

PROJECT NOTES:

- LOCATION**
PROPOSED NEW STRUCTURE CARRYING US 301 NB OVER SCOTT RUN IN NEW CASTLE COUNTY, DELAWARE.
- ELEVATIONS**
VERTICAL DATUM IS REFERENCED TO NAVD 88.
- DESIGN CRITERIA**
2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, INCLUDING 2008 AND 2009 INTERIM PROVISIONS AND THE 2005 DELDOT BRIDGE DESIGN MANUAL, INCLUDING LATEST REVISIONS.

PROVIDE MATERIAL AND PERFORM WORK IN ACCORDANCE WITH THE DELDOT STANDARD SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS AND THE CONTRACT SPECIAL PROVISIONS.
- LOADING**
HL-93 AND DELAWARE LEGAL LOADS FOR LIVE LOAD WITH PROVISIONS FOR FUTURE 2" WEARING SURFACE AND 15 LBS/FT² FOR THE USE OF STEEL BRIDGE DECK FORMS WHICH REMAIN IN PLACE.
- CONCRETE**
ALL CONCRETE PROPERTIES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

CLASS A - EXPOSED FOOTINGS, ABUTMENTS, STEMS, BACKWALLS, WINGWALLS, DIAPHRAGMS AND PARAPETS (f'c = 4,500 PSI).

CLASS D - CONCRETE DECK SLAB, APPROACH SLAB, MOMENT SLAB AND SLEEPER SLAB (f'c = 4,500 PSI).

ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
- REINFORCING STEEL**
ALL REINFORCING STEEL SHALL BE AASHTO M 31 (ASTM A 615), GRADE 60 AND UNLESS NOTED OTHERWISE ON THE PLANS SHALL BE PROTECTED WITH FUSION BONDED EPOXY, CONFORMING TO AASHTO M 284 (ASTM A 775) AND DENOTED WITH A SUFFIX "E" IN THE BAR MARKS. EPOXY COATED REINFORCING STEEL SHALL BE USED IN THE FOLLOWING LOCATIONS:

APPROACH SLABS
MOMENT SLABS
DECK SLAB
PARAPETS
ABUTMENT BACKWALLS AND BEARING PEDESTALS

ALL REINFORCING STEEL HAS BEEN DETAILED FOR A MAXIMUM LENGTH OF 60 FT.

ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE:

FOUNDATION ELEMENTS: 3"
DECK SLABS: 2 1/2" TOP OF SLAB (INCLUDES 1/2" INTEGRAL WEARING SURFACE)
1" BOTTOM OF SLAB WHEN STAY-IN-PLACE FORMS ARE USED
- PRESTRESSED REINFORCED CONCRETE MEMBERS**
PRESTRESSED CONCRETE DESIGN: DESIGN CONSISTENT WITH 2007 AASHTO LRFD, WITH 2008 AND 2009 INTERIMS. THE PRECAST CONCRETE BEAMS ARE DESIGNED AS NONCOMPOSITE SIMPLE SPAN FOR ALL DEAD LOADS EXCEPT THE PARAPET AND FUTURE WEARING SURFACE. THE PRECAST BEAMS ARE DESIGNED AS COMPOSITE SIMPLE SPAN FOR LIVE LOADS AS WELL AS THE PARAPET AND FUTURE WEARING SURFACE DEAD LOADS. REINFORCING STEEL DESIGN: fs = 24,000 PSI (NONPRETENSIONING STEEL).

PRESTRESSED CONCRETE: THE MINIMUM COMPRESSIVE STRENGTH FOR PRECAST CONCRETE AT THE AGE OF 28 DAYS SHALL BE f'c = 8,000 PSI. THE MINIMUM COMPRESSIVE STRENGTH AT THE TRANSFER OF PRESTRESS SHALL BE f'ci = 6,400 PSI.

PRETENSIONING STEEL: PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M 203 GRADE 270. EACH 1/2" STRAND SHALL BE PRETENSIONED TO 30,980 LBS (0.75 f's). AFTER ESTIMATED LOSSES OF 25,720 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 27,040 LBS. CAMBER GROWTH IN PRETENSIONED BEAMS BETWEEN THE TIME OF STRESSING AND THE TIME OF SLAB PLACEMENT IS ASSUMED TO BE 60% FOR CAMBER CALCULATIONS.
- ELASTOMERIC BEARINGS**
ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO M 251. ELASTOMER SHALL BE 60 DUROMETER. SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO ASTM A 36. FOR ADDITIONAL REQUIREMENTS FOR THE ELASTOMERIC BEARINGS, SEE DWG. NOS. BB-01 AND BB-02. ELASTOMERIC BEARINGS SHALL BE INCIDENTAL TO ITEM 623003 - PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB TBEAM.
- STEEL H-PILES**
STEEL H-PILES SHALL BE AASHTO M 270 (ASTM A 709), GRADE 50.
- FOUNDATION REQUIREMENTS**
FOR FOUNDATION REQUIREMENTS, SEE DWG. NO. PL-01. DELDOT STANDARD SPECIFICATION 619.11(A)(6) SHALL BE MODIFIED BY REFERENCE TO SPECIAL PROVISIONS 619519 AND 619539.
- TRAFFIC CONTROL REQUIREMENTS**
FOR TRAFFIC CONTROL REQUIREMENTS SEE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLANS.

- RIPRAP**
RIPRAP SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 712 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. GEOTEXTILE SHALL CONFORM TO SECTION 713 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- CONSTRUCTION JOINTS**
KEYED CONSTRUCTION JOINTS SHALL BE 2" X 4" UNLESS NOTED OTHERWISE. ALL EXPOSED CONSTRUCTION JOINT EDGES SHALL HAVE A 3/4" V-NOTCH UNLESS NOTED OTHERWISE.
- MISCELLANEOUS**
ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE GRADED BACK TO THE ORIGINAL EXISTING GRADE, TOP SOILED, SEEDED AND MULCHED. PAYMENT SHALL BE INCIDENTAL TO THE CONTRACT. AS DIRECTED BY THE ENGINEER, ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATION RESULTING FROM UNAUTHORIZED ACTIVITIES OUTSIDE THE LIMIT OF CONSTRUCTION SHALL BE TOP SOILED, SEEDED, AND MULCHED AT THE CONTRACTOR'S EXPENSE.
- STABILIZING STRUCTURAL EXCAVATIONS**
IN LIEU OF A 2:1 SLOPE, THE CONTRACTOR MAY USE SHORING FOR EXCAVATIONS EXCEEDING 5 FEET IN HEIGHT. THE COST OF THE SHORING SHALL BE INCIDENTAL TO ITEM 207000 - EXCAVATION AND BACKFILL FOR STRUCTURES.
- HYDRAULIC DATA**
DRAINAGE AREA = 3.72 SQ. MI.
25-YR FLOOD ELEVATION = 12.68
DESIGN FREQUENCY = 50 YEARS
DESIGN DISCHARGE = 1586 CFS
DESIGN HEADWATER ELEVATION = 13.24 FT
DESIGN VELOCITY, CHANNEL = 1.15 FPS
FLOW AREA OF PROPOSED OPENING = 1118 SF

NOTE: HYDRAULIC ANALYSES CONDUCTED WITH EXISTING US 13 BOX CULVERT IN-PLACE, AS WORSE CASE SCENARIO.

NOTE: SEE REPORT TITLED, "HYDROLOGIC AND HYDRAULIC ANALYSES OF SCOTT RUN WATERSHED AND PROPOSED BRIDGES 1-1, 1-2, 1-4 NB & SB, 1-6, AND 1-7 NB & SB FOR US 301 EXTENSION," DATED MAY 2011.

- SCOUR DATA**
BRIDGE BR1-2 HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH FHWA HEC-18 - "EVALUATING SCOUR AT BRIDGES" AND HEC-23 - "BRIDGE SCOUR AND STREAM INSTABILITY COUNTERMEASURES." SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORSE CASE OF THE OVERTOPPING FLOOD OR THE 500-YR FLOOD EVENT.

NOTE: SCOUR ANALYSES CONDUCTED WITH REMOVAL OF EXISTING US 13 BOX CULVERT, AS WORSE CASE SCENARIO.

DESIGN STORM EVENT = 100 YEAR FLOOD
DESIGN STORM DISCHARGE = 1887 CFS
DESIGN STORM HEADWATER ELEVATION = 11.08 FT
DESIGN STORM VELOCITY, CHANNEL = 1.90 FPS
DESIGN STORM DEPTH OF FLOW = 5.71 FT

CHECK STORM EVENT = 500 YEAR FLOOD
CHECK STORM DISCHARGE = 2568 CFS
CHECK STORM HEADWATER ELEVATION = 12.09 FT
CHECK STORM VELOCITY, CHANNEL = 2.18 FPS
CHECK STORM DEPTH OF FLOW = 6.73 FT

- LOAD RATINGS**
FOR LOAD AND RESISTANCE FACTOR RATING, SEE BRIDGE NO. 1-432 LOAD RATING TABLE BELOW.

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.75	N/A	INTERIOR GIRDER	104	LONG. REINF.
HL-93 TANDEM (INVENTORY)	2.13	N/A	INTERIOR GIRDER	105	LONG. REINF.
HL-93 TRUCK TRAIN (INVENTORY)	N/A	N/A	N/A	N/A	N/A
HS-20 (INVENTORY)	2.41	86.60	INTERIOR GIRDER	104	LONG. REINF.
HL-93 TRUCK (OPERATING)	2.24	N/A	INTERIOR GIRDER	104	LONG. REINF.
HL-93 TANDEM (OPERATING)	2.76	N/A	INTERIOR GIRDER	105	LONG. REINF.
HL-93 TRUCK TRAIN (OPERATING)	N/A	N/A	N/A	N/A	N/A
HS-20 (OPERATING)	3.08	111.00	INTERIOR GIRDER	104	LONG. REINF.
DE S220 & LEGAL-LANE (LEGAL)	4.12	82.32	INTERIOR GIRDER	105	CONCRETE STRESS
DE S335 & LEGAL-LANE (LEGAL)	2.32	81.13	INTERIOR GIRDER	105	CONCRETE STRESS
DE S437 & LEGAL-LANE (LEGAL)	2.21	80.85	INTERIOR GIRDER	105	CONCRETE STRESS
DE S330 & LEGAL-LANE (LEGAL)	3.01	90.37	INTERIOR GIRDER	105	CONCRETE STRESS
DE S435 & LEGAL-LANE (LEGAL)	2.62	91.59	INTERIOR GIRDER	105	CONCRETE STRESS
DE S540 & LEGAL-LANE (LEGAL)	2.30	92.16	INTERIOR GIRDER	105	CONCRETE STRESS

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

BRIDGE NO. 1-432 INDEX OF SHEETS		
SHEET NO.	DWG. NO.	TABLE OF CONTENTS
150	PN-01	PROJECT NOTES
151	QS-01	QUANTITY SUMMARY
152	TS-01	SUPERSTRUCTURE TYPICAL SECTION
153	PE-01	GENERAL PLAN AND ELEVATION
154	GR-01	GRADING PLAN
155	FT-01	GEOMETRIC AND FOOTING LAYOUT PLAN
156	PL-01	PILE LAYOUT PLAN
157	AB-01	ABUTMENT A PLAN AND ELEVATION
158	AB-02	ABUTMENT A TYPICAL SECTION
159	AB-03	ABUTMENT A REINFORCEMENT ELEVATION
160	AB-04	ABUTMENT A REINFORCEMENT TYPICAL SECTION
161	AB-05	ABUTMENT A FOOTING REINFORCEMENT PLAN
162	AB-06	ABUTMENT A REINFORCEMENT DETAILS
163	WW-01	WINGWALL I AND II ELEVATIONS
164	WW-02	WINGWALL TYPICAL SECTIONS
165	WW-03	WINGWALL I AND II REINFORCEMENT ELEVATIONS
166	WW-04	WINGWALL I AND II REINFORCEMENT TYPICAL SECTIONS
167	AB-07	ABUTMENT B PLAN AND ELEVATION
168	AB-08	ABUTMENT B TYPICAL SECTION
169	AB-09	ABUTMENT B REINFORCEMENT ELEVATION
170	AB-10	ABUTMENT B REINFORCEMENT TYPICAL SECTION
171	AB-11	ABUTMENT B FOOTING REINFORCEMENT PLAN
172	AB-12	ABUTMENT B REINFORCEMENT DETAILS
173	WW-05	WINGWALL III AND IV ELEVATIONS
174	WW-06	WINGWALL III AND IV REINFORCEMENT ELEVATIONS
175	WW-07	WINGWALL III AND IV REINFORCEMENT TYPICAL SECTIONS
176	RB-01	ABUTMENT A REINFORCEMENT LIST
177	RB-02	ABUTMENT B REINFORCEMENT LIST
178	BB-01	ABUTMENT A EXPANSION BEARING DETAILS
179	BB-02	ABUTMENT B FIXED BEARING DETAILS
180	BM-01	PCEF BULB-TEE BEAM DETAILS - 1
181	BM-02	PCEF BULB-TEE BEAM DETAILS - 2
182	DT-01	ABUTMENT DIAPHRAGM DETAILS
183	DT-02	INTERMEDIATE DIAPHRAGM DETAILS
184	FR-01	FRAMING PLAN
185	DK-01	DECK SLAB POURING SEQUENCE
186	DK-02	DECK SLAB AND PARAPET REINFORCEMENT
187	DK-03	DECK SLAB AND PARAPET REINFORCEMENT DETAILS
188	RB-03	SUPERSTRUCTURE REINFORCEMENT LIST
189	FD-01	FINISHED BRIDGE DECK ELEVATIONS
190	EX-01	ARMORED STRIP SEAL JOINT DETAILS
191	AS-01	APPROACH SLAB A PLAN
192	AS-02	APPROACH SLAB A REINFORCEMENT PLAN
193	AS-03	APPROACH SLAB B PLAN
194	AS-04	APPROACH SLAB B REINFORCEMENT PLAN
195	AS-05	MOMENT AND SLEEPER SLAB A PLAN
196	AS-06	MOMENT AND SLEEPER SLAB A REINFORCEMENT PLAN
197	AS-07	APPROACH AND SLEEPER SLAB A REINFORCEMENT DETAILS
198	AS-08	APPROACH SLAB B REINFORCEMENT DETAILS
199	AS-09	MOMENT SLAB REINFORCEMENT DETAILS
200	AS-10	APPROACH SLAB AND MOMENT SLAB PARAPET CONDUIT DETAILS
201	RB-04	APPROACH SLAB AND MOMENT SLAB REINFORCEMENT LIST
202	BO-01	BORING PROFILE

- UTILITIES**
BEFORE BEGINNING WORK, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF TWO WORKING DAYS PRIOR TO START OF WORK. VERIFY AND LOCATE ALL UTILITIES PRIOR TO STARTING WORK.

COORDINATE THE REQUIREMENTS FOR PROTECTION OF ANY UTILITY WITH THE UTILITY OWNER PRIOR TO STARTING WORK.

CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED. ANY DAMAGE INCURRED TO THESE UTILITIES OR ANY OTHER UTILITIES, SHOWN OR NOT SHOWN ON THE PLANS, DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.

THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY SUPPORTING, PROTECTING, OR RELOCATING ANY UTILITIES DURING CONSTRUCTION. WHERE NECESSARY, THE COST FOR THIS WORK WILL BE INCIDENTAL TO THE CONTRACT.

- TEMPORARY PROTECTIVE SHIELD**
THE CONTRACTOR SHALL INSTALL A TEMPORARY PROTECTIVE SHIELD DURING BRIDGE CONSTRUCTION. THE TEMPORARY PROTECTIVE SHIELD SHALL COVER THE FULL WIDTH AND SPAN, BETWEEN BEARING CENTERLINES, OF THE BRIDGE. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

M:\31653-000\CONTRACT 18\CAD\Bridges\Bridg-No2\PN01-Br1-2.dgn 9/22/09 AM



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PROJECT NOTES

BR1-2
PN-01

SHEET NO.	150
TOTAL SHTS.	491

NOT FOR BIDDING

AUGUST 2015

ITEM NO.	ITEM NAME	UNITS	QUANTITY
202000	Excavation and Embankment	C.Y.	600
207000	Excavation and Backfill for Structures	C.Y.	265
211000	Removal of Structures and Obstructions	L.S.	1
302011	Delaware No. 3 Stone	Ton	137
302012	Delaware No. 57 Stone	Ton	152
601502	Temporary Protective Shield	L.S.	1
602003	Portland Cement Concrete Masonry, Abutment Footing, Class A	C.Y.	227
602013	Portland Cement Concrete Masonry, Superstructure, Class D	C.Y.	172
602014	Portland Cement Concrete Masonry, Approach Slab, Class D	C.Y.	131
602015	Portland Cement Concrete Masonry, Abutment Above Footing, Class A	C.Y.	162
602017	Portland Cement Concrete Masonry, Parapet, Class A	C.Y.	54
602018	Portland Cement Concrete Masonry, Class D	C.Y.	33
602019	Portland Cement Concrete Masonry, Superstructure, Class A	C.Y.	21
603000	Bar Reinforcement	LBS	32,600
604000	Bar Reinforcement, Epoxy Coated	LBS	99,600
605511	Prefabricated Expansion Joint System, 3"	L.F.	46
618062	Steel H Piles, HP 14x73	L.F.	6,370
618065	Steel H Test Piles, HP 14x73	L.F.	402
619042	Install Steel H Piles, HP 14x73	L.F.	6,370
619045	Install Steel H Test Piles, HP 14x73	L.F.	402
619501	Production Pile Restrike	Each	5
619502	Test Pile Restrike	E.A.D.Y.	1
619519	Dynamic Pile Testing by Contractor	Each	12
619539	Signal Matching Analysis by Contractor	Each	12
623003	Prestressed Reinforced Concrete Members, Bulb Tbeam	L.S.	1
712022	Riprap, R-6	Ton	980
713003	Geotextiles, Riprap	S.Y.	614

NOTES:

1. ITEM 202000 IS REPRESENTED ON DRAWING EW-03 AS FOLLOWS:
 - o 55 CY UNDER TYPE F MATERIAL REQUIRED, "PLUS EMBANKMENT FOR STRUCTURES"; AND
 - o 545 CY UNDER TYPE C MATERIAL REQUIRED, "TYPE C BACKFILL FOR STRUCTURES".
2. ITEM 207000 IS REPRESENTED ON DRAWING EW-03 UNDER EXCAVATION AVAILABLE FOR EMBANKMENT, "PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES."

M:\31653-000\CONTRACT 18\CADD\BRIDGE\BR_NO2\OS01_Lp1-2.dgn 2/17/2015 8:53:17 AM



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301 &
SR 1 INTERCHANGE

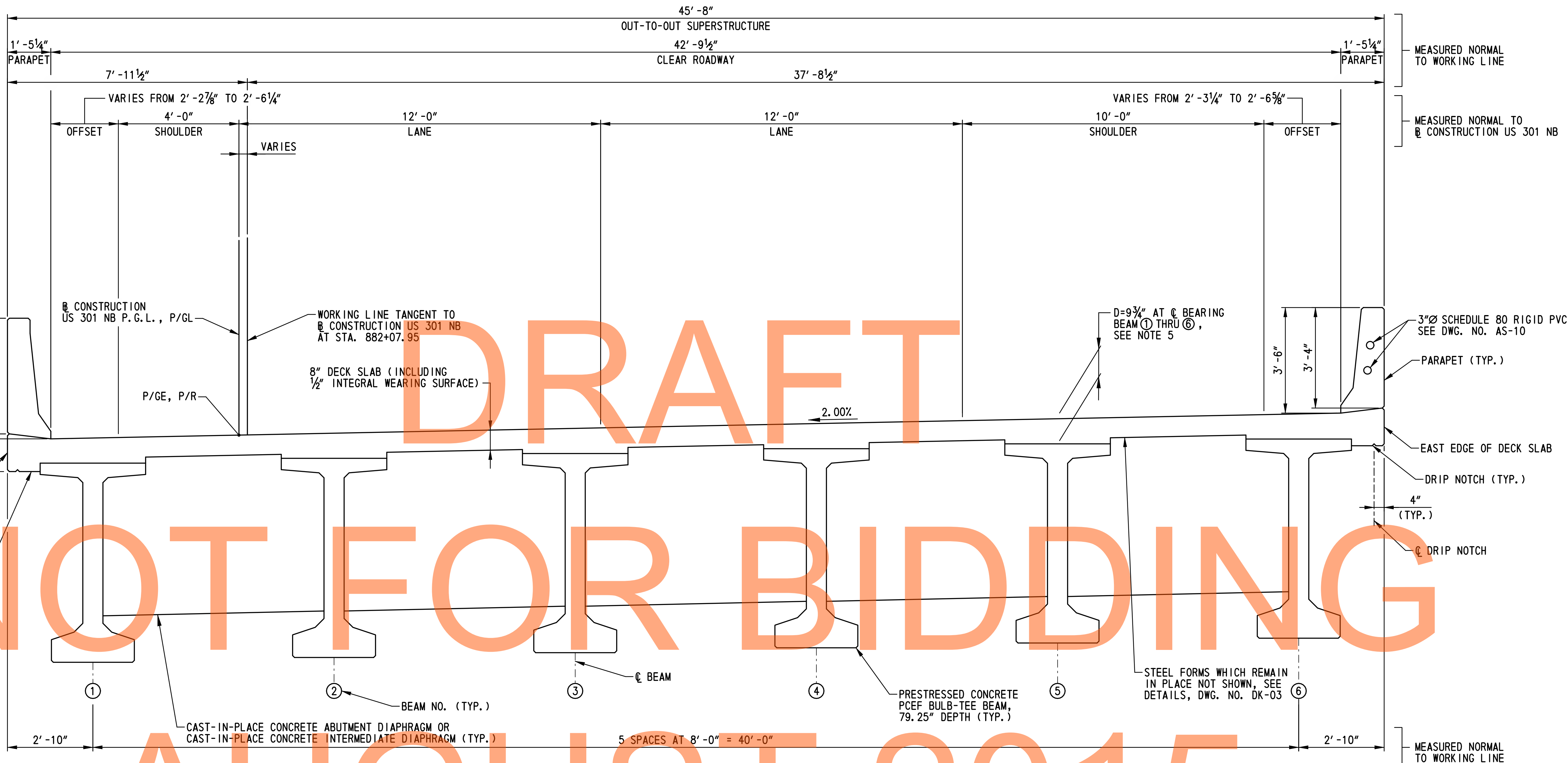
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

QUANTITY SUMMARY

BR1-2 QS-01
SHEET NO.
151
TOTAL SHTS.
491

CONSTRUCTION JOINT AND V-NOTCH (RAKED FINISH, TYP.)

WEST EDGE OF DECK SLAB
LEVEL (TYP.)
1'-3" (TYP.)



DRAFT
NOT FOR BIDDING
AUGUST 2015

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

- NOTES:**
1. TYPICAL SECTION SHOWN LOOKING STATIONS AHEAD.
 2. FOR DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DWG. NOS. DK-01 THRU DK-03.
 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.
 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 ϕ 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-05 FOR DETAILS.

M:\31653\000\CONTRACT 18\CADD\Bridges\B-1\No2\TS01_Lbr1-2.dgn 2/27/2015 2:42:27 PM



ADDENDUMS / REVISIONS	

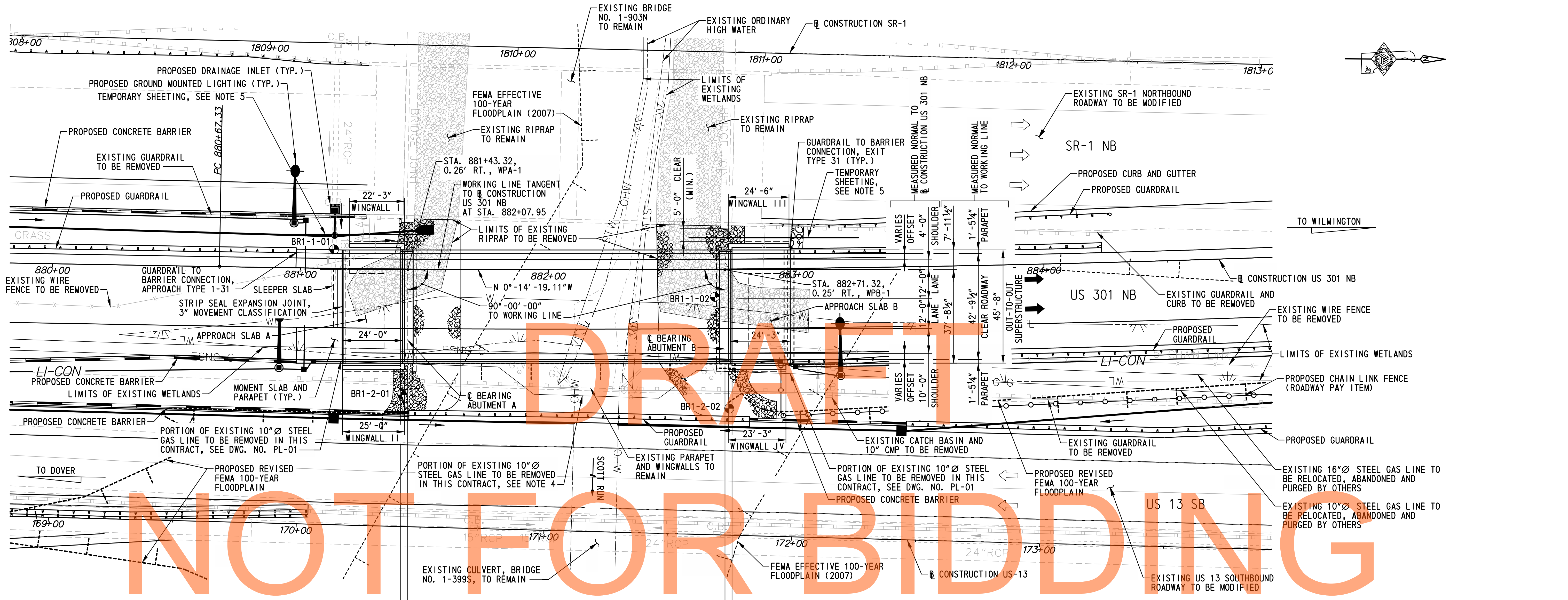
SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

CONTRACT T200911302	BRIDGE NO. 1-432	
COUNTY NEW CASTLE	DESIGNED BY: A.J.F.	CHECKED BY: P.S.D.

**SUPERSTRUCTURE
TYPICAL SECTION**

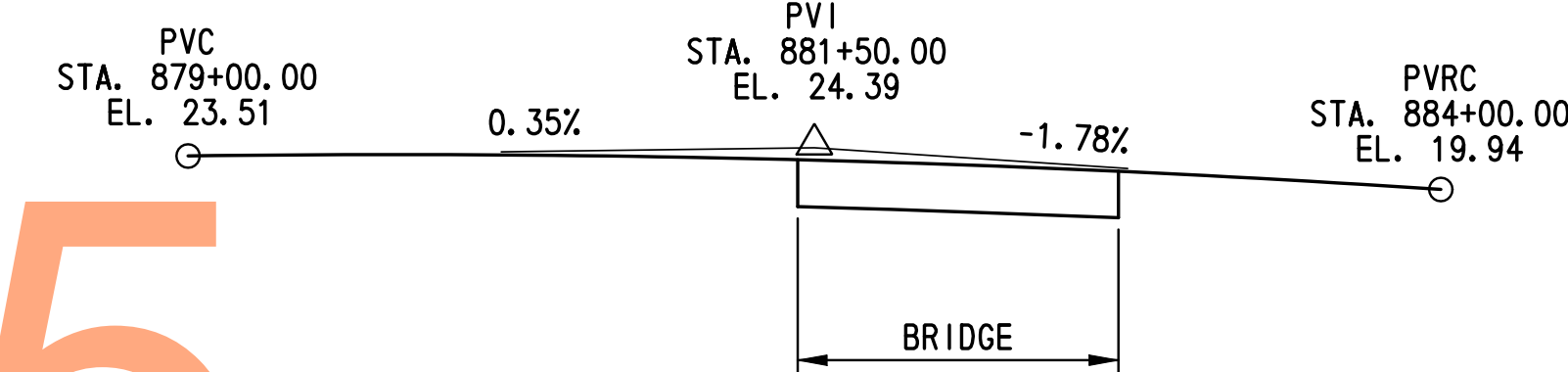
BR1-2 TS-01
SHEET NO. 152
TOTAL SHTS. 491



NOT FOR BIDDING

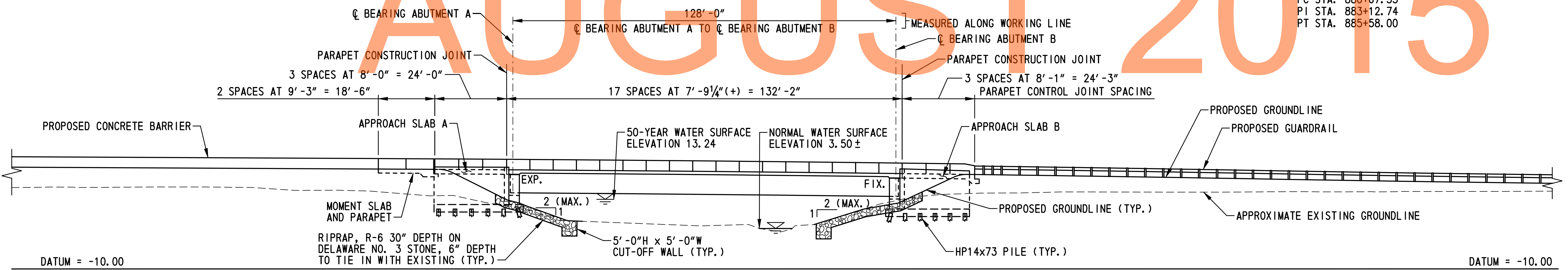
TEST BORINGS		
BORING DESIGNATION	STATION	OFFSET
BR1-1-01	881+13.52	7.68' LT.
BR1-1-02	882+67.15	11.22' RT.
BR1-2-01	881+41.48	50.75' RT.
BR1-2-02	882+72.59	56.29' RT.

CURVE DATA	
Δ	3°-29'-16.85"
D_c	0°-42'-39.12"
R	8060'
T	245.41'
L	490.67'
E	3.74'
PC STA.	880+67.33
PI STA.	883+12.74
PT STA.	885+58.00



AUGUST 2015

PLAN
SCALE: 1"=20'-0"



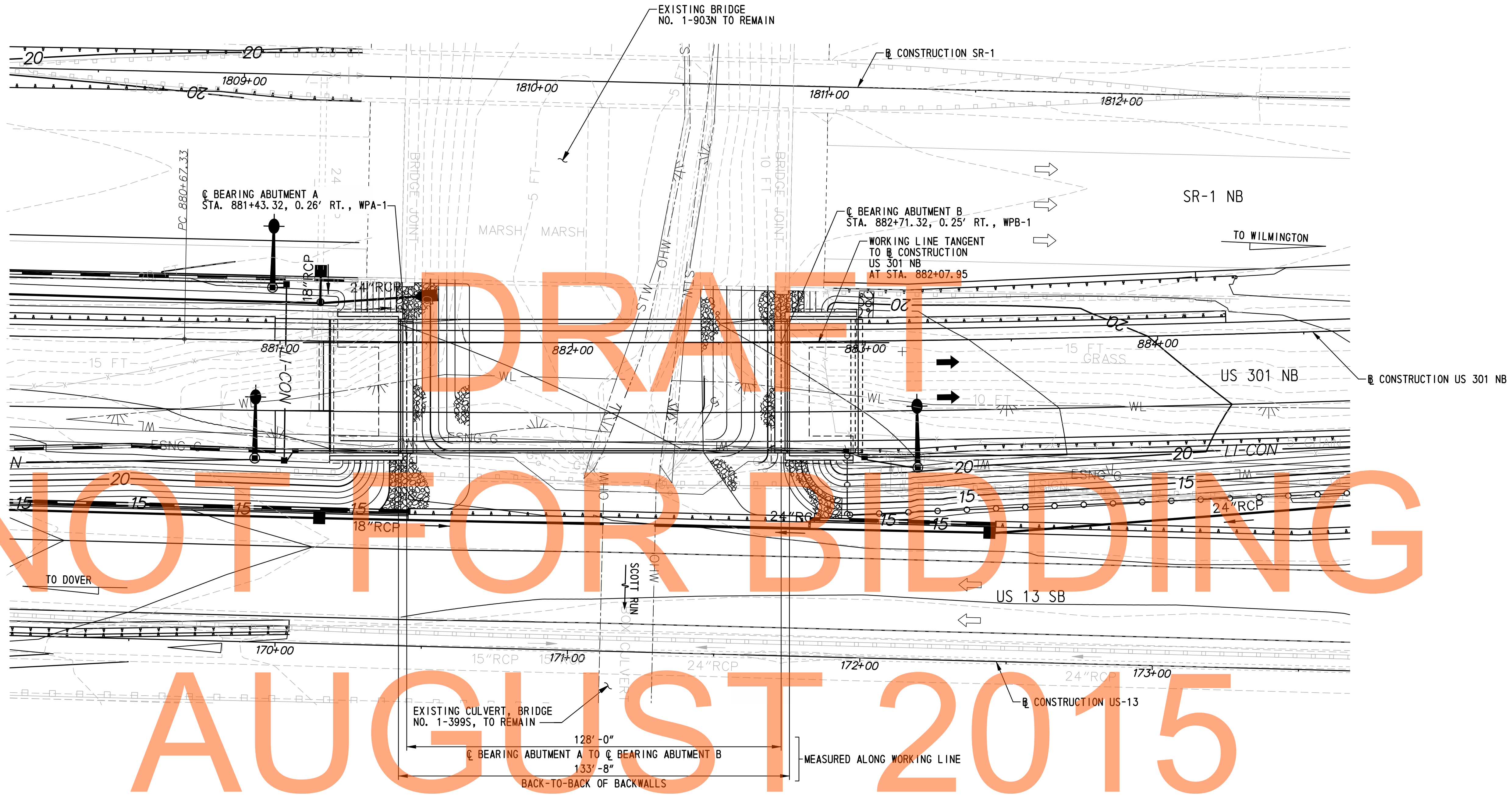
ELEVATION
SCALE: 1"=20'-0"

VERTICAL CURVE
SCALE: NOT TO SCALE

- NOTES:**
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE PROVIDED AT ABUTMENTS. SEE DWG. NOS. BB-01 AND BB-02 FOR DETAILS.
 - FOR PROPOSED GRADING, SEE DWG. NO. GR-01.
 - FOR MAINTENANCE OF STREAM FLOW PLANS, SEE DWG. NOS. MS-01 AND MS-02.
 - REMOVE EXISTING GAS LINE AND STEEL CASING FROM INSIDE OF EXISTING US 13 CULVERT, BRIDGE NO. 1-399S. SEE DWG. NO. DT-20 FOR DETAILS.
 - TEMPORARY SHEETING SHALL BE INCIDENTAL TO ITEM 207000 - EXCAVATION AND BACKFILLING FOR STRUCTURES. THE TEMPORARY SHEETING SHALL BE DESIGNED AND INSTALLED TO AVOID INTERFERENCE WITH THE PROPOSED WINGWALL PILES AND THE EXISTING BRIDGE NO. 1-903N BATTERED WINGWALL PILES. PROVIDE WORKING DRAWINGS DEPICTING THE NECESSARY SHEETING DETAILS IN CONFORMANCE WITH SECTION 105.04 OF THE STANDARD SPECIFICATIONS.

M:\31653\000\Contract\1B\CADD\Bridge\Br_No2\PE01\br1-2.dgn 7/25/09 AM

DRAFT
NOT FOR BIDDING
AUGUST 2015



GRADING PLAN
SCALE: 1" = 20' - 0"

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

M:\31653\000\Contract\1B\CADD\Bridge\Bri_No2\GR01\BR1-2.dgn 2/2/2015 7:29:51 PM



ADDENDUMS / REVISIONS

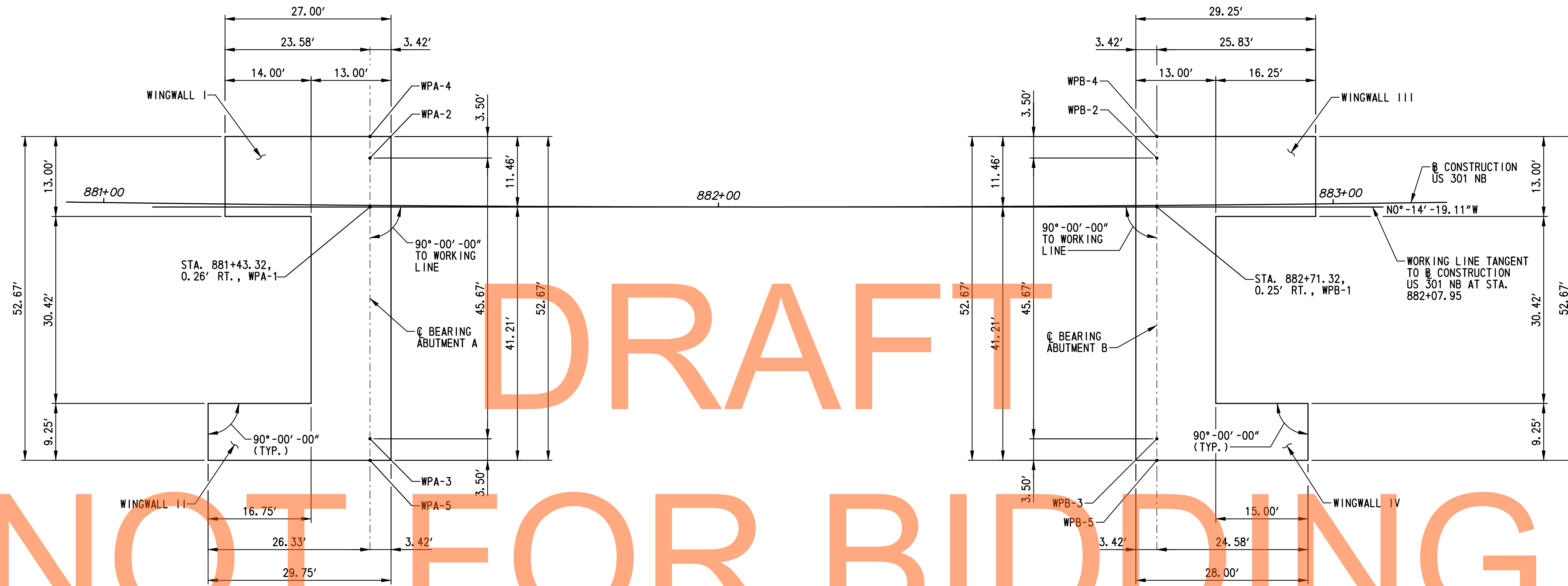
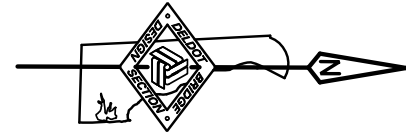
SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

GRADING PLAN

BR1-2 GR-01
SHEET NO.
154
TOTAL SHTS.
491



DRAFT

NOT FOR BIDDING

AUGUST 2015

GEOMETRIC AND FOOTING LAYOUT PLAN
SCALE: 1"=10'-0"

CURVE DATA
 $\Delta = 3^\circ-29'-16.85''$
 $D_c = 0^\circ-42'-39.12''$
 $R = 8060'$
 $T = 245.41'$
 $L = 490.67'$
 $E = 3.74'$
 PC STA. 880+67.33
 PI STA. 883+12.74
 PT STA. 885+58.00

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

WORKING POINT	COORDINATES	
	NORTHING	EASTING
WPA-1	559324.0421	590566.5120
WPA-2	559324.0089	590558.5538
WPA-3	559324.1991	590604.2200
WPA-4	559323.9944	590555.0538
WPA-5	559324.2137	590607.7200
WPB-1	559452.0410	590565.9789
WPB-2	559452.0078	590558.0207
WPB-3	559452.1980	590603.6869
WPB-4	559451.9933	590554.5207
WPB-5	559452.2126	590607.1868

M:\31653\000\Contract\IB\CADD\Bridges\Bridg\No2\FT01\br1-2.dgn 2/2/2015 7:58:05 AM

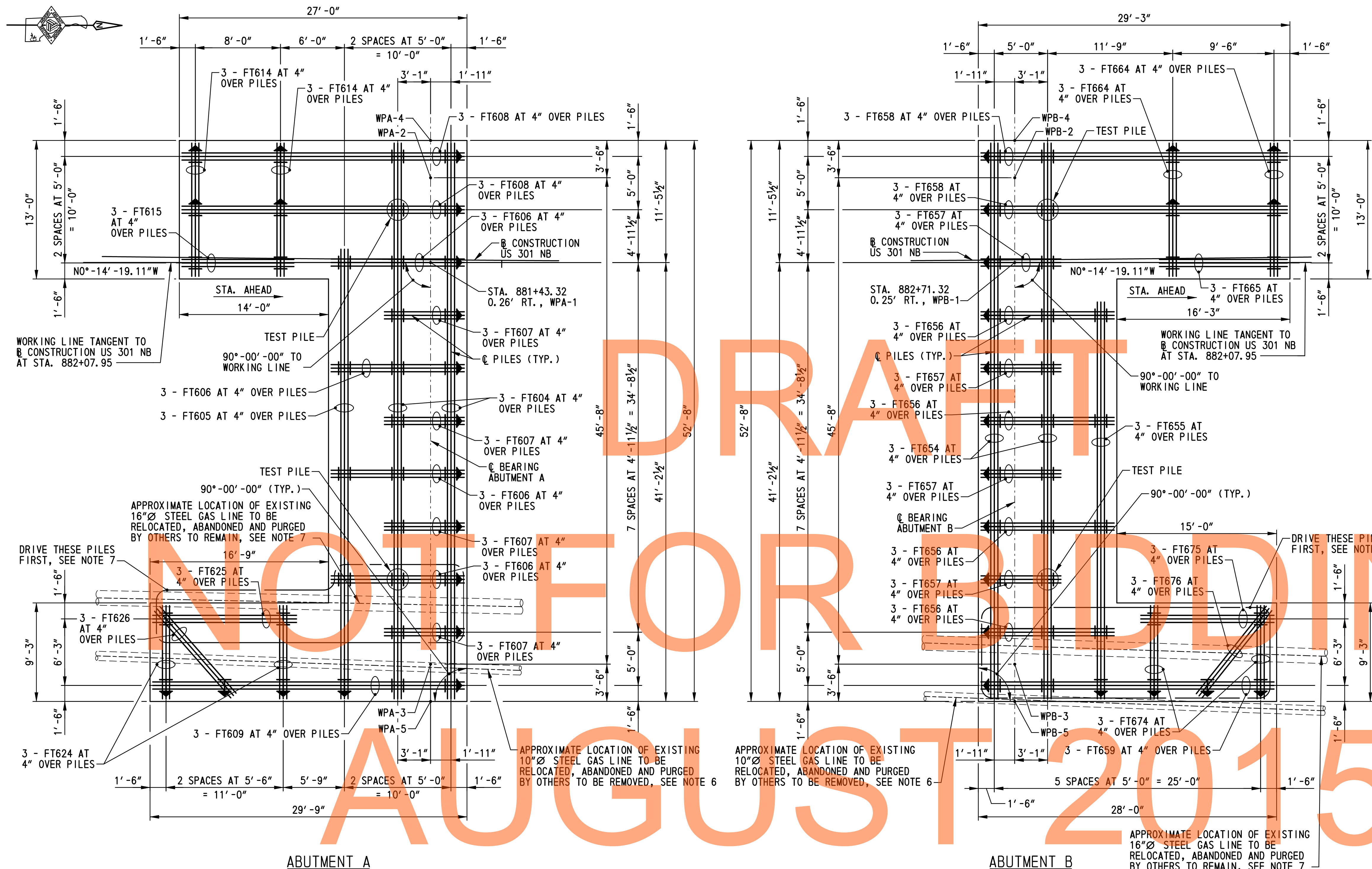
ADDENDUMS / REVISIONS

SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

GEOMETRIC AND FOOTING LAYOUT PLAN



- PILE LEGEND:**
- ⊥ DENOTES PLUMB HP 14x73 PILE AND ORIENTATION OF PILE STRONG AXIS.
 - ↘ DENOTES 3:12 BATTERED PILE AND DIRECTION OF BATTER
 - ⊕ DENOTES HP 14x73 TEST PILE AND LOCATION OF DYNAMIC PILE TESTING.

- PILE NOTES:**
- THE FACTORED RESISTANCE OF THE HP 14x73 STEEL PILING IS 125 TONS. PILES SHALL BE DRIVEN AND TESTED IN CONFORMANCE WITH THE SPECIAL PROVISIONS FOR DYNAMIC PILE TESTING TO A NOMINAL PILE DRIVING RESISTANCE OF 235 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 235 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 RESTRUCK 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.
 - PORTION OF EXISTING 10" DIAMETER STEEL GAS LINE SHALL BE REMOVED TO WITHIN 5 FEET MINIMUM OF THE PROPOSED ABUTMENT FOOTING PRIOR TO PILE INSTALLATION. COST OF EXISTING GAS LINE REMOVAL SHALL BE PAID UNDER TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
 - THE EXISTING 16" DIAMETER STEEL GAS LINE IS LOCATED APPROXIMATELY 32 FEET BELOW THE TOP OF PILE AT ABUTMENT A AND 40 FEET BELOW THE TOP OF PILE AT ABUTMENT B. IF PILE DRIVING REFUSAL IS ENCOUNTERED ON THE EXISTING GAS LINE, THE PILE SHALL BE EXTRACTED AND REPLACED IN A REVISED LOCATION DETERMINED AT THE DISCRETION OF THE ENGINEER. PILE DRIVING REFUSAL IS DEFINED AS GREATER THAN 10 BLOWS PER INCH. THE PILES ADJACENT TO THE EXISTING 16" DIAMETER GAS LINE SHALL BE DRIVEN BEFORE ANY OF THE OTHER PRODUCTION PILES AT THE ABUTMENT. THE COST OF PILE EXTRACTION SHALL BE INCIDENTAL TO THE PILE INSTALLATION ITEM.

PILE TIP DATA				
SUBSTRUCTURE UNIT	DESIGN DATA		ACTUAL FIELD DATA	
	ESTIMATED TIP ELEVATION	MINIMUM TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT A	-74.0	-32.0		
ABUTMENT B	-74.0	-32.0		

ABUTMENT A PILE DRIVING INFORMATION
PILE SIZE AND TYPE: HP 14x73
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY: 50,000 LB-FT TO 90,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:

ABUTMENT B PILE DRIVING INFORMATION
PILE SIZE AND TYPE: HP 14x73
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY: 50,000 LB-FT TO 90,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:

M:\31653\000\Contract\1B\CADD\Bridges\Bridg\No2\PL01\br1-2.dgn
 2/2/2015 7:59:21 PM



ADDENDUMS / REVISIONS

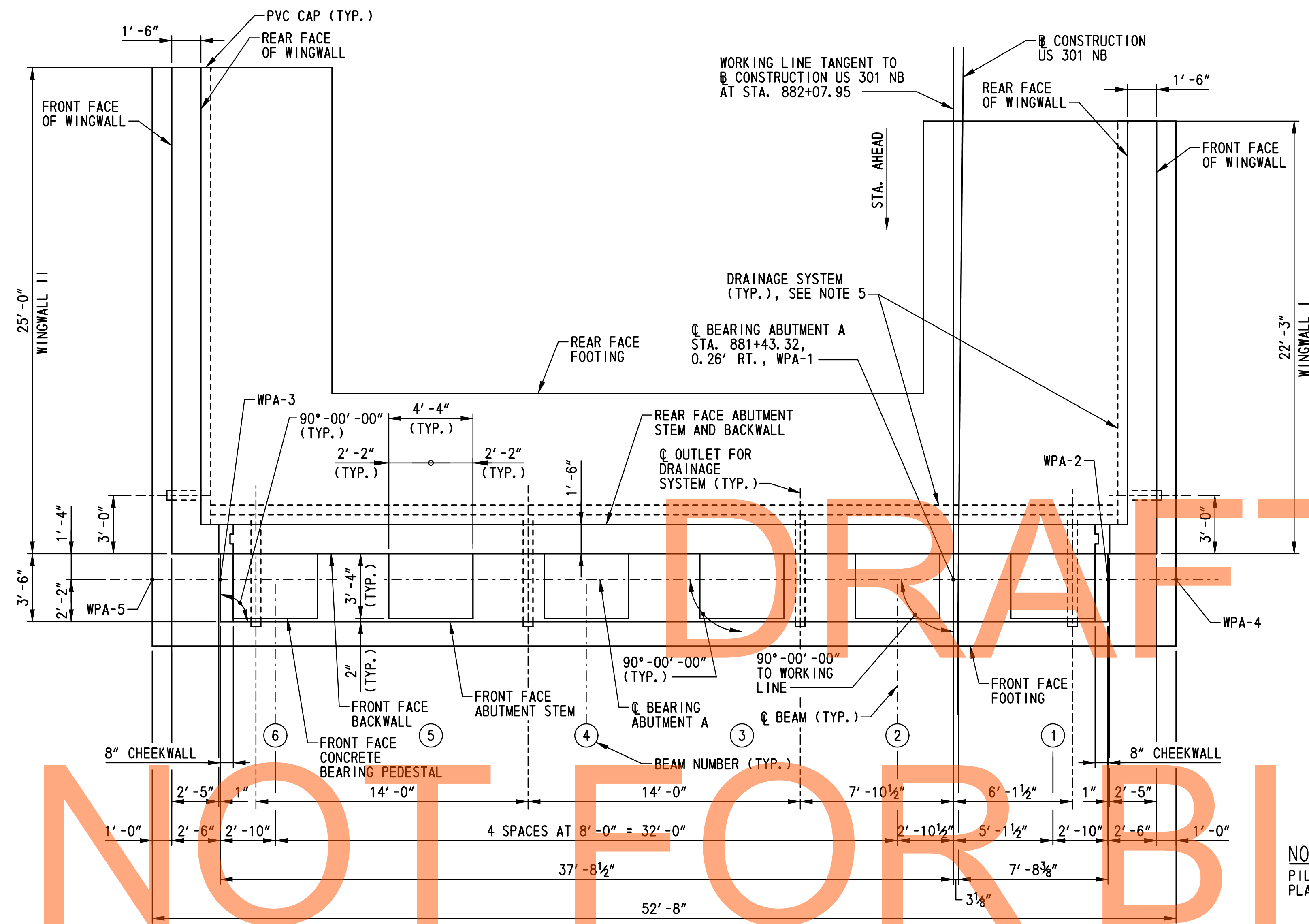
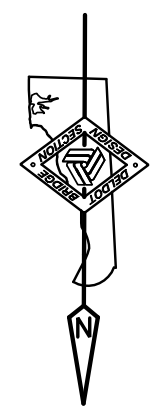
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

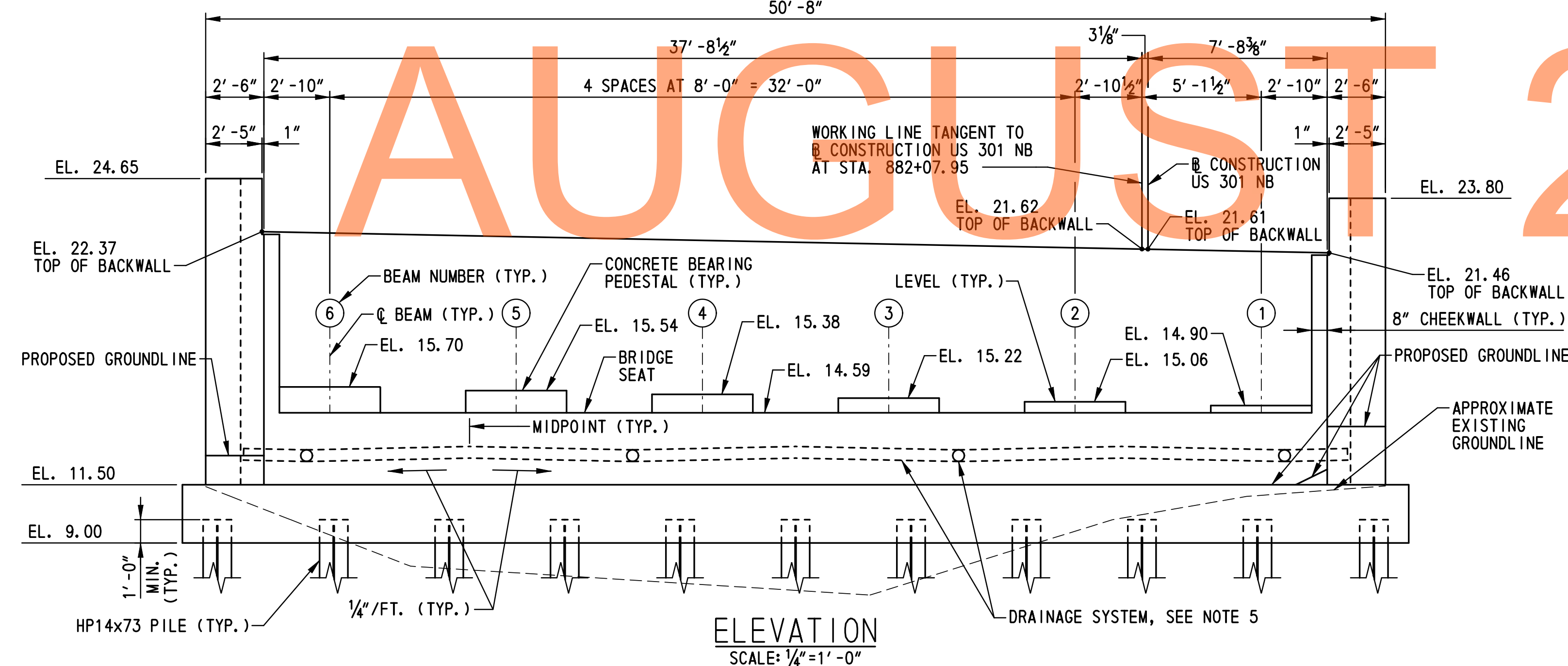
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

PILE LAYOUT PLAN

BR1-2 PL-01
SHEET NO.
TOTAL SHTS.
491



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



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

NOT FOR BIDDING

AUGUST 2015

NOTE:
PILES NOT SHOWN IN
PLAN FOR CLARITY.

- NOTES:
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
 2. FOR ABUTMENT A TYPICAL SECTION, SEE DWG. NO. AB-02.
 3. FOR WINGWALL ELEVATIONS, SEE DWG. NO. WW-01.
 4. FOR WINGWALL TYPICAL SECTIONS, SEE DWG. NO. WW-02.
 5. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. AB-02.

