



NOT FOR BIDDING  
AUGUST 2015

ITEM NO.	ITEM NAME	UNITS	QUANTITY
202000	Excavation and Embankment	CY	2,300
202505	Settlement Platform	EACH	4
202508	Wetland Access Road, Type II	LS	1
202518	Settlement Monument	EACH	4
207000	Excavation and Backfill for Structures	CY	450
302011	Delaware No. 3 Stone	TON	145
302012	Delaware No. 57 Stone	TON	390
602006	Portland Cement Concrete Masonry, Pier Footing, Class B	CY	132
602007	Portland Cement Concrete Masonry, Pier Above Footing, Class A	CY	172
602013	Portland Cement Concrete Masonry, Superstructure, Class D	CY	304
602014	Portland Cement Concrete Masonry, Approach Slab, Class D	CY	86
602015	Portland Cement Concrete Masonry, Abutment Above Footing, Class A	CY	105
602017	Portland Cement Concrete Masonry, Parapet, Class A	CY	99
602018	Portland Cement Concrete Masonry, Class D	CY	79
602019	Portland Cement Concrete Masonry, Superstructure, Class A	CY	48
602772	Mechanically Stabilized Earth Walls	L.S.	1
603000	Bar Reinforcement	LB	47,200
604000	Bar Reinforcement, Epoxy Coated	LB	151,700
605511	Prefabricated Expansion Joint System, 3"	LF	87
618062	Steel H Piles, HP 14 x 73	LF	2,610
618065	Steel H Test Piles, HP 14 x 73	LF	360
618081	Furnish Precast Prestressed Concrete Piles, 14" x 14"	LF	1,960
618091	Furnish Precast Prestressed Concrete Test Piles, 14" x 14"	LF	280
619042	Install Steel H Piles, HP 14 x 73	LF	2,610
619045	Install Steel H Test Piles, HP 14 x 73	LF	360
619061	Install Precast Prestressed Concrete Piles, 14" x 14"	LF	1,960
619067	Install Precast Prestressed Concrete Test Piles, 14" x 14"	LF	280
619501	Production Pile Restrike	EACH	5
619502	Test Pile Restrike	EACH	1
619519	Dynamic Pile Testing by Contractor	EACH	12
619539	Signal Matching Analysis by Contractor	EACH	12
623003	Prestressed Reinforced Concrete Members, Bulb Tbeam	LS	1
712021	Riprap, R-5	TON	720
713003	Geotextiles, Riprap	SY	570
733001	Topsoiling, 4" Depth	SY	820
734531	Streambank Seed Mix	SY	410
735535	Soil Retention Blanket Mulch, Type 5	SY	410

**NOTES:**

- THE QUANTITY SUMMARY INCLUDES QUANTITIES FOR BRIDGE NO. 1-458 STANDARD ITEMS, PILE ALTERNATIVE 1 (14" SQUARE PRESTRESSED CONCRETE PILES) ITEMS AND PILE ALTERNATIVE 2 (HP 14X73 PILES) ITEMS. ITEM NOS. 618081, 618091, 619061 AND 619067 ARE APPLICABLE TO PILE ALTERNATIVE 1. ITEM NOS. 618062, 618065, 619042 AND 619045 ARE APPLICABLE TO PILE ALTERNATIVE 2. ALL OTHER ITEMS ARE STANDARD ITEMS. SEE PILE NOTE 1 ON DWG. NO. PL-01 FOR ADDITIONAL INFORMATION REGARDING PILE ALTERNATIVES.
- ITEM 202000 IS REPRESENTED UNDER TYPE C MATERIAL REQUIRED, "TYPE C BACKFILL FOR STRUCTURES". SEE DRAWING EW-08.
- ITEM 207000 IS REPRESENTED ON DRAWING EW-08 UNDER EXCAVATION AVAILABLE FOR EMBANKMENT, "PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES".

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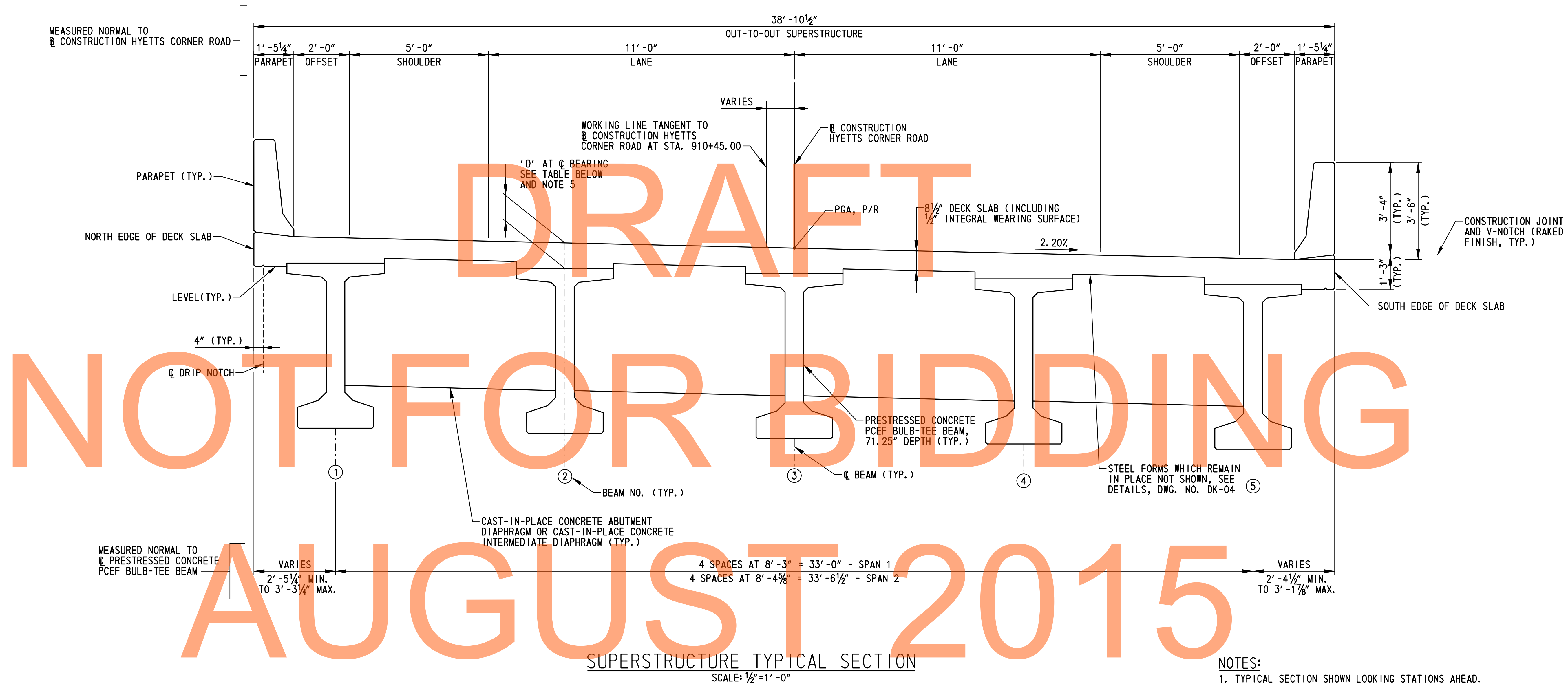
ADDENDUMS / REVISIONS

**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**QUANTITY SUMMARY**

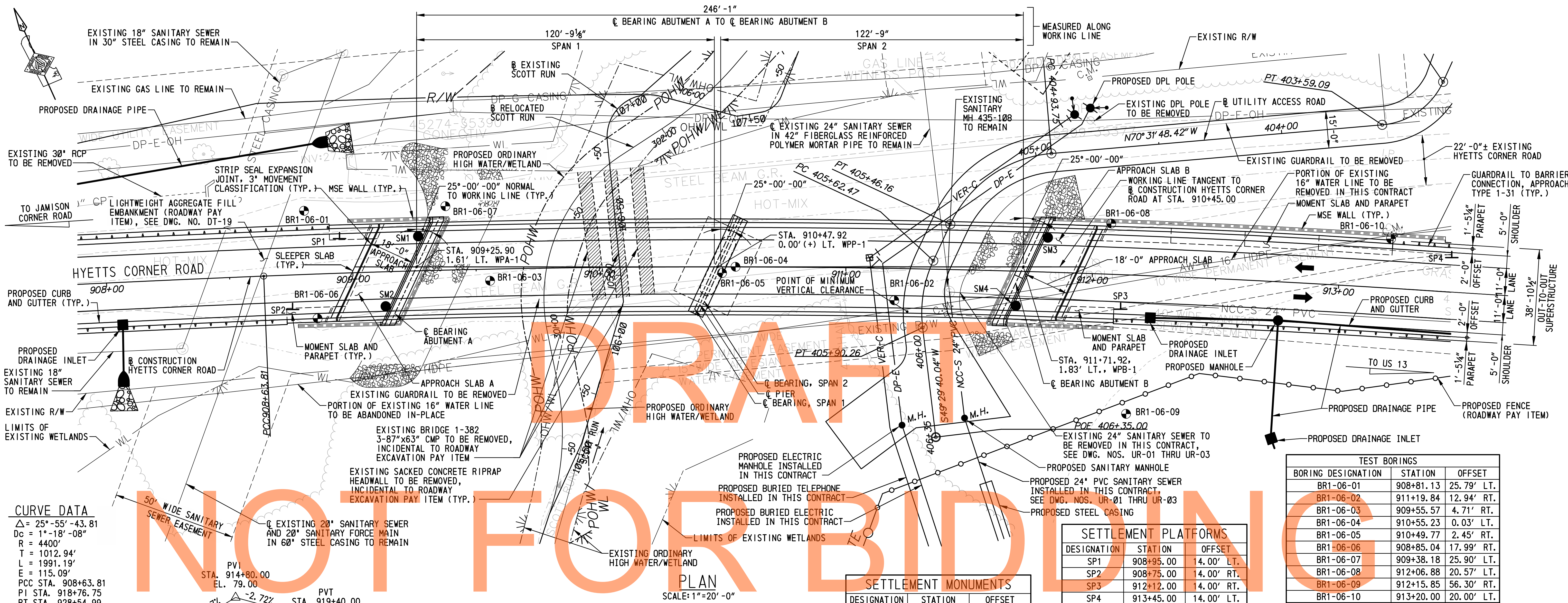
<b>BR1-6 QS-01</b>
SHEET NO.
315
TOTAL SHTS.
875



- NOTES:**
1. TYPICAL SECTION SHOWN LOOKING STATIONS AHEAD.
  2. FOR DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DWG. NOS. DK-01 THRU DK-04.
  3. FOR DIAPHRAGM LOCATIONS, SEE DWG. NO. FR-01.
  4. FOR ABUTMENT DIAPHRAGM DETAILS, SEE DWG. NO. DT-01. FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE DWG. NO. DT-02. FOR PIER DIAPHRAGM DETAILS, SEE DWG. NO. DT-03.
  5. HAUNCH DEPTH VARIES ALONG SPAN TO COMPENSATE FOR VARIATION IN CAMBER AND ROADWAY PROFILE. HAUNCH DIMENSIONS SHOWN ARE MEASURED FROM THE TOP OF THE DECK SLAB TO THE TOP OF THE BEAM AT @ BEARING. FOR ADDITIONAL INFORMATION, SEE CAMBER NOTES ON DWG. NOS. BM-02.
  6. PARAPETS SHALL NOT BE SLIP FORMED.
  7. REFLECTORS SHALL BE INSTALLED ALONG EACH PARAPET (ROADWAY PAY ITEM). SEE DWG. NO. DT-17 FOR DETAILS.

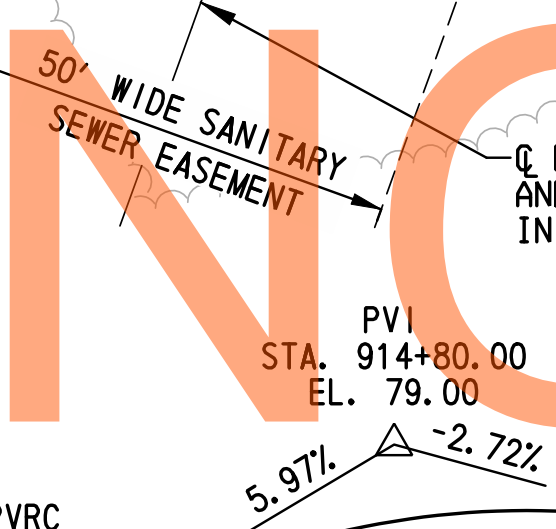
HAUNCH DIMENSIONS		
SPAN	BEAM NO.	'D' DIMENSION
1	1	1' - 1 3/4"
	2	1' - 1 3/4"
	3	1' - 1 7/8"
	4	1' - 2"
	5	1' - 2 3/8"
2	1-5	10 1/8"

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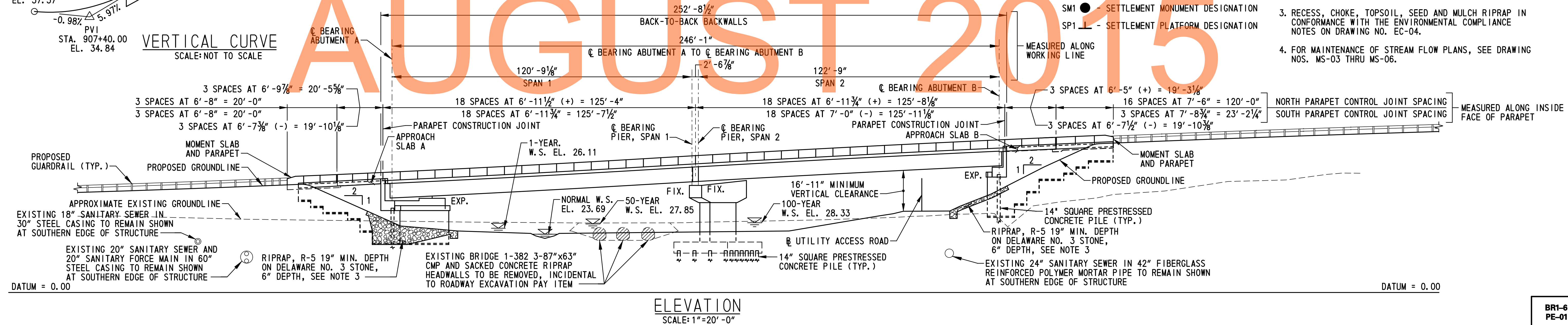


**CURVE DATA**

Δ = 25°-55' -43.81  
 Δc = 1°-18' -08"  
 R = 4400'  
 T = 1012.94'  
 L = 1991.19'  
 E = 115.09'  
 PCC STA. 908+63.81  
 PI STA. 918+76.75  
 PT STA. 928+54.99



**VERTICAL CURVE**  
SCALE: NOT TO SCALE



**ELEVATION**  
SCALE: 1"=20'-0"

NOT FOR BIDDING

AUGUST 2015

**TEST BORINGS**

BORING DESIGNATION	STATION	OFFSET
BR1-06-01	908+81.13	25.79' LT.
BR1-06-02	911+19.84	12.94' RT.
BR1-06-03	909+55.57	4.71' RT.
BR1-06-04	910+55.23	0.03' LT.
BR1-06-05	910+49.77	2.45' RT.
BR1-06-06	908+85.04	17.99' RT.
BR1-06-07	909+38.18	25.90' LT.
BR1-06-08	912+06.88	20.57' LT.
BR1-06-09	912+15.85	56.30' RT.
BR1-06-10	913+20.00	20.00' LT.

**SETTLEMENT PLATFORMS**

DESIGNATION	STATION	OFFSET
SP1	908+95.00	14.00' LT.
SP2	908+75.00	14.00' RT.
SP3	912+12.00	14.00' RT.
SP4	913+45.00	14.00' LT.

**SETTLEMENT MONUMENTS**

DESIGNATION	STATION	OFFSET
SM1	909+27	14.00' LT.
SM2	909+13	14.00' RT.
SM3	911+82	14.00' LT.
SM4	911+70	14.00' RT.

FOR SETTLEMENT MONUMENT AND SETTLEMENT PLATFORM DETAILS, SEE DWG. NO. PL-02.  
 FOR SETTLEMENT MONITORING REQUIREMENTS, SEE THE SPECIAL PROVISIONS.

**LEGEND:**  
 SM1 ● - SETTLEMENT MONUMENT DESIGNATION  
 SP1 ⊥ - SETTLEMENT PLATFORM DESIGNATION

- NOTES:**
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE PROVIDED AT ABUTMENTS AND PIER.
  - FOR PROPOSED GRADING, SEE DRAWING NO. GR-01.
  - RECESS, CHOKER, TOPSOIL, SEED AND MULCH RIPRAP IN CONFORMANCE WITH THE ENVIRONMENTAL COMPLIANCE NOTES ON DRAWING NO. EC-04.
  - FOR MAINTENANCE OF STREAM FLOW PLANS, SEE DRAWING NOS. MS-03 THRU MS-06.

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**ADDENDUMS / REVISIONS**

NO.	DATE	DESCRIPTION

SCALE: AS NOTED

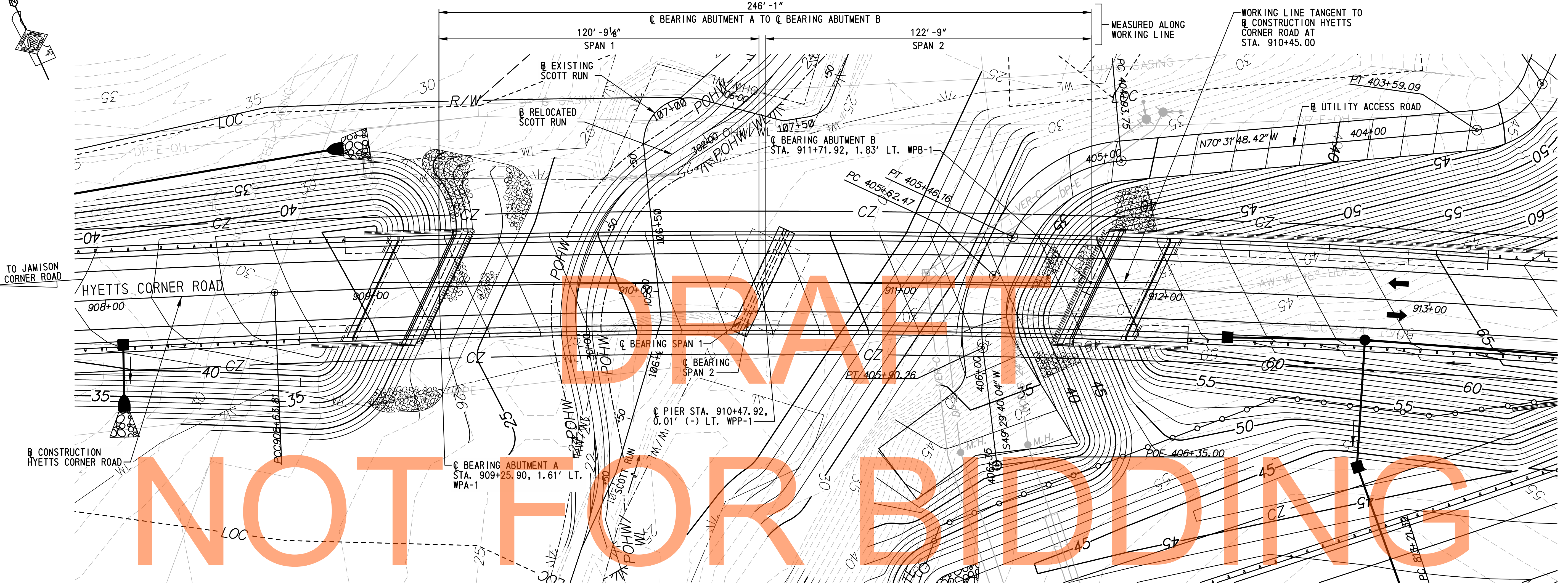
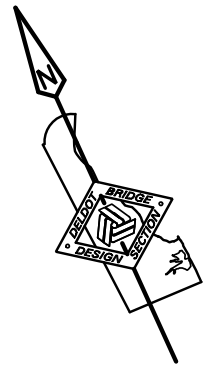
**US 301, SR 896 TO SR 1**

CONTRACT	T200911308	BRIDGE NO.	1-458
COUNTY	NEW CASTLE	DESIGNED BY:	A.J.F.
		CHECKED BY:	P.S.D.

**GENERAL PLAN AND ELEVATION**

**BR1-6 PE-01**

SHEET NO.	317
TOTAL SHTS.	875



DRAFT

NOT FOR BIDDING

PLAN  
SCALE: 1" = 20' - 0"

AUGUST 2015

**NOTE:**  
1. FOR ADDITIONAL INFORMATION, SEE DRAWING NO. PE-01.

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ADDENDUMS / REVISIONS	

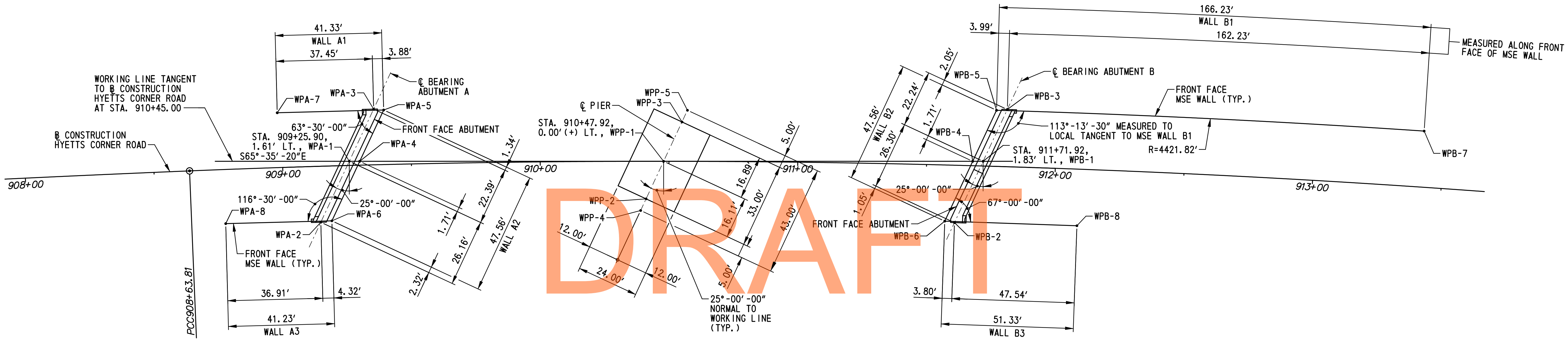
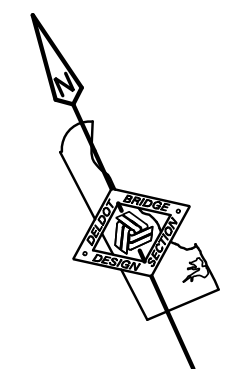
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F.
	CHECKED BY: P.S.D.

**GRADING PLAN**

<b>BR1-6 GR-01</b>
SHEET NO. 318
TOTAL SHTS. 875



NOT FOR BIDDING

AUGUST 2015

GEOMETRIC AND FOOTING LAYOUT PLAN  
SCALE: 1"=20'-0"

NOTE:  
1. FOR PILE LAYOUT PLANS, SEE DWG. NO. PL-01.

WORKING POINT	COORDINATES	
	NORTHING	EASTING
WPA-1	555585.4323	586014.1883
WPA-2	555568.4166	585994.3280
WPA-3	555599.9982	586031.1893
WPA-4	555583.7602	586017.8725
WPA-5	555598.0851	586034.5921
WPA-6	555567.1396	585998.4733
WPA-7	555614.1762	585996.5196
WPA-8	555583.1903	585960.4966
WPP-1	555534.9918	586125.3261
WPP-2	555524.5095	586113.0912
WPP-3	555545.9801	586138.1513
WPP-4	555521.2563	586109.2943
WPP-5	555549.2332	586141.9484
WPB-1	555483.7284	586238.2772
WPB-2	555466.6196	586218.3081
WPB-3	555498.1963	586255.1638
WPB-4	555485.4004	586234.5932
WPB-5	555499.6460	586251.2204
WPB-6	555468.7006	586215.1015
WPB-7	555423.6654	586399.0576
WPB-8	555445.8671	586261.0769

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ADDENDUMS / REVISIONS	

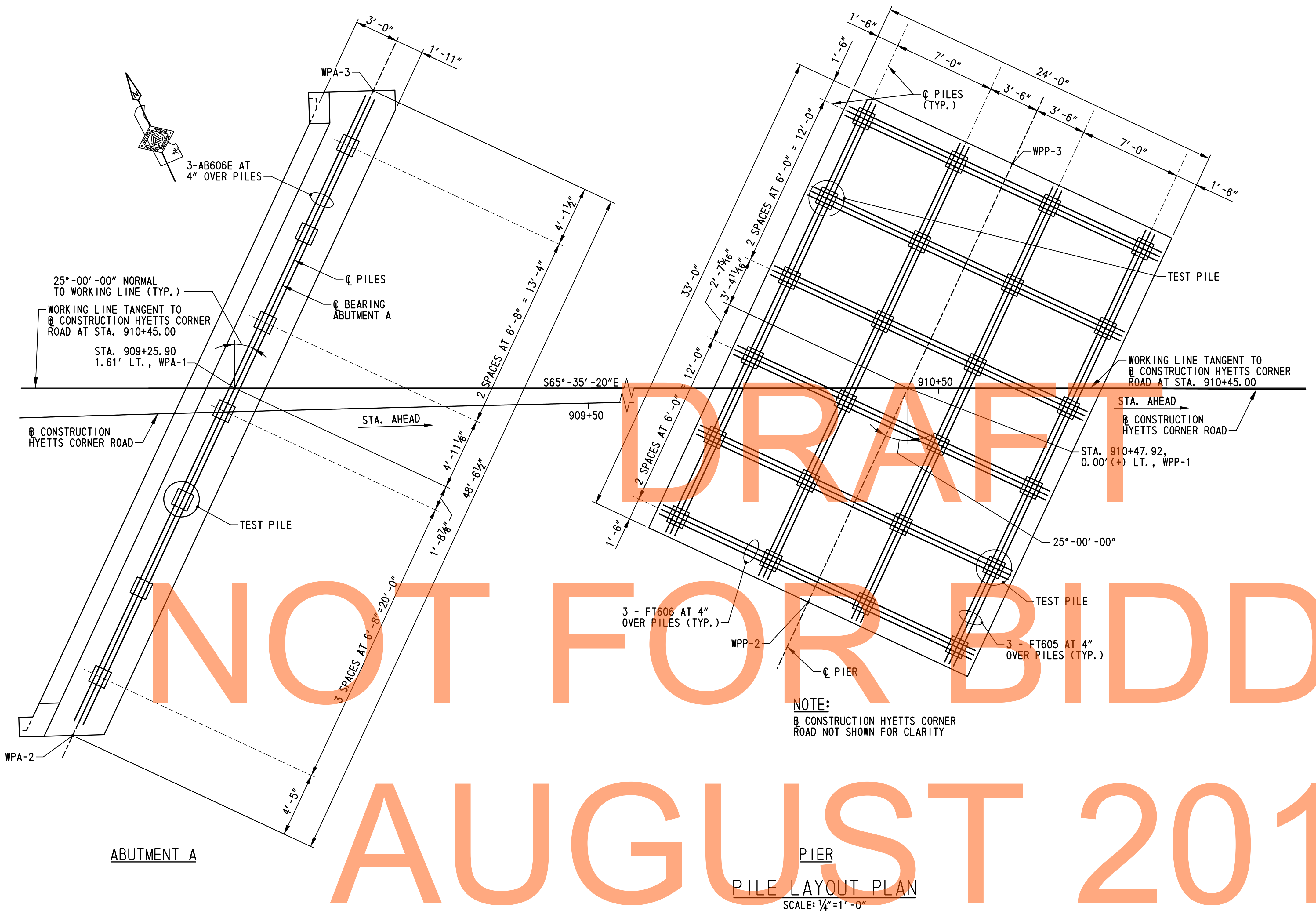
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**GEOMETRIC AND  
FOOTING LAYOUT PLAN**

<b>BR1-6 FT-01</b>
SHEET NO.
319
TOTAL SHTS.
875



- PILE NOTES:**
- THE CONTRACTOR HAS THE OPTION TO INSTALL HP 14x73 STEEL PILES (PILE ALTERNATIVE 2) AS AN ALTERNATIVE TO THE 14" SQUARE PRESTRESSED CONCRETE PILES (PILE ALTERNATIVE 1) SHOWN. THE HP 14x73 STEEL PILES SHALL BE INSTALLED AT THE SAME LOCATIONS AS THE 14" SQUARE PRESTRESSED PILES AND ORIENTED AS SHOWN ON DWG. NO. PL-03. ONLY ONE TYPE OF PILING MAY BE USED FOR THIS BRIDGE.
  - THE FACTORED RESISTANCE OF THE 14" SQUARE PRESTRESSED CONCRETE AND HP 14x73 STEEL PILING IS 145 TONS. PILES SHALL BE DRIVEN AND TESTED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR DYNAMIC PILE TESTING TO A NOMINAL RESISTANCE OF 225 TONS.
  - PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE OF 225 TONS AND TO THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. UPON COMPLETION OF THE DYNAMIC PILE TESTING, THE CONTRACTOR SHALL SUBMIT A SIGNAL MATCHING ANALYSIS TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
  - ALL TEST PILES SHALL BE 10 FEET LONGER THAN THE PILE LENGTH COMPUTED FROM THE PILE TIP DATA TABLE. PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY THE TEST PILES. DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID FOR AS FOLLOWS:
    - ALL TEST PILES WILL BE RESTRIKED AFTER A WAITING PERIOD OF AT LEAST 48 HOURS. TEST PILE RESTRIKES SHALL BE INCIDENTAL TO THE INITIAL INSTALLATION OF THE PILE PROVIDED THEY ARE REQUESTED WITHIN FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE. IF RESTRIKES ARE REQUESTED AFTER FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE, THEN THE TEST PILE RESTRIKE SHALL BE PAID FOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
    - IF DIRECTED BY THE ENGINEER TO RESTRIKE A PRODUCTION PILE, THE RESTRIKE OF THE PRODUCTION PILE SHALL BE PAID SEPARATELY UNDER ITEM NO. 619501 - PRODUCTION PILE RESTRIKE.
  - THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.
  - SEE DWG. NO. PE-01 FOR SETTLEMENT PLATFORM AND MONUMENT LOCATIONS. READINGS ON THE SETTLEMENT PLATFORMS SHALL BE MADE AFTER THE INITIAL INSTALLATION OF THE RISER AND CASING PIPES AND INSTALLATION RECORD SHEETS ARE APPROVED BY THE ENGINEER AND PRIOR TO FILL PLACEMENT. DURING FILL PLACEMENT, READINGS ON ALL SETTLEMENT PLATFORMS SHALL BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER COMPLETION OF THE FILL AND SURCHARGE PLACEMENT, INSTALL SETTLEMENT MONUMENTS IF INDICATED ON THE BRIDGE PLANS AND TAKE INITIAL READINGS. READINGS ON ALL SETTLEMENT MONITORING DEVICES SHALL THEN BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. IF THE SETTLEMENT HAS CEASED ON ALL MONITORED SETTLEMENT MONITORING DEVICES IN THE VICINITY OF THE SUBSTRUCTURE UNIT BY CALENDAR DAY 6, THAT IS THREE READINGS, AFTER THE COMPLETION OF THE FILL, SURCHARGE AND SETTLEMENT MONUMENT PLACEMENT, THE SUBSTRUCTURE WILL BE RELEASED BY THE ENGINEER FOR REMOVAL OF THE SURCHARGE AND INSTALLATION OF PRODUCTION PILES WITHIN THREE WORKING DAYS OF RECEIPT OF SETTLEMENT MONITORING RESULTS. AFTER COMPLETION OF THE ABUTMENT AND MSE WALL PANEL PLACEMENT, THE CONTRACTOR SHALL ESTABLISH REFERENCE POINTS TO MONITOR SETTLEMENT ON TOP OF THE ABUTMENT SEAT AND EITHER ON TOP OF THE MSE WALL PANELS OR ON TOP OF THE MSE WALL LEVELING PAD AT POINTS WITHIN FIVE FEET OF ALL ENDS AND CORNERS AND AT THE CENTER OF BRIDGES AND THE CENTERLINE OF US301. AFTER THE CONCRETE ABUTMENTS HAVE BEEN CONSTRUCTED AND THE MSE WALL PANELS HAVE BEEN PLACED, READINGS ON ALL SETTLEMENT MONITORING DEVICES AND REFERENCE POINTS SHALL CONTINUE TO BE TAKEN AT A MINIMUM OF 30-DAY INTERVALS FOR THE NEXT 6 MONTHS OR AS DIRECTED BY THE ENGINEER. SEE SPECIAL PROVISIONS FOR ADDITIONAL SETTLEMENT MONITORING REQUIREMENTS.
  - FOR PILE DETAILS, SEE DWG. NO. PL-03.
  - FOR PILE INSTALLATION SEQUENCE OF CONSTRUCTION AT ABUTMENTS, SEE DWG. NO. PL-02.

**NOTE:**  
 CONSTRUCTION HYETTS CORNER ROAD NOT SHOWN FOR CLARITY

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

- PILE LEGEND:**
- DENOTES PLUMB 14" PRESTRESSED CONCRETE OR HP 14x73 STEEL PILE
  - ⊙ DENOTES LOCATION OF 14" PRESTRESSED CONCRETE OR HP 14x73 STEEL PILE AND DYNAMIC PILE TESTING.

ABUTMENT A PILE DRIVING INFORMATION	
PILE SIZE AND TYPE:	14" SQUARE PRESTRESSED CONCRETE OR HP14x73
ACTUAL BEARING OBTAINED:	
HAMMER TYPE:	
PILE HAMMER ENERGY:	45,000 LB-FT TO 75,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:	

PIER PILE DRIVING INFORMATION	
PILE SIZE AND TYPE:	14" SQUARE PRESTRESSED CONCRETE OR HP14x73
ACTUAL BEARING OBTAINED:	
HAMMER TYPE:	
PILE HAMMER ENERGY:	45,000 LB-FT TO 75,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:	

PILE TIP DATA					
SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	MINIMUM TIP ELEVATION	14" SQ. PCP ESTIMATED TIP ELEVATION	HP14x73 ESTIMATED TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT A	-10.0	-29.0	-52.0		
PIER	-35.0	-35.0	-52.0		

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ADDENDUMS / REVISIONS	

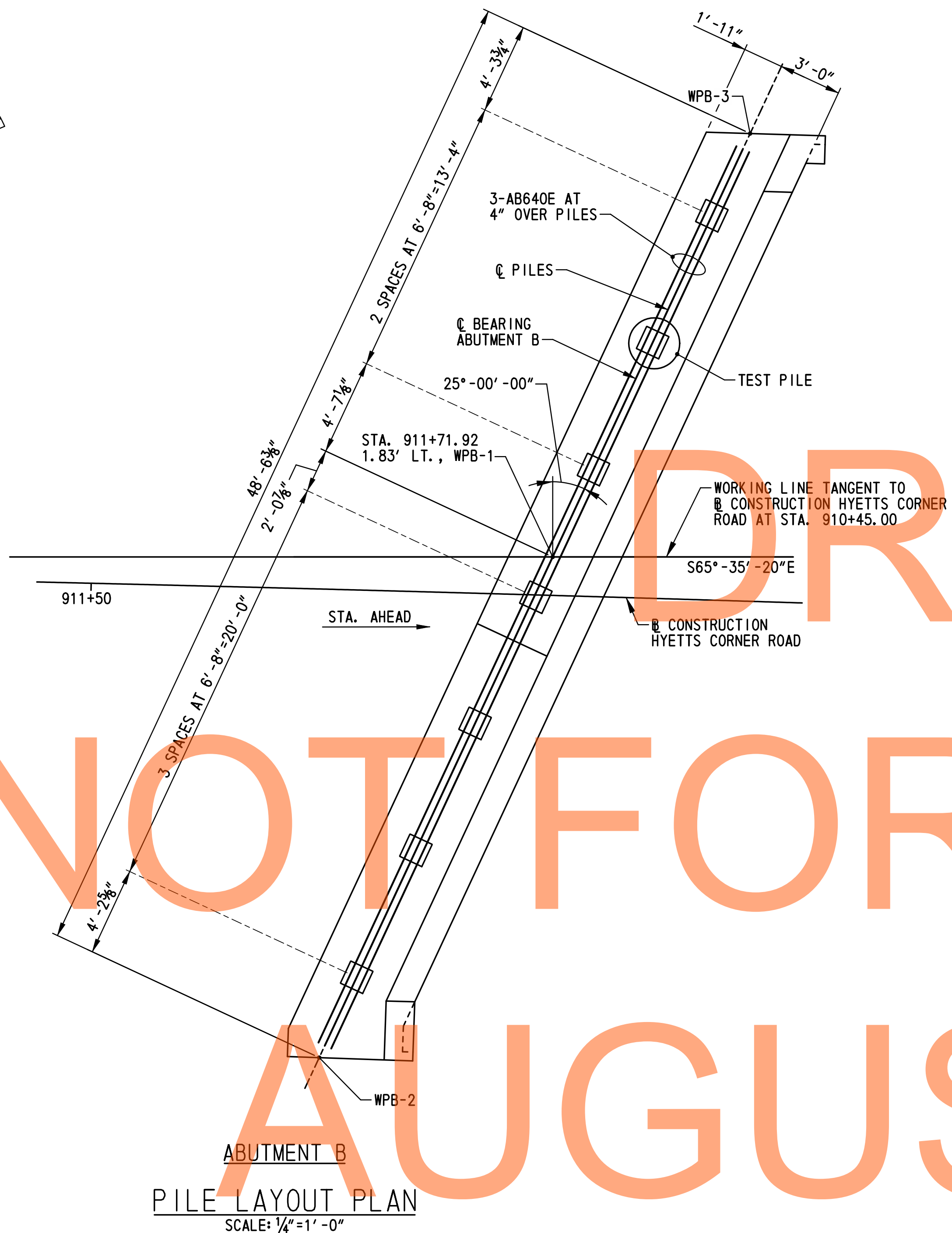
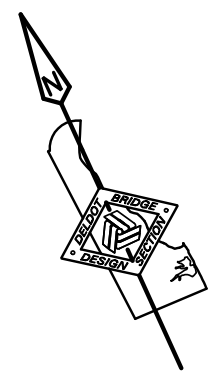
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.D.D./A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PILE LAYOUT PLAN - 1

BR1-6 PL-01	SHEET NO.	320
	TOTAL SHTS.	875



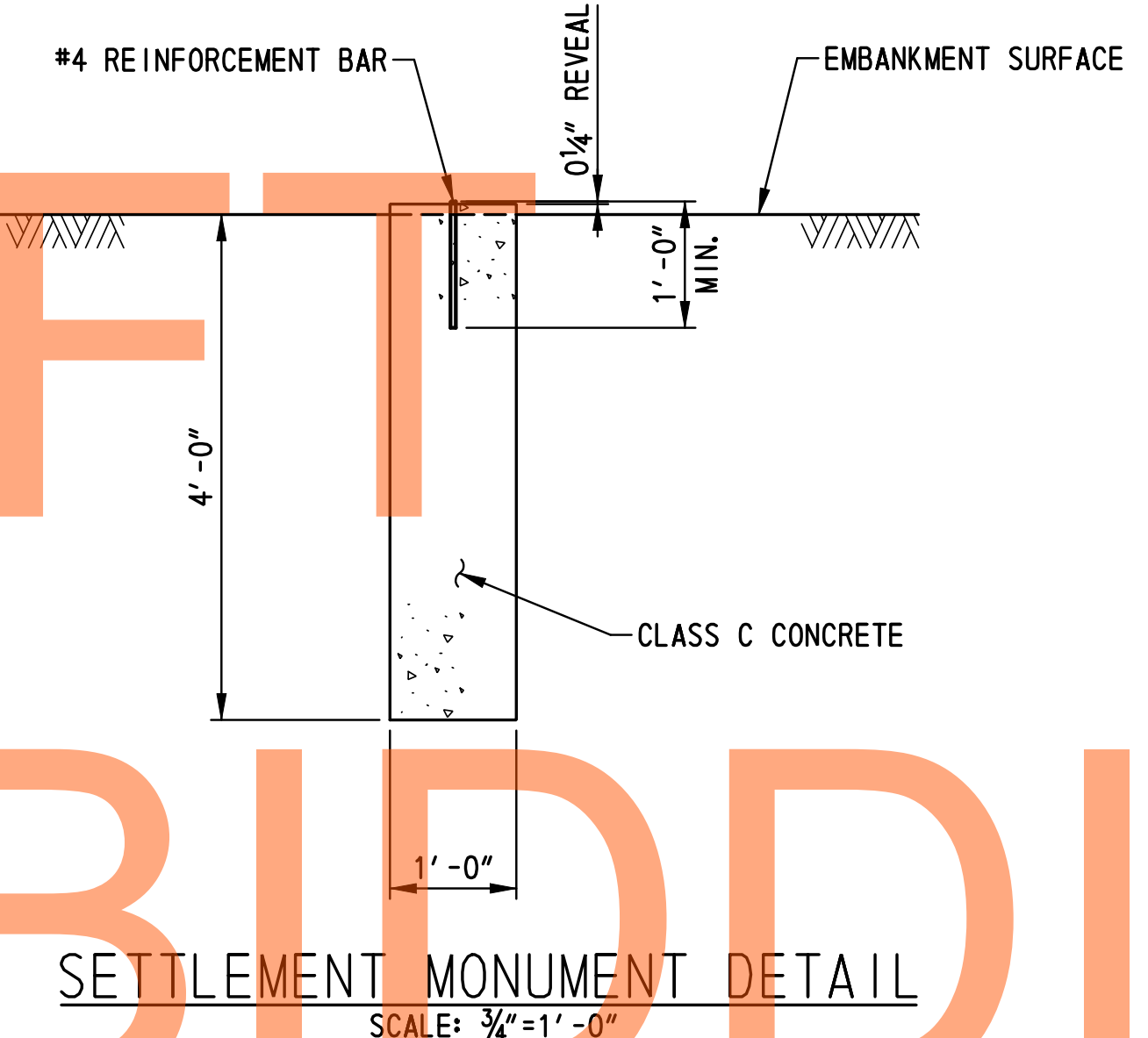
ABUTMENT B  
PILE LAYOUT PLAN  
SCALE: 1/4"=1'-0"

**PILE LEGEND:**

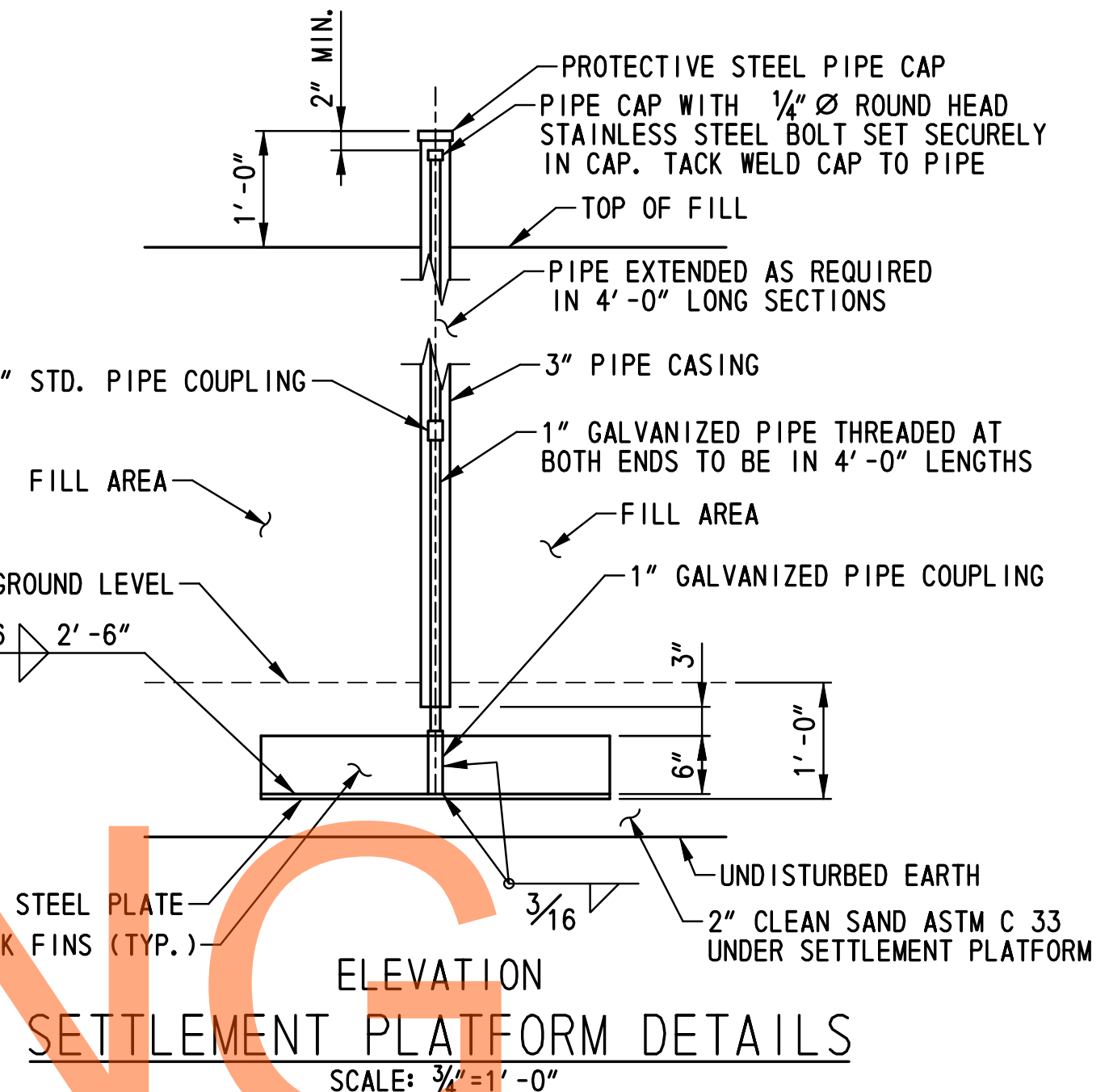
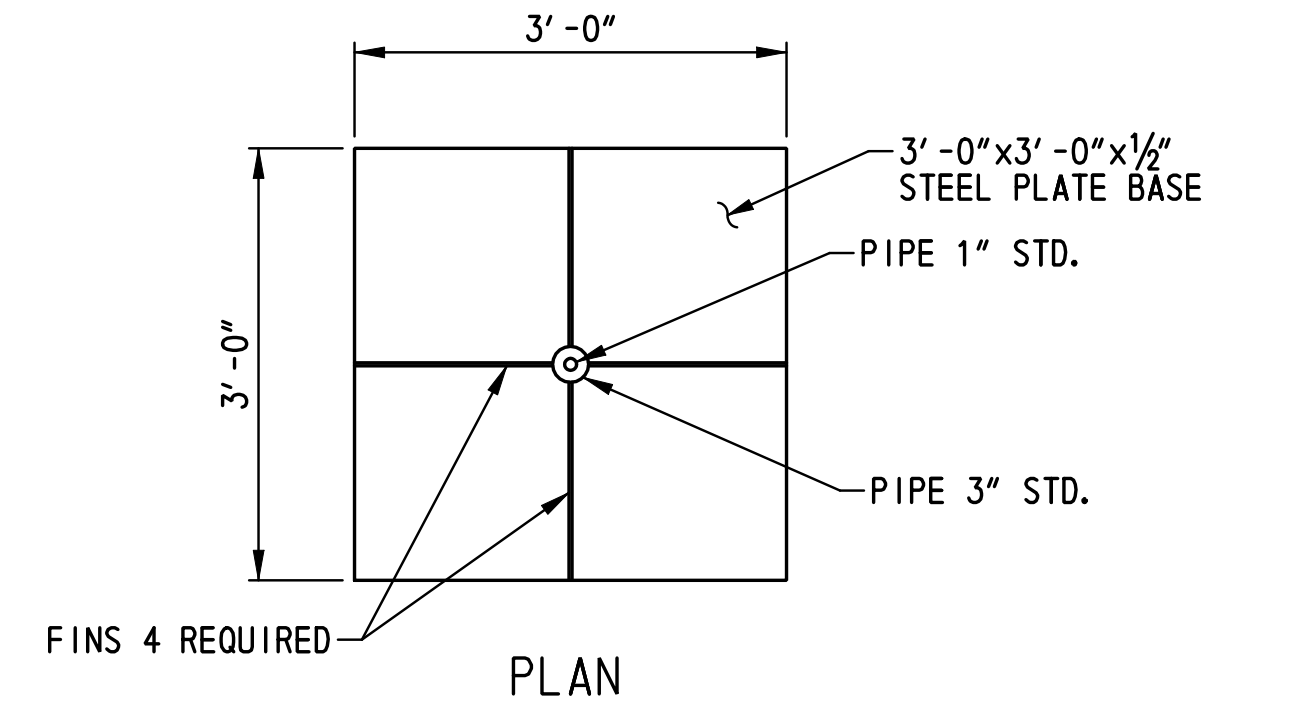
1. □ DENOTES PLUMB 14" PRESTRESSED CONCRETE OR HP 14x73 STEEL PILE
2. ⊙ DENOTES LOCATION OF 14" PRESTRESSED CONCRETE OR HP 14x73 STEEL PILE AND DYNAMIC PILE TESTING.

ABUTMENT B PILE DRIVING INFORMATION	
PILE SIZE AND TYPE:	14" SQUARE PRESTRESSED CONCRETE OR HP14x73
ACTUAL BEARING OBTAINED:	
HAMMER TYPE:	
PILE HAMMER ENERGY:	45,000 LB-FT TO 75,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:	

PILE TIP DATA					
SUBSTRUCTURE UNIT	MINIMUM TIP ELEVATION	DESIGN DATA		ACTUAL FIELD DATA	
		14" SQ. PCP ESTIMATED TIP ELEVATION	HP14x73 ESTIMATED TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT B	0.0	-23.0	-46.0		



SETTLEMENT MONUMENT DETAIL  
SCALE: 3/4"=1'-0"



SETTLEMENT PLATFORM DETAILS  
SCALE: 3/4"=1'-0"

**PILE INSTALLATION SEQUENCE OF CONSTRUCTION AT ABUTMENTS:**

1. PILE CASINGS SHALL BE INSTALLED DURING INSTALLATION OF THE MSE WALL SELECT BACKFILL AND REINFORCEMENT TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT STEMS.
2. CONSTRUCT MSE WALLS, INCLUDING WIRE FACED MSE WALLS AT REAR FACES OF ABUTMENT STEMS AND BACKWALLS, TO THE REQUIRED ELEVATIONS.
3. AFTER COMPLETION OF THE SETTLEMENT WAITING PERIOD AS DETERMINED BY THE ENGINEER, THE PILES SHALL BE SET AND CENTERED IN THE CASINGS. A 60-DAY SETTLEMENT WAITING PERIOD IS ANTICIPATED AT ABUTMENT A AND ABUTMENT B. SETTLEMENT IS CONSIDERED TO BE COMPLETE AFTER TWO CONSECUTIVE SETTLEMENT PLATFORM READINGS THAT ARE WITHIN 0.01 FEET FOR ALL SETTLEMENT PLATFORMS. SEE SPECIAL PROVISIONS FOR SETTLEMENT PLATFORM AND MONUMENT REQUIREMENTS.
4. PILES SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATIONS AND REQUIRED NOMINAL RESISTANCE SPECIFIED. FOR PILE RESTRIKE REQUIREMENTS, SEE SPECIAL PROVISIONS.
5. AFTER PILE INSTALLATION/DRIVING IS COMPLETE THE CASINGS SHALL BE FILLED WITH SAND.
6. TEST PILES MAY BE DRIVEN PRIOR TO PLACING EMBANKMENT AND SURCHARGE MATERIAL. RESTRIKES OF THESE TEST PILES SHALL BE PERFORMED PRIOR TO PLACING EMBANKMENT IN ACCORDANCE WITH ITEM 619502-TEST PILE RESTRIKE. AFTER THE EMBANKMENT HAS BEEN PLACED, SETTLEMENT HAS BEEN ACHIEVED AND THE SUBSTRUCTURE HAS BEEN RELEASED BY THE ENGINEER, THE TEST PILE SHALL BE ACTING AS A PRODUCTION PILE AND IT SHALL BE RE-STRUCK PRIOR TO PLACING ANY OTHER PRODUCTION PILES WITH PAYMENT UNDER ITEM 619501 - PRODUCTION PILE RESTRIKE. ONCE THE TEST PILE HAS BEEN ACCEPTED, THE REMAINING PRODUCTION PILES MAY BE INSTALLED.

**NOTES:**

1. FOR PILE NOTES, SEE DWG. NO. PL-01.
2. SEE DWG. NO. PE-01 FOR SETTLEMENT PLATFORM AND SETTLEMENT MONUMENT LOCATIONS.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PILE LAYOUT PLAN - 2

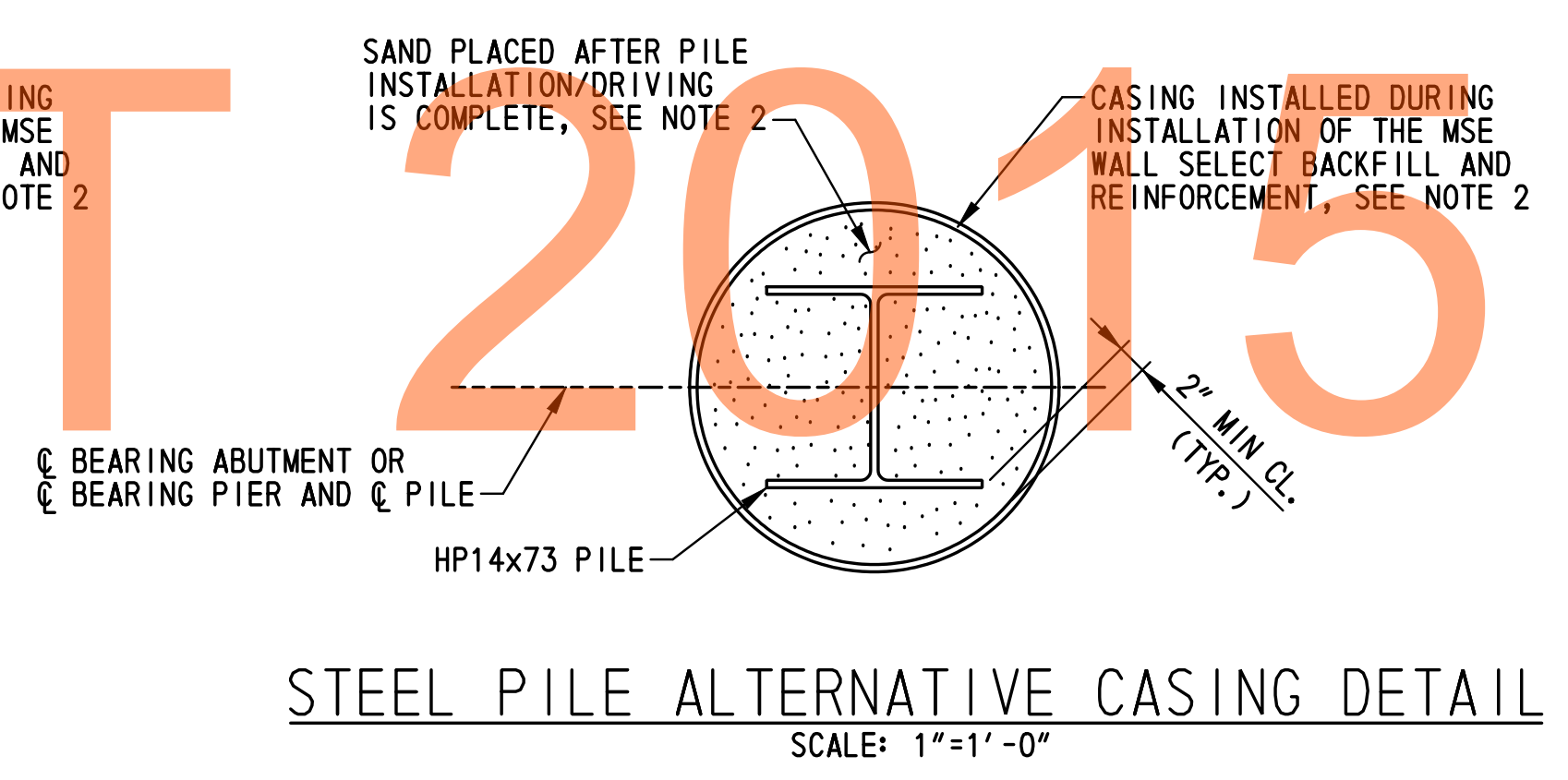
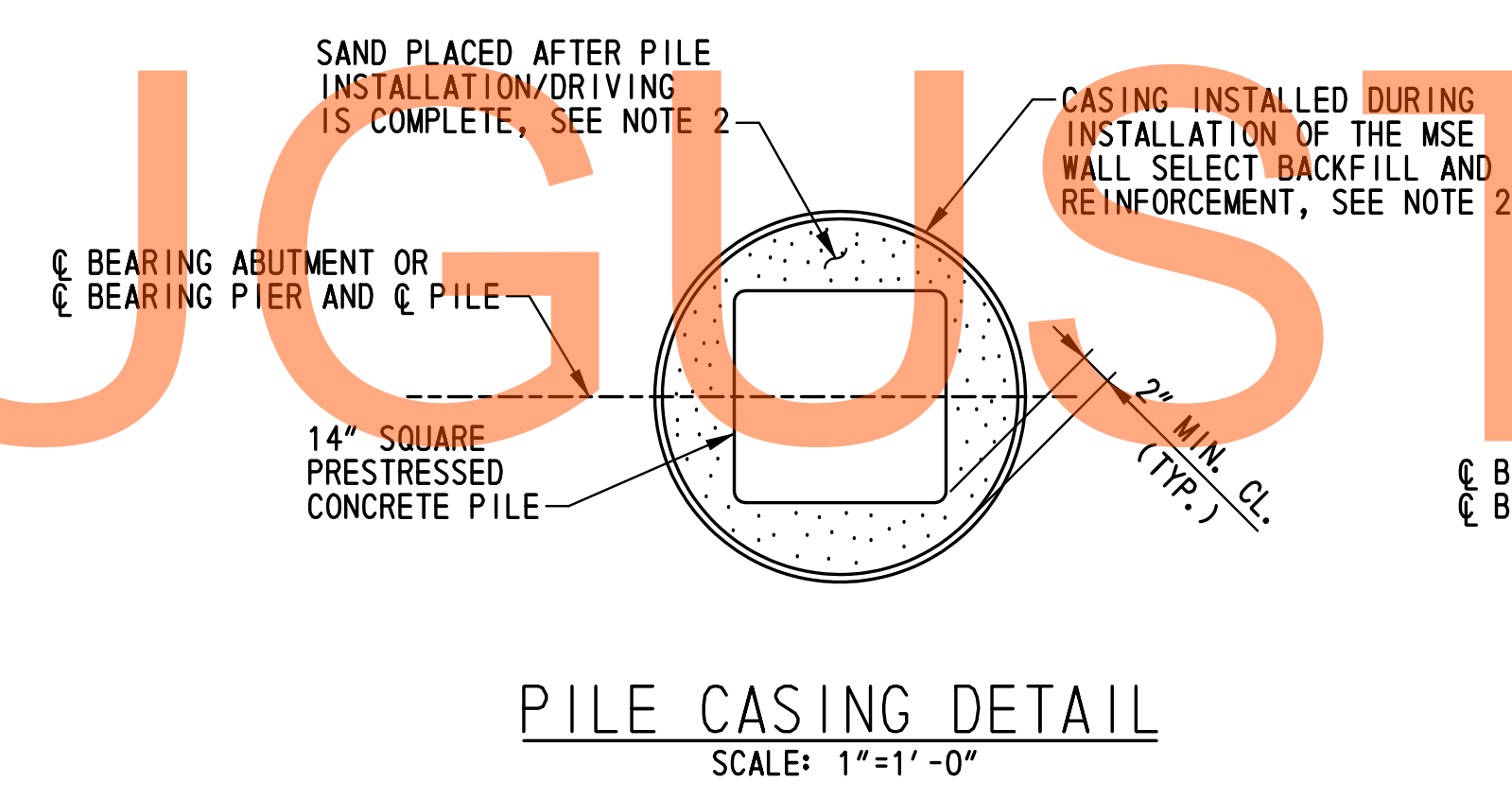
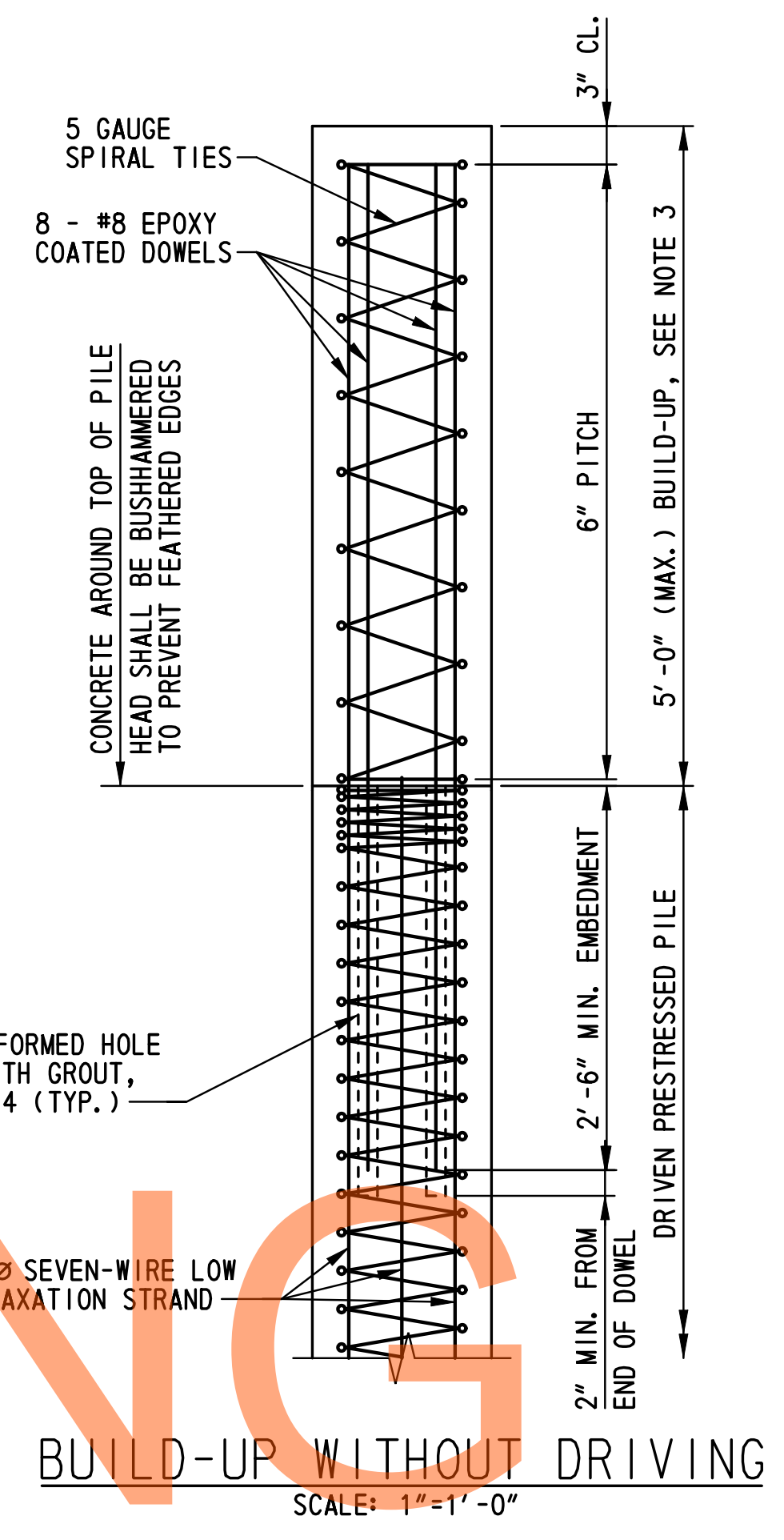
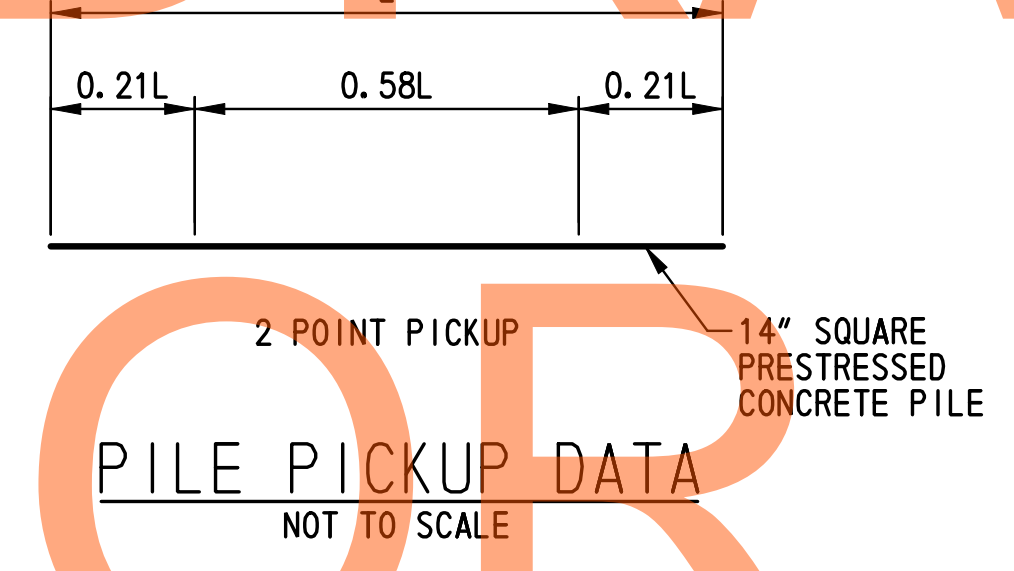
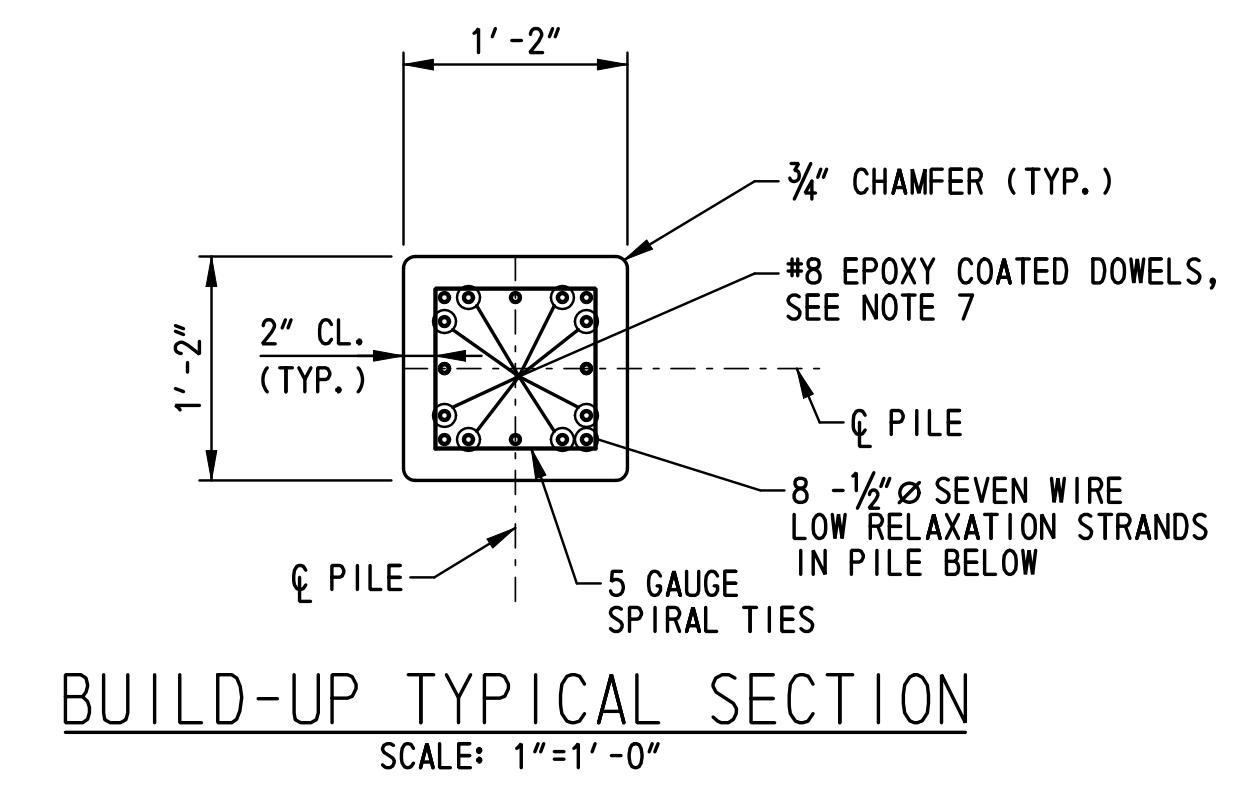
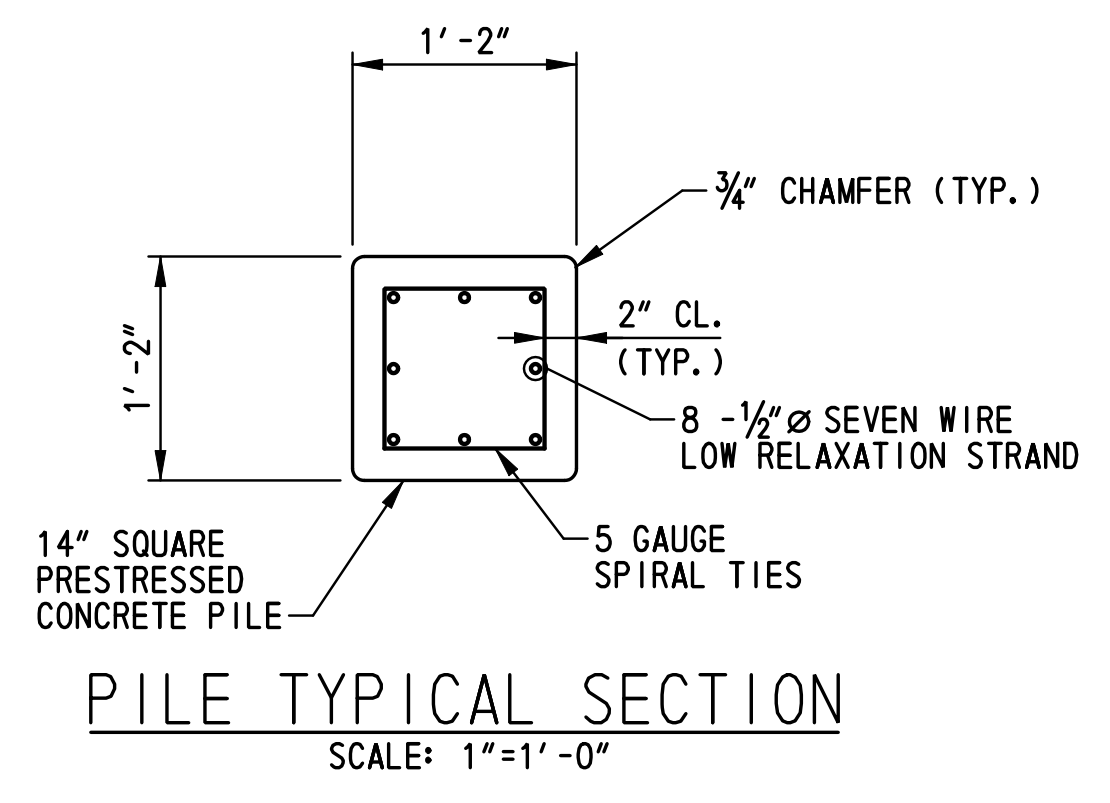
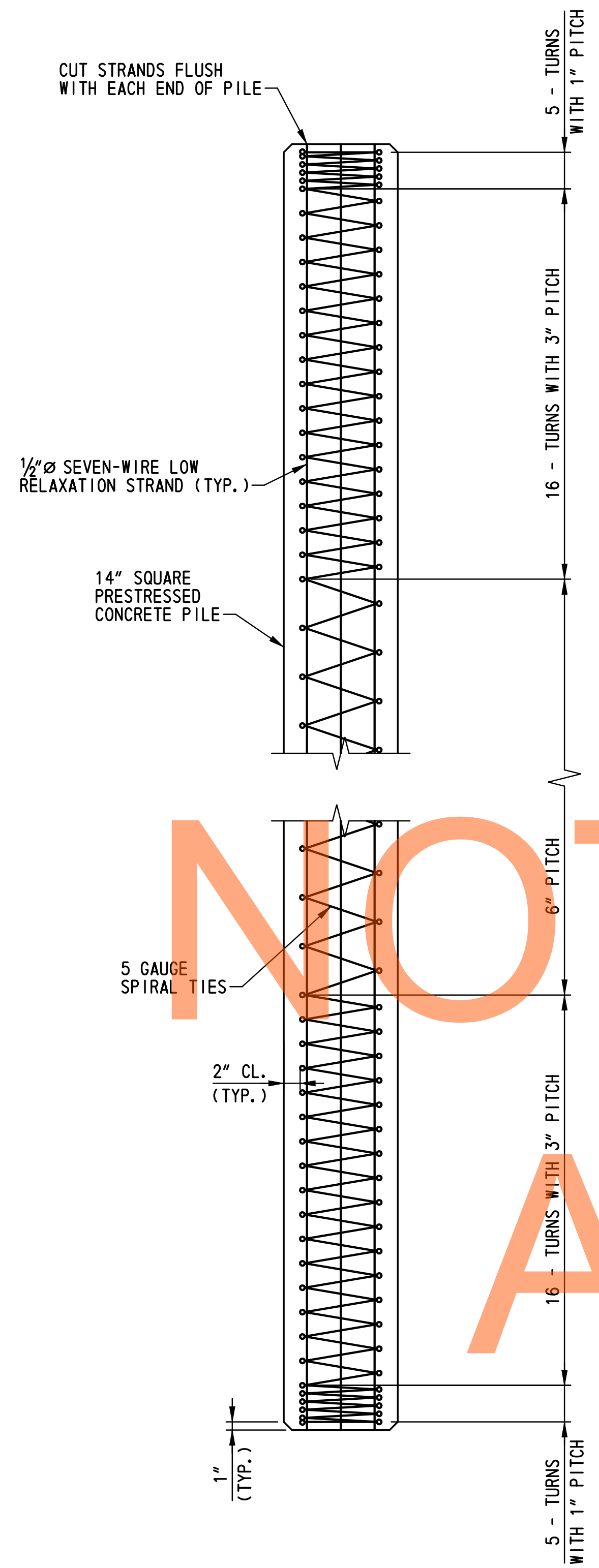
BR1-6 PL-02
SHEET NO.
321
TOTAL SHTS.
875



# DRAFT

# NOT FOR BIDDING

# AUGUST 2015



- NOTES:**
- FOR ADDITIONAL PILE INFORMATION, SEE DWG. NO. PL-01.
  - PAYMENT FOR FURNISHING AND INSTALLATION OF CASING AND SAND WILL BE INCIDENTAL TO ITEM NO. 602772 - MECHANICALLY STABILIZED EARTH WALLS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
  - THE CAST-IN-PLACE CONCRETE PILE BUILD-UP SHALL BE USED WHERE PILES MUST BE DRIVEN TO AN ELEVATION WHICH RESULTS IN THE TOP OF PILE BEING LOWER THAN THE BOTTOM OF CAP TO ACHIEVE THE REQUIRED NOMINAL RESISTANCE. PILE BUILD-UP WILL BE MEASURED AND PAID FOR IN CONFORMANCE WITH SECTION 618 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
  - PROVIDE 1/2" DIAMETER PREFORMED HOLES IN PILE HEAD AT THE DOWEL LOCATIONS. DOWELS SHALL BE GROUTED INTO PLACE WITH AN APPROVED EPOXY GROUT. PRIOR TO THE GROUTING PROCEDURE, PREFORMED HOLES SHALL REMAIN PLUGGED TO ENSURE THAT WATER AND FOREIGN MATERIAL DOES NOT ENTER THE PREFORMED HOLES. HOLES SHALL BE GROUTED WHEN THE PILE BUILD-UP IS NOT NEEDED.
  - MINIMUM COMPRESSIVE STRENGTH OF EPOXY GROUT SHALL BE f'c=6,000 PSI.
  - THE COMPRESSIVE STRENGTH OF THE PILE BUILD-UP SHALL BE f'c=6,000 PSI.
  - DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN A 1" CLEAR DISTANCE FROM ALL PRESTRESSING STRANDS IN THE PILE.

