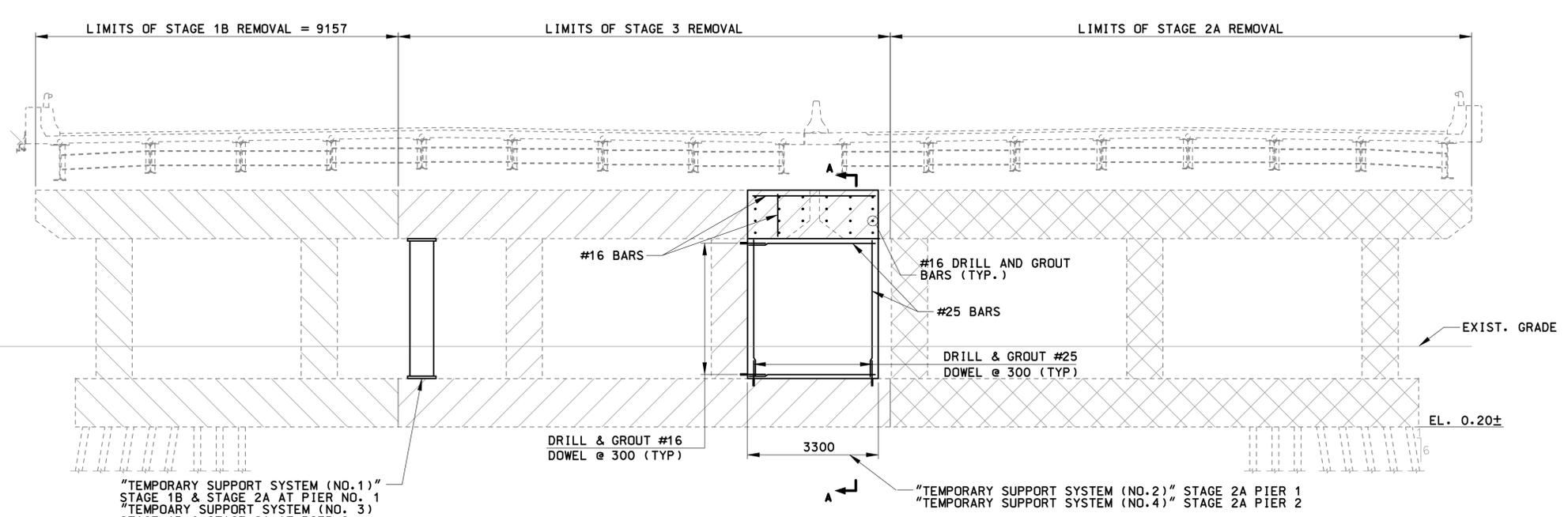
		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: O. JAMBOTKAR DRAFTER: G. GERARD CHECKED BY: T. LALIBERTE DATE CHECKED: 11-12-12	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p> ENGINEER: PB AMERICAS, INC. APPROVED BY: _____ DATE: _____	PROJECT TITLE: <b>RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)</b>	TOWN: <b>NEW HAVEN / WEST HAVEN</b>	PROJECT NO.: <b>92-522</b> DRAWING NO.: <b>STR-17</b> SHEET NO.:	
REV.	DATE	DESCRIPTION REVISIONS	SHEET NO.	CADD		PLOTTED 11/13/2012		<b>ABUTMENT DEMOLITION PLAN</b>



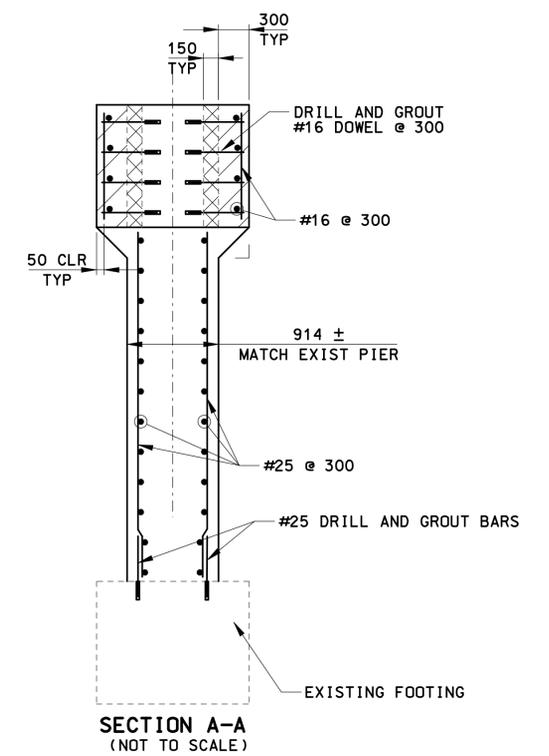
PLAN



SUGGESTED TEMPORARY SUPPORT UNDER PIER CAP



ELEVATION  
PIER 1 SHOWN, PIER 2 SIMILAR

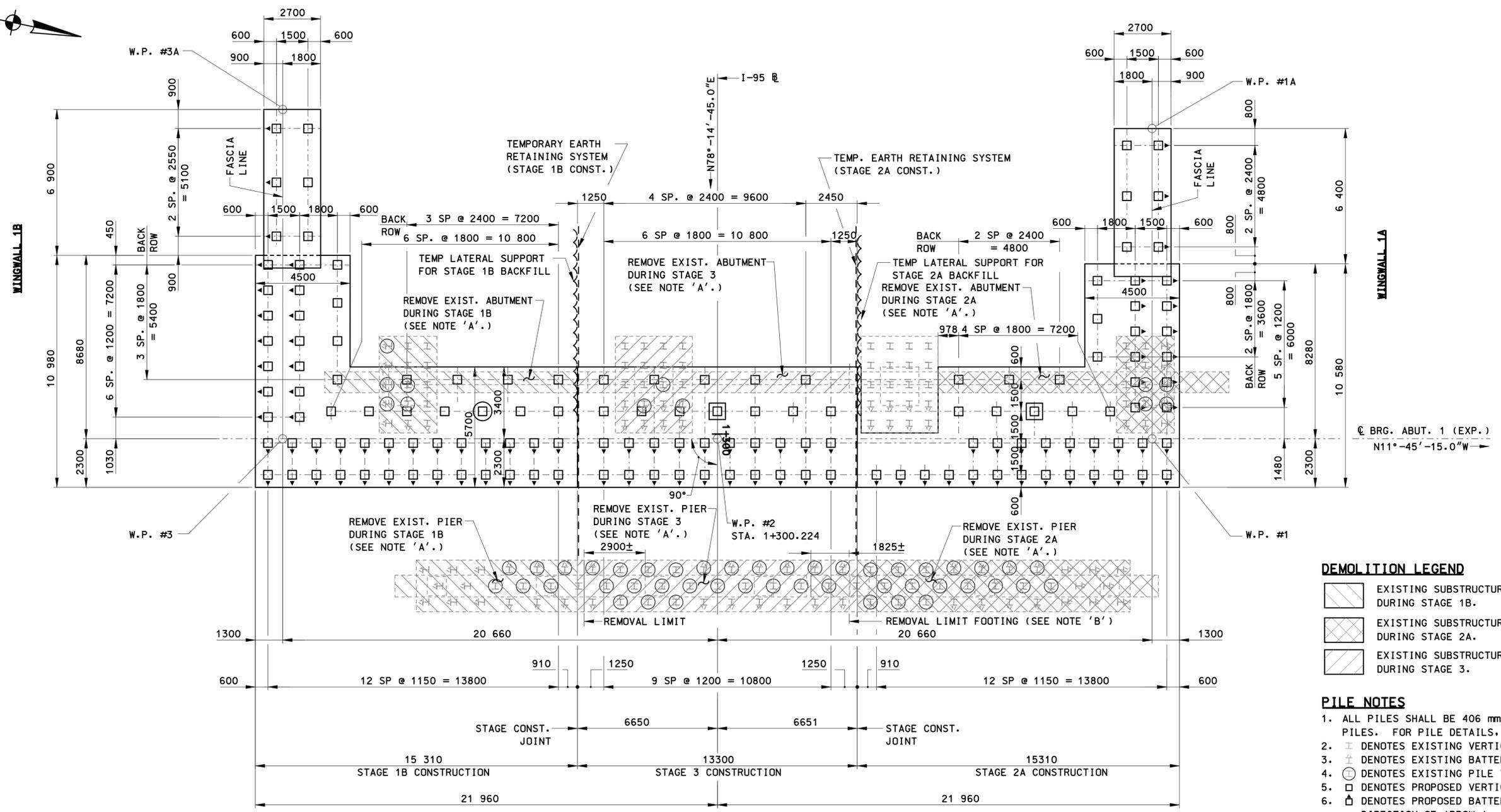


- DEMOLITION LEGEND**
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
  - EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
  - EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.
  - DENOTES EXISTING VERTICAL PILE.
  - DENOTES EXISTING BATTERED PILE.
  - DENOTES EXISTING PILE TO BE REMOVED.

- NOTES**
1. PLACE "TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)" AND RELATED TRAFFIC CONTROL DEVICES AS SHOWN ON THE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS. TEMPORARY CONCRETE BARRIERS SHALL BE ANCHORED TO THE EXISTING BRIDGE DECK.
  2. DRILL & GROUT REBAR INTO EXISTING PIER CAP AND FOOTING AS SHOWN.
  3. CONSTRUCT TEMPORARY CONCRETE PIER.
  4. PERFORM STAGE 2A DEMOLITION.
  5. TEMPORARY SUPPORT SYSTEM (NO.1) SHALL BE PAID UNDER "TEMPORARY SUPPORT SYSTEM (NO.1)".
  6. TEMPORARY SUPPORT SYSTEM (NO.2) SHALL BE PAID UNDER "TEMPORARY SUPPORT SYSTEM (NO.2)".

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		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: O. JAMBOTKAR DRAFTER: G. LEE CHECKED BY: T. LALIBERTE DATE CHECKED: 11-12-12	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522 DRAWING NO.: STR-18 SHEET NO.:	
REV.	DATE	DESCRIPTION REVISIONS	SHEET NO.	APPROVED BY:	DATE:	CADD	PLOTTED 11/13/2012	



- DEMOLITION LEGEND**
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
  - EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
  - EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.

- PILE NOTES**
1. ALL PILES SHALL BE 406 mm SQUARE PRESTRESSED CONCRETE PILES. FOR PILE DETAILS, SEE DWG. NO. STR-17.
  2.  $\pm$  DENOTES EXISTING VERTICAL PILE.
  3.  $\oplus$  DENOTES EXISTING BATTERED PILE.
  4.  $\ominus$  DENOTES EXISTING PILE TO BE REMOVED.
  5.  $\square$  DENOTES PROPOSED VERTICAL PILE.
  6.  $\triangle$  DENOTES PROPOSED BATTERED PILE. (BATTER 1:3 IN DIRECTION OF ARROW.)
  7.  $\boxplus$  DENOTES TEST PILE (27.5m LONG).
  8.  $\oplus$  DENOTES TEST PILE (27.5m LONG) WITH PILE LOADING TEST.
  9. PRIOR TO DRIVING THE PILES, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL HIS METHOD AND SEQUENCE OF PILE DRIVING.
  10. THE ESTIMATED LENGTHS OF PILES WILL VARY WITH LOCATION AND CUTOFF ELEVATION AS FOLLOWS:
    - ABUTMENT 1: 24.8 m (INCL. WINGWALL TYPE I)
    - WINGWALL 1A: 28.8 m (WINGWALL TYPE II ONLY)
    - WINGWALL 1B: 28.8 m (WINGWALL TYPE II ONLY)
  11. THE NUMBER OF PILES SHALL BE AS FOLLOWS:
    - ABUTMENT 1: 140 (INCL. WINGWALL TYPE I)
    - WINGWALL 1A: 6 (WINGWALL TYPE II ONLY)
    - WINGWALL 1B: 6 (WINGWALL TYPE II ONLY)
  12. PDA TESTING REQUIRED FOR ALL TEST PILES.

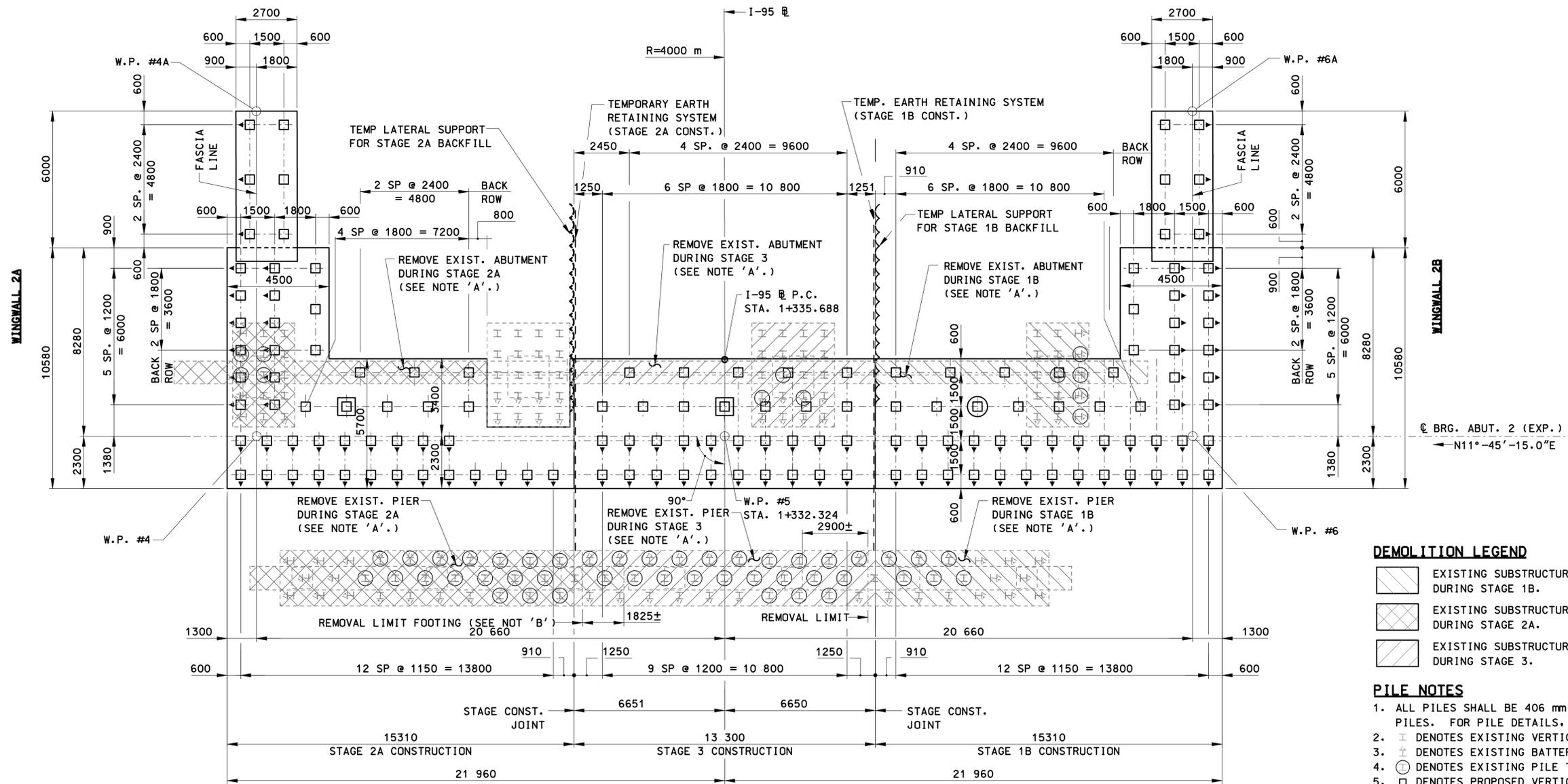
**PLAN**  
SCALE: 1:100

**NOTE 'A':**  
EXISTING SUBSTRUCTURE INCLUDING THE EXISTING PILES INDICATED SHALL BE REMOVED TO THE LIMITS SHOWN. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING SUBSTRUCTURE COMPONENTS TO REMAIN IN SUBSEQUENT STAGES.

**NOTE 'B':**  
FOR DETAILS OF REMOVAL LIMITS AND TEMPORARY MODIFICATIONS TO EXISTING PIER, SEE DEMO PLANS.

13:55:51 PM 11/13/2012 T:\2010\Projects\92-52\Drawings\Structures\Contract\_Sheets\92-52-0016.dgn

		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: O. JAMBOTKAR DRAFTER: G. LEE CHECKED BY: T. LALIBERTE DATE CHECKED: 11-12-12	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p> ENGINEER: PB AMERICAS, INC. APPROVED BY: _____ DATE: _____	PROJECT TITLE: <b>RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)</b>	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522 DRAWING NO.: STR-19 SHEET NO.:	
REV.	DATE	DESCRIPTION	SHEET NO.	CADD      PLOTTED 11/13/2012				<b>PILE PLAN - ABUTMENT 1</b>



**DEMOLITION LEGEND**

- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.

**PILE NOTES**

1. ALL PILES SHALL BE 406 mm SQUARE PRESTRESSED CONCRETE PILES. FOR PILE DETAILS, SEE DWG. NO. STR-17.
2.  $\pm$  DENOTES EXISTING VERTICAL PILE.
3.  $\pm$  DENOTES EXISTING BATTERED PILE.
4.  $\ominus$  DENOTES EXISTING PILE TO BE REMOVED.
5.  $\square$  DENOTES PROPOSED VERTICAL PILE.
6.  $\triangle$  DENOTES PROPOSED BATTERED PILE. (BATTER 1:3 IN DIRECTION OF ARROW.)
7.  $\boxplus$  DENOTES TEST PILE (24.5m LONG).
8.  $\oplus$  DENOTES TEST PILE (24.5m LONG) WITH PILE LOADING TEST.
9. PRIOR TO DRIVING THE PILES, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL HIS METHOD AND SEQUENCE OF PILE DRIVING.
10. THE ESTIMATED LENGTHS OF PILES WILL VARY WITH LOCATION AND CUTOFF ELEVATION AS FOLLOWS:
  - ABUTMENT 2: 21.8 m (INCL. WINGWALL TYPE I)
  - WINGWALL 2A: 25.8 m (WINGWALL TYPE II ONLY)
  - WINGWALL 2B: 25.8 m (WINGWALL TYPE II ONLY)
11. THE NUMBER OF PILES SHALL BE AS FOLLOWS:
  - ABUTMENT 2: 138 (INCL. WINGWALL TYPE I)
  - WINGWALL 2A: 6 (WINGWALL TYPE II ONLY)
  - WINGWALL 2B: 6 (WINGWALL TYPE II ONLY)
12. PDA TESTING REQUIRED FOR ALL TEST PILES.

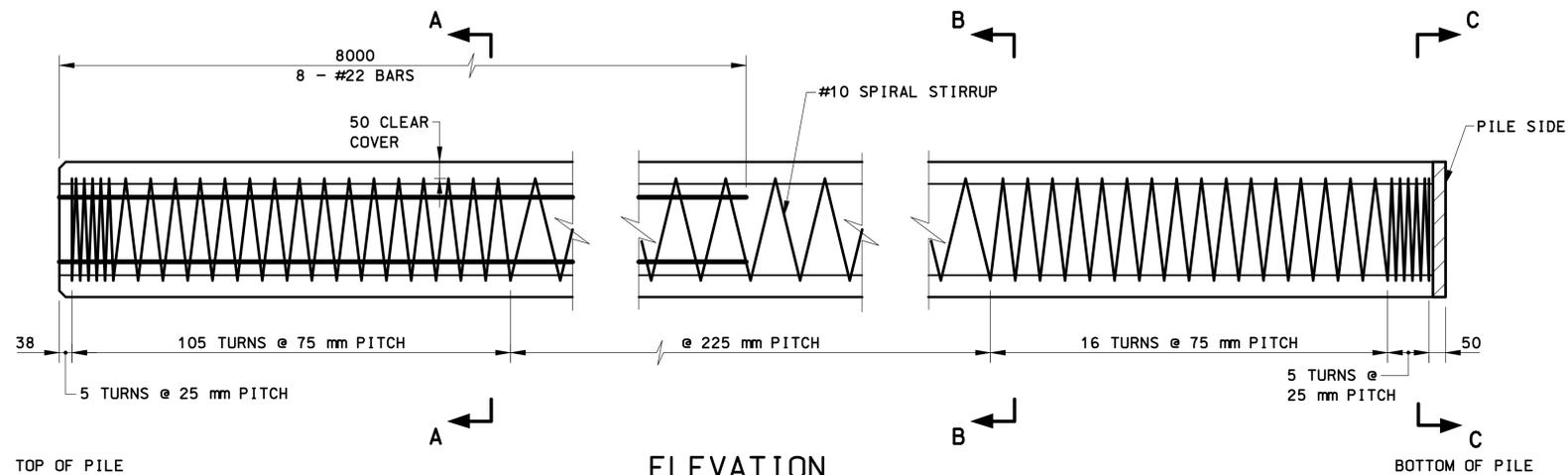
**PLAN**  
SCALE: 1:100

NOTE 'A':  
EXISTING SUBSTRUCTURE INCLUDING THE EXISTING PILES INDICATED SHALL BE REMOVED TO THE LIMITS SHOWN. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING SUBSTRUCTURE COMPONENTS TO REMAIN IN SUBSEQUENT STAGES.

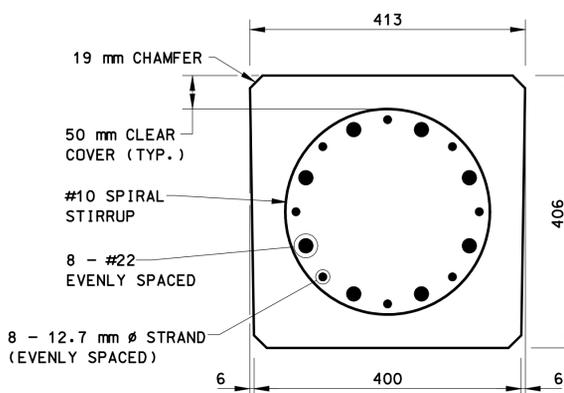
NOTE 'B':  
FOR DETAILS OF REMOVAL LIMITS AND TEMPORARY MODIFICATIONS TO EXISTING PIER, SEE DEMO PLANS.