M:\31653\000\US301\Contract\IB\CADD\Bridges\AB-No2\AB01\br1-2.dgn 2/2/2015 7:52:27 AM



ADDENDUMS / REVISIONS	

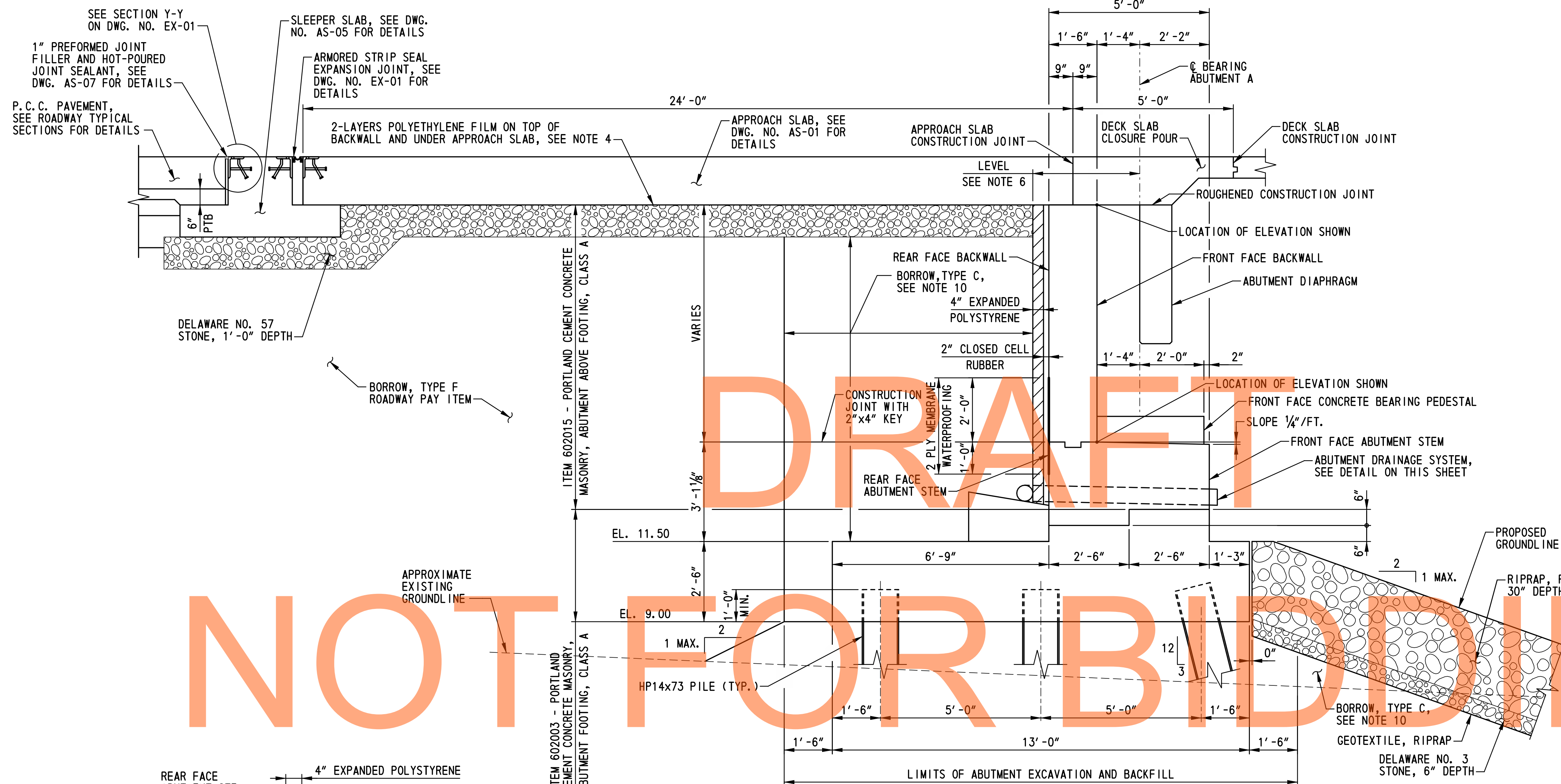
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT A
PLAN AND ELEVATION

BR1-6 AB-01	SHEET NO.	157
	TOTAL SHTS.	491



- SEQUENCE OF CONSTRUCTION**
1. DRIVE STEEL H-PILES AND POUR THE ABUTMENT TO THE REQUIRED BRIDGE SEAT ELEVATION. POUR CONCRETE BEARING PEDESTALS AND BACKWALL.
 2. SET BEAMS ON THE BEARINGS AND ANCHOR TO THE ABUTMENTS VIA ANCHOR BOLTS.
 3. AFFIX THE WATERPROOFING MEMBRANE, CLOSED CELL RUBBER AND EXPANDED POLYSTYRENE PER MANUFACTURER'S RECOMMENDATIONS TO THE REAR FACE OF THE ABUTMENT STEM AND BACKWALL. PLACE BORROW, TYPE C AND DELAWARE NO. 57 STONE AS SHOWN.
 4. POUR SLEEPER SLAB AND PLACE TWO LAYERS OF POLYETHYLENE FILM ON THE PREPARED SUBGRADE AS SHOWN.
 5. POUR THE BRIDGE DECK SLAB AND APPROACH SLAB. SEE DECK SLAB POURING SEQUENCE ON DWG. NO. DK-01 FOR DETAILS.

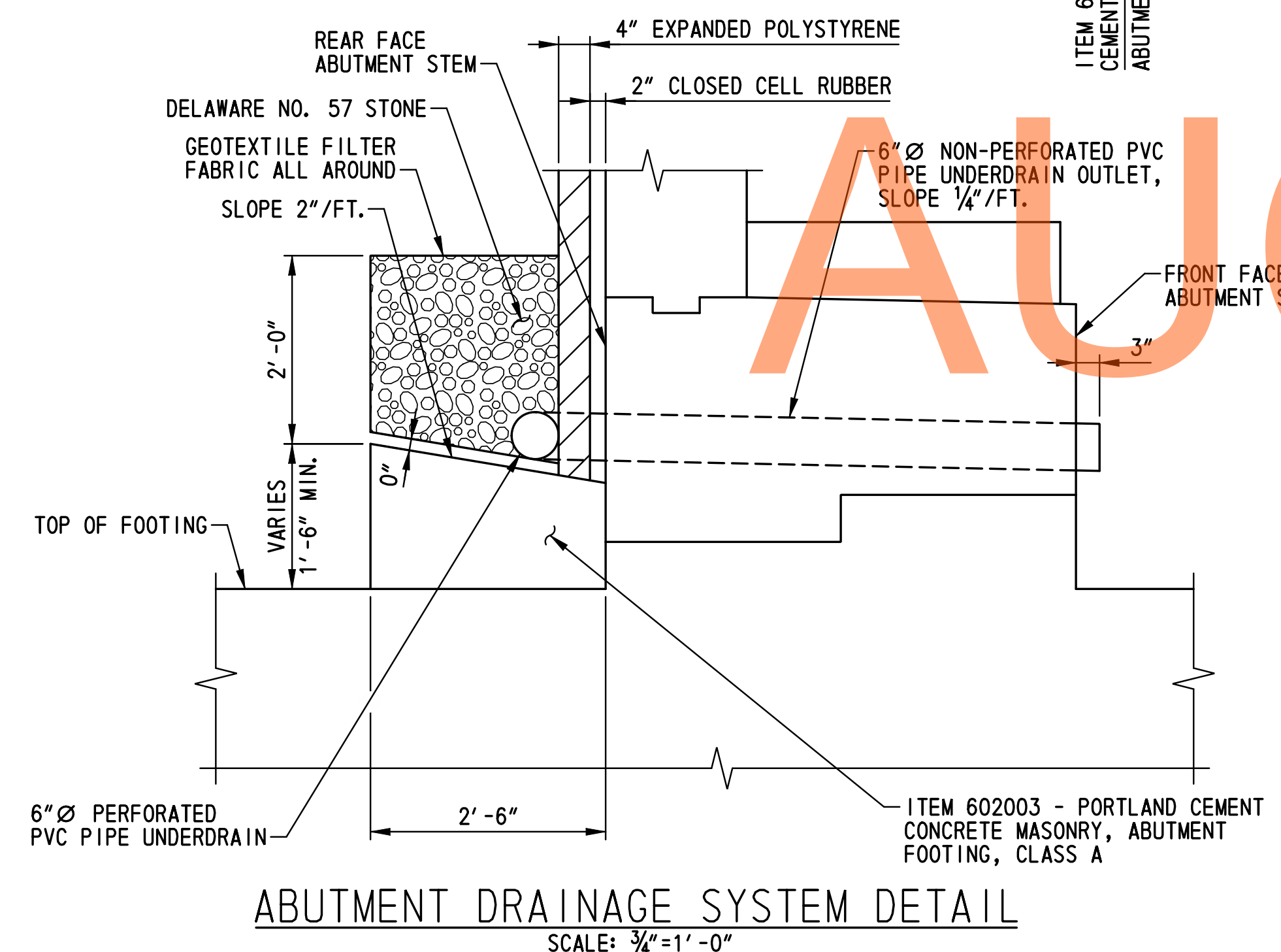
- NOTES:**
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
 2. FOR ABUTMENT A PLAN AND ELEVATION, SEE DWG. NO. AB-01.
 3. SLEEPER SLABS SHALL BE CAREFULLY POURED AFTER COMPACTION OF THE ABUTMENT EMBANKMENT MATERIAL IN CONFORMANCE WITH SECTION 202 - EXCAVATION AND EMBANKMENT. SLEEPER SLABS SHALL BE FOUNDED ON UNDISTURBED COMPACTED MATERIAL. NO LOOSE BACKFILL WILL BE ALLOWED.
 4. 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.
 5. 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 - APPROACH SLAB, CLASS D.
 6. TOP OF BACKWALL SHALL BE LEVEL PARALLEL TO THE WORKING LINE.
 7. WHITE OPAQUE POLYETHYLENE FILM SHALL CONFORM TO ASTM C 171.
 8. CLOSED CELL RUBBER SHALL CONFORM TO ASTM D 1056, TYPE 2, CLASS B, GRADE 3. COST SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.
 9. EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, TYPE IV. COST SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.
 10. BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.
 11. 2-PLY MEMBRANE WATERPROOFING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TEST PROPERTY	TEST METHOD	SPECIFICATION LIMITS
GRAB TENSILE STRENGTH, LB/IN. @ 12 IN./MINUTE RATE OF LOADING, MIN.	D 5034	70
PLIABILITY, 180° BEND, 1 IN. MANDREL @ 20°F	D 146	UNAFFECTED
RESISTANCE TO PUNCTURE, LB MIN.	E 154 (SQUARE MOUNTING FRAME METHOD)	40
PERMEANCE, PERM (kg/Pa * s * m²), MAX.	E 96, METHOD B	0.1
WEIGHT, oz/yd² MIN.	D 3776	40
PRIMER	-	AS SPECIFIED BY THE MANUFACTURER

THE ADHESIVE SIDE OF THE MEMBRANE SHALL BE PROTECTED WITH A SPECIAL RELEASE PAPER THAT CAN BE EASILY REMOVED FOR INSTALLATION. COST OF 2-PLY MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.

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

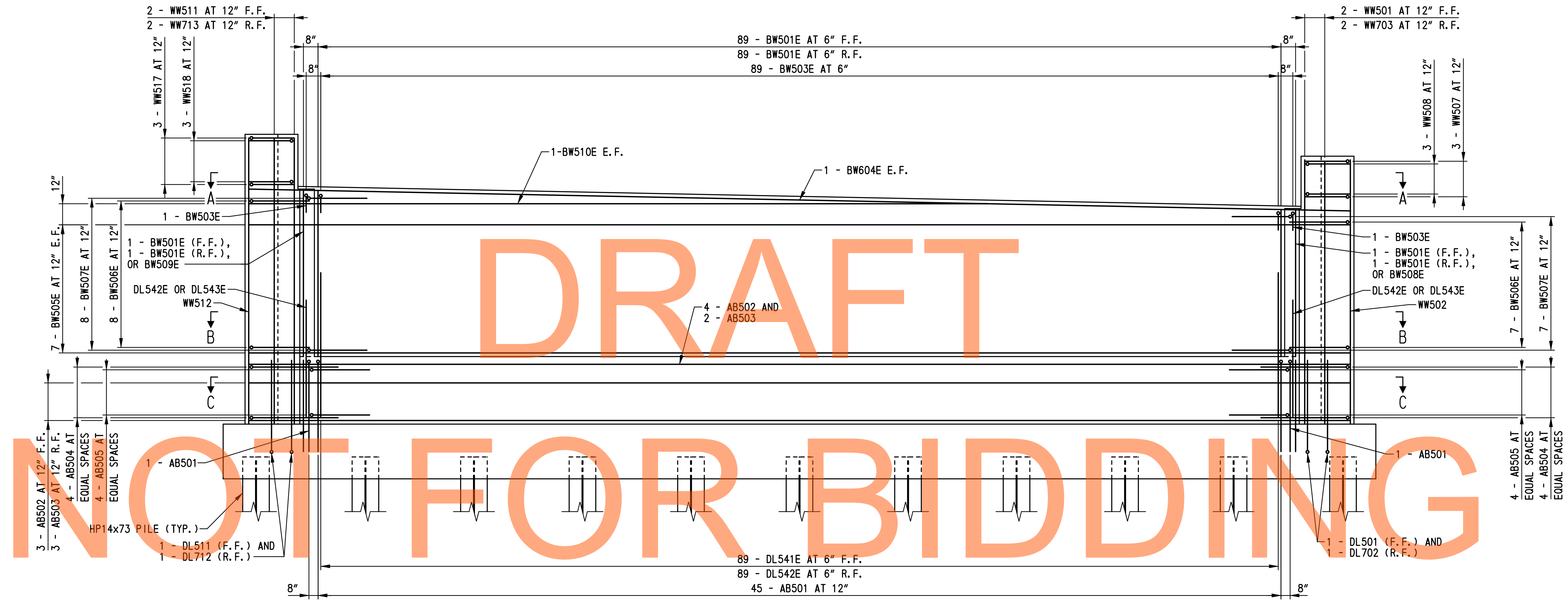
- DRAINAGE SYSTEM NOTES:**
1. COST OF PVC PIPE UNDERDRAIN, DELAWARE NO. 57 STONE, GEOTEXTILE FILTER FABRIC, BAR REINFORCEMENT, AND THREADED COUPLERS SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.
 2. PERFORATED AND NON-PERFORATED PVC PIPE UNDERDRAIN SHALL CONFORM TO ASTM F758, TYPE PS 28.
 3. GEOTEXTILE FILTER FABRIC SHALL CONFORM TO AASHTO M 288, CLASS 2.



ABUTMENT DRAINAGE SYSTEM DETAIL
SCALE: 3/4" = 1'-0"

NOT FOR BIDDING

M:\31653\000\Contract\IB\CADD\Bridg\Br_No2\AB02_brl-2.dgn 2/2/2015 8:59:25 AM



AUGUST 2015

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

- NOTES:**
1. CONCRETE BEARING PEDESTALS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT IN CONCRETE BEARING PEDESTALS SEE DWG. NO. AB-06.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-04 TO AB-06.
 3. REINFORCING STEEL IN FOOTING NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. AB-05 AND PL-01.
 4. F. F. = FRONT FACE
R. F. = REAR FACE
E. F. = EACH FACE

M:\31653\000\Contract\1B\CADD\Bridges\Br_No2\AB03_br1-2.dgn 2/2/2015 8:12:18 AM



ADDENDUMS / REVISIONS	

SCALE: AS SHOWN

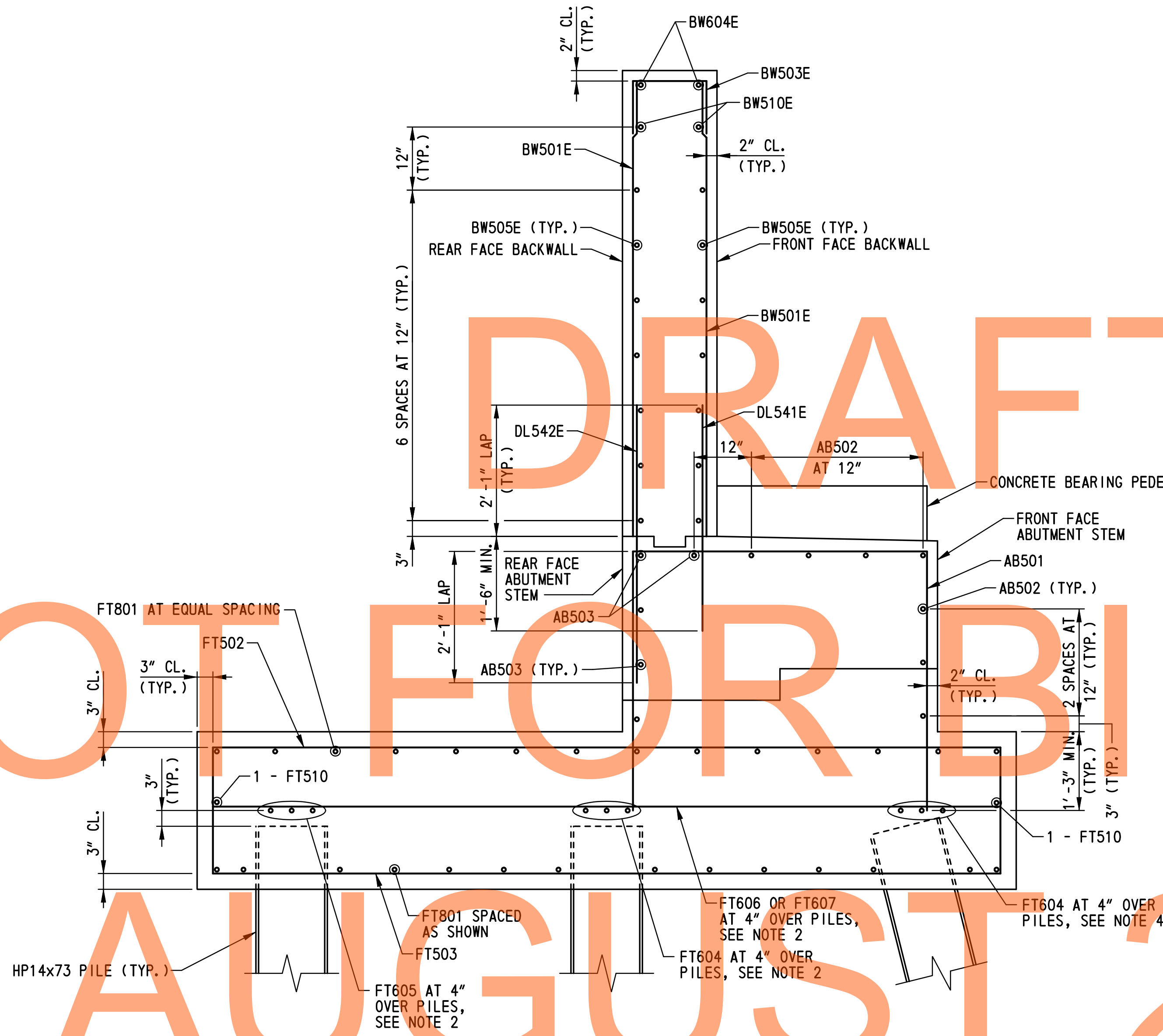
**US 301 &
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**ABUTMENT A
REINFORCEMENT
ELEVATION**

BR1-2 AB-03
SHEET NO.
159
TOTAL SHTS.
491

DRAFT
NOT FOR BIDDING
AUGUST 2015

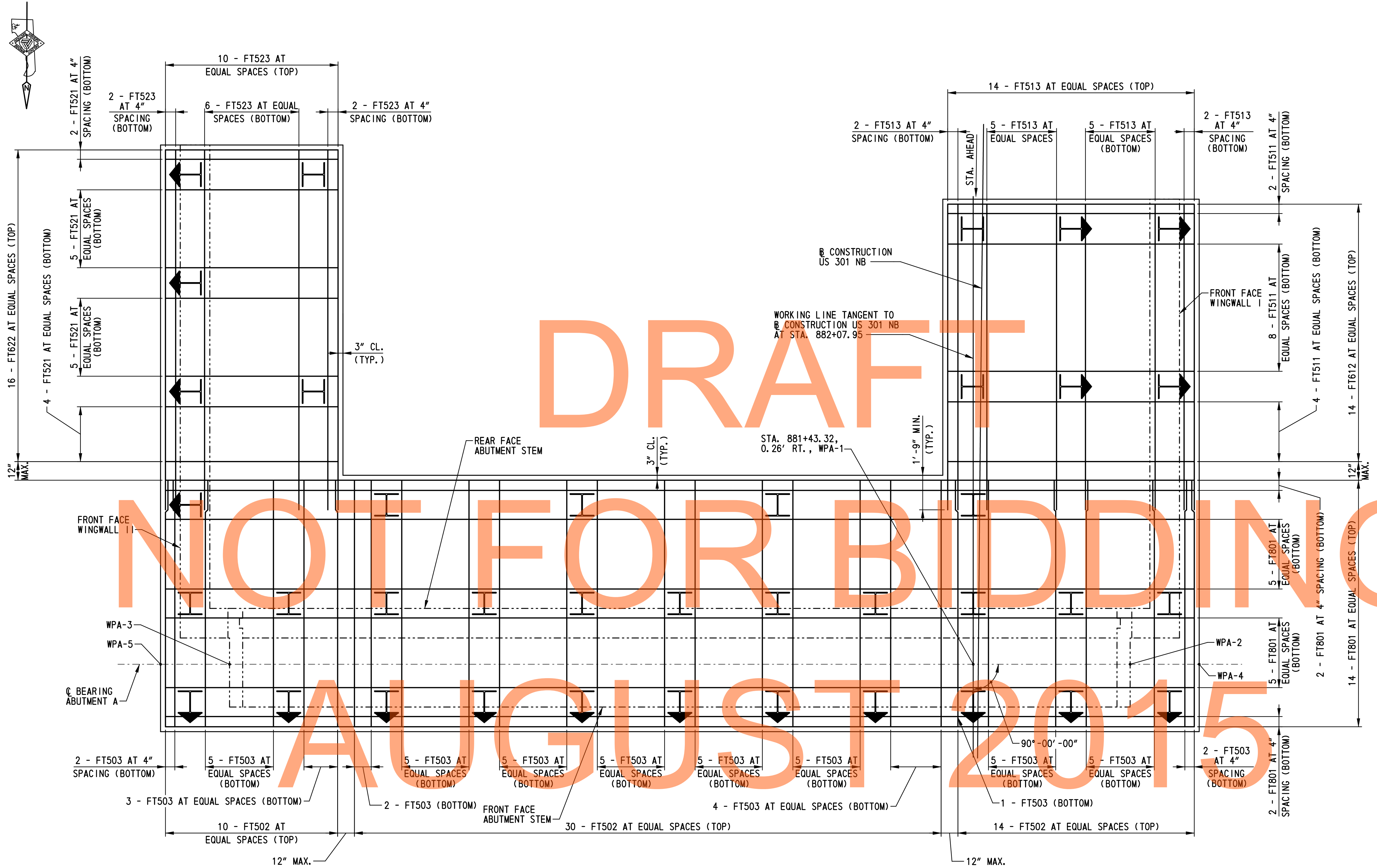


ABUTMENT A REINFORCEMENT TYPICAL SECTION
SCALE: 3/8"=1'-0"

NOTES:

1. CONCRETE BEARING PEDESTAL REINFORCEMENT NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. AB-06.
2. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-01.
3. FOR ADDITIONAL FOOTING REINFORCEMENT DETAILS, SEE DWG. NO. AB-05.
4. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-03, AB-05 AND AB-06.

M:\31653\000\Contract\B\CADD\Bridges\Br_No2\AB04_br1-2.dgn 2/2/2015 8:50:42 AM



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

- NOTES:
1. REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. SEE DRAWING NO. PL-01 FOR ADDITIONAL INFORMATION.
 2. SEE ABUTMENT REINFORCEMENT TYPICAL SECTION ON DWG. NO. AB-04 AND WINGWALL REINFORCEMENT TYPICAL SECTIONS ON DWG. NO. WW-04 FOR ADDITIONAL INFORMATION.
 3. ALL REINFORCEMENT SHALL HAVE 1 1/2" MINIMUM CLEAR TO PILES.

M:\31653\000\Contract\1B\CADD\Bridges\Bridg\No2\AB05_brl-2.dgn
 2/2/2015 8:15:15 AM

ADDENDUMS / REVISIONS

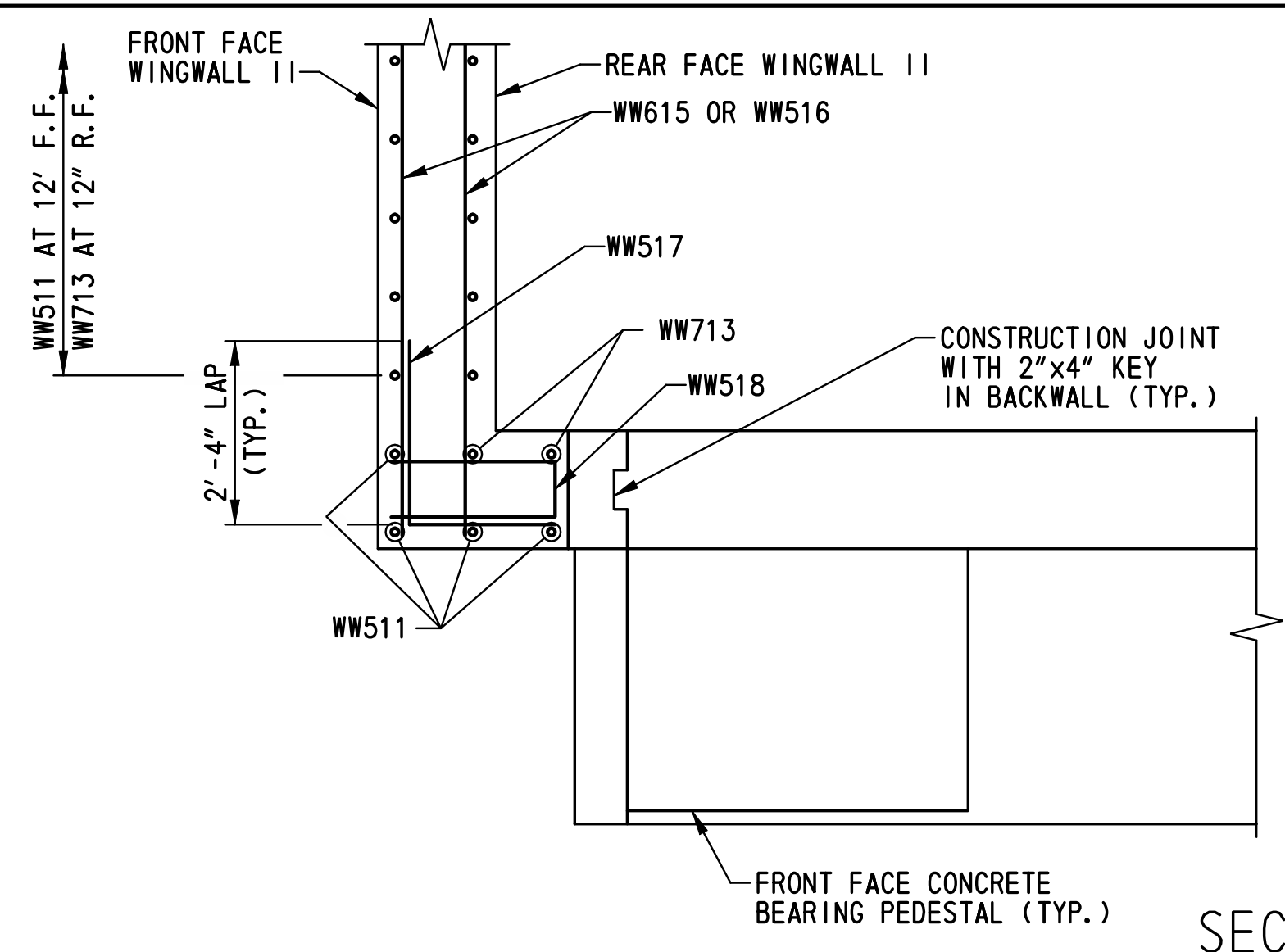
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

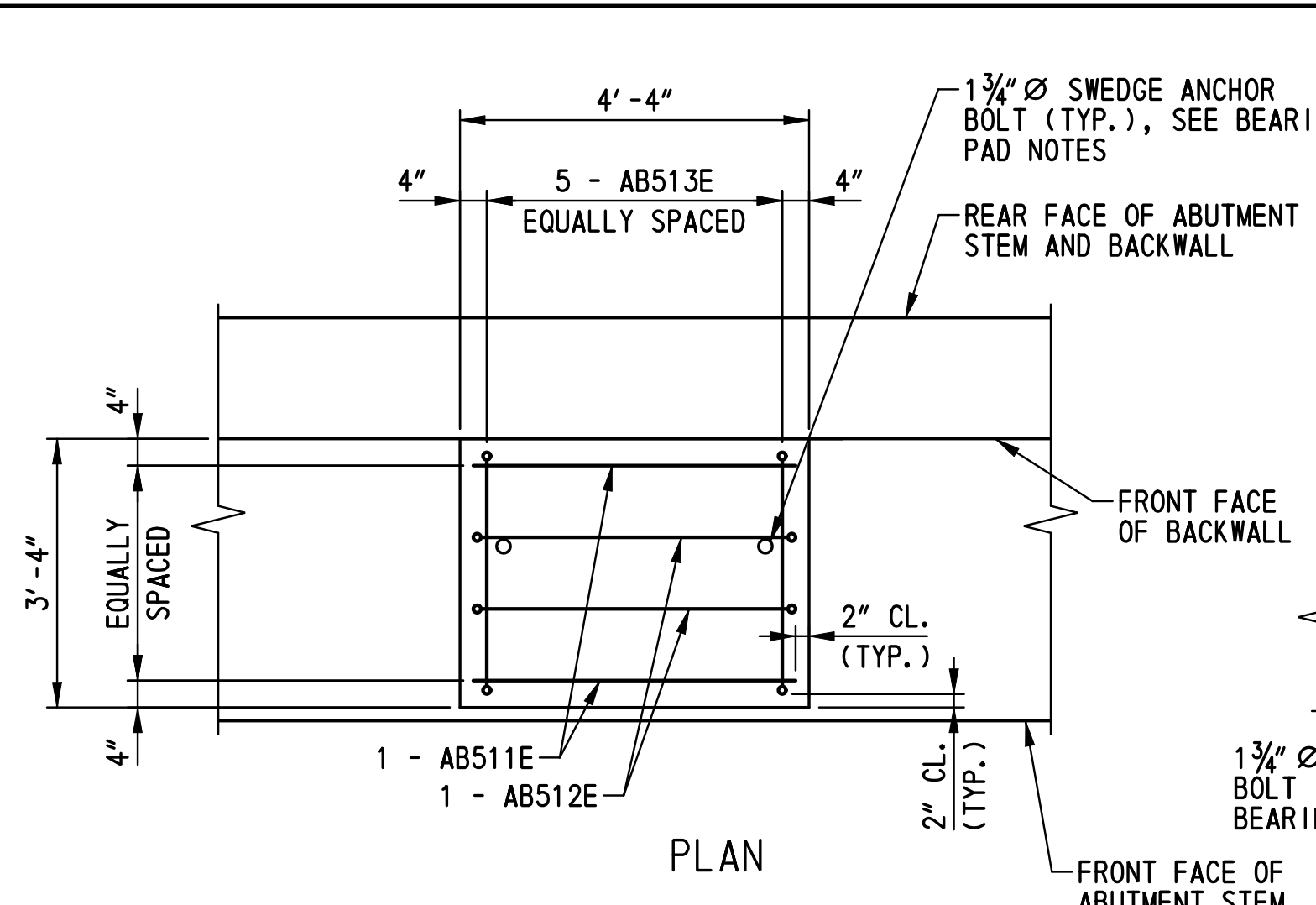
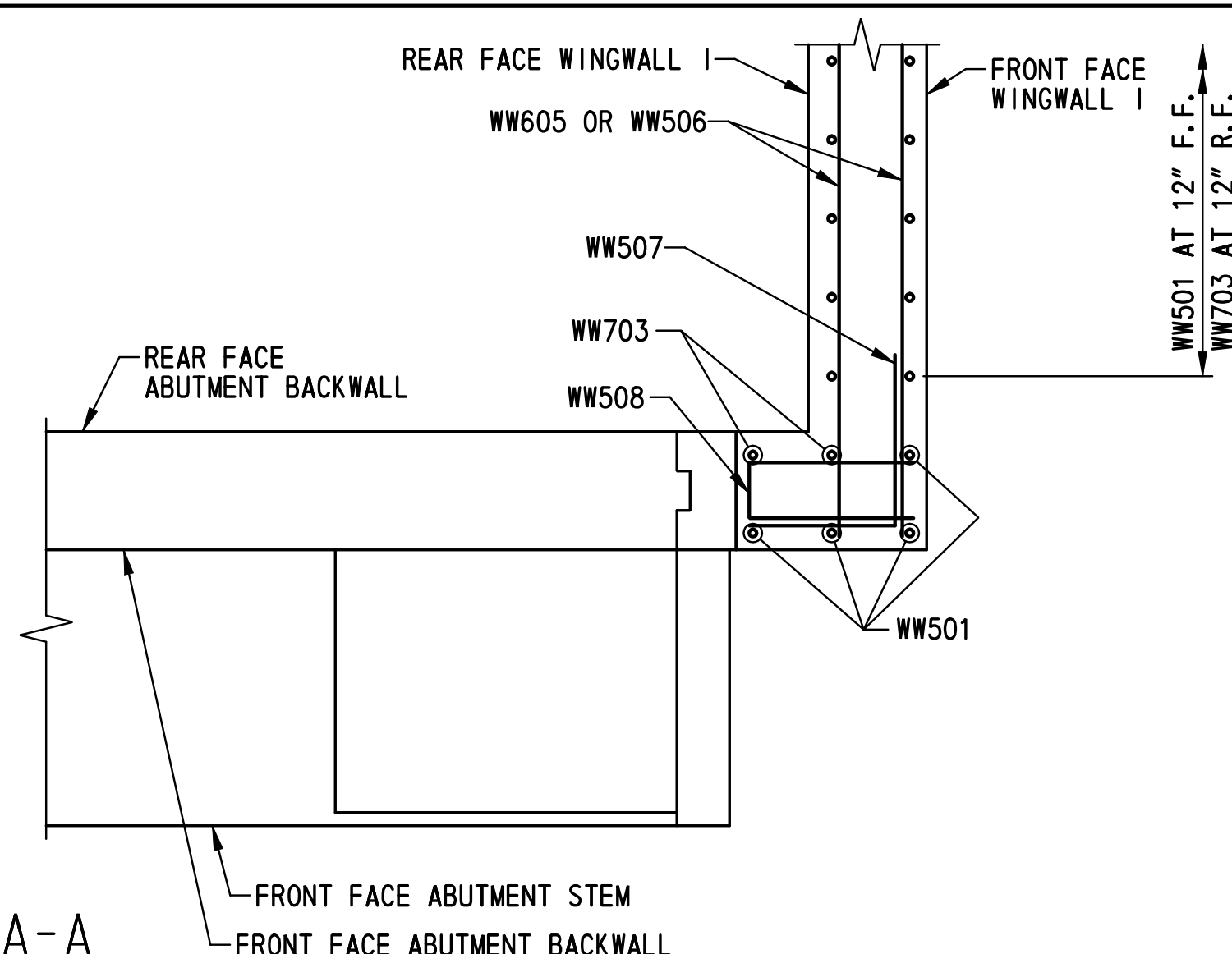
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT A
FOOTING REINFORCEMENT
PLAN

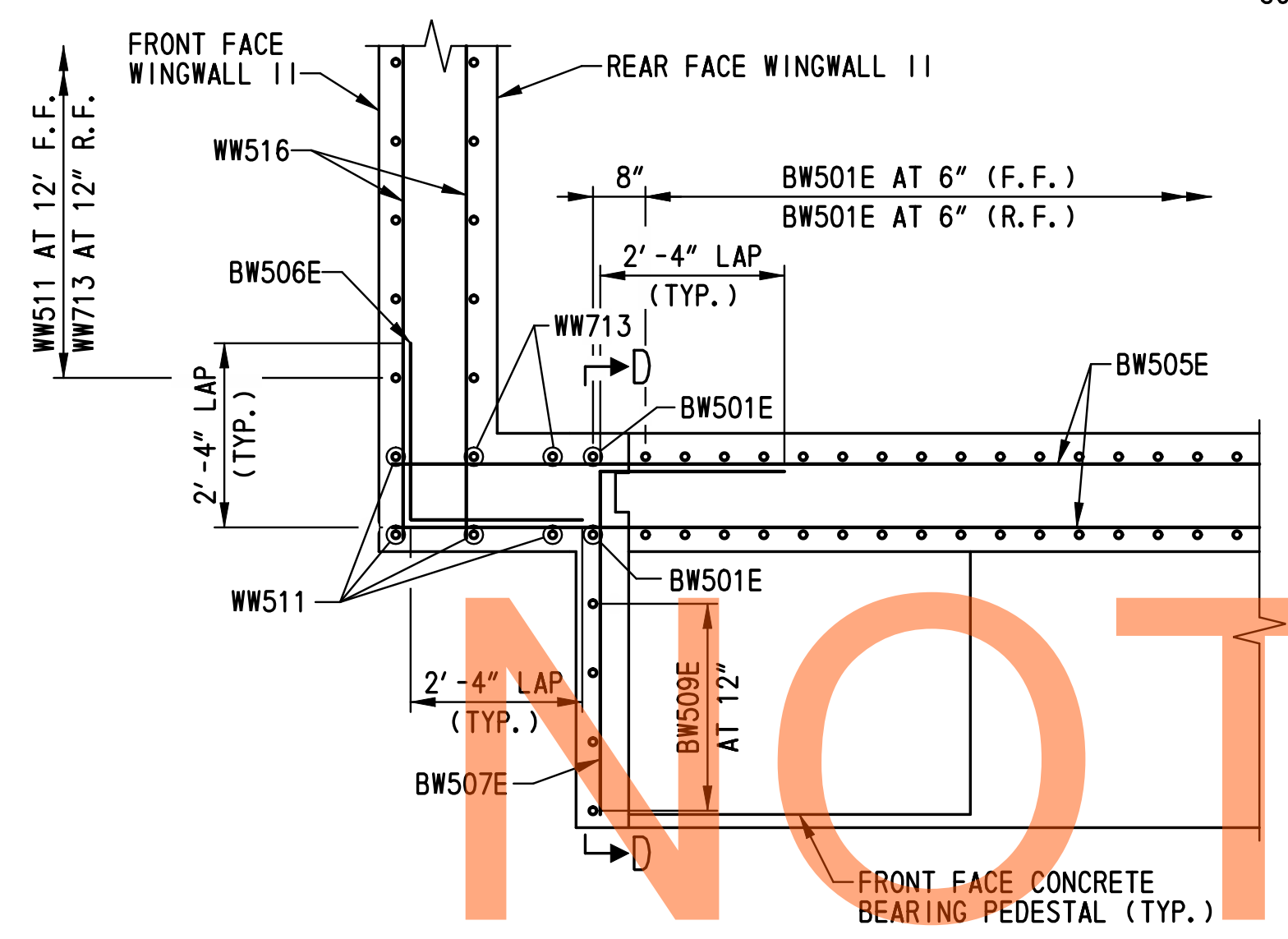
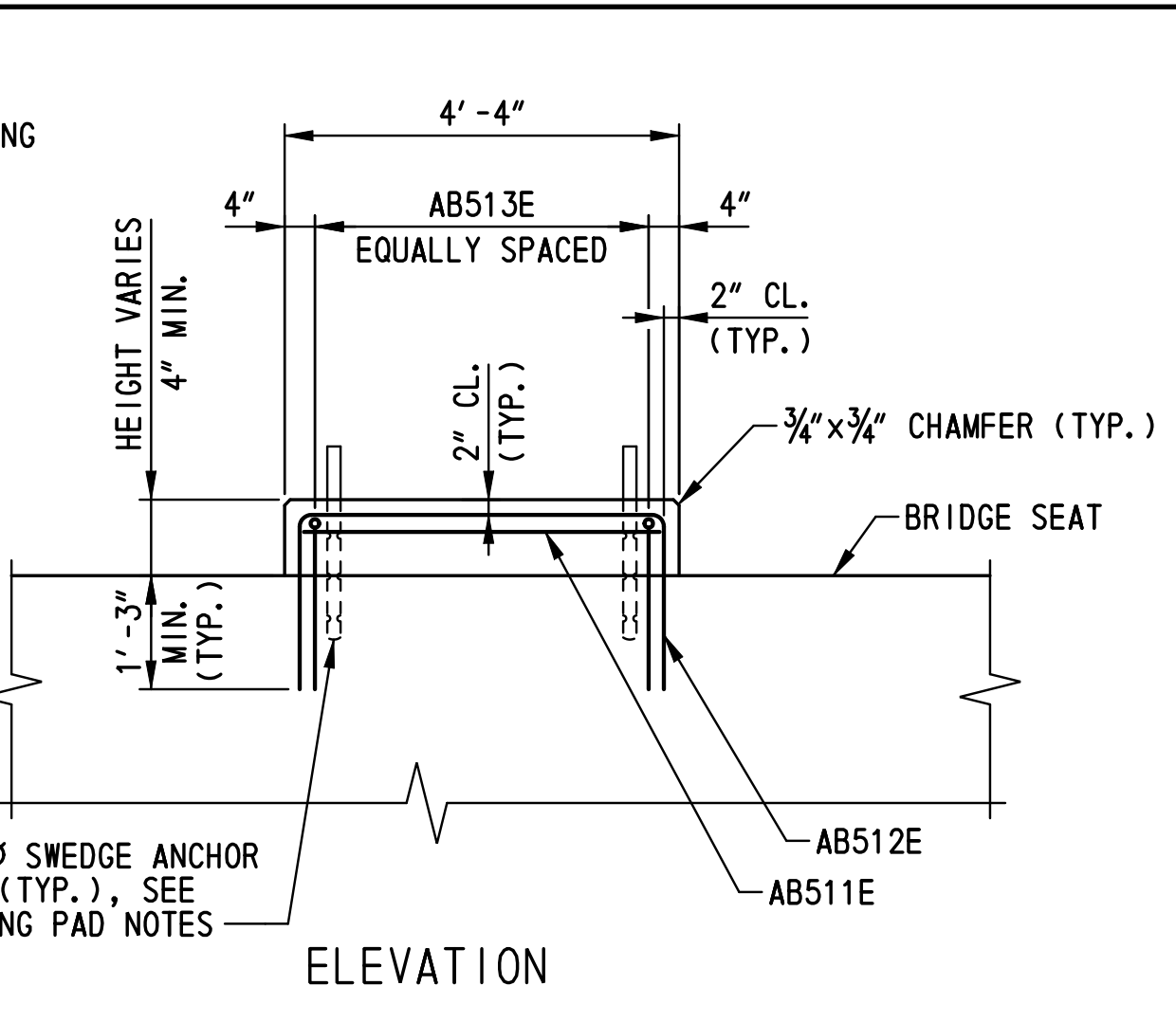
BR1-2 AB-05
SHEET NO.
161
TOTAL SHTS.
491



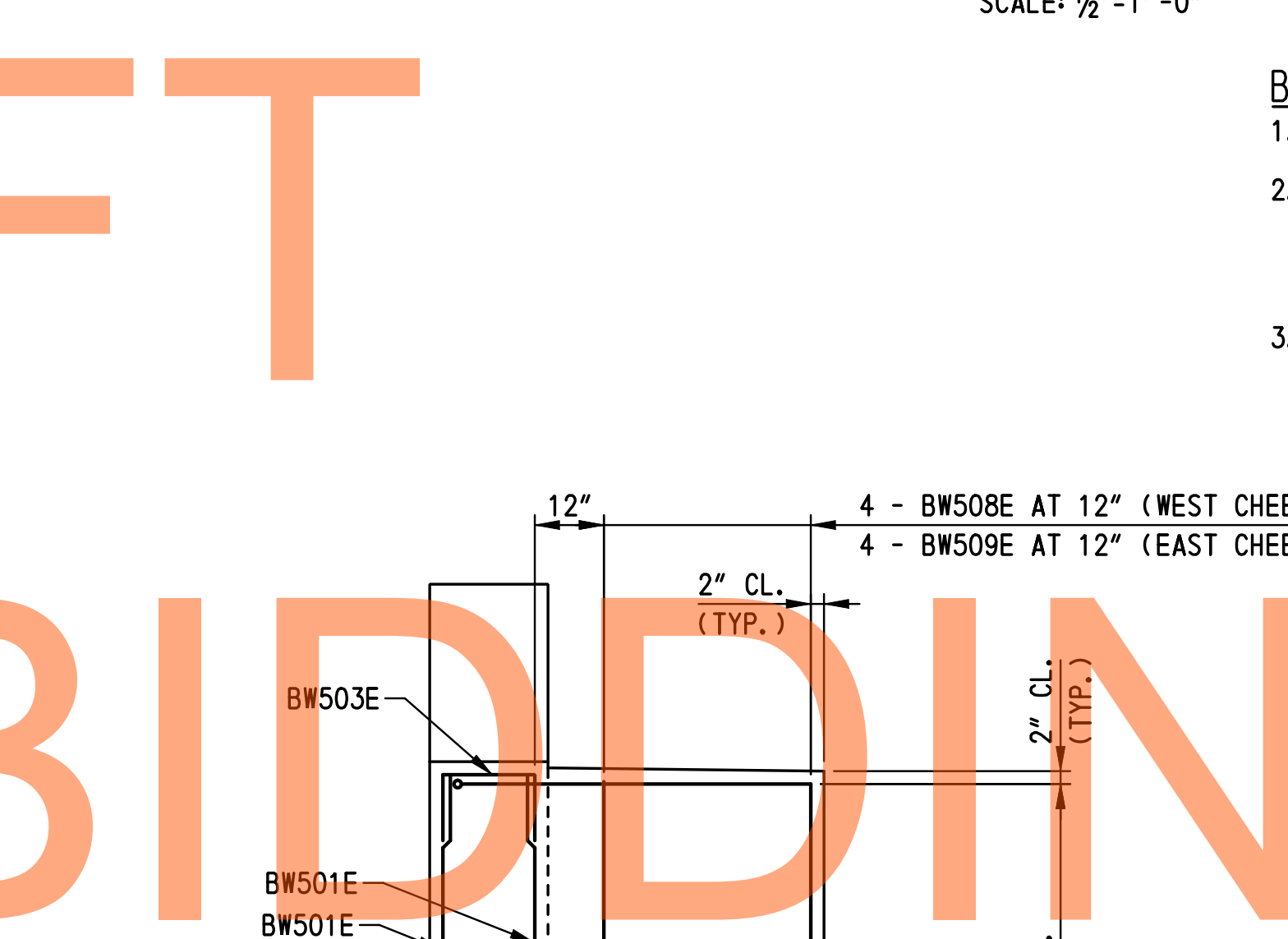
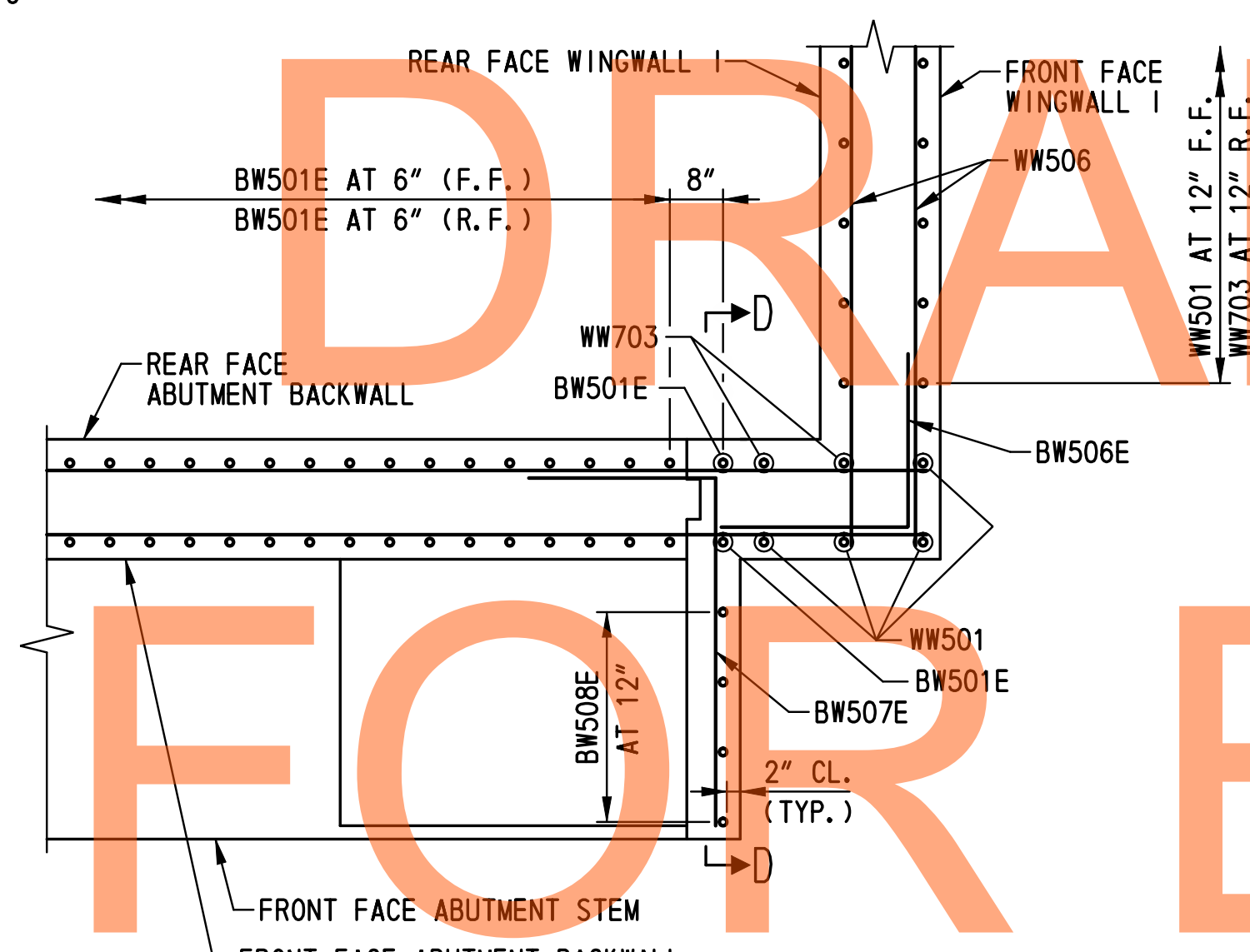
SECTION A-A
SCALE: 1/2" = 1' - 0"



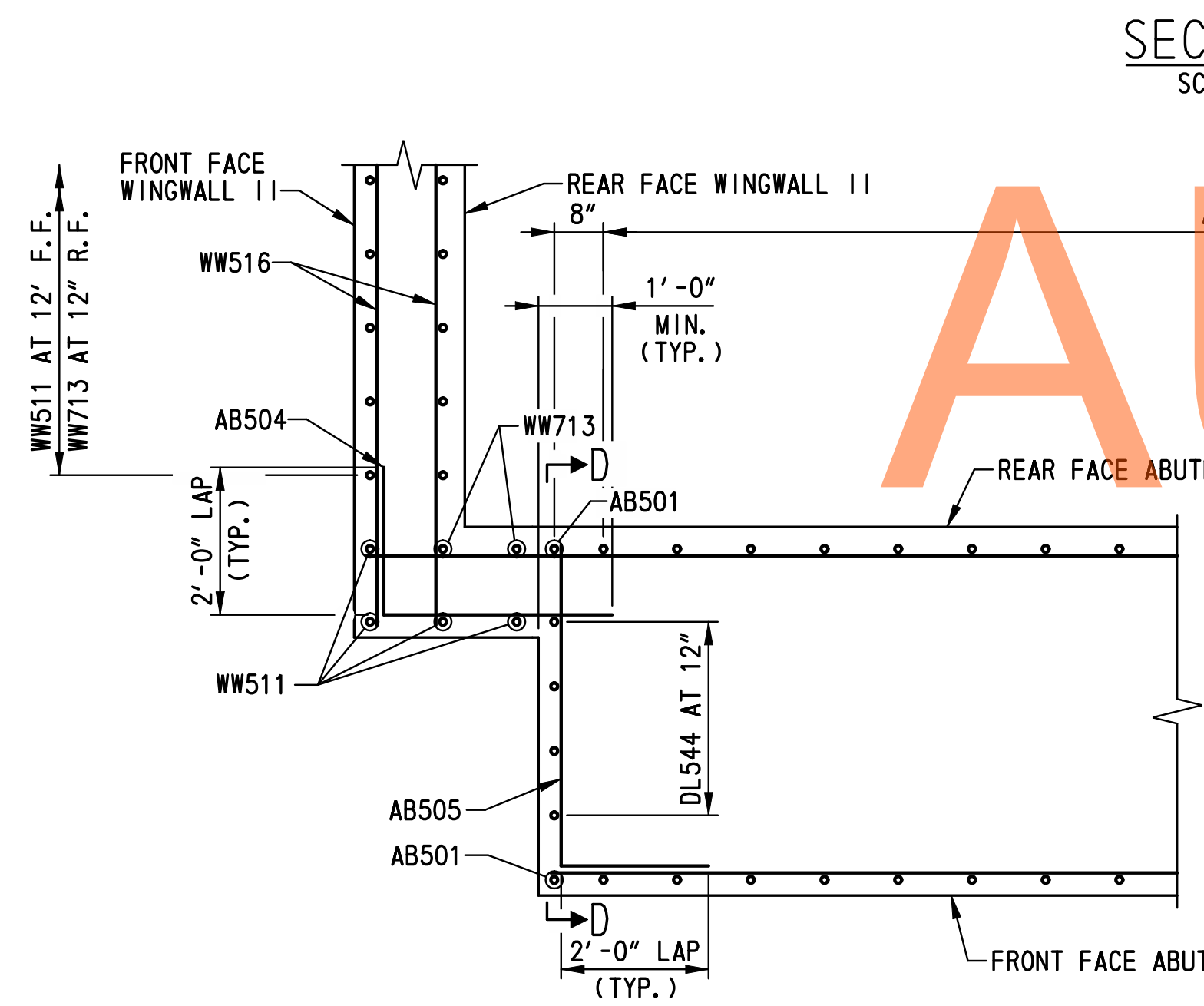
PLAN
ABUTMENT A CONCRETE BEARING PEDESTAL DETAILS
SCALE: 1/2" = 1' - 0"



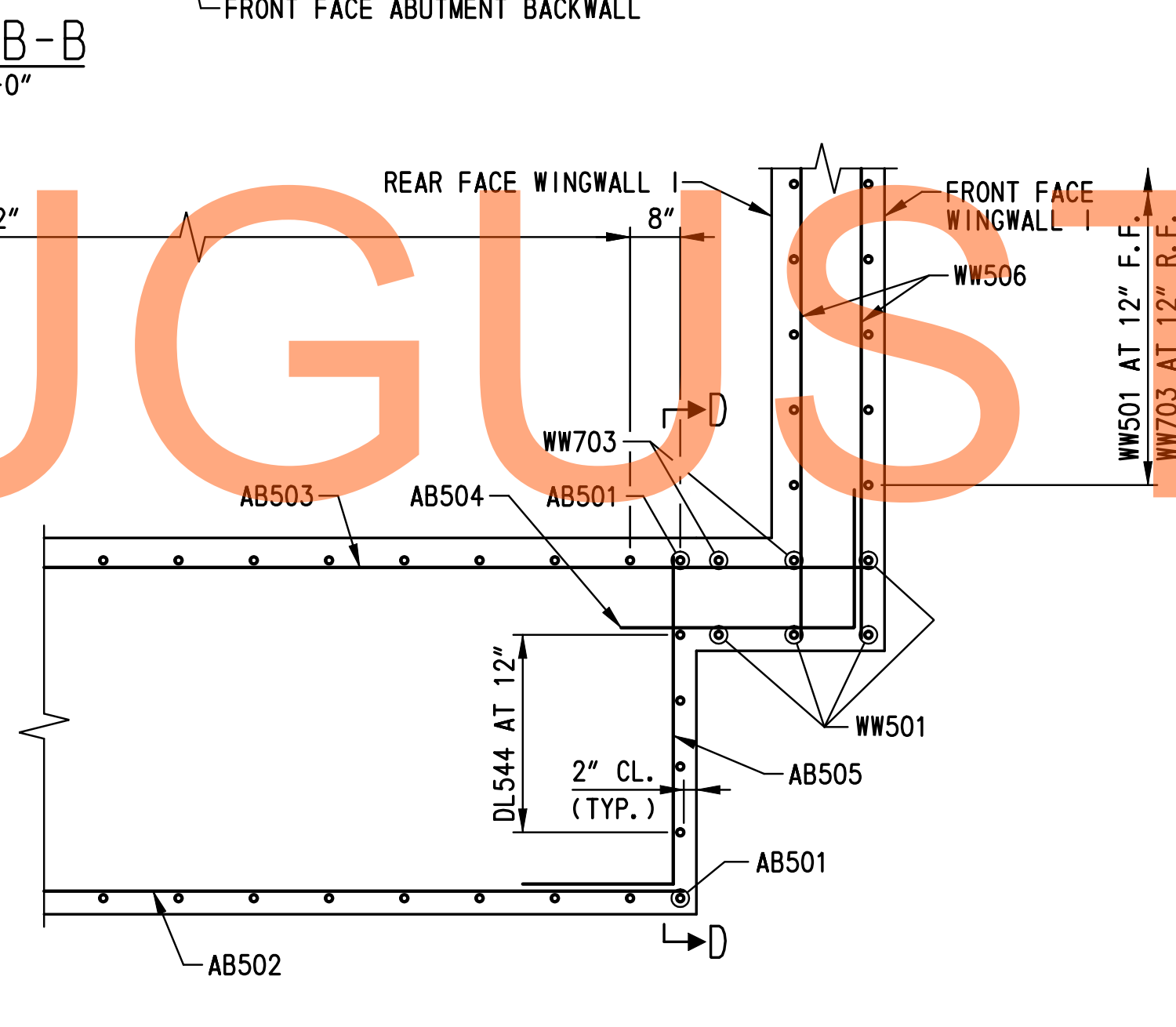
SECTION B-B
SCALE: 1/2" = 1' - 0"



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



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



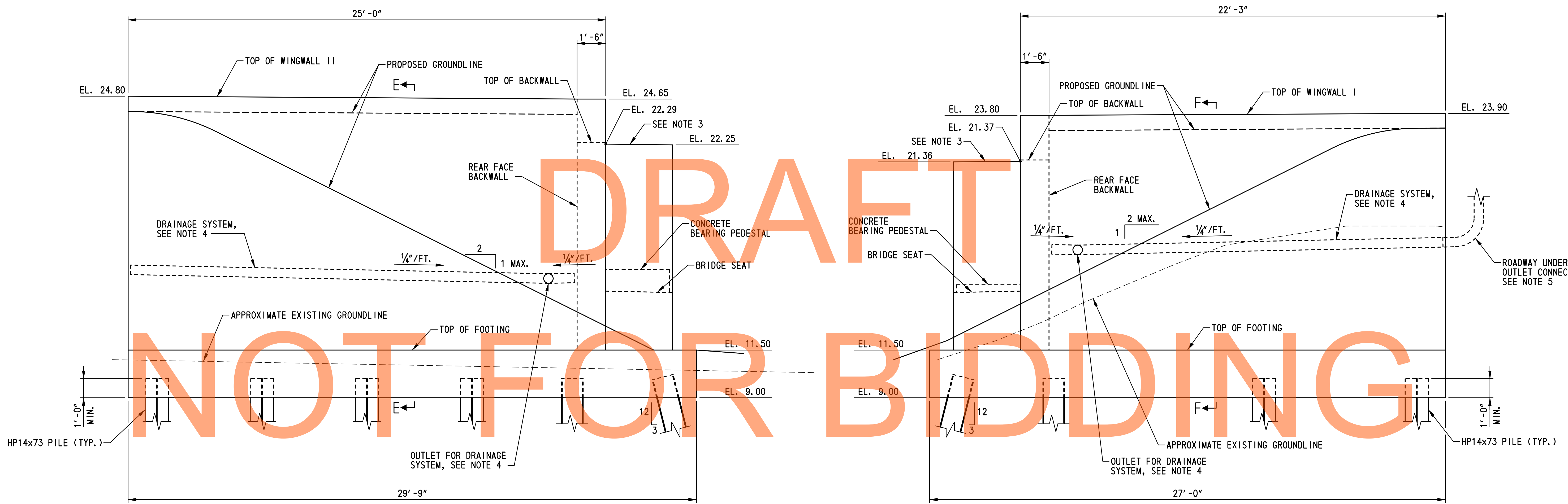
- BEARING PAD NOTES:**
1. FOR ANCHOR BOLT DIMENSIONS AND LOCATION, SEE DWG. NO. BB-01.
 2. ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER CONCRETE HAS SET.
 3. SPACE REINFORCING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

- NOTES:**
1. FOOTING REINFORCEMENT NOT SHOWN FOR CLARITY. FOR FOOTING REINFORCEMENT, SEE DWG. NOS. AB-05 AND PL-01.
 2. ABUTMENT STEM AND BACKWALL LONGITUDINAL REINFORCEMENT NOT SHOWN IN SECTION D-D FOR CLARITY. SEE DWG. NOS. AB-03 AND AB-04 FOR LONGITUDINAL REINFORCEMENT.
 3. FOR WINGWALL REINFORCEMENT, SEE DWG. NOS. WW-03 AND WW-04.
 4. F.F. = FRONT FACE
R.F. = REAR FACE

M:\31653\000\Contract\1B\CADD\Bridges\Br_No2\AB06_brl-2.dgn
 2/2/2015 8:44:10 AM

ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		



DRAFT
NOT FOR BIDDING
AUGUST 2015

- NOTES:**
1. FOR TYPICAL SECTIONS E-E AND F-F, SEE DRAWING NO. WW-02.
 2. FOR WINGWALL I AND II REINFORCEMENT ELEVATIONS, SEE DWG. NOS. WW-03.
 3. TOP OF CHEEKWALL TO BE 1" BELOW BOTTOM OF SUPERSTRUCTURE.
 4. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. WW-02.
 5. CONNECT ROADWAY UNDERDRAIN OUTLET TO WINGWALL DRAINAGE SYSTEM. COST OF UNDERDRAIN OUTLET CONNECTION SHALL BE INCIDENTAL TO ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6". SEE DWG. NO. CP-08 FOR ADDITIONAL INFORMATION.