PL-01-0001 CONTRACT 14\CAD\Bridg\BR-06\PL-01.dwg 11/16/14  
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ADDENDUMS / REVISIONS	

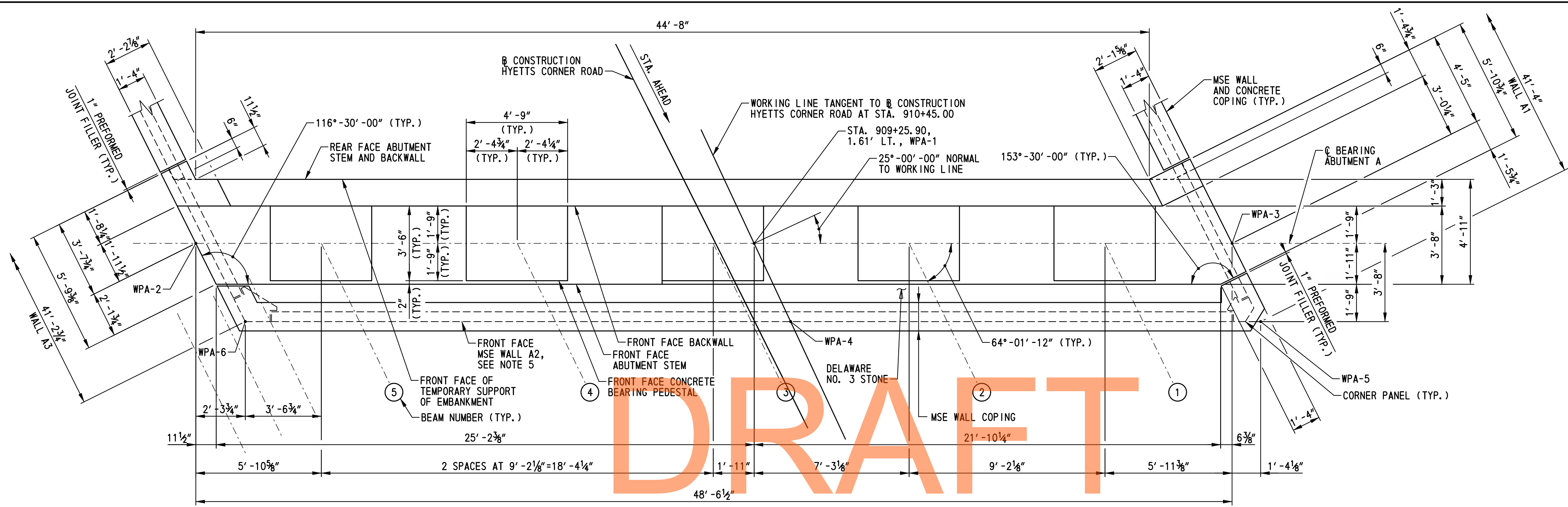
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US 301,  
SR 896 TO SR 1

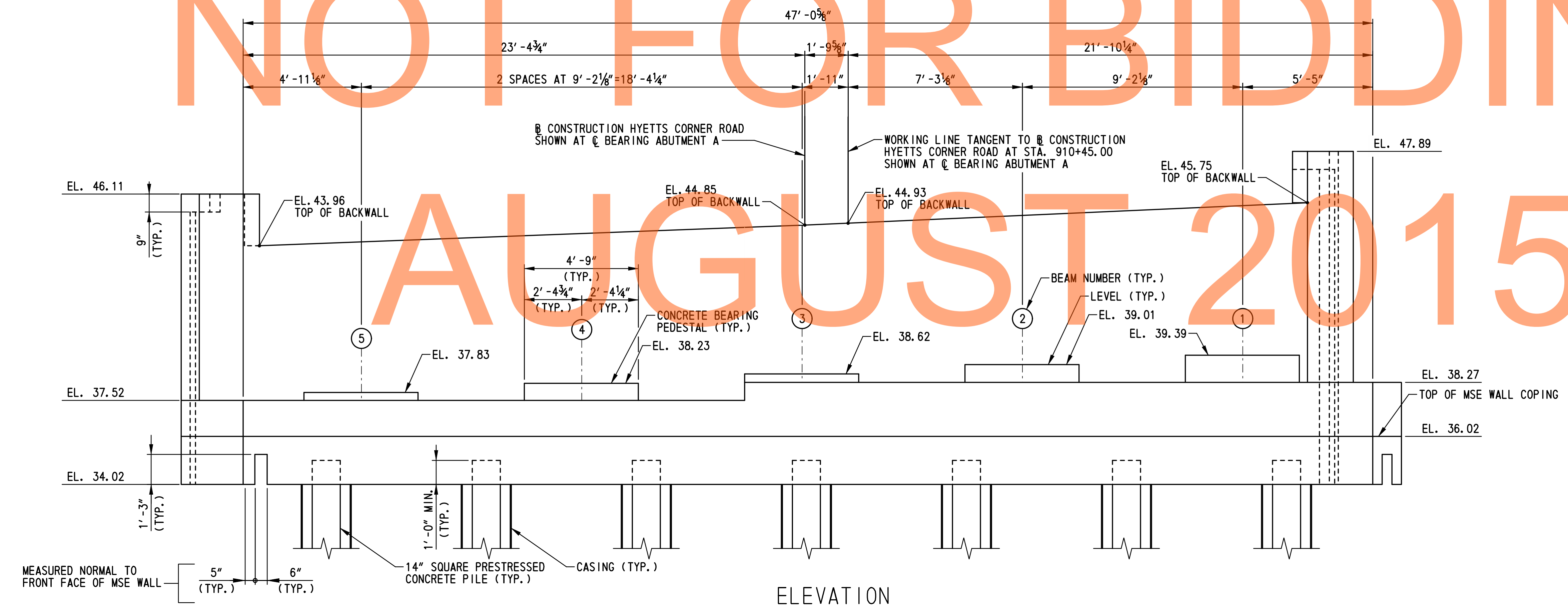
CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PILE DETAILS	
SHEET NO.	322
TOTAL SHTS.	875

BR1-6  
PL-03



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



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

DRAFT

NOT FOR BIDDING

AUGUST 2015

- NOTES:**
1. MSE WALL NOT SHOWN IN ELEVATION FOR CLARITY.
  2. FOR APPROXIMATE EXISTING GROUNDLINE SEE DWG. NO. AB-03.
  3. FOR PILE LAYOUT SEE DWG. NO. PL-01.
  4. FOR ABUTMENT A TYPICAL SECTION SEE DWG. NO. AB-02.
  5. FOR ABUTMENT A MSE WALL ELEVATION AND NOTES SEE DWG. NO. AB-03.

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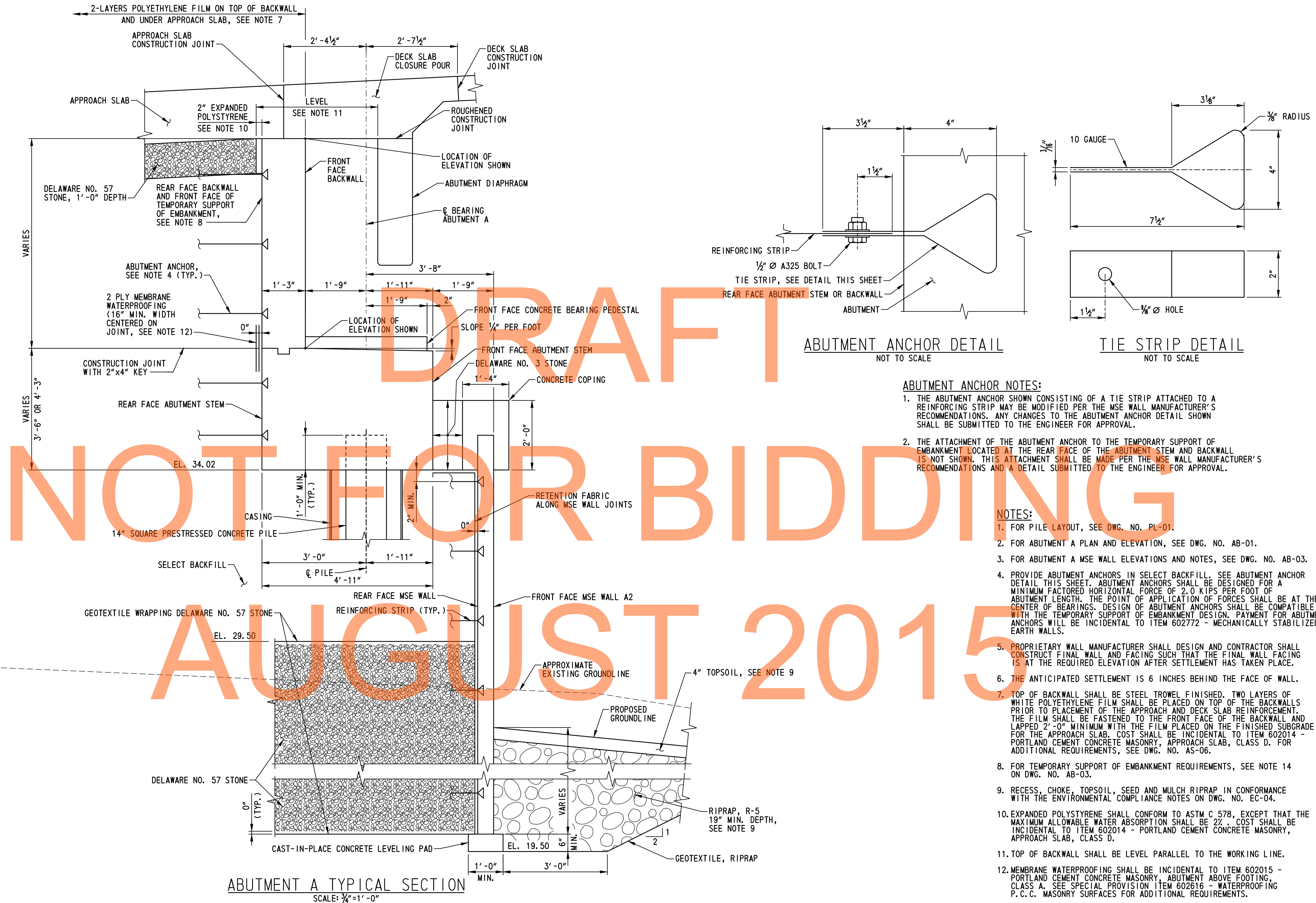
ADDENDUMS / REVISIONS	

**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.D.D. CHECKED BY: P.S.D.

**ABUTMENT A  
PLAN AND ELEVATION**

<b>BR1-6 AB-01</b>
SHEET NO. 323
TOTAL SHTS. 875



- ABUTMENT ANCHOR NOTES:**
1. THE ABUTMENT ANCHOR SHOWN CONSISTING OF A TIE STRIP ATTACHED TO A REINFORCING STRIP MAY BE MODIFIED PER THE MSE WALL MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES TO THE ABUTMENT ANCHOR DETAIL SHOWN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
  2. THE ATTACHMENT OF THE ABUTMENT ANCHOR TO THE TEMPORARY SUPPORT OF EMBANKMENT LOCATED AT THE REAR FACE OF THE ABUTMENT STEM AND BACKWALL IS NOT SHOWN. THIS ATTACHMENT SHALL BE MADE PER THE MSE WALL MANUFACTURER'S RECOMMENDATIONS AND A DETAIL SUBMITTED TO THE ENGINEER FOR APPROVAL.

- NOTES:**
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
  2. FOR ABUTMENT A PLAN AND ELEVATION, SEE DWG. NO. AB-01.
  3. FOR ABUTMENT A MSE WALL ELEVATIONS AND NOTES, SEE DWG. NO. AB-03.
  4. PROVIDE ABUTMENT ANCHORS IN SELECT BACKFILL. SEE ABUTMENT ANCHOR DETAIL THIS SHEET. ABUTMENT ANCHORS SHALL BE DESIGNED FOR A MINIMUM FACTORED HORIZONTAL FORCE OF 2.0 KIPS PER FOOT OF ABUTMENT LENGTH. THE POINT OF APPLICATION OF FORCES SHALL BE AT THE CENTER OF BEARINGS. DESIGN OF ABUTMENT ANCHORS SHALL BE COMPATIBLE WITH THE TEMPORARY SUPPORT OF EMBANKMENT DESIGN. PAYMENT FOR ABUTMENT ANCHORS WILL BE INCIDENTAL TO ITEM 602772 - MECHANICALLY STABILIZED EARTH WALLS.
  5. PROPRIETARY WALL MANUFACTURER SHALL DESIGN AND CONTRACTOR SHALL CONSTRUCT FINAL WALL AND FACING SUCH THAT THE FINAL WALL FACING IS AT THE REQUIRED ELEVATION AFTER SETTLEMENT HAS TAKEN PLACE.
  6. THE ANTICIPATED SETTLEMENT IS 6 INCHES BEHIND THE FACE OF WALL.
  7. TOP OF BACKWALL SHALL BE STEEL TROWEL FINISHED. TWO LAYERS OF WHITE POLYETHYLENE FILM SHALL BE PLACED ON TOP OF THE BACKWALLS PRIOR TO PLACEMENT OF THE APPROACH AND DECK SLAB REINFORCEMENT. THE FILM SHALL BE FASTENED TO THE FRONT FACE OF THE BACKWALL AND LAPPED 2'-0" MINIMUM WITH THE FILM PLACED ON THE FINISHED SUBGRADE FOR THE APPROACH SLAB. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D. FOR ADDITIONAL REQUIREMENTS, SEE DWG. NO. AS-06.
  8. FOR TEMPORARY SUPPORT OF EMBANKMENT REQUIREMENTS, SEE NOTE 14 ON DWG. NO. AB-03.
  9. RECESS, CHOKER, TOPSOIL, SEED AND MULCH RIPRAP IN CONFORMANCE WITH THE ENVIRONMENTAL COMPLIANCE NOTES ON DWG. NO. EC-04.
  10. EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, EXCEPT THAT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 2%. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
  11. TOP OF BACKWALL SHALL BE LEVEL PARALLEL TO THE WORKING LINE.
  12. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P.C.C. MASONRY SURFACES FOR ADDITIONAL REQUIREMENTS.

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

**ABUTMENT ANCHOR DETAIL**  
NOT TO SCALE

**TIE STRIP DETAIL**  
NOT TO SCALE

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ADDENDUMS / REVISIONS	

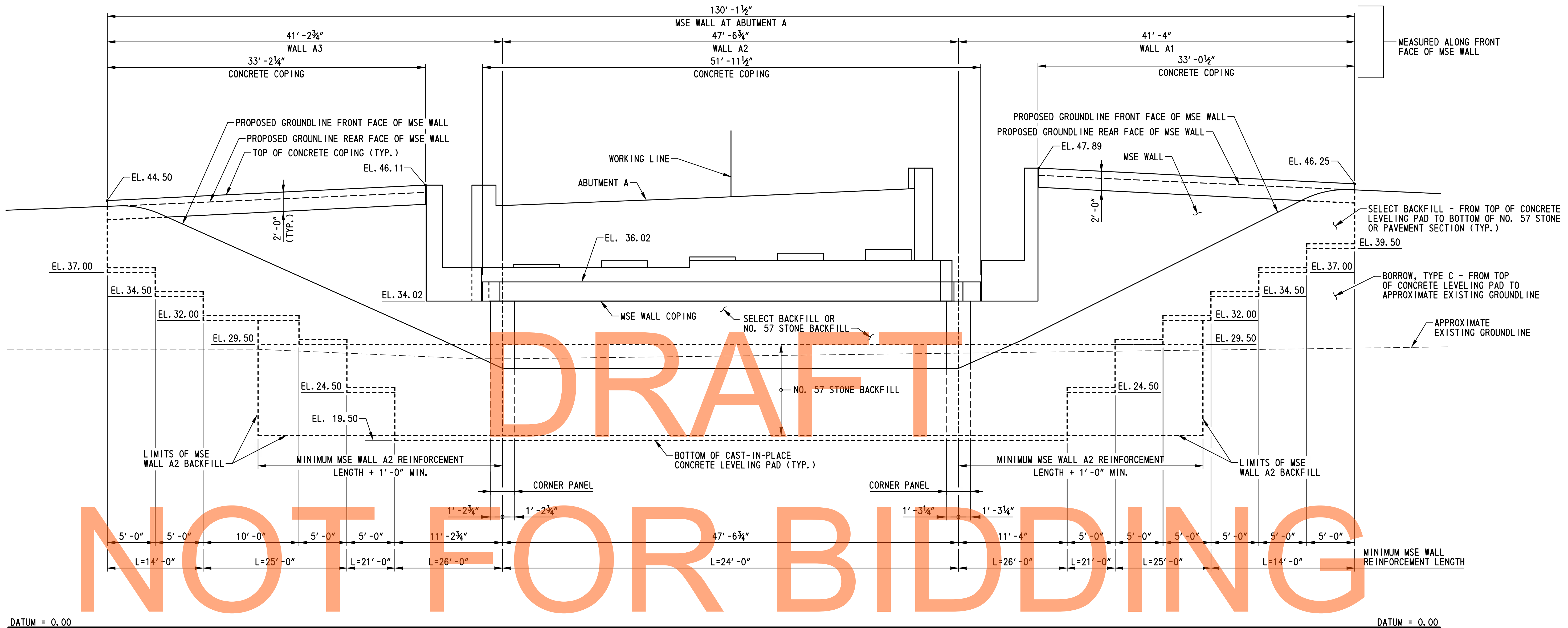
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

<b>ABUTMENT A TYPICAL SECTION</b>	
SHEET NO.	324
TOTAL SHTS.	875

**BR1-6  
AB-02**



DATUM = 0.00

DATUM = 0.00

**DEVELOPED ELEVATION**

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

**MSE WALL NOTES:**

- DESIGN CRITERIA  
SEE SPECIAL PROVISION FOR ITEM 602772.
- CONCRETE  
ALL CONCRETE PROPERTIES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.  
  
CLASS A - MSE WALL PANELS AND MSE WALL COPING (f'c = 4,500 PSI)  
CLASS B - MSE WALL LEVELING PAD (f'c = 3,000 PSI)  
  
ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.
- REINFORCING STEEL  
ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM A 615), GRADE 60 AND SHALL BE PROTECTED WITH FUSION BONDED EPOXY CONFORMING TO AASHTO M 284 (ASTM A 775).  
  
MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 2" UNLESS NOTED OTHERWISE.  
  
THE MSE WALL MANUFACTURER MAY SUBSTITUTE ALTERNATIVE REINFORCING CONFIGURATIONS AND SUBMIT FOR APPROVAL.
- ARCHITECTURAL FINISH  
THE COMPONENTS OF THE MSE WALL SHALL HAVE THE ARCHITECTURAL TREATMENT AS SPECIFIED IN THE SPECIAL PROVISION FOR ITEM 602772.
- WALL REINFORCEMENT  
WALL REINFORCEMENT SHALL BE LOCATED TO CLEAR THE PILE CASINGS WITH 2" MINIMUM CLEARANCE AND A MAXIMUM 15 DEGREE SKEW.
- COPING  
THE MSE WALL COPING SHALL BE A PRECAST CONCRETE COPING INSTALLED IN CONFORMANCE WITH THE PROPRIETARY WALL MANUFACTURER'S RECOMMENDATIONS. FOR LOCATIONS ALONG THE MSE WALL WHERE A PRECAST CONCRETE COPING CANNOT BE UTILIZED, A CAST-IN-PLACE CONCRETE COPING INSTALLED IN CONFORMANCE WITH THE PROPRIETARY WALL MANUFACTURER'S RECOMMENDATIONS MAY BE UTILIZED.

- LEVELING PAD  
THE LEVELING PAD STEPS MAY BE RELOCATED AT THE DISCRETION OF THE PROPRIETARY WALL MANUFACTURER PROVIDED THAT THE MINIMUM EMBEDMENT IS MAINTAINED IN ACCORDANCE WITH THE SPECIFIED DESIGN CRITERIA. ANY CHANGES TO THE STEP LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- BACKFILL AND FOUNDATION SOILS  
MSE WALL BACKFILL SHALL CONSIST OF SELECT BACKFILL AND SHALL BE IN CONFORMANCE WITH THE SPECIAL PROVISIONS. MSE WALL BACKFILL AT ABUTMENT A BELOW EL. 29.50 SHALL CONSIST OF DELAWARE NO. 57 STONE. SEE SOIL PROPERTIES TABLE ON THIS SHEET.
- INTERNAL STABILITY  
THE INTERNAL STABILITY OF THE MSE WALL SHALL BE DESIGNED BY THE PROPRIETARY WALL MANUFACTURER USING THE SOIL PROPERTIES PROVIDED AT EACH WALL LOCATION. THE INTERNAL STABILITY CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE AS INDICATED IN THE PROJECT SPECIFICATIONS.
- QUARANTINE PERIOD  
ALLOW A MINIMUM OF 60 DAYS QUARANTINE PERIOD FOR SETTLEMENT MONITORING. BEGIN THE QUARANTINE PERIOD WHEN THE FULL HEIGHT OF THE MSE WALL IS ACHIEVED, THE APPROACH EMBANKMENTS ARE AT THEIR FINAL ROADWAY SUBGRADE ELEVATION AND THE SETTLEMENT PLATFORMS ARE COMPLETELY CONSTRUCTED. THE ENGINEER WILL DETERMINE THE DURATION OF THE QUARANTINE PERIOD BASED ON THE SETTLEMENT READINGS. THE ENGINEER WILL NOTIFY THE CONTRACTOR, IN WRITING, WHEN THE QUARANTINE PERIOD CAN BE LIFTED BASED ON THE RESULTS OF THE SETTLEMENT READINGS.
- SETTLEMENT REQUIREMENTS  
THE PROPRIETARY WALL MANUFACTURER SHALL DESIGN AND THE CONTRACTOR SHALL CONSTRUCT FINAL WALL AND FACING SUCH THAT THE FINAL WALL FACING IS AT THE REQUIRED ELEVATION AFTER SETTLEMENT HAS TAKEN PLACE. THE ANTICIPATED SETTLEMENT IS 6 INCHES BEHIND THE FACE OF WALL A2 AND B2. SEE SPECIAL PROVISIONS FOR SETTLEMENT MONITORING REQUIREMENTS.
- SERVICE LIFE  
ALL RETAINING WALL COMPONENTS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS.
- WALL SYSTEM  
ONLY ONE MSE WALL SYSTEM MANUFACTURER MAY BE USED ON THIS PROJECT.

- TEMPORARY SUPPORT OF EMBANKMENT  
TEMPORARY SUPPORT OF EMBANKMENT IS REQUIRED AT THE REAR FACE OF BOTH ABUTMENT STEMS AND BACKWALLS TO ALLOW THE UNDERLYING SOILS TO PRECONSOLIDATE UNDER THE FINAL REQUIRED SOIL PRESSURE PRIOR TO PILE INSTALLATION. THE LIMITS OF THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE THE FULL ABUTMENT HEIGHT OVER THE FULL ABUTMENT LENGTH. THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE DESIGNED BY THE MSE WALL DESIGNER TO RESIST THE FULL HORIZONTAL EARTH PRESSURE AND HORIZONTAL SOIL PRESSURE DUE TO SURCHARGE OF SOIL AND THE CONTRACTOR'S EQUIPMENT AND MATERIALS. ALL MSE WALL REINFORCING STRIPS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS. THE DESIGN OF THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE COMPATIBLE WITH THE ABUTMENT ANCHORS SHOWN ON DWG. NOS. AB-02 AND AB-08. PAYMENT FOR CONSTRUCTION OF THE TEMPORARY SUPPORT OF EMBANKMENT WILL BE MADE UNDER ITEM NO. 602772 - MECHANICALLY STABILIZED EARTH WALLS. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

**SOIL PROPERTIES**

SOIL TYPE	UNIT WEIGHT (PCF)	DRAINED ANGLE OF FRICTION (DEGREES)	UNDRAINED SHEAR (PSF)
SELECT BACKFILL	125	34 MIN.	0
NO. 57 STONE (ABUTMENT A)	105	34 MIN.	0
IN-SITU FOUNDATION SOIL (ABUTMENT A)	115	28	0
IN-SITU FOUNDATION SOIL (ABUTMENT B)	115	28	0
BORROW, TYPE C	120	32	0
RETAINED FILL	120	30	0

**NOTES:**

- FOR MSE WALL PLAN, SEE GEOMETRIC AND FOOTING LAYOUT PLAN ON DWG. NO. GL-01.
- FOR ABUTMENT A PLAN AND ELEVATION, SEE DWG. NO. AB-01.
- FOR ABUTMENT A TYPICAL SECTION, SEE DWG. NO. AB-02.
- FOR ABUTMENT A MSE WALL TYPICAL SECTIONS, SEE DWG. NOS. AB-04 THRU AB-06.

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ADDENDUMS / REVISIONS

SCALE: AS NOTED

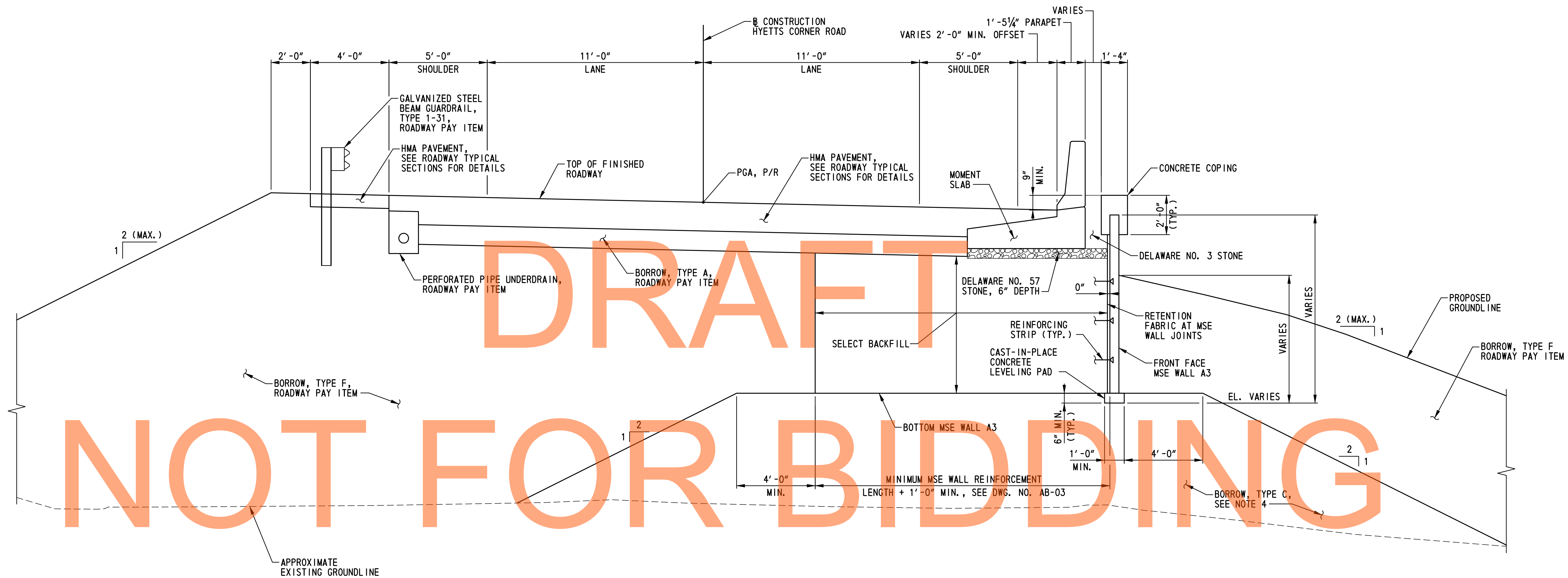
**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**MSE WALL AT  
ABUTMENT A**

**BR1-6  
AB-03**

SHEET NO.	325
TOTAL SHTS.	875



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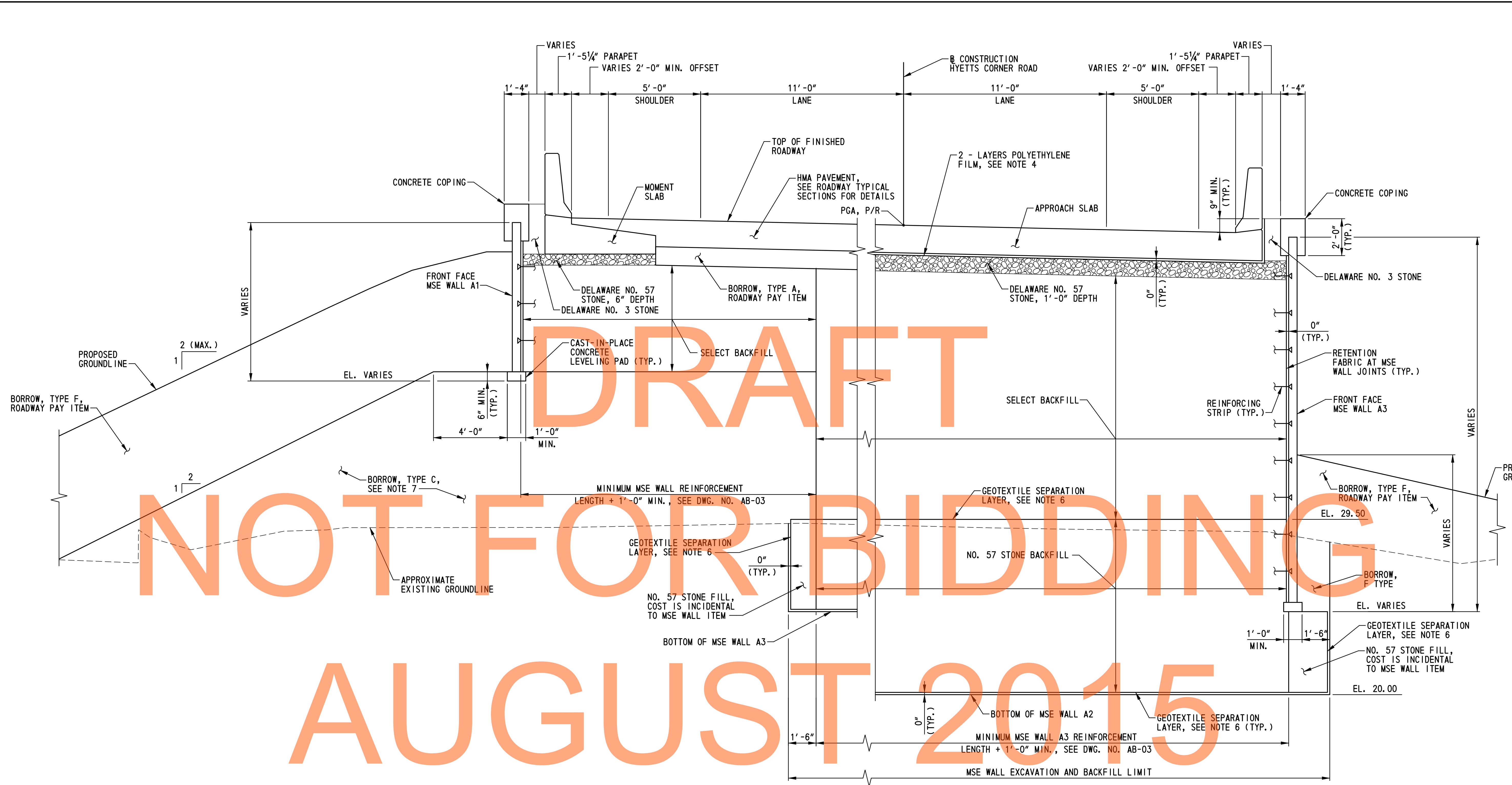
AUGUST 2015

TYPICAL SECTION - STA. 908+77.06 TO STA. 908+93.64  
SCALE: 3/8" = 1'-0"

**NOTES:**

1. FOR WETLAND ACCESS ROAD DETAILS, SEE SPECIAL PROVISIONS AND MAINTENANCE OF STREAMFLOW PLANS MS-03 THRU MS-06.
2. FOR MSE WALL ELEVATION AND NOTES, SEE DWG. NO. AB-03.
3. FOR MOMENT SLAB DETAILS, SEE DWG. NO. AS-07.
4. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

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NOT FOR BIDDING  
AUGUST 2015

TYPICAL SECTION - STA. 908+98.58 TO STA. 909+13.35, MSE WALL A1 AND  
TYPICAL SECTION - STA. 908+93.64 TO STA. 909+07.20, MSE WALL A3  
SCALE: 3/8"=1'-0"

- NOTES:**
1. FOR WETLAND ACCESS ROAD DETAILS, SEE SPECIAL PROVISIONS AND MAINTENANCE OF STREAMFLOW PLANS MS-03 THRU MS-06.
  2. FOR MSE WALL ELEVATION AND NOTES, SEE DWG. NO. AB-03.
  3. FOR MOMENT SLAB DETAILS, SEE DWG. NO. AS-07.
  4. FOR APPROACH SLAB DETAILS, SEE DWG. NO. AS-06.
  5. FOR POLYETHYLENE FILM DETAILS, SEE DWG. NO. AS-06.
  6. COST OF GEOTEXTILE SEPARATION LAYER IS INCIDENTAL TO ITEM 602772 - MECHANICALLY STABILIZED EARTH WALLS.
  7. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

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ADDENDUMS / REVISIONS	SCALE: AS NOTED

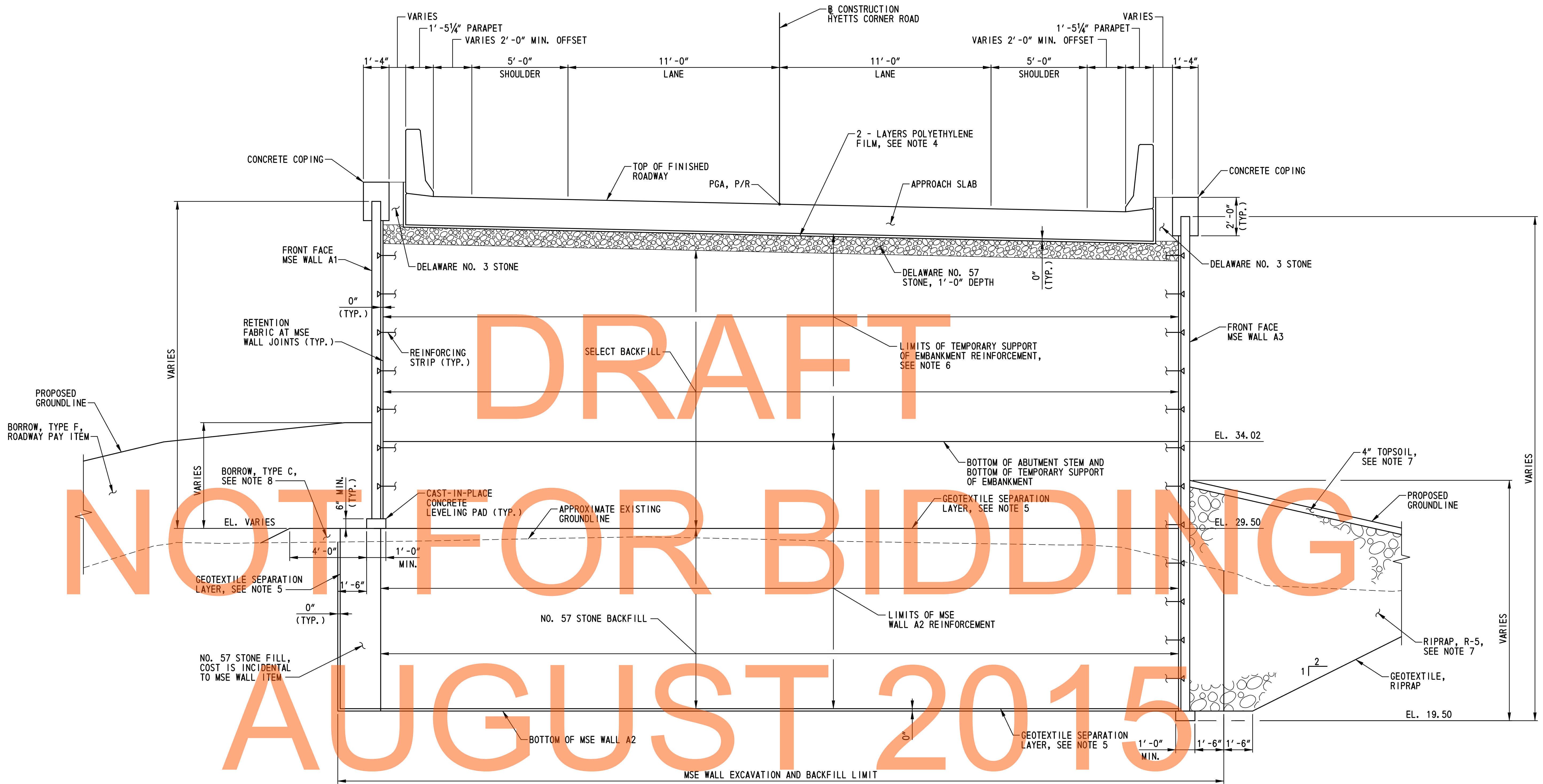
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**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F.
	CHECKED BY: P.S.D.

**ABUTMENT A  
MSE WALL  
TYPICAL SECTIONS - 2**

<b>BR1-6 AB-05</b>
SHEET NO. 327
TOTAL SHTS. 875



DRAFT  
NOT FOR BIDDING  
AUGUST 2015

TYPICAL SECTION - STA. 909+13.35 TO STA. 909+31.47, MSE WALL A1 AND  
TYPICAL SECTION - STA. 909+07.20 TO STA. 909+11.46, MSE WALL A3  
SCALE: 3/8"=1'-0"

- NOTES:**
1. FOR WETLAND ACCESS ROAD DETAILS, SEE SPECIAL PROVISIONS AND MAINTENANCE OF STREAMFLOW PLANS MS-03 THRU MS-06.
  2. FOR MSE WALL ELEVATION AND NOTES, SEE DWG. NO. AB-03.
  3. FOR APPROACH SLAB DETAILS, SEE DWG. NO. AS-06.
  4. FOR POLYETHYLENE FILM DETAILS, SEE DWG. NO. AS-06.
  5. COST OF GEOTEXTILE SEPARATION LAYER IS INCIDENTAL TO ITEM 602772 - MECHANICALLY STABILIZED EARTH WALLS.
  6. FOR TEMPORARY SUPPORT OF EMBANKMENT DETAILS, SEE DWG. NOS. AB-02 AND AB-03.
  7. RECESS, CHOKE, TOPSOIL, SEED AND MULCH RIPRAP IN CONFORMANCE WITH THE ENVIRONMENTAL COMPLIANCE NOTES ON DWG. NO. EC-04.
  8. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

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ADDENDUMS / REVISIONS

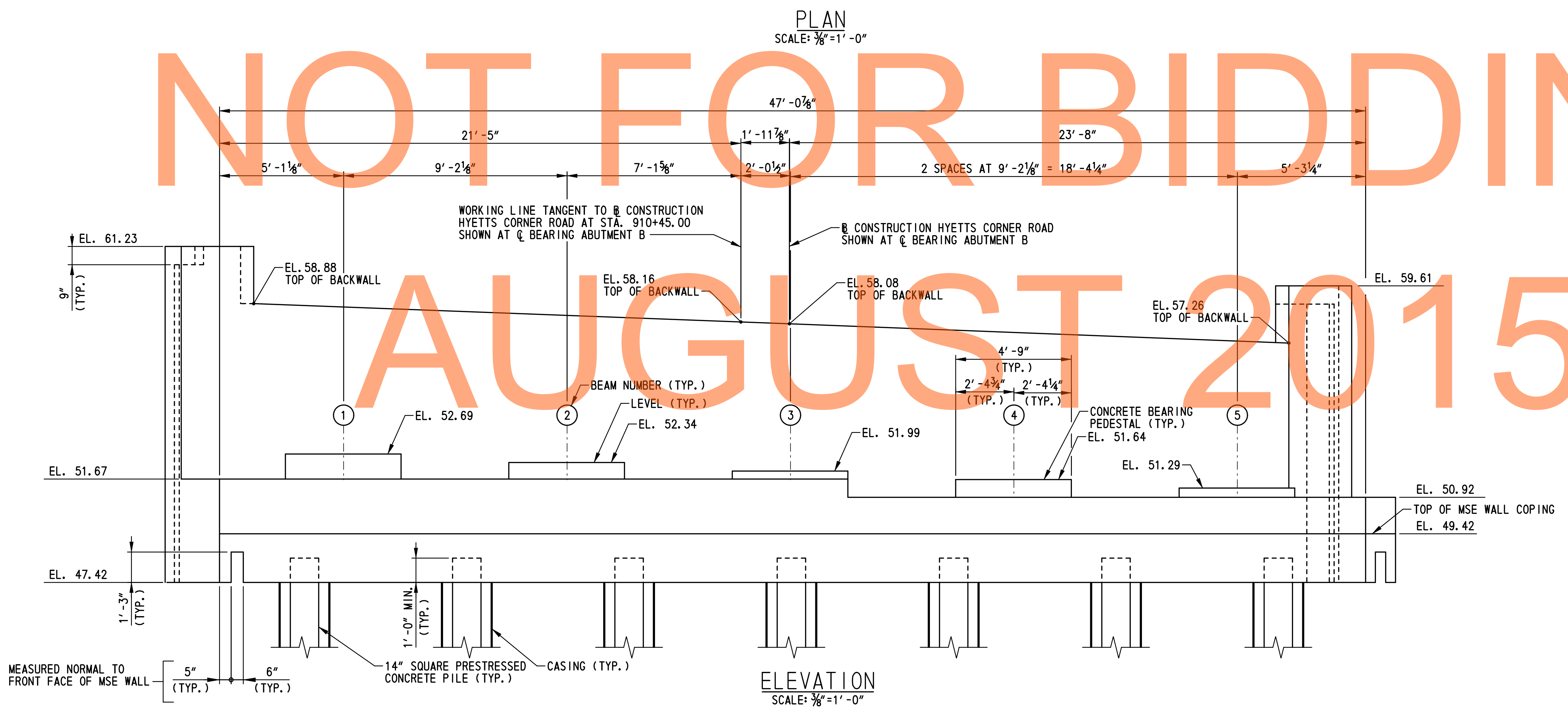
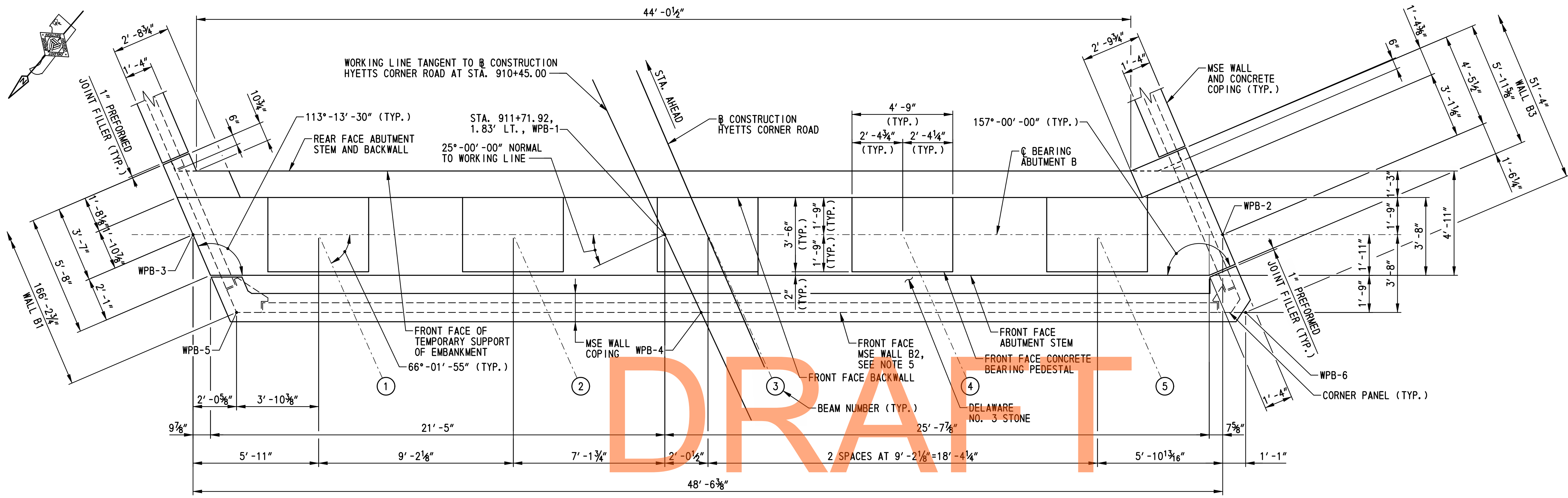
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**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**ABUTMENT A  
MSE WALL  
TYPICAL SECTIONS - 3**

<b>BR1-6 AB-06</b>
SHEET NO. 328
TOTAL SHTS. 875



NOT FOR BIDDING  
AUGUST 2015

- NOTES:**
1. MSE WALL NOT SHOWN IN ELEVATION FOR CLARITY.
  2. FOR APPROXIMATE EXISTING GROUNDLINE, SEE DWG. NO. AB-09.
  3. FOR PILE LAYOUT SEE DWG. NO. PL-01.
  4. FOR ABUTMENT B TYPICAL SECTION SEE DWG. NO. AB-06.
  5. FOR ABUTMENT B MSE WALL ELEVATION SEE DWG. NO. AB-09.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

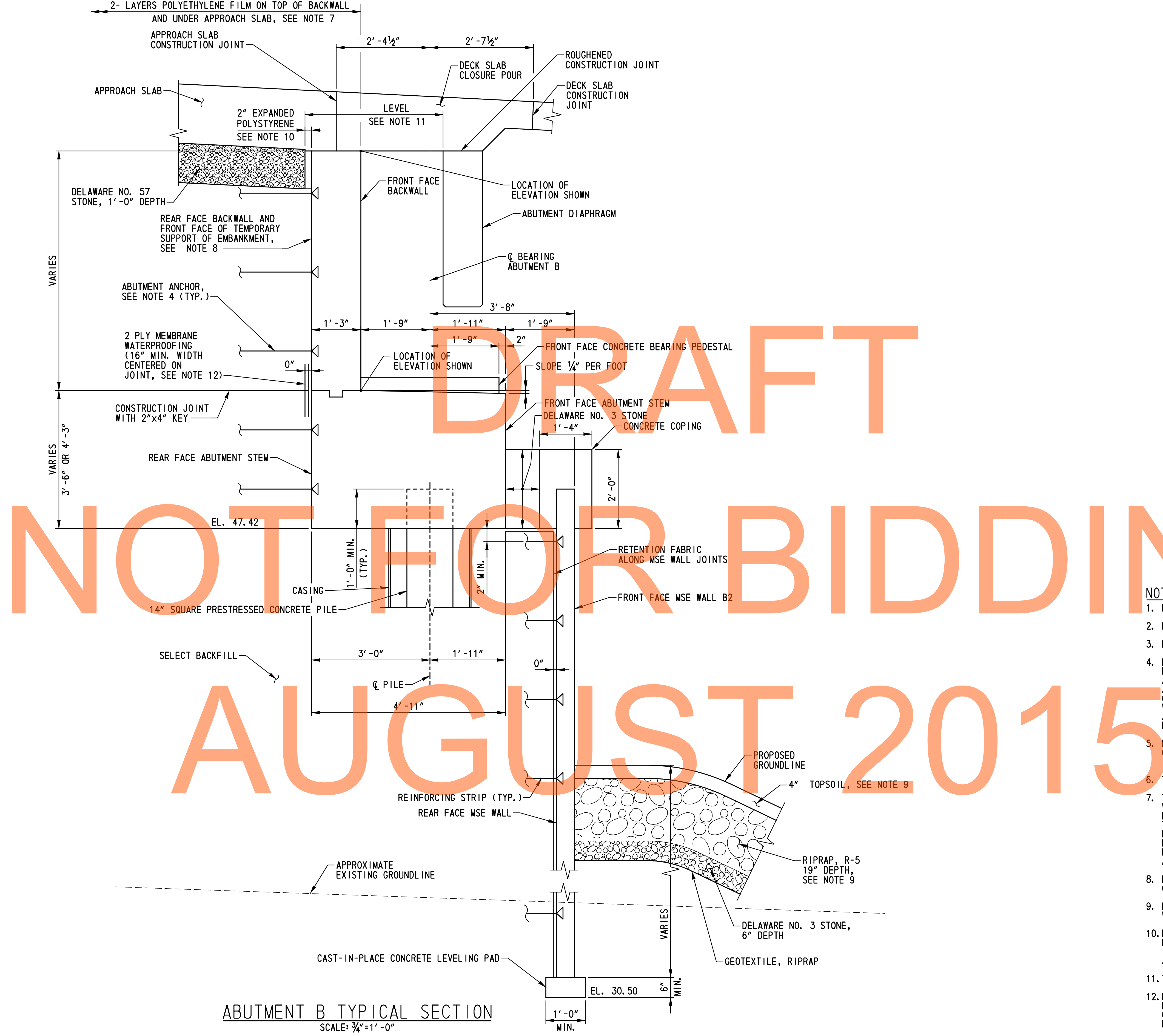
**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.D.D. CHECKED BY: P.S.D.

**ABUTMENT B  
PLAN AND ELEVATION**

<b>BR1-6 AB-07</b>
SHEET NO. 329
TOTAL SHTS. 875





DRAFT

NOT FOR BIDDING

AUGUST 2015

- NOTES:**
- FOR PILE LAYOUT, SEE DWG. NO. PL-01.
  - FOR ABUTMENT B PLAN AND ELEVATION, SEE DWG. NO. AB-07.
  - FOR ABUTMENT B MSE WALL ELEVATIONS AND NOTES, SEE DWG. NO. AB-09.
  - PROVIDE ABUTMENT ANCHORS IN SELECT BACKFILL. SEE ABUTMENT ANCHOR DETAIL ON DWG. NO. AB-02. ABUTMENT ANCHORS SHALL BE DESIGNED FOR A MINIMUM FACTORED HORIZONTAL FORCE OF 2.0 KIPS PER FOOT OF ABUTMENT LENGTH. THE POINT OF APPLICATION OF FORCES SHALL BE AT THE CENTER OF BEARINGS. DESIGN OF ABUTMENT ANCHORS SHALL BE COMPATIBLE WITH THE TEMPORARY SUPPORT OF EMBANKMENT DESIGN. PAYMENT FOR ABUTMENT ANCHORS WILL BE INCIDENTAL TO ITEM 602772 - MECHANICALLY STABILIZED EARTH WALLS.
  - PROPRIETARY WALL MANUFACTURER SHALL DESIGN AND CONTRACTOR SHALL CONSTRUCT FINAL WALL AND FACING SUCH THAT THE FINAL WALL FACING IS AT THE REQUIRED ELEVATION AFTER SETTLEMENT HAS TAKEN PLACE.
  - THE ANTICIPATED SETTLEMENT IS 6 INCHES BEHIND THE FACE OF WALL.
  - TOP OF BACKWALL SHALL BE STEEL TROWEL FINISHED. TWO LAYERS OF WHITE POLYETHYLENE FILM SHALL BE PLACED ON TOP OF THE BACKWALLS PRIOR TO PLACEMENT OF THE APPROACH AND DECK SLAB REINFORCEMENT. THE FILM SHALL BE FASTENED TO THE FRONT FACE OF THE BACKWALL AND LAPPED 2'-0" MINIMUM WITH THE FILM PLACED ON THE FINISHED SUBGRADE FOR THE APPROACH SLAB. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D. FOR ADDITIONAL REQUIREMENTS, SEE DWG. NO. AS-06.
  - FOR TEMPORARY SUPPORT OF EMBANKMENT REQUIREMENTS, SEE NOTE 14 ON DWG. NO. AB-03.
  - RECESS, CHOKE, TOPSOIL, SEED AND MULCH RIPRAP IN CONFORMANCE WITH THE ENVIRONMENTAL COMPLIANCE NOTES ON DWG. NO. EC-04.
  - EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, EXCEPT THAT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 22%. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
  - TOP OF BACKWALL SHALL BE LEVEL PARALLEL TO THE WORKING LINE.
  - MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P. C. C. MASONRY SURFACES FOR ADDITIONAL REQUIREMENTS.

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ADDENDUMS / REVISIONS	

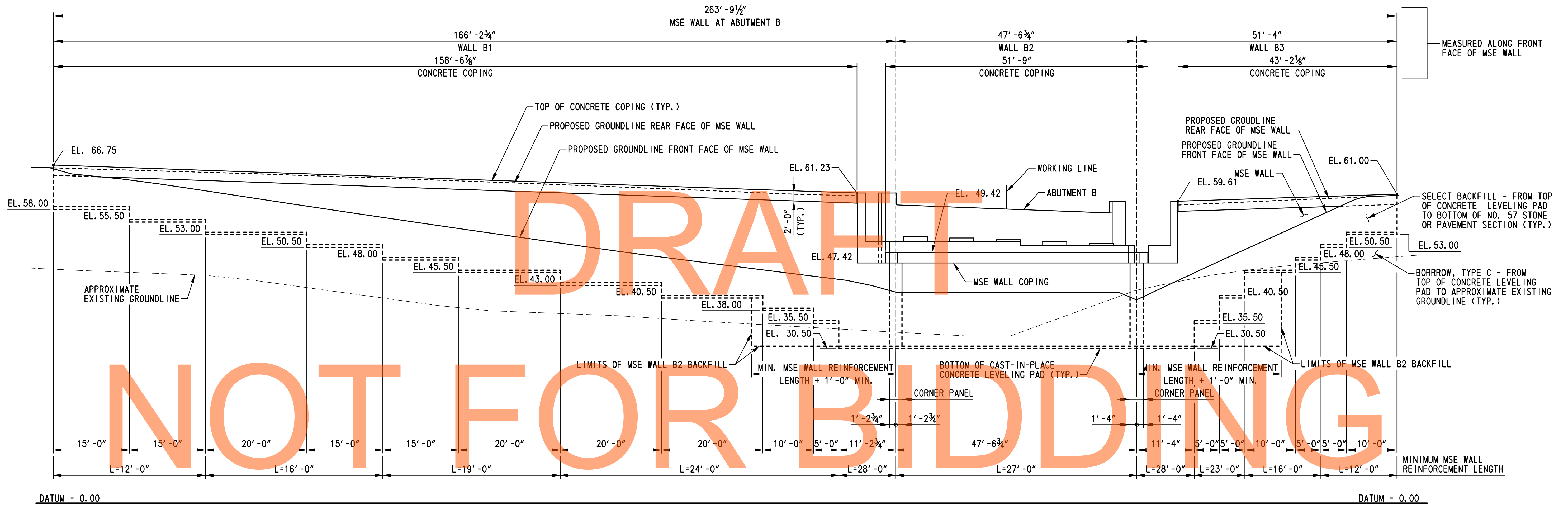
SCALE: AS NOTED

**US 301,**  
**SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**ABUTMENT B**  
**TYPICAL SECTION**

<b>BR1-6</b> <b>AB-08</b>
SHEET NO.
330
TOTAL SHTS.
875



DEVELOPED ELEVATION  
SCALE: 1"=10'-0"

AUGUST 2015

NOTES:

1. FOR MSE WALL PLAN, SEE GEOMETRIC AND FOOTING LAYOUT PLAN ON DWG. NO. GL-01.
2. FOR MSE WALL NOTES AND SOIL PROPERTIES, SEE DWG. NO. AB-03.
3. FOR ABUTMENT B PLAN AND ELEVATION, SEE DWG. NO. AB-07.
4. FOR ABUTMENT B TYPICAL SECTION, SEE DWG. NO. AB-08.
5. FOR ABUTMENT B MSE WALL TYPICAL SECTIONS, SEE DWG. NOS. AB-10 THRU AB-13.

ADDENDUMS / REVISIONS

SCALE: AS NOTED

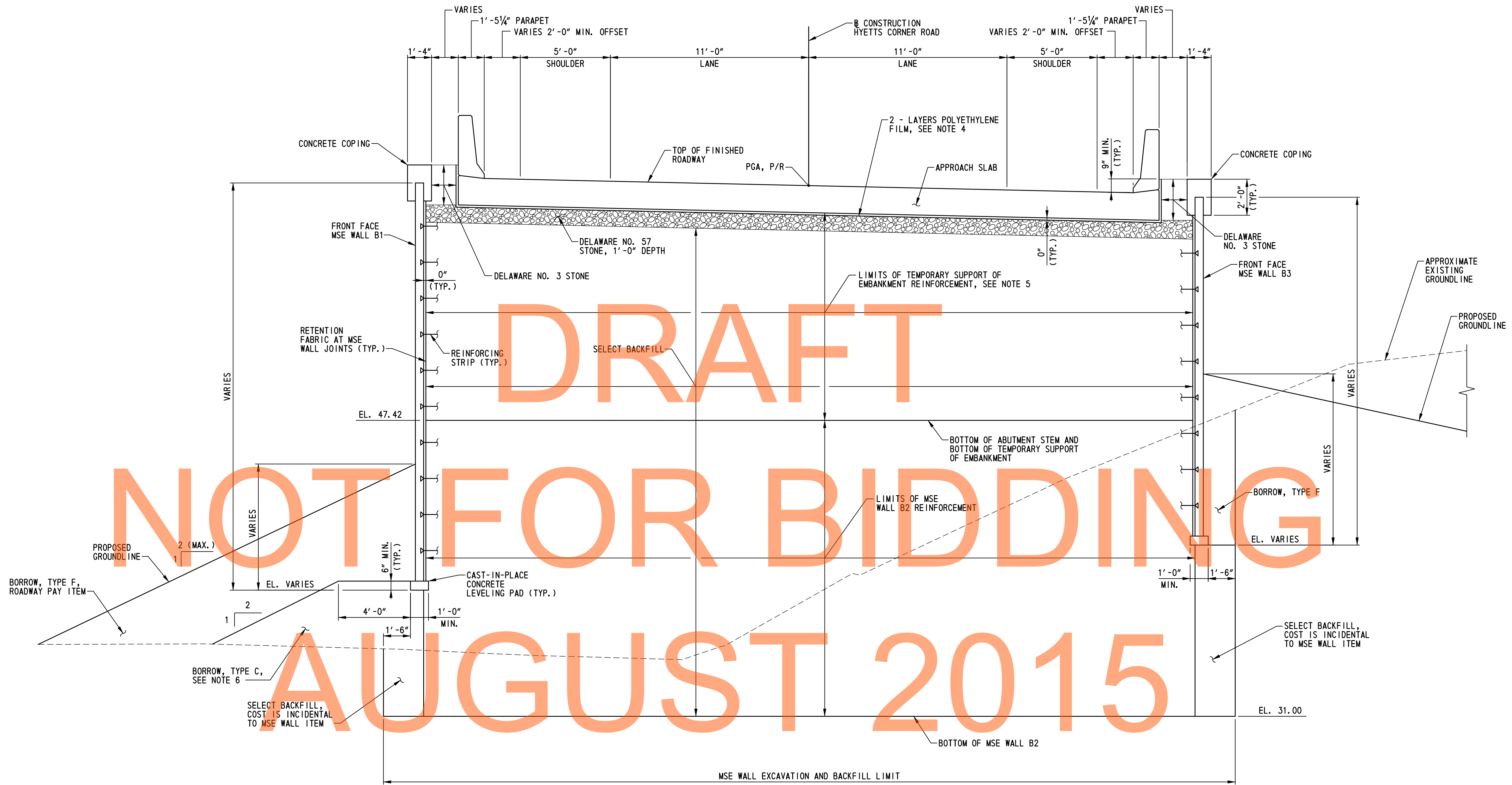
US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	<b>BR1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

MSE WALL AT  
ABUTMENT B

BR1-6  
AB-09

SHEET NO.	331
TOTAL SHTS.	875



TYPICAL SECTION - STA. 911+83.37 TO STA. 912+00.32, MSE WALL B1  
 TYPICAL SECTION - STA. 911+65.95 TO STA. 911+83.71, MSE WALL B3

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

NOTES:

1. FOR MSE WALL ELEVATION, SEE DWG. NO. AB-09.
2. FOR MSE WALL NOTES, SEE DWG. NO. AB-03.
3. FOR APPROACH SLAB DETAILS, SEE DWG. NO. AS-06.
4. FOR POLYETHYLENE FILM DETAILS, SEE DWG. NO. AS-06.
5. FOR TEMPORARY SUPPORT OF EMBANKMENT DETAILS, SEE DWG. NOS. AB-03 AND AB-08.
6. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

ADDENDUMS / REVISIONS

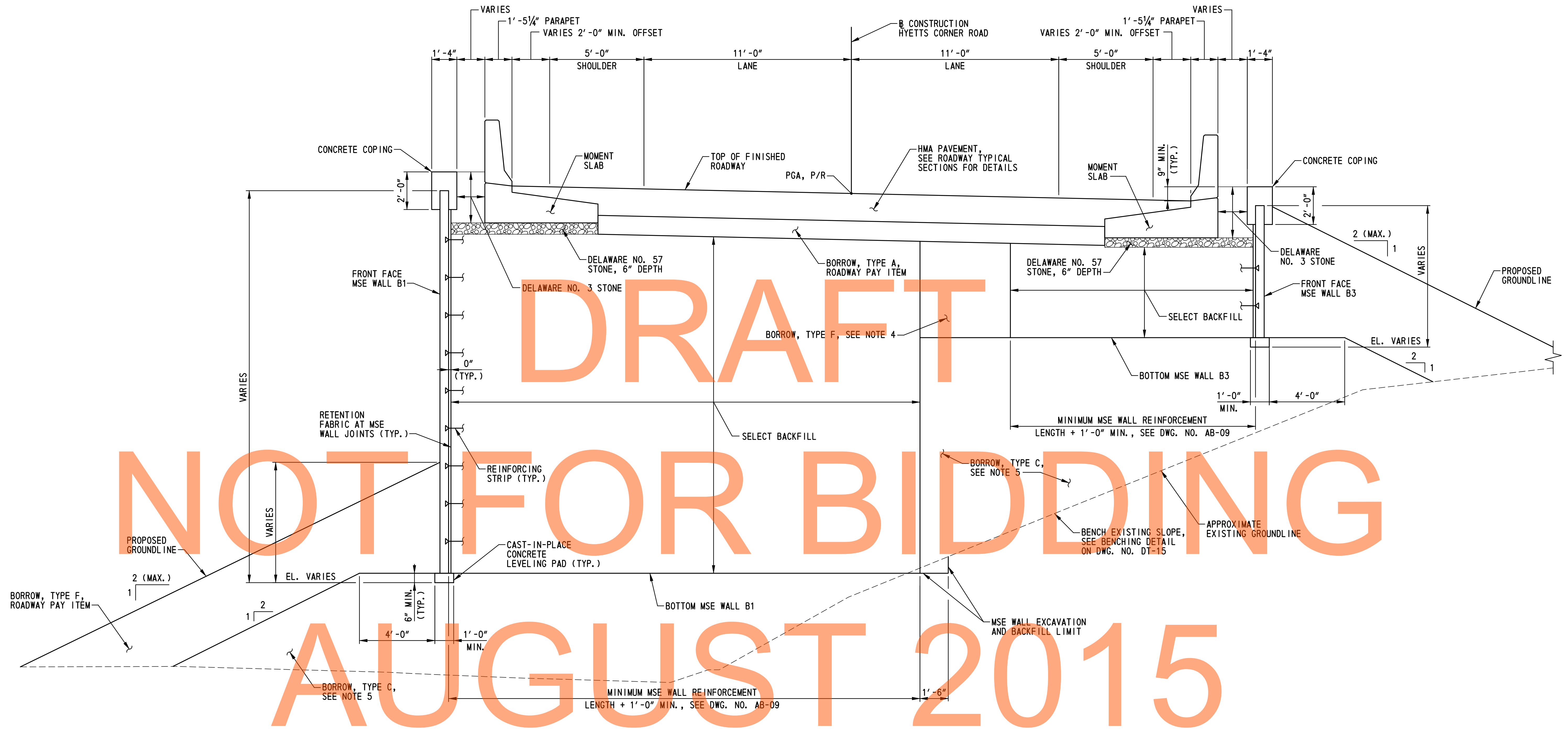
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT B  
MSE WALL  
TYPICAL SECTIONS - 1

BRI-6 AB-10
SHEET NO.
332
TOTAL SHTS.
875



TYPICAL SECTION - STA. 912+00.32 TO STA. 912+09.22, MSE WALL B1 AND  
 TYPICAL SECTION - STA. 911+83.71 TO STA. 912+09.22, MSE WALL B3  
 SCALE: 3/8"=1'-0"

NOTES:

1. FOR MSE WALL ELEVATION, SEE DWG. NO. AB-09.
2. FOR MSE WALL NOTES, SEE DWG. NO. AB-03.
3. FOR MOMENT SLAB DETAILS, SEE DWG. NO. AS-07 AND AS-08.
4. BORROW, TYPE F SHALL BE PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.
5. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

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ADDENDUMS / REVISIONS	

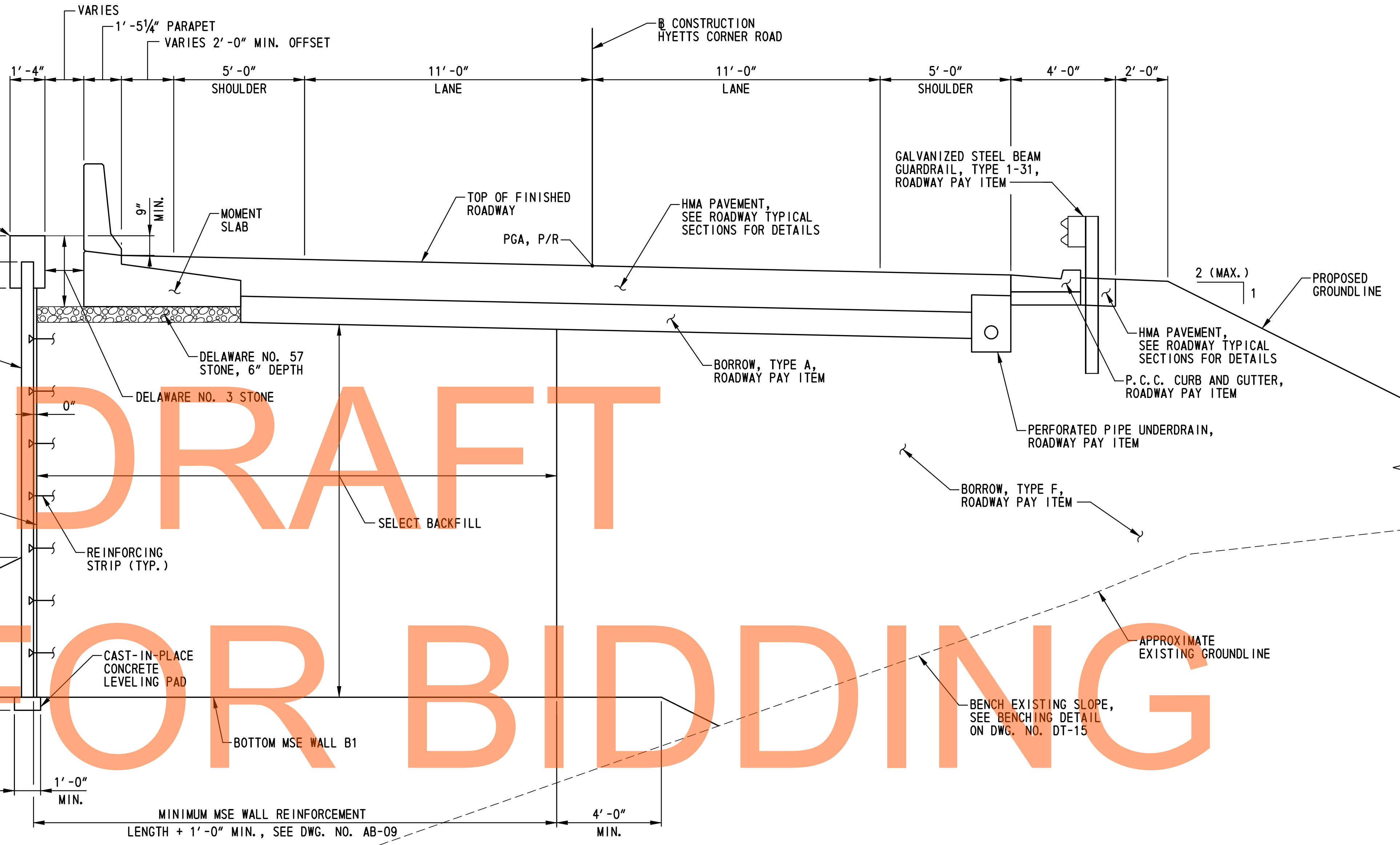
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT B  
MSE WALL  
TYPICAL SECTIONS - 2

BR1-6 AB-11
SHEET NO.
333
TOTAL SHTS.
875



DRAFT  
NOT FOR BIDDING  
AUGUST 2015

TYPICAL SECTION - STA. 912+09.22 TO STA. 913+20.84  
SCALE: 3/8" = 1'-0"

- NOTES:**
1. FOR MSE WALL ELEVATION, SEE DWG. NO. AB-09.
  2. FOR MSE WALL NOTES, SEE DWG. NO. AB-03.
  3. FOR MOMENT SLAB DETAILS, SEE DWG. NO. AS-08.
  4. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

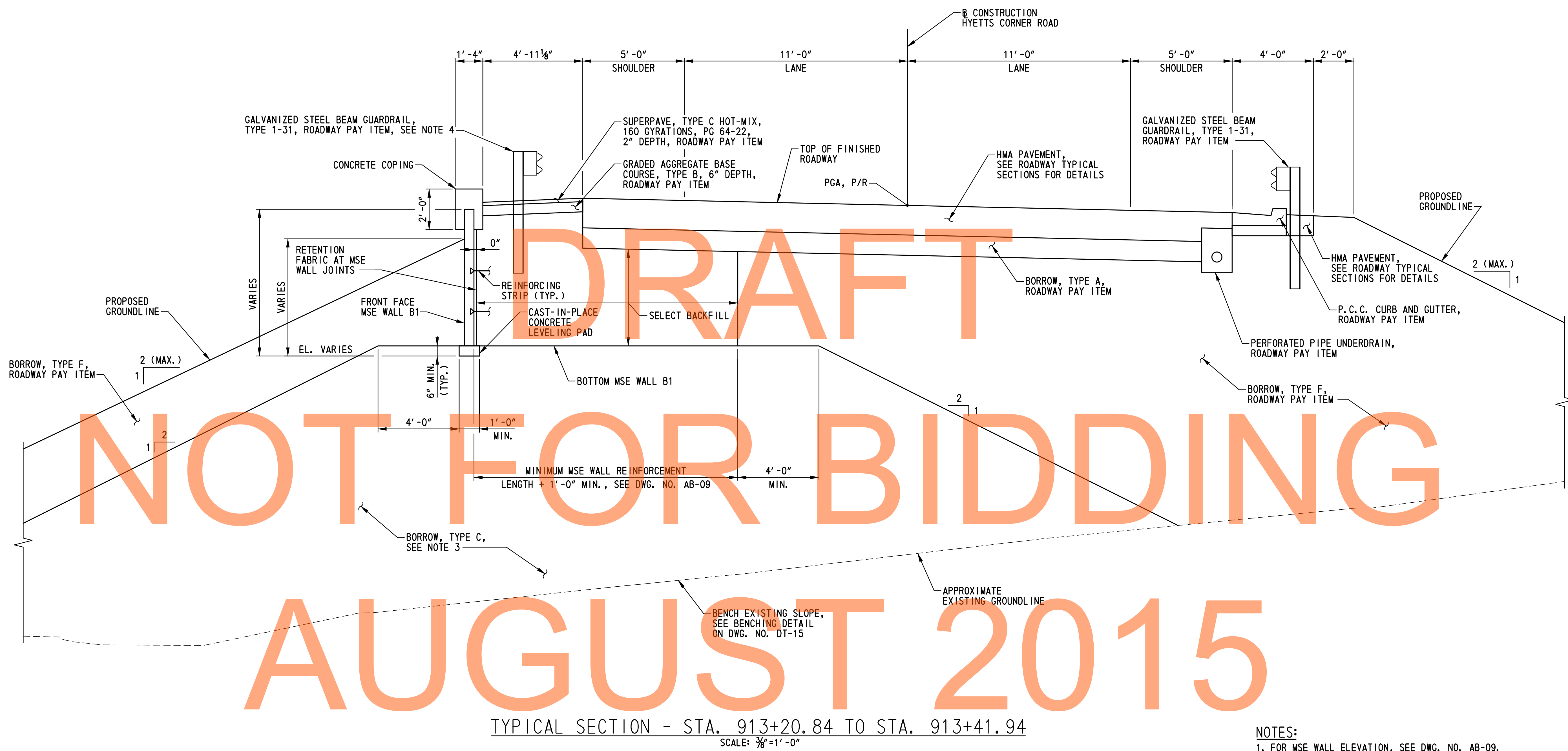
**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>	
COUNTY NEW CASTLE	DESIGNED BY: A.J.F.	CHECKED BY: P.S.D.