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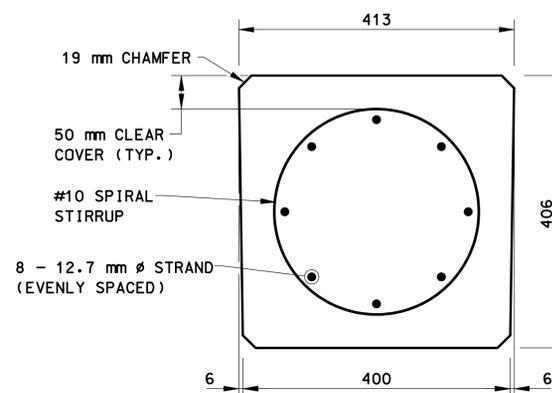
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER: O. JAMBOTKAR	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522	
REV.	DATE	DESCRIPTION REVISIONS		SHEET NO.	DRAWING NO.: STR-20	SHEET NO.:	
		CHECKED BY: T. LALIBERTE	ENGINEER: PB AMERICAS, INC.	CADD	PLOTTED 11/13/2012		
		DATE CHECKED: 11-12-12	APPROVED BY:				



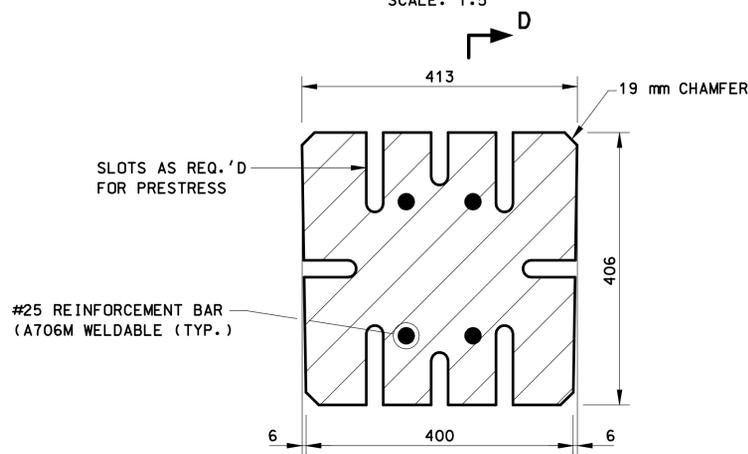
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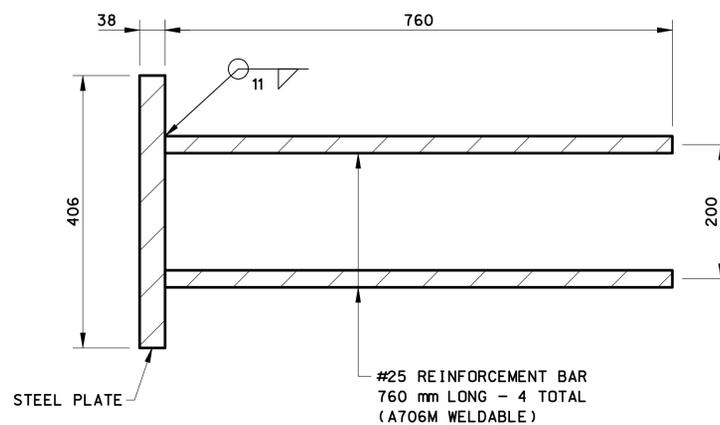
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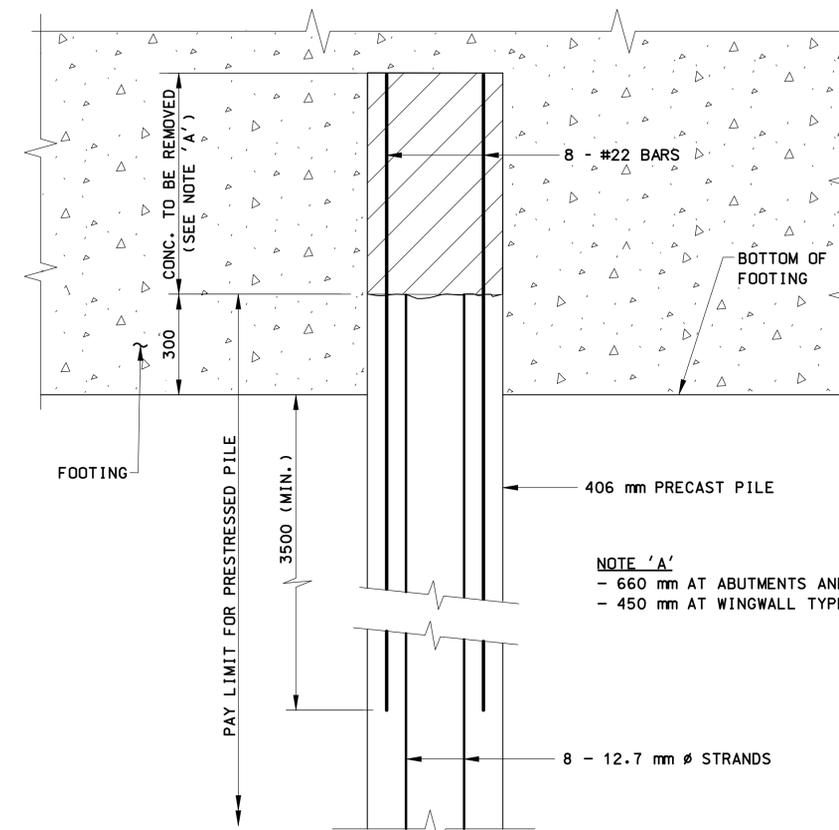
**SECTION B-B**  
SCALE: 1:5



**SECTION C-C**  
SCALE: 1:5



**SECTION D-D**  
SCALE: 1:5



**PILE CUTOFF DETAIL**  
SCALE: 1:10

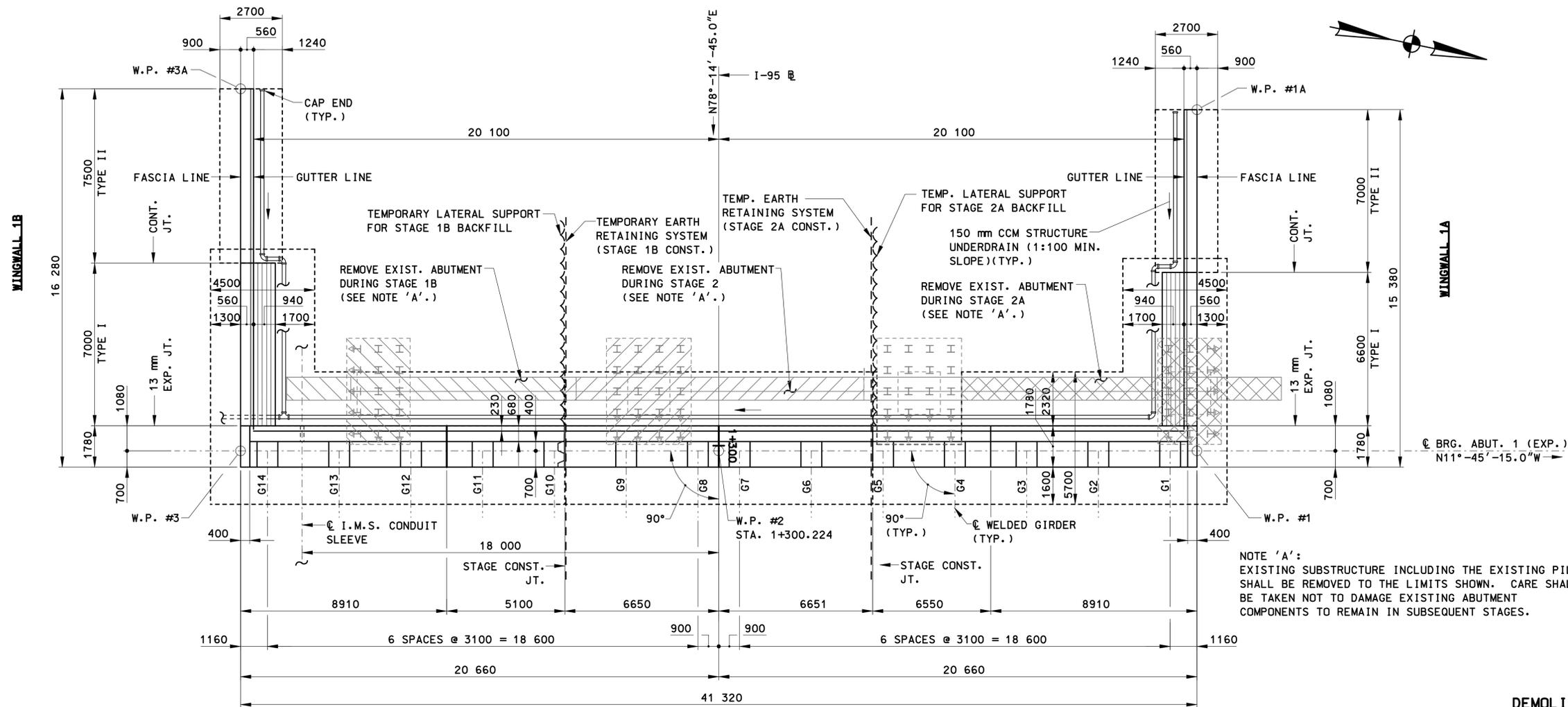
**NOTE 'A'**  
- 660 mm AT ABUTMENTS AND WINGWALL TYPE I.  
- 450 mm AT WINGWALL TYPE II.

**NOTES**

1. CONCRETE FOR PRESTRESSED CONCRETE PILES SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF:  
 $f'_{ci} = 28 \text{ MPa}$  AT TRANSFER.  
 $f'_c = 41 \text{ MPa}$  AT 28 DAYS.
2. PRESTRESSED STRANDS SHALL BE LOW RELAXATION 12.7 mm DIAMETER SEVEN WIRE UNCOATED STRANDS CONFORMING TO ASTM A416M, GRADE 1860.
3. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615M, GRADE 420 UNLESS NOTED OTHERWISE.
4. ALL STEEL SHALL BE ASTM A709M, GRADE 250 AND ALL WELDING SHALL CONFORM TO AWS D1-1.
5. INITIAL TENSION ON 12.7 mm STRANDS SHALL BE 138KN PER STRAND (JACKING TENSION).
6. PILES ARE DESIGNED FOR 5.2 MPa UNIFORM COMPRESSION AFTER PRESTRESS LOSSES WITHOUT ANY LOADS.
7. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ACHIEVED THE MINIMUM COMPRESSION STRENGTH AT TRANSFER AS SHOWN BY THE CYLINDER TEST.
8. PILE SPLICES ARE NOT ALLOWED.
9. COST OF CONCRETE REMOVAL AT TOP OF PILE SHALL BE INCLUDED UNDER THE ITEM "FURNISHING 406 mm SQUARE PRESTRESSED CONCRETE PILES (PRETENSIONED)".
10. LOAD TEST PILES SHALL BE CAST WITH A 19mm SCHEDULE 40 STEEL PIPE CONCENTRIC TO THE CENTER OF THE PILE, CAPPED ON THE BOTTOM AND EXTENDING TO WITHIN 150 mm OF THE PILE TIP.

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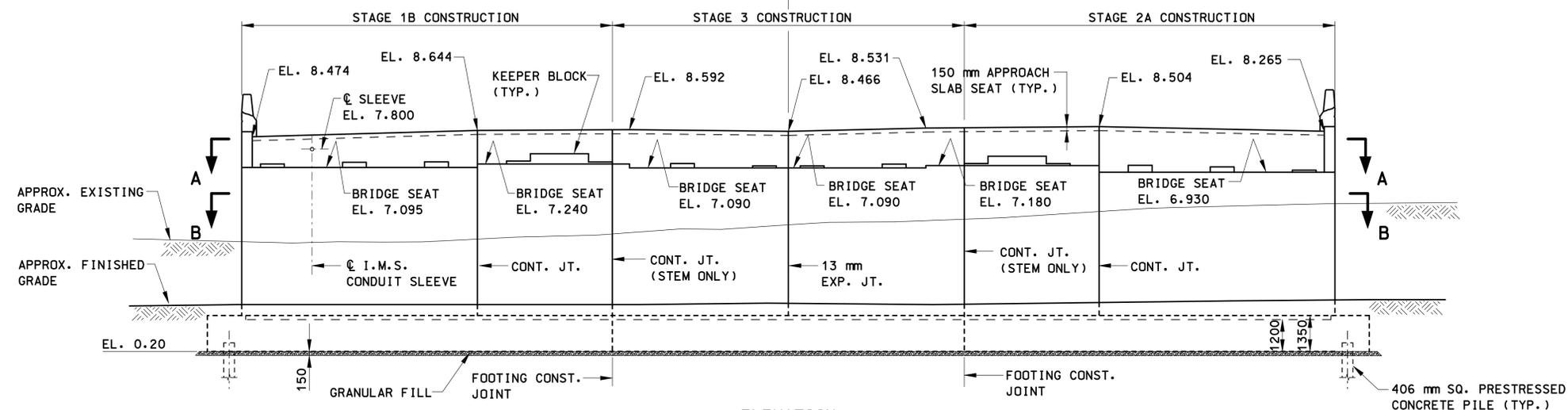
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DATE CHECKED: 11-12-12		DRAFTER: M. DEEGAN		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: PILE DETAILS	DRAWING NO.: STR-21
REV.	DATE	DESCRIPTION REVISIONS	APPROVED BY:	CADD	PLOTTED 11/13/2012	



BEARING PAD ELEVATIONS	
LOCATION	ELEVATION
G1	7.006
G2	7.128
G3	7.190
G4	7.252
G5	7.257
G6	7.236
G7	7.169
G8	7.169
G9	7.255
G10	7.317
G11	7.352
G12	7.320
G13	7.288
G14	7.167

NOTE 'A':  
EXISTING SUBSTRUCTURE INCLUDING THE EXISTING PILES SHALL BE REMOVED TO THE LIMITS SHOWN. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING ABUTMENT COMPONENTS TO REMAIN IN SUBSEQUENT STAGES.

**PLAN**



**ELEVATION  
ABUTMENT 1**  
SCALE: 1:100

**DEMOLITION LEGEND**

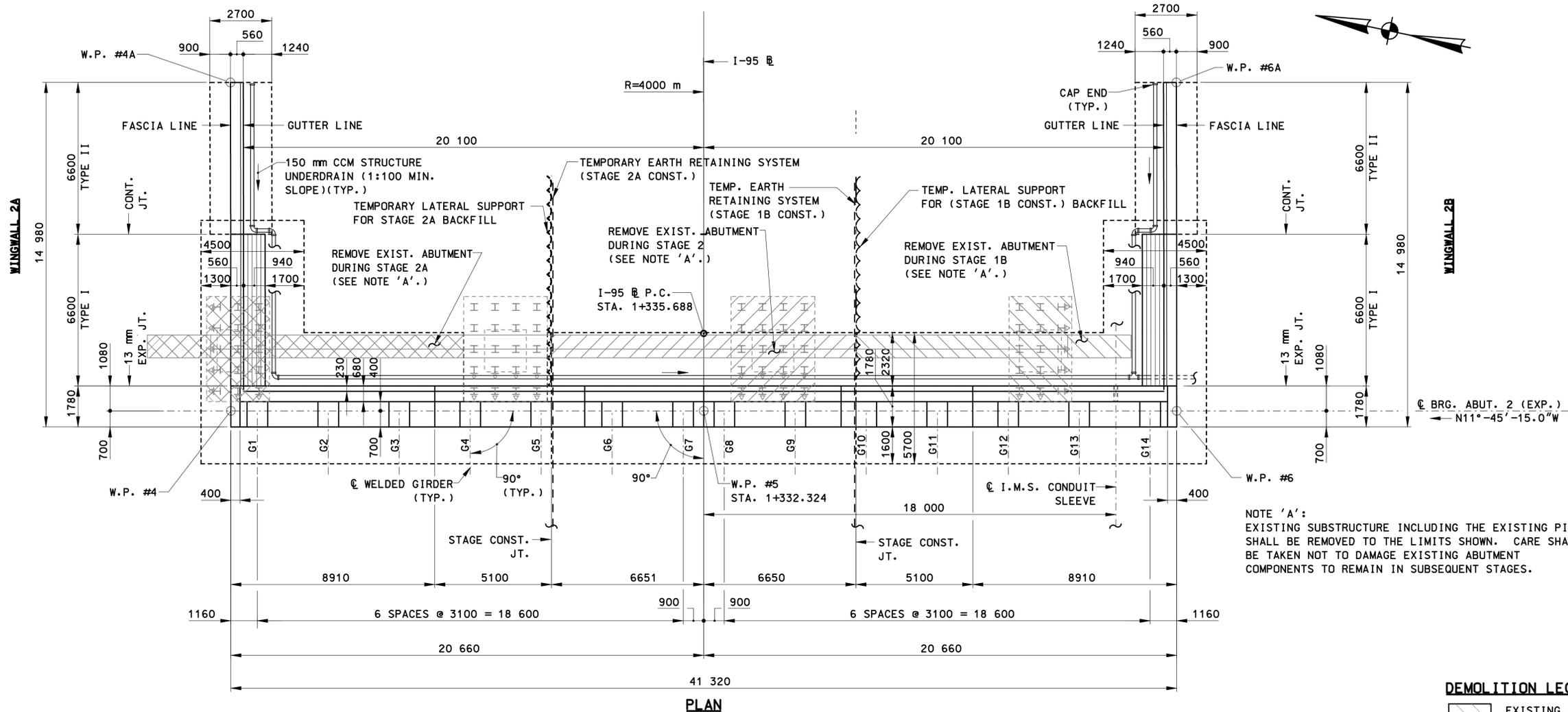
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
- EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.

**NOTES**

1. FOR WORKING POINT COORDINATES, SEE SHEET "LAYOUT PLAN".
2. FOR WINGWALL ELEVATIONS, SEE SHEET "WINGWALLS".
3. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE SHEET "TYPICAL SECTIONS".
4. FOR SECTIONS A-A & B-B, SEE SHEET "SUBSTRUCTURE DETAILS - SHEET 1 OF 3".
5. FOR SUBSTRUCTURE DETAILS, SEE SHEETS "SUBSTRUCTURE DETAILS - SHEET X OF X".

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REV.	DATE	DESCRIPTION	SHEET NO.	CADD	PLOTTED 11/13/2012	

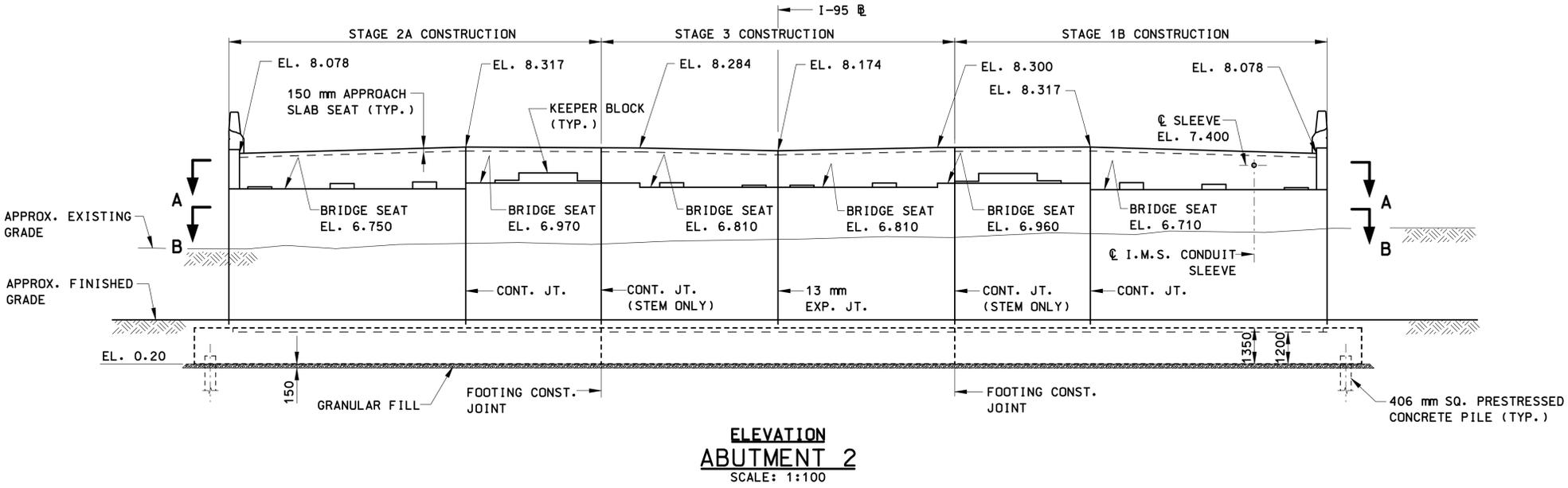


BEARING PAD ELEVATIONS	
LOCATION	ELEVATION
G1	6.824
G2	6.946
G3	7.008
G4	7.070
G5	7.044
G6	6.979
G7	6.885
G8	6.885
G9	6.971
G10	7.033
G11	7.055
G12	6.979
G13	6.903
G14	6.781

NOTE 'A':  
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**DEMOLITION LEGEND**