M:\31653\000\Contract\1B\CADD\Bridges\Br_No2\WMO_Lbr1-2.dgn 2/2/2015 8:15:58 AM



ADDENDUMS / REVISIONS	

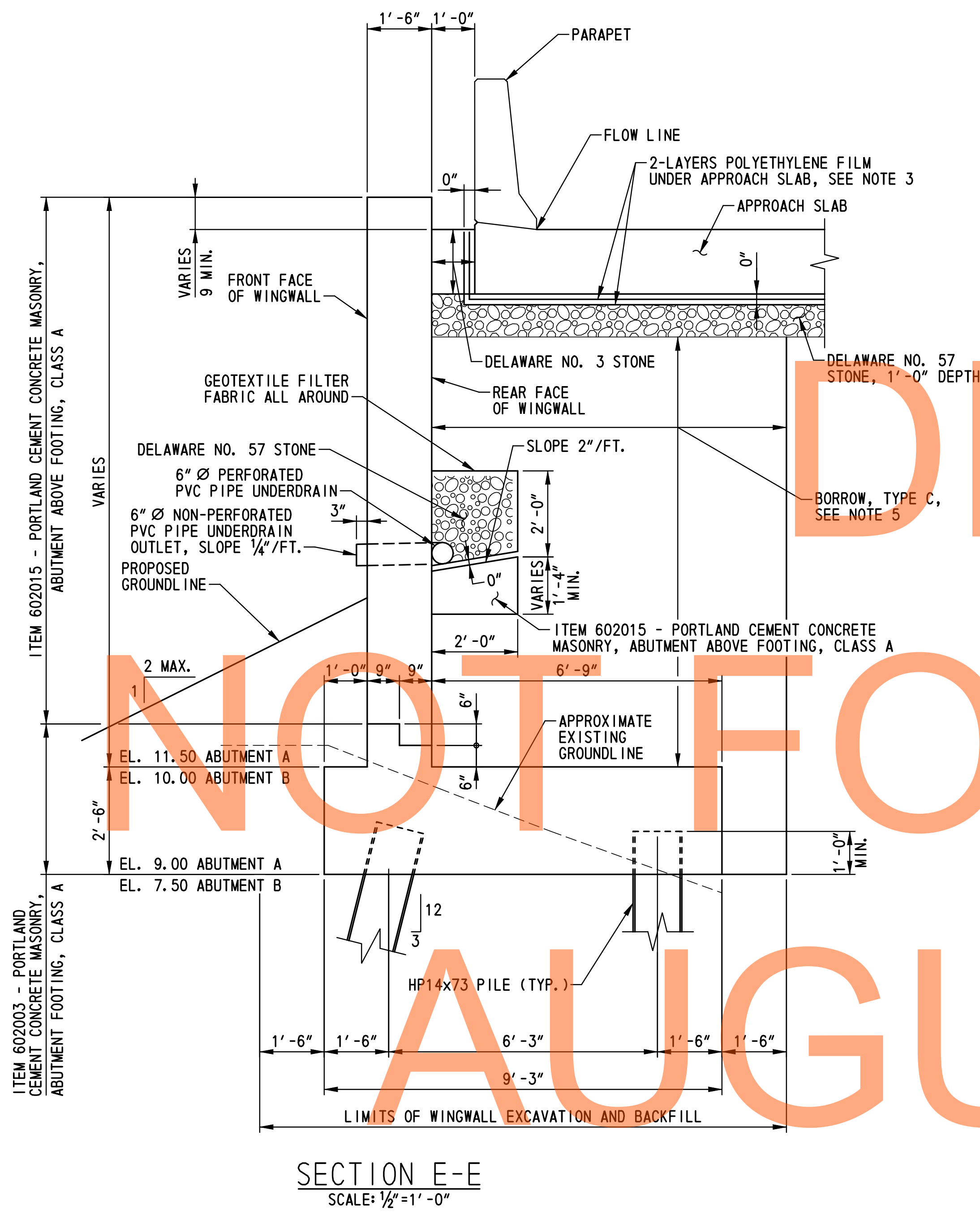
SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

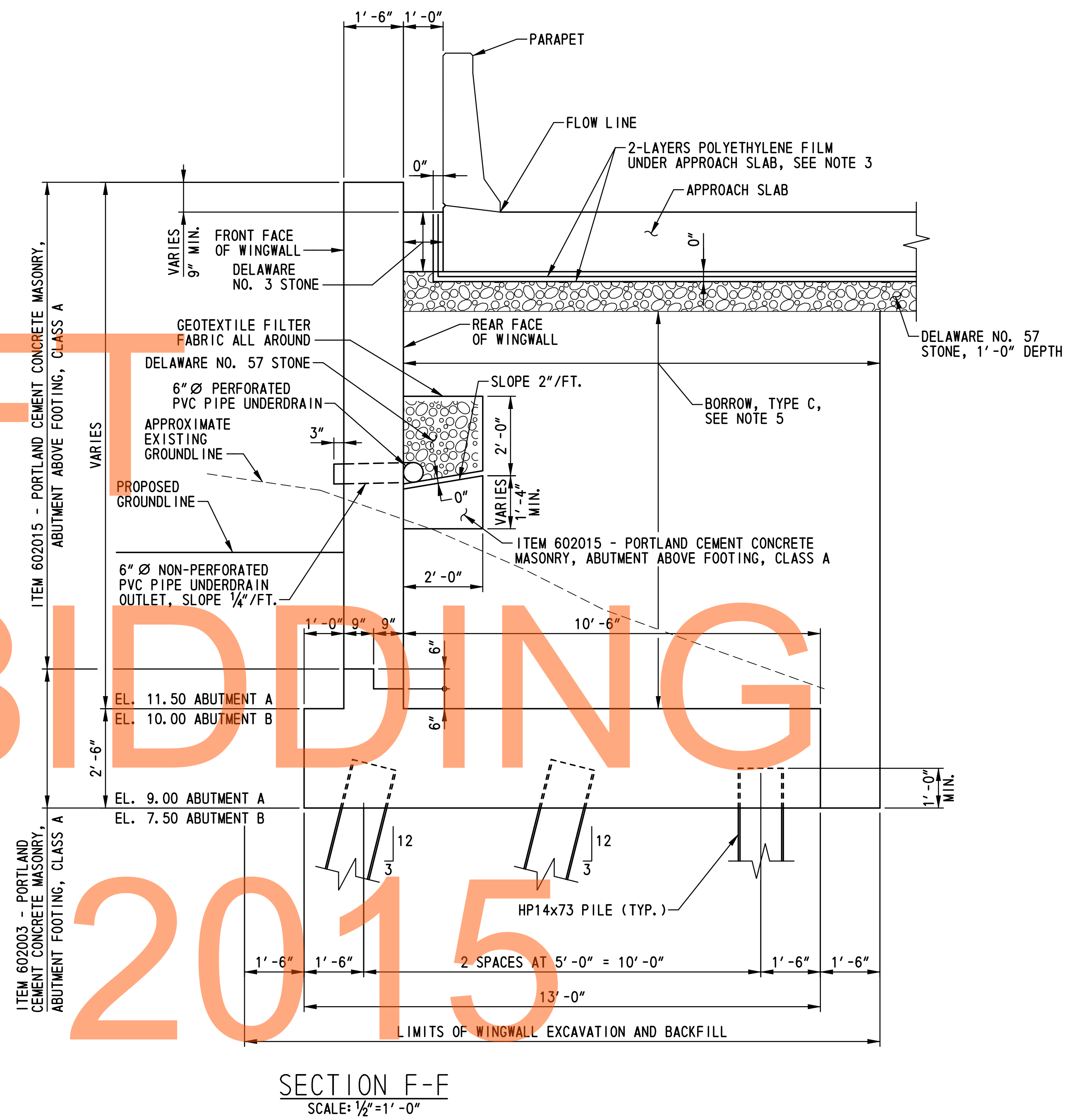
CONTRACT T200911302	BRIDGE NO. 1-432
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

WINGWALL I AND II ELEVATIONS	SHEET NO. 163
	TOTAL SHTS. 491

**BR1-2
WW-01**



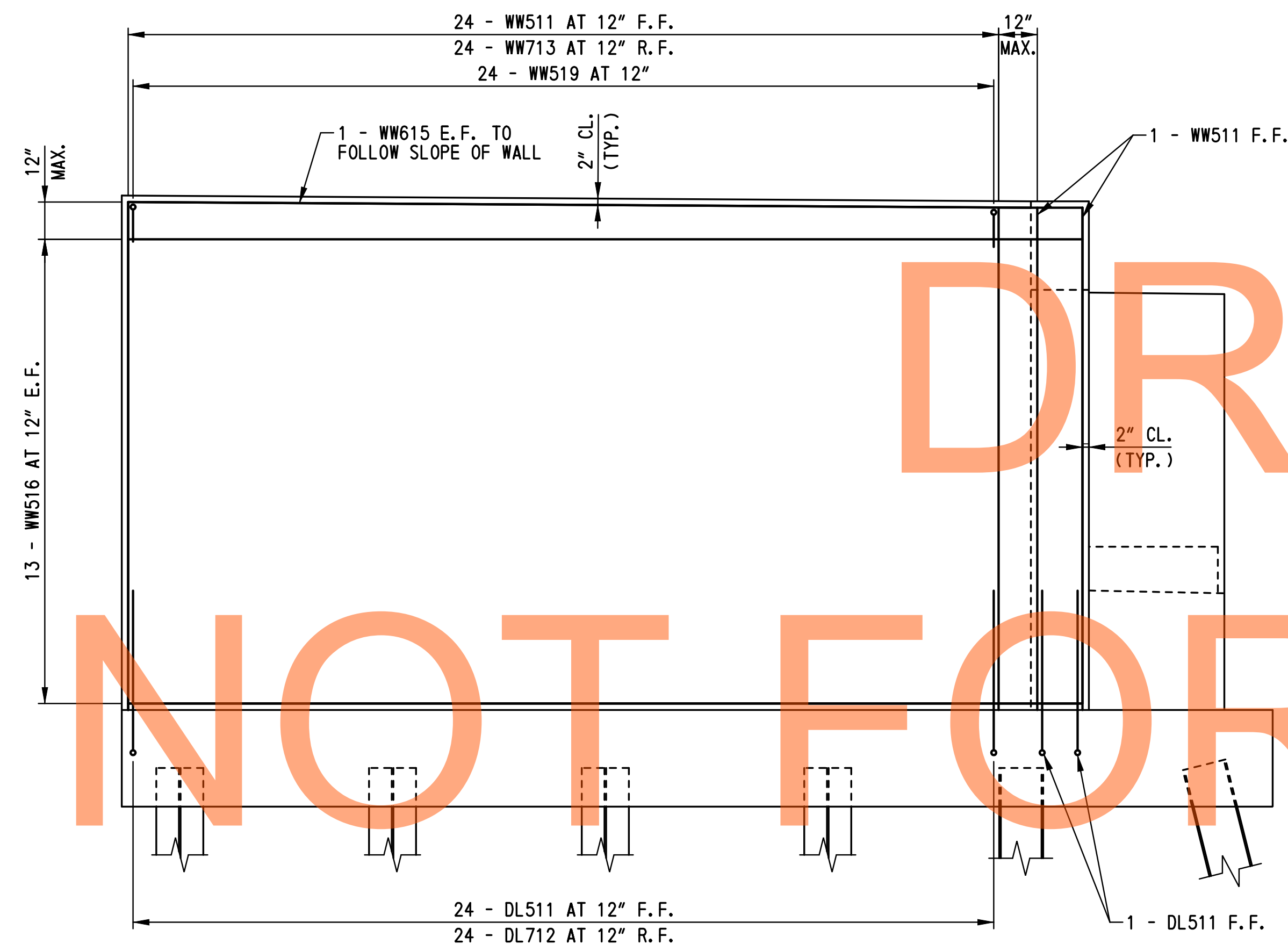
SECTION E-E
SCALE: 1/2"=1'-0"



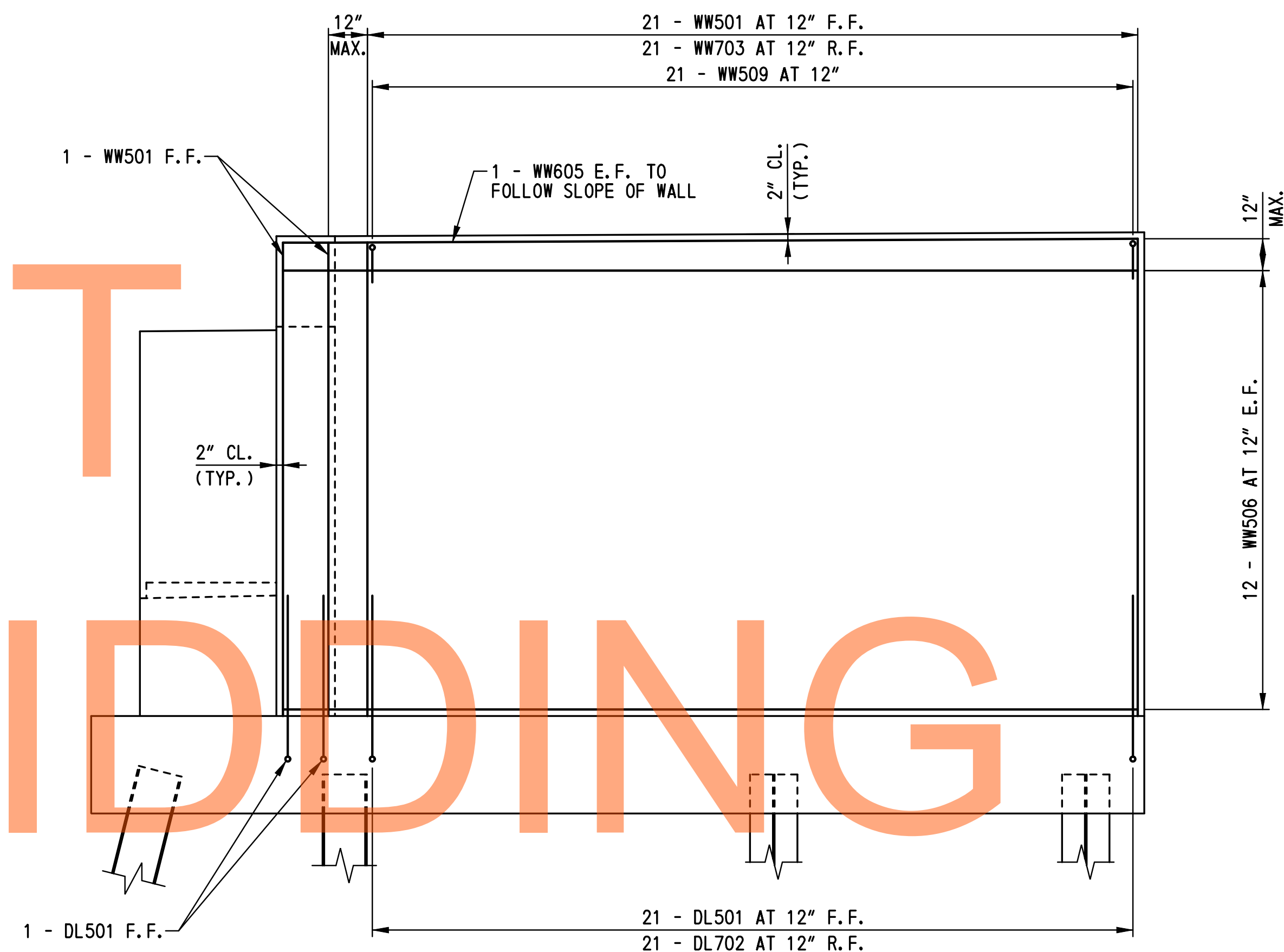
SECTION F-F
SCALE: 1/2"=1'-0"

- NOTES:**
- FOR PILE LAYOUT, SEE DWG. NO. PL-01.
 - FOR WINGWALLS I AND II ELEVATION, SEE DWG. NO. WW-01. FOR WINGWALLS III AND IV ELEVATION, SEE DWG. NO. WW-05.
 - POLYETHYLENE FILM REQUIRED AT APPROACH SLAB A ONLY. FOR POLYETHYLENE FILM DETAILS, SEE DWG. NO. AB-02.
 - FOR ADDITIONAL DRAINAGE SYSTEM INFORMATION, SEE DWG. NO. AB-02.
 - BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

M:\31653\000\CONTRACT 18\CADD\Bridg\B-No2\WW02_brl-2.dgn 2/2/2015 10:27:01 AM



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



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

NOTES:

1. REINFORCING STEEL IN FOOTING NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. AB-05 AND PL-01.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-03 AND AB-06.
3. FOR WINGWALL REINFORCEMENT TYPICAL SECTIONS, SEE DWG. NO. WW-04.
4. F. F. = FRONT FACE
R. F. = REAR FACE
E. F. = EACH FACE

DRAFT
NOT FOR BIDDING
AUGUST 2015

M:\31653\000\Contract\B\CADD\Bridg\Br_No2\W03_brt-2.dgn 2/2/2015 8:54:19 AM



ADDENDUMS / REVISIONS

SCALE: AS SHOWN

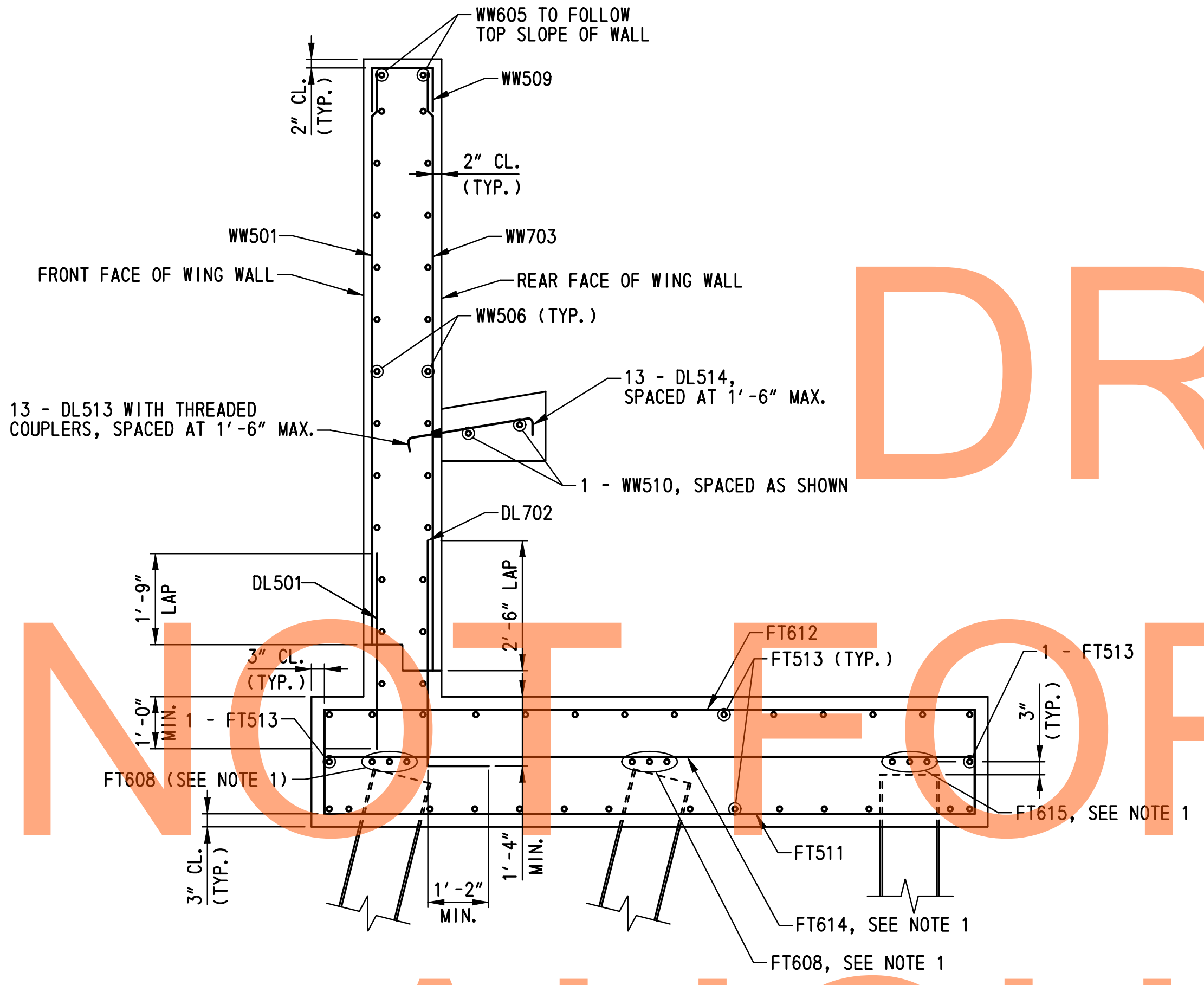
US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

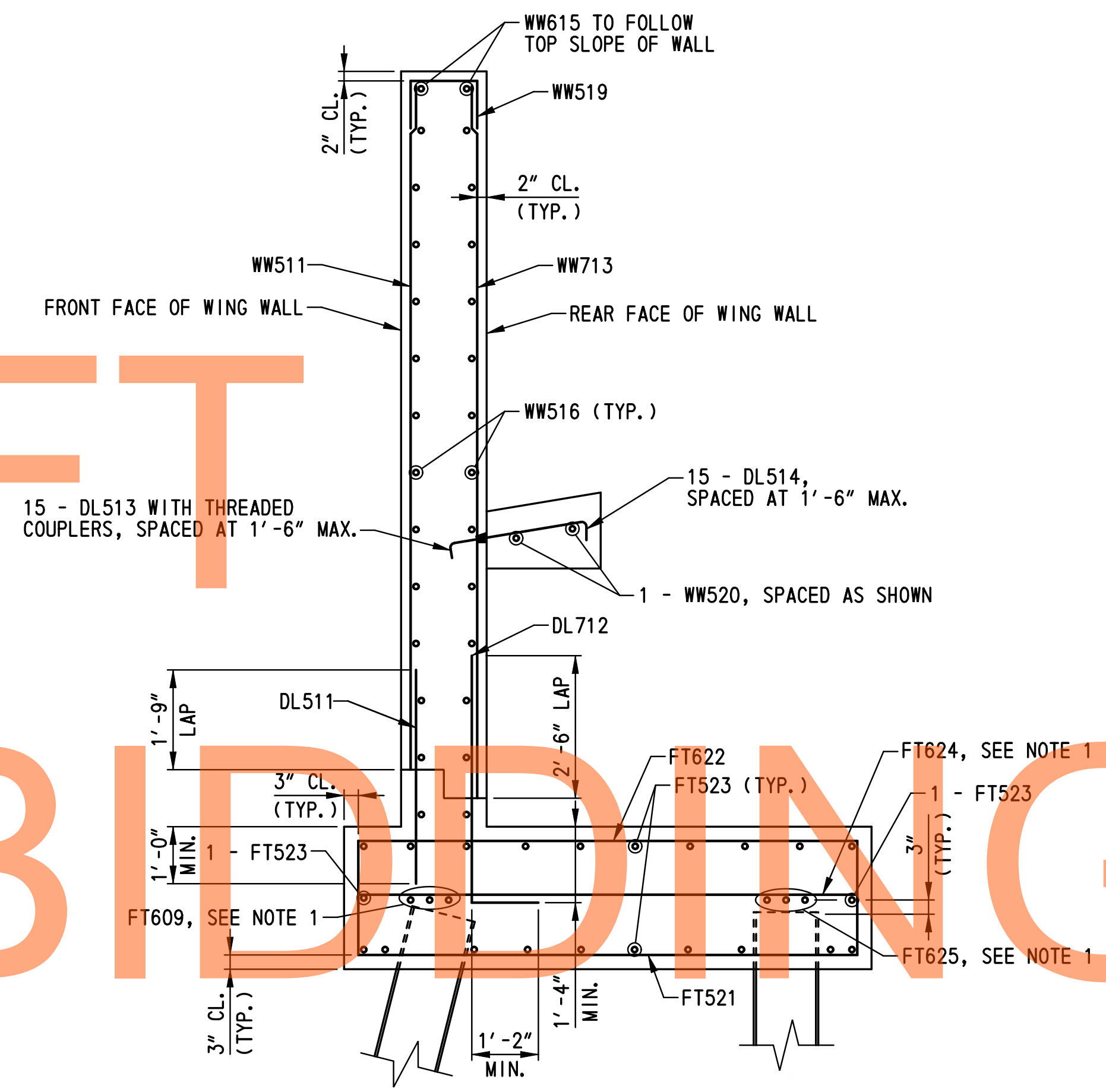
**WINGWALLS I & II
REINFORCEMENT
ELEVATIONS**

**BR1-2
WW-03**

SHEET NO.	165
TOTAL SHTS.	491



WINGWALL I REINFORCEMENT TYPICAL SECTION
SCALE: 1/2"=1'-0"



WINGWALL II REINFORCEMENT TYPICAL SECTION
SCALE: 1/2"=1'-0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

- NOTES:**
1. FOR PILE LAYOUT AND REINFORCEMENT PLAN OVER PILES, SEE DWG. NO. PL-01.
 2. FOR ADDITIONAL FOOTING REINFORCEMENT DETAILS, SEE DWG. NO. AB-05.
 3. FOR WINGWALL I AND II REINFORCEMENT ELEVATIONS, SEE DWG. NO. WW-03.

M:\31653\000\Contract\1B\CADD\Bridges\Bridg\No2\WMO4-br1-2.dgn
2/2/2015 9:58:15 AM



ADDENDUMS / REVISIONS	

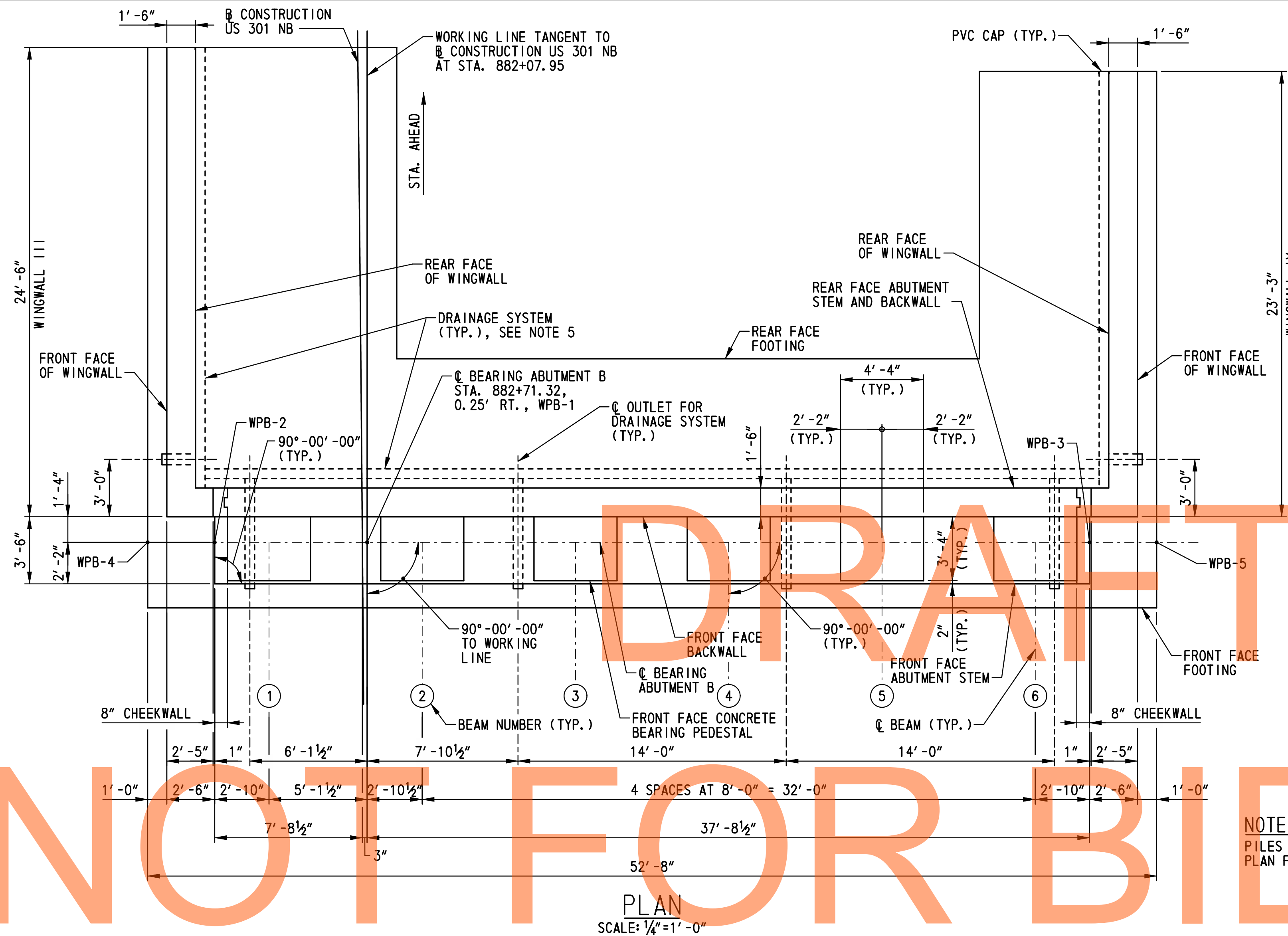
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

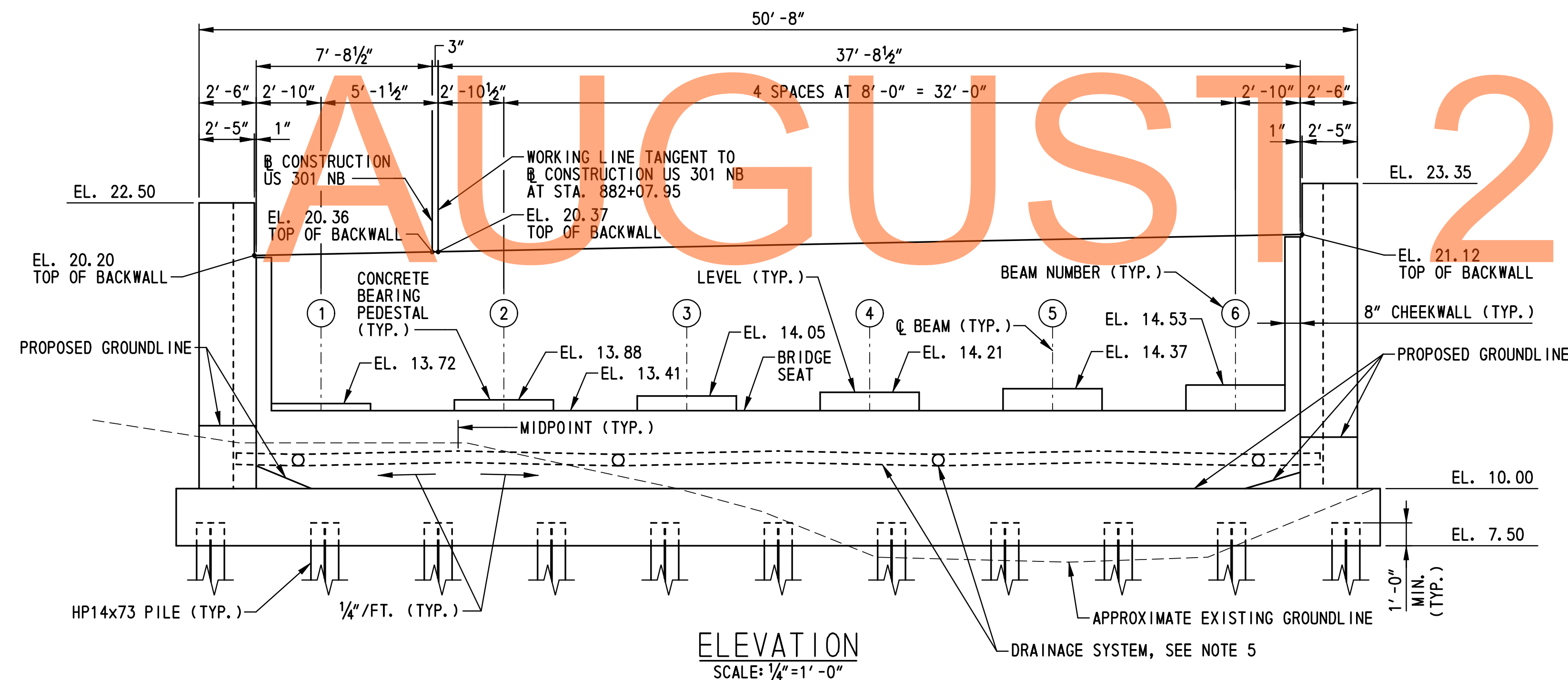
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**WINGWALLS I & II
REINFORCEMENT
TYPICAL SECTIONS**

BR1-2 WW-04
SHEET NO.
166
TOTAL SHTS.
491



NOT FOR BIDDING



NOTE:
PILES NOT SHOWN IN PLAN FOR CLARITY.

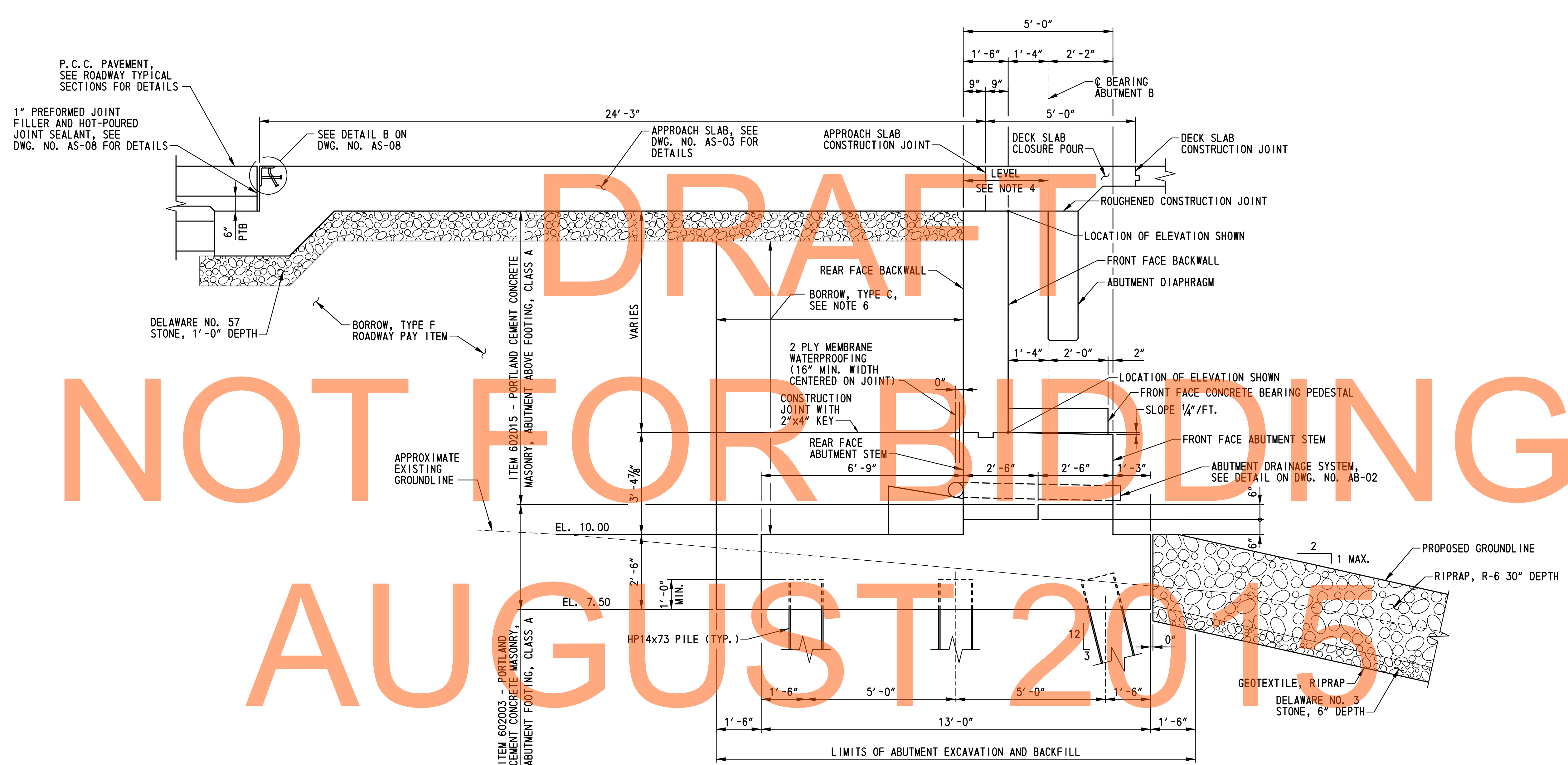
- NOTES:**
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
 2. FOR ABUTMENT B TYPICAL SECTION, SEE DWG. NO. AB-08.
 3. FOR WINGWALL ELEVATIONS, SEE DWG. NO. WW-05.
 4. FOR WINGWALL TYPICAL SECTIONS, SEE DWG. NO. WW-02.
 5. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. AB-02.

M:\31653-000\CONTRACT 18\CADD\Bridges\BR-No2\AB07-br1-2.dgn 2/27/2015 2:32:02 PM

ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

BR1-2 AB-07
SHEET NO.
167
TOTAL SHTS.
491



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

- NOTES:**
- FOR PILE LAYOUT, SEE DWG. NO. PL-01.
 - FOR ABUTMENT B PLAN AND ELEVATION, SEE DWG. NO. AB-07.
 - FOR SEQUENCE OF CONSTRUCTION, SEE DWG. NO. AB-02.
 - TOP OF BACKWALL SHALL BE LEVEL PARALLEL TO THE WORKING LINE.
 - FOR 2-PLY MEMBRANE WATERPROOFING REQUIREMENTS, SEE DWG. NO. AB-02.
 - BORROW, TYPE C SHALL BE OBTAINED FROM BORROW SOURCES AND PAID UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

M:\31653\000\CONTRACT 2020\2020\2020\BRIDGE\BR-1-2.dgn

ADDENDUMS / REVISIONS

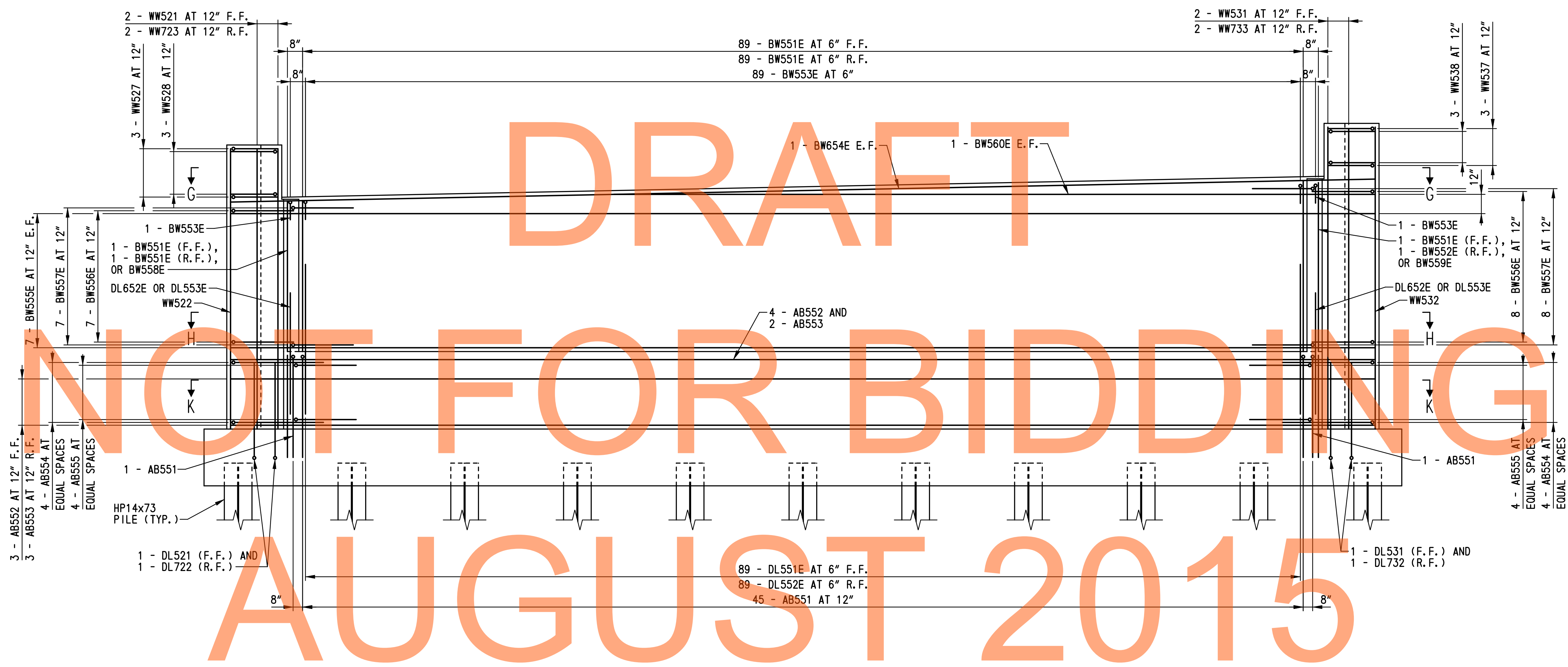
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT B TYPICAL SECTION

BR1-2 AB-08
SHEET NO.
168
TOTAL SHTS.
491



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

- NOTES:**
1. CONCRETE BEARING PEDESTALS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT IN CONCRETE BEARING PEDESTALS SEE DWG. NO. AB-12.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-10 TO AB-12.
 3. REINFORCING STEEL IN FOOTING NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. AB-11 AND PL-01.
 4. F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE

M:\31653\000\CONTRACT 1B\CADD\Bridges\B-1\No2\AB09_brl-2.dgn 2/2/2015 2:35:25 PM



ADDENDUMS / REVISIONS	

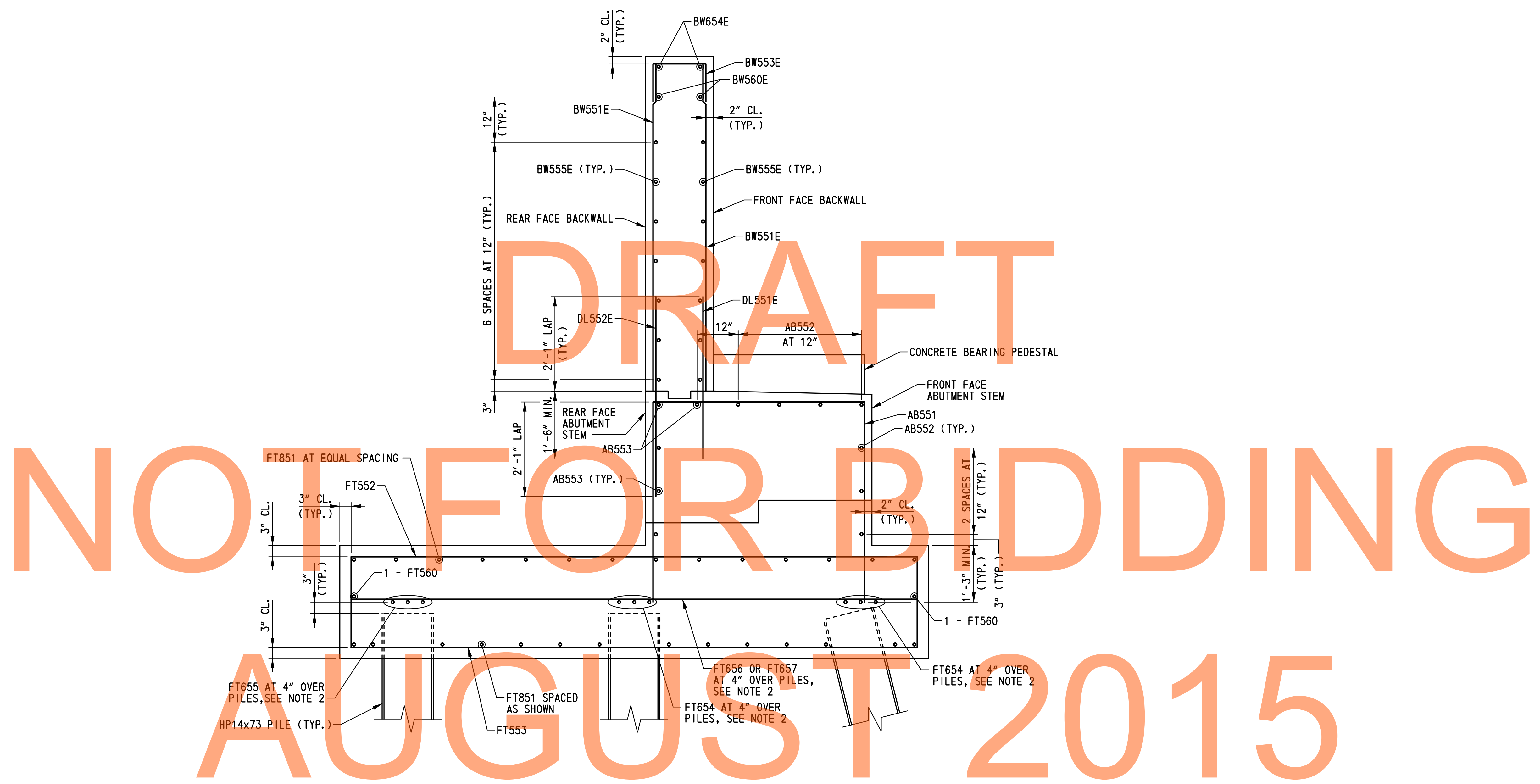
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT B
REINFORCEMENT
ELEVATION

BR1-2 AB-09
SHEET NO.
169
TOTAL SHTS.
491



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

- NOTES:**
1. CONCRETE BEARING PEDESTAL REINFORCEMENT NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. AB-12.
 2. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-01.
 3. FOR ADDITIONAL FOOTING REINFORCEMENT DETAILS, SEE DWG. NO. AB-11.
 4. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-09, AB-11 AND AB-12.

M:\31653\000\CONTRACT 2072015 201405 PM 18\CADD\Bridges\Bri_No2\AB10_bri-2.dgn

ADDENDUMS / REVISIONS	

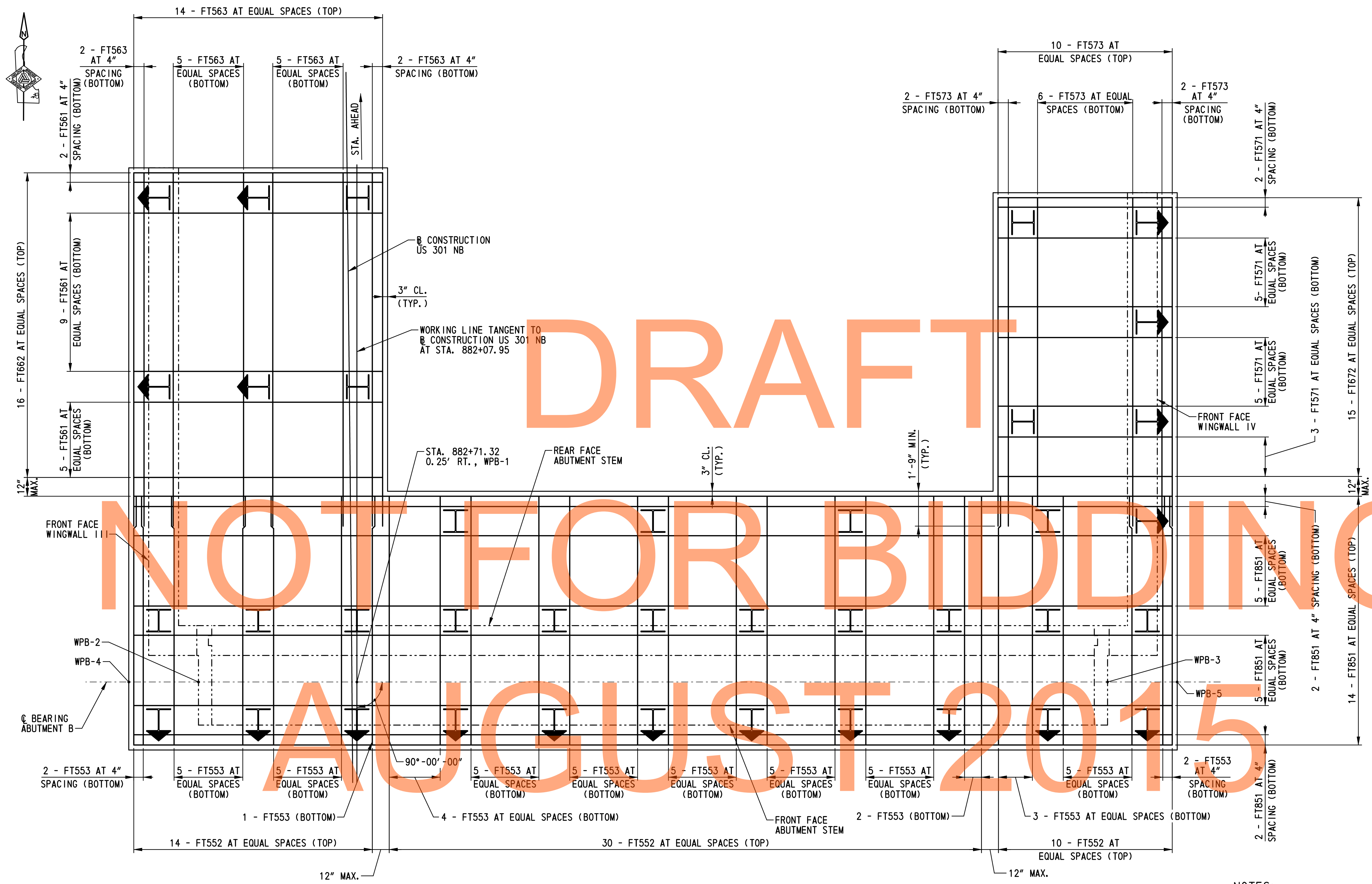
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT B REINFORCEMENT TYPICAL SECTION

BR1-2 AB-10
SHEET NO.
170
TOTAL SHTS.
491



DRAFT

NOT FOR BIDDING

AUGUST 2015

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

- NOTES:**
1. REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. SEE DRAWING NO. PL-01 FOR ADDITIONAL INFORMATION.
 2. SEE ABUTMENT REINFORCEMENT TYPICAL SECTION ON DWG. NO. AB-10 AND WINGWALL REINFORCEMENT TYPICAL SECTIONS ON DWG. NO. WW-07 FOR ADDITIONAL INFORMATION.
 3. ALL REINFORCEMENT SHALL HAVE 1 1/2" MINIMUM CLEAR TO PILES.