**ABUTMENT B  
MSE WALL  
TYPICAL SECTIONS - 3**

<b>BR1-6 AB-12</b>
SHEET NO. 334
TOTAL SHTS. 875

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 NOT FOR BIDDING  
 AUGUST 2015

TYPICAL SECTION - STA. 913+20.84 TO STA. 913+41.94  
 SCALE: 3/8" = 1'-0"

- NOTES:**
1. FOR MSE WALL ELEVATION, SEE DWG. NO. AB-09.
  2. FOR MSE WALL NOTES, SEE DWG. NO. AB-03.
  3. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.
  4. PRIOR TO PLACING REINFORCING STRIPS, THE CONTRACTOR SHALL LOCATE ALL PROPOSED GUARDRAIL POSTS AND MARK THEM ON BACK FACE OF WALL. SKEW INTERFERING REINFORCING STRIPS AS DIRECTED BY PROPRIETARY WALL MANUFACTURER TO PROVIDE ROOM FOR FUTURE GUARDRAIL POST INSTALLATION.



ADDENDUMS / REVISIONS	

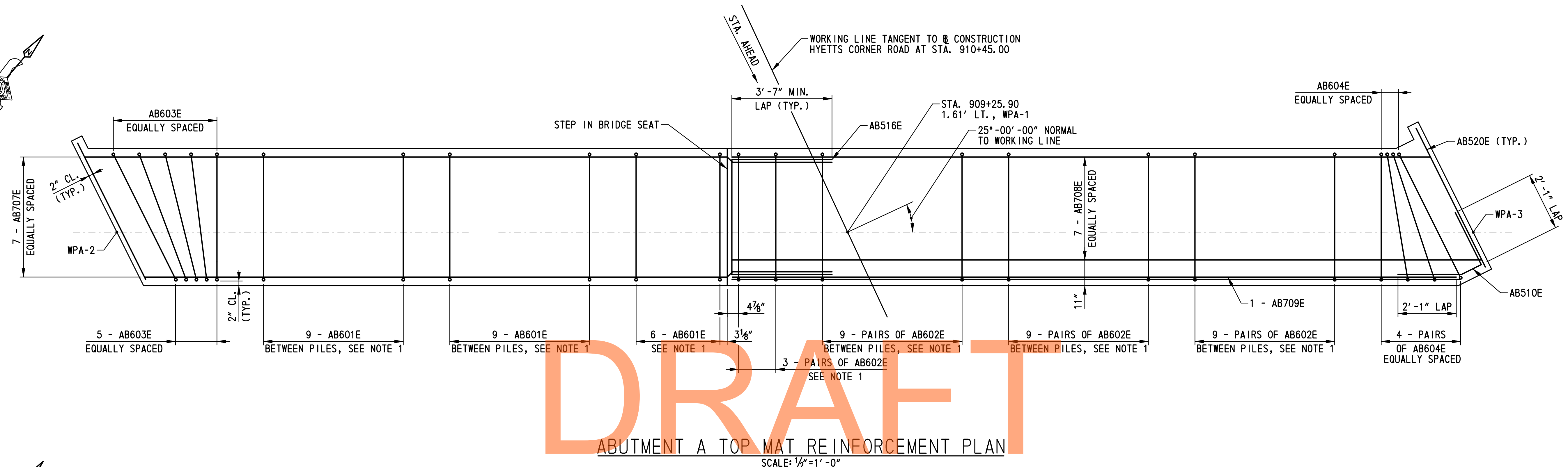
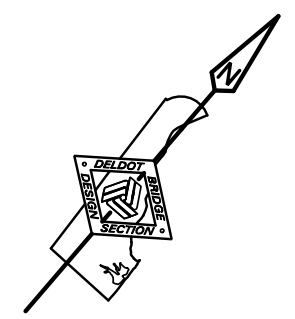
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**US 301,  
 SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

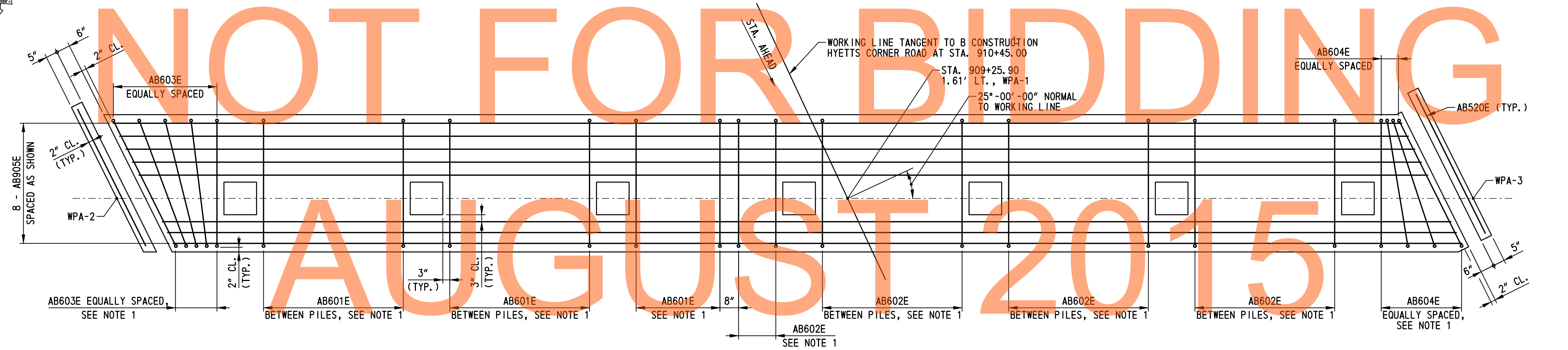
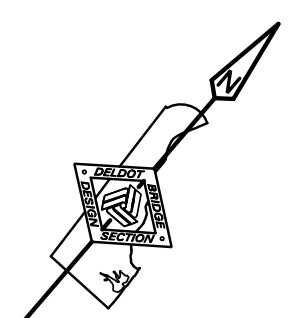
<b>ABUTMENT B          MSE WALL          TYPICAL SECTIONS - 4</b>
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<b>BR1-6          AB-13</b>
SHEET NO. 335
TOTAL SHTS. 875



DRAFT

ABUTMENT A TOP MAT REINFORCEMENT PLAN  
SCALE: 1/2" = 1' - 0"



ABUTMENT A BOTTOM MAT REINFORCEMENT PLAN  
SCALE: 1/2" = 1' - 0"

NOT FOR BIDDING  
AUGUST 2015

- NOTES:**
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-15.
  2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-15 AND AB-16.
  3. REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-01.

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ADDENDUMS / REVISIONS	

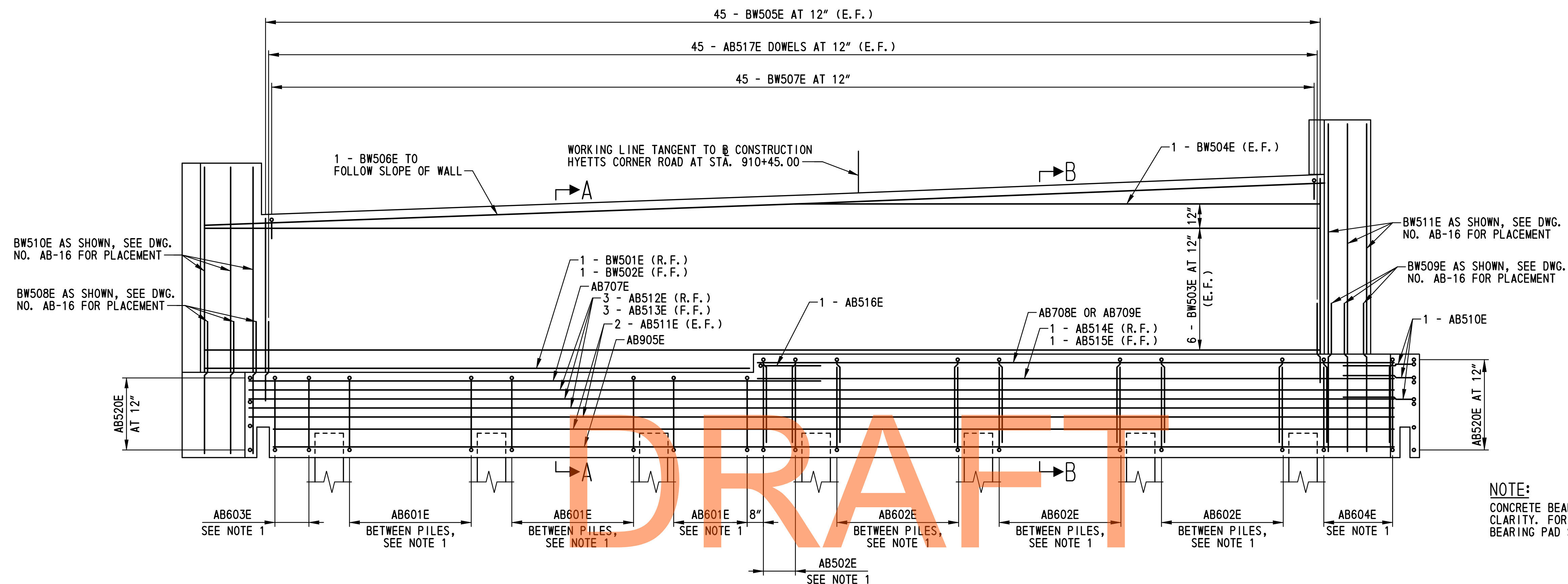
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**ABUTMENT A  
REINFORCEMENT  
DETAILS - 1**

<b>BR1-6 AB-14</b>
SHEET NO.
336
TOTAL SHTS.
875

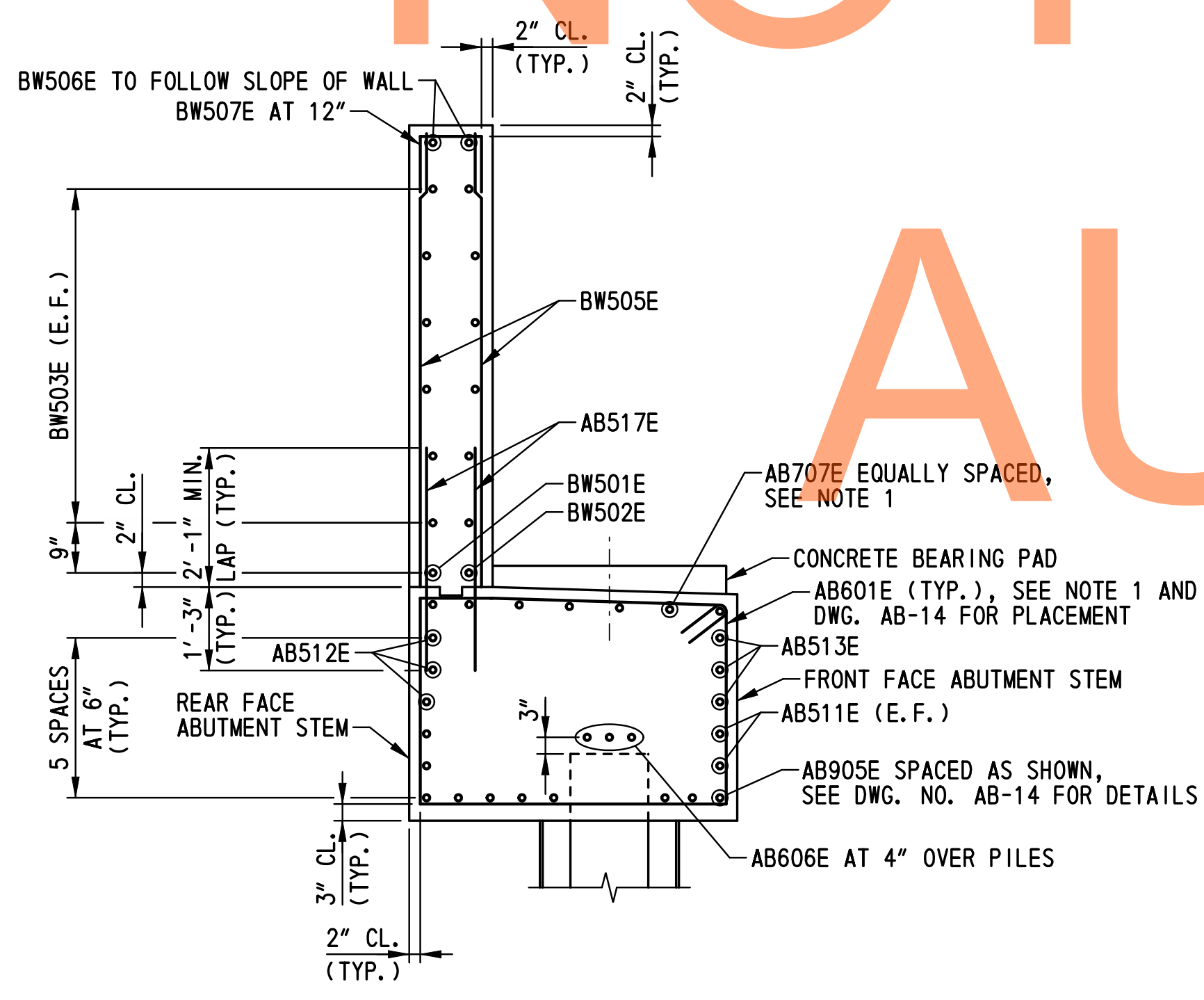


**NOTE:**  
 CONCRETE BEARING PADS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT IN CONCRETE BEARING PAD SEE DETAILS THIS DWG.

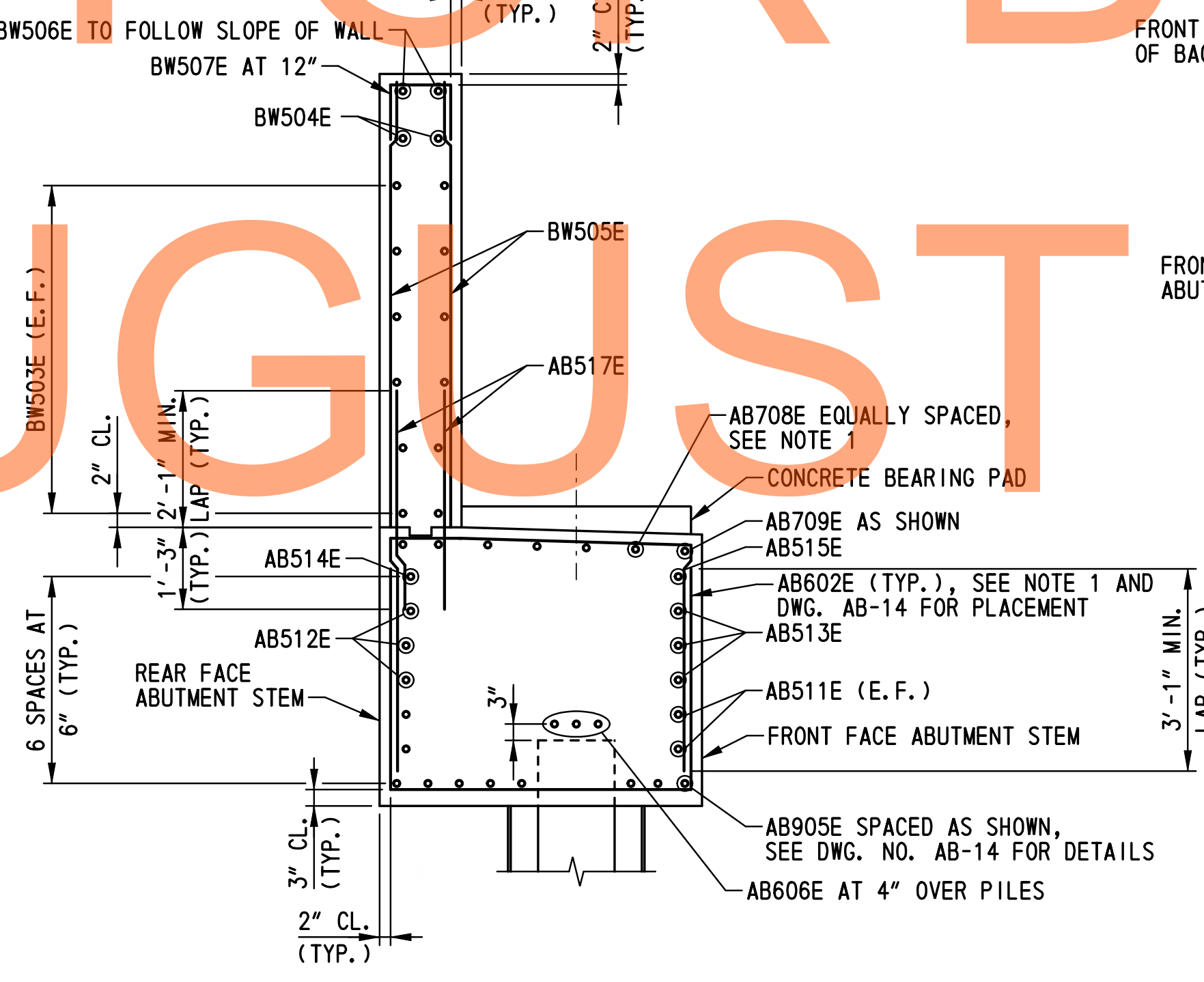
**ABUTMENT A REINFORCEMENT**  
 SCALE: 3/8" = 1' - 0"

NOT FOR BIDDING

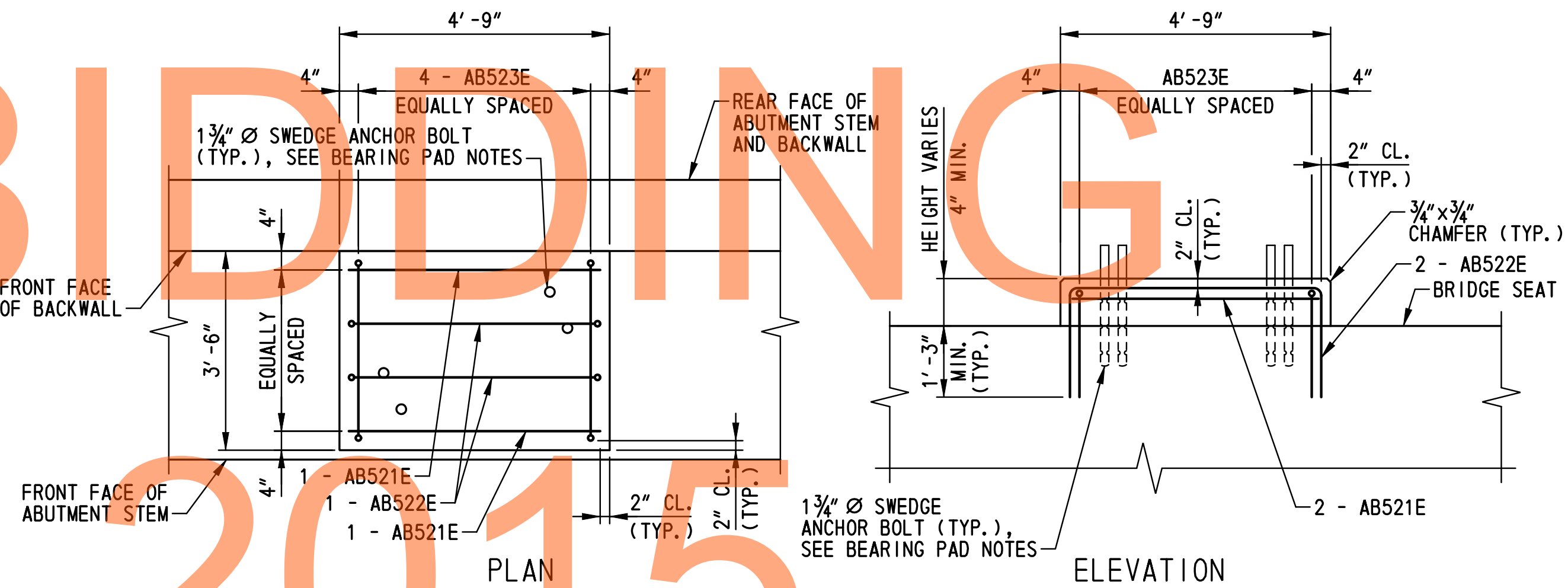
AUGUST 2015



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



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



**BEARING PAD NOTES:**

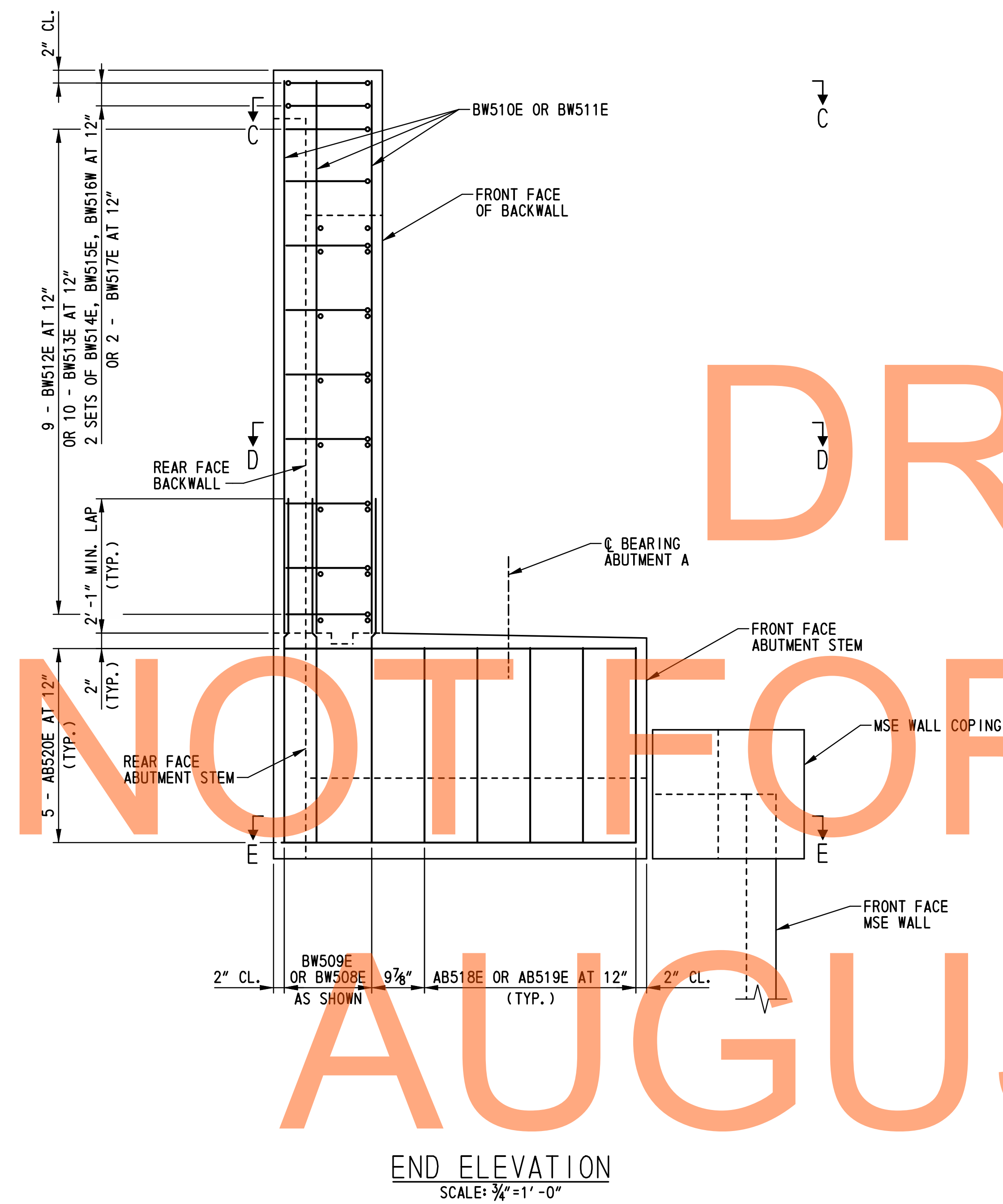
- FOR ANCHOR BOLT DIMENSIONS AND LOCATION, SEE DWG. NO. BB-01.
- ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER CONCRETE HAS SET.
- SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS.

**NOTES:**

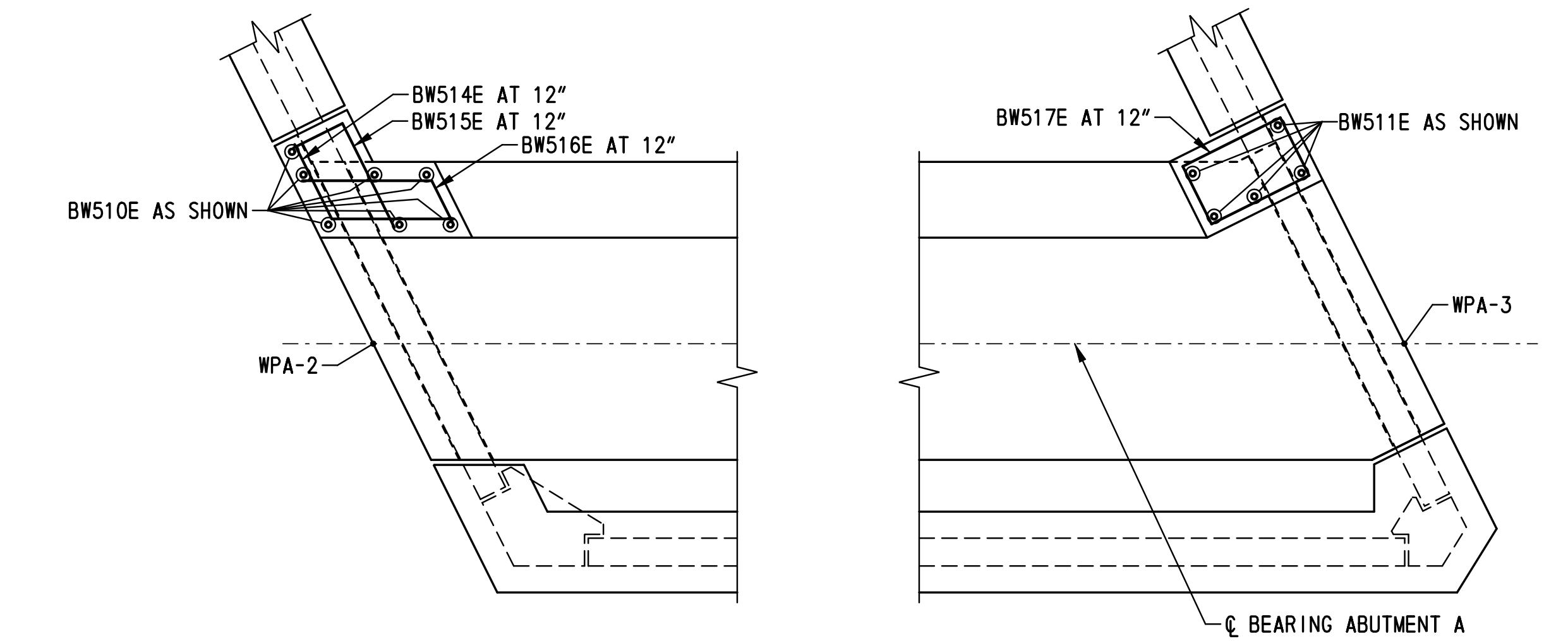
- SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-14.
- FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-14 AND AB-16.
- REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-01.

NO. 31653-0000.S001.PACT 1A\CADD\Bridg\B-Ne6\AB15\_brf-16.dgn  
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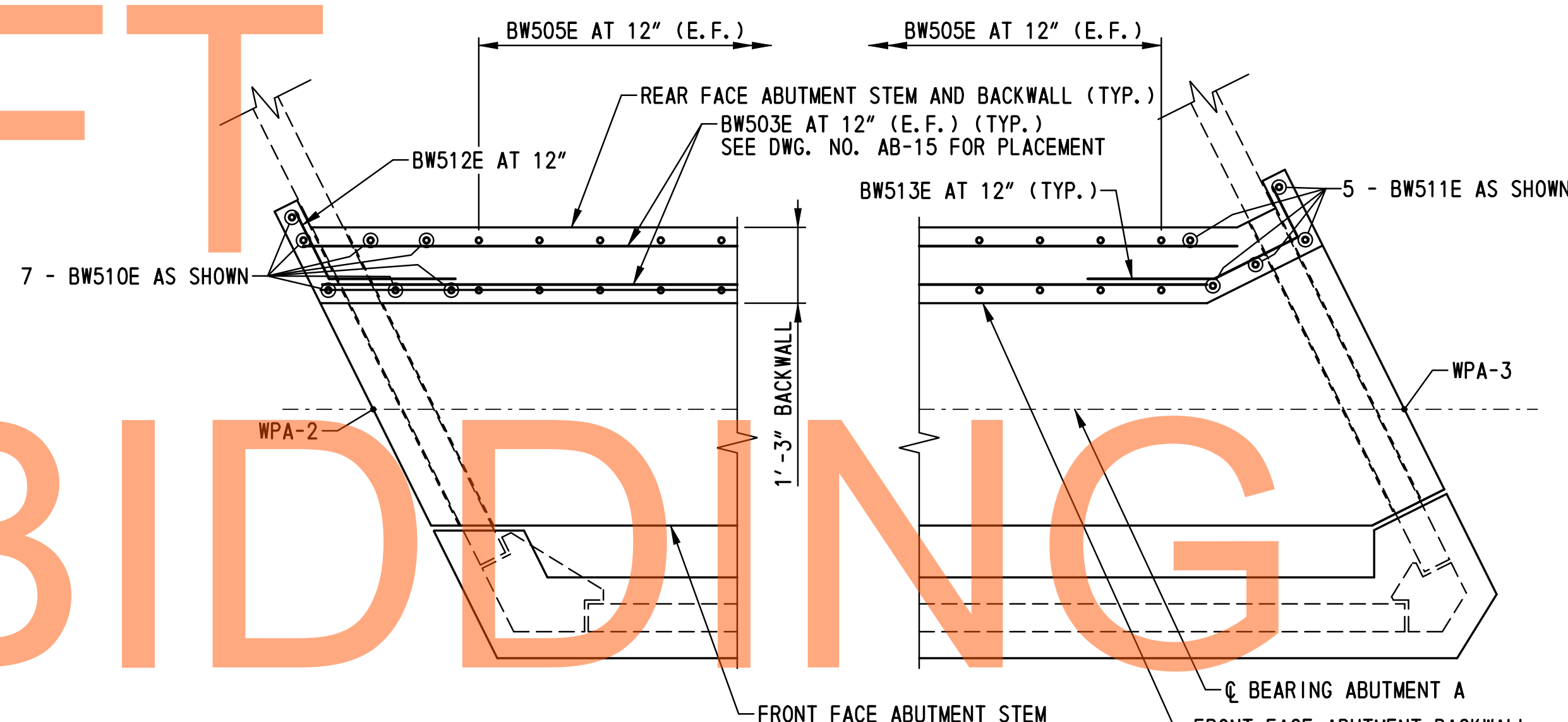




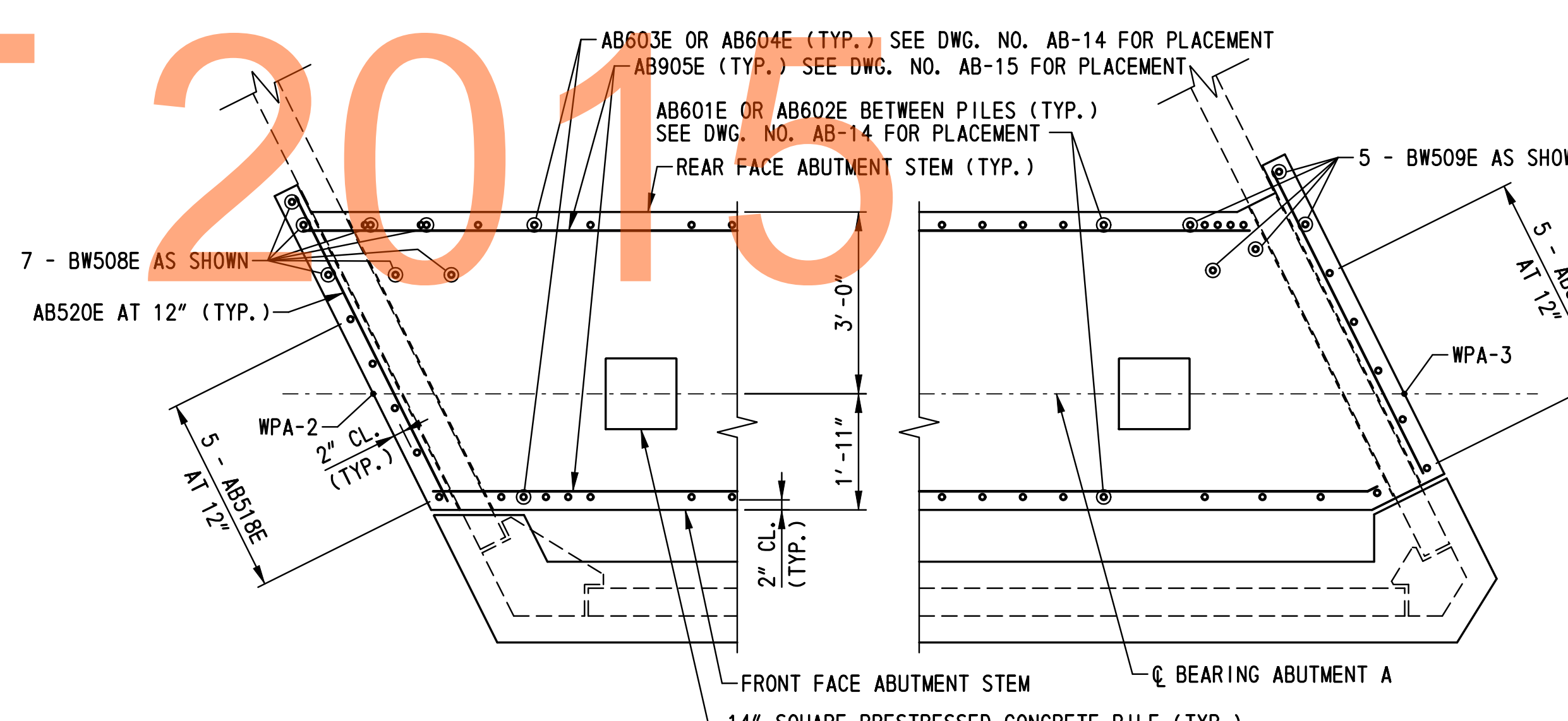
END ELEVATION  
SCALE: 3/4" = 1' - 0"



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



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



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

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NOT FOR BIDDING  
AUGUST 2010

NO 31653-000-CONTRACT 1A\CADD\Bridg\BR\_No6\AB16\_brt-E.dgn 2010/08/12 10:00:41 AM



DELAWARE  
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

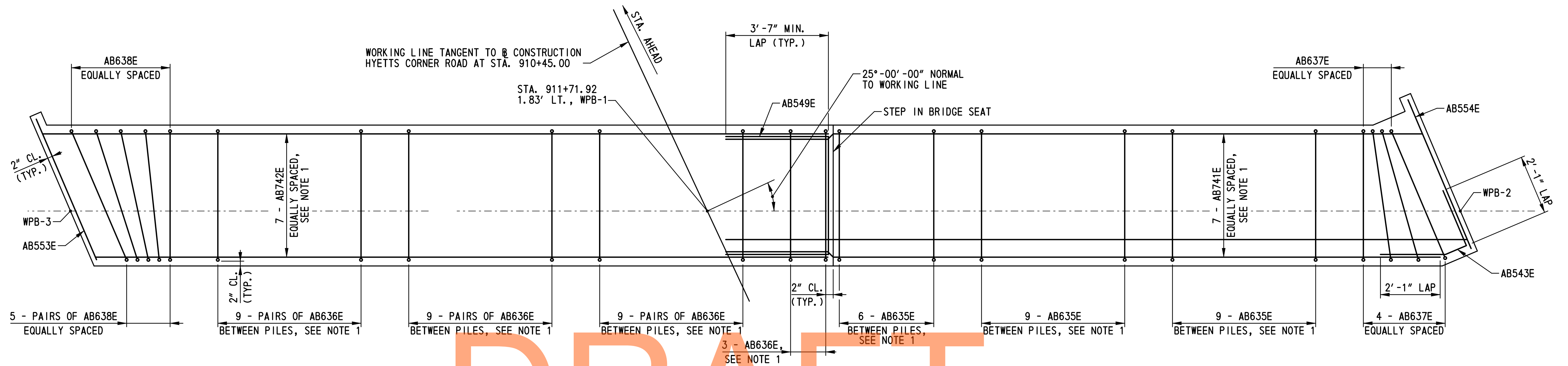
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.D.D.
NEW CASTLE	CHECKED BY:	P.S.D.

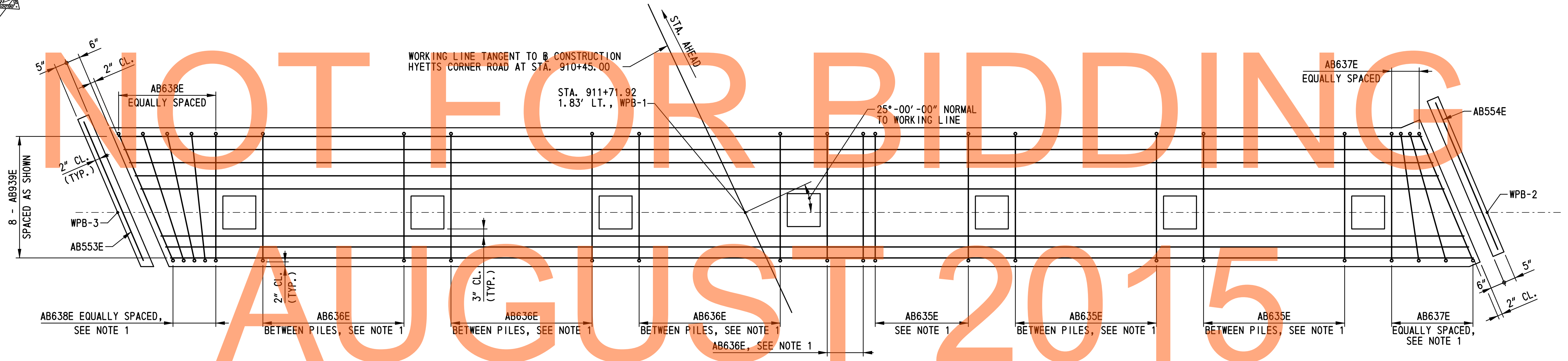
ABUTMENT A  
REINFORCEMENT  
DETAILS - 3

BR1-6 AB-16
SHEET NO.
338
TOTAL SHTS.
875



DRAFT

ABUTMENT B TOP MAT REINFORCEMENT PLAN  
SCALE: 1/2" = 1'-0"



ABUTMENT B BOTTOM MAT REINFORCEMENT PLAN  
SCALE: 1/2" = 1'-0"

- NOTES:**
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-18.
  2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-18 AND AB-19.
  3. REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-01.

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ADDENDUMS / REVISIONS

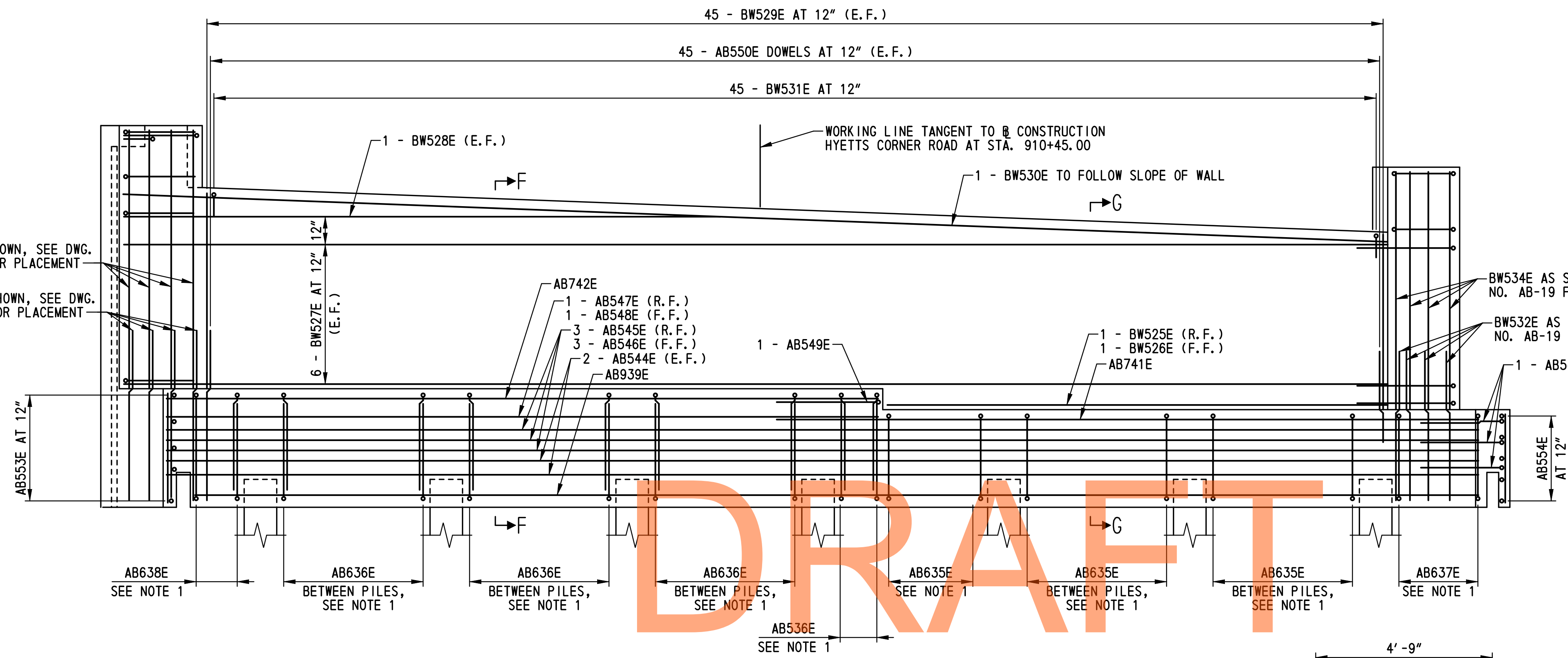
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

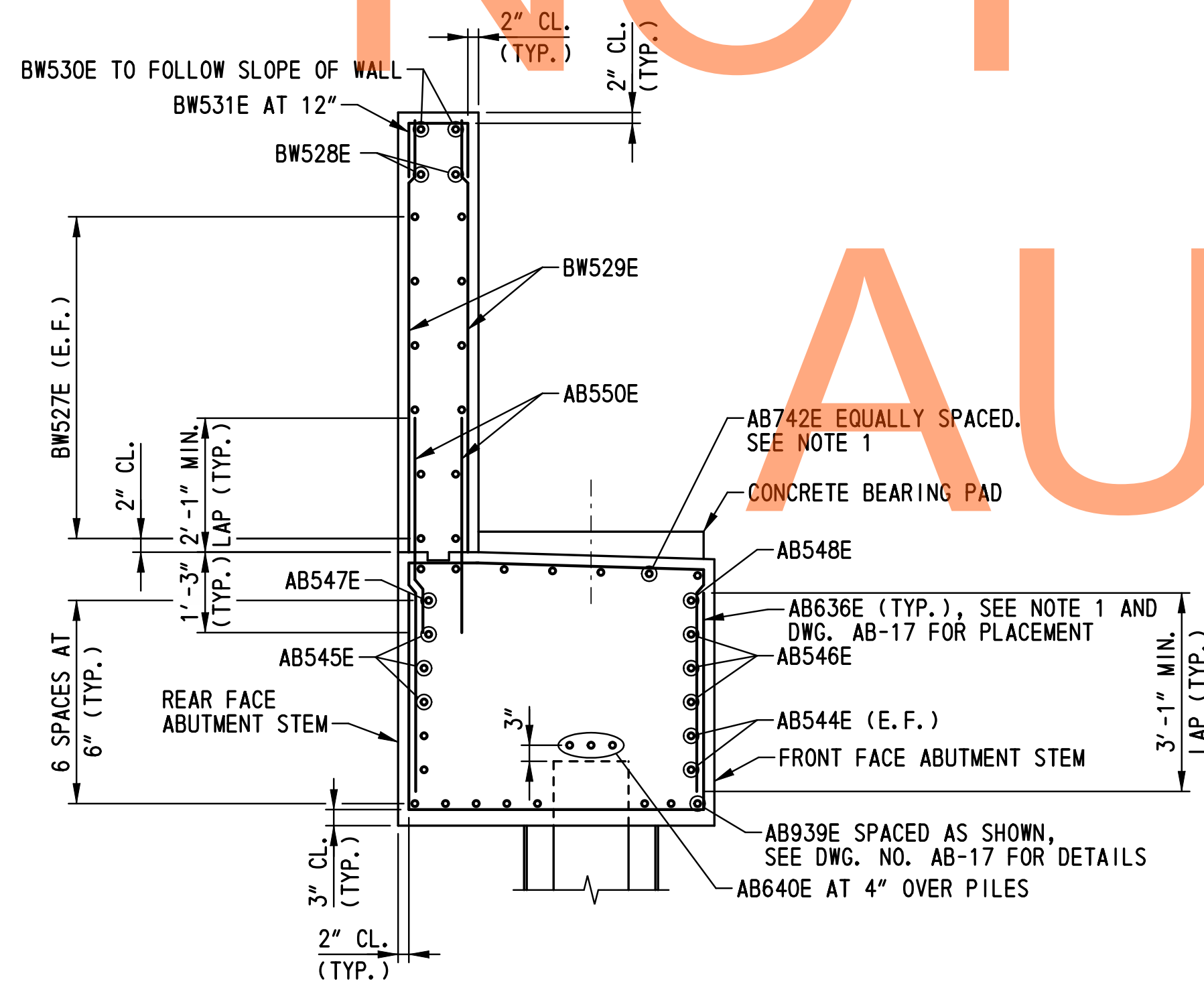
**ABUTMENT B  
REINFORCEMENT  
DETAILS - 1**

<b>BR1-6 AB-17</b>
SHEET NO.
339
TOTAL SHTS.
875

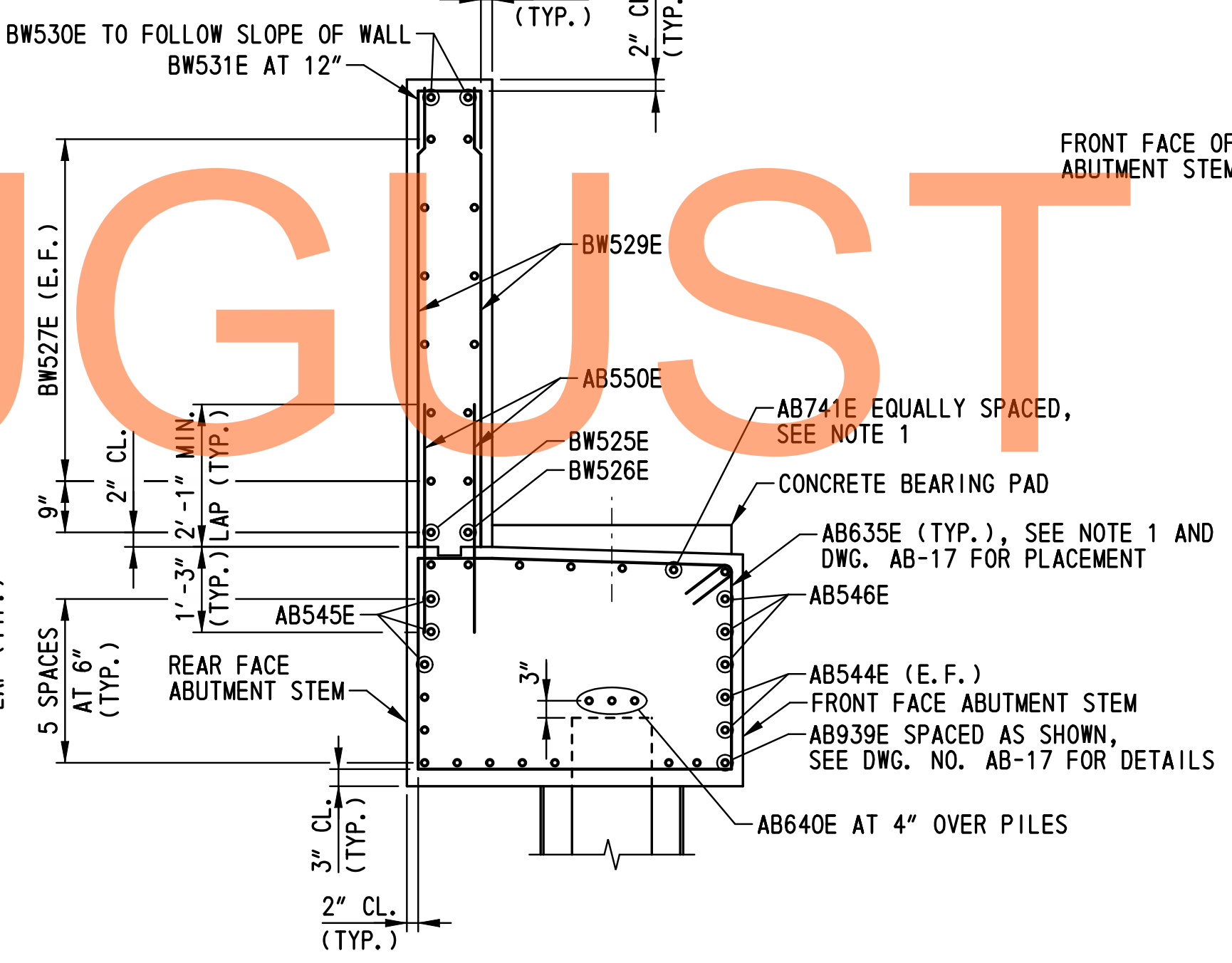


ABUTMENT B REINFORCEMENT  
SCALE: 3/8" = 1' - 0"

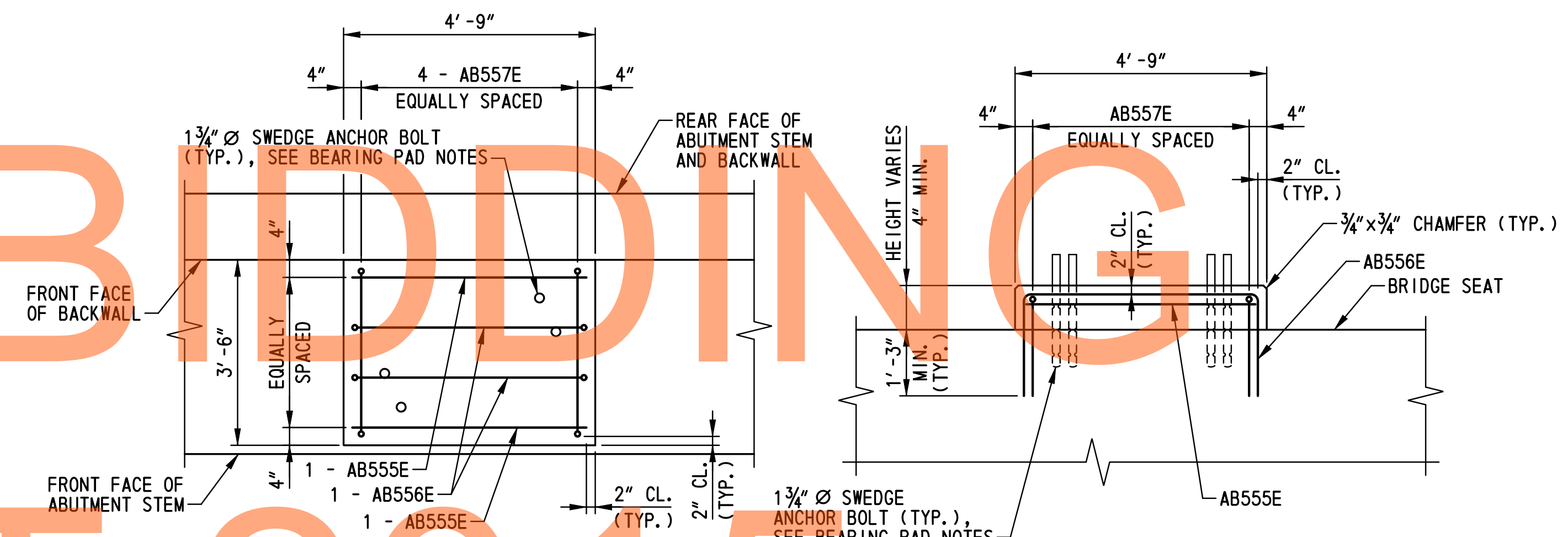
NOTE:  
CONCRETE BEARING PADS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT CONCRETE BEARING PAD SEE DETAILS THIS DWG.



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



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



PLAN  
ABUTMENT CONCRETE BEARING PAD DETAILS  
SCALE: 1/2" = 1' - 0"

- BEARING PAD NOTES:
1. FOR ANCHOR BOLT DIMENSIONS AND LOCATION, SEE DWG. BB-01.
  2. ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER THE CONCRETE HAS SET.
  3. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS.

- NOTES:
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-17.
  2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-17 AND AB-19.
  3. REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-01.

NO. 31653-000, CONTRACT 1A-CADD, Bridge 1B-Ne6, AB18-brt-6.dgn, 10/31/2012 10:27:53 AM



ADDENDUMS / REVISIONS	

SCALE: AS NOTED

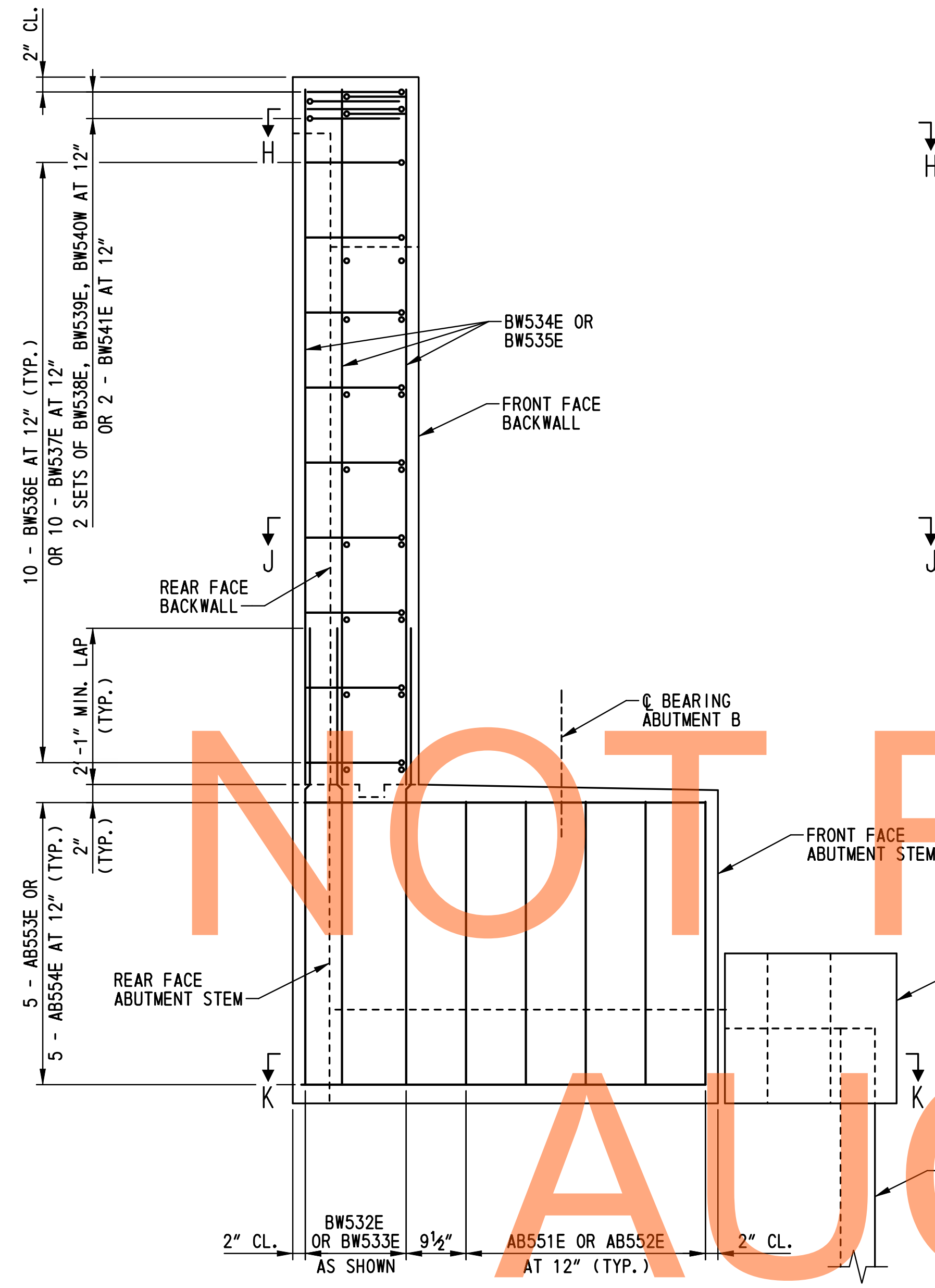
US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

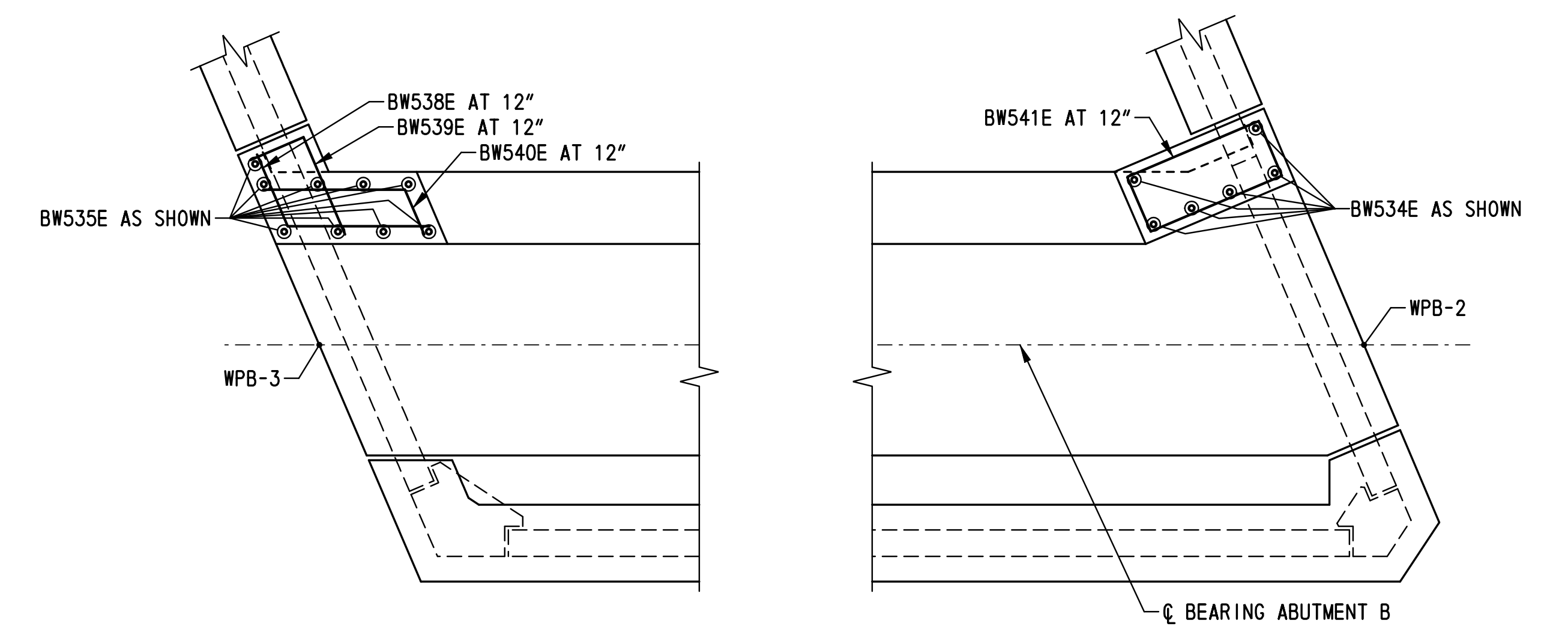
ABUTMENT B  
REINFORCEMENT  
DETAIL - 2

BR1-6 AB-18	SHEET NO.	340
	TOTAL SHTS.	875

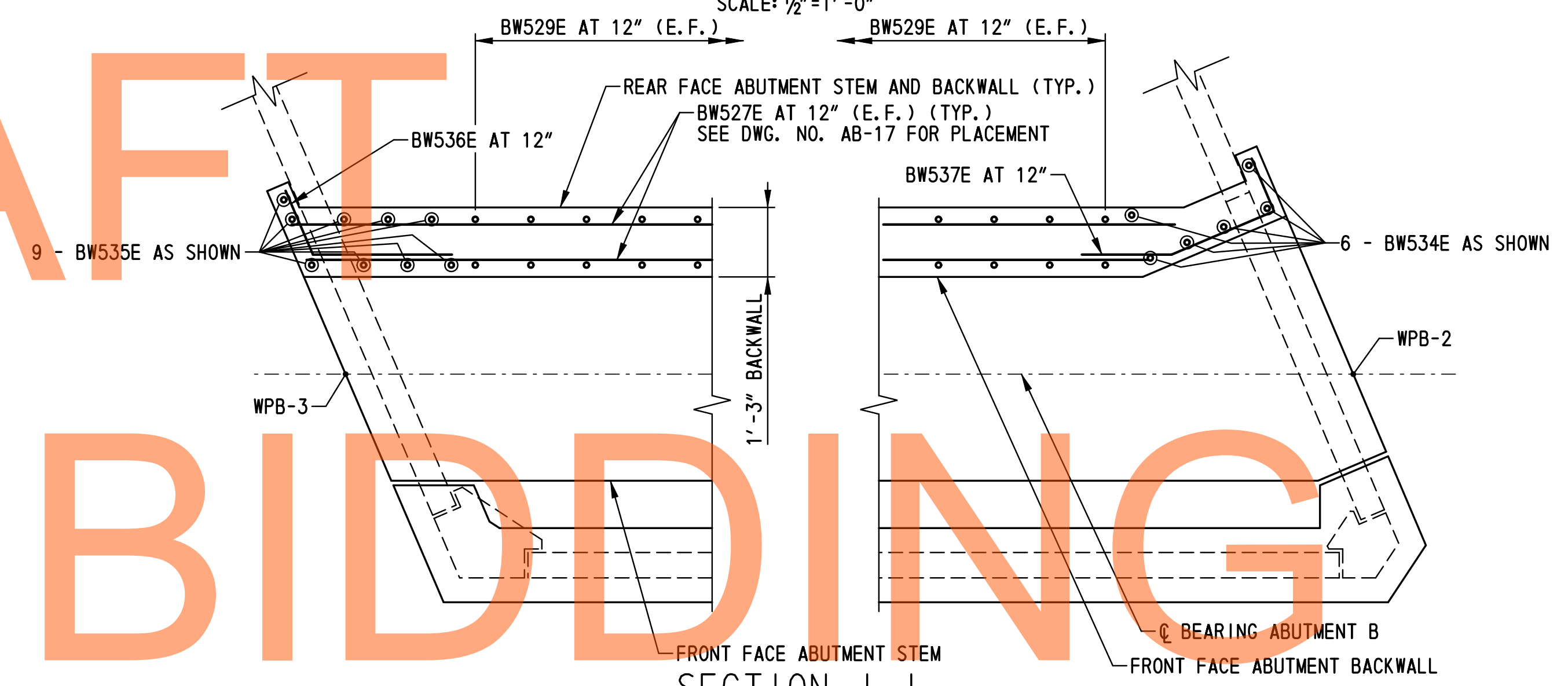
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AUGUST 2015



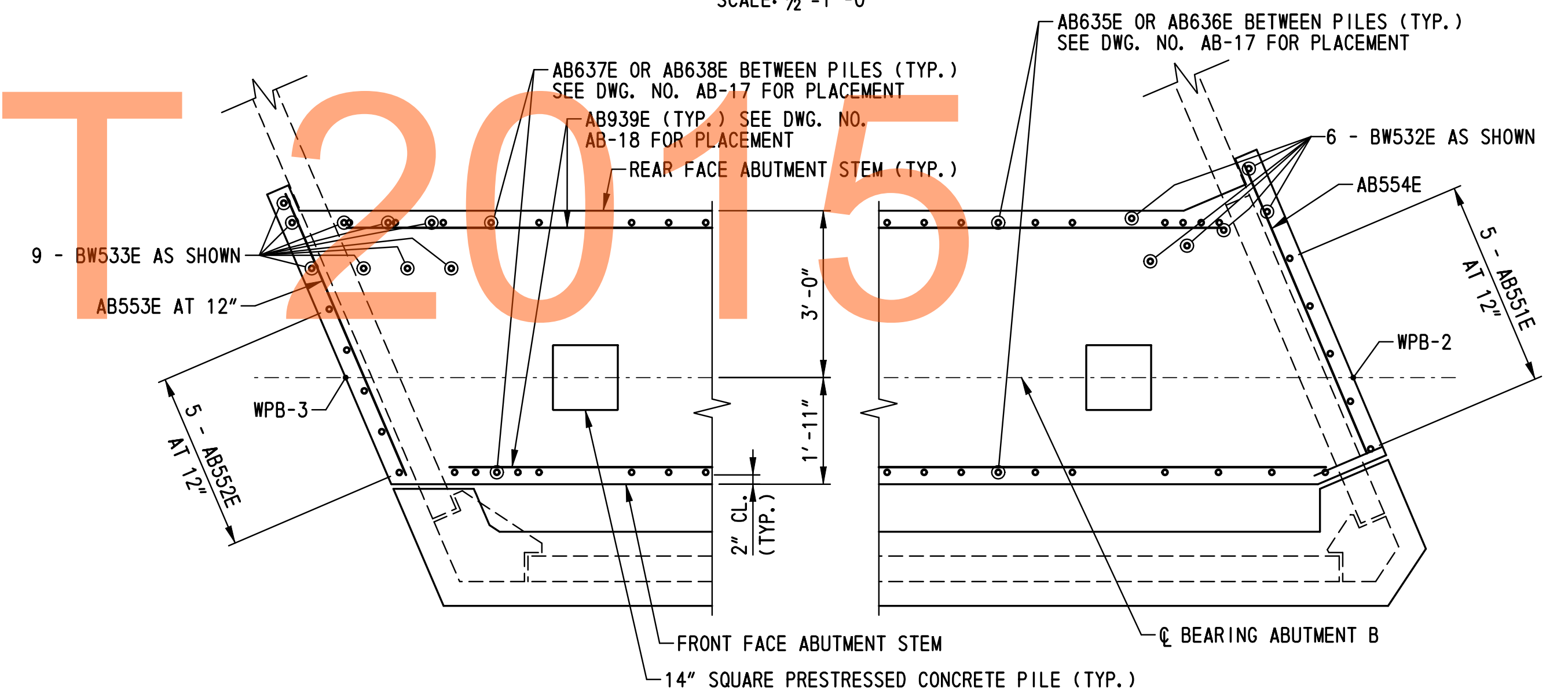
END ELEVATION  
SCALE: 3/4" = 1'-0"



