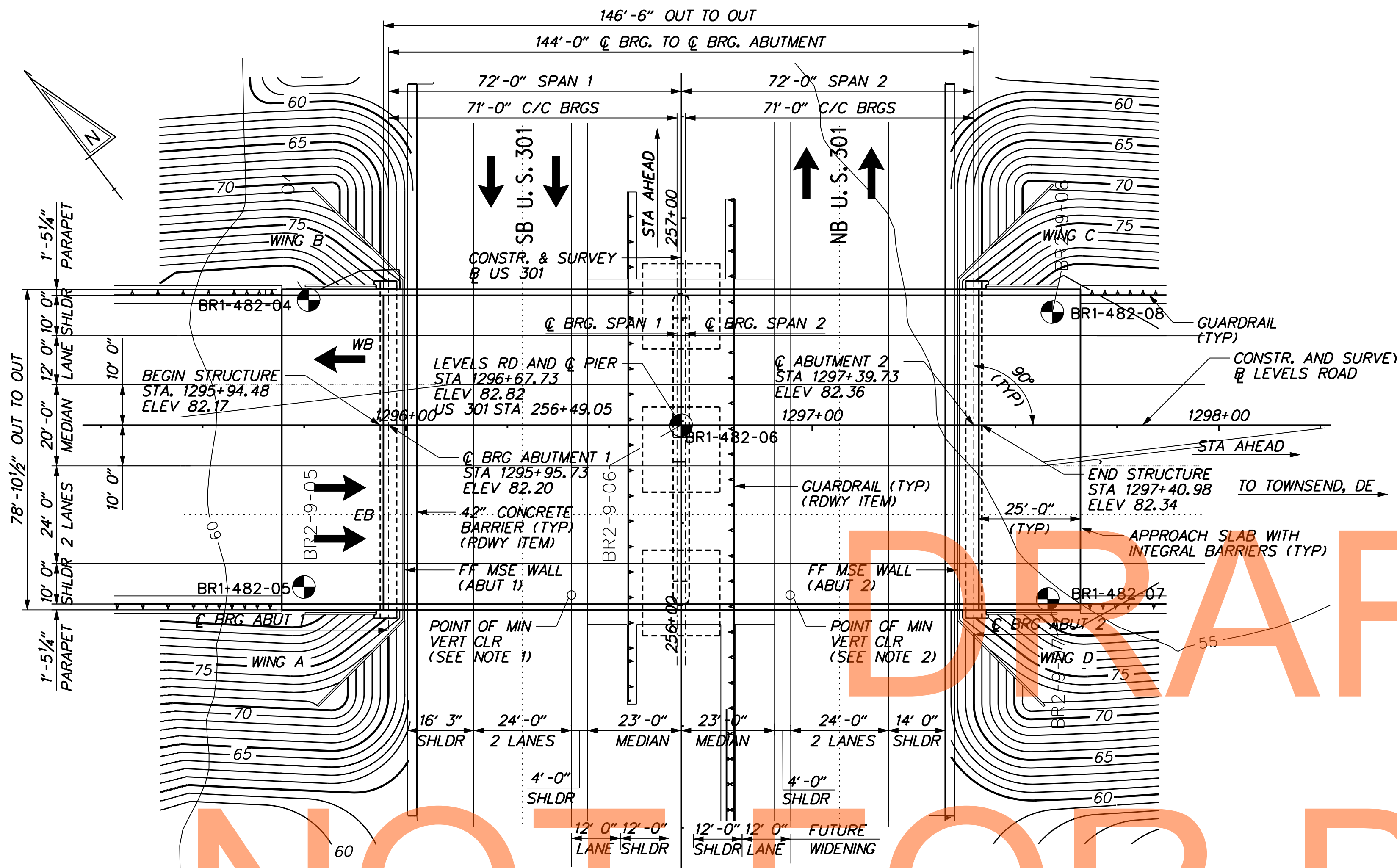


BRIDGE SHEET INDEX	
SHEET	DESCRIPTION
BR1-482-01	GENERAL PLAN AND ELEVATION
BR1-482-02	TYPICAL SECTIONS
BR1-482-03	PROJECT NOTES AND QUANTITIES
BR1-482-04	GEOMETRIC LAYOUT
BR1-482-05	ABUTMENT 1 PILE LAYOUT AND DETAILS
BR1-482-06	ABUTMENT 2 PILE LAYOUT
BR1-482-07	PILE DETAILS AND NOTES
BR1-482-08	PILE TABLES
BR1-482-09	ABUTMENT 1 PLAN AND ELEVATION
BR1-482-10	ABUTMENT 2 PLAN AND ELEVATION
BR1-482-11	ABUTMENT SECTION AND DETAILS - 1
BR1-482-12	ABUTMENT SECTION AND DETAILS - 2
BR1-482-13	ABUTMENT 1 MSE WALL PLAN AND ELEVATION
BR1-482-14	ABUTMENT 2 MSE WALL PLAN AND ELEVATION
BR1-482-15	MSE WALL DETAILS
BR1-482-16	PIER PLAN AND ELEVATION
BR1-482-17	PIER SECTION AND DETAILS
BR1-482-18	BEARING PAD DETAILS
BR1-482-19	FRAMING PLAN
BR1-482-20	BEAM DETAILS
BR1-482-21	DIAPHRAGM DETAILS - 1
BR1-482-22	DIAPHRAGM DETAILS - 2
BR1-482-23	DECK PLAN AND POURING SEQUENCE
BR1-482-24	DECK SECTION - 1
BR1-482-25	DECK SECTION - 2
BR1-482-26	DECK AND PARAPET DETAILS
BR1-482-27	DECK ELEVATIONS
BR1-482-28	PARAPET SAFETY FENCE ELEVATION AND DETAILS
BR1-482-29	APPROACH SLAB PLAN AND SECTIONS
BR1-482-30	APPROACH SLAB DETAILS
BR1-482-31	REINFORCEMENT BAR SCHEDULE - SUBSTRUCTURE 1
BR1-482-32	REINFORCEMENT BAR SCHEDULE - SUBSTRUCTURE 2
BR1-482-33	REINFORCEMENT BAR SCHEDULE - SUPERSTRUCTURE
BR1-482-34	REINFORCEMENT BAR SCHEDULE - APPROACH SLABS
BR1-482-35	STANDARD BAR BENDS
BR1-482-36	BRIDGE 1-482 GEOTECHNICAL DATA



GENERAL PLAN

NOTE: SOUTHBOUND GUARDRAIL TO BE CONSTRUCTED UNDER THE SECTION 2 CONTRACT.

BORING LOCATIONS		
BORING NO.	STATION *	OFFSET *
BR1-482-04	1295+76.09	30.80' LT.
BR1-482-05	1295+74.94	39.81' RT.
BR1-482-06	1296+67.73	0.00' RT.
BR1-482-07	1297+57.92	42.78' RT.
BR1-482-08	1297+59.07	27.84' LT.

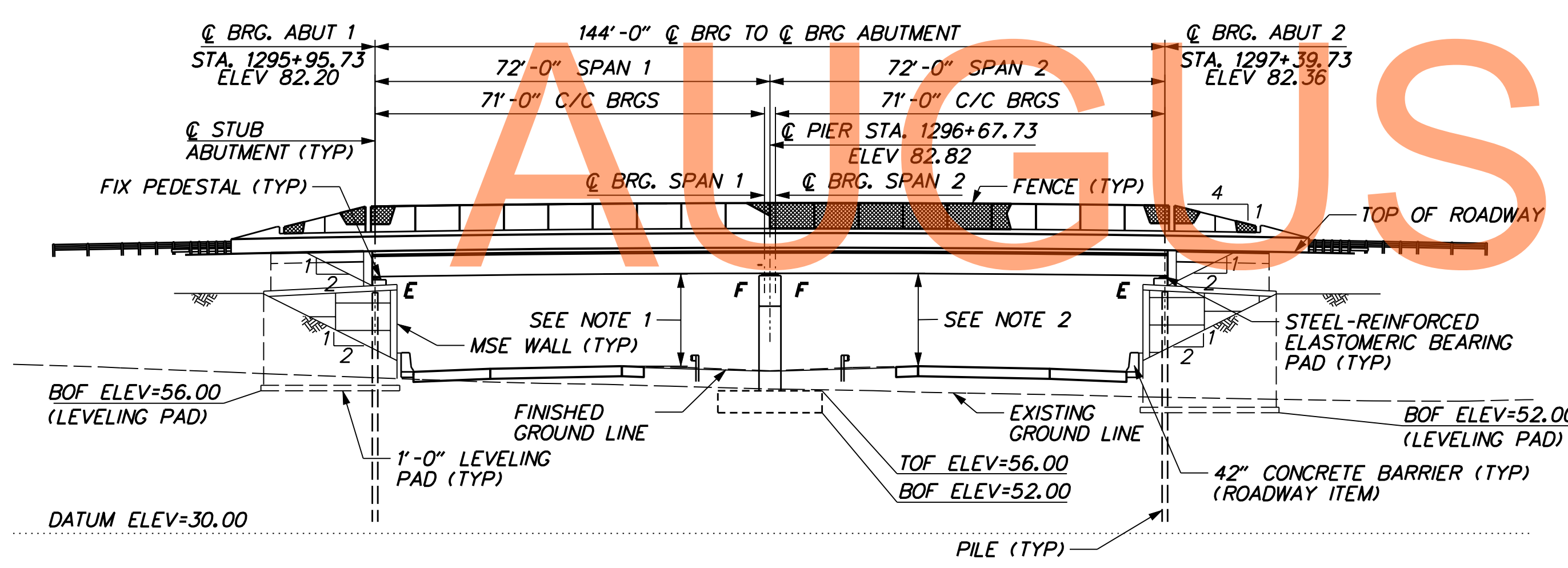
* TAKEN FROM @ LEVELS ROAD

NOTES:

- US 301 SB LANES - MIN REQUIRED CLEAR = 16'-6"
MIN PROVIDED CLEAR = 16'-11 1/2"
- US 301 NB LANES - MIN REQUIRED CLEAR = 16'-6"
MIN PROVIDED CLEAR = 17'-0 1/4"

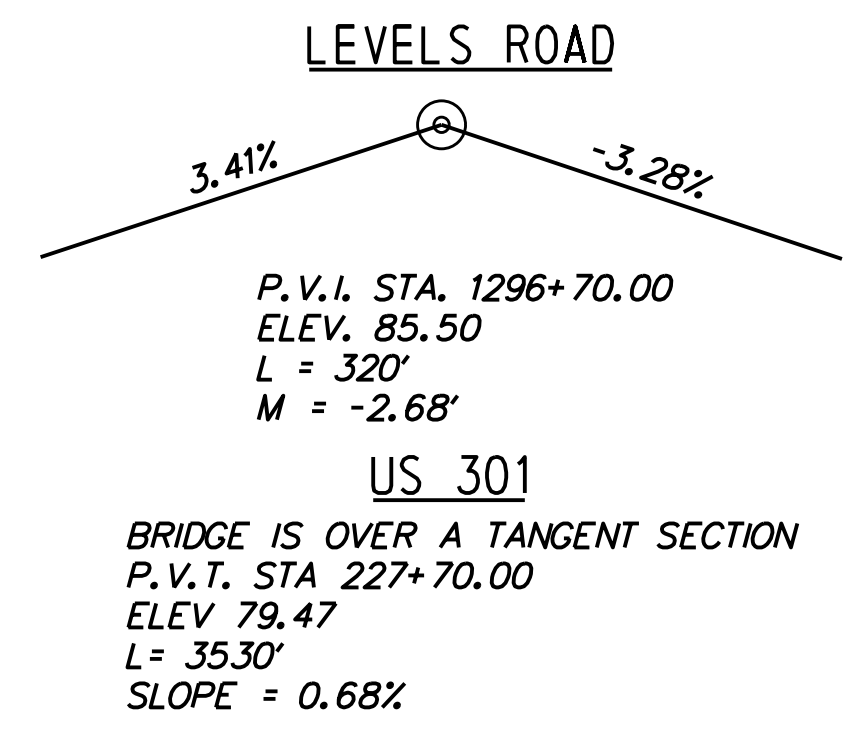
LEGEND

- 70 - EXISTING CONTOUR MAJOR
- - EXISTING CONTOUR MINOR
- 90 - PROPOSED CONTOUR MAJOR
- - PROPOSED CONTOUR MINOR
- CL - CENTERLINE
- B - BASELINE
- BL - BORING LOCATION
- FF - FRONT FACE
- BRG - BEARING
- E - EXPANSION BEARING
- F - FIXED BEARING
- BOF - BOTTOM OF FOOTING
- TOF - TOP OF FOOTING



ELEVATION
(LOOKING STATION AHEAD)

VERTICAL CURVE DATA



HORIZONTAL CURVE DATA

LEVELS ROAD
BRIDGE IS ON A TANGENT
BEARING S 52°46'25" E
US 301
P.T. STA. 238+61.77
P.O.E. STA. 263+00.00
L = 2438.23'

TRAFFIC DATA

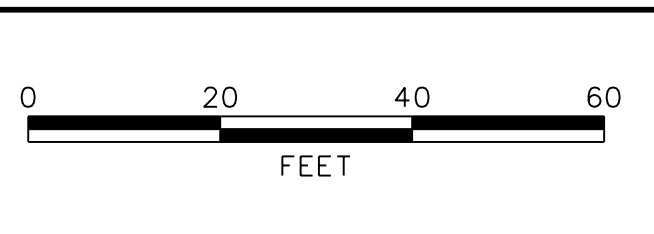
LEVELS ROAD
2009 A.A.D.T. = 1879
2009 A.A.D.T.T. = 244
DESIGN YEAR = 2030
DESIGN YEAR A.D.T. = 18500
DESIGN YEAR A.D.T.T. = 2405

REFERENCES:

- TYPICAL SECTIONS BR1-482-02
- PROJECT NOTES BR1-482-03
- GEOTECHNICAL DATA BR1-482-36

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ADDENDUMS / REVISIONS



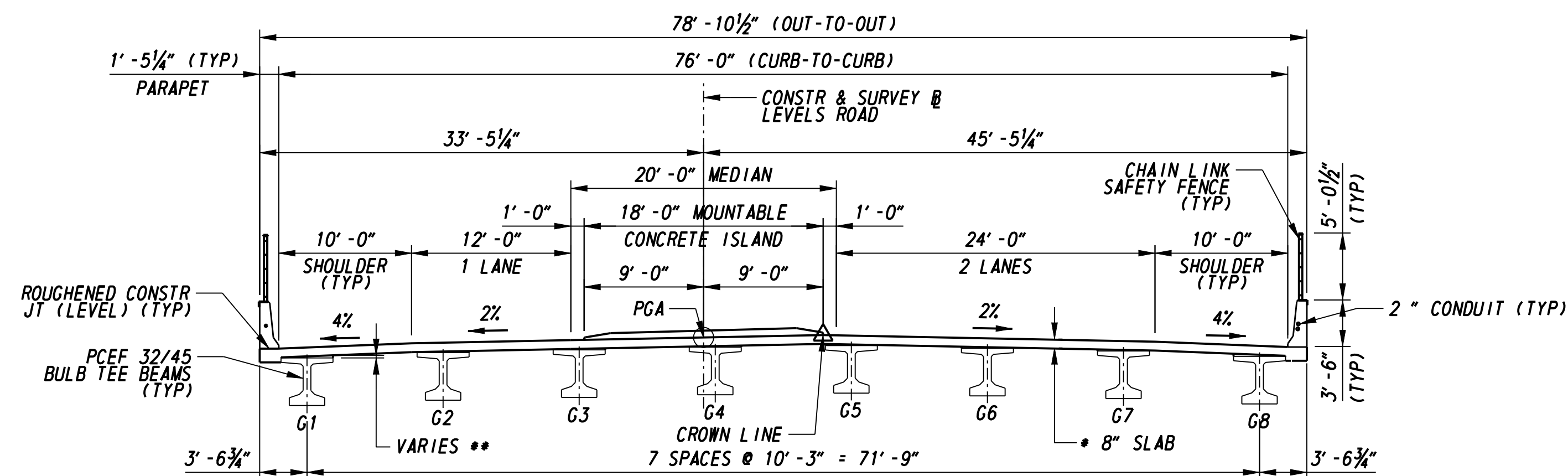
US 301
MARYLAND STATE LINE
TO LEVELS ROAD

CONTRACT T200811301	BRIDGE NO. BR1-482
COUNTY NEW CASTLE	DESIGNED BY: SPM CHECKED BY: KOC

GENERAL PLAN
AND ELEVATION

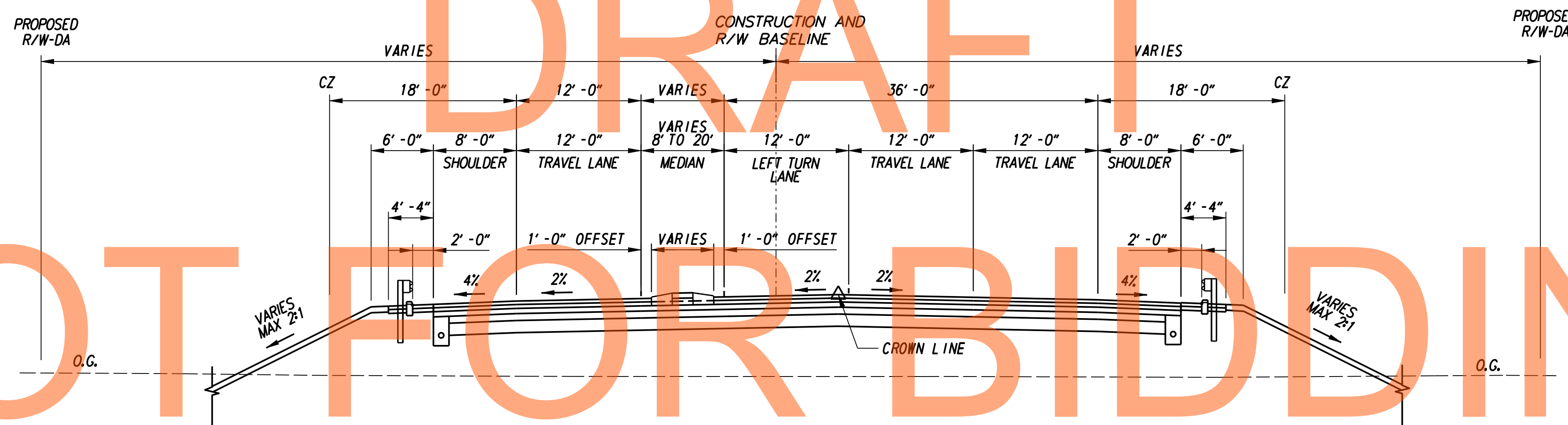
BR1-482-01

SHEET NO. 292
TOTAL SHTS. 850



TYPICAL BRIDGE SECTION

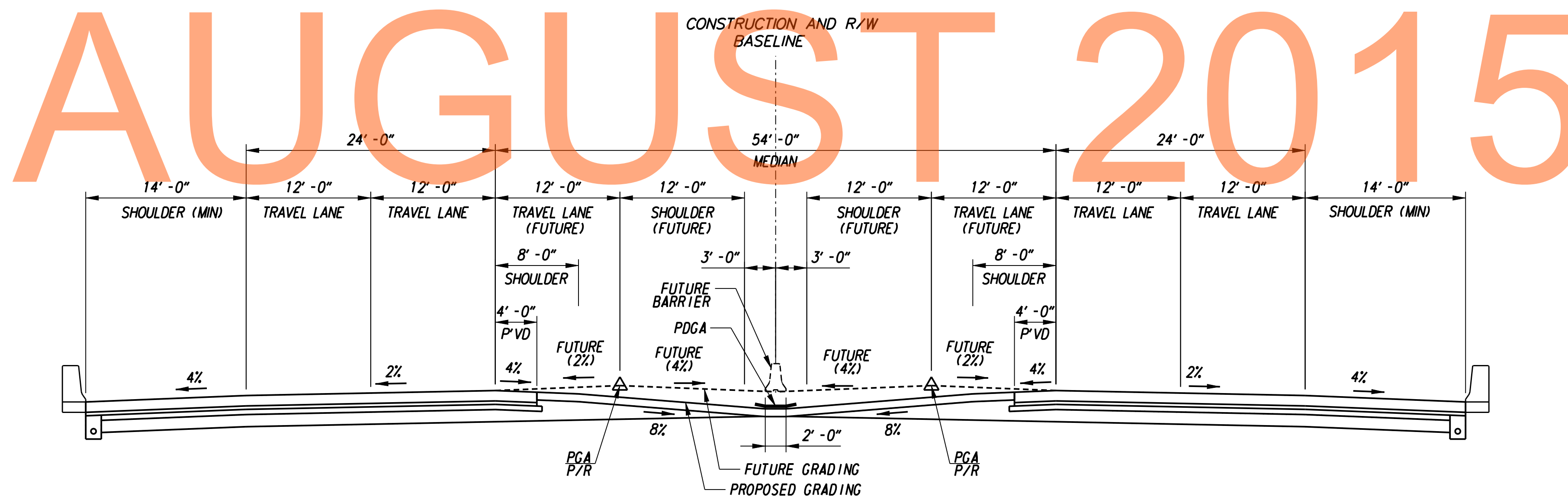
- * INCLUDES 1/2" INTEGRAL WEARING SURFACE (LOOKING STATION AHEAD)
- ** FOR HAUNCH DIMENSIONS, SEE DECK SECTION - 1.



TYPICAL APPROACH SECTION - LEVELS ROAD

REFERENCES:

GENERAL PLAN	BR1-482-01
PROJECT NOTES	BR1-482-03
DECK SECTION - 1	BR1-482-24



TYPICAL NORMAL SECTION - US 301 FOUR LANES

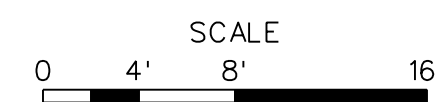
DRAFT
NOT FOR BIDDING

AUGUST 2015

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ADDENDUMS / REVISIONS	



**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	CNN
COUNTY	CHECKED BY:	KO'C
NEW CASTLE		

TYPICAL SECTIONS

BR1-482-02

SHEET NO.	293
TOTAL SHTS.	850

PROJECT NOTES:

- DESIGN SPECIFICATIONS**
AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 2007, 4TH EDITION WITH 2008 AND 2009 INTERIMS.
DELAWARE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, MAY 2005, LATEST REVISIONS JANUARY 2008. ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5-2008.
- LOADING**
HL-93 AND RAITINGS PROVIDED FOR HS20 44 AND DELAWARE LEGAL LOADS S220, S335, S437, T330, T435, AND T540.
25 LBS/SQ FT HAS BEEN INCLUDED FOR FUTURE OVERLAY.
15 LBS/SQ FT HAS BEEN INCLUDED FOR USE OF STEEL BRIDGE DECK FORMS WHICH STAY IN PLACE.
UNIT WEIGHTS OF MATERIALS ARE IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL. FOR THERMAL LOADS, CONSIDER THE MODERATE CLIMATE AS STIPULATED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE NORMAL TEMPERATURE IS TAKEN TO BE 68°F.
FOR SEISMIC DESIGN THE PROJECT SITE IS LOCATED WITHIN SEISMIC ZONE 1 WITH SITE CLASS D.
- PRESTRESSED CONCRETE**
THE MINIMUM COMPRESSIVE STRENGTH FOR PRESTRESSED CONCRETE AT THE AGE OF 28 DAYS SHALL BE $f'c = 8,000$ PSI. THE MINIMUM COMPRESSIVE STRENGTH AT THE TRANSFER OF PRESTRESS SHALL BE $f'c = 6,800$ PSI. THE PRECAST CONCRETE BEAMS ARE DESIGNED AS NONCOMPOSITE SIMPLE SPANS FOR ALL DEAD LOADS EXCEPT THE PARAPET AND FUTURE WEARING SURFACE DEAD LOADS.
- PRETENSIONING STEEL**
PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF ASTM A416 GRADE 1860 (270 KSI). EACH 1/2" STRAND SHALL BE PRETENSIONED TO 33,810 LBS (0.75fpu), AFTER ESTIMATED LOSSES OF 52,730 PSI. THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 25,000 LBS. CAMBER GROWTH IN PRETENSIONED BEAMS BETWEEN THE TIME OF STRESSING AND THE TIME OF SLAB PLACEMENT IS ASSUMED TO BE 80% FOR CAMBER CALCULATIONS.
- SERVICEABILITY**
LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
- PORTLAND CEMENT CONCRETE**
PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS SHALL BE AS FOLLOWS:
($f'c=28$ DAY COMPRESSIVE STRENGTH)
CLASS A (ITEM NO. 602007) - PIER ABOVE FOOTING ($f'c= 4500$ PSI)
CLASS A (ITEM NO. 602015) - ABUTMENT ($f'c= 4500$ PSI)
CLASS A (ITEM NO. 602017) - PARAPET ($f'c= 4500$ PSI)
CLASS B (ITEM NO. 602006) - PIER FOOTING ($f'c= 3000$ PSI)
CLASS D (ITEM NO. 602013) - DECK ($f'c= 4500$ PSI)
CLASS D (ITEM NO. 602014) - APPROACH SLAB ($f'c= 4500$ PSI)
MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4" X 3/4" MILLED CHAMFER STRIPS UNLESS OTHERWISE NOTED.
- BAR REINFORCEMENT**
REINFORCEMENT STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. ALL REINFORCEMENT STEEL SHALL HAVE A CLEAR COVER OF 2" UNLESS OTHERWISE NOTED ON THE PLANS.
EPOXY COATED REINFORCEMENT STEEL SHALL CONFORM TO AASHTO M284 (ASTM D3963), AND IS DENOTED WITH A SUFFIX "E" IN THE BAR MARKS.
USE EPOXY COATED REINFORCEMENT STEEL IN THE FOLLOWING LOCATIONS: APPROACH SLABS, DECK SLAB, PARAPET, PARAPET PORTION OF APPROACH SLAB, ABUTMENT, AND PIER.
DO NOT WELD GRADE 60 REINFORCING STEEL
PROVIDE MINIMUM LAP LENGTH OF 30 BAR DIAMETERS OR IN ACCORDANCE WITH AASHTO, WHICHEVER IS GREATER, UNLESS OTHERWISE NOTED.
- CONSTRUCTION JOINTS**
KEYED CONSTRUCTION JOINTS SHALL BE 2"x4" OR AS NOTED.
ALL EXPOSED JOINT EDGES SHALL HAVE A 3/4" V NOTCH.
- EXCAVATION REQUIRED TO ATTAIN THE GRADE FOR INSTALLATION OF MSE WALLS SHALL BE INCIDENTAL TO ITEM "602772 - MECHANICALLY STABILIZED EARTH WALLS", AND SHALL NOT BE INCLUDED IN ITEM "207000 - EXCAVATION AND BACKFILL FOR STRUCTURES".**

- PILES (RECOMMENDED)**
PILES SHALL BE HP14X73 PILES CONFORMING TO ASTM A709 GRADE 50.

(ALTERNATE)
PILES SHALL BE 14" OUTSIDE DIAMETER OPEN END (CONCRETE FILLED) PIPE PILES WITH 1/2" WALL THICKNESS CONFORMING TO ASTM A252, GRADE 2 (ULTIMATE TENSILE STRENGTH OF 60 KSI). THE VOID REMAINING IN THE PILE FOLLOWING DRIVING SHALL BE REINFORCED AND FILLED WITH CLASS A CONCRETE, AS SPECIFIED.

(ALTERNATE)
PILES SHALL BE 14" OUTSIDE DIAMETER 3 GAGE Y-TAPER MONOTUBE PILES MADE OF 50 KSI STEEL. THE VOID REMAINING IN THE PILE FOLLOWING DRIVING SHALL BE REINFORCED AND FILLED WITH CLASS A CONCRETE, AS SPECIFIED.

ONLY ONE PILE TYPE SHALL BE USED FOR THIS STRUCTURE. FOR MORE INFORMATION REGARDING PILE MATERIALS AND FABRICATION, REFER TO SECTION 618 (PILE MATERIALS) OF THE STANDARD SPECIFICATION, FOR MORE INFORMATION REGARDING PILE DRIVING AND INSTALLATION, REFER TO SECTION 619 (INSTALLATION OF PILES) OF THE STANDARD SPECIFICATIONS.
- STYROFOAM MUST MEET ASTM C-578, TYPE 1, MATERIAL REQUIREMENTS EXCEPT THE MAXIMUM ALLOWABLE WATER ABSORPTION TO BE 2%.
- CLOSED CELL NEOPRENE SPONGE PADS MAY BE MANUFACTURED AS SPONGE NEOPRENE OR EXPANDED NEOPRENE AND MAY BE COMPOSED OF LAMINATIONS. USE MATERIAL CONFORMING TO
 - ASTM D 1056, TYPE 2, CLASS C, GRADE 2, INCLUDING THE REQUIREMENTS OF SUFFIXES B3 AND F1
 - ASTM D 1171, QUALITY RETENTION RATING OF 100% AFTER 6 WEEKS EXPOSURE.
- SEE ROADWAY CONSTRUCTION DETAILS PLAN (DRAWING DT-24) FOR ROADWAY APPROACH EMBANKMENT SETTLEMENT MONITORING AND QUARANTINE PERIOD REQUIREMENTS.
- ALL EXPANSION MATERIAL MUST MEET AASHTO M 153 REQUIREMENTS.

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.51	N/A	SPAN 2, INTERIOR BEAM	200.55	SHEAR
HL-93 TANDEM (INVENTORY)	1.92	N/A	SPAN 2, INTERIOR BEAM	200.55	SHEAR
HL-93 TRUCK TRAIN (INVENTORY)	1.61	N/A	SPAN 1, EXTERIOR BEAM	110	FLEXURE
HS-20 (INVENTORY)	2.08	74.77	SPAN 2, INTERIOR BEAM	200.55	SHEAR
HL-93 TRUCK (OPERATING)	2.05	N/A	SPAN 2, INTERIOR BEAM	200.55	SHEAR
HL-93 TANDEM (OPERATING)	2.58	N/A	SPAN 2, INTERIOR BEAM	200.55	SHEAR
HL-93 TRUCK TRAIN (OPERATING)	2.08	N/A	SPAN 1, EXTERIOR BEAM	110	FLEXURE
HS-20 (OPERATING)	2.78	99.91	SPAN 2, INTERIOR BEAM	200.55	SHEAR
DE S220 & LEGAL-LANE	3.30	66.09	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS
DE S335 & LEGAL-LANE	2.07	72.45	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS
DE S437 & LEGAL-LANE	1.97	72.04	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS
DE T330 & LEGAL-LANE	2.67	80.08	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS
DE T435 & LEGAL-LANE	2.35	82.32	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS
DE T540 & LEGAL-LANE	2.14	85.47	SPAN 1, EXTERIOR BEAM	109.45	FLANGE STRESS

NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
207000*	EXCAVATION AND BACKFILL FOR STRUCTURES	CY	313
209002*	BORROW, TYPE B	CY	37
602006	PORTLAND CEMENT CONCRETE MASONRY, PIER FOOTING, CLASS B	CY	178
602007	PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	CY	111
602013	PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	CY	443
602014	PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	CY	237
602015	PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	CY	120
602017	PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	CY	51
602772	MECHANICALLY STABILIZED EARTH WALLS	LS	1
604000	BAR REINFORCEMENT, EPOXY COATED	LB	258,953
608000*	COARSE AGGREGATE FOR FOUNDATION STABILIZATION AND SUBFOUNDATION BACKFILL	TON	18
618050	FURNISH STEEL SHELL PILES, 14" (ALTERNATE)	LF	1,612
618051	FURNISH TEST STEEL SHELL PILES, 14" (ALTERNATE)	LF	121
618062	FURNISH STEEL H PILES, HP 14 X 73	LF	1,836
618065	FURNISH STEEL TEST H PILES, HP 14 X 73	LF	135
618552	FURNISH PIPE PILE, SCHEDULE 40, OPEN END, 14" (ALTERNATE)	LF	2,156
618557	FURNISH TEST PIPE PILE, SCHEDULE 40, OPEN END, 14" (ALTERNATE)	LF	155
619042	INSTALL STEEL H PILES, HP 14 X 73	LF	1,836
619045	INSTALL STEEL TEST H PILES, HP 14 X 73	LF	135
619055	INSTALL STEEL SHELL PILES, 14" (ALTERNATE)	LF	1,612
619056	INSTALL TEST STEEL SHELL PILES, 14" (ALTERNATE)	LF	121
619501*	PRODUCTION PILE RESTRIKE	EA	1
619502*	TEST PILE RESTRIKE	EA DAY	1
619519	DYNAMIC PILE TESTING BY CONTRACTOR	EA	4
619539	SIGNAL MATCHING ANALYSIS BY CONTRACTOR	EA	4
619540	INSTALL PIPE PILE, SCHEDULE 40, OPEN END, 14" (ALTERNATE)	LF	2,156
619558	INSTALL TEST PIPE PILE, SCHEDULE 40, OPEN END, 14" (ALTERNATE)	LF	155
623003	PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T-BEAM, PCEF 32/45	LS	1
727507	BRIDGE SAFETY FENCE	LF	354

THE QUANTITIES PROVIDED INCLUDE ONLY THOSE ASSOCIATED WITH BRIDGE BR1-482 (LEVELS ROAD BRIDGE). ROADWAY QUANTITIES FOR US 301 AND LEVELS ROAD ARE NOT INCLUDED IN THE TABULATION

- * CONTINGENCY ITEM
- ** INCLUDES 49 CY CONTINGENCY IF UNSUITABLE MATERIAL ENCOUNTERED

BEAM	EXTERIOR	INTERIOR
I in ⁴	441613	534232
Y _o (in)	33.88	37.11
Y _i (in)	11.12	7.89
Y _s (in)	18.62	18.39

BEAM	EXTERIOR	INTERIOR
I in ⁴	459675	557060
Y _o (in)	33.37	36.60
Y _i (in)	11.63	8.40
Y _s (in)	19.13	18.90

Y_o = NEUTRAL AXIS TO BOTTOM OF BEAM
Y_i = NEUTRAL AXIS TO TOP OF BEAM
Y_s = NEUTRAL AXIS TO TOP OF SLAB

RATING NOTES

- LOAD RATINGS DETERMINED USING THE LOAD RESISTANCE FACTOR RATING (LRF) METHOD.
- LOAD DUE TO FUTURE WEARING SURFACE (25 PSF) IS INCLUDED IN THE RATINGS.
- MAXIMUM FACTORED NEGATIVE FLEXURAL RESISTANCE (OVER PIER)
INTERIOR BEAM: 4278.0 KIP-FT
EXTERIOR BEAM: 3429.5 KIP-FT
- MAXIMUM FACTORED POSITIVE FLEXURAL RESISTANCE
INTERIOR BEAM: 7158.9 KIP-FT AT 36 FT, SPAN 1
EXTERIOR BEAM: 6600.3 KIP-FT AT 36 FT, SPAN 1
- MAXIMUM FACTORED SHEAR RESISTANCE
INTERIOR BEAM: 586.08 KIP AT 64.8 FT, SPAN 2
EXTERIOR BEAM: 544.42 KIP AT 64.8 FT, SPAN 2

REFERENCES:

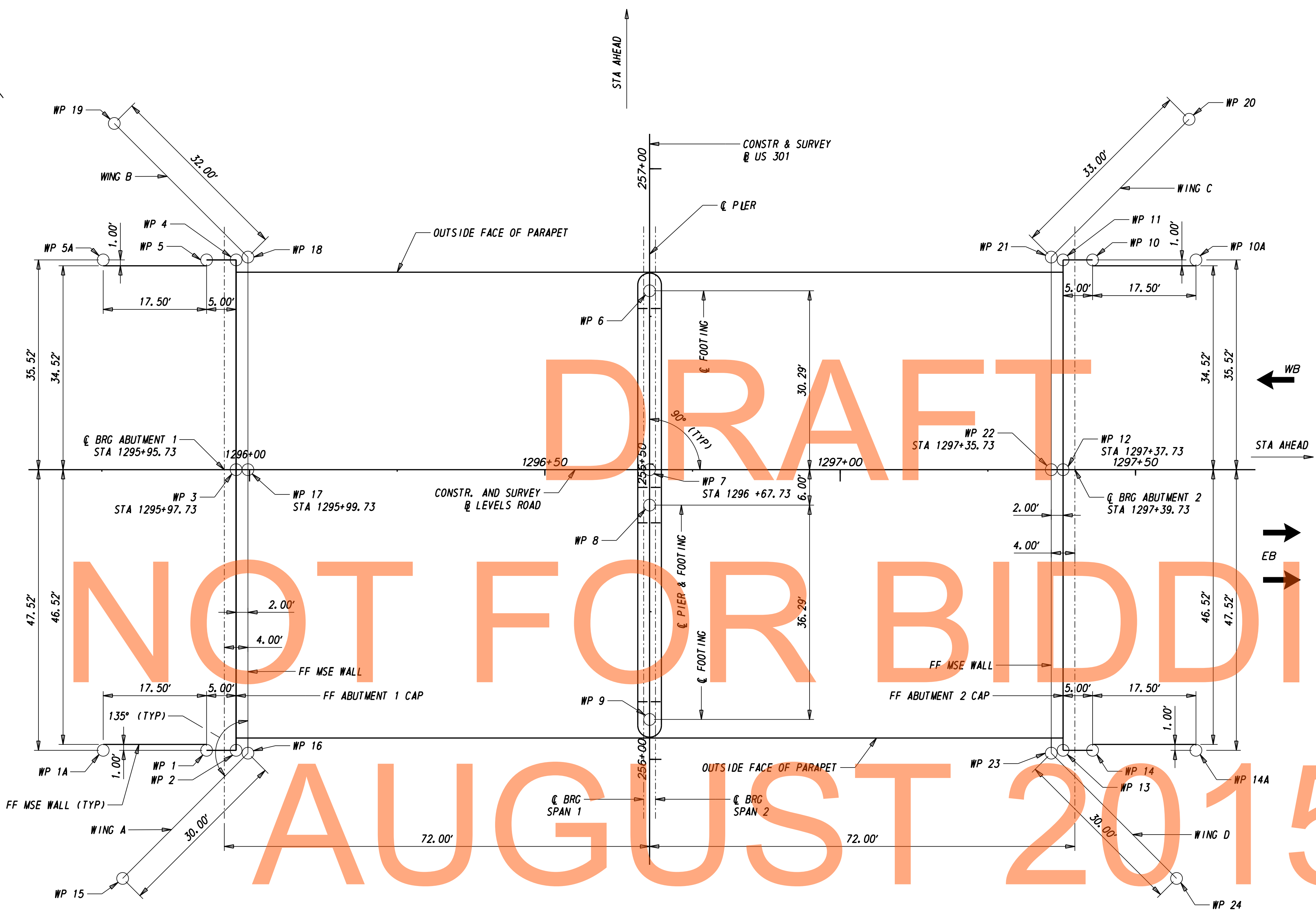
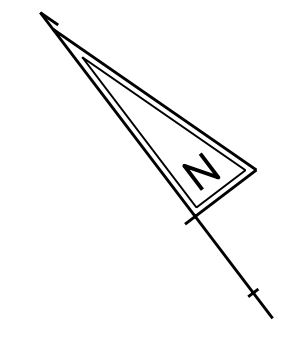
GENERAL PLAN BR1-482-01

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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS		<p>US 301 MARYLAND STATE LINE TO LEVELS ROAD</p>	CONTRACT	BRIDGE NO.	<p>1-482</p>	<p>PROJECT NOTES AND QUANTITIES</p>	SHEET NO.
	T20081301	DESIGNED BY: SPM		294				
	COUNTY	CHECKED BY: KO'C		TOTAL SHTS.				
	NEW CASTLE			850				

BR1-482-03

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WORK POINT COORDINATES				
WORK POINT	STATION	OFFSET	NORTHING	EASTING
1	1295+92.73	47.52RT	526,439.1998	561,414.7312
1A	1295+75.23	47.52RT	526,449.7867	561,400.7968
2	1295+97.73	47.52RT	526,436.1750	561,418.7125
3	1295+97.73	0.00	526,474.0135	561,447.4610
4	1295+97.73	35.52LT	526,502.2970	561,468.9498
5	1295+92.73	35.52LT	526,505.3218	561,464.9686
5A	1295+75.23	35.52LT	526,515.9087	561,451.0342
6	1296+67.73	30.29LT	526,455.7857	561,521.5240
7	1296+67.73	0.00	526,431.6659	561,503.1986
8	1296+67.73	6.00RT	526,426.8884	561,499.5688
9	1296+67.73	42.29RT	526,397.9910	561,477.6135
10	1297+42.73	35.52LT	526,414.5769	561,584.4063
10A	1297+60.23	35.52LT	526,403.9900	561,598.3407
11	1297+37.73	35.52LT	526,417.6017	561,580.4250
12	1297+37.73	0.00	526,389.3183	561,558.9362
13	1297+37.73	47.52RT	526,351.4797	561,530.1877
14	1297+42.73	47.52RT	526,348.4549	561,534.1690
14A	1297+60.23	47.52RT	526,337.8680	561,548.1033
15	1295+78.52	69.21RT	526,430.5257	561,390.2908
16	1295+99.73	48.00RT	526,434.5835	561,420.0151
17	1295+99.73	0.00	526,472.8035	561,449.0535
18	1295+99.73	36.00LT	526,501.4686	561,470.8322
19	1295+77.10	58.63LT	526,533.1745	561,466.5039
20	1297+59.06	59.33LT	526,423.6568	561,611.8192
21	1297+35.73	36.00LT	526,419.1932	561,579.1224
22	1297+35.73	0.00	526,390.5282	561,557.3437
23	1297+35.73	48.00RT	526,352.3081	561,528.3053
24	1297+56.94	69.21RT	526,322.5838	561,532.3631

DRAFT

NOT FOR BIDDING

AUGUST 2015

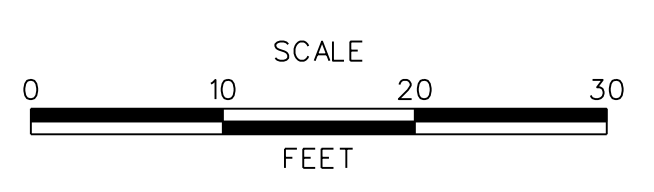
GEOMETRIC LAYOUT

REFERENCES:

- PROJECT NOTES
- ABUTMENT DETAILS
- MSE WALL DETAILS
- PIER DETAILS
- FRAMING PLAN
- BEAM DETAILS
- DECK PLAN
- BR1-482-03
- BR1-482-05 THRU BR1-482-12
- BR1-482-13 THRU BR1-482-15
- BR1-482-16 AND BR1-482-17
- BR1-482-19
- BR1-482-20
- BR1-482-23



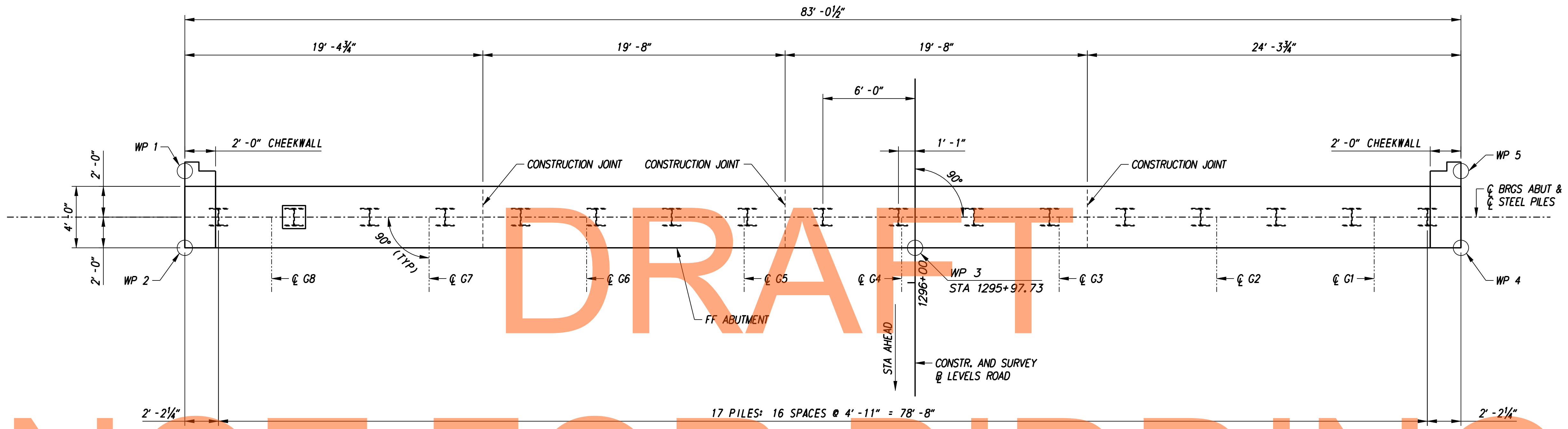
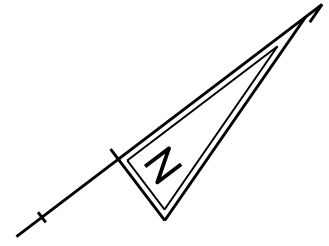
ADDENDUMS / REVISIONS	



US 301
MARYLAND STATE LINE
TO LEVELS ROAD

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	WMM
COUNTY	CHECKED BY:	KO'C
NEW CASTLE		

GEOMETRIC LAYOUT	SHEET NO.	295
	TOTAL SHTS.	850
	BR1-482-04	

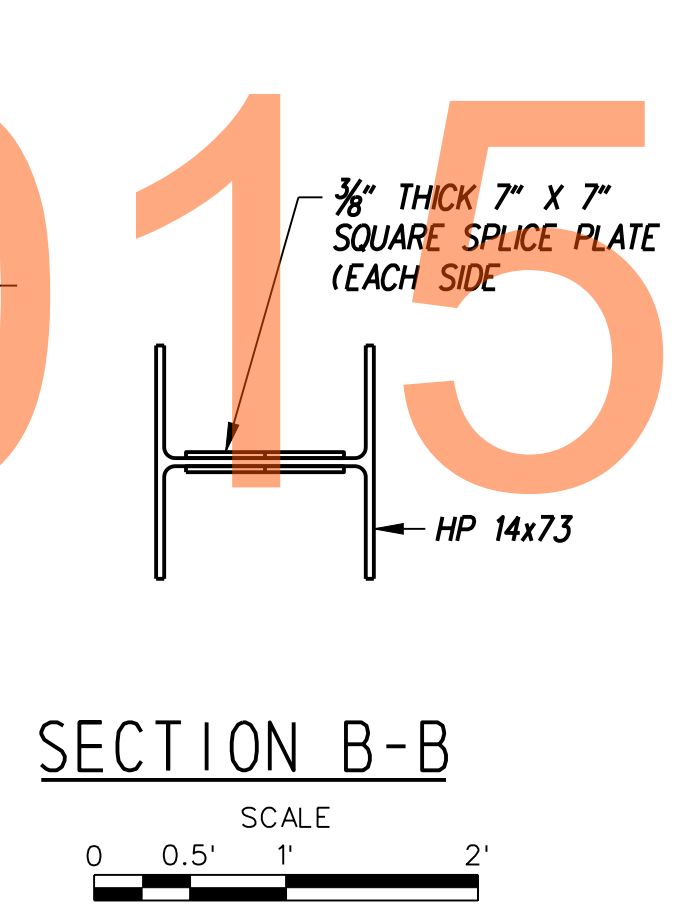
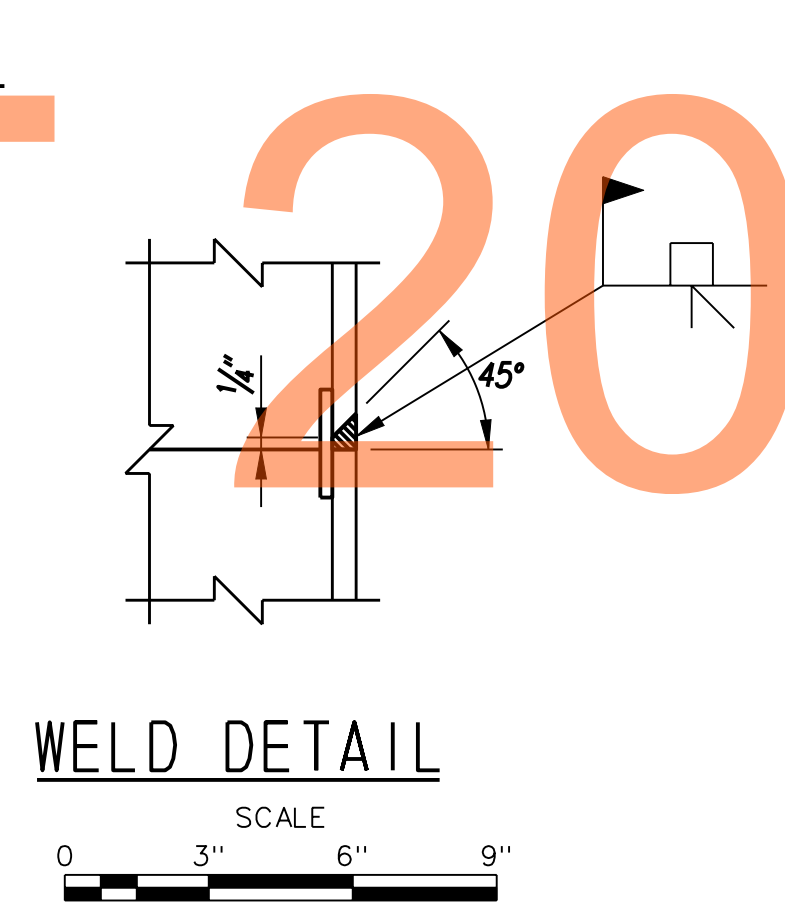
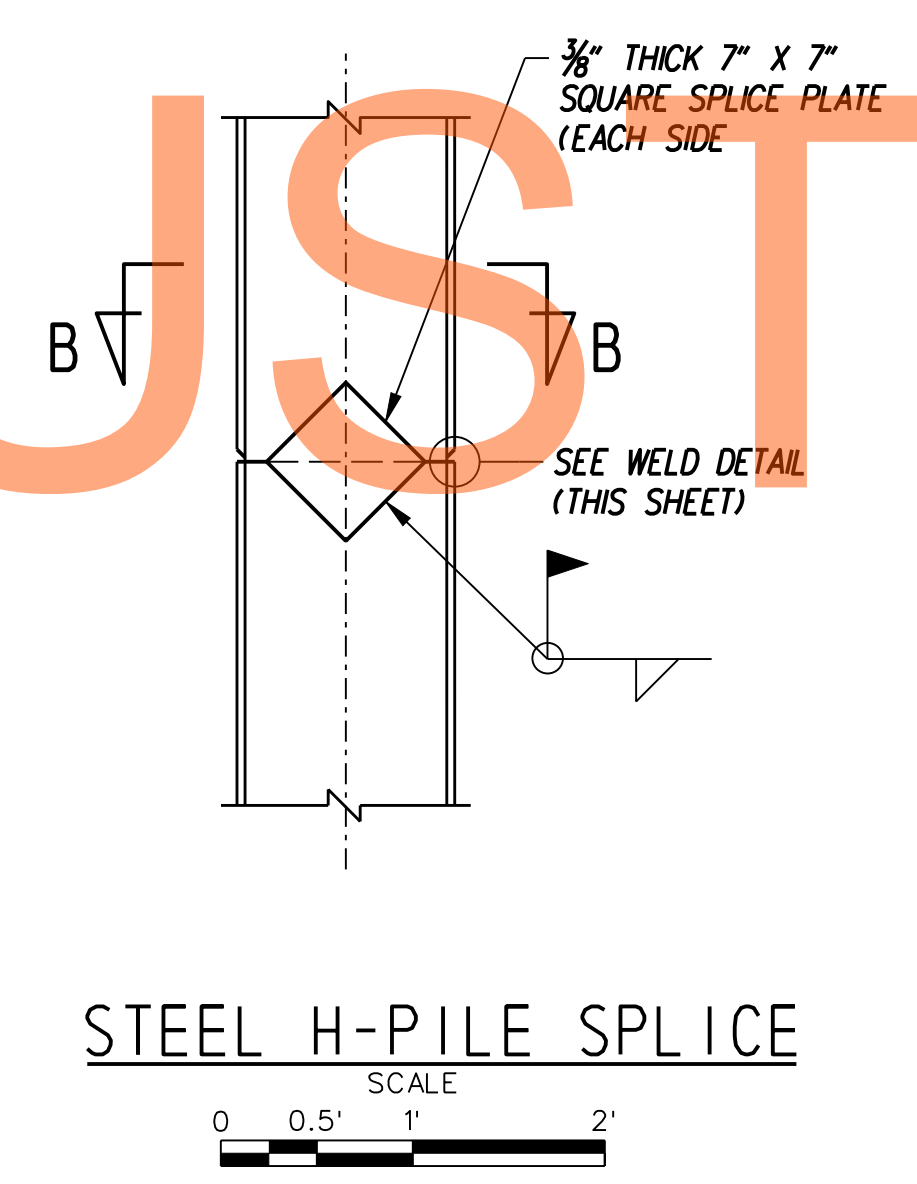
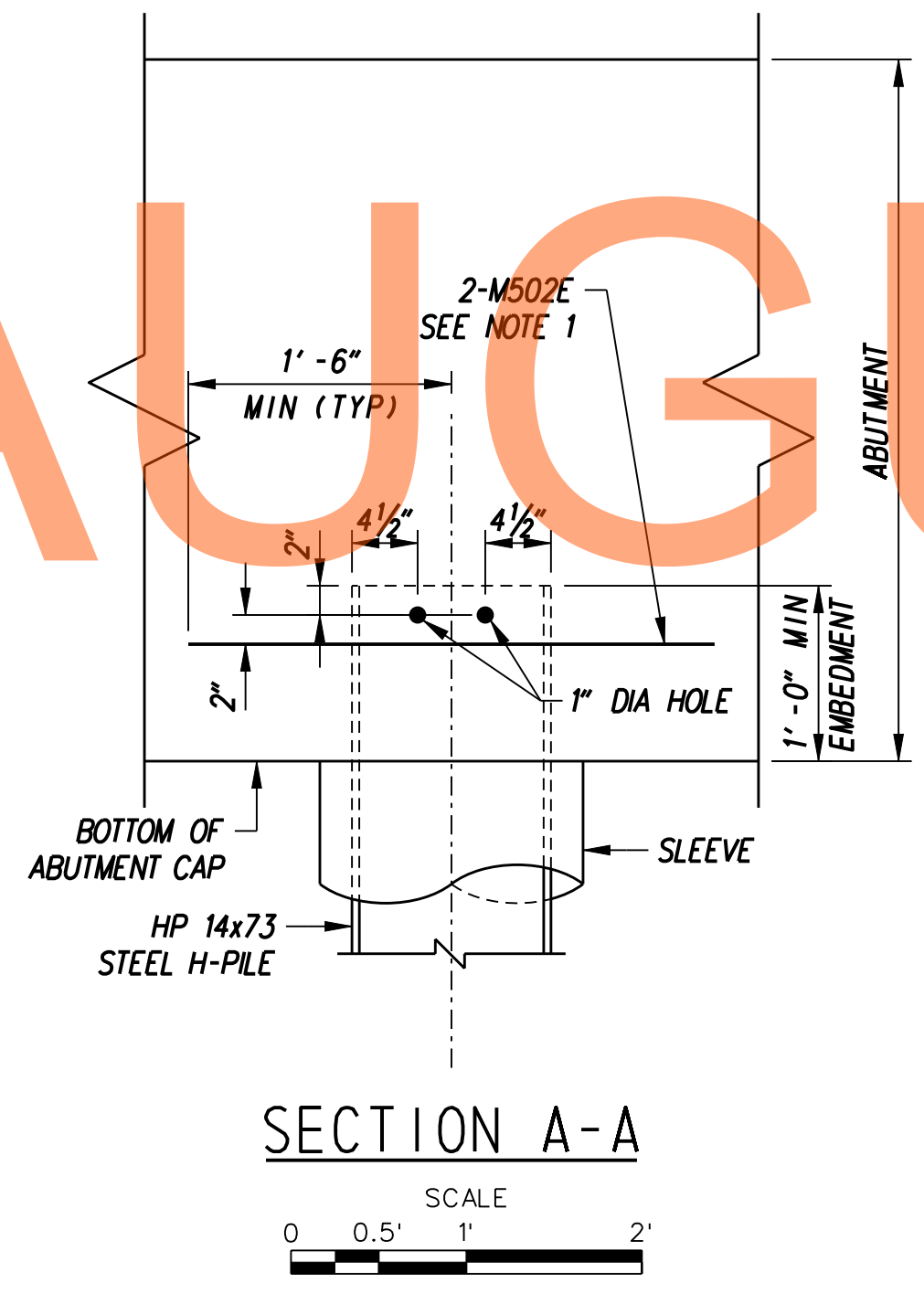
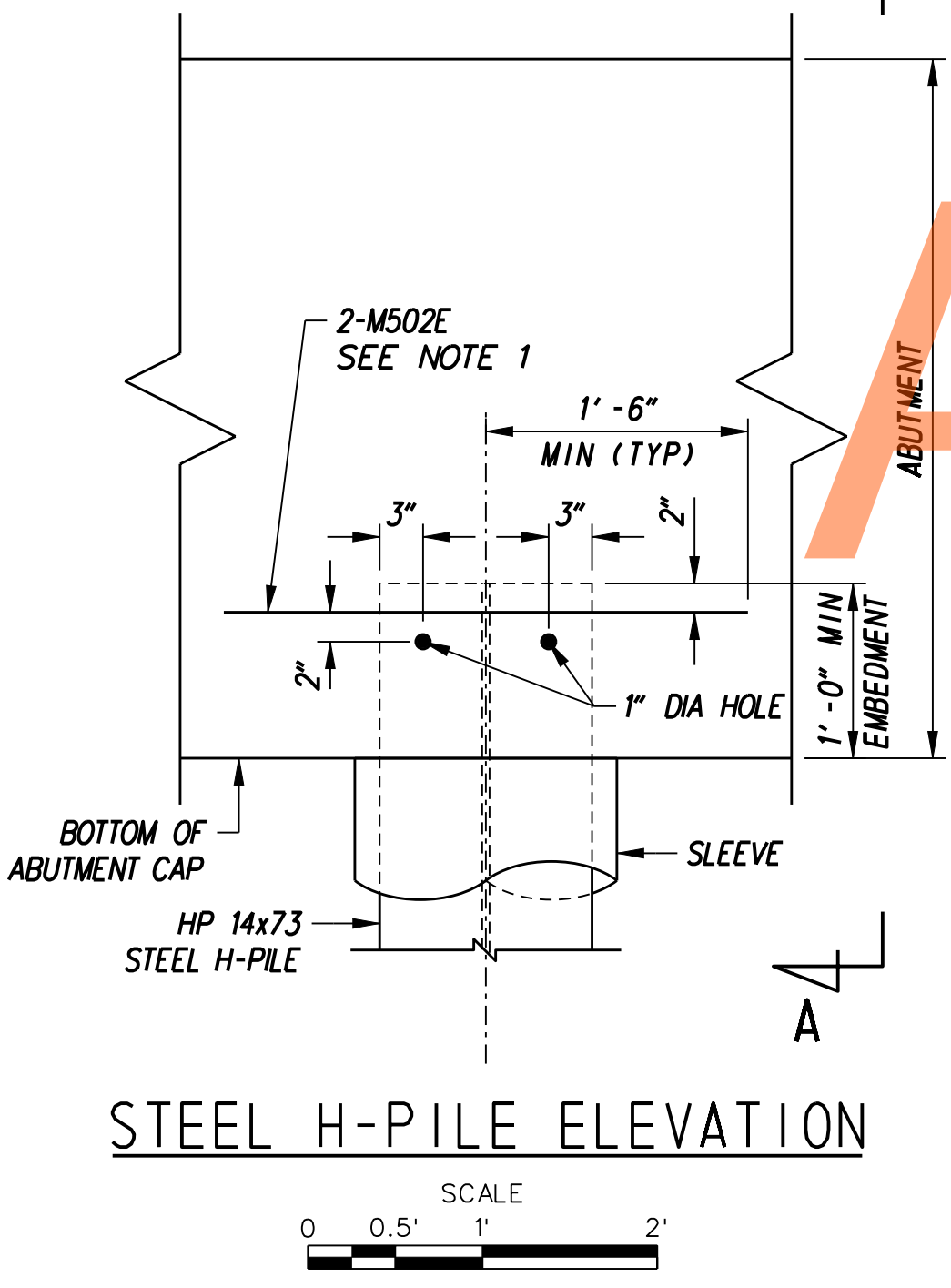


NOT FOR BIDDING

AUGUST 2015

ABUTMENT 1 PLAN AND PILE LAYOUT

SCALE
0 2' 4' 8'



H-PILE NOTES:

- REINFORCEMENT STEEL (MATERIAL) FOR H-PILES IS INCIDENTAL TO ITEMS "618062 - FURNISH STEEL H PILE, HP14X73" AND "618065 - FURNISH STEEL H TEST PILES, HP14X73". INSTALLATION OF REINFORCEMENT STEEL FOR H-PILES IS INCIDENTAL TO ITEMS "619042-INSTALL STEEL H PILES, HP14X73" AND "619045 - INSTALL STEEL H TEST PILES, HP14X73".