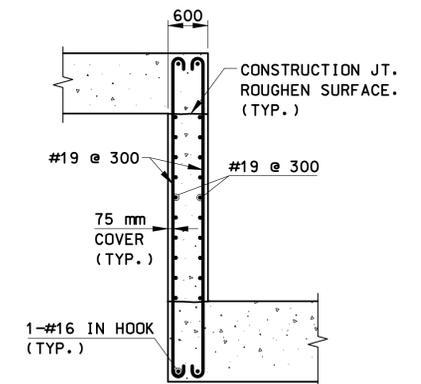
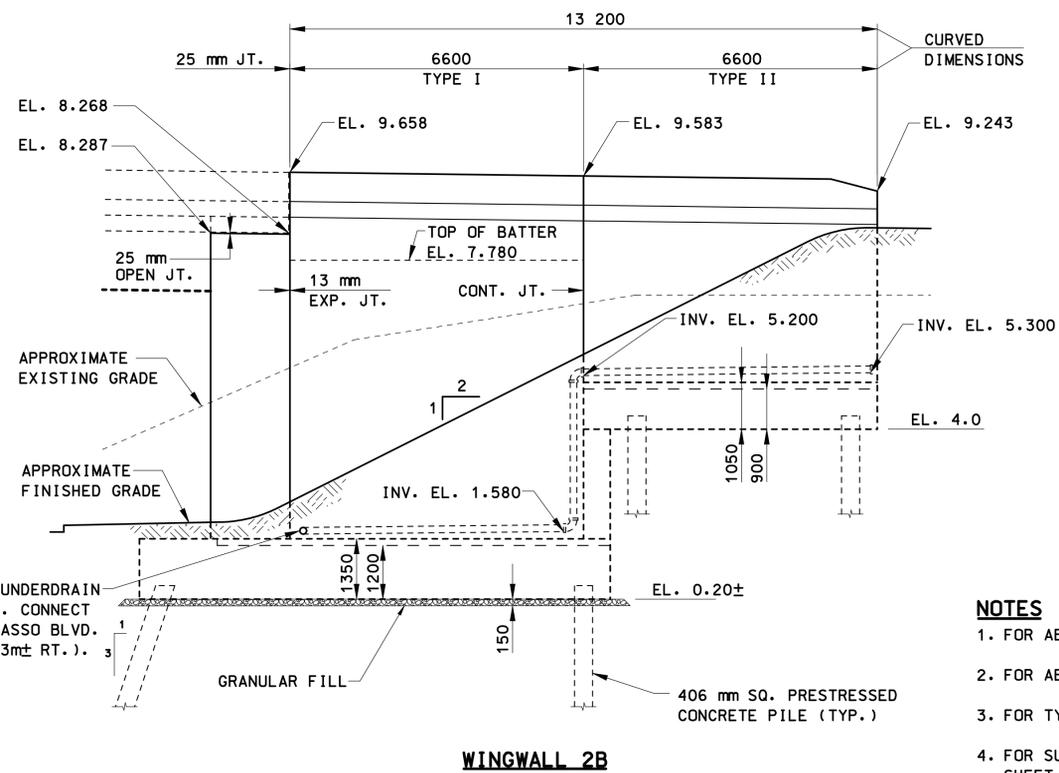
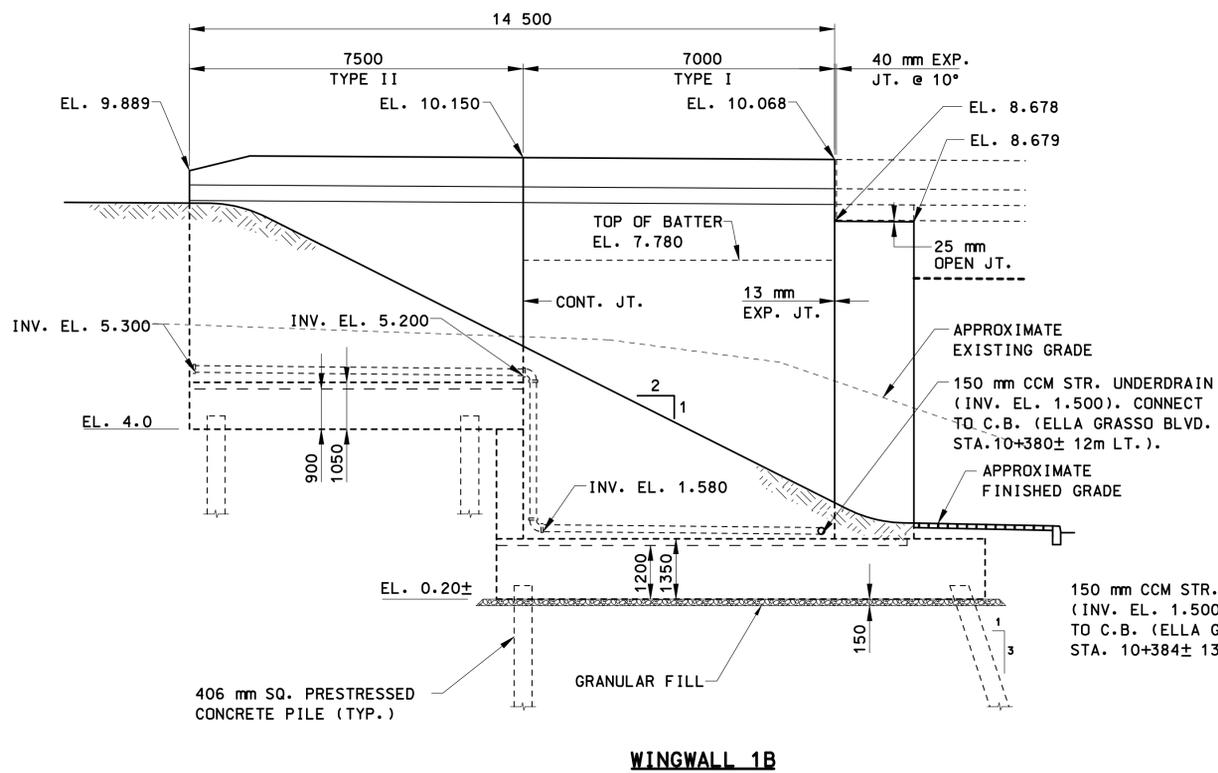
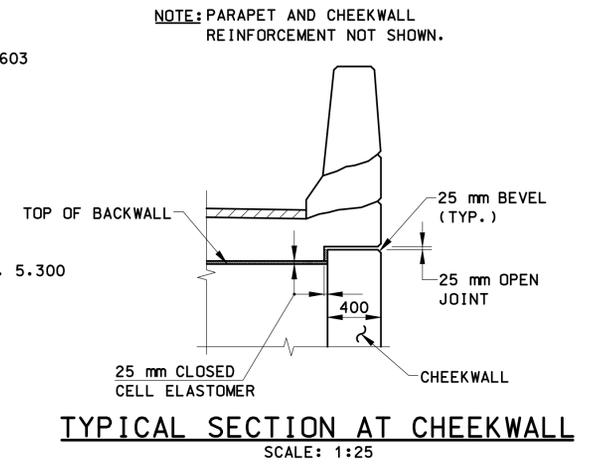
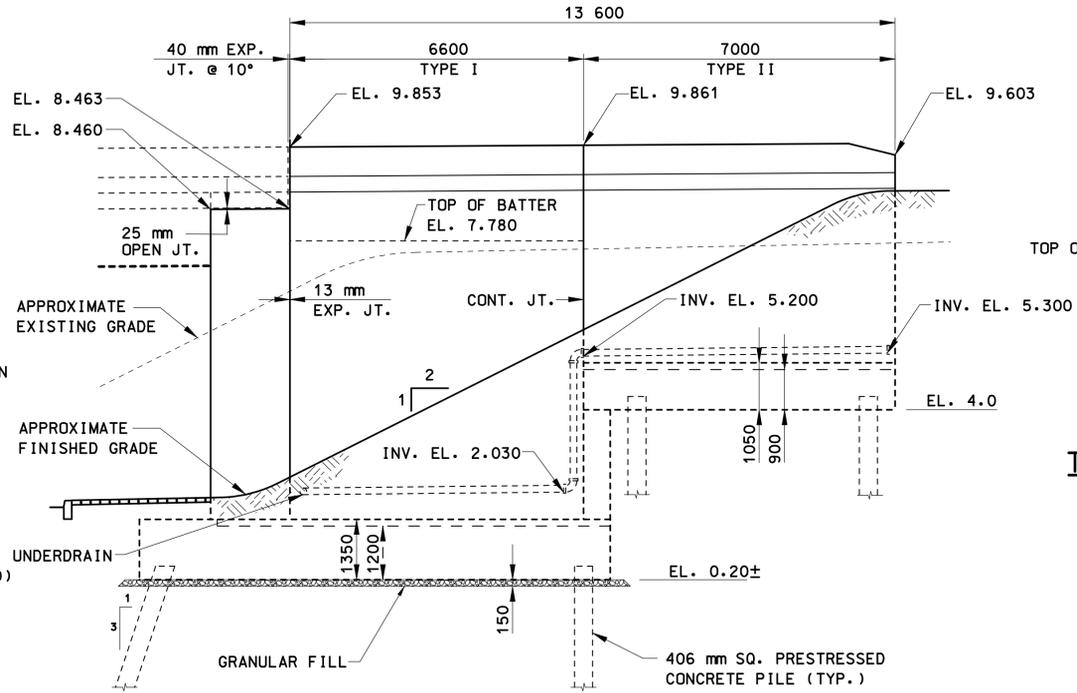
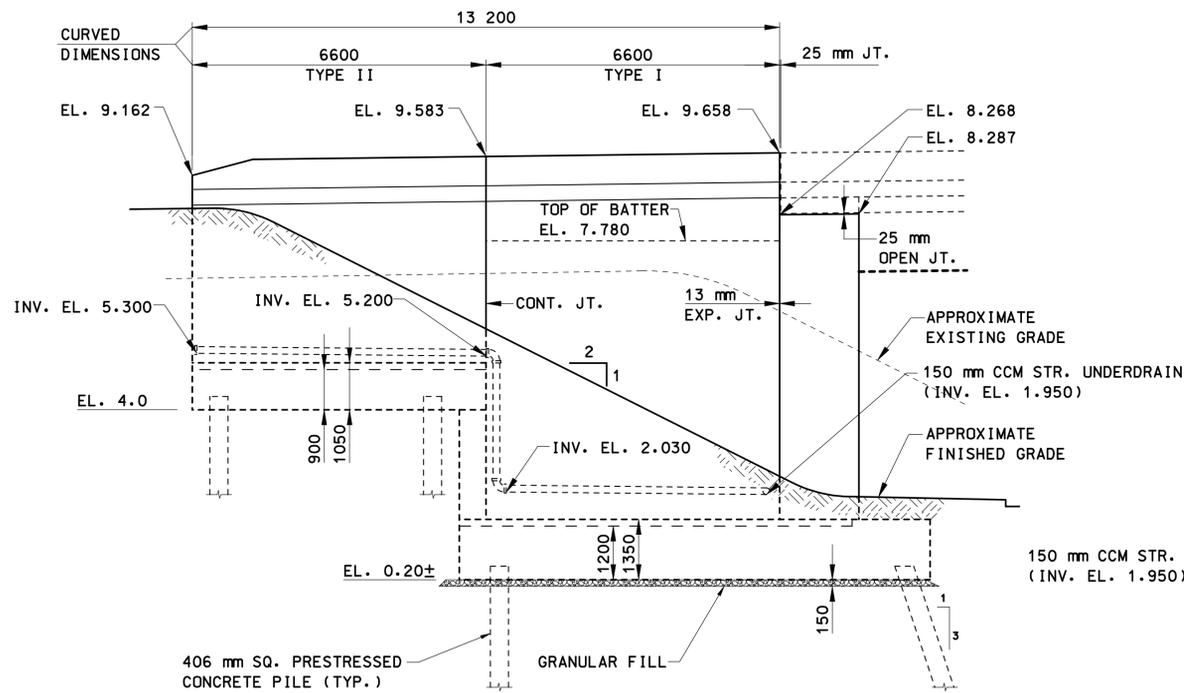
	EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 1B.
	EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 2A.
	EXISTING SUBSTRUCTURE TO BE REMOVED IN ITS ENTIRETY DURING STAGE 3.



- NOTES**
- FOR WORKING POINT COORDINATES, SEE SHEET "LAYOUT PLAN".
  - FOR WINGWALL ELEVATIONS, SEE SHEET "WINGWALLS".
  - FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE SHEET "TYPICAL SECTIONS".
  - FOR SECTIONS A-A & B-B, SEE SHEET "SUBSTRUCTURE DETAILS - SHEET 1 OF 3".
  - FOR SUBSTRUCTURE DETAILS, SEE SHEETS "SUBSTRUCTURE DETAILS - SHEET X OF X".

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	DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: ABUTMENT 2	DRAWING NO.: STR-23
REV. DATE DESCRIPTION REVISIONS SHEET NO.	CHECKED BY: T. LALIBERTE	APPROVED BY:	CADD	PLOTTED 11/13/2012	



WINGWALL ELEVATIONS

SCALE: 1:75

NOTES

1. FOR ABUTMENT 1 PLAN AND ELEVATION, SEE SHEET "ABUTMENT 1".
2. FOR ABUTMENT 2 PLAN AND ELEVATION, SEE SHEET "ABUTMENT 2".
3. FOR TYPICAL WINGWALL SECTIONS, SEE SHEET "TYPICAL SECTIONS".
4. FOR SUBSTRUCTURE DETAILS, SEE SHEETS "SUBSTRUCTURE DETAILS - SHEET X OF X".
5. TYPE R-B 350 METAL BEAM RAIL NOT SHOWN. FOR R-B 350 BRIDGE ATTACHMENT DETAILS, SEE "SUBSTRUCTURE DETAILS - SHEET 3 OF 3".

SCALE AS NOTED

DESIGNER:  
D. BAGDASARIAN

DRAFTER:  
G. LEE

CHECKED BY:  
T. LALIBERTE

DATE CHECKED: 11-12-12



PROJECT TITLE:  
RECONSTRUCTION OF I-95 OVER  
ELLA T. GRASSO BOULEVARD  
(BRIDGE NO. 00164)

TOWN:  
NEW HAVEN / WEST HAVEN

DRAWING TITLE:  
WINGWALLS

PROJECT NO.:  
92-522

DRAWING NO.:  
STR-24

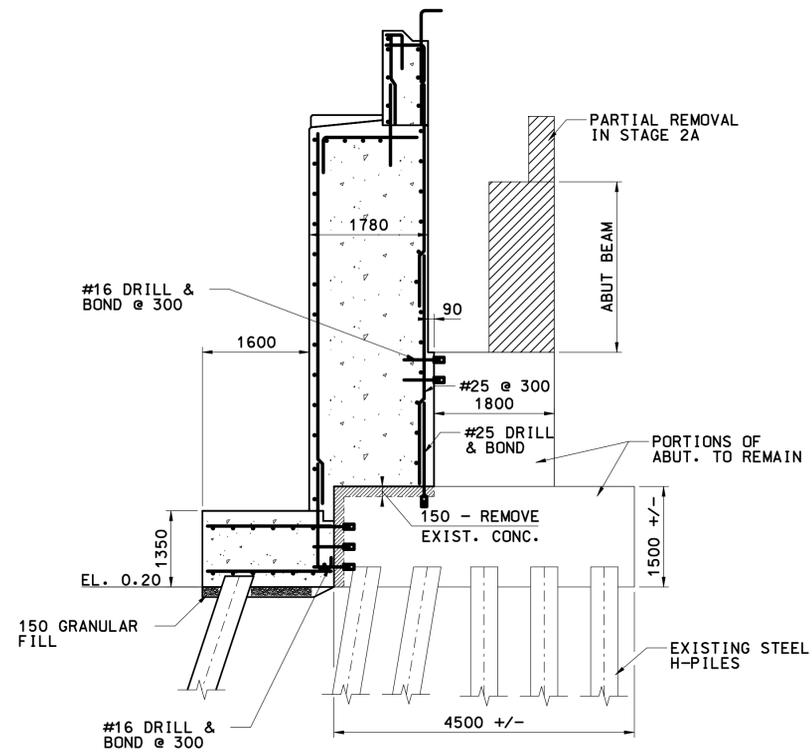
SHEET NO.:

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11/13/2012  
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REV.	DATE	DESCRIPTION	SHEET NO.

CADD  
PLOTTED 11/13/2012



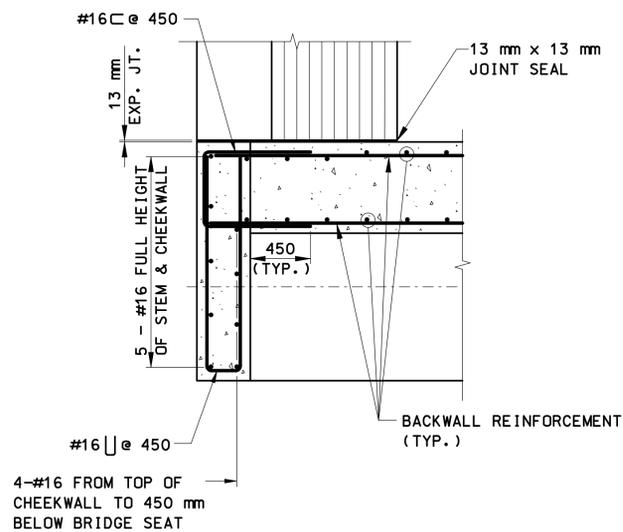


**ABUTMENT SECTION @ EXIST. COLUMN**

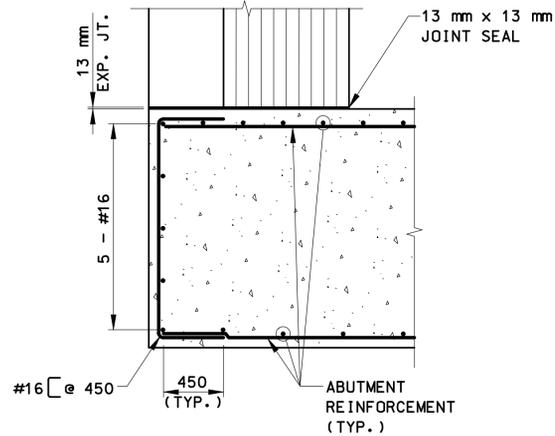
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 MAXIMUM DESIGN PILE LOAD = 1157 kN (STRENGTH I)  
 MAXIMUM DOWNDRAG PILE LOAD = 276 kN  
 (FOR DETAILS NOT SHOWN, SEE "ABUTMENT SECTION".)

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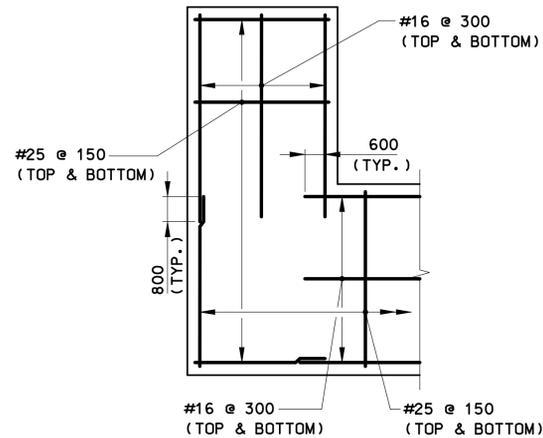
REVISIONS REV. DATE DESCRIPTION SHEET NO.		SCALE AS NOTED		DESIGNER: O. JAMBOTKAR DRAFTER: G. GERARD CHECKED BY: T. LALIBERTE DATE CHECKED: 11-12-12		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)		TOWN: NEW HAVEN / WEST HAVEN		PROJECT NO.: 92-522	
				ENGINEER: PB AMERICAS, INC. APPROVED BY: _____ DATE: _____				DRAWING TITLE: ABUTMENT DETAILS		DRAWING NO.: STR-26		SHEET NO.:	
				CADD				PLOTTED 11/13/2012					



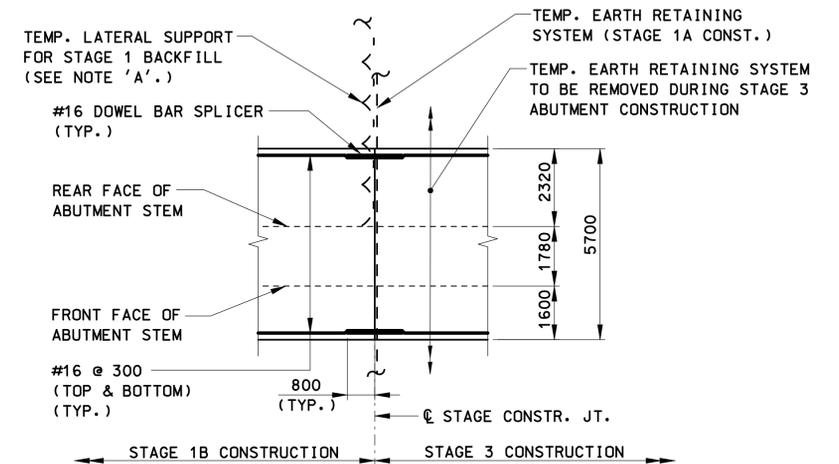
**SECTION A-A**  
SCALE: 1:25  
WINGWALL 1B & 2A SHOWN  
WINGWALL 1A & 2B OPPOSITE HAND



**SECTION B-B**  
SCALE: 1:25  
WINGWALL 1B & 2A SHOWN  
WINGWALL 1A & 2B OPPOSITE HAND



**FOOTING REINFORCEMENT PLAN**  
SCALE: 1:100

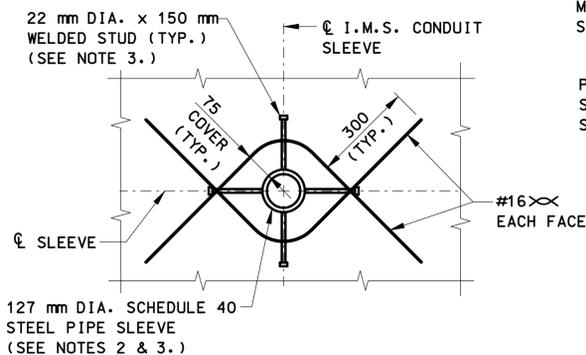


**FOOTING CONSTRUCTION JOINT DETAIL**

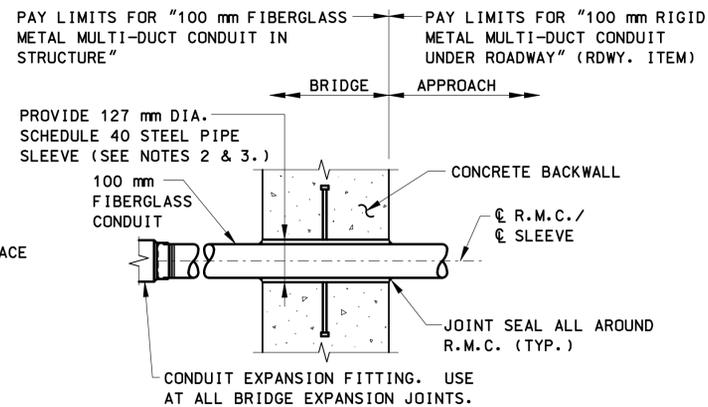
SCALE: 1:100  
STAGE 1B / STAGE 3 CONST. JOINT SHOWN  
STAGE 2A / STAGE 3 CONST. JOINT SIMILAR

**NOTE 'A'**  
PLACE PRIOR TO REMOVING PORTION OF STAGE 1A SHEET PILING. TERMINATE AT TOP OF FOOTING AND PROVIDE TIGHT FIT TO REAR FACE OF ABUTMENT STEM. TEMPORARY LATERAL SUPPORT SHALL BE INSTALLED BELOW BOTTOM OF EXCAVATION GRADE IN SUBSEQUENT STAGES.

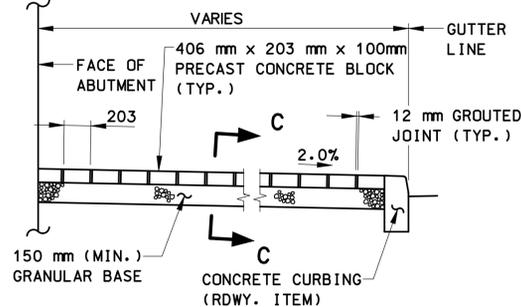
**NOTE:**  
FOR SECTIONS A-A & B-B, SEE SHEETS  
"ABUTMENT 1" & "ABUTMENT 2".



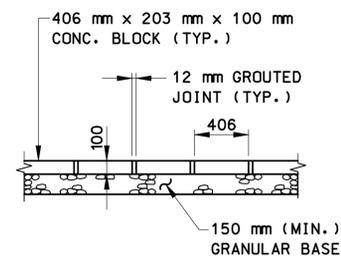
**BACKWALL REINFORCEMENT DETAIL**



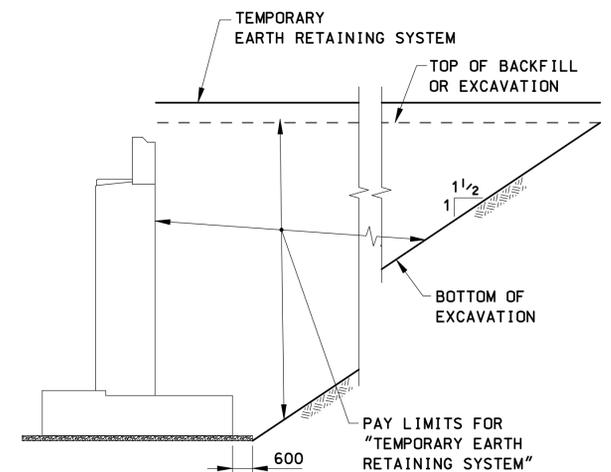
**WALL PENETRATION DETAIL**



**ELEVATION**



**SECTION C-C**



**TEMPORARY EARTH RETAINING SYSTEM DETAIL**

NOT TO SCALE

**CONCRETE BLOCK SLOPE PROTECTION DETAILS**

SCALE: 1:25  
THE COST OF FURNISHING AND PLACING GRANULAR BASE TO BE INCLUDED IN THE ITEM "CONCRETE BLOCK SLOPE PROTECTION".

**I.M.S. CONDUIT SLEEVE DETAILS**

SCALE: 1:10

**CONDUIT SLEEVE NOTES**

1. THE STEEL PIPE SLEEVE SHALL CONFORM TO ASTM A53 SCHEDULE 40 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
2. FASTEN NEOPRENE SHEET TO SLEEVE WITH ADHESIVE CONFORMING TO M.17.01 OF FORM 816.
3. THE COST OF THE PIPE SLEEVE AND WELDED STUDS SHALL BE INCLUDED UNDER THE ITEM "100 mm FIBERGLASS METAL MULTI-DUCT CONDUIT - EXTRA HEAVY WALL".