M:\31653\000\Contract\IB\CADD\Bridges\Br_No2\AB11_Lbr1-2.dgn 2/2/2015 8:26:15 AM



ADDENDUMS / REVISIONS	

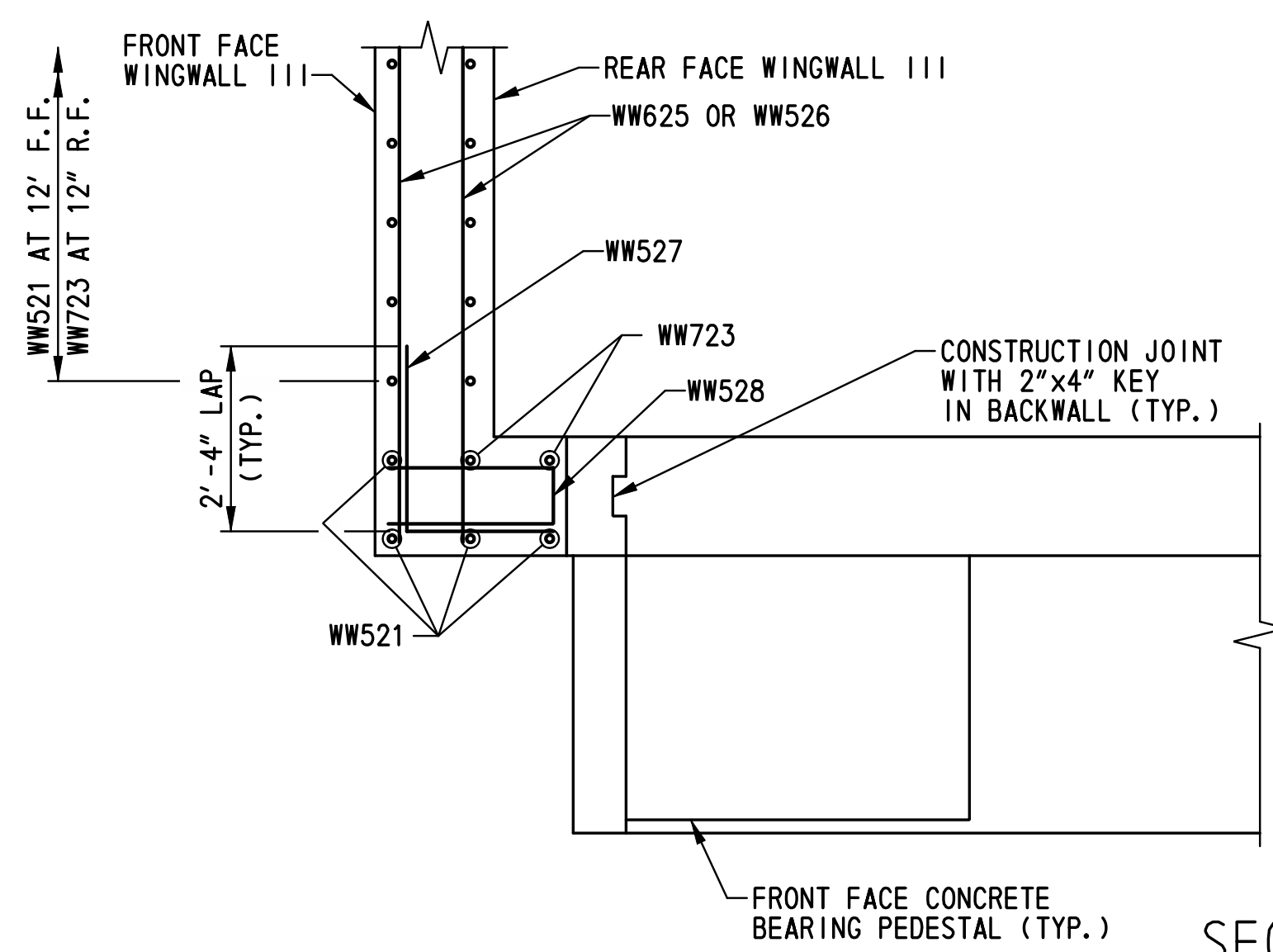
SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

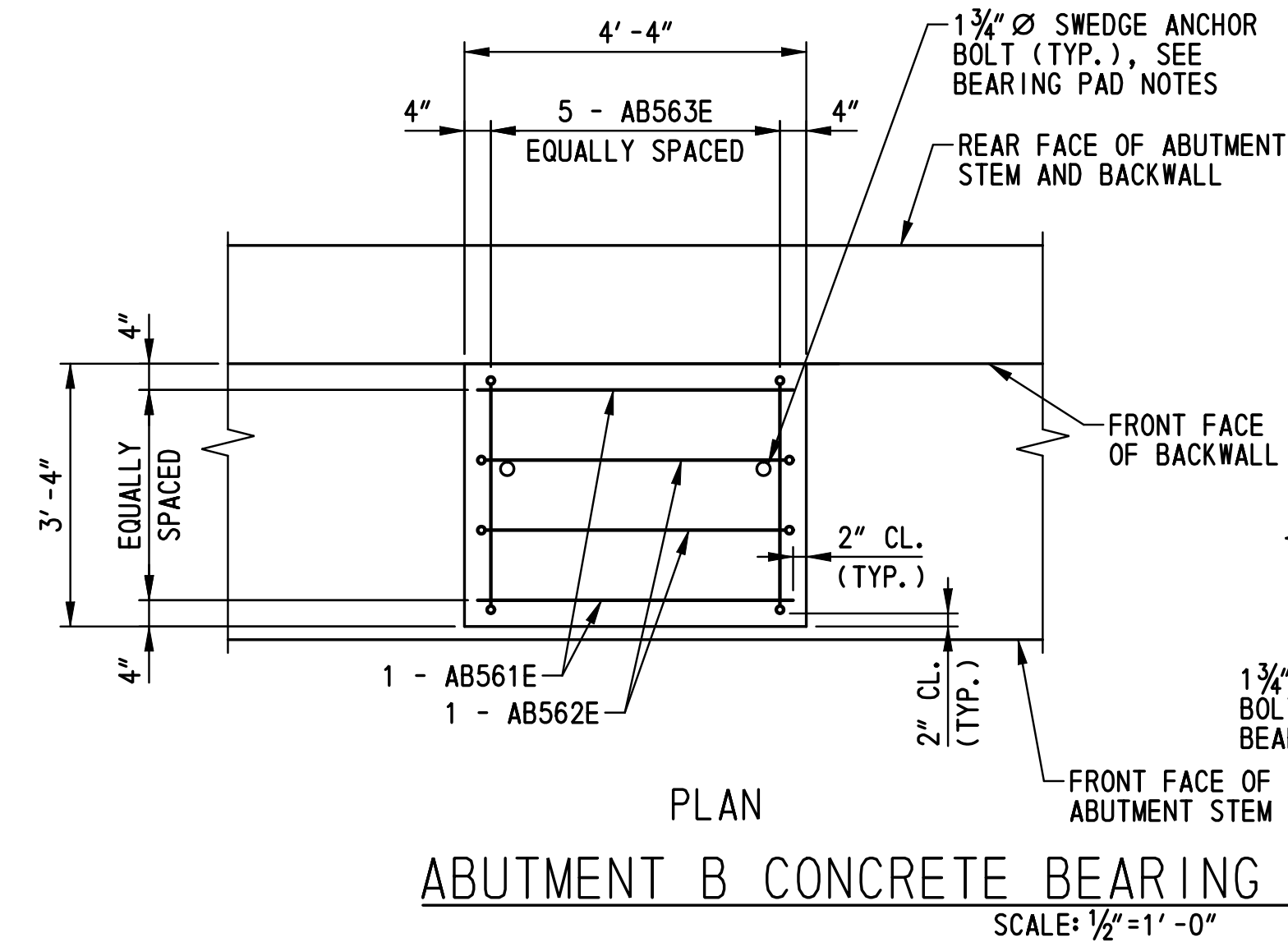
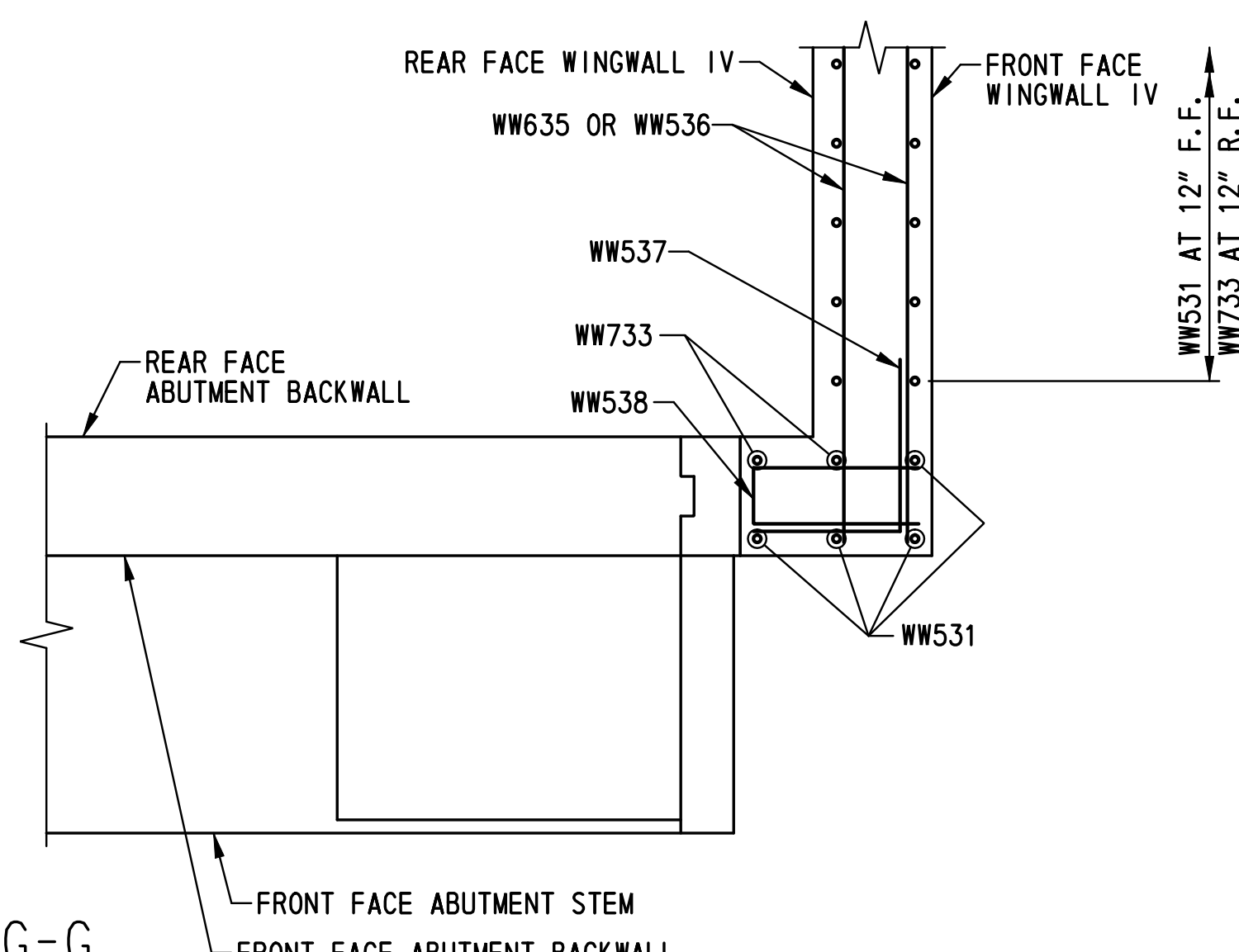
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**ABUTMENT B
FOOTING REINFORCEMENT
PLAN**

BR1-2 AB-11
SHEET NO.
171
TOTAL SHTS.
491

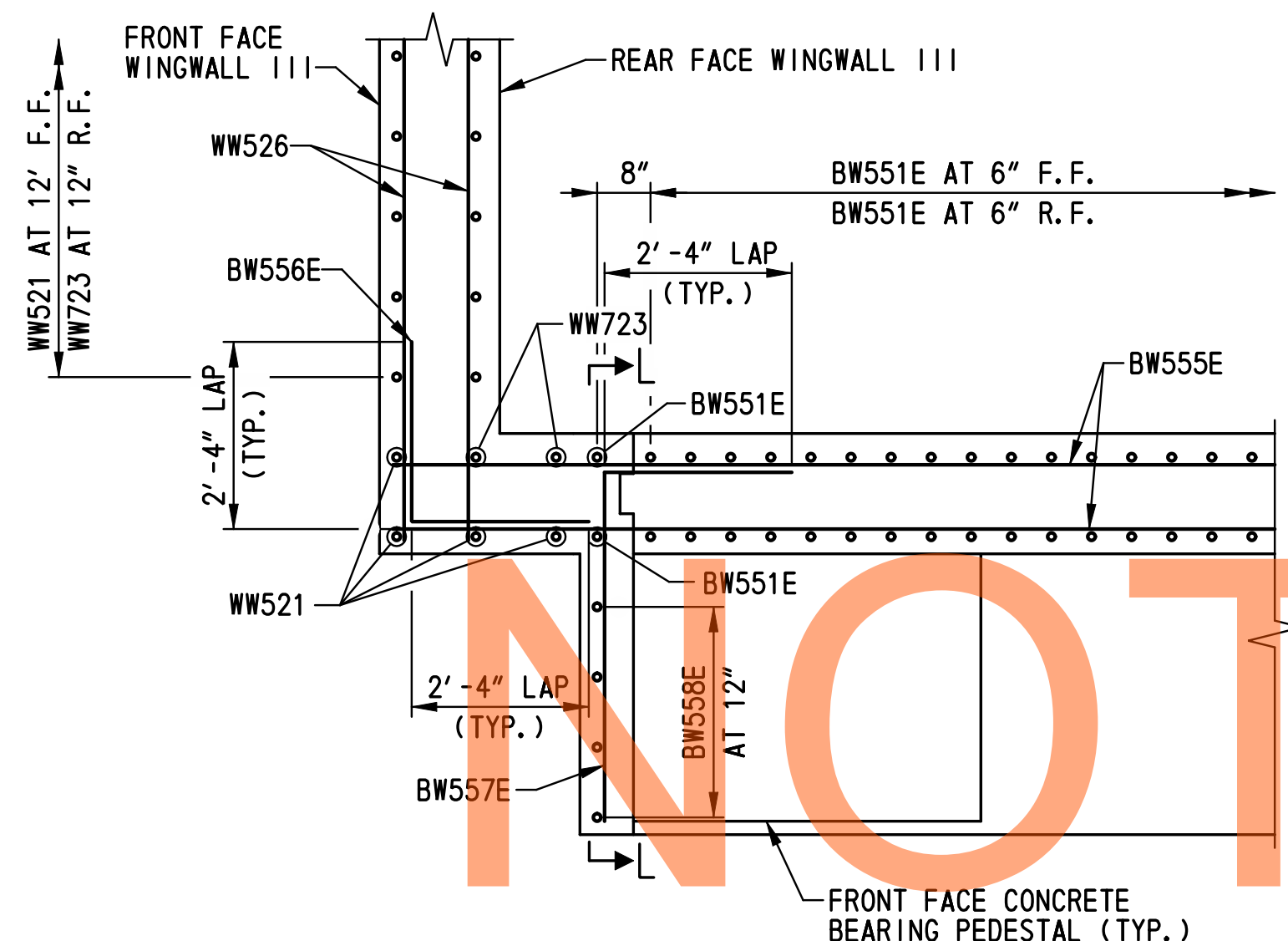


SECTION G-G
SCALE: 1/2"=1'-0"

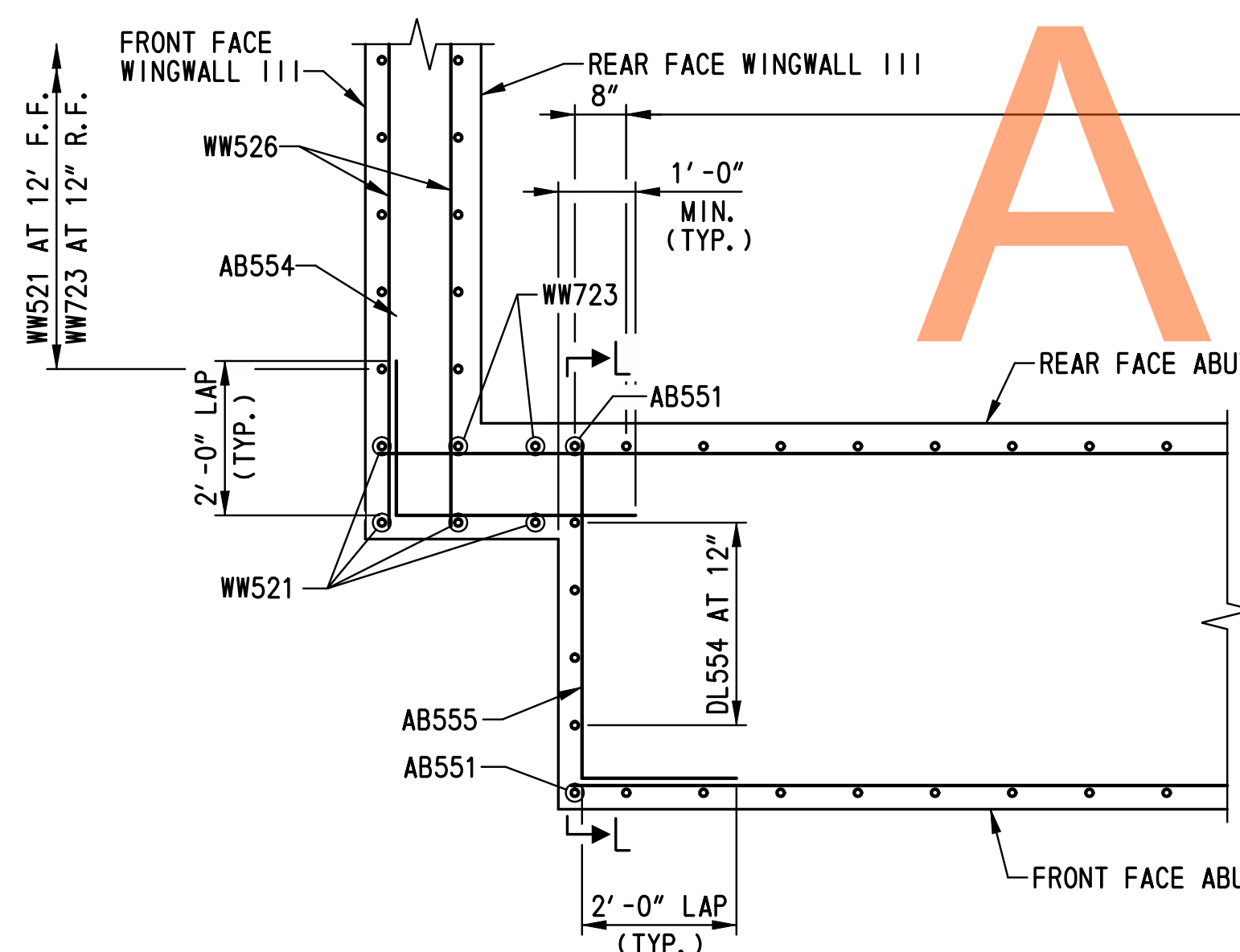
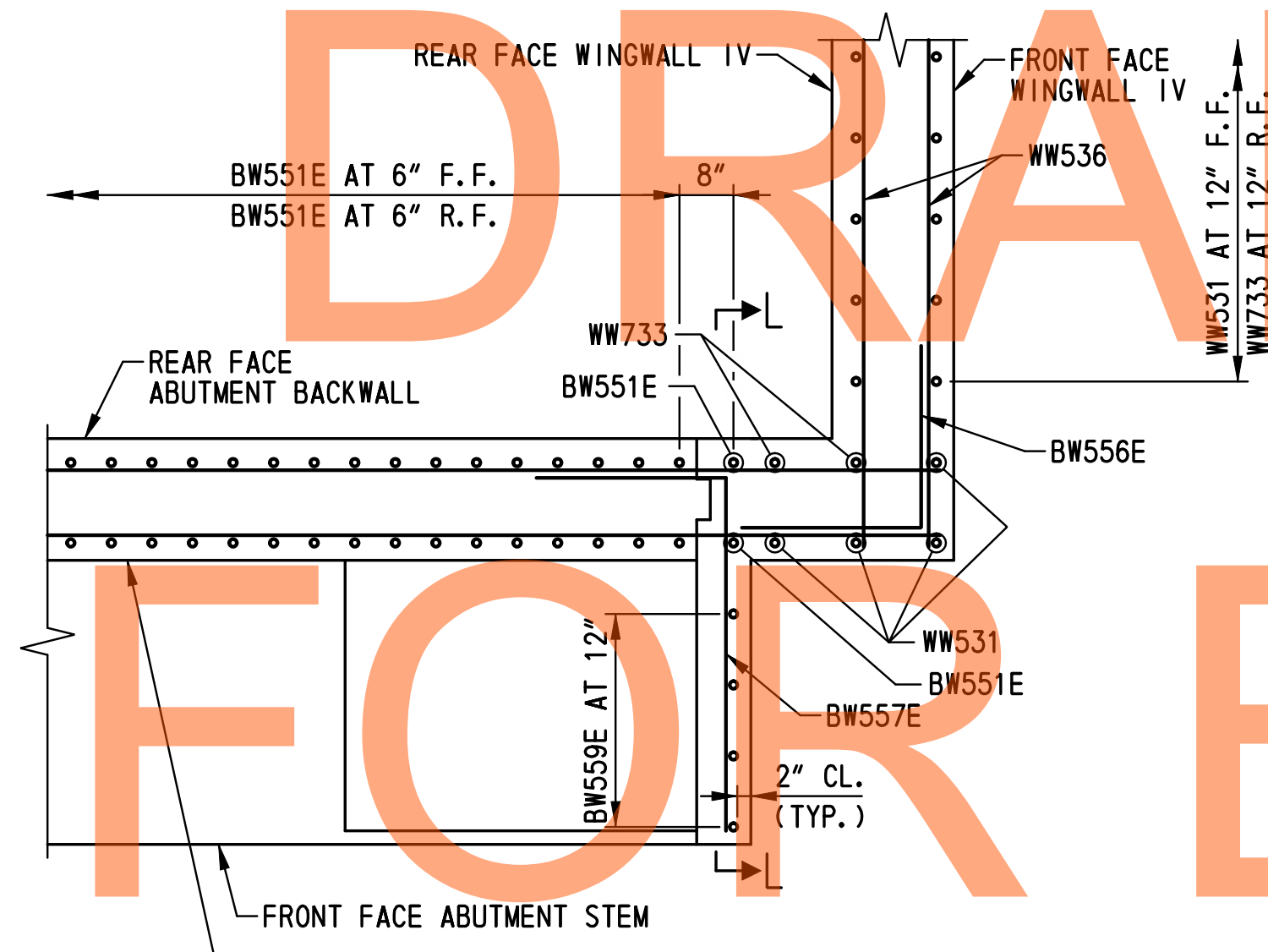


ABUTMENT B CONCRETE BEARING PEDESTAL DETAILS
SCALE: 1/2"=1'-0"

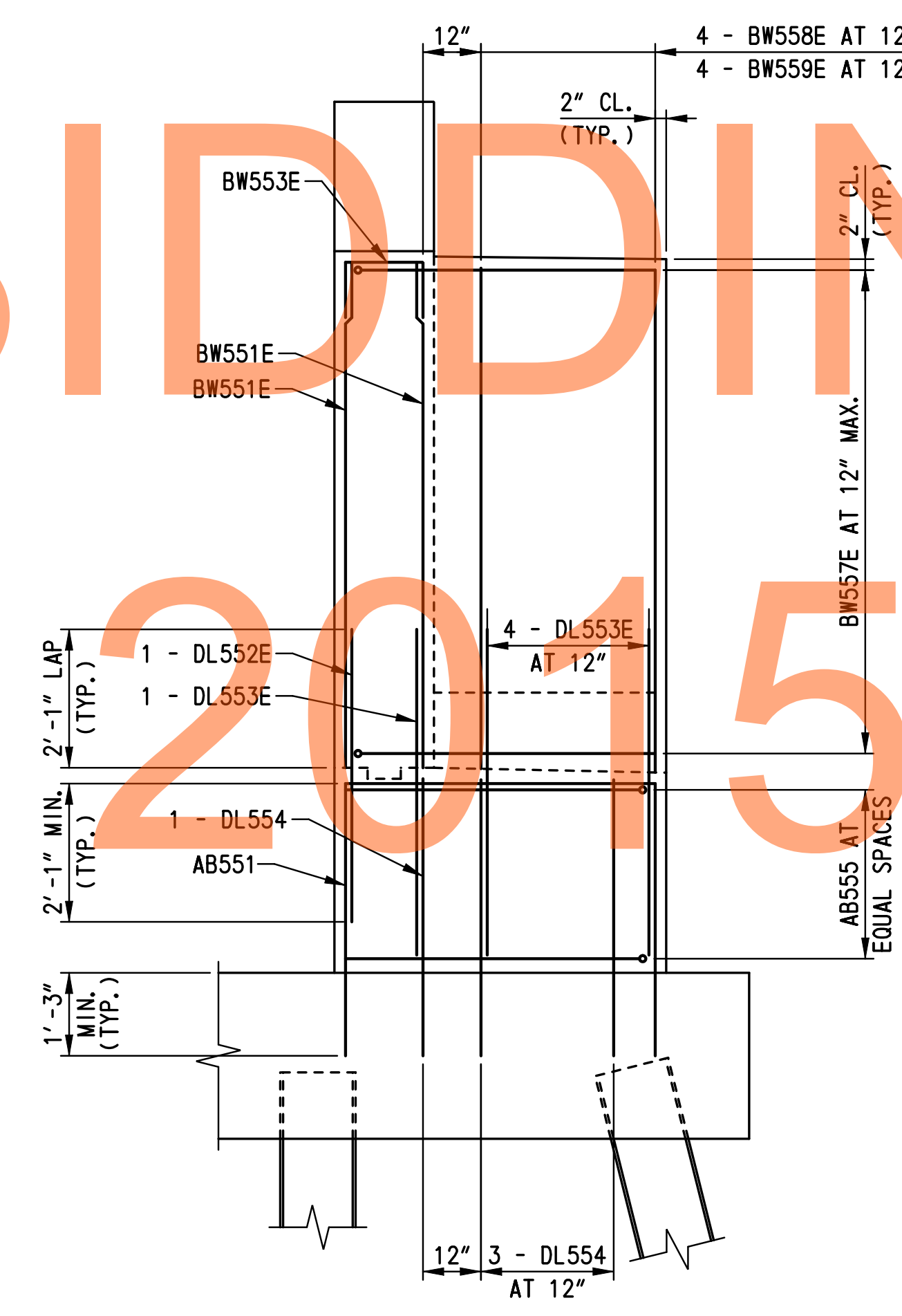
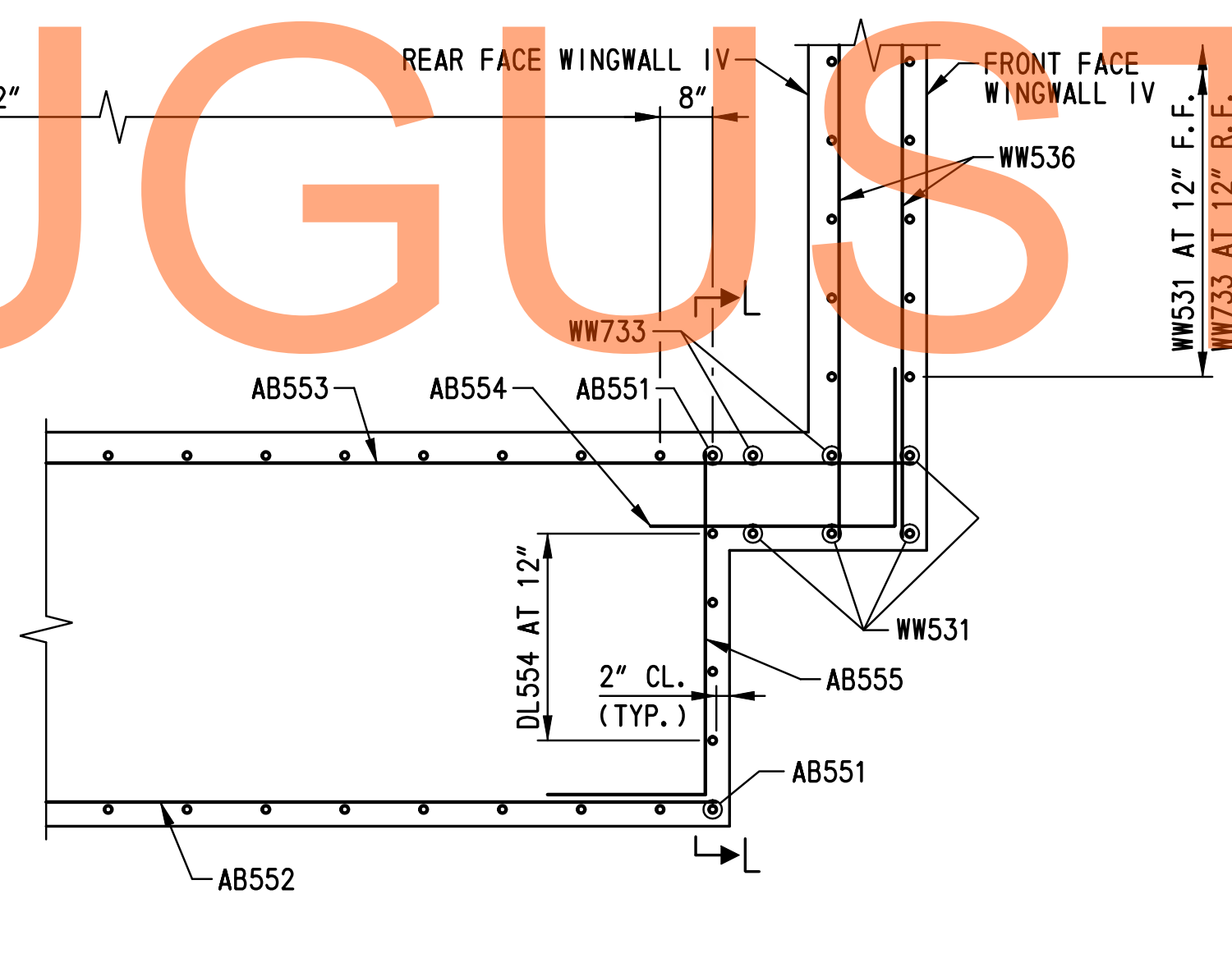
- BEARING PAD NOTES:**
- FOR ANCHOR BOLT DIMENSIONS AND LOCATION, SEE DWG. NO. BB-02.
 - ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER CONCRETE HAS SET.
 - SPACE REINFORCING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



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



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



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

- NOTES:**
- FOOTING REINFORCEMENT NOT SHOWN FOR CLARITY. FOR FOOTING REINFORCEMENT, SEE DWG. NOS. AB-10 AND PL-01.
 - ABUTMENT STEM AND BACKWALL LONGITUDINAL REINFORCEMENT NOT SHOWN IN SECTION L-L FOR CLARITY. SEE DWG. NOS. AB-08 AND AB-09 FOR LONGITUDINAL REINFORCEMENT.
 - FOR WINGWALL REINFORCEMENT, SEE DWG. NOS. WW-06 AND WW-07.
 - F. F. = FRONT FACE
R. F. = REAR FACE

M:\31653-000\Contract\1B\CADD\Bridges\Br_No2\AB12_brl-2.dgn 2/2/2015 8:50:29 AM

ADDENDUMS / REVISIONS	

SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

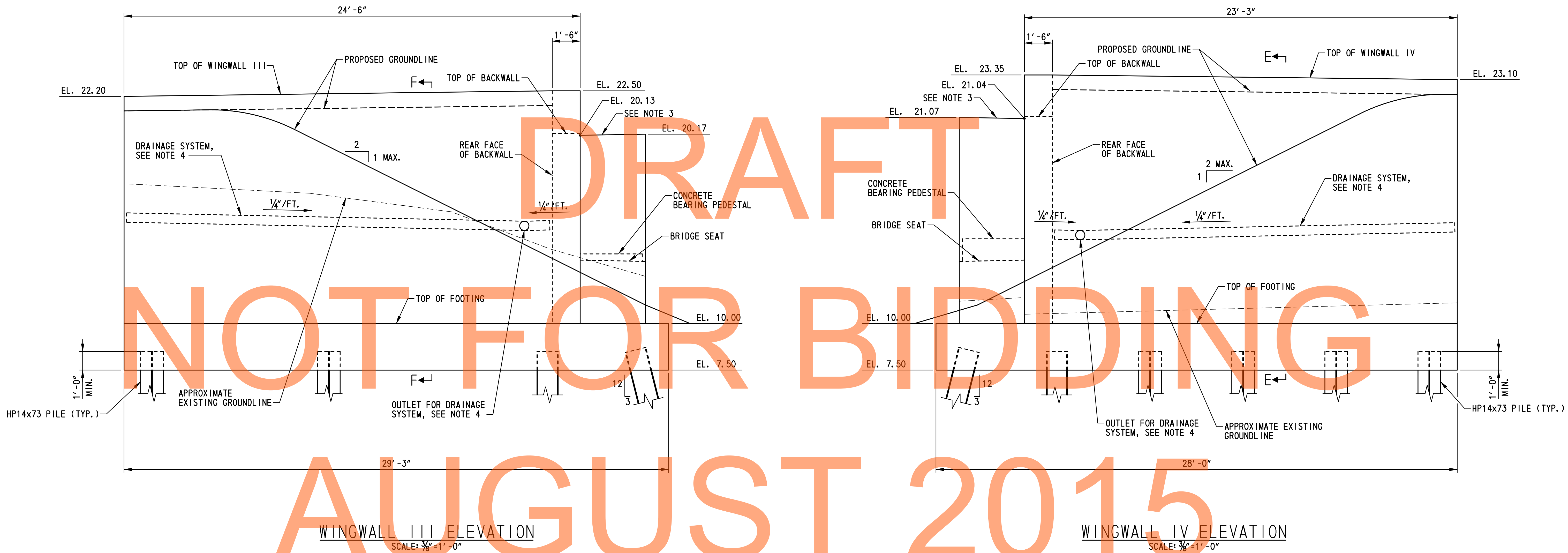
ABUTMENT B REINFORCEMENT DETAILS

BR1-2 AB-12
SHEET NO.
172
TOTAL SHTS.
491

DRAFT

NOT FOR BIDDING

AUGUST 2015



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

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

NOTES:

1. FOR TYPICAL SECTIONS E-E AND F-F, SEE DRAWING NO. WW-02.
2. FOR WINGWALL III AND IV REINFORCEMENT ELEVATIONS, SEE DWG. NOS. WW-06.
3. TOP OF CHEEKWALL TO BE 1" BELOW BOTTOM OF SUPERSTRUCTURE.
4. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. WW-02.

M:\316531-000\Contract\1B\CADD\Bridges\Br_No2\WW05_brl-2.dgn
 2/2/2015 8:21:57 AM



ADDENDUMS / REVISIONS	

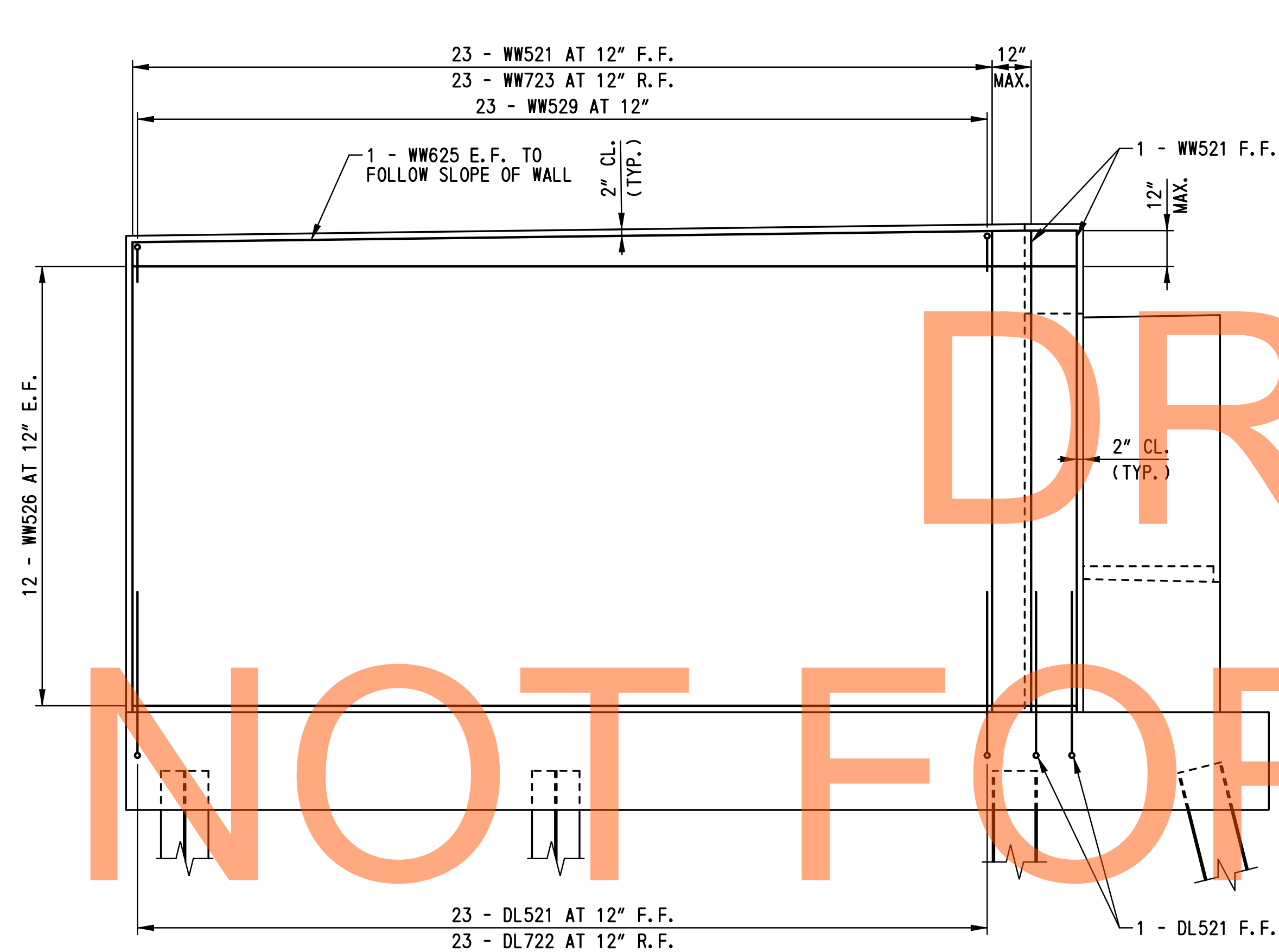
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

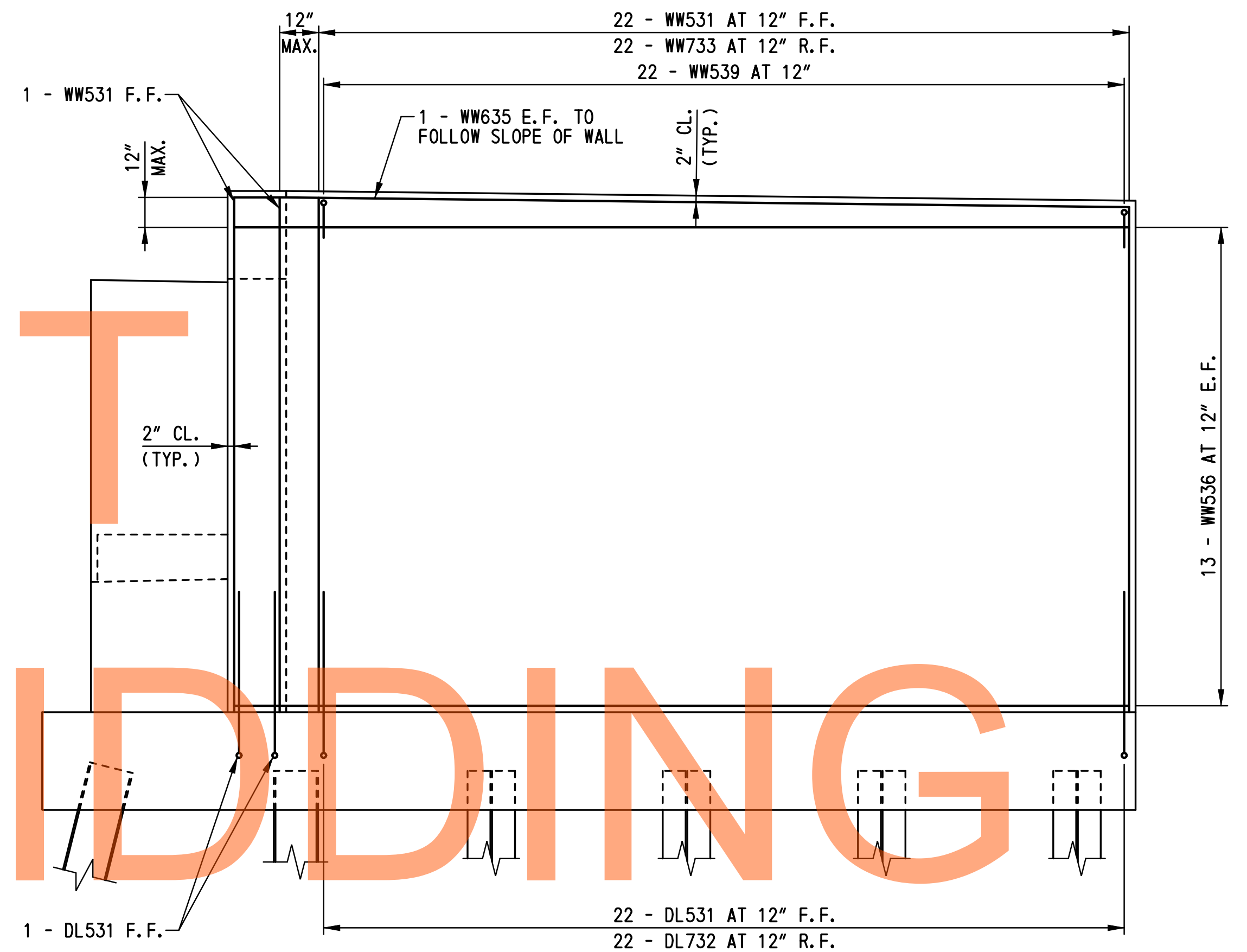
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

WINGWALL III AND IV
ELEVATIONS

BR1-2 WW-05
SHEET NO.
173
TOTAL SHTS.
491



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



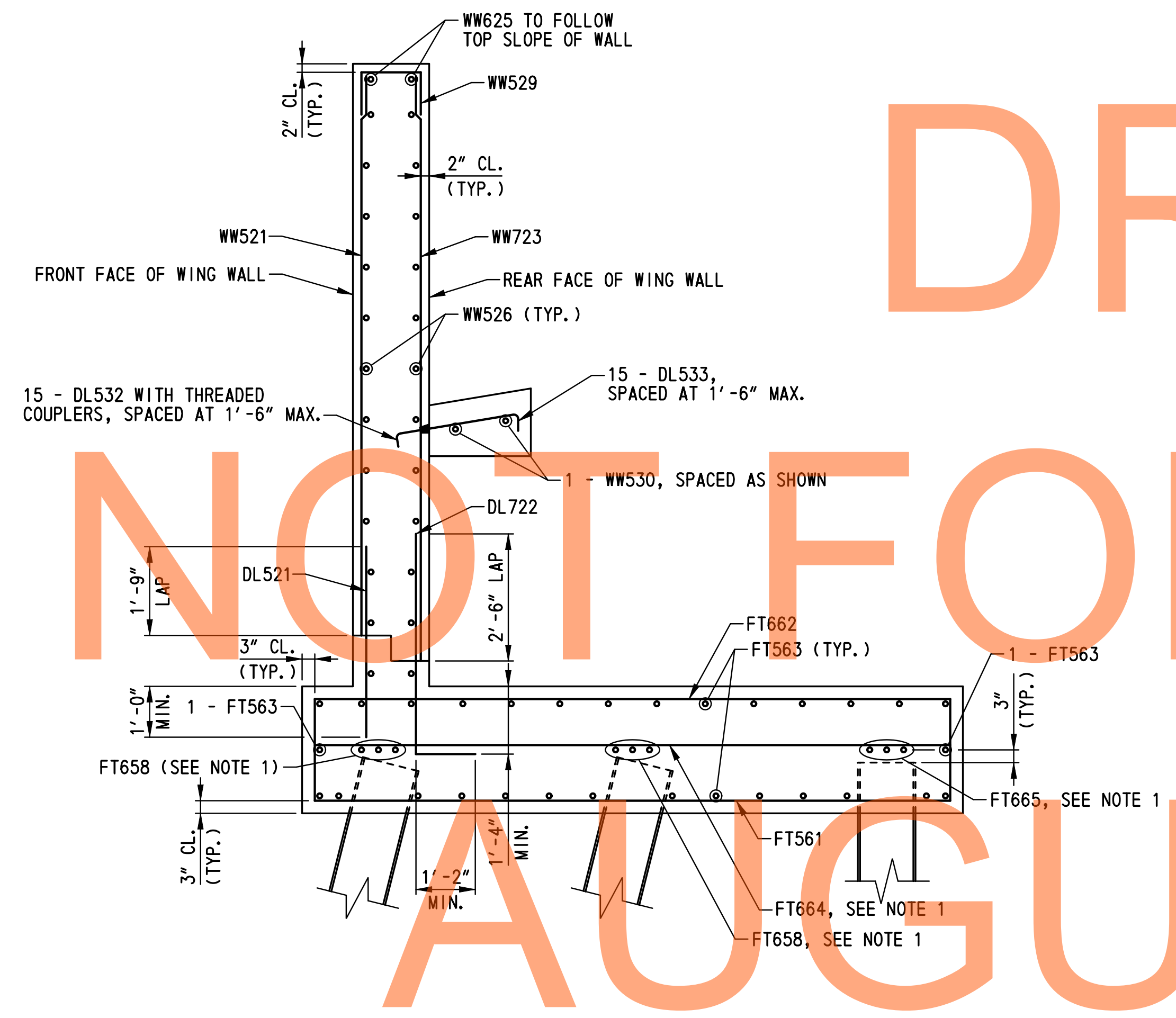
WINGWALL IV REINFORCEMENT ELEVATION
SCALE: 3/8" = 1'-0"

NOTES:

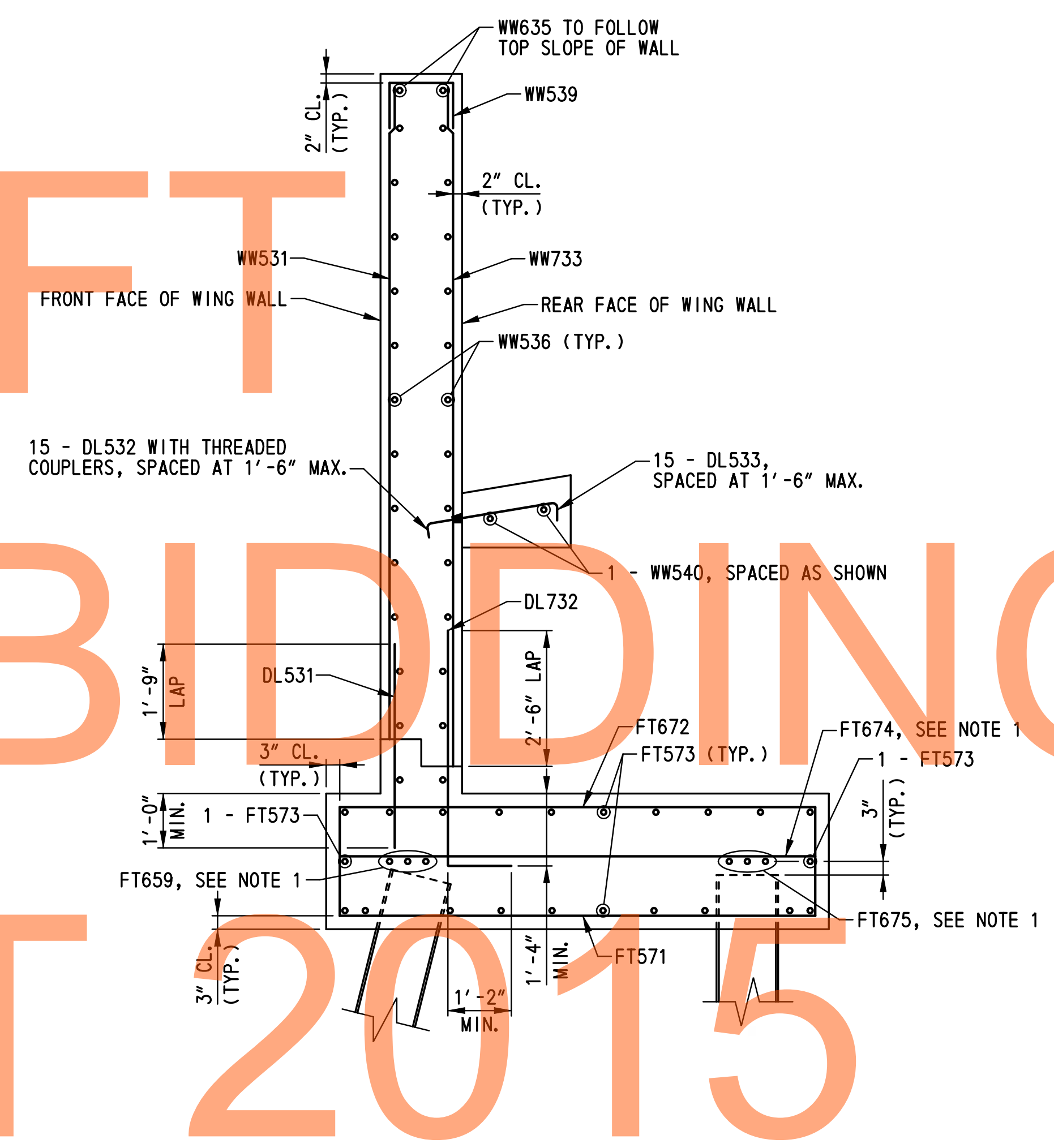
1. REINFORCING STEEL IN FOOTING NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. AB-11 AND PL-01.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-09 AND AB-12.
3. FOR WINGWALL TYPICAL REINFORCEMENT SECTIONS, SEE DWG. NO. WW-07.
4. F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE

M:\316531-000\Construct\IB\CADD\Bridges\Br_No2\WW06_brt-2.dgn 2/2/2015 9:22:05 AM

DRAFT



WINGWALL III REINFORCEMENT TYPICAL SECTION
SCALE: 1/2"=1'-0"



WINGWALL IV REINFORCEMENT TYPICAL SECTION
SCALE: 1/2"=1'-0"

NOT FOR BIDDING

AUGUST 2015

- NOTES:**
1. FOR PILE LAYOUT AND REINFORCEMENT PLAN OVER PILES, SEE DWG. NO. PL-01.
 2. FOR ADDITIONAL FOOTING REINFORCEMENT DETAILS, SEE DWG. NO. AB-11.
 3. FOR WINGWALL III AND IV REINFORCEMENT ELEVATIONS, SEE DWG. NO. WW-06.