REFERENCES:

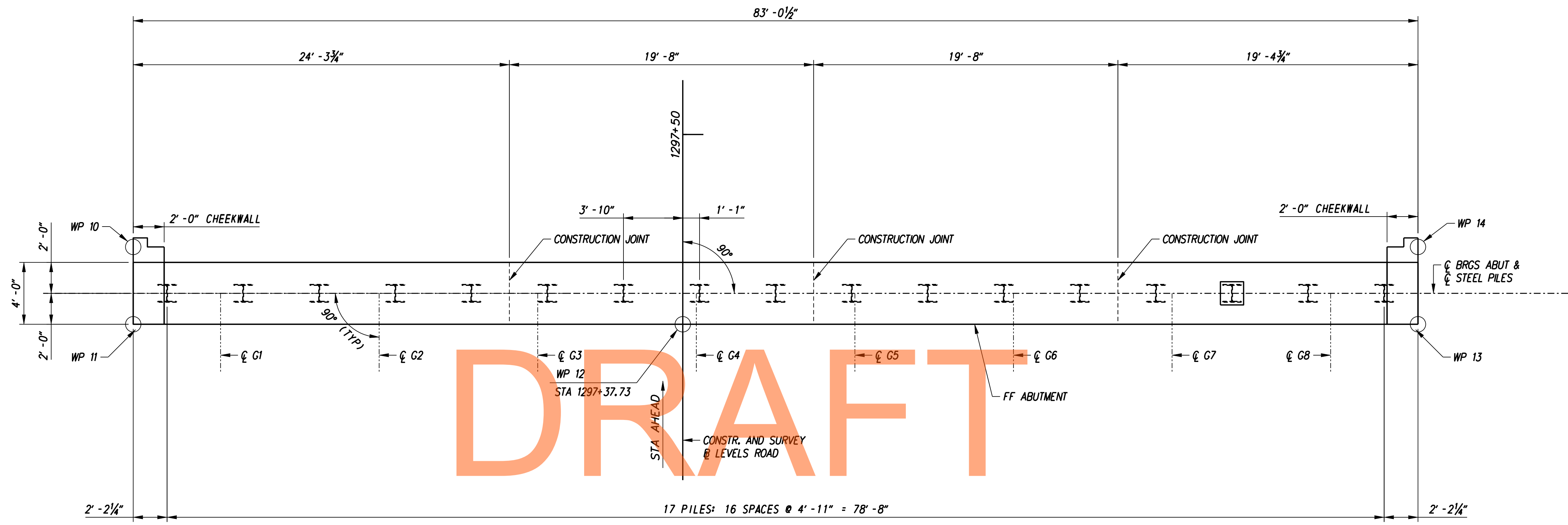
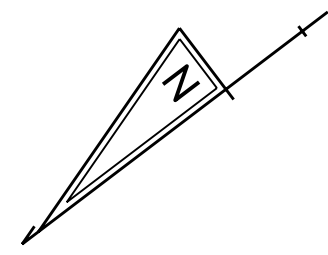
GENERAL PLAN	BRI-482-01
PROJECT NOTES	BRI-482-03
GEOMETRIC LAYOUT	BRI-482-04
PILE DETAILS, NOTES AND TABLES	BRI-482-07 AND BRI-482-08
ABUTMENT 1 PLAN	BRI-482-09
ABUTMENT AND CHEEKWALL DETAILS	BRI-482-11 AND BRI-482-12
REINFORCEMENT BAR SCHEDULE	BRI-482-31

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ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	JS/WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

ABUTMENT 1 PILE LAYOUT AND DETAILS	SHEET NO. 296
	TOTAL SHTS. 850



DRAFT

NOT FOR BIDDING

AUGUST 2015

ABUTMENT 2 PLAN AND PILE LAYOUT

- TEST PILE
- HPI4X73 PILE (RECOMMENDED)
- 14" DIA OPEN END PIPE PILE (ALTERNATE)
- 14" DIA STEEL SHELL PILE (ALTERNATE)

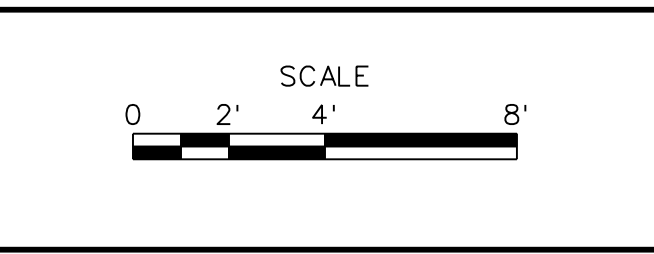
REFERENCES:

- | | |
|---|---|
| <p>GENERAL PLAN
PROJECT NOTES
GEOMETRIC LAYOUT
PILE DETAILS, NOTES AND TABLES
ABUTMENT 2 PLAN
ABUTMENT AND CHEEKWALL DETAILS
REINFORCEMENT BAR SCHEDULE</p> | <p>BR1-482-01
BR1-482-03
BR1-482-04
BR1-482-07 AND BR1-482-08
BR1-482-10
BR1-482-11 AND BR1-482-12
BR1-482-31</p> |
|---|---|

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



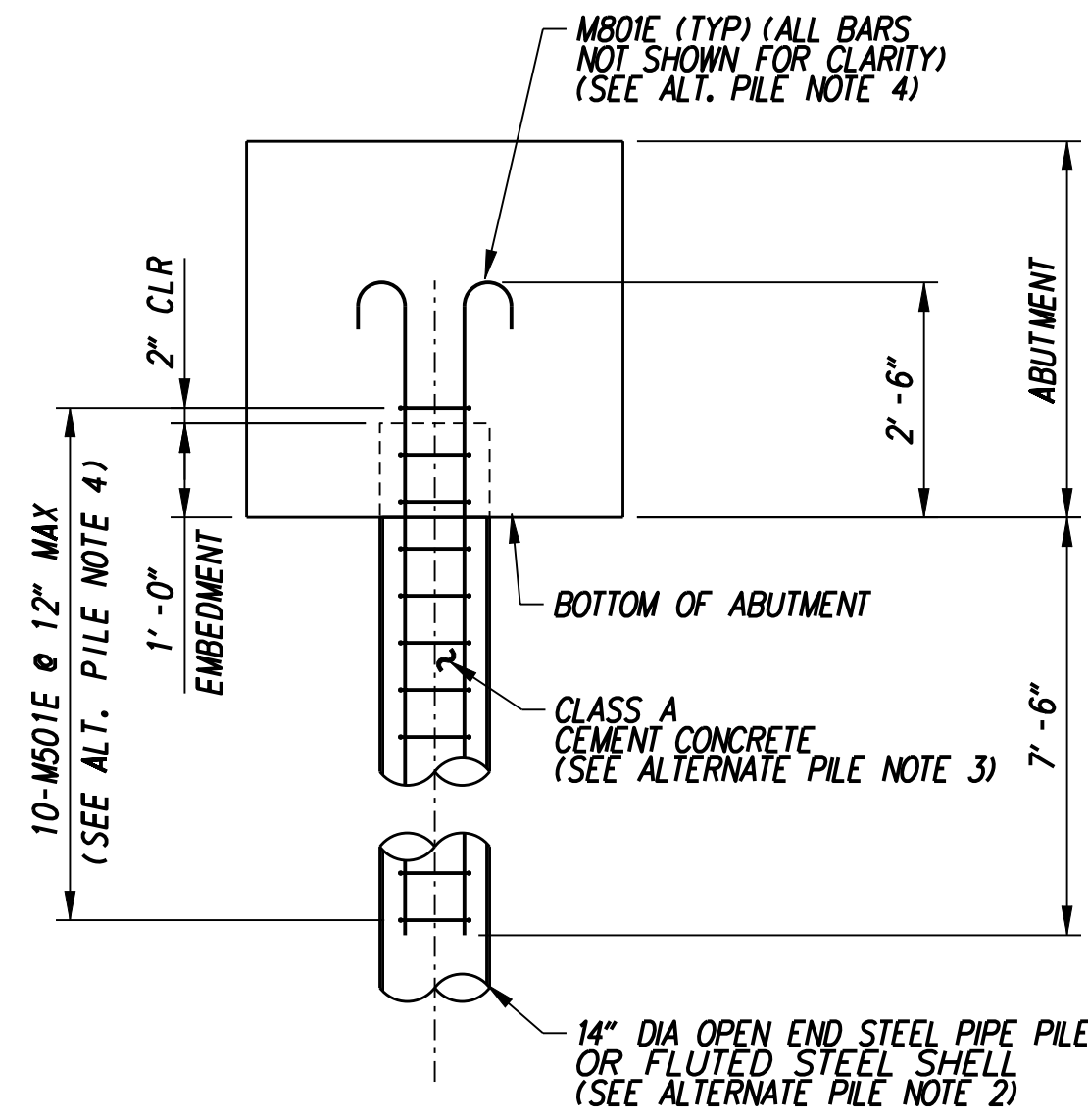
**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: JS/WMM CHECKED BY: DJP

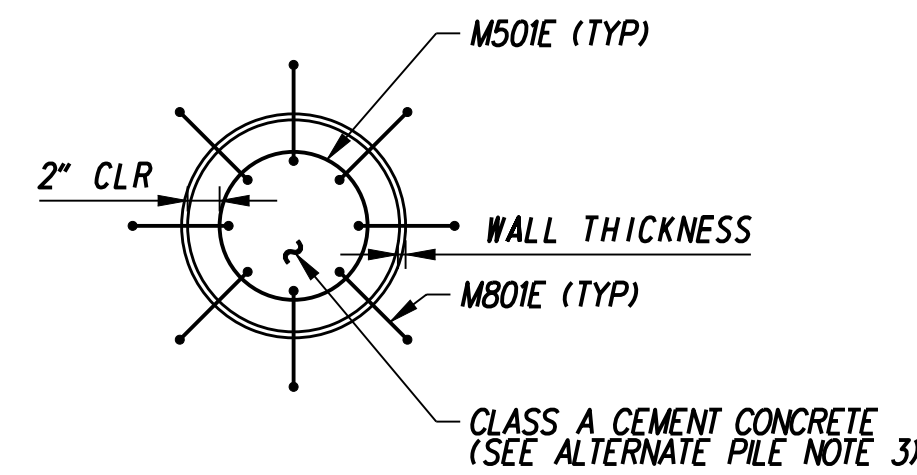
**ABUTMENT 2
PILE LAYOUT**

BR1-482-06

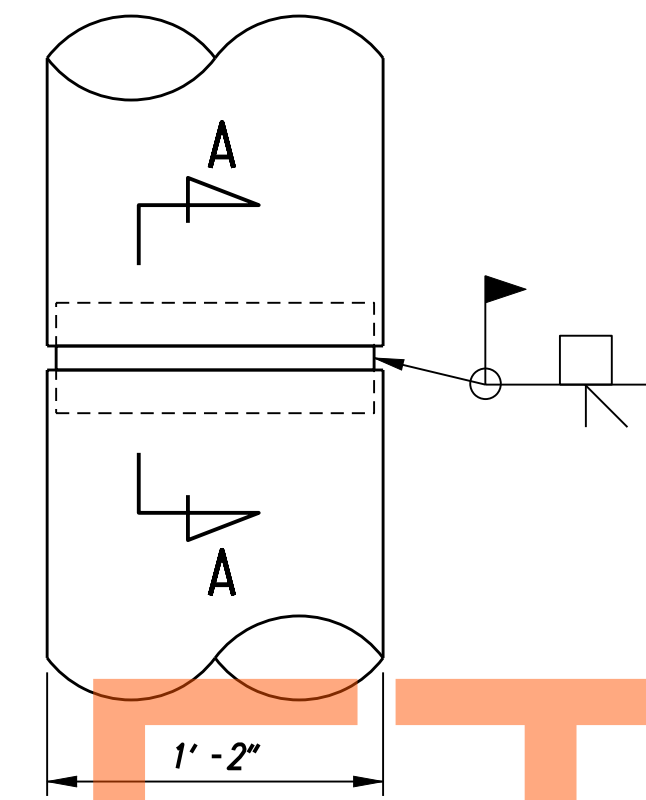
SHEET NO. 297
TOTAL SHTS. 850



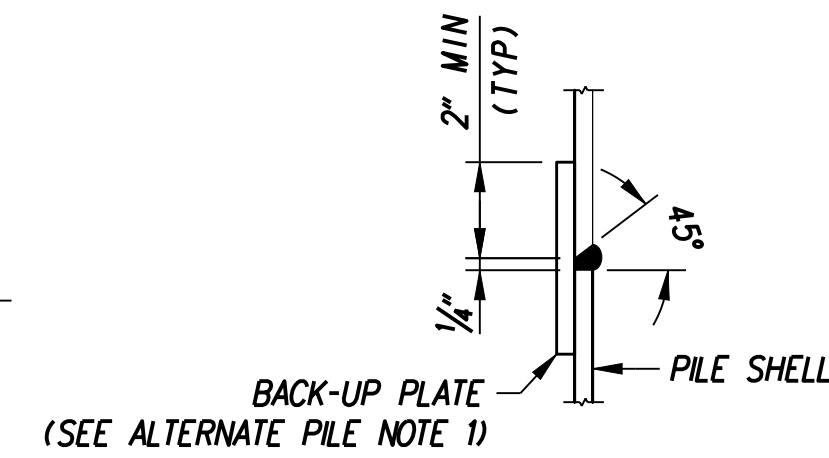
STEEL PIPE PILE OR FLUTED STEEL SHELL PILE REINFORCEMENT



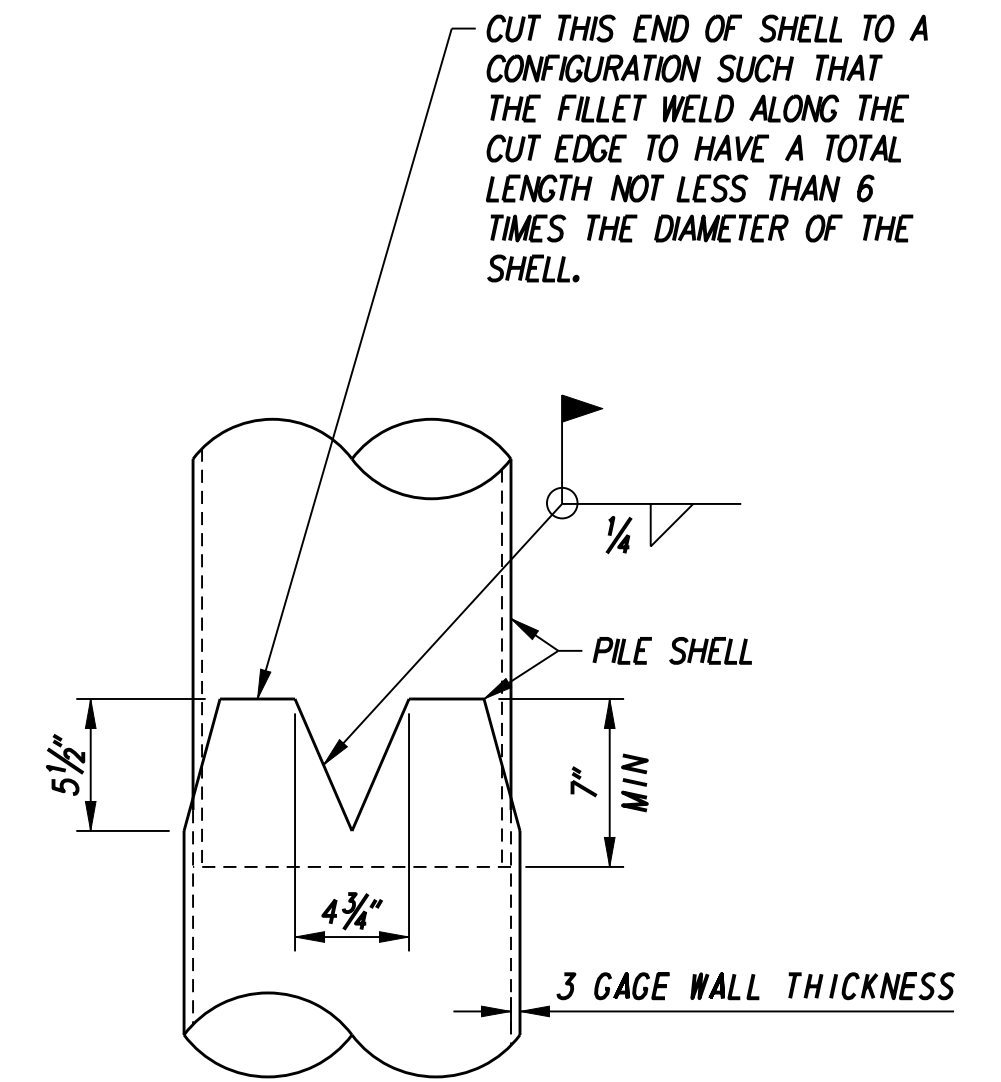
PILE PLAN



PIPE PILE SPLICE DETAIL
NTS



SECTION A-A
NTS



FLUTED STEEL SHELL PILE SPLICE DETAIL
NTS

DRAFT

ALTERNATE PIPE PILE DETAILS

PILE INSTALLATION NOTES:

1. ALL PILES SHALL BE ONE OF THE FOLLOWING:
 - HP 14X73 AASHTO M270 (ASTM A 709), GRADE 50 (RECOMMENDED)
 - 14" DIAMETER OPEN END STEEL PIPE PILE, 1/2" WALL THICKNESS, ASTM A 252, GRADE 2 (ALTERNATE)
 - 14" DIAMETER 3 GAGE FLUTED STEEL SHELL PILE (Y-TAPER) (ALTERNATE)
2. PILES SHALL BE CASED WITH A CORRUGATED PIPE FROM THE BOTTOM OF THE MSE WALL LEVELING PAD ELEVATION TO THE BOTTOM OF THE BRIDGE STUB PILE CAP AND FILLED WITH FINE AGGREGATE (SEE DELDOT STANDARD SPECIFICATIONS, SECTION 804). REFER TO THE PILE INSTALLATION SEQUENCE. FOR THE RECOMMENDED H-PILE THE CORRUGATED PIPE SHALL BE 24", 16 GAGE 2 3/4" X 1/2" CORRUGATION AND FOR THE ALTERNATE STEEL PIPE PILES OR FLUTED STEEL SHELL PILES, THE CORRUGATED PIPE SHALL BE 18", 16 GAGE, 2 3/4" X 1/2" CORRUGATION. REFER TO PILE INSTALLATION SEQUENCE FOR ADDITIONAL INFORMATION. PAYMENT FOR CORRUGATED GALVANIZED STEEL PIPE AND FINE AGGREGATE INSIDE PIPE SHALL BE INCIDENTAL TO ITEM "602772 - MECHANICALLY STABILIZED EARTH WALLS."
3. ALL TEST PILES SHALL BE 10 FEET LONGER THAN INDICATED ON THE PILE INSTALLATION TABLE.
4. ALL PILES SHALL BE DRIVEN TO THE NOMINAL PILE DRIVING RESISTANCE (R_{ndr}) LISTED IN THE PILE INSTALLATION TABLE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE WAVE EQUATION AND HIGH-STRAIN DYNAMIC PILE TESTING MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
6. A QUARANTINE PERIOD OF 30 DAYS IS REQUIRED AFTER THE CONSTRUCTION OF THE FULL HEIGHT OF THE FILL AT THE ABUTMENTS IS ACHIEVED.
7. THE ENGINEER SHALL APPROVE THE COMPLETION OF THE WAITING PERIOD, BASED ON THE RESULTS OF INSTRUMENTATION.
8. SEE THE SPECIAL PROVISIONS FOR SETTLEMENT MONITORING REQUIREMENTS AND CONSTRUCTION DETAILS SHEET DT-24 FOR INSTALLATION LOCATIONS.
9. PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY TEST PILES. A MINIMUM OF ONE PILE PER SUBSTRUCTURE, AS SHOWN ON THE PLANS, SHALL BE DYNAMICALLY TESTED WITH SIGNAL MATCHING ANALYSIS BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 619519 AND 619539. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID AS FOLLOWS:
 - A). ALL TEST PILE(S) WILL BE RESTRUCK AFTER A WAITING PERIOD OF AT LEAST 48 HOURS. RESTRIKES OF THESE TEST PILES SHALL BE PERFORMED PRIOR TO PLACING ANY EMBANKMENT IN ACCORDANCE WITH ITEM NO. 619502 TEST PILE RESTRIKE. TEST PILE RESTRIKES SHALL BE INCIDENTAL.
 - B). IF DIRECTED BY THE ENGINEER TO RESTRIKE A PRODUCTION PILE, THE RESTRIKE OF THE PRODUCTION PILE SHALL BE PAID SEPARATELY UNDER ITEM NO. 619501.
10. THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC TESTING OF RESTRIKES.

ALTERNATE PILE NOTES:

1. BACK-UP PLATE TO BE CUT FROM THE SAME PILE SIZE AS BEING SPLICED. CUT AND BEND TO FIT INSIDE DIAMETER OF PILE.
2. CORRUGATED PIPE NOT SHOWN FOR CLARITY.
3. CLASS A CEMENT CONCRETE (MATERIAL) FOR FILLING VOID IN ALT. PILES IS INCIDENTAL TO ITEMS "618552 - FURNISH PIPE PILE, SCHEDULE 40, OPEN END, 14", "618557 - FURNISH TEST PIPE PILE, SCHEDULE 40, OPEN END, 14", "618050 - FURNISH STEEL SHELL PILES, 14", OR "618051 - FURNISH TEST STEEL SHELL PILES, 14". INSTALLATION OF CLASS A CEMENT CONCRETE FOR FILLING VOID IN ALTERNATE PILES IS INCIDENTAL TO ITEMS "619540 - INSTALL PIPE PILE SCHEDULE 40, OPEN END, 14" "619558 - INSTALL TEST PIPE PILE, SCHEDULE 40, OPEN END, 14", "619055 - INSTALL STEEL SHELL PILES, 14", OR "619056 - INSTALL TEST STEEL SHELL PILES, 14".
4. REINFORCEMENT STEEL FOR ALTERNATE PILES (MATERIAL) IS INCIDENTAL TO ITEMS "618552 - FURNISH PIPE PILE, SCHEDULE 40, OPEN END, 14", "618557 - FURNISH TEST PIPE PILE, SCHEDULE 40, OPEN END, 14", "618050 - FURNISH STEEL SHELL PILES, 14", OR "618051 - FURNISH TEST STEEL SHELL PILES, 14". INSTALLATION OF REINFORCEMENT STEEL FOR ALTERNATE PILES IS INCIDENTAL TO ITEMS "619540 - INSTALL PIPE PILE, SCHEDULE 40, OPEN END, 14" "619558 - INSTALL TEST PIPE PILE, SCHEDULE 40, OPEN END, 14", "619055 - INSTALL STEEL SHELL PILES, 14", OR "619056 - INSTALL TEST STEEL SHELL PILES, 14".

PILE INSTALLATION SEQUENCE:

1. DRIVE PILES PRIOR TO MSE WALL INSTALLATION.
2. PLACE OVER EACH PILE, A CORRUGATED PIPE OF SUFFICIENT THICKNESS TO PREVENT BUCKLING OR DISTORTION DURING PLACEMENT OF THE BACKFILL.
3. PLACE SPACERS BETWEEN THE PILE AND THE CORRUGATED PIPE TO PREVENT THE CORRUGATED PIPE FROM COMING INTO CONTACT WITH THE PILE DURING BACKFILLING OF THE WALL.
4. EXTEND CORRUGATED PIPE FROM THE BOTTOM OF THE MSE WALL LEVELING PAD TO THE BOTTOM OF THE BRIDGE STUB ABUTMENT PILE CAP.
5. ENSURE NO CONSTRUCTION OR OTHER DEBRIS FALLS INTO THE VOID BETWEEN THE CORRUGATED PIPE AND THE PILE.
6. FILL THE CORRUGATED PIPE LOOSELY WITH FINE AGGREGATE (SEE DELDOT STANDARD SPECIFICATIONS, SECTION 804). AT THE CONTRACTOR'S OPTION, PLACE FINE AGGREGATE BEFORE OR AFTER THE MSE WALL CONSTRUCTION IS COMPLETED.
7. FOR ALTERNATE PILES, PLACE REINFORCEMENT CAGE IN 14" DIAMETER STEEL PIPE PILES OR 14" DIAMETER STEEL SHELL PILES AND FILL VOID REMAINING IN PILE WITH CLASS A CONCRETE TO THE PLUG FORMED AT THE DRIVEN END.

REFERENCES:

- | | |
|------------------------------------|---------------------------|
| GENERAL PLAN | BRI-482-01 |
| PROJECT NOTES | BRI-482-03 |
| GEOMETRIC LAYOUT | BRI-482-04 |
| ABUTMENT 1 PILE LAYOUT AND DETAILS | BRI-482-05 |
| ABUTMENT 2 PILE LAYOUT | BRI-482-06 |
| PILE TABLES | BRI-482-08 |
| ABUTMENT 1 PLAN | BRI-482-09 |
| ABUTMENT 2 PLAN | BRI-482-10 |
| ABUTMENT AND CHEEKWALL DETAILS | BRI-482-11 AND BRI-482-12 |
| REINFORCEMENT BAR SCHEDULE | BRI-482-31 |

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301 MARYLAND STATE LINE TO LEVELS ROAD	CONTRACT	BRIDGE NO.	1-482	PILE DETAILS AND NOTES	SHEET NO.
				T200811301	DESIGNED BY: JS/WMM			298
				NEW CASTLE	CHECKED BY: DJP			TOTAL SHTS.
						850		

BR1-482-07

HP14X73 PILE INSTALLATION DATA (RECOMMENDED)					
SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	NOMINAL PILE DRIVING RESISTANCE (R _{ndr}) (KIPS)	ESTIMATED TIP ELEVATION	MINIMAL TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT 1	327	18	18		
ABUTMENT 2	327	14	14		

ABUTMENT 1 PILE DRIVING INFORMATION (RECOMMENDED)
PILE SIZE AND TYPE: HP 14 x 73
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

ABUTMENT 2 PILE DRIVING INFORMATION (RECOMMENDED)
PILE SIZE AND TYPE: HP 14 x 73
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

14" DIAMETER OPEN END STEEL PIPE PILE INSTALLATION DATA (ALTERNATE)					
SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	NOMINAL PILE DRIVING RESISTANCE (R _{ndr}) (KIPS)	ESTIMATED TIP ELEVATION	MINIMAL TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT 1	329	8	8		
ABUTMENT 2	329	4	4		

ABUTMENT 1 PILE DRIVING INFORMATION (ALTERNATE)
PILE SIZE AND TYPE: 14" DIAMETER SCHEDULE 40 OPEN END STEEL PIPE PILE
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

ABUTMENT 2 PILE DRIVING INFORMATION (ALTERNATE)
PILE SIZE AND TYPE: 14" DIAMETER SCHEDULE 40 OPEN END STEEL PIPE PILE
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

14" DIAMETER STEEL SHELL PILE (FLUTED, Y-TAPER) INSTALLATION DATA (ALTERNATE)					
SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	NOMINAL PILE DRIVING RESISTANCE (R _{ndr}) (KIPS)	ESTIMATED TIP ELEVATION	MINIMAL TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT 1	338	25	25		
ABUTMENT 2	338	21	21		

ABUTMENT 1 PILE DRIVING INFORMATION (ALTERNATE)
PILE SIZE AND TYPE: 14" DIAMETER 3 GAGE FLUTED STEEL SHELL PILE (Y-TAPER)
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

ABUTMENT 2 PILE DRIVING INFORMATION (ALTERNATE)
PILE SIZE AND TYPE: 14" DIAMETER 3 GAGE FLUTED STEEL SHELL PILE (Y-TAPER)
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

REFERENCES:

- | | |
|------------------------------------|---------------------------|
| GENERAL PLAN | BRI-482-01 |
| PROJECT NOTES | BRI-482-03 |
| GEOMETRIC LAYOUT | BRI-482-04 |
| ABUTMENT 1 PILE LAYOUT AND DETAILS | BRI-482-05 |
| ABUTMENT 2 PILE LAYOUT | BRI-482-06 |
| PILE DETAILS AND NOTES | BRI-482-07 |
| ABUTMENT 1 PLAN | BRI-482-09 |
| ABUTMENT 2 PLAN | BRI-482-10 |
| ABUTMENT AND CHEEKWALL DETAILS | BRI-482-11 AND BRI-482-12 |
| REINFORCEMENT BAR SCHEDULE | BRI-482-31 |

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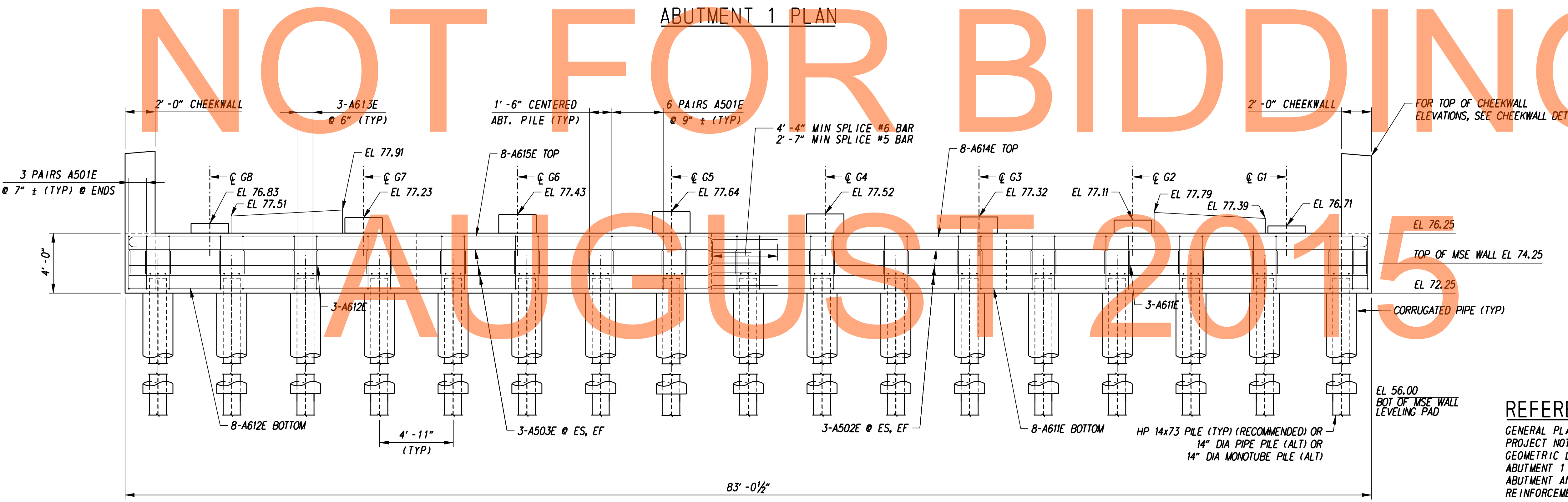
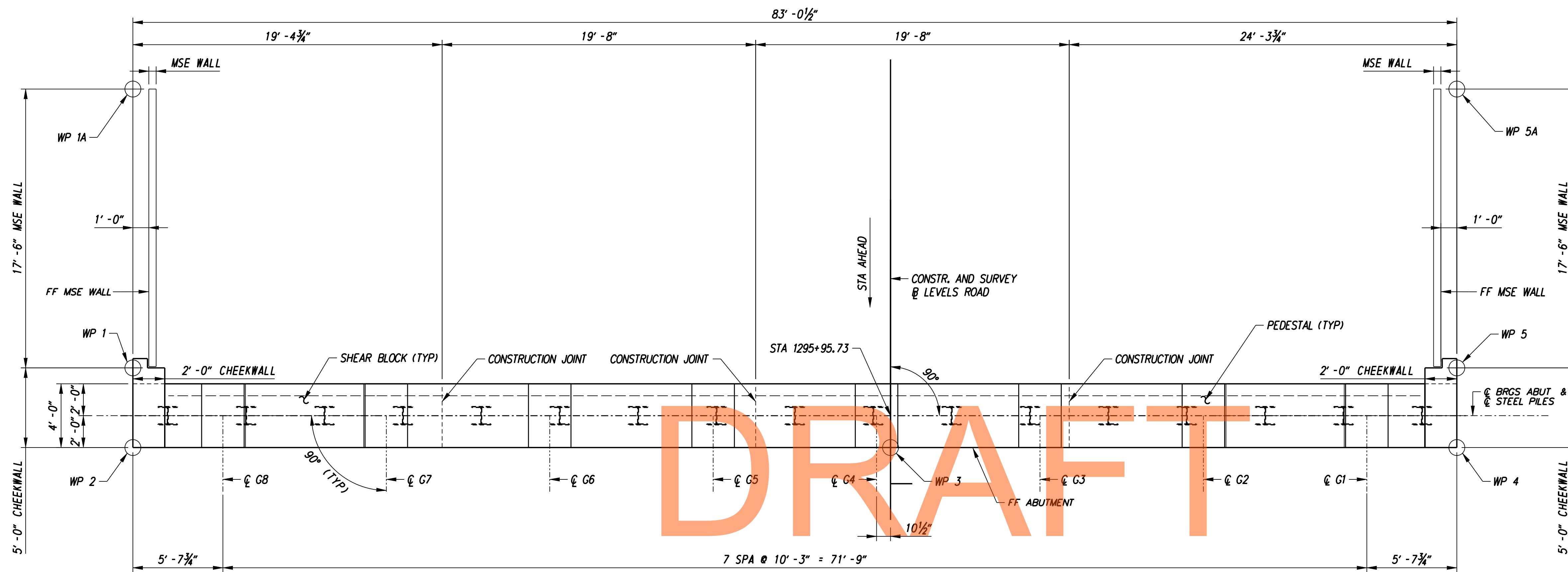
ADDENDUMS / REVISIONS	

**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	JS/WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

PILE TABLES	SHEET NO.	299
	TOTAL SHTS.	850

BR1-482-08

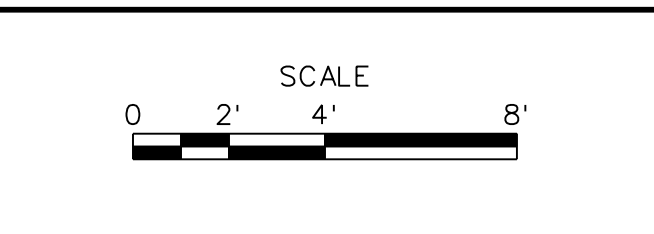


- REFERENCES:**
- GENERAL PLAN
 - PROJECT NOTES
 - GEOMETRIC LAYOUT
 - ABUTMENT 1 PILE LAYOUT AND DETAILS
 - ABUTMENT AND CHEEKWALL DETAILS
 - REINFORCEMENT BAR SCHEDULE
- BR1-482-01
 - BR1-482-03
 - BR1-482-04
 - BR1-482-05
 - BR1-482-11 AND BR1-482-12
 - BR1-482-31

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ADDENDUMS / REVISIONS	

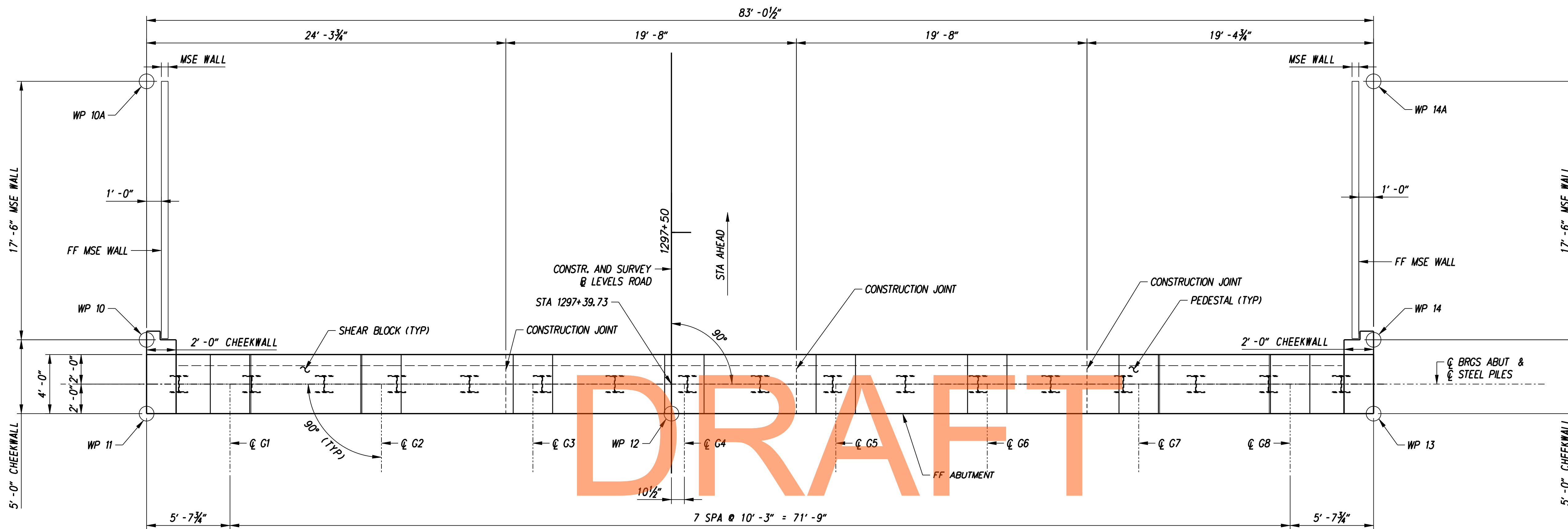


**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

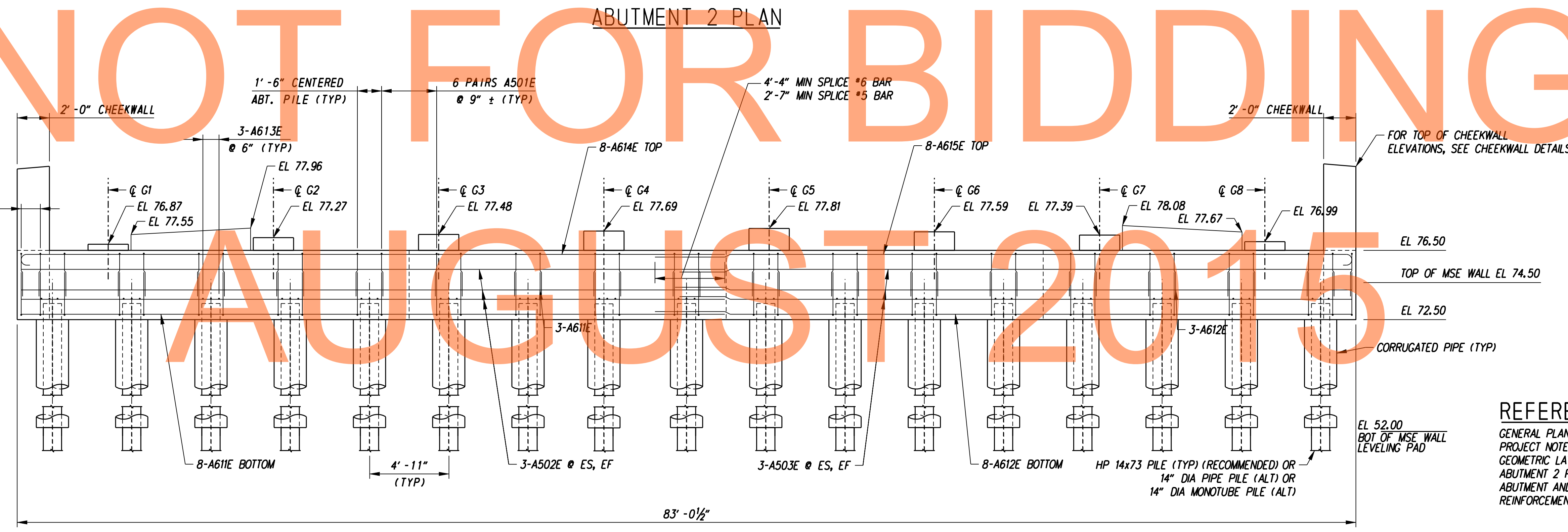
CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	JS/WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

**ABUTMENT 1
PLAN AND ELEVATION**

BR1-482-09	SHEET NO.	300
	TOTAL SHTS.	850



NOT FOR BIDDING

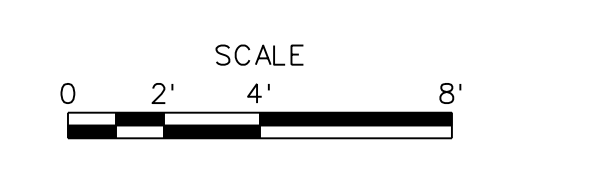


- REFERENCES:**
- GENERAL PLAN
 - PROJECT NOTES
 - GEOMETRIC LAYOUT
 - ABUTMENT 2 PILE LAYOUT
 - ABUTMENT AND CHEEKWALL DETAILS
 - REINFORCEMENT BAR SCHEDULE
- BRI-482-01
 - BRI-482-03
 - BRI-482-04
 - BRI-482-06
 - BRI-482-11 AND BRI-482-12
 - BRI-482-31

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ADDENDUMS / REVISIONS



**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

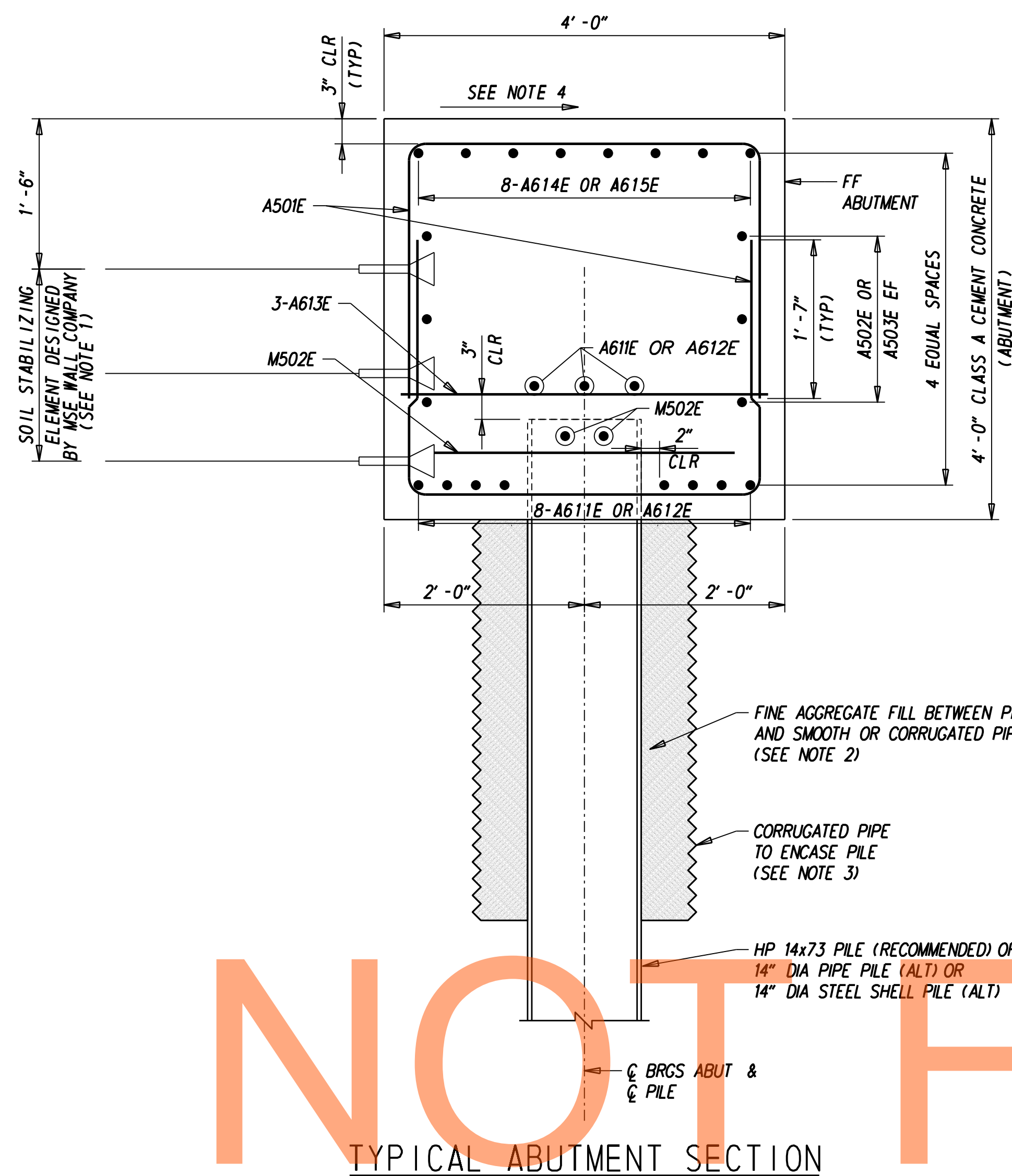
CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: JS/WMM
CHECKED BY: DJP	

**ABUTMENT 2
PLAN AND ELEVATION**

BR1-482-10
SHEET NO. 301
TOTAL SHTS. 850

NOTES

- SOIL STABILIZING ELEMENTS TO BE DESIGNED AND DETAILED (NUMBER, SIZE, AND SPACING) BY THE MSE WALL COMPANY FOR FORCES INDICATED ON THE LOADING DIAGRAM. SOIL STABILIZING ELEMENTS SHALL BE INCIDENTAL TO ITEM "602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING".
- FINE AGGREGATE TO MEET THE REQUIREMENTS OF DELDOT STANDARD SPECIFICATIONS, SECTION 804. QUANTITY TO FILL VOID BETWEEN PILE AND CORRUGATED GALVANIZED STEEL PIPE SHALL BE INCIDENTAL TO ITEM "602772 - MECHANICALLY STABILIZED EARTH WALLS."
- HP, PIPE PILE OR STEEL SHELL PILE ENCASED WITH CORRUGATED GALVANIZED STEEL PIPE, INSTALLED FROM BOTTOM OF MSE WALL LEVELING PAD ELEVATION TO THE BOTTOM OF THE BRIDGE STUB ABUTMENT. REFER TO PILE INSTALLATION SEQUENCE ON PILE DETAILS AND NOTES SHEET. CORRUGATED PIPE SHALL BE INCIDENTAL TO ITEM 602772.
- SLOPE ABUTMENT 1/4" PER FOOT FROM REAR FACE TO FRONT FACE BETWEEN BEAM SEATS.