SCALE AS NOTED

DESIGNER: O. JAMBOTKAR  
DRAFTER: G. LEE  
CHECKED BY: T. LALIBERTE  
DATE CHECKED: 11-12-12

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

ENGINEER: PB AMERICAS, INC.  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT TITLE:  
RECONSTRUCTION OF I-95 OVER  
ELLA T. GRASSO BOULEVARD  
(BRIDGE NO. 00164)

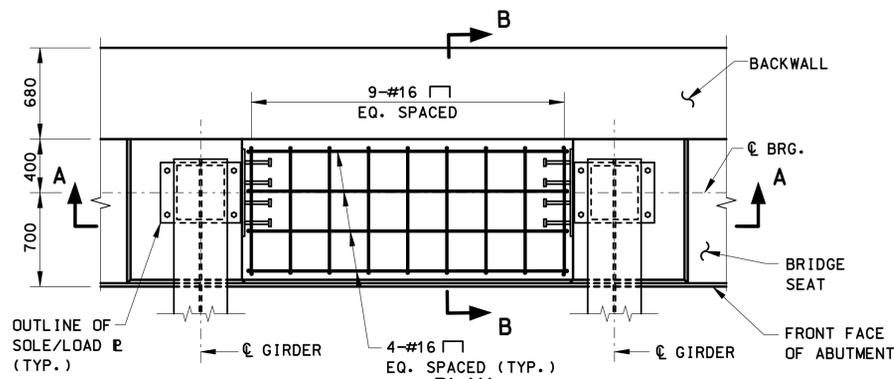
CADD PLOTTED 11/13/2012

TOWN:  
NEW HAVEN / WEST HAVEN

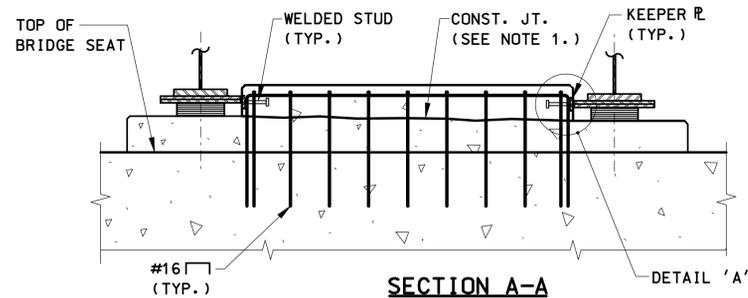
DRAWING TITLE:  
SUBSTRUCTURE DETAILS -  
SHEET 1 OF 3

PROJECT NO.: 92-522  
DRAWING NO.: STR-27  
SHEET NO.:

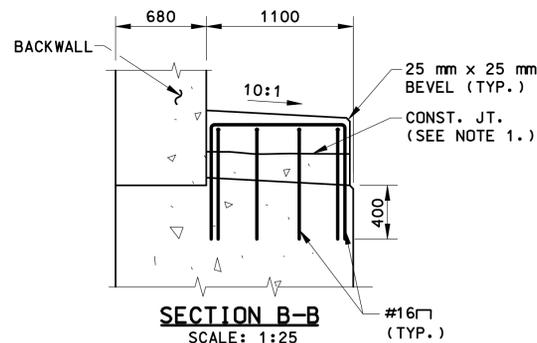
11/13/2012 1:56:14 PM T:\08\0400\Projects\9252\Drawings\Substructure\Contract\_Sheets\00164\str-27-092522-00164.dgn



**PLAN**  
SCALE: 1:25

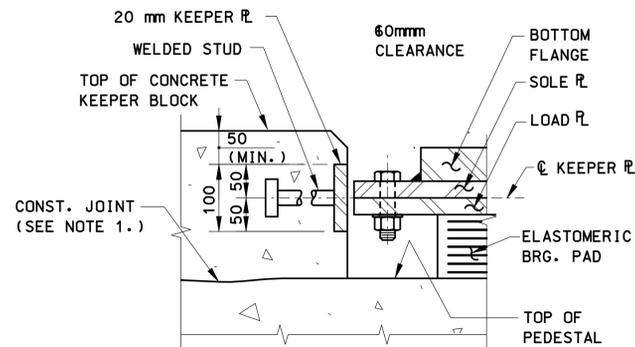


**SECTION A-A**  
SCALE: 1:25

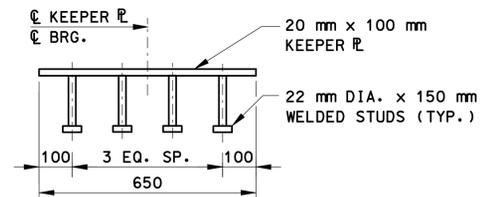


**SECTION B-B**  
SCALE: 1:25

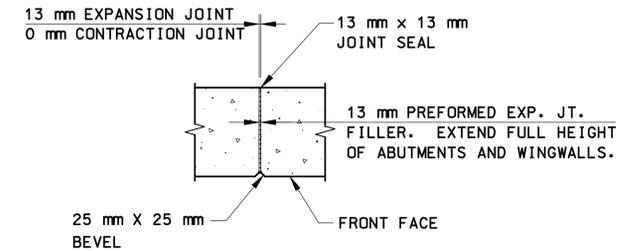
**ABUTMENT KEEPER BLOCK**



**DETAIL 'A'**  
SCALE: 1:5



**KEEPER PLATE DETAIL**  
SCALE: 1:10



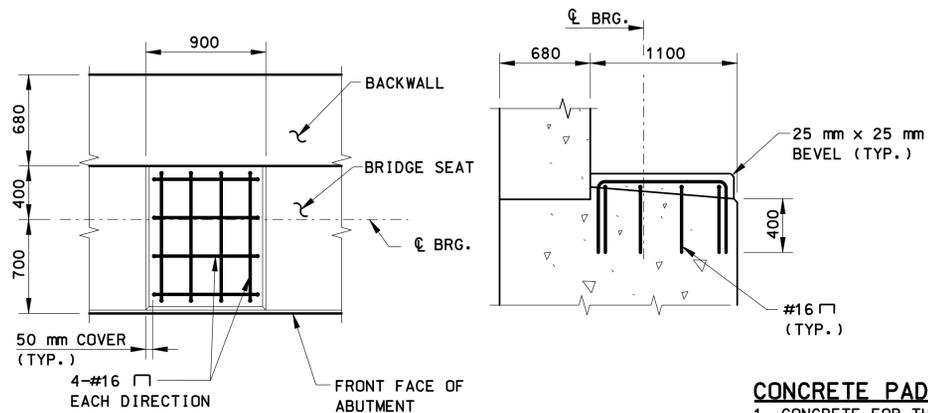
**VERTICAL STEM JOINT DETAIL**  
SCALE: 1:20

**JOINT NOTES**

1. JOINT SEAL AND 13 mm PREFORMED EXPANSION JOINT FILLER SHALL BE INCLUDED IN THE ITEM "CLASS 'A' CONCRETE".
2. ABUTMENTS - JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF BACKWALL AND HORIZONTALLY ALONG TOP OF BACKWALL.
3. WINGWALLS - JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF PARAPET AND HORIZONTALLY ALONG THIS JOINT TO OUTSIDE FACE OF PARAPET.
4. REINFORCEMENT: NO REINFORCEMENT SHALL PASS THROUGH EXPANSION OR CONTRACTION JOINTS. REINFORCEMENT SHALL PASS THROUGH CONSTRUCTION JOINTS.

**KEEPER BLOCK NOTES**

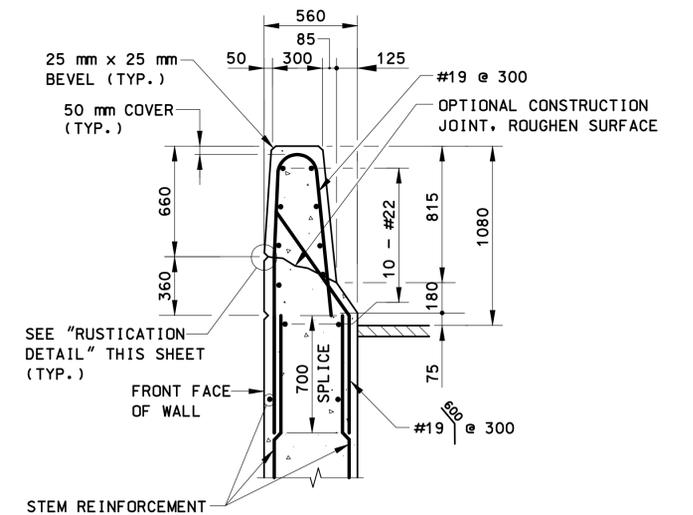
1. ROUGHEN CONTACT SURFACE TO AN AMPLITUDE OF 6 mm(±) AND APPLY A NEAT CEMENT GROUT OR OTHER SUITABLE BONDING MATERIAL IMMEDIATELY PRIOR TO PLACING KEEPER BLOCK CONCRETE.
2. KEEPER BLOCK SHALL BE CONSTRUCTED AFTER ALL STRUCTURAL STEEL HAS BEEN ERRECTED IN IT'S FINAL POSITION.
3. ALL REINFORCING STEEL SHALL HAVE 50 mm COVER.
4. ALL CONCRETE FOR THE KEEPER BLOCK SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE".
5. STRUCTURAL STEEL FOR KEEPER PLATES SHALL BE ASTM A709M, GRADE 250 (GALV.) AND SHALL BE INCLUDED UNDER THE ITEM "STRUCTURAL STEEL-(SITE NO. 2)." WELDED STUDS FOR KEEPER PLATES SHALL BE INCLUDED UNDER THE ITEM "STRUCTURAL STEEL-(SITE NO. 2)."
6. FOR KEEPER BLOCK LOCATION, SEE SHEETS "ABUTMENT 1" & "ABUTMENT 2".



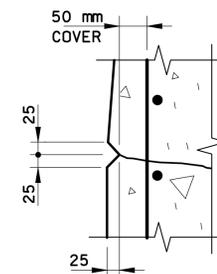
**CONCRETE PAD DETAILS**  
SCALE: 1:25

**CONCRETE PAD NOTES**

1. CONCRETE FOR THE CONCRETE PADS SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE".
2. PLACE REINFORCEMENT TO CLEAR ANCHOR RODS.
3. ADJUST CONCRETE PAD REBAR TO ACCOMODATE KEEPER BLOCKS.



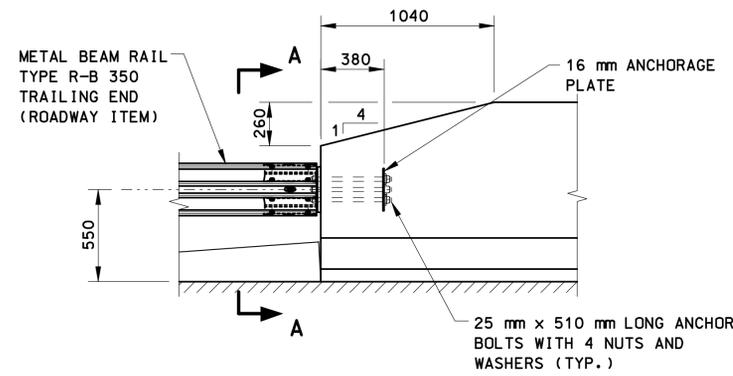
**TYPICAL FASCIA PARAPET DETAIL**  
SCALE: 1:20



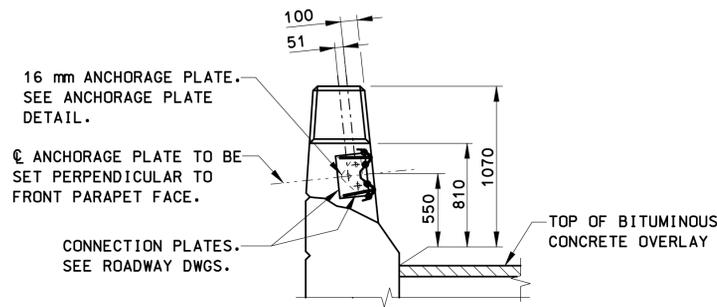
**RUSTICATION DETAIL**  
NOT TO SCALE

1:56:48 PM 11/13/2012 T:\2012\Projects\9252\Structures\Contract\_Sheets\9252-0016.dgn

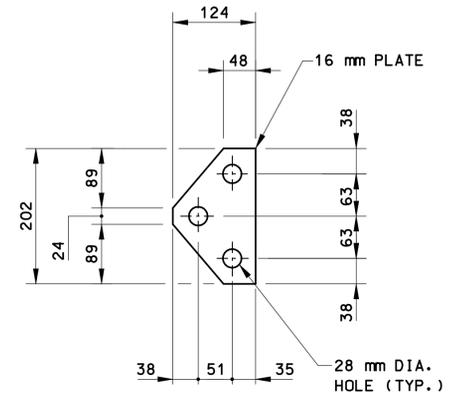
SCALE AS NOTED		DESIGNER: D. BAGDASARIAN		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: SUBSTRUCTURE DETAILS - SHEET 2 OF 3	DRAWING NO.: STR-28
REV.	DATE	DESCRIPTION REVISIONS	APPROVED BY:	CADD	PLOTTED 11/13/2012	



**ELEVATION**  
SCALE: 1:20



**VIEW A-A**  
SCALE: 1:20

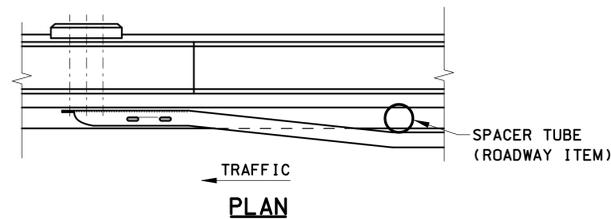


**ANCHORAGE PLATE DETAIL**  
SCALE: 1:5

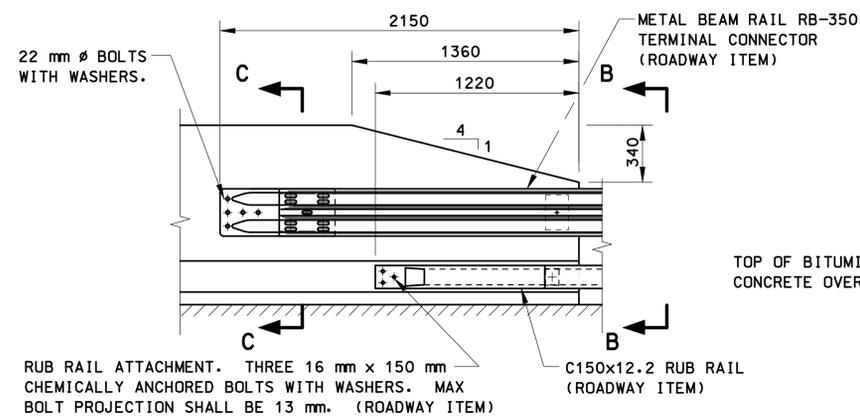
**TRAILING END R-B 350 RAIL ATTACHMENT DETAILS**

**NOTES:**

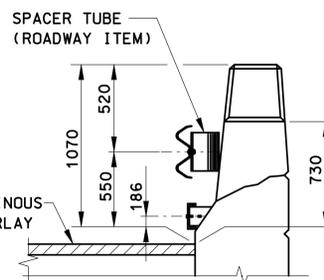
1. STEEL PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36M. THE STEEL PLATES SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123.
2. ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325, MECHANICALLY GALVANIZED.
3. 25 mm DIAMETER PIPE SHALL CONFORM TO ASTM A53, GRADE B OR ASTM A501 AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123.
4. RAILWAY ELEMENTS SHALL BE PAID FOR UNDER THE APPLICABLE ROADWAY ITEMS.
5. ALL RAIL ANCHORAGE MATERIAL REQUIRED FOR END ATTACHMENTS SHALL BE PAID FOR UNDER THE APPLICABLE ROADWAY ITEMS.



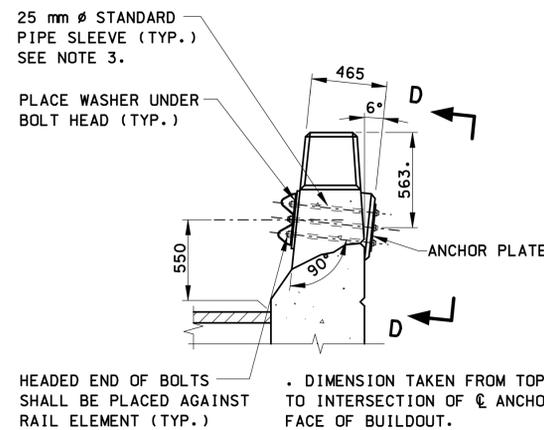
**PLAN**



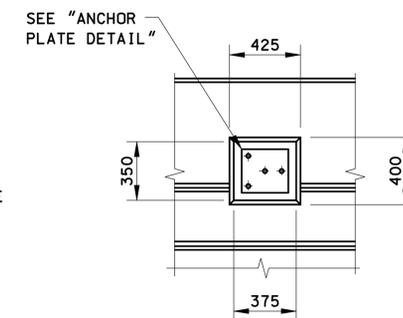
**ELEVATION**  
SCALE: 1:20



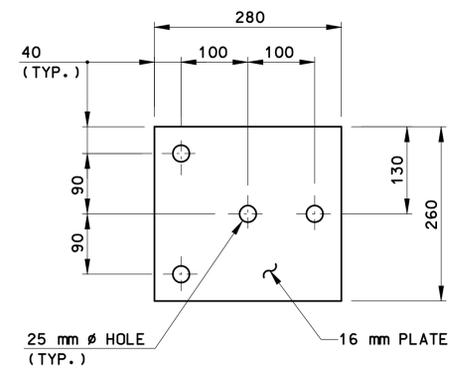
**VIEW B-B**  
SCALE: 1:20



**SECTION C-C**  
SCALE: 1:20



**VIEW D-D**  
SCALE: 1:20

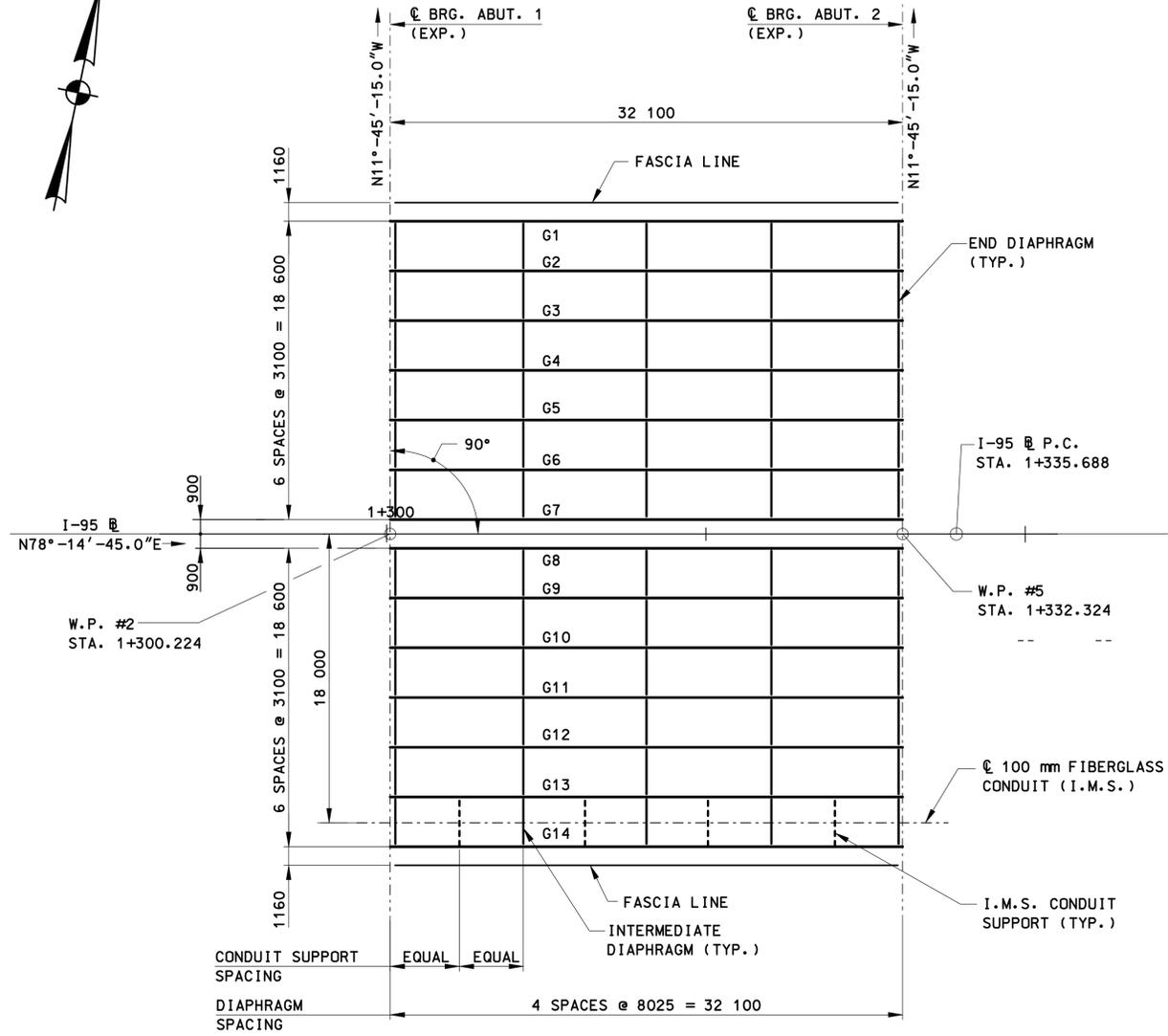


**ANCHOR PLATE DETAIL**  
SCALE: 1:5

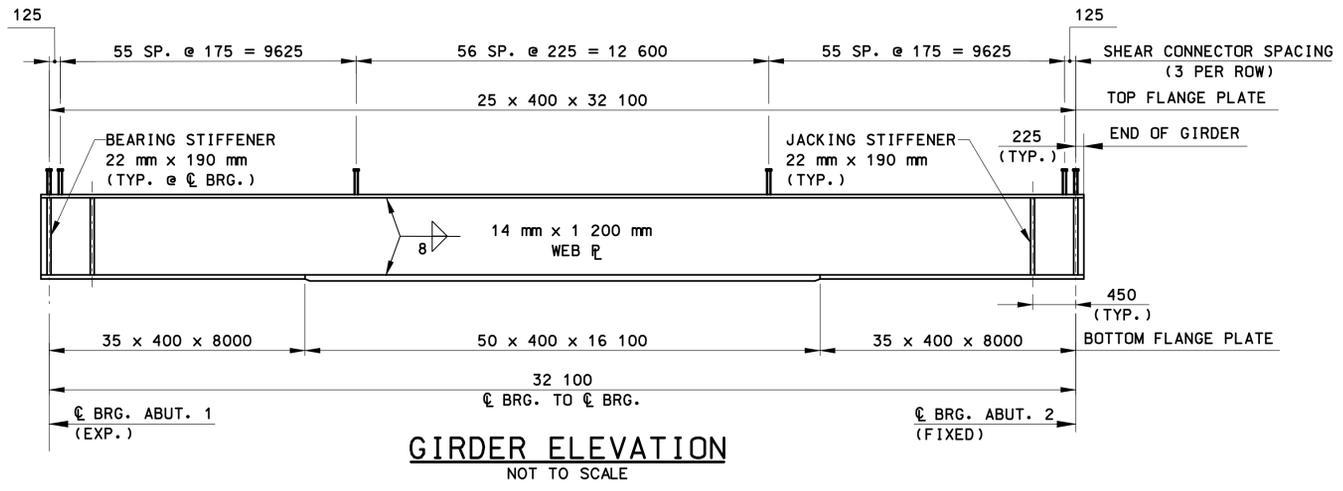
**LEADING END R-B 350 RAIL ATTACHMENT DETAILS**

11/13/2012 1:57:32 PM T:\08\0400\Projects\9818735\CD\Structures\Contract\_Sheets\92-522-0016.dgn

SCALE AS NOTED		DESIGNER: D. BAGDASARIAN	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: SUBSTRUCTURE DETAILS - SHEET 3 OF 3	DRAWING NO.: STR-29
REV.	DATE	DESCRIPTION	CHECKED BY: O. JAMBOTKAR	APPROVED BY:	CADD	PLOTTED 11/13/2012
		REVISIONS	DATE CHECKED: 11-12-12	DATE:		



**PLAN**  
SCALE: 1:200



**GIRDER ELEVATION**  
NOT TO SCALE

DEFLECTIONS & CAMBERS							
MARK	DEAD LOAD DEFLECTIONS @ C.L. OF SPAN			CAMBERS AT C.L. OF SPAN			
	STRUCTURAL STEEL	ADDITIONAL DEAD LOAD	COMPOSITE DEAD LOAD	TOTAL DEAD LOAD	V.C. ORDINATE	EXTRA	TOTAL
G1	21	86	29	136	48	0	184
G2	21	103	27	152	48	0	200
G3	21	103	27	152	48	0	200
G4	21	103	30	155	48	0	203
G5	21	82	32	135	38	0	173
G6	21	87	25	134	24	3	161
G7	21	79	24	124	16	11	151
G8	21	79	24	124	16	11	151
G9	21	84	25	131	16	11	158
G10	21	84	32	138	16	11	165
G11	21	103	30	155	12	15	182
G12	21	103	27	152	0	27	179
G13	21	103	27	152	0	27	179
G14	21	86	29	135	0	27	162

STRUCTURAL STEEL: INCLUDES WEIGHT OF GIRDER AND DIAPHRAGMS.  
 ADDITIONAL DEAD LOAD: INCLUDES WEIGHT OF SLAB, HAUNCH & STAY-IN-PLACE FORMS.  
 COMPOSITE DEAD LOAD: INCLUDES WEIGHT OF OTHER LOADS PLACED AFTER THE SLAB HAS CURED. (I.E. PARAPETS, SIDEWALKS, BWS, ETC...)