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



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



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

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ADDENDUMS / REVISIONS	

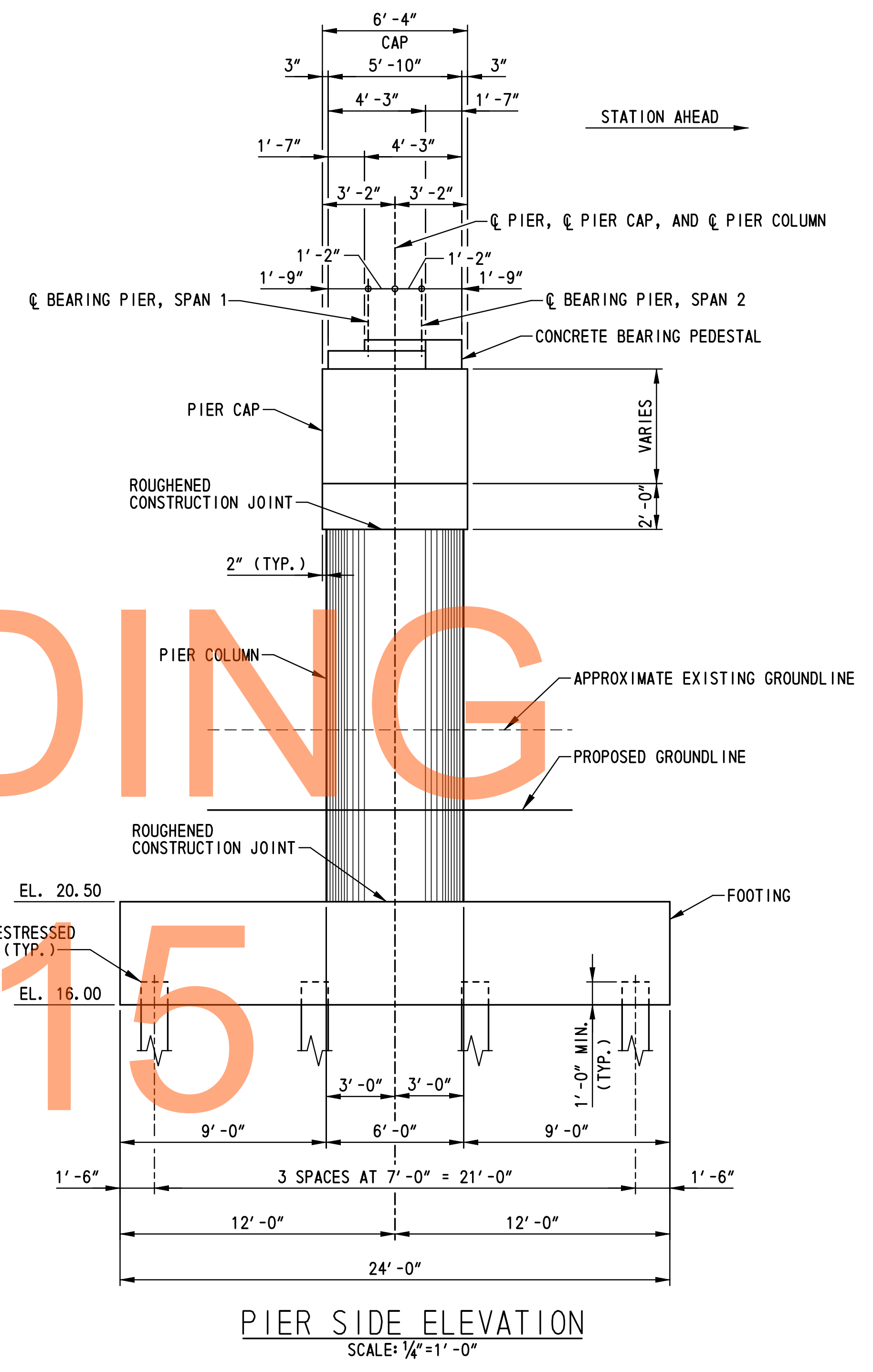
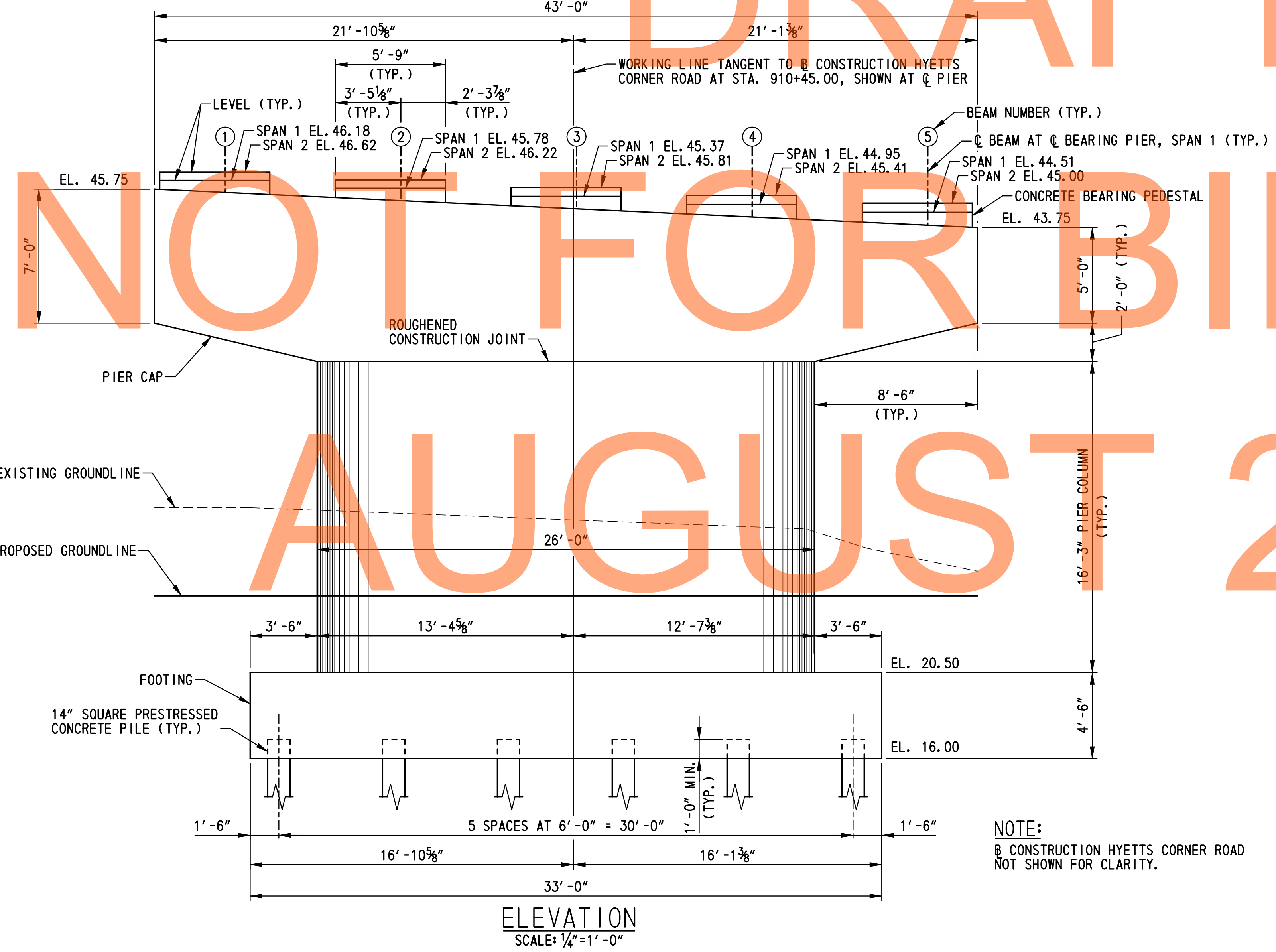
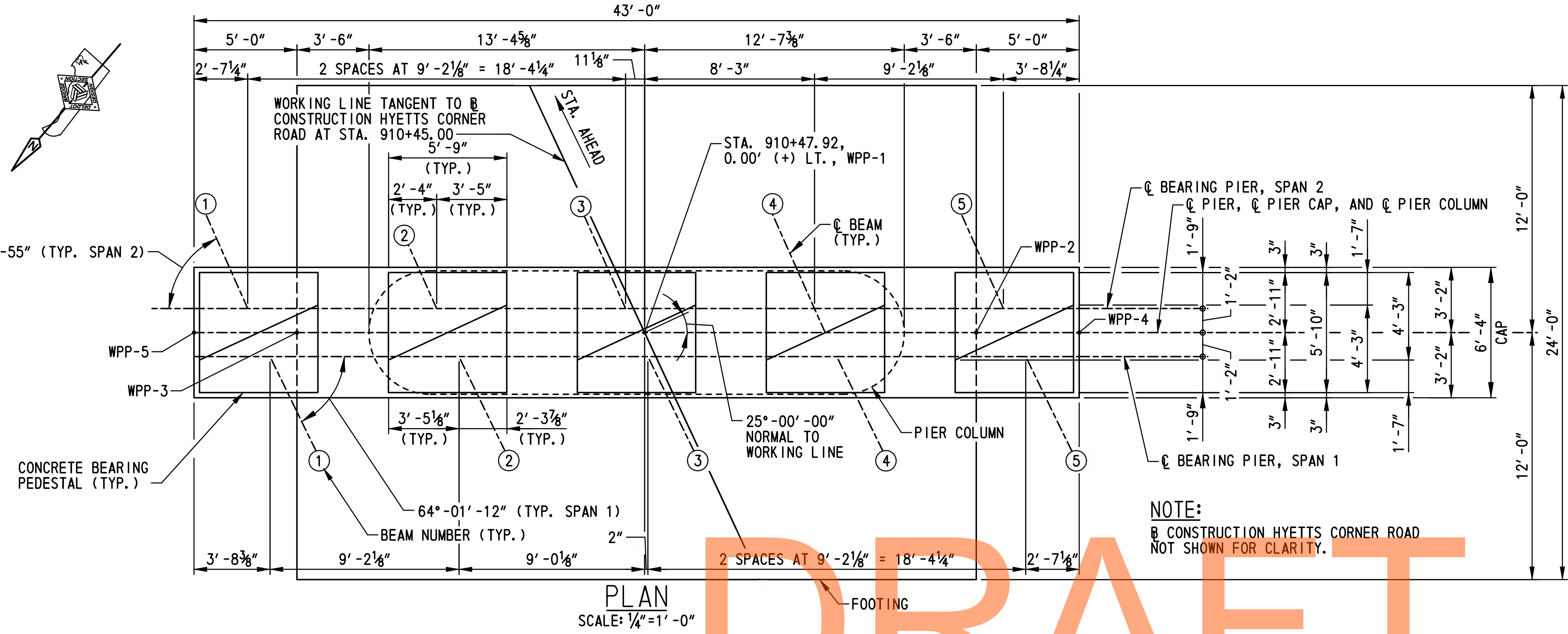
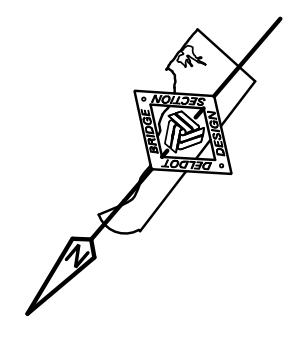
SCALE: AS NOTED

**US 301,**  
**SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO.	<b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY:	A.D.D.
	CHECKED BY:	P.S.D.

**ABUTMENT B**  
**REINFORCEMENT**  
**DETAILS - 3**

<b>BR1-6</b> <b>AB-19</b>
SHEET NO. 341
TOTAL SHTS. 875



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ADDENDUMS / REVISIONS

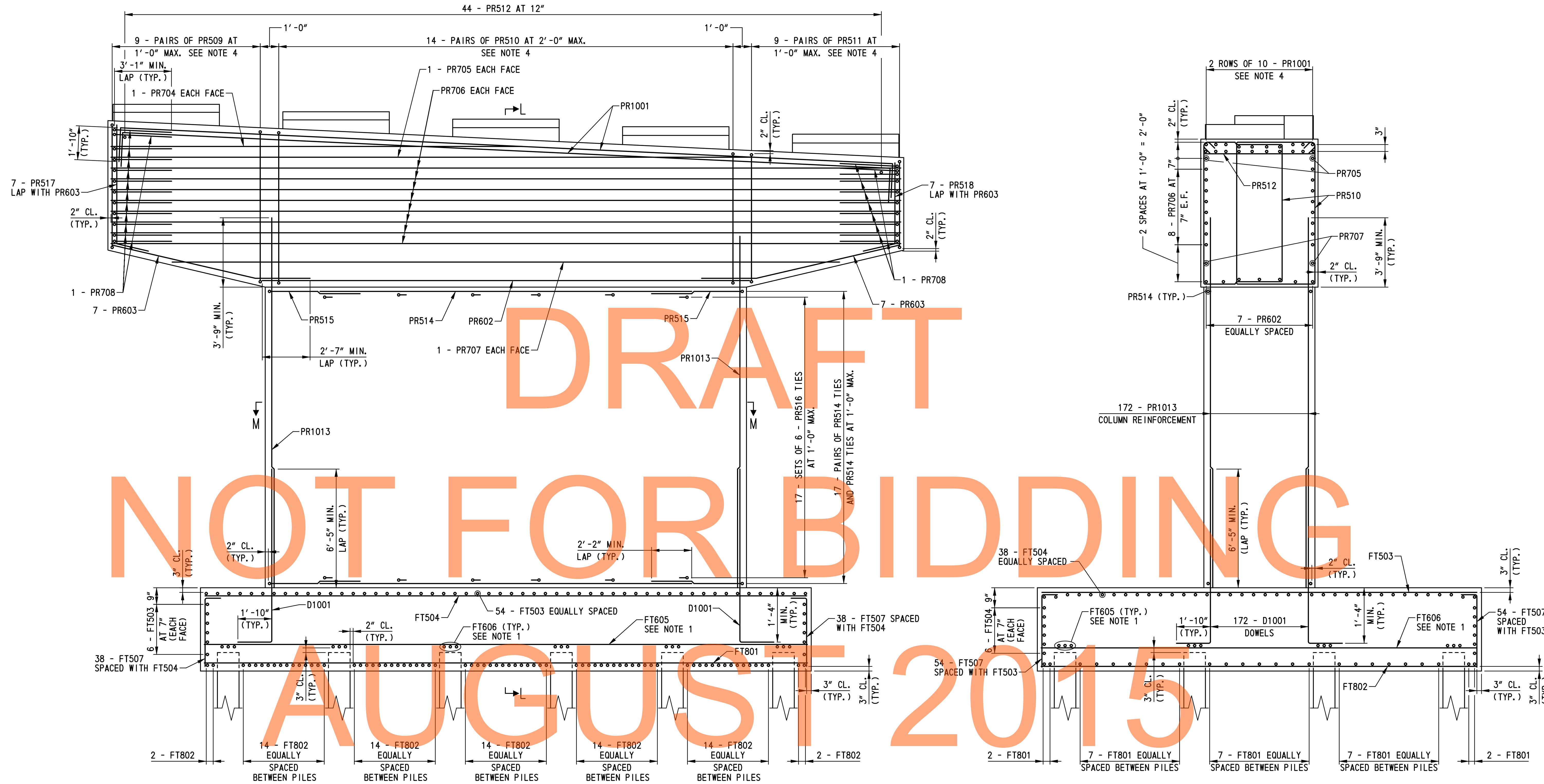
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**PIER PLAN AND ELEVATIONS**

<b>BRI-6 PR-01</b>
SHEET NO. 342
TOTAL SHTS. 875



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

SECTION L-L  
SCALE: 3/8" = 1'-0"

- NOTES:
1. FOR PILE LAYOUT AND REINFORCEMENT PLAN OVER PILES SEE DWG. NO. PL-01.
  2. FOR PIER PLAN, ELEVATION, AND SECTION, SEE DWG. NO. PR-01.
  3. FOR SECTION M-M AND PIER BEARING PEDESTAL REINFORCEMENT, SEE DWG. NO. PR-03.
  4. SPACE TOP HORIZONTAL REINFORCEMENT IN PIER CAPS AROUND BEARING ANCHOR BOLTS.

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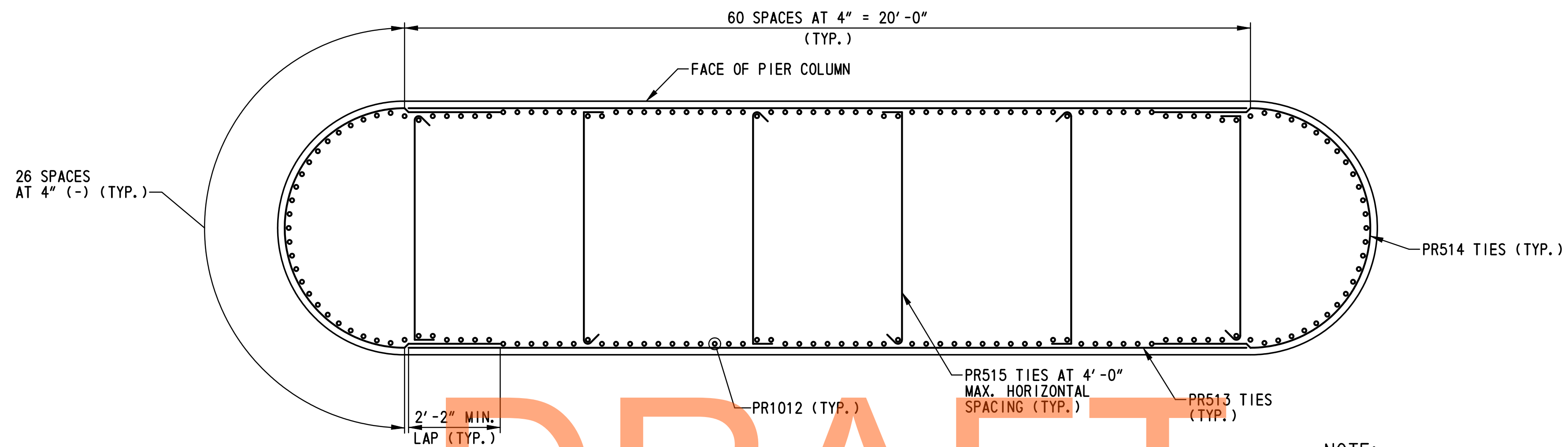
ADDENDUMS / REVISIONS	

US 301,  
SR 896 TO SR 1

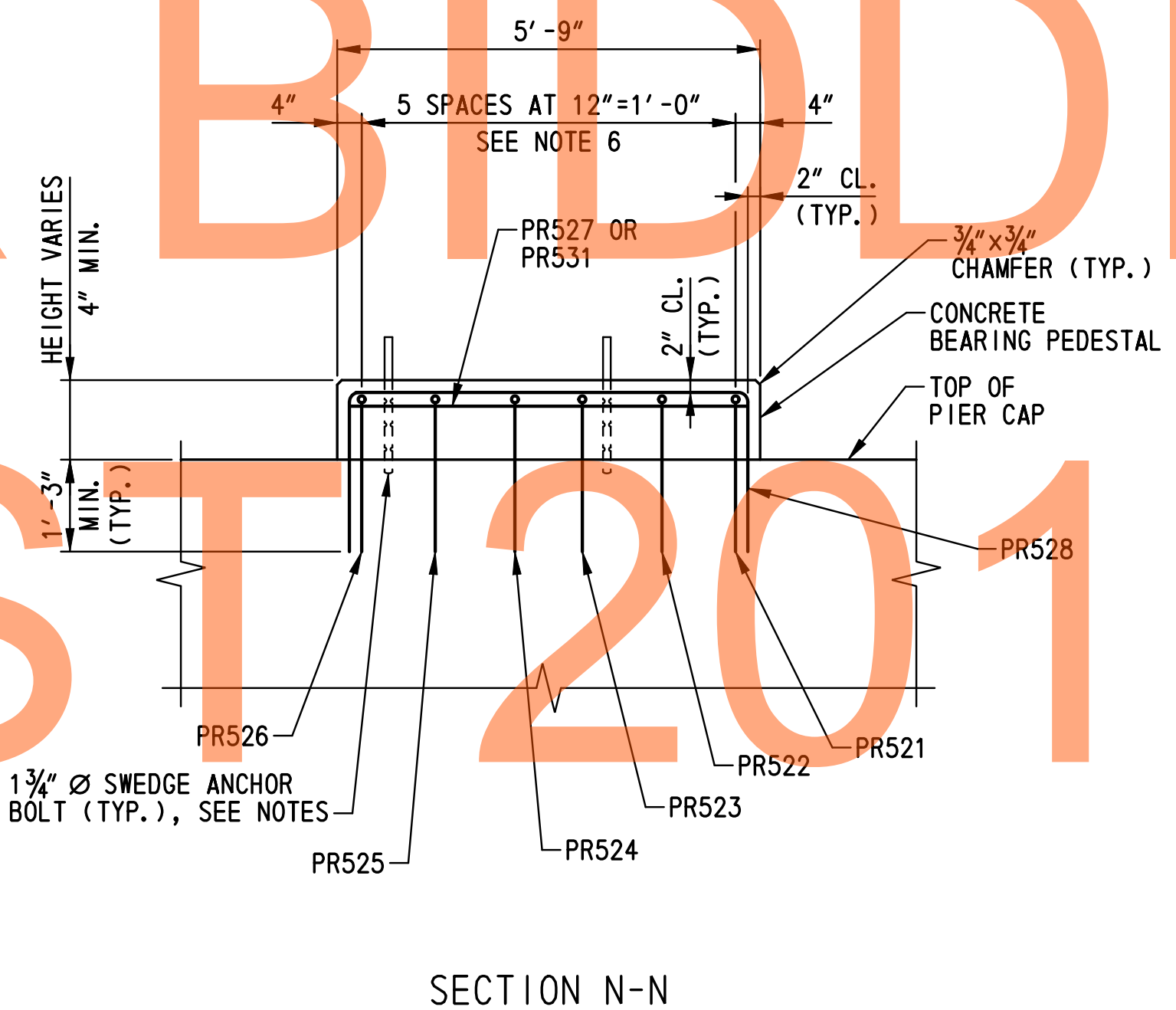
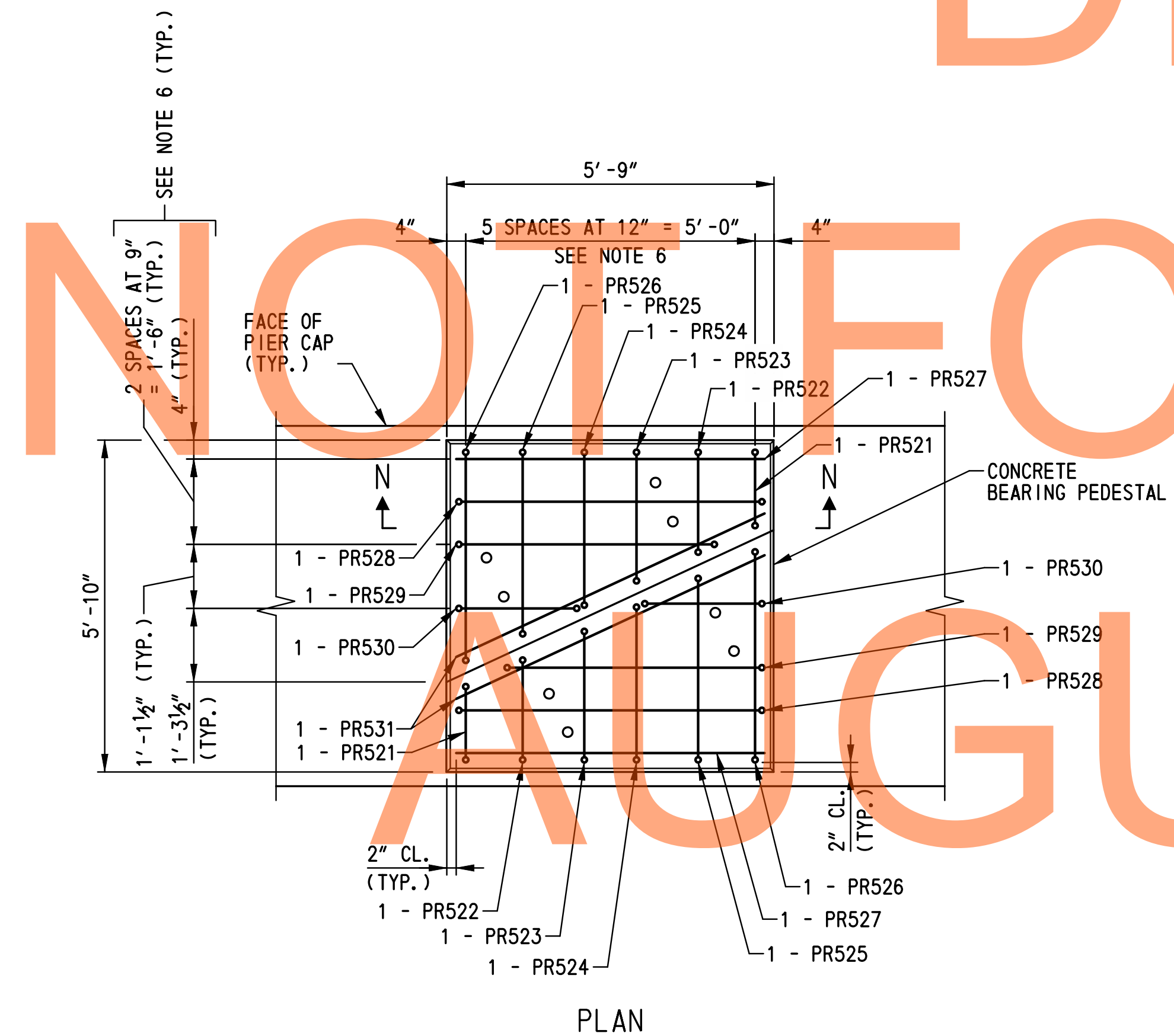
CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PIER REINFORCEMENT  
DETAILS - 1

BR-6 PR-02
SHEET NO.
343
TOTAL SHTS.
875



**NOTE:**  
ALTERNATE 90 DEGREE AND 135 DEGREE HOOK OF PR151 TIES IN EACH LAYER.



PIER CONCRETE BEARING PEDESTAL REINFORCEMENT DETAILS  
SCALE: 1/2" = 1' - 0"

- NOTES:**
- FOR LOCATION OF SECTION M-M, SEE DWG. NO. PR-02.
  - FOR ANCHOR BOLT DIMENSIONS AND LOCATIONS, SEE DWG. NO. BB-02.
  - ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER THE CONCRETE HAS SET.
  - SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS AND PIER CAP REINFORCEMENT.

DRAFT

NOT FOR BIDDING

AUGUST 2015

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ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

<b>BR1-6</b> <b>PR-03</b>
SHEET NO.
344
TOTAL SHTS.
875

**DRAFT**  
 SHEET NOT USED  
**NOT FOR BIDDING**  
**AUGUST 2015**

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ADDENDUMS / REVISIONS


SCALE: AS NOTED

**US 301,**  
**SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**PIER SCOUR**  
**COUNTERMEASURES**  
**PLAN AND SECTION**

<b>BR1-6</b>
<b>PR-04</b>
SHEET NO.
345
TOTAL SHTS.
875





① ANY MARK NUMBER WITH SUFFIX 'E' DENOTES EPOXY COATED REINFORCING STEEL.

② ALL MARK 'LOCATION PREFIXES' SHALL CONSIST OF TWO LETTERS AND ARE AS FOLLOWS: AB = ABUTMENT, AS = APPROACH SLAB, BC = BOX CULVERT, BW = BACKWALL, CL = COLUMN, DK = DECK, DL = DOWEL, FT = FOOTING, HW = HEADWALL, MS = MISC. BARS, PA = PARAPET, PR = PIER, SC = SHEETPILE CAP, SL = SLAB, TW = TOEWALL, WL = WALL (UNIQUE LOCATION), WW = WINGWALL

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE) and BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O). Includes rows for PIER and PIER CONT.

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE) and BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O). Includes rows for PIER CONT.

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE) and BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O).

DRAFT

NOT FOR BIDDING

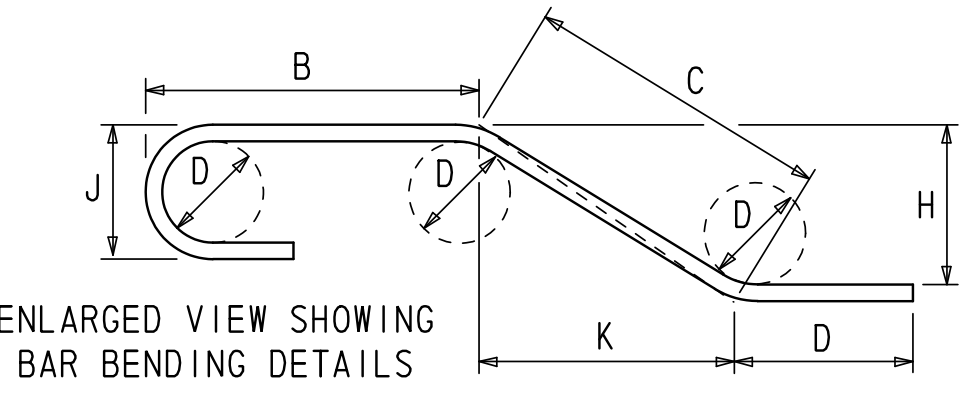
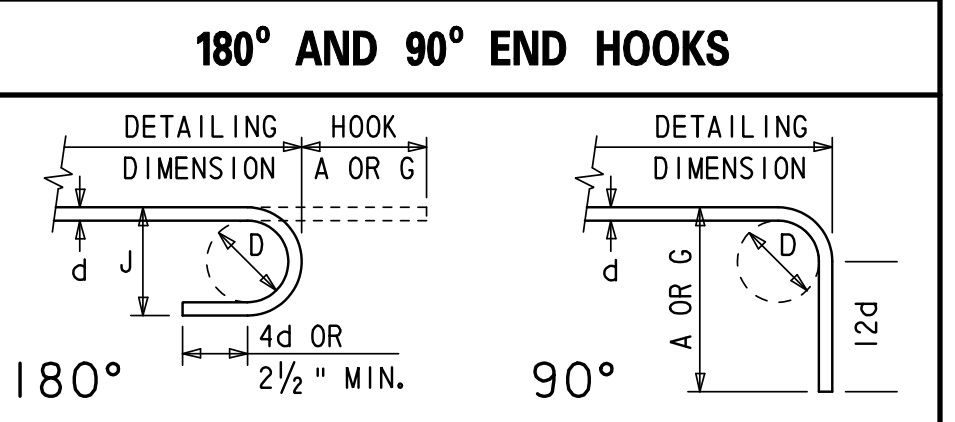
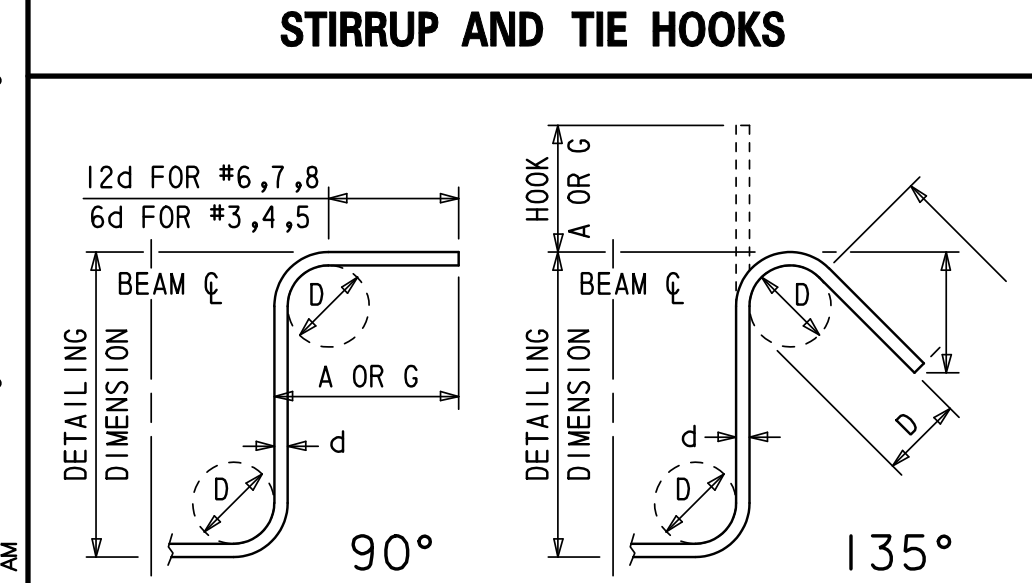
ASTM STANDARD ENGLISH REINFORCING BARS table with columns: BAR SIZE, NOMINAL DIMENSIONS (DIAMETER, AREA, WEIGHT), and HOOKS (180°, 90°, 135°).

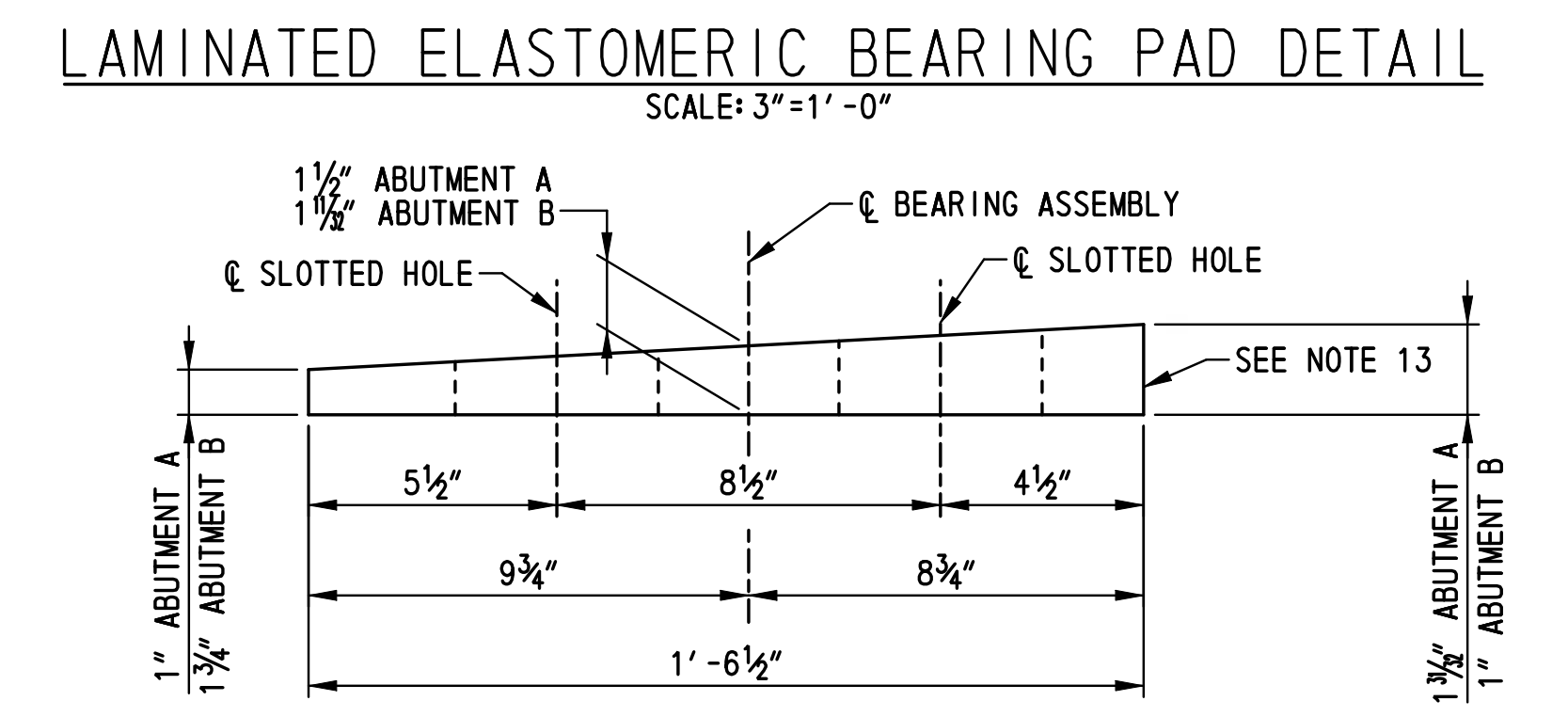
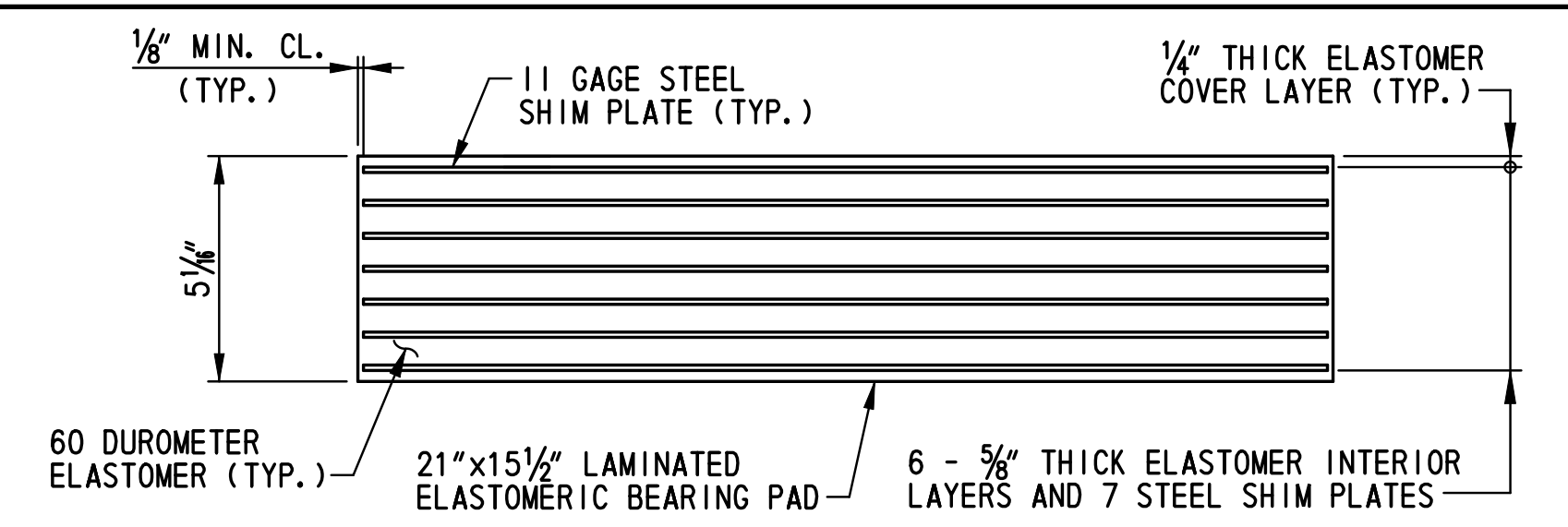
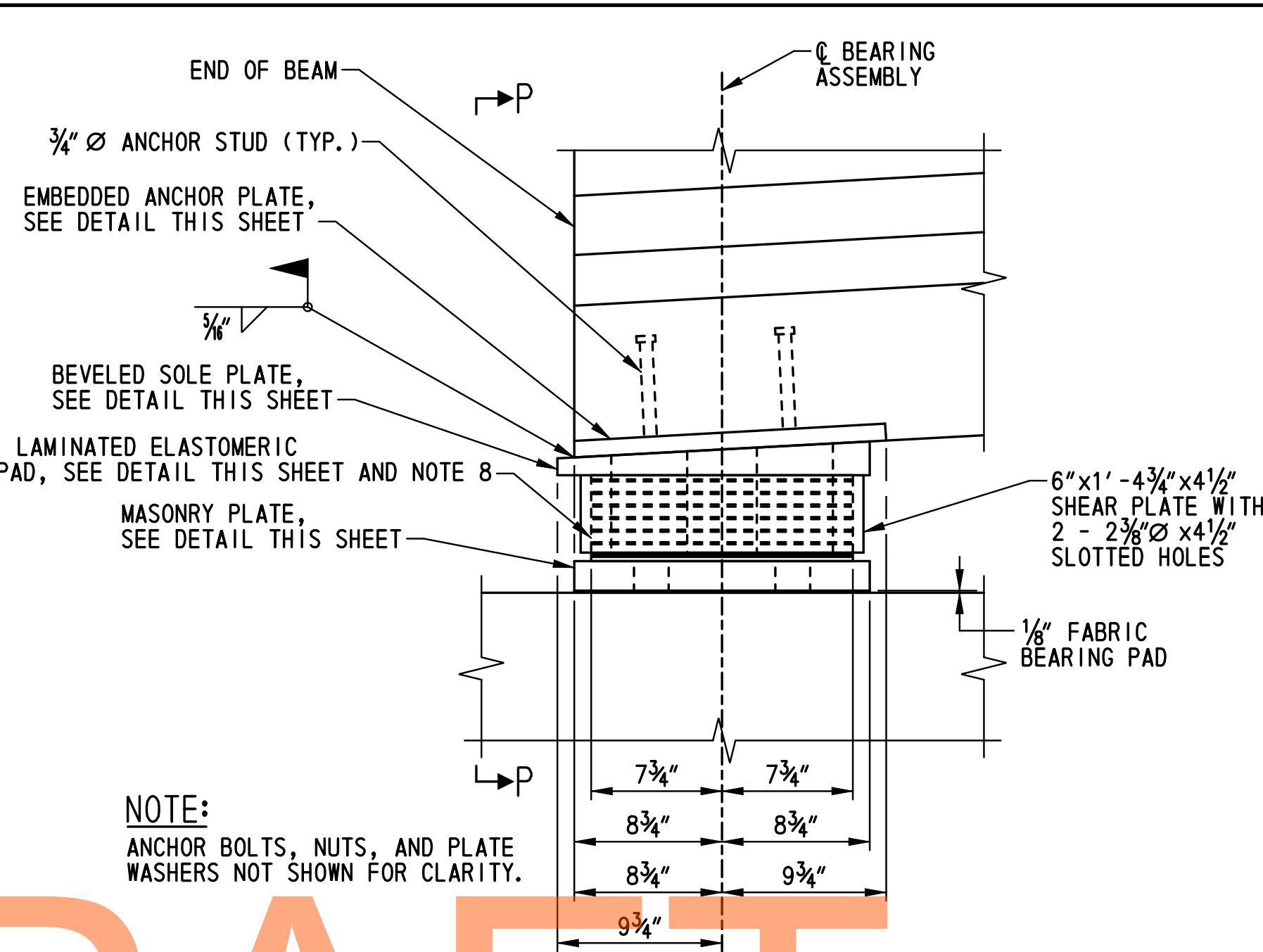
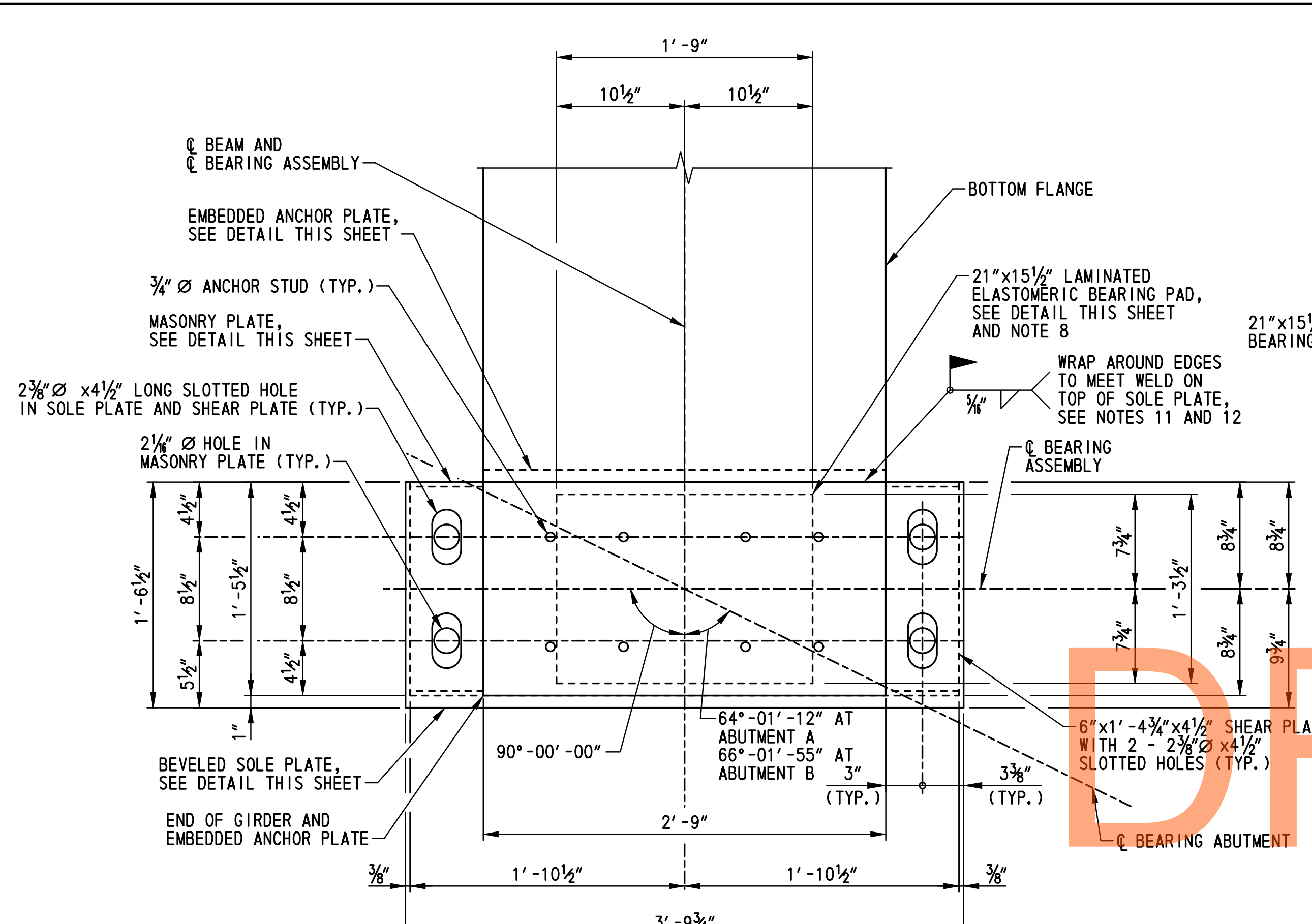
- NOTES:
- FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
  - STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
  - ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "C" ON STD. 180° AND 135° HOOKS.
  - "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
  - WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H".
  - 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, 'CRS1' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
  - TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

STANDARD BAR BENDS

SPECIAL BAR BENDS

- X: SPIRAL NOTES: J = TURNS AT 'F' SPACING, K = EXTRA TURNS (HALF TOP & BOTTOM). PLAIN SPIRAL WITH SPACERS LOOSE. PLAIN SPIRAL WITH SPACERS MOUNTED.
- HI: [Diagram]
- T15: [Diagram]
- PA: [Diagram]
- DW: STANDARD THREADED END (2' LONG)





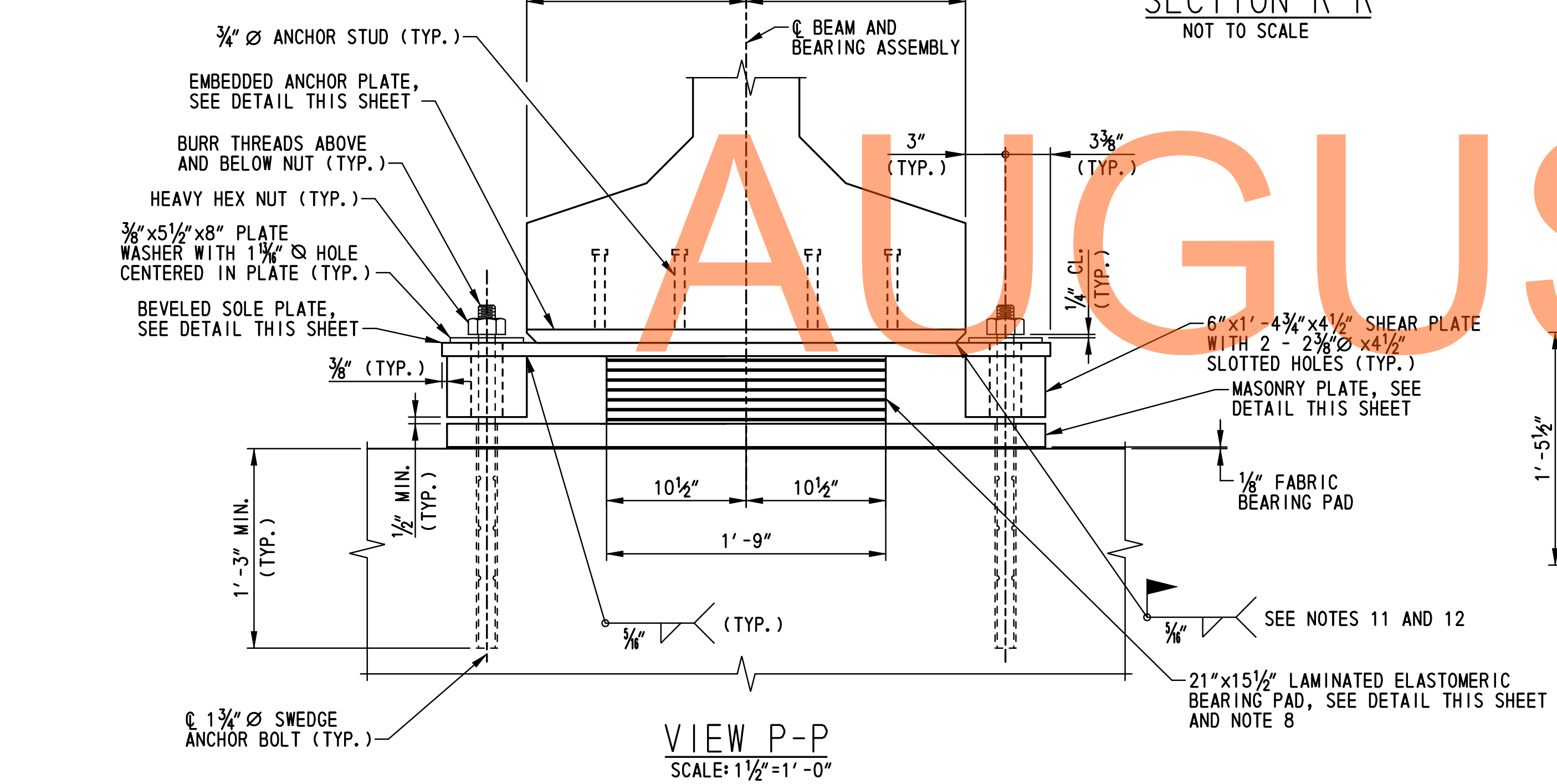
- NOTES:**
- ANCHOR BOLTS, NUTS AND PLATE WASHERS NOT SHOWN FOR CLARITY.
  - CONCRETE BEARING PAD NOT SHOWN FOR CLARITY.

**EXPANSION BEARING PLAN**  
SCALE: 1 1/2" = 1'-0"

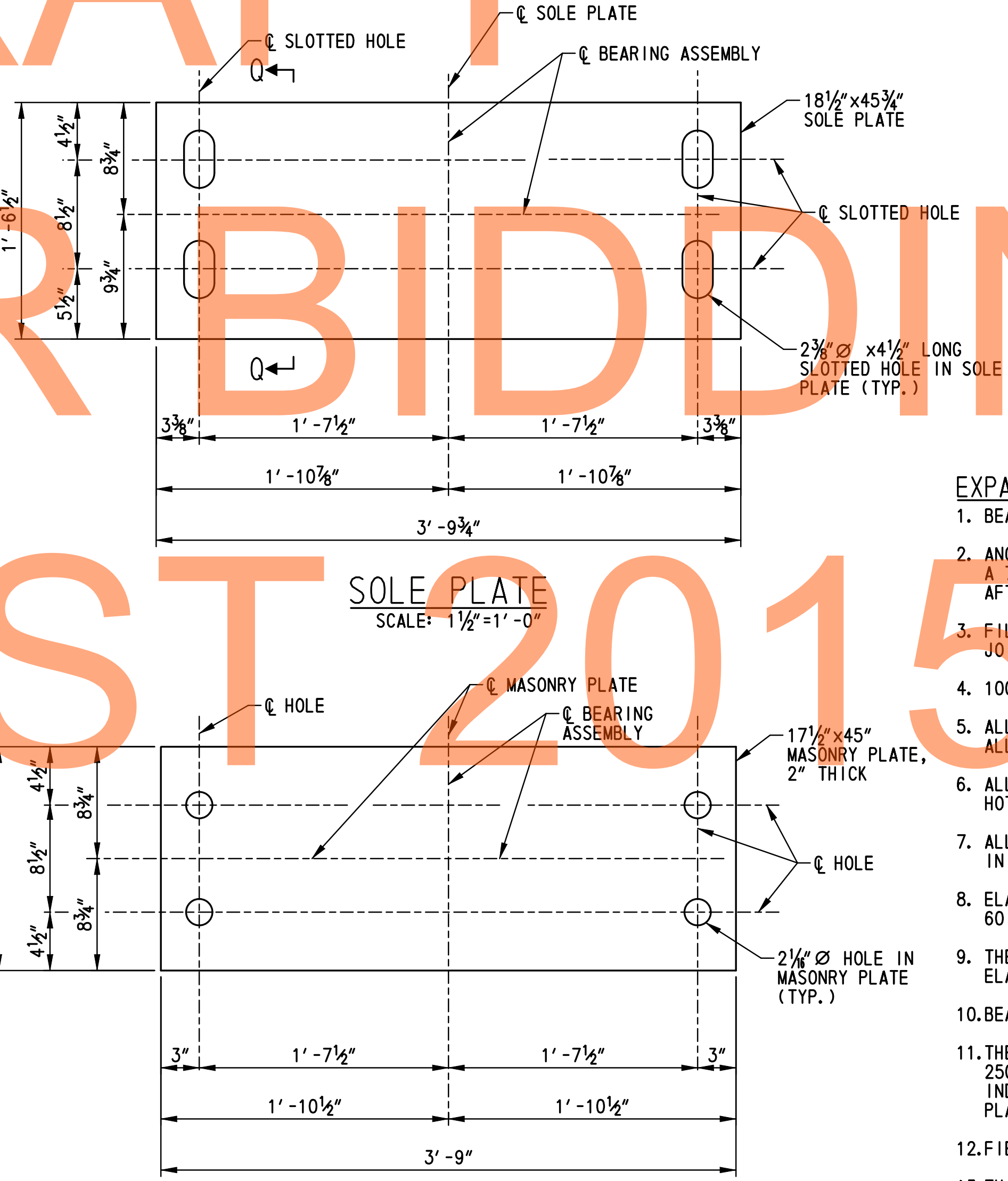
**SECTION R-R**  
NOT TO SCALE

**SOLE PLATE**  
SCALE: 1 1/2" = 1'-0"

**EMBEDDED ANCHOR PLATE**  
SCALE: 1 1/2" = 1'-0"



**VIEW P-P**  
SCALE: 1 1/2" = 1'-0"



**MASONRY PLATE**  
SCALE: 1 1/2" = 1'-0"

**EXPANSION BEARING NOTES:**

- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF BEAM.
- ANCHOR PLATES, SHEAR PLATES, SOLE PLATES AND MASONRY PLATES TO BE UNPAINTED A 709, GRADE 36 GALVANIZED STEEL. PLATES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
- FILL HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
- 1000 RMS FINISH ALL OVER.
- ALL PLATE WASHERS SHALL BE UNPAINTED A 709, GRADE 36 GALVANIZED STEEL. ALL NUTS SHALL BE UNPAINTED A 563 GALVANIZED STEEL.
- ALL ANCHOR STUDS SHALL CONFORM TO ASTM A 108, GRADE 1015, 1018, OR 1020, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
- ALL ANCHOR BOLTS SHALL BE ASTM F 1554 GRADE 105 STEEL, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
- ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO M 251. THE ELASTOMER SHALL BE 60 DUROMETER. THE SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO ASTM A 36.
- THE SOLE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE LAMINATED ELASTOMERIC BEARING PAD. THE BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
- BEARING MAXIMUM DESIGN LOAD: 258.0 KIPS.
- THE TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER SHALL BE KEPT BELOW 250 DEGREES (F) DURING FIELD WELDING. TEMPERATURE CRAYONS OR OTHER HEAT INDICATING DEVICES SHALL BE PROVIDED FOR WELDING INSPECTION. TOUCH-UP SOLE PLATE PAINT SYSTEM AFTER WELDING.
- FIELD WELDING SHALL BE COMPLETED PRIOR TO PLACEMENT OF THE BACKWALL.
- THICKER END OF BEVELED SOLE PLATE SHALL BE MARKED TO ENSURE PROPER INSTALLATION IN FIELD. THICKER END SHALL BE PLACED STATIONS AHEAD.

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ADDENDUMS / REVISIONS	

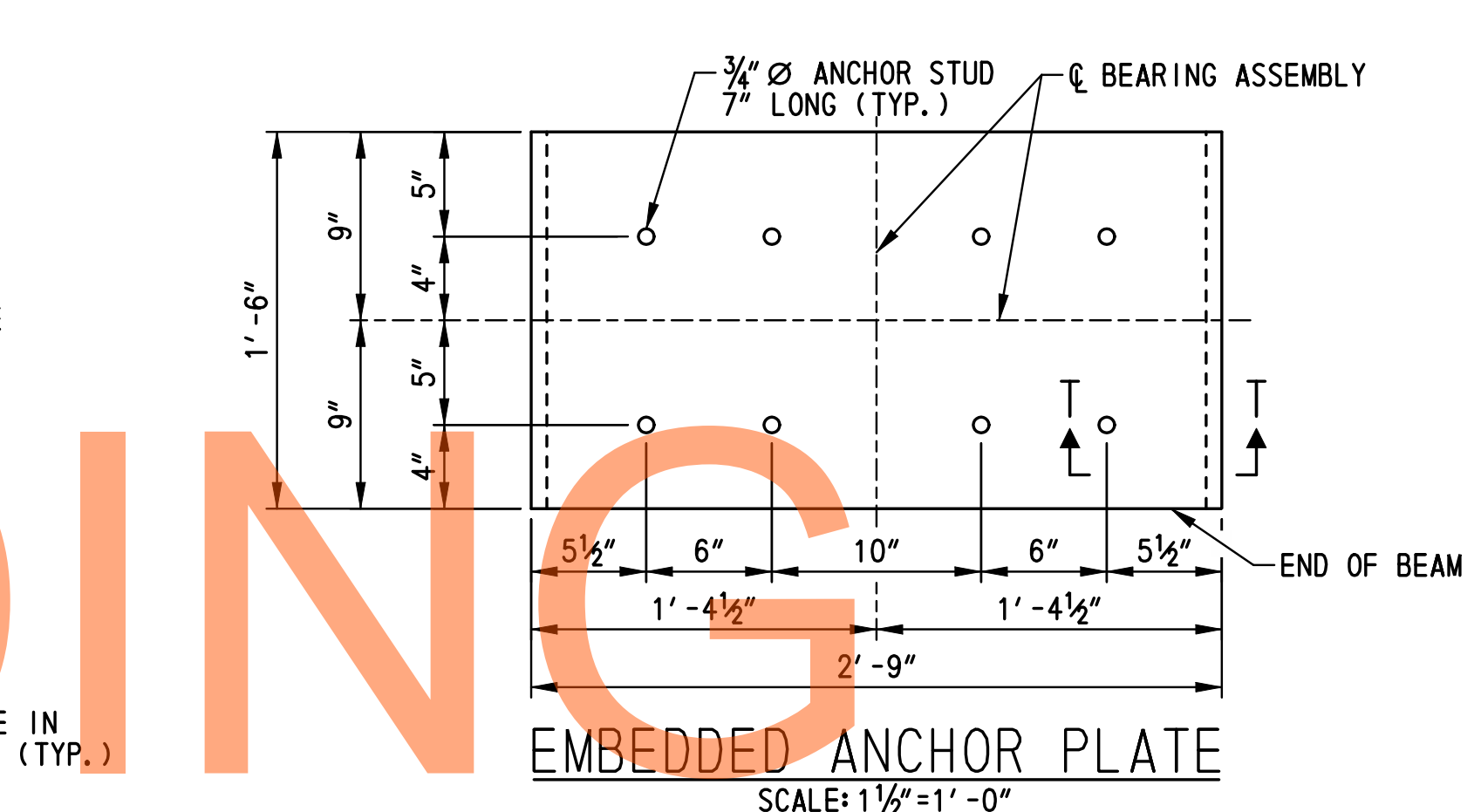
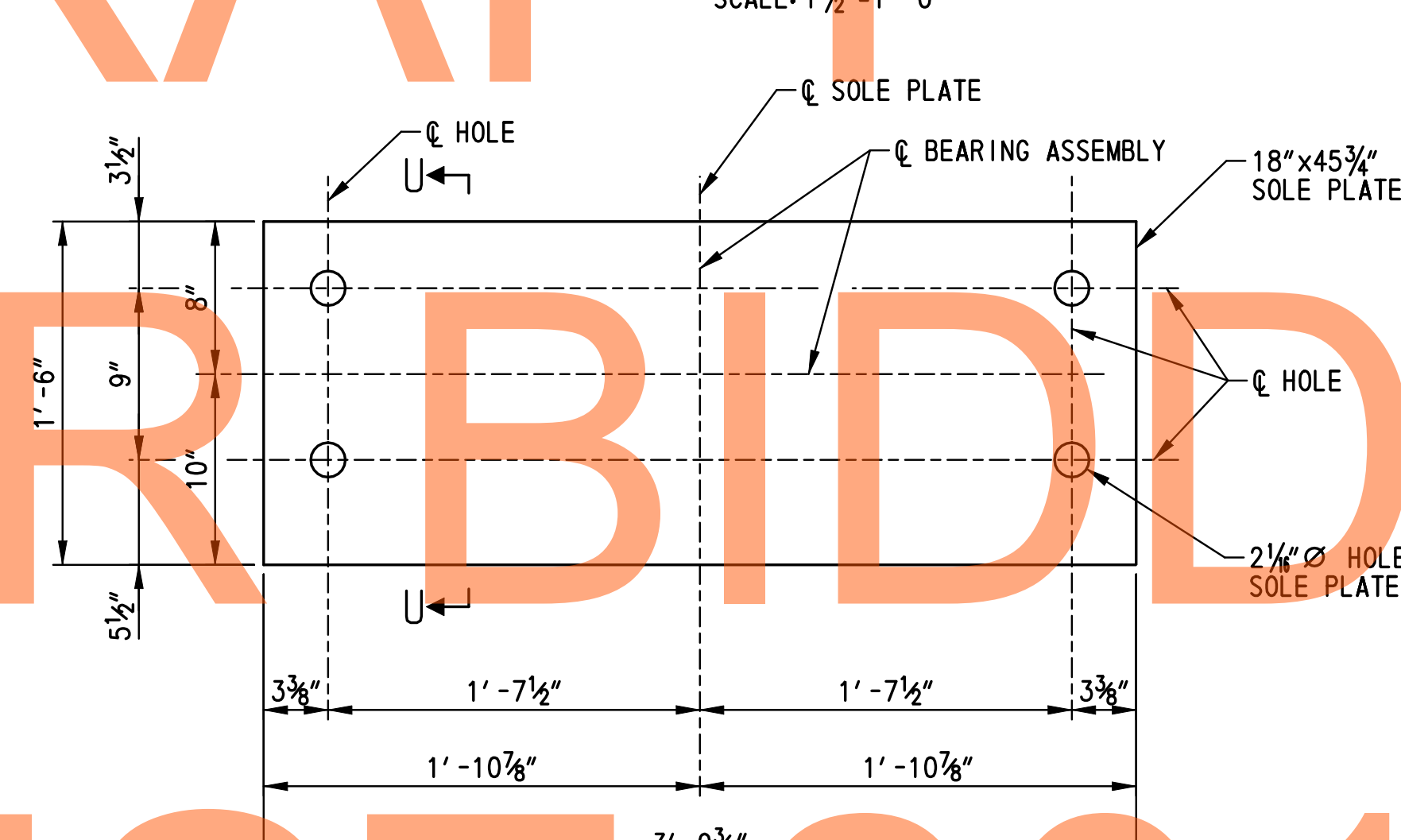
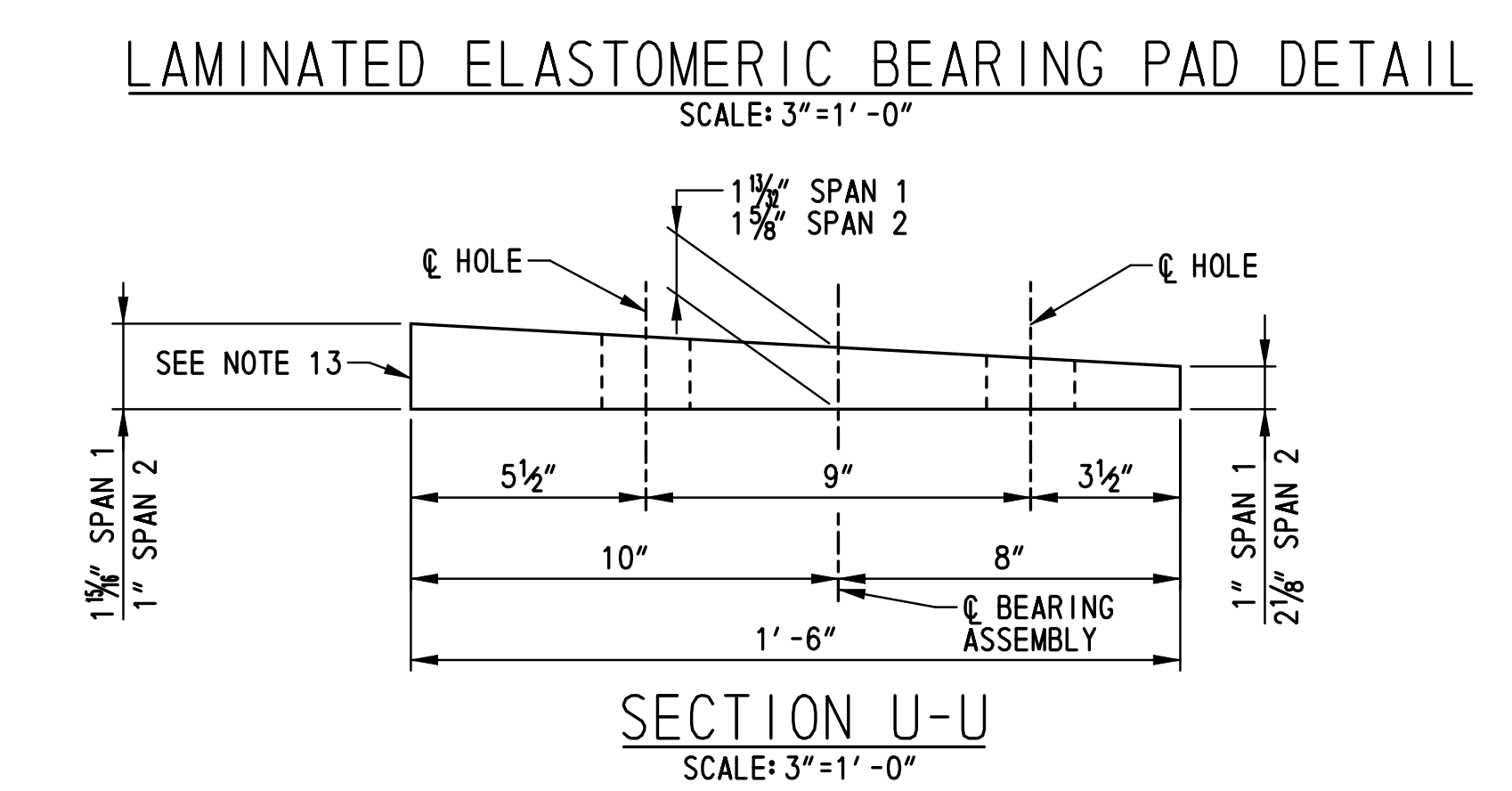
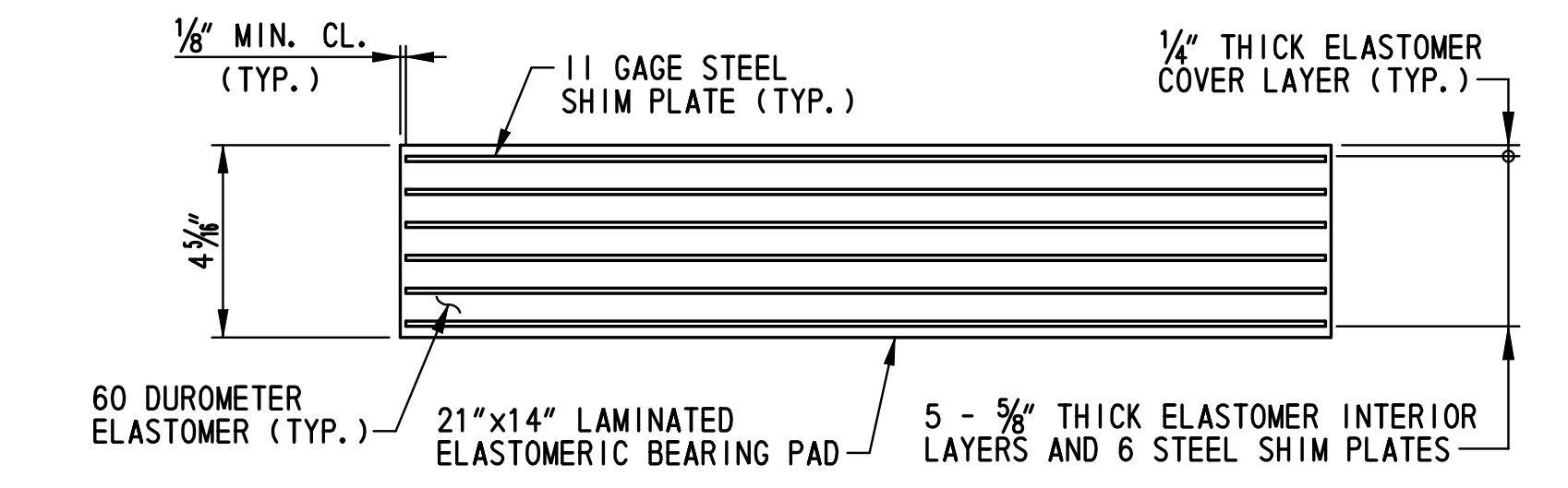
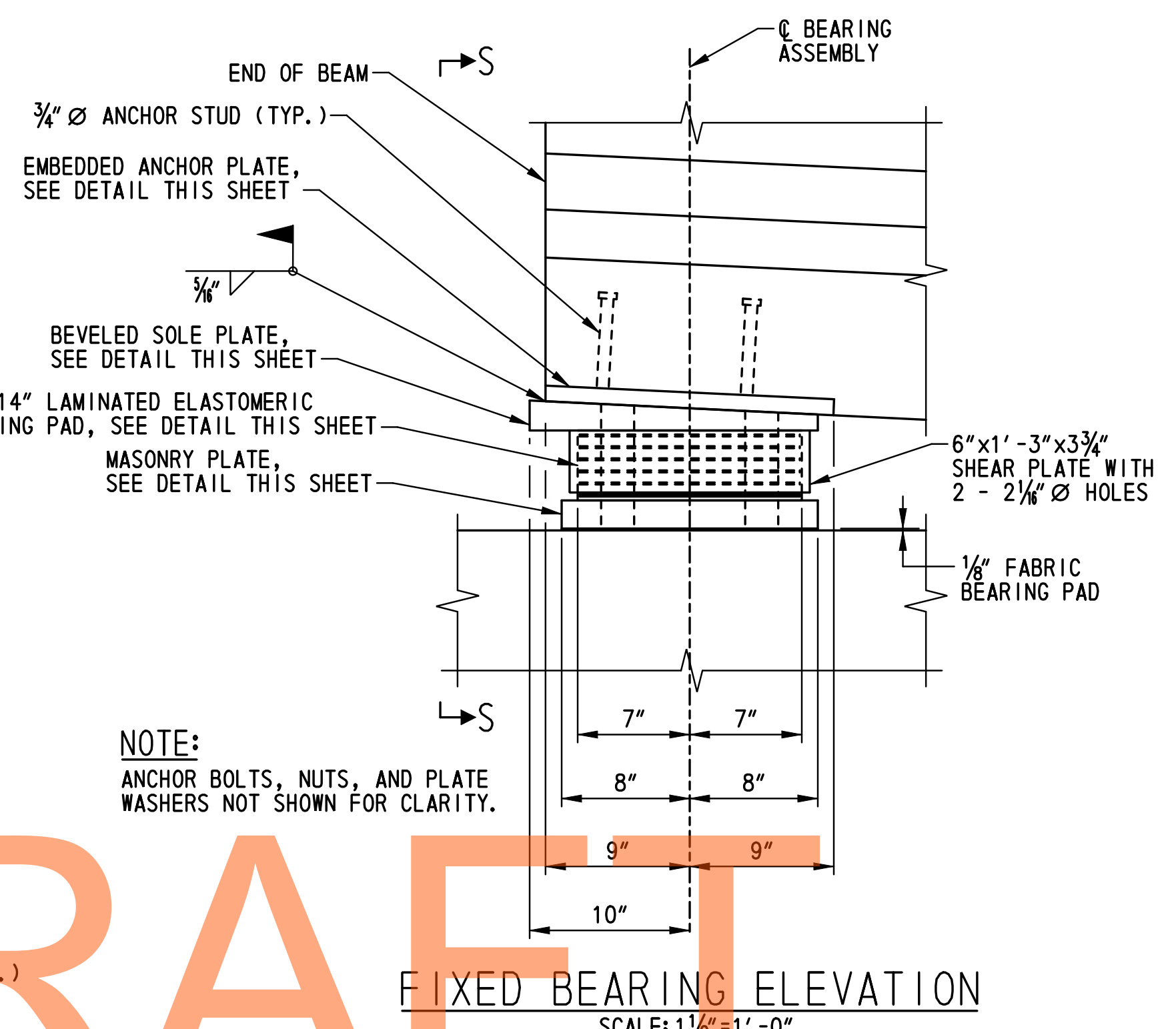
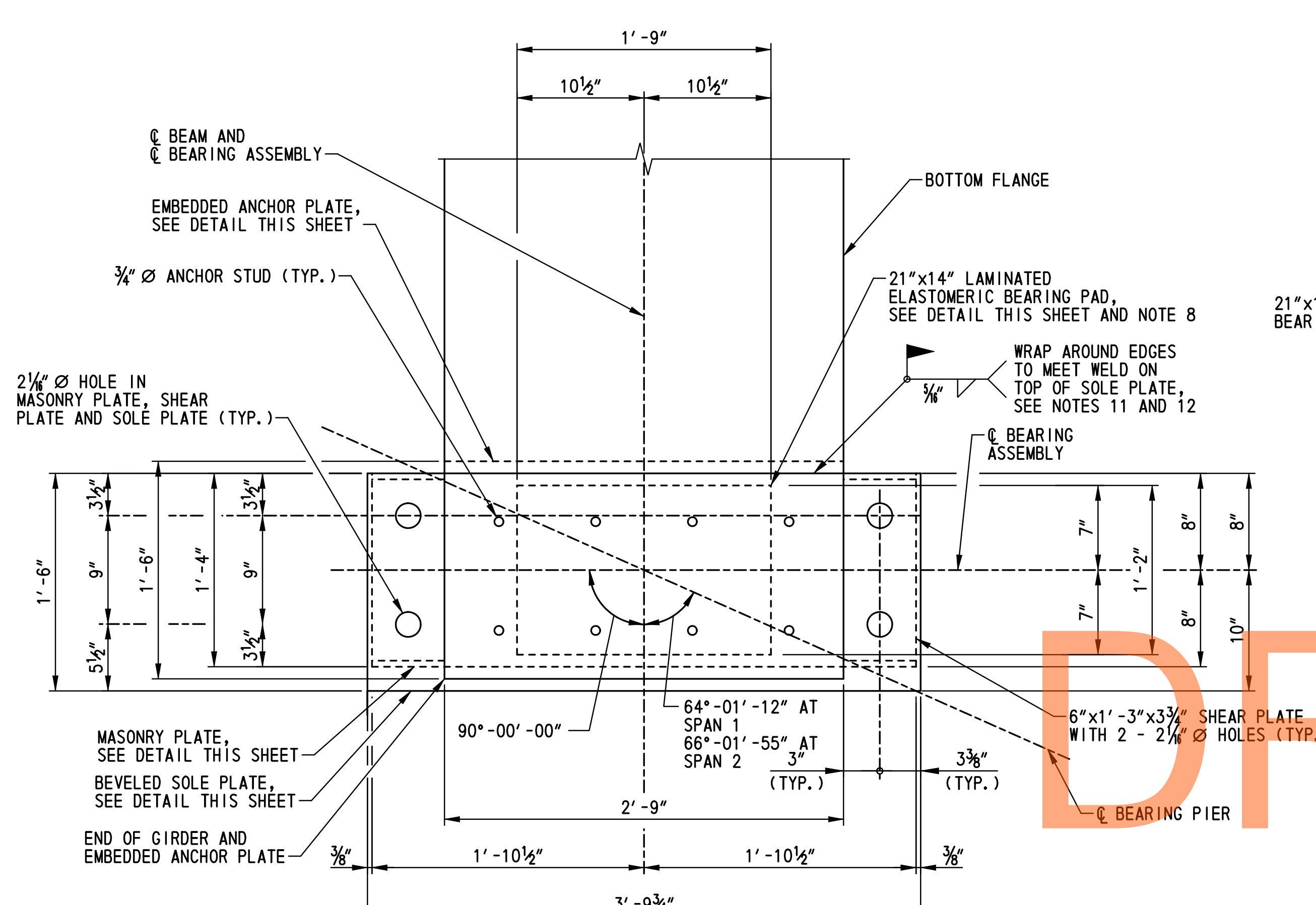
SCALE: AS NOTED