TYPICAL ABUTMENT SECTION

EACH ABUTMENT

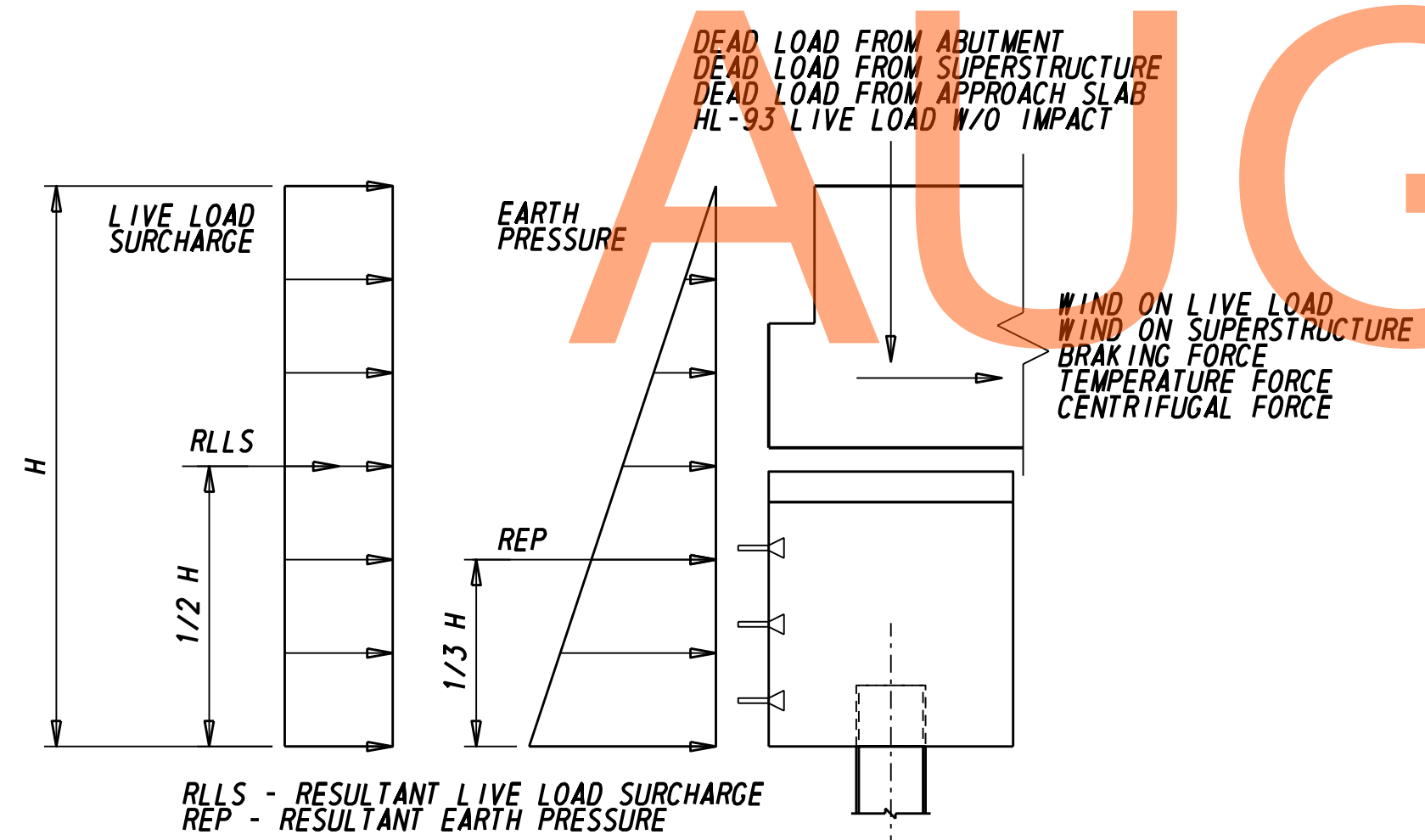
VERTICAL LOADS:

DEAD LOAD FROM ABUTMENT	2.40 k/lf
DEAD LOAD FROM SUPERSTRUCTURE	11.32 k/lf
DEAD LOAD FROM APPROACH SLAB	3.26 k/lf
HL-93 LOAD W/O IMPACT (1)	6.19 k/lf

HORIZONTAL LOADS IN THE OVERTURNING DIRECTION# (2)

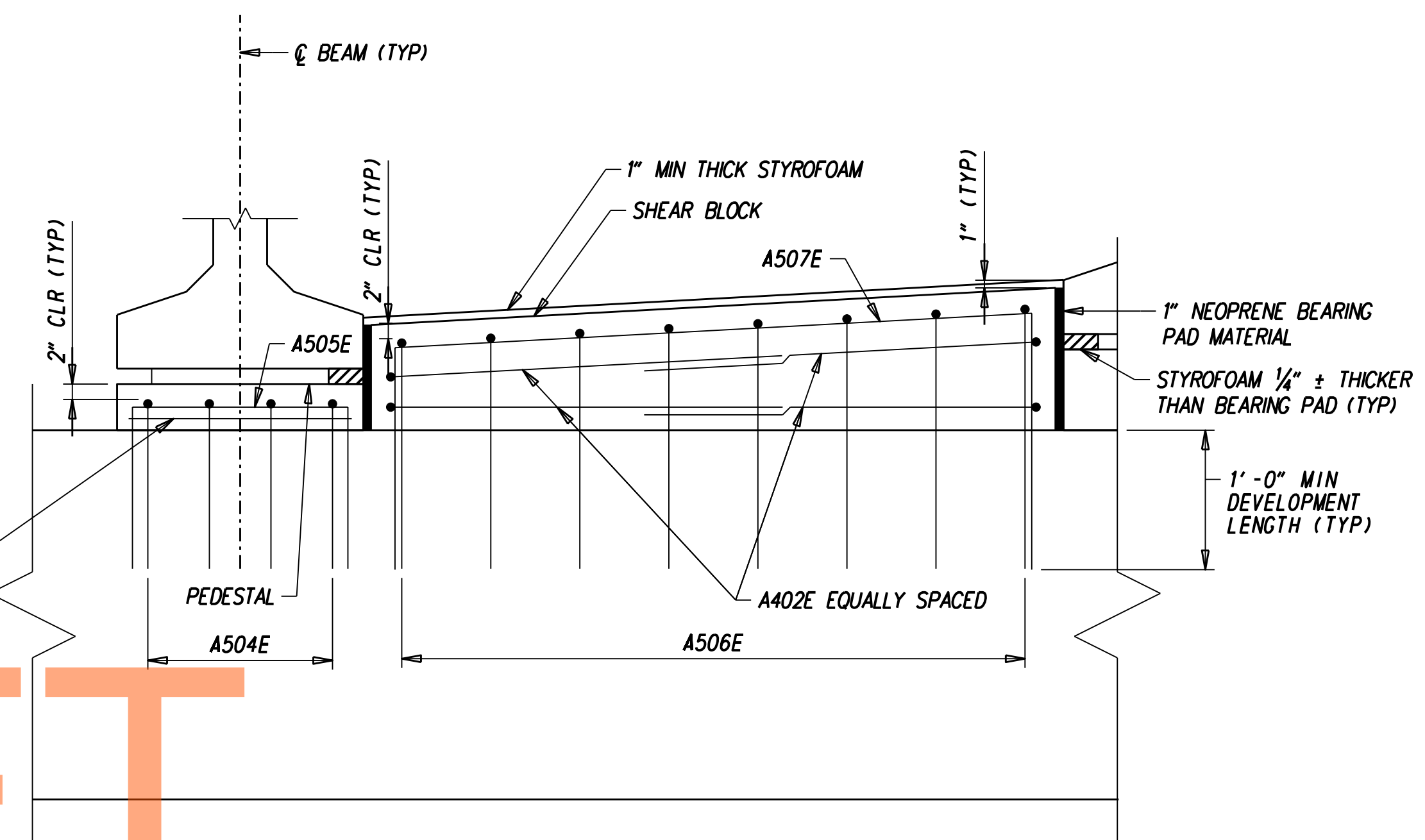
WIND ON LIVE LOAD (3)	0.00 k/lf
WIND ON SUPERSTRUCTURE (3)	0.00 k/lf
BRAKING FORCE (3)	0.00 k/lf
TEMPERATURE FORCE	0.61 k/lf
EARTH PRESSURE	1.80 k/lf
CENTRIFUGAL FORCE	0.00 k/lf
LIVE LOAD SURCHARGE	0.11 k/lf

- LIVE LOAD IS PROVIDED FOR MAXIMUM DESIGN LANE CONFIGURATION.
- THE OVERTURNING DIRECTION IS PERPENDICULAR TO C BEARINGS, ALL LOADS ARE UNFACTORED AND CONSIDERED TO ACT AT THE BEAM SEAT ELEVATION
- WIND LOADS AND BRAKING FORCE ARE CARRIED BY THE FIXED BEARINGS AT THE PIER.

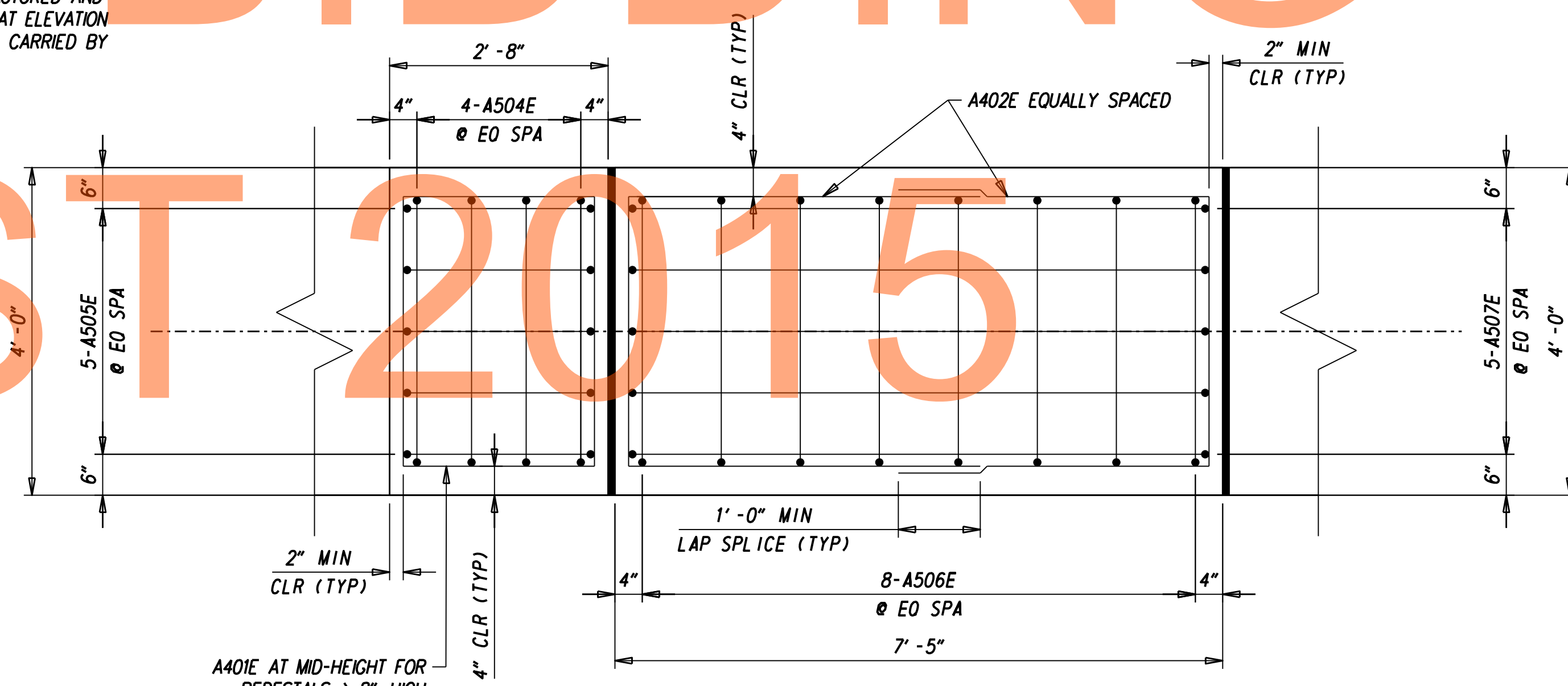


LOADING DIAGRAM

NTS



TYPICAL ELEVATION PEDESTAL AND SHEAR BLOCK



TYPICAL PLAN PEDESTAL AND SHEAR BLOCK

REFERENCES:

- PROJECT NOTES
 PILE DETAILS AND NOTES
 ABUTMENT PLANS
 REINFORCEMENT BAR SCHEDULE
- BRI-482-03
 BRI-482-07
 BRI-482-09 AND BRI-482-10
 BRI-482-31

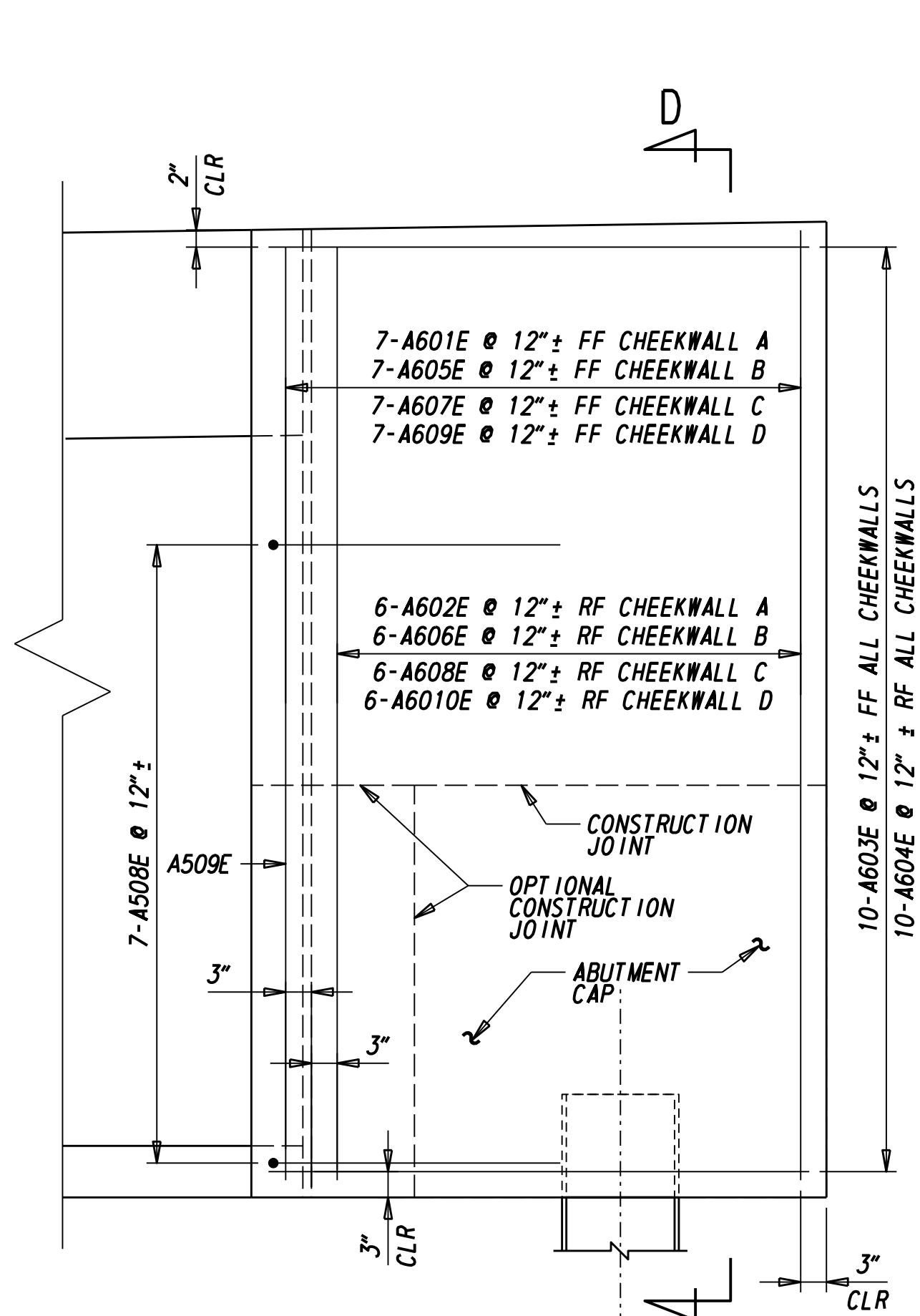
BRI-482-11

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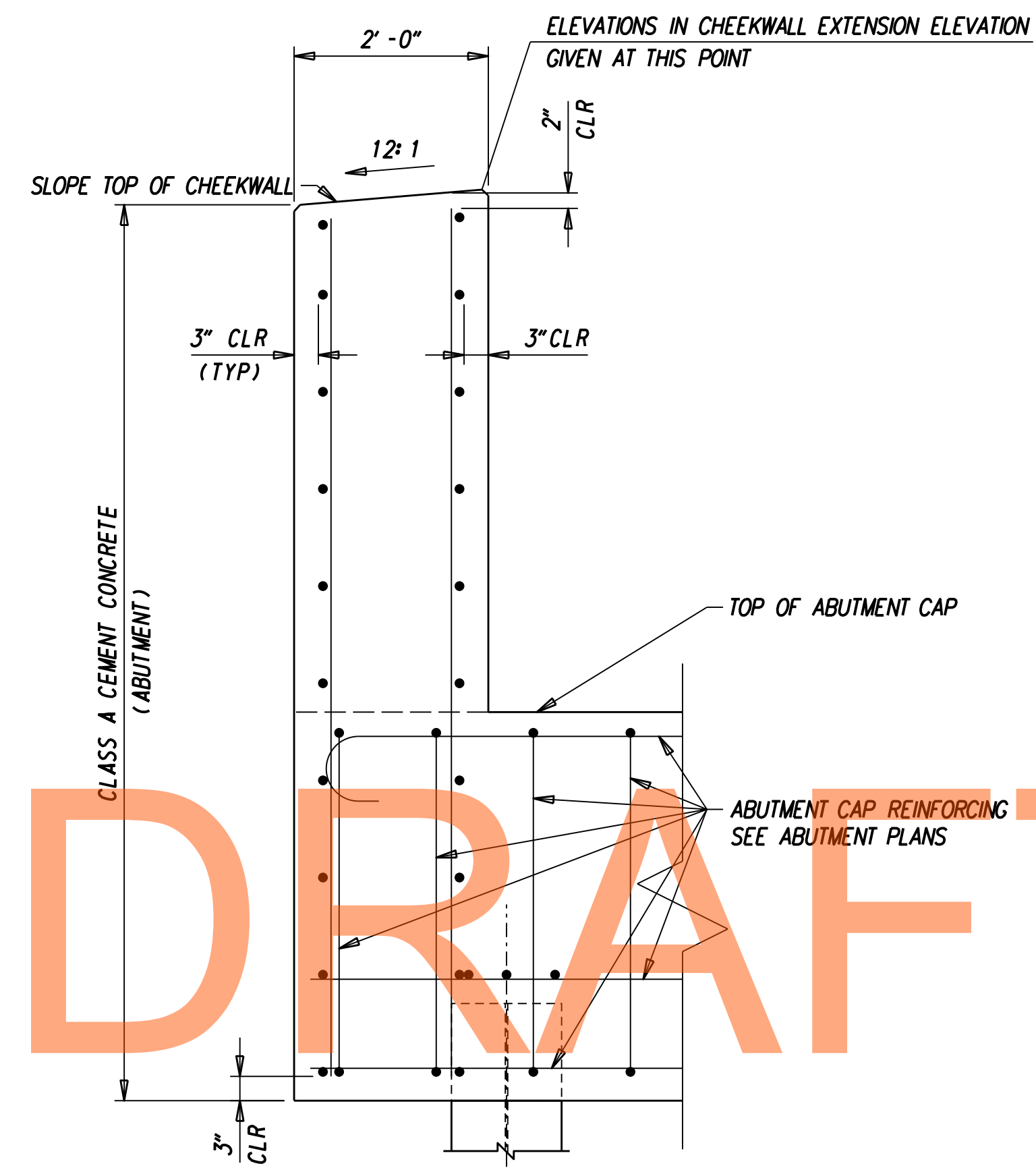
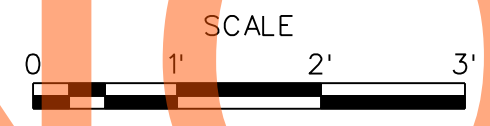
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	JS/WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

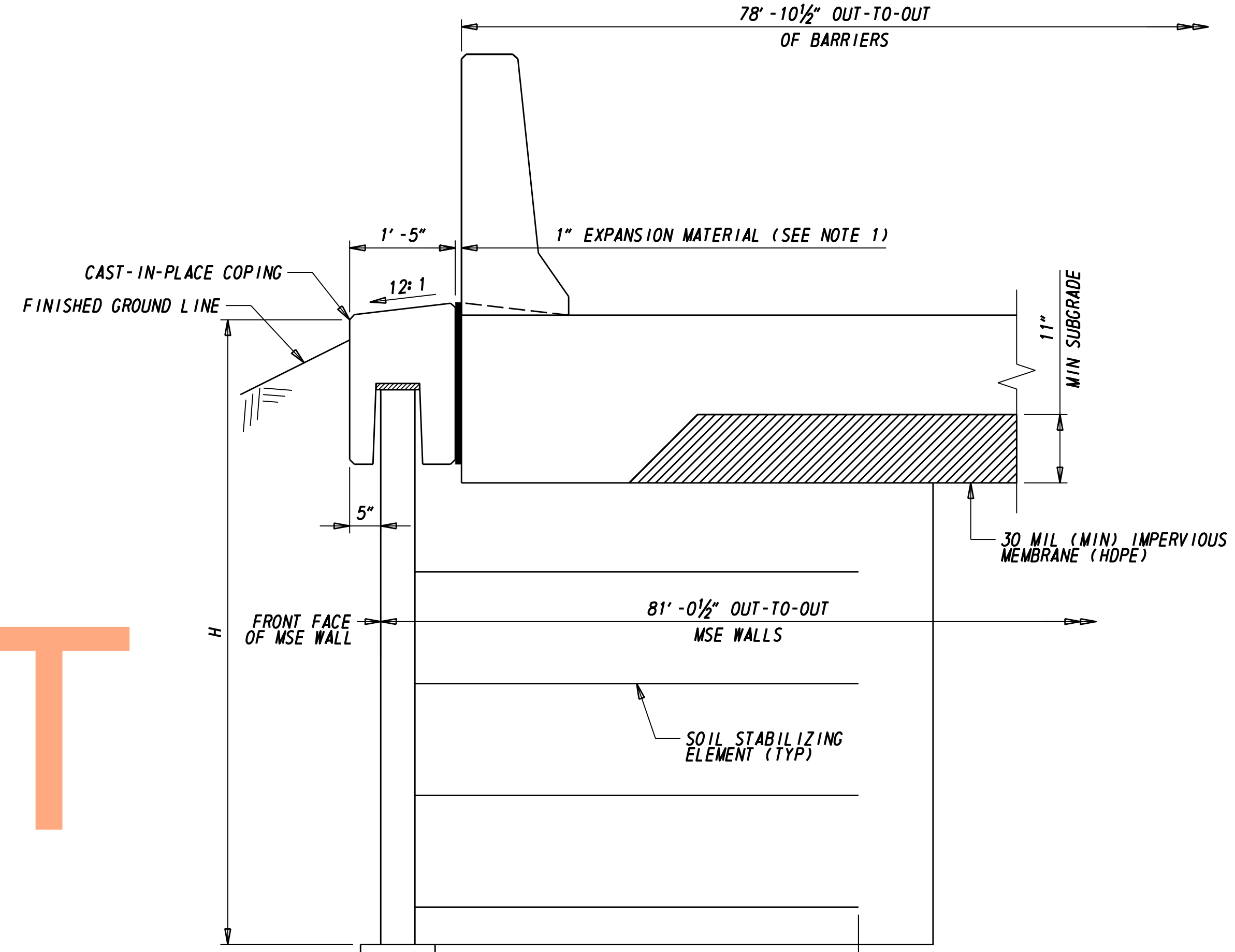
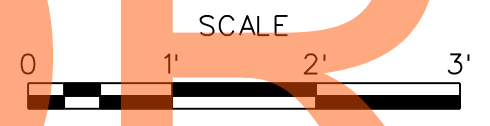
SHEET NO.	302
TOTAL SHTS.	850



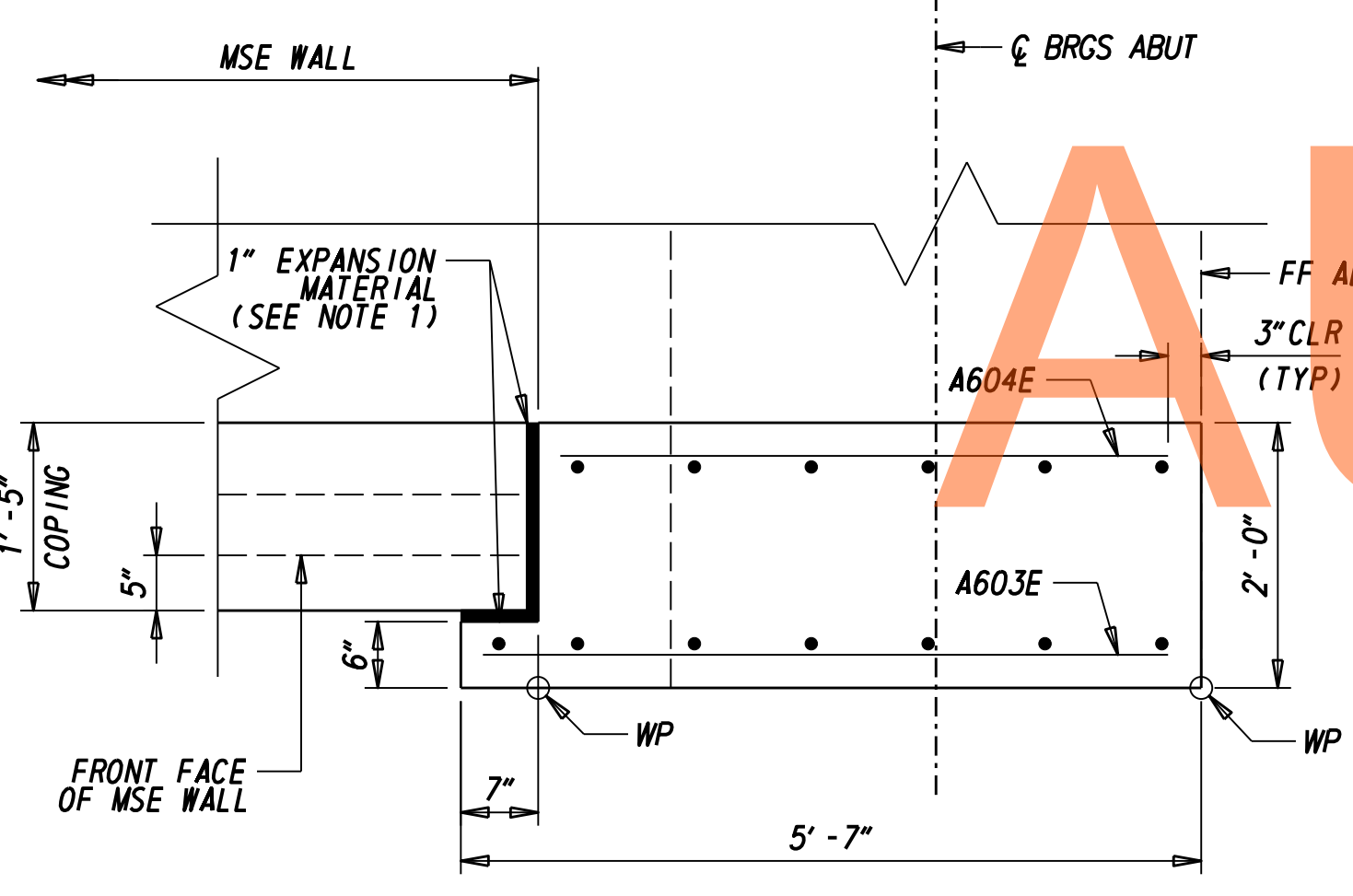
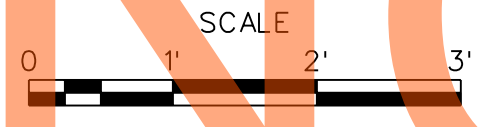
CHEEKWALL ELEVATION



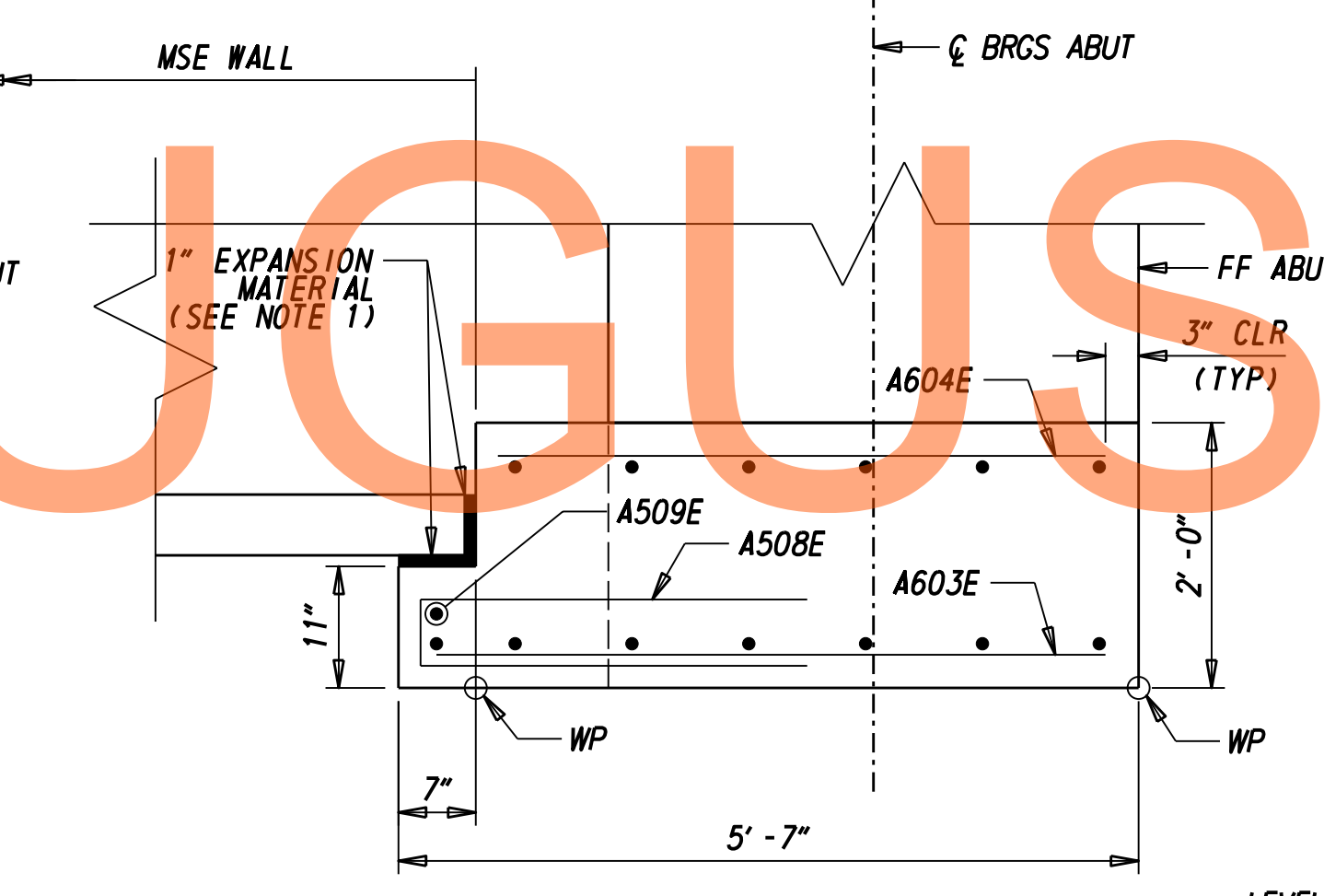
SECTION D-D



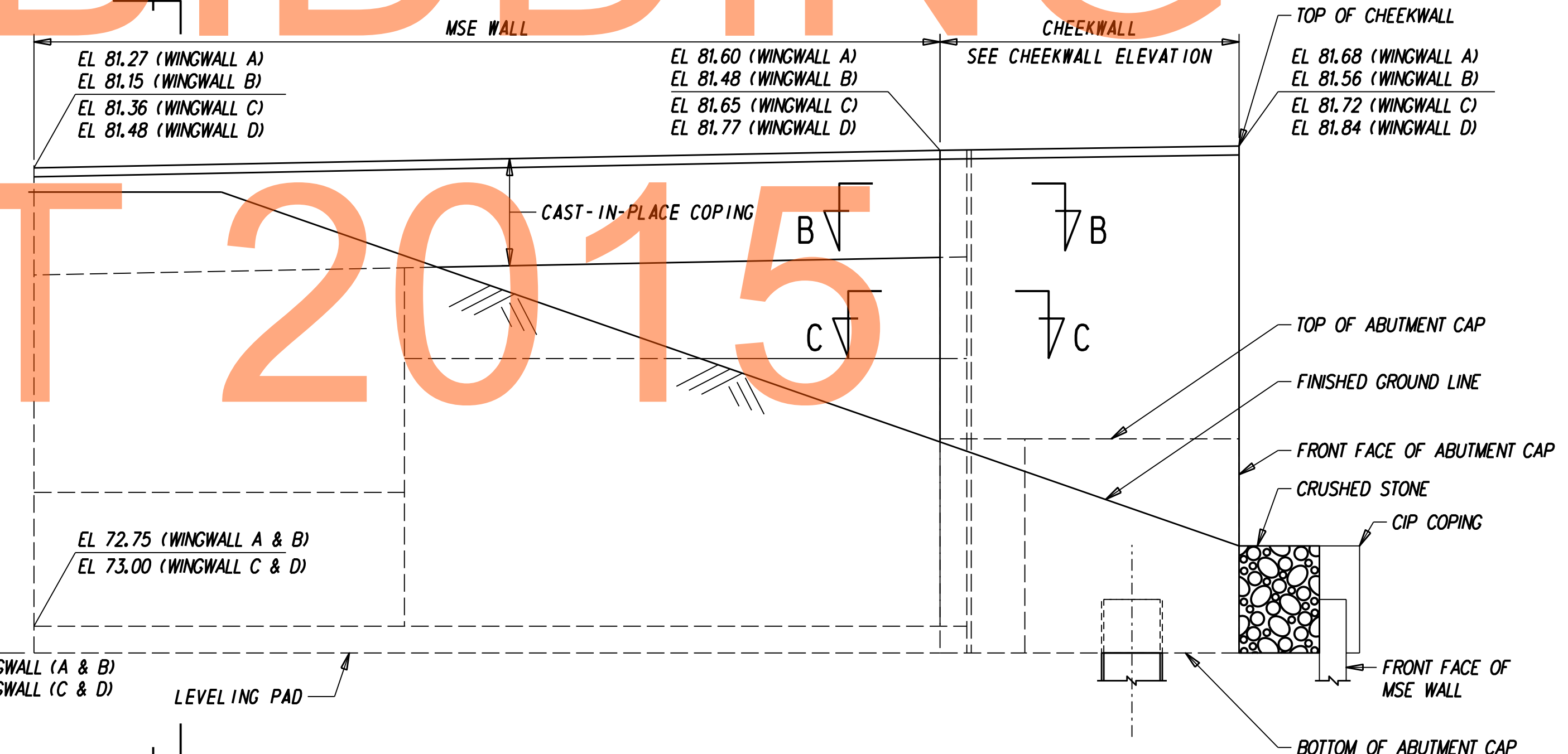
SECTION A-A



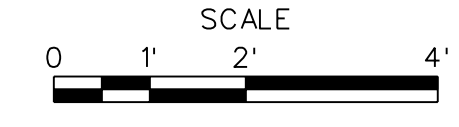
SECTION B-B



SECTION C-C



CHEEKWALL EXTENSION ELEVATION



NOTES

- 1. 1" EXPANSION MATERIAL SHALL BE INCIDENTAL TO ITEM "602772 - MECHANICALLY STABILIZED EARTH WALLS."

REFERENCES:

- PROJECT NOTES
- ABUTMENT PLANS
- MSE WALL NOTES
- REINFORCEMENT BAR SCHEDULE
- BRI-482-03
- BRI-482-09 AND BRI-482-10
- BRI-482-15
- BRI-482-31

ADDENDUMS / REVISIONS



US 301
MARYLAND STATE LINE
TO LEVELS ROAD

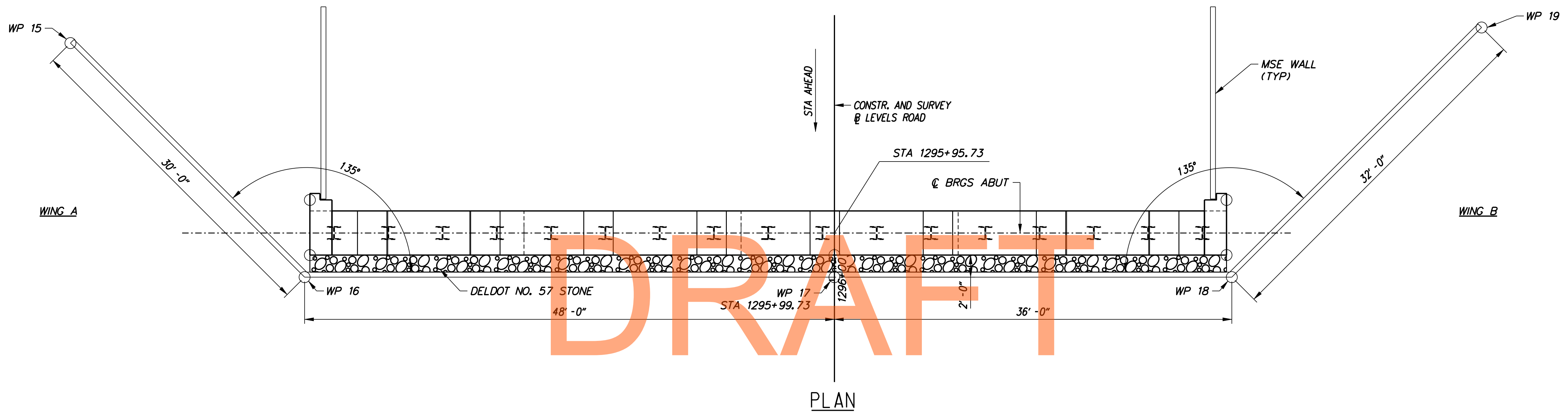
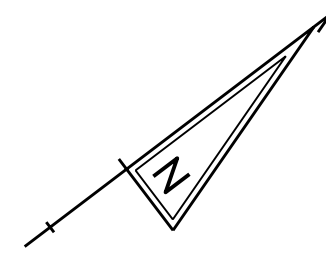
CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	WMM
COUNTY	CHECKED BY:	JS
NEW CASTLE		

ABUTMENT SECTION
AND DETAILS - 2

BRI-482-12

SHEET NO.	303
TOTAL SHTS.	850

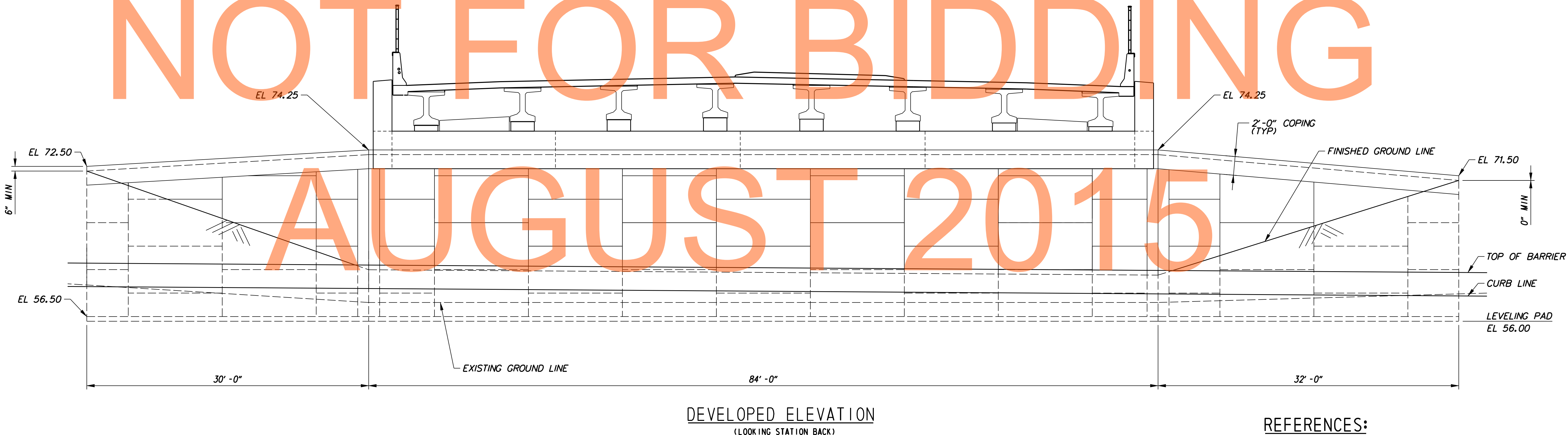
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DRAFT

NOT FOR BIDDING

AUGUST 2015

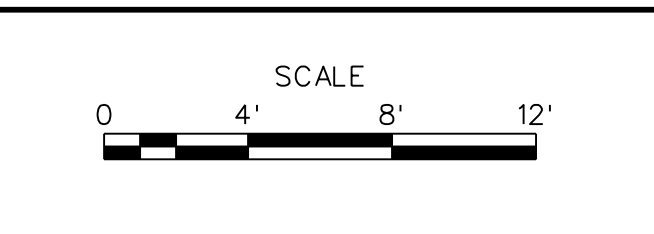


- REFERENCES:**
- GENERAL PLAN BR1-482-01
 - PROJECT NOTES BR1-482-03
 - GEOMETRIC LAYOUT BR1-482-04
 - ABUTMENT 1 PLAN BR1-482-09
 - MSE WALL DETAILS BR1-482-15

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ADDENDUMS / REVISIONS	

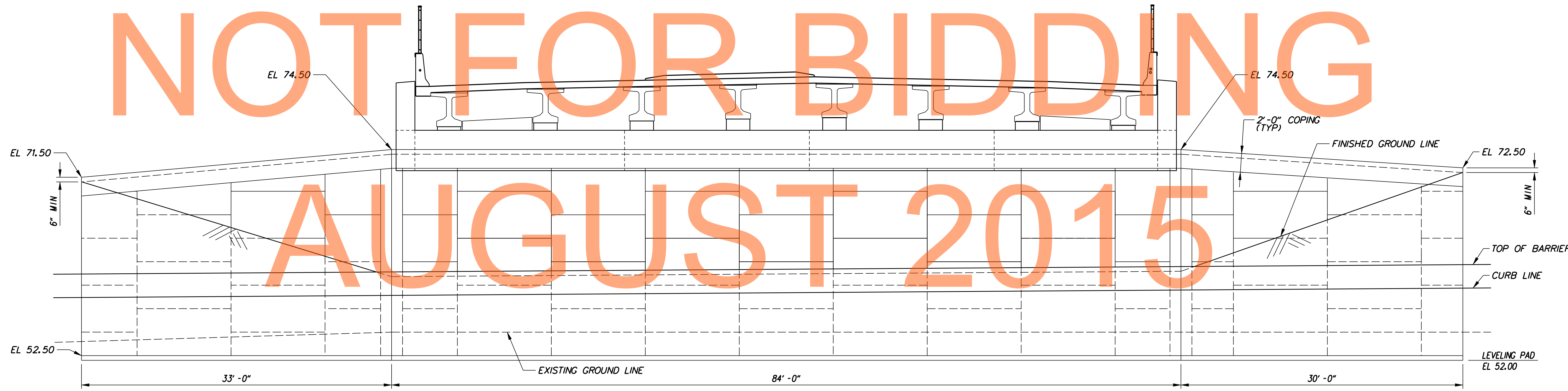
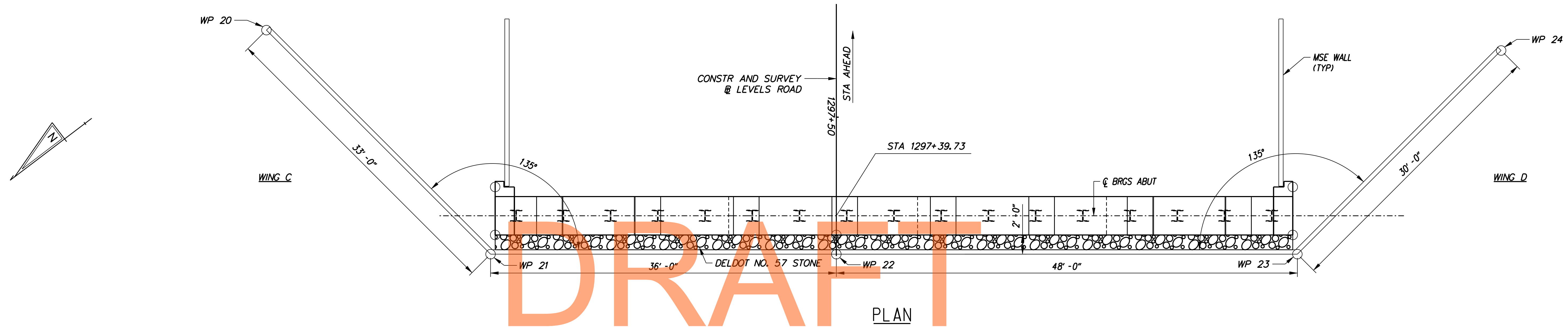


US 301
MARYLAND STATE LINE
TO LEVELS ROAD

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

ABUTMENT 1 MSE WALL
PLAN AND ELEVATION

BR1-482-13
SHEET NO.
304
TOTAL SHTS.
850

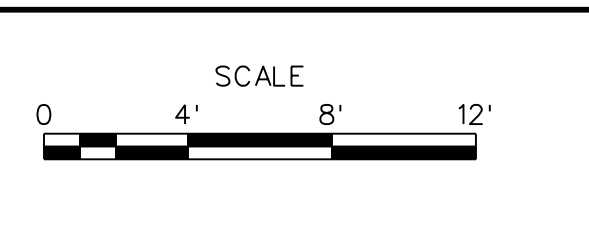


- REFERENCES:**
- GENERAL PLAN
 - PROJECT NOTES
 - GEOMETRIC LAYOUT
 - ABUTMENT 2 PLAN
 - MSE WALL DETAILS
 - BRI-482-01
 - BRI-482-03
 - BRI-482-04
 - BRI-482-10
 - BRI-482-15

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

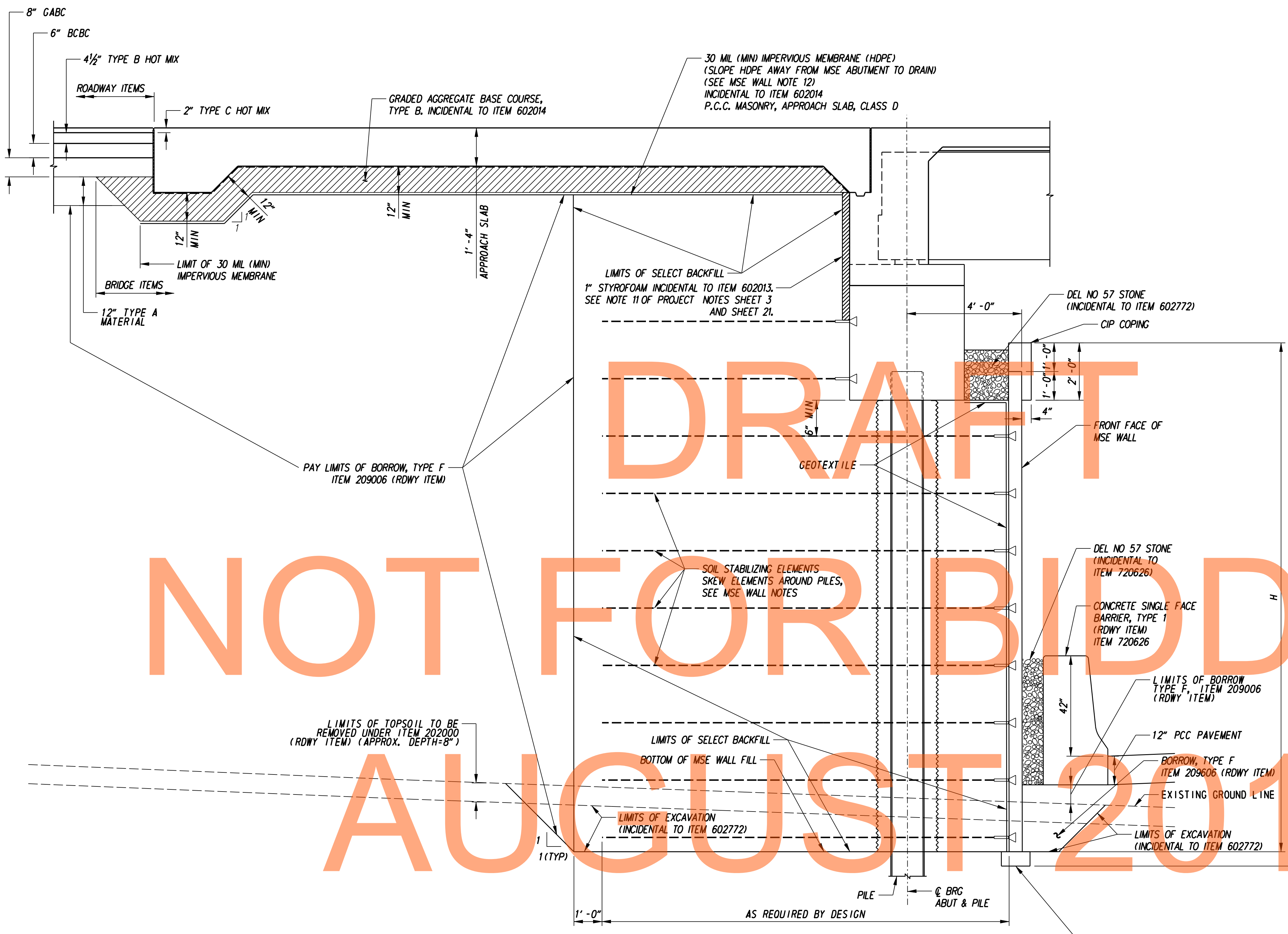


US 301 MARYLAND STATE LINE TO LEVELS ROAD

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	WMM
COUNTY	CHECKED BY:	DJP
NEW CASTLE		

ABUTMENT 2 MSE WALL PLAN AND ELEVATION

BR1-482-14
SHEET NO.
305
TOTAL SHTS.
850



MSE WALL NOTES:

1. CONCRETE:
CONCRETE DESIGN SHALL BE PERFORMED USING LOAD AND RESISTANCE FACTOR DESIGN METHOD.
LEVELING PAD CONCRETE SHALL BE 3,000 PSI. MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
2. CHAMFERS:
ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4" x 3/4" MILLED CHAMFER STRIPS, UNLESS OTHERWISE NOTED.
3. REINFORCING STEEL:
REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A 615), GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER THE LRFD BRIDGE DESIGN SPECIFICATIONS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED.
FOR TIES AND STIRRUPS, STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCE.
ONLY GRADE 60 CAN BE USED ON THIS PROJECT.
ALL KEYS ARE TO BE NORMAL SIZE.
THE MSE WALL MANUFACTURER MAY SUBSTITUTE ALTERNATE REINFORCING CONFIGURATIONS AND SUBMIT FOR APPROVAL.
4. ROADWAY LIMITS:
THE PROPRIETARY WALL MANUFACTURER SHALL VERIFY THAT PROPOSED PROPRIETARY WALL COMPONENTS ARE POSITIONED SUCH THAT DESIGNATED ROADWAY LIMITS ARE NOT ENCRoACHED UPON.
5. COORDINATION:
ALL MSE WALL SHOP DRAWINGS MUST SHOW PILE LOCATIONS AND ARRANGEMENT OF MSE WALL SOIL REINFORCEMENT ELEMENTS TO AVOID INTERFERENCE WITH PILES. CUTTING SOIL REINFORCING ELEMENTS TO AVOID INTERFERENCE WITH PILES IS NOT PERMITTED.
6. SERVICE LIFE:
ALL RETAINING WALL COMPONENTS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS.
7. WALL SYSTEM:
ONLY ONE MSE WALL SYSTEM MAY BE USED ON THIS CONTRACT.
8. EXCAVATION & BACKFILL:
EXCAVATION REQUIRED FOR INSTALLATION OF MSE WALL SYSTEMS SHALL BE INCIDENTAL TO ITEM 602772, MECHANICALLY STABILIZED EARTH WALLS. BACKFILL SPACES EXCAVATED FOR MSE WALL AND NOT OCCUPIED BY MSE WALL COMPONENTS OR SELECT BACKFILL, WITH TYPE F MATERIAL.
9. MSE WALL BACKFILL:
SHALL CONSIST OF SELECT BACKFILL, IN ACCORDANCE WITH SPECIAL PROVISION 602772, MECHANICALLY STABILIZED EARTH WALLS.
10. FOUNDATION:
IF DIRECTED BY THE ENGINEER, REMOVE UNSUITABLE MATERIAL BELOW BOTTOM OF MSE WALL FILL. PLACE GEOTEXTILE AT THE BOTTOM OF THE EXCAVATION AND FILL WITH PROPERLY COMPACTED TYPE B BORROW. EXCAVATION FOR THIS ITEM TO BE PAID FOR UNDER ITEM "207000 - EXCAVATION AND BACKFILLING FOR STRUCTURES" AND FILL TO BE PAID UNDER ITEM "209002 - BORROW, TYPE B". GEOTEXTILE IS TO BE IN ACCORDANCE WITH SECTION 827.06 OF THE DELDOT SPECIFICATIONS AND IS INCIDENTAL TO ITEM "209002 - BORROW, TYPE B".
11. MSE WALL AESTHETIC TREATMENT:
THE COMPONENTS OF THE MSE WALLS SHALL HAVE THE AESTHETIC TREATMENT AS IDENTIFIED IN THE SPECIAL PROVISION FOR ITEM 602772.
12. HIGH DENSITY POLYETHYLENE (HDPE):
PHYSICAL REQUIREMENTS:
 - * DENSITY: 59 POUNDS PER CUBIC FOOT (MINIMUM), ASTM D 1505
 - * UV STABILIZATION: 2% CARBON BLACK, ASTM D1603
 - * SHEET THICKNESS: 30 MILS (MINIMUM), ASTM D5199
 - * TEAR RESISTANCE: 22 POUNDS, ASTM D1004
 - * RESISTANCE SOIL BURIAL: 90% RETAINED STRENGTH, ASTM D3083
 - * MINIMUM ROLL WIDTH: 20 FEET

SECTION AT ABUTMENT
(ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR)

REFERENCES:

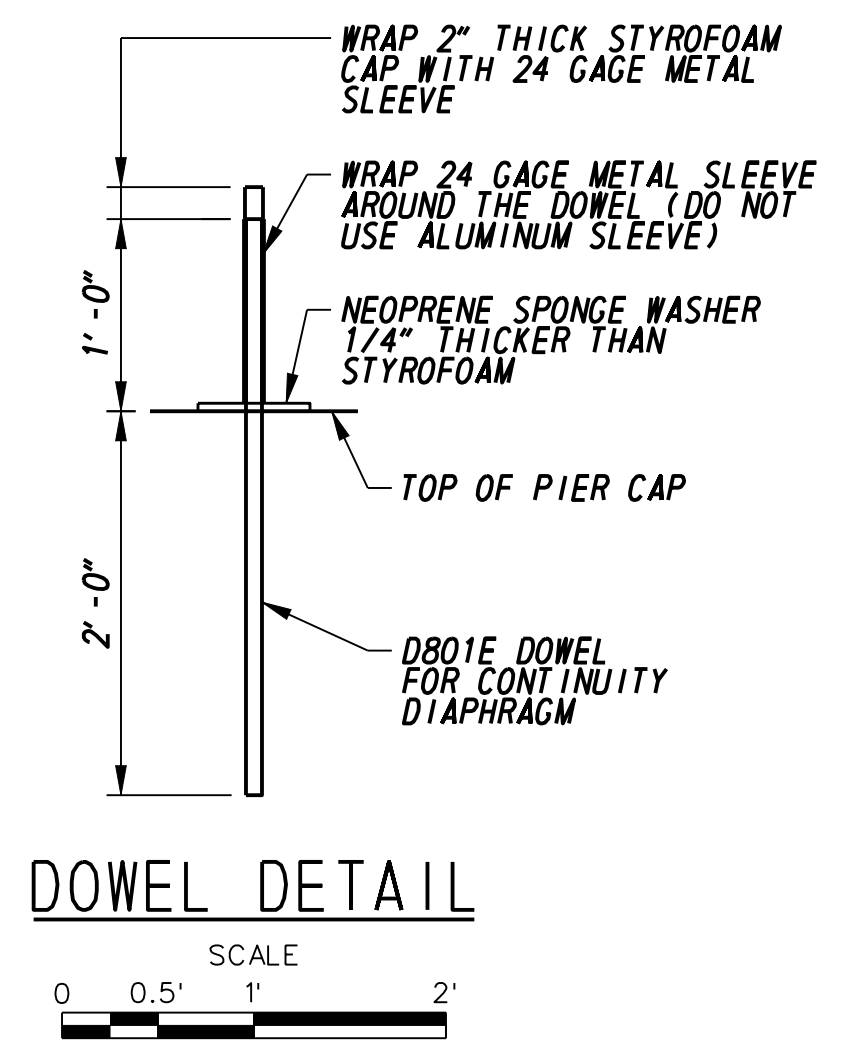
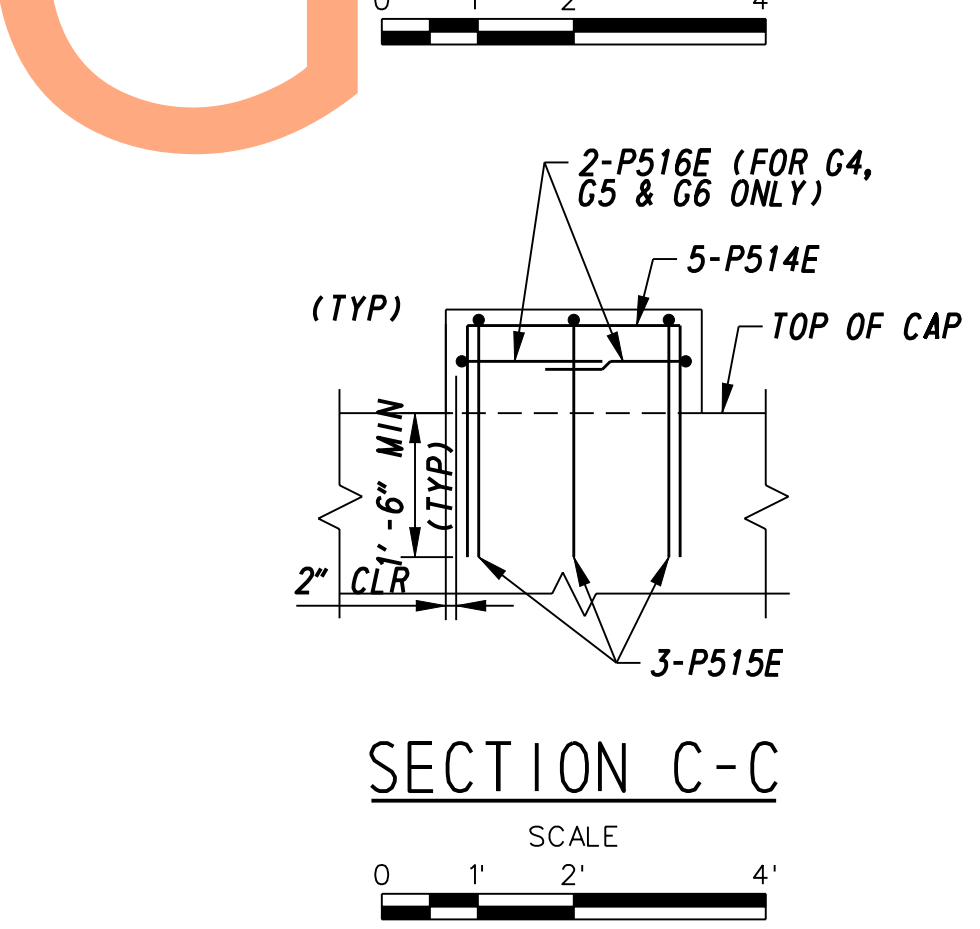
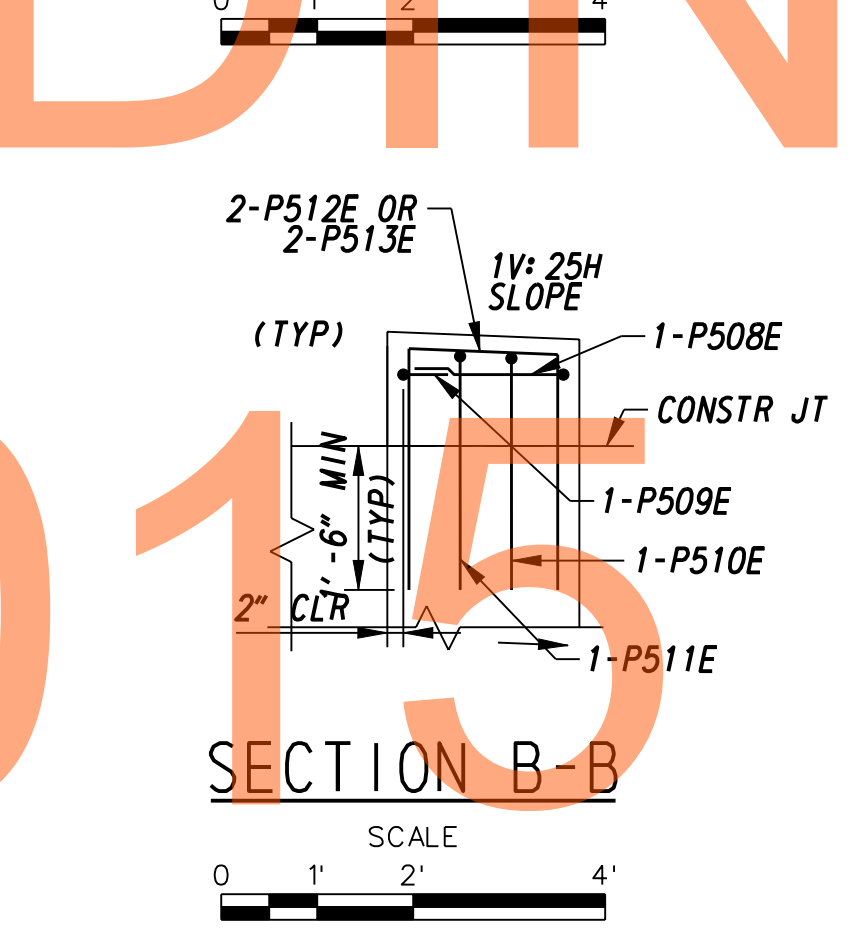
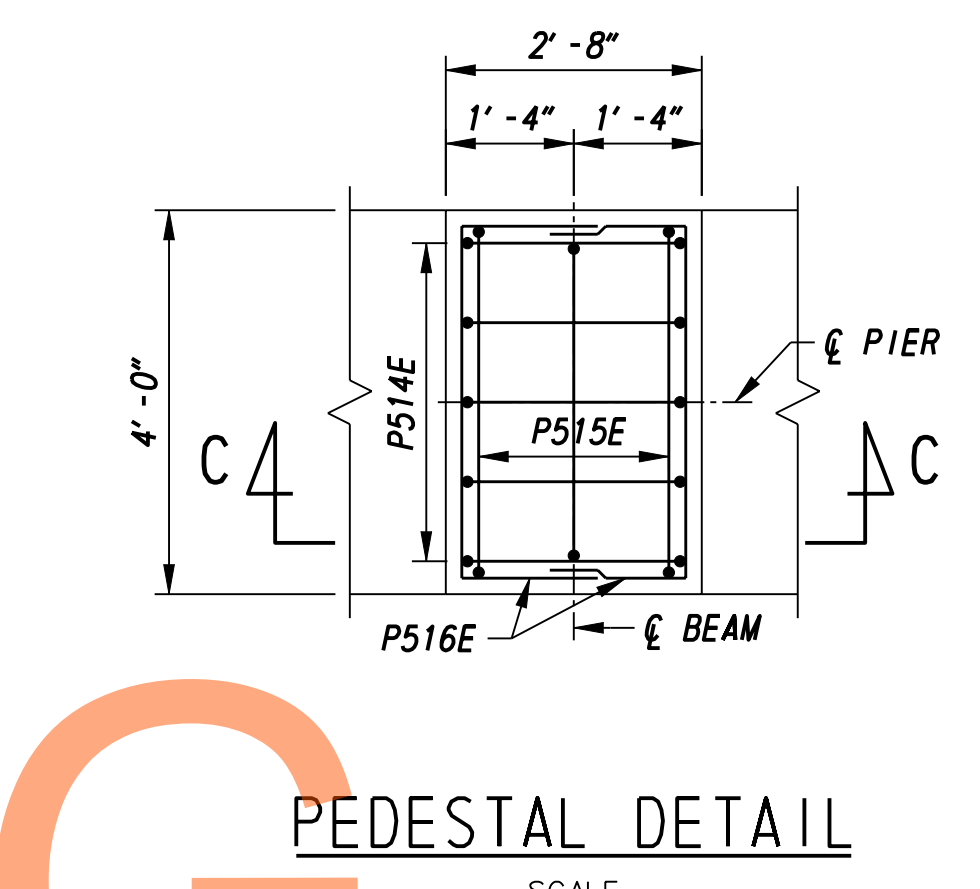
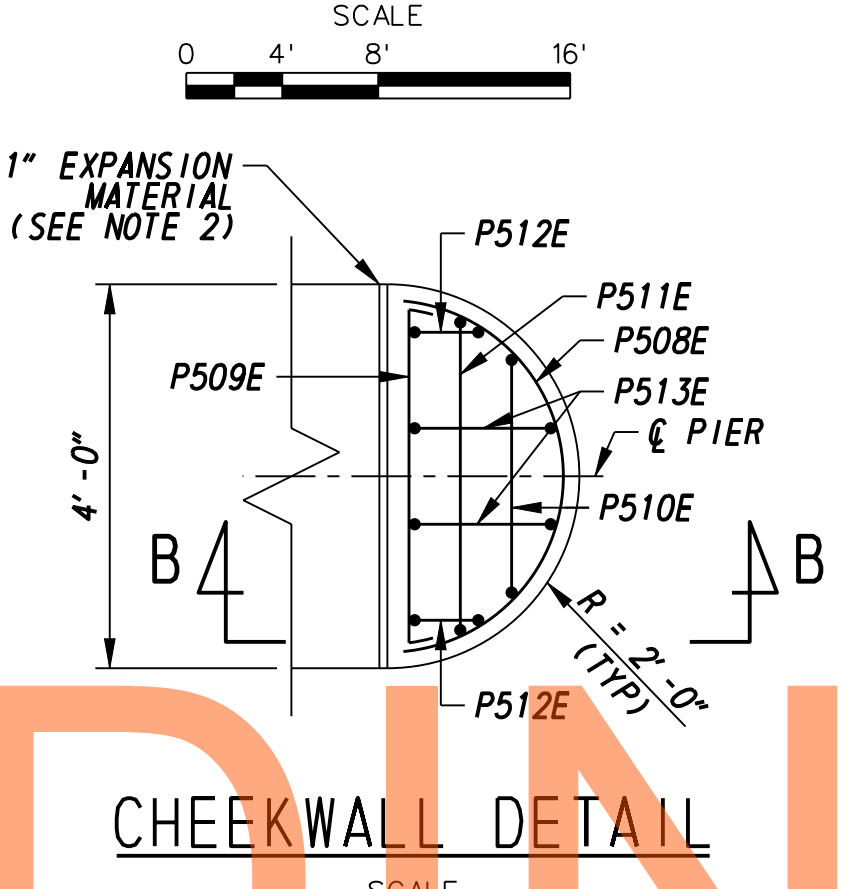
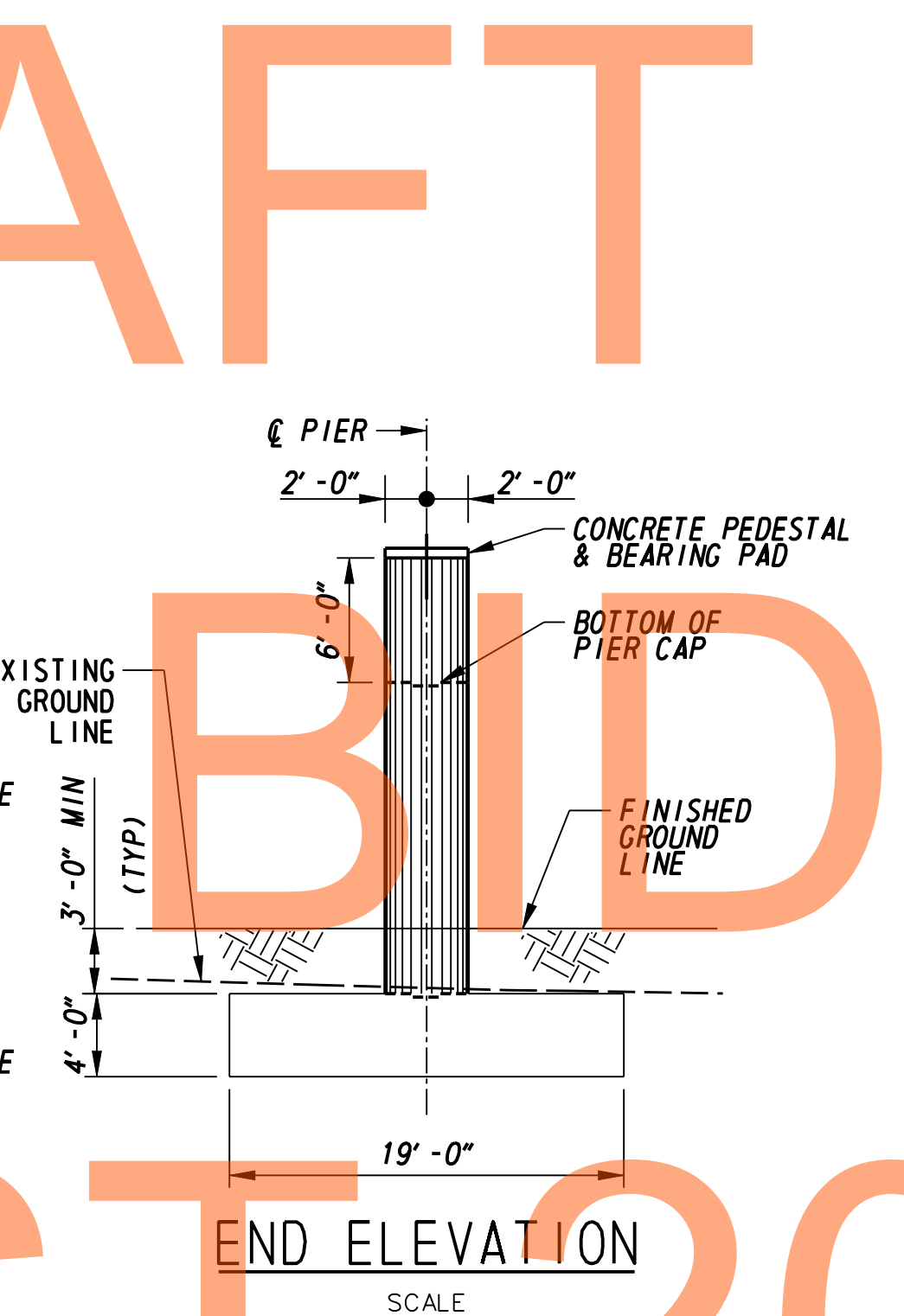
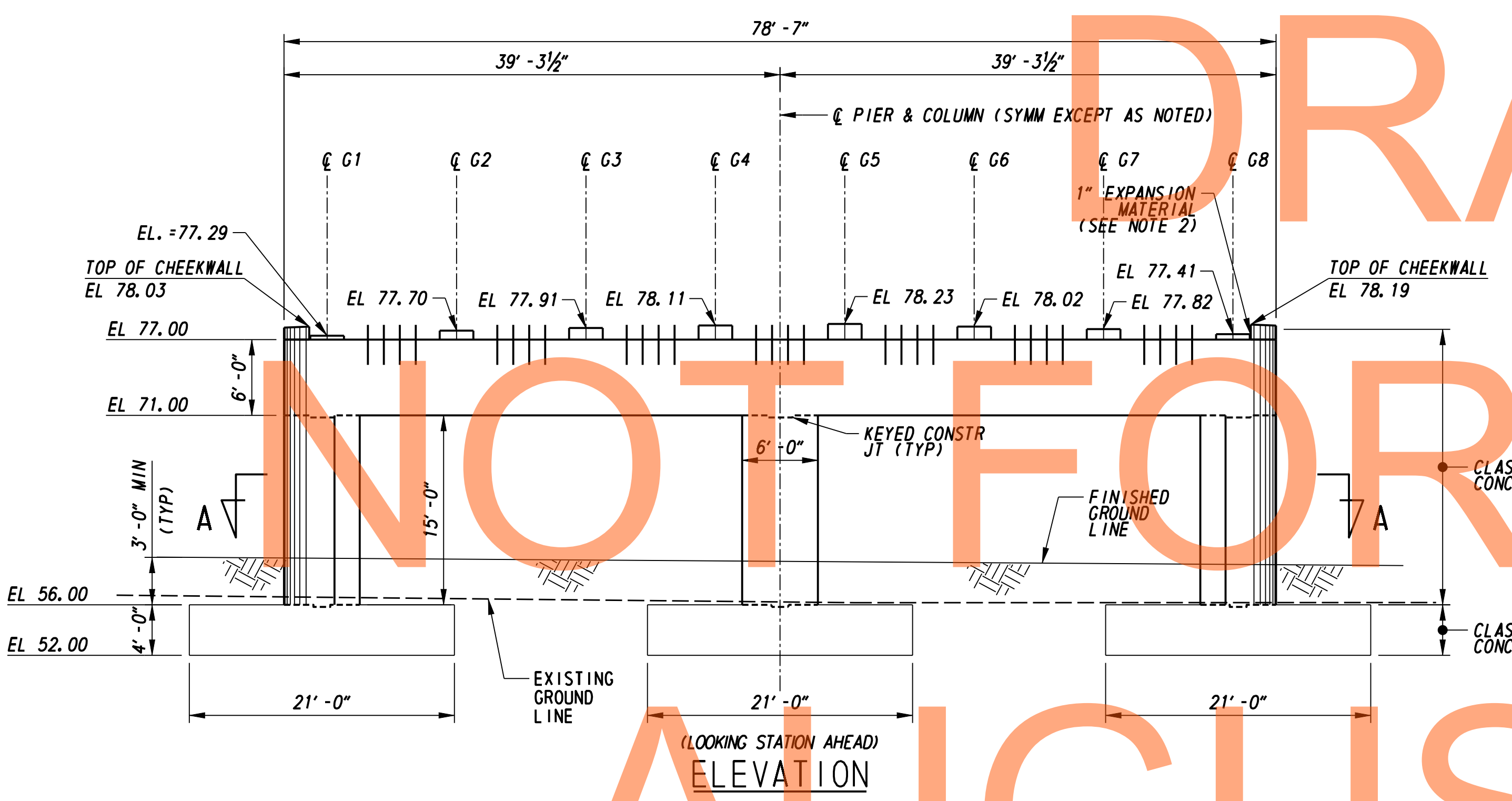
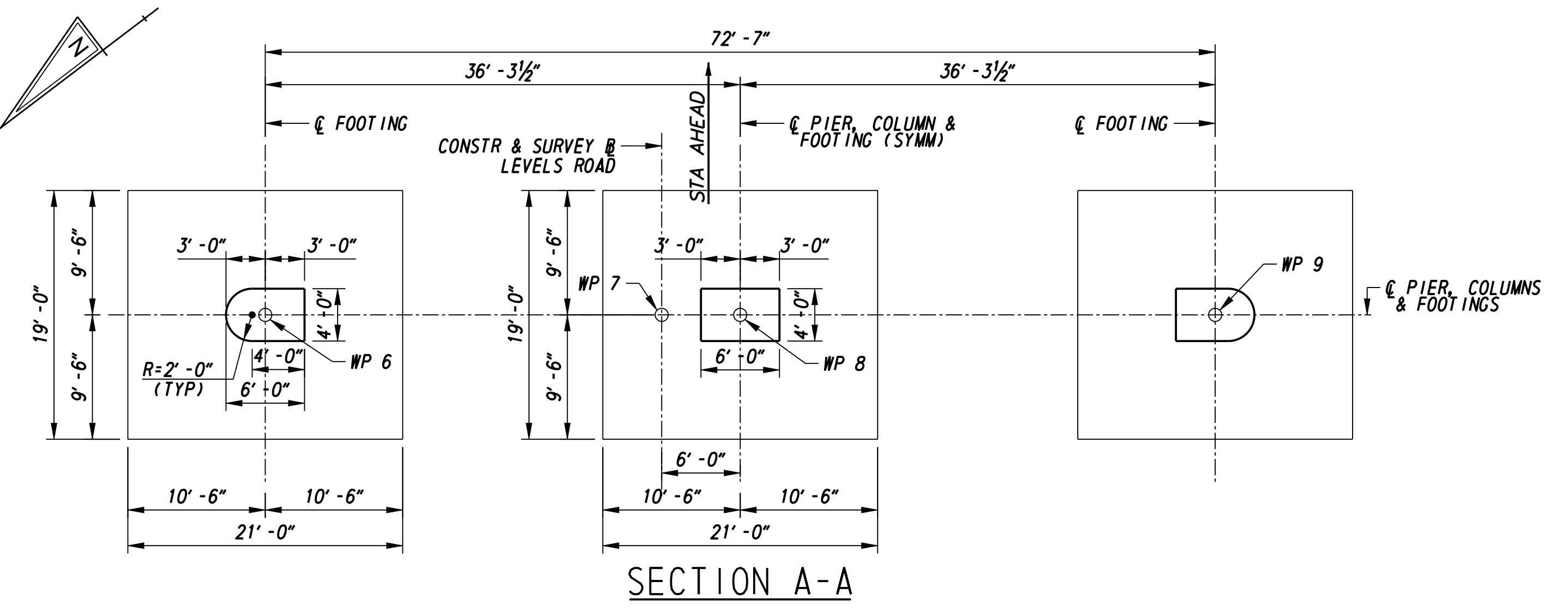
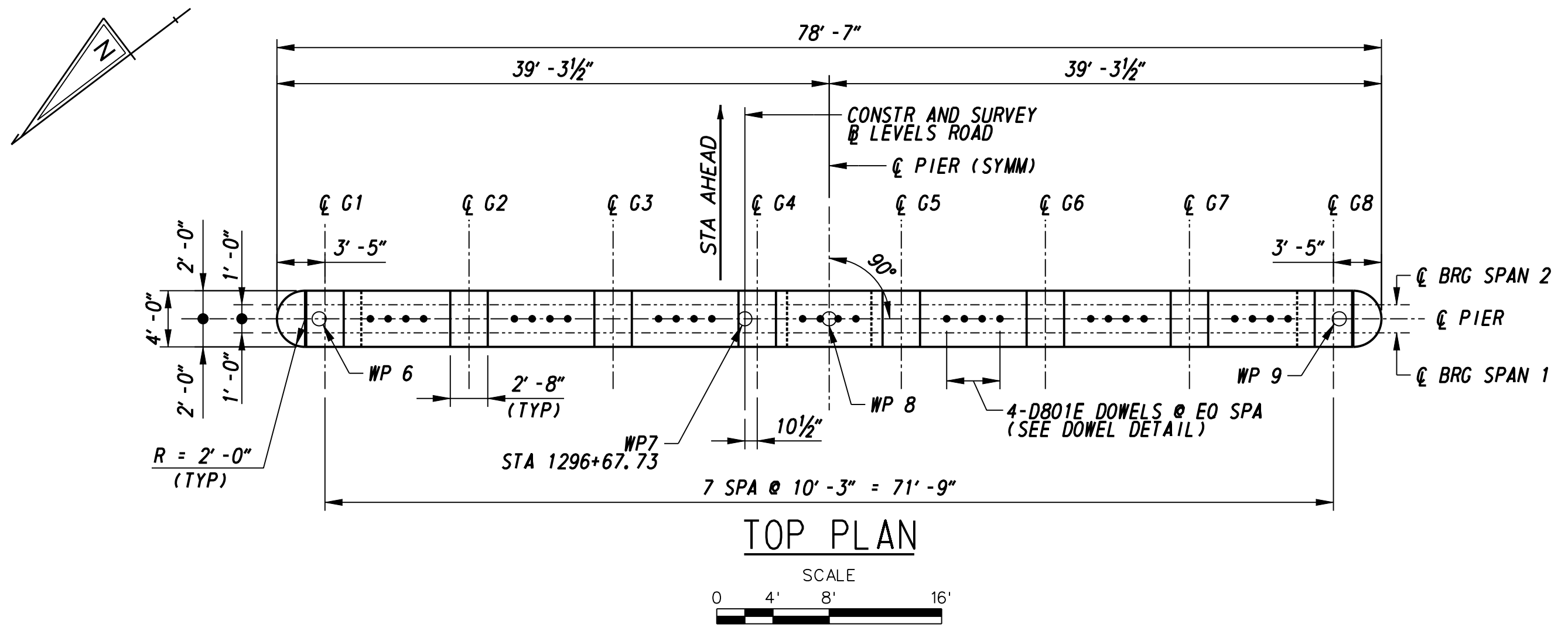
- PROJECT NOTES BR1-482-03
MSE WALL PLANS BR1-482-13 AND BR1-482-14

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NOT FOR BIDDING
AUGUST 2015

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	ADDENDUMS / REVISIONS	SCALE 	US 301 MARYLAND STATE LINE TO LEVELS ROAD	CONTRACT	BRIDGE NO.	1-482	MSE WALL DETAILS	SHEET NO.
					T200811301	DESIGNED BY: WMM		
				COUNTY	CHECKED BY: JS/DJP		TOTAL SHTS.	850
				NEW CASTLE				

BR1-482-15



FOUNDATION DESIGN SUMMARY

	CONTROLLING LIMIT STATE	STRENGTH I
BEARING	UNIFORM PRESSURE (KSF)	7.18
	BEARING RESISTANCE (KSF)	24.71
SLIDING	CONTROLLING LIMIT STATE	EXTREME II
	LATERAL FORCE (KIP)	407.57
	LATERAL RESISTANCE (KIP)	515.09

NOTES:

- IF DIRECTED BY THE ENGINEER, REMOVE UNSUITABLE MATERIAL BELOW BOTTOM OF FOOTING ELEVATION, PLACE GEOTEXTILE AT THE BOTTOM OF THE EXCAVATION AND FILL WITH COARSE AGGREGATE. EXCAVATION FOR THIS ITEM TO BE PAID FOR UNDER ITEM "207000 - EXCAVATION AND BACKFILLING FOR STRUCTURES". COARSE AGGREGATE ONE TO BE IN ACCORDANCE WITH SECTION 608 OF DELDOT SPECIFICATIONS AND PAID UNDER ITEM "608000 - COARSE AGGREGATE FOR FOUNDATION STABILIZATION AND SUBFOUNDATION BACKFILL". GEOTEXTILE IS TO BE IN ACCORDANCE WITH SECTION 827.06 OF THE DELDOT SPECIFICATIONS AND IS INCIDENTAL TO ITEM "608000 - COARSE AGGREGATE FOR FOUNDATION STABILIZATION AND SUBFOUNDATION BACKFILL".
- EXPANSION MATERIAL SHALL BE INCIDENTAL TO ITEM 602007.

REFERENCES:

- GENERAL PLAN AND ELEVATION
 PROJECT NOTES
 GEOMETRIC LAYOUT
 PIER SECTION AND DETAILS
 BEARING PAD DETAILS
 FRAMING PLAN
 DIAPHRAGM DETAILS
 REINFORCEMENT BAR SCHEDULE
- BR1-482-01
 BR1-482-03
 BR1-482-04
 BR1-482-17
 BR1-482-18
 BR1-482-19
 BR1-482-21 AND BR1-482-22
 BR1-482-32 AND BR1-482-33

BR1-482-16

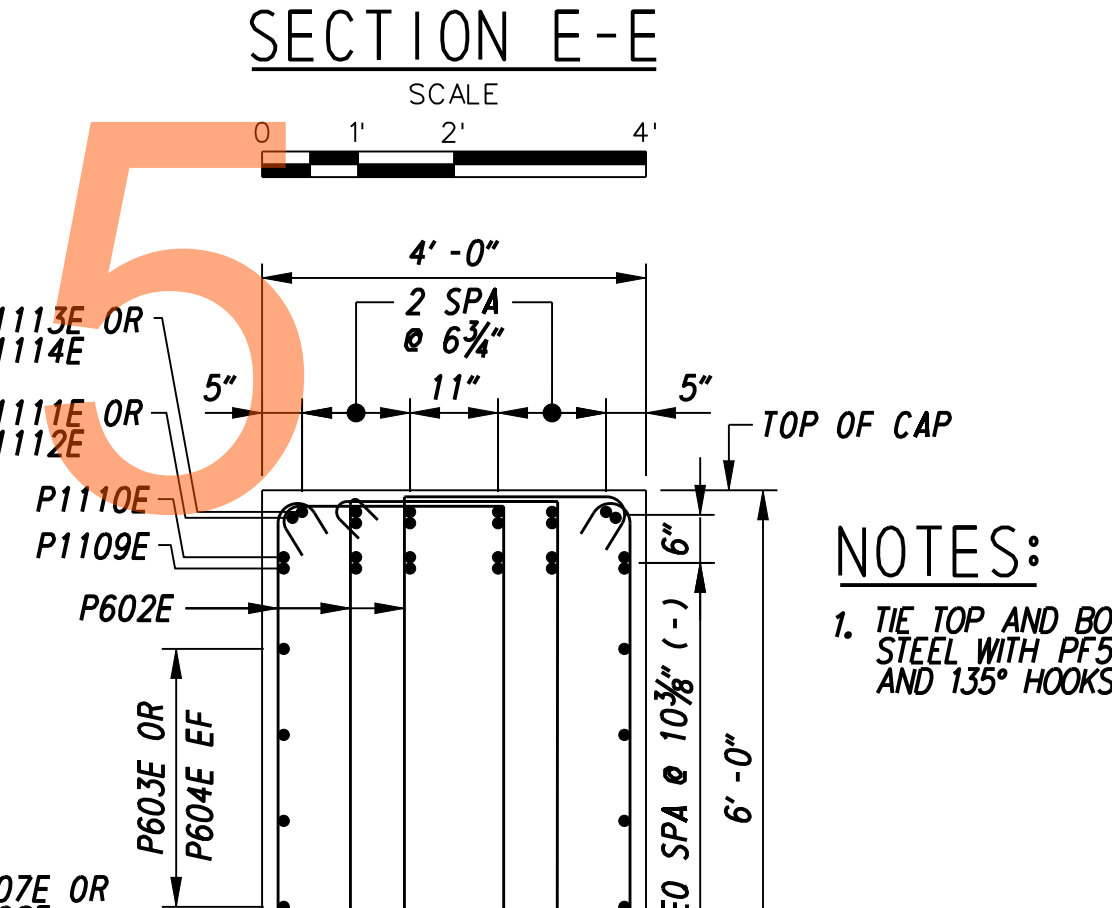
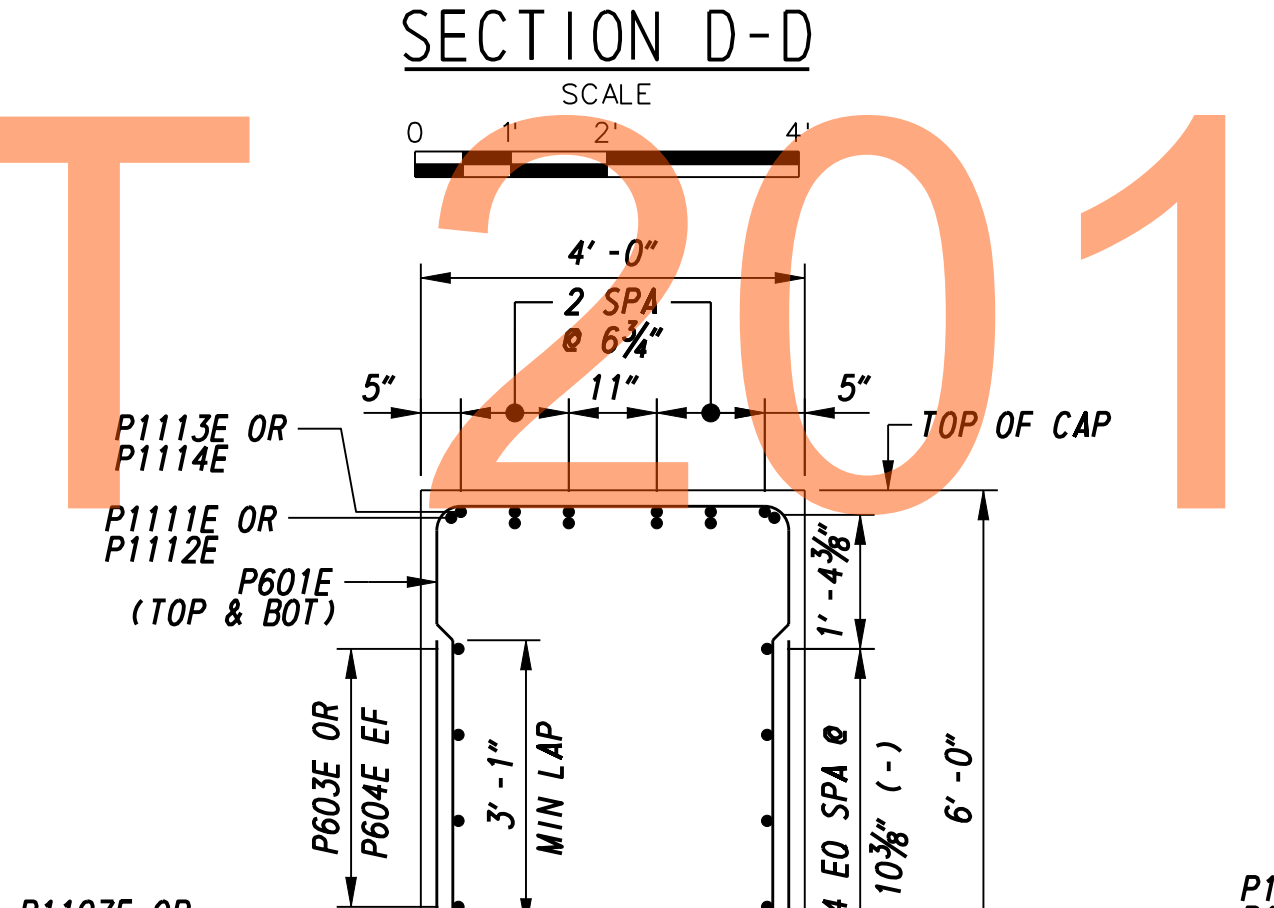
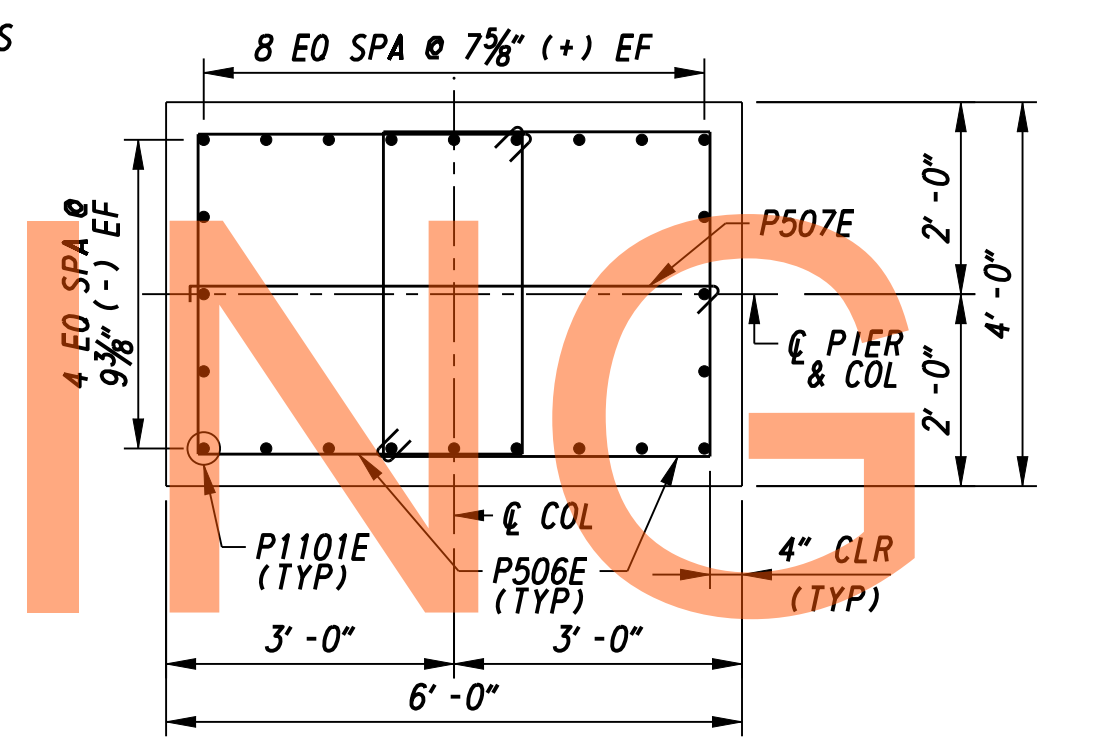
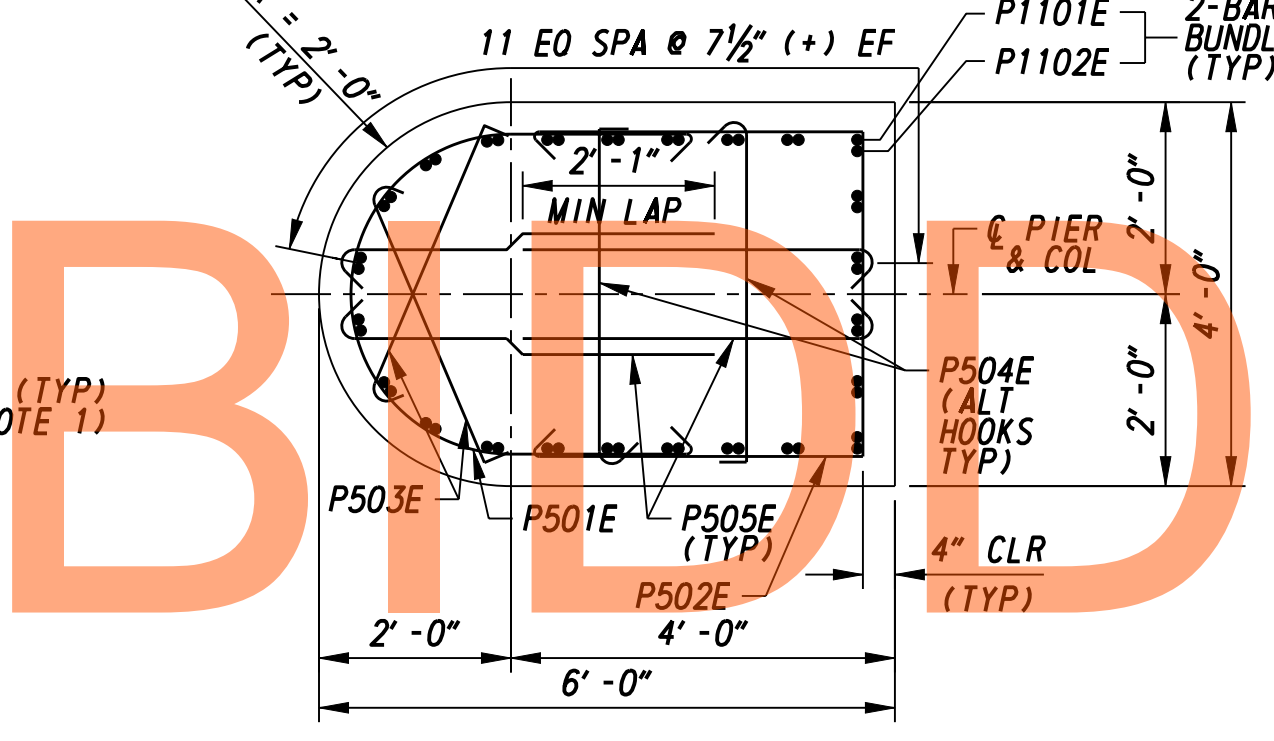
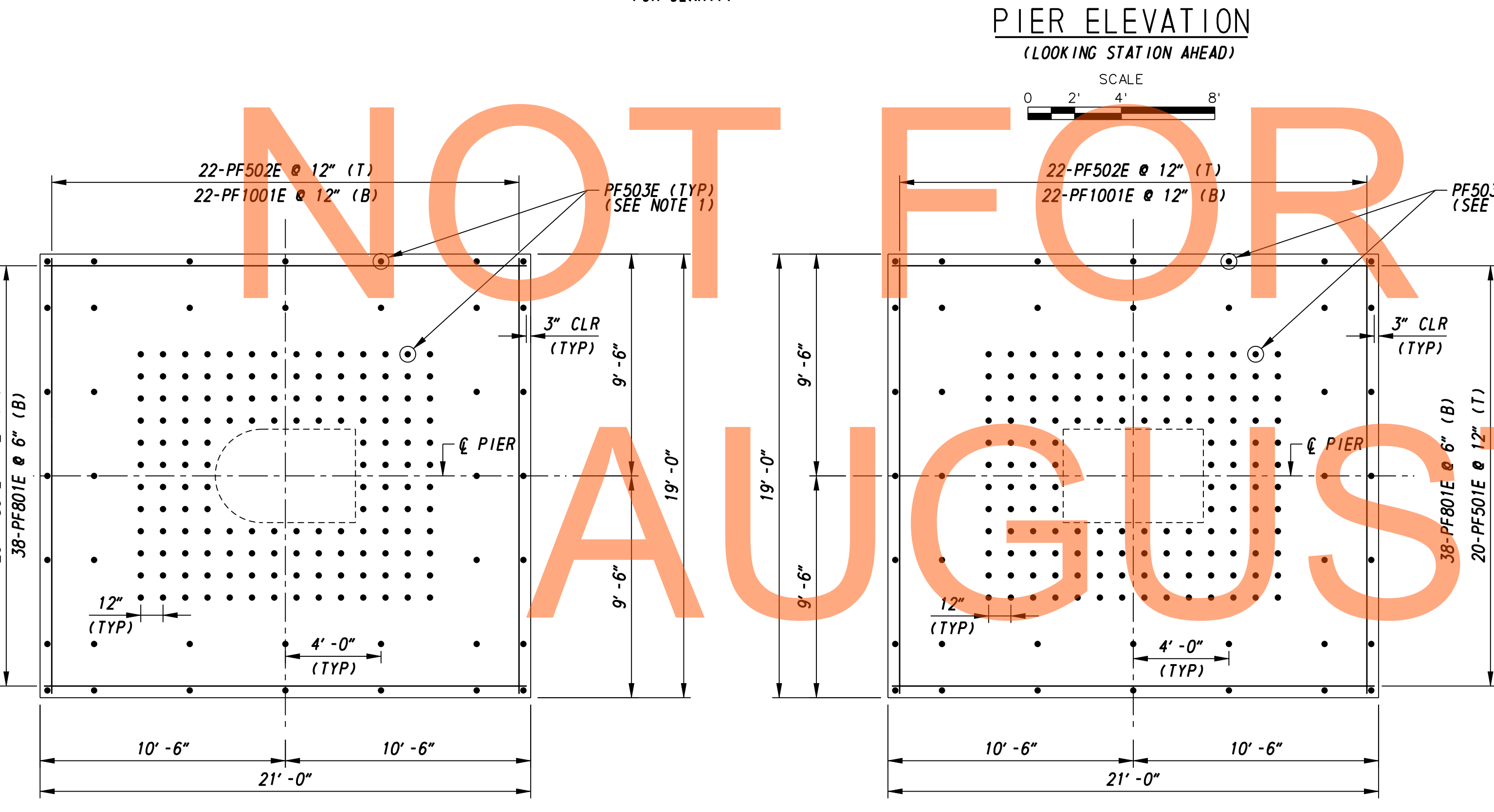
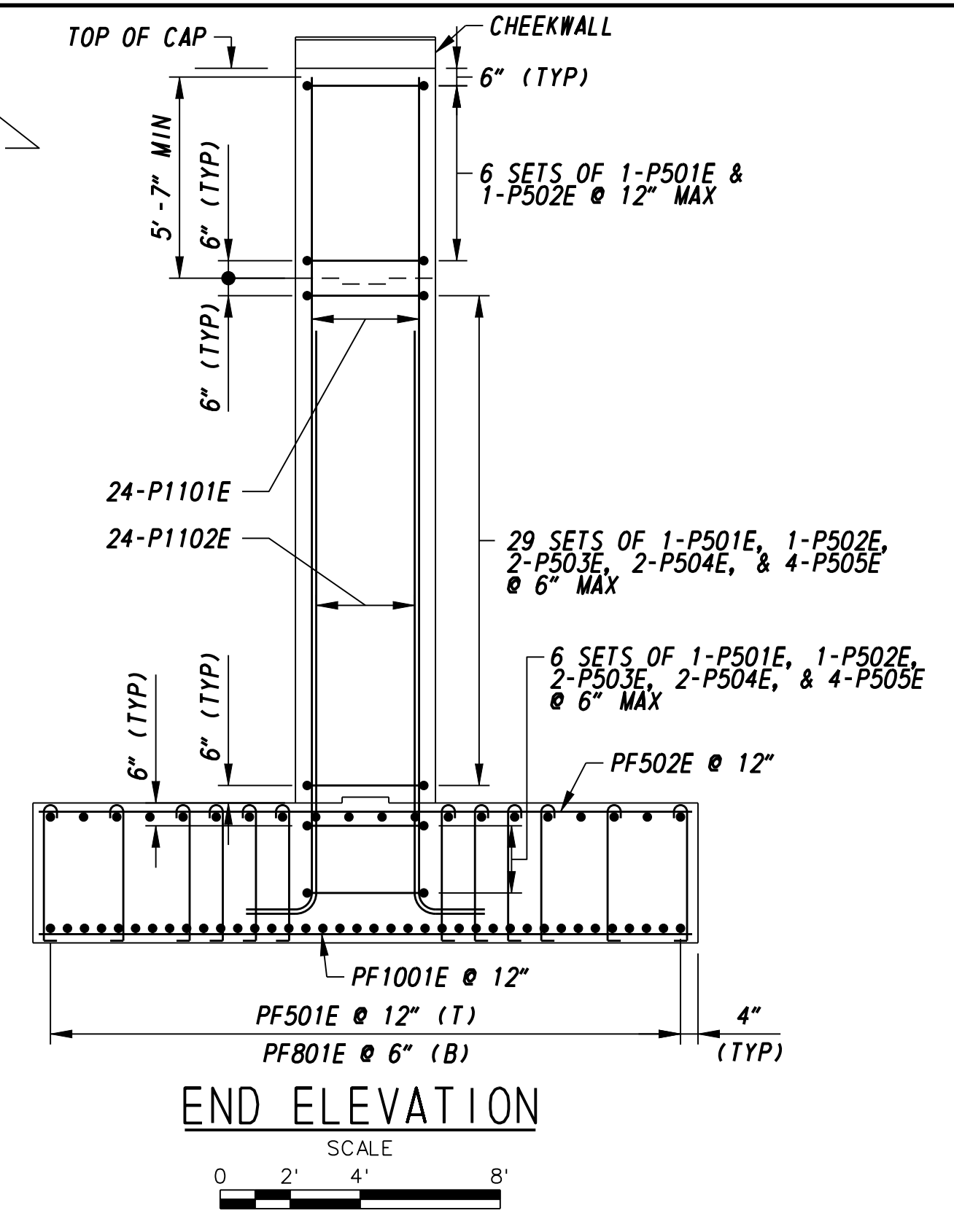
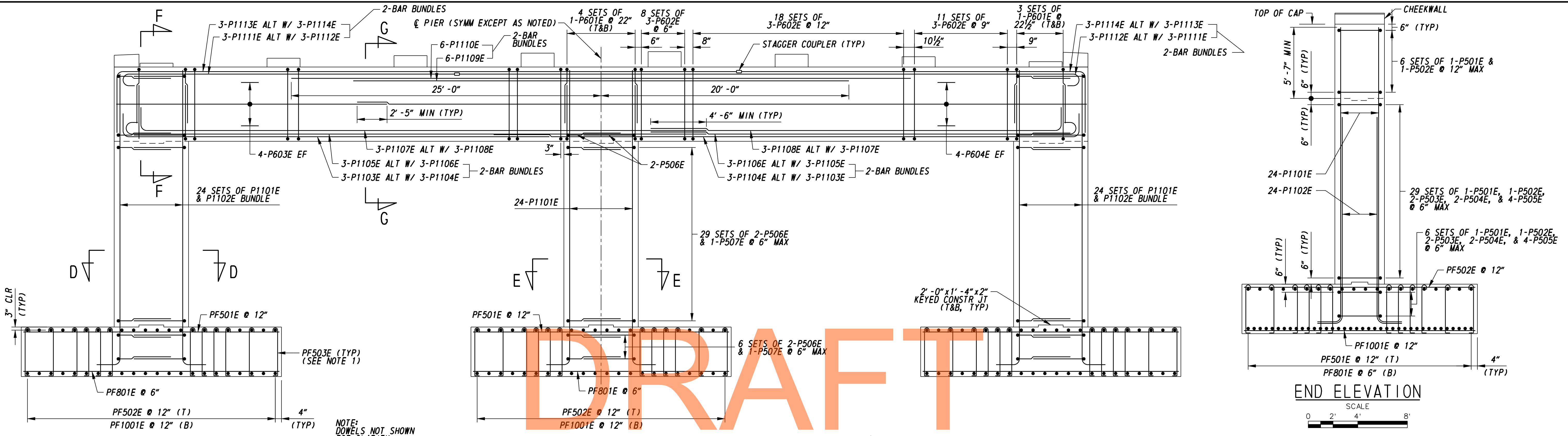
ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	CNN
COUNTY	CHECKED BY:	YY
NEW CASTLE		

PIER PLAN AND ELEVATION	SHEET NO.	307
	TOTAL SHTS.	850

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NOTES:

1. TIE TOP AND BOTTOM MATS OF REINFORCEMENT STEEL WITH PF503E TIE BARS. ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.

REFERENCES:

PROJECT NOTES
PIER PLAN AND ELEVATION
REINFORCEMENT BAR SCHEDULE

BR1-482-03
BR1-482-16
BR1-482-32

ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	CNN
NEW CASTLE	CHECKED BY:	YY

PIER SECTION AND DETAILS	SHEET NO.	308
	TOTAL SHTS.	850

ELASTOMERIC BEARING PAD NOTES:

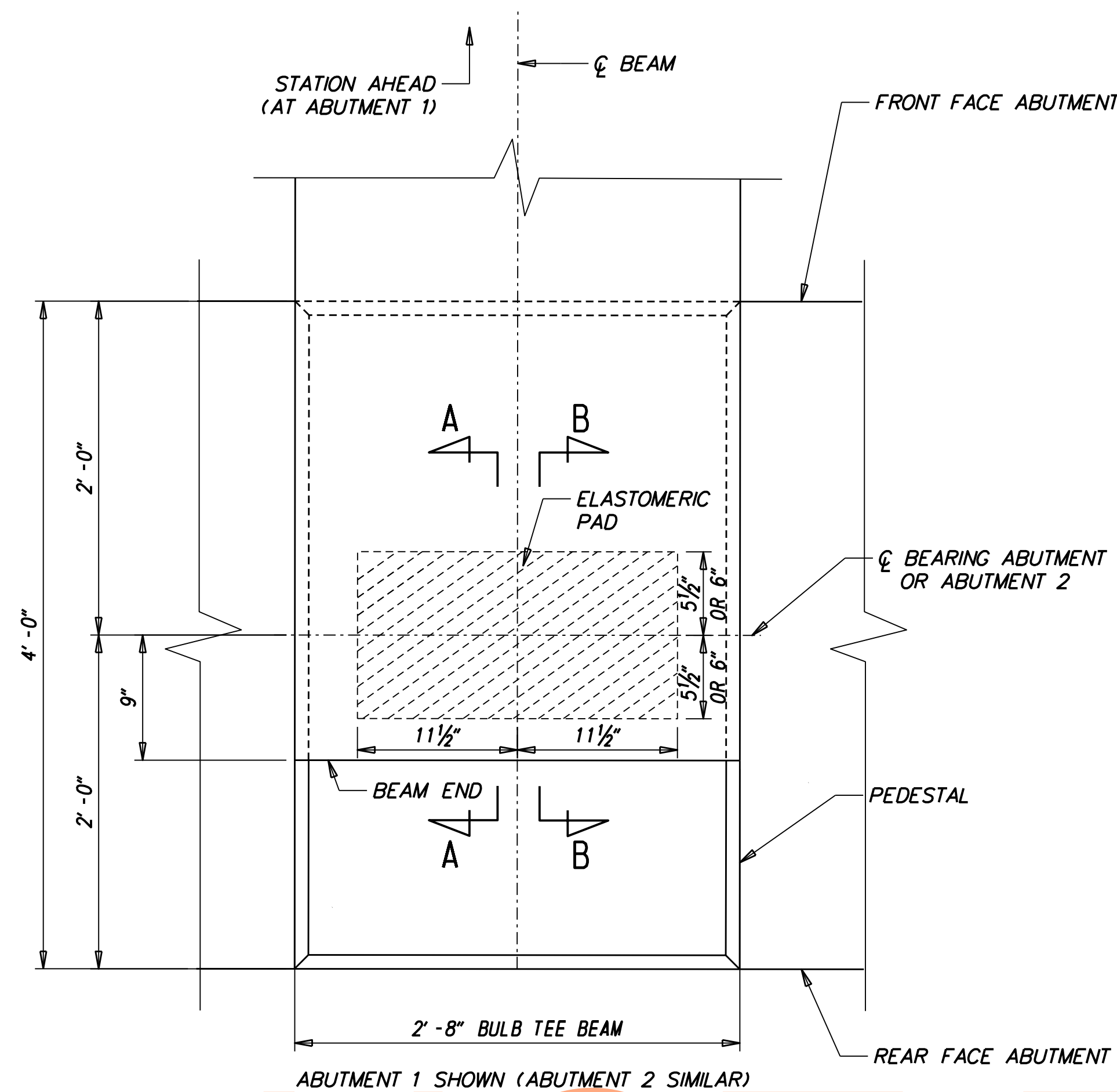
1. MANUFACTURE ALL BEARINGS IN ACCORDANCE WITH THESE PLANS AND DELDOT SPECIFICATIONS.
2. MEET THE MATERIAL SPECIFICATION FOR ELASTOMERIC BEARINGS REQUIREMENTS OF CURRENT AASHTO (M-251-92 STANDARD SPECIFICATIONS BEARINGS) AS LISTED UNDER SUBSECTION "MATERIALS AND TESTING".
3. ALL BEARING PADS ARE TO BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
4. HOLES ARE NOT PERMITTED IN ELASTOMERIC BEARINGS.
5. PROVIDE NEOPRENE WITH A HARDNESS OF 50 +5 DUROMETER.
6. PROVIDE INTERNAL LAMINATES CONFORMING TO AASHTO M183.
7. SMOOTH CUT AND DEBURR METAL SHIMS.
8. GRIT BLAST AND DEGREASE METAL SHIMS.
9. VULCANIZE PATCH PIN GROOVES.
10. PROVIDE A ROUGH TEXTURE TO CONCRETE BEARING SURFACES. DO NOT APPLY EPOXY COATING TO THE BEARING SURFACES WITHIN 2" OF THE BEARING PAD.
11. NUMBER OF BEARINGS REQUIRED:
 ABUTMENT 1 (EXP): 8
 PIER (FIX): 16
 ABUTMENT 2 (EXP): 8
 EXTRA BEARING FOR TESTING PURPOSE: 1
 TOTAL NUMBER OF BEARINGS REQUIRED: 33
12. BEARING SHALL BE PLACED NORMAL TO THE CENTERLINE OF GIRDER.
13. THE MAXIMUM DESIGN LOAD FOR THE FIXED BEARING IS 201.58 KIPS. THE MAXIMUM DESIGN LOAD FOR THE EXP. BEARINGS IS 213.22 KIPS.

BEAM DAP DIMENSIONS										
BEAM	T3	T1	T2	W	A	T3	T1	T2	W	A
					SPAN 1 - NEAR END					
1	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
2	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
3	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
4	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
5	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
6	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
7	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000
8	0.563	0.250	0.438	18.50	9.000	0.250	0.500	0.438	18.50	9.000

NOTE: BEAM DAP NOT REQUIRED AT SPAN 1-FAR END OR SPAN 2-NEAR END.