GIRDER	FUTURE JACKING LOADS (UNFACTORED) (kN)			
	INDIVIDUAL		SIMULTANEOUS	
	DL	LL+I	DL	LL+I
G1, G7, G8, G14	674	682	450	455
G2-G6 & G9-G13	726	789	484	526

DL = DEAD LOAD  
 LL+I = LIVE LOAD + IMPACT  
 INDIVIDUAL = JACKING LOAD IF GIRDER IS JACKED INDIVIDUALLY.  
 SIMULTANEOUS = JACKING LOAD IF ALL GIRDERS IN LINE ARE JACKED SIMULTANEOUSLY.

**STRUCTURAL STEEL NOTES**

- STRUCTURAL STEEL (LOW ALLOY) SHALL CONFORM TO AASHTO M270, GRADE 345T2.
- WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE ANSI/AASHTO/AWS D1.5-96 BRIDGE WELDING CODE, UNLESS OTHERWISE NOTED ON THE PLANS.
- FIELD SPLICES WILL NOT BE ALLOWED EXCEPT WITH THE WRITTEN PERMISSION OF THE ENGINEER PRIOR TO THE SUBMISSION OF SHOP PLANS. IF ALLOWED, THESE SPLICES SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE COST OF THESE SPLICES, INCLUDING THE COST OF DESIGN, SHALL BE AT NO EXTRA EXPENSE TO THE STATE.
- ALL WEB TO FLANGE, WEB TO BEARING STIFFENER AND BEARING STIFFENER TO FLANGE FILLET WELDS SHALL BE INSPECTED BY THE MAGNETIC PARTICLE METHOD.
- MULTIPLE PASS WELDS, INSPECTED BY THE MAGNETIC PARTICLE METHOD SHALL HAVE EACH PASS OR LAYER INSPECTED AND ACCEPTED BEFORE PROCEEDING TO THE NEXT PASS OR LAYER, AS DETERMINED BY THE ENGINEER.
- SHOP WEB SPLICES SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SPAN.
- SHOP FLANGE SPLICES SHALL BE LOCATED A MINIMUM OF 150 mm FROM WEB SPLICES.
- FLANGE OR WEB SPLICES SHALL BE LOCATED A MINIMUM OF 150 mm FROM STIFFENERS AND CONNECTION PLATES.
- BEARING STIFFENERS AND THE ENDS OF GIRDERS SHALL BE VERTICAL AFTER THE APPLICATION OF FULL DEAD LOADS.
- THE STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CONTROL PROGRAM AS NOTED BELOW:

CATEGORY MBR - MAJOR STEEL BRIDGES.

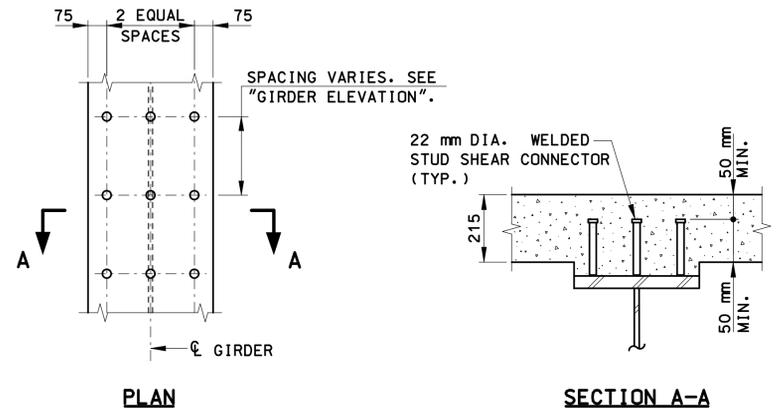
- THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO INSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS IN BEING.

**HIGH STRENGTH BOLT NOTES**

- ALL BOLTED CONNECTIONS SHALL BE "SLIP CRITICAL" CONNECTIONS WITH CLASS 'B' SURFACE CONDITIONS UNLESS OTHERWISE NOTED.
- ALL HIGH STRENGTH BOLTS SHALL BE ASTM A325M TYPE 1 BOLTS IN STANDARD HOLES UNLESS NOTED OTHERWISE. BOLTS, NUTS AND WASHERS THAT REQUIRE FIELD PAINTING SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

**FRAMING PLAN NOTES**

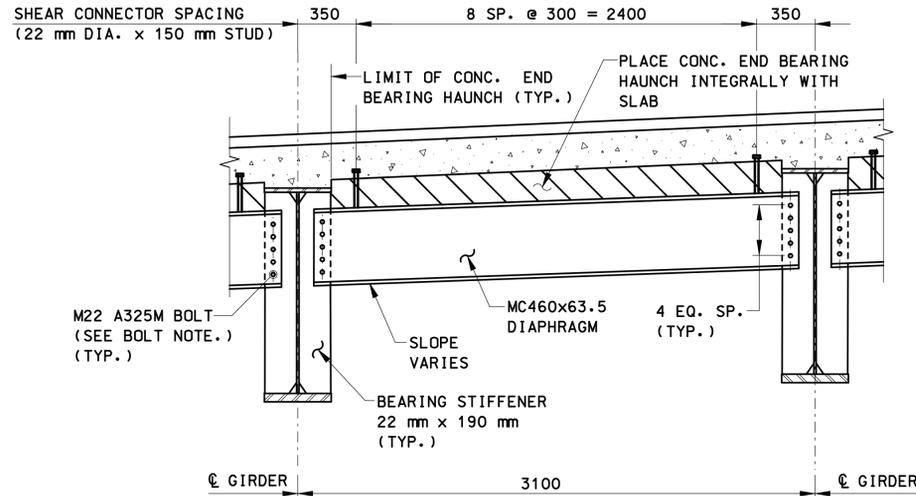
- DIMENSIONS AT ENDS OF GIRDER ARE MEASURED ALONG THE C OF BEARING.
- ALL LENGTH DIMENSIONS ARE HORIZONTAL.
- FOR GENERAL NOTES, SEE SHEET "GENERAL PLAN".
- FOR WORKING POINT COORDINATES, SEE SHEET "LAYOUT PLAN".
- FOR STRUCTURAL STEEL DETAILS, SEE SHEET "STRUCTURAL STEEL DETAILS".
- FOR I.M.S. CONDUIT SUPPORT DETAILS, SEE SHEET "I.M.S. CONDUIT SUPPORT DETAILS".



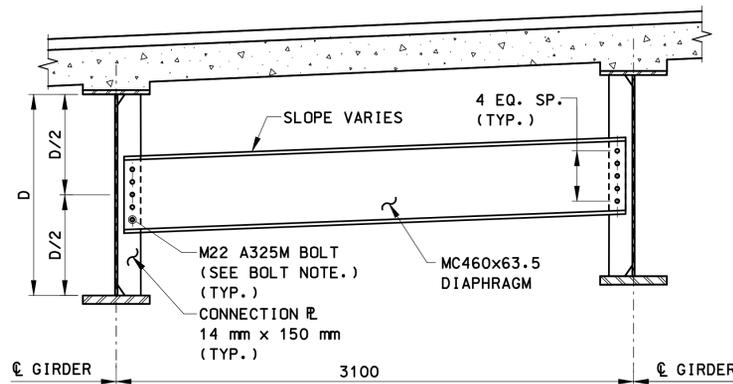
**WELDED STUD SHEAR CONNECTOR DETAIL**  
NOT TO SCALE

1/5/2012 11:56:05 PM T:\08\2010\Projects\991735\CD\Structures\Contract\_Sheets\G0016\A\str-30-09252-0016.dgn

REV. DATE DESCRIPTION REVISIONS SHEET NO.	SCALE AS NOTED	DESIGNER: B. SULLIVAN	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		DRAFTER: G. GERARD		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: FRAMING PLAN	DRAWING NO.: STR-30
CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12	APPROVED BY:	DATE:	CADD	PLOTTED 1/13/2012	SHEET NO.:	



**END DIAPHRAGM**  
SCALE: 1:20



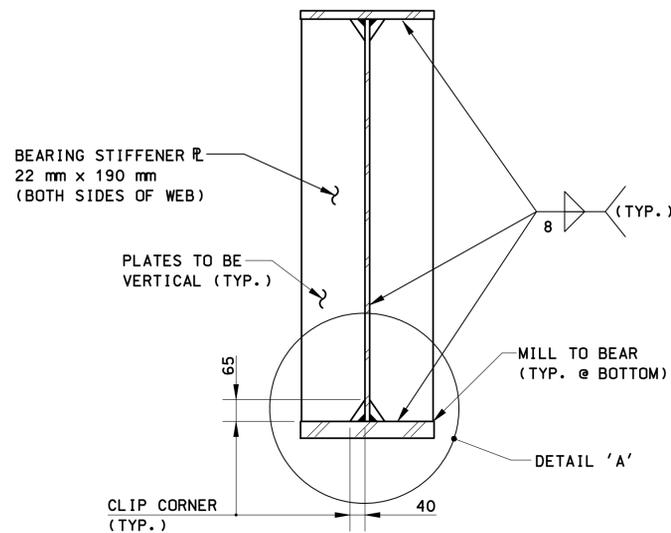
**INTERMEDIATE DIAPHRAGM**  
SCALE: 1:20

**BOLT NOTE**

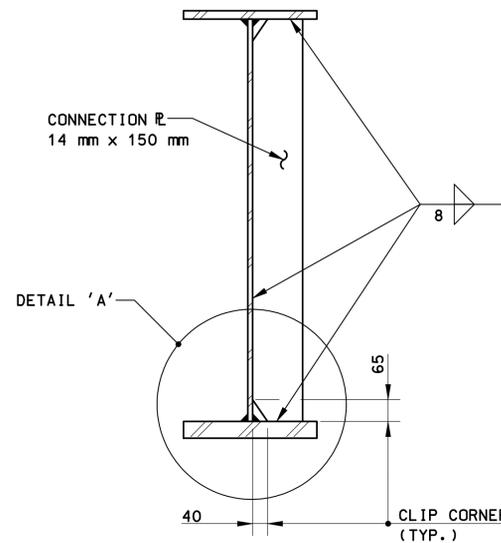
BOLT HOLE IN DIAPHRAGM SHALL BE 24 mm DIAMETER. BOLT HOLE IN BEARING STIFFENER AND CONNECTION PLATE SHALL BE 27 mm DIAMETER.

**ERECTION NOTE**

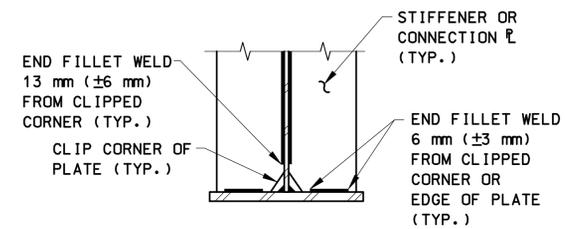
BOLT HOLES IN CONNECTION PLATES SHALL BE FIELD DRILLED FOR INTERMEDIATE DIAPHRAGMS LOCATED UNDER A LONGITUDINAL STAGE CONSTRUCTION JOINT. FIELD DRILL HOLES FOR GIRDER ERECTED IN SUBSEQUENT STAGE ONLY. CONTRACTOR SHALL PROVIDE ERECTION BOLTS AS NECESSARY PRIOR TO PLACING CONCRETE.



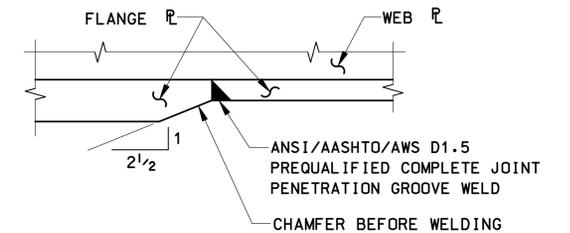
**BEARING/JACKING STIFFENER DETAIL**  
SCALE: 1:10  
(BEARING STIFFENER SHOWN, JACKING STIFFENER SIMILAR)



**CONNECTION PLATE DETAIL**  
SCALE: 1:10



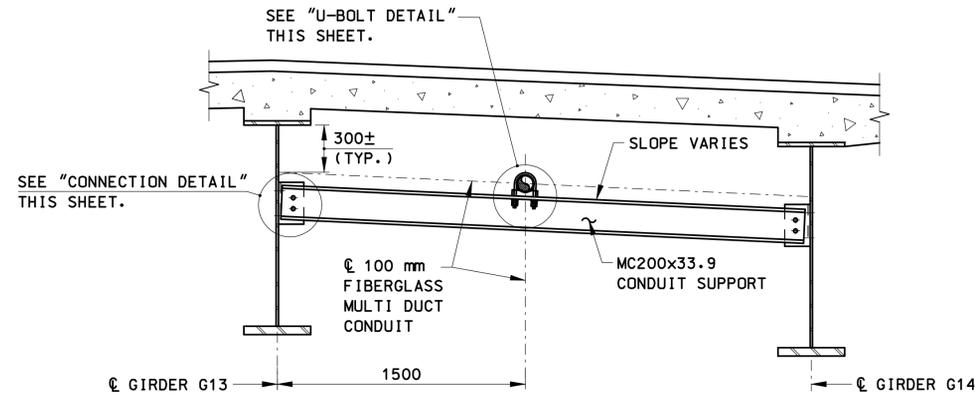
**DETAIL 'A'**  
NOT TO SCALE



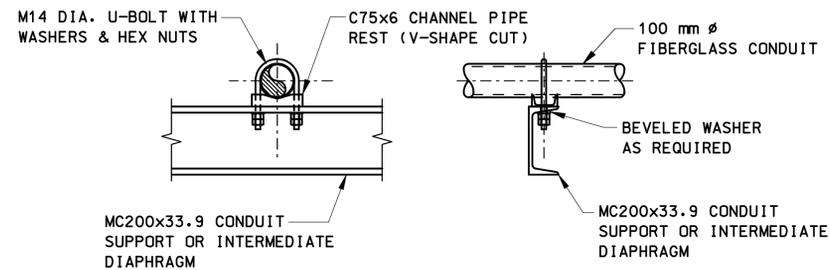
**ELEVATION**  
**FLANGE THICKNESS TRANSITION DETAIL**  
SCALE: 1:5

15844 PM 11/13/2012 T:\2010\Projects\92-52\Structures\Contract\_Sheets\92-52-016.dgn

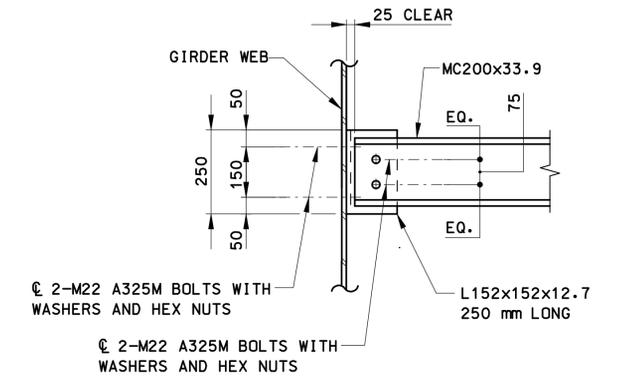
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								DRAWING TITLE: STRUCTURAL STEEL DETAILS		DRAWING NO.: STR-31		SHEET NO.:	
								CADD		PLOTTED 11/13/2012			



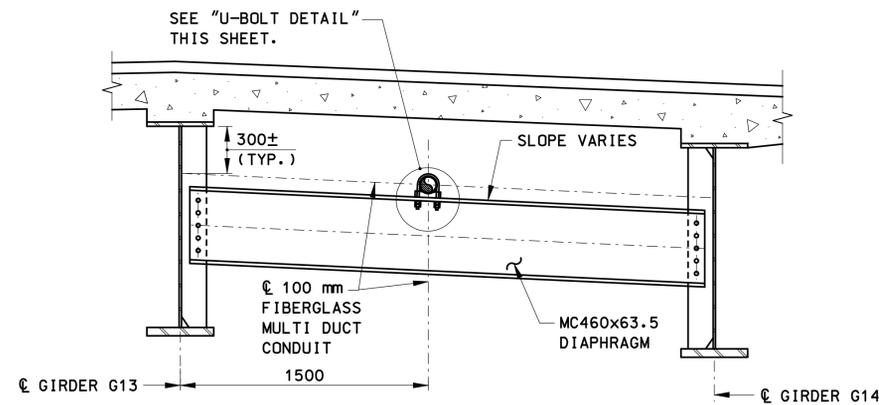
**I.M.S. CONDUIT SUPPORT**  
SCALE: 1:20



**ELEVATION SECTION**  
**U-BOLT DETAIL**  
SCALE: 1:10



**CONNECTION DETAIL**  
SCALE: 1:10



**I.M.S. CONDUIT SUPPORT AT INTERMEDIATE DIAPHRAGM**  
SCALE: 1:20

**END DIAPHRAGM NOTE**

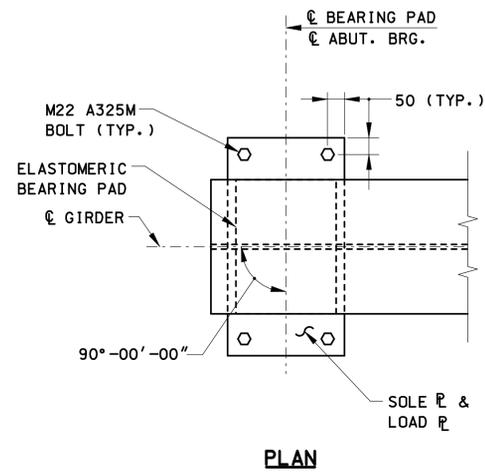
FOLLOWING BACKWALL PENETRATION, THE I.M.S. CONDUIT SHALL PASS BELOW THE END DIAPHRAGM THEN SWEEP UPWARDS TO FIRST I.M.S. CONDUIT SUPPORT LOCATION.

**CONDUIT SUPPORT NOTES**

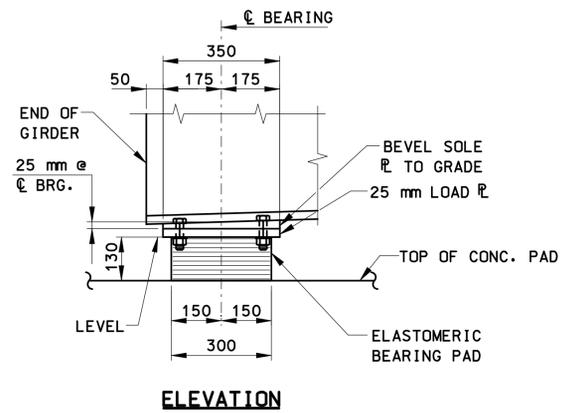
1. THE CONDUIT SHALL BE POSITIVELY CONNECTED TO THE TOP FLANGE OF INTERMEDIATE DIAPHRAGMS WITH U-BOLTS & PIPE RESTS. SEE "U-BOLT DETAIL" THIS SHEET.
2. THE U-BOLTS, NUTS AND WASHERS SHALL BE MECHANICALLY GALVANIZED IN CONFORMANCE WITH ASTM B695, CLASS 50.
3. THE COST OF THE CONDUIT SUPPORTS, CONNECTION PLATES, MODIFIED DIAPHRAGMS FOR CONDUIT SUPPORTS, PIPE SLEEVES, NEOPRENE AND ADHESIVE SHALL BE INCLUDED UNDER THE ITEM "STRUCTURAL STEEL - SITE NO. 2".
4. PROVIDE CONDUIT EXPANSION JOINT AT BRIDGE EXPANSION JOINT. SEE SPECIAL PROVISIONS.

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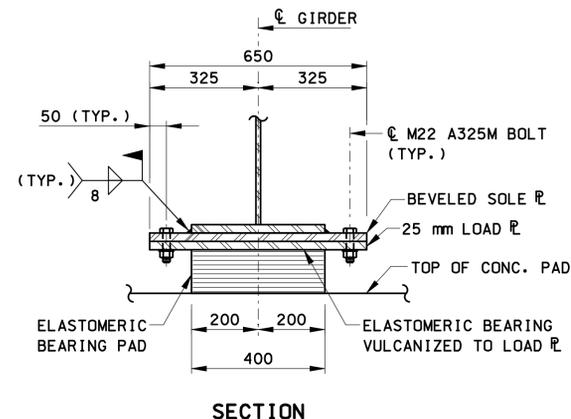
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				DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: I.M.S. CONDUIT SUPPORT DETAILS	DRAWING NO.: STR-32
				CHECKED BY: O. JAMBOTKAR	APPROVED BY:	CADD	PLOTTED 1/13/2012	
				DATE CHECKED: 11-12-12	DATE:			



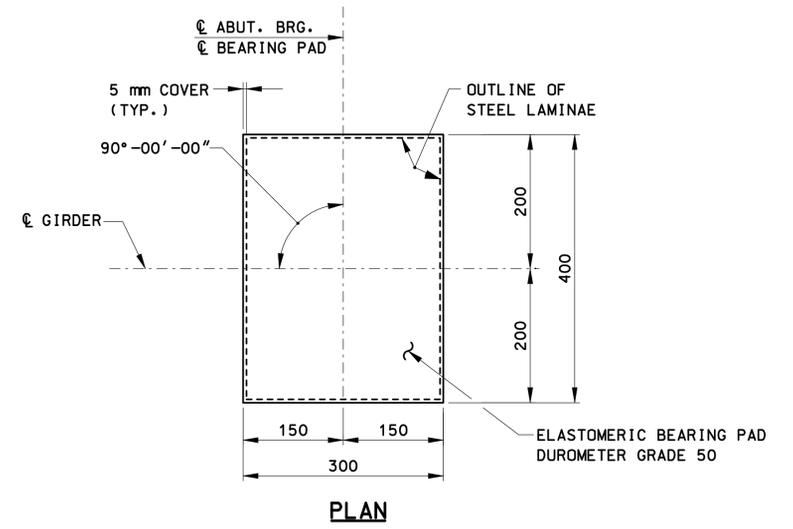
PLAN



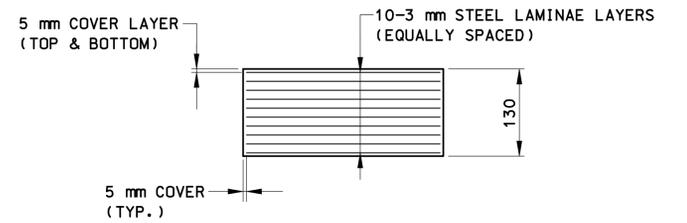
ELEVATION



SECTION



PLAN



SECTION

ELASTOMERIC BEARING PAD

SCALE: 1:5

EXPANSION BEARING

SCALE: 1:10

**BEARING NOTES:**

- ELASTOMER SHALL BE GRADE 3 WITH A SHORE "A" DUROMETER HARDNESS =  $50 \pm 5$  POINTS AND A SHEAR MODULUS WITHIN THE RANGE OF 0.66 MPa TO 0.90 MPa.
- THE STEEL LAMINAE USED IN THE ELASTOMERIC BEARING SHALL CONFORM TO ASTM A709M, GRADE 250.
- BOLTED CONNECTIONS SHALL BE "SLIP-CRITICAL" CONNECTIONS WITH CLASS 'B' SURFACE CONDITION USING M22 ASTM A325M HIGH STRENGTH BOLTS.
- ALL OTHER STEEL IN BEARINGS INCLUDING SOLE PLATES, LOAD PLATES AND SHEAR PLATES SHALL CONFORM TO ASTM A709M, GRADE 345.
- THE LOAD/SOLE PLATE SHALL BE HOT BONDED TO THE ELASTOMERIC BEARING PAD DURING VULCANIZATION.
- THE SOLE PLATE SHALL BE BEVELED TO MATCH THE SLOPE OF THE GIRDER SO THAT THE BOTTOM SURFACE OF THE PLATE IS LEVEL AFTER THE APPLICATION OF FULL DEAD LOAD.
- ELASTOMERIC BEARINGS SHALL BE INSTALLED AT AN AMBIENT TEMPERATURE BETWEEN 0° AND 27° C. CENTERLINE OF BEARING PAD AND SOLE PLATE TO BE INSTALLED AT THE CENTERLINE OF BEARING
- IN NO CASE SHALL THE ELASTOMER OR VULCANIZED BOND BE SUBJECTED TO TEMPERATURES HIGHER THAN 204°C.
- THE ELASTOMERIC BEARINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 14, METHOD B.