M:\31653-000\Contract\IB\CADD\Bridges\Br_No2\WMO7-br1-2.dgn 8/22/15 2:23:23 PM



ADDENDUMS / REVISIONS	

SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**WINGWALLS III & IV
REINFORCEMENT
TYPICAL SECTIONS**

BR1-2 WW-07
SHEET NO.
175
TOTAL SHTS.
491

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

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES / QUARTER INCH)													
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O		
FOOTING A																	
28	8	52-02 0	FT801	STR		52-02 0											
54	5	12-06 0	FT502	STR		12-06 0											
54	5	16-06 0	FT503	17		2-00 0		12-06 0		2-00 0							
6	6	52-02 0	FT604	STR		52-02 0											
3	6	42-03 0	FT605	STR		42-03 0											
12	6	12-06 0	FT606	STR		12-06 0											
12	6	7-06 0	FT607	STR		7-06 0											
6	6	26-06 0	FT608	STR		26-06 0											
3	6	29-03 0	FT609	STR		29-03 0											
2	5	52-02 0	FT510	STR		52-02 0											
14	5	16-06 0	FT511	17		2-00 0		12-06 0		2-00 0							
14	6	12-06 0	FT612	STR		12-06 0											
30	5	15-06 0	FT513	STR		15-06 0											
6	6	12-06 0	FT614	STR		12-06 0											
3	6	9-06 0	FT615	STR		9-06 0											
16	5	12-09 0	FT521	17		2-00 0		8-09 0		2-00 0							
16	6	8-09 0	FT622	STR		8-09 0											
22	5	18-03 0	FT523	STR		18-03 0											
6	6	8-09 0	FT624	STR		8-09 0											
3	6	13-06 0	FT625	STR		13-06 0											
3	6	10-10 0	FT626	STR		10-10 0											
25	5	3-10 0	DL501	STR		3-10 0											
23	7	5-07 0	DL702	2	1-02 0	4-05 0											
28	5	3-10 0	DL511	STR		3-10 0											
26	7	5-07 0	DL712	2	1-02 0	4-05 0											
8	5	4-02 0	DL544	STR		4-02 0											

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES / QUARTER INCH)													
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O		
ABUTMENT A																	
47	5	12-11 0	AB501	17		4-01 2		4-08 0		4-01 2							
7	5	45-04 0	AB502	STR		45-04 0											
5	5	50-04 0	AB503	STR		50-04 0											
8	5	4-04 0	AB504	17		2-00 0		2-04 0									
8	5	6-07 1	AB505	17		2-00 0		4-07 1									
12	5	4-00 0	AB511E	STR		4-00 0											
12	5	8-05 0	AB512E	17		2-02 2		4-00 0		2-02 2							
30	5	7-04 0	AB513E	17		2-02 0		3-00 0		2-02 0							
89	5	3-07 0	DL541E	STR		3-07 0											
91	5	4-05 0	DL542E	STR		4-05 0											
10	5	4-05 0	DL543E	STR		4-05 0											
8	5	4-02 0	DL544	STR		4-02 0											
ABUTMENT A (BACKWALL)																	
182	5	6-08 0	BW501E	STR		6-08 0											
						TO											
						7-07 0											
						*2 SETS OF 91											
91	5	2-10 0	BW503E	2	0-10 0	1-02 0		0-10 0									
2	6	50-04 0	BW604E	STR		50-04 0											
14	5	50-04 0	BW505E	STR		50-04 0											
15	5	4-08 0	BW506E	17		2-04 0		2-04 0									
15	5	6-11 1	BW507E	17		2-04 0		4-07 1									
4	5	6-07 2	BW508E	STR		6-07 2											
4	5	7-06 2	BW509E	STR		7-06 2											
2	5	19-02 0	BW510E	STR		19-02 0											

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES / QUARTER INCH)													
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O		
WINGWALL 1																	
25	5	11-01 2	WW501	STR		11-01 2											
23	7	11-07 2	WW703	STR		11-07 2											
2	6	21-11 0	WW605	STR		21-11 0											
24	5	21-11 0	WW506	STR		21-11 0											
3	5	4-04 1	WW507	17		2-00 1		2-04 0									
3	5	5-02 2	WW508	17		2-01 0		1-00 2		2-01 0							
21	5	2-10 0	WW509	2		0-10 0		1-02 0		0-10 0							
2	5	20-05 0	WW510	STR		20-05 0											
13	5	1-10 0	DL513	DR		1-00 0		0-10 0									
13	5	2-04 0	DL514	DR		1-06 0		0-10 0									
WINGWALL 11																	
28	5	11-11 2	WW511	STR		11-11 2											
26	7	12-05 2	WW713	STR		12-05 2											
2	6	24-08 0	WW615	STR		24-08 0											
26	5	24-08 0	WW516	STR		24-08 0											
3	5	4-04 1	WW517	17		2-00 1		2-04 0									
3	5	5-02 2	WW518	17		2-01 0		1-00 2		2-01 0							
24	5	2-10 0	WW519	2		0-10 0		1-02 0		0-10 0							
2	5	23-02 0	WW520	STR		23-02 0											
15	5	1-10 0	DL513	DR		1-00 0		0-10 0									
15	5	2-04 0	DL514	DR		1-06 0		0-10 0									

NOT FOR BIDDING

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

STIRRUP AND TIE HOOKS			
RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES			
STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES			

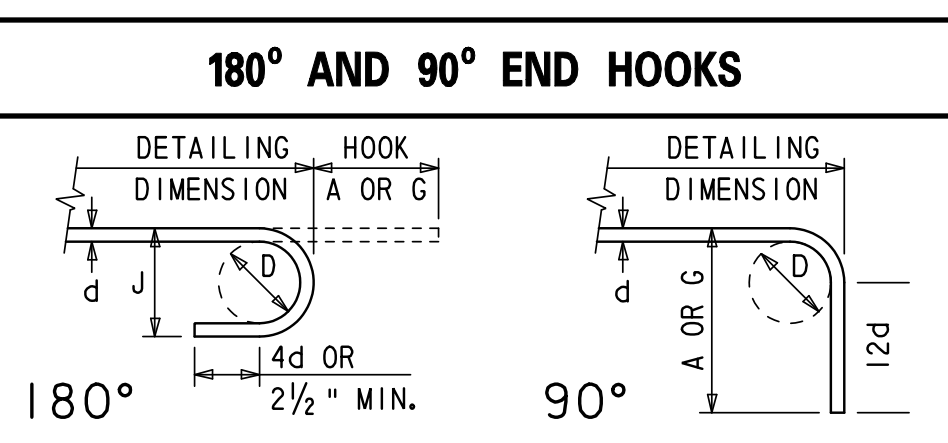
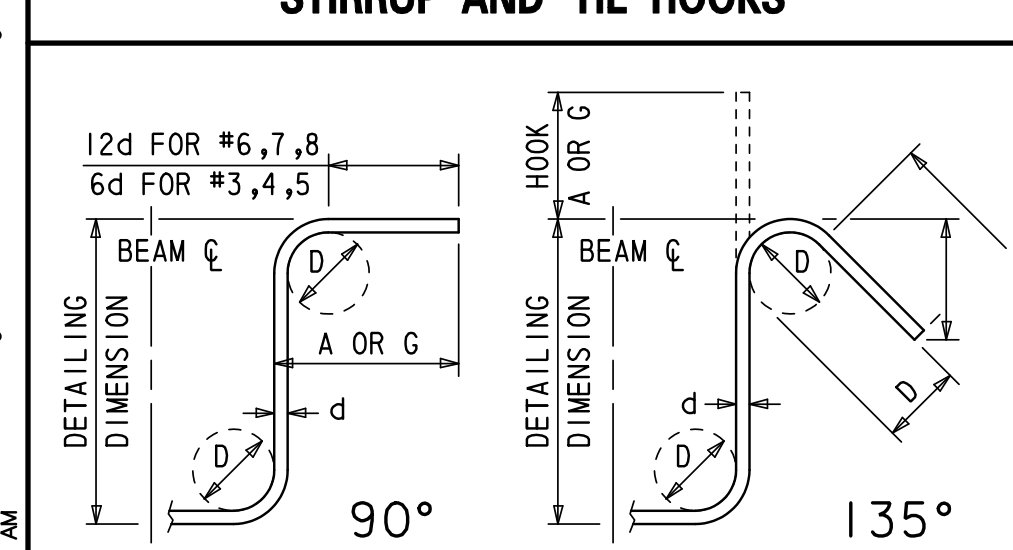
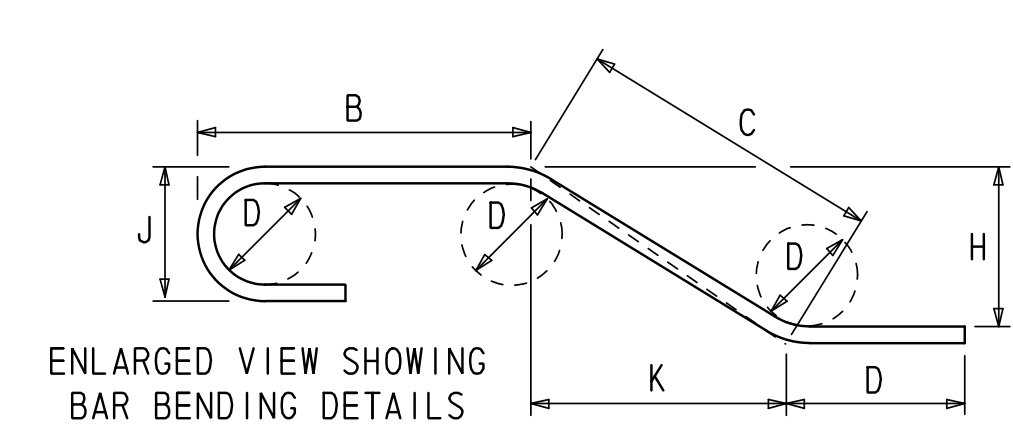
- NOTES:
- FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
 - STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
 - ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "C" ON STD. 180° AND 135° HOOKS.
 - "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE,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

ISOMETRIC VIEW ISOMETRIC VIEW

SPECIAL BAR BENDS

SPRAL NOTES:
 J = TURNS AT 'F' SPACING
 K = EXTRA TURNS (HALF TOP & BOTTOM)
 PLAIN SPIRAL WITH SPACERS LOOSE
 PLAIN SPIRAL WITH SPACERS MOUNTED



M:\2009\000\Contract_IB\CADD\Bridges\Br_No2_RB01_Lbr1-2.dgn
 2/3/2010 8:33:05 AM

- 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

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
FOOTING B															
28	8	52-02.0	FT851	STR		52-02.0									
54	5	12-06.0	FT552	STR		12-06.0									
54	5	16-06.0	FT553	17		2-00.0	12-06.0	2-00.0							
6	6	52-02.0	FT654	STR		52-02.0									
3	6	37-03.0	FT655	STR		37-03.0									
12	6	12-06.0	FT656	STR		12-06.0									
12	6	7-06.0	FT657	STR		7-06.0									
6	6	28-09.0	FT658	STR		28-09.0									
3	6	27-06.0	FT659	STR		27-06.0									
2	5	52-02.0	FT560	STR		52-02.0									
16	5	16-06.0	FT561	17		2-00.0	12-06.0	2-00.0							
16	6	12-06.0	FT662	STR		12-06.0									
30	5	17-09.0	FT563	STR		17-09.0									
6	6	12-06.0	FT664	STR		12-06.0									
3	6	12-00.0	FT665	STR		12-00.0									
15	5	12-09.0	FT571	17		2-00.0	8-09.0	2-00.0							
15	6	8-09.0	FT672	STR		8-09.0									
22	5	16-06.0	FT573	STR		16-06.0									
6	6	8-09.0	FT674	STR		8-09.0									
3	6	12-06.0	FT675	STR		12-06.0									
3	6	10-06.0	FT676	STR		10-06.0									
27	5	4-01.0	DL521	STR		4-01.0									
25	7	5-10.0	DL722	2	1-02.0	4-08.0									
26	5	4-01.0	DL531	STR		4-01.0									
24	7	5-10.0	DL732	2	1-02.0	4-08.0									
8	5	4-06.0	DL554	STR		4-06.0									

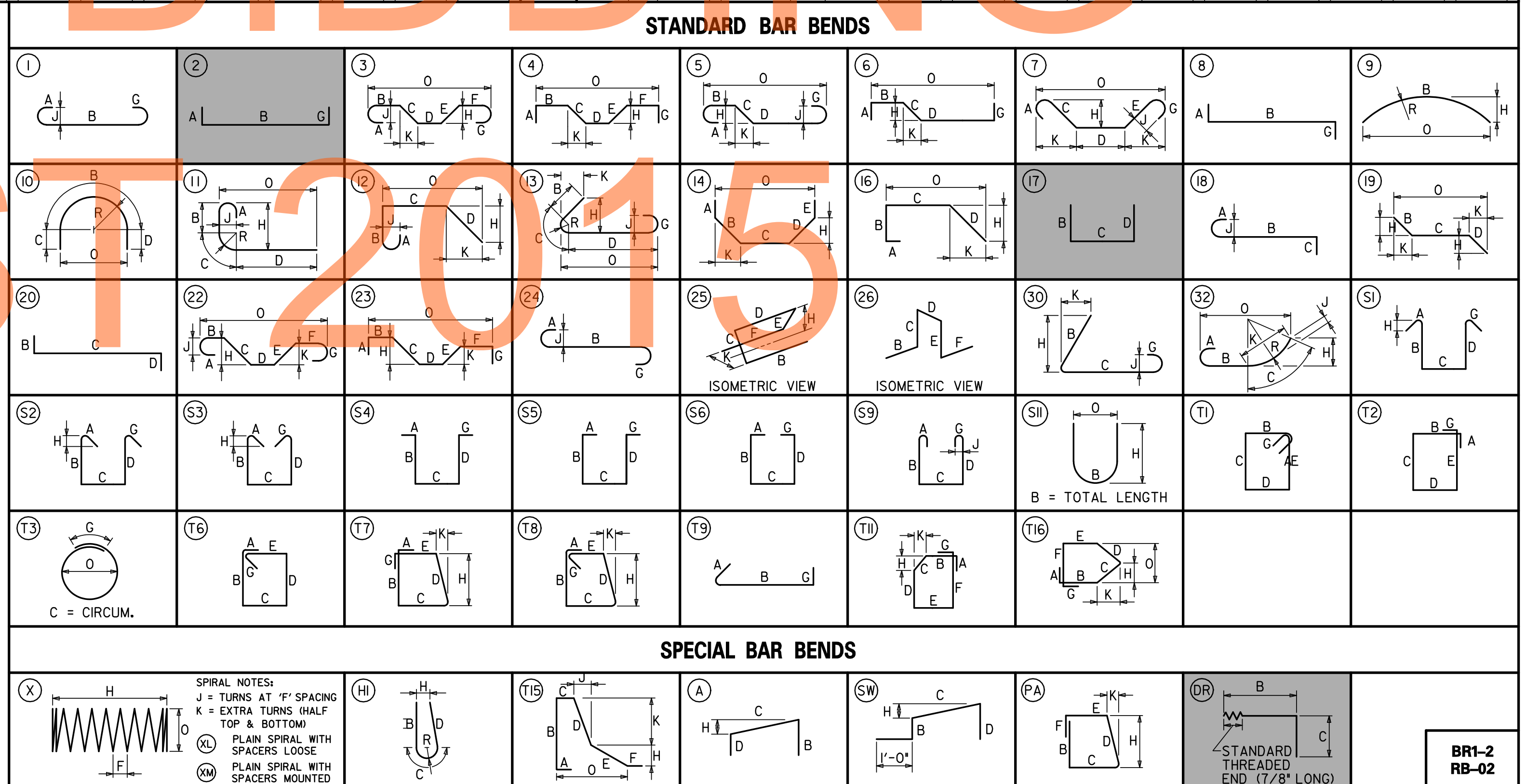
SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
ABUTMENT B															
47	5	13-07.0	AB551	17		4-05.2	4-08.0	4-05.2							
7	5	45-04.0	AB552	STR		45-04.0									
5	5	50-04.0	AB553	STR		50-04.0									
8	5	5-04.0	AB554	17		2-00.0	3-04.0								
8	5	6-07.1	AB555	17		2-00.0	4-07.1								
12	5	4-00.0	AB561E	STR		4-00.0									
12	5	8-06.0	AB562E	17		2-03.0	4-00.0	2-03.0							
30	5	7-05.0	AB563E	17		2-02.2	3-00.0	2-02.2							
89	5	3-07.0	DL551E	STR		3-07.0									
91	5	4-05.0	DL552E	STR		4-05.0									
10	5	4-05.0	DL553E	STR		4-05.0									
ABUTMENT B (BACKWALL)															
182	5	6-07.0	BW551E	STR		6-07.0									
			TO												
			7-06.0			7-06.0									
			*2 SETS OF 91												
91	5	2-10.0	BW553E	2	0-10.0	1-02.0	0-10.0								
2	6	50-04.0	BW654E	STR		50-04.0									
14	5	50-04.0	BW555E	STR		50-04.0									
15	5	5-02.0	BW556E	17		2-04.0	2-10.0								
15	5	6-11.1	BW557E	17		2-04.0	4-07.1								
4	5	6-06.0	BW558E	STR		6-06.0									
4	5	7-05.0	BW559E	STR		7-05.0									
2	5	19-05.0	BW560E	STR		19-05.0									

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
WINGWALL III															
27	5	11-00.0	WW521	STR		11-00.0									
25	7	11-06.0	WW723	STR		11-06.0									
2	6	24-02.0	WW625	STR		24-02.0									
24	5	24-02.0	WW526	STR		24-02.0									
3	5	4-04.1	WW527	17		2-00.1	2-04.0								
3	5	5-02.2	WW528	17		2-01.0	1-00.2	2-01.0							
23	5	2-10.0	WW529	2		0-10.0	1-02.0	0-10.0							
2	5	22-06.0	WW530	STR		22-06.0									
15	5	1-10.0	DL533	DR		1-00.0	0-10.0								
15	5	2-04.0	DL534	DR		1-06.0	0-10.0								
WINGWALL IV															
26	5	11-11.0	WW531	STR		11-11.0									
24	7	12-05.0	WW733	STR		12-05.0									
2	6	22-11.0	WW635	STR		22-11.0									
26	5	22-11.0	WW536	STR		22-11.0									
3	5	4-04.1	WW537	17		2-00.1	2-04.0								
3	5	5-02.2	WW538	17		2-01.0	1-00.2	2-01.0							
22	5	2-10.0	WW539	2		0-10.0	1-02.0	0-10.0							
2	5	21-03.0	WW540	STR		21-03.0									
15	5	1-10.0	DL533	DR		1-00.0	0-10.0								
15	5	2-04.0	DL534	DR		1-06.0	0-10.0								

NOT FOR BIDDING

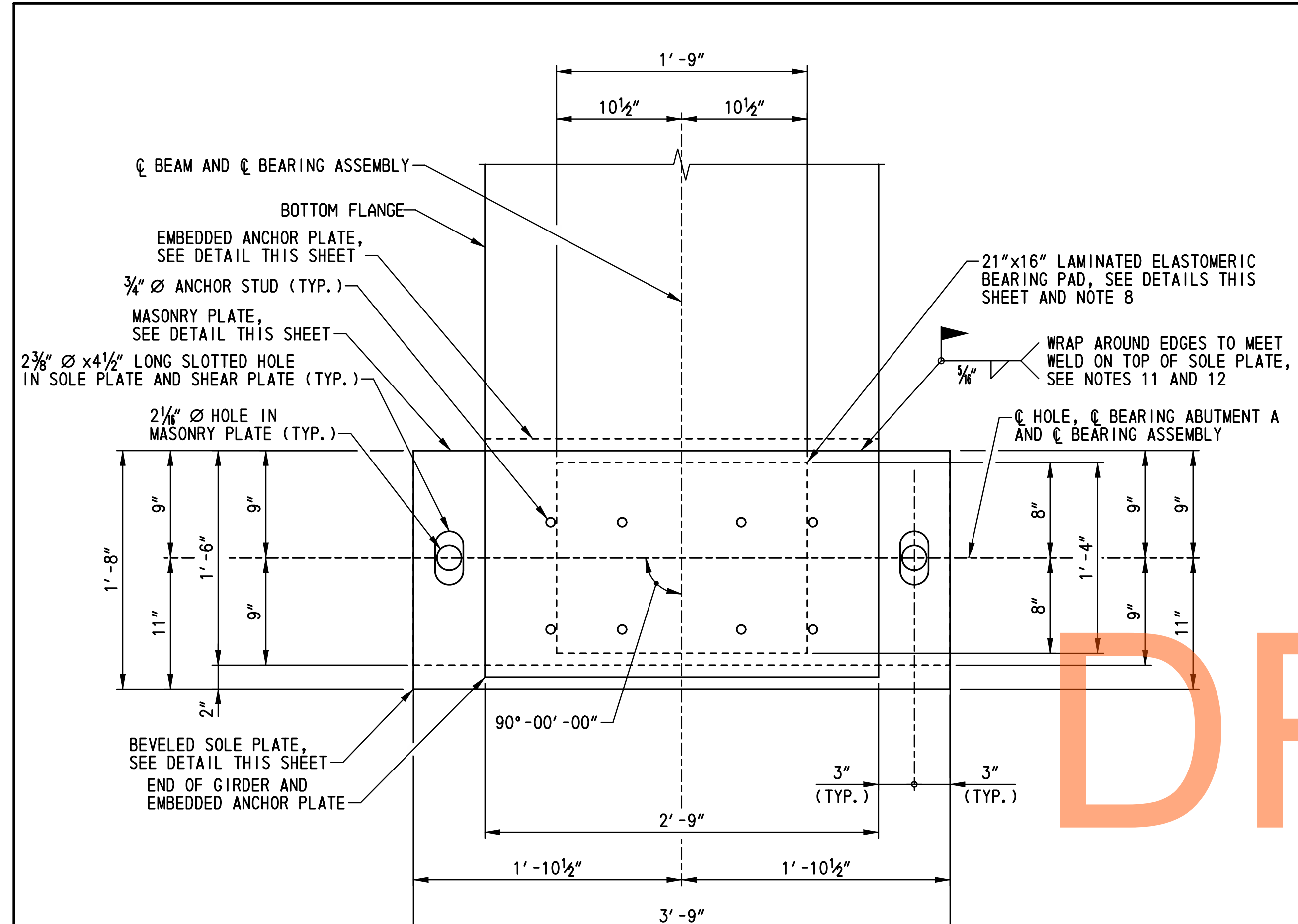
ASTM STANDARD ENGLISH REINFORCING BARS				RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES				STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES			
BAR SIZE	NOMINAL DIMENSIONS			180° HOOKS		90° HOOKS		90° HOOK		135° HOOK	
	DIAMETER (INCHES)	AREA (INCHES ²)	WEIGHT (LBS./FT.)	D	A OR G	J	A OR G	D	A OR G	A OR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

- NOTES:
- FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
 - STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES 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" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
 - "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
 - UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
 - WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
 - WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
 - FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRS1' OR 'AC1' TABLES WHERE APPLICABLE AND REQUIRED.
 - TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.



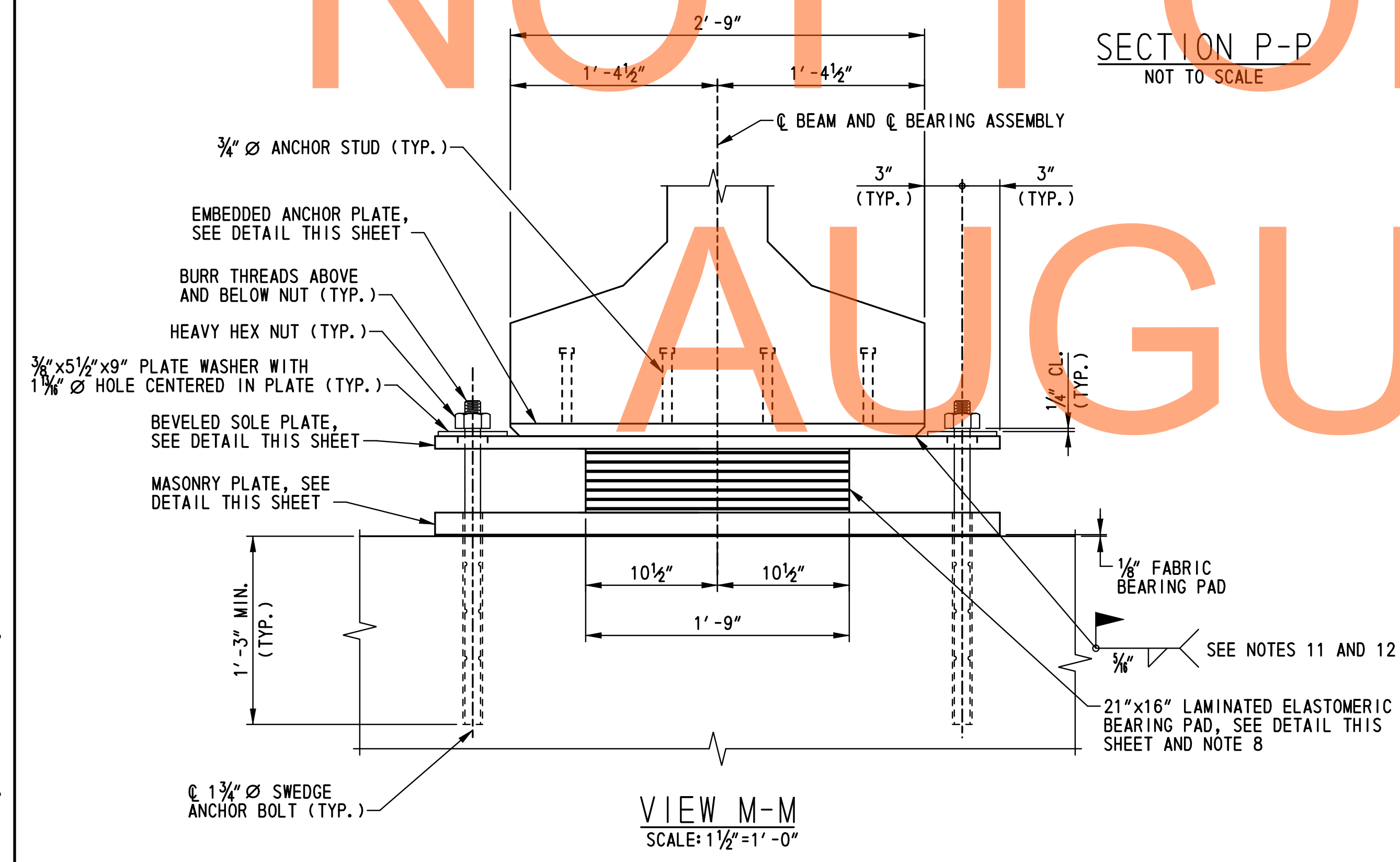
M:\31653\000\Contract\IB\CADD\Bridges\Br_No2\RB02_bf1-2.dgn 2/2/2015 9:23:26 AM

M:\31653\000\Contract\1B\CADD\Bridges\BR-No2\BB01\br1-2.dgn
 2/2/2015 9:24:05 AM

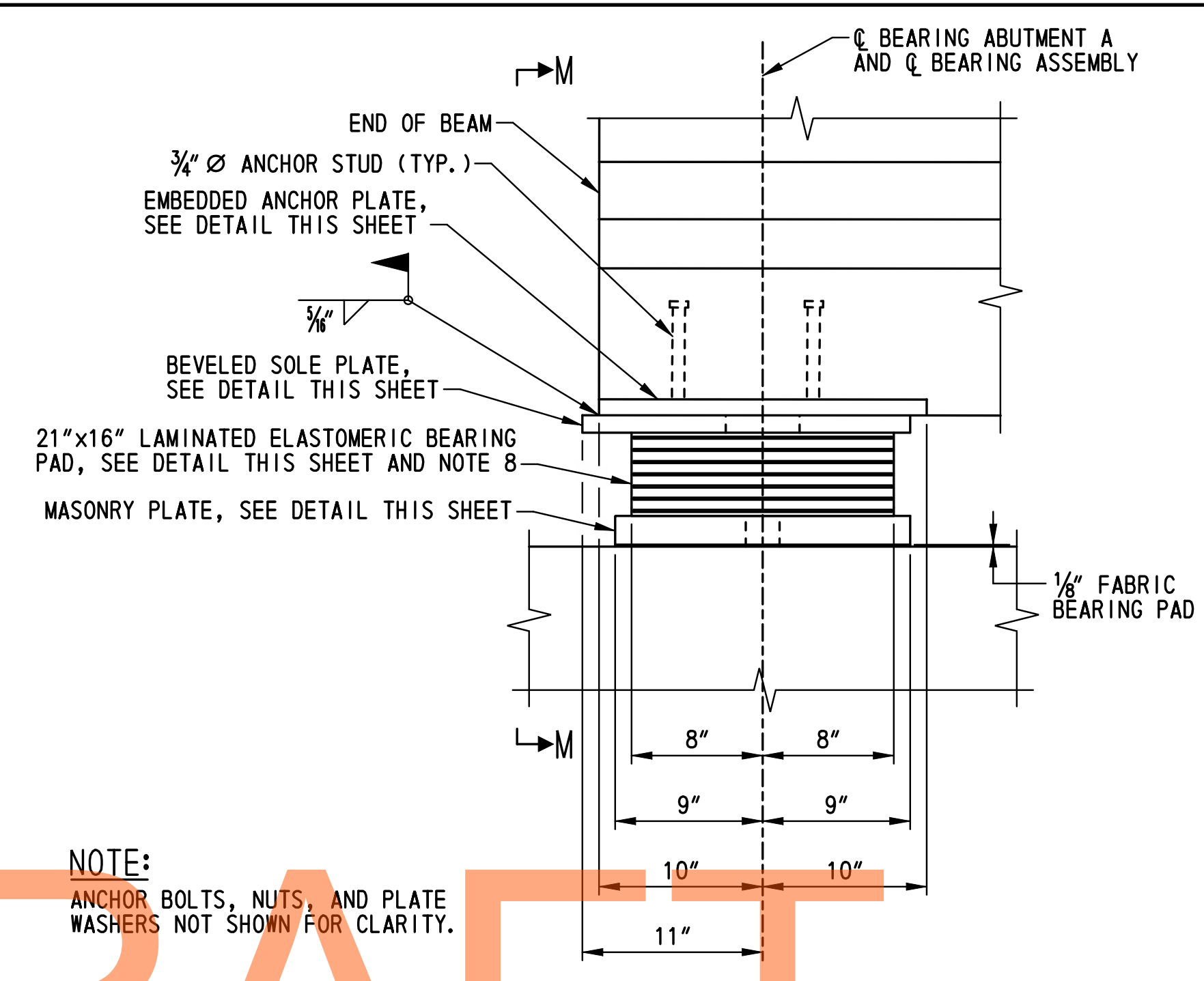


- NOTES:**
1. ANCHOR BOLTS, NUTS AND PLATE WASHERS NOT SHOWN FOR CLARITY.
 2. CONCRETE BEARING PAD NOT SHOWN FOR CLARITY.

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

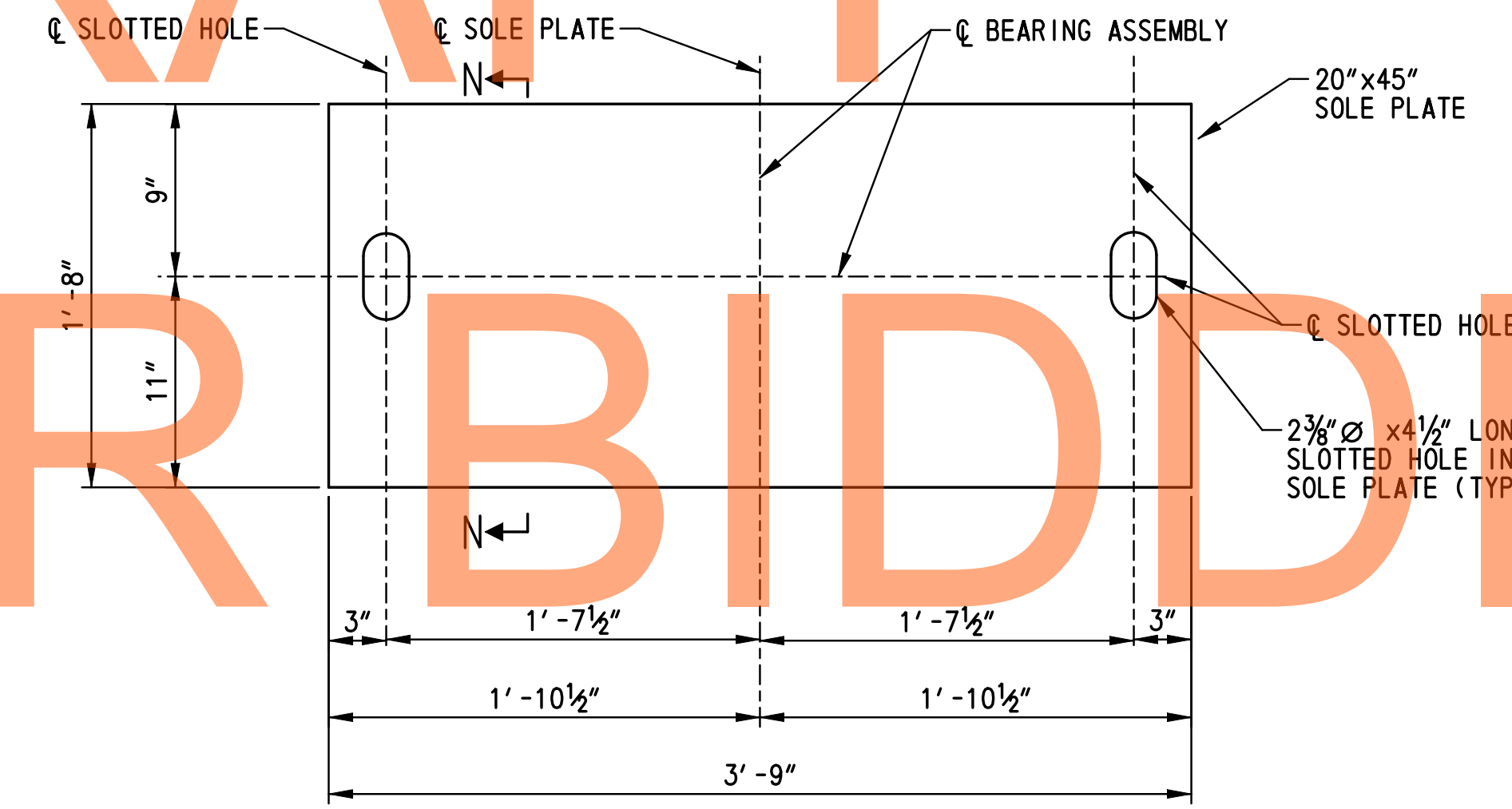


VIEW M-M
SCALE: 1 1/2"=1'-0"

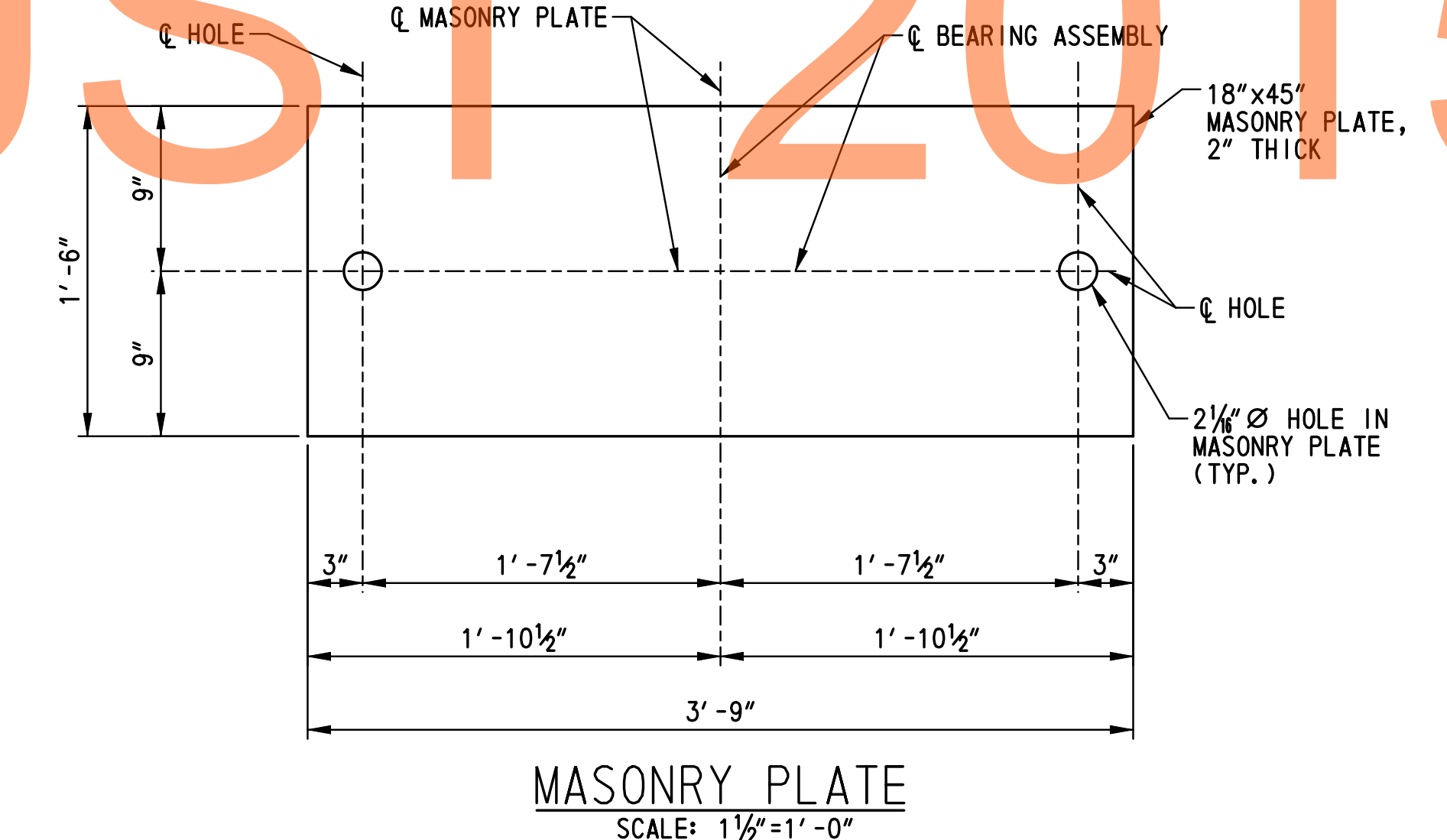


NOTE:
ANCHOR BOLTS, NUTS, AND PLATE WASHERS NOT SHOWN FOR CLARITY.

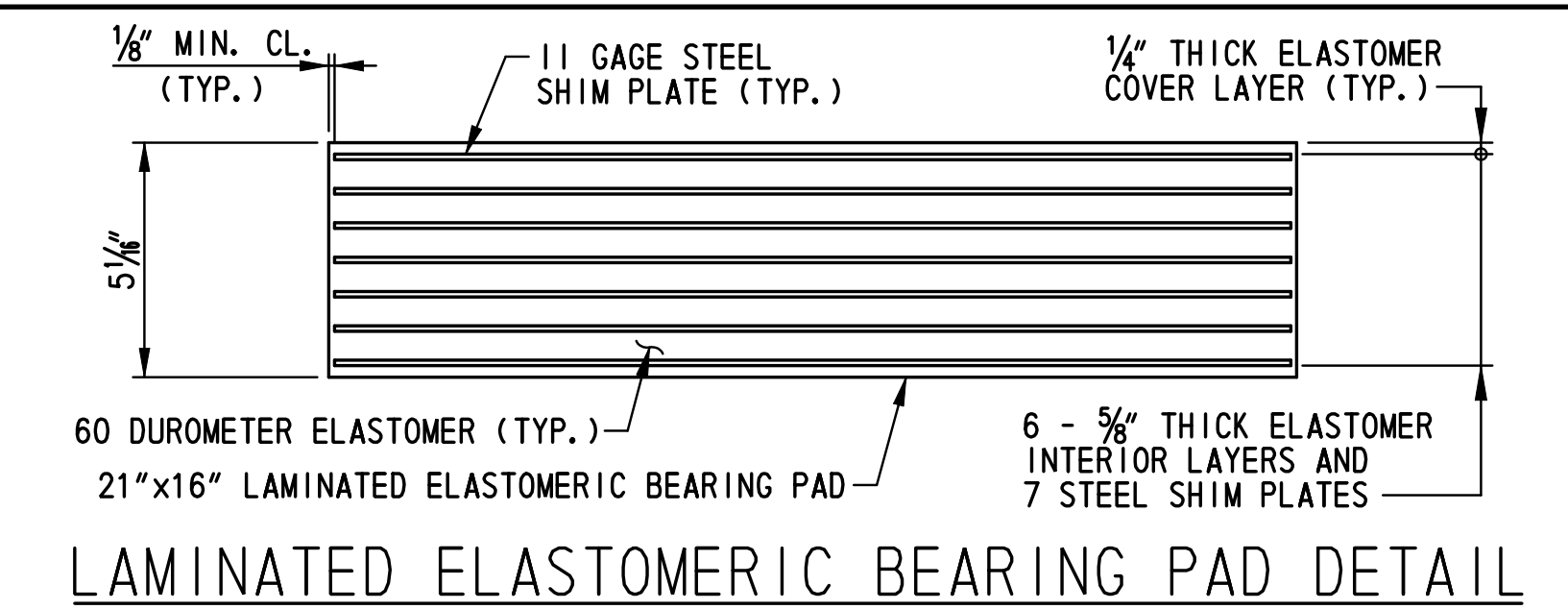
EXPANSION BEARING ELEVATION
SCALE: 1 1/2"=1'-0"



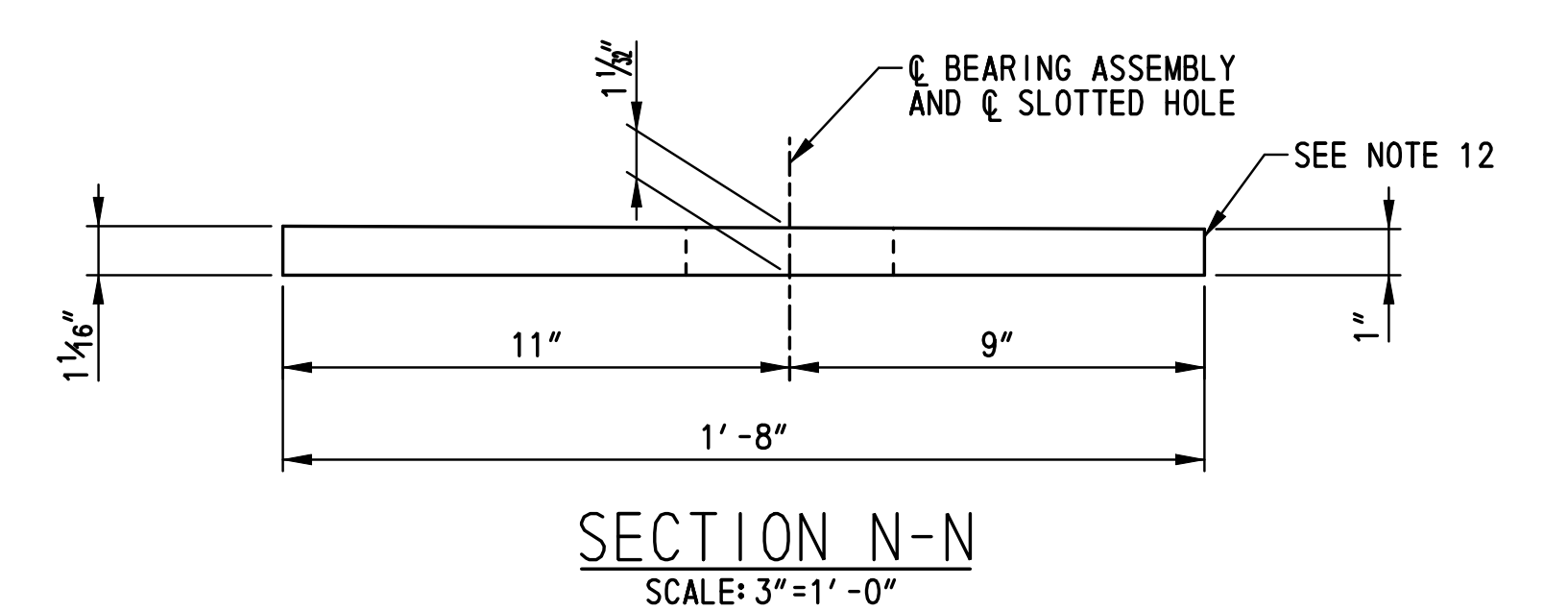
SOLE PLATE
SCALE: 1 1/2"=1'-0"



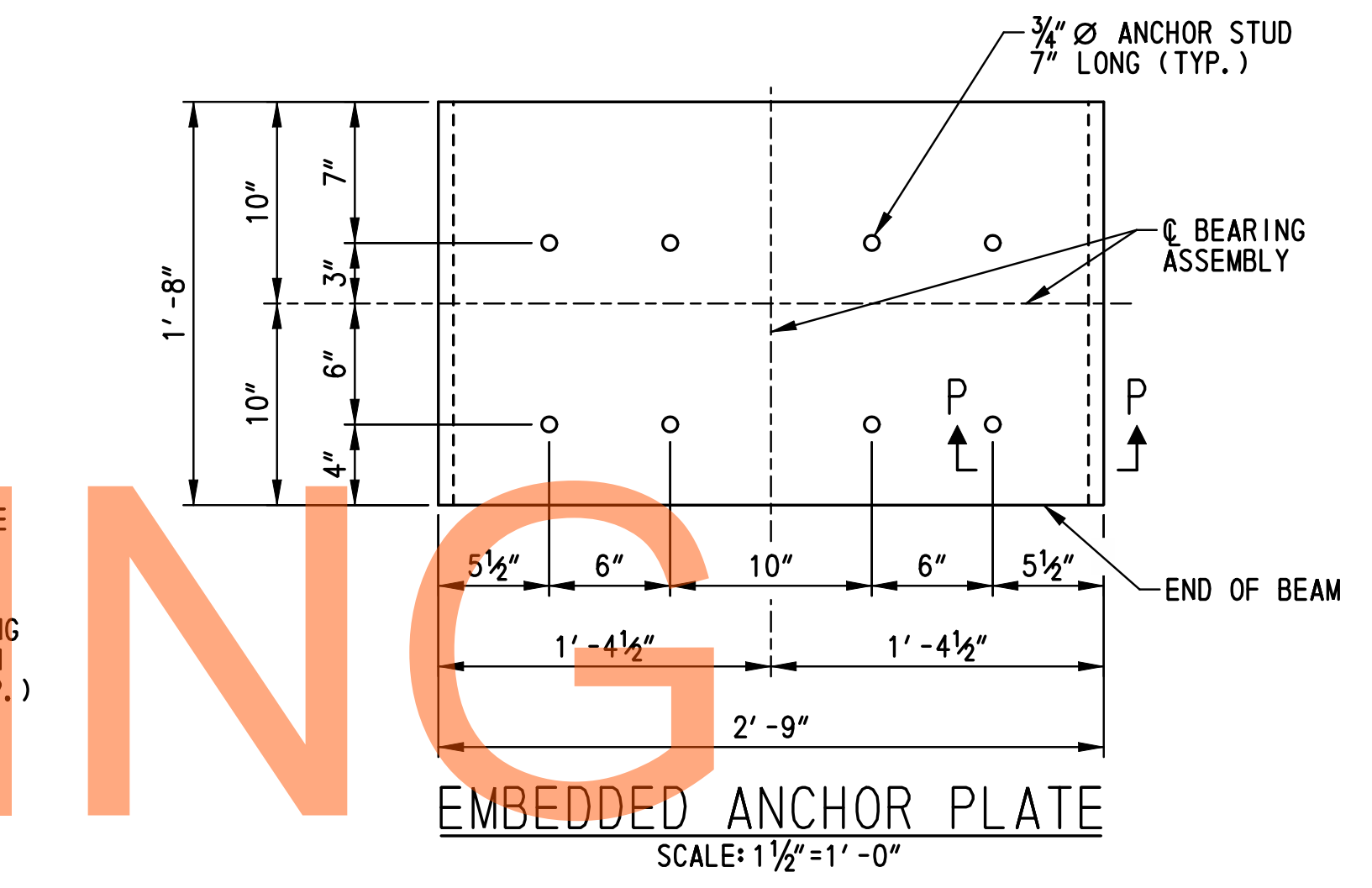
MASONRY PLATE
SCALE: 1 1/2"=1'-0"



LAMINATED ELASTOMERIC BEARING PAD DETAIL
SCALE: 3"=1'-0"



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



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

- EXPANSION BEARING NOTES:**
1. BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF BEAM.
 2. ANCHOR PLATES, SHEAR PLATES, SOLE PLATES AND MASONRY PLATES TO BE A 709, GRADE 36 STEEL. ANCHOR PLATES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. SHEAR PLATES, SOLE PLATES AND MASONRY PLATES SHALL BE PAINTED TO MATCH FINISHED BRIDGE CONCRETE COLOR.
 3. FILL HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
 4. 1000 RMS FINISH ALL OVER.
 5. ALL PLATE WASHERS SHALL BE UNPAINTED A 709, GRADE 36 GALVANIZED STEEL. ALL NUTS SHALL BE UNPAINTED A 563 GALVANIZED STEEL.
 6. ALL ANCHOR STUDS SHALL CONFORM TO ASTM A 108, GRADE 1015, 1018, OR 1020, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
 7. ALL ANCHOR BOLTS SHALL BE ASTM F 1554 GRADE 105 STEEL, HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A 153.
 8. 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.
 9. 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.
 10. BEARING MAXIMUM DESIGN LOAD: 256 KIPS.
 11. 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.
 12. THINNER END OF BEVELED SOLE PLATE SHALL BE MARKED TO ENSURE PROPER INSTALLATION IN FIELD. THINNER END SHALL BE PLACED STATIONS AHEAD.