UNFACTORED REACTIONS (KIPS)					
CONTROLLING BEAMS	LOCATION	TOTAL DL		HL-93 (LL)	
		DC1	DC2	MAX	MIN
G3-G5	ABUTMENT 1	99.23	31.03	82.96	-8.97
	PIER (BACK)	89.55	38.77	73.26	0.00
	PIER (AHEAD)	89.55	38.77	73.26	0.00
	ABUTMENT 2	99.23	31.03	82.96	-8.97

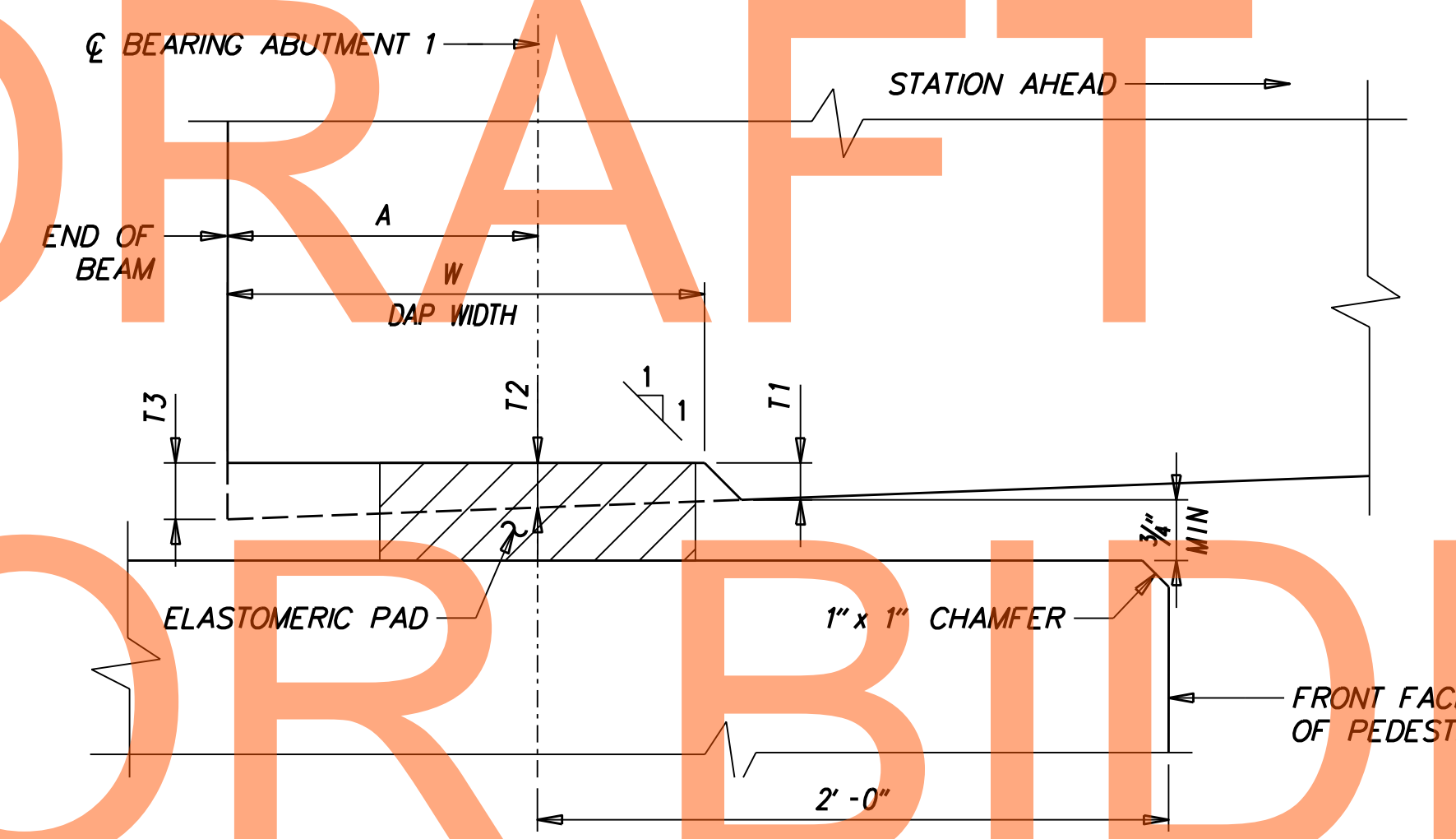
NOTES: DC2 INCLUDES FUTURE WEARING SURFACE. LL DOES NOT INCLUDE IMPACT.



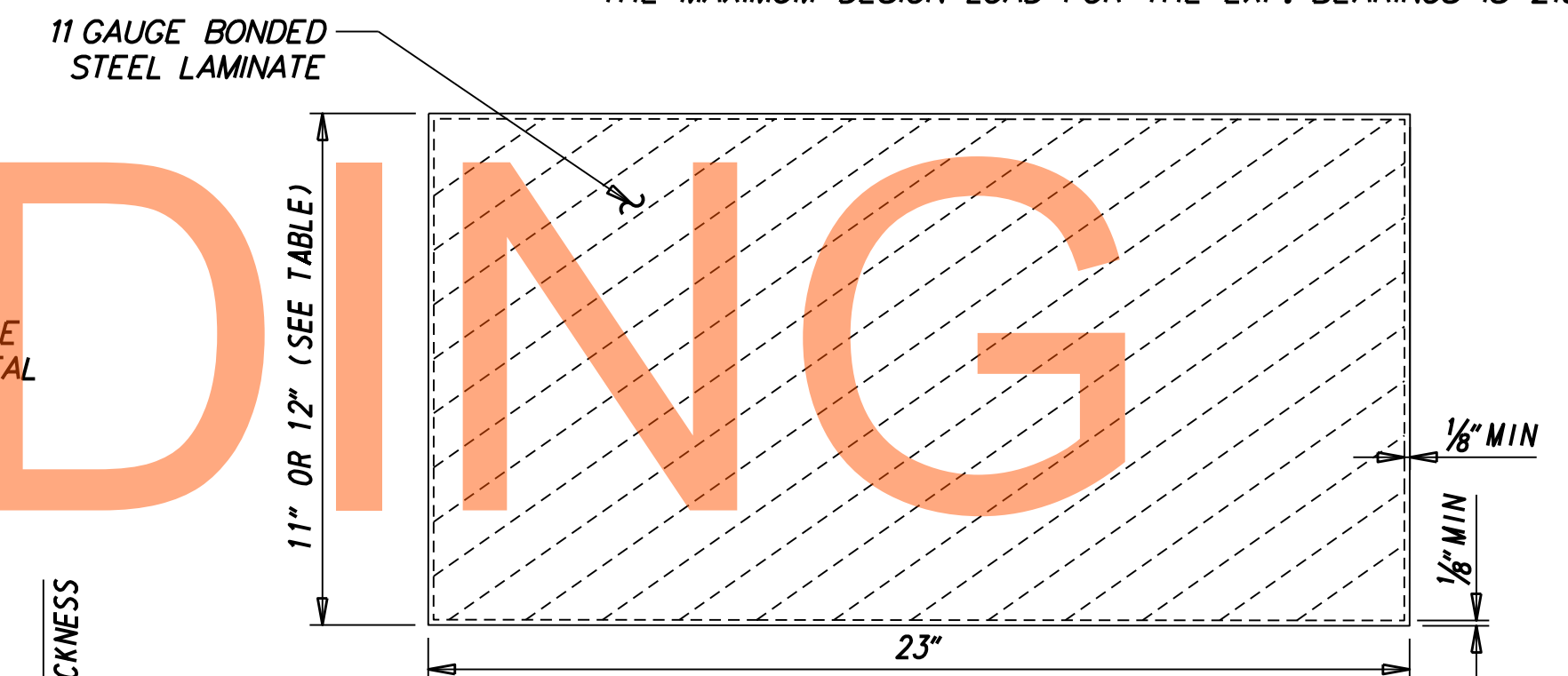
ABUTMENT 1 SHOWN (ABUTMENT 2 SIMILAR)
PLAN VIEW AT ABUTMENTS



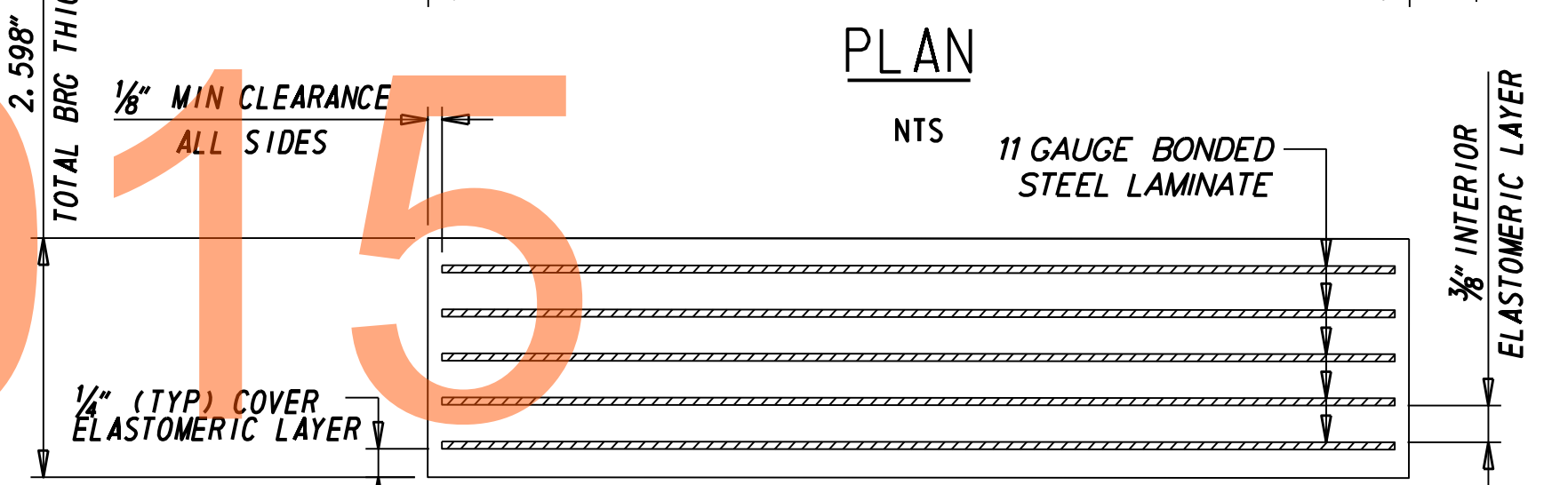
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SECTION A-A AT ABUTMENT 1 NEAR END



PLAN



ELEVATION

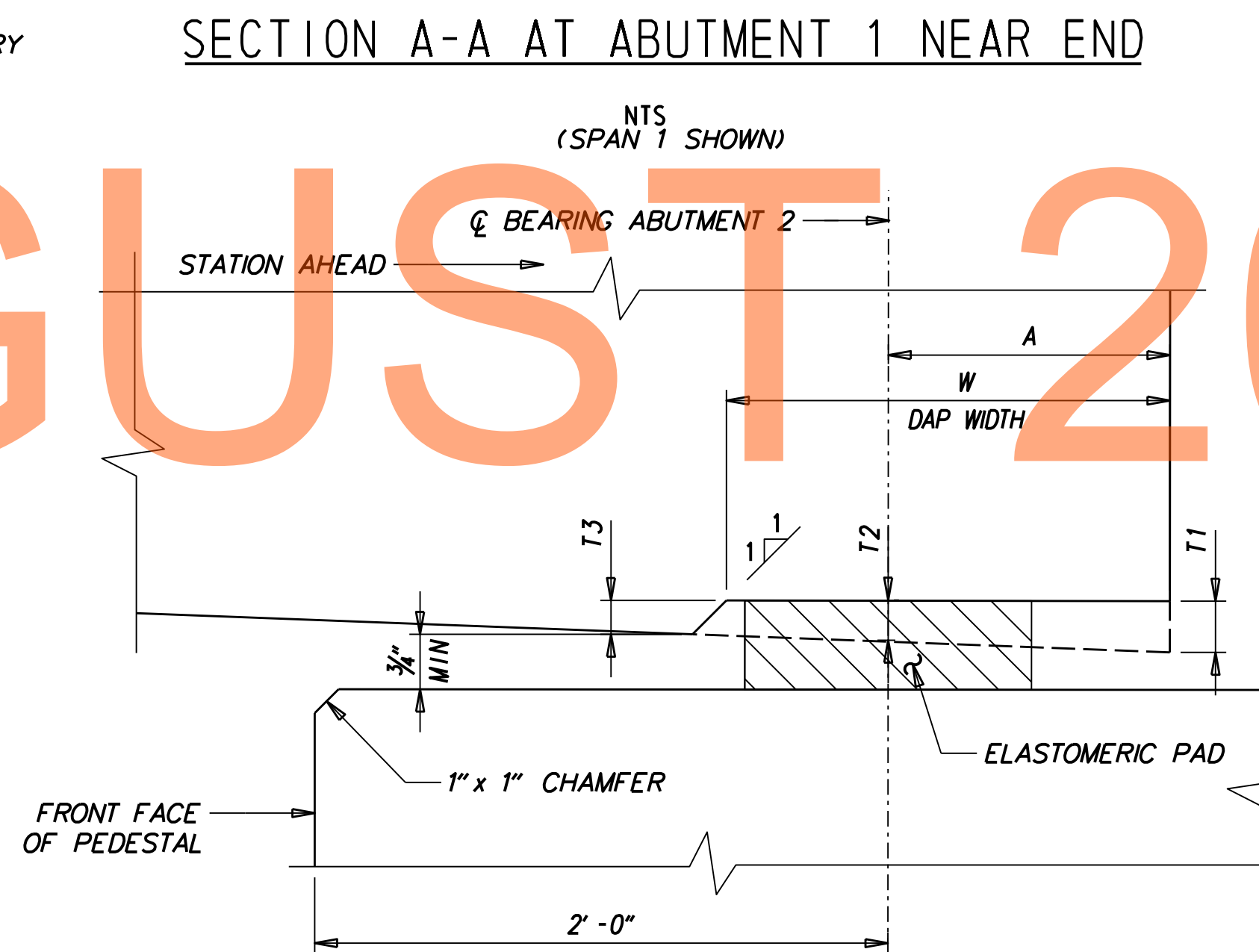
NTS

BEARING PAD DIMENSIONS		
GIRDERS	ABUTMENTS	PIER
G1 & G8	23 x 11 x 2.598	23 x 11 x 2.598
G2 & G7	23 x 12 x 2.598	23 x 11 x 2.598
G3, G4 & G5	23 x 12 x 2.598	23 x 12 x 2.598
G6	23 x 11 x 2.598	23 x 11 x 2.598

REFERENCES:

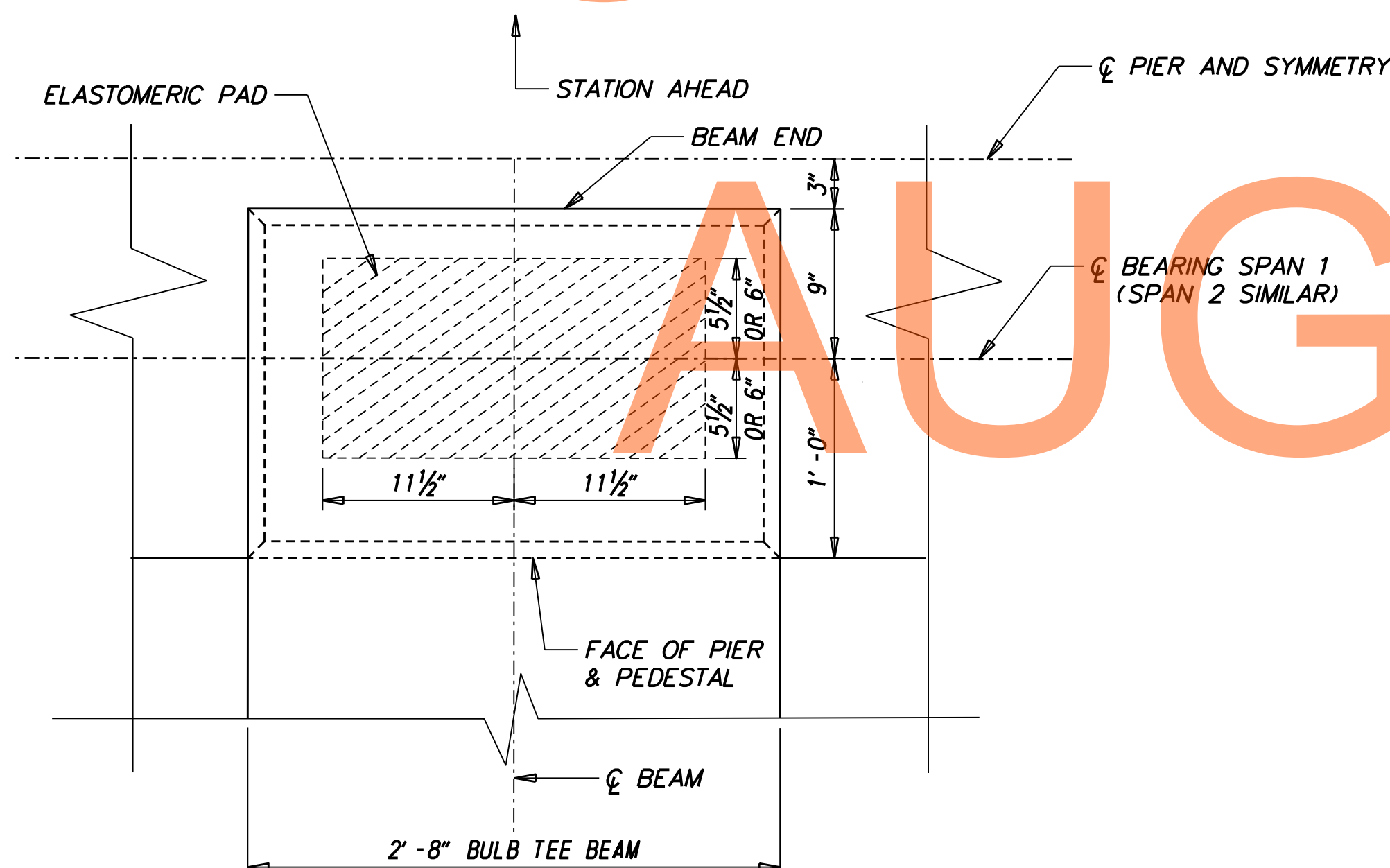
- PROJECT NOTES BR1-482-03
- FRAMING PLAN BR1-482-19
- BEAM DETAILS BR1-482-20

BR1-482-18

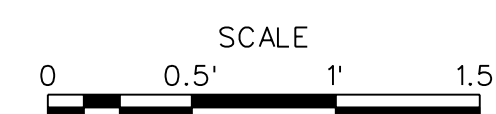


SECTION B-B AT ABUTMENT 2 FAR END

NTS
(SPAN 2 SHOWN)



PLAN VIEW AT PIER



ADDENDUMS / REVISIONS

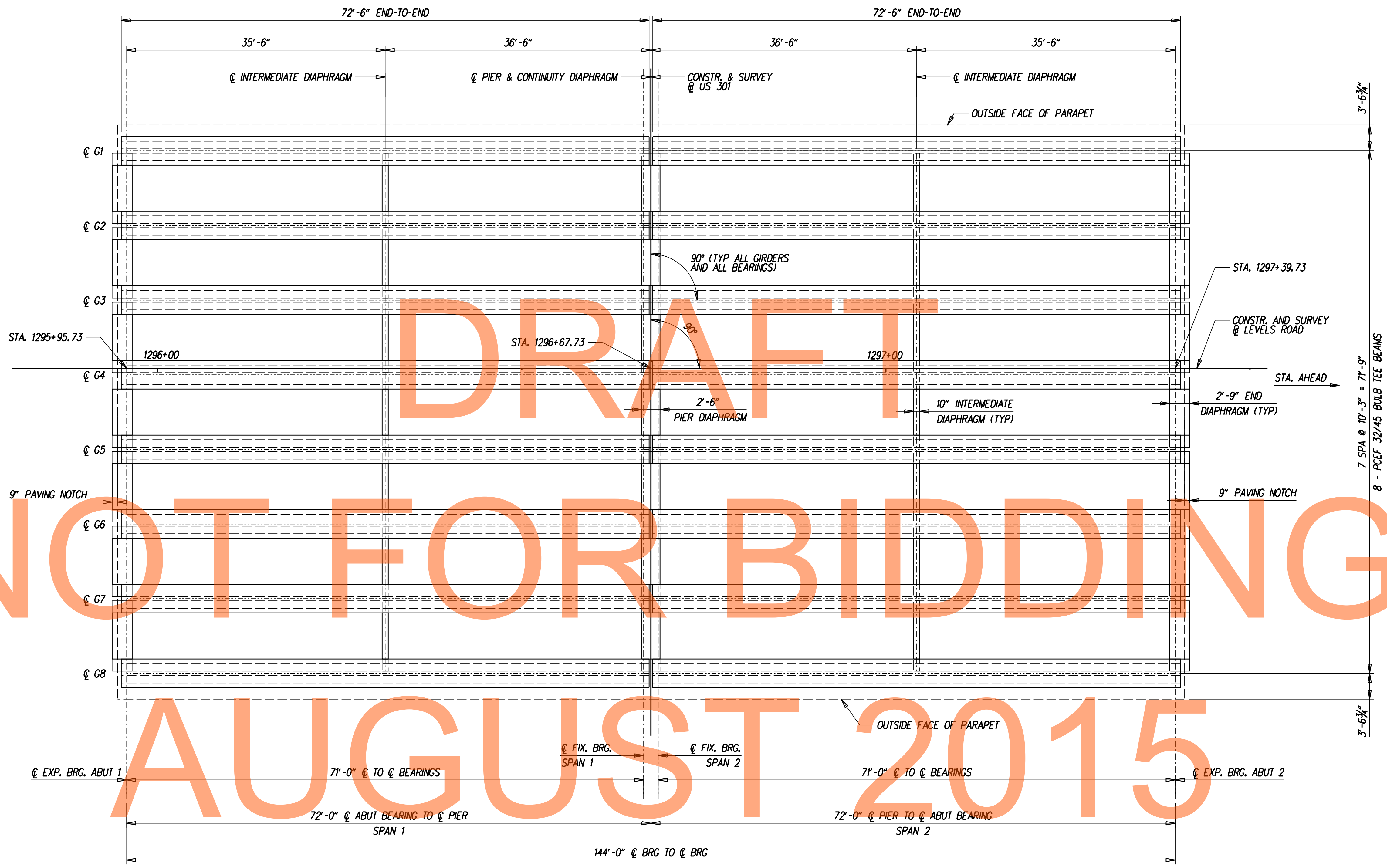
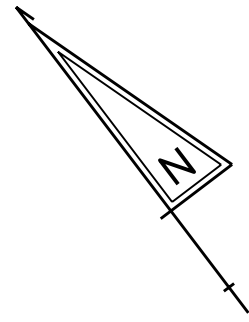


**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	ADL
COUNTY	CHECKED BY:	RS/GCI
NEW CASTLE		

BEARING PAD DETAILS

SHEET NO.	309
TOTAL SHTS.	850



FRAMING PLAN

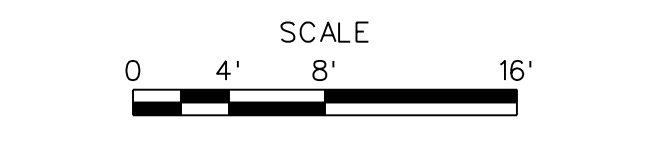
REFERENCES:

- PROJECT NOTES BR1-482-03
- BEAM DETAILS BR1-482-20
- DIAPHRAGM DETAILS BR1-482-21 AND BR1-482-22
- DECK PLAN BR1-482-23

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ADDENDUMS / REVISIONS	

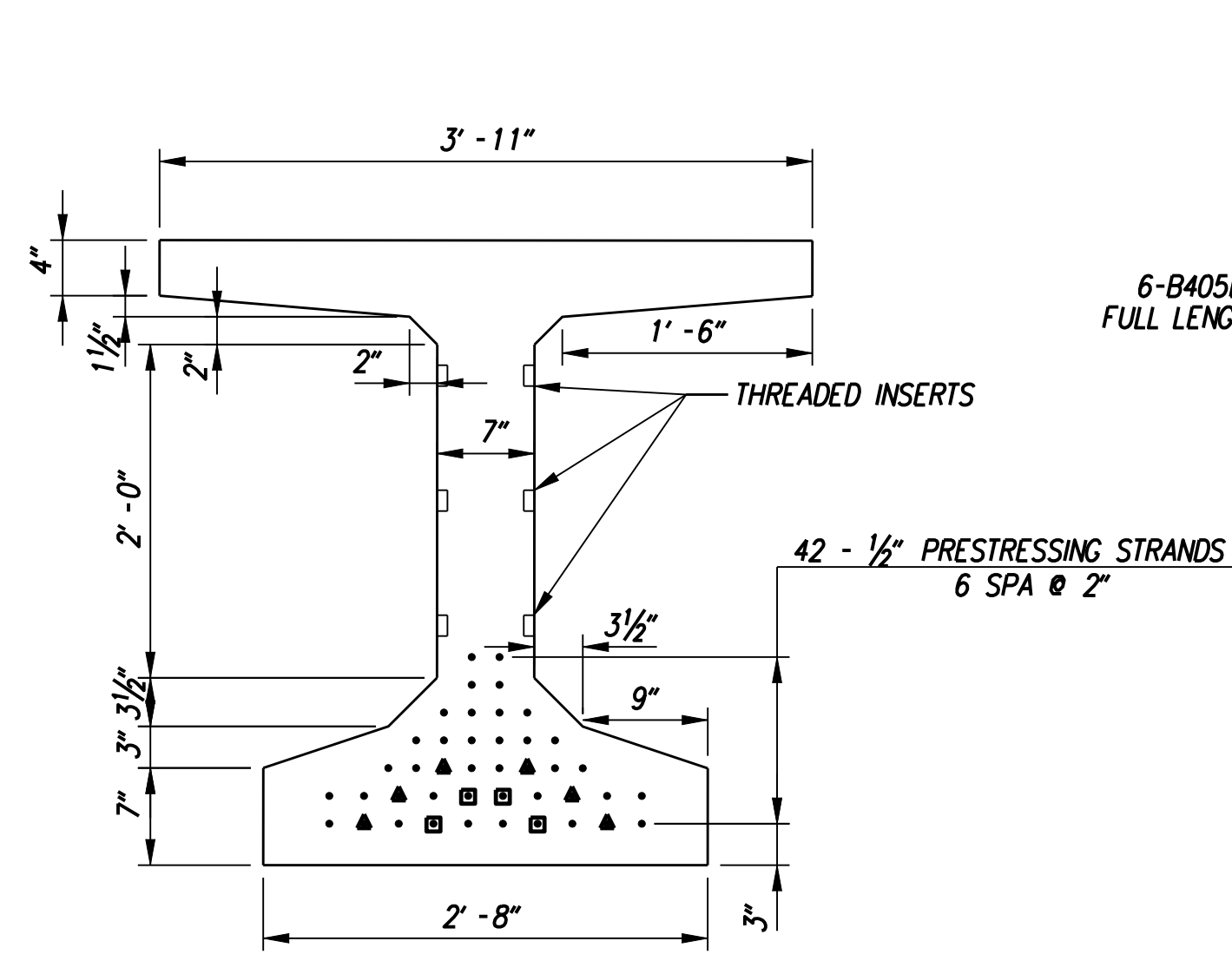


US 301
MARYLAND STATE LINE
TO LEVELS ROAD

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	SPM
COUNTY	CHECKED BY:	JS
NEW CASTLE		

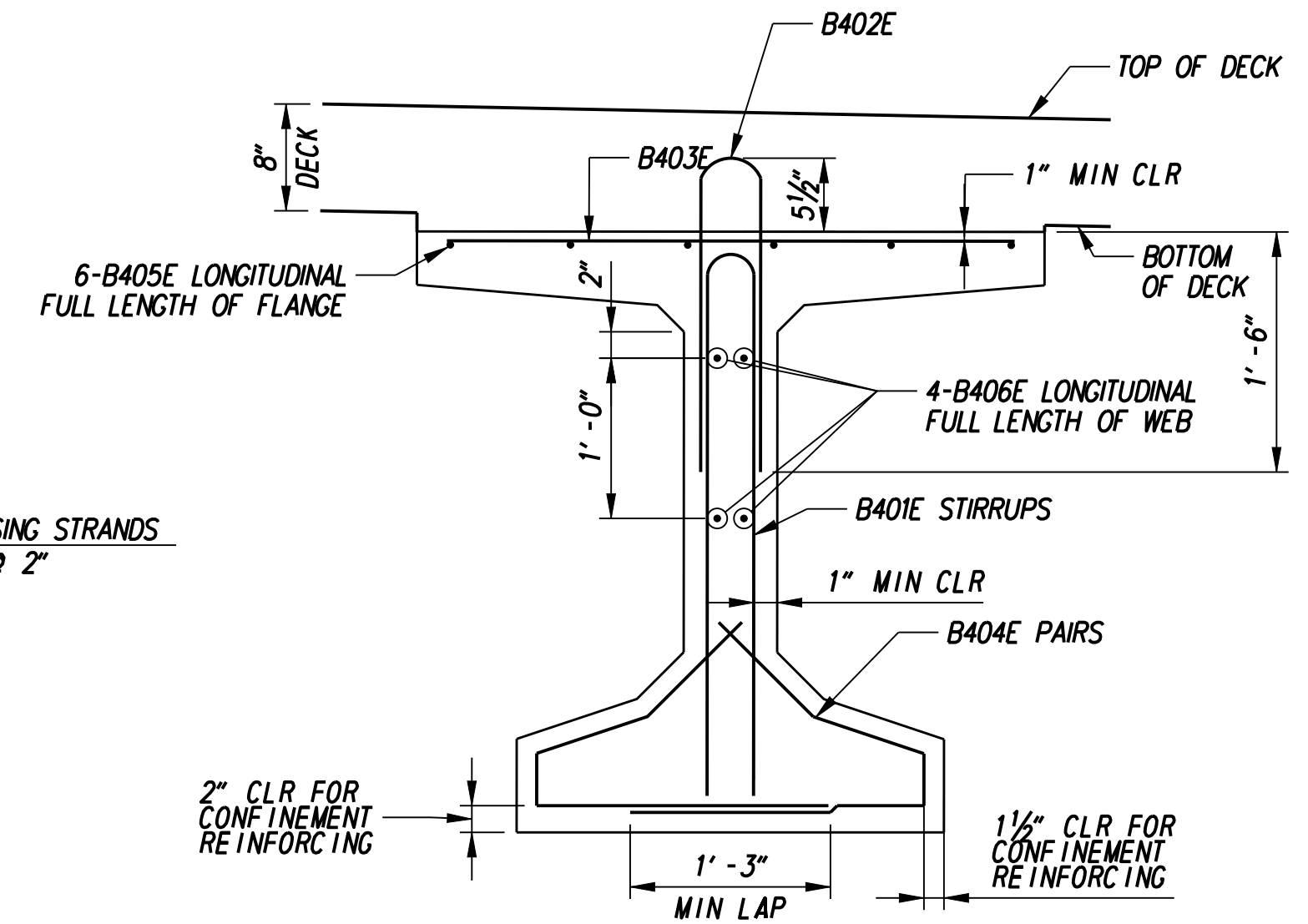
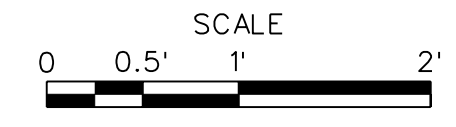
FRAMING PLAN

BR1-482-19
SHEET NO.
310
TOTAL SHTS.
850

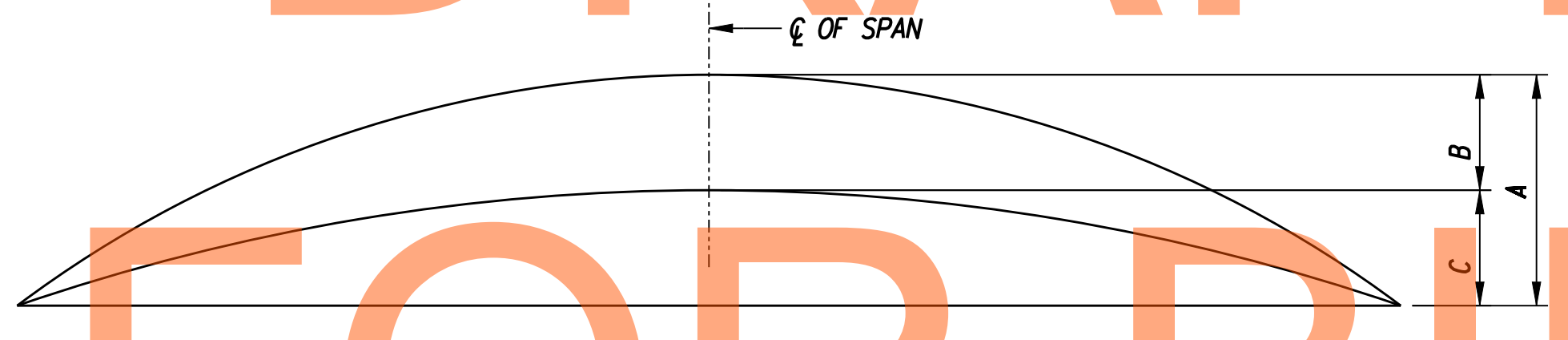
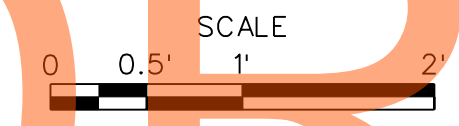


DEBONDING : ▲ DENOTES STRAND AT 4'-0" LONG AT EACH END
 ■ DENOTES STRAND AT 7'-6" LONG AT EACH END
 ROW 1 & 2: 9 SPACES AT 2 1/2"
 ROW 3: 7 SPACES AT 2"
 ROW 4: 5 SPACES AT 2"
 ROW 5: 3 SPACES AT 2"
 ROW 6 & 7: 1 SPACE AT 2"

TYPICAL STRAND PATTERN



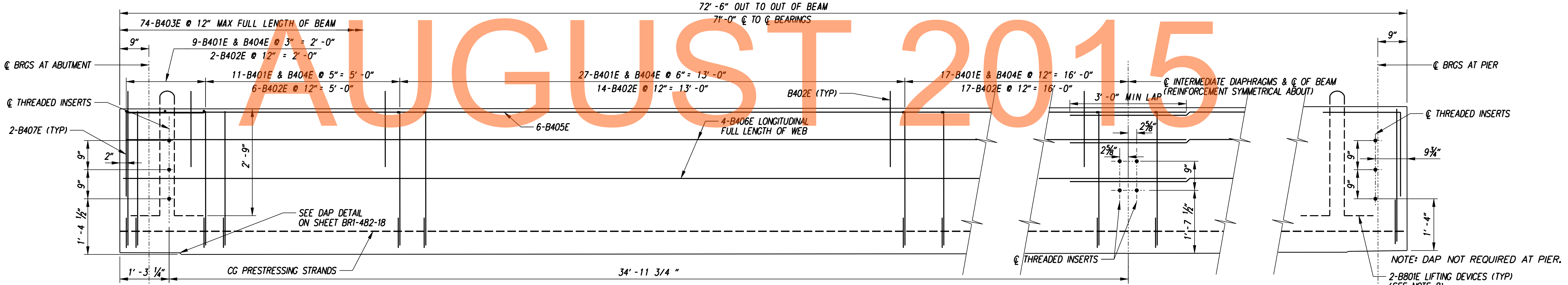
TYPICAL REINFORCEMENT DETAIL



A = ESTIMATED PRESTRESS CAMBER LESS DEFLECTION DUE TO DEAD LOAD OF BEAM TIMES CREEP FACTOR.
 B = DEFLECTION DUE TO DEAD LOAD OF SLAB, PARAPET, SIP FORMS AND FUTURE PAVING ALLOWANCES.
 C = A - B = NET CAMBER

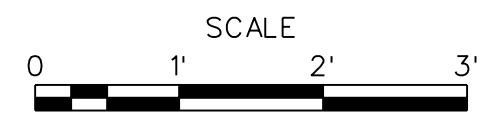
BEAM CAMBER DIAGRAM

DIM	G1&G8	G2&G7	G3, G4&G5	G6
A	2.25"	2.25"	2.25"	2.25"
B	0.73"	0.88"	0.95"	0.82"
C	1.52"	1.37"	1.30"	1.43"



BULB TEE ELEVATION

(SPAN 1 SHOWN, SPAN 2 SIMILAR)



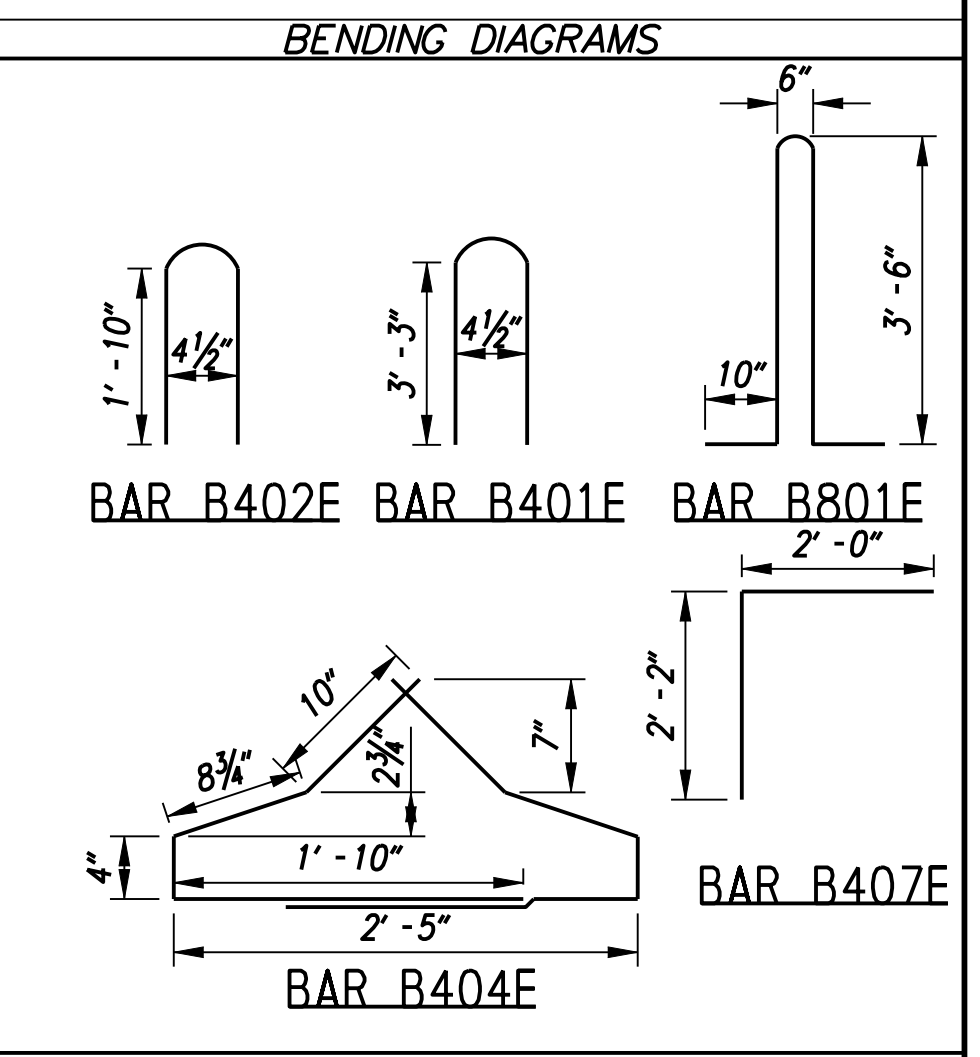
REINFORCING BAR LIST (EACH BEAM)				
MARK	SIZE	NUMBER	TYPE	LENGTH
B401E	4	125	BENT	7'-0 1/4"
B402E	4	74	BENT	4'-2 1/4"
B403E	4	74	STR	3'-6"
B404E	4	250	BENT	3'-8 3/4"
B405E	4	12	STR	37'-7"
B406E	4	8	STR	37'-7"
B407E	4	4	BENT	4'-2"
B801E	8	4	BENT	9'-3 7/8"

BEAM NOTES

- BEAMS ARE PCEF 32/45 BULB TEE. CONCRETE STRENGTH: f'c = 8000 PSI @ 28 DAYS; f'd = 6800 PSI @ STRAND RELEASE. g_a = DISTANCE FROM BOTTOM OF BEAM TO CENTER OF GRAVITY OF STRANDS AT MID SPAN = 6.90"; g_b = DISTANCE FROM BOTTOM OF BEAM TO CENTER OF GRAVITY OF STRANDS AT CENTERLINE OF BEARING = 7.62"
- PRESTRESSING STEEL: ALL STRANDS 1/2" DIAMETER SEVEN WIRE STRAND, 0.167 in² NOMINAL AREA, GRADE 270, LOW RELAXATION STRANDS IN ACCORDANCE WITH ASTM A416 WITH INITIAL PULL PER STRAND OF 33.82 KIPS.
- ALL MILD REINFORCEMENT IN GIRDER SHALL BE EPOXY COATED.
- GIRDER LENGTHS IN CASTING BED SHALL BE DETERMINED AND DEPICTED IN SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO PRESTRESS EFFECT.
- TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND PROVIDE A ROUGHENED SURFACE FOR BONDING.
- NO CLEAR COVER LESS THAN AS SHOWN ON THESE PLANS WILL BE ACCEPTED.
- METAL INSERTS SHALL BE PROVIDED ALONG THE TOP FLANGE OF THE PRESTRESSED CONCRETE BEAMS TO SUPPORT SIP FORMS. SIZE, SPACING, AND LOCATION OF INSERTS AS REQUIRED BY SIP FORM MANUFACTURER. SEE SUPPORT DETAIL ON "DECK PLAN AND POURING SEQUENCE SHEET."
- PROVIDE 2-B801 LIFTING DEVICES AT EACH END OF BEAM. IF THEY CONFLICT WITH PLACEMENT OF DECK REINFORCEMENT, REMOVE WITHOUT DAMAGING TOP FACE OF BEAM. AT THE CONTRACTOR'S OPTION, ALTERNATE LIFTING DETAILS WILL BE CONSIDERED, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- TIME FROM CASTING OF BEAMS TO POURING OF DIAPHRAGMS MUST BE NO LESS THAN 90 DAYS. IF TIME IS NOT SUFFICIENT, CONTRACTOR MUST SUBMIT DESIGN FOR APPROVAL SHOWING STRUCTURAL DESIGN CALCULATIONS TO ACCOUNT FOR RESTRAINT MOMENTS. PIER DIAPHRAGM CAN NOT BE POURED UNTIL DECK POURS 1 AND 2 ARE COMPLETED.

PRESTRESS NOTES

- A NET FINAL CAMBER VALUE HAS BEEN INCLUDED IN THE CALCULATION OF BEARING ELEVATIONS AND HAUNCH THICKNESS AT CENTERLINE OF BEARINGS (SEE CAMBER DIAGRAM).
- THE CONTRACTOR SHALL SURVEY THE TOPS OF THE BEAMS AT THE 10TH POINTS AND VARY HAUNCH THICKNESS TO COMPENSATE FOR ANY INACCURACIES IN THE ACTUAL BEAM CAMBER TO ACHIEVE FINAL FINISHED DECK ELEVATIONS AS SHOWN IN ELEVATION TABLES ON BR1-482-27.
- A CREEP FACTOR, Cr=1.6, AND AN INITIAL PRESTRESS LOSS, Δfs=10%, WHERE ASSUMED FOR COMPUTING CAMBERS.
- PRESTRESS CAMBER AND DEAD LOAD DEFLECTION DATA SHOWN ARE THEORETICAL AND MAY VARY WITH ACTUAL CONCRETE STRENGTH (AGE), VARIABLE PRESTRESSING CONDITIONS, CREEP FACTOR AND PRESTRESS LOSSES.
- CAST BEAMS SO THAT THE END FACES WILL BE TRULY VERTICAL WHEN PLACED IN THEIR FINAL POSITION.
- END ZONE REINFORCEMENT MAY BE INCREASED BY FABRICATOR TO REFLECT FABRICATOR'S EXPERIENCE AND/OR TO CONTROL CRACKING.



NOT FOR BIDDING

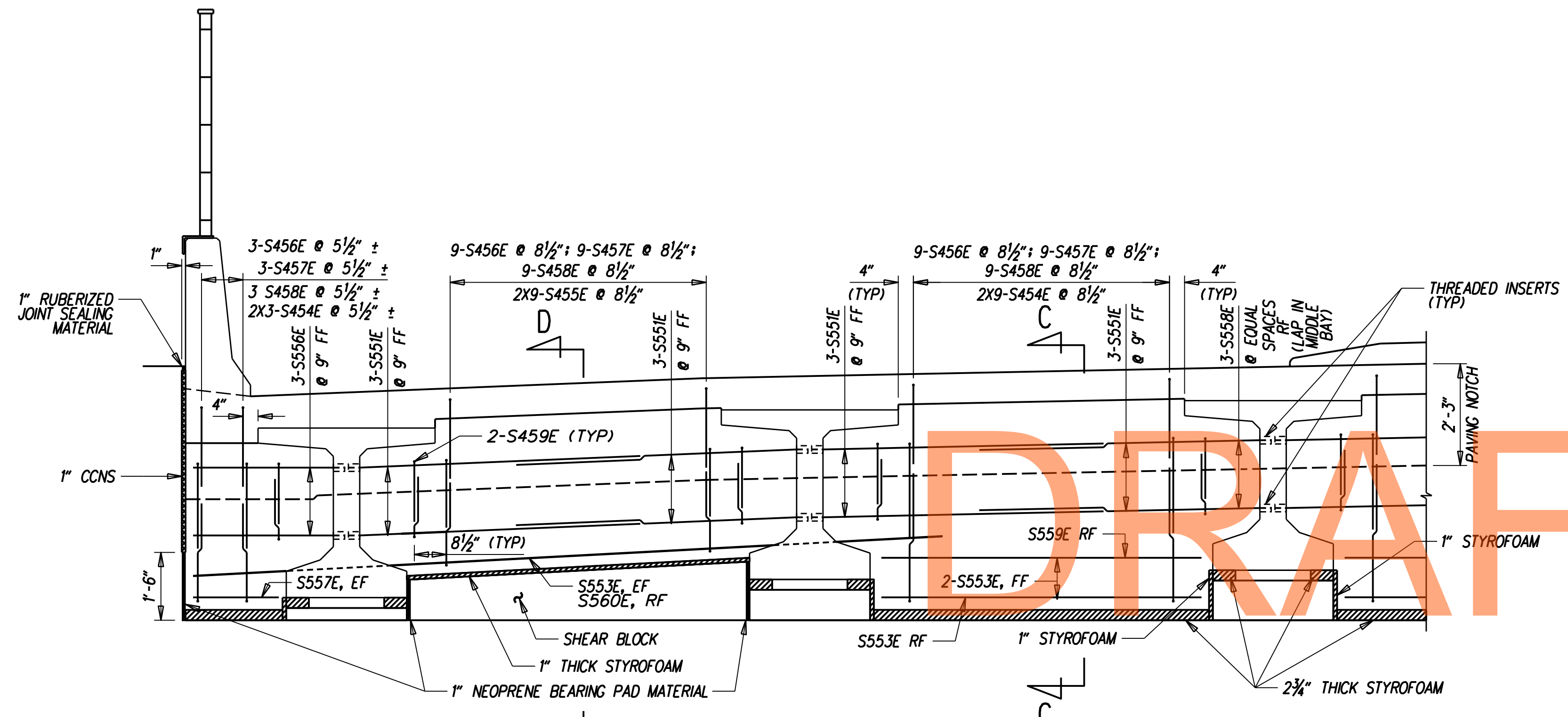
AUGUST 2015

REFERENCES:

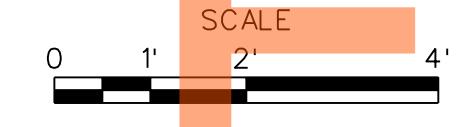
- PROJECT NOTES AND BEAM SECTION PROPERTIES
 BR1-482-18 BEARING AND BEAM DAP DETAILS
 BR1-482-19 FRAMING PLAN

BR1-482-20

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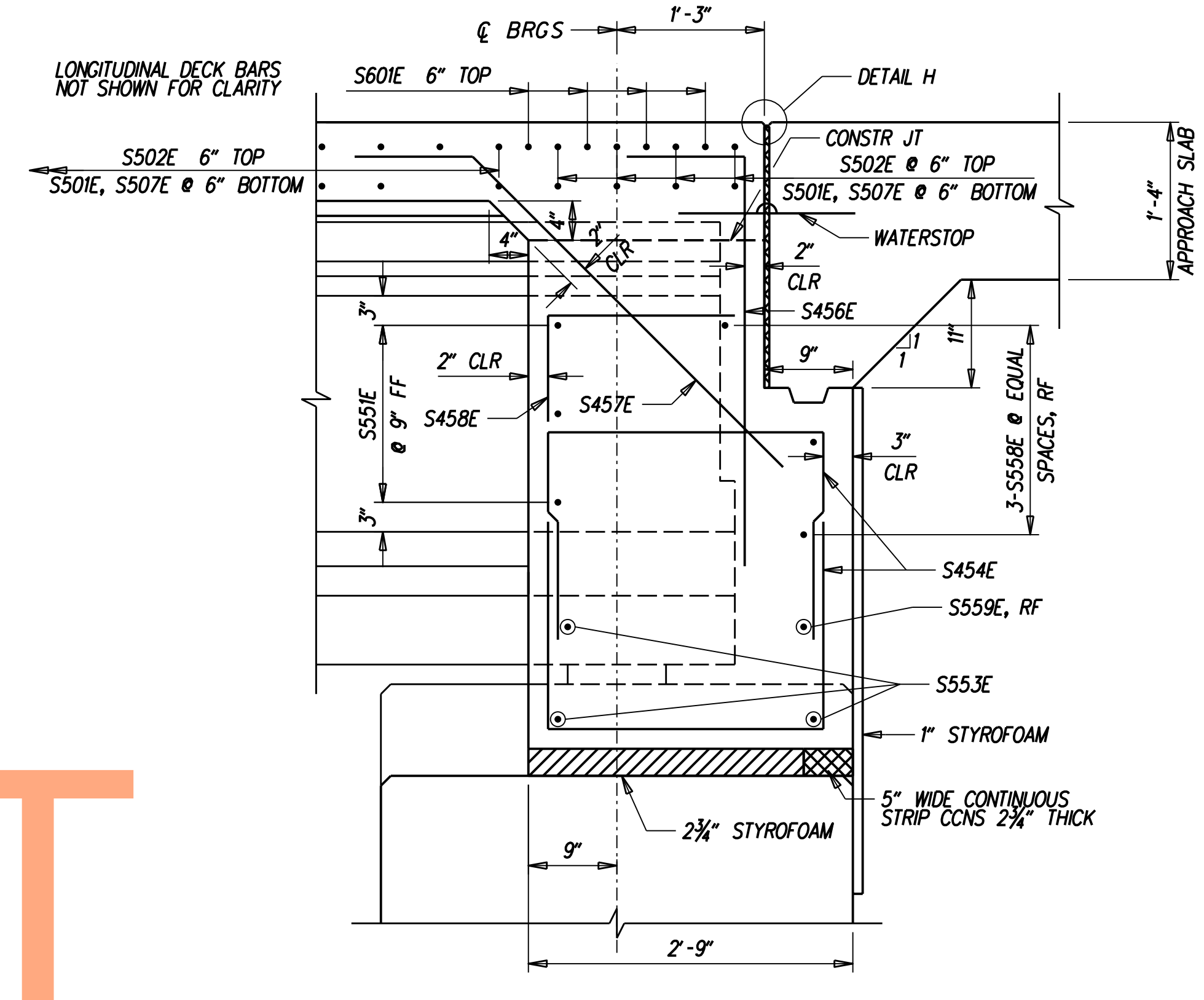


END DIAPHRAGM AT ABUTMENTS

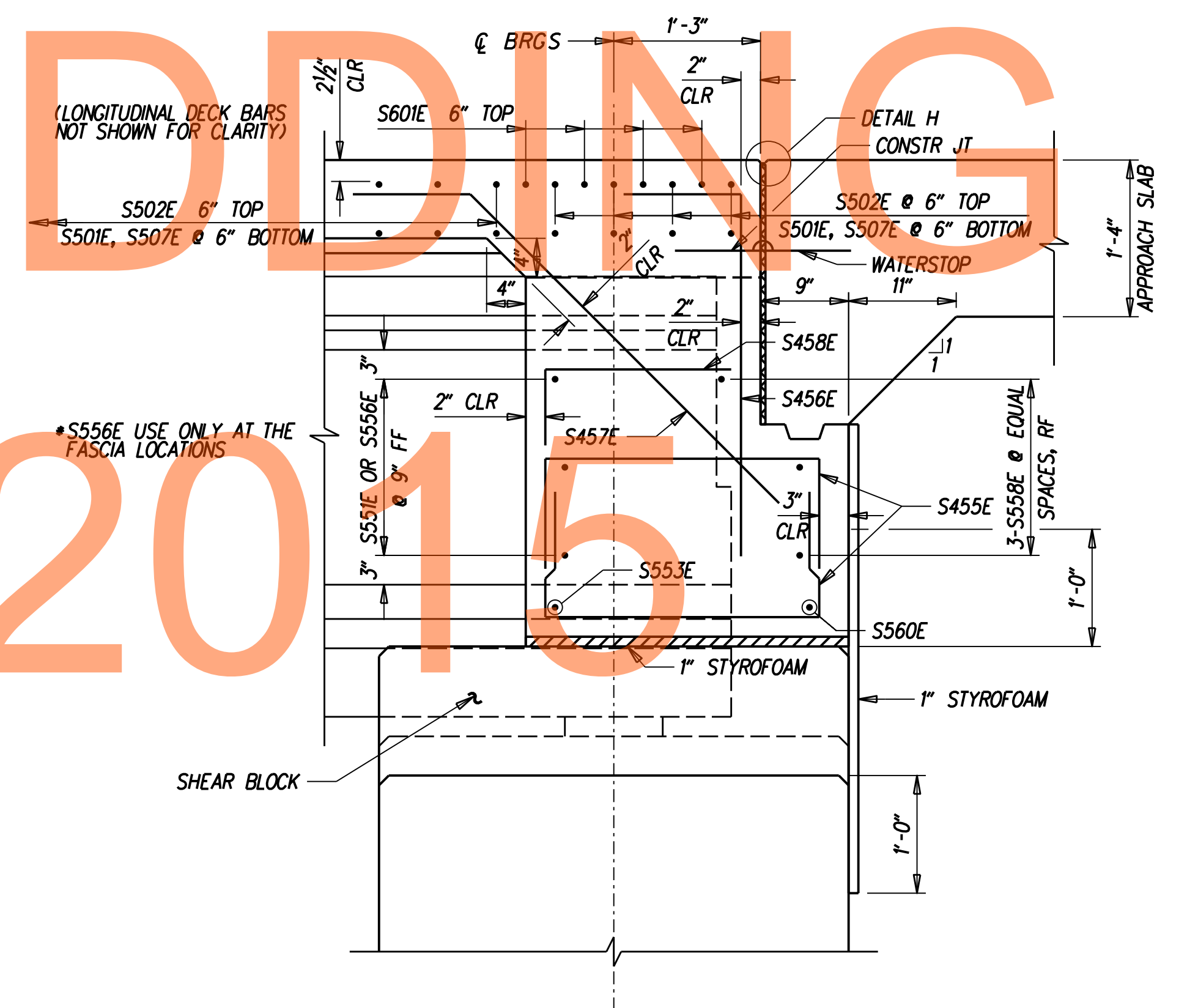
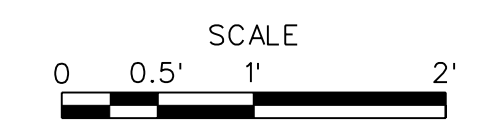


NOTES

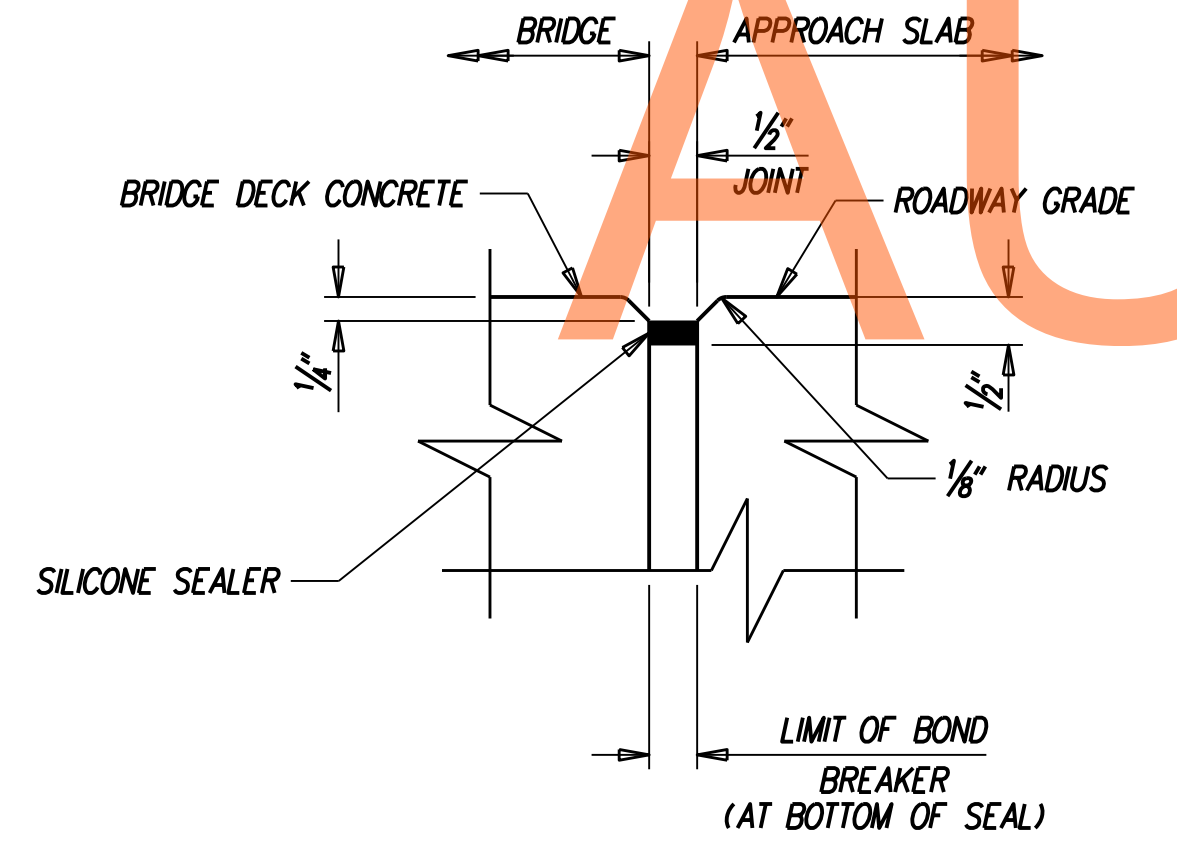
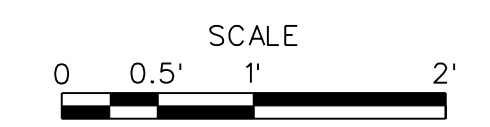
1. STYROFOAM, NEOPRENE BEARING PAD MATERIAL, CLOSED CELL NEOPRENE SPONGE AND JOINT MATERIAL SHALL BE INCIDENTAL TO ITEM 602013, PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D. SEE NOTES 11 AND 12 OF PROJECT NOTES, SHEET BR1-482-03, FOR DETAILS.