SCALE AS NOTED

DESIGNER: B. SULLIVAN  
 DRAFTER: G. LEE  
 CHECKED BY: O. JAMBOTKAR  
 DATE CHECKED: 11-12-12

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION  
 ENGINEER: PB AMERICAS, INC.  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

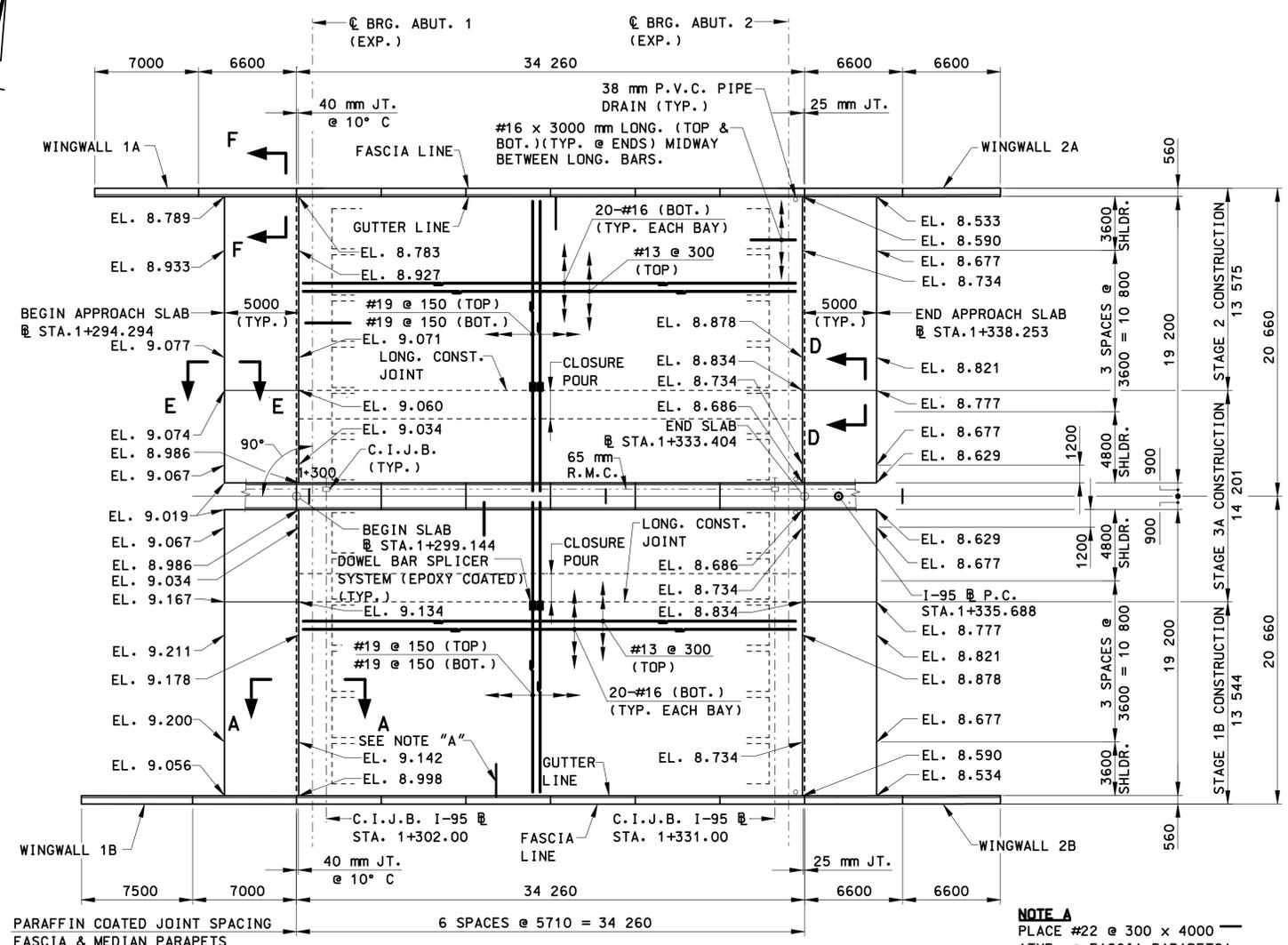
PROJECT TITLE:  
 RECONSTRUCTION OF I-95 OVER  
 ELLA T. GRASSO BOULEVARD  
 (BRIDGE NO. 00164)  
 CADD PLOTTED 11/13/2012

TOWN:  
 NEW HAVEN / WEST HAVEN  
 DRAWING TITLE:  
 BEARINGS

PROJECT NO.: 92-522  
 DRAWING NO.: STR-33  
 SHEET NO.: \_\_\_\_\_

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REV.	DATE	DESCRIPTION	SHEET NO.



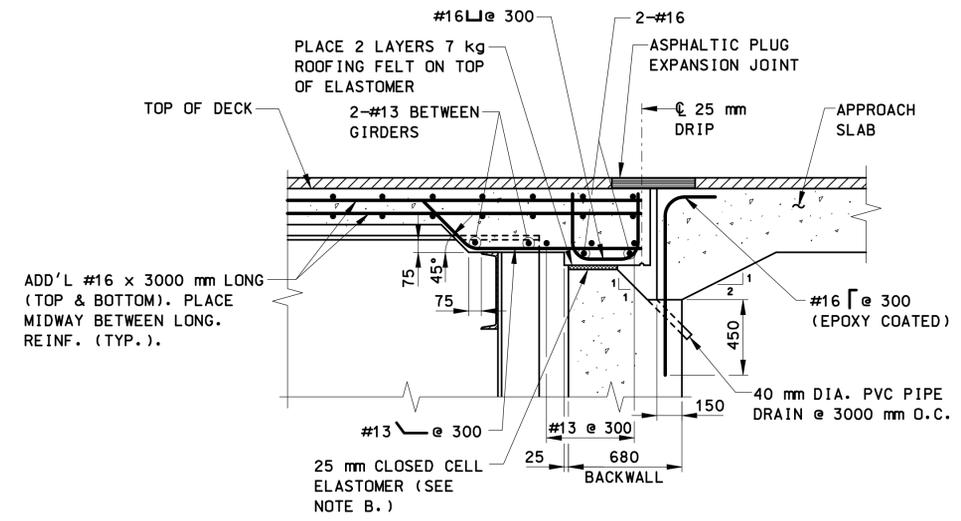
**PLAN**  
SCALE: 1:200

**SLAB NOTES**

- FOR FINISHED SLAB ELEVATIONS, SEE SHEET "SLAB DETAILS - SHEET 1 OF 2".
- FOR PROFILES AND BANKING DIAGRAMS, SEE SHEET "PROFILES".
- FOR TYPICAL SLAB SECTIONS AND DETAILS, SEE SHEETS "SLAB SECTIONS AND DETAILS".
- FOR BOTTOM LONGITUDINAL REINFORCEMENT, SEE "TYPICAL BAY REINFORCEMENT DETAIL" ON SHEET "SLAB SECTIONS AND DETAILS".
- ELEVATIONS GIVEN IN "PLAN" APPLY AT TOP OF WEARING SURFACE.
- C.I.J.B. DENOTES 450 mm x 300 mm x 200 mm CAST IRON JUNCTION BOX WITH 65 mm R.M.C. STUB DOWN & CAP.
- FOR ELECTRICAL DETAILS, SEE SHEETS "PARAPET ELECTRICAL DETAILS" AND "MEDIAN ELECTRICAL DETAILS".
- FOR APPROACH SLAB DETAILS, SEE SHEET "SLAB DETAILS - SHEET 2 OF 2".
- FOR JOINT DETAILS, SEE SHEET "EXPANSION JOINT DETAILS".
- ALL LAP SPLICES SHALL BE ALTERNATED A FULL LAP LENGTH. MINIMUM LAP SPLICES SHALL BE AS FOLLOWS:
 

BAR SIZE	SPLICE LENGTH
#13	500 mm
#16	625 mm
#19	750 mm
- FOR DETAILS OF PARAFFIN COATED JOINTS, SEE SHEET "SLAB DETAILS - SHEET 1 OF 2".
- TYPE 2 CONDUIT EXPANSION FITTINGS SHALL BE USED AT EACH ABUTMENT JOINT.
- JOINT OPENING BETWEEN BRIDGE AND WINGWALL PARAPET AT EXPANSION END VARIES FOR TEMPERATURES OTHER THAN 10°C. SEE DIMENSION "X" ON SHEET "EXPANSION JOINT DETAILS".

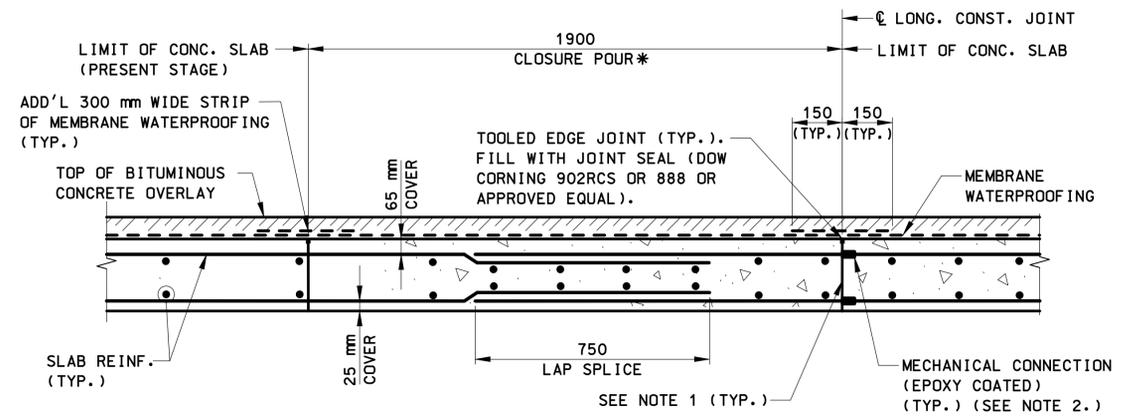
**NOTE A**  
PLACE #22 @ 300 x 4000 (TYP. @ FASCIA PARAPETS)



**SECTION A-A**  
SCALE: 1:20

**NOTE B**  
CLOSED CELL ELASTOMER BONDED TO TOP OF BACKWALL WITH A PRESSURE SENSITIVE ADHESIVE. PLACE SKIN SIDE OF ELASTOMER UPWARD.

\*CLOSURE POURS SHALL BE USED BETWEEN CONSTRUCTION STAGES AS SHOWN, AND/OR AS DIRECTED BY THE ENGINEER.



**SECTION**

**LONGITUDINAL CONSTRUCTION JOINT/CLOSURE POUR DETAIL**

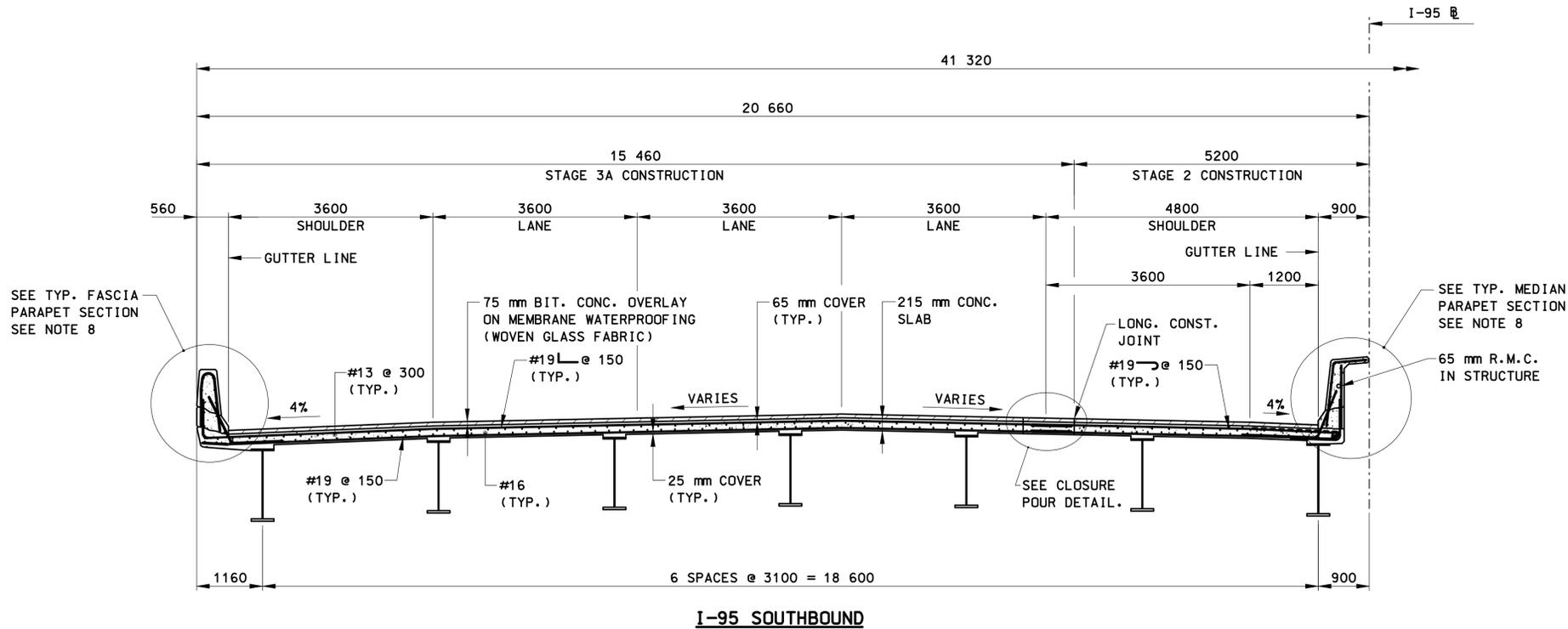
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**NOTES:**

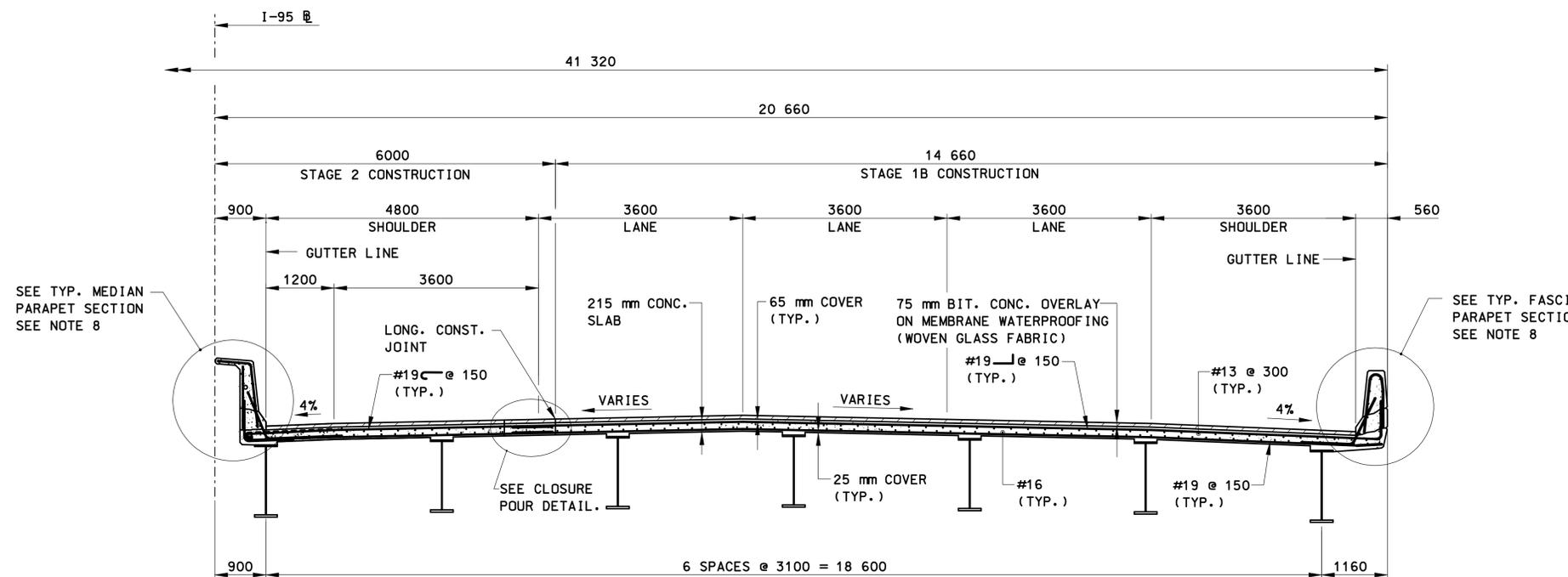
- ROUGHEN SURFACE, BLAST CLEAN, THEN APPLY A NEAT CEMENT GROUT OR OTHER SUITABLE BONDING MATERIAL IMMEDIATELY PRIOR TO PLACING ADJACENT POUR. COST TO BE INCLUDED IN THE CONTRACT ITEM "CLASS 'F' CONCRETE".
- MECHANICAL CONNECTION SHALL DEVELOP IN TENSION 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR AND SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITION OF AASHTO. THE CONTRACTOR SHALL SUBMIT TYPE OF CONNECTION FOR ENGINEERS APPROVAL. COST TO BE INCLUDED IN THE ITEM "DOWEL BAR SPLICER SYSTEM - EPOXY COATED."

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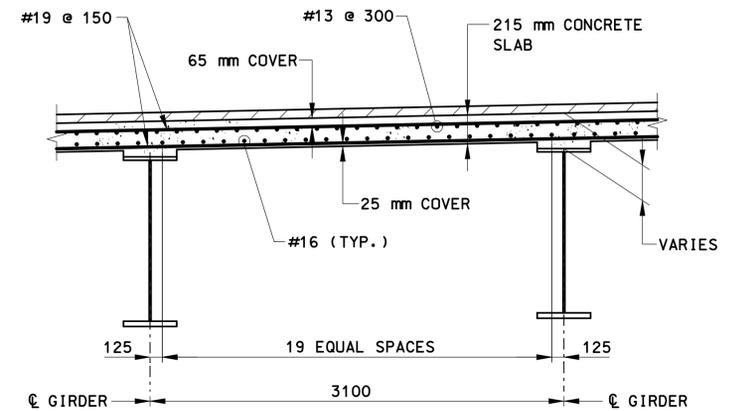
DESIGNER: B. SULLIVAN DRAFTER: G. LEE CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION ENGINEER: PB AMERICAS, INC. APPROVED BY:		PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)		TOWN: NEW HAVEN / WEST HAVEN		PROJECT NO.: 92-522 DRAWING NO.: STR-34 SHEET NO.:	
SCALE AS NOTED		CADD		PLOTTED 11/13/2012		DRAWING TITLE: SLAB PLAN			
REV.	DATE	DESCRIPTION	REVISIONS	SHEET	NO.				



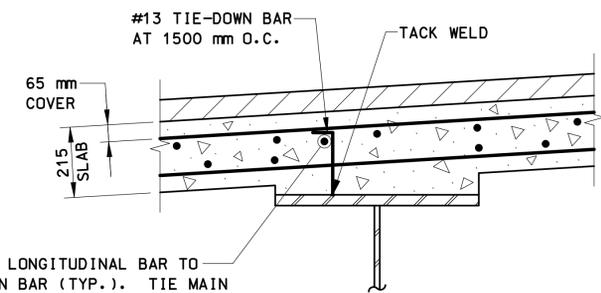
**I-95 SOUTHBOUND**



**I-95 NORTHBOUND**  
**TYPICAL SLAB SECTIONS**  
SCALE: 1:50



**TYPICAL BAY REINFORCEMENT DETAIL**  
SCALE: 1:25



TIE #13 LONGITUDINAL BAR TO TIE-DOWN BAR (TYP.). TIE MAIN REINFORCEMENT TO LONGITUDINAL BAR.

**TIE-DOWN DETAIL**  
SCALE: 1:10

**TIE-DOWN NOTES**

1. TIE-DOWN BARS DO NOT EXCLUDE THE USE OF CHAIRS FOR SUPPORTING THE REINFORCEMENT MAT.
2. THE COST OF FURNISHING AND PLACING TIE-DOWN BARS TO BE INCLUDED IN THE CONTRACT ITEM "DEFORMED STEEL BARS (EPOXY COATED)".
3. TIE-DOWN BARS AND LONGITUDINAL BARS SHALL CLEAR SHEAR CONNECTORS.

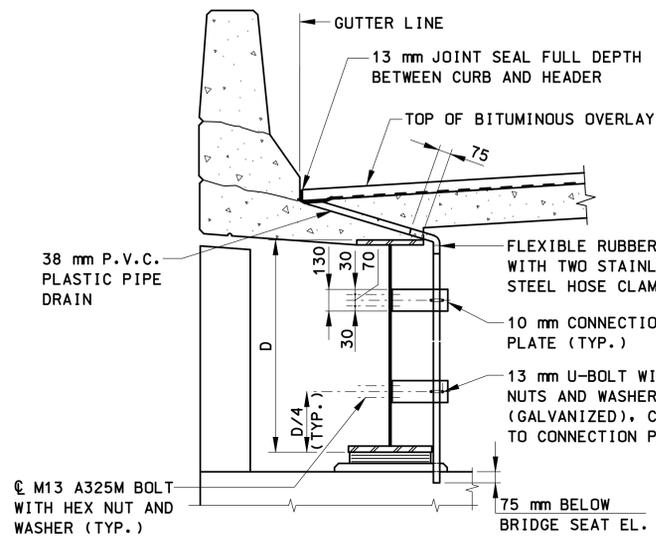
**NOTES**

1. ALL REINFORCEMENT IN SLAB TO BE EPOXY COATED.
2. DIAPHRAGMS NOT SHOWN FOR CLARITY.
3. FOR GENERAL NOTES, SEE SHEET "GENERAL PLAN".
4. FOR PROFILES AND BANKING DIAGRAMS, SEE SHEET "PROFILES".
5. FOR FRAMING PLAN, SEE SHEET "FRAMING PLAN".
6. FOR SLAB PLAN, SEE SHEET "SLAB PLAN".
7. FOR ADDITIONAL SLAB DETAILS, SEE SHEETS "SLAB DETAILS - SHEET X OF X".
8. FOR MEDIAN & FASCIA PARAPET SECTIONS, SEE SHEET "SLAB DETAILS - SHEET 1 OF 2".