ADDENDUMS / REVISIONS	

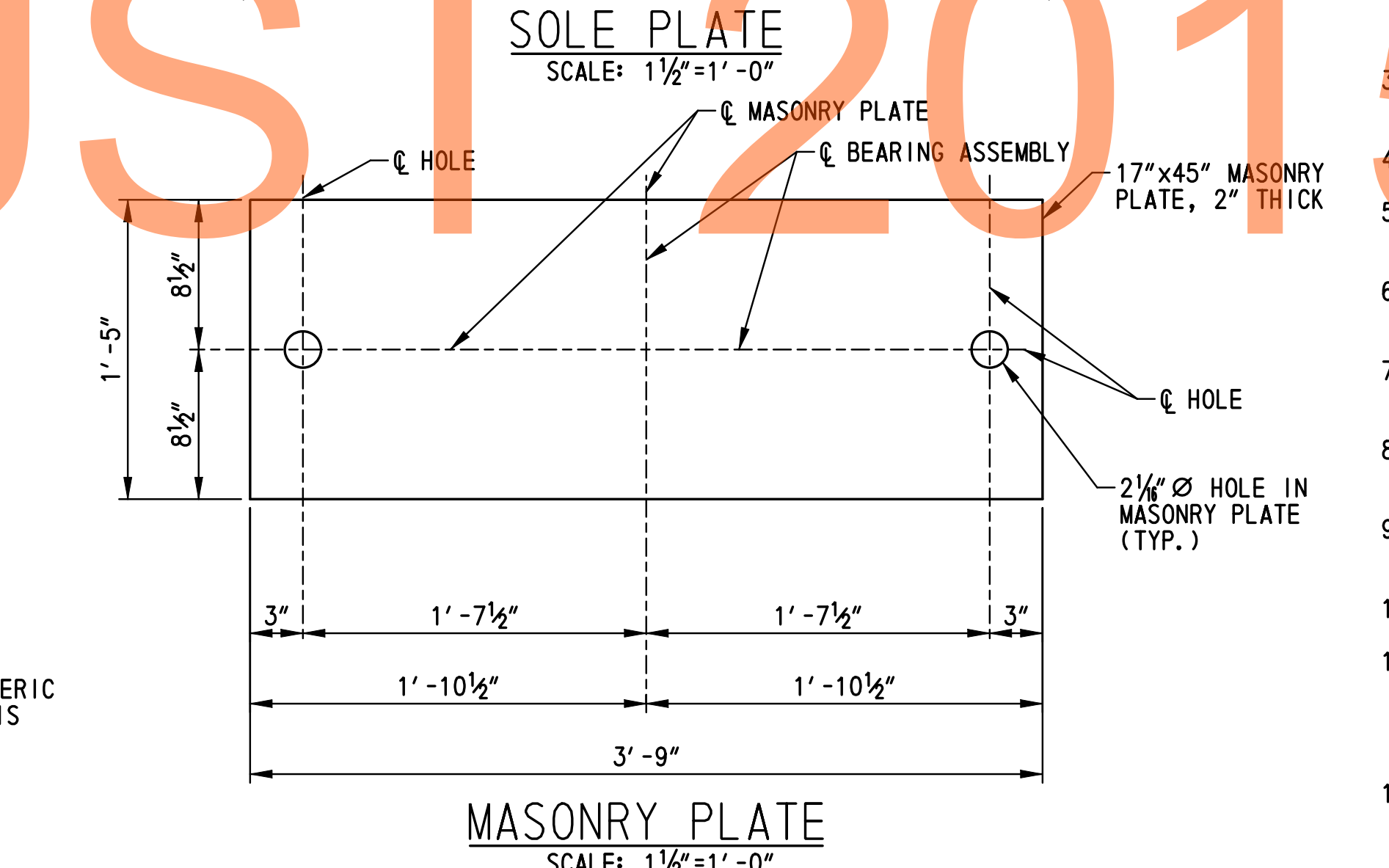
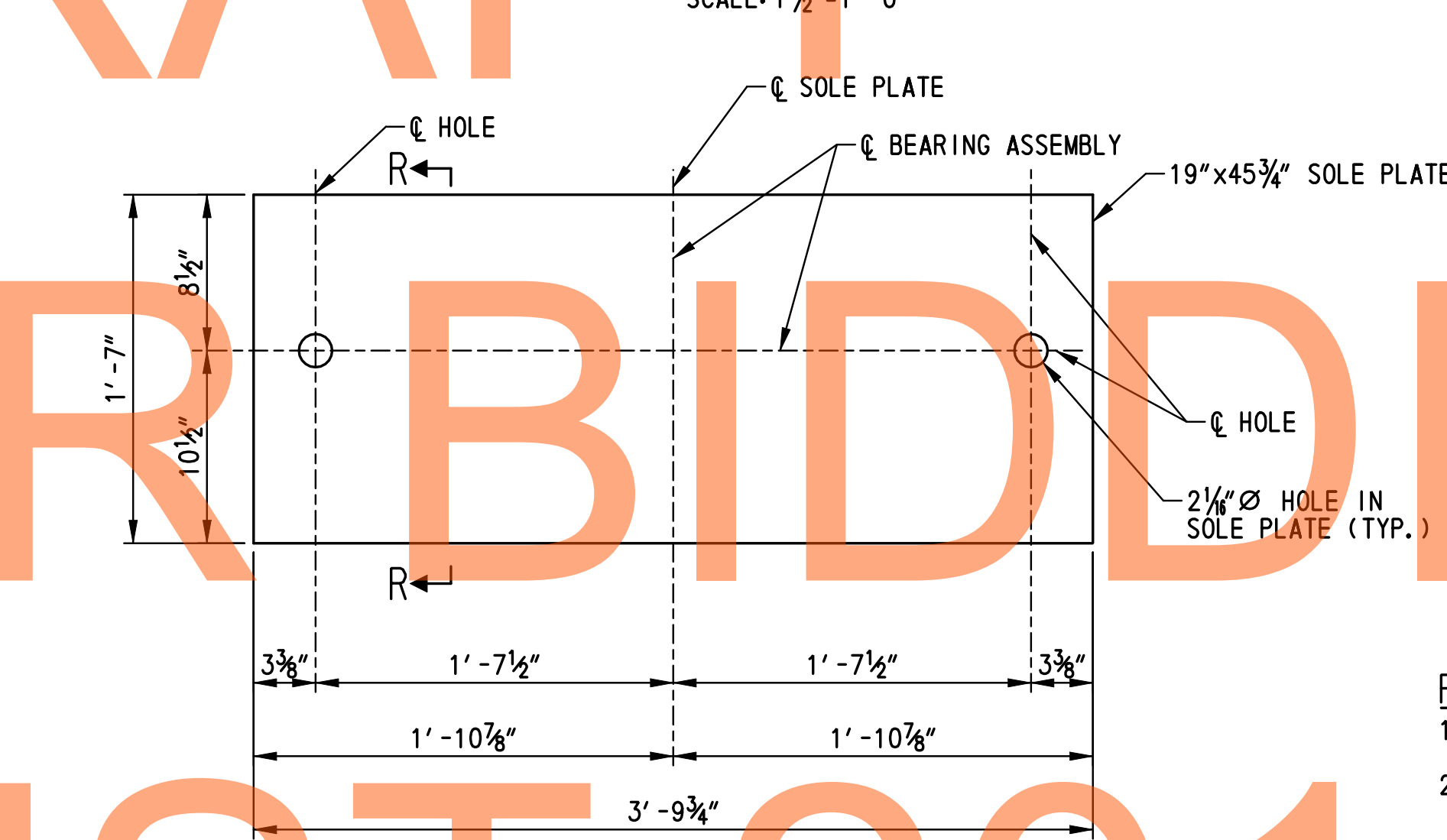
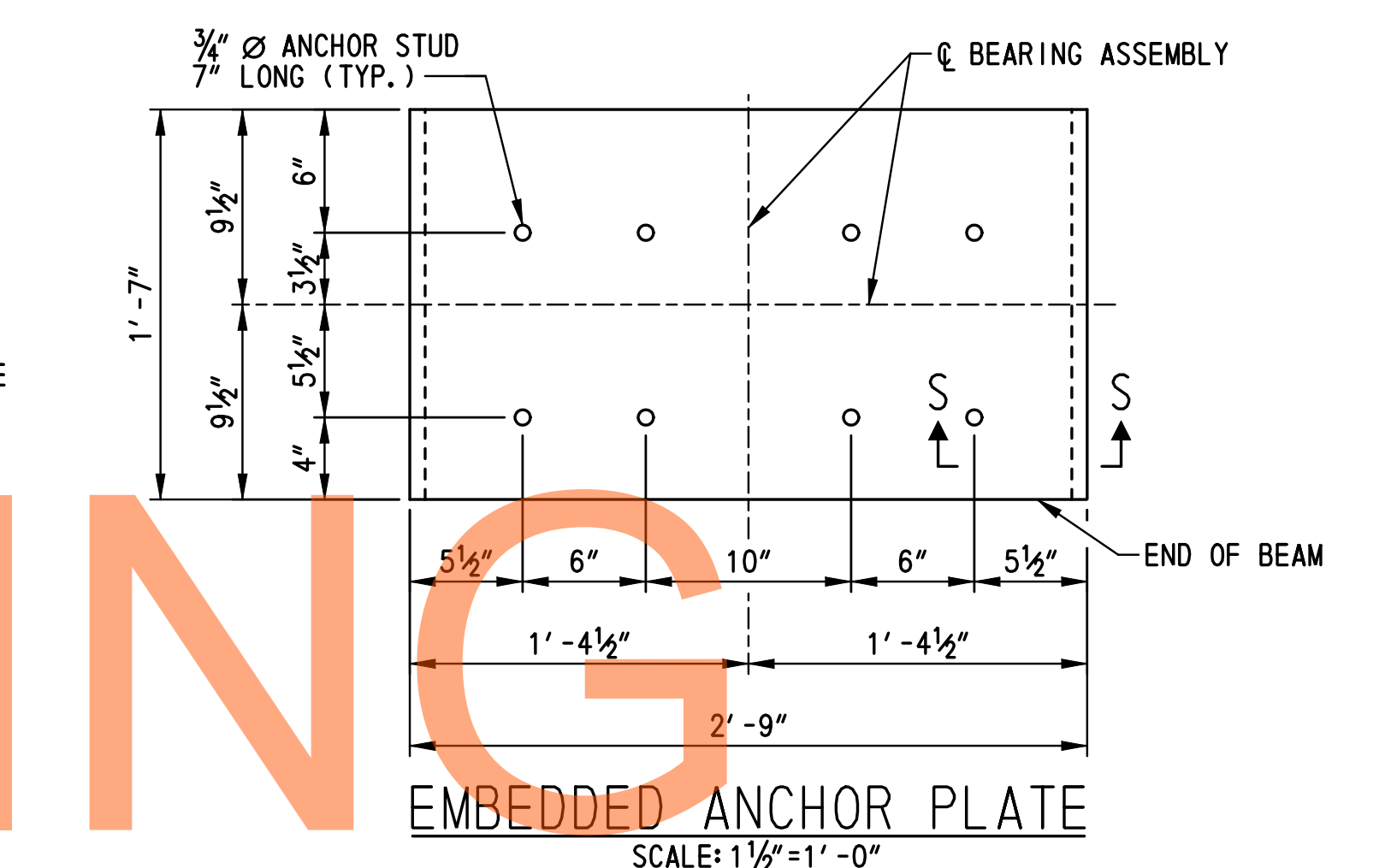
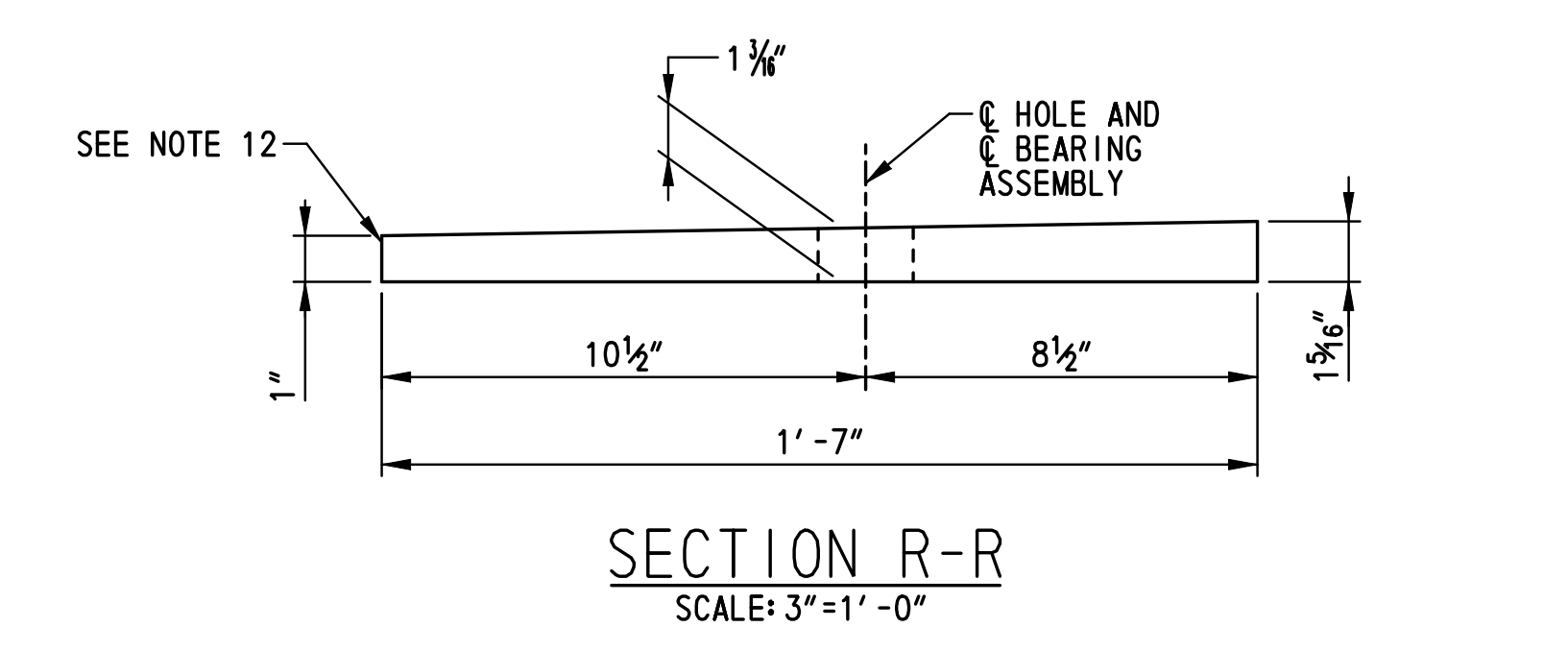
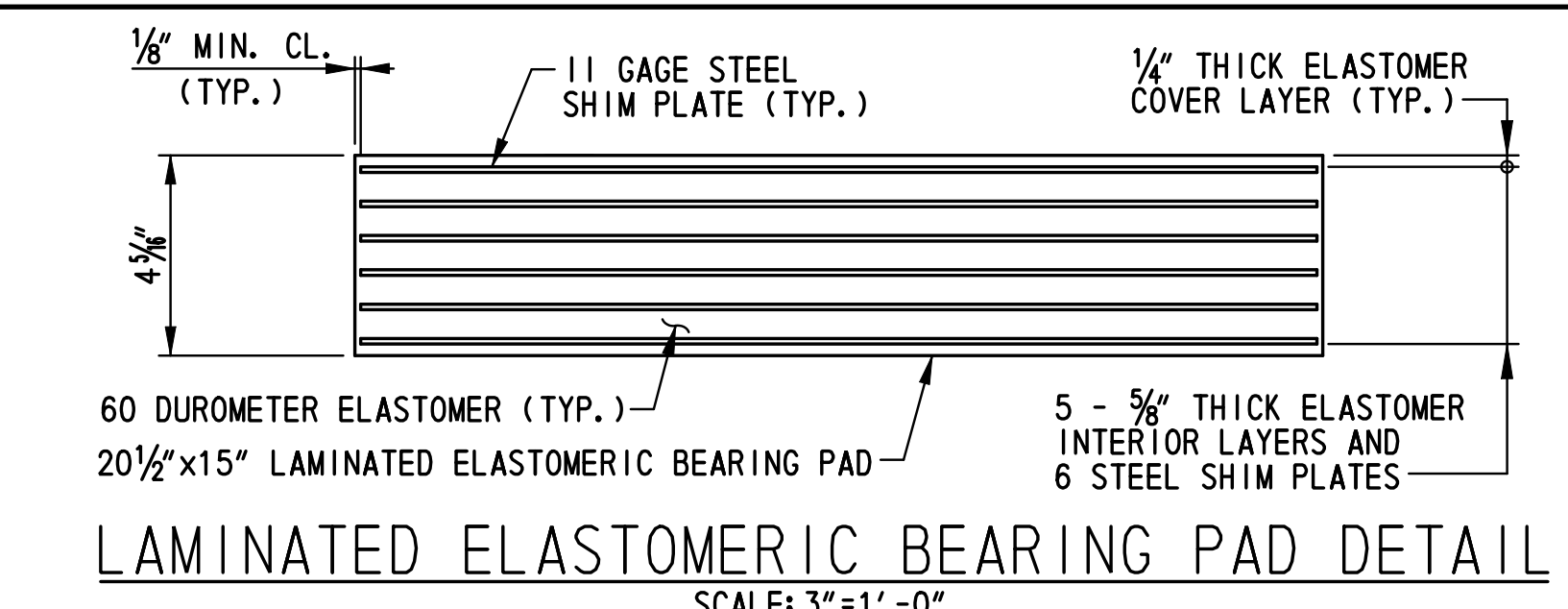
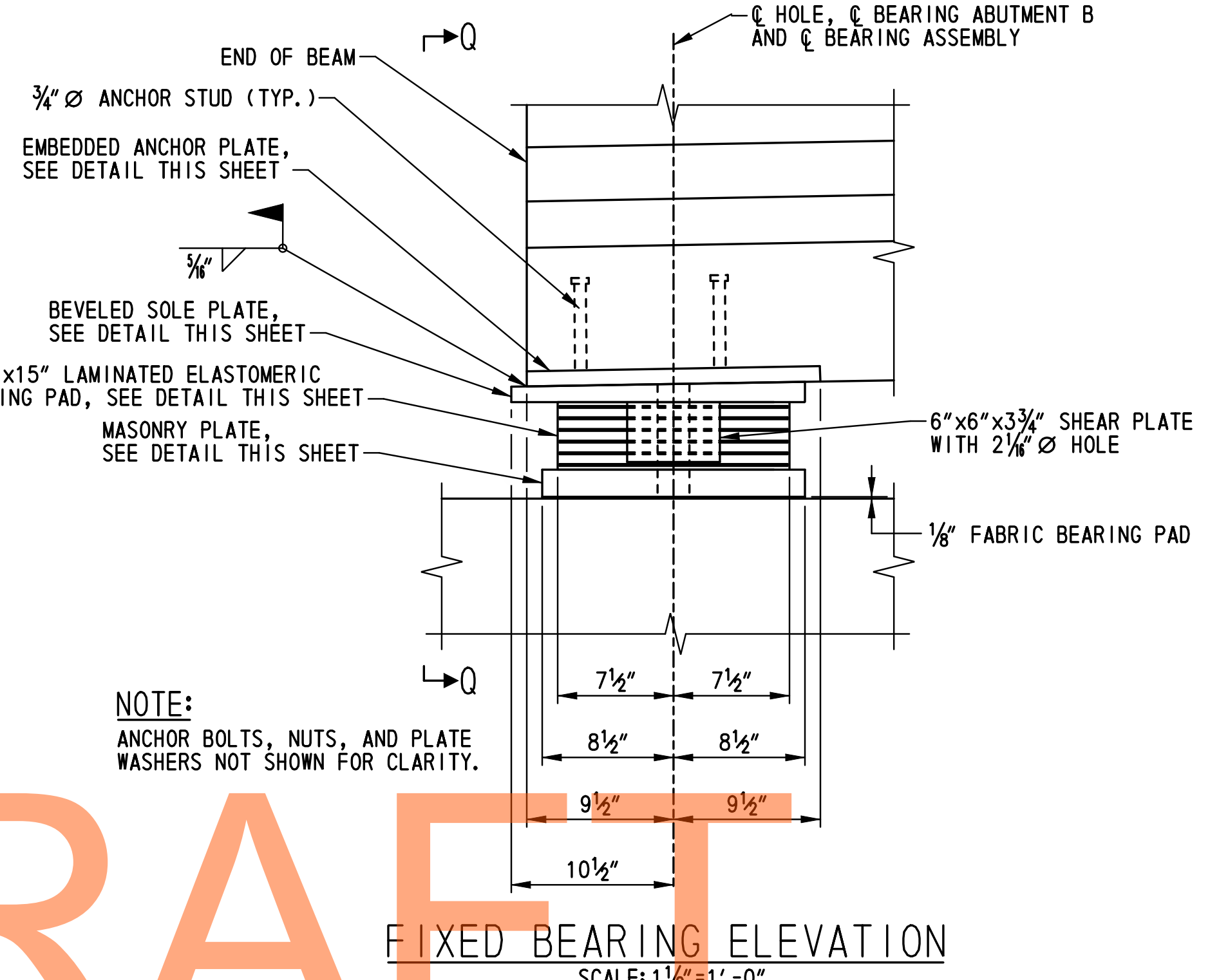
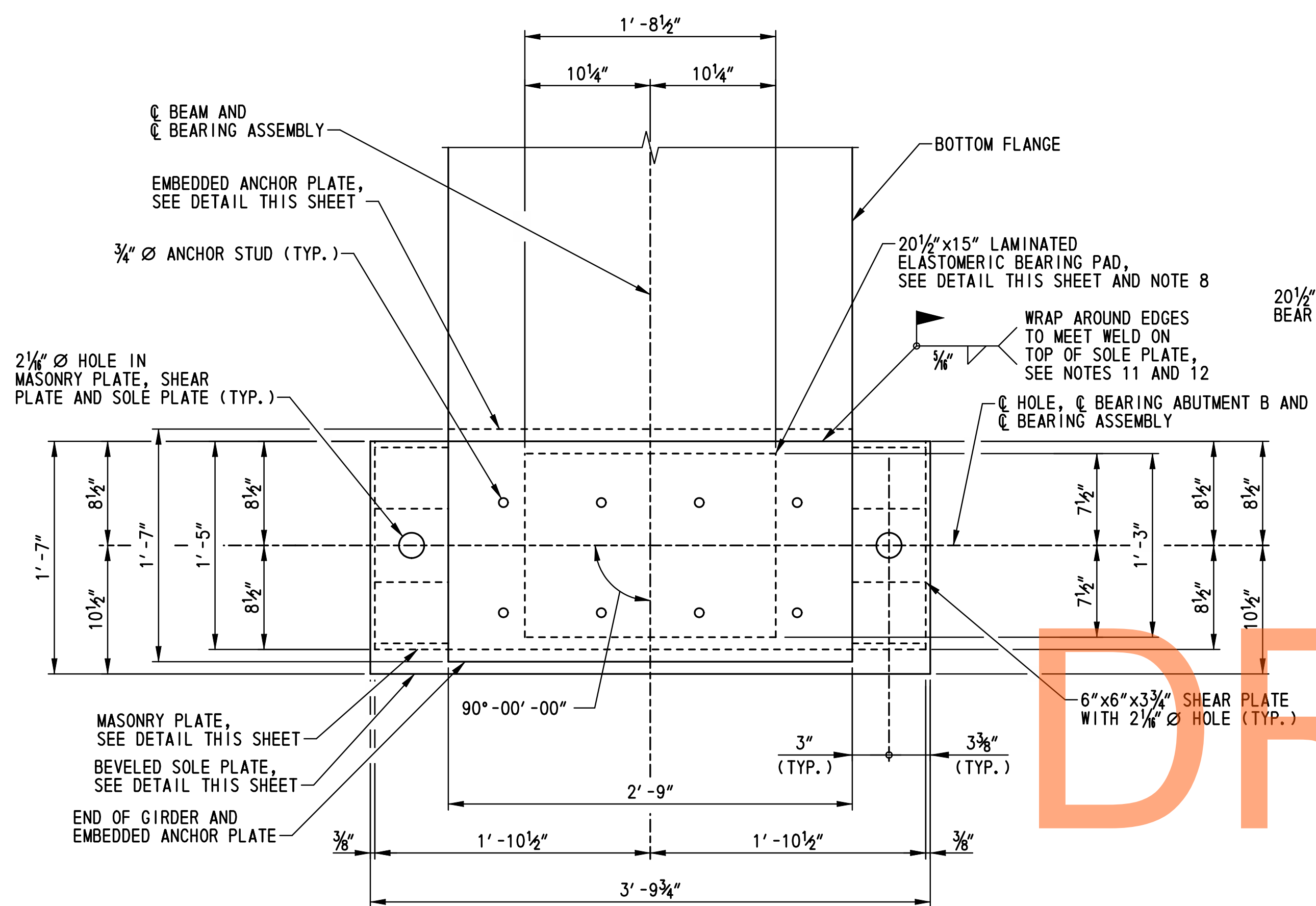
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT A EXPANSION BEARING DETAILS

BR1-2 BB-01
SHEET NO.
178
TOTAL SHTS.
491



- 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 S-S
NOT TO SCALE

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

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

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

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

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

FIXED BEARING NOTES:

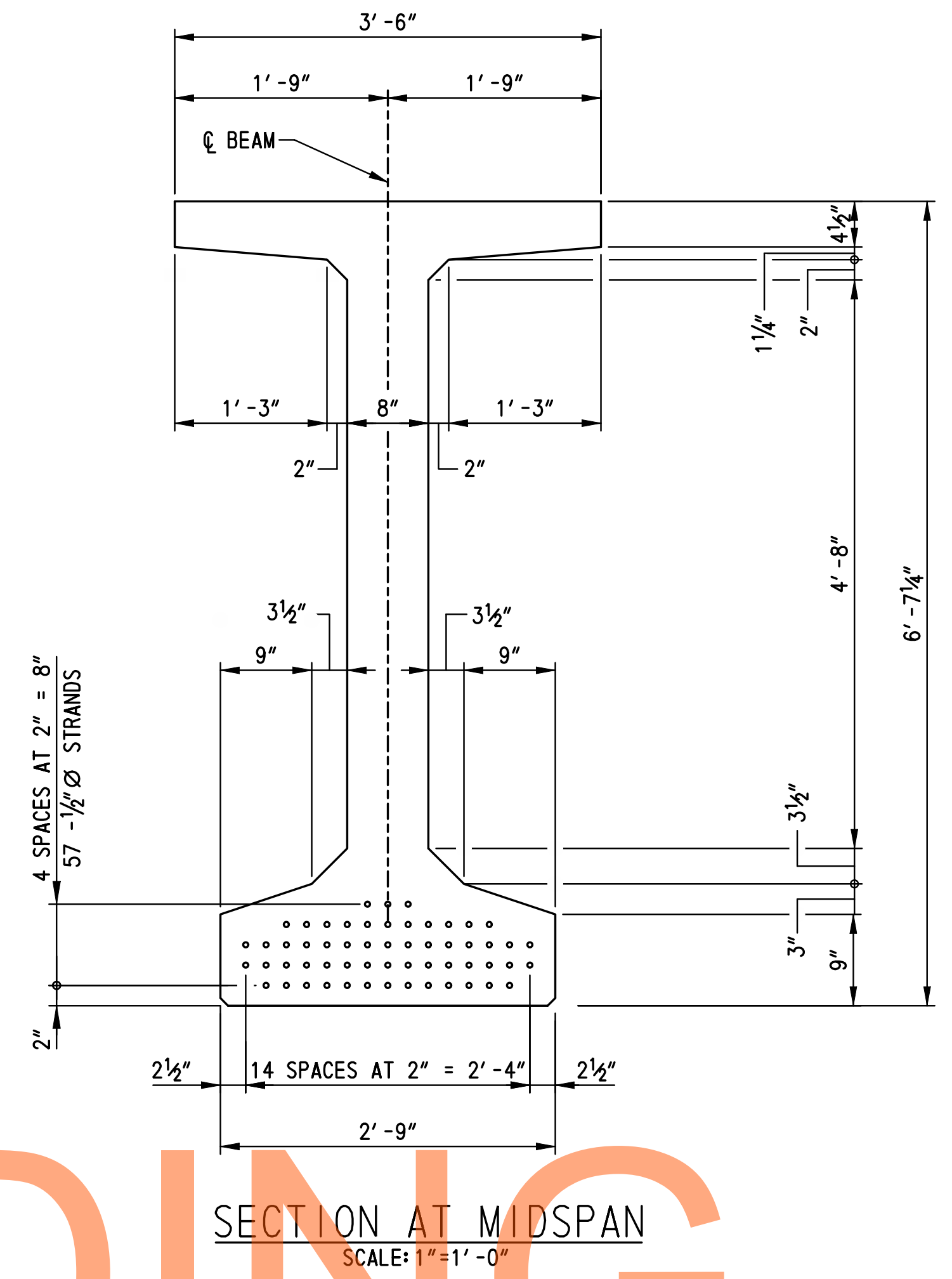
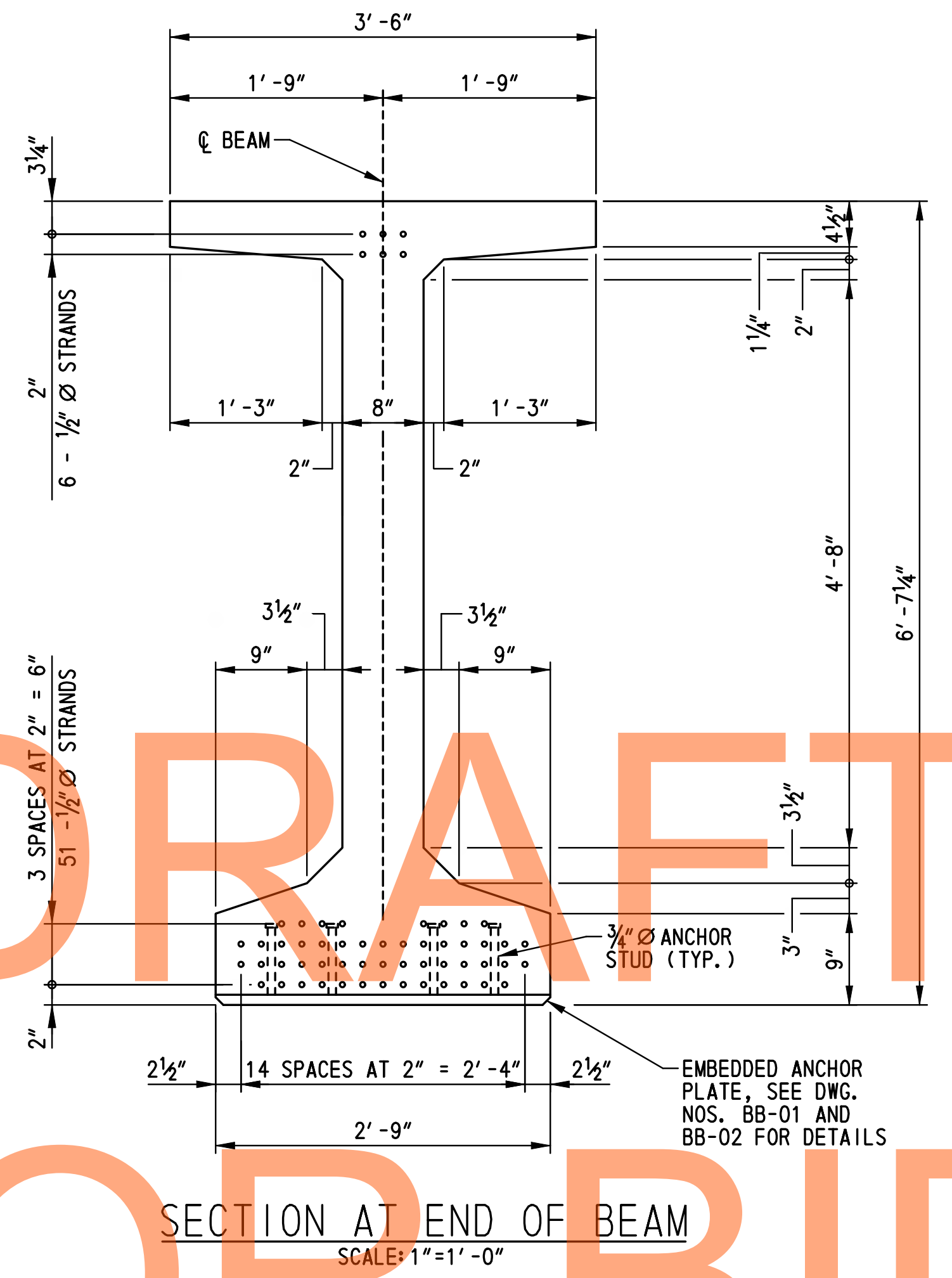
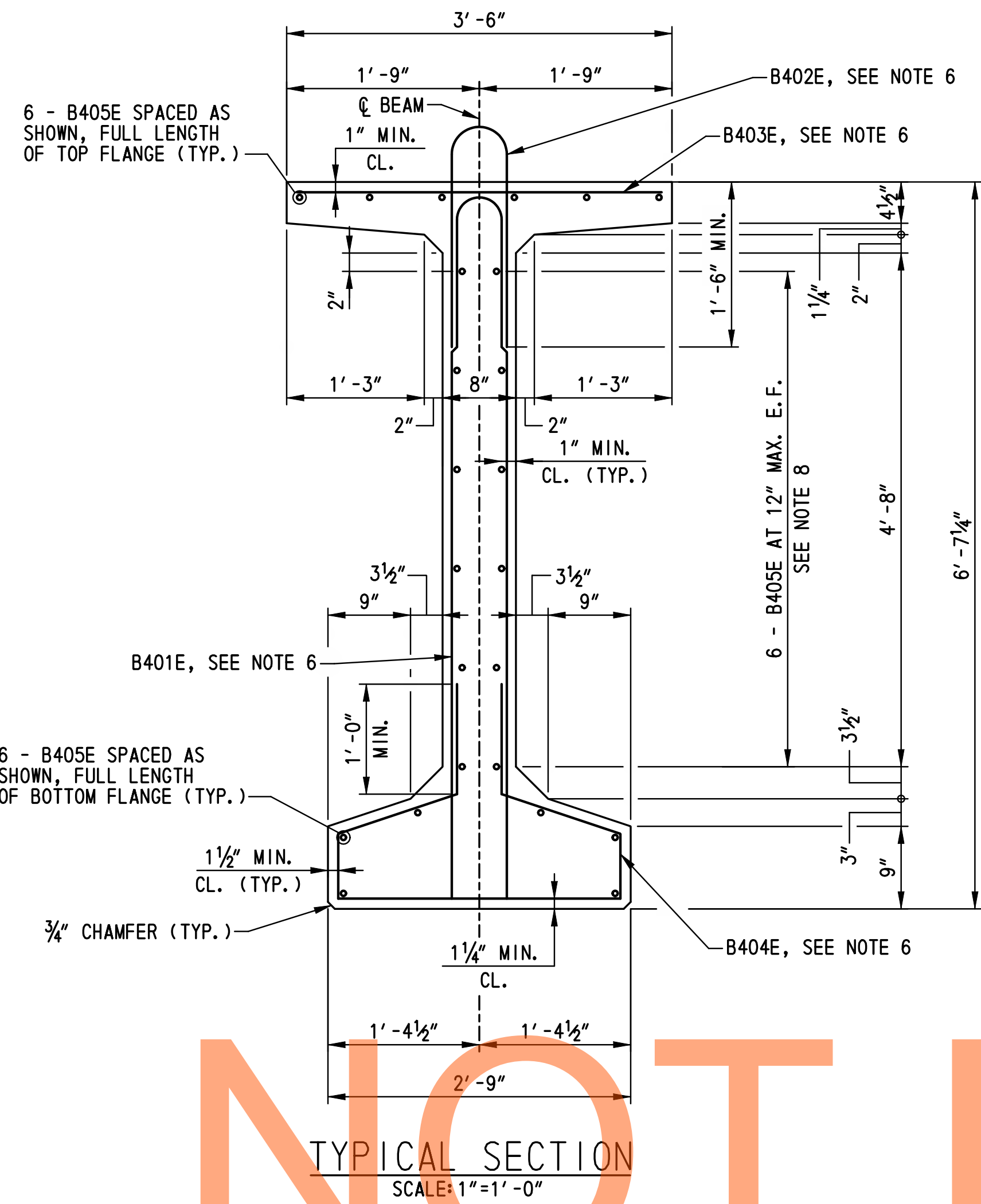
- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF BEAM.
- ANCHOR PLATES, SHEAR PLATES, SOLE PLATES AND MASONRY PLATES TO BE A 709, GRADE 36 STEEL. ANCHOR PLATES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. SHEAR PLATES, SOLE PLATES AND MASONRY PLATES SHALL BE PAINTED TO MATCH FINISHED BRIDGE CONCRETE COLOR.
- 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: 256 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.
- THINNER END OF BEVELED SOLE PLATE SHALL BE MARKED TO ENSURE PROPER INSTALLATION IN FIELD. THINNER END SHALL BE PLACED STATIONS AHEAD.

M:\316531-000\Construct\IB\CADD\Bridges\Br_No2\BB02_br1-2.dgn
 2/2/2015 8:44:35 AM

ADDENDUMS / REVISIONS	

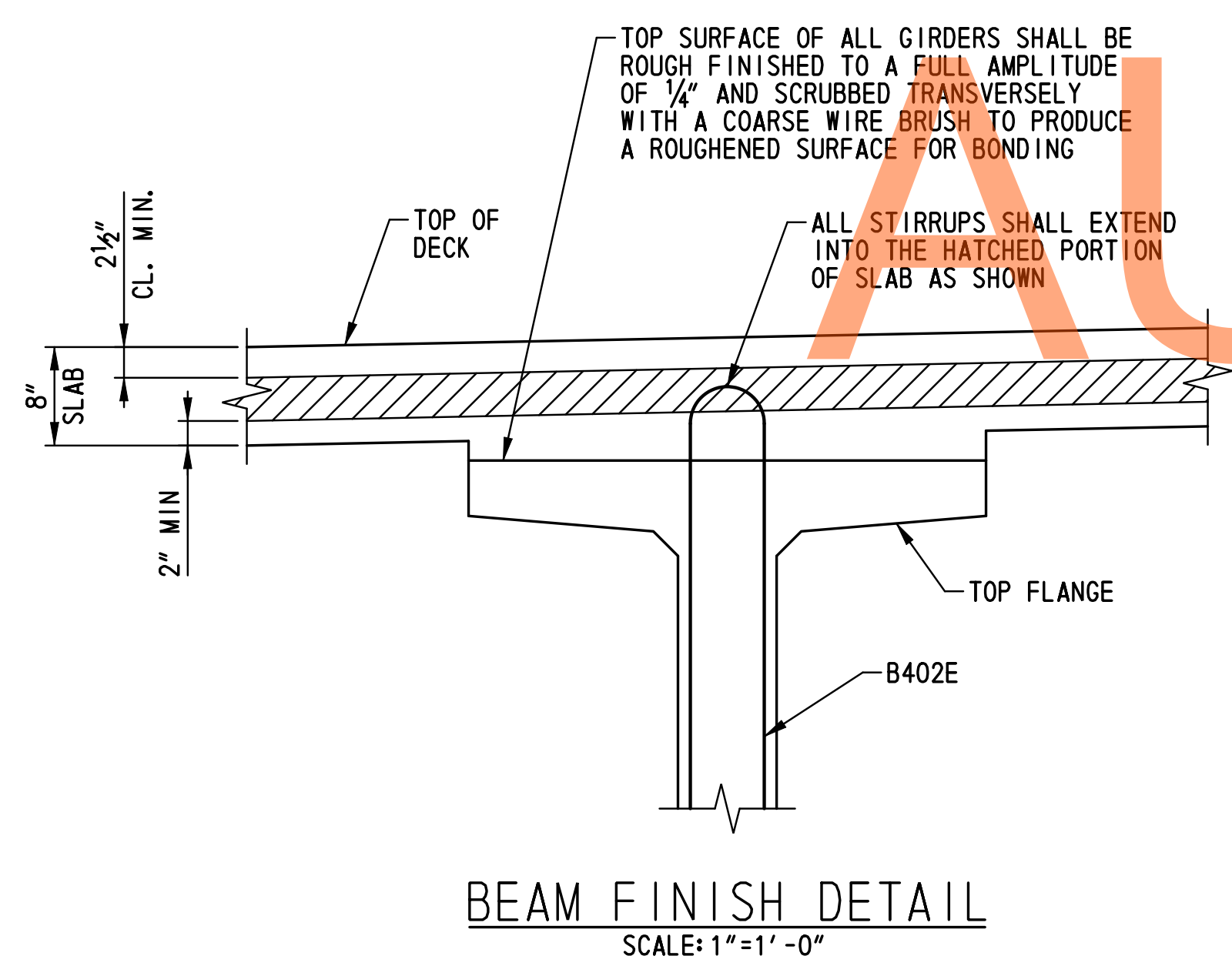
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

BR1-2 BB-02
SHEET NO.
179
TOTAL SHTS.
491

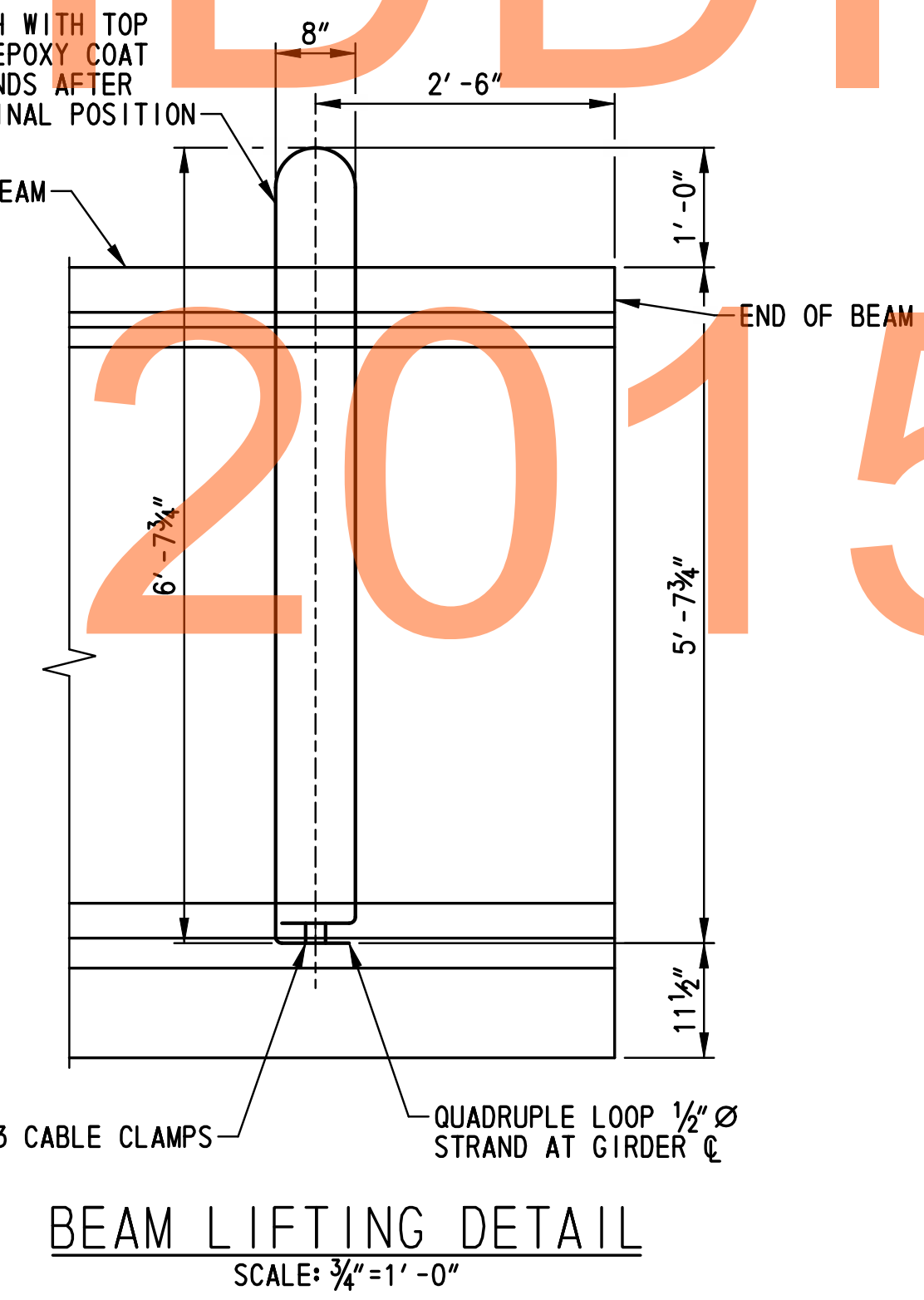


DRAFT

NOT FOR BIDDING



- NOTES:**
- LIFTING DETAIL TYPICAL AT BOTH ENDS OF ALL BEAMS PLACED AT BEAM CENTERLINE.
 - AT THE CONTRACTOR'S OPTION, ALTERNATE LIFTING DETAILS WILL BY 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.



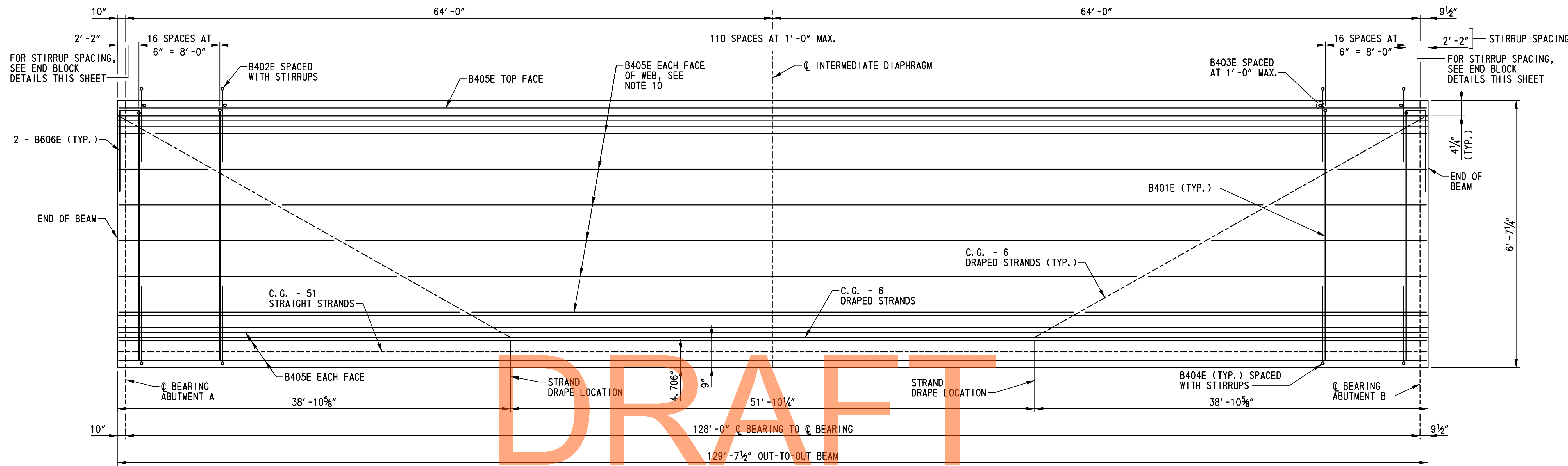
- BEAM NOTES:**
- BEAMS ARE 33/79.25" PCEF BULB-TEE BEAMS. THE BEAMS HAVE BEEN DESIGNED USING A DRAPED STRAND PATTERN AS SHOWN. THE FABRICATOR MAY ELECT TO USE ALTERNATE STRAND PATTERNS, DEBONDING OF STRANDS, OR ADDITIONAL STRANDS. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE SHOWING 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, GRADE 270. 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-03.

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES / 1/4 INCH)					
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E
159	4	13-01.2	B401E	1	0-06.0	6-05.0	13-01.2		
159	4	4-03.2	B402E	1	0-06.0	2-00.0	4-03.2		
131	4	3-03.0	B403E	STR		3-03.0			
159	4	7-09.0	B404E	3	1-00.0	1-00.0	0-04.0	0-06.3	2-06.0
24	4	129-03.2	B405E*	STR		129-03.2			
4	6	4-00.0	B606E	2	2-00.0	2-00.0			

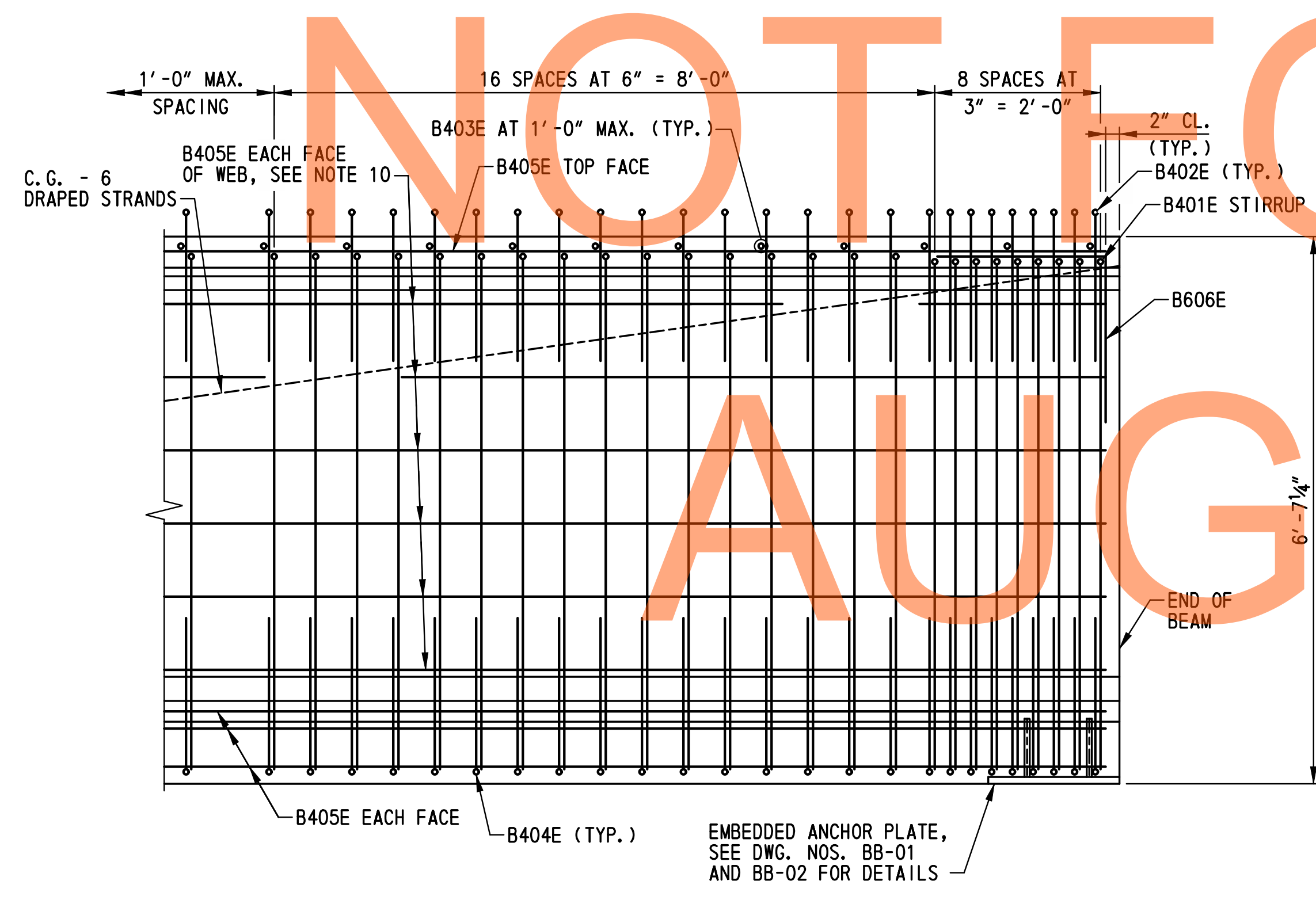
STANDARD BAR BENDS		
①	②	③

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

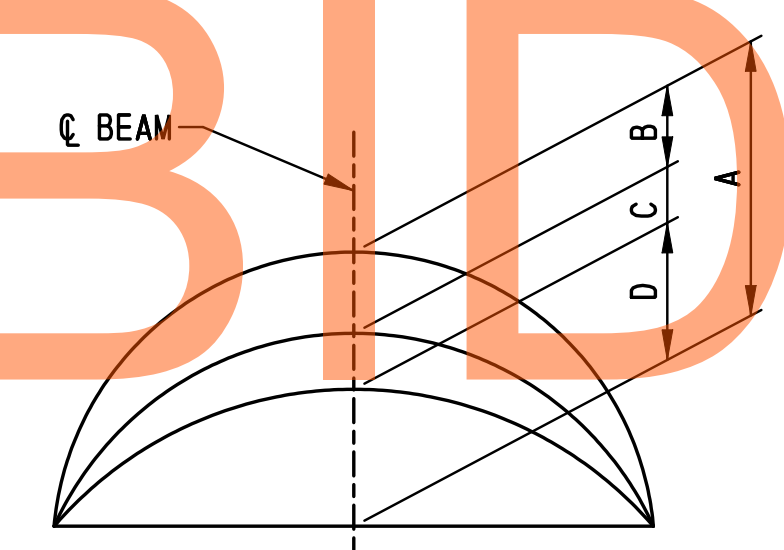
M:\31653-000\Contract\1B\CADD\Bridges\Bridg\No2\BMO1\br1-2.dgn 2/2/2015 8:25:03 AM



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



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



CAMBER TABLE

BEAM	A	B	C	D
EXTERIOR	5 3/8"	2 1/8"	1 1/2"	1 1/2"
INTERIOR	5 7/8"	2 1/8"	1 1/8"	1 3/8"

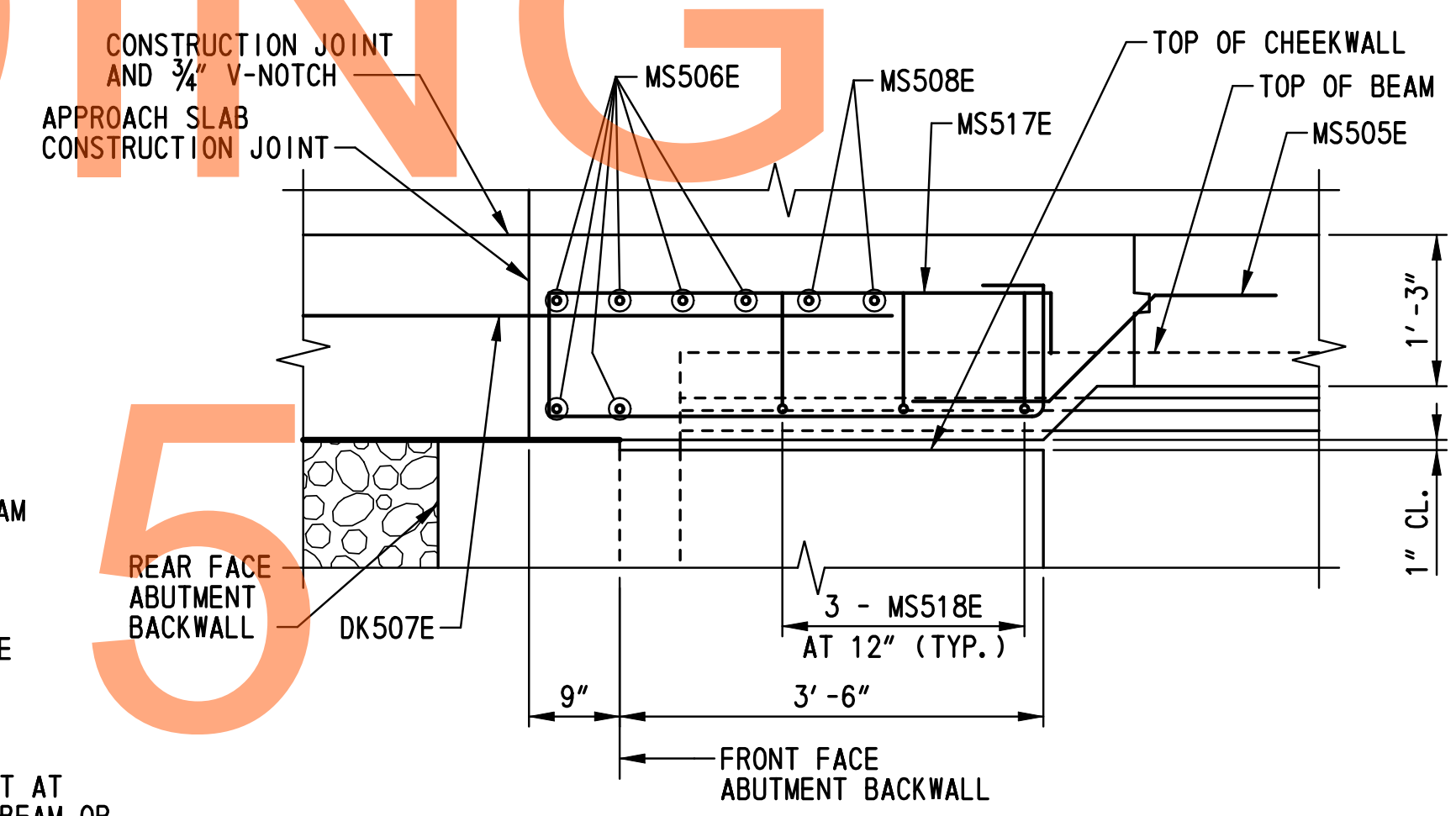
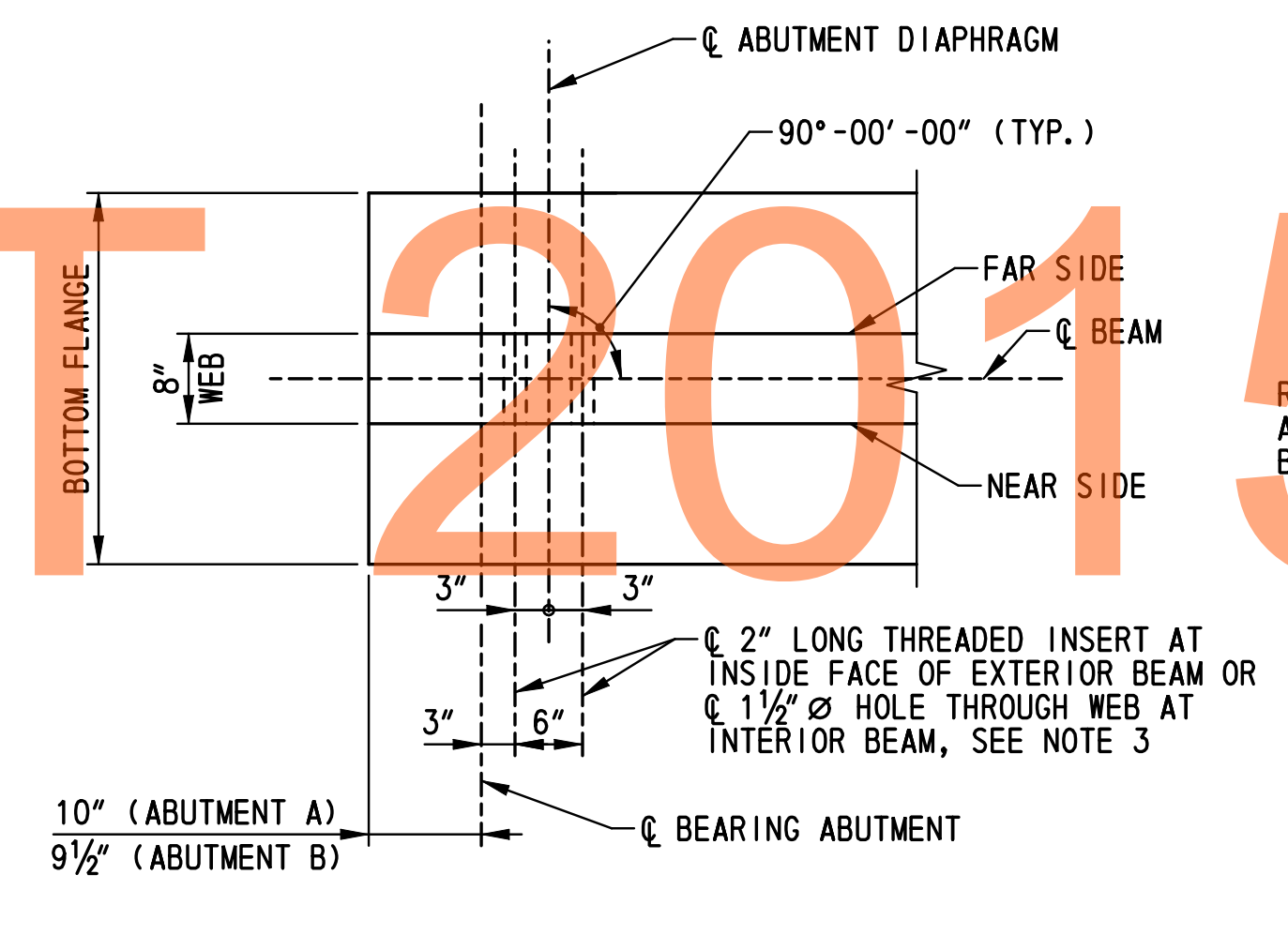
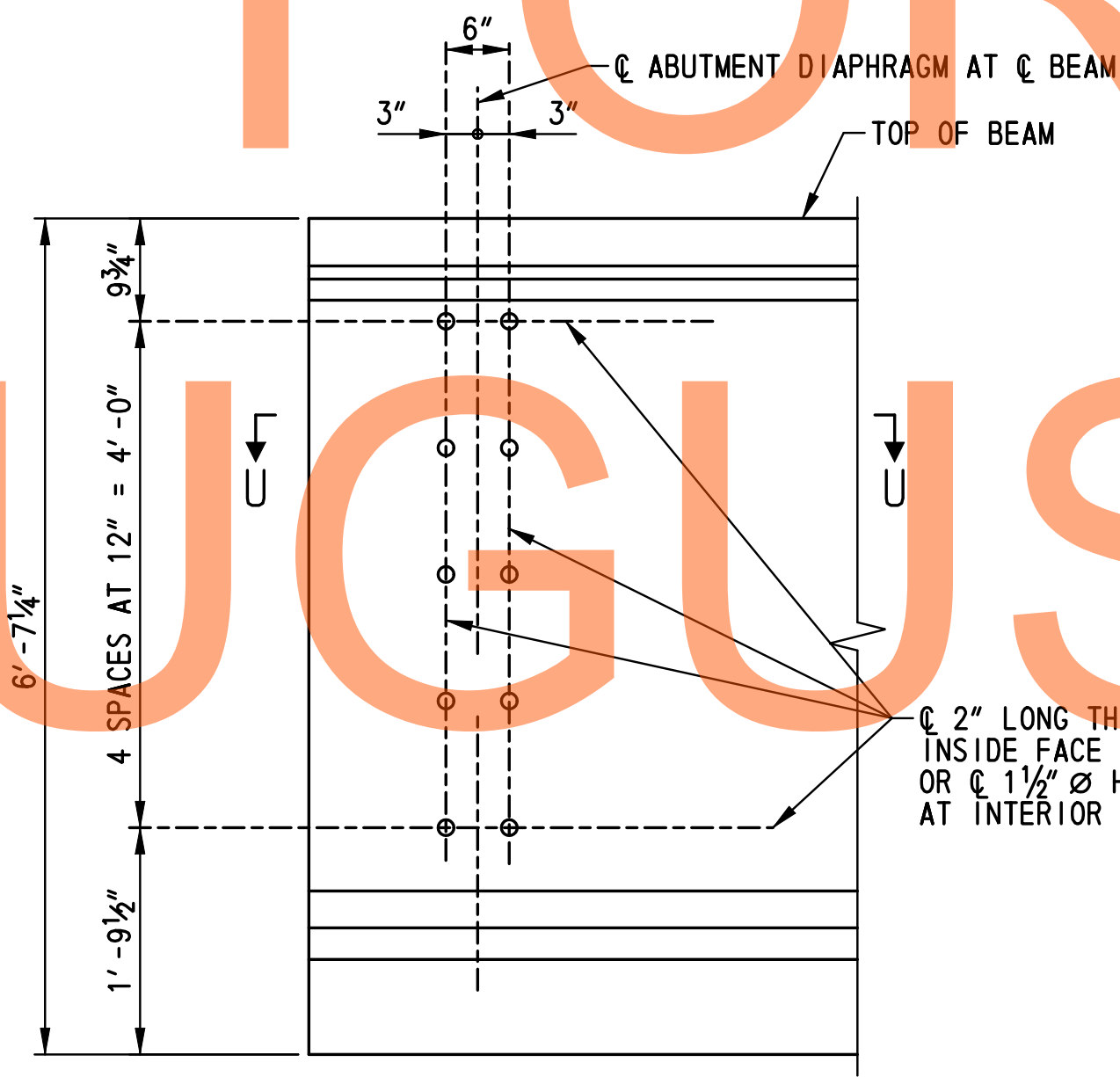
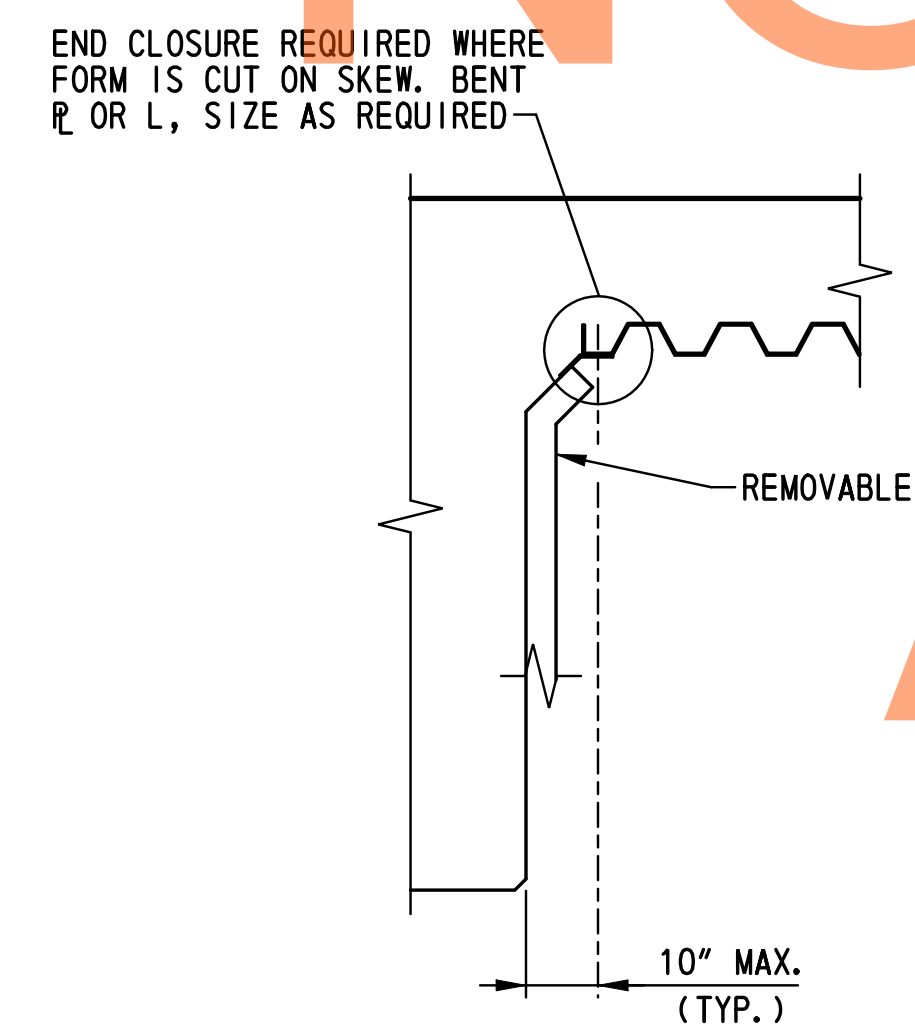
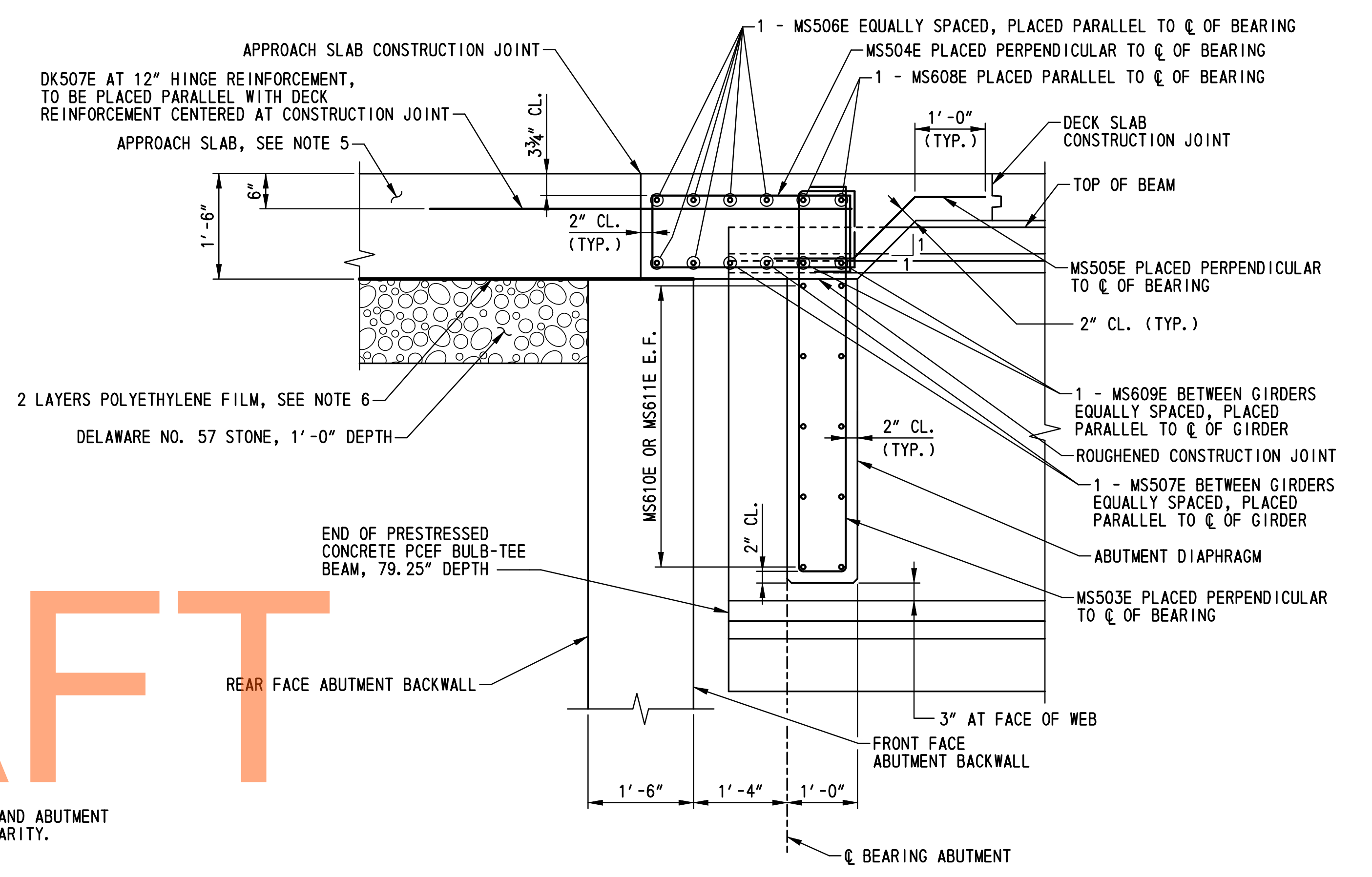
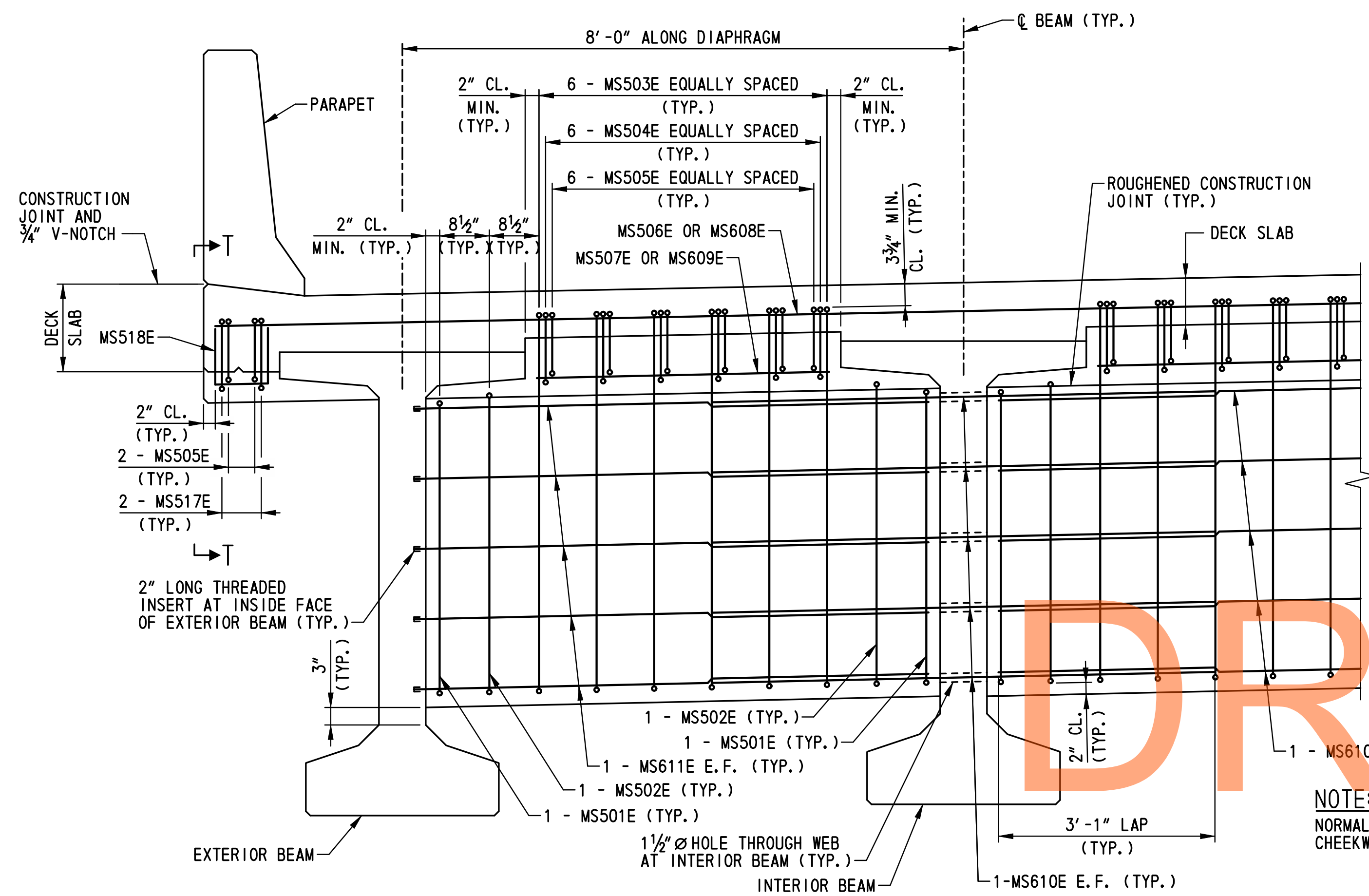
CAMBER NOTES:

- 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.
- 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-03.

M:\31653-000\Contract\1B\CADD\Bridges\Br-No2\BMO2_br1-2.dgn
 2/2/2015 9:52:28 AM



- 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.
 5. APPROACH SLAB AND NOMINAL DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
 6. FOR POLYETHYLENE FILM INFORMATION, SEE DWG. NO. AB-02.

M:\31653-000\Contract\IB\CADD\Bridges\Br_No2\DT01_brl-2.dgn 2/2/2015 9:59:00 AM

ADDENDUMS / REVISIONS	

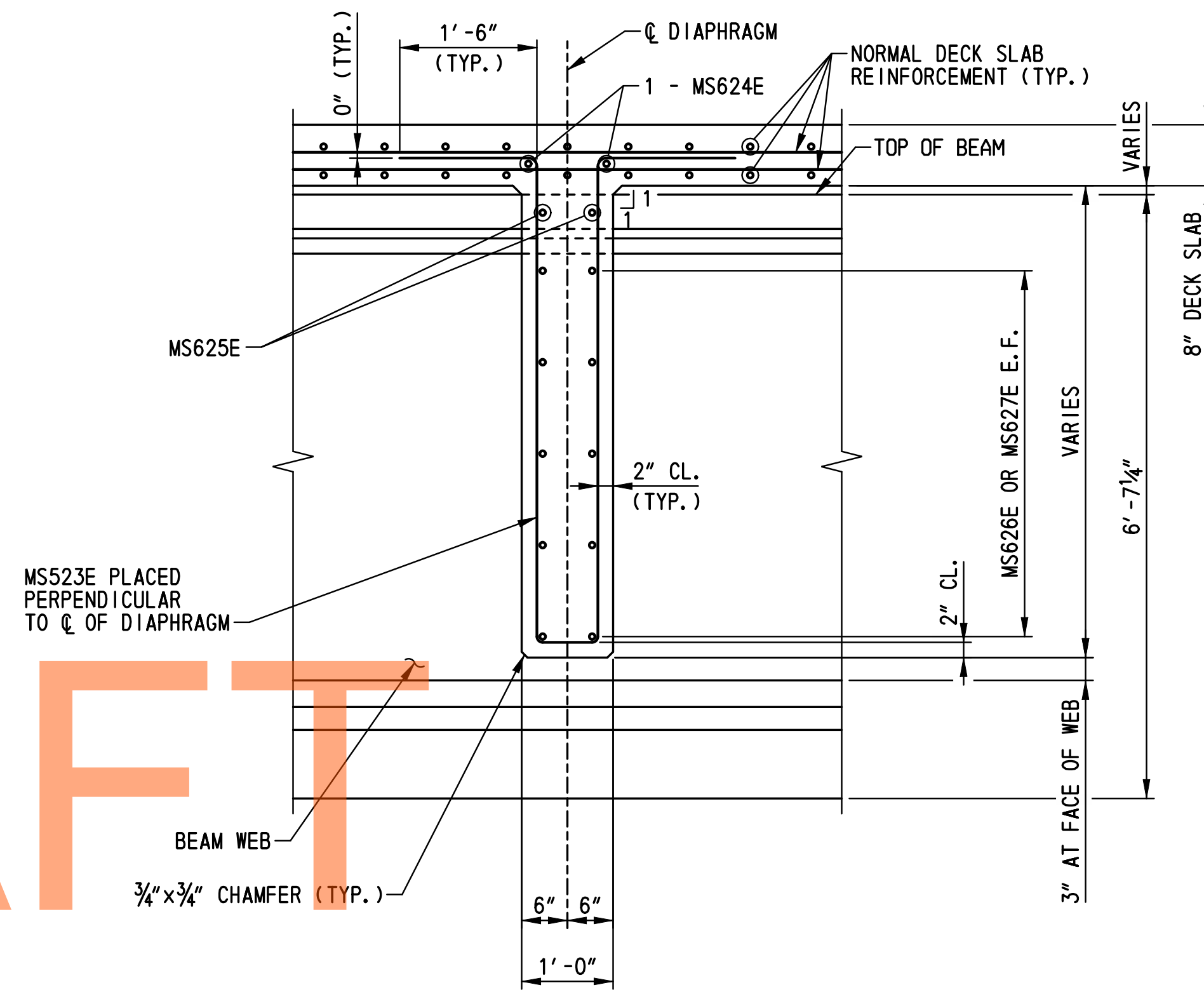
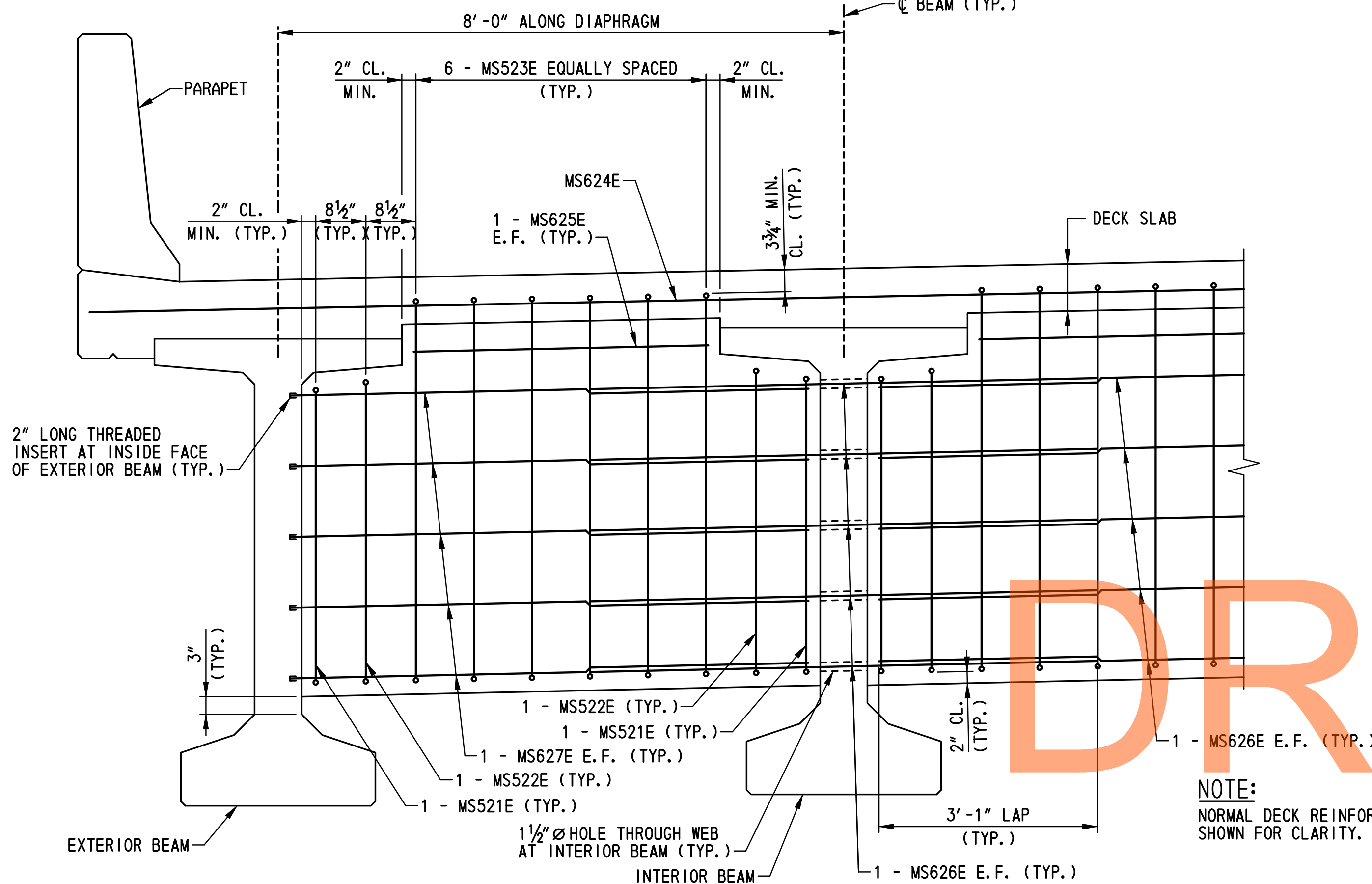
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ABUTMENT DIAPHRAGM DETAILS

BR1-2 DT-01
SHEET NO.
182
TOTAL SHTS.
491



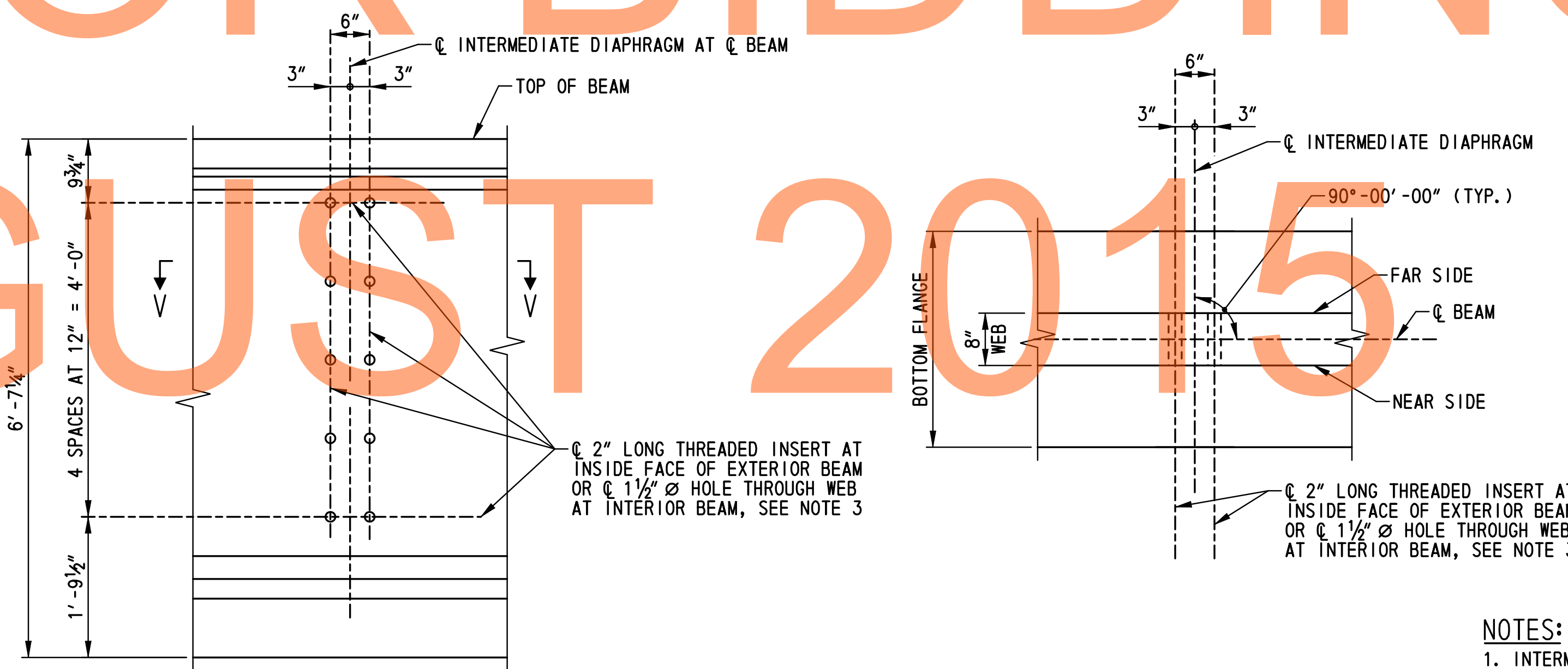
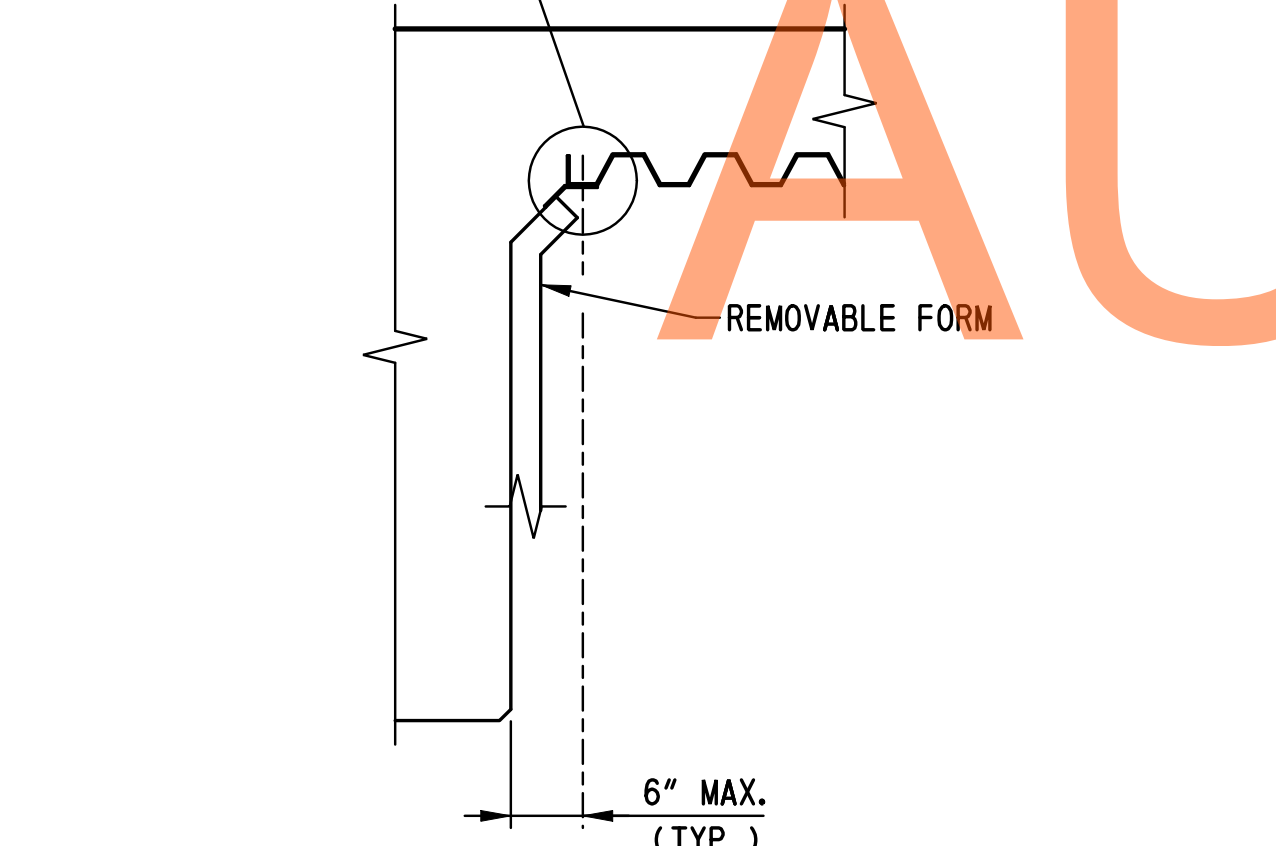
NOTE:
NORMAL DECK REINFORCEMENT NOT SHOWN FOR CLARITY.

DRAFT

NOT FOR BIDDING

AUGUST 2015

END CLOSURE REQUIRED WHERE FORM IS CUT ON SKEW. BENT R OR L, SIZE AS REQUIRED

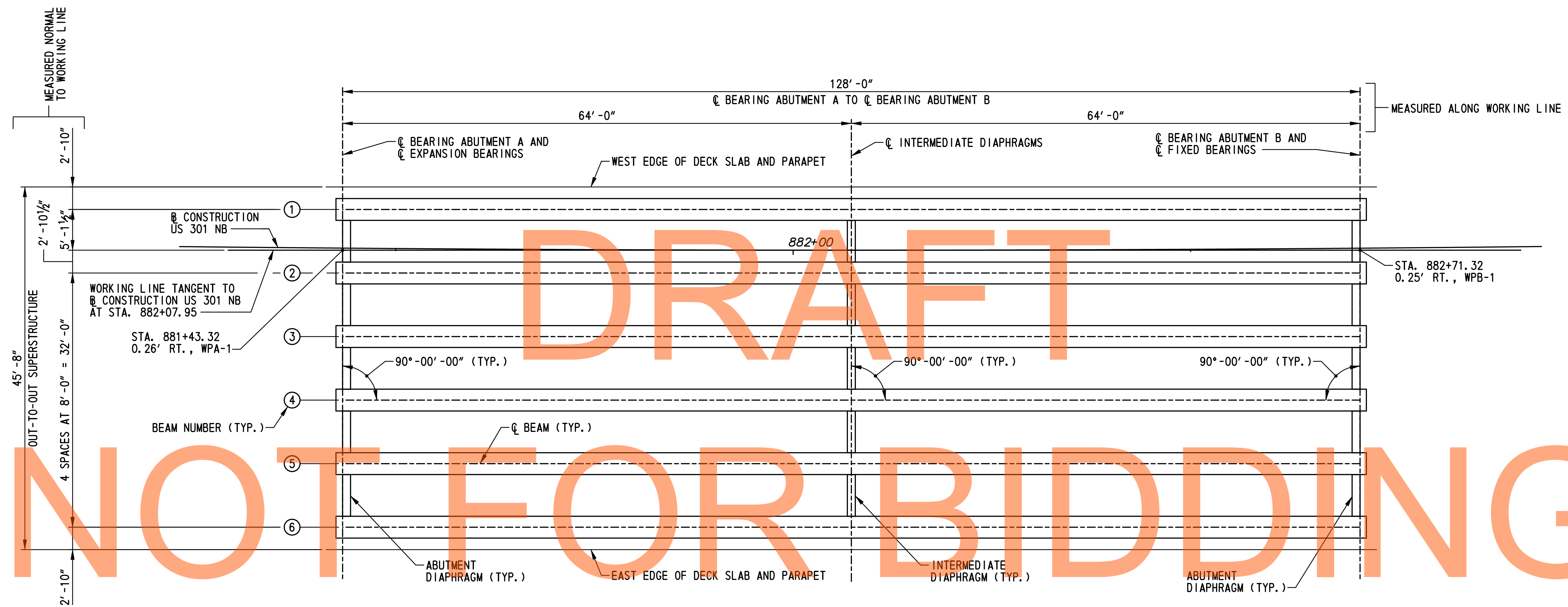
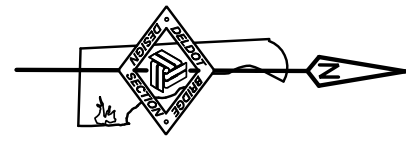


- NOTES:**
1. INTERMEDIATE DIAPHRAGMS SHOWN LOOKING STATIONS AHEAD.
 2. FOR LOCATION OF INTERMEDIATE DIAPHRAGMS, SEE FRAMING PLAN ON DWG. NO. FR-01.
 3. THE 2" LONG THREADED INSERTS SHALL BE USED FOR THE EXTERIOR BEAMS ONLY. ONLY 1 1/2" Ø HOLES SHALL BE USED FOR THE INTERIOR BEAMS. THREADED INSERTS AND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

M:\31653\000\31653.ctb\Bridges\Bridges\No2\DT02_br1-2.dgn
2/2/2015 8:27:46 AM

ADDENDUMS / REVISIONS

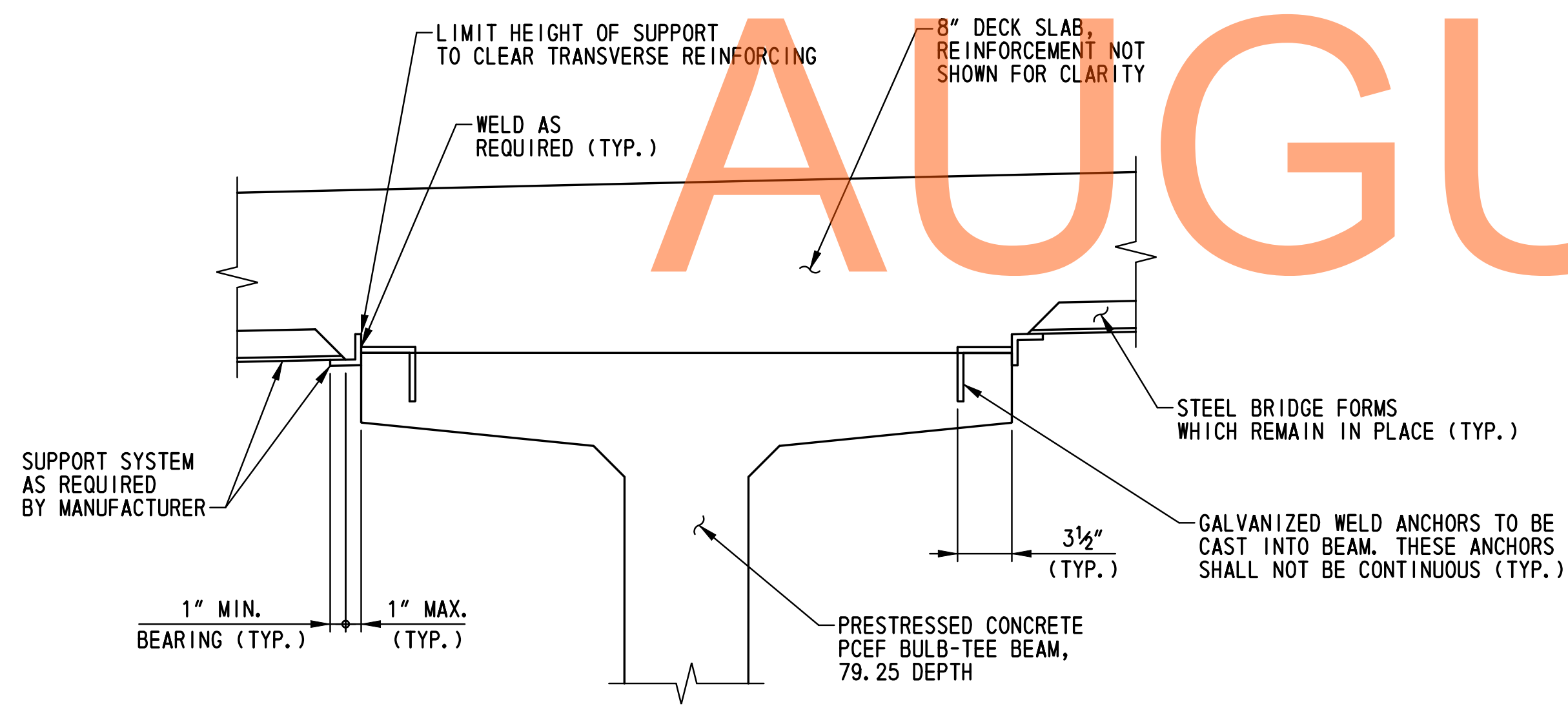
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		



DRAFT

NOT FOR BIDDING

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

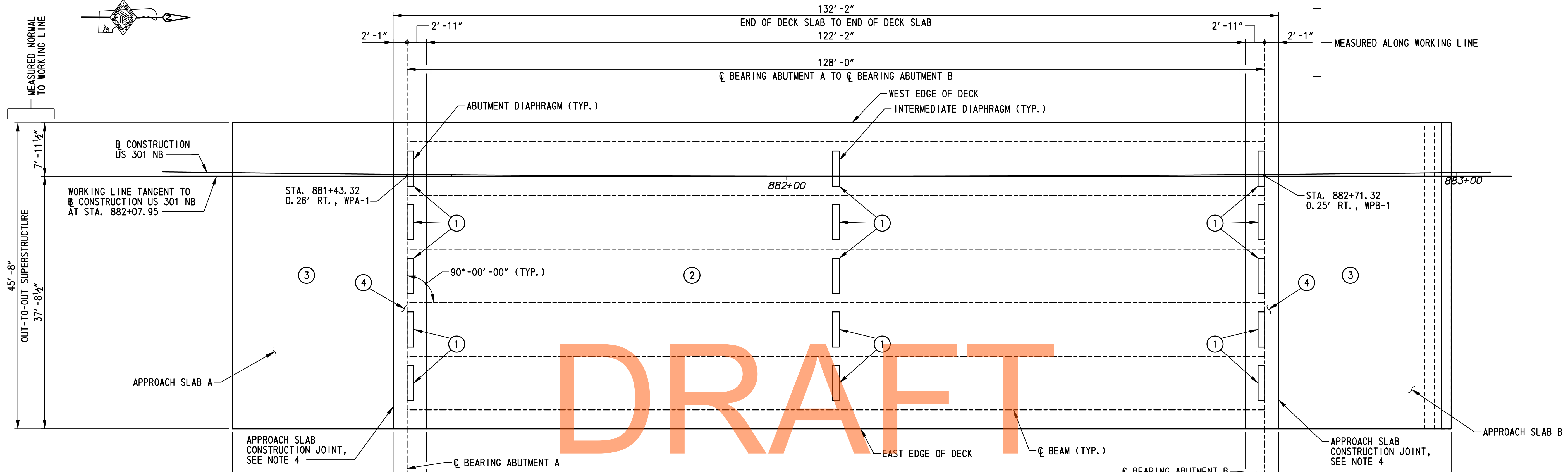
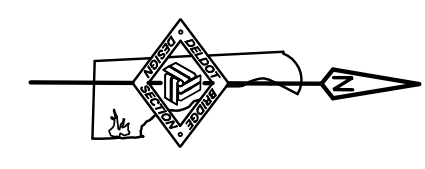


S. I. P. FORM SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"

NOTES:

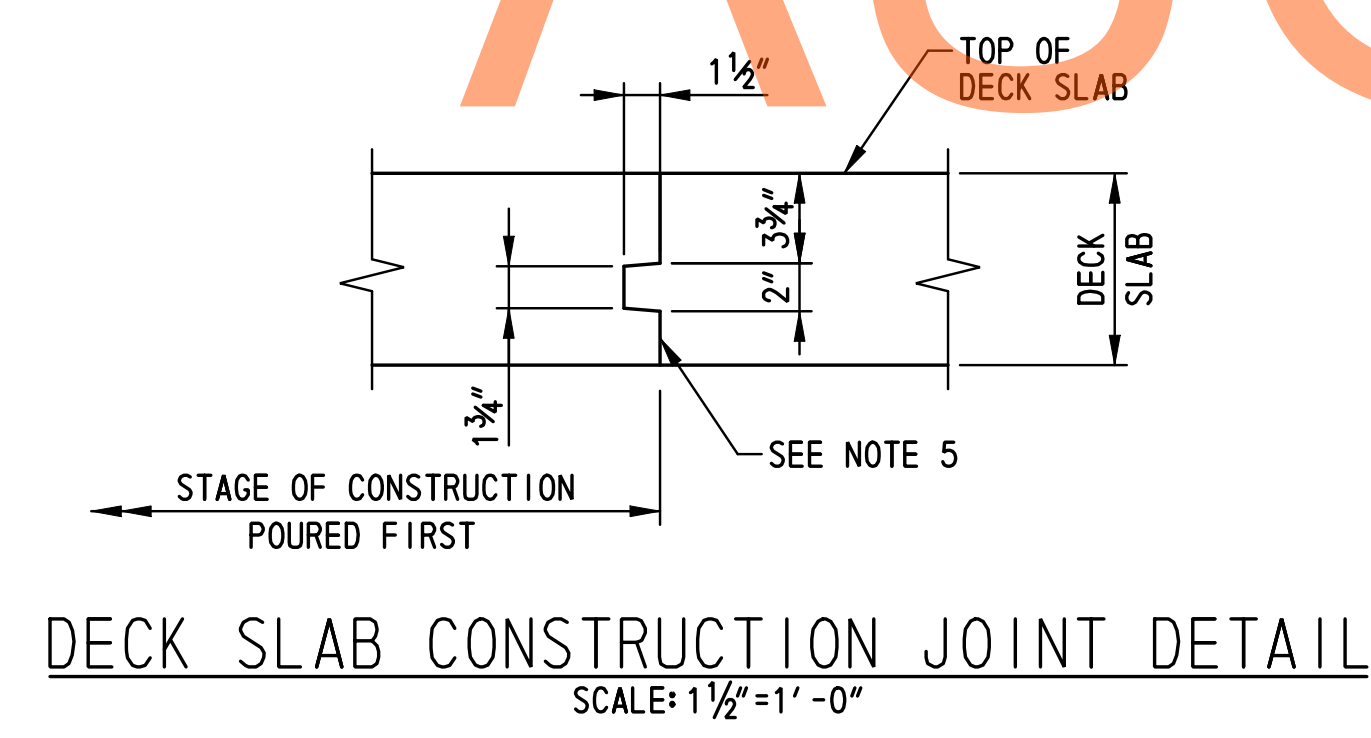
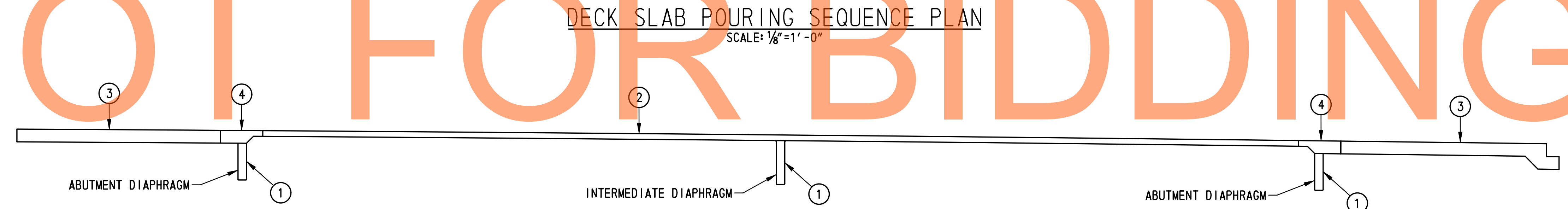
1. ABUTMENT DIAPHRAGMS ARE PARALLEL TO THE © BEARINGS. FOR ABUTMENT DIAPHRAGM DETAILS, SEE DWG. NO. DT-01.
2. FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE DWG. NO. DT-02.
3. FOR STAY-IN-PLACE FORM NOTES, SEE DWG. NO. DK-03.

M:\31653\000\CONTRACT 18\CAD\Bridges\B-1\No2\FR01_Lbr1-2.dgn 2/2/2015 12:27:10 PM



DRAFT

NOT FOR BIDDING



- 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. FOR SEQUENCE OF CONSTRUCTION, SEE DWG. NO. AB-02.
 3. POURING SEQUENCE
THE CONTRACTOR MUST START BY PLACING THE SECTIONS INDICATED AS POUR 1. THE CONTRACTOR MAY PLACE THE 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 SECTIONS AS SOON AS THE POUR 2 SECTIONS HAVE BEEN PLACED. THE CONTRACTOR MAY PLACE THE POUR 4 SECTIONS AS SOON AS THE POUR 3 SECTIONS HAVE BEEN IN PLACE A MINIMUM OF 40 HOURS. THE POUR 4 SECTIONS SHALL BE PLACED STARTING AT THE BRIDGE DECK AND WORKING TOWARD THE APPROACH SLAB.
 4. MAKE A 3" DEEP SAW CUT AT THE APPROACH SLAB CONSTRUCTION JOINT NO LATER THAN 36 HOURS AFTER PLACEMENT OF POUR 4 SECTIONS. SEAL THIS SAW CUT 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.
 5. 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.
 6. FOR FINISHED BRIDGE DECK ELEVATIONS, SEE DWG. NO. FD-01.
 7. FOR DECK SLAB REINFORCEMENT, SEE DWG. NOS. DK-02 AND DK-03.
 8. FOR ADDITIONAL DECK SLAB REINFORCEMENT IN THE DIAPHRAGMS, SEE DWG. NOS. DT-01 AND DT-02.

- ① INDICATES INTERMEDIATE OR ABUTMENT DIAPHRAGM POUR
- ② INDICATES DECK SLAB POUR
- ③ INDICATES APPROACH SLAB POUR
- ④ INDICATES DECK SLAB CLOSURE POUR

M:\31653\000\Contract\IB\CADD\Bridges\BR_No2\DK01\BR1-2.dgn
 2/2/2015 8:52:16 AM



ADDENDUMS / REVISIONS

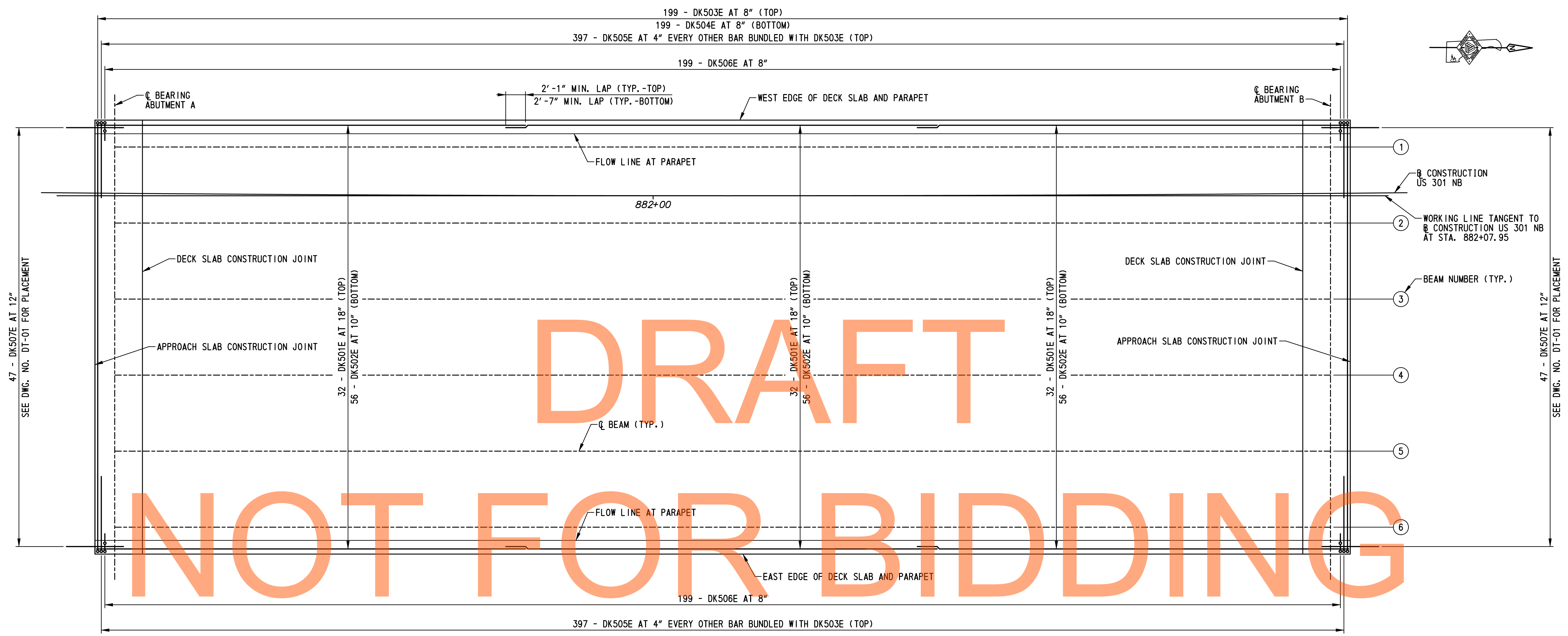
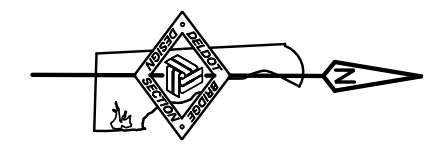
SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

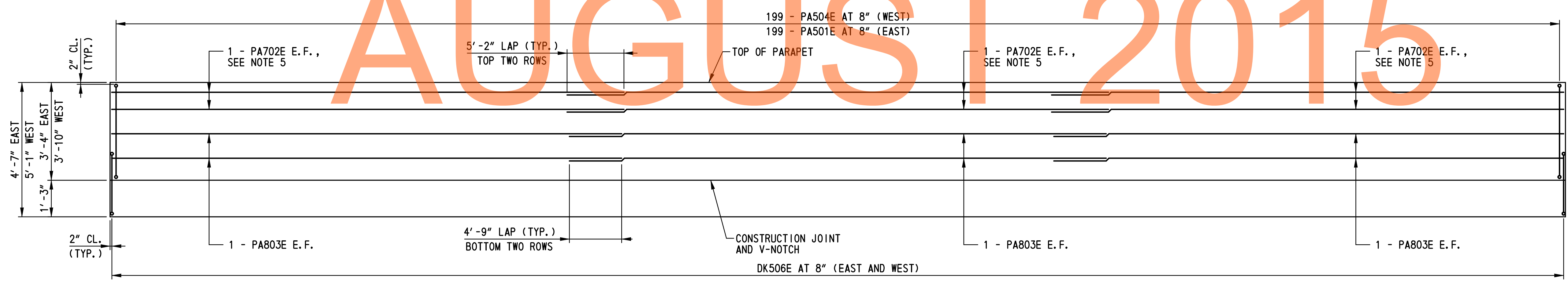
CONTRACT T200911302	BRIDGE NO. 1-432
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**DECK SLAB
POURING SEQUENCE**

BR1-2 DK-01
SHEET NO. 185
TOTAL SHTS. 491



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



PARAPET REINFORCEMENT ELEVATION
HORIZONTAL SCALE: 3/8" = 1'-0"
VERTICAL SCALE: 1/2" = 1'-0"

- NOTES:
1. FOR ADDITIONAL INFORMATION ON PLACEMENT OF DK505E AND DK506E AND ADDITIONAL DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DECK SLAB TYPICAL REINFORCEMENT SECTION ON DWG. NO. DK-03.
 2. FOR ADDITIONAL DECK SLAB REINFORCEMENT IN ABUTMENT DIAPHRAGM, SEE DWG. NO. DT-01.
 3. FOR ADDITIONAL DECK SLAB REINFORCEMENT IN INTERMEDIATE DIAPHRAGM, SEE DWG. NO. DT-02.
 4. FOR DECK SLAB CONSTRUCTION JOINT LOCATIONS AND DECK SLAB POURING SEQUENCE, SEE DWG. NO. DK-01.
 5. A TOTAL OF SIX (6) ADDITIONAL PA702E BARS ARE REQUIRED IN THE TOP PORTION OF THE WEST PARAPET. SEE WEST PARAPET REINFORCEMENT SECTION ON DWG. NO. DK-03.

NOTE:
EAST PARAPET SHOWN LOOKING WEST, WEST PARAPET SIMILAR LOOKING EAST OPPOSITE HAND.

M:\31653\000\CONTRACT 18\CADD\Bridges\B-1-No2\DK02-br1-2.dgn 2/2/2015 2:14:47 PM



ADDENDUMS / REVISIONS	

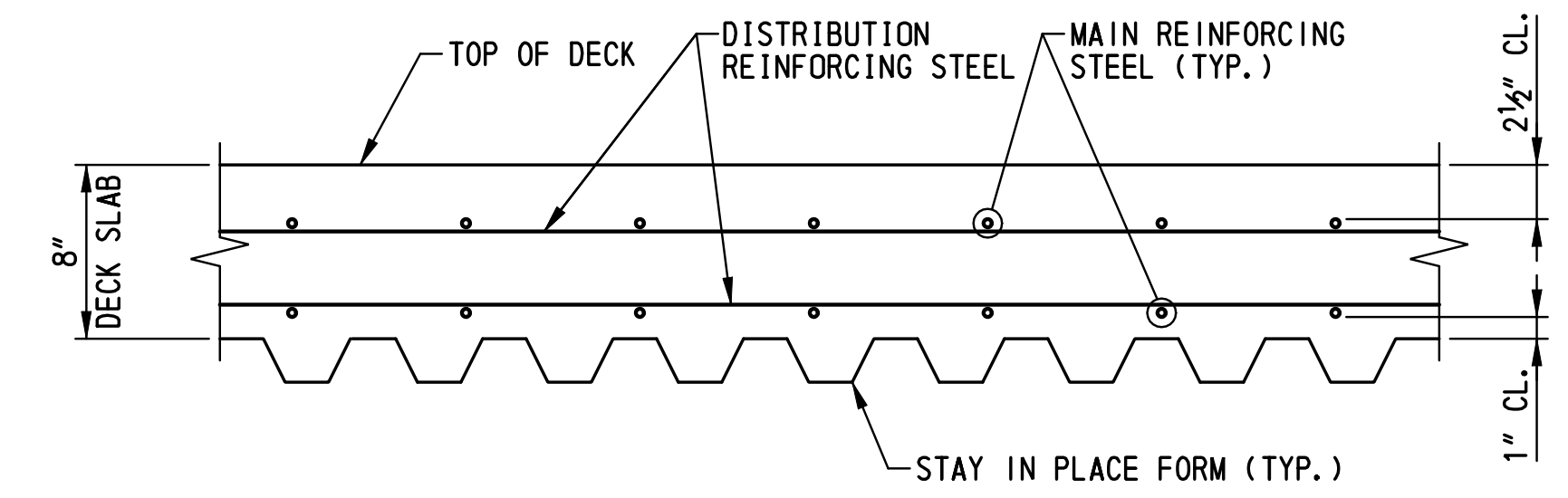
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

DECK SLAB AND PARAPET REINFORCEMENT	
SHEET NO.	186
TOTAL SHTS.	491

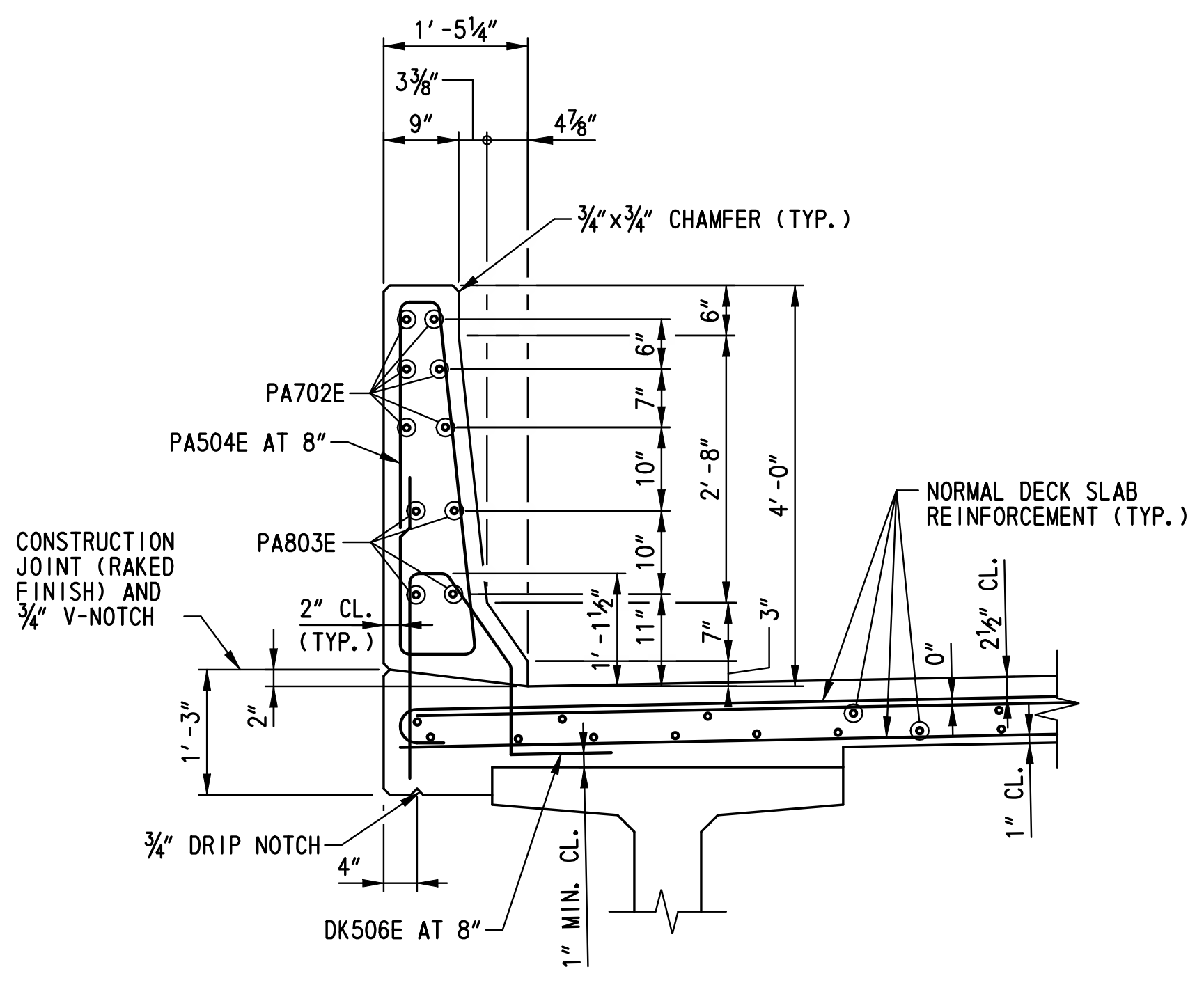
BR1-2 DK-02



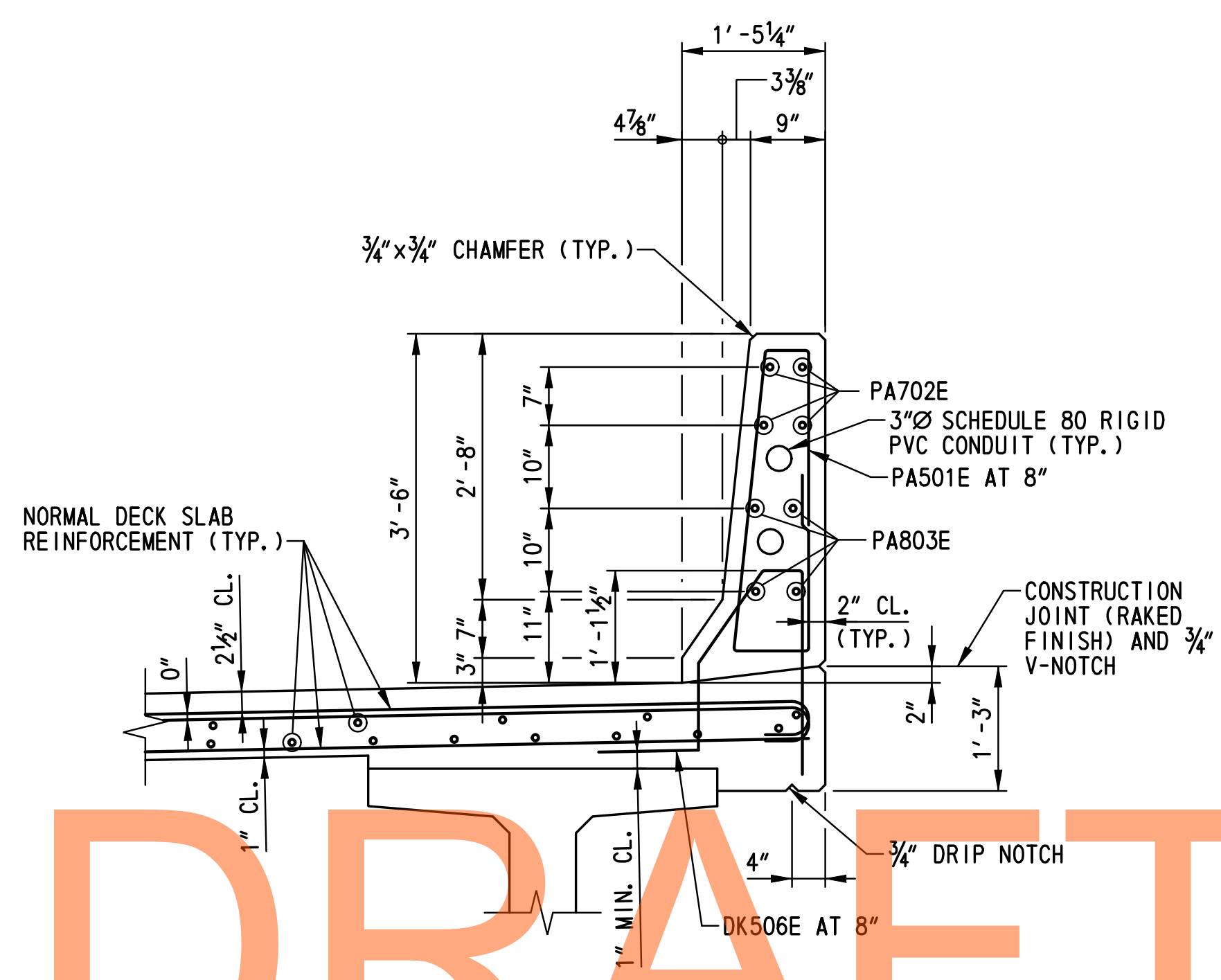
S. I. P. FORM PLACEMENT SECTION
SCALE: 1 1/2" = 1' - 0"

STAY-IN-PLACE FORM NOTES:

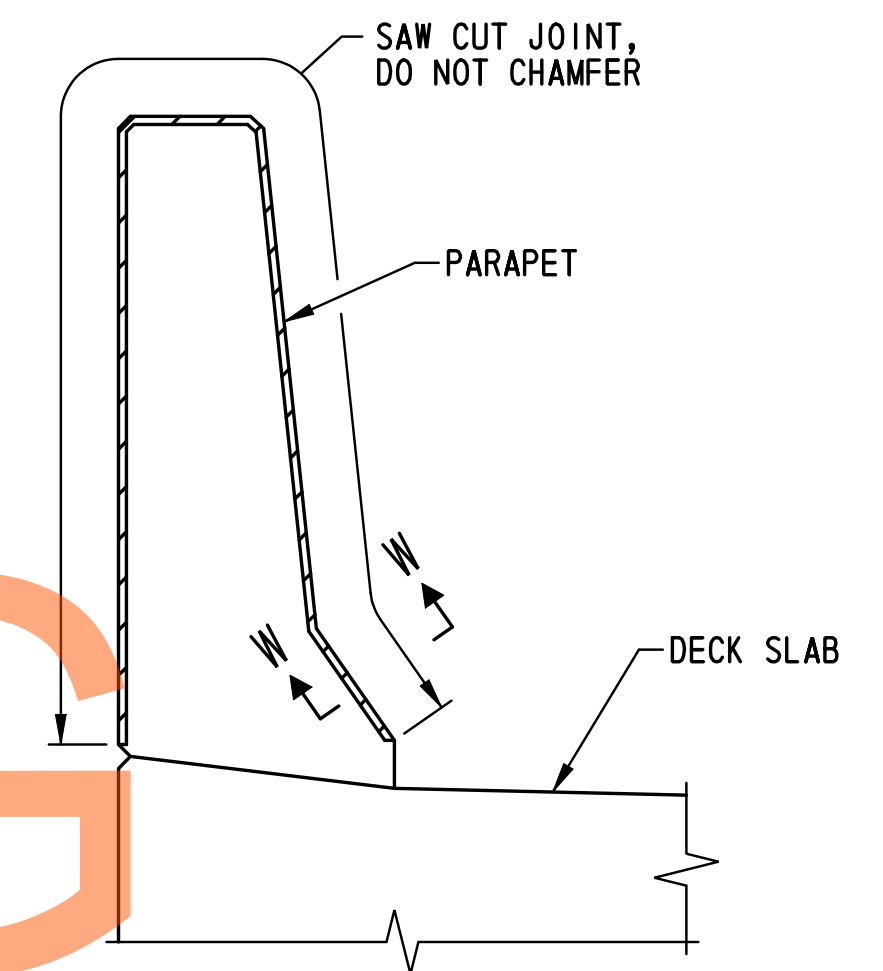
1. STAY-IN-PLACE FORMS SHALL CONFORM TO SECTION 602.03.
2. STAY-IN-PLACE FORMS SHALL BE VERTICALLY ADJUSTED TO ATTAIN FINISHED LINES AND GRADES REQUIRED ON THE PLANS.
3. ANY PERMANENTLY EXPOSED FORM METAL WHERE THE GALVANIZED COATING HAS BEEN DAMAGED SHALL BE THOROUGHLY CLEANED, WIRE BRUSHED, AND PAINTED 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.
4. FOR STAY-IN-PLACE FORM SUPPORT DETAILS, SEE DWG. NO. FR-01.