SECTION C-C

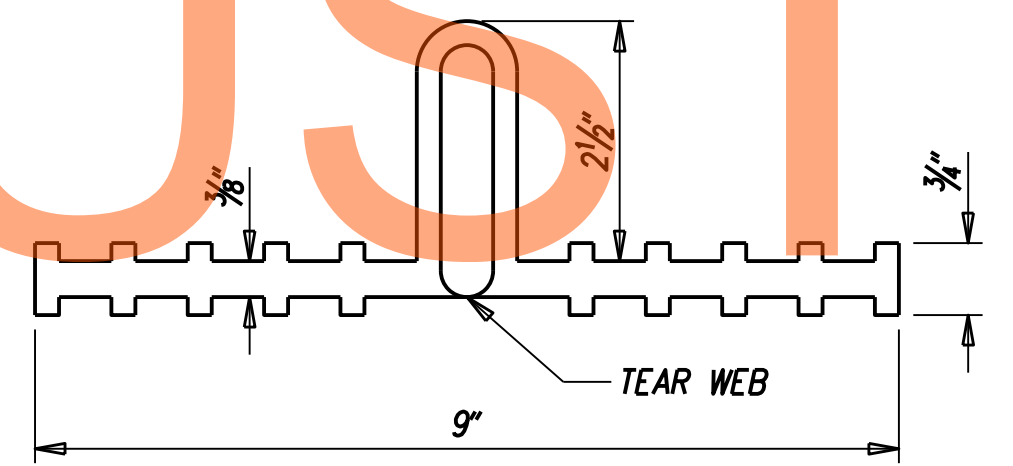


SECTION D-D



DETAIL H

NTS



WATERSTOP DETAIL

NTS

REFERENCES:

- PROJECT NOTES
 - ABUTMENT 1 PLAN AND ELEVATION
 - ABUTMENT 2 PLAN AND ELEVATION
 - ABUTMENT SECTION AND DETAILS
 - MSE WALL DETAILS
 - FRAMING PLAN
 - BEAM DETAILS
 - REINFORCEMENT BAR SCHEDULE
- BR1-482-03
 - BR1-482-09
 - BR1-482-10
 - BR1-482-11
 - BR1-482-15
 - BR1-482-19
 - BR1-482-20
 - BR1-482-33

NOT FOR BIDDING

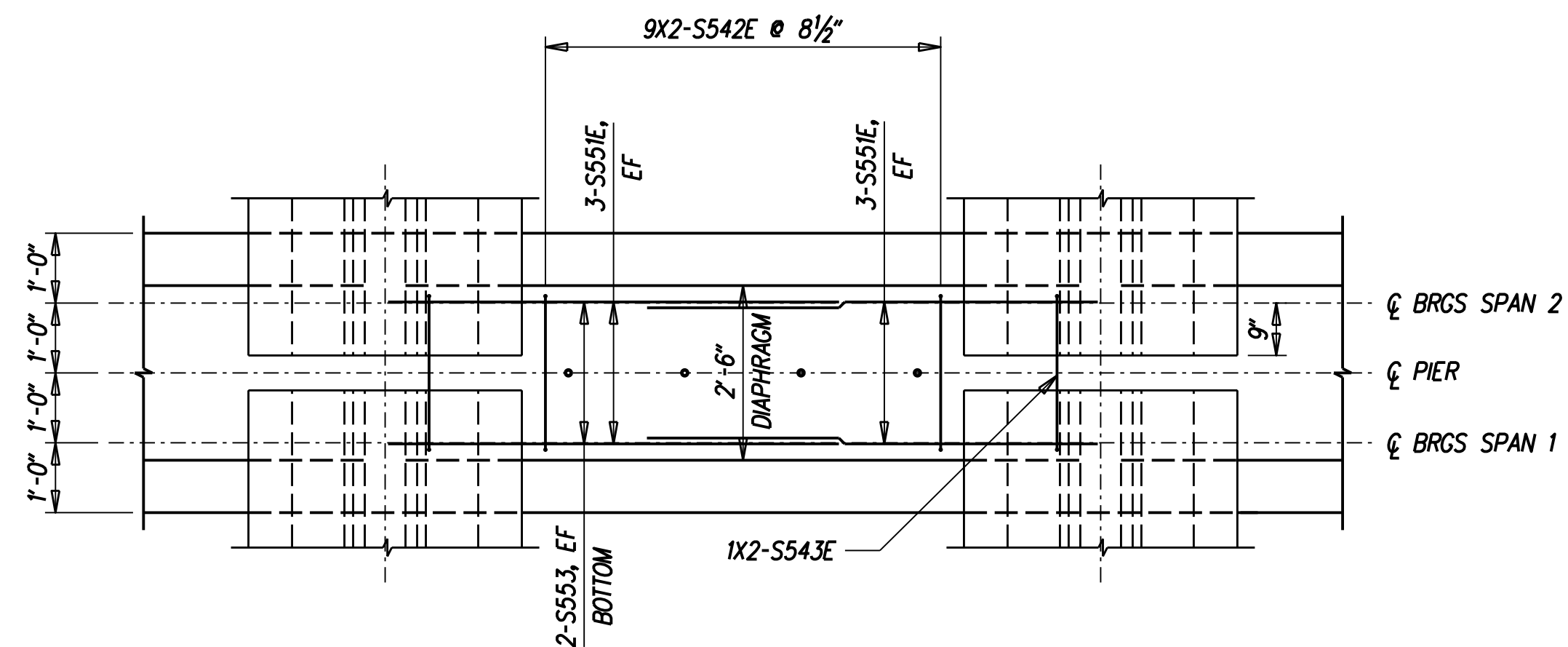
AUGUST 2015

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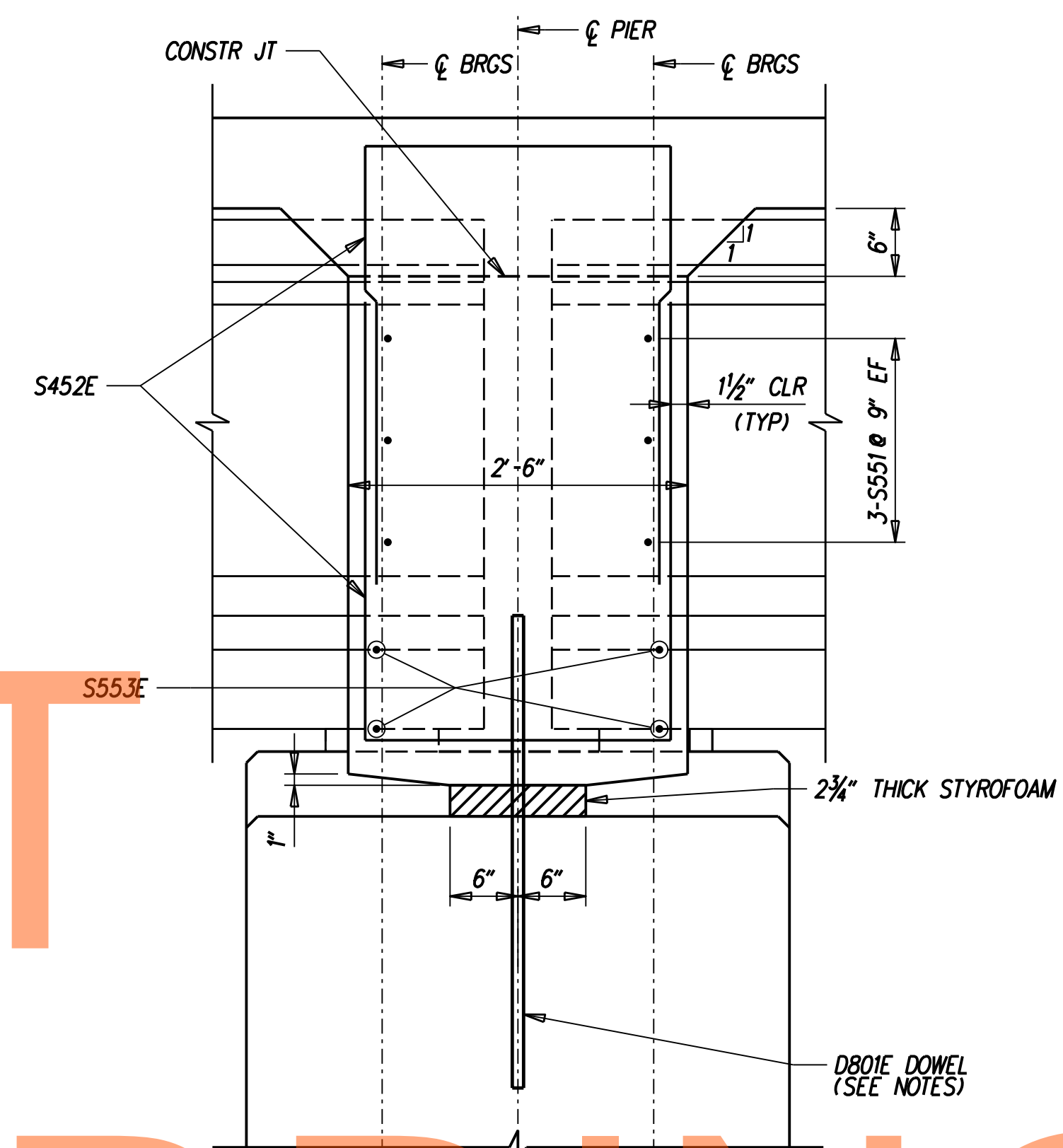
ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: WMM CHECKED BY: GCI

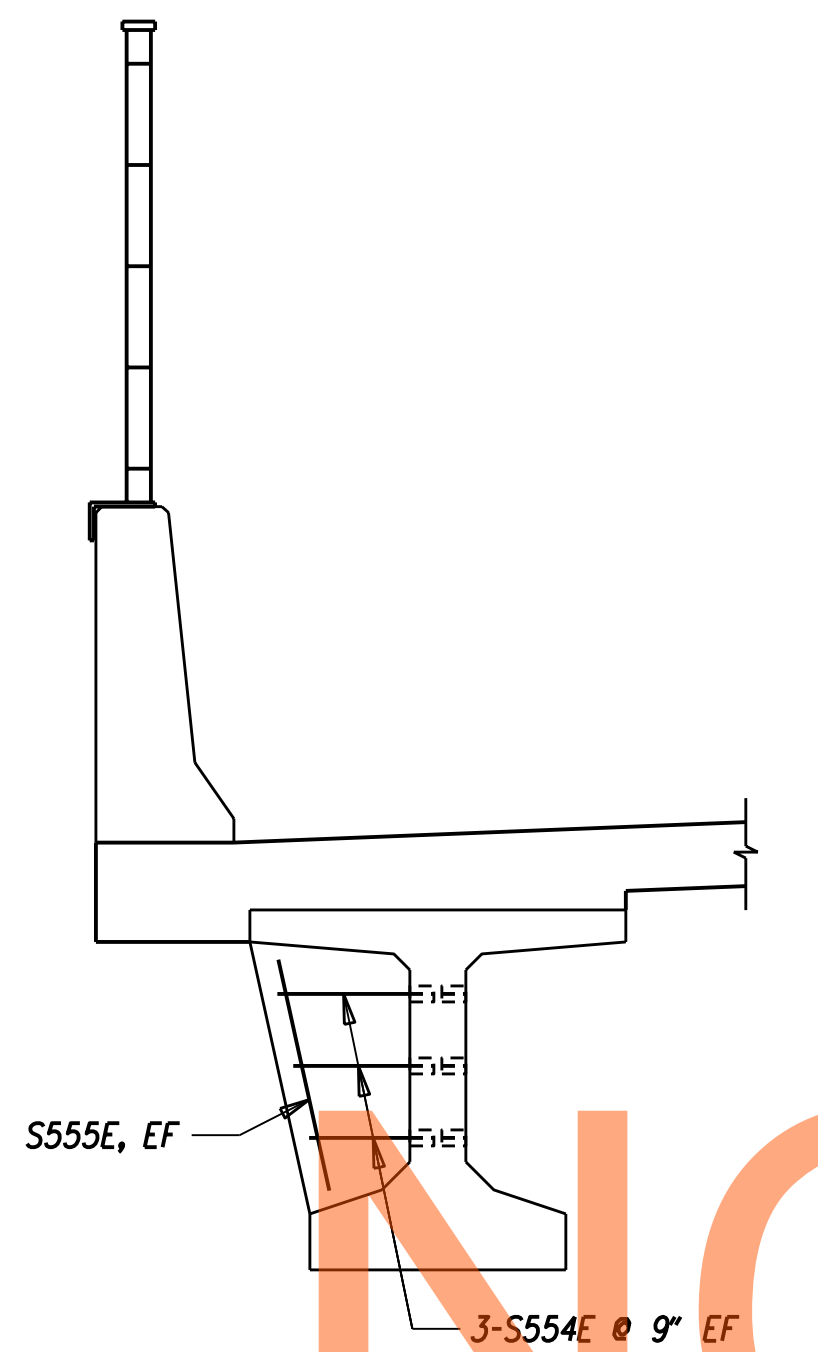
DIAPHRAGM DETAILS - 1	
SHEET NO. 312	TOTAL SHTS. 850



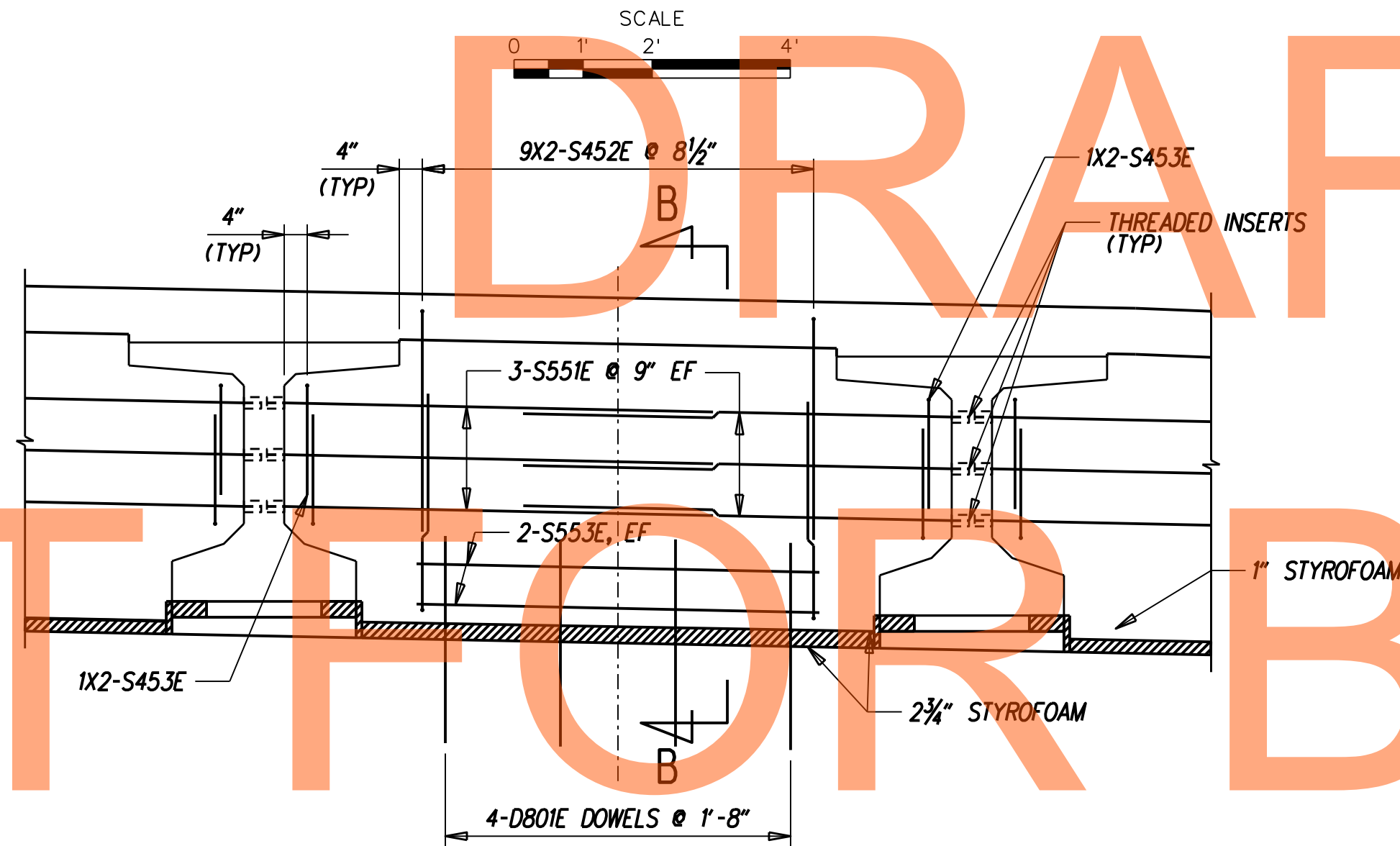
TYPICAL CONTINUITY DIAPHRAGM PLAN AT PIER



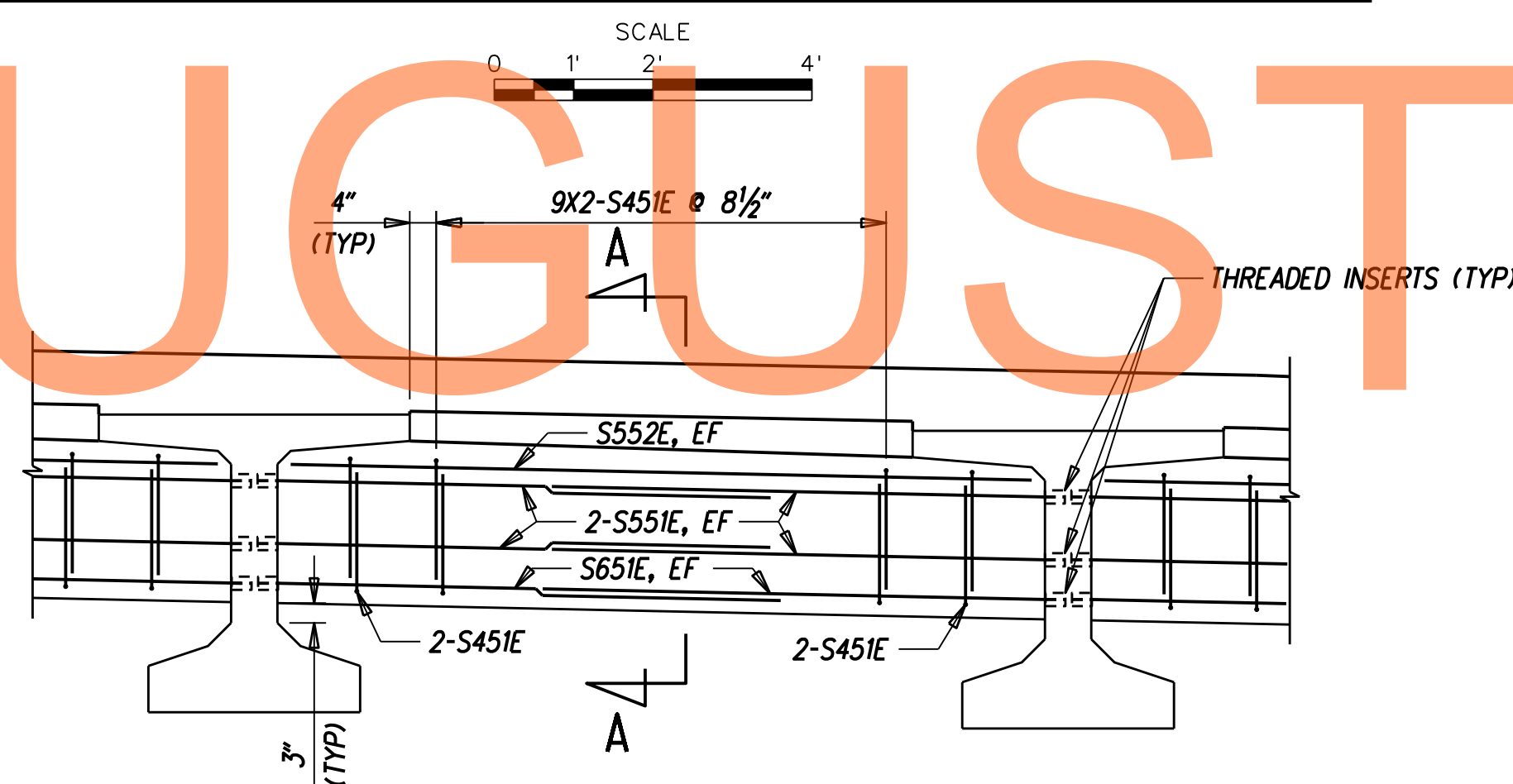
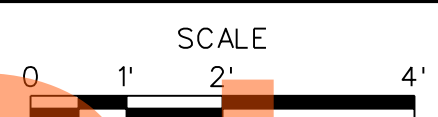
SECTION B-B



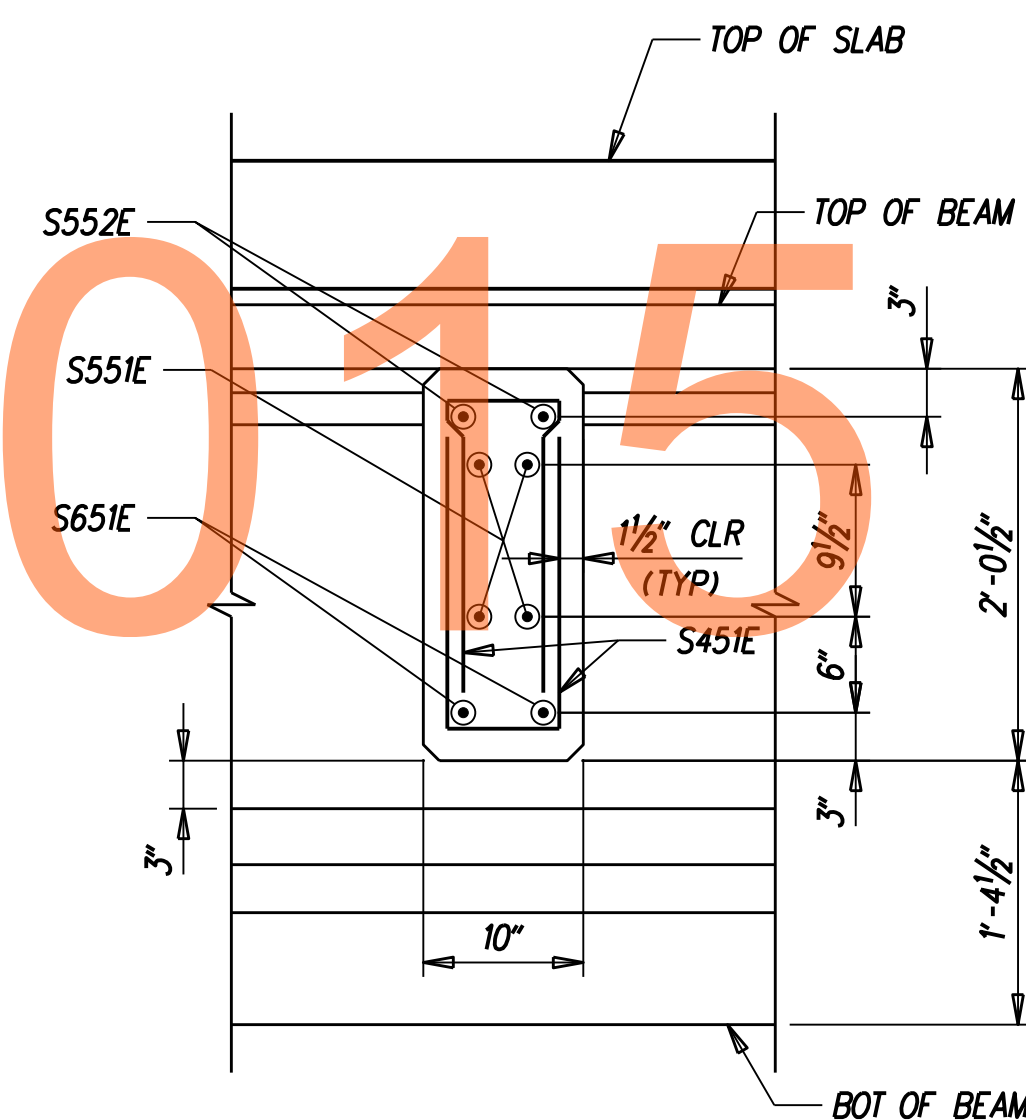
TYPICAL CONTINUITY FASCIA DIAPHRAGM ELEVATION AT PIER



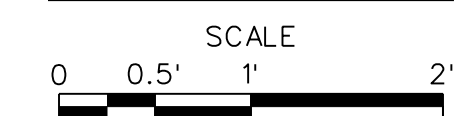
TYPICAL CONTINUITY DIAPHRAGM ELEVATION AT PIER



TYPICAL INTERMEDIATE DIAPHRAGM ELEVATION



SECTION A-A



NOTES:

FOR DOWEL DETAIL SEE PIER PLAN AND ELEVATION DRAWING

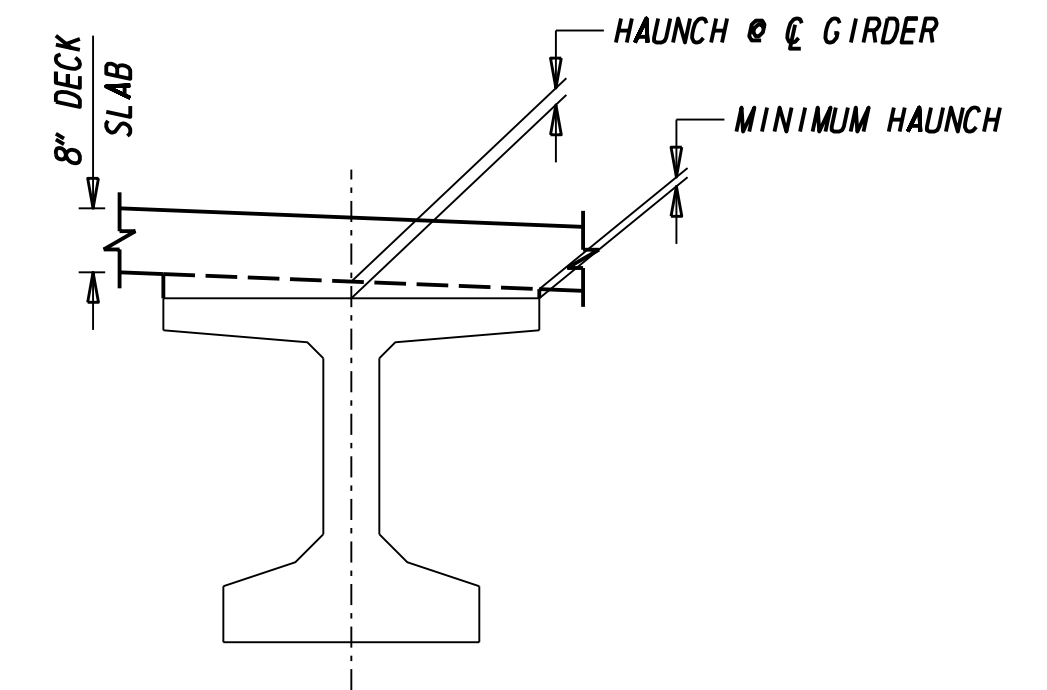
REFERENCES:

- PROJECT NOTES
- PIER PLAN AND ELEVATION
- FRAMING PLAN
- BEAM DETAILS
- REINFORCEMENT BAR SCHEDULE

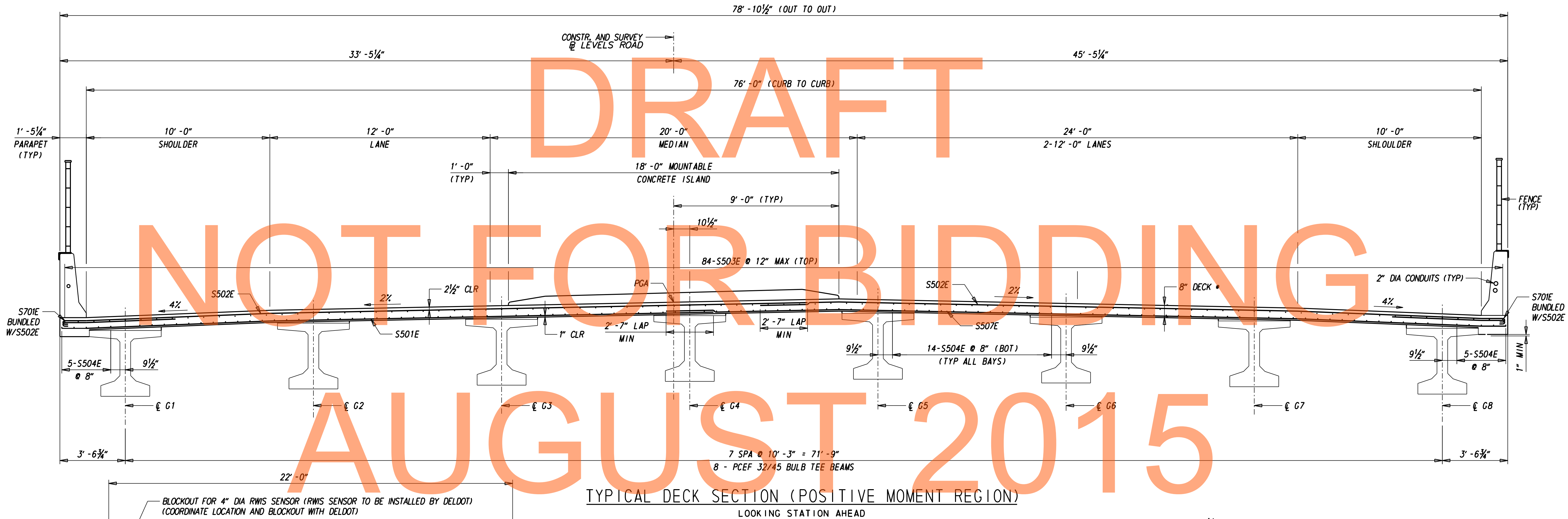
- BR1-482-03
- BR1-482-16
- BR1-482-19
- BR1-482-20
- BR1-482-33

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TABLE 1																
HAUNCH DIMENSIONS (INCHES)																
GIRDER LINE	G1		G2		G3		G4		G5		G6		G7		G8	
	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER	MINIMUM	AT C GIRDER
C BRCS ABUT 1	0.67	1.61	0.60	1.07	0.53	1.00	0.53	1.00	0.53	1.00	0.66	1.13	0.60	1.07	0.67	1.61
C PIER	0.67	1.61	0.60	1.07	0.53	1.00	0.53	1.00	0.53	1.00	0.66	1.13	0.60	1.07	0.67	1.61
C BRCS ABUT 2	0.67	1.61	0.60	1.07	0.53	1.00	0.53	1.00	0.53	1.00	0.66	1.13	0.60	1.07	0.67	1.61

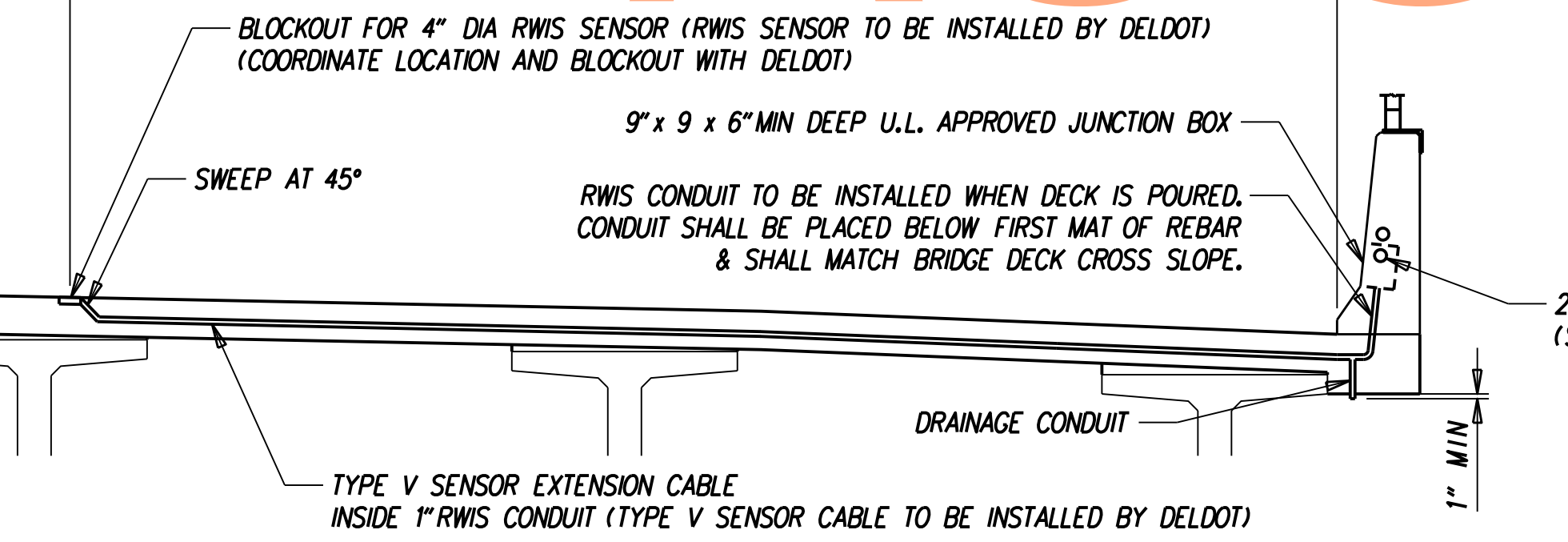


TYPICAL HAUNCH DETAIL
NTS



TYPICAL DECK SECTION (POSITIVE MOMENT REGION)
LOOKING STATION AHEAD

• INCLUDES 1/2\"/>



RWIS SENSOR DETAIL
LOOKING STATION AHEAD
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

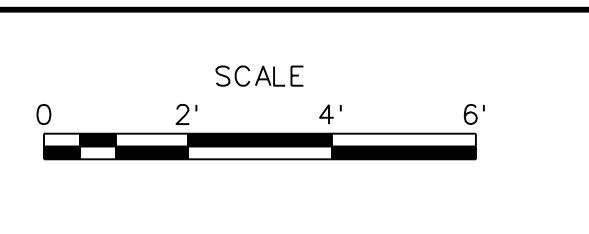
NOTE: ALL RWIS CONDUIT AND BLOCKOUT SHALL BE INCIDENTAL TO ITEM 602013

REFERENCES:

- PROJECT NOTES BR1-482-03
- FRAMING PLAN BR1-482-19
- BEAM DETAILS BR1-482-20
- DECK PLAN BR1-482-23
- CONDUIT DETAILS AND NOTES BR1-482-26
- REINFORCEMENT BAR SCHEDULE BR1-482-33

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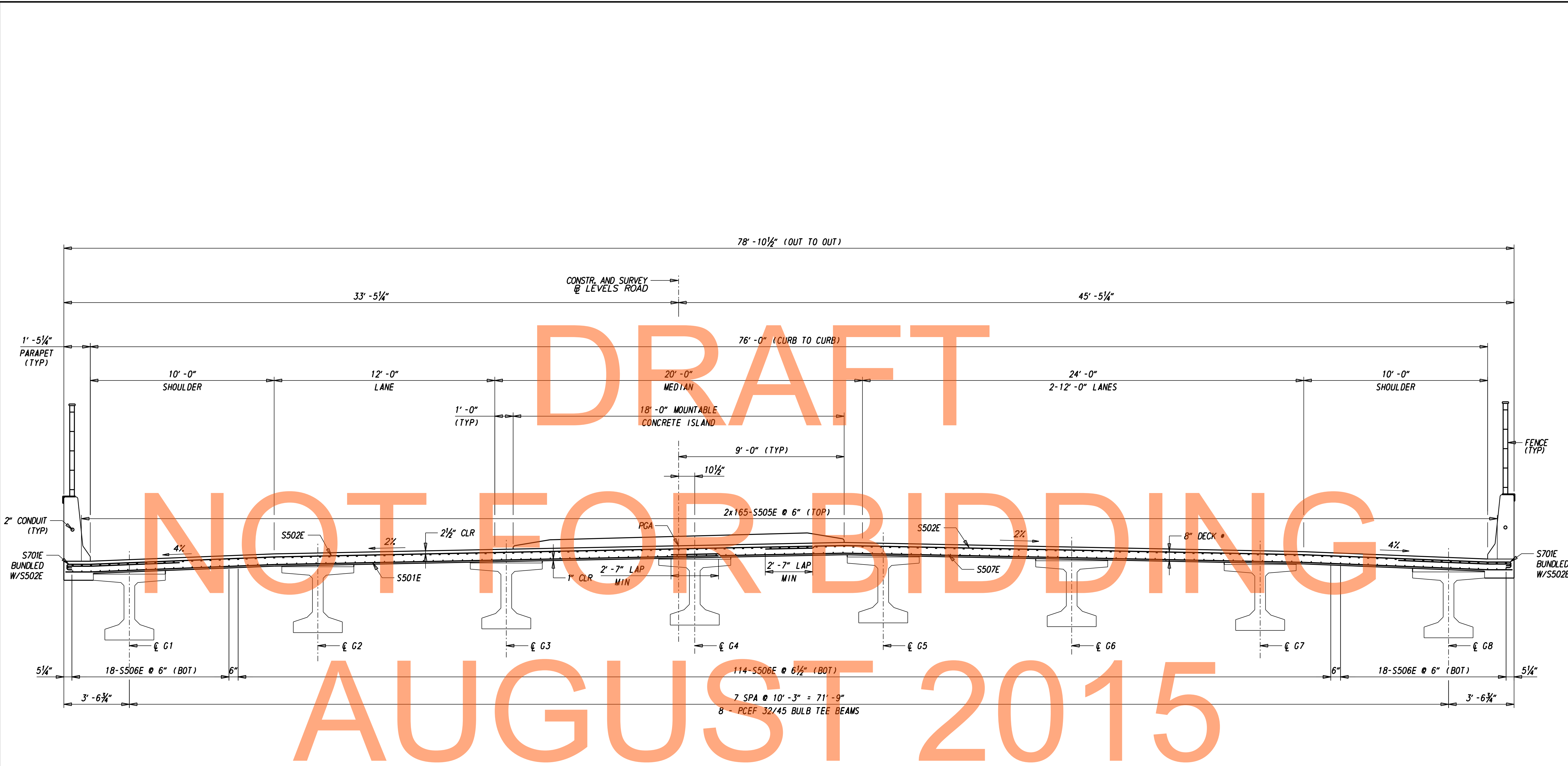
ADDENDUMS / REVISIONS



CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: SPM
	CHECKED BY: WMM/GCI

SHEET NO. 315
TOTAL SHTS. 850

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NOT FOR BIDDING
AUGUST 2015

TYPICAL DECK SECTION (NEGATIVE MOMENT REGION)
LOOKING STATION AHEAD

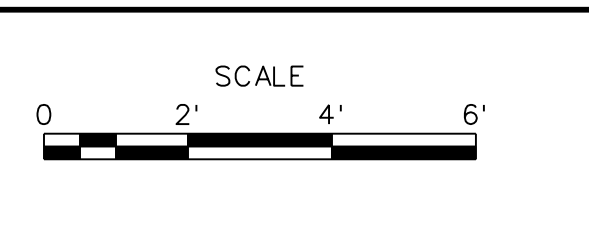
• INCLUDES 1/2" WEARING SURFACE

REFERENCES:

- | | |
|----------------------------|------------|
| PROJECT NOTES | BR1-482-03 |
| FRAMING PLAN | BR1-482-19 |
| BEAM DETAILS | BR1-482-20 |
| DECK PLAN | BR1-482-23 |
| CONDUIT DETAILS AND NOTES | BR1-482-26 |
| REINFORCEMENT BAR SCHEDULE | BR1-482-33 |



ADDENDUMS / REVISIONS	

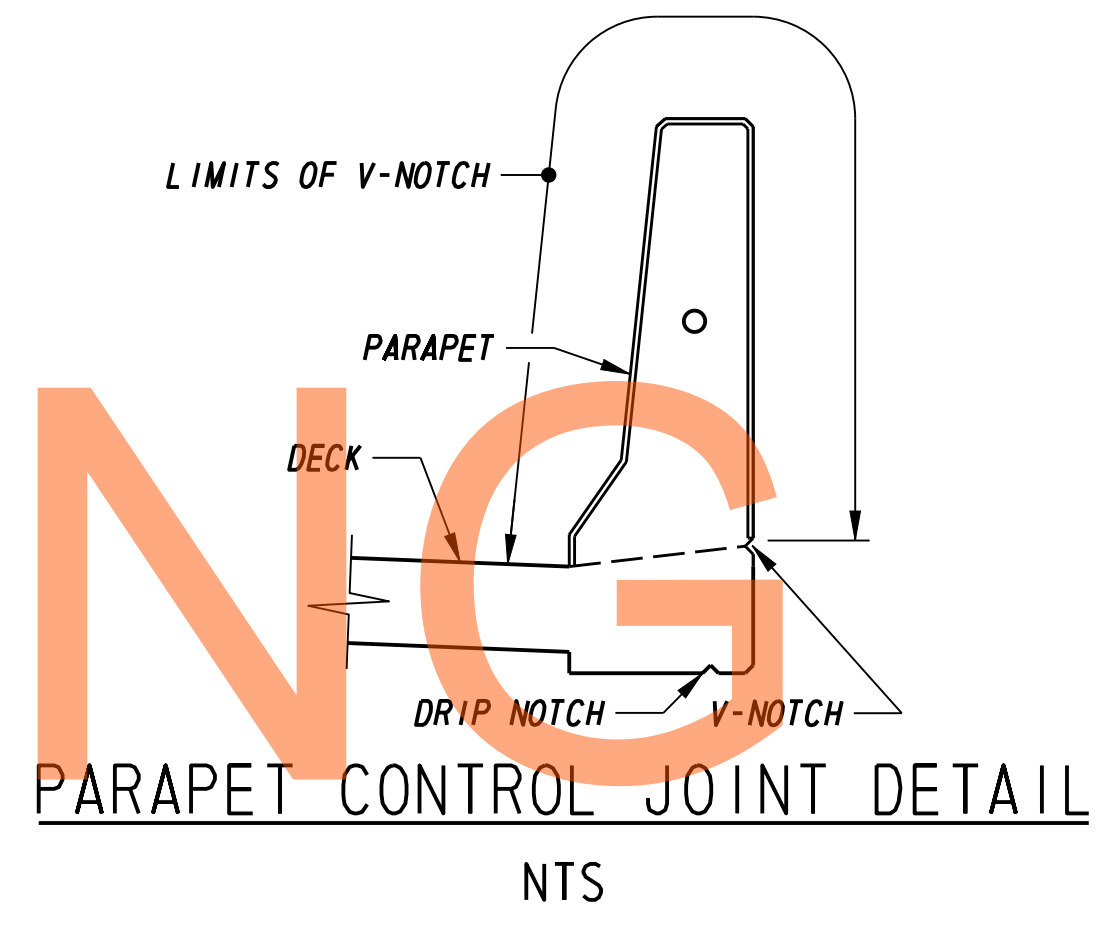
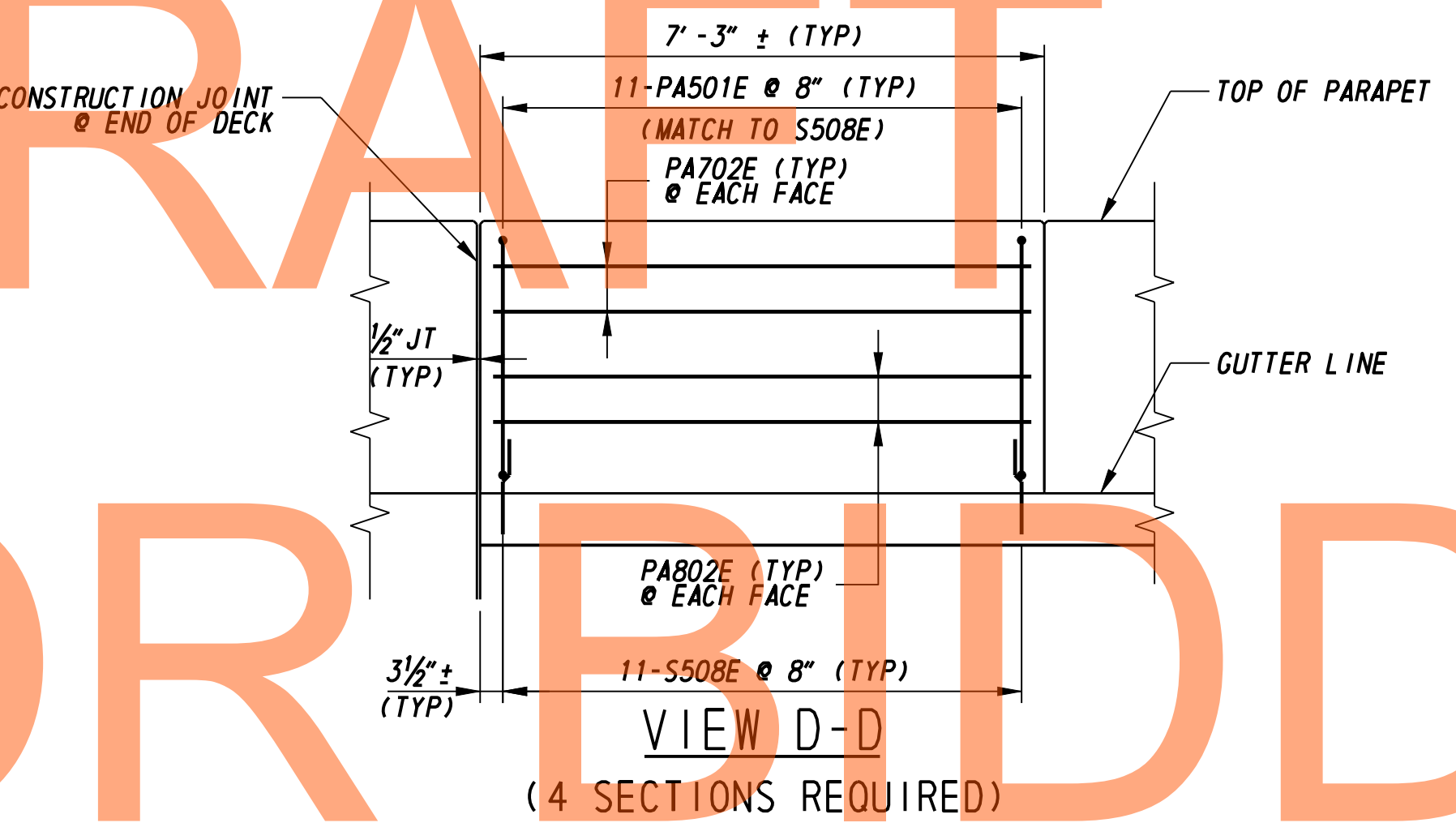
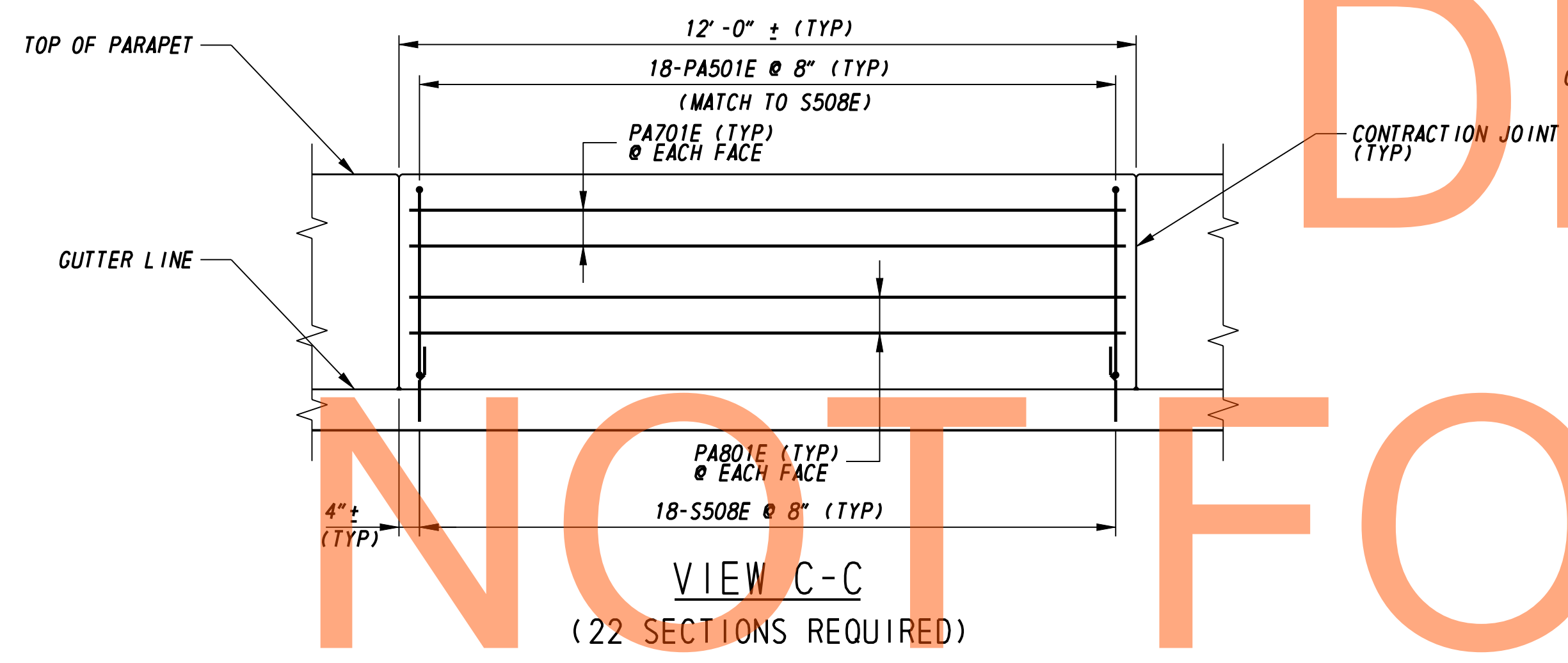
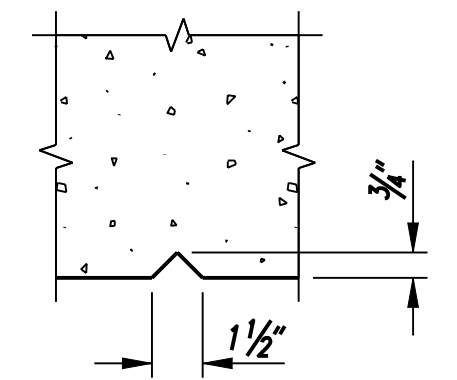
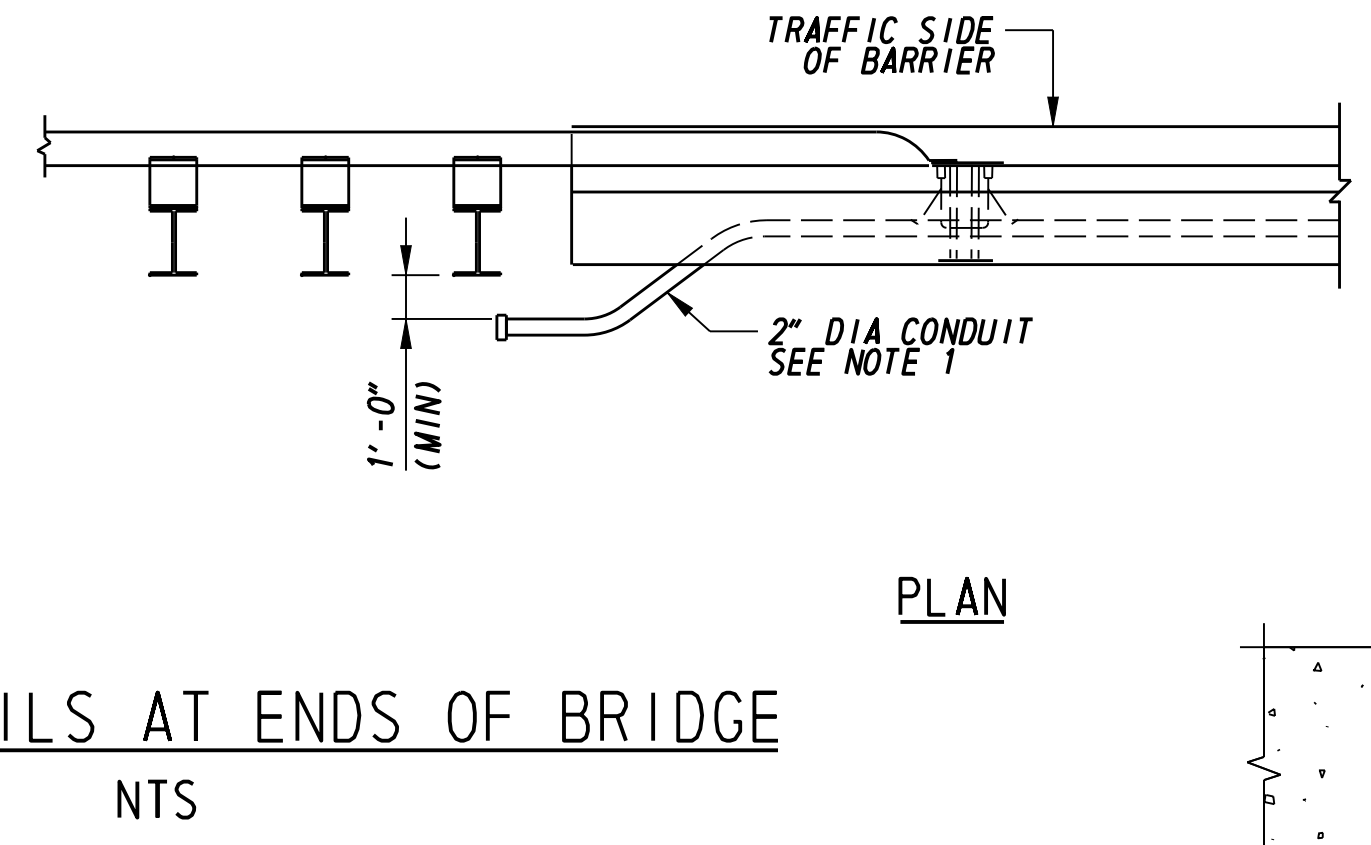
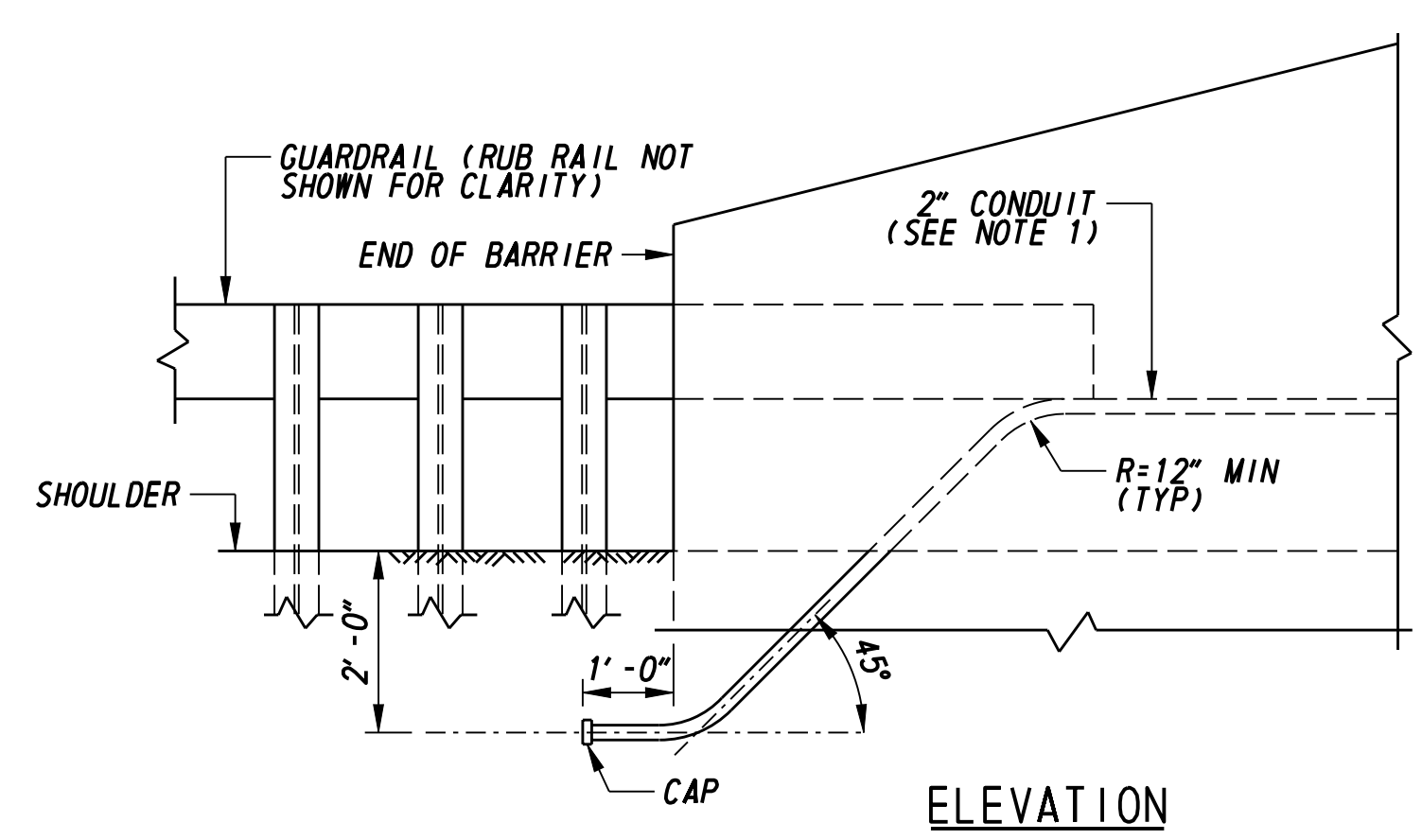
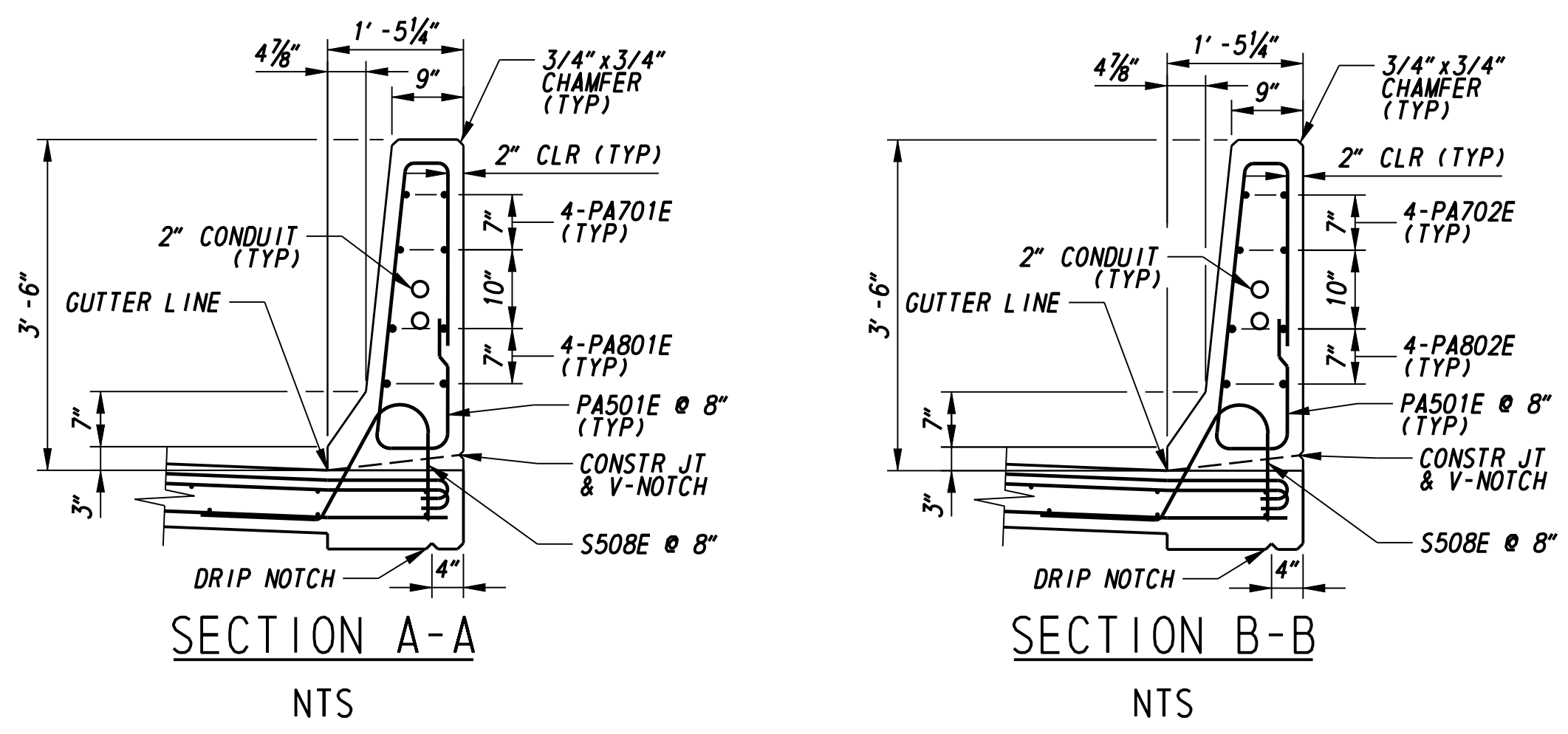