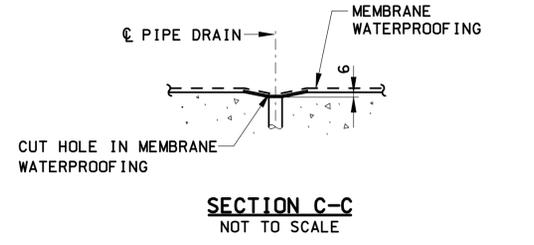
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REV. DATE DESCRIPTION REVISIONS SHEET NO.	SCALE AS NOTED	DESIGNER: O. JAMBOTKAR	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
		DRAFTER: G. LEE		ENGINEER: PB AMERICAS, INC.	DRAWING TITLE: SLAB SECTIONS AND DETAILS	DRAWING NO.: STR-35
		CHECKED BY: T. LALIBERTE	APPROVED BY:	CADD	PLOTTED 11/13/2012	SHEET NO.:
		DATE CHECKED: 11-12-12	DATE:			



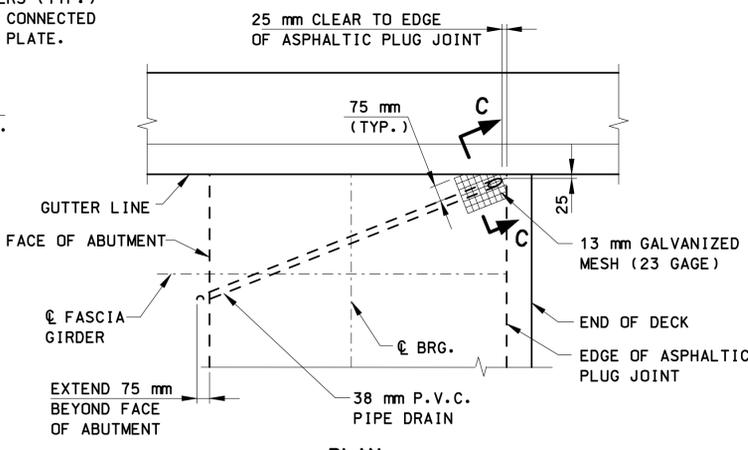


**SECTION AT FASCIA GIRDER**  
SCALE: 1:20

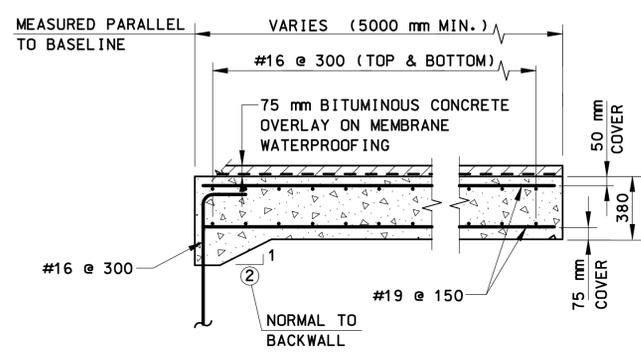


**SECTION C-C**  
NOT TO SCALE

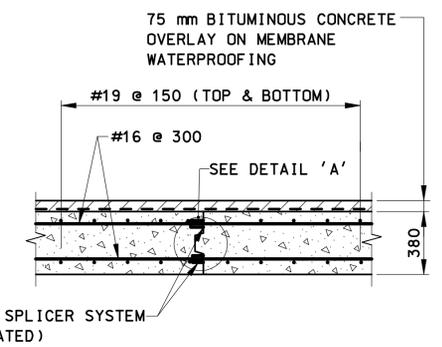
- NOTES**
- 38 mm POLYVINYL CHLORIDE (P.V.C.) PLASTIC PIPE DRAINS SHALL BE PLACED THRU SLAB WHERE SHOWN ON THE "SLAB PLAN". LOCATIONS MAY BE FIELD ADJUSTED, AS DIRECTED BY THE ENGINEER, SUCH THAT PIPE DRAINS ARE NOT ABOVE THE TRAVEL LANES, SHOULDERS, OR SIDEWALKS.
  - COST OF PIPE DRAINS SHALL BE INCLUDED UNDER THE ITEM "38 mm POLYVINYL CHLORIDE PLASTIC PIPE".
  - THE COST OF FURNISHING AND INSTALLING MESH SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR "HMA SO.25".
  - DETAILS SHOWN AT FASCIA, MEDIAN IS SIMILAR.



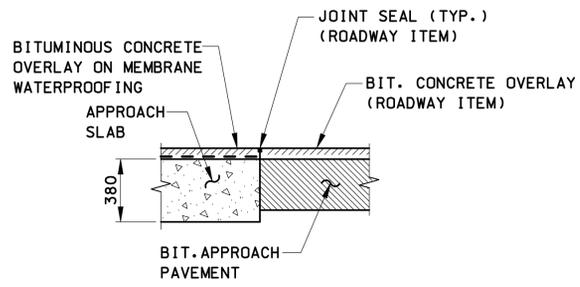
**PLAN**  
SCALE: 1:20



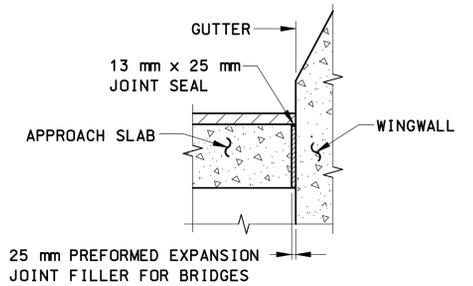
**TYPICAL LONGITUDINAL SECTION**  
SCALE: 1:20



**SECTION D-D**  
SCALE: 1:20

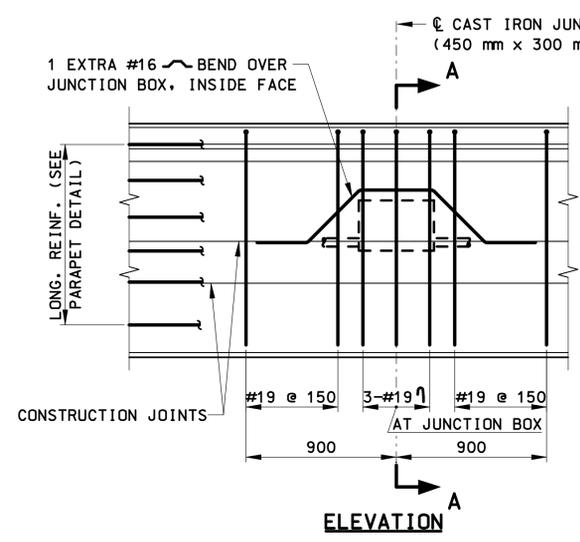


**SECTION E-E**  
SCALE: 1:20

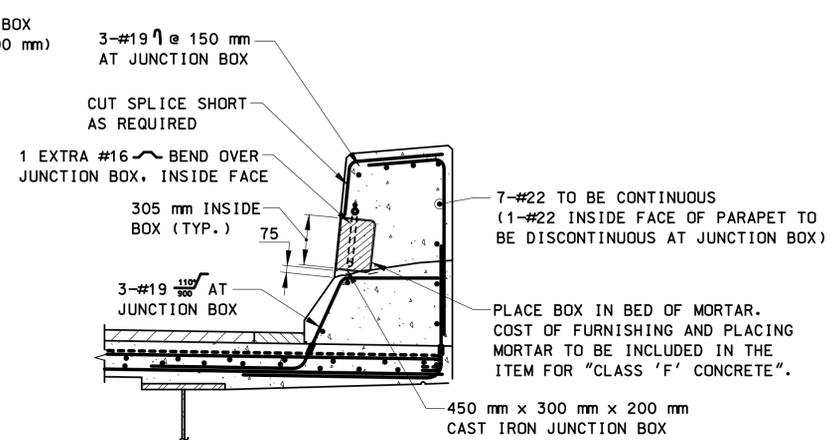


**SECTION F-F**  
SCALE: 1:20

**OVERLAY INTERFACE DRAINAGE DETAILS**  
SCALE AS NOTED

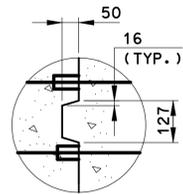


**ELEVATION**



**SECTION A-A**

**PARAPET REINFORCEMENT AT JUNCTION BOX**  
SCALE: 1:20



**DETAIL 'A'**  
NOT TO SCALE

- NOTES**
- APPROACH SLABS SHALL BE CONSTRUCTED OF CLASS "F" CONCRETE.
  - ALL REINFORCING IN THE APPROACH SLABS SHALL BE EPOXY COATED.
  - SECTIONS D-D, E-E, AND F-F ARE CUT FROM SHEET "SLAB PLAN".

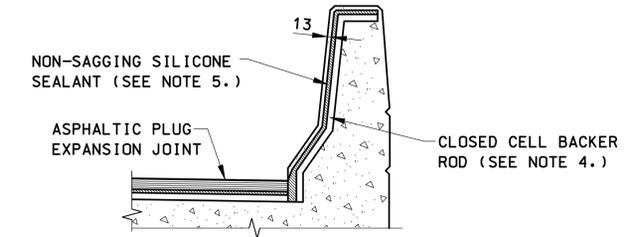
**APPROACH SLAB DETAILS**  
SCALE AS NOTED

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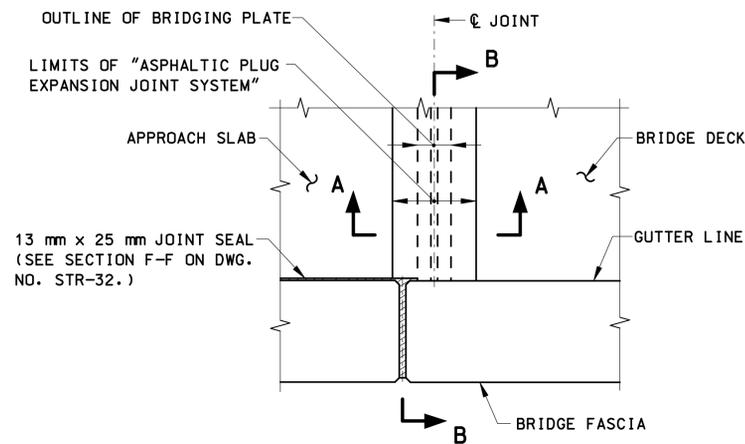
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REV.	DATE	DESCRIPTION	REVISIONS	SHEET NO.	CADD	PLOTTED	11/13/2012		

DIMENSION "X" FOR VARIOUS INSTALLATION TEMPERATURES								
	-7°	-1°	4°	10°	16°	21°	27°	32°
ABUTMENT	43.0	42.0	41.1	40.0	38.9	38.0	37.0	36.0

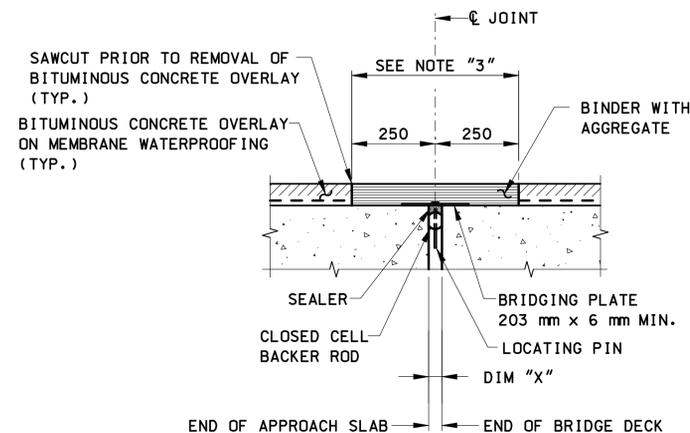
MAXIMUM DESIGN THERMAL MOVEMENT RANGE	
ABUTMENT 1	12 mm
ABUTMENT 2	12 mm



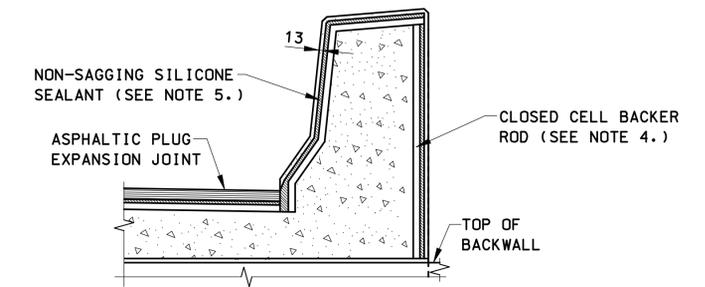
**SECTION B-B**  
(AT FASCIA)  
SCALE: 1:20



**PARTIAL PLAN**  
(WINGWALL 1B SHOWN,  
OTHER WINGWALLS AND MEDIAN SIMILAR)  
SCALE: 1:20



**SECTION A-A**  
SCALE: 1:10



**SECTION B-B**  
(AT MEDIAN)  
SCALE: 1:20

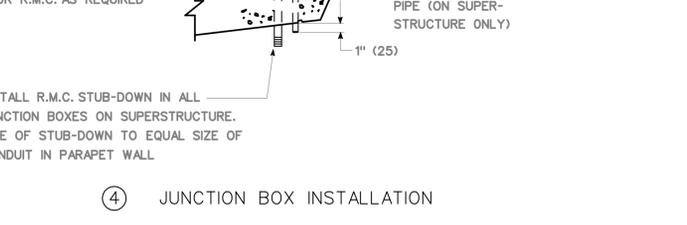
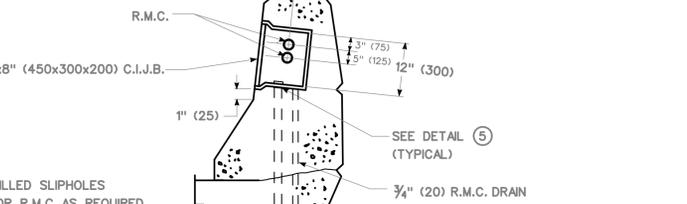
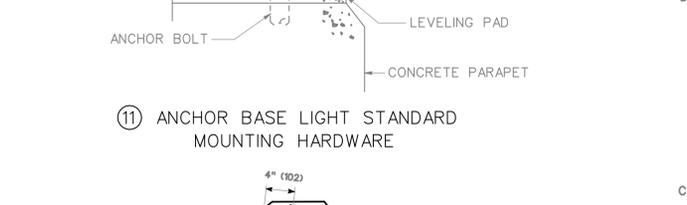
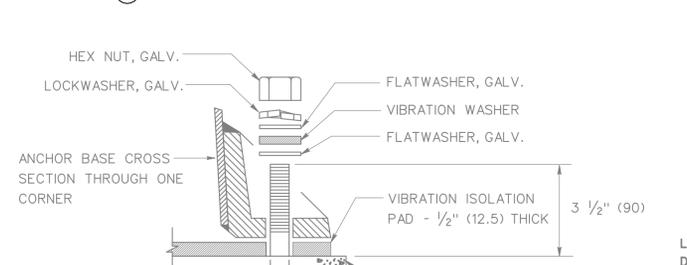
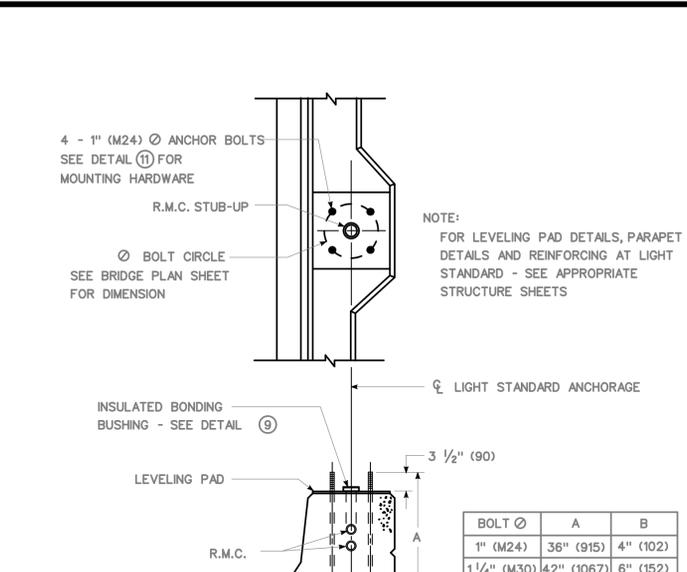
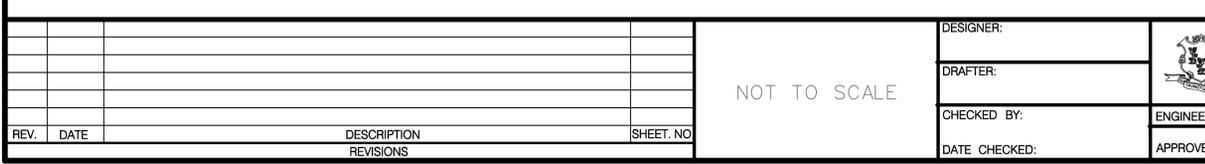
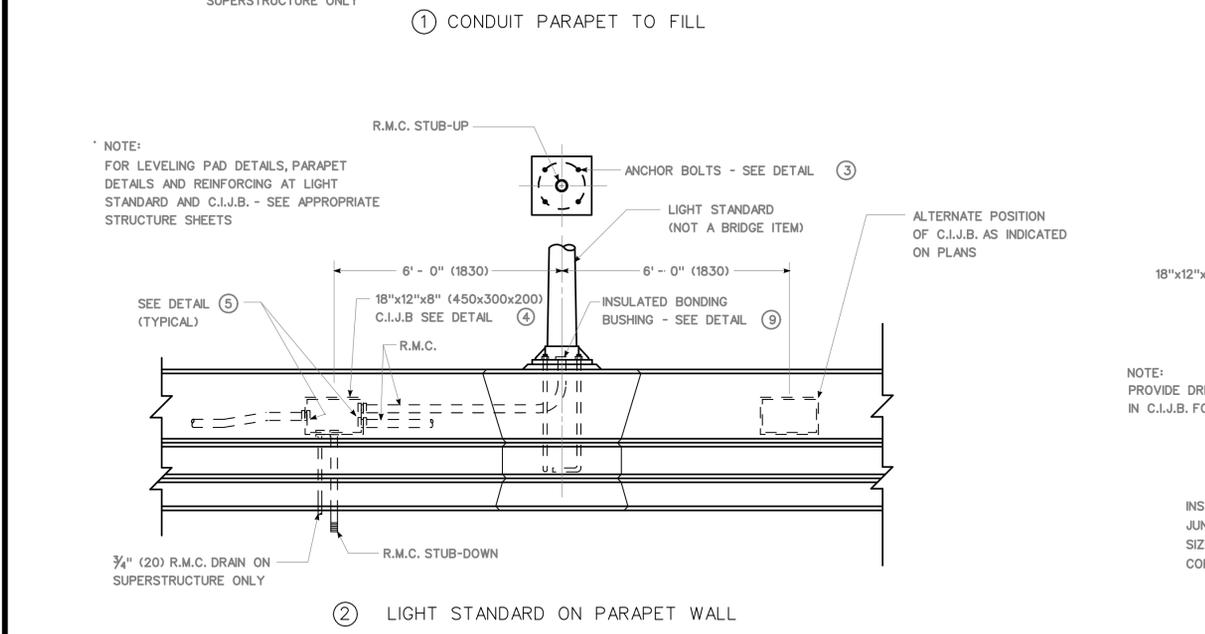
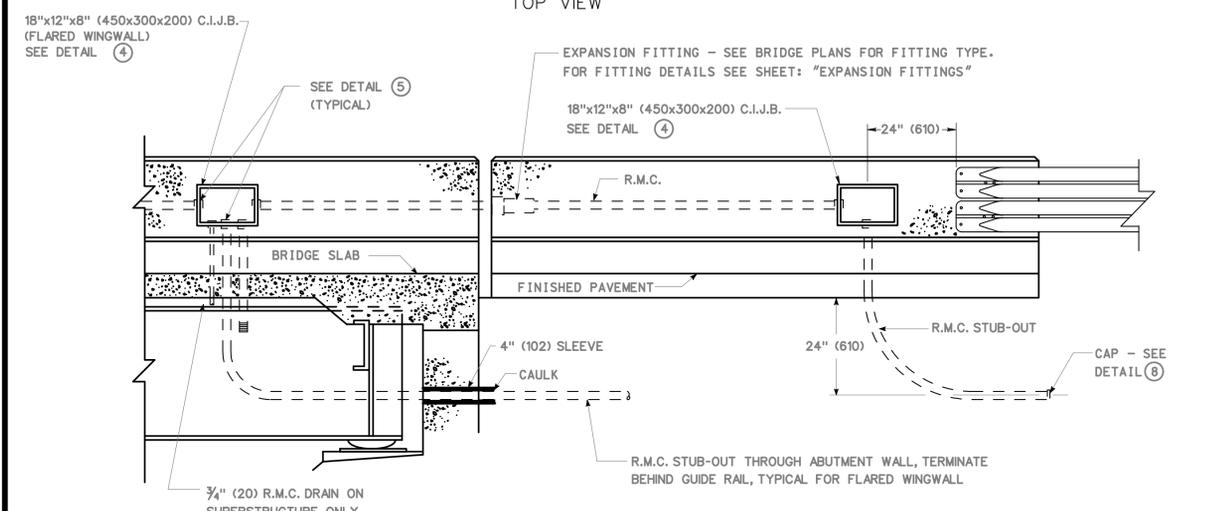
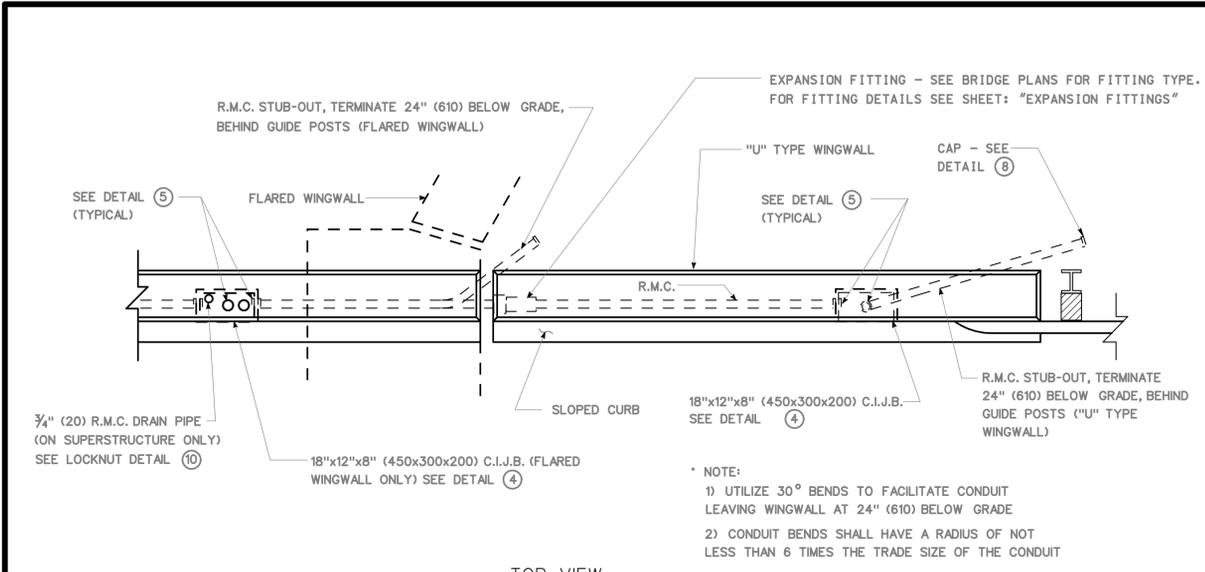
**ASPHALTIC PLUG EXPANSION JOINT DETAILS**  
SCALE AS NOTED

**NOTES**

- TEMPERATURE GIVEN IN DEGREES CENTIGRADE.
- DIMENSION "X" GIVEN IN MILLIMETERS.
- REMOVE NEW BITUMINOUS CONCRETE OVERLAY AND MEMBRANE WATERPROOFING. REPLACE WITH ASPHALTIC PLUG EXPANSION JOINT SYSTEM. THIS WORK TO BE PAID FOR UNDER THE CONTRACT ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM". (SEE SPECIAL PROVISIONS)
- THE CLOSED CELL BACKER ROD SHALL BE PLACED A MINIMUM OF 50 mm FROM THE OUTSIDE FACE OF PARAPETS AND MEDIAN BARRIERS.
- THE NON-SAGGING SILICONE SEALANT SHALL BE PLACED ON THE BACKER ROD 13 mm THICK. AT THE GUTTER, THE SILICONE SEALANT SHALL BE PLACED FLUSH WITH THE OUTSIDE FACE OF CONCRETE.
- PRIOR TO INSTALLING THE SILICONE SEALANT, CLEAN JOINT SIDES BY SANDBLASTING. DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM". (SEE SPECIAL PROVISIONS)

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REVISIONS REV. DATE DESCRIPTION SHEET NO.		SCALE AS NOTED		DESIGNER: B. BURKE DRAFTER: G. LEE CHECKED BY: O. JAMBOTKAR DATE CHECKED: 11-12-12	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION ENGINEER: PB AMERICAS, INC. APPROVED BY:	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN DRAWING TITLE: EXPANSION JOINT DETAILS	PROJECT NO.: 92-522 DRAWING NO.: STR-38 SHEET NO.:
				DATE:	CADD	PLOTTED 11/13/2012		



NOTE:  
 1) UTILIZE 30° BENDS TO FACILITATE CONDUIT LEAVING WINGWALL AT 24" (610) BELOW GRADE  
 2) CONDUIT BENDS SHALL HAVE A RADIUS OF NOT LESS THAN 6 TIMES THE TRADE SIZE OF THE CONDUIT

BOLT Ø	A	B
1" (M24)	36" (915)	4" (102)
1 1/4" (M30)	42" (1067)	6" (152)

- NOTES:
- SEE BRIDGE PLANS FOR SPECIFIC CONSTRUCTION DETAILS AND LOCATIONS.
  - DIAMETER OF RIGID METAL CONDUIT SHALL BE AS CALLED FOR ON BRIDGE PLANS.
  - R.M.C. STUB-UPS TO LIGHT STANDARDS, STUB-OUTS TO FILL, AND STUB-DOWNS TO UNDERBRIDGE LUMINAIRES, SHALL BE OF THE SAME DIAMETER AS THE R.M.C. CAST IN THE PARAPET WALL.
  - INSTALL ONE R.M.C. STUB-DOWN IN ALL JUNCTION BOXES ON SUPERSTRUCTURE. ADDITIONAL STUB-DOWNS SHALL BE INSTALLED WHERE INDICATED ON THE PLANS.
  - USE APPLICABLE DETAILS.