**US 301,**  
**SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**ABUTMENT**  
**EXPANSION**  
**BEARING DETAILS**

<b>BR1-6</b> <b>BB-01</b>
SHEET NO. 348
TOTAL SHTS. 875



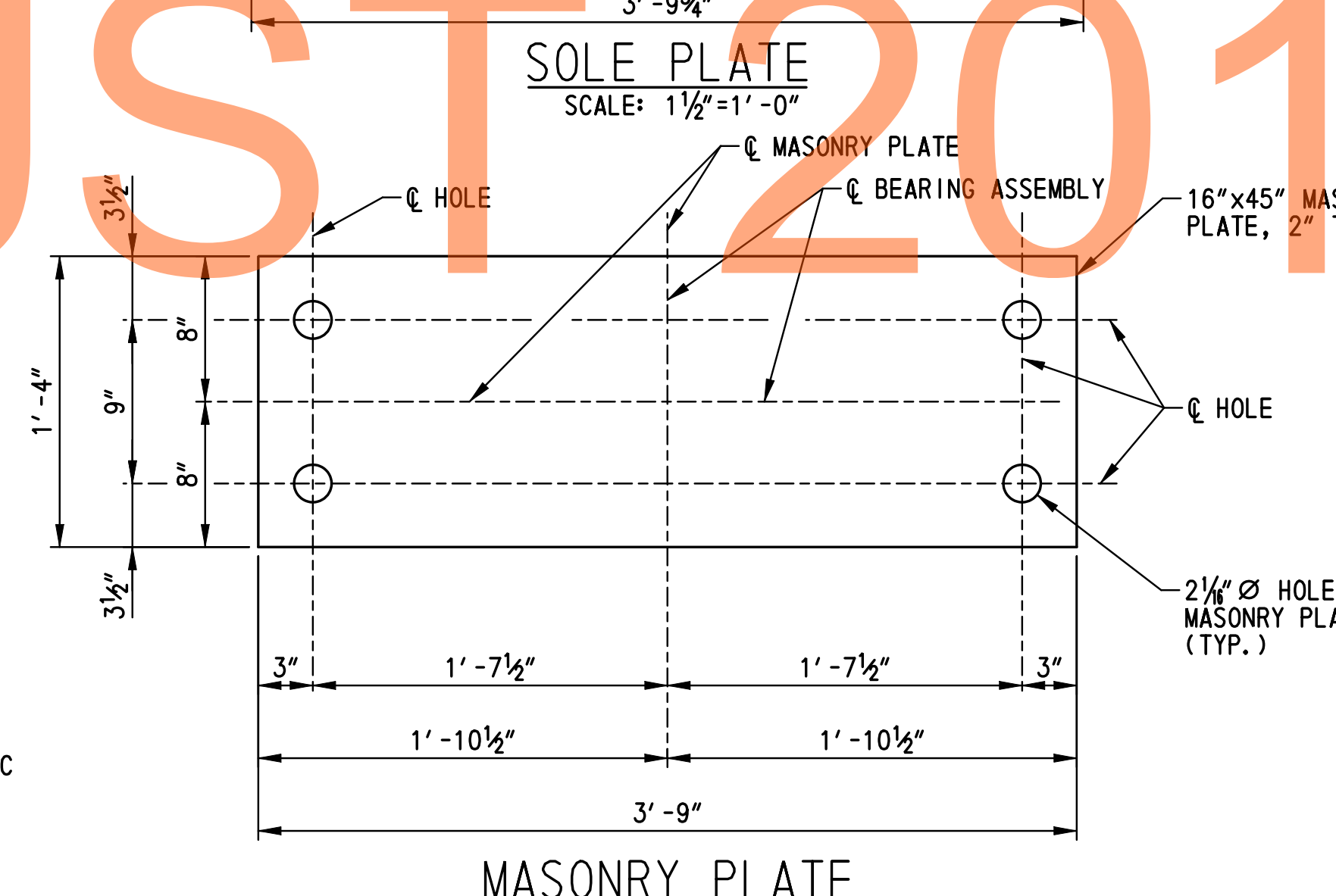
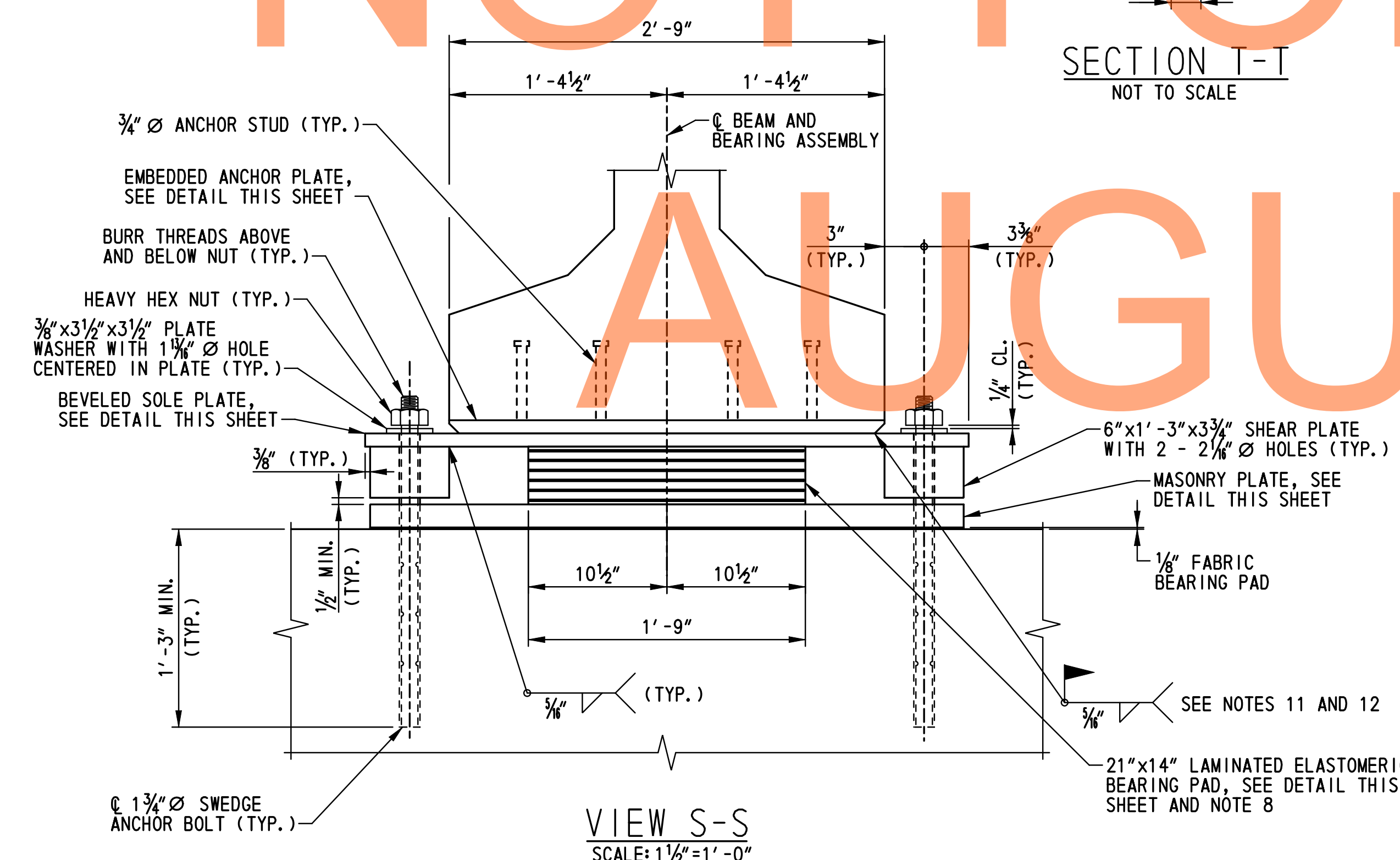
- NOTES:**
- ANCHOR BOLTS, NUTS AND PLATE WASHERS NOT SHOWN FOR CLARITY.
  - CONCRETE BEARING PAD NOT SHOWN FOR CLARITY.

**FIXED BEARING PLAN**  
SCALE: 1 1/2"=1'-0"

**SECTION T-T**  
NOT TO SCALE

**SOLE PLATE**  
SCALE: 1 1/2"=1'-0"

**EMBEDDED ANCHOR PLATE**  
SCALE: 1 1/2"=1'-0"



**MASONRY PLATE**  
SCALE: 1 1/2"=1'-0"

- FIXED BEARING NOTES:**
- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF BEAM.
  - ANCHOR PLATES, SHEAR PLATES, SOLE PLATES AND MASONRY PLATES TO BE UNPAINTED A 709, GRADE 36 GALVANIZED STEEL. PLATES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
  - FILL HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
  - 1000 RMS FINISH ALL OVER.
  - ALL PLATE WASHERS SHALL BE UNPAINTED A 709, GRADE 36 GALVANIZED STEEL. ALL NUTS SHALL BE UNPAINTED A 563 GALVANIZED STEEL.
  - ALL ANCHOR STUDS SHALL CONFORM TO ASTM A 108, GRADE 1015, 1018, OR 1020, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
  - ALL ANCHOR BOLTS SHALL BE ASTM F 1554 GRADE 105 STEEL, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
  - ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO M 251. THE ELASTOMER SHALL BE 60 DUROMETER. THE SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO ASTM A 36.
  - THE SOLE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE LAMINATED ELASTOMERIC BEARING PAD. THE BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
  - BEARING MAXIMUM DESIGN LOAD: 245.0 KIPS.
  - THE TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER SHALL BE KEPT BELOW 250 DEGREES (F) DURING FIELD WELDING. TEMPERATURE CRAYONS OR OTHER HEAT INDICATING DEVICES SHALL BE PROVIDED FOR WELDING INSPECTION. TOUCH-UP SOLE PLATE PAINT SYSTEM AFTER WELDING.
  - FIELD WELDING SHALL BE COMPLETED PRIOR TO PLACEMENT OF THE BACKWALL.
  - THICKER END OF BEVELED SOLE PLATE SHALL BE MARKED TO ENSURE PROPER INSTALLATION IN FIELD. THICKER END SHALL BE PLACED STATIONS AHEAD.

**VIEW S-S**  
SCALE: 1 1/2"=1'-0"

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ADDENDUMS / REVISIONS	

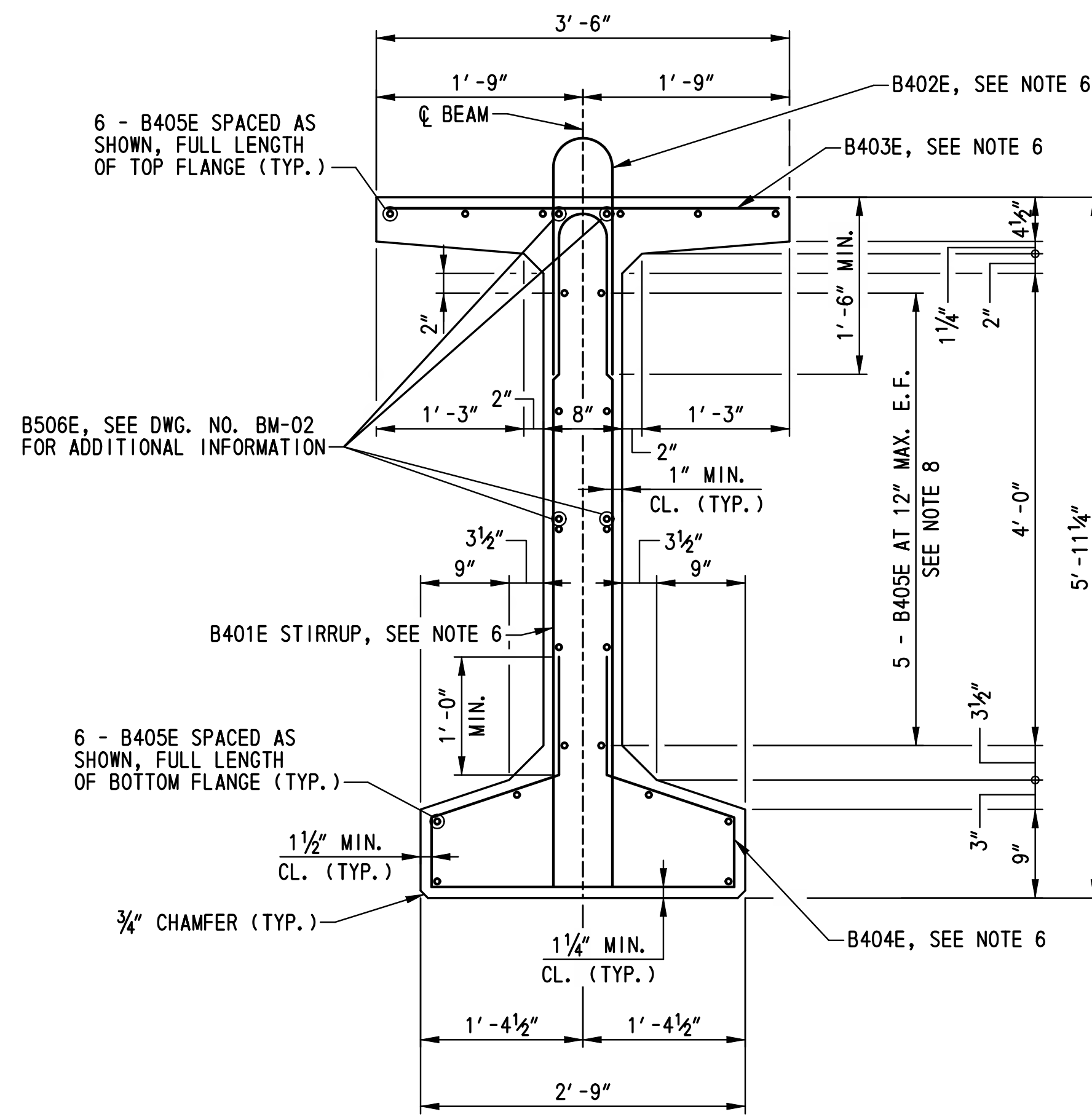
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**US 301,**  
**SR 896 TO SR 1**

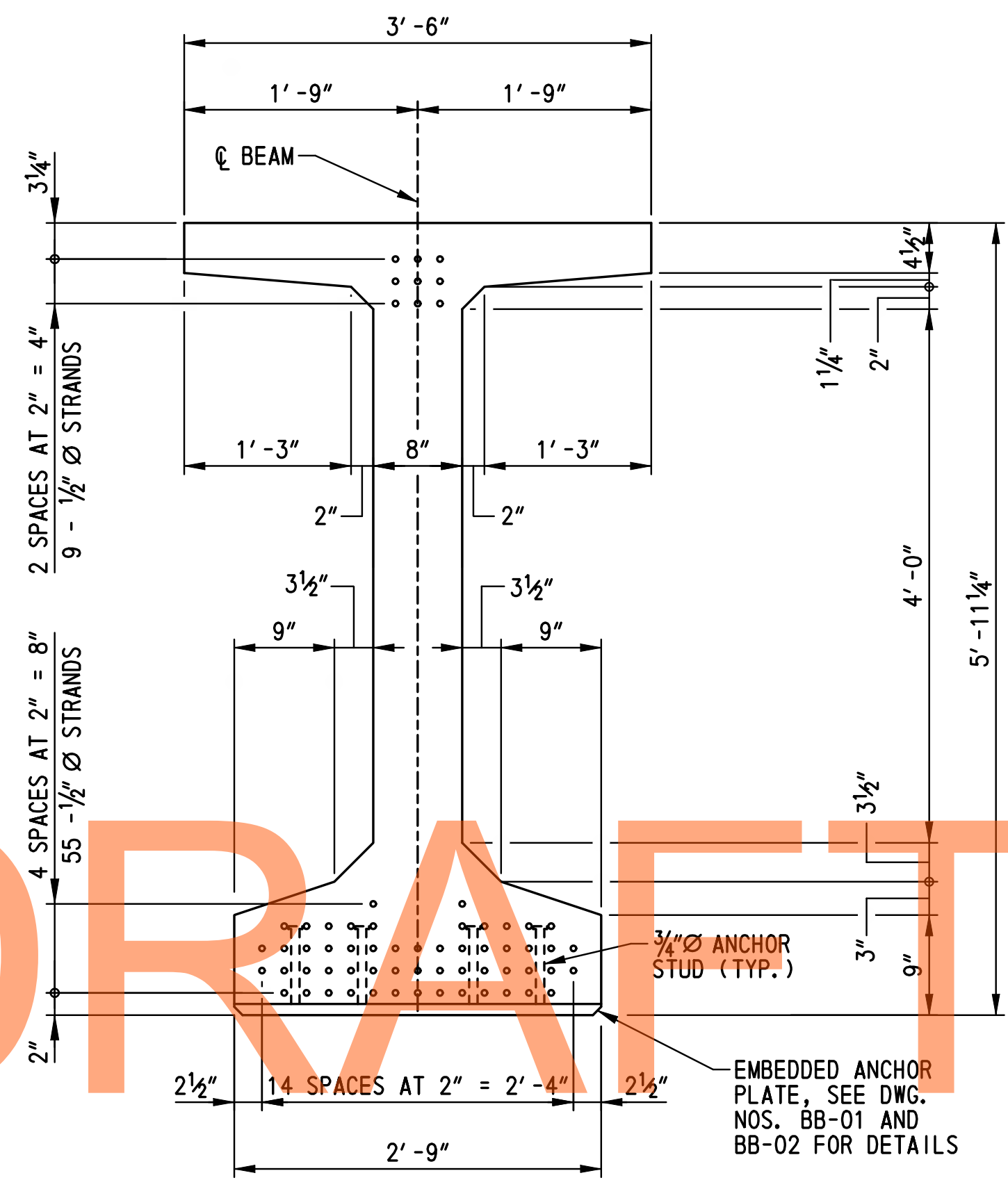
CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**PIER FIXED**  
**BEARING DETAILS**

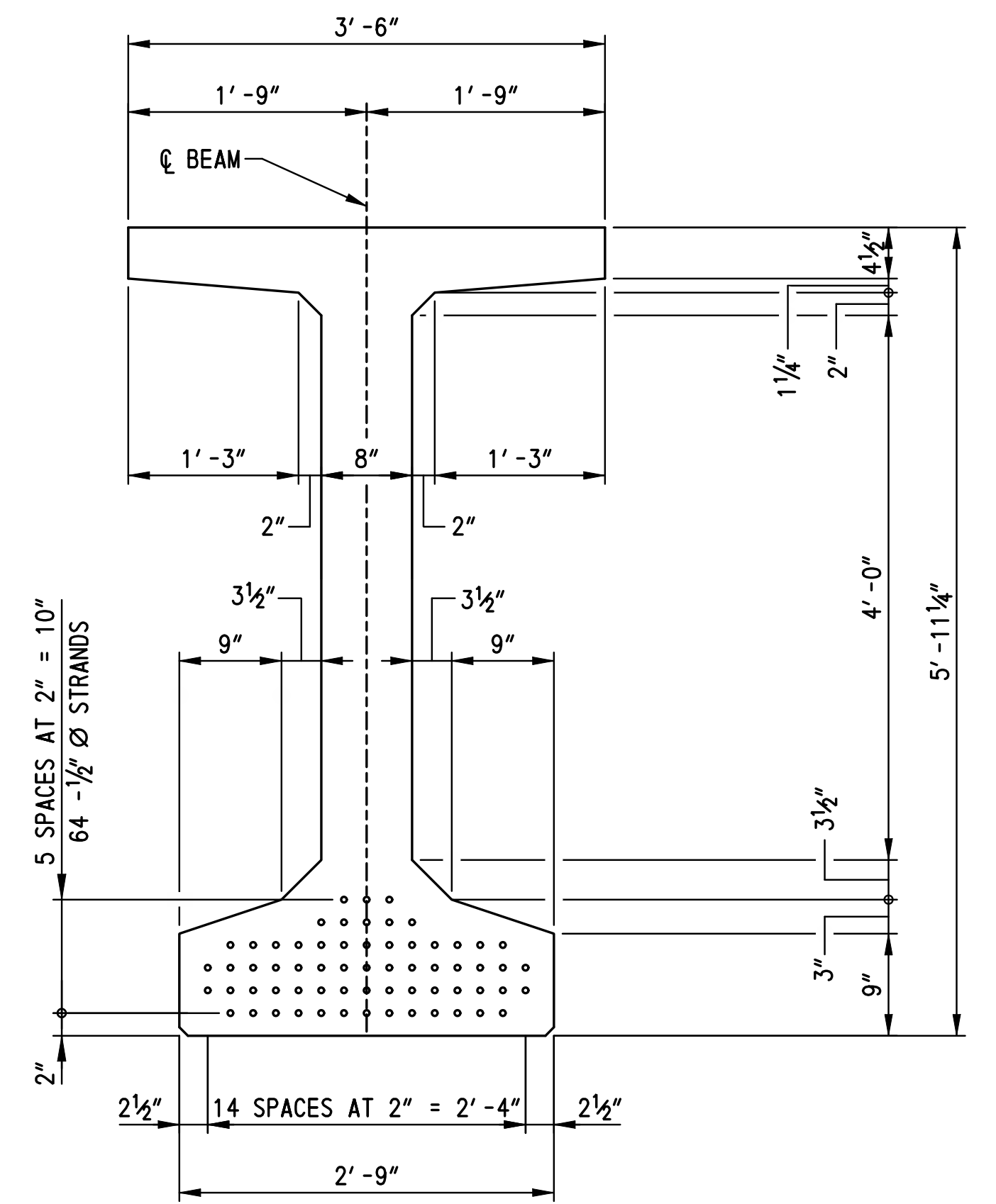
<b>BR1-6</b> <b>BB-02</b>
SHEET NO.
349
TOTAL SHTS.
875



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

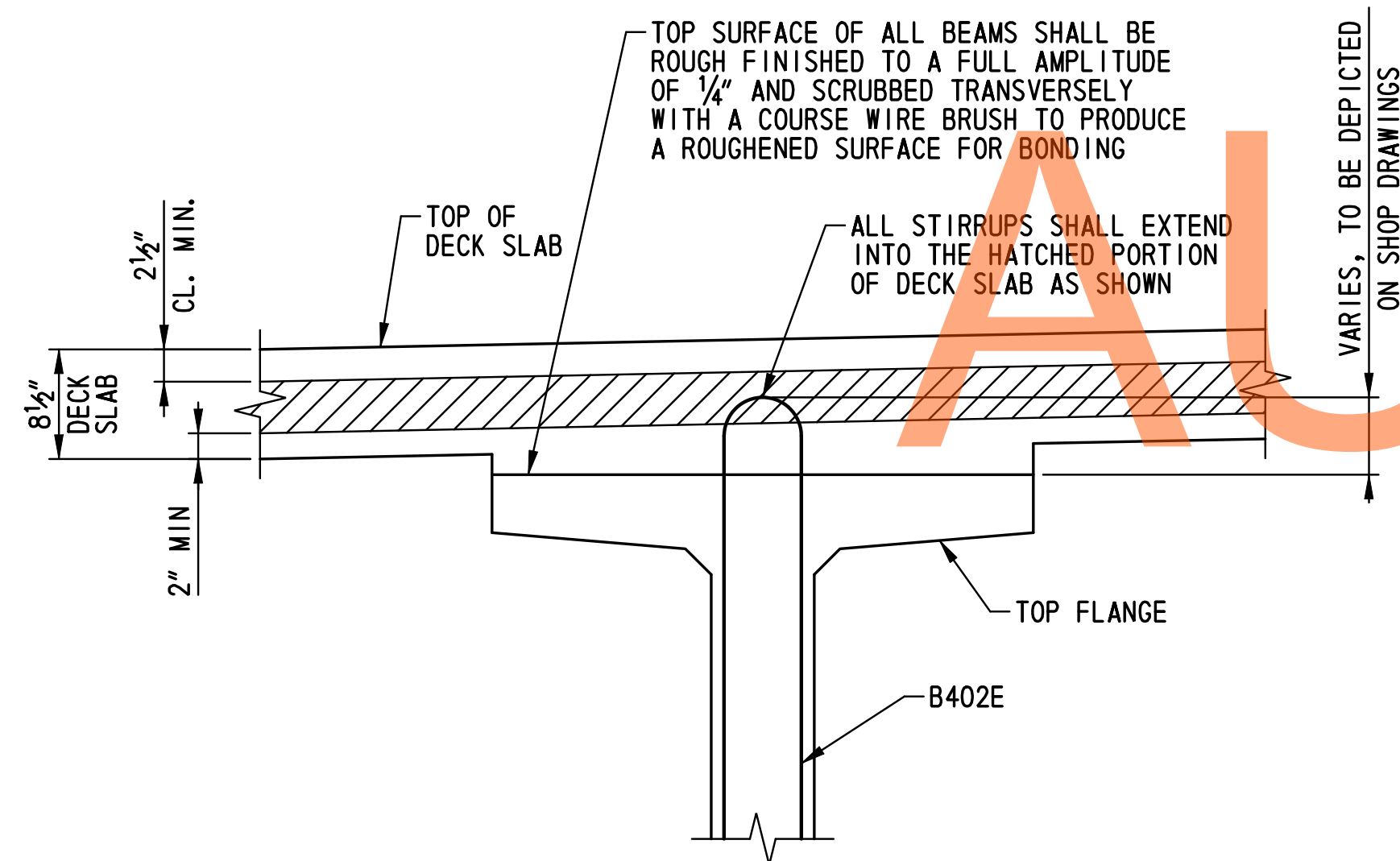


SECTION AT END OF BEAM  
SCALE: 1"=1'-0"



SECTION AT MIDSPAN  
SCALE: 1"=1'-0"

NOT FOR BIDDING



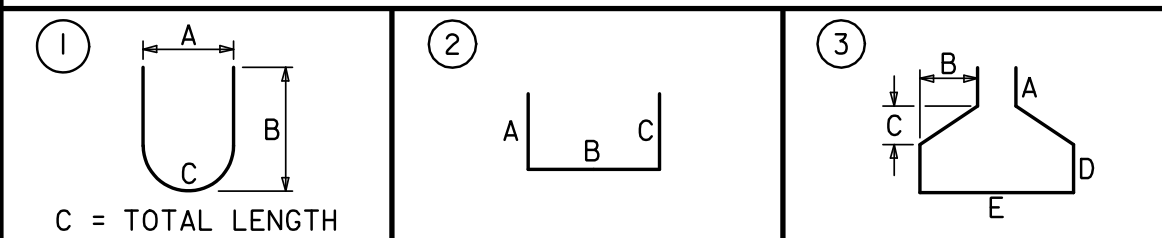
BEAM FINISH DETAIL  
SCALE: 1"=1'-0"

**NOTES:**

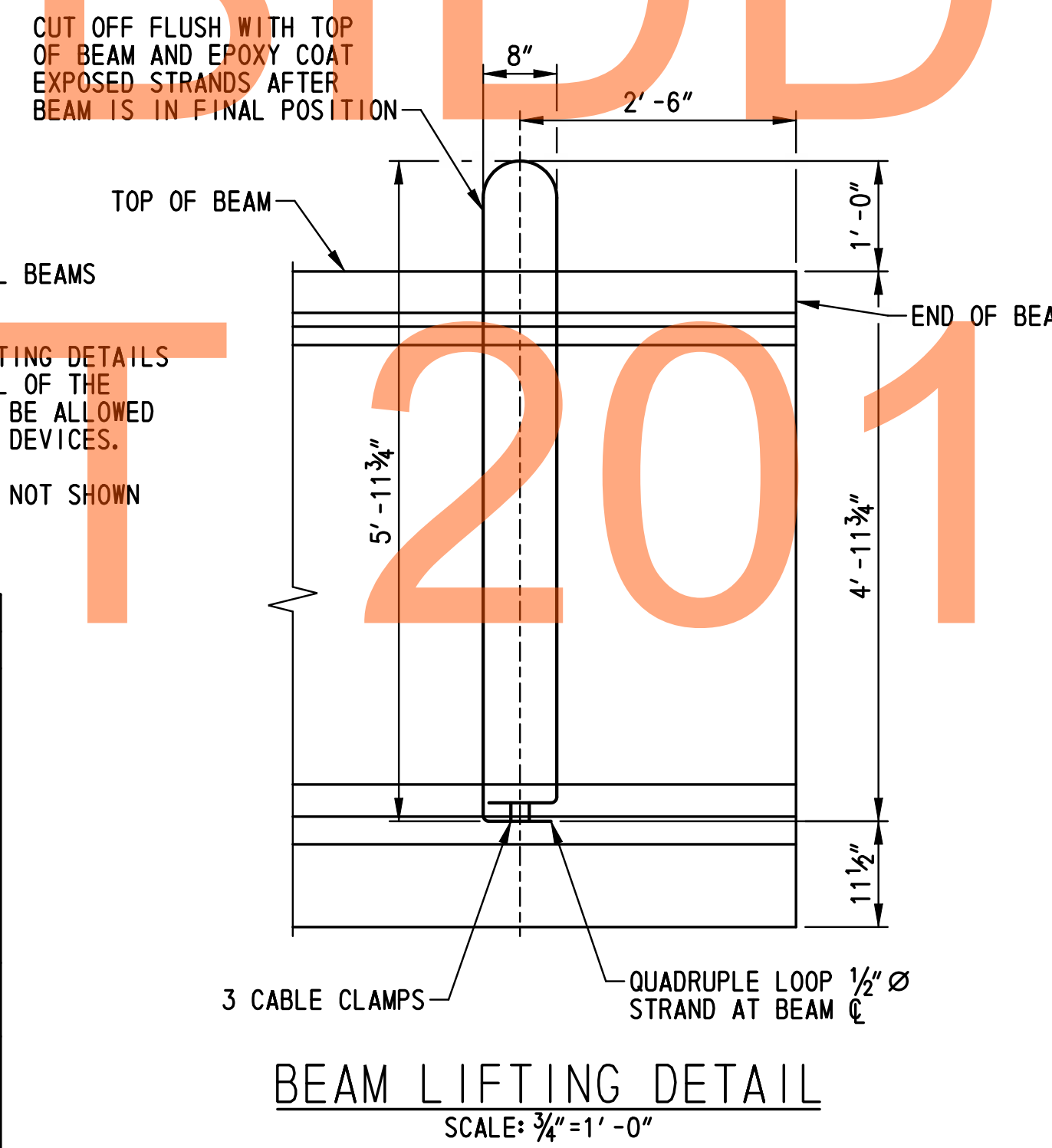
- LIFTING DETAIL TYPICAL AT BOTH ENDS OF ALL BEAMS PLACED AT BEAM CENTERLINE.
- AT THE CONTRACTOR'S OPTION, ALTERNATE LIFTING DETAILS WILL BE CONSIDERED SUBJECT TO THE APPROVAL OF THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ALTERNATIVE LIFTING DEVICES.
- PRESTRESSING STEEL AND MILD REINFORCEMENT NOT SHOWN FOR CLARITY.

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES / 1/4 INCH)					
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E
152	4	11-09.2	B401E	1	0-06.0	5-09.0	11-09.2		
152	4	4-09.2	B402E	1	0-06.0	2-03.0	4-09.2		
126	4	3-03.0	B403E	STR		3-03.0			
152	4	7-09.0	B404E	3	1-00.0	1-00.0	0-04.0	0-06.3	2-06.0
22	4	122-11.0	B405E	STR		122-11.0			
4	5	6-10.0	B506E	2	0-10.0	6-00.0			
4	6	4-00.0	B607E	2	2-00.0	2-00.0			

**STANDARD BAR BENDS**



QUANTITY SHOWN FOR EACH BEAM  
\*OVERALL LENGTH SHOWN, LAP SPLICE AS REQUIRED. SEE NOTE 8.

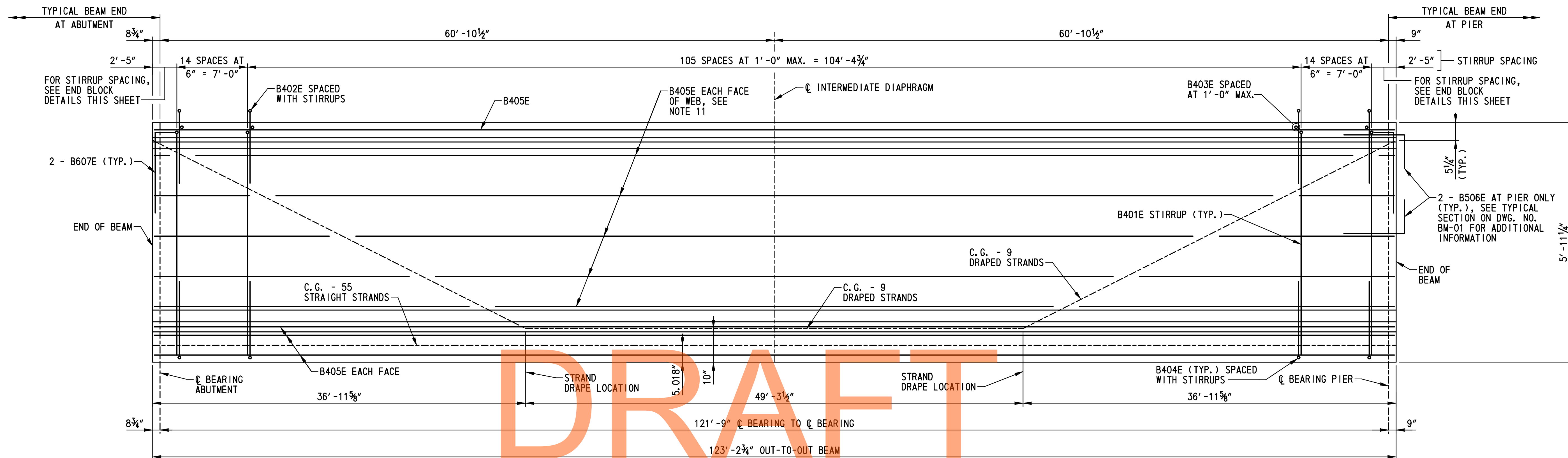


BEAM LIFTING DETAIL  
SCALE: 3/4"=1'-0"

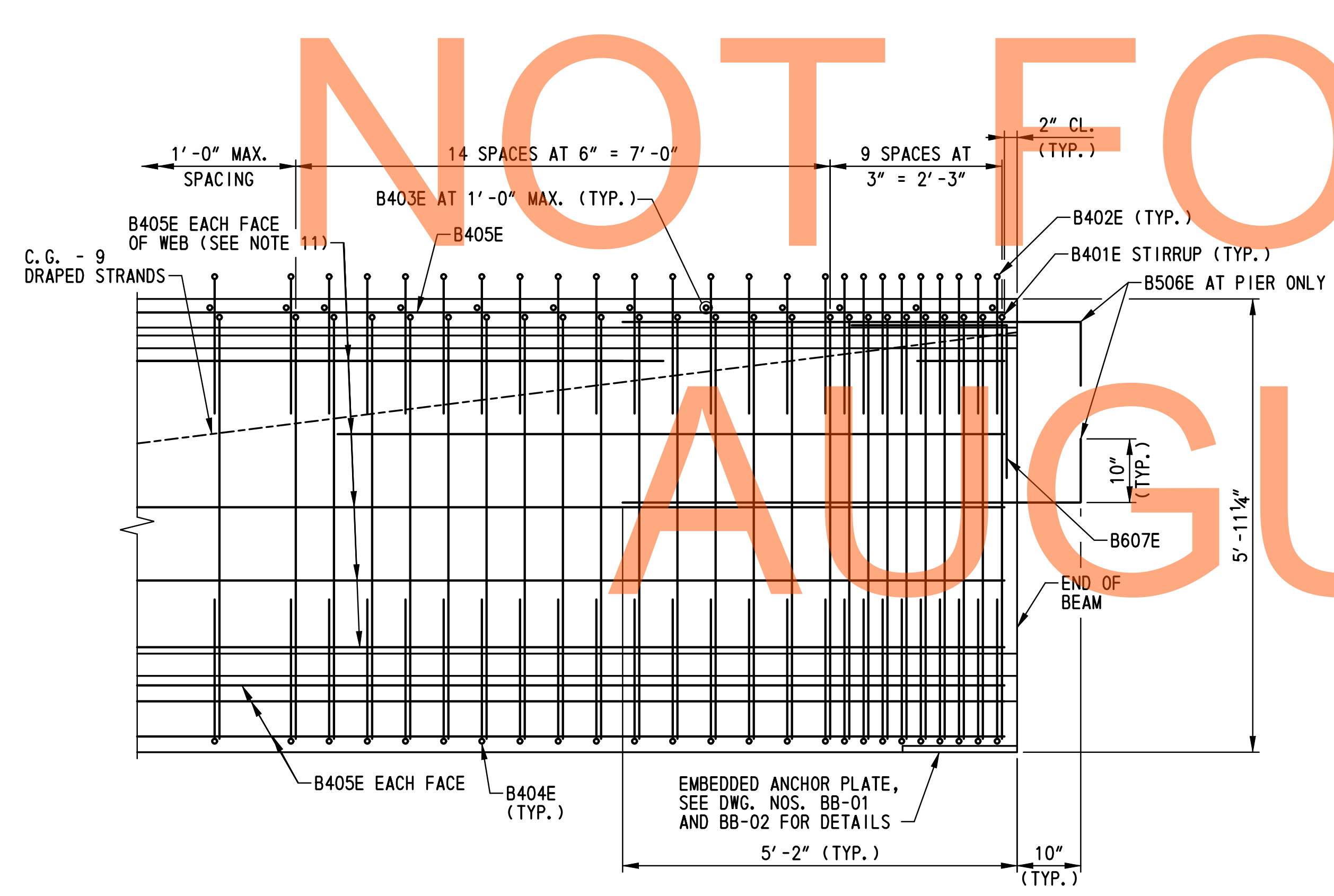
**BEAM NOTES:**

- BEAMS ARE 33/71.25" PCEF BULB-TEE BEAMS. THE BEAMS HAVE BEEN DESIGNED USING A DRAPED STRAND PATTERN AS SHOWN. THE FABRICATOR MAY ELECT TO USE ALTERNATE STRAND PATTERNS, DEBONDING OF STRANDS, OR ADDITIONAL STRANDS. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE SHOWING THE ALTERNATE PATTERN ALONG WITH STRESS CALCULATIONS DOCUMENTING THE CHANGE. CALCULATIONS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE.
- THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT TIME OF INITIAL PRESTRESS SHALL BE 6,400 PSI. THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 8,000 PSI. THE ALLOWABLE CONCRETE TENSION AT TRANSFER SHALL BE 0.2 KSI AND AT 28 DAYS SHALL BE  $6\sqrt{f'c}$ .
- PRESTRESSING STEEL SHALL BE HIGH STRENGTH UNCOATED 7-WIRE LOW RELAXATION STRAND WITH A NOMINAL DIAMETER OF 1/2" AND SHALL CONFORM TO M 203, 270 GRADE. THE INITIAL PRESTRESSING FORCE APPLIED TO EACH STRAND SHALL BE 30,980 LBS. MINIMUM COVER FOR ANY STRAND SHALL BE 1 1/2".
- MILD STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL IN THE PROJECT NOTES, DWG. NO. PN-01. ALL MILD STEEL REINFORCEMENT SHALL BE EPOXY COATED. MILD STEEL REINFORCEMENT SHALL BE INCIDENTAL TO ITEM 623003 - PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB TBEAM.
- NO CLEAR COVER LESS THAN AS SHOWN ON THESE PLANS WILL BE ACCEPTED.
- SEE BEAM ELEVATION, DWG. NO. BM-02, FOR MILD STEEL REINFORCEMENT SPACING.
- TOPS OF ALL BEAMS SHALL HAVE A ROUGHENED SURFACE FOR BONDING. SEE BEAM FINISH DETAIL, THIS SHEET.
- PROVIDE LONGITUDINAL REINFORCEMENT ALONG FULL LENGTH OF WEB. OMIT LONGITUDINAL BARS IN BEAM WEB AT STRAND DRAPE LOCATIONS TO MAINTAIN CLEARANCE.
- FOR STAY-IN-PLACE FORM SUPPORT DETAILS, SEE DWG. NO. DK-04.

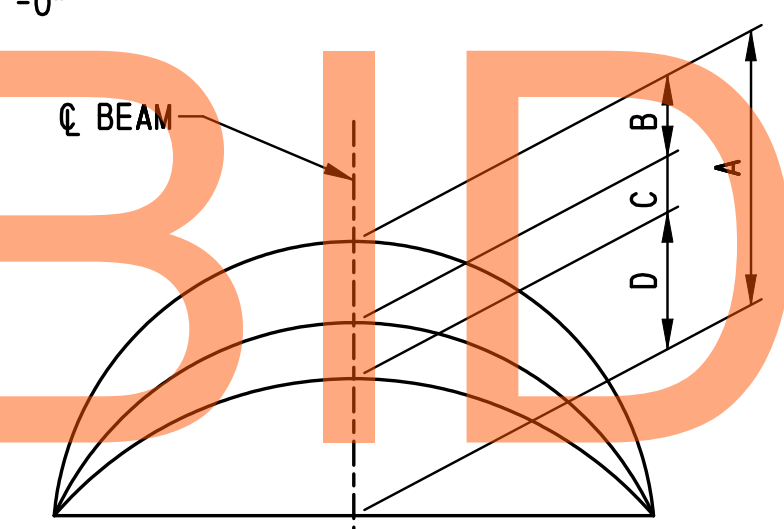
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 CONTRACT  
 7/20/20



**BEAM ELEVATION**  
 HORIZONTAL SCALE: 3/8" = 1'-0"  
 VERTICAL SCALE: 3/4" = 1'-0"



**END BLOCK DETAIL**  
 SCALE: 3/4" = 1'-0"



**CAMBER DIAGRAM**  
 SCALE: NOT TO SCALE

CAMBER TABLE				
BEAM	A	B	C	D
SPAN 1 EXTERIOR	6 3/8"	2 1/8"	1 3/8"	1 3/8"
SPAN 1 INTERIOR	6 3/8"	2 1/8"	1 3/4"	1 3/4"
SPAN 2 EXTERIOR	6 3/8"	2 1/8"	1 3/8"	2 1/8"
SPAN 2 INTERIOR	6 3/8"	2 1/8"	1 3/8"	1 3/8"

**CAMBER NOTES:**

- CAMBER AND DEFLECTIONS ARE SHOWN IN INCHES.
- A = ESTIMATED CAMBER DUE TO PRESTRESS.
- B = DEFLECTION DUE TO WEIGHT OF BEAM.
- C = DEFLECTION DUE TO WEIGHT OF CONCRETE DECK SLAB, HAUNCH, DIAPHRAGMS, STEEL BRIDGE DECK FORMS AND CONCRETE PARAPETS.
- D = NET CAMBER AT ERECTION.
- THE TABLE CAMBERS AND DEFLECTIONS ARE THEORETICAL VALUES AND MAY VARY WITH ACTUAL CONCRETE STRENGTH (AGE), PRESTRESSING CONDITIONS, LONG-TERM DEFLECTION MULTIPLIERS, AND PRESTRESS LOSSES. THE ESTIMATED CAMBER DUE TO PRESTRESS AND DEFLECTION DUE TO WEIGHT OF GIRDER ARE BASED UPON A CREEP FACTOR EQUAL TO 1.6 AND PRESTRESS LOSS EQUAL TO 10%.
- THE THICKNESS OF THE CONCRETE HAUNCH SHALL BE VARIED TO COMPENSATE FOR ANY DIFFERENCE IN GIRDER CAMBER.

**NOTES:**

- FOR BEAM NOTES AND BEAM REINFORCEMENT DETAILS, SEE DWG. NO. BM-01.
- ALL DIMENSIONS MEASURED ALONG CENTERLINE OF BEAM.
- SEE ABUTMENT DIAPHRAGM DETAILS ON DWG. NO. DT-01 FOR ADDITIONAL INFORMATION.
- SEE INTERMEDIATE DIAPHRAGM DETAILS ON DWG. NO. DT-02 FOR ADDITIONAL INFORMATION.
- SEE PIER DIAPHRAGM DETAILS ON DWG. NO. DT-03 FOR ADDITIONAL INFORMATION.
- BEAM LENGTH IN CASTING BED SHALL BE DETERMINED AND DEPICTED IN SHOP DRAWINGS TO COMPENSATE FOR GRADE AND SHORTENING DUE TO PRESTRESS EFFECT.
- THE FABRICATOR SHALL SHOW ANY MODIFICATIONS TO REINFORCEMENT SPLICE AND BENDING DETAILS ON SHOP DRAWINGS.
- THE FABRICATOR SHALL SHOW THE FOLLOWING DATA ON THE SHOP DRAWINGS:
  - THE SIZE AND LOCATION OF THE TEMPORARY STORAGE SUPPORTS.
  - THE TYPE AND LOCATION OF THE BRACING AND TEMPORARY SUPPORTS USED FOR THE TRANSPORTATION AND ERECTION OF THE BEAMS.
- END ZONE REINFORCEMENT MAY BE INCREASED BY FABRICATOR TO REFLECT FABRICATOR'S EXPERIENCE AND/OR TO CONTROL CRACKING.
- THE FABRICATOR SHALL CHECK STABILITY FOR HANDLING AND TRANSPORTING OF THE MEMBERS.
- PROVIDE LONGITUDINAL REINFORCEMENT ALONG FULL LENGTH OF WEB. OMIT LONGITUDINAL BARS IN BEAM WEB AT STRAND DRAPE LOCATIONS TO MAINTAIN CLEARANCE.
- FOR PERMANENT STEEL BRIDGE DECK FORM DETAILS, SEE DWG. NO. DK-04.

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ADDENDUMS / REVISIONS

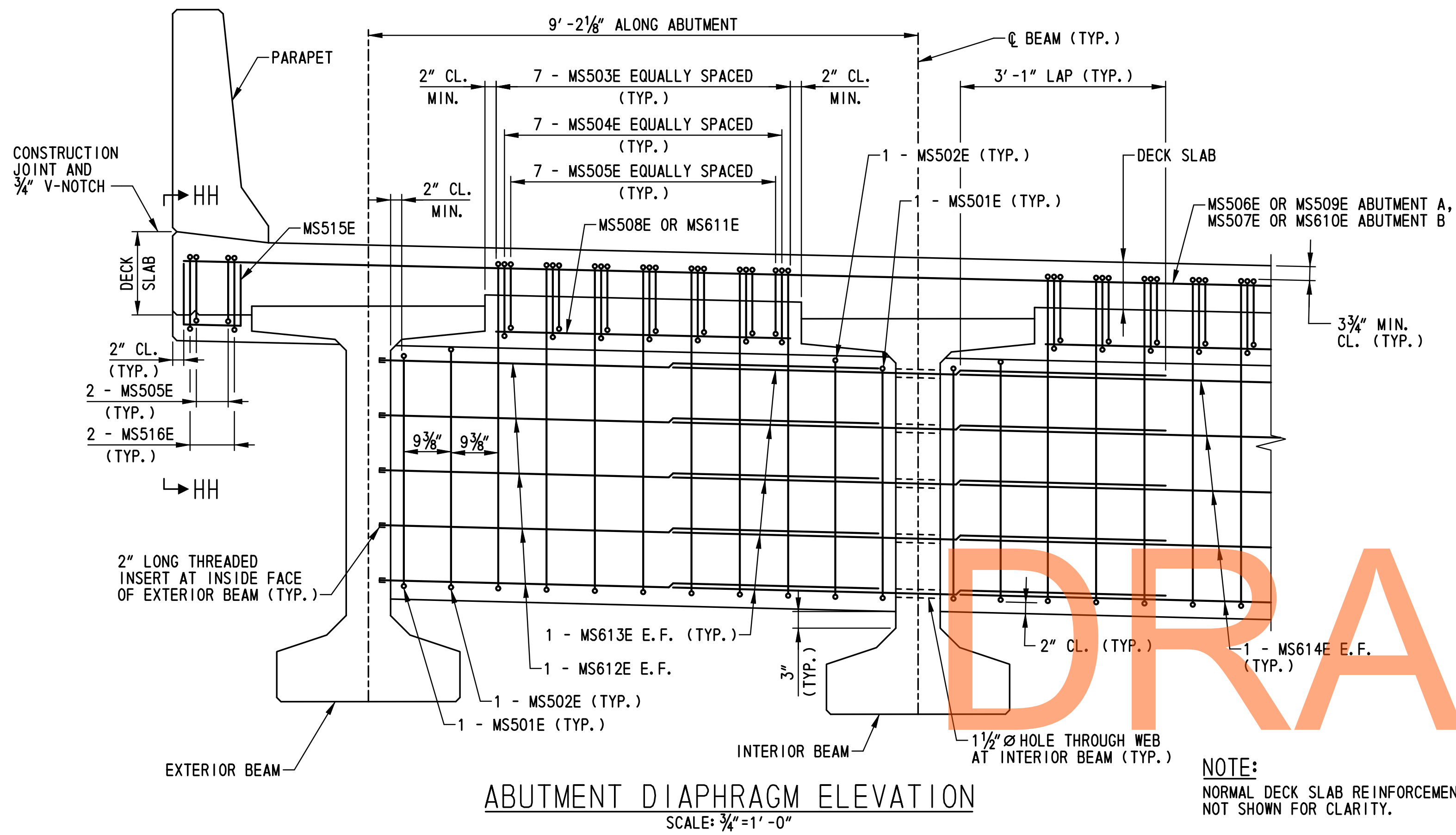
SCALE: AS NOTED

**US 301,  
 SR 896 TO SR 1**

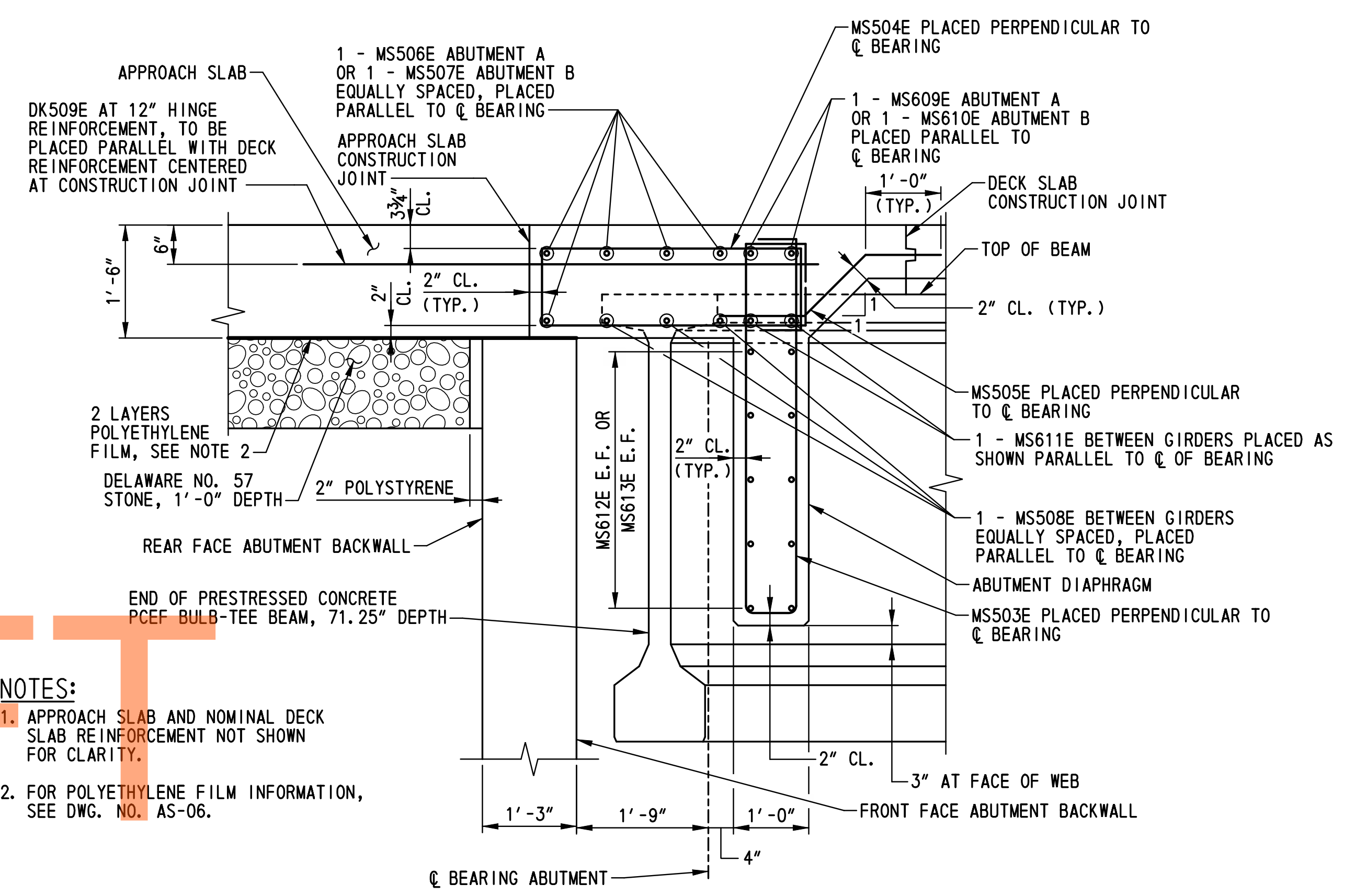
CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**PCEF BULB-TEE  
 BEAM DETAILS - 2**

<b>BR1-6 BM-02</b>
SHEET NO.
351
TOTAL SHTS.
875



ABUTMENT DIAPHRAGM ELEVATION  
SCALE: 3/4" = 1' - 0"



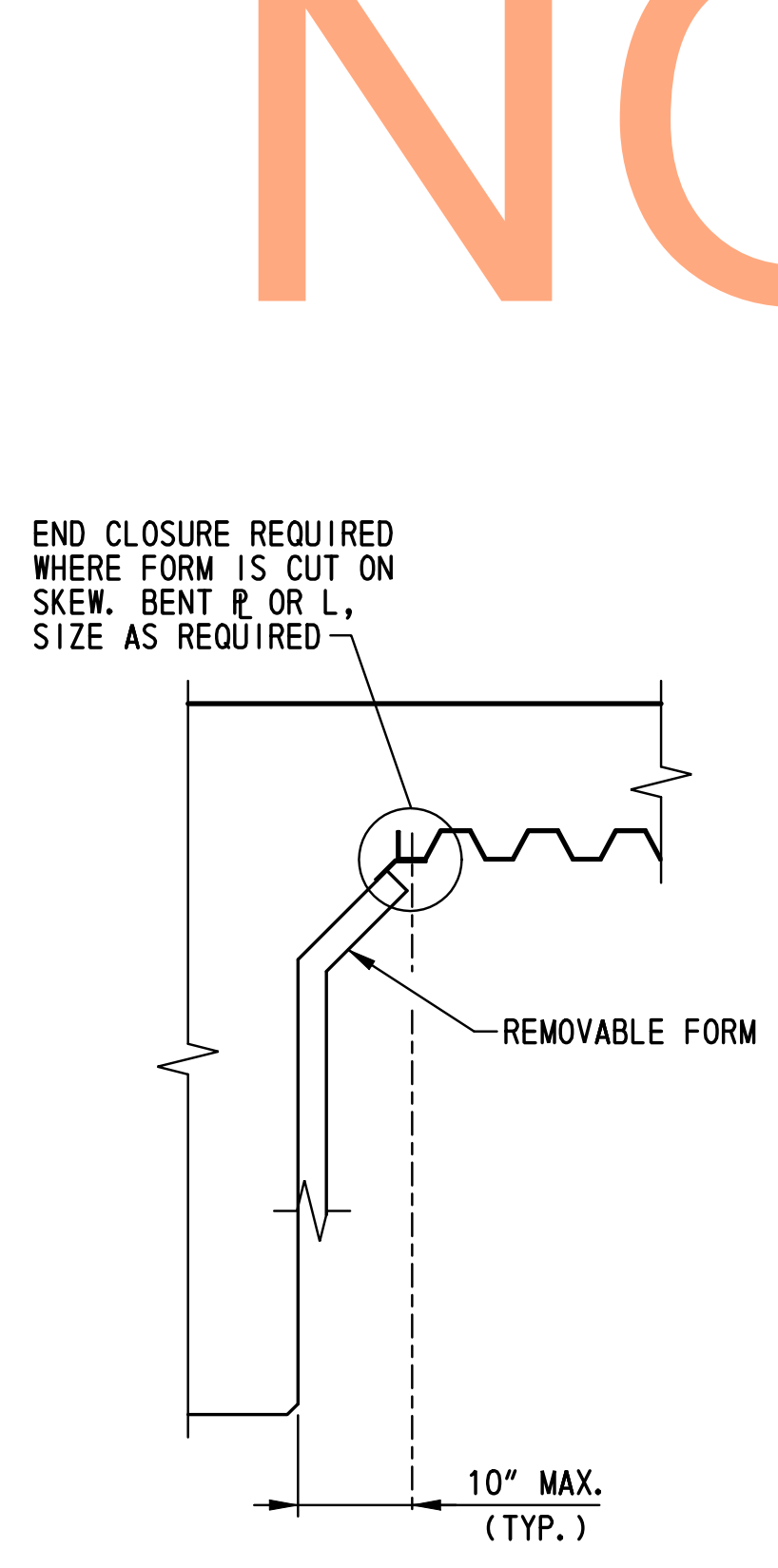
ABUTMENT DIAPHRAGM SECTION  
SCALE: 3/4" = 1' - 0"

NOTES:  
1. APPROACH SLAB AND NOMINAL DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.  
2. FOR POLYETHYLENE FILM INFORMATION, SEE DWG. NO. AS-06.

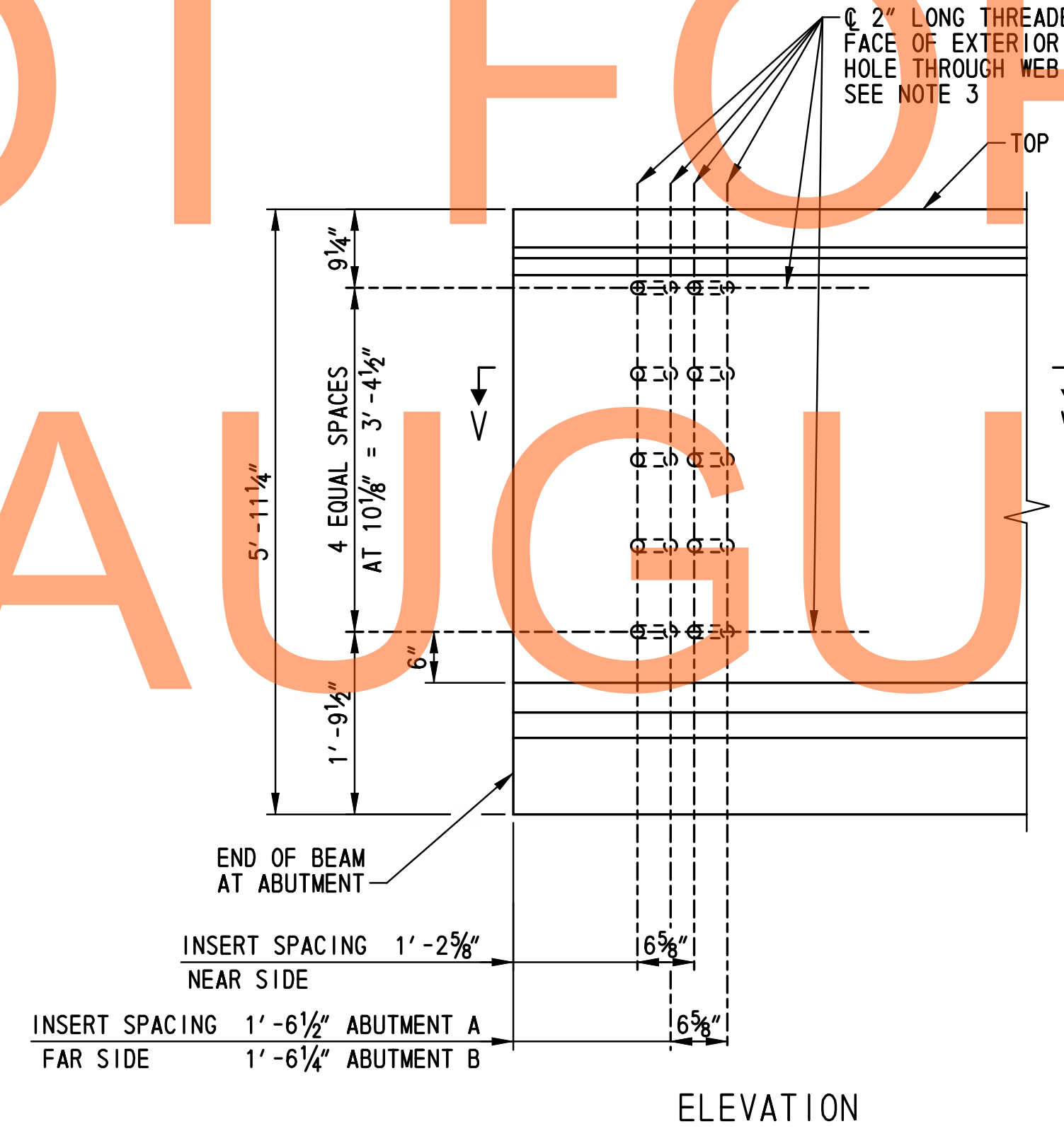
NOTE:  
NORMAL DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

DRAFT

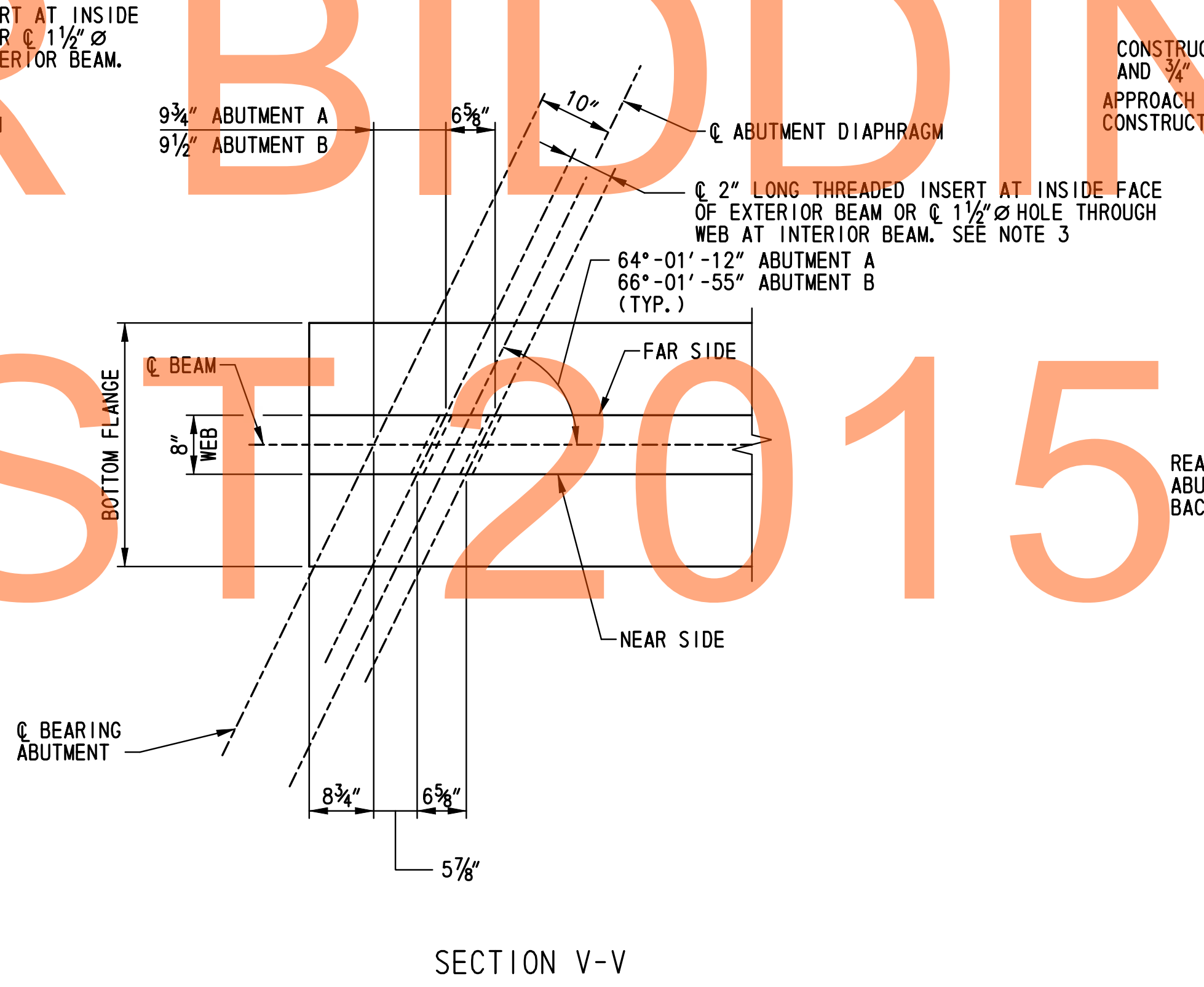
AUGUST 2015



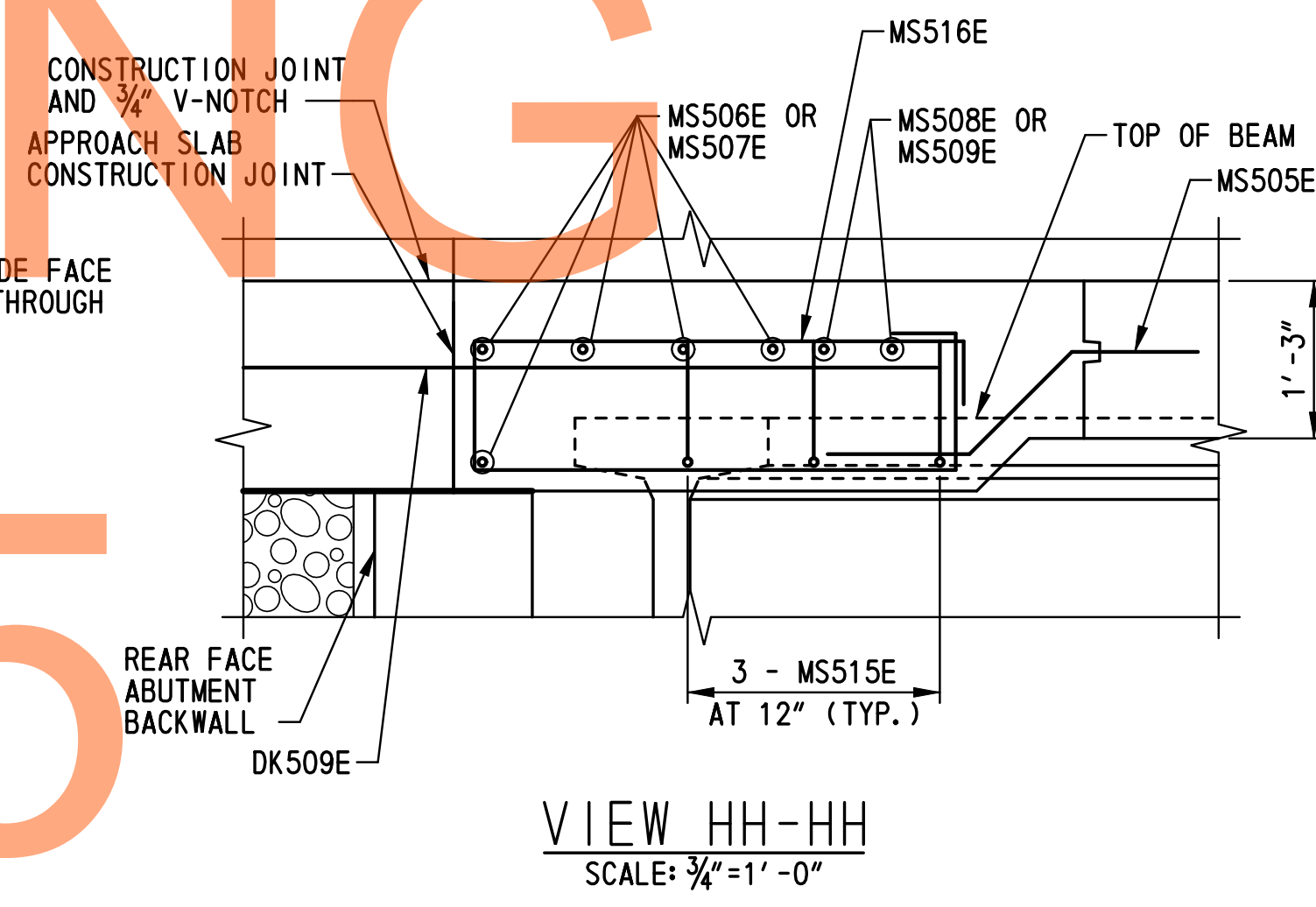
STEEL FORMS AT ABUTMENT DIAPHRAGM  
NOT TO SCALE



GIRDER FACE AT ABUTMENT DIAPHRAGM ELEVATION  
SCALE: 3/4" = 1' - 0"



SECTION V-V



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

- ABUTMENT DIAPHRAGM NOTES:**
1. ABUTMENT DIAPHRAGMS SHOWN LOOKING STATIONS AHEAD.
  2. FOR LOCATION OF ABUTMENT DIAPHRAGMS, SEE FRAMING PLAN ON DWG. NO. FR-01.
  3. THE 2" LONG THREADED INSERTS SHALL BE USED FOR THE EXTERIOR BEAMS ONLY. ONLY 1 1/2" Ø HOLES SHALL BE USED FOR THE INTERIOR BEAMS. THREADED INSERTS AND HOLES SHALL BE CAST-IN-PLACE AND PLACED AT THE DIAPHRAGM ANGLE SHOWN ON THE PLANS.
  4. ALL REINFORCEMENT SHALL BE EPOXY COATED.