**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

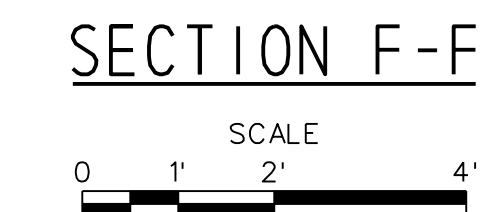
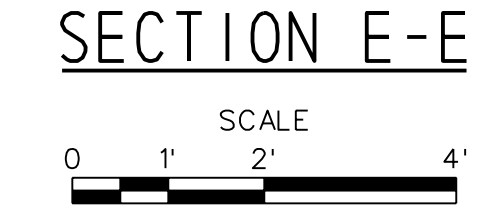
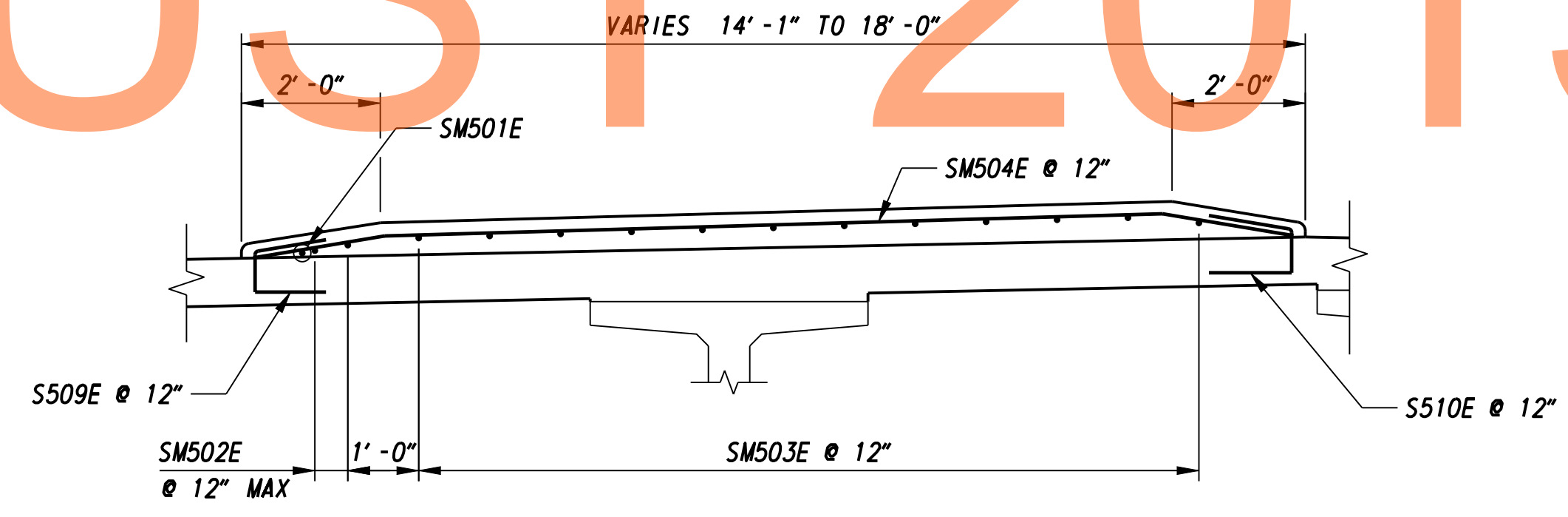
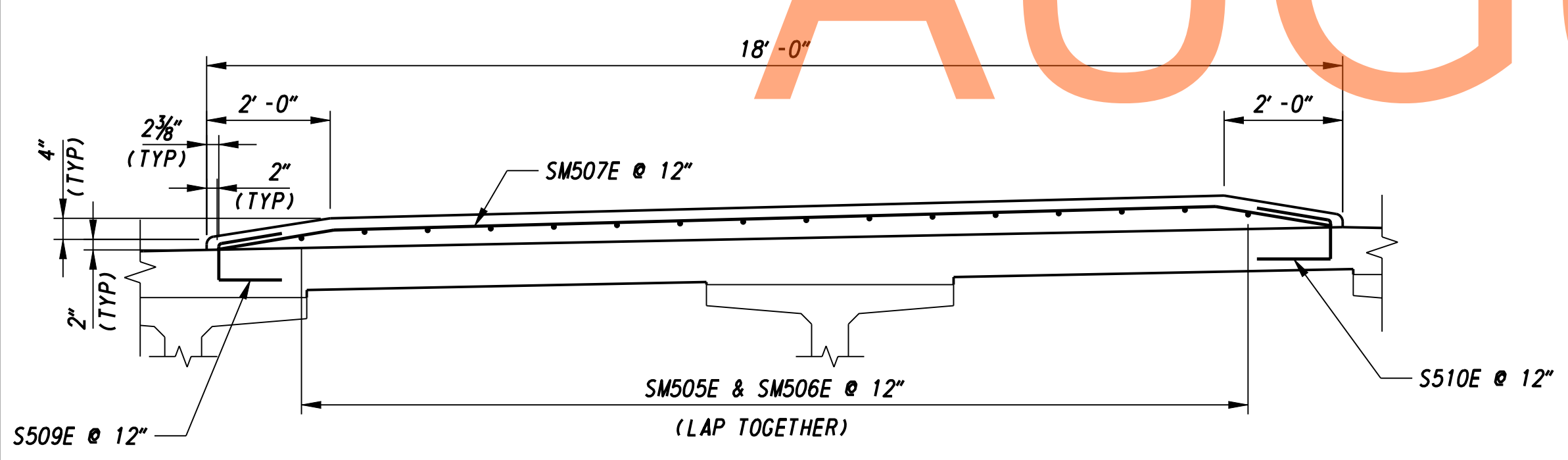
CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	SPM
COUNTY	CHECKED BY:	WMM/GCI
NEW CASTLE		

DECK SECTION - 2	SHEET NO.	316
	TOTAL SHTS.	840

BR1-482-25



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AUGUST 2015



- NOTES:**
- CONDUIT TO EXIT BARRIER ON OUTSIDE OF GUARDRAIL POST LINE TO AVOID DAMAGE TO CONDUIT.
 - PROVIDE GALVANIZED STEEL OR NON-METALLIC EXPANSION AND DEFLECTION JOINT FITTINGS THROUGH JOINTS AT ENDS OF BRIDGE PARAPET. 2" CONDUITS, FITTINGS, JUNCTION BOX, EXPANSION AND DEFLECTION JOINT FITTINGS, SHALL BE INCIDENTAL TO ITEM 602017. MATERIAL AND CONSTRUCTION METHODS SHALL MEET THE REQUIREMENTS AS APPLICABLE OF SECTION 745, AND BE APPROVED BY THE ENGINEER. PROVIDE SLEEVE OF SUFFICIENT LENGTH TO ACCOMMODATE MAXIMUM EXPANSION AND CONTRACTION OF EXPANSION JOINTS.
 - 1" CONDUIT, DRAINAGE CONDUIT AND FITTINGS SHALL BE INCIDENTAL TO ITEM 602013.
 - SLIP FORMING OF CAST IN PLACE CONCRETE PARAPET WILL NOT BE ALLOWED ON THIS PROJECT.
 - REFER TO DECK PLAN AND POURING SEQUENCE FOR SECTION AND VIEW MARKER LOCATIONS.

- REFERENCES:**
- | | |
|--------------------------------|------------|
| PROJECT NOTES | BR1-482-03 |
| DECK PLAN AND POURING SEQUENCE | BR1-482-23 |
| RE INFORCEMENT BAR SCHEDULE | BR1-482-33 |

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	ADDENDUMS / REVISIONS	<p>US 301 MARYLAND STATE LINE TO LEVELS ROAD</p>	CONTRACT T200811301	BRIDGE NO. 1-482	<p>DECK AND PARAPET DETAILS</p>	SHEET NO. 317
			COUNTY NEW CASTLE	DESIGNED BY: CNN		TOTAL SHTS. 850
				CHECKED BY: WMM/GCI		

BR1-482-26

FINISHED GRADE ELEVATIONS							
STATION	(A) (GUTTER)	(B) (LANE)	(C) (ISLAND)	(D) (PGA)	(E) (ISLAND)	(F) (LANE)	(G) (GUTTER)
1296+00.00	81.42	81.82	82.08	82.26	82.44	81.94	81.54
1296+10.00	81.57	81.97	82.23	82.41	82.59	82.09	81.69
1296+20.00	81.69	82.09	82.35	82.53	82.71	82.21	81.81
1296+30.00	81.79	82.19	82.45	82.63	82.81	82.31	81.91
1296+40.00	81.87	82.27	82.53	82.71	82.89	82.39	81.99
1296+50.00	81.93	82.33	82.59	82.77	82.95	82.45	82.05
1296+60.00	81.97	82.37	82.63	82.81	82.99	82.49	82.09
1296+70.00	81.98	82.38	82.64	82.82	83.00	82.50	82.10
1296+80.00	81.98	82.38	82.64	82.82	83.00	82.50	82.10
1296+90.00	81.95	82.35	82.61	82.79	82.97	82.47	82.07
1297+00.00	81.91	82.31	82.57	82.75	82.93	82.43	82.03
1297+10.00	81.84	82.24	82.50	82.68	82.86	82.36	81.96
1297+20.00	81.75	82.15	82.41	82.59	82.77	82.27	81.87
1297+30.00	81.65	82.05	82.31	82.49	82.67	82.17	81.77
1297+40.00	81.52	81.92	82.18	82.36	82.54	82.04	81.64

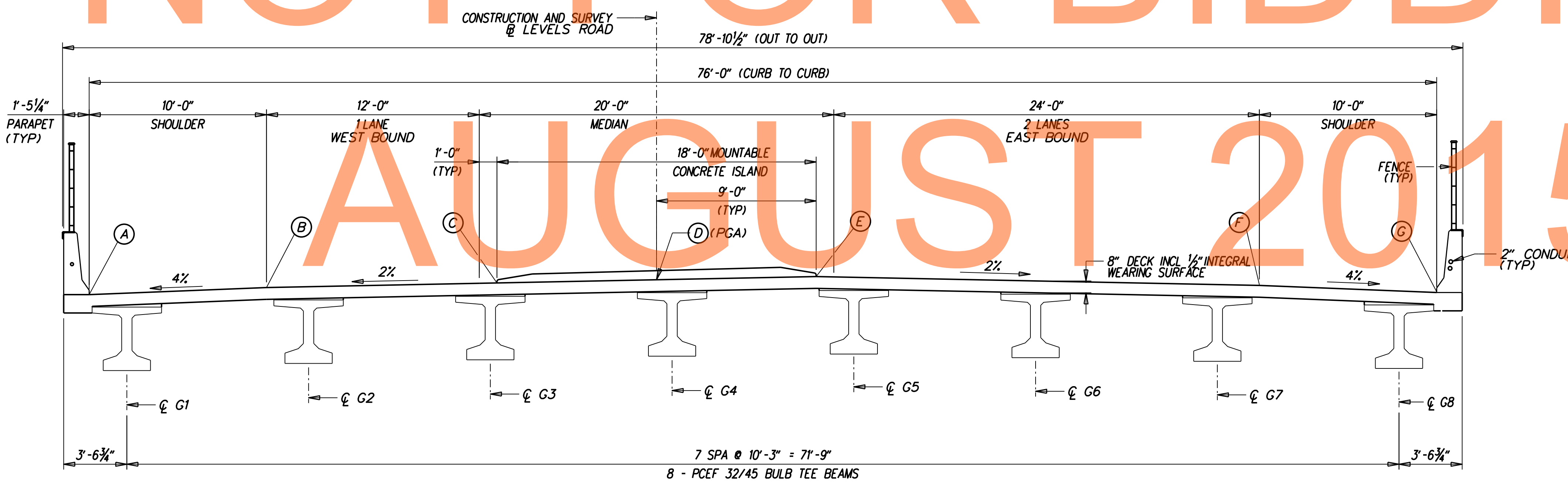
FINISHED DECK ELEVATIONS OVER C BEAM									
LOCATION	STATION	G1	G2	G3	G4	G5	G6	G7	G8
C BRG ABUT 1									
0.1 L	1295+95.73	81.44	81.81	82.01	82.22	82.34	82.13	81.93	81.56
0.2 L	1296+02.83	81.55	81.92	82.12	82.33	82.45	82.24	82.04	81.67
0.3 L	1296+09.93	81.65	82.02	82.22	82.43	82.55	82.34	82.14	81.77
0.4 L	1296+17.03	81.74	82.10	82.31	82.51	82.63	82.43	82.22	81.86
0.5 L	1296+24.13	81.82	82.18	82.39	82.59	82.71	82.51	82.30	81.94
0.6 L	1296+31.23	81.89	82.25	82.45	82.66	82.78	82.57	82.37	82.01
0.7 L	1296+38.33	81.94	82.31	82.51	82.72	82.84	82.63	82.43	82.06
0.8 L	1296+45.43	81.99	82.35	82.56	82.76	82.88	82.68	82.47	82.11
0.9 L	1296+52.53	82.03	82.39	82.59	82.80	82.92	82.71	82.51	82.15
0.9 L	1296+59.63	82.05	82.41	82.62	82.82	82.94	82.74	82.53	82.17
C BRG PIER (BACK)									
0.1 L	1296+66.73	82.07	82.43	82.63	82.84	82.96	82.75	82.55	82.19
C BRG PIER (AHD)									
0.1 L	1296+68.73	82.07	82.43	82.64	82.84	82.96	82.76	82.55	82.19
0.2 L	1296+75.83	82.07	82.43	82.64	82.84	82.96	82.76	82.55	82.19
0.3 L	1296+82.93	82.06	82.42	82.63	82.83	82.95	82.75	82.54	82.18
0.4 L	1296+90.03	82.04	82.40	82.61	82.81	82.93	82.73	82.52	82.16
0.5 L	1296+97.13	82.01	82.37	82.58	82.78	82.90	82.70	82.49	82.13
0.6 L	1297+04.23	81.97	82.33	82.54	82.74	82.86	82.66	82.45	82.09
0.7 L	1297+11.33	81.92	82.28	82.48	82.69	82.81	82.60	82.40	82.04
0.8 L	1297+18.43	81.86	82.22	82.42	82.63	82.75	82.54	82.34	81.98
0.9 L	1297+25.53	81.78	82.15	82.35	82.56	82.68	82.47	82.27	81.90
0.9 L	1297+32.63	81.70	82.06	82.27	82.47	82.59	82.39	82.18	81.82
C BRG ABUT 2									
0.1 L	1297+39.73	81.61	81.97	82.17	82.38	82.50	82.29	82.09	81.73

DRAFT

NOT FOR BIDDING

AUGUST 2015

FINISHED DECK ELEVATIONS OVER C BRG			
LOCATION	STATION	OFFSET	ELEV
C BRG ABUT 1			
(A) (GUTTER)	1295+95.73	-32.00	81.36
(B) (LANE)	1295+95.73	-22.00	81.76
(C) (ISLAND)	1295+95.73	-9.00	82.02
(D) (PGL)	1295+95.73	0.00	82.20
(E) (ISLAND)	1295+95.73	9.00	82.38
(F) (LANE)	1295+95.73	34.00	81.88
(G) (GUTTER)	1295+95.73	44.00	81.48
C BRG PIER (BACK)			
(A) (GUTTER)	1296+66.73	-32.00	81.98
(B) (LANE)	1296+66.73	-22.00	82.38
(C) (ISLAND)	1296+66.73	-9.00	82.64
(D) (PGL)	1296+66.73	0.00	82.82
(E) (ISLAND)	1296+66.73	9.00	83.00
(F) (LANE)	1296+66.73	34.00	82.50
(G) (GUTTER)	1296+66.73	44.00	82.10
C BRG PIER (AHD)			
(A) (GUTTER)	1296+68.73	-32.00	81.98
(B) (LANE)	1296+68.73	-22.00	82.38
(C) (ISLAND)	1296+68.73	-9.00	82.64
(D) (PGL)	1296+68.73	0.00	82.82
(E) (ISLAND)	1296+68.73	9.00	83.00
(F) (LANE)	1296+68.73	34.00	82.50
(G) (GUTTER)	1296+68.73	44.00	82.10
C BRG ABUT 2			
(A) (GUTTER)	1297+39.73	-32.00	81.52
(B) (LANE)	1297+39.73	-22.00	81.92
(C) (ISLAND)	1297+39.73	-9.00	82.18
(D) (PGL)	1297+39.73	0.00	82.36
(E) (ISLAND)	1297+39.73	9.00	82.54
(F) (LANE)	1297+39.73	34.00	82.04
(G) (GUTTER)	1297+39.73	44.00	81.64



TYPICAL DECK SECTION
LOOKING STATION AHEAD

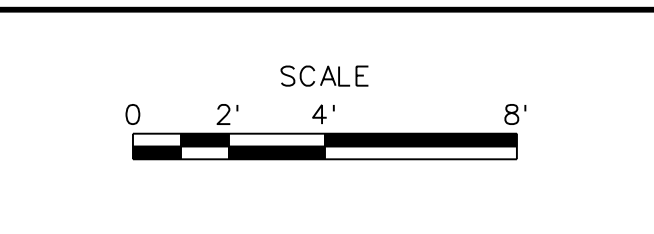
REFERENCES:
PROJECT NOTES BR1-482-03
FRAMING PLAN BR1-482-19
DECK PLAN & POURING SEQUENCE BR1-482-23

BR1-482-27

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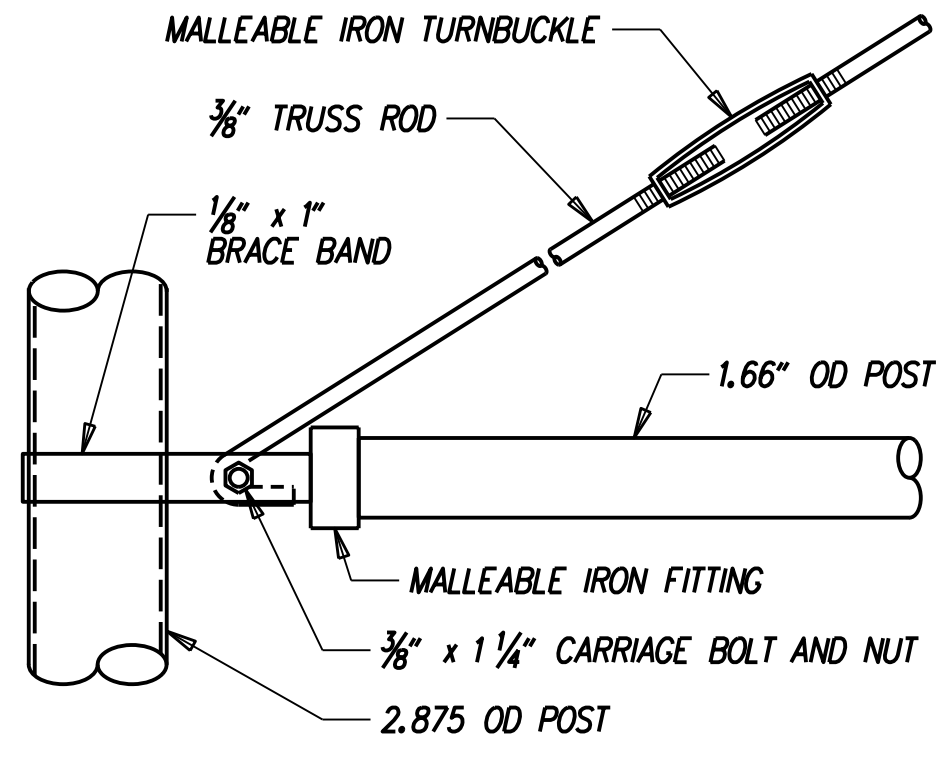
ADDENDUMS / REVISIONS	



US 301
MARYLAND STATE LINE
TO LEVELS ROAD

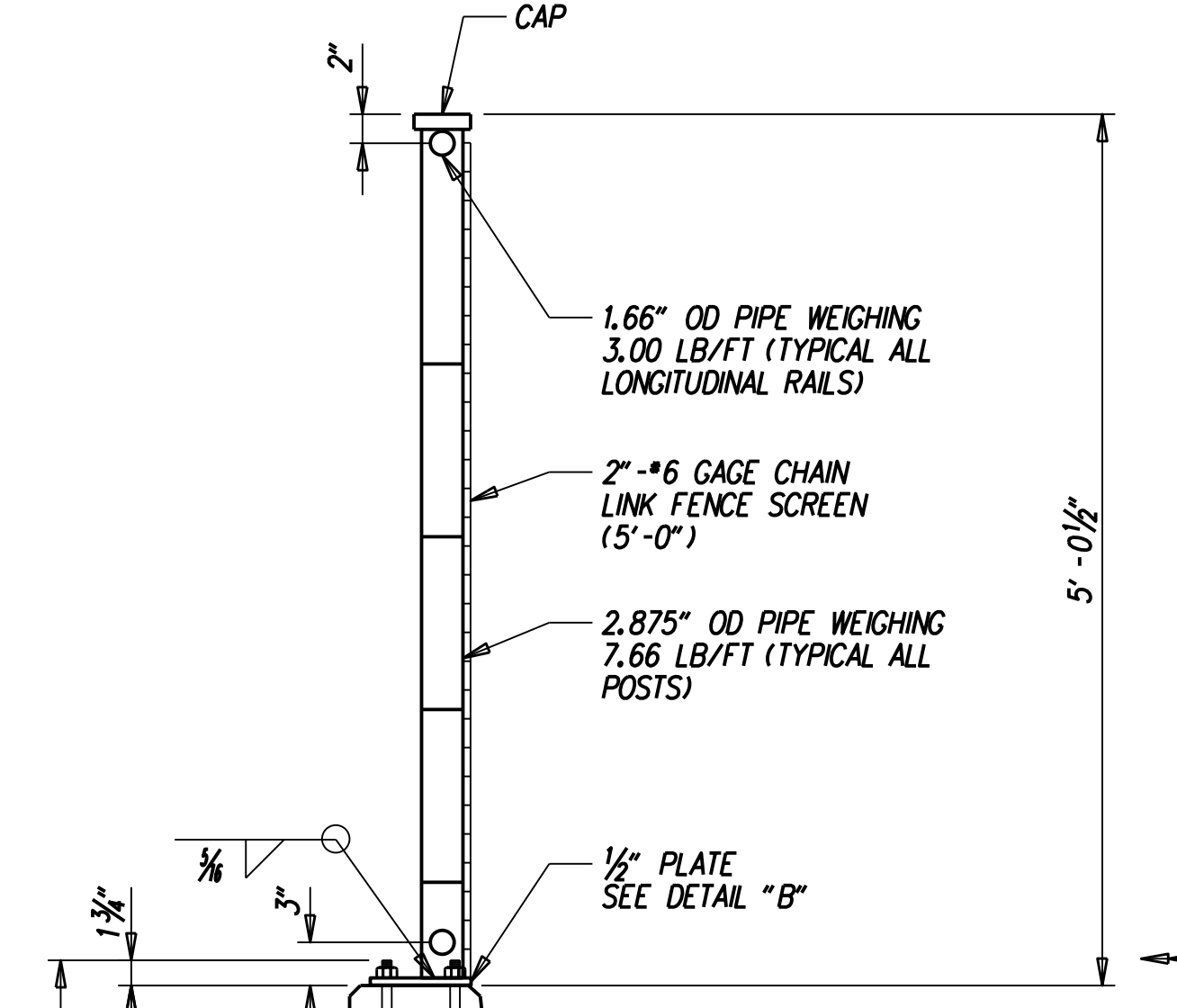
CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	ADL
COUNTY	CHECKED BY:	GCI
NEW CASTLE		

DECK ELEVATIONS	
SHEET NO.	318
TOTAL SHTS.	850



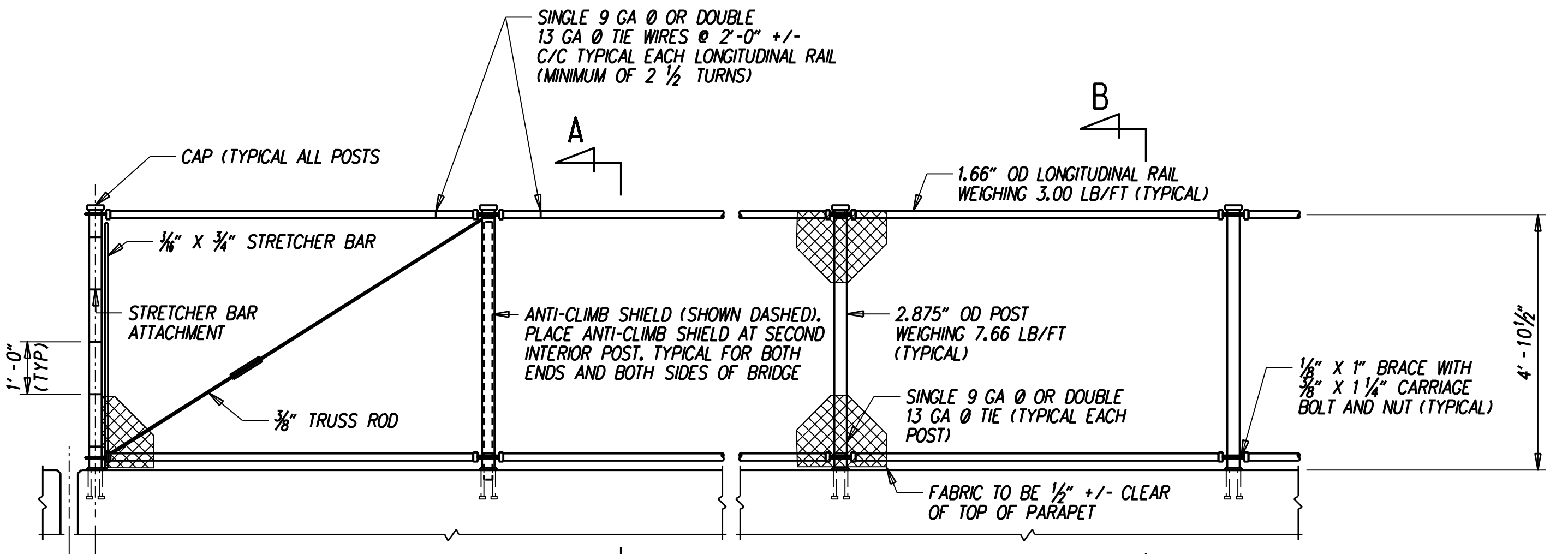
TRUSS ROD ATTACHMENT

NTS



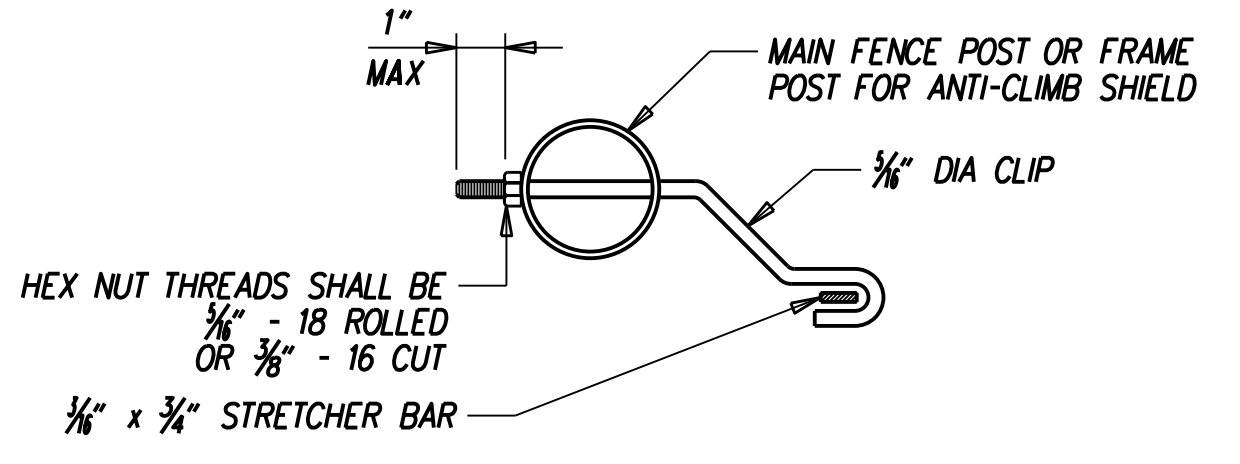
SECTION B-B

NTS



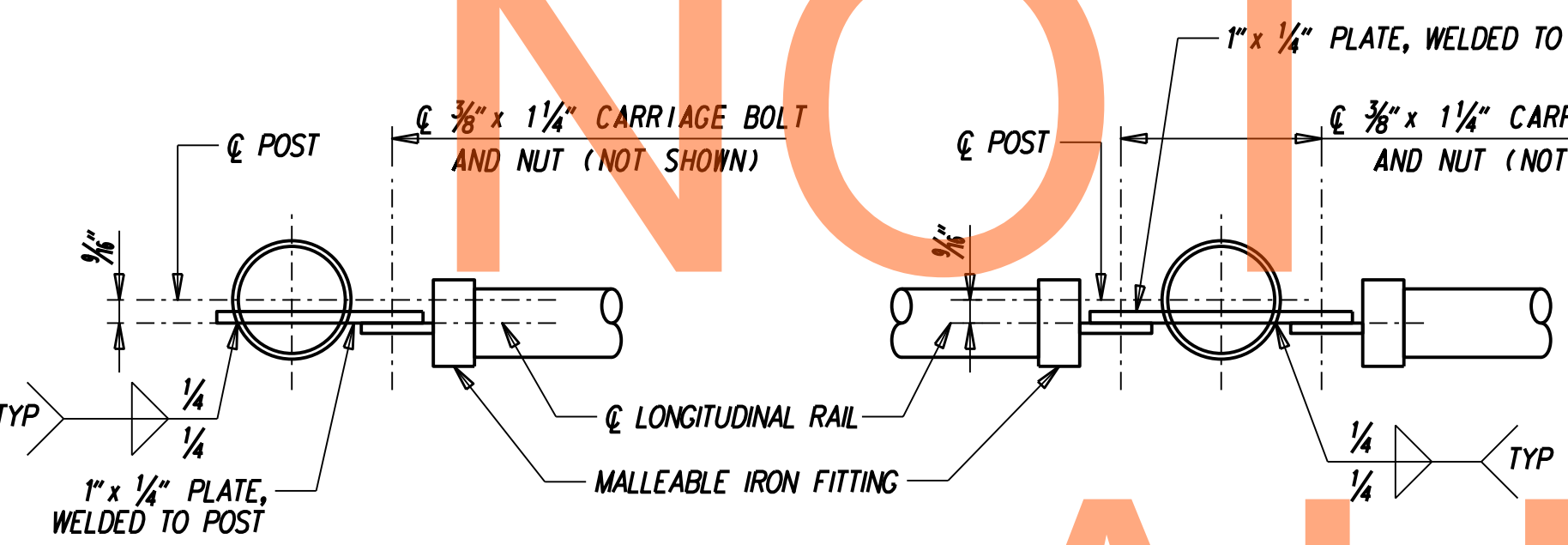
FENCE ELEVATION

NTS



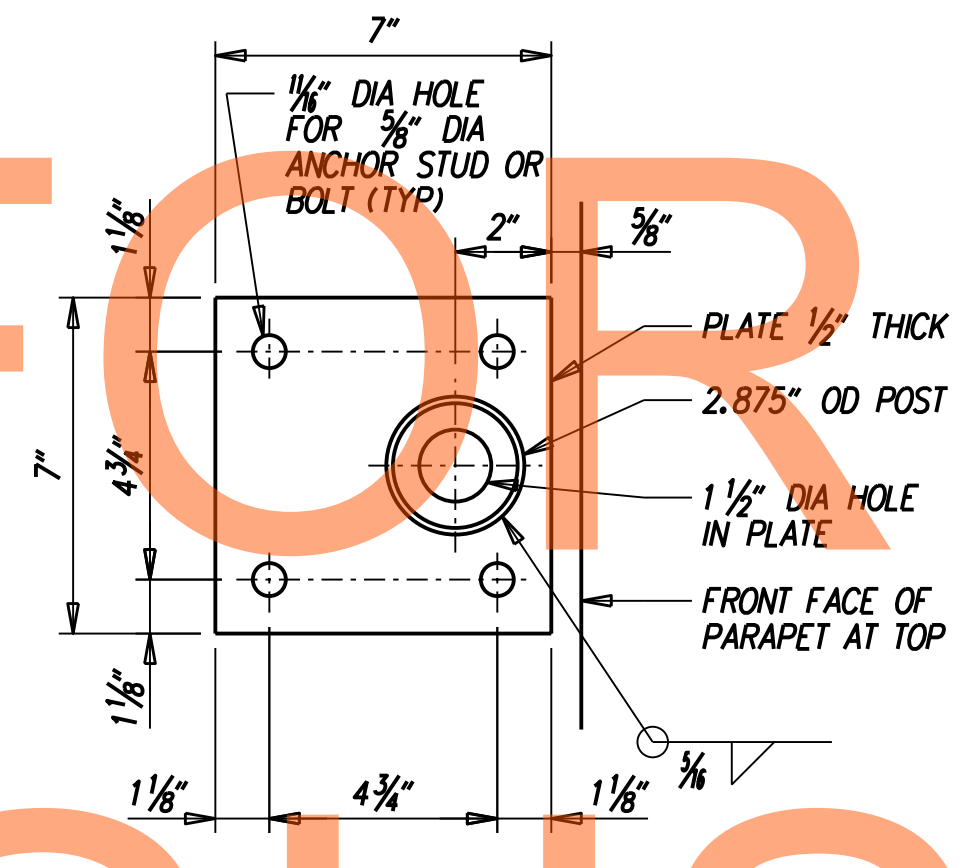
STRETCHER BAR ATTACHMENT

NTS



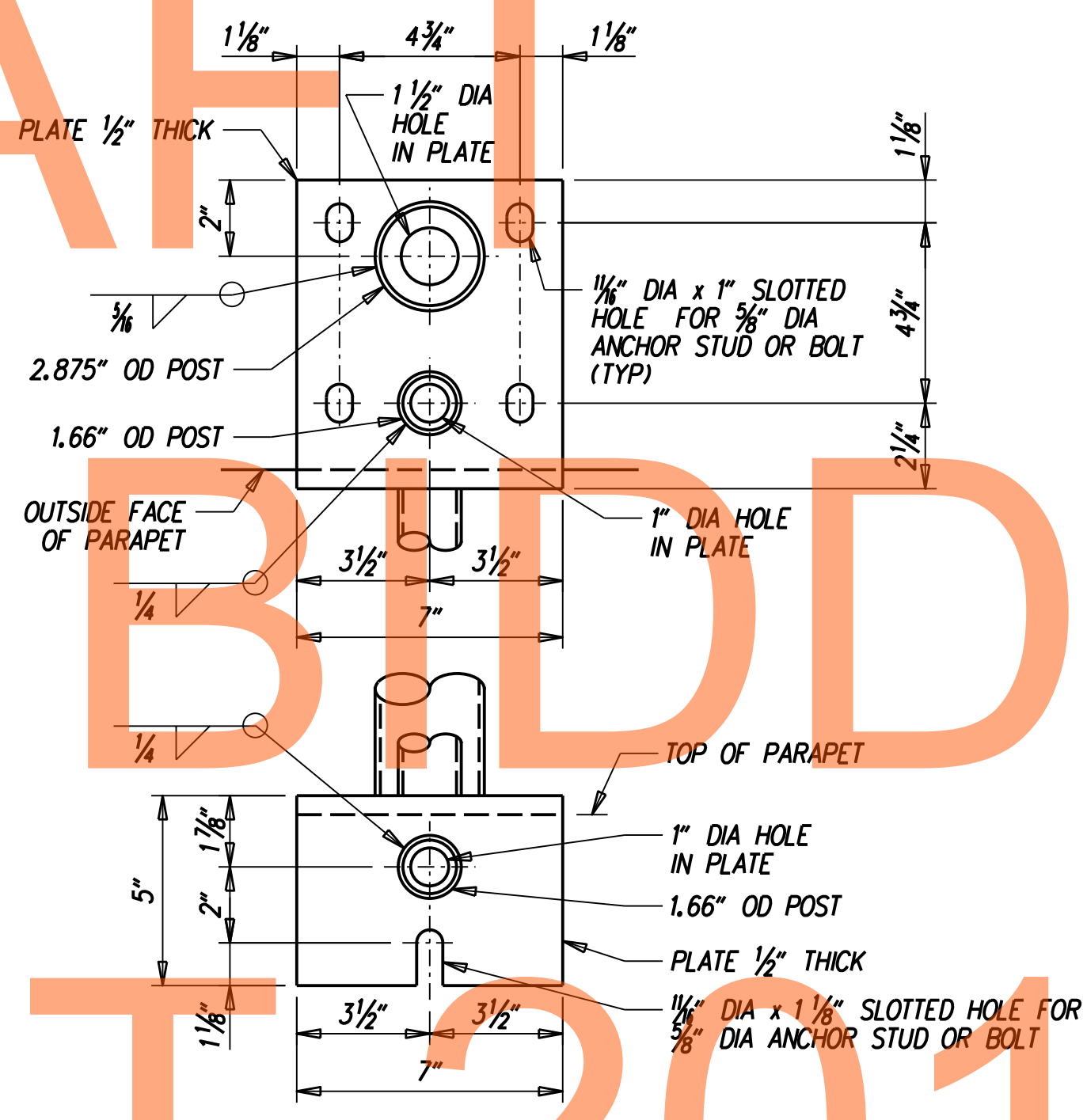
TOP LONGITUDINAL RAIL-POST ATTACHMENT

NTS



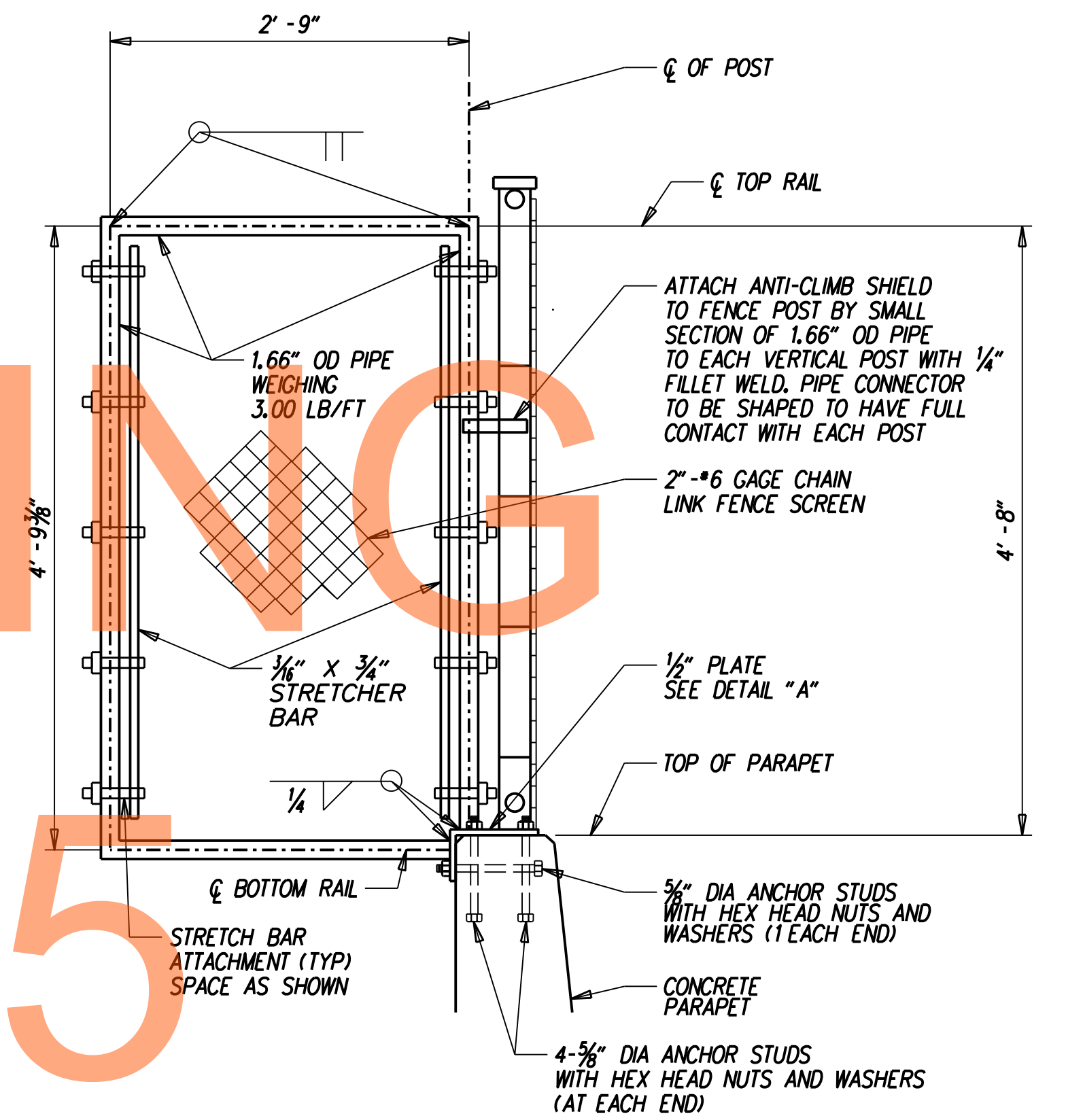
DETAIL "B"

NTS



DETAIL "A"

NTS



SECTION A-A

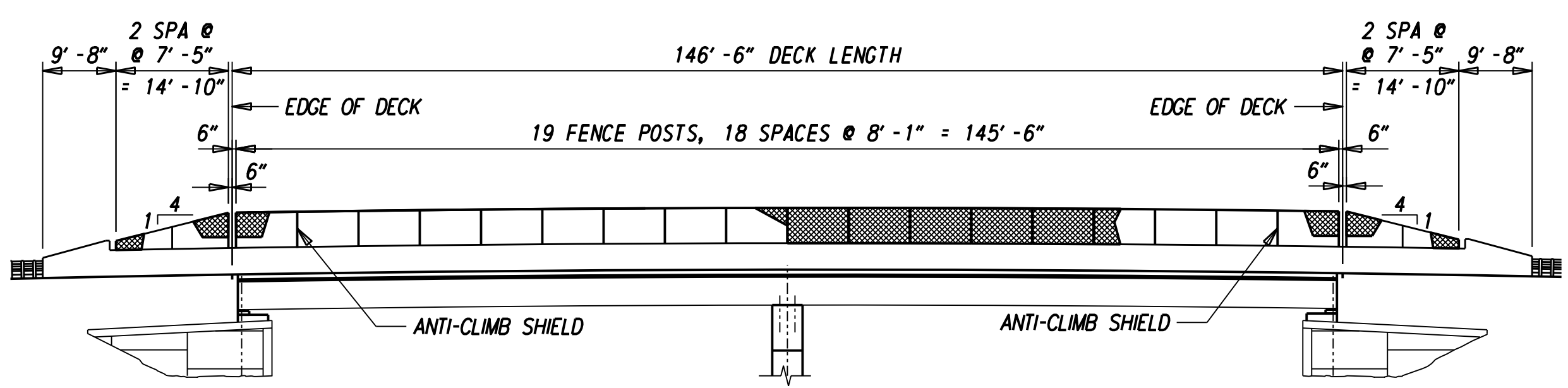
NTS

NOTES:

- MATERIALS:**
 CHAIN-LINK FENCE SHALL BE EITHER GALVANIZED STEEL FABRIC FENCE OR ALUMINUM-COATED STEEL FABRIC FENCE, CONFORMING TO THE APPROPRIATE REQUIREMENTS OF AASHTO M 181, SECTION 727.11B OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.
 TUBULAR STEEL POSTS, BRACES, FITTINGS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 281 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111, SECTION 727 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.
 ALL BASE PLATES SHALL BE STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M 270, GRADE 36.
 MATERIAL FOR ANCHOR STUDS OR ANCHOR BOLTS SHALL MEET ASTM A276, TYPE 430 OR TYPE 304 STAINLESS STEEL ANNEALED, HOT-FINISHED, ULTIMATE STRENGTH 70,000 PSI MIN., 20% MIN. ELONGATION. THREADS MAY BE ROLLED OR CUT.
- WORKING DRAWINGS:**
 CONTRACTOR SHALL SUBMIT WORKING DRAWINGS FOR THE FENCE IN ACCORDANCE WITH PROJECT SPECIAL PROVISIONS.
- CONSTRUCTION REQUIREMENTS:**
 ALL LONGITUDINAL RAILS SHALL BE PARALLEL TO TOP OF PARAPET.
 ALL POSTS SHALL BE SET NORMAL TO TOP OF PARAPET.
 THE CHAIN LINK FENCE SHALL BE TRUE TO LINE, TAUT, TIGHT FIT TO TOP OF PARAPET (1/2" MAXIMUM GAP) AND SHALL COMPLY WITH THE BEST PRACTICE FOR FENCE CONSTRUCTION OF THIS TYPE.
 POST AND RAILS SHALL BE PERMANENTLY POSITIONED BEFORE FABRIC IS PLACED.
 ANY DEFECTS UNCOVERED BY THE INSPECTION OF WELDS ON BASE PLATES AND POLES SHALL BE REPAIRED OR REPLACED BY NEW MEMBERS AT THE SOLE EXPENSE OF THE CONTRACTOR.
- PAYMENT:**
 THIS CHAIN LINK FENCE INCLUDING ANTI-CLIMB SHIELD ITEMS WILL BE PAID UNDER ITEM 727507-BRIDGE SAFETY FENCE.