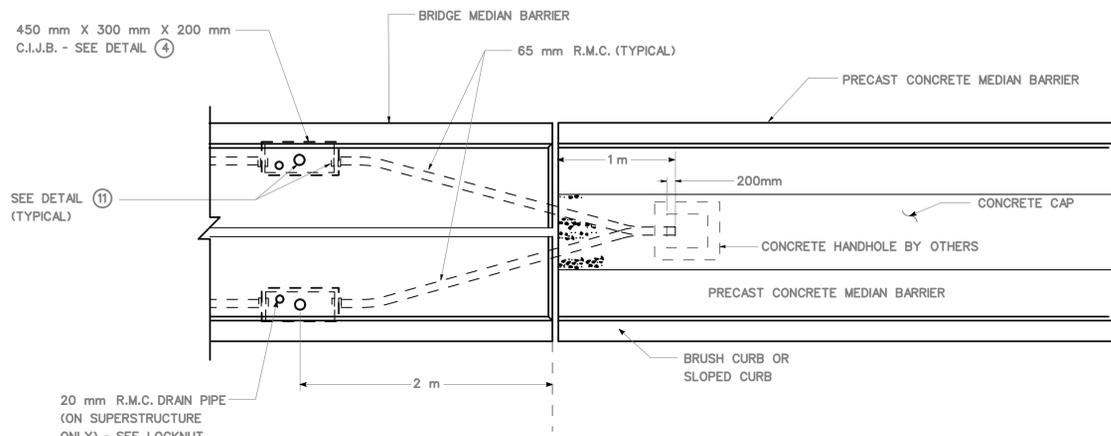
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DESIGNER: \_\_\_\_\_  
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 CHECKED BY: \_\_\_\_\_  
 DATE CHECKED: \_\_\_\_\_

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

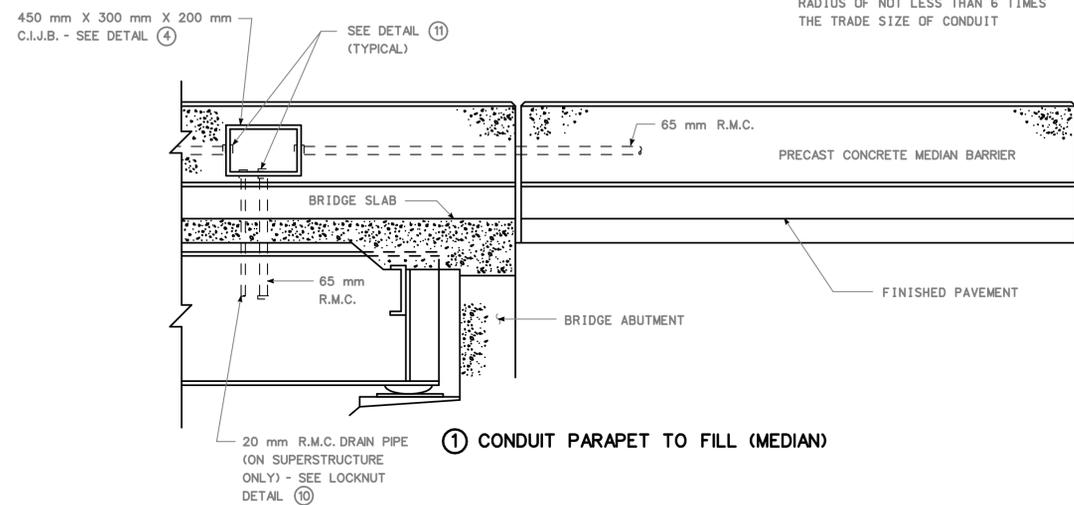
ENGINEER: OFFICE OF ENGINEERING  
 APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)  
 TOWN: NEW HAVEN / WEST HAVEN  
 DRAWING TITLE: PARAPET ELECTRICAL DETAILS  
 PROJECT NO.: 92-522  
 DRAWING NO.: STR-39  
 SHEET NO.: \_\_\_\_\_



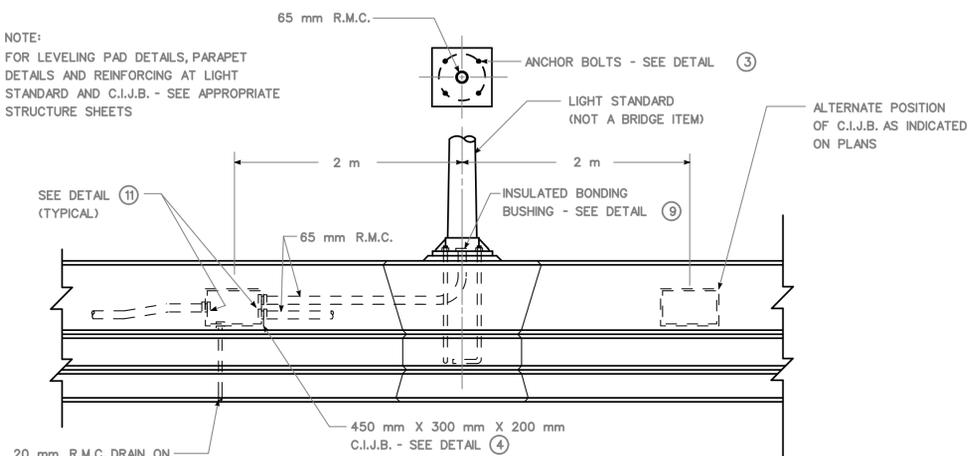
TOP VIEW

NOTE:  
 1) UTILIZE 30° BENDS TO FACILITATE CONDUIT LEAVING WINGWALL  
 2) CONDUIT BENDS SHALL HAVE A RADIUS OF NOT LESS THAN 6 TIMES THE TRADE SIZE OF CONDUIT

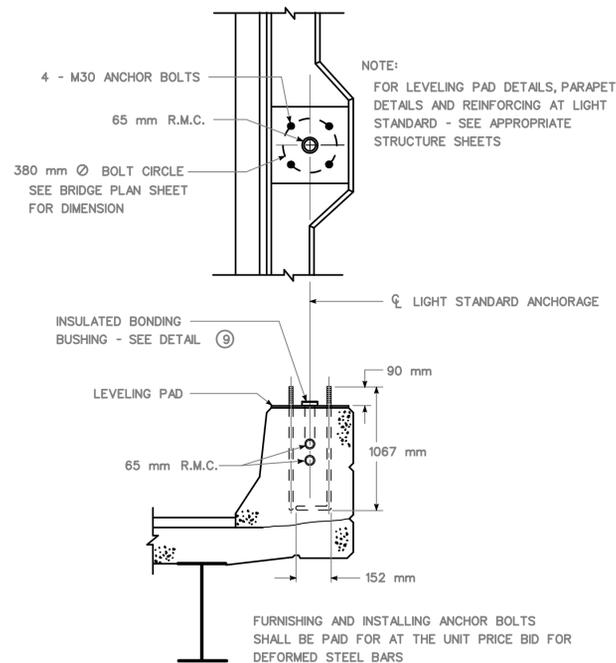


① CONDUIT PARAPET TO FILL (MEDIAN)

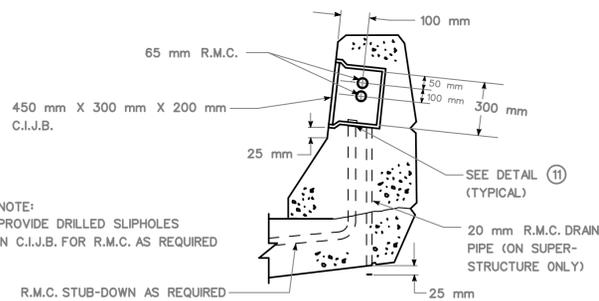
NOTE:  
 FOR LEVELING PAD DETAILS, PARAPET DETAILS AND REINFORCING AT LIGHT STANDARD AND C.I.J.B. - SEE APPROPRIATE STRUCTURE SHEETS



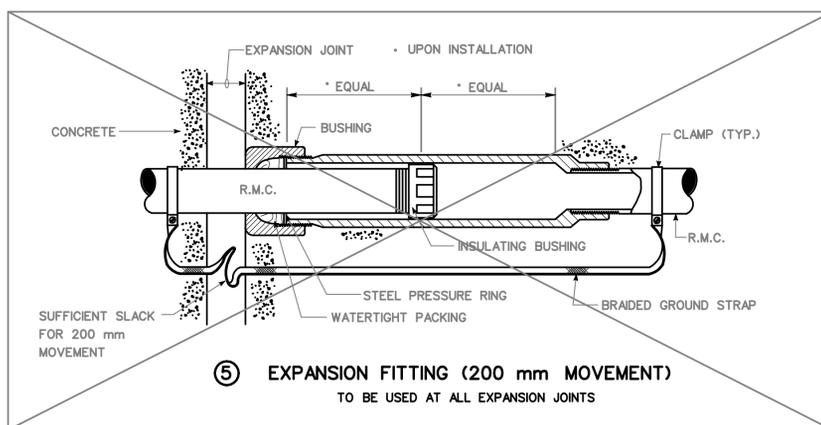
② LIGHT STANDARD ON PARAPET WALL



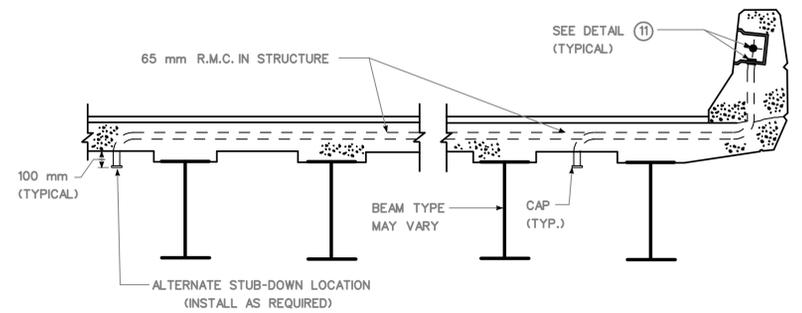
③ PARAPET TREATMENT AT LIGHT STANDARD



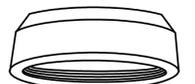
④ JUNCTION BOX INSTALLATION



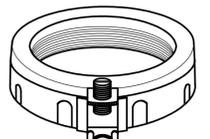
⑤ EXPANSION FITTING (200 mm MOVEMENT) TO BE USED AT ALL EXPANSION JOINTS



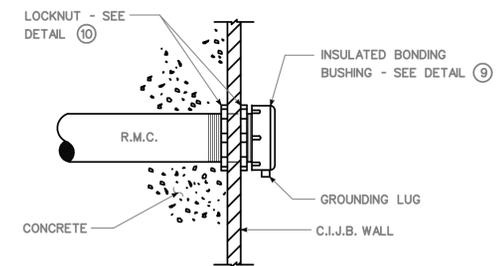
⑥ SERVICE TO LUMINAIRE UNDER STRUCTURE



⑧ MALLEABLE IRON CAP



⑨ INSULATED BONDING BUSHING WITH GROUND LUG



⑪ CONDUIT ENTRY INTO CAST IRON JUNCTION BOX



⑩ LOCKNUT

NOTES:

- 1) SEE BRIDGE PLANS FOR SPECIFIC CONSTRUCTION DETAILS AND LOCATIONS.
- 2) R.M.C. STUB-UPS TO LIGHT STANDARDS, STUB-OUTS TO FILL, AND STUB-DOWNS TO UNDERBRIDGE LUMINAIRES, SHALL BE OF THE SAME DIAMETER AS THE R.M.C. CAST IN THE PARAPET WALL.
- 3) USE APPLICABLE DETAILS.

REV.	DATE	DESCRIPTION	SHEET NO.

NOT TO SCALE

DESIGNER:
DRAFTER:
CHECKED BY:
DATE CHECKED:

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

ENGINEER: OFFICE OF ENGINEERING

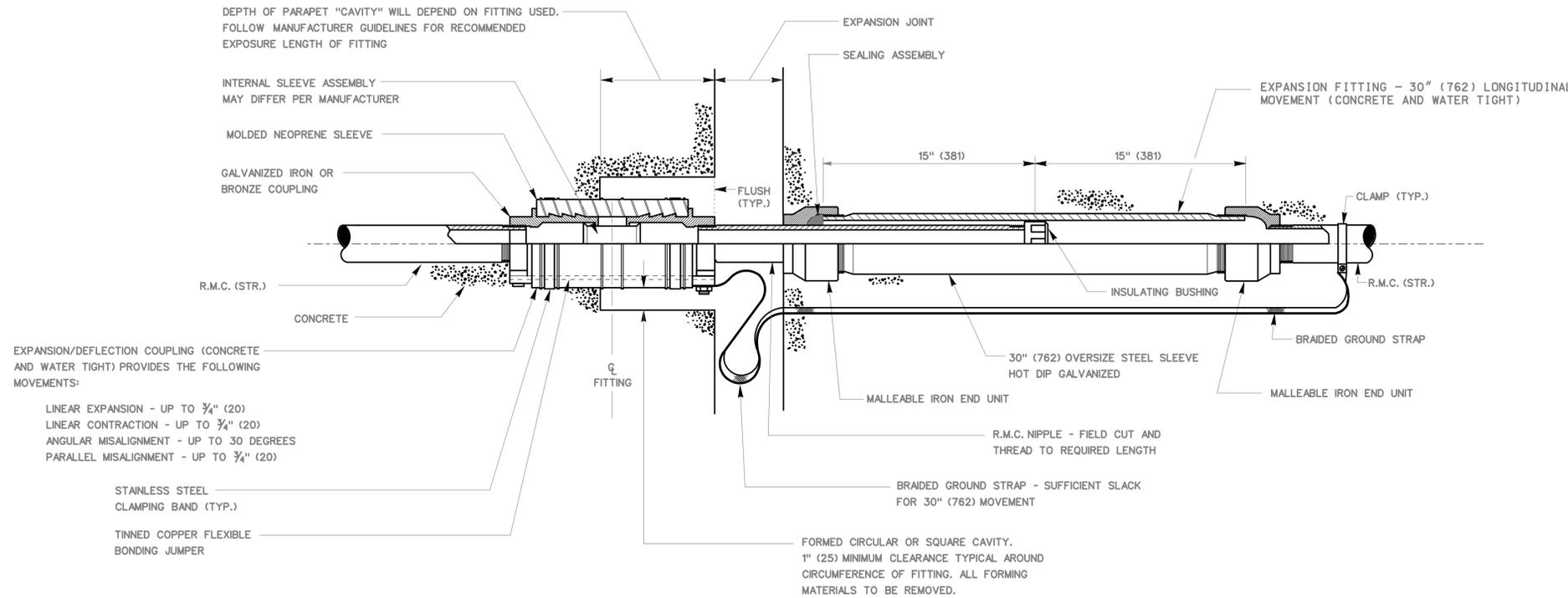
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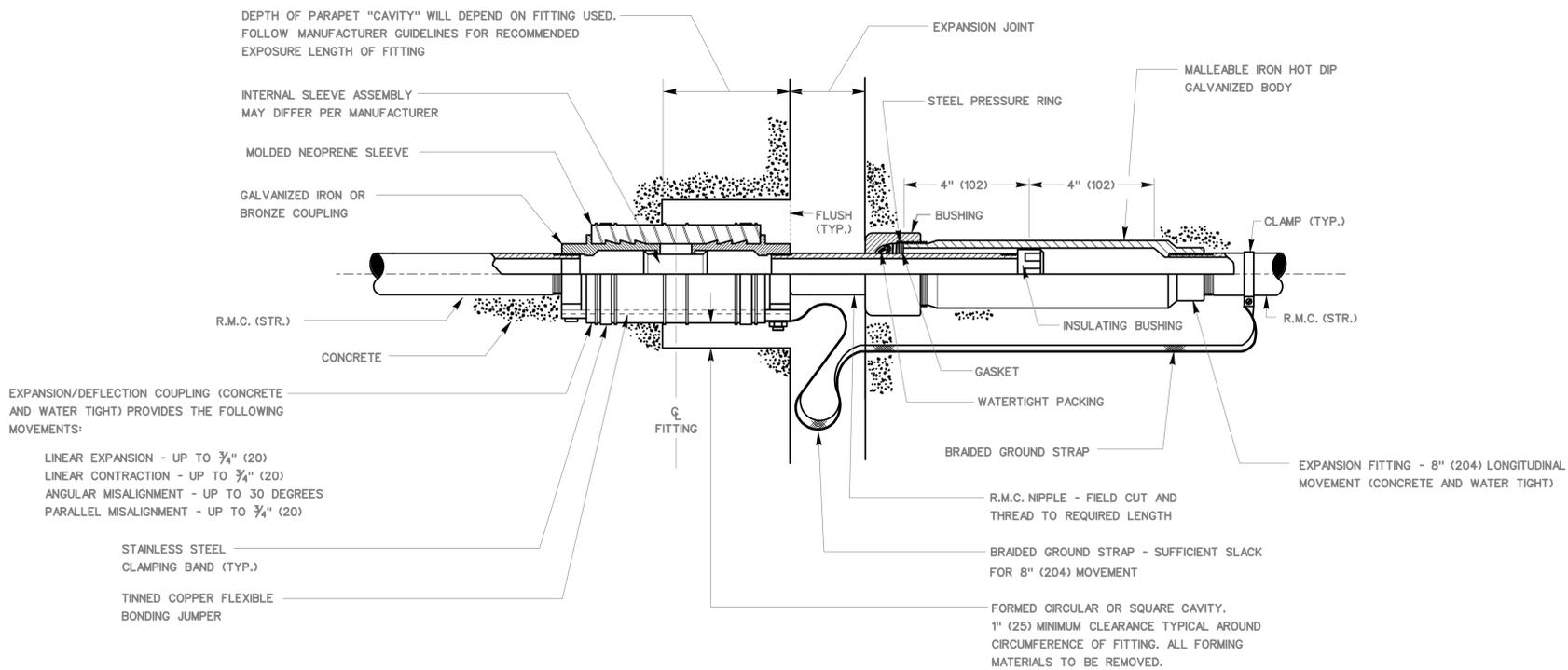
PROJECT TITLE:	RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)
CADD	0920522035.BRG
PLOTTED	

TOWN:	NEW HAVEN / WEST HAVEN
DRAWING TITLE:	MEDIAN ELECTRICAL DETAILS

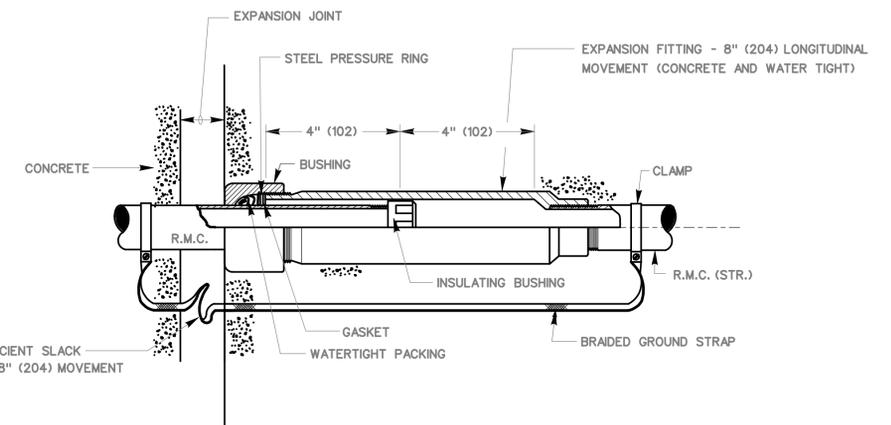
PROJECT NO.:	92-522
DRAWING NO.:	STR-40
SHEET NO.:	



**EXPANSION FITTING TYPE 3**



**EXPANSION FITTING TYPE 2**



**EXPANSION FITTING TYPE 1**

EXPANSION/DEFLECTION COUPLING (CONCRETE AND WATER TIGHT) PROVIDES THE FOLLOWING MOVEMENTS:

- LINEAR EXPANSION - UP TO 3/4" (20)
- LINEAR CONTRACTION - UP TO 3/4" (20)
- ANGULAR MISALIGNMENT - UP TO 30 DEGREES
- PARALLEL MISALIGNMENT - UP TO 3/4" (20)

STAINLESS STEEL CLAMPING BAND (TYP.)  
 TINNED COPPER FLEXIBLE BONDING JUMPER

**NOTES:**

SEE BRIDGE PLANS FOR SPECIFIC FITTING TYPE TO BE USED AT EACH BRIDGE EXPANSION JOINT.

ORIENTATION OF FITTING TO BE FIELD DETERMINED.

REV.	DATE	DESCRIPTION	SHEET NO.

NOT TO SCALE

DESIGNER: \_\_\_\_\_  
 DRAFTER: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DATE CHECKED: \_\_\_\_\_

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

ENGINEER: OFFICE OF ENGINEERING  
 APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

	PROJECT TITLE: RECONSTRUCTION OF I-95 OVER ELLA T. GRASSO BOULEVARD (BRIDGE NO. 00164)	TOWN: NEW HAVEN / WEST HAVEN	PROJECT NO.: 92-522
	CADD 092522033.BRG	DRAWING TITLE: EXPANSION FITTINGS	DRAWING NO.: STR-41