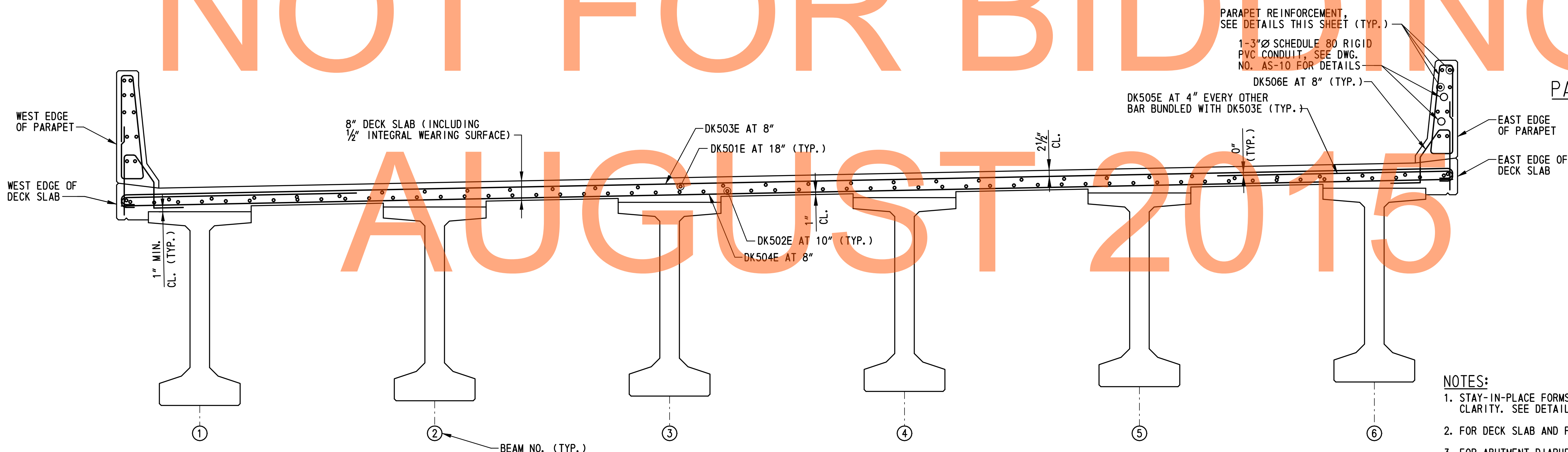
WEST PARAPET REINFORCEMENT SECTION
SCALE: 3/4" = 1' - 0"



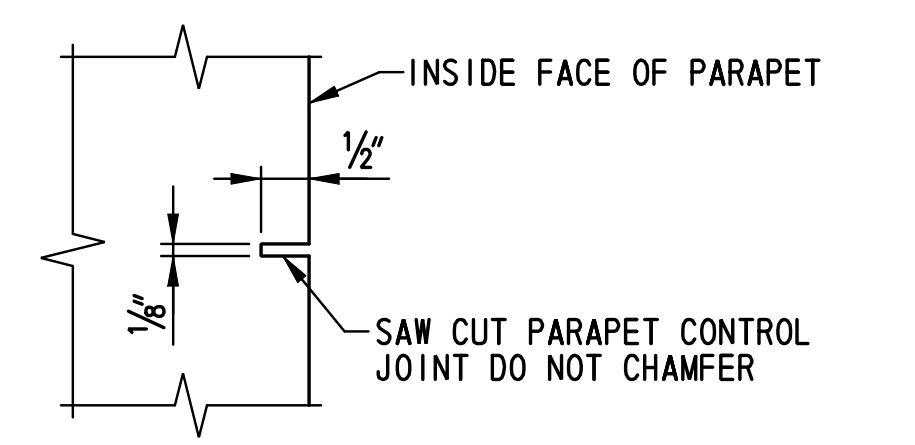
EAST PARAPET REINFORCEMENT SECTION
SCALE: 3/4" = 1' - 0"



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



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



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

SECTION W-W
SCALE: 6" = 1' - 0"

NOTES:

1. STAY-IN-PLACE FORMS NOT SHOWN ON TYPICAL REINFORCEMENT SECTION FOR CLARITY. SEE DETAILS THIS SHEET AND DWG. NO. FR-01.
2. FOR DECK SLAB AND PARAPET REINFORCEMENT PLANS, SEE DWG. NO. DK-02.
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 PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. SAW CUTTING SHALL BE INCIDENTAL TO ITEM 602017 - PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A.

NOTE:
TYPICAL SECTION SHOWN LOOKING STATION AHEAD.

DRAFT
NOT FOR BIDDING
AUGUST 2015

M:\31653\000\CONTRACT 18\NCADD\Bridges\B-1-No2\DK03-br1-2.dgn 2/2/2015 2:28:15 PM

ADDENDUMS / REVISIONS	

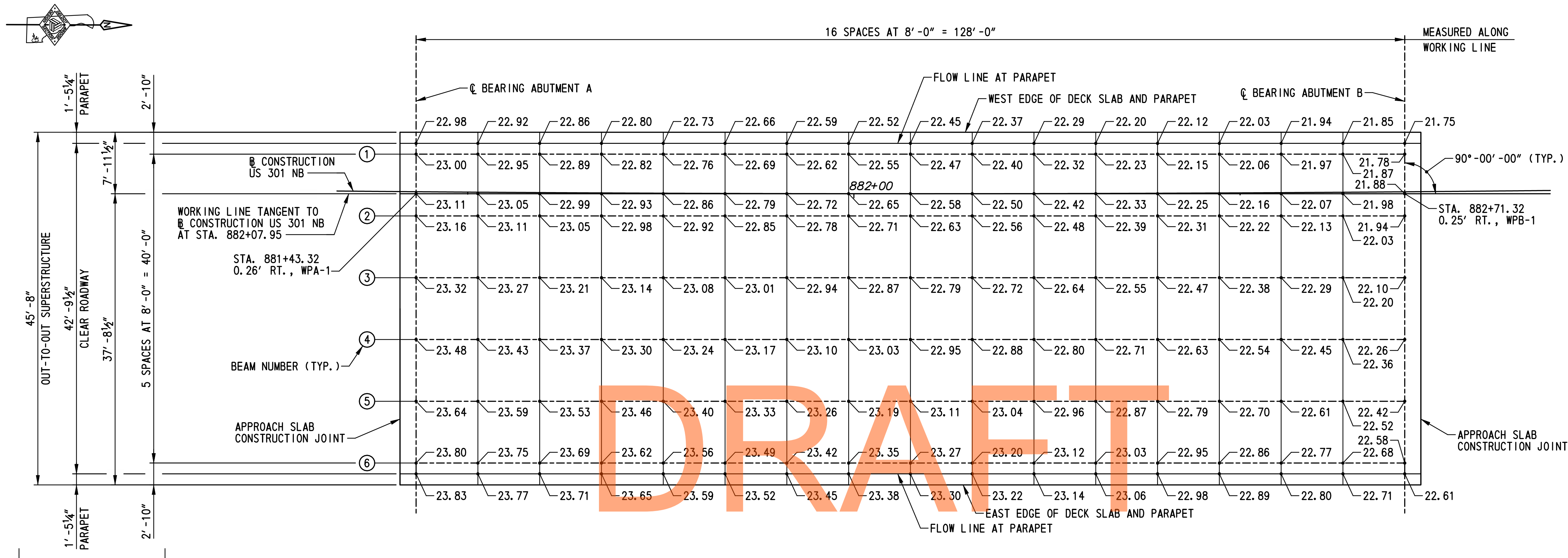
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

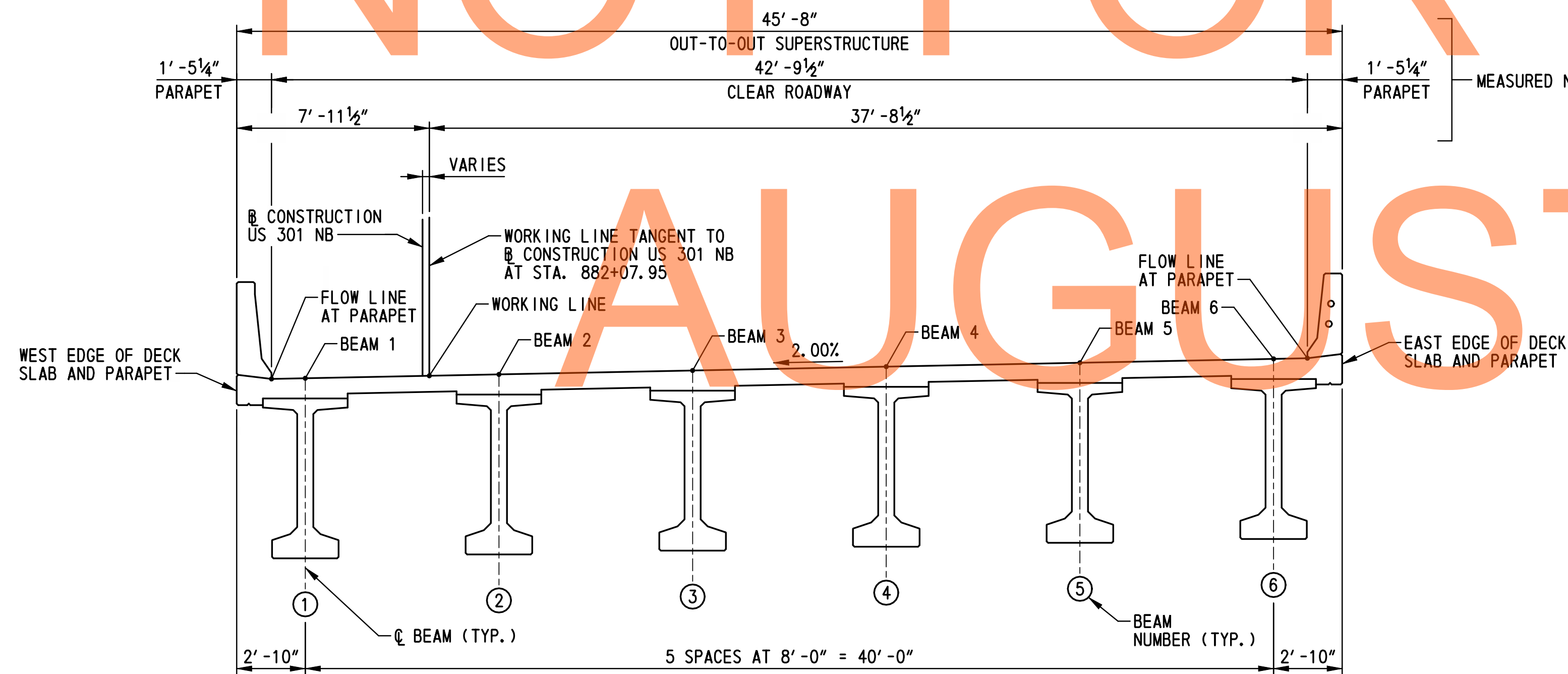
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

DECK SLAB AND PARAPET REINFORCEMENT DETAILS

BR1-2 DK-03	SHEET NO.	187
	TOTAL SHTS.	491



FINISHED BRIDGE DECK ELEVATIONS
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.

M:\31653\000\CONTRACT 18\NCADD\Bridges\B-1\No2\FD01_Lbr1-2.dgn 2/27/2015 3:58:16 PM



ADDENDUMS / REVISIONS	

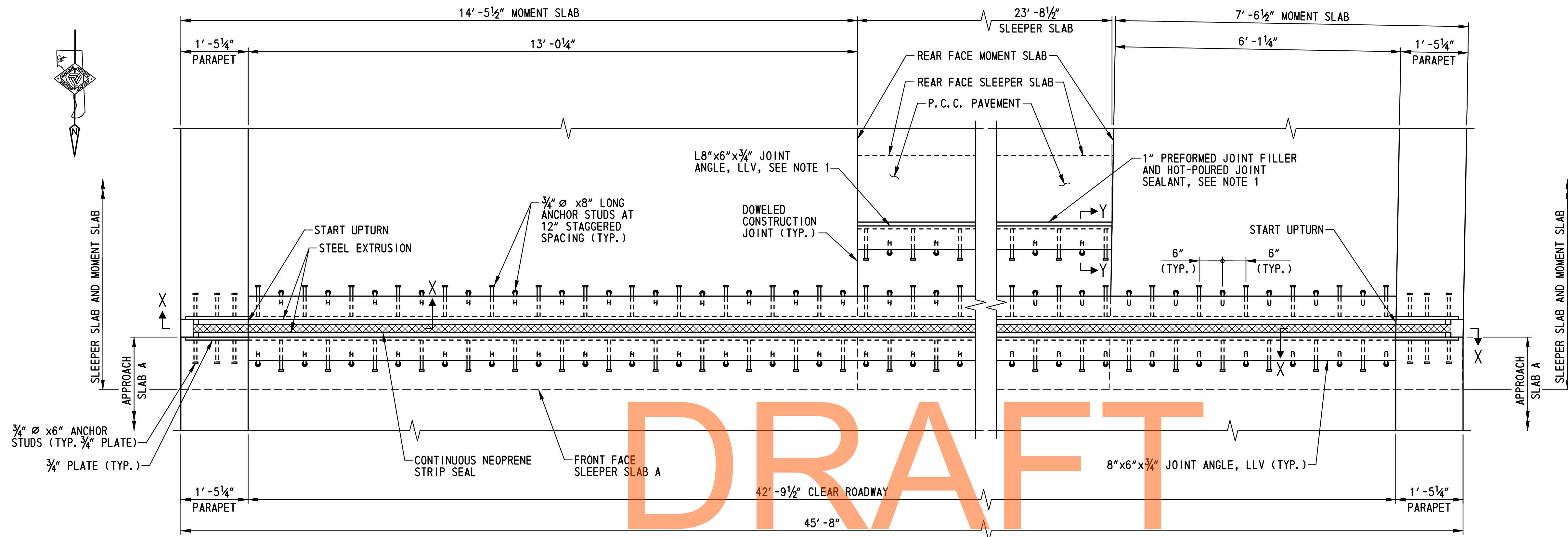
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

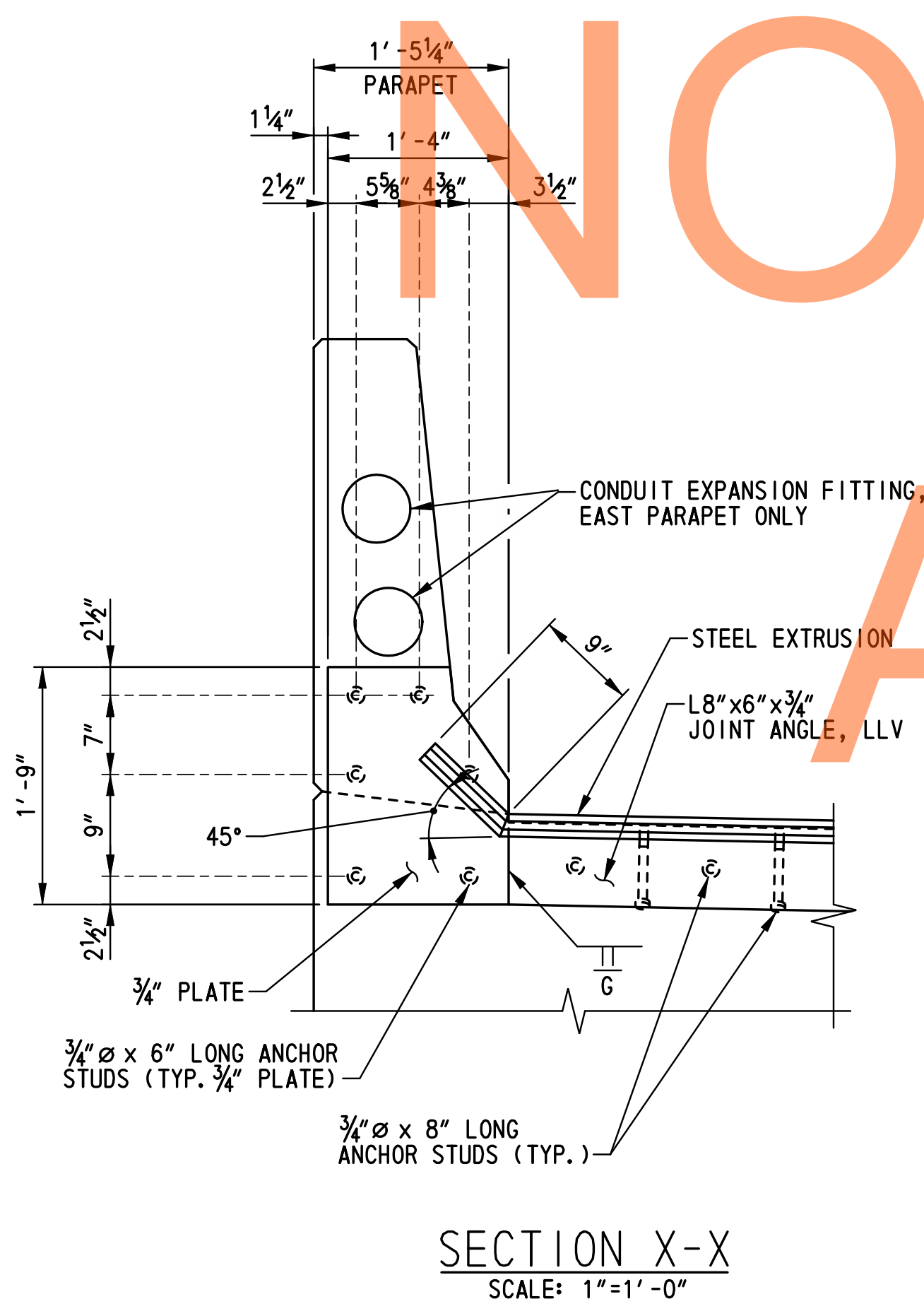
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

FINISHED BRIDGE DECK
ELEVATIONS

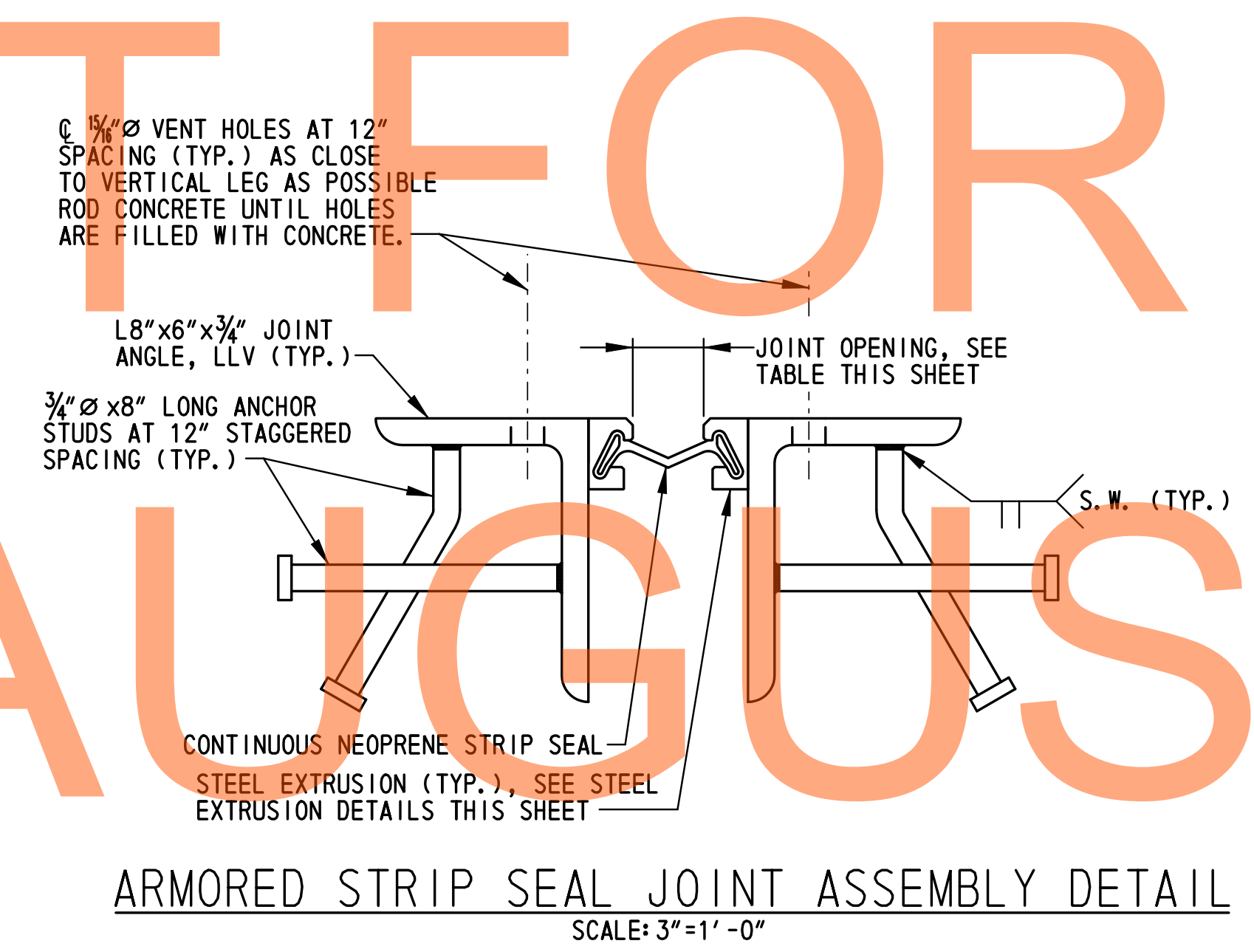
BR1-2 FD-01
SHEET NO.
189
TOTAL SHTS.
491



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



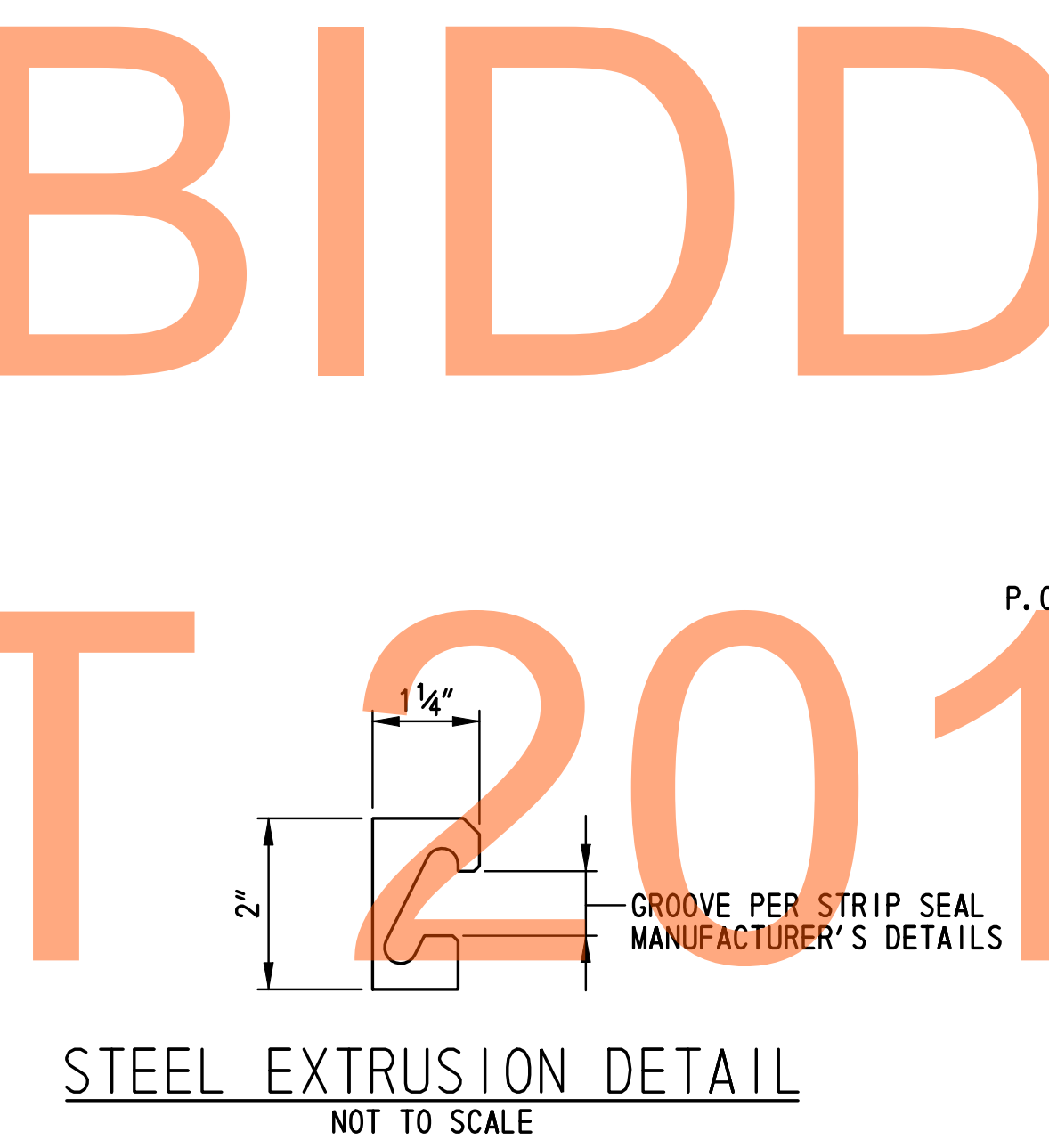
SECTION X-X
SCALE: 1"=1'-0"



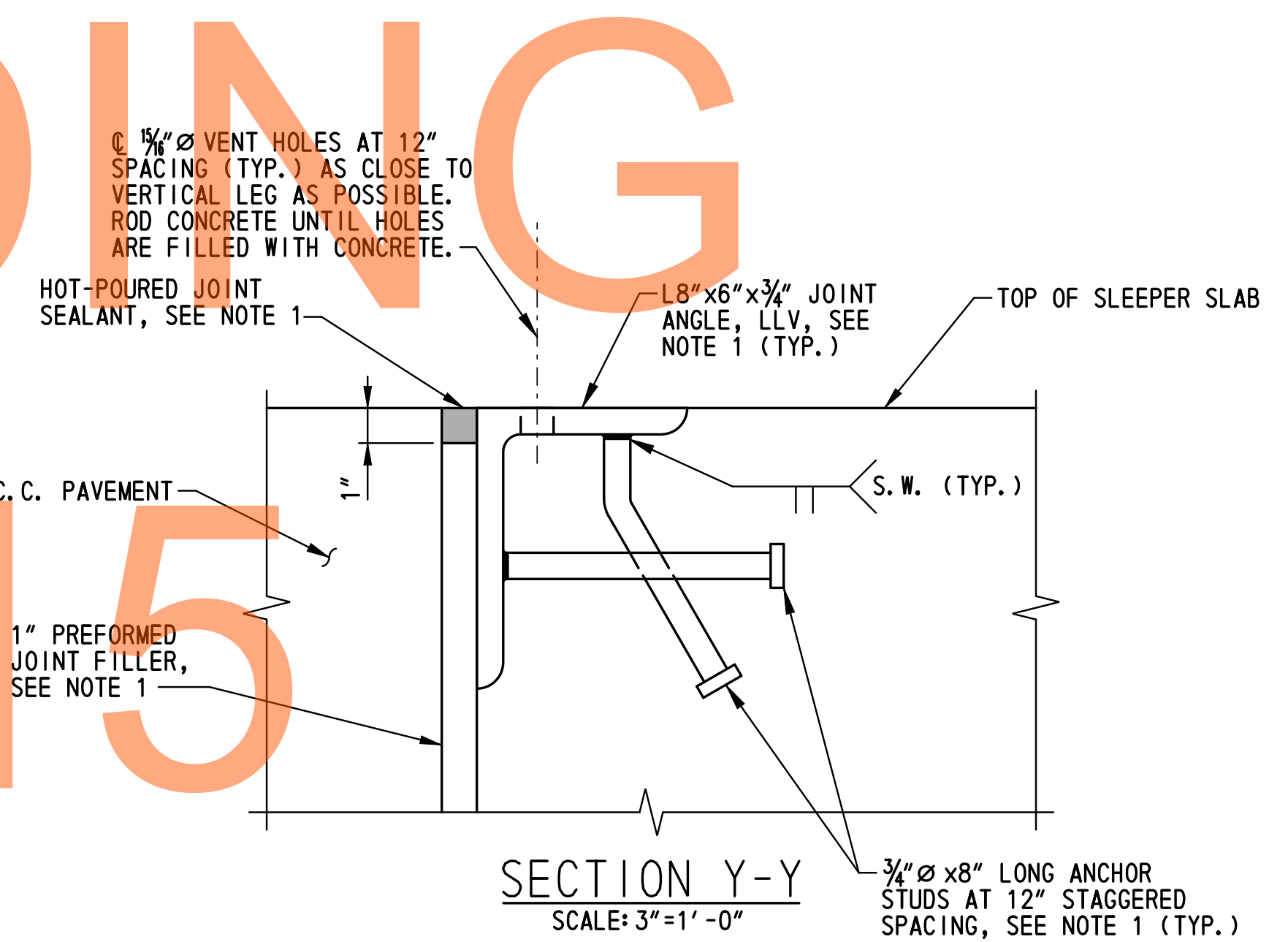
ARMORED STRIP SEAL JOINT ASSEMBLY DETAIL
SCALE: 3"=1'-0"

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

NOTE: JOINT OPENINGS SHOWN ARE MEASURED NORMAL TO JOINT.



STEEL EXTRUSION DETAIL
NOT TO SCALE



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

- NOTES:
- PAYMENT FOR PREFORMED JOINT FILLER, 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.
 - FOR APPROACH SLAB AND SLEEPER SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-07.

M:\31653\000\CONTRACT 1B\CADD\Bridg\B-1\No2\EX01_Lbr1-2.dgn
 2/2/2015 2:40:08 PM

ADDENDUMS / REVISIONS	

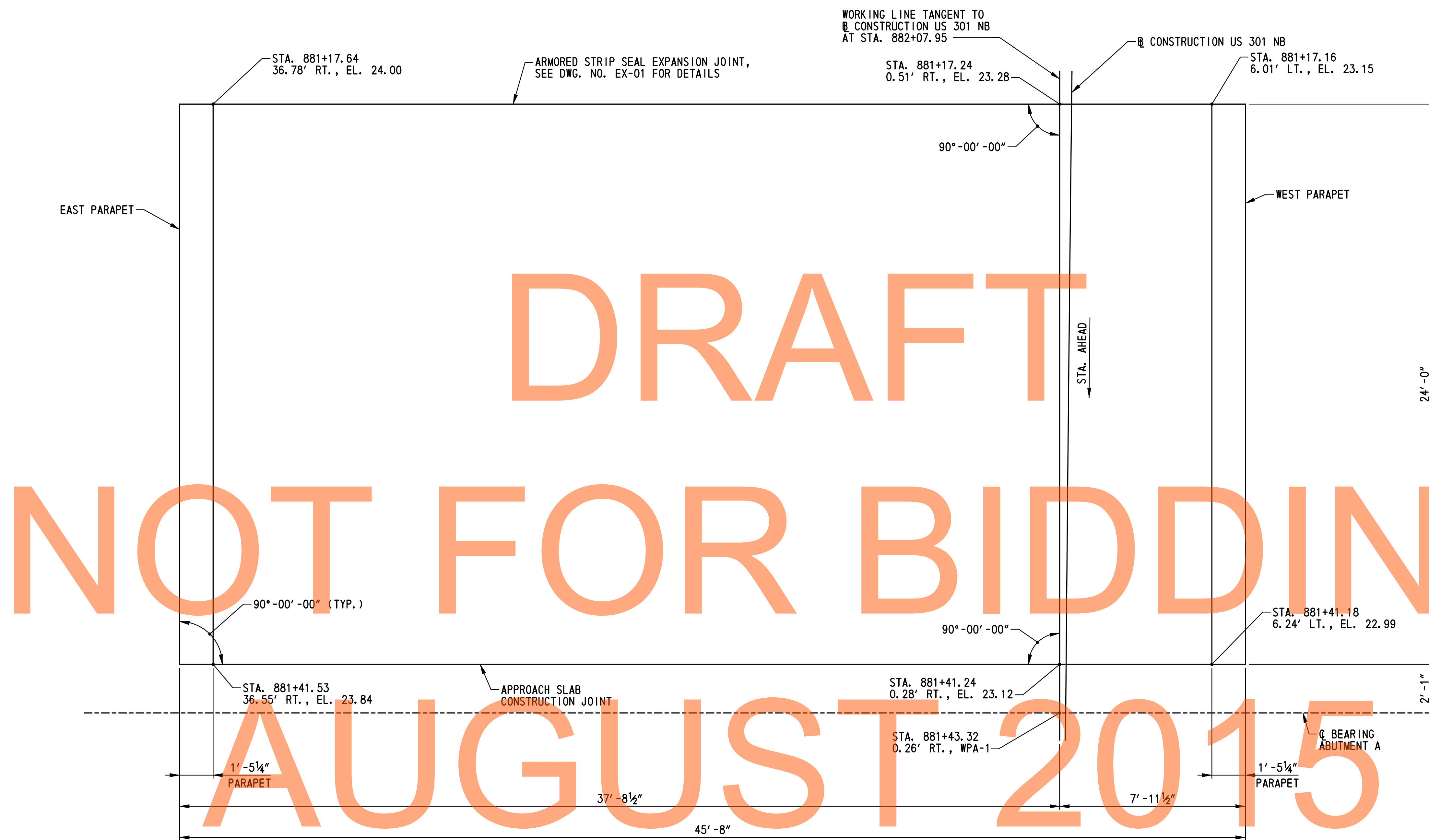
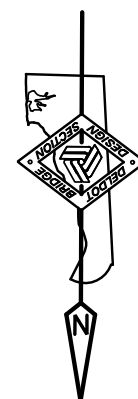
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

ARMORED STRIP SEAL JOINT DETAILS

BR1-2 EX-01	SHEET NO.	190
	TOTAL SHTS.	491



DRAFT
NOT FOR BIDDING
AUGUST 2015

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

NOTE:
FOR APPROACH SLAB A REINFORCING PLAN, SEE DWG. NO. AS-02.

M:\31653\000\Contract\IB\CADD\Bridges\Br_No2\AS01_Lbr1-2.dgn 2/2/2015 9:55:51 AM



ADDENDUMS / REVISIONS

SCALE: AS SHOWN

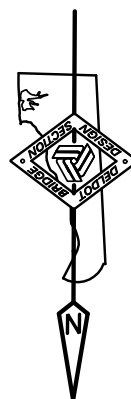
US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

APPROACH SLAB A PLAN

BR1-2
AS-01

SHEET NO.	191
TOTAL SHTS.	491

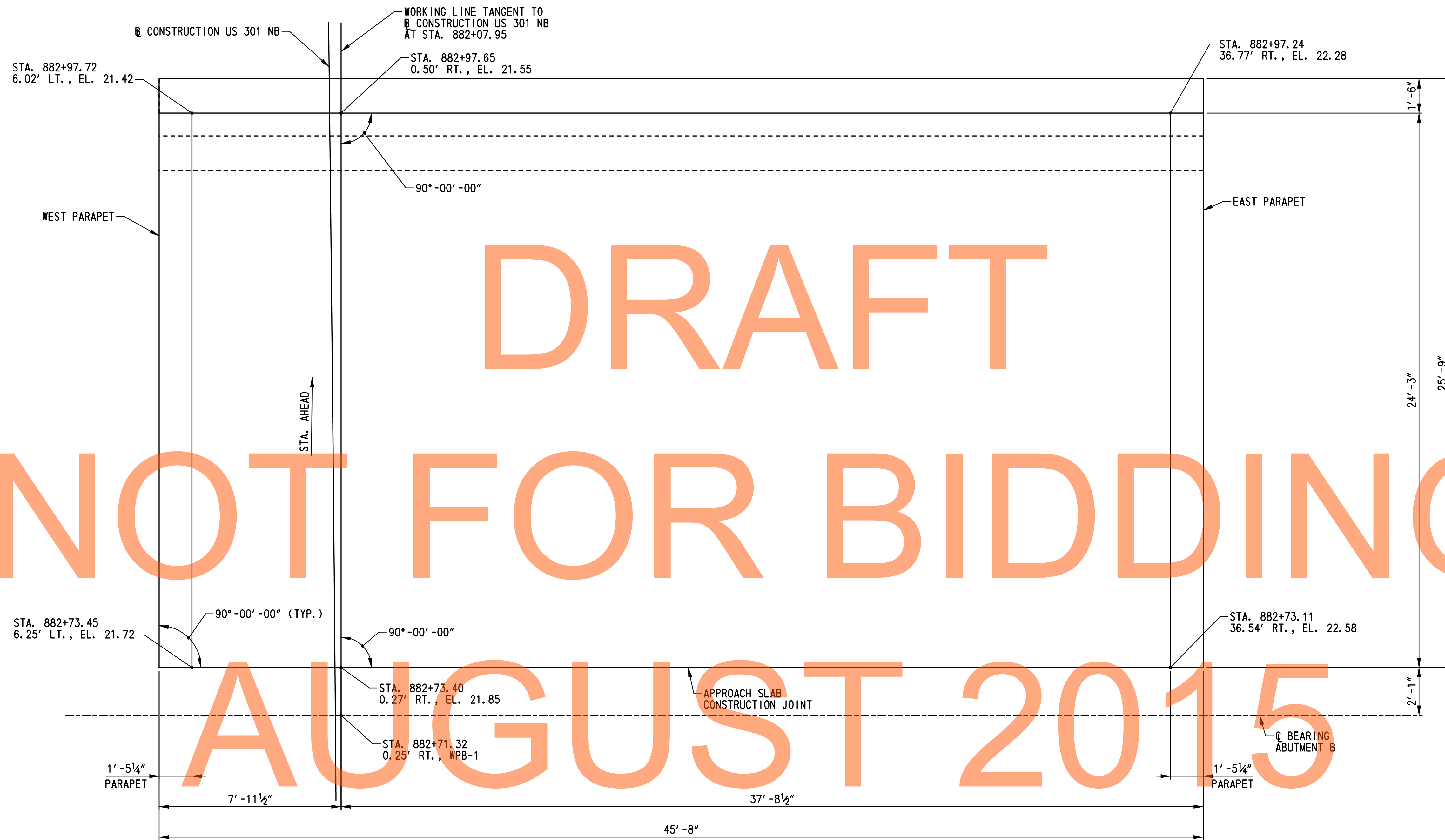


DRAFT
NOT FOR BIDDING
AUGUST 2015

APPROACH SLAB A REINFORCEMENT PLAN
SCALE: $\frac{3}{8}''=1'-0''$

- NOTES:**
1. FOR APPROACH SLAB TYPICAL SECTION, SECTION Z-Z, AND SECTION AA-AA, SEE DWG. NO. AS-07.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-07.

M:\31653\000\CONTRACT 18\CADD\Bridges\Bridges\No2\AS02_brl-2.dgn 2/2/2015 2:44:11 PM



DRAFT
NOT FOR BIDDING
AUGUST 2015

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

NOTE:
FOR APPROACH SLAB B REINFORCING PLAN, SEE DWG. NO. AS-04.

M:\31653\000\CONTRACT 1B\CADD\Bridges\B-No2\AS03_brl-2.dgn 2/2/2015 3:55:57 PM



ADDENDUMS / REVISIONS

SCALE: AS SHOWN

**US 301 &
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY: A.J.F.	
COUNTY	CHECKED BY: P.S.D.	
NEW CASTLE		

APPROACH SLAB B PLAN

BR1-2 AS-03
SHEET NO.
193
TOTAL SHTS.
491



DRAFT
NOT FOR BIDDING
AUGUST 2015

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

- NOTES:**
1. FOR APPROACH SLAB TYPICAL SECTION, SECTION BB-BB AND SECTION CC-CC, SEE DWG. NO. AS-08.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-08.

M:\1653\000\CONTRACT 18\CADD\Bridges\BR-No2\AS04-br1-2.dgn 2/2/2015 2:45:50 PM



ADDENDUMS / REVISIONS

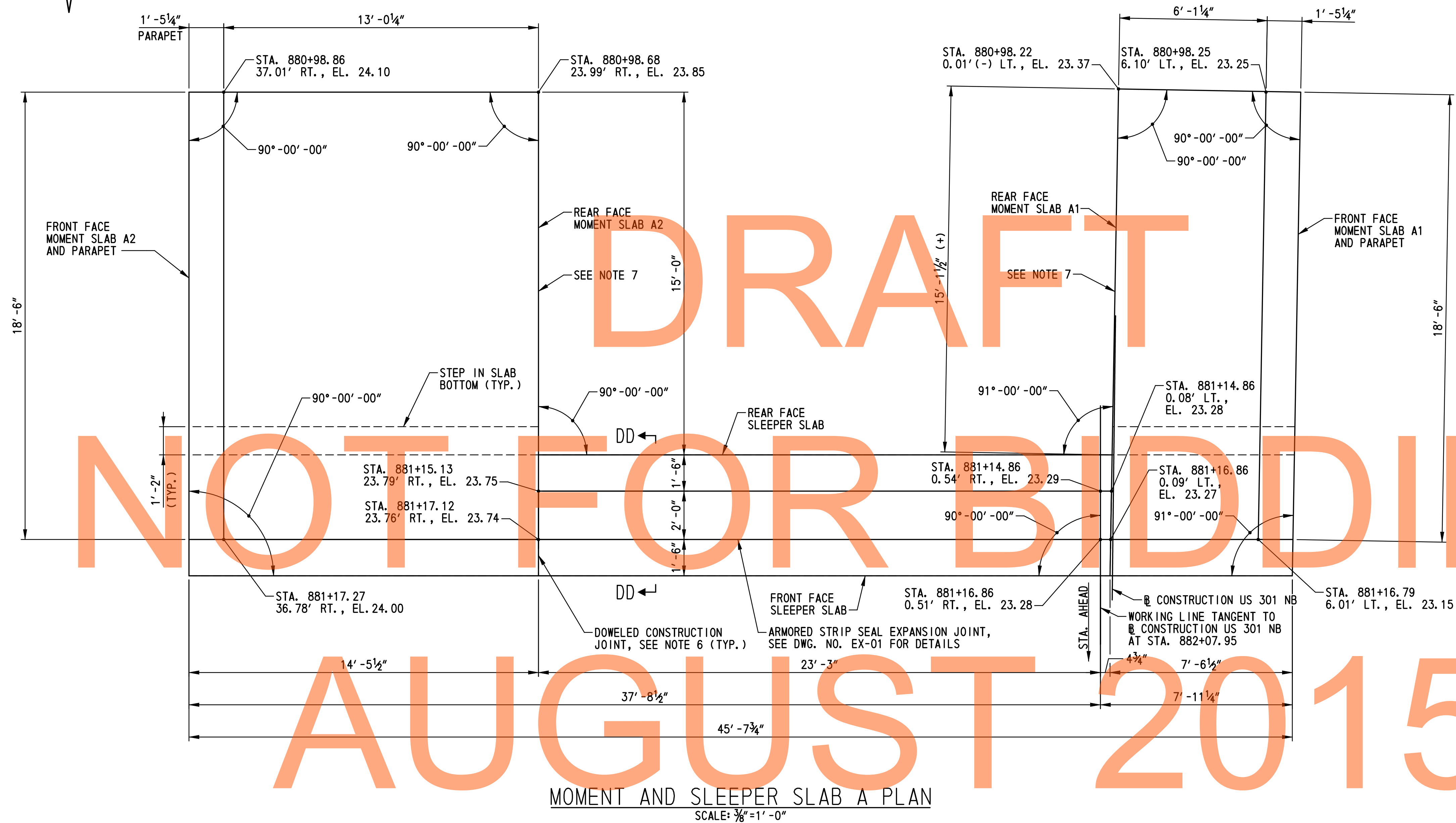
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

**APPROACH SLAB B
REINFORCEMENT PLAN**

BR1-2 AS-04
SHEET NO.
194
TOTAL SHTS.
491

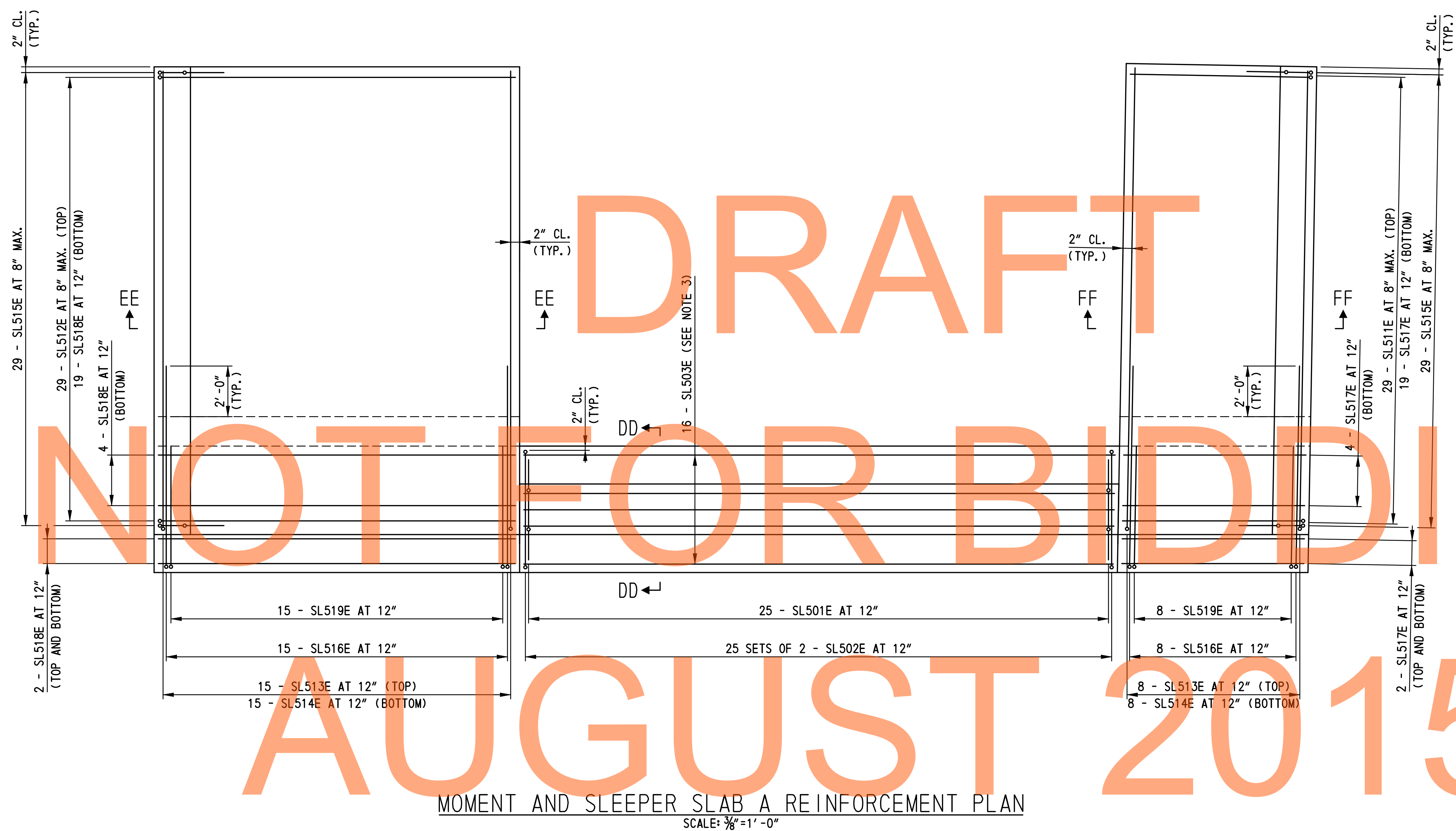
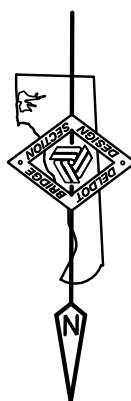


MOMENT AND SLEEPER SLAB A PLAN
SCALE: 3/8" = 1'-0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

- NOTES:**
- 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.
 - FOR MOMENT SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-09.
 - FOR SLEEPER SLAB TYPICAL SECTION, SEE DWG. NO AS-07.
 - FOR REINFORCEMENT PLAN, SEE DWG. NO. AS-06.
 - FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-09.
 - DOWEL BARS SHALL CONFORM TO SECTION 824.02(G). SEE SECTION DD-DD ON DWG. NO. AS-07.
 - PRIOR TO PLACING MOMENT SLAB CONCRETE ADJACENT TO EXISTING CONCRETE PAVEMENT, OR PRIOR TO PLACING CONCRETE PAVEMENT ADJACENT TO EXISTING MOMENT SLAB CONCRETE, AN APPROVED BOND BREAKER SHALL BE APPLIED TO THE EXISTING CONCRETE VERTICAL FACE. THIS LONGITUDINAL JOINT AT THE INTERFACE BETWEEN THE CONCRETE PAVEMENT AND THE MOMENT SLAB CONCRETE SHALL NOT BE SEALED. VERTICAL CRACKS IN THE EXISTING CONCRETE FACE SHALL BE COVERED OR SEALED AS APPROVED BY THE ENGINEER TO PREVENT INTRUSION OF THE NEW CONCRETE INTO THE EXISTING CONCRETE. ALL WORK SHALL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.

M:\31653\000\CONTRACT 18\CAD\Bridges\B1-No2\AS05_brl-2.dgn 2/2/2015 2:47:22 PM



- NOTES:**
1. FOR MOMENT AND SLEEPER SLAB A PLAN, SEE DWG. NO. AS-05.
 2. FOR SECTION DD-DD, SEE DWG. NO. AS-07. FOR SECTIONS EE-EE AND FF-FF, SEE DWG. NO. AS-09.
 3. FOR SLEEPER SLAB TYPICAL SECTION, SEE DWG. NO AS-07.
 4. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NO. AS-09.

M:\31653\000\CONTRACT 23\2015\BRIDGE\BR-2\AS06\br1-2.dgn
 2:53:47 PM

ADDENDUMS / REVISIONS	

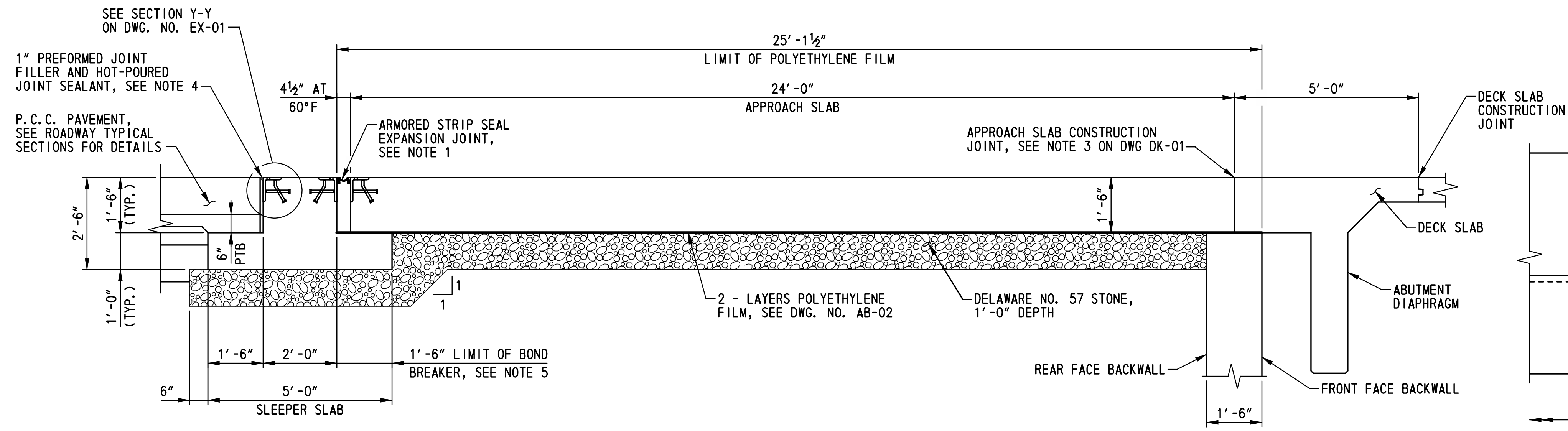
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