REFERENCES:

- PROJECT NOTES BR1-482-03
 GEOMETRIC LAYOUT BR1-482-04
 DECK PLAN BR1-482-23
 DECK SECTIONS BR1-482-24 AND BR1-482-25
 PARAPET DETAILS BR1-482-26



FENCE LOCATION ELEVATION

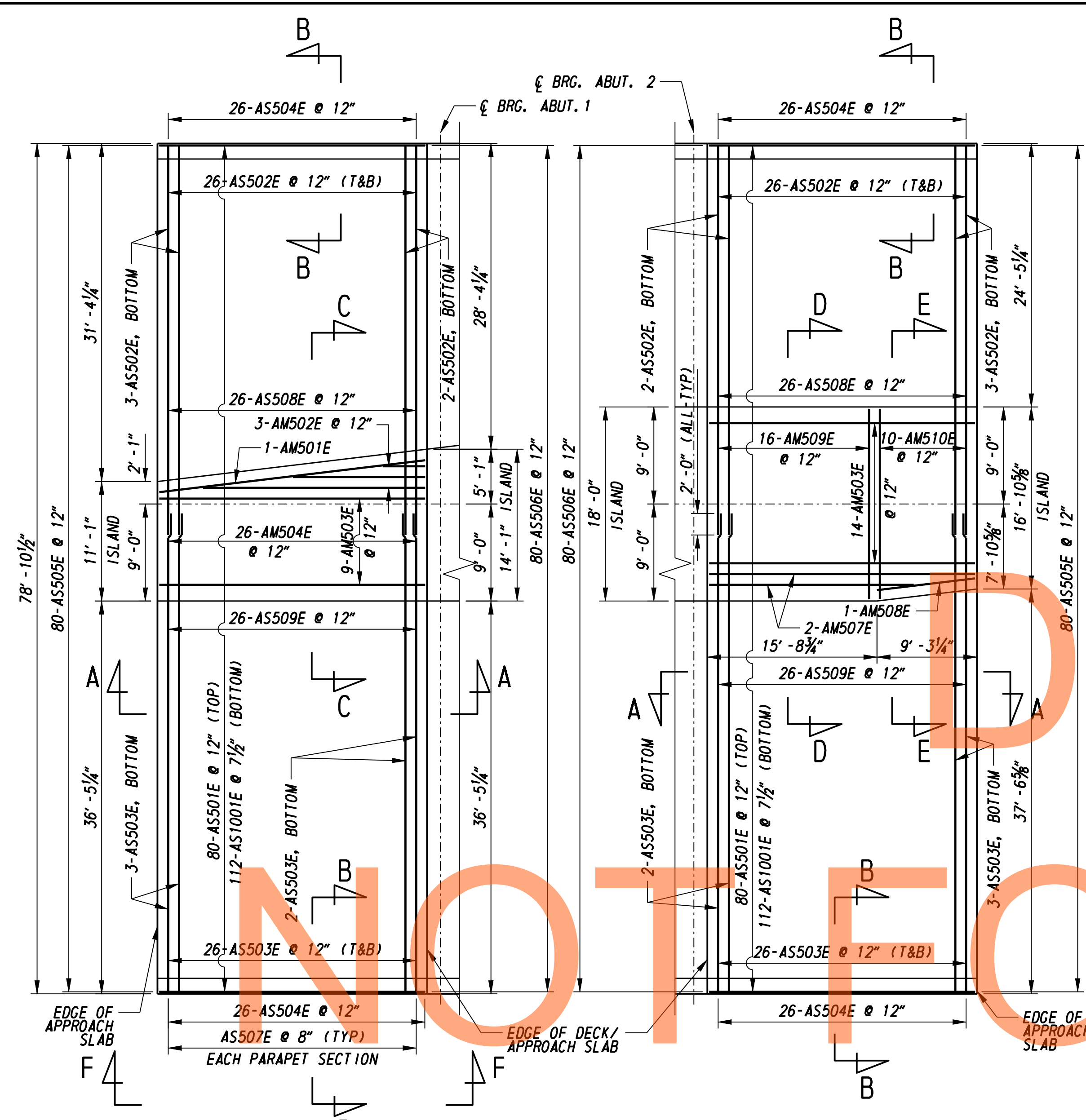
NTS

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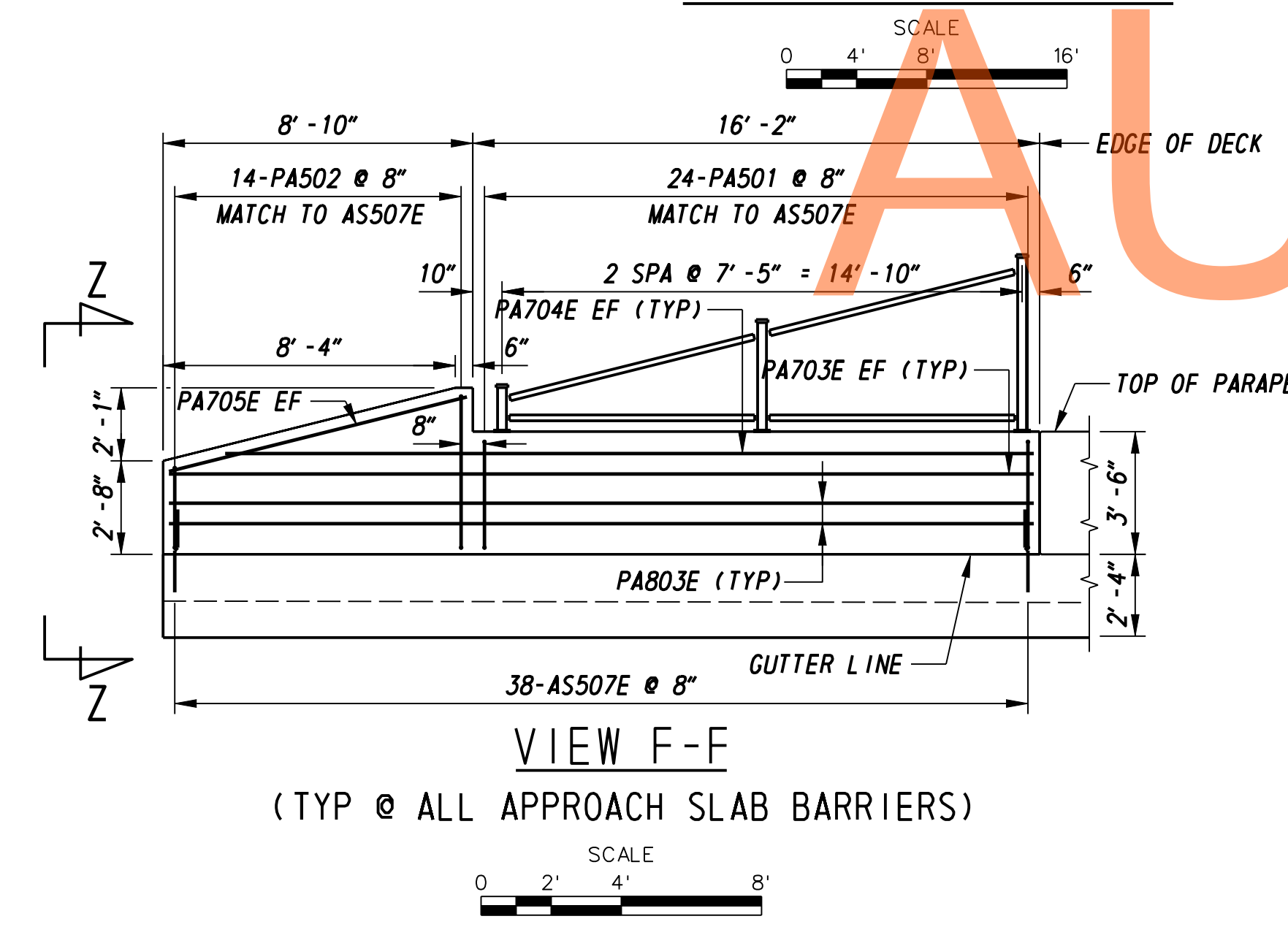
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	ADL
COUNTY	CHECKED BY:	GCI
NEW CASTLE		

SHEET NO.	319
TOTAL SHTS.	850



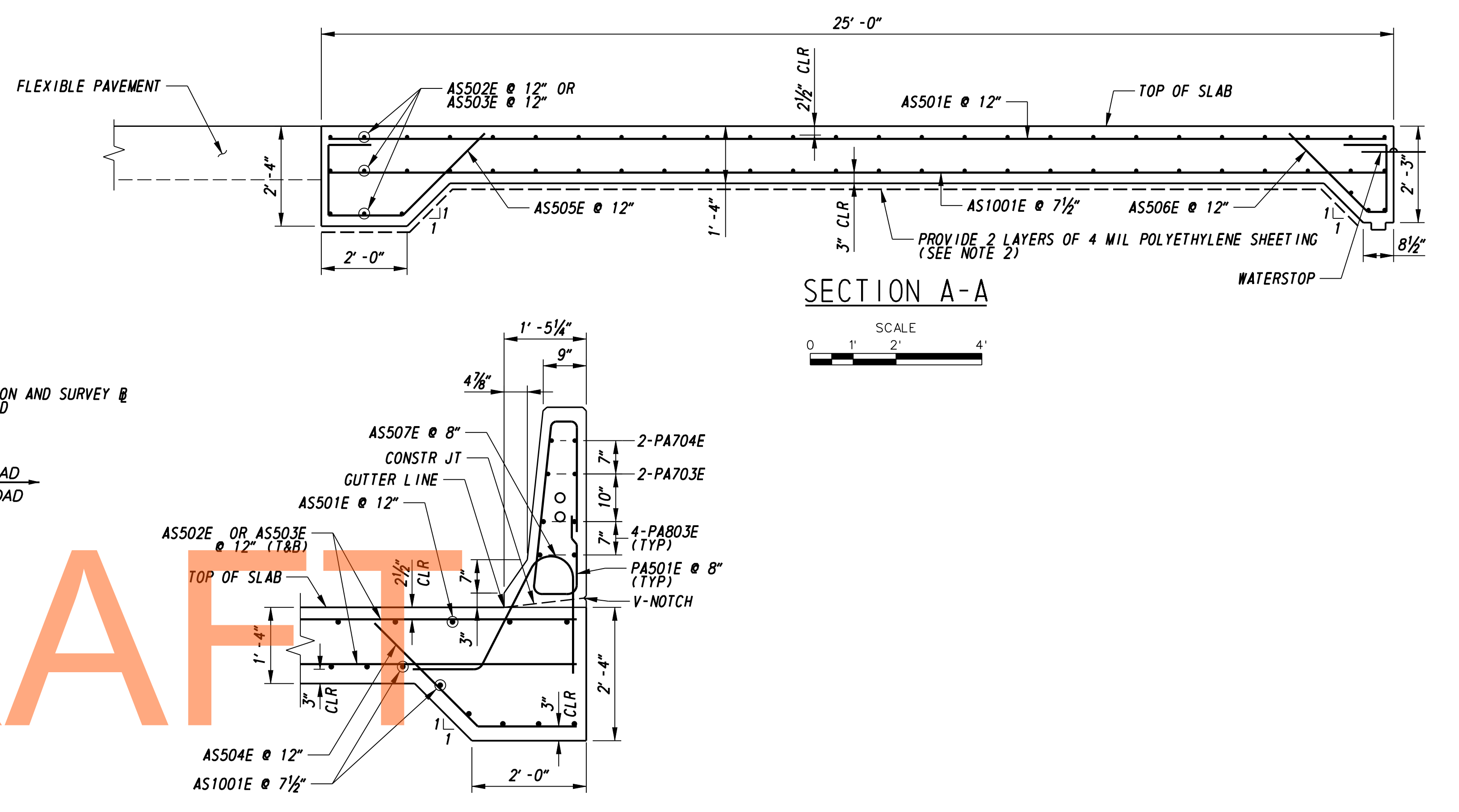
APPROACH SLAB PLAN



VIEW F-F
(TYP @ ALL APPROACH SLAB BARRIERS)

NOTE: REINFORCEMENT NOT SHOWN FOR CLARITY

SECTION Z-Z



SECTION A-A

SCALE
0 1' 2' 4'

SECTION B-B

SCALE
0 1' 2' 3'

NOT FOR BIDDING

- NOTES:**
- SEE APPROACH SLAB DETAILS FOR SECTIONS NOT SHOWN.
 - POLYETHYLENE SHEETING SHALL BE INCIDENTAL TO ITEM 602014.

- REFERENCES:**
- PROJECT NOTES
WATERSTOP AND JOINT DETAILS
DECK PLAN
APPROACH SLAB DETAILS
REINFORCEMENT BAR SCHEDULE
- BR1-482-03
BR1-482-21
BR1-482-23
BR1-482-30
BR1-482-34

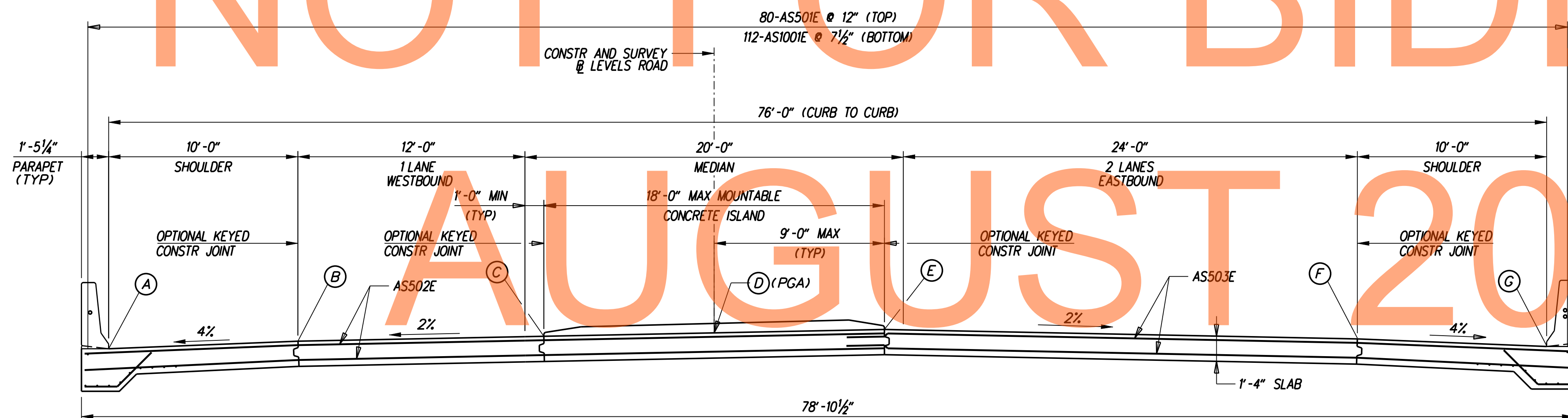
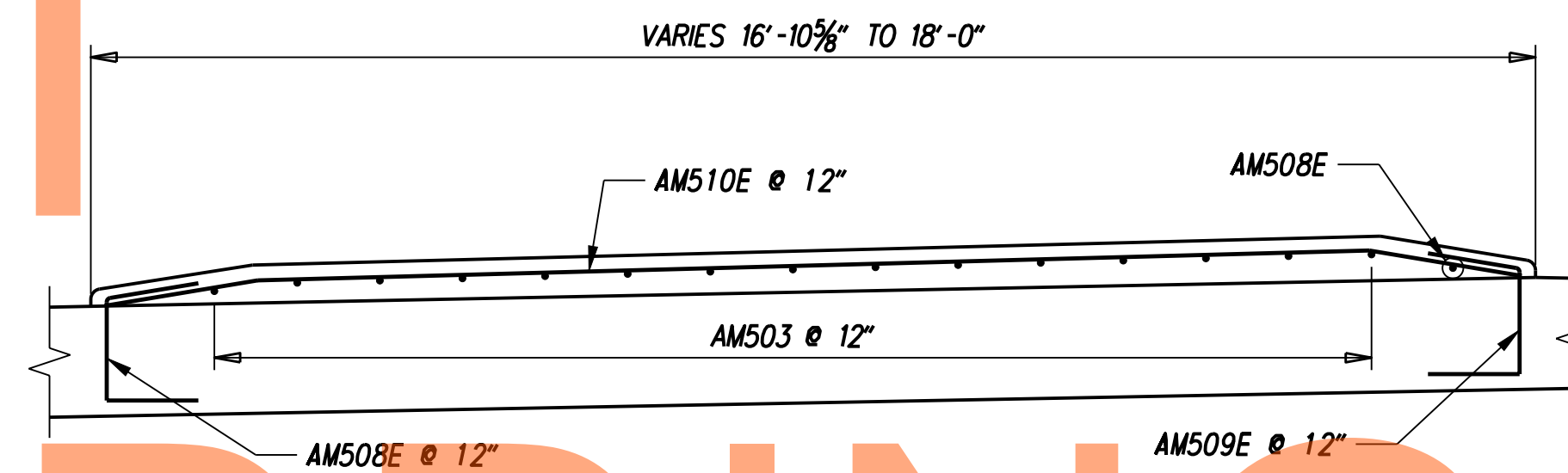
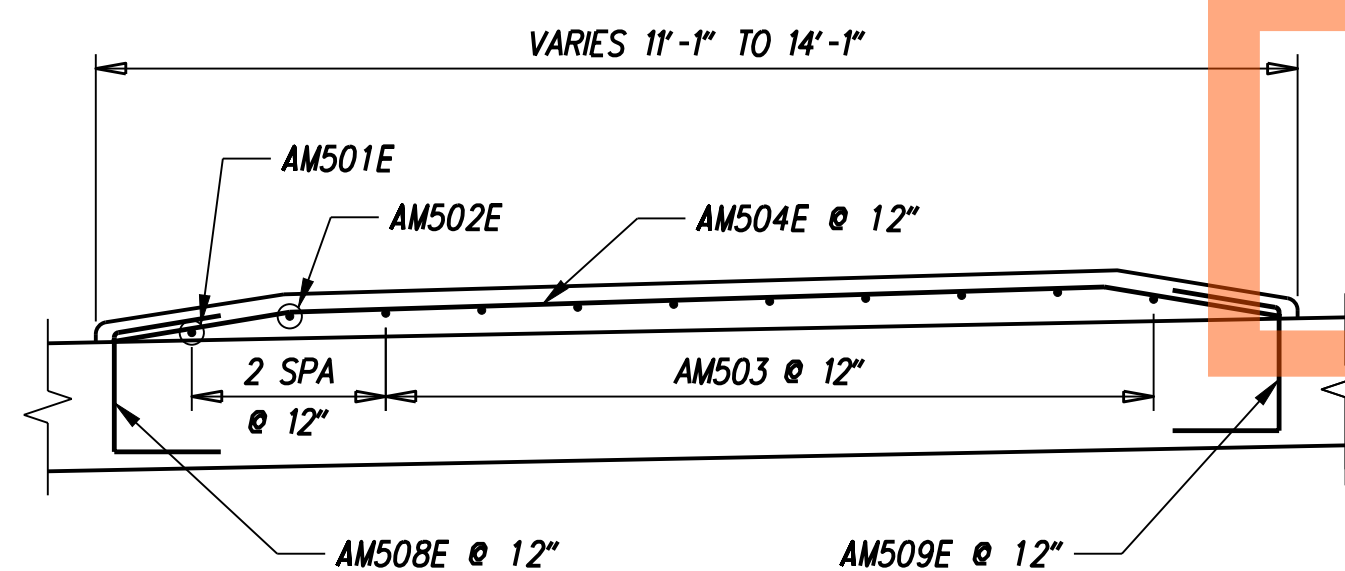
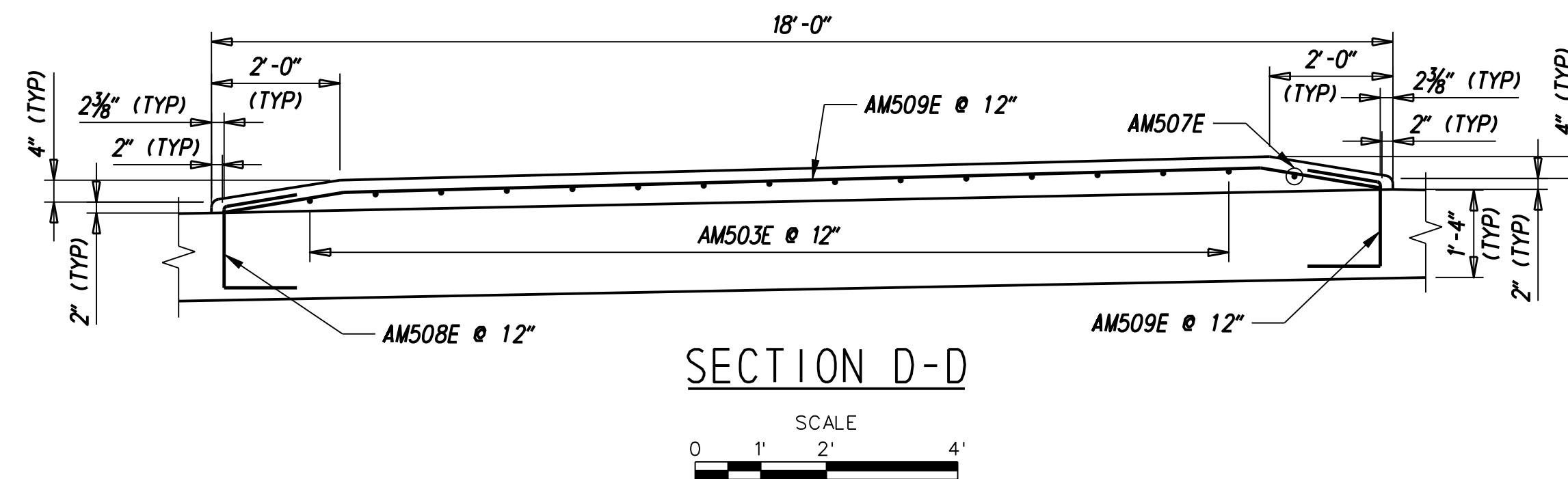
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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: WMM CHECKED BY: ADL

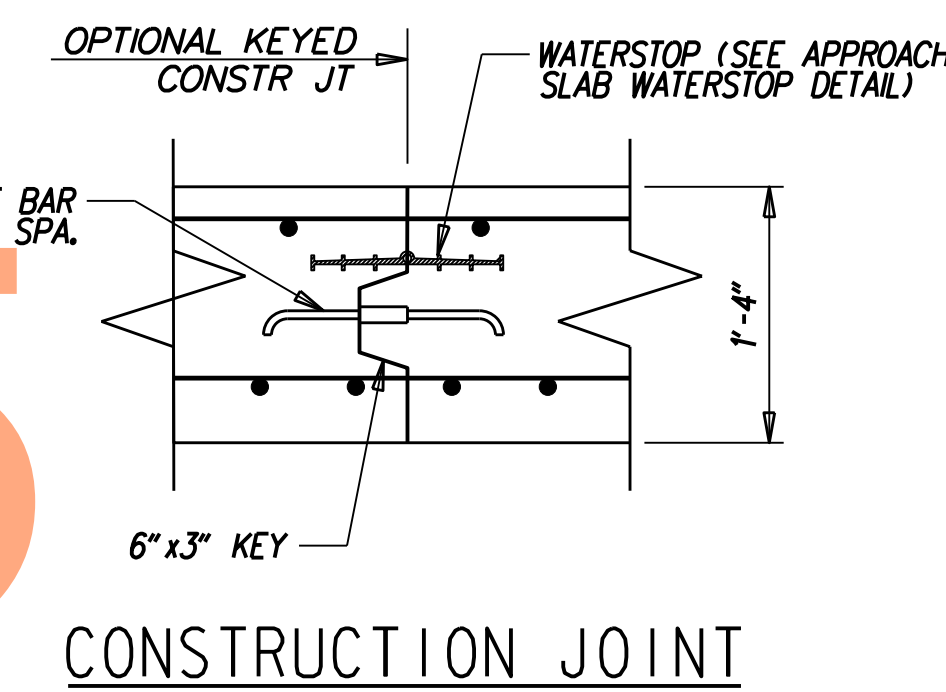
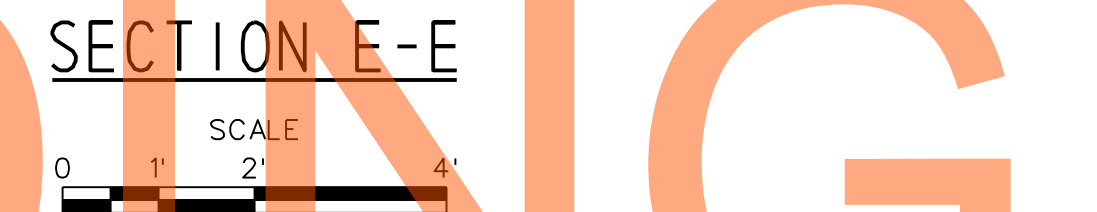
APPROACH SLAB PLAN AND SECTIONS	SHEET NO. 320
	TOTAL SHTS. 850

FINISHED APPROACH SLAB & ROADWAY ELEVATIONS							
STATION	(A)	(B)	(C)	(D) (PGA)	(E)	(F)	(G)
AT ABUTMENT 1							
1295+50.00	80.40	80.80	81.06	81.24	81.42	80.92	80.52
1295+60.00	80.64	81.04	81.30	81.48	81.66	81.16	80.76
1295+69.48	80.86	81.26	81.52	81.70	81.88	81.38	80.98
1295+70.00	80.87	81.27	81.53	81.71	81.89	81.39	80.99
1295+80.00	81.08	81.48	81.74	81.92	82.10	81.60	81.20
1295+90.00	81.26	81.66	81.92	82.10	82.28	81.78	81.38
AT ABUTMENT 2							
1297+50.00	81.37	81.77	82.03	82.21	82.39	81.89	81.49
1297+60.00	81.20	81.60	81.86	82.04	82.22	81.72	81.32
1297+65.98	81.08	81.48	81.74	81.92	82.10	81.60	81.20
1297+70.00	81.00	81.40	81.66	81.84	82.02	81.52	81.12
1297+80.00	80.79	81.19	81.45	81.63	81.81	81.31	80.91



NOTES:
SEE APPROACH SLAB PLAN AND SECTIONS FOR LOCATION OF SECTION MARKERS.

TYPICAL APPROACH SLAB SECTION
LOOKING STATION AHEAD



APPROACH SLAB WATERSTOP DETAIL
(NOT TO SCALE)

REFERENCES:

- PROJECT NOTES
- APPROACH SLAB PLAN AND SECTIONS
- REINFORCEMENT BAR SCHEDULE
- BR1-482-03
- BR1-482-29
- BR1-482-34

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ADDENDUMS / REVISIONS

US 301
MARYLAND STATE LINE
TO LEVELS ROAD

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	WMM
COUNTY	CHECKED BY:	ADL
NEW CASTLE		

APPROACH SLAB DETAILS

BR1-482-30

SHEET NO.	321
TOTAL SHTS.	850

SUBSTRUCTURE BAR SCHEDULE

QTY.	SIZE	SPECIFICATIONS			BENDING DIMENSIONS										REMARKS
		LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	
ABUTMENTS															
12	4	12'-4"	A401E	T1	6"	2'-4"	3'-4"	2'-4"	3'-4"		6"				
16	4	11'-10"	A402E	17		4'-3"	3'-4"	4'-3"							
408	5	8'-8"	A501E	17		2'-7"	3'-6"	2'-7"							
12	5	43'-9"	A502E	STR											
12	5	41'-5"	A503E	STR											
64	5	8'-11"	A504E	17		2'-10"	3'-3"	2'-10"							
80	5	7'-11"	A505E	17		2'-10"	2'-3"	2'-10"							
32	5	8'-3"	A506E	17		2'-6"	3'-3"	2'-6"							
20	5	12'-9 1/2"	A507E	H4	2'-8 1/2"	7'-0"	3'-1"	4 1/2"						6'-11 7/8"	
28	5	6'-4"	A508E	17		2'-11"	6"	2'-11"							
4	5	5'-8"	A509E	STR											
7	6	8'-10 1/2"	A601E	STR											
6	6	8'-11"	A602E	STR											
40	6	5'-3"	A603E	STR											
40	6	4'-8"	A604E	STR											
7	6	8'-8 1/2"	A605E	STR											
6	6	8'-9 1/2"	A606E	STR											
7	6	8'-7"	A607E	STR											
6	6	8'-9"	A608E	STR											
7	6	8'-8"	A609E	STR											
6	6	8'-10"	A610E	STR											
22	6	43'-9"	A611E	STR											
22	6	43'-2"	A612E	STR											
102	6	3'-6"	A613E	STR						0"		6"			
16	6	44'-5"	A614E	1	8"	43'-9"				0"		6"			
16	6	43'-10"	A615E	1	8"	43'-2"									
PILES															
374	5	4'-3"	M501E	T3		1'-7"								10"	
136	5	3'-0"	M502E	STR											
272	8	10'-11"	M801E	18	11"	10'-0"	0"					8"		PIPE PILE OR FLUTED STEEL SHELL PILE ONLY	

DRAFT

NOT FOR BIDDING

AUGUST 2015

REFERENCES:
STANDARD BAR BENDS BR1-482-35

BR1-482-31



ADDENDUMS / REVISIONS

**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: JS/WMM
	CHECKED BY: DJP

**REINFORCEMENT
BAR SCHEDULE -
SUBSTRUCTURE 1**

SHEET NO. 322
TOTAL SHTS. 850

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SUBSTRUCTURE BAR SCHEDULE

QTY.	SIZE	SPECIFICATIONS			BENDING DIMENSIONS											REMARKS
		LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	
PIER																
60	5	20'-6"	PF501E	STR												
66	5	18'-6"	PF502E	STR												
552	5	4'-5"	PF503E	T9	5 5/8"	3'-6"						6"				
114	8	20'-6"	PF801E	STR												
66	10	18'-6"	PF1001E	STR												
82	5	10'-5 1/2"	P501E	H10	5 5/8"	2'-2"	5'-2 7/8"	2'-2"	5 5/8"	1'-8"				3'-4"		
82	5	11'-1 1/4"	P502E	S3	5 5/8"	3'-5 1/8"	3'-4"	3'-5 1/8"			5 5/8"	3 3/4"				
140	5	4'-0 1/8"	P503E	T9	5 5/8"	3'-0 5/8"					6"					
140	5	4'-3 1/2"	P504E	T9	5 5/8"	3'-4"					6"					
280	5	4'-2 1/2"	P505E	T9	5 5/8"	3'-9"					0					
72	5	14'-5"	P506E	T1	5 5/8"	3'-5"	3'-4"	3'-5"	3'-4"		5 5/8"					
35	5	6'-3 1/2"	P507E	T9	5 5/8"	5'-4"					6"					
2	5	5'-5 1/8"	P508E	10		5'-5 1/8"	0	0		1'-10"				3'-8"		
2	5	4'-6 3/4"	P509E	2	6"	3'-6 3/4"					6"					
2	5	7'-8 3/8"	P510E	S10		2'-7 1/4"	2'-5 1/8"	2'-7 1/4"								
2	5	8'-4 1/2"	P511E	S10		2'-7 1/4"	3'-2"	2'-7 1/4"								
4	5	5'-11 3/4"	P512E	H4	2'-6 1/2"	10"	2'-7 1/4"	3/4"						10"		
4	5	6'-8 3/8"	P513E	H4	2'-6 1/2"	1'-6 5/8"	2'-7 1/4"	3/4"						1'-6 5/8"		
40	5	7'-4 1/4"	P514E	S10		2'-6 3/4"	2'-2 3/4"	2'-6 3/4"								
24	5	8'-9 1/2"	P515E	S10		2'-7 3/8"	3'-6 3/4"	2'-7 3/8"								
6	5	7'-0"	P516E	S10		1'-8"	3'-8"	1'-8"								
20	6	12'-5"	P601E	17		4'-4 1/2"	3'-8"	4'-4 1/2"								
222	6	17'-6"	P602E	T1	7 1/2"	5'-8"	2'-5"	5'-8"	2'-5"		7 1/2"					
8	6	21'-10 1/4"	P603E	STR												
8	6	58'-10 3/4"	P604E	STR												
72	11	26'-1 3/4"	P1101E	H5	2'-0"	24'-1 3/4"										
48	11	20'-0 3/4"	P1102E	H5	2'-0"	18'-0 3/4"										
6	11	36'-4 1/2"	P1103E	H5	2'-0"	34'-4 1/2"										
6	11	49'-2 7/8"	P1104E	H5	2'-0"	47'-2 7/8"										
6	11	48'-4 1/8"	P1105E	18	1'-0 3/4"	46'-9 1/8"	0				1'-2 3/4"					
6	11	35'-10 1/8"	P1106E	18	1'-0 3/4"	34'-3 1/8"	0				1'-2 3/4"					
6	11	47'-7 5/8"	P1107E	H5	2'-0"	45'-7 5/8"										
6	11	35'-1 1/2"	P1108E	H5	2'-0"	33'-1 1/2"										
6	11	40'-0"	P1109E	STR												
6	11	50'-0"	P1110E	STR												
6	11	28'-3 3/8"	P1111E	18	1'-0 3/4"	26'-8 1/8"	0				1'-2 3/4"					
6	11	51'-7"	P1112E	18	1'-0 3/4"	50'-0"	0				1'-2 3/4"					
6	11	54'-11 3/8"	P1113E	H5	4'-11 3/8"	50'-0"										
6	11	32'-8 1/8"	P1114E	H5	4'-11 3/8"	27'-8 3/4"										

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NOT FOR BIDDING

AUGUST 2015

REFERENCES:
STANDARD BAR BENDS BR1-482-35

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301 MARYLAND STATE LINE TO LEVELS ROAD	CONTRACT	BRIDGE NO.	1-482	REINFORCEMENT BAR SCHEDULE - SUBSTRUCTURE 2	SHEET NO.	323
				T200811301	DESIGNED BY: CNN			TOTAL SHTS.	850
				NEW CASTLE	CHECKED BY: YY				

BR1-482-32

SUPERSTRUCTURE BAR SCHEDULE

QTY.	SIZE	SPECIFICATIONS			BENDING DIMENSIONS											REMARKS
		LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	
DECK																
294	5	35'-6 1/2"	S501E	STR												
588	5	41'-3"	S502E	1	7"	40'-8"							5"			
168	5	54'-11"	S503E	STR												
216	5	54'-11"	S504E	STR												
330	5	46'-8"	S505E	STR												
150	5	46'-8"	S506E	STR												
294	5	45'-9"	S507E	STR												
440	5	4'-7 3/4"	S508E	H8	1'-0"	2 7/8"	1'-3 1/2"	1'-0 3/8"	1'-1"	F = 7"						
147	5	2'-10 1/8"	S509E	16		1'-2"	6"	1'-2 1/8"				1'-1 7/8"	2 1/2"	8 1/2"		
147	5	2'-10 5/8"	S510E	16		1'-2"	6 1/2"	1'-2 1/8"				1'-1 7/8"	2 1/2"	9"		
16	6	41'-6"	S601E	1	8"	40'-10"							6"			
588	7	9'-1"	S701E	1	10"	8'-3"							7"			
PARAPET																
440	5	9'-2 1/2"	PA501E	H7	2'-6"	8 3/4"	3'-0 1/2"	5 1/4"	2'-6"	3 1/2"						
88	7	11'-8"	PA701E	STR												
16	7	6'-11"	PA702E	STR												
88	8	11'-8"	PA801E	STR												
16	8	6'-11"	PA802E	STR												
MOUNTABLE CONCRETE ISLAND																
1	5	33'-9"	SM501E	STR												
4	5	VARIES 3'-9" TO 28'-0"	SM502E	STR											VARY BY 8'-1"	
12	5	34'-7"	SM503E	STR												
33	5	VARIES 13'-0" TO 17'-0"	SM504E	14		1'-6"	10'-0" TO 14'-0"	1'-6"				3 1/8"	12'-11 1/2" TO 16'-11 1/2"		VARY C BY 1 1/2"	
16	5	59'-0"	SM505E	STR												
16	5	57'-10"	SM506E	STR												
114	5	17'-0"	SM507E	14		1'-6"	14'-0"	1'-6"				3 1/8"	16'-11 1/2"			
DIAPHRAGMS																
308	4	3'-3"	S451E	17		1'-4"	7"	1'-4"								
126	4	8'-9"	S452E	17		3'-3"	2'-3"	3'-3"								
28	4	4'-11"	S453E	17		1'-4"	2'-3"	1'-4"								
204	4	6'-8"	S454E	17		2'-2"	2'-4"	2'-2"								
72	4	5'-2"	S455E	17		1'-5"	2'-4"	1'-5"								
138	4	4'-4"	S456E	H5	1'-0"	3'-4"										
138	4	4'-6"	S457E	H6	3'-6"	1'-0"	8 1/2"									
138	4	5'-8"	S458E	17		2'-0"	1'-8"	2'-0"								
64	4	4'-4"	S459E	17		1'-4"	1'-8"	1'-4"								
280	5	6'-4"	S551E	STR											THREAD ONE END 2" OR AS REQUIRED	
28	5	9'-2"	S552E	STR												
66	5	7'-1"	S553E	STR												
12	5	1'-3" TO 1'-7"	S554E	STR											4 SETS OF 3 EACH; VARY EACH SET BY 2"; THREAD ONE END 2" OR AS REQUIRED	
4	5	2'-6"	S555E	STR												
12	5	3'-3"	S556E	STR											THREAD ONE END 2" OR AS REQUIRED	
8	5	1'-10"	S557E	STR												
12	5	40'-8"	S558E	STR												
4	5	25'-5"	S559E	STR												
4	5	16'-0"	S560E	STR												
56	6	6'-7"	S651E	STR											THREAD ONE END 2" OR AS REQUIRED	
28	1"	3'-0"	D801E	STR												

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AUGUST 2015

REFERENCES:
STANDARD BAR BENDS BR1-482-35

BR1-482-33



ADDENDUMS / REVISIONS

**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: WMM CHECKED BY: CGI

**REINFORCEMENT
BAR SCHEDULE -
SUPERSTRUCTURE**

SHEET NO. 324
TOTAL SHTS. 850

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APPROACH SLAB BAR SCHEDULE

QTY.	SIZE	SPECIFICATIONS			BENDING DIMENSIONS										REMARKS
		LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	
MOUNTABLE CONCRETE ISLAND															
1	5	24'-8"	AM501E	STR											
3	5	8'-4" to 24'-6"	AM502E	STR											VARY BY 8'-1"
23	5	24'-7"	AM503E	STR											
26	5	10'-1" TO 13'-0"	AM504E	14	0"	1'-6"	7'-1" TO 10'-0"	1'-6"	0"			3/8"	1'-5 3/4"	10'-0 1/2" TO 12'-11"	VARY C BY 1/2" ± VARY BY 4'-0"
2	5	20'-6" TO 24'-6"	AM507E	STR											
1	5	8'-6"	AM508E	STR											
16	5	17'-0"	AM509E	14	0"	1'-6"	14'-0"	1'-6"	0"			3/8"	1'-5 3/4"	16'-11 1/2"	
10	5	16'-0" TO 17'-0"	AM510E	14	0"	1'-6"	13'-0" TO 14'-0"	1'-6"	0"			3/8"	1'-5 3/4"	15'-11 1/2" TO 16'-11 1/2"	VARY C BY 1 3/8" ±
PARAPET															
96	5	9'-2 1/2"	PA501E	H7	2'-6"	8 3/4"	3'-0 3/8"	5 1/4"	2'-6"	F = 3 1/2"					
56	5	7'-7 5/8" TO 11'-8 1/4"	PA502E	H7	2'-1" TO 3'-2"	8 3/4"	2'-2 1/2" TO 4'-3 1/2"	6 1/4" TO 3 3/4"	2'-1" TO 3'-2"	F = 2 1/2" TO 5"					4 SETS OF 14: VARY A & E BY 1"; C BY 1'-11"; D BY - 3/16" ± ; F BY 3/16" ±
8	7	24'-8"	PA703E	STR											
8	7	23'-0"	PA704E	STR											
8	7	8'-9"	PA705E	STR											
16	8	24'-8"	PA803E	STR											
APPROACH SLAB															
160	5	24'-8"	AS501E	STR											
114	5	42'-1"	AS502E	STR											
114	5	38'-6"	AS503E	STR											
104	5	4'-7 1/2"	AS504E	16	0"	0"	1'-8 1/2"	2'-11"				2'-0 3/4"	2'-0 3/4"	3'-9 1/4"	
160	5	8'-2 1/2"	AS505E	16	1'-10"	1'-11"	1'-9"	2'-8 1/2"				1'-11"	1'-11"	3'-8"	
160	5	6'-9"	AS506E	16	1'-10"	1'-10"	5 1/4"	2'-7 3/4"				1'-10 1/2"	1'-10 1/2"	2'-3 3/4"	
152	5	5'-6 1/4"	AS507E	H8	1'-0"	2 7/8"	1'-9"	1'-0 3/8"	1'-6"	F = 9 1/2"					
52	5	3'-4 5/8"	AS508E	16	0"	1'-2"	1'-0 1/2"	1'-2 1/8"				1'-1 7/8"	2 1/2"	1'-3"	
52	5	3'-5 1/8"	AS509E	16	0"	1'-2"	1'-1"	1'-2 1/8"				1'-1 7/8"	2 1/2"	1'-3 1/2"	
254	10	24'-8"	AS1001E	STR											

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NOT FOR BIDDING

AUGUST 2015

REFERENCES:

STANDARD BAR BENDS BR1-482-35

BR1-482-34



ADDENDUMS / REVISIONS

**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

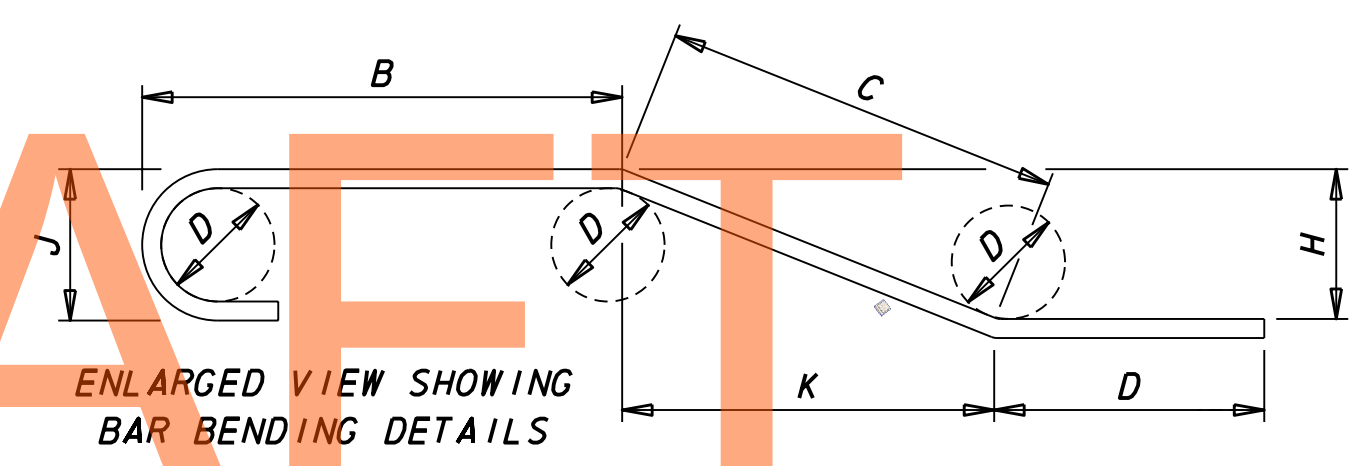
CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	ADL
COUNTY	CHECKED BY:	WMM
NEW CASTLE		

**REINFORCEMENT
BAR SCHEDULE -
APPROACH SLABS**

SHEET NO.	325
TOTAL SHTS.	850

STANDARD BAR BENDS

ASTM STANDARD ENGLISH REINFORCING BARS				RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES			STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES					
BAR SIZE	NOMINAL DIMENSIONS			180° HOOKS			90° HOOKS		90° HOOK		135° HOOKS	
	DIAMETER (INCHES)	AREA (INCHES ²)	WEIGHT (LBS/FT)	D	A OR G	J	A OR G	D	A OR G	A OR G	H	
3	0.375	0.110	0.376	2 1/4"	5"	3"	6"	1 1/2"	4"	4"	2 1/2"	
4	0.500	0.200	0.668	3"	6"	4"	8"	2"	4 1/2"	4 1/2"	3"	
5	0.625	0.310	1.043	3 3/4"	7"	5"	10"	2 1/2"	6"	5 1/2"	3 3/4"	
6	0.750	0.440	1.502	4 1/2"	8"	6"	1'-0"	4 1/2"	1'-0"	8"	4 1/2"	
7	0.875	0.600	2.044	5 1/4"	10"	7"	1'-2"	5 1/4"	1'-2"	9"	5 1/4"	
8	1.000	0.790	2.670	6"	11"	8"	1'-4"	6"	1'-4"	10 1/2"	6"	
9	1.128	1.000	3.400	9 1/2"	1'-3"	11 3/4"	1'-7"					
10	1.270	1.270	4.303	10 3/4"	1'-5"	1'-1 1/4"	1'-10"					
11	1.410	1.560	5.313	1'-0"	1'-7"	1'-2 3/4"	2'-0"					
14	1.693	2.250	7.650	1'-6 1/4"	2'-3"	1'-9 3/4"	2'-7"					
18	2.257	4.000	13.600	2'-0"	3'-0"	2'-4 1/2"	3'-5"					

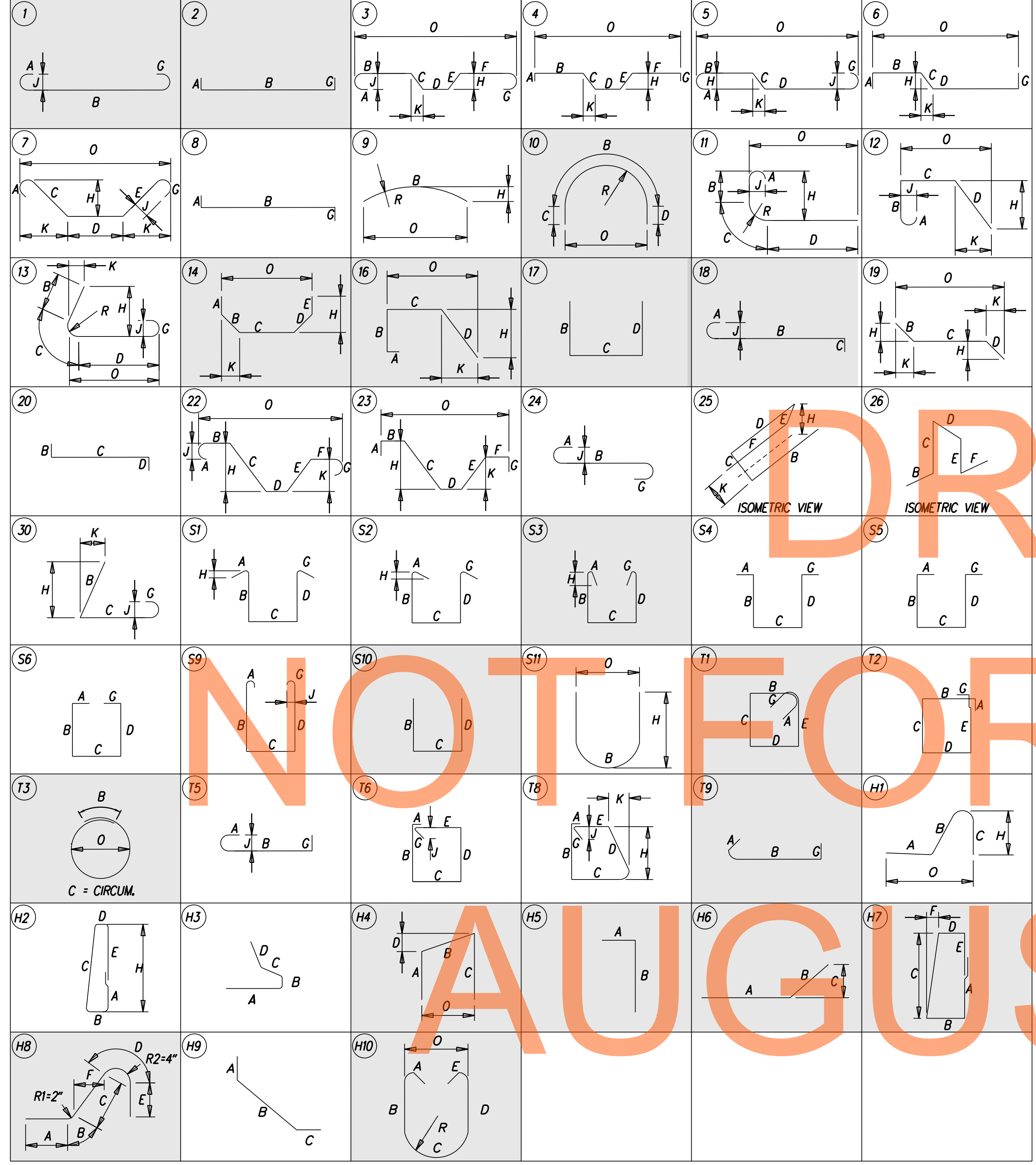


NOTES:

- FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
- STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES SHOWN, WITH THE EXCEPTION OF TYPE "H" BARS.
- ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" STD. 180° AND 135° HOOKS.
- "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
- WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5, AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
- "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
- UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
- WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
- WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
- FOR RECOMMENDED DIAMETER "D" OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
- TYPE S1-S11, T1-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

REFERENCES:

REINFORCEMENT BAR SCHEDULES BR1-482-31 THRU BR1-482-34

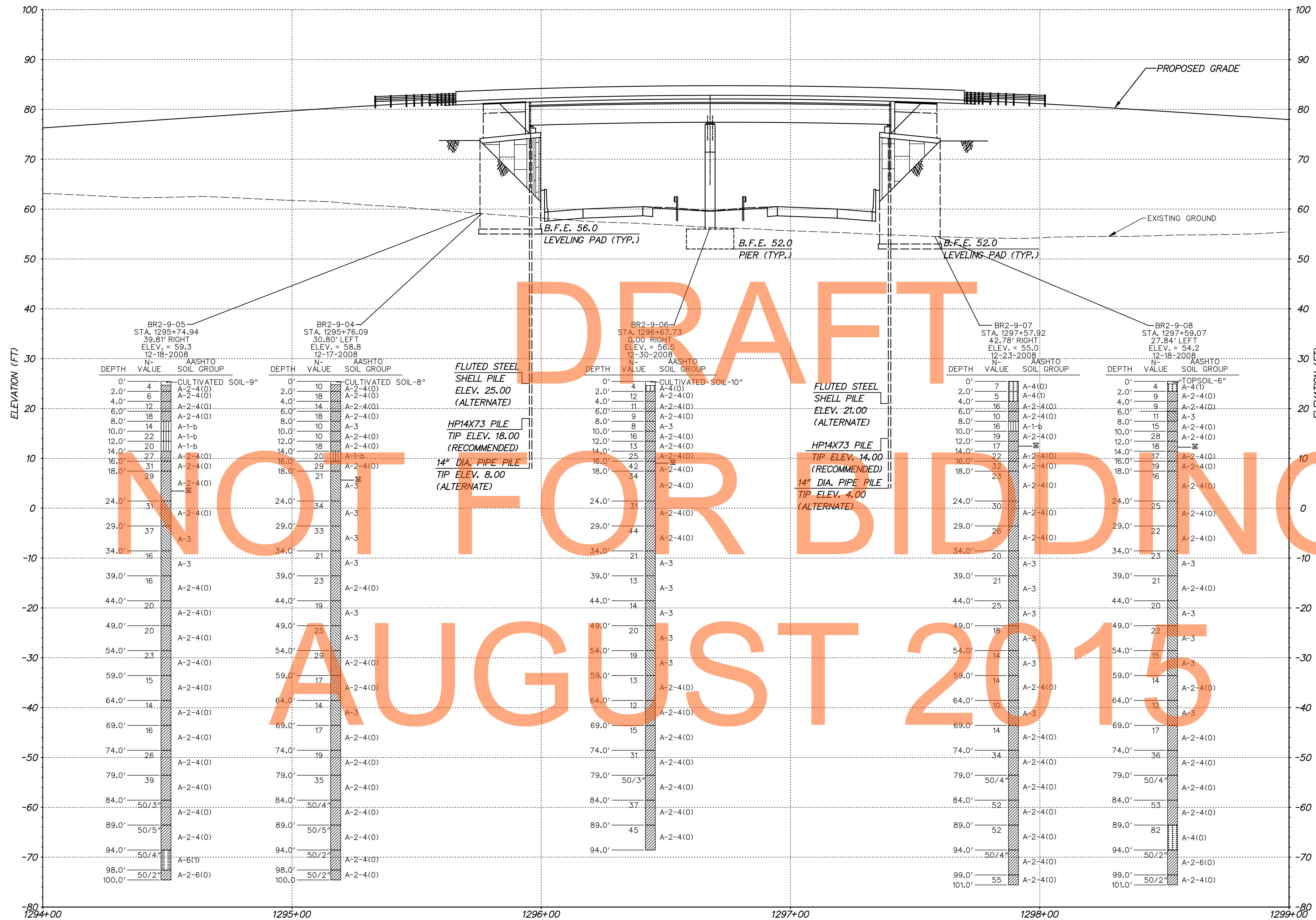


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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO. 1-482
COUNTY NEW CASTLE	DESIGNED BY: ADL CHECKED BY: KO'C

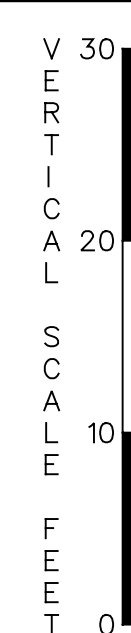
STANDARD BAR BENDS	SHEET NO. 326
	TOTAL SHTS. 850



LEGEND

- A-1 (WELL GRADED SAND)
- A-2 (POORLY GRADED SILTY/CLAYEY SAND)
- A-3 (CLEAN SAND)
- A-4 (SILT)
- A-5 (ELASTIC SILT)
- A-6 (PLASTIC CLAY)
- A-7 (EXPANSIVE PLASTIC CLAY)
- A-8 (MUCK/PEAT)
- WATER ENCOUNTERED DURING DRILLING

N = UNCORRECTED SPT BLOW VALUE COUNT (BLOWS/FT)
 U-1 = UNDISTURBED SAMPLE
 W/R = WEIGHT OF RODS
 W/H = WEIGHT OF HAMMER

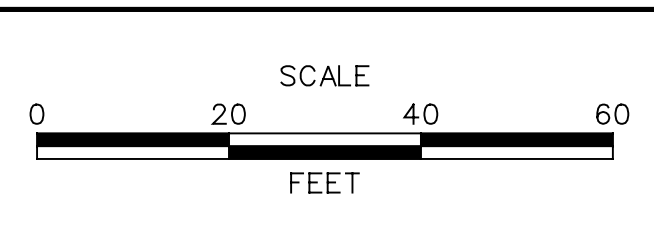


LEVELS ROAD

BR1-482-36



ADDENDUMS / REVISIONS



**US 301
MARYLAND STATE LINE
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.	1-482
T200811301	DESIGNED BY:	JLW
COUNTY	CHECKED BY:	JPF
NEW CASTLE		

**BRIDGE 1-482
GEOTECHNICAL DATA**

SHEET NO.	327
TOTAL SHTS.	850