NO. 31653-000, CONTRACT 1A-CADD, Bridge\Bri\_Ne6\DT01\_Lbr1-6.dgn 08/31/2012 10:53:53 AM

ADDENDUMS / REVISIONS	

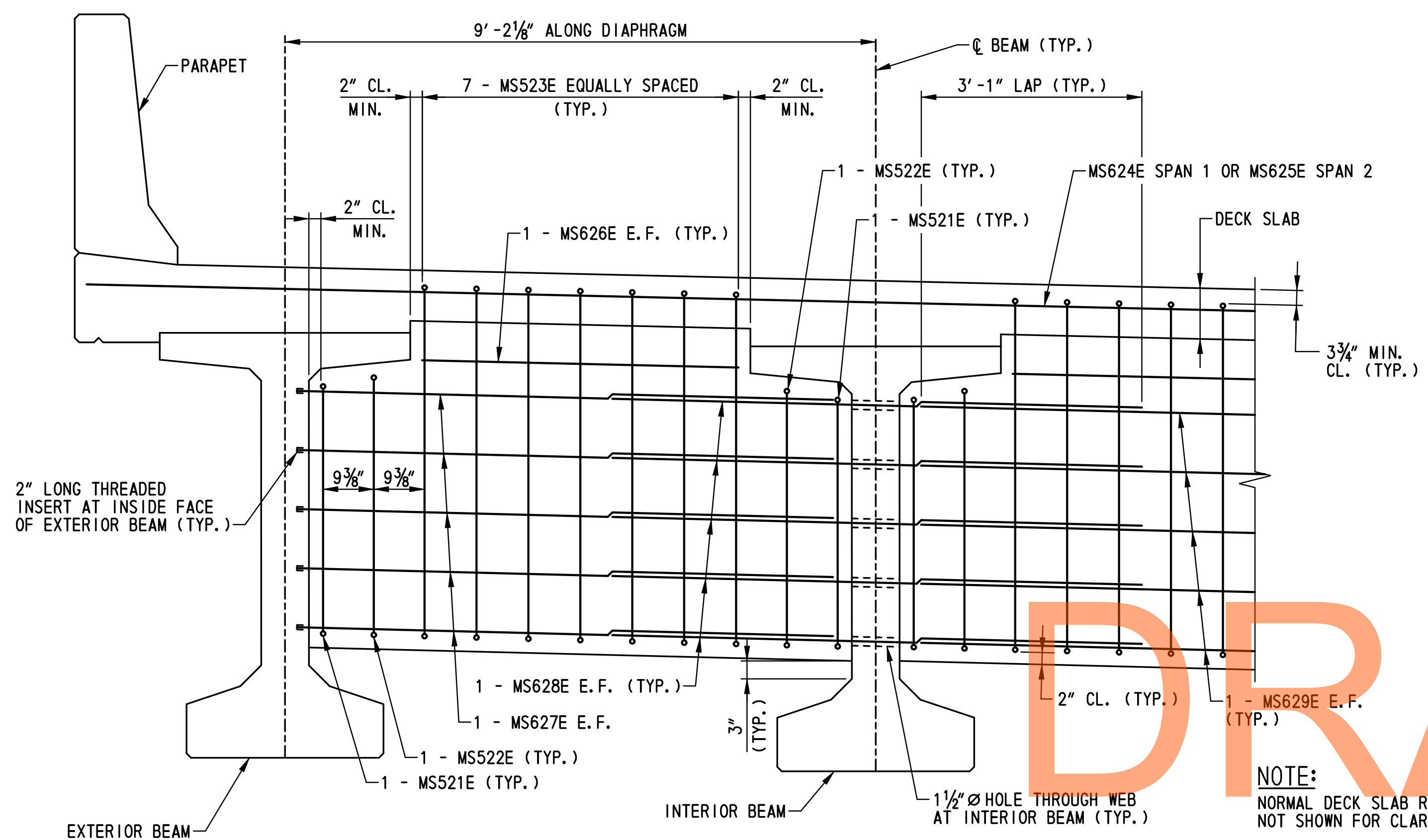
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US 301,  
SR 896 TO SR 1

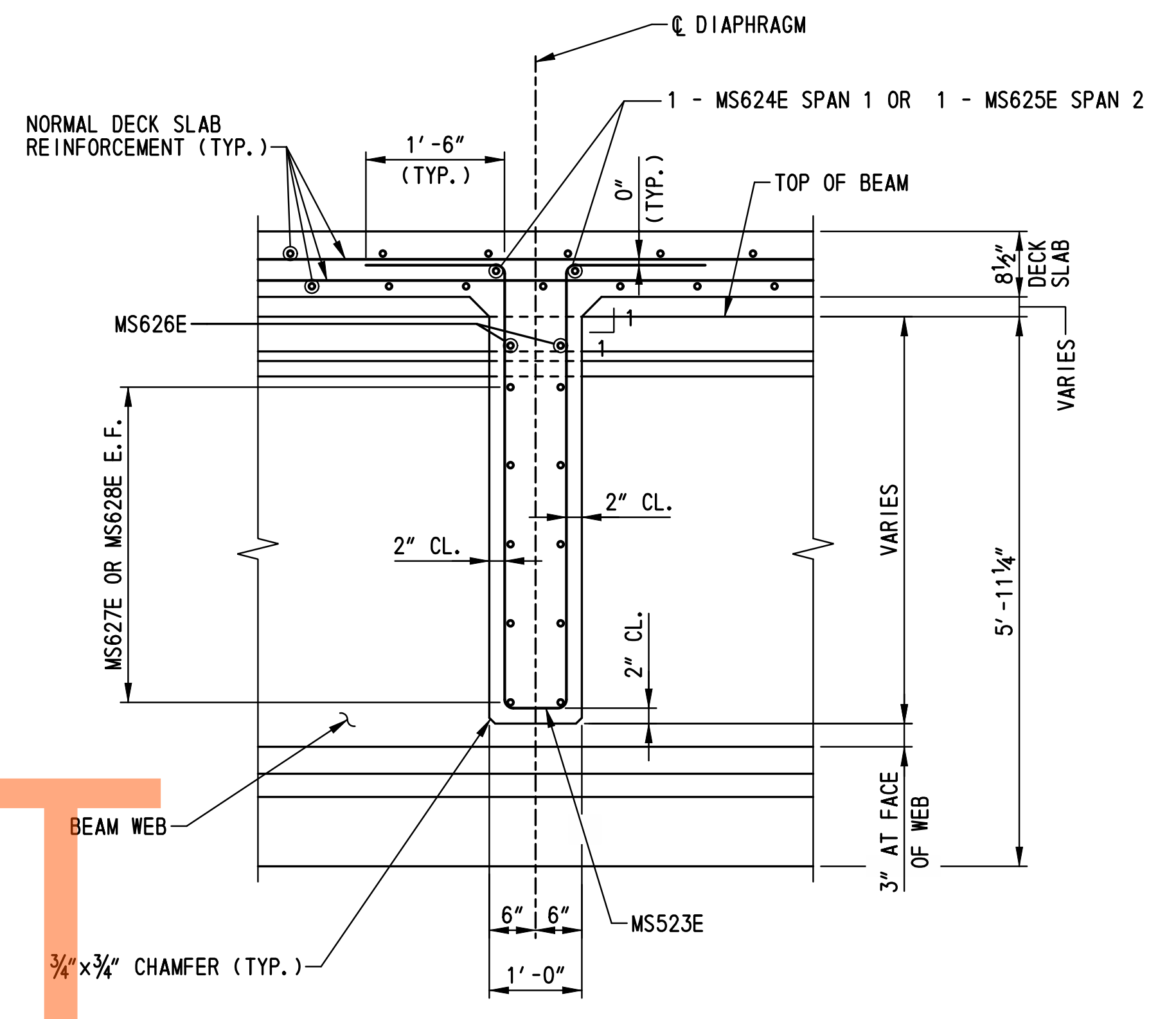
CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
NEW CASTLE	CHECKED BY:	P.S.D.

**ABUTMENT DIAPHRAGM**  
DETAILS

BR1-6 DT-01	SHEET NO.	352
	TOTAL SHTS.	875



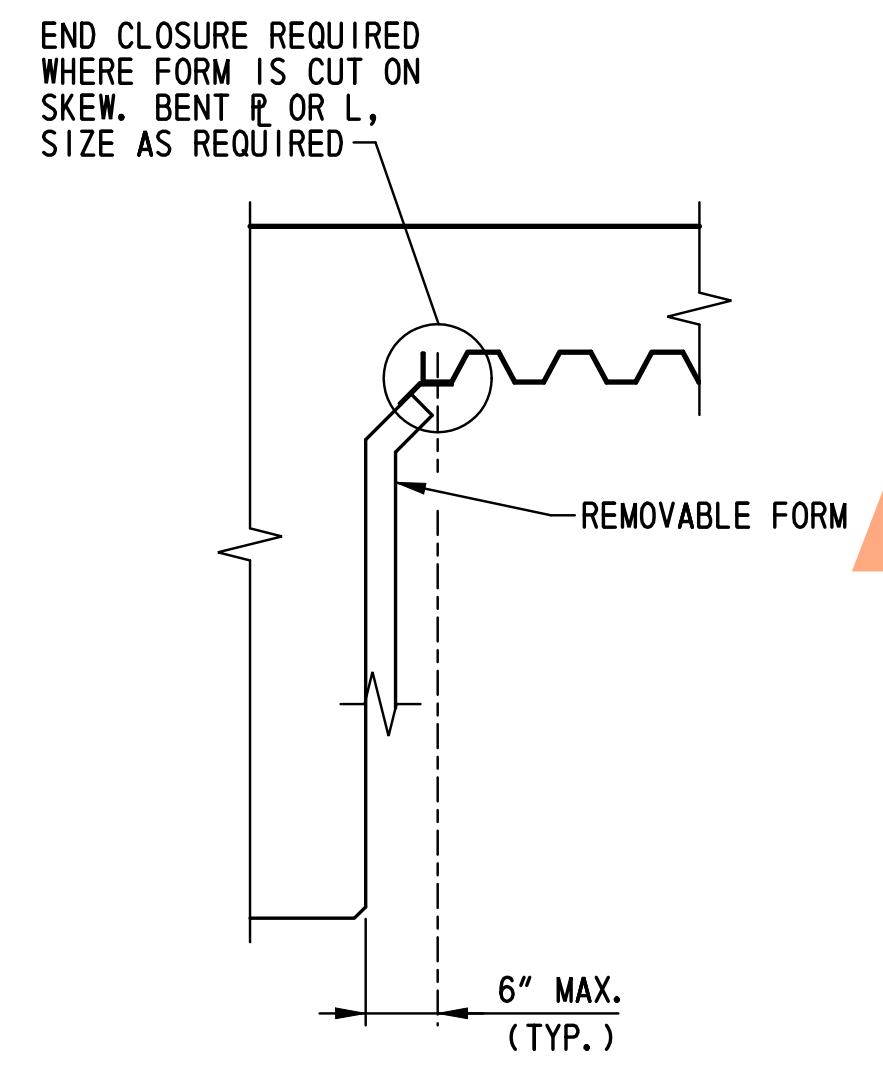
INTERMEDIATE DIAPHRAGM ELEVATION  
SCALE: 3/4" = 1' - 0"



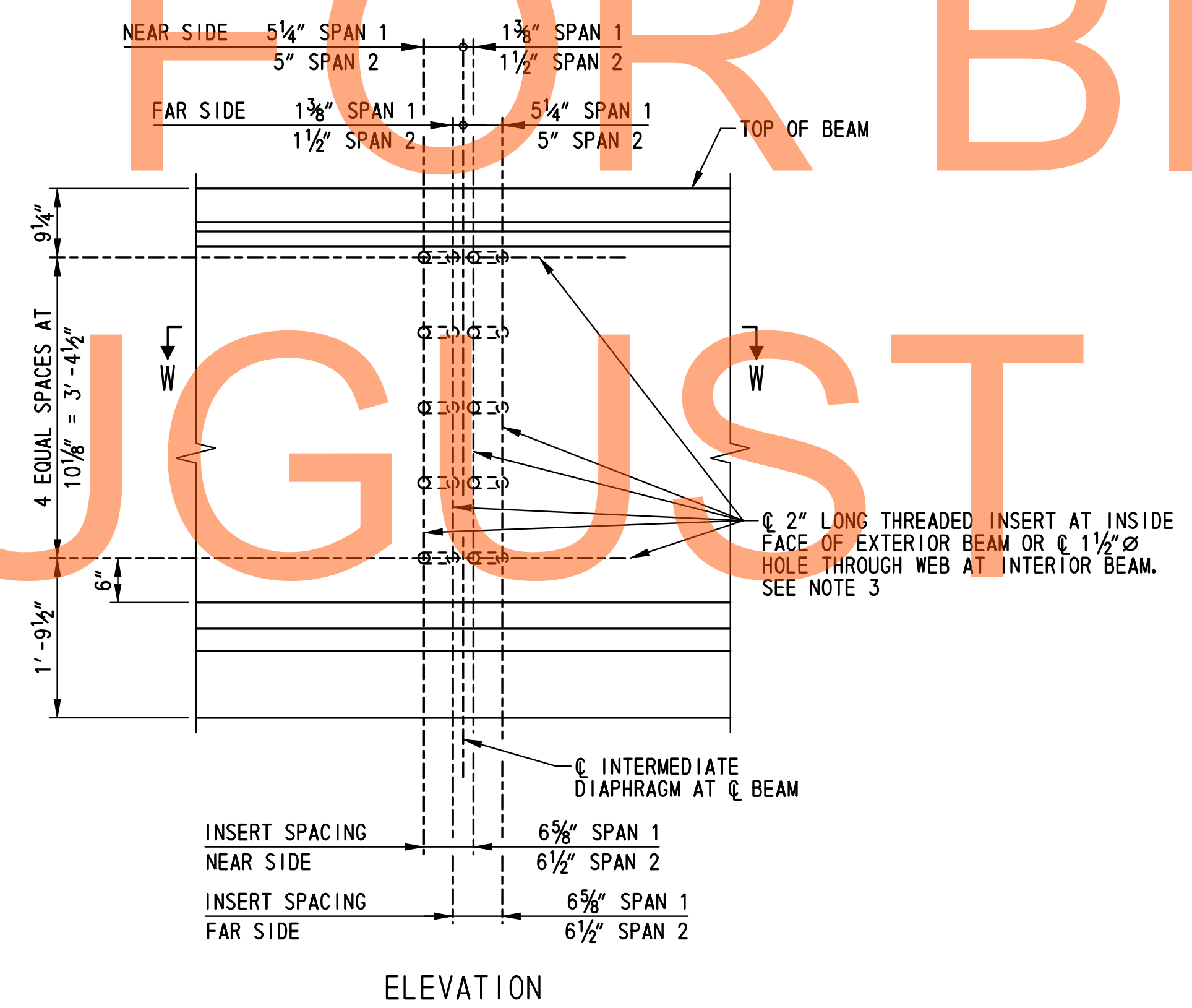
INTERMEDIATE DIAPHRAGM SECTION  
SCALE: 3/4" = 1' - 0"

DRAFT

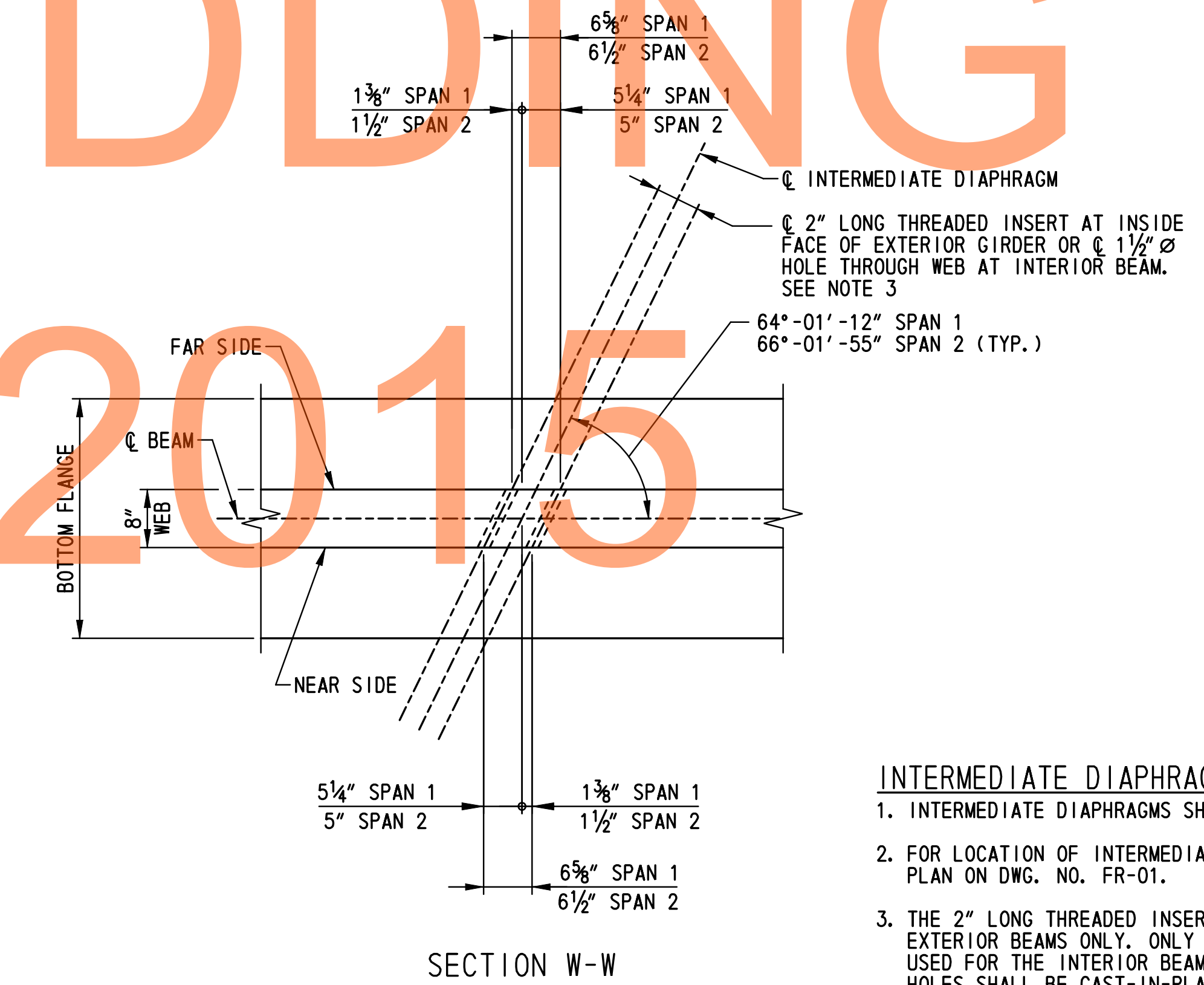
NOT FOR BIDDING



STEEL FORMS AT INTERMEDIATE DIAPHRAGM  
NOT TO SCALE



BEAM FACE AT INTERMEDIATE DIAPHRAGM DETAIL  
SCALE: 3/4" = 1' - 0"



- INTERMEDIATE DIAPHRAGM NOTES:**
1. INTERMEDIATE DIAPHRAGMS SHOWN LOOKING STATIONS AHEAD.
  2. FOR LOCATION OF INTERMEDIATE DIAPHRAGMS, SEE FRAMING PLAN ON DWG. NO. FR-01.
  3. THE 2" LONG THREADED INSERTS SHALL BE USED FOR THE EXTERIOR BEAMS ONLY. ONLY 1 1/2" Ø HOLES SHALL BE USED FOR THE INTERIOR BEAMS. THREADED INSERTS AND HOLES SHALL BE CAST-IN-PLACE AND PLACED AT THE DIAPHRAGM ANGLE SHOWN ON THE PLANS.
  4. ALL REINFORCEMENT SHALL BE EPOXY COATED.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

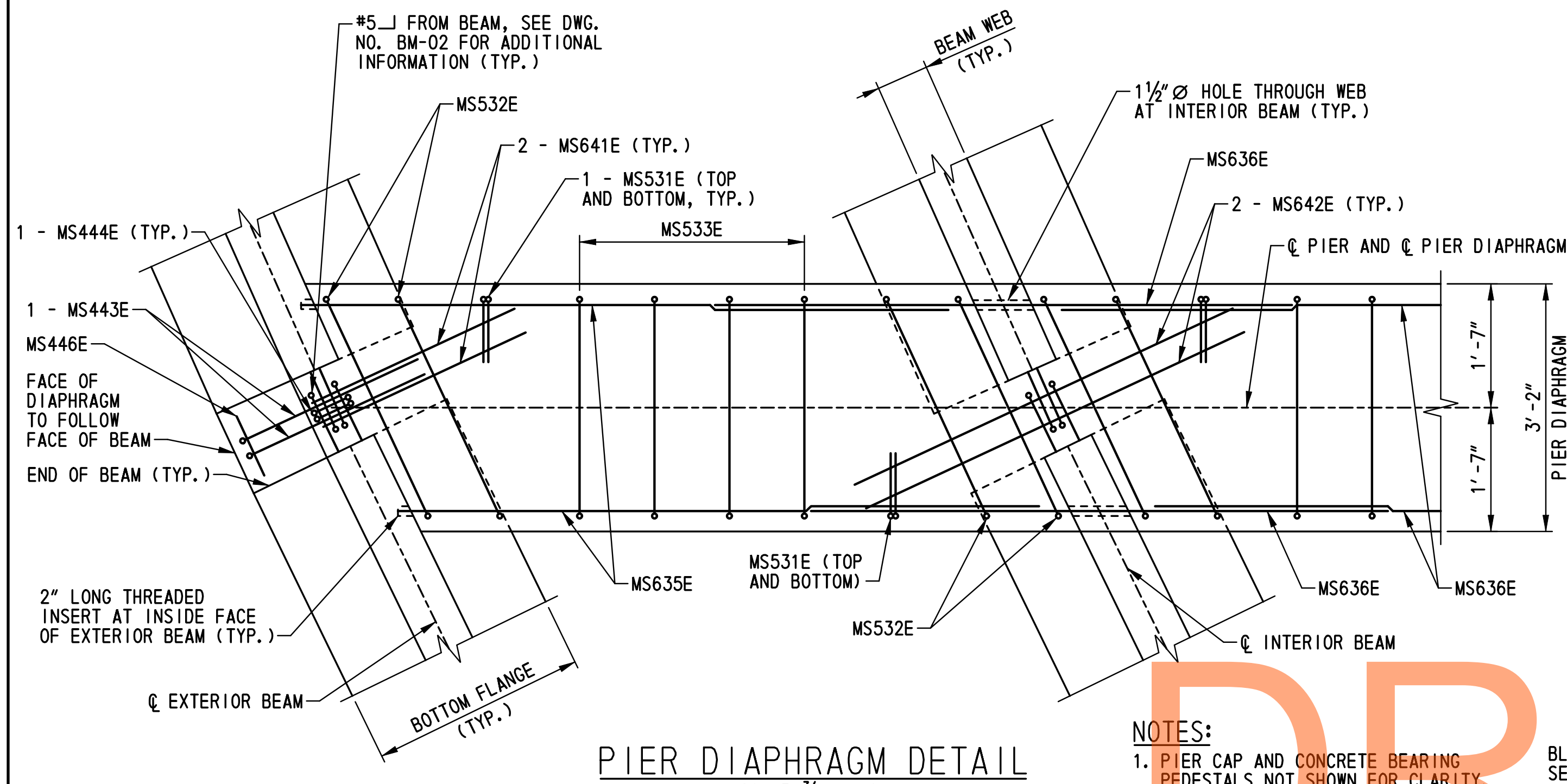
**US 301,**  
**SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

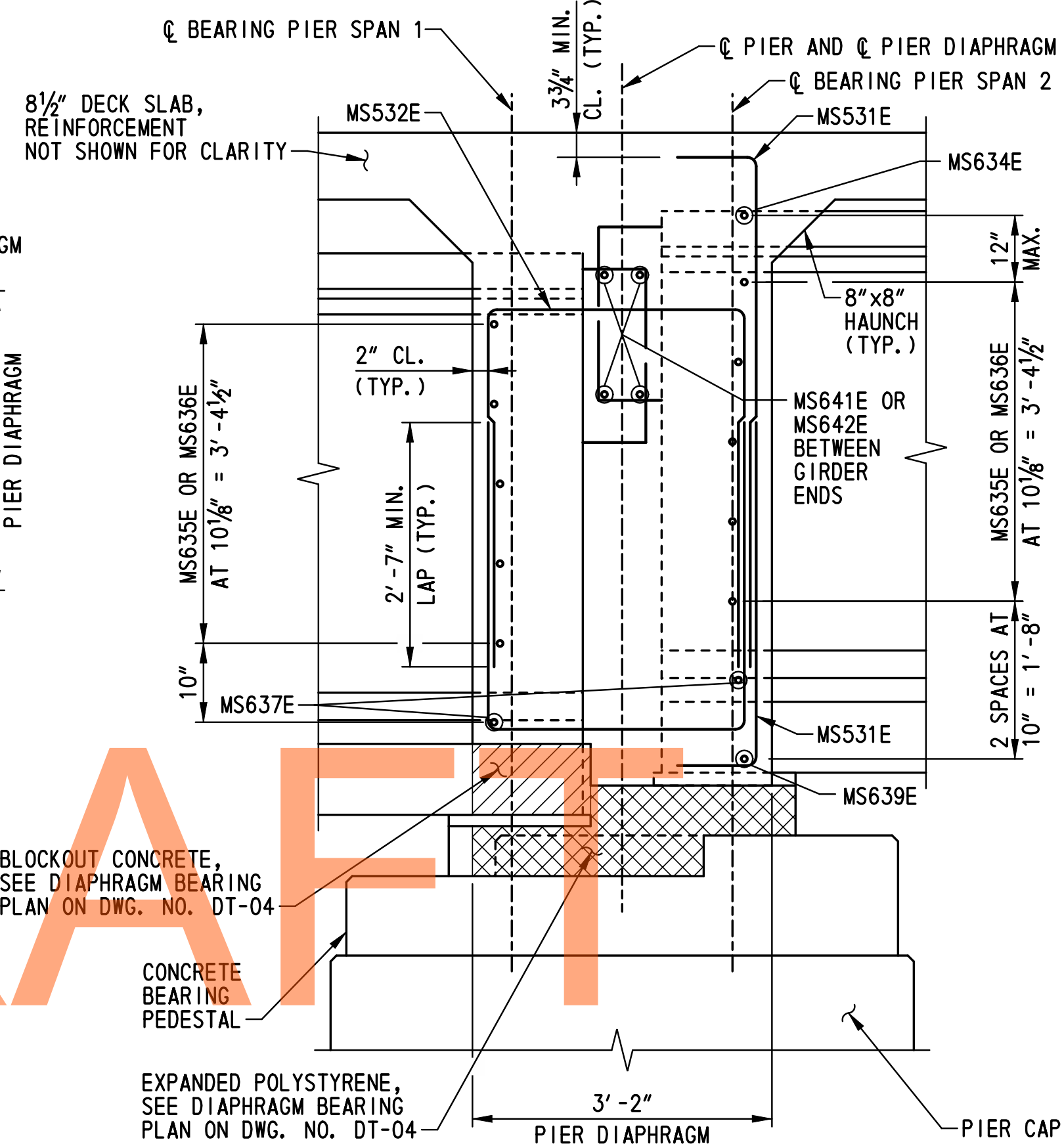
**INTERMEDIATE DIAPHRAGM**  
**DETAILS**

<b>BR1-6</b> <b>DT-02</b>
SHEET NO.
353
TOTAL SHTS.
875

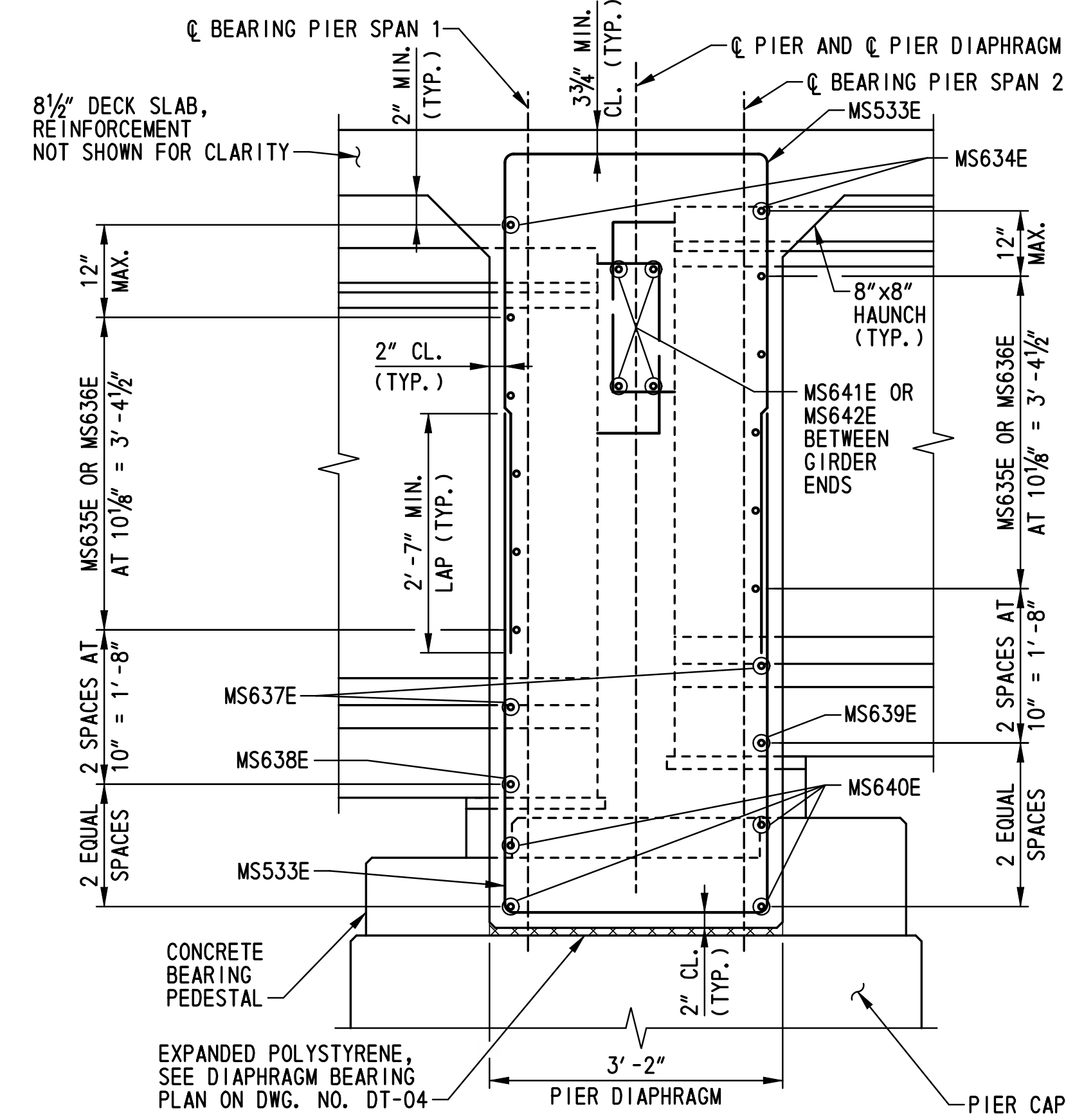




PIER DIAPHRAGM DETAIL  
SCALE: 3/4"=1'-0"



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



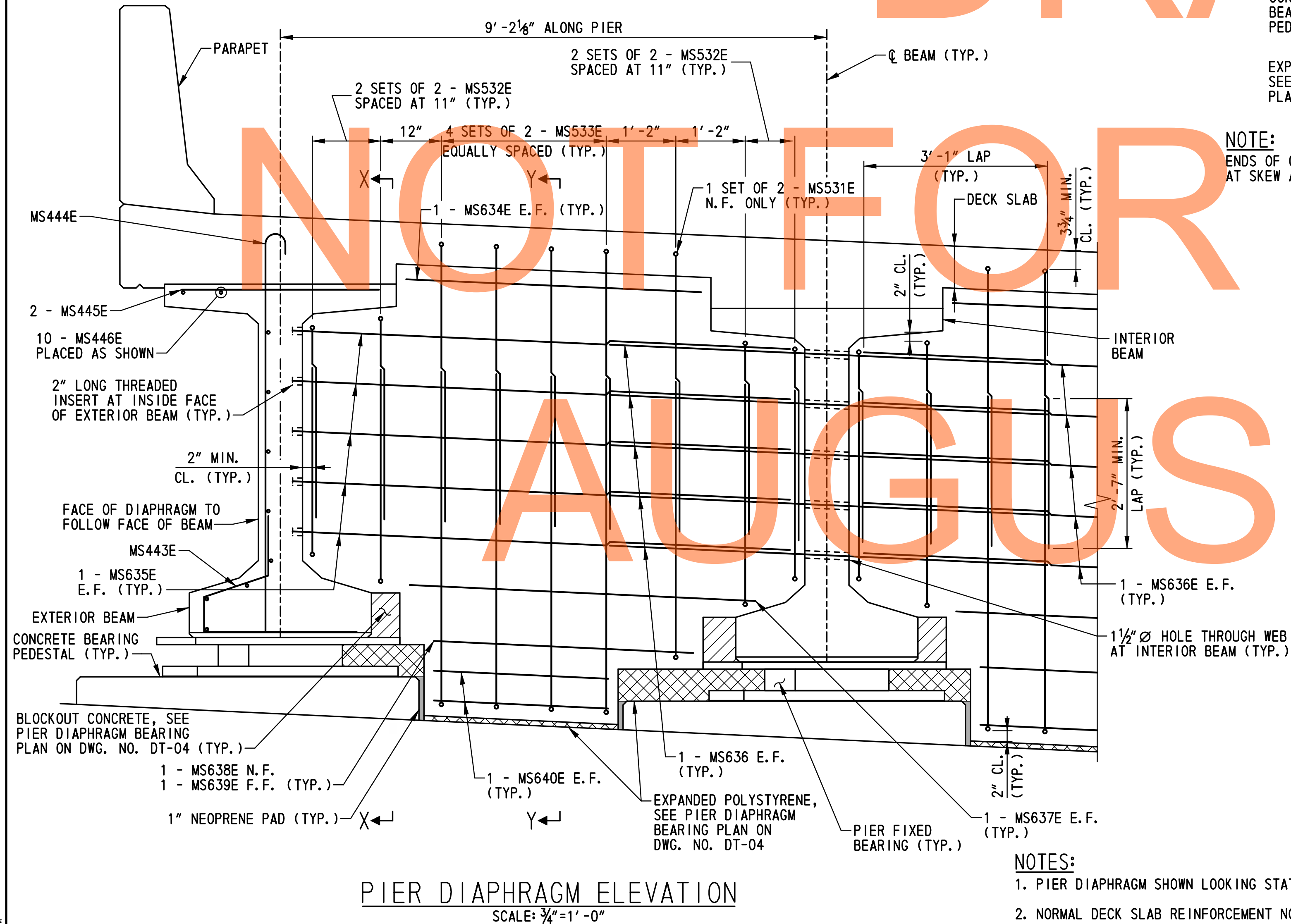
SECTION Y-Y  
SCALE: 3/4"=1'-0"

- NOTES:
1. PIER CAP AND CONCRETE BEARING PEDESTALS NOT SHOWN FOR CLARITY.
  2. BEARINGS AND ANCHOR BOLTS NOT SHOWN FOR CLARITY.

BLOCKOUT CONCRETE, SEE DIAPHRAGM BEARING PLAN ON DWG. NO. DT-04

NOTE:  
ENDS OF GIRDERS NOT SHOWN AT SKEW ANGLE FOR CLARITY.

NOTE:  
ENDS OF GIRDERS NOT SHOWN AT SKEW ANGLE FOR CLARITY.

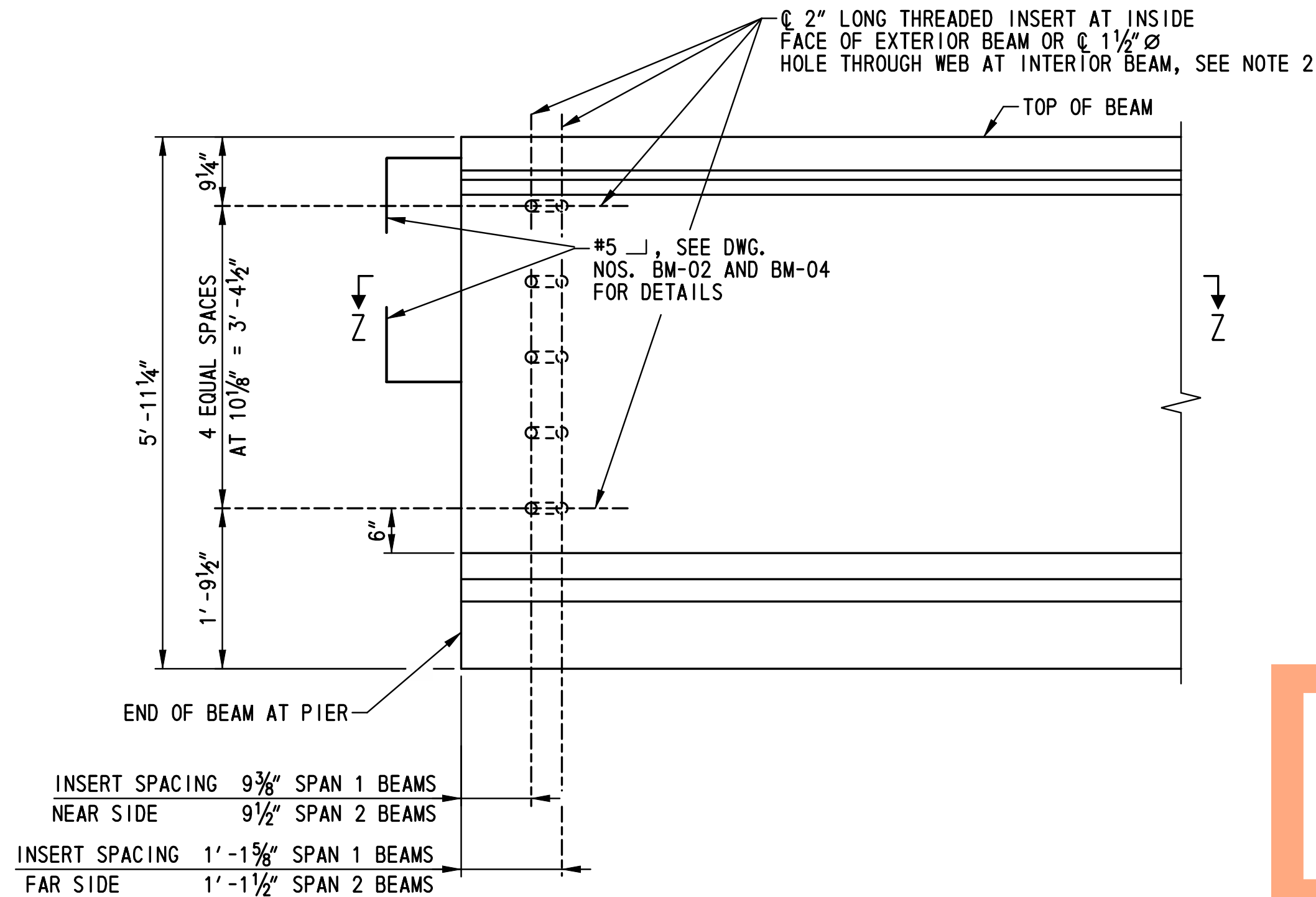


PIER DIAPHRAGM ELEVATION  
SCALE: 3/4"=1'-0"

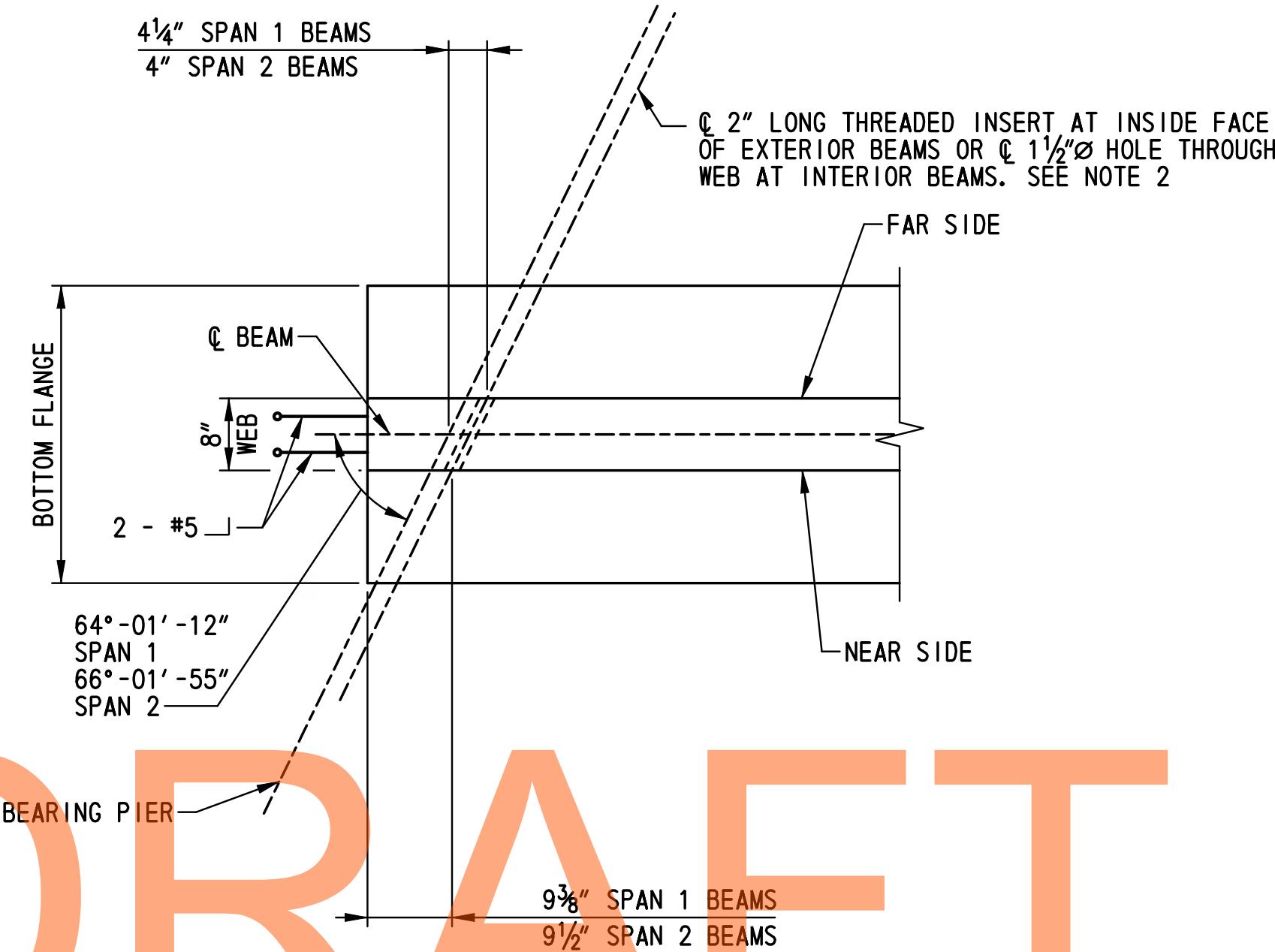
- NOTES:
1. PIER DIAPHRAGM SHOWN LOOKING STATIONS AHEAD NORMAL TO FACE OF PIER.
  2. NORMAL DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

- NOTES:
1. FOR LOCATION OF PIER DIAPHRAGM, SEE FRAMING PLAN ON DWG. NO. FR-01.
  2. THE 2" LONG THREADED INSERTS SHALL BE USED FOR THE EXTERIOR BEAMS ONLY. ONLY 1 1/2" Ø HOLES SHALL BE USED FOR THE INTERIOR BEAMS. THREADED INSERTS AND HOLES SHALL BE CAST-IN-PLACE AND PLACED AT THE DIAPHRAGM ANGLE SHOWN ON THE PLANS.
  3. ALL REINFORCEMENT SHALL BE EPOXY COATED.
  4. N.F. = NEAR FACE  
F.F. = FAR FACE
  5. EXPANDED POLYSTYRENE AT BEARING PEDESTAL SHALL EXTEND FROM TOP OF BEARING PEDESTAL TO BOTTOM OF BEVELED SOLE PLATE.
  6. EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, EXCEPT THAT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 2%. COST SHALL BE INCIDENTAL TO ITEM 602019 - PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS A.

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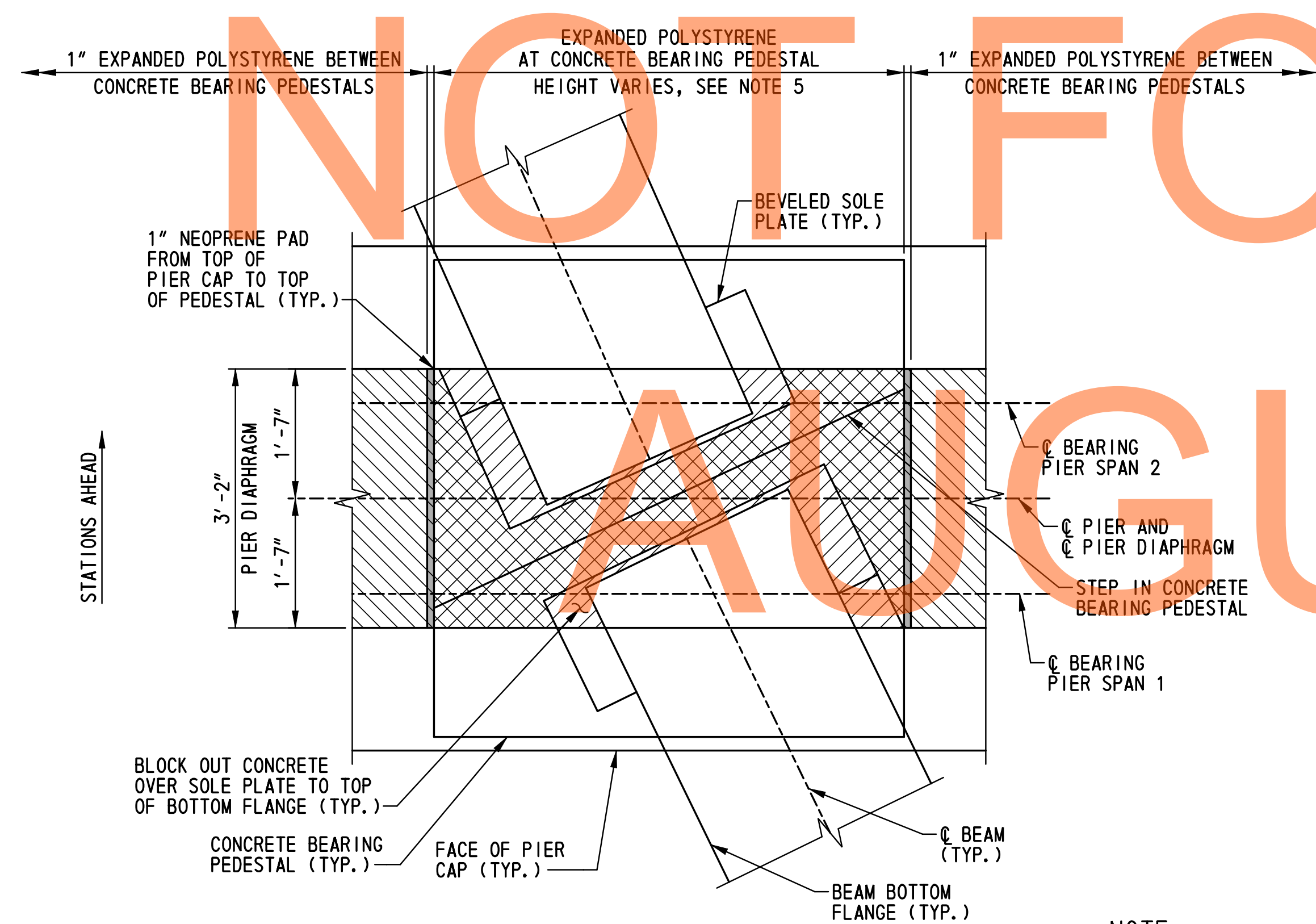


ELEVATION OF BEAM FACE AT PIER DIAPHRAGM DETAIL  
SCALE: 3/4" = 1' - 0"



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

DRAFT



PIER DIAPHRAGM BEARING PLAN  
SCALE: 3/4" = 1' - 0"

**NOTE:**  
PIER DIAPHRAGM SHOWN AT INTERIOR BEAMS. PIER DIAPHRAGM SIMILAR AT EXTERIOR BEAMS EXCEPT THAT EXPANDED POLYSTYRENE SHALL TERMINATE AT END FACE OF DIAPHRAGM.

NOT FOR BIDDING  
AUGUST 2015

- NOTES:**
- FOR LOCATION OF PIER DIAPHRAGM, SEE FRAMING PLAN ON DWG. NO. FR-01.
  - THE 2" LONG THREADED INSERTS SHALL BE USED FOR THE EXTERIOR BEAMS ONLY. ONLY 1 1/2" Ø HOLES SHALL BE USED FOR THE INTERIOR BEAMS. THREADED INSERTS AND HOLES SHALL BE CAST-IN-PLACE AND PLACED AT THE DIAPHRAGM ANGLE SHOWN ON THE PLANS.
  - ALL REINFORCEMENT SHALL BE EPOXY COATED.
  - N.F. = NEAR FACE  
F.F. = FAR FACE
  - EXPANDED POLYSTYRENE AT BEARING PEDESTAL SHALL EXTEND FROM TOP OF BEARING PEDESTAL TO BOTTOM OF BEVELED SOLE PLATE.
  - EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, EXCEPT THAT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 2%, COST SHALL BE INCIDENTAL TO ITEM 602019 - PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS A.

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ADDENDUMS / REVISIONS	

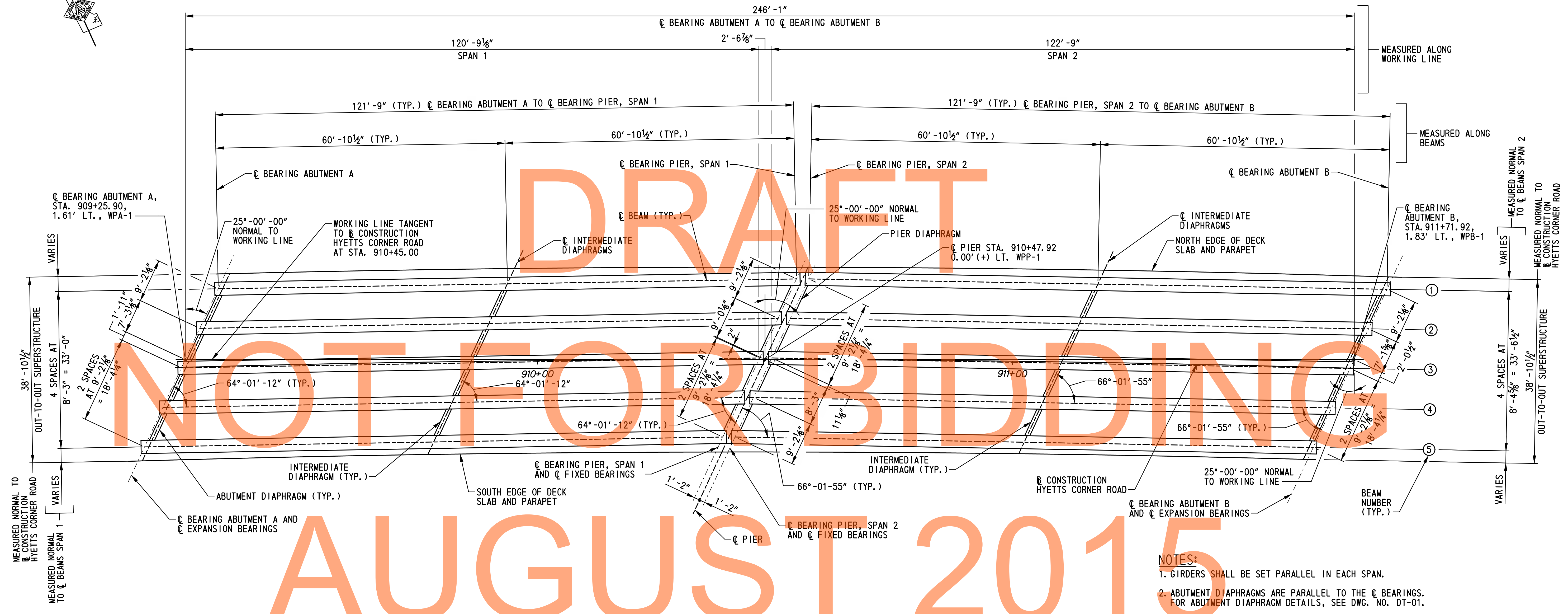
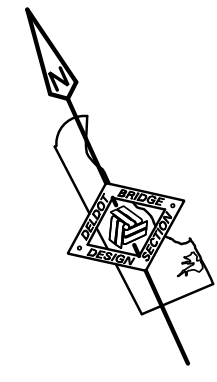
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US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**PIER DIAPHRAGM  
DETAILS - 2**

BR-6 DT-04	SHEET NO.	355
	TOTAL SHTS.	875



DRAFT  
NOT FOR BIDDING  
AUGUST 2015

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

- NOTES:**
1. GIRDERS SHALL BE SET PARALLEL IN EACH SPAN.
  2. ABUTMENT DIAPHRAGMS ARE PARALLEL TO THE  $\phi$  BEARINGS. FOR ABUTMENT DIAPHRAGM DETAILS, SEE DWG. NO. DT-01.
  3. FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE DWG. NO. DT-02.
  4. FOR PIER DIAPHRAGM DETAILS, SEE DWG. NO. DT-03.

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ADDENDUMS / REVISIONS	

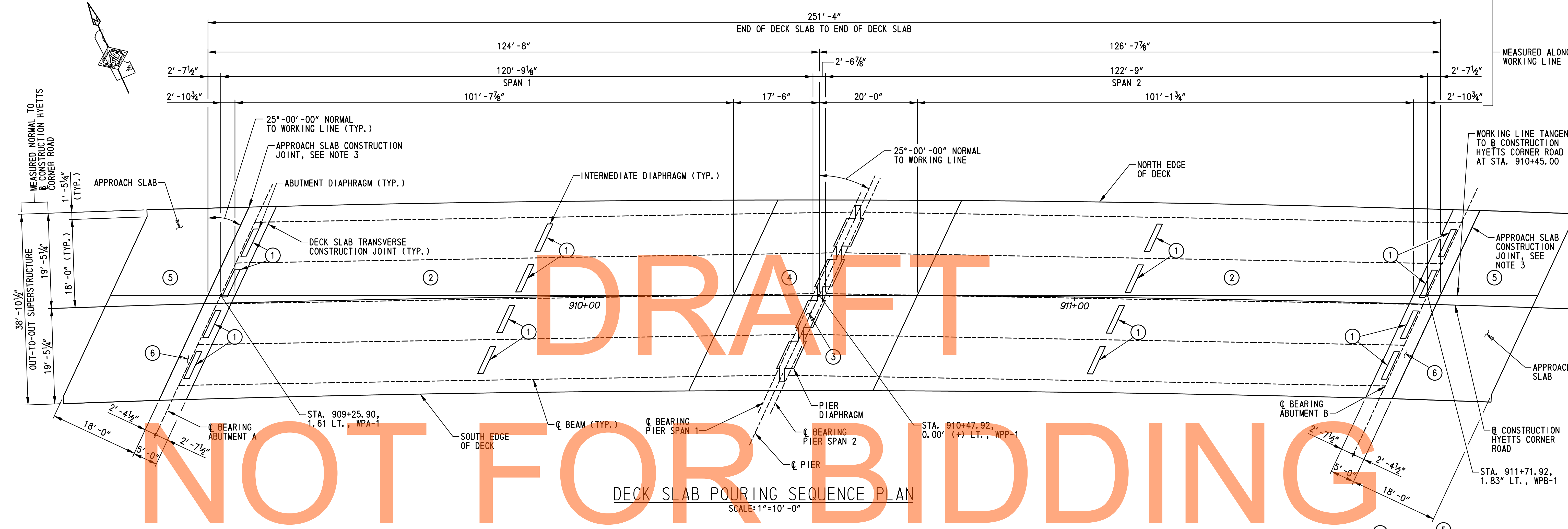
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**US 301,  
SR 896 TO SR 1**

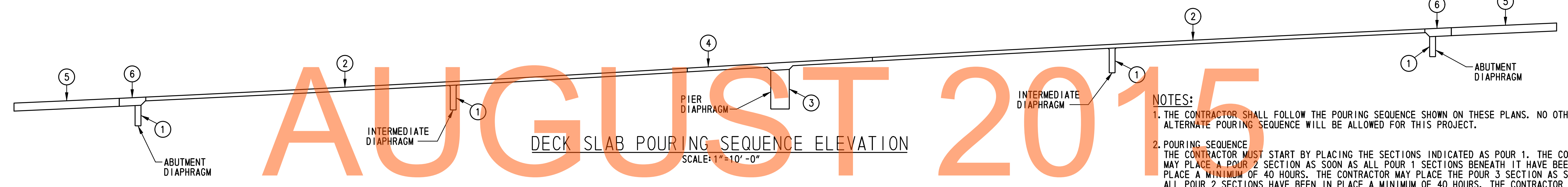
CONTRACT T200911308	BRIDGE NO. <b>1-458</b>	
COUNTY NEW CASTLE	DESIGNED BY: A.J.F.	
	CHECKED BY: P.S.D.	

**FRAMING PLAN**

<b>BR1-6 FR-01</b>
SHEET NO. 356
TOTAL SHTS. 875



DECK SLAB POURING SEQUENCE PLAN  
SCALE: 1"=10'-0"



DECK SLAB POURING SEQUENCE ELEVATION  
SCALE: 1"=10'-0"

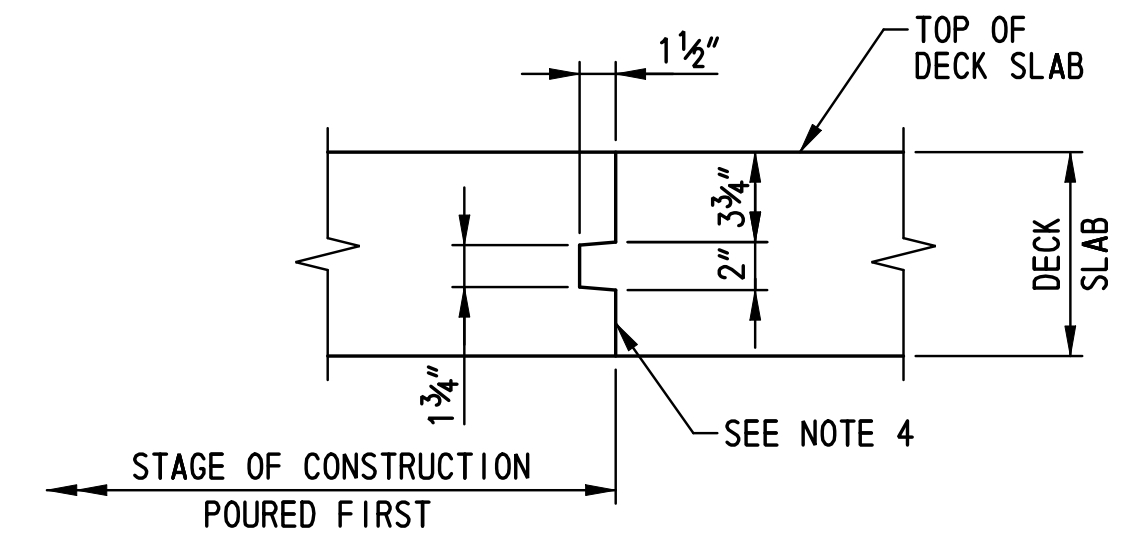
NOTES:

1. THE CONTRACTOR SHALL FOLLOW THE POURING SEQUENCE SHOWN ON THESE PLANS. NO OTHER ALTERNATE POURING SEQUENCE WILL BE ALLOWED FOR THIS PROJECT.
2. POURING SEQUENCE: THE CONTRACTOR MUST START BY PLACING THE SECTIONS INDICATED AS POUR 1. THE CONTRACTOR MAY PLACE A POUR 2 SECTION AS SOON AS ALL POUR 1 SECTIONS BENEATH IT HAVE BEEN IN PLACE A MINIMUM OF 40 HOURS. THE CONTRACTOR MAY PLACE THE POUR 3 SECTION AS SOON AS ALL POUR 2 SECTIONS HAVE BEEN IN PLACE A MINIMUM OF 40 HOURS. THE CONTRACTOR MAY PLACE THE POUR 4 SECTION AFTER THE POUR 3 SECTION HAS BEEN IN PLACE A MINIMUM OF 40 HOURS. THE CONTRACTOR MAY PLACE THE POUR 5 SECTIONS AS SOON AS THE POUR 2 SECTIONS HAVE BEEN PLACED. THE CONTRACTOR MAY PLACE THE POUR 6 SECTIONS AS SOON AS THE POUR 4 AND POUR 5 SECTIONS HAVE BEEN IN PLACE A MINIMUM OF 40 HOURS. THE POUR 6 SECTIONS SHALL BE PLACED STARTING AT THE BRIDGE DECK AND WORKING TOWARD THE APPROACH SLAB.
3. MAKE A 3" DEEP SAWCUT AT THE APPROACH SLAB CONSTRUCTION JOINT NO LATER THAN 36 HOURS AFTER PLACEMENT OF POUR 6 SECTIONS. SEAL THIS SAWCUT WITH AN APPROVED COLD APPLIED SILICONE SEALER PLACED IN A CLEAN AIR-BLOWN NOTCH FREE OF MOISTURE. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
4. THE ENTIRE FACE OF CONSTRUCTION JOINT SHALL BE COATED WITH AN APPROVED EPOXY BONDING COMPOUND. COST SHALL BE INCIDENTAL TO ITEM 602013 - PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D.
5. FOR FINISHED BRIDGE DECK ELEVATIONS, SEE DWG. NOS. FD-01 AND FD-02.
6. FOR DECK SLAB REINFORCEMENT, SEE DWG. NOS. DK-02 THRU DK-04.
7. FOR ADDITIONAL REINFORCEMENT IN THE DIAPHRAGMS, SEE DWG. NOS. DT-01 THRU DT-03.

NOTE A:

THE PIER DIAPHRAGM AND DECK SLAB POUR AT PIER SHALL NOT BE POURED UNTIL THE BEAMS ARE A MINIMUM OF 90 DAYS OLD FROM THE TIME OF RELEASE.

- ① INDICATES INTERMEDIATE OR ABUTMENT DIAPHRAGM POUR
- ② INDICATES DECK SLAB POUR
- ③ INDICATES PIER DIAPHRAGM POUR, SEE NOTE A
- ④ INDICATES DECK SLAB POUR AT PIER, SEE NOTE A
- ⑤ INDICATES APPROACH SLAB POUR
- ⑥ INDICATES DECK SLAB CLOSURE POUR



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

ADDENDUMS / REVISIONS

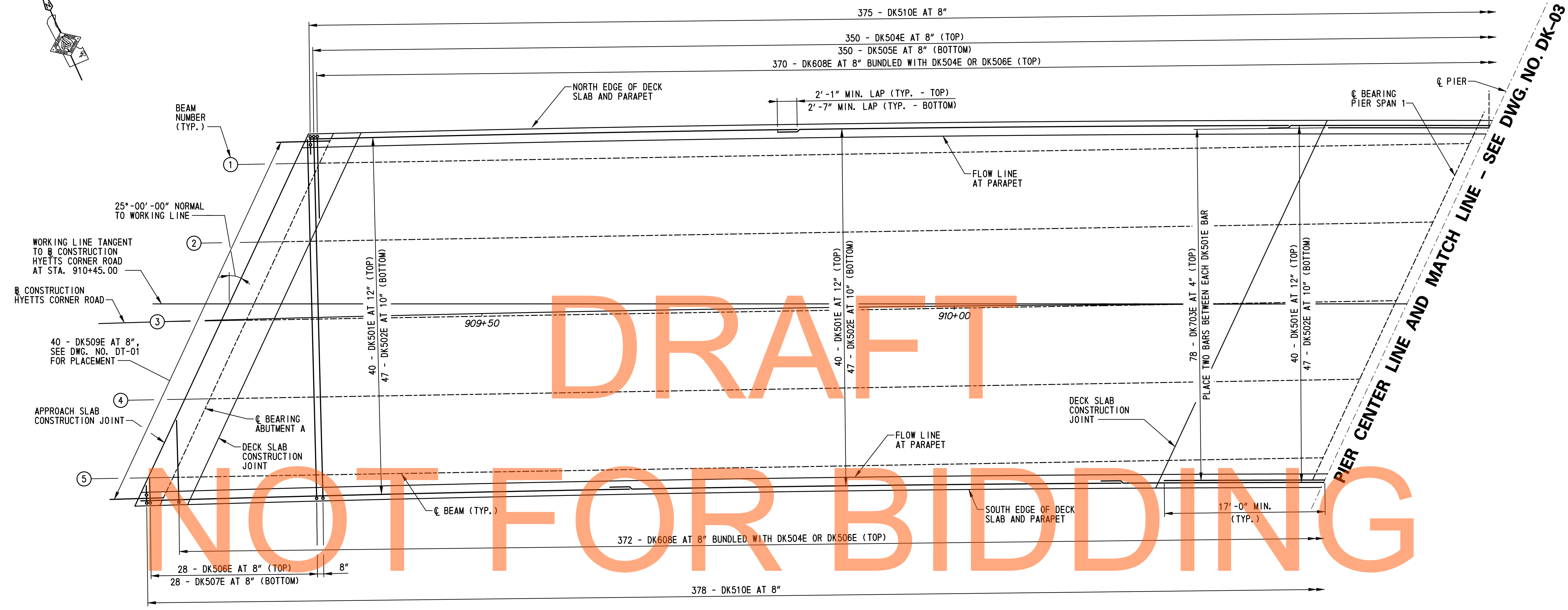
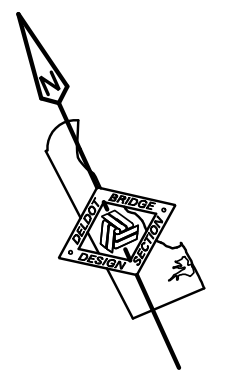
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

DECK SLAB  
POURING SEQUENCE

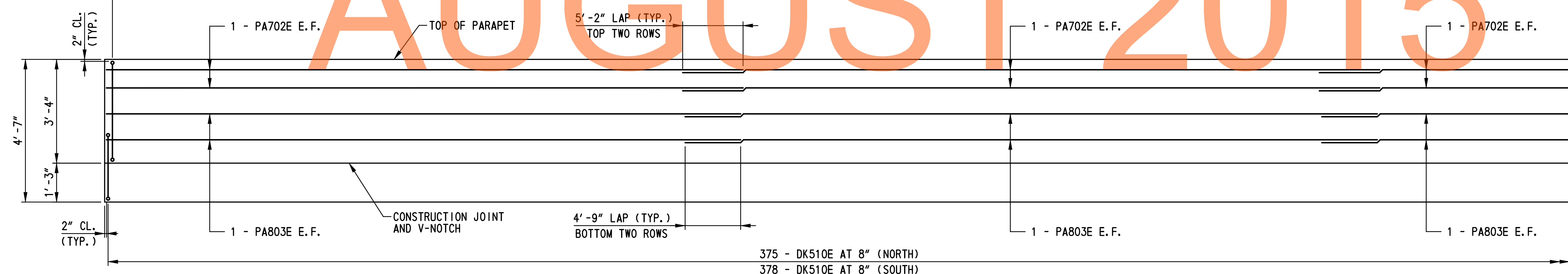
BR-6 DK-01	SHEET NO.
	357
	TOTAL SHTS.
	875



DECK SLAB REINFORCEMENT PLAN - SPAN 1

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

375 - PA501E AT 8" (NORTH)  
378 - PA501E AT 8" (SOUTH)



PARAPET REINFORCEMENT ELEVATION - SPAN 1

HORIZONTAL SCALE: 1/4" = 1'-0"  
VERTICAL SCALE: 1/2" = 1'-0"

NOTE:  
SOUTH PARAPET SHOWN LOOKING NORTH, NORTH  
PARAPET SIMILAR LOOKING SOUTH OPPOSITE HAND.

- NOTES:
1. FOR ADDITIONAL INFORMATION ON PLACEMENT OF DK608E AND DK510E AND ADDITIONAL DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DECK SLAB TYPICAL REINFORCEMENT SECTION ON DWG. NO. DK-04.
  2. FOR ADDITIONAL REINFORCEMENT IN ABUTMENT DIAPHRAGM, SEE DWG. NO. DT-01.
  3. FOR ADDITIONAL REINFORCEMENT IN INTERMEDIATE DIAPHRAGM, SEE DWG. NO. DT-02.
  4. FOR ADDITIONAL REINFORCEMENT IN PIER DIAPHRAGM, SEE DWG. NO. DT-03.
  5. FOR DECK SLAB CONSTRUCTION JOINT LOCATIONS AND DECK SLAB POURING SEQUENCE, SEE DWG. NO. DK-01.

MATCH LINE - SEE DWG. NO. DK-03

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ADDENDUMS / REVISIONS	

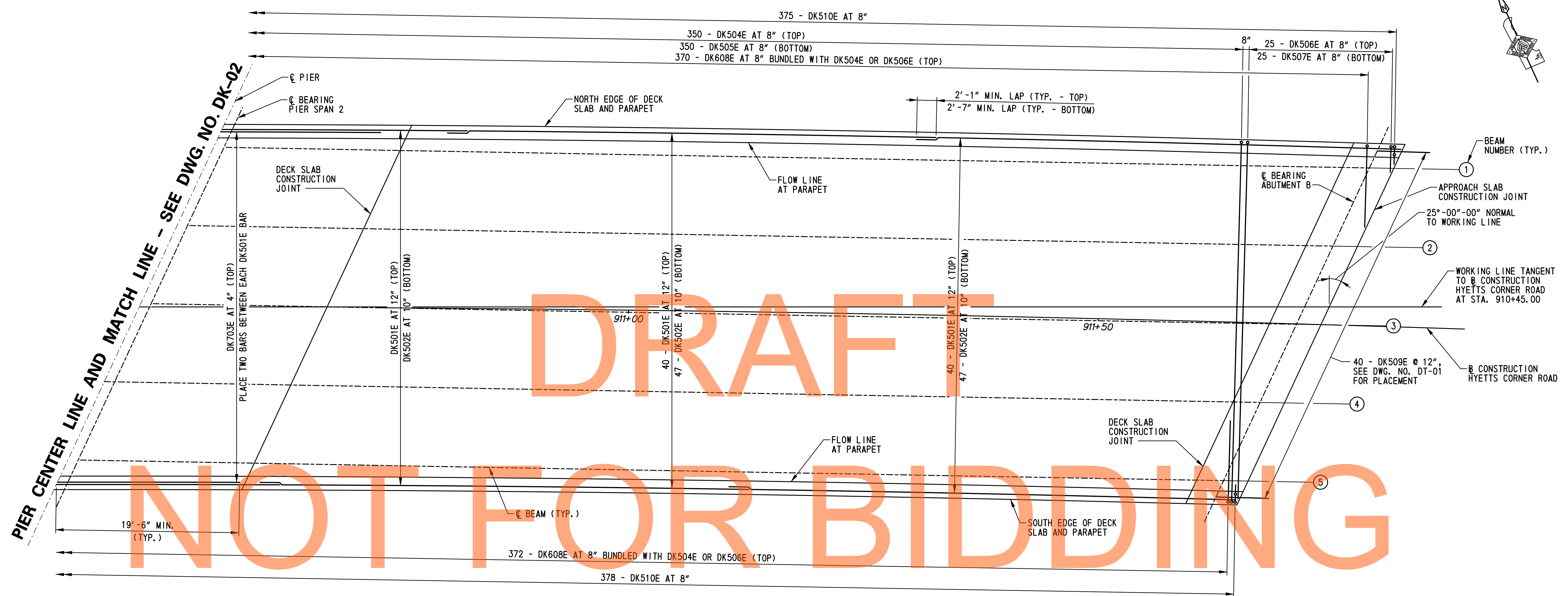
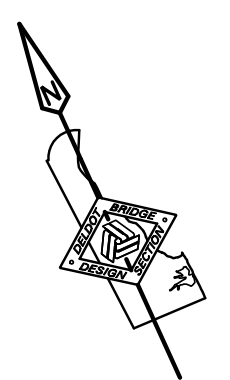
SCALE: AS NOTED

US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

DECK SLAB AND  
PARAPET REINFORCEMENT  
- SPAN 1

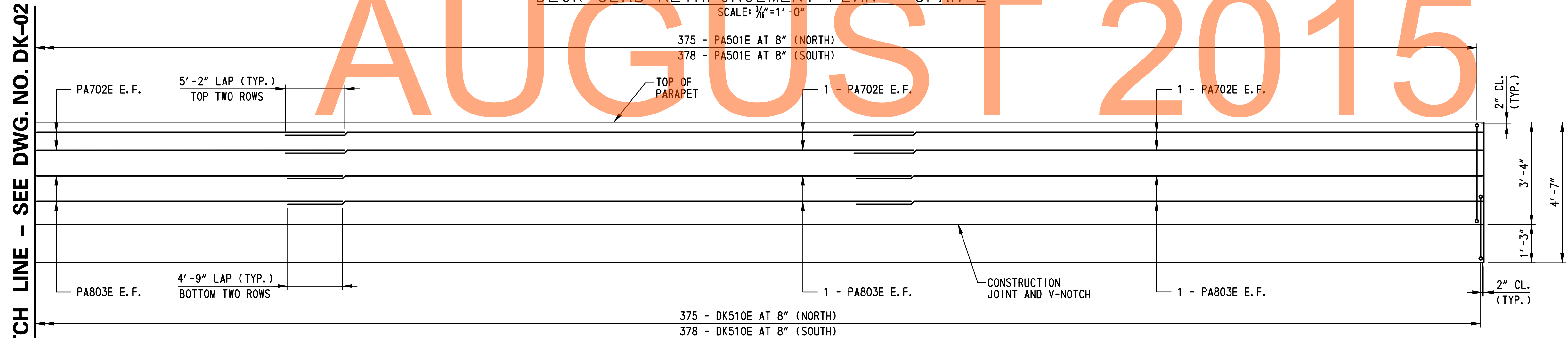
BR1-6 DK-02	SHEET NO.	358
	TOTAL SHTS.	875



DRAFT  
NOT FOR BIDDING

DECK SLAB REINFORCEMENT PLAN - SPAN 2

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



PARAPET REINFORCEMENT ELEVATION - SPAN 2

HORIZONTAL SCALE: 1/4" = 1'-0"  
VERTICAL SCALE: 1/2" = 1'-0"

- NOTES:**
1. FOR ADDITIONAL INFORMATION ON PLACEMENT OF DK608E AND DK510E AND ADDITIONAL DECK SLAB AND PARAPET REINFORCING DETAILS, SEE DECK SLAB TYPICAL REINFORCEMENT SECTION ON DWG. NO. DK-04.
  2. FOR ADDITIONAL REINFORCEMENT IN ABUTMENT DIAPHRAGM, SEE DWG. NO. DT-01.
  3. FOR ADDITIONAL REINFORCEMENT IN INTERMEDIATE DIAPHRAGM, SEE DWG. NO. DT-02.
  4. FOR ADDITIONAL REINFORCEMENT IN PIER DIAPHRAGM, SEE DWG. NO. DT-03.
  5. FOR DECK SLAB CONSTRUCTION JOINT LOCATIONS AND DECK SLAB POURING SEQUENCE, SEE DWG. NO. DK-01.

**NOTE:**  
SOUTH PARAPET SHOWN LOOKING NORTH, NORTH PARAPET SIMILAR LOOKING SOUTH OPPOSITE HAND.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

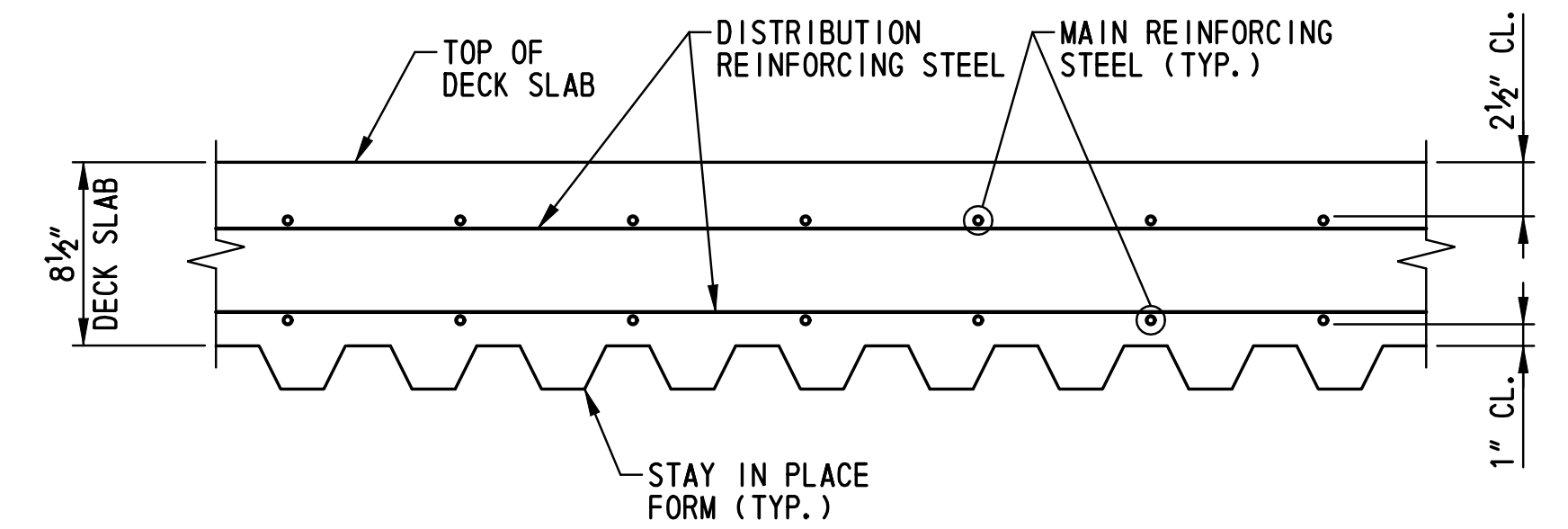
CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**DECK SLAB AND  
PARAPET REINFORCEMENT  
- SPAN 2**

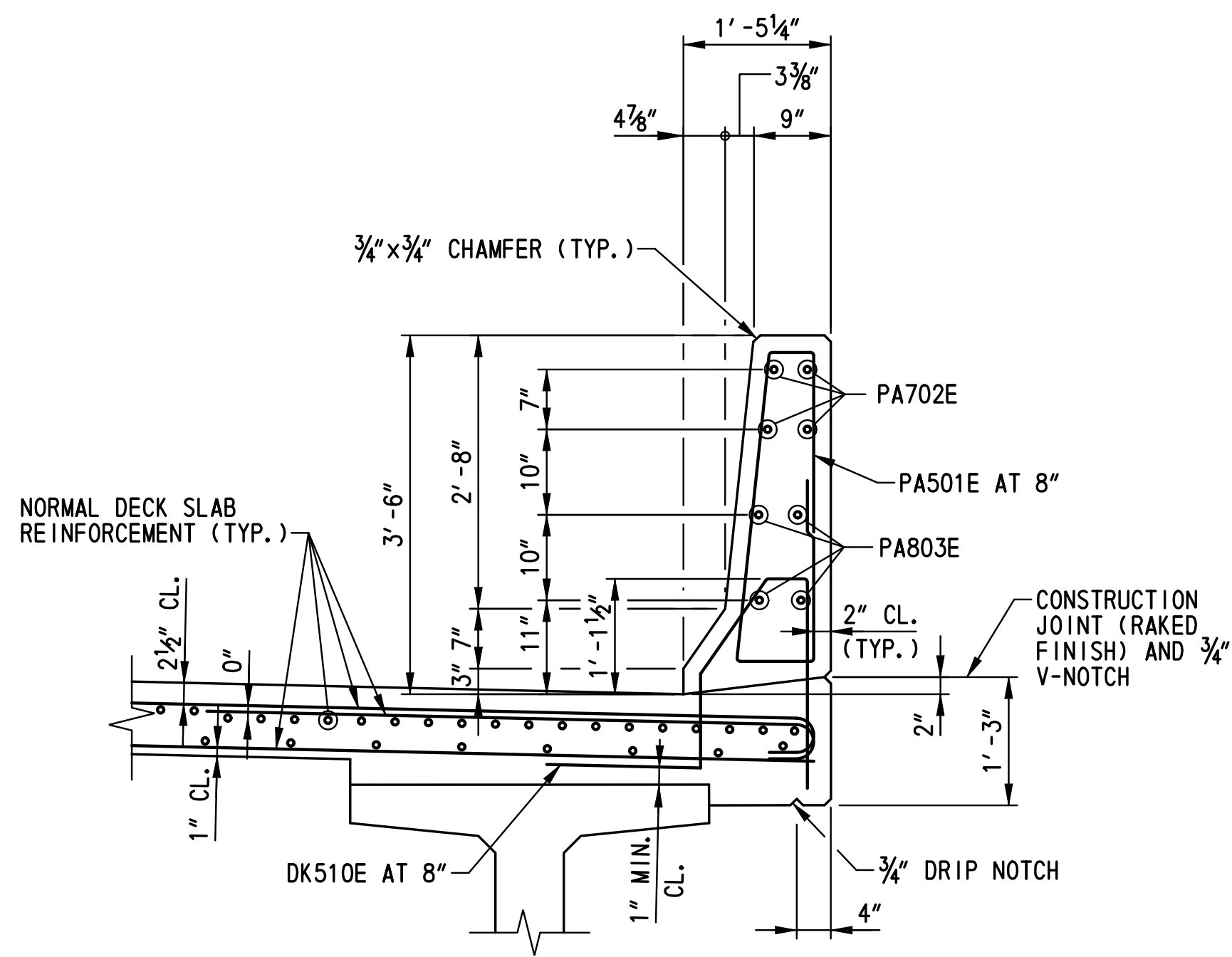
<b>BR-6 DK-03</b>
SHEET NO.
359
TOTAL SHTS.
875

**STAY-IN-PLACE FORM NOTES:**

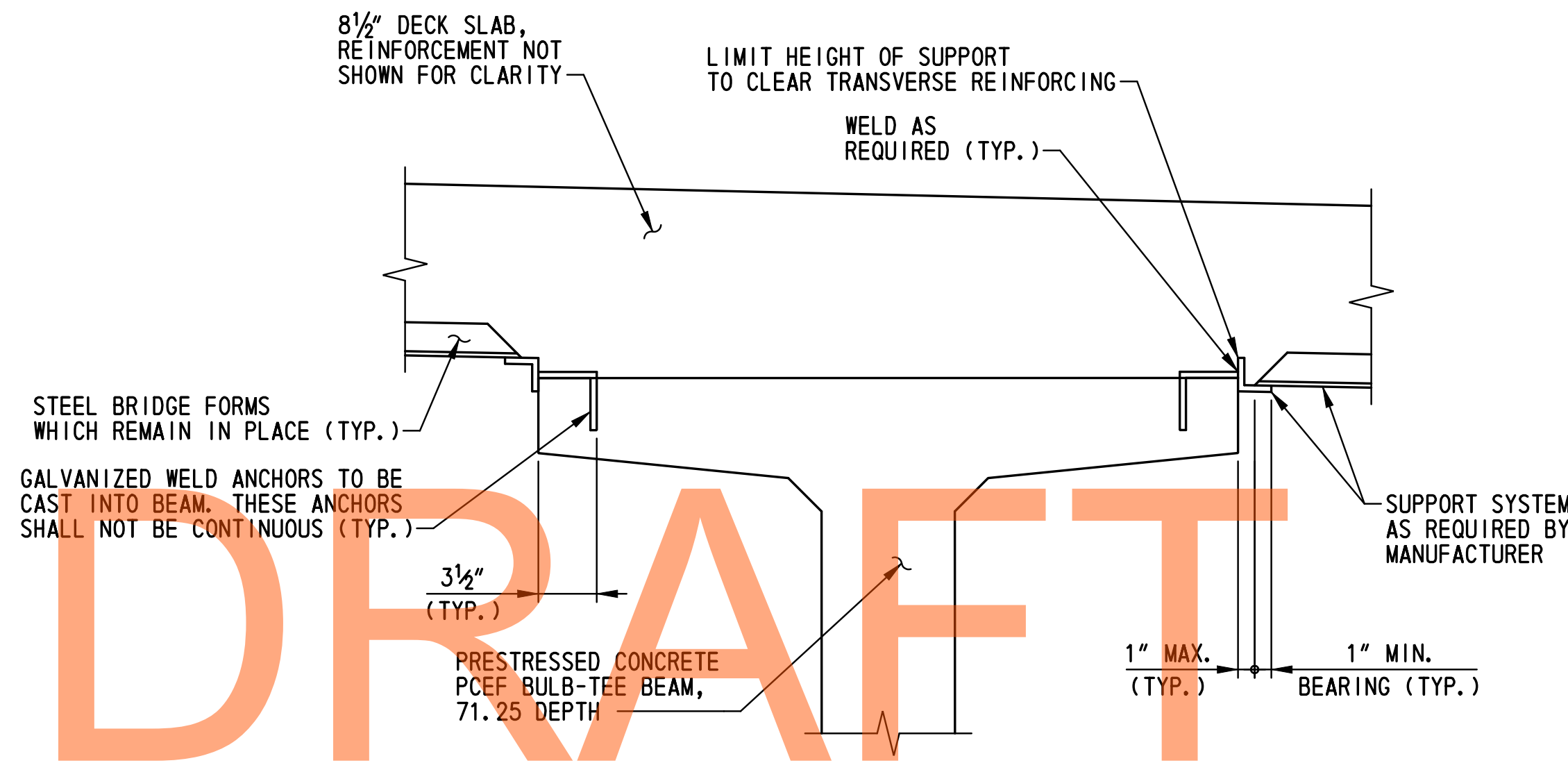
1. STAY-IN-PLACE FORMS SHALL CONFORM TO SECTION 602.03.
2. STAY-IN-PLACE FORMS SHALL BE VERTICALLY ADJUSTED TO ATTAIN FINISHED LINES AND GRADES REQUIRED ON THE PLANS.
3. ANY PERMANENTLY EXPOSED FORM METAL WHERE THE GALVANIZED COATING HAS BEEN DAMAGED SHALL BE THOROUGHLY CLEANED, WIRE BRUSHED, AND PAINTED WITH TWO COATS OF ZINC-OXIDE DUST PRIMER, FEDERAL SPECIFICATION TT-P-641D, TYPE II, NO COLOR ADDED, TO THE SATISFACTION OF THE ENGINEER. MINOR HEAT DISCOLORATION IN AREAS OF WELDS NEED NOT BE TOUCHED UP.



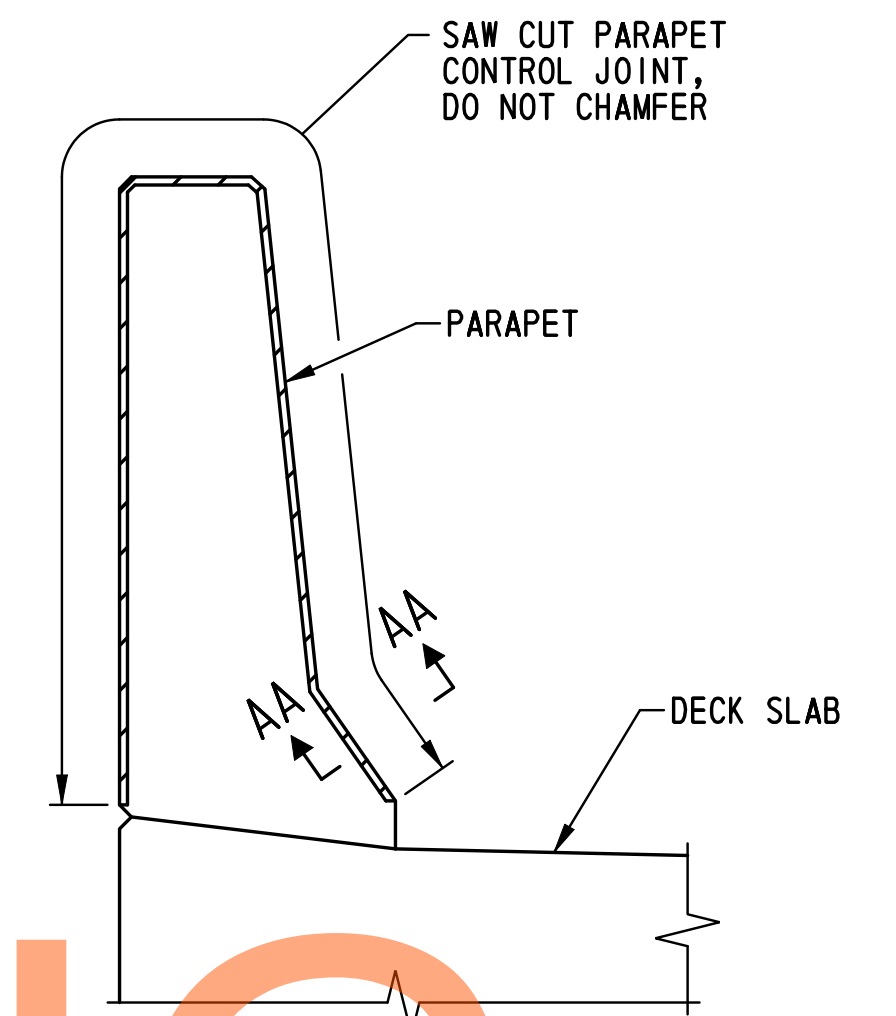
**S. I. P. FORM PLACEMENT SECTION**  
SCALE: 1 1/2" = 1' - 0"



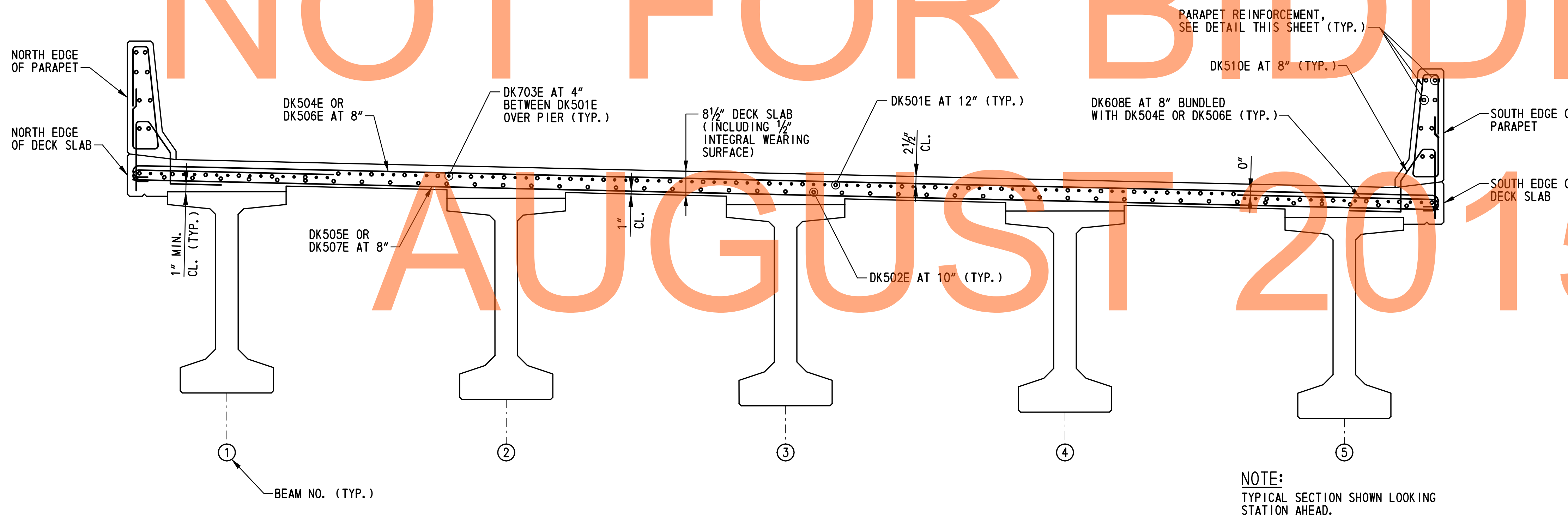
**PARAPET TYPICAL REINFORCEMENT SECTION**  
SCALE: 3/4" = 1' - 0"



**S. I. P. FORM SUPPORT DETAIL**  
SCALE: 1 1/2" = 1' - 0"



**PARAPET CONTROL JOINT DETAIL**  
SCALE: 1" = 1' - 0"



**DECK SLAB TYPICAL REINFORCEMENT SECTION**  
SCALE: 1/2" = 1' - 0"

**SECTION AA-AA**  
SCALE: NOT TO SCALE

**NOTE:**  
SAW CUT PARAPET CONTROL JOINT SHALL BE SAWED SAME DAY AS CONCRETE IS POURED.

- NOTES:**
1. STAY-IN-PLACE FORMS NOT SHOWN ON TYPICAL REINFORCEMENT SECTION FOR CLARITY. SEE DETAILS THIS SHEET.
  2. FOR DECK SLAB AND PARAPET REINFORCEMENT PLANS, SEE DWG. NOS. DK-02 AND DK-03.
  3. FOR ABUTMENT DIAPHRAGM AND END HAUNCH REINFORCEMENT DETAILS, SEE DWG. NO. DT-01.
  4. FOR INTERMEDIATE DIAPHRAGM REINFORCEMENT DETAILS, SEE DWG. NO. DT-02.
  5. FOR PIER DIAPHRAGM REINFORCEMENT DETAILS, SEE DWG. NOS. DT-03 AND DT-04.
  6. FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01.

**NOTE:**  
TYPICAL SECTION SHOWN LOOKING STATION AHEAD.

ADDENDUMS / REVISIONS

SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

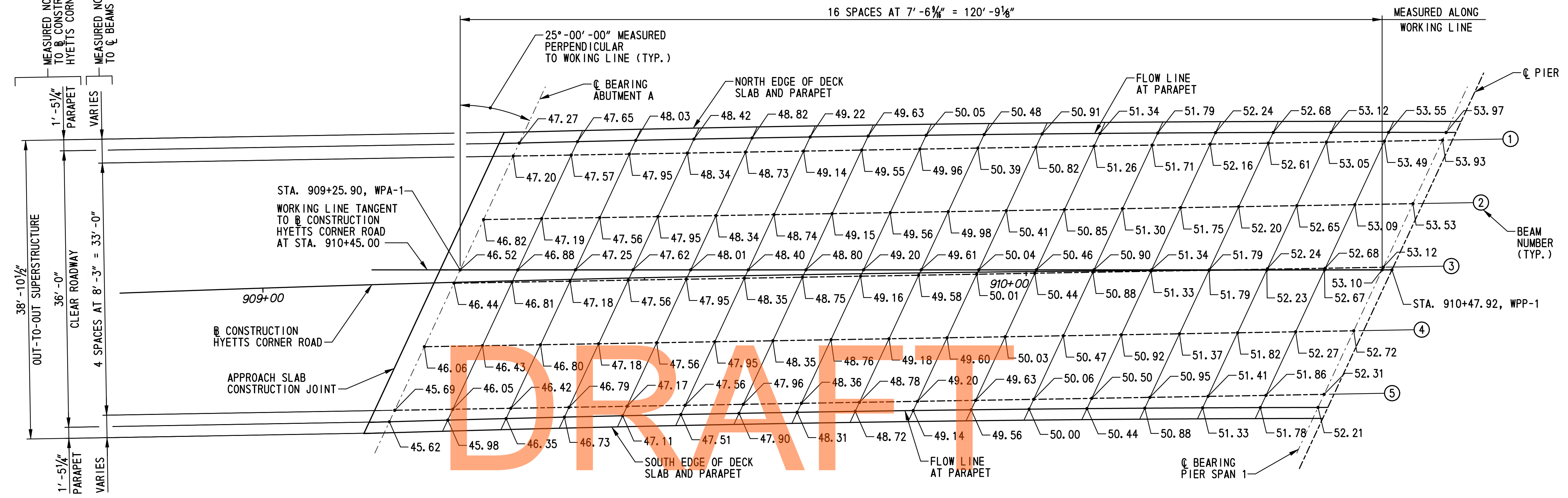
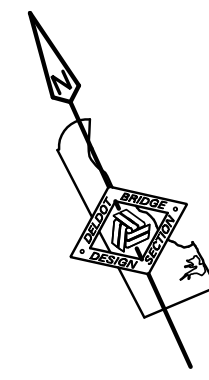
CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**DECK SLAB AND  
PARAPET REINFORCEMENT  
DETAILS**

<b>BR1-6 DK-04</b>
SHEET NO.
360
TOTAL SHTS.
875



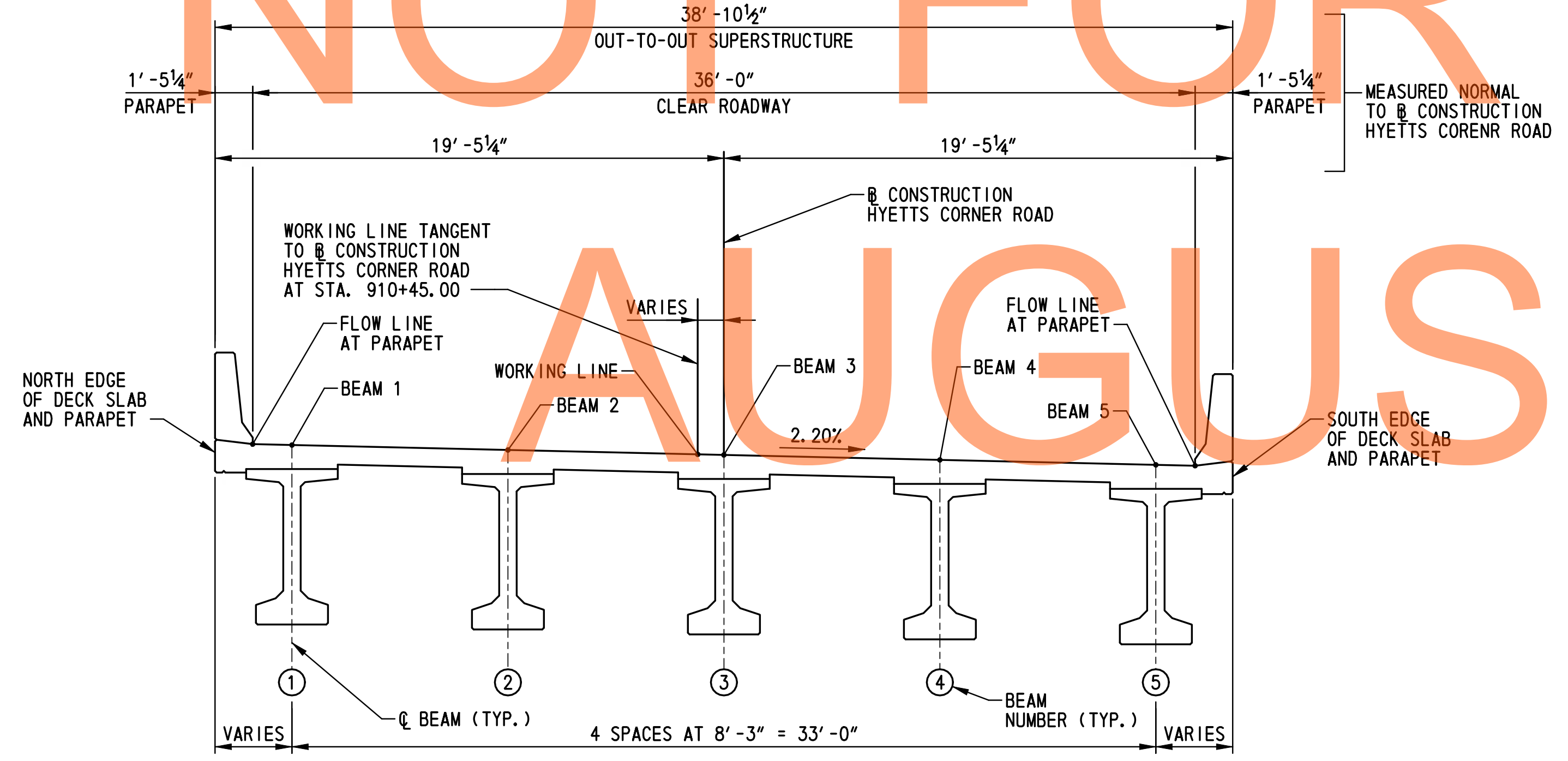




**NOT FOR BIDDING**

**AUGUST 2015**

FINISHED BRIDGE DECK ELEVATIONS - SPAN 1  
SCALE: 1/8" = 1'-0"



LOCATIONS OF FINISHED BRIDGE DECK ELEVATIONS  
SCALE: 1/4" = 1'-0"

- NOTES:**
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF PROPOSED CONCRETE DECK SLAB.
  2. FOR VERTICAL CURVE DATA, SEE DWG. NO. PE-01.
  3. FOR FRAMING PLAN, SEE DWG. NO. FR-01.

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ADDENDUMS / REVISIONS	

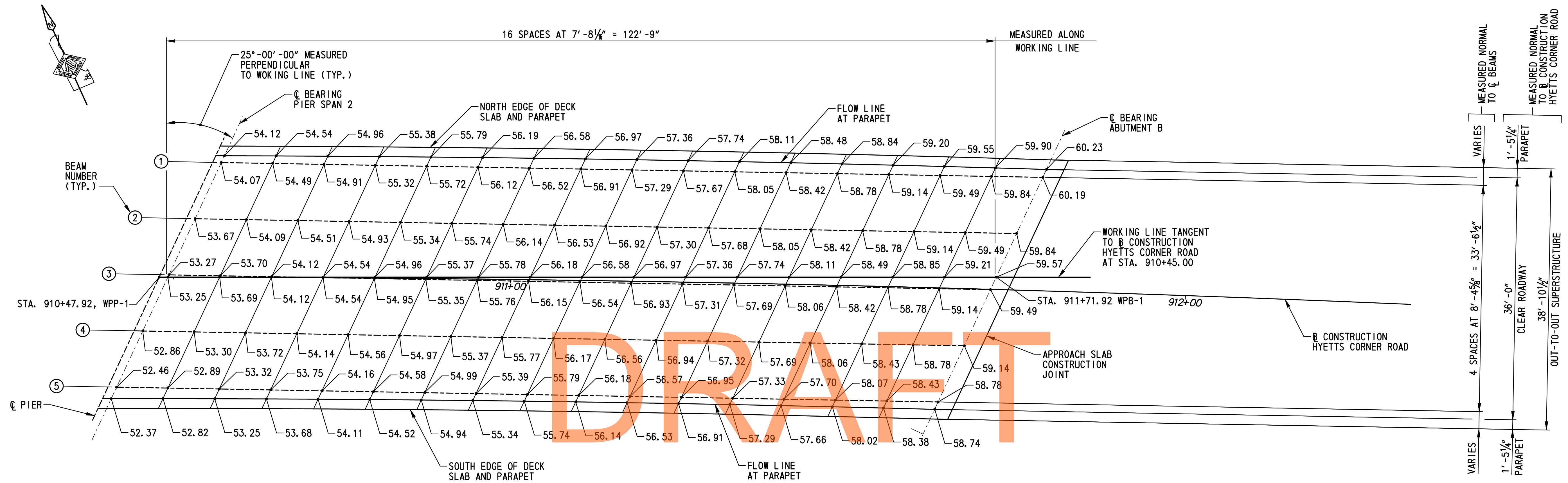
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

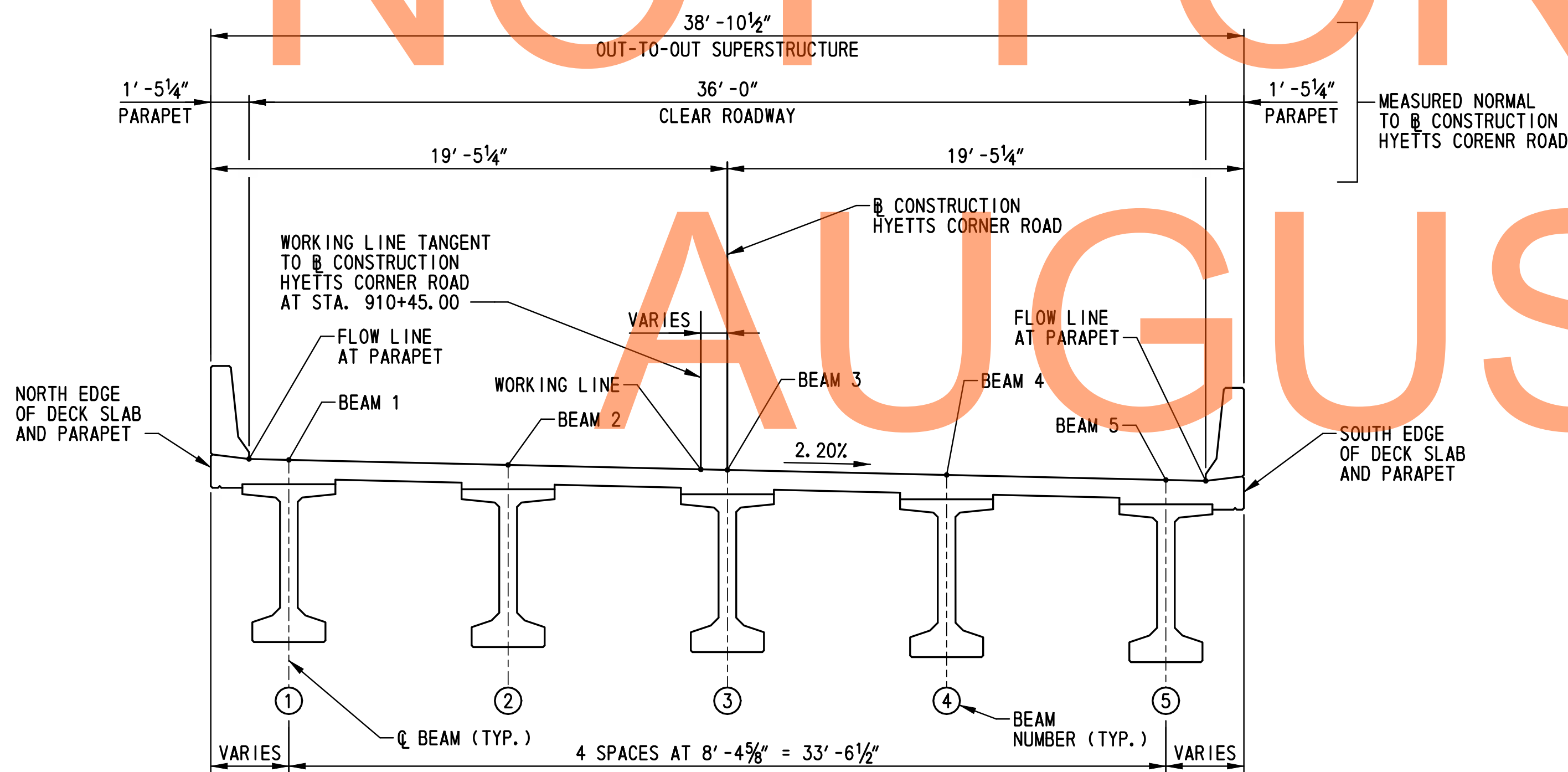
CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**FINISHED BRIDGE DECK  
ELEVATIONS - SPAN 1**

<b>BR1-6 FD-01</b>
SHEET NO. 362
TOTAL SHTS. 875



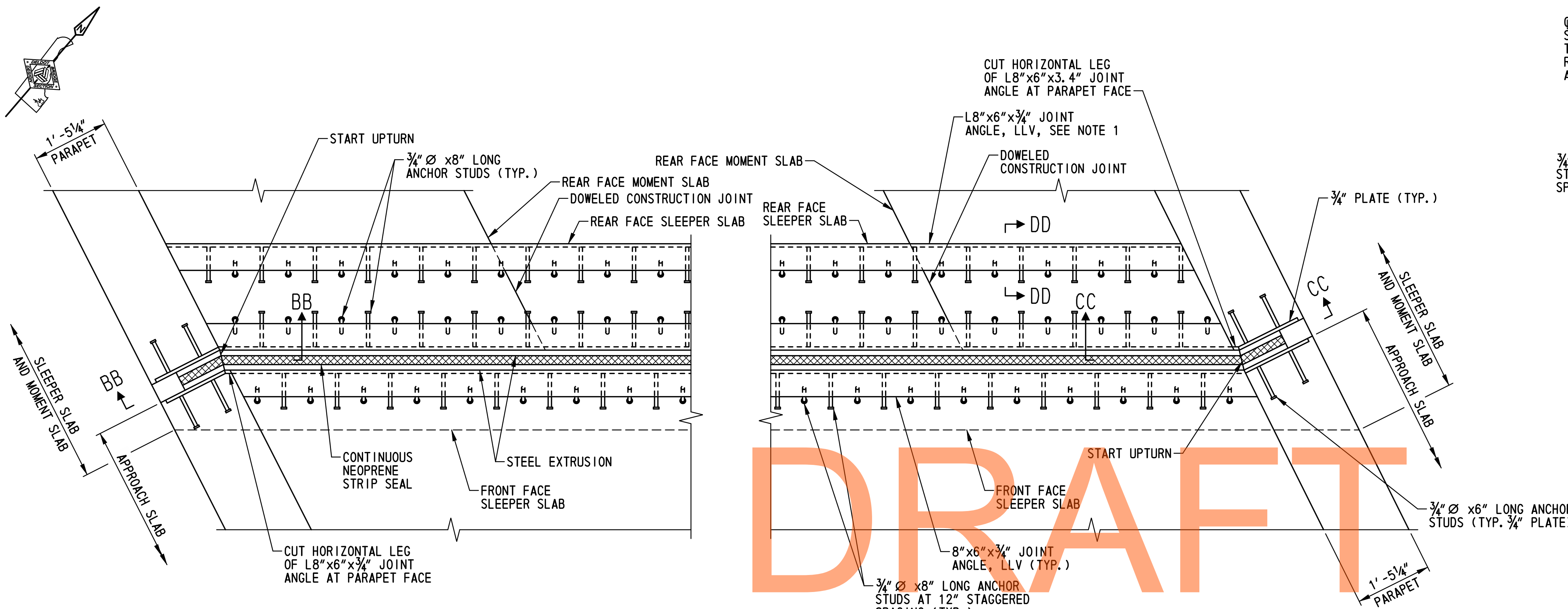
FINISHED BRIDGE DECK ELEVATIONS - SPAN 2  
SCALE: 1/8" = 1'-0"



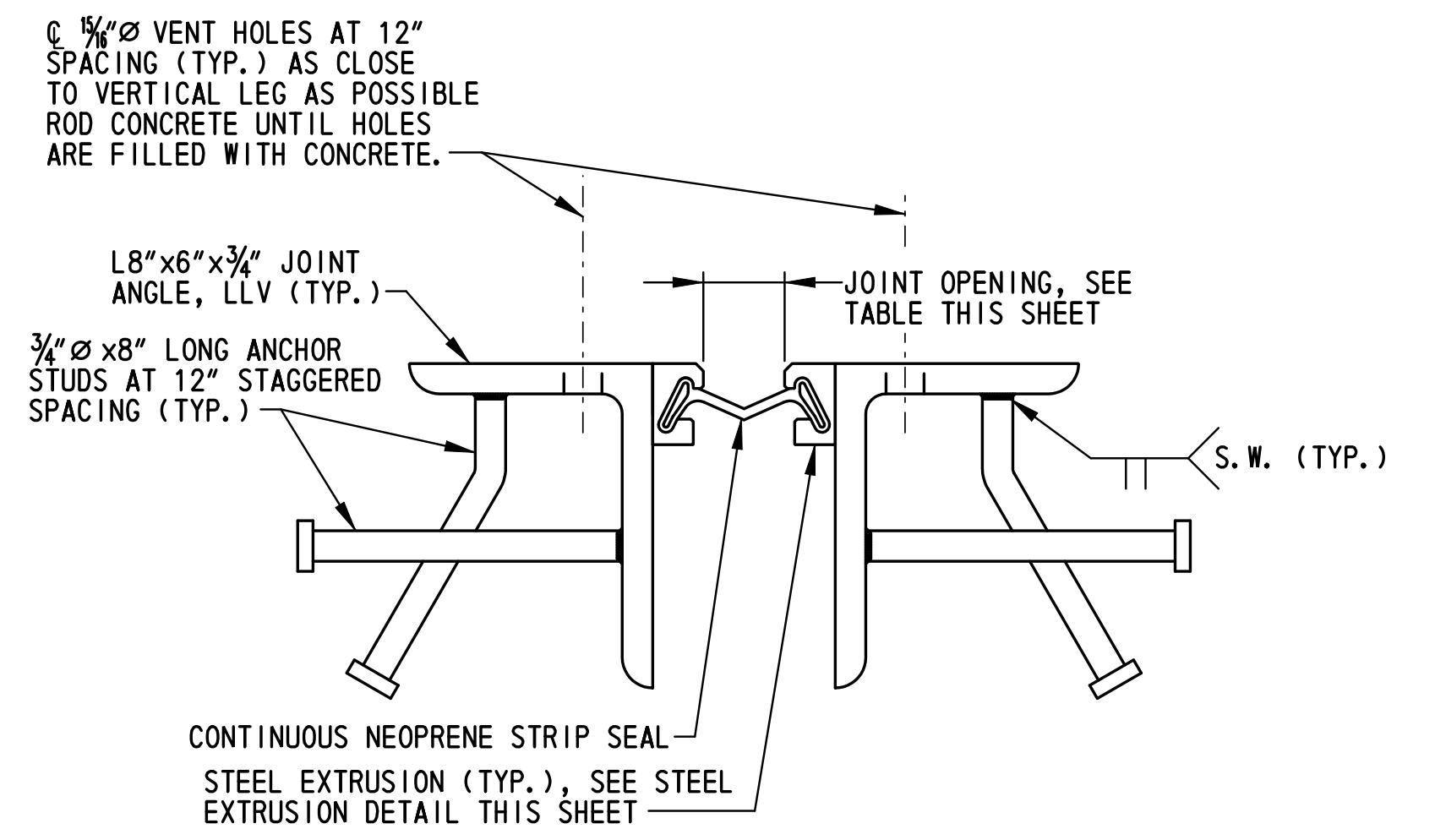
LOCATIONS OF FINISHED BRIDGE DECK ELEVATIONS  
SCALE: 1/4" = 1'-0"

- NOTES:
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF PROPOSED CONCRETE DECK SLAB.
  2. FOR VERTICAL CURVE DATA, SEE DWG. NO. PE-01.
  3. FOR FRAMING PLAN, SEE DWG. NO. FR-01.

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ARMORED STRIP SEAL JOINT PLAN  
SCALE: 3/4"=1'-0"

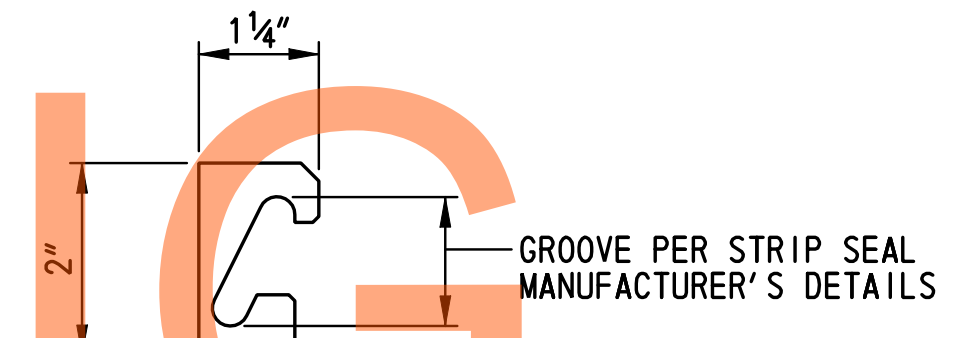


ARMORED STRIP SEAL JOINT ASSEMBLY DETAIL  
SCALE: 3"=1'-0"

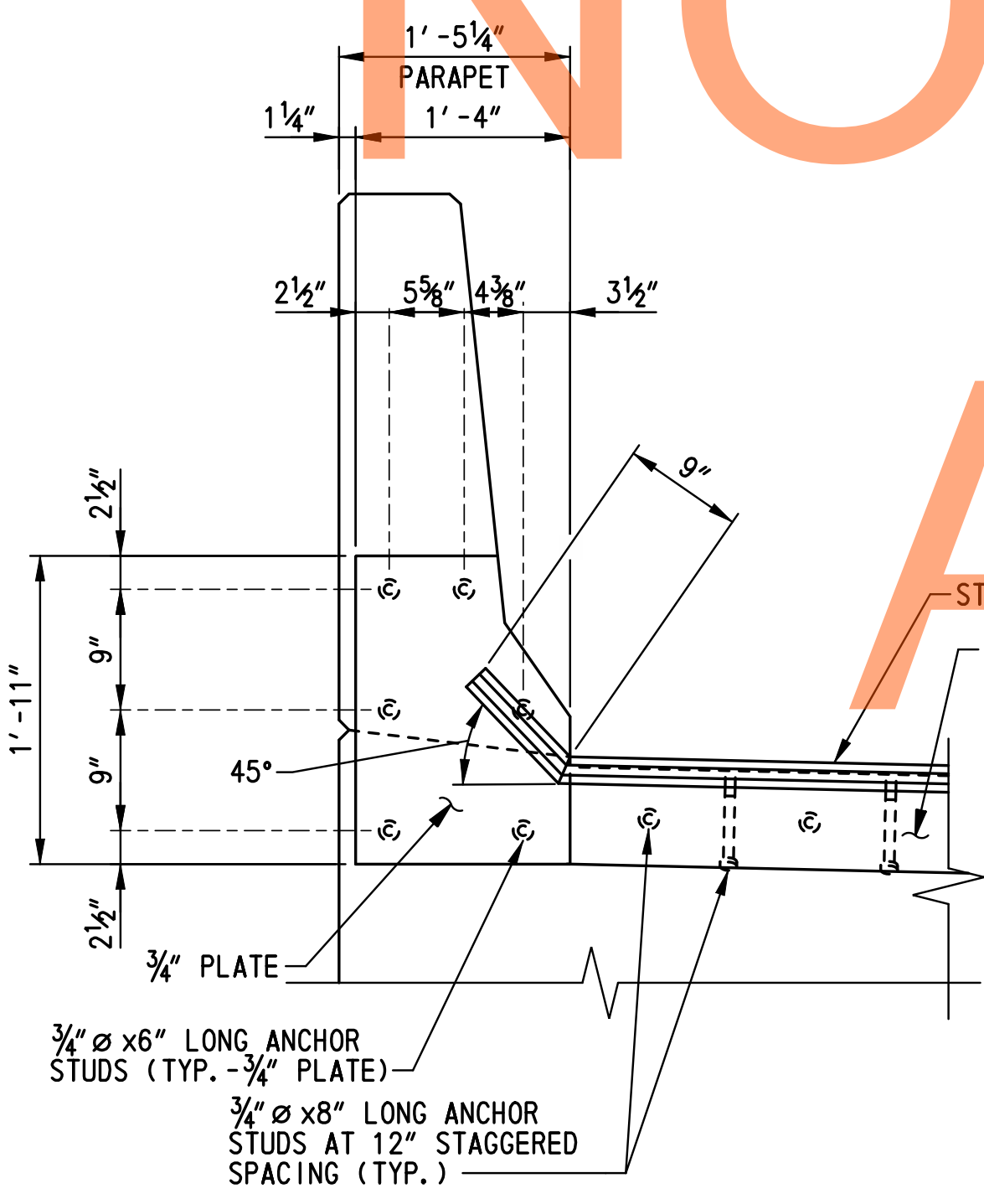
LOCATION	TEMPERATURE (°F)										
	0	10	20	30	40	50	60	70	80	90	100
APPROACH SLAB A	2 5/8"	2 1/2"	2 1/4"	2 3/8"	2 3/4"	2 1/8"	2"	1 7/8"	1 1/4"	1 1/8"	1 1/4"
APPROACH SLAB B	2 5/8"	2 1/2"	2 1/4"	2 3/8"	2 3/4"	2 1/8"	2"	1 7/8"	1 1/4"	1 1/8"	1 1/4"

NOTE: JOINT OPENINGS SHOWN ARE MEASURED NORMAL TO JOINT.

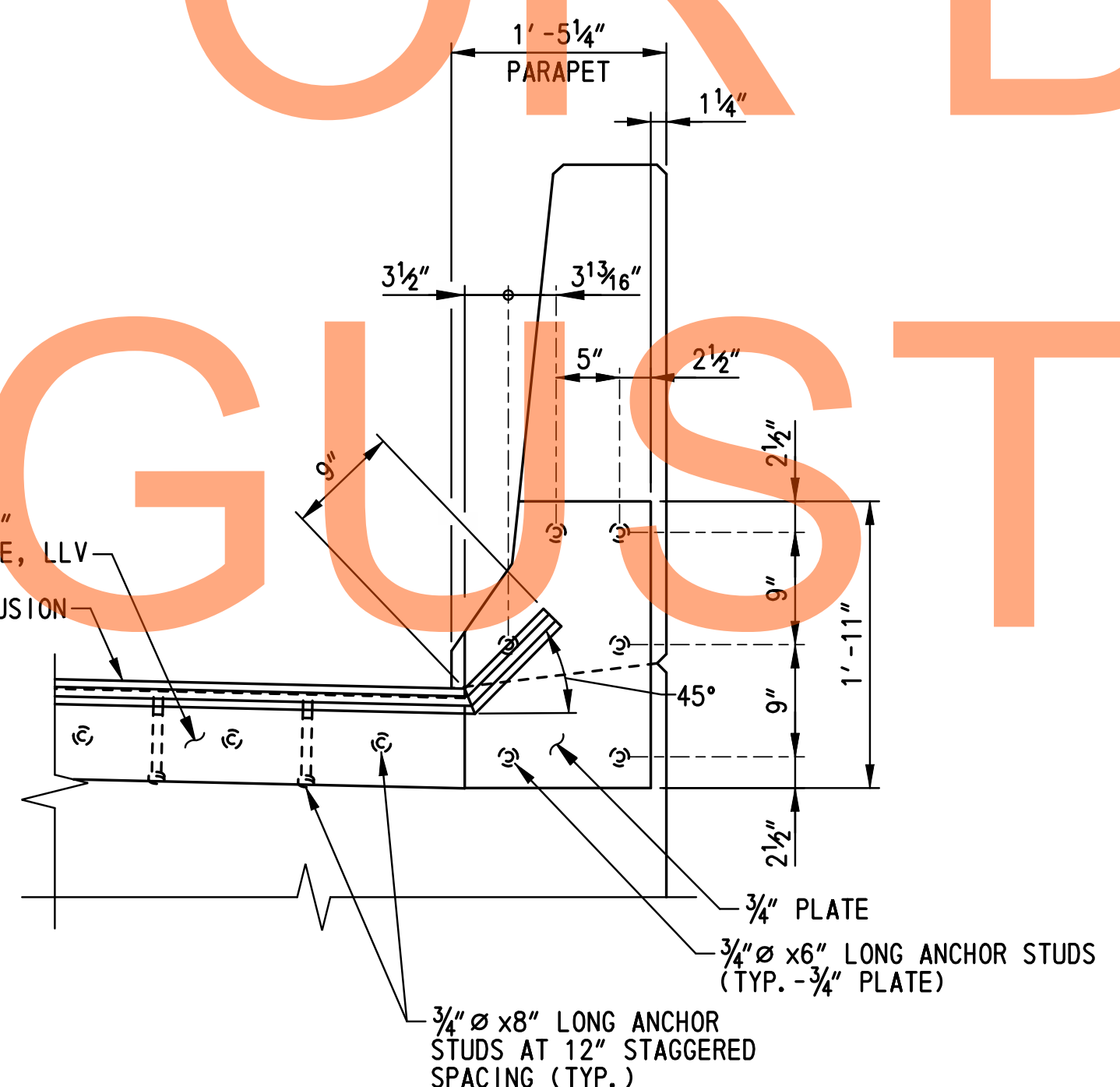
NOTES:  
APPROACH SLAB A AND SLEEPER SLAB A SHOWN;  
SEE DWG. NOS. AS-01 AND AS-03 FOR DIMENSIONS.  
APPROACH SLAB B AND SLEEPER SLAB B SIMILAR;  
SEE DWG. NOS. AS-02 AND AS-04 FOR DIMENSIONS.



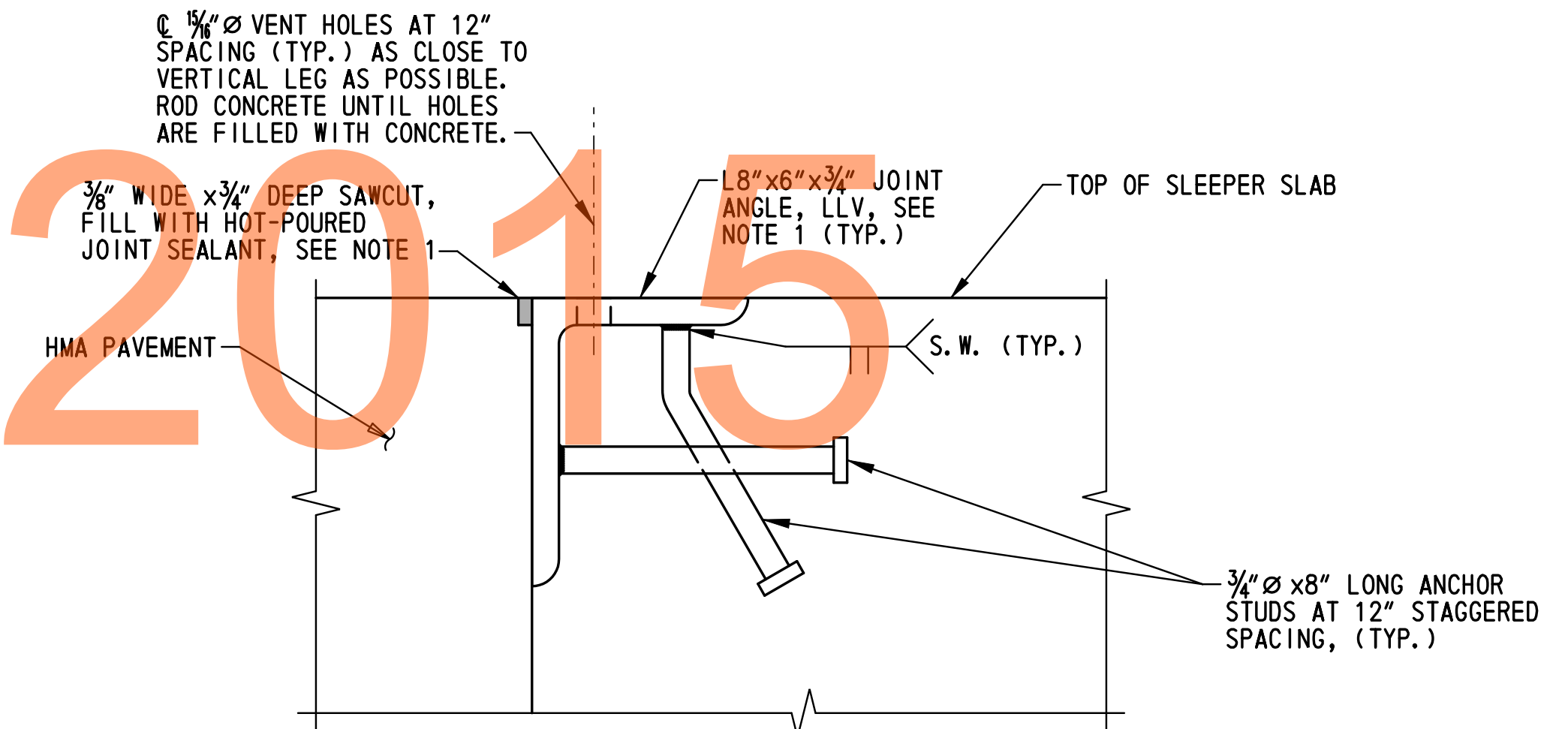
STEEL EXTRUSION DETAIL  
NOT TO SCALE



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



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

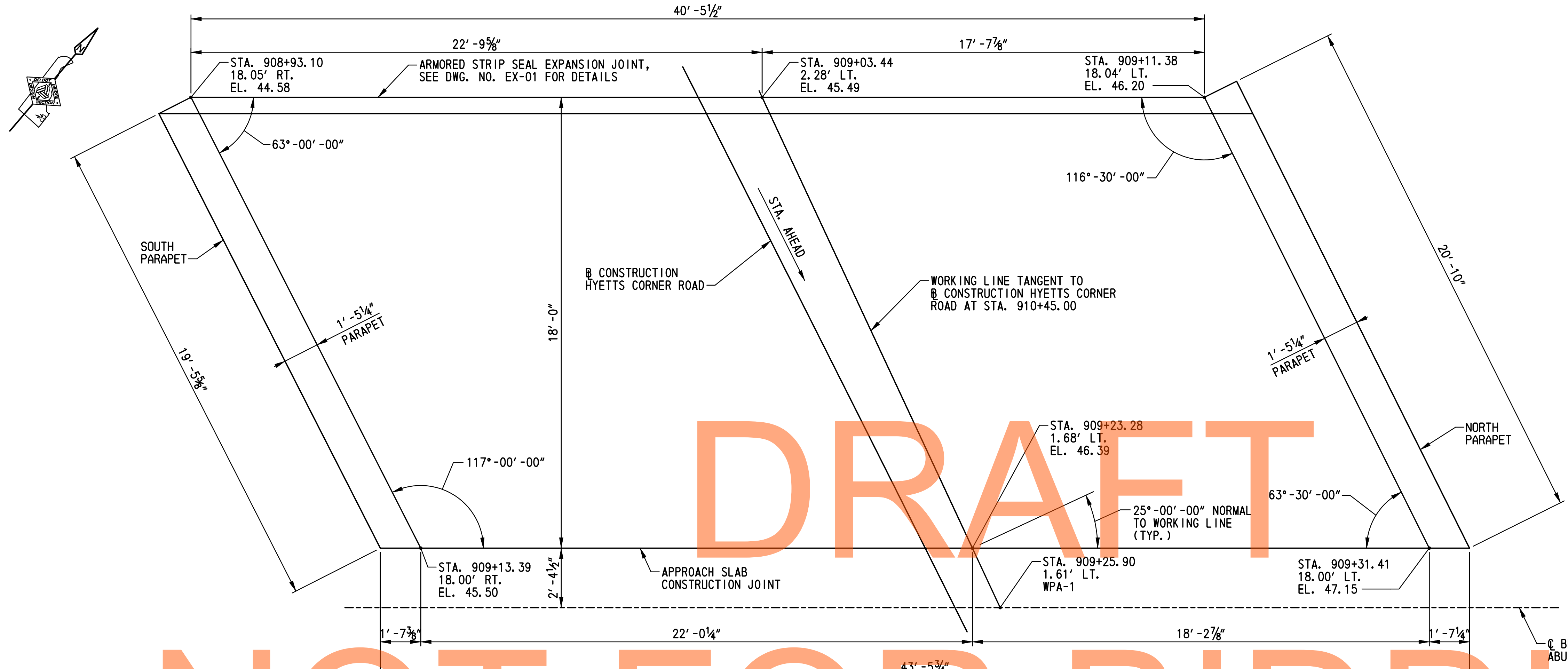


SECTION DD-DD  
SCALE: 3"=1'-0"

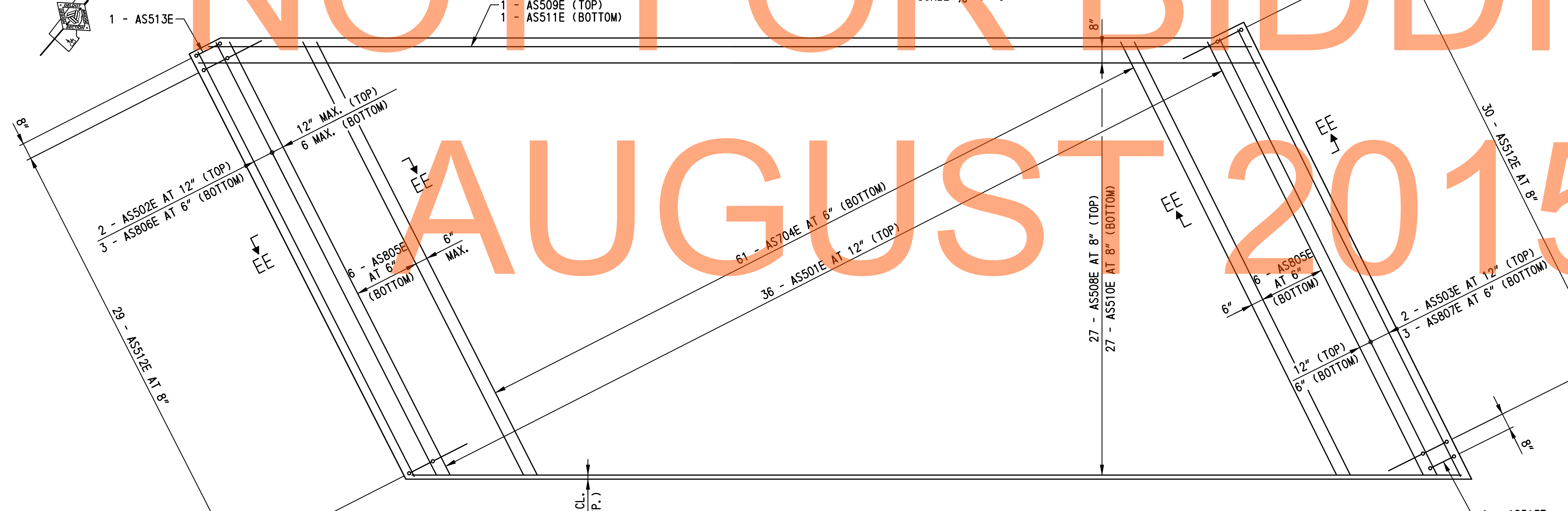
NOTES:  
1. PAYMENT FOR SAWING AND INSTALLATION OF HOT-POURED JOINT SEALANT AND JOINT ANGLES AT APPROACH PAVEMENT EDGE OF SLEEPER SLAB SHALL BE INCIDENTAL TO ITEM 602018 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.  
2. FOR APPROACH SLAB AND SLEEPER SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-06.

NOT FOR BIDDING  
AUGUST 2015

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APPROACH SLAB A PLAN  
SCALE: 3/8" = 1'-0"



APPROACH SLAB A REINFORCEMENT PLAN  
SCALE: 3/8" = 1'-0"

- NOTES:
- FOR APPROACH SLAB A TYPICAL SECTION AND SECTION EE-EE, SEE DWG. NO. AS-06.
  - FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-06.

DELAWARE  
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

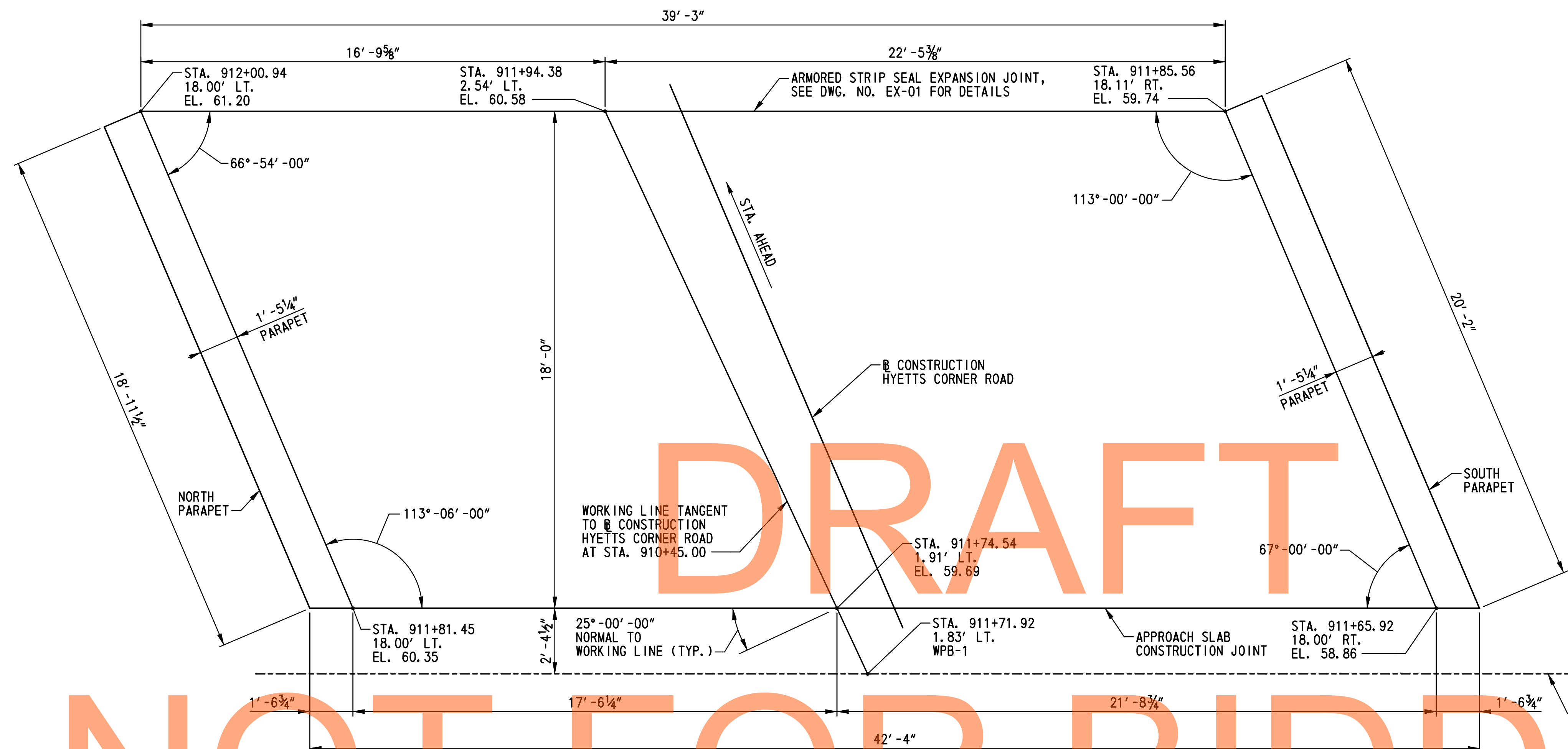
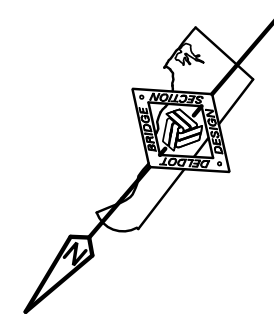
US 301,  
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-458
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

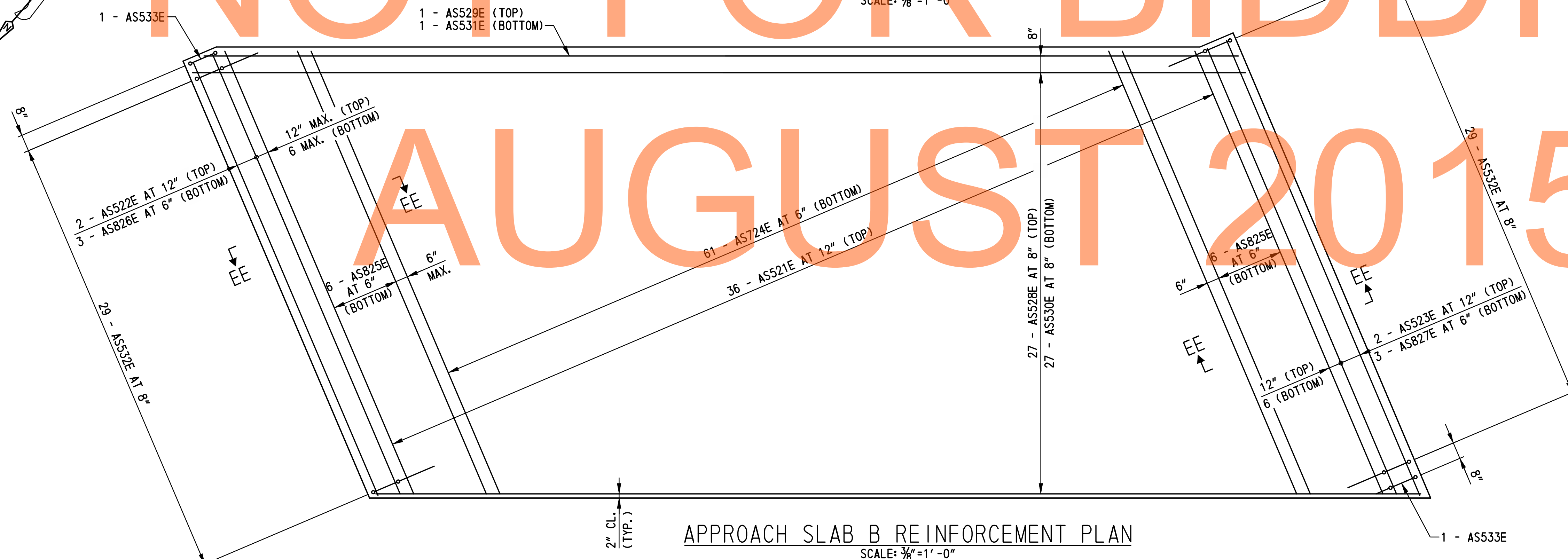
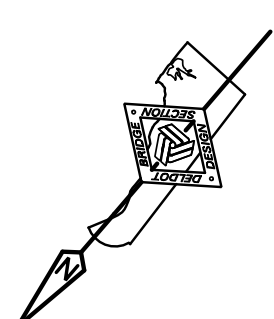
APPROACH SLAB A  
PLAN AND  
REINFORCEMENT PLAN

BRI-6 AS-01
SHEET NO.
365
TOTAL SHTS.
875

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NOT FOR BIDDING



- NOTES:**
1. FOR APPROACH SLAB B TYPICAL SECTION AND SECTION EE-EE, SEE DWG. NO. AS-06.
  2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-06.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

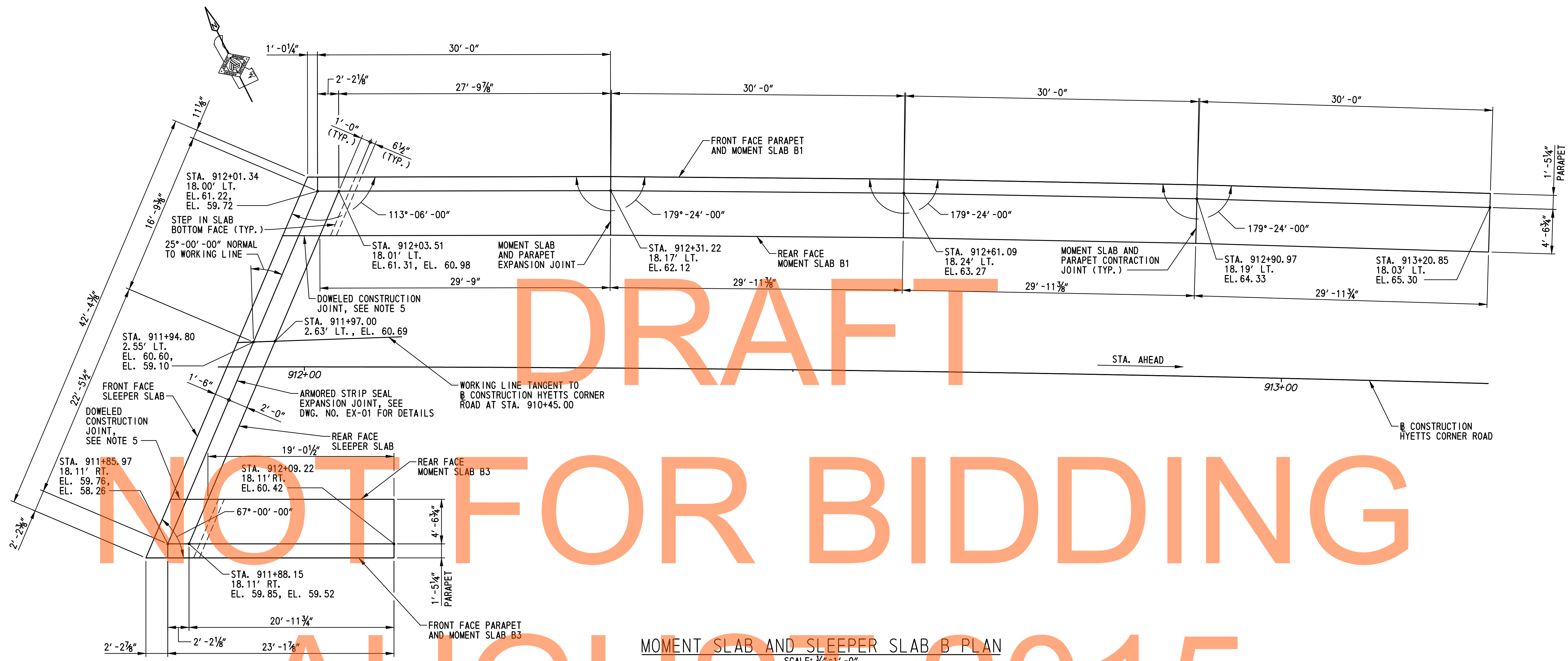
**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**APPROACH SLAB B  
PLAN AND  
REINFORCEMENT PLAN**

<b>BR1-6 AS-02</b>
SHEET NO.
366
TOTAL SHTS.
875





DRAFT

NOT FOR BIDDING

AUGUST 2015

MOMENT SLAB AND SLEEPER SLAB B PLAN  
SCALE: 1/4" = 1' - 0"

**NOTES:**

1. PAYMENT FOR CONSTRUCTION OF MOMENT SLABS AND SLEEPER SLABS WILL BE MADE UNDER ITEM 602018- PORTLAND CEMENT CONCRETE MASONRY CLASS D. PAYMENT FOR PREFORMED JOINT FILLER, DOWEL BARS AND METAL EXPANSION SLEEVES SHALL BE INCIDENTAL TO THIS ITEM.
2. FOR MOMENT SLAB B3 TYPICAL SECTION, SEE DWG. NO. AS-07. FOR MOMENT SLAB B1 TYPICAL SECTION, SEE DWG. NO. AS-08.
3. FOR REINFORCEMENT PLAN, SEE DWG. NO. AS-05.
4. FOR REINFORCEMENT DETAILS, SEE DWG. NOS. AS-06, AS-07, AND AS-08.
5. DOWEL BARS SHALL CONFORM TO SECTION 824.02 (G). SEE SECTION FF-FF ON DWG. NO. AS-06 FOR PLACEMENT.
6. FOR SLEEPER SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-06.

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ADDENDUMS / REVISIONS

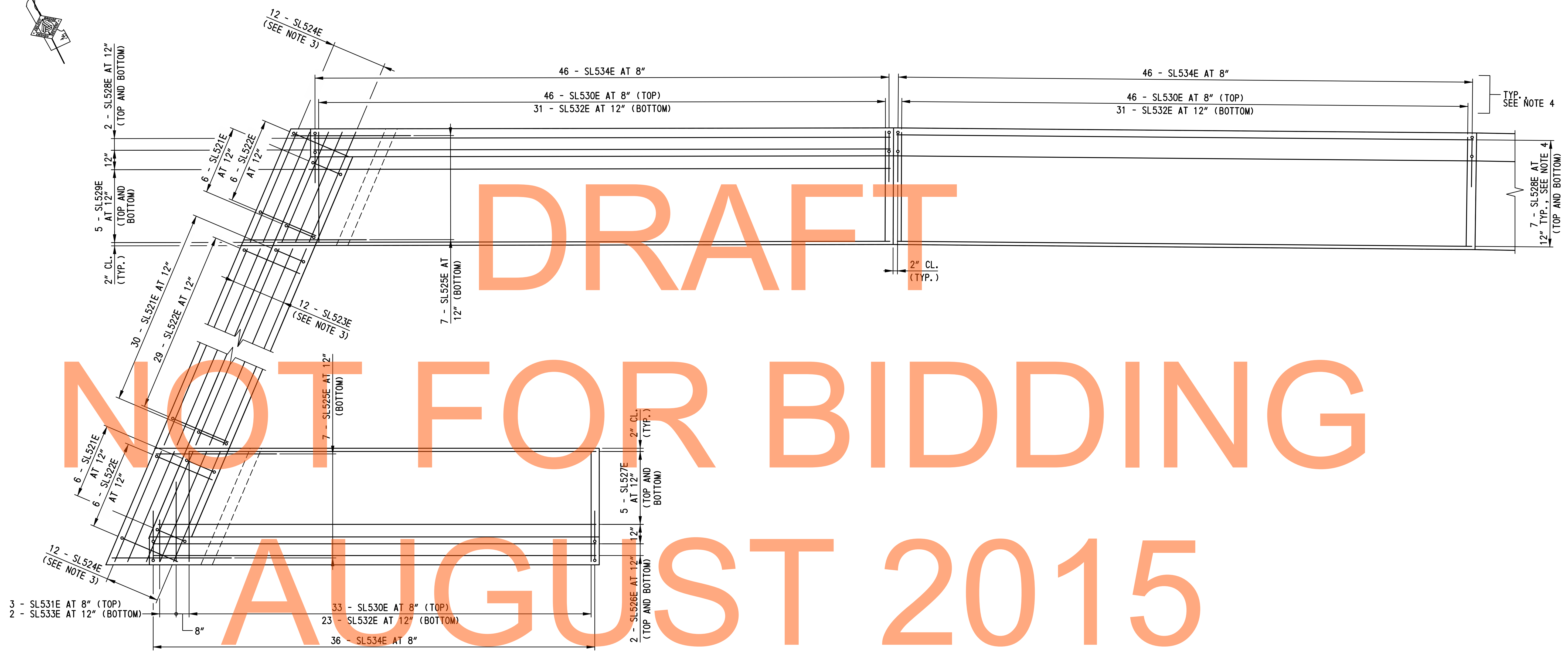
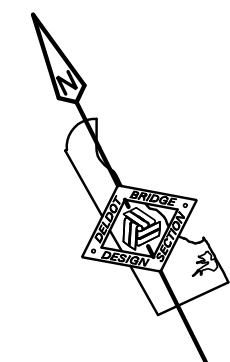
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**MOMENT AND  
SLEEPER SLAB B  
PLAN**

<b>BR1-6 AS-04</b>
SHEET NO. 368
TOTAL SHTS. 875



MOMENT SLAB AND SLEEPER SLAB B REINFORCEMENT PLAN  
SCALE: 3/8" = 1' - 0"

- NOTES:**
1. FOR MOMENT SLAB B PLAN, SEE DWG. NO. AS-04.
  2. FOR SLEEPER SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-06.
  3. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AS-06, AS-07, AND AS-08.
  4. REINFORCEMENT IN 30'-0" LONG SLAB SEGMENTS IS TYPICAL. ONLY ONE SEGMENT SHOWN ON THIS SHEET.

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ADDENDUMS / REVISIONS	

SCALE: AS NOTED

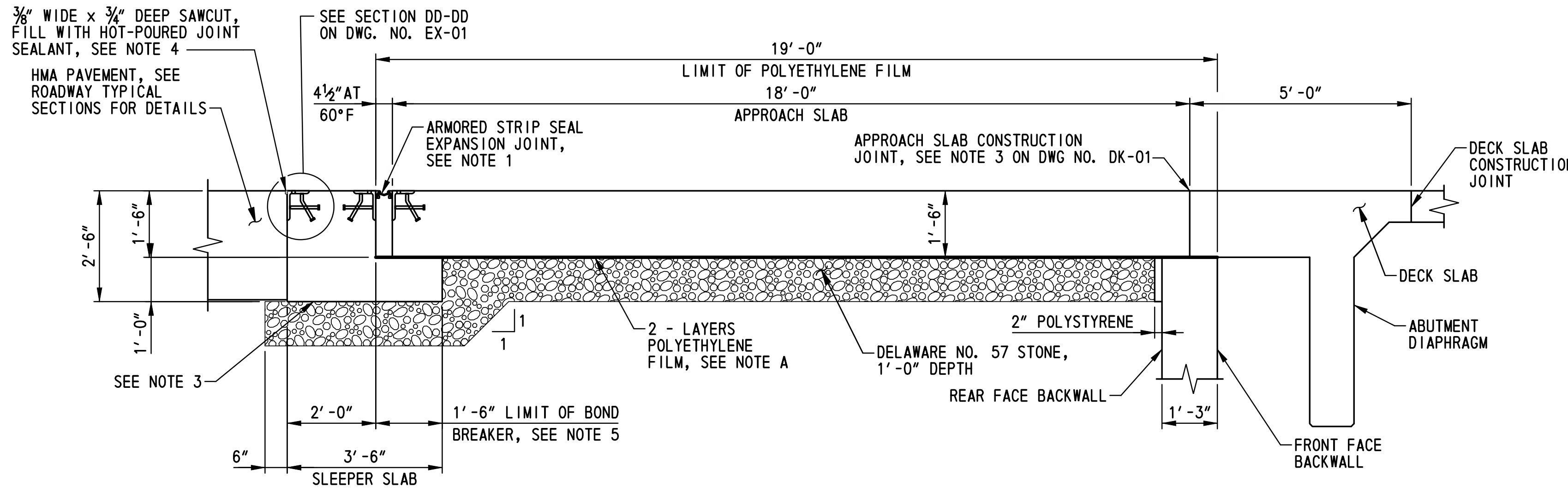
**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

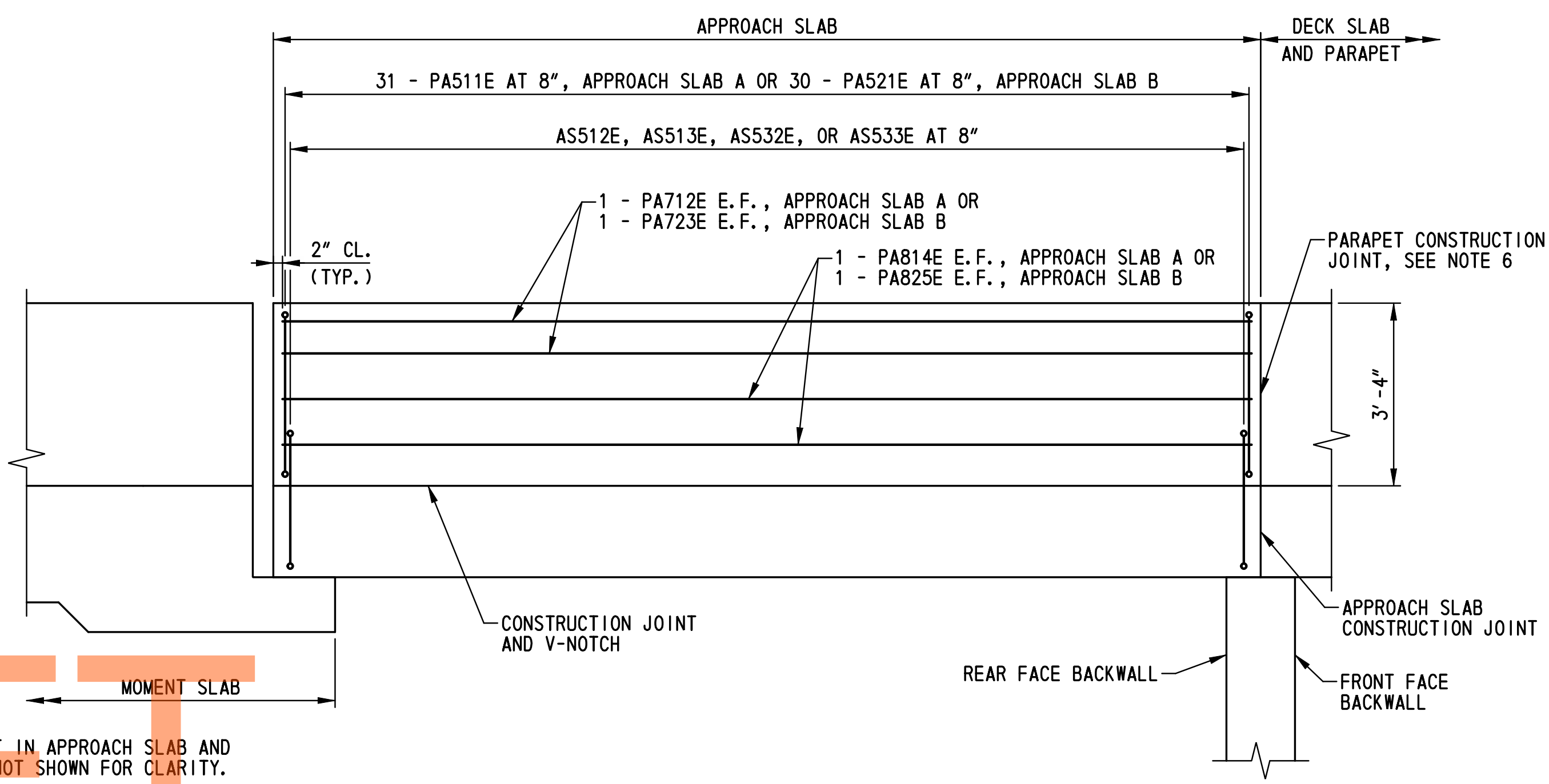
**MOMENT AND  
SLEEPER SLAB B  
REINFORCEMENT PLAN**

<b>BR1-6 AS-05</b>
SHEET NO.
369
TOTAL SHTS.
875

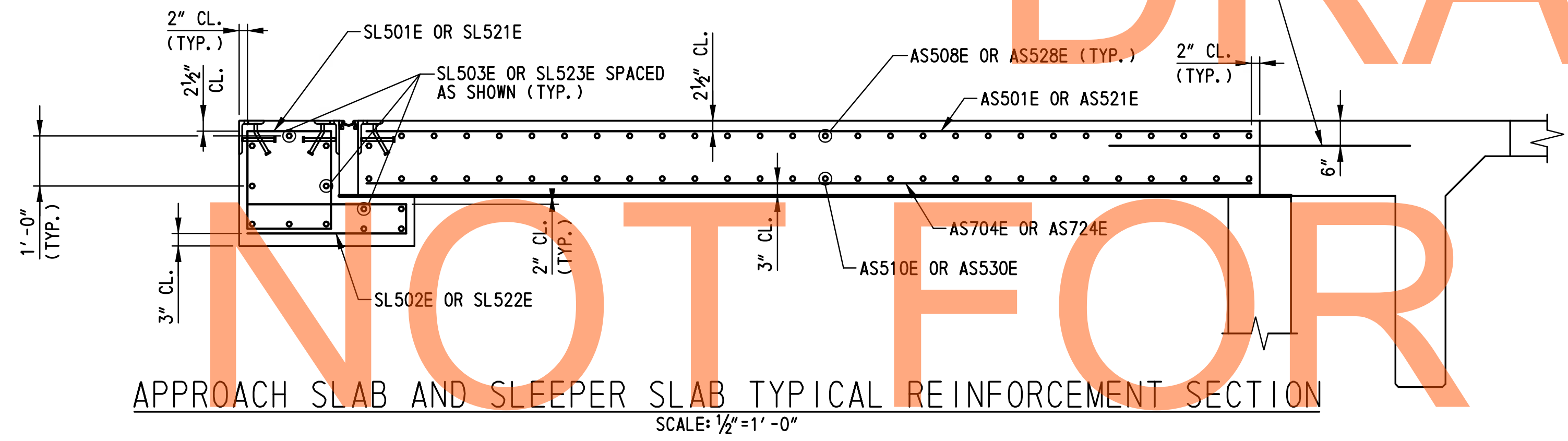




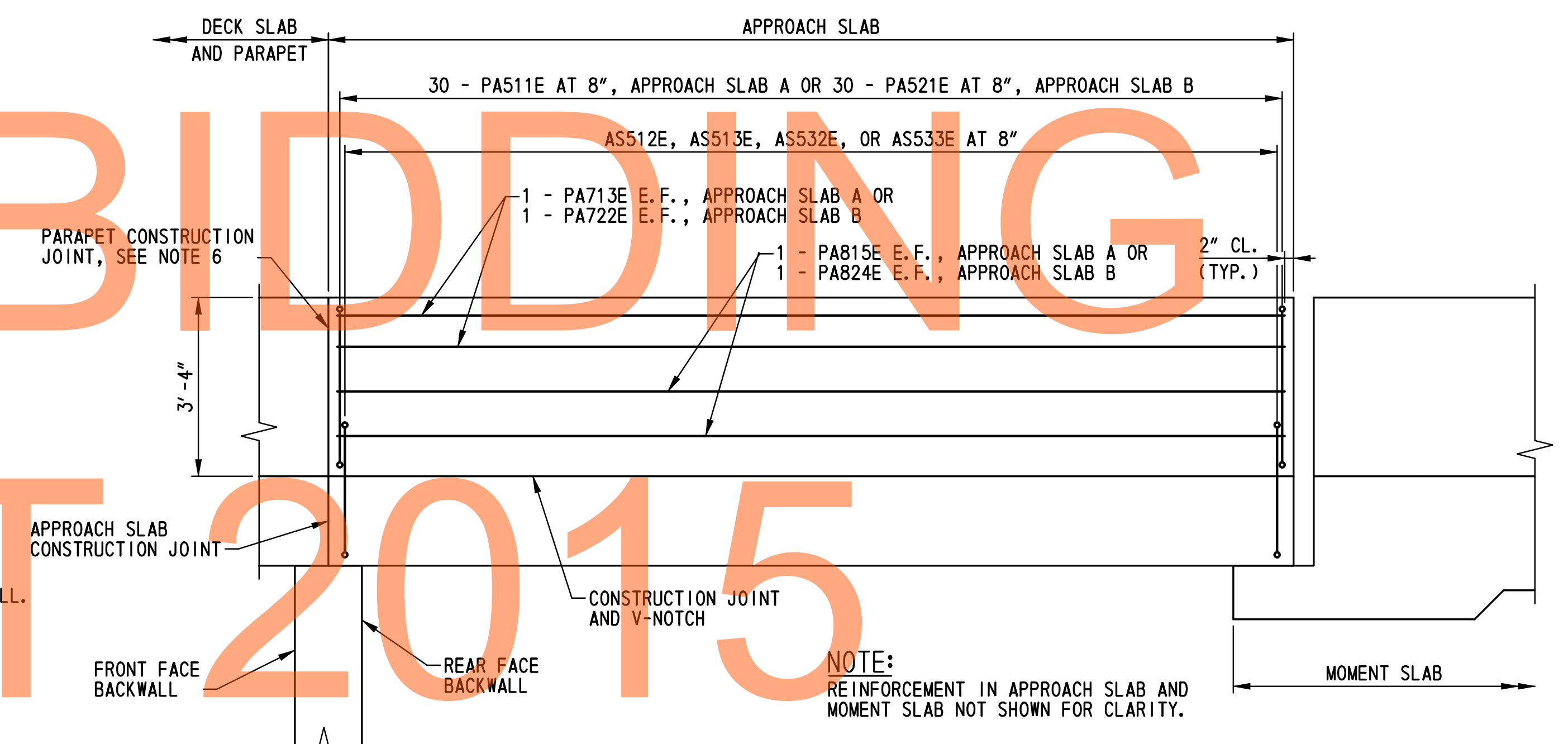
APPROACH SLAB AND SLEEPER SLAB TYPICAL SECTION  
SCALE: 1/2" = 1'-0"



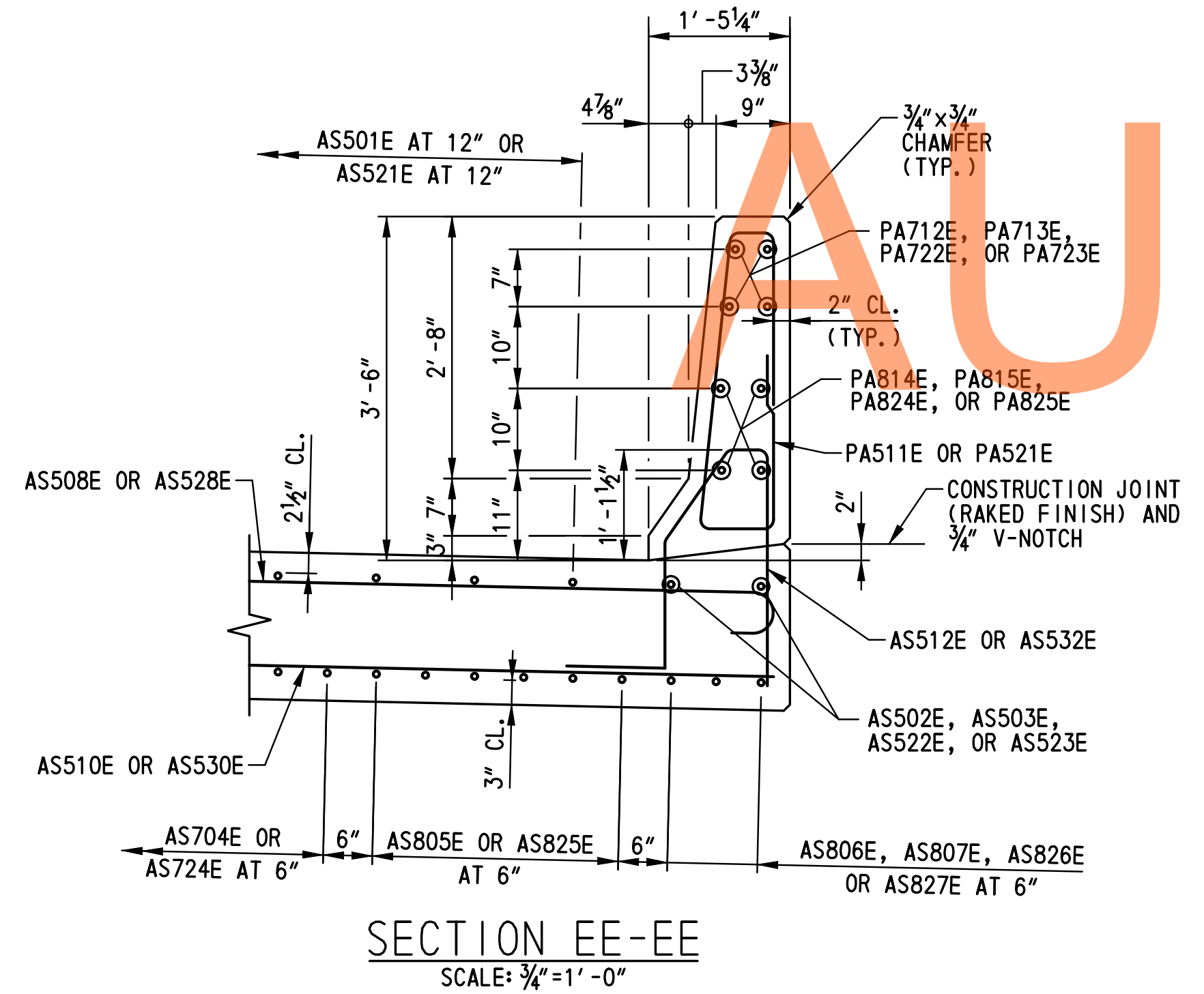
APPROACH SLAB A NORTH PARAPET AND  
APPROACH SLAB B SOUTH PARAPET REINFORCEMENT ELEVATION  
SCALE: 1/2" = 1'-0"



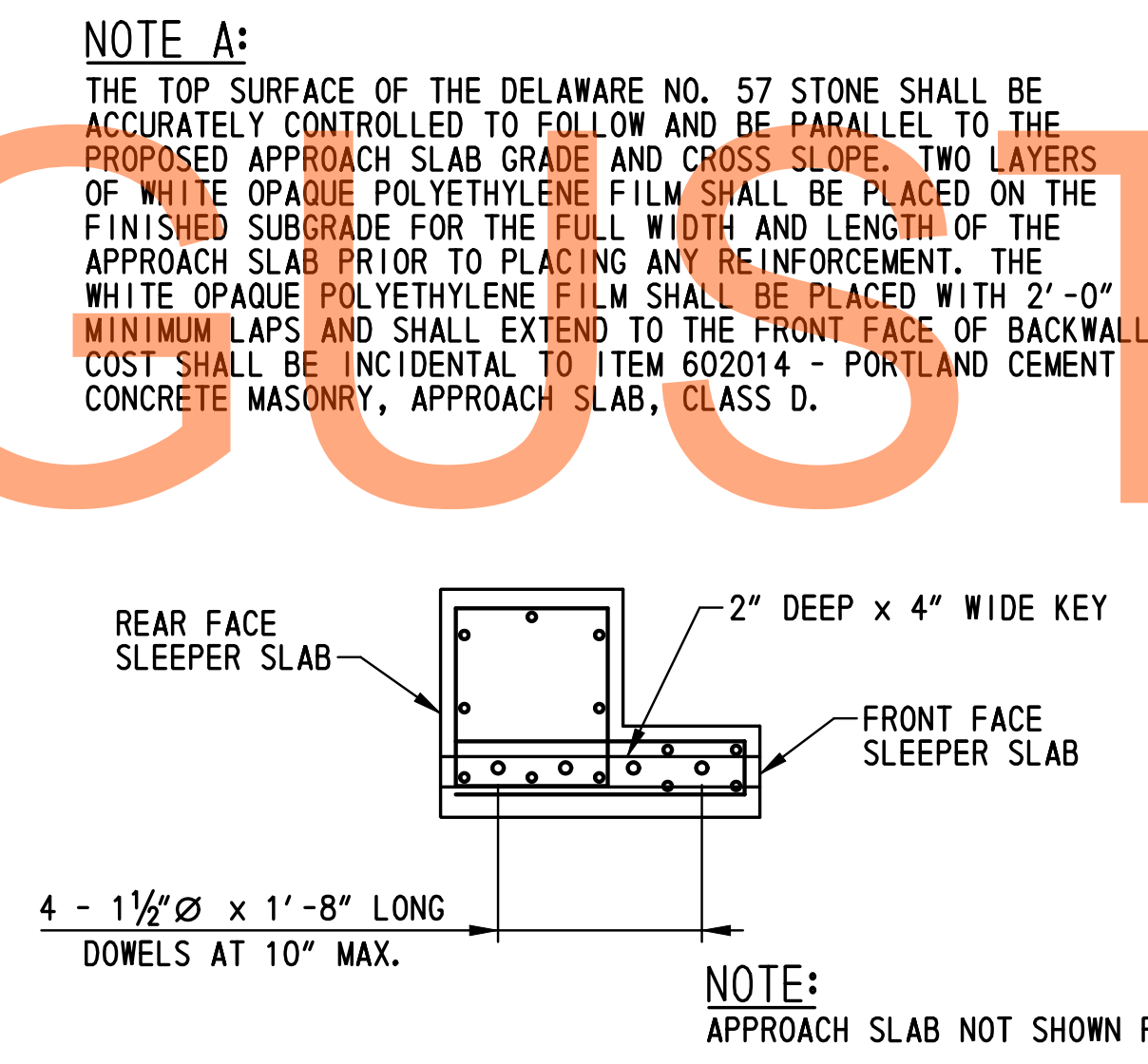
APPROACH SLAB AND SLEEPER SLAB TYPICAL REINFORCEMENT SECTION  
SCALE: 1/2" = 1'-0"



APPROACH SLAB A SOUTH PARAPET AND  
APPROACH SLAB B NORTH PARAPET REINFORCEMENT ELEVATION  
SCALE: 1/2" = 1'-0"



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



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

**NOTE A:**  
THE TOP SURFACE OF THE DELAWARE NO. 57 STONE SHALL BE ACCURATELY CONTROLLED TO FOLLOW AND BE PARALLEL TO THE PROPOSED APPROACH SLAB GRADE AND CROSS SLOPE. TWO LAYERS OF WHITE OPAQUE POLYETHYLENE FILM SHALL BE PLACED ON THE FINISHED SUBGRADE FOR THE FULL WIDTH AND LENGTH OF THE APPROACH SLAB PRIOR TO PLACING ANY REINFORCEMENT. THE WHITE OPAQUE POLYETHYLENE FILM SHALL BE PLACED WITH 2'-0" MINIMUM LAPS AND SHALL EXTEND TO THE FRONT FACE OF BACKWALL. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.

**NOTE:**  
REINFORCEMENT IN APPROACH SLAB AND MOMENT SLAB NOT SHOWN FOR CLARITY.

**NOTE:**  
REINFORCEMENT IN APPROACH SLAB AND MOMENT SLAB NOT SHOWN FOR CLARITY.

- NOTES:**
- FOR ARMORED STRIP SEAL EXPANSION JOINT DETAILS, SEE DWG. NO. EX-01.
  - FOR ADDITIONAL APPROACH SLAB REINFORCEMENT DETAILS, SEE DWG. NOS. AS-01 AND AS-02.
  - SLEEPER SLAB SHALL BE CAREFULLY POURED AFTER COMPACTION OF THE MSE WALL BACKFILL MATERIAL IN CONFORMANCE WITH ITEM 602772 - MECHANICALLY STABILIZED EARTH WALLS.
  - PAYMENT FOR SAWING AND INSTALLATION OF HOT-POURED JOINT SEALANT, AND JOINT ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF SLEEPER SLAB WILL BE INCIDENTAL TO ITEM 602018 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.
  - STEEL TROWEL FINISH SLEEPER SLAB AND APPLY 30 MIL. NOMINAL THICKNESS OF ASPHALT BOND BREAKER. COST SHALL BE INCIDENTAL TO ITEM 602018 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.
  - AN APPROVED BOND BREAKER SHALL BE APPLIED TO THE SURFACES OF THE PARAPET CONSTRUCTION JOINT. COST SHALL BE INCIDENTAL TO ITEM 602017 - PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A.
  - FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. FOR PARAPET CONTROL JOINT DETAILS, SEE DWG. NO. DK-01.

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ADDENDUMS / REVISIONS	

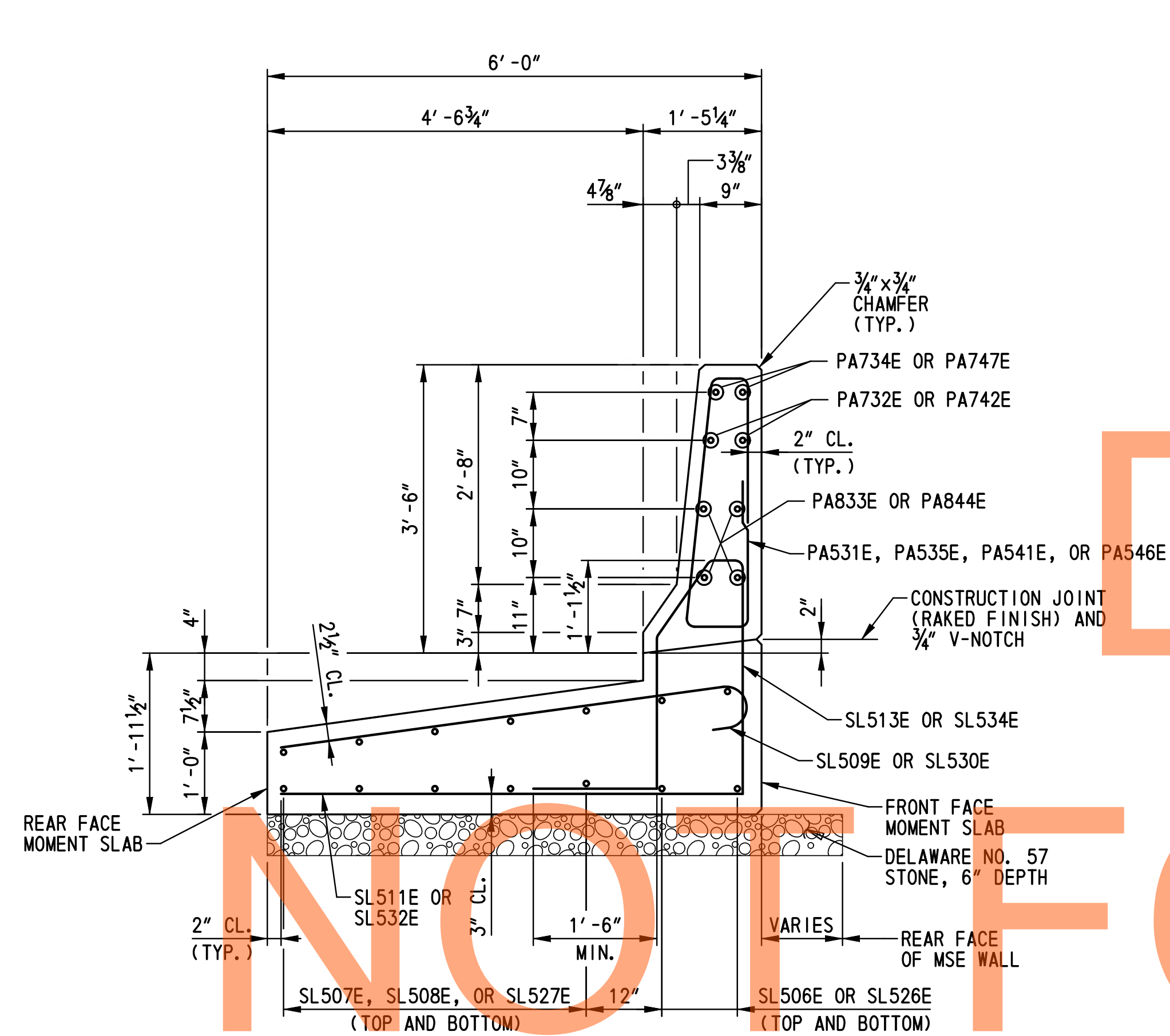
SCALE: AS NOTED

**US 301,  
SR 896 TO SR 1**

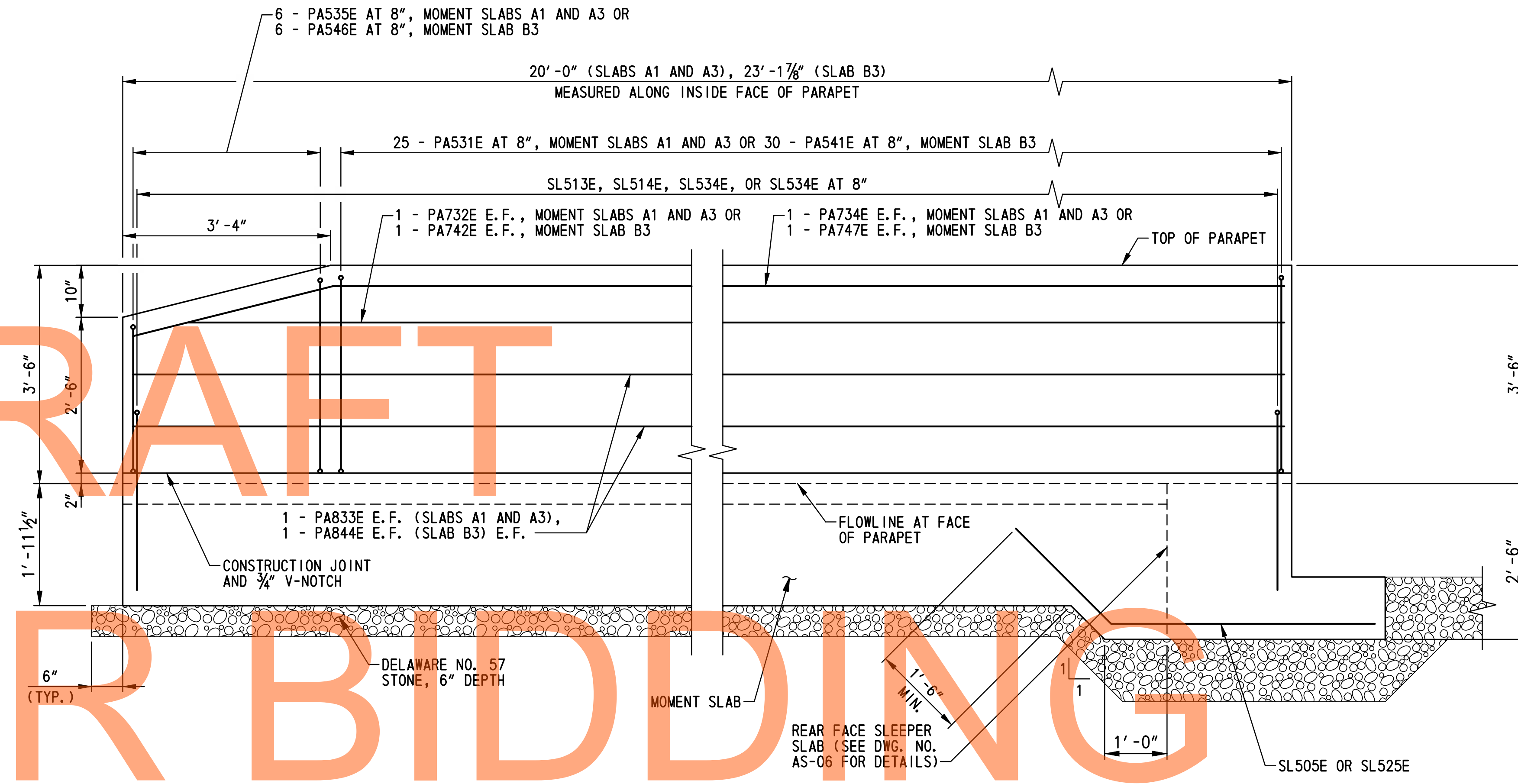
CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**APPROACH SLAB  
AND SLEEPER SLAB  
DETAILS**

<b>BR1-6 AS-06</b>
SHEET NO.
370
TOTAL SHTS.
875



MOMENT SLABS A1, A3, AND B3 TYPICAL SECTION  
SCALE: 3/4"=1'-0"



MOMENT SLABS A1, A3, AND B3 PARAPET REINFORCEMENT ELEVATION  
SCALE: 3/4"=1'-0"

DRAFT  
NOT FOR BIDDING  
AUGUST 2015

**NOTES:**

1. FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. FOR PARAPET CONTROL JOINT DETAILS, SEE DWG. NO. DK-04.
2. ADDITIONAL REINFORCEMENT IN MOMENT SLAB AND SLEEPER SLAB NOT SHOWN FOR CLARITY. SEE DWG. NOS. AS-05 AND AS-06 FOR DETAILS.

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ADDENDUMS / REVISIONS

SCALE: AS NOTED

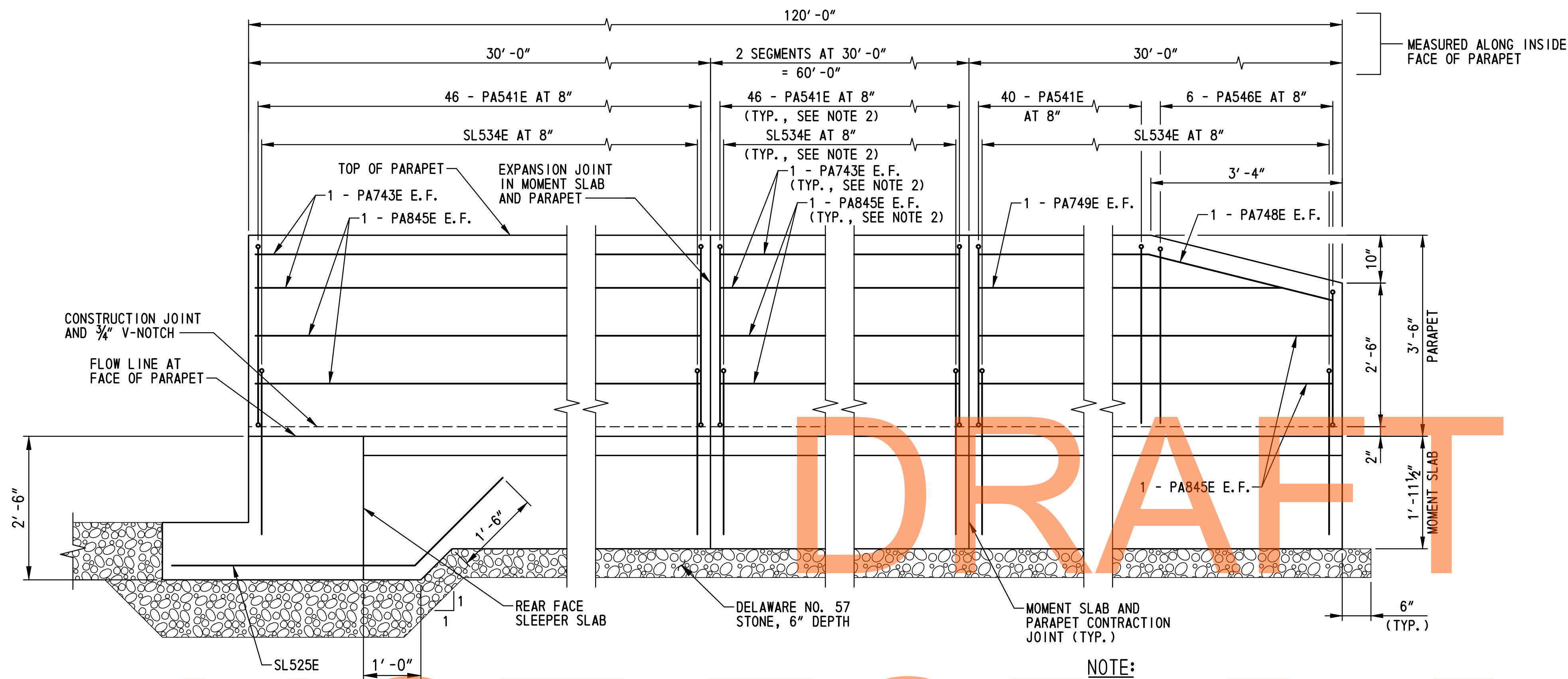
**US 301,  
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	<b>1-458</b>
T200911308	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

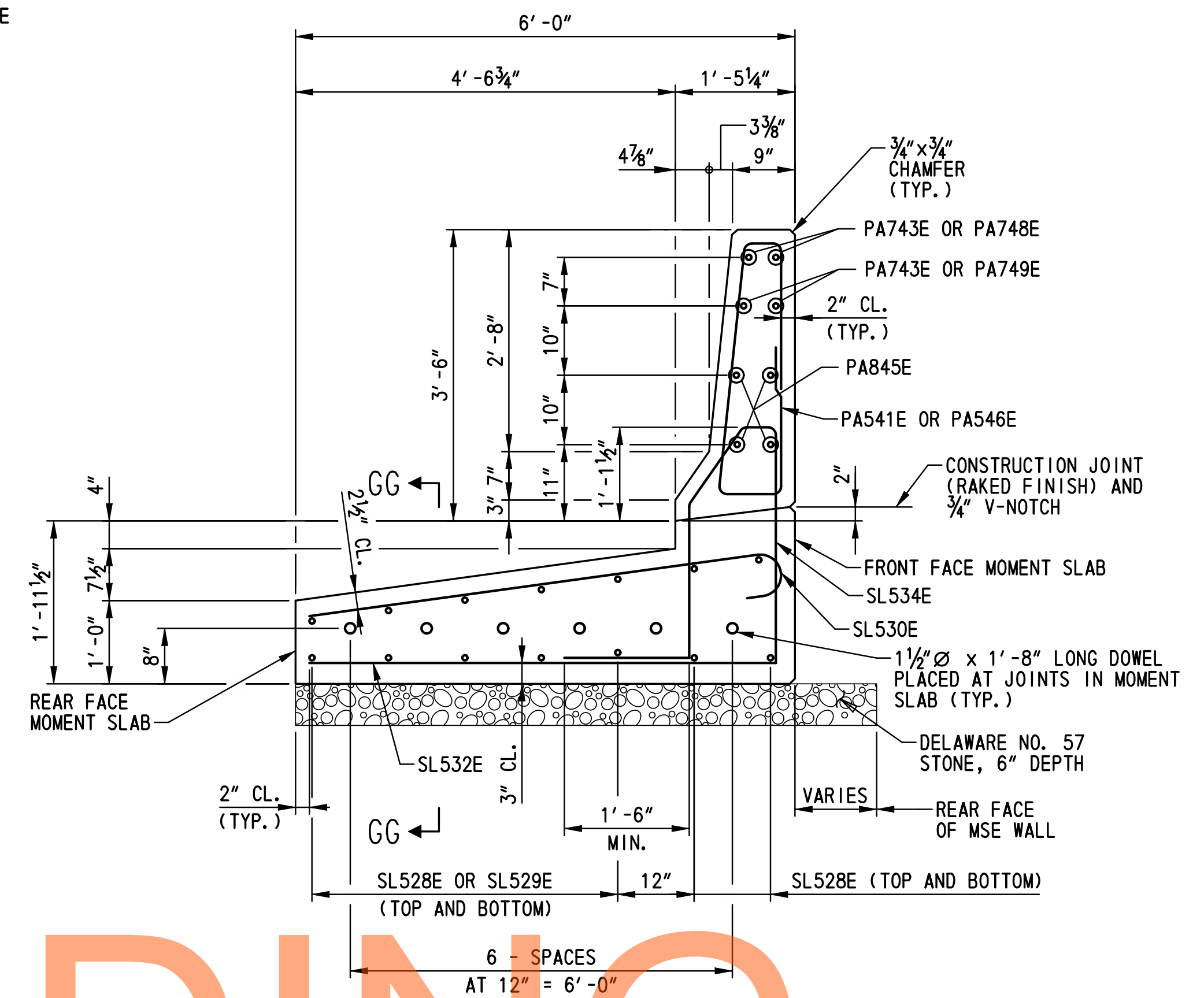
**MOMENT SLAB  
DETAILS - 1**

**BR1-6  
AS-07**

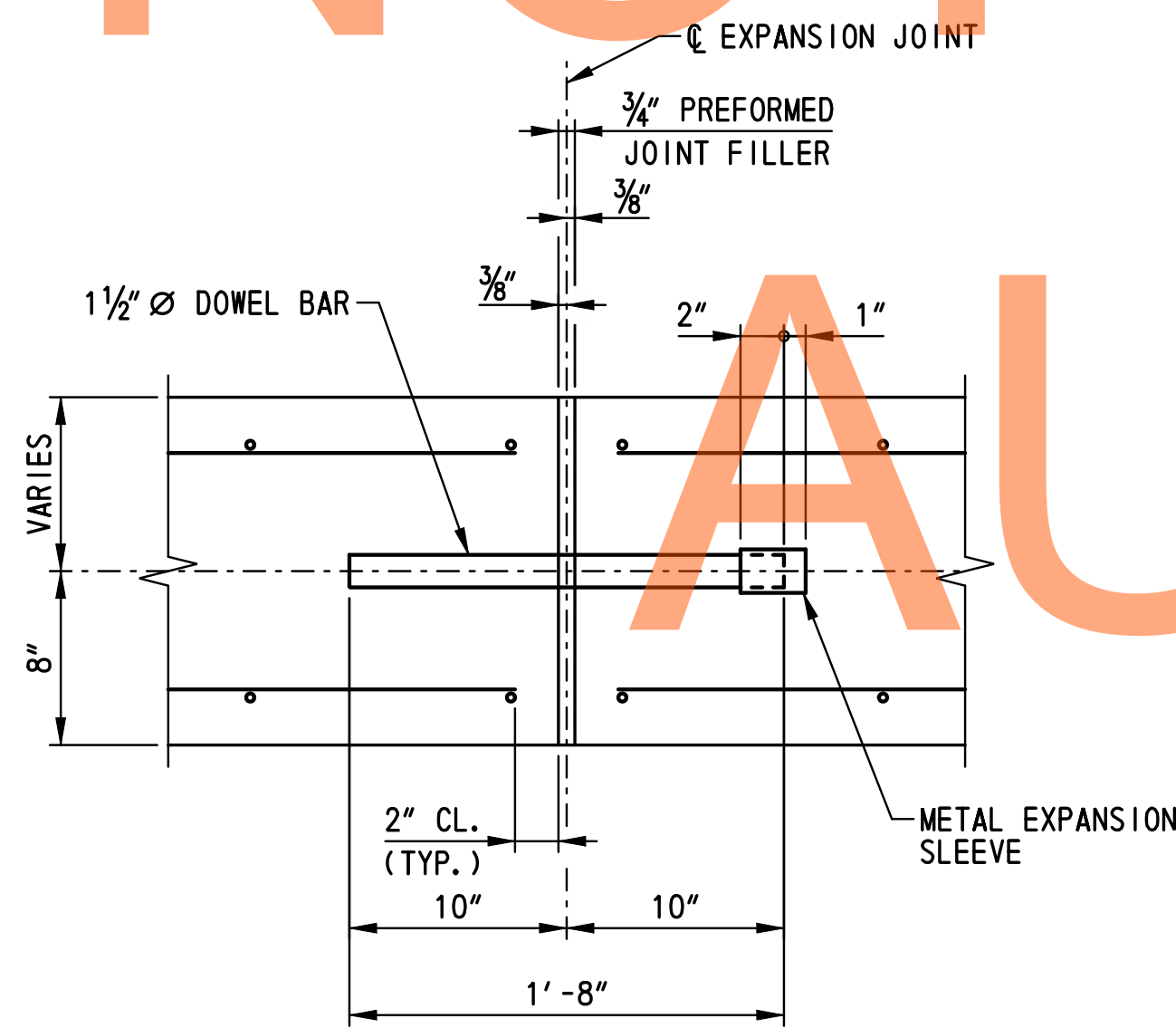
SHEET NO.	371
TOTAL SHTS.	875



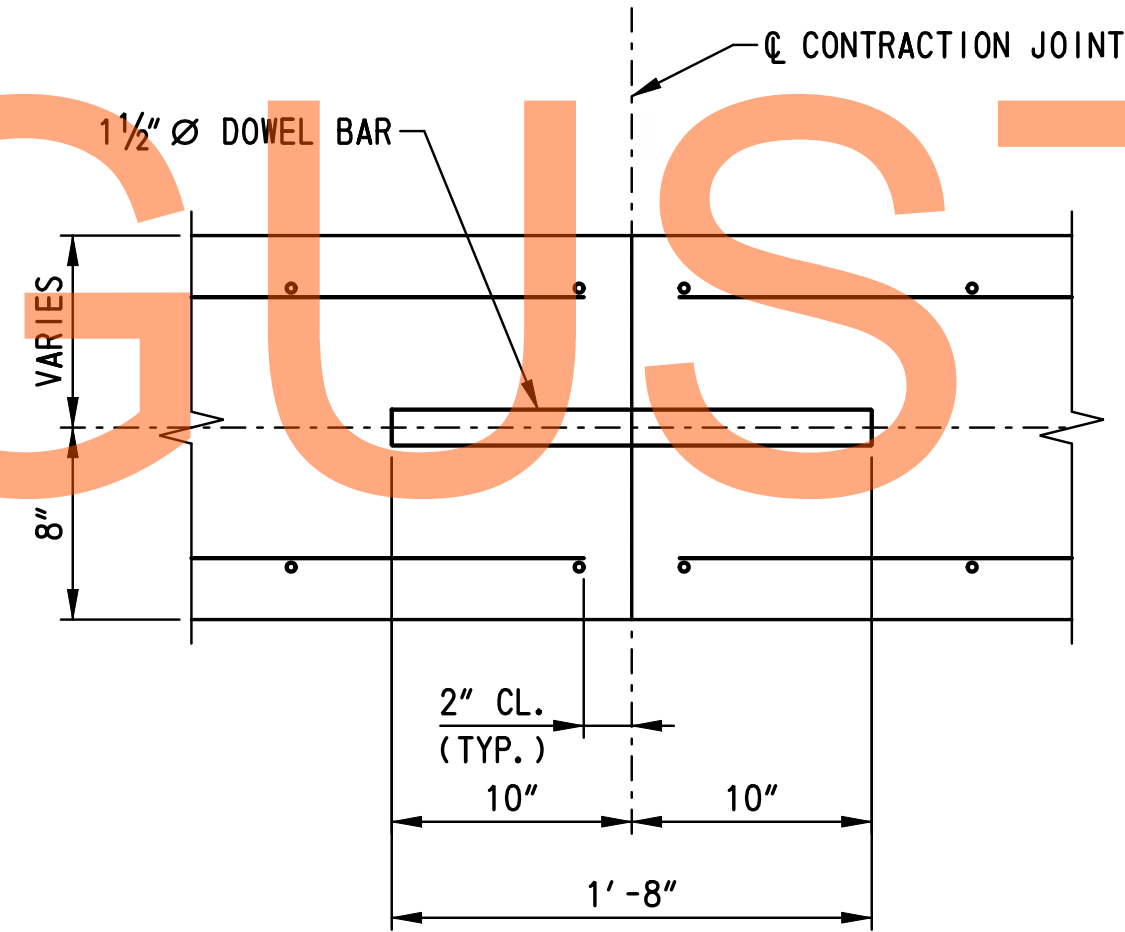
MOMENT SLAB B1 PARAPET REINFORCEMENT ELEVATION  
SCALE: 3/4"=1'-0"



MOMENT SLAB B1 TYPICAL SECTION  
SCALE: 3/4"=1'-0"



SECTION GG-GG (EXPANSION)  
SCALE: 1 1/2"=1'-0"



SECTION GG-GG (CONTRACTION)  
SCALE: 1 1/2"=1'-0"

**NOTES:**

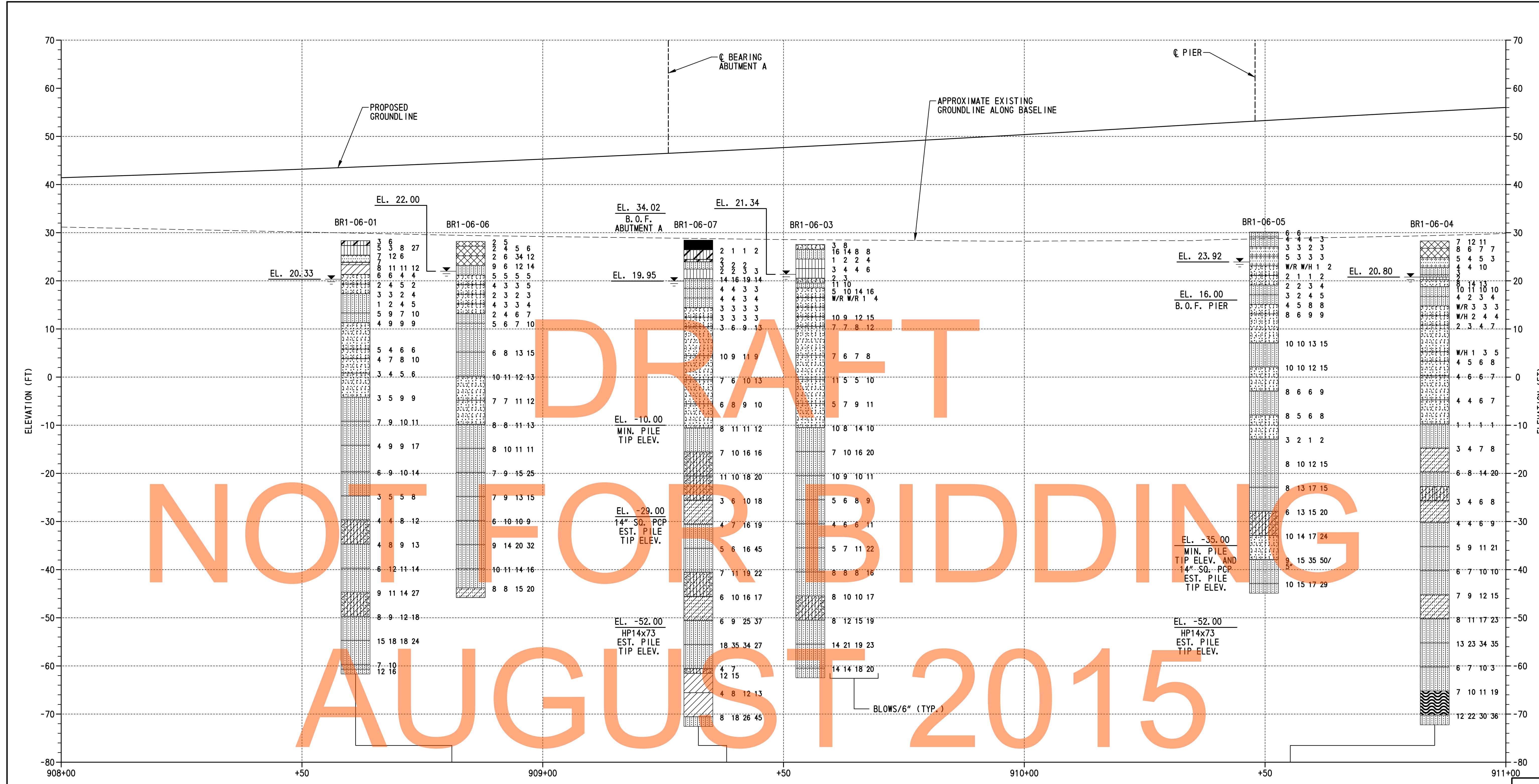
- ADDITIONAL REINFORCEMENT IN MOMENT SLAB AND SLEEPER SLAB NOT SHOWN FOR CLARITY. SEE DWG. NOS. AS-05 AND AS-06 FOR DETAILS.
- REINFORCEMENT IN MIDDLE 30'-0" LONG PARAPET SEGMENTS IS TYPICAL. ONLY ONE SEGMENT HAS BEEN SHOWN ON THIS SHEET.
- FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. FOR PARAPET CONTROL JOINT DETAILS, SEE DWG. NO. DK-04.
- DOWEL BARS SHALL CONFORM TO 824.02(G).
- DOWELS SHALL BE ASSEMBLED IN A RIGID FRAMEWORK, SEE STANDARD P-1 FOR DETAILS. THE EXPANSION JOINT FRAMEWORK SHALL PROVIDE ADEQUATE SUPPORT TO MAINTAIN THE PREFORMED JOINT FILLER IN PROPER HORIZONTAL AND VERTICAL ALIGNMENT.
- ANCHOR PINS SHALL BE USED TO SECURE THE FRAMEWORK ALONG THE SUBGRADE.
- THE FREE MOVING OR UNANCHORED END OF ALL DOWEL BARS IN BOTH CONTRACTION AND EXPANSION JOINTS SHALL BE COATED AFTER INSTALLATION OF THE DEVICE UPON THE SUBGRADE AND IMMEDIATELY PRIOR TO THE POURING OF THE CONCRETE WITH GRAPHITE GREASE APPLIED WITH A GLOVED HAND. THIS SAME END OF ALL EXPANSION JOINT DOWELS SHALL BE CAPPED WITH A SNUG FITTING, CLOSED END METAL EXPANSION SLEEVE TEMPORARILY SECURED TO THE BAR END SO AS TO PROVIDE A 1" LONG OPEN SOCKET BEYOND THE BAR END AND TO LAP BACK 2" ON THE BAR AT THE TIME OF INSTALLATION.

NOT FOR BIDDING  
AUGUST 2015

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AUGUST 2015

**LEGEND:**

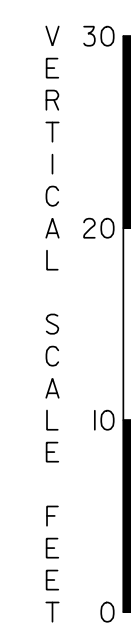
- |                            |                              |                                 |                               |                                  |
|----------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| SILTY LOW PLASTICITY CLAY  | LOW PLASTICITY CLAY          | POORLY GRADED CLAYEY SILTY SAND | HIGH PLASTICITY CLAY          | PAVING                           |
| SILT                       | POORLY GRADED SAND WITH SILT | FILL                            | CLAYEY SAND                   | WELL GRADED SAND                 |
| WELL GRADED SAND WITH SILT | SILTY SAND                   | POORLY GRADED SAND              | HIGH PLASTICITY ORGANIC CLAYS | WATER TABLE AT BORING COMPLETION |
- W/R = WEIGHT OF ROD      W/H = WEIGHT OF HAMMER

**BORING PROFILE**  
SCALE: 1"=10'-0"

TEST BORINGS				
BORING DESIGNATION	STATION	OFFSET	NORTHING	EASTING
BR1-06-01	908+81.13	25.79' LT.	555625	585982
BR1-06-03	909+55.57	4.71' RT.	555568	586039
BR1-06-04	910+55.23	0.03' LT.	555532	586132
BR1-06-05	910+49.77	2.45' RT.	555532	586126
BR1-06-06	908+85.04	17.99' RT.	555583	585969
BR1-06-07	909+38.18	25.90' LT.	586035	555603

**NOTES:**

- FOR BORING LOCATIONS, SEE DWG. NO. PE-01.
- BORINGS BR1-06-01, BR1-06-07, AND BR1-06-04 ARE SHOWN OFFSET AS INDICATED FOR CLARITY.
- RESULTS OF TESTS CONDUCTED ON SAMPLES RECOVERED ARE REPORTED ON THE BORING LOGS. LOGS AND LABORATORY TESTING ARE INCLUDED AS PART OF THE CONTRACT DOCUMENTS, SEE CD.



ADDENDUMS / REVISIONS

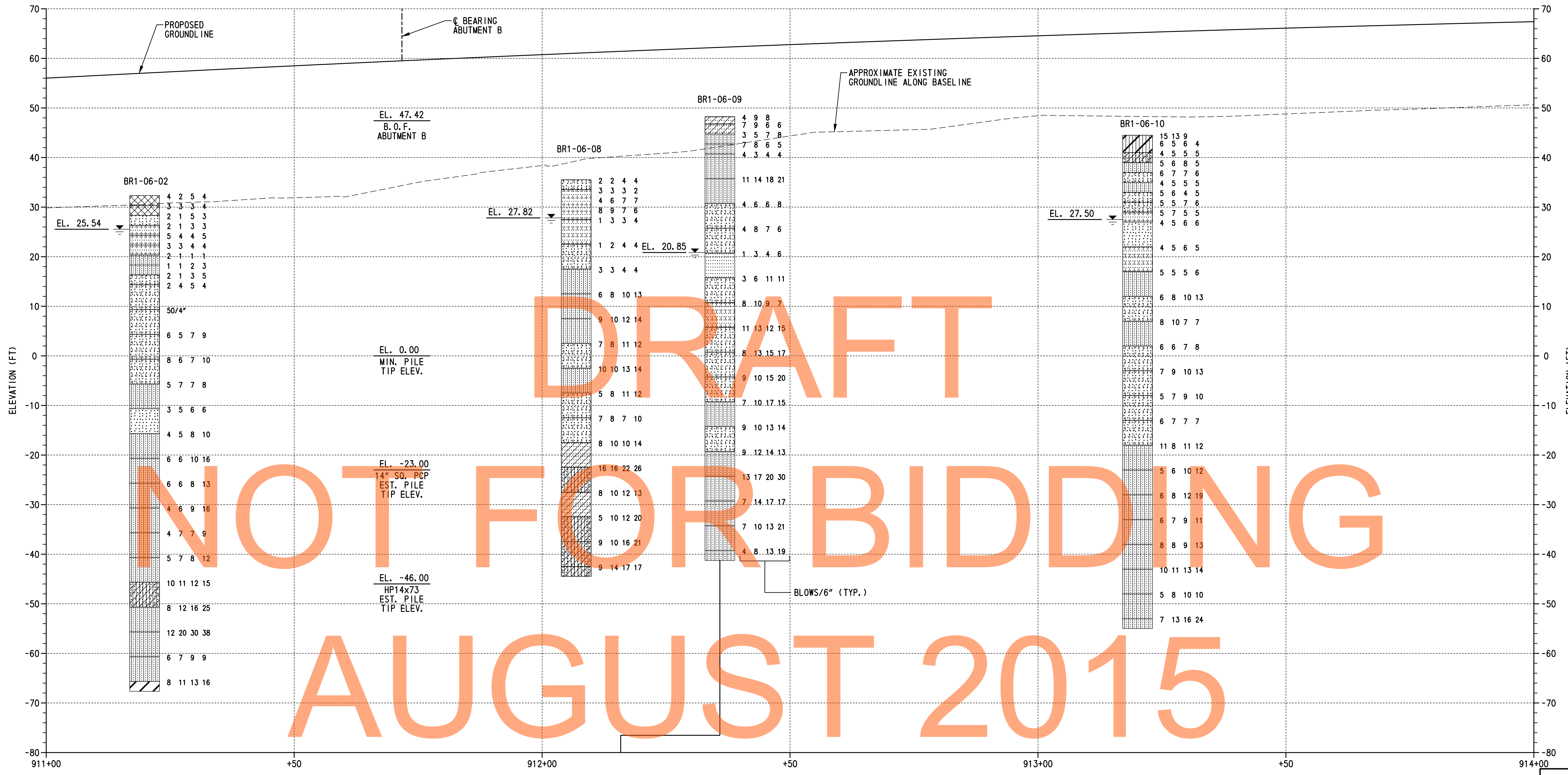


**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**BORING PROFILE - 1**

<b>BR1-6 BO-01</b>
SHEET NO. 375
TOTAL SHTS. 875



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NOT FOR BIDDING  
AUGUST 2015

**LEGEND:**

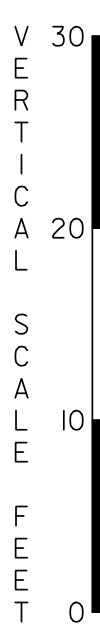
- |                            |                              |                                 |                               |                                  |
|----------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| SILTY LOW PLASTICITY CLAY  | LOW PLASTICITY CLAY          | POORLY GRADED CLAYEY SILTY SAND | HIGH PLASTICITY CLAY          | PAVING                           |
| SILT                       | POORLY GRADED SAND WITH SILT | FILL                            | CLAYEY SAND                   | WELL GRADED SAND                 |
| WELL GRADED SAND WITH SILT | SILTY SAND                   | POORLY GRADED SAND              | HIGH PLASTICITY ORGANIC CLAYS | WATER TABLE AT BORING COMPLETION |

**BORING PROFILE**  
SCALE: 1"=10'-0"

TEST BORINGS				
BORING DESIGNATION	STATION	OFFSET	NORTHING	EASTING
BR1-06-02	911+19.84	12.94' RT.	555493	586185
BR1-06-08	912+06.88	20.57' LT.	555485	586278
BR1-06-09	912+15.85	56.30' RT.	555412	586251
BR1-06-10	913+20.00	20.00' LT.	555432	586379

**NOTES:**

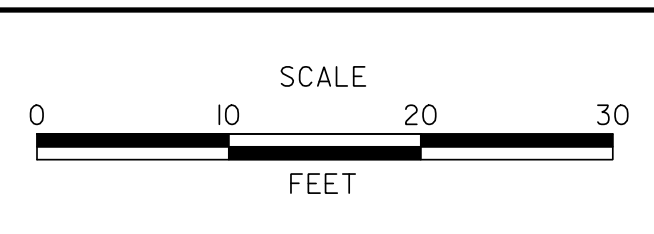
- FOR BORING LOCATIONS, SEE DWG. NO. PE-01.
- BORING BR1-06-09 IS SHOWN OFFSET AS INDICATED FOR CLARITY.
- RESULTS OF TESTS CONDUCTED ON SAMPLES RECOVERED ARE REPORTED ON THE BORING LOGS. LOGS AND LABORATORY TESTING ARE INCLUDED AS PART OF THE CONTRACT DOCUMENTS, SEE CD.



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ADDENDUMS / REVISIONS	



**US 301,  
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO. <b>1-458</b>
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

<b>BORING PROFILE - 2</b>
SHEET NO. 376
TOTAL SHTS. 875

**BR1-6  
BO-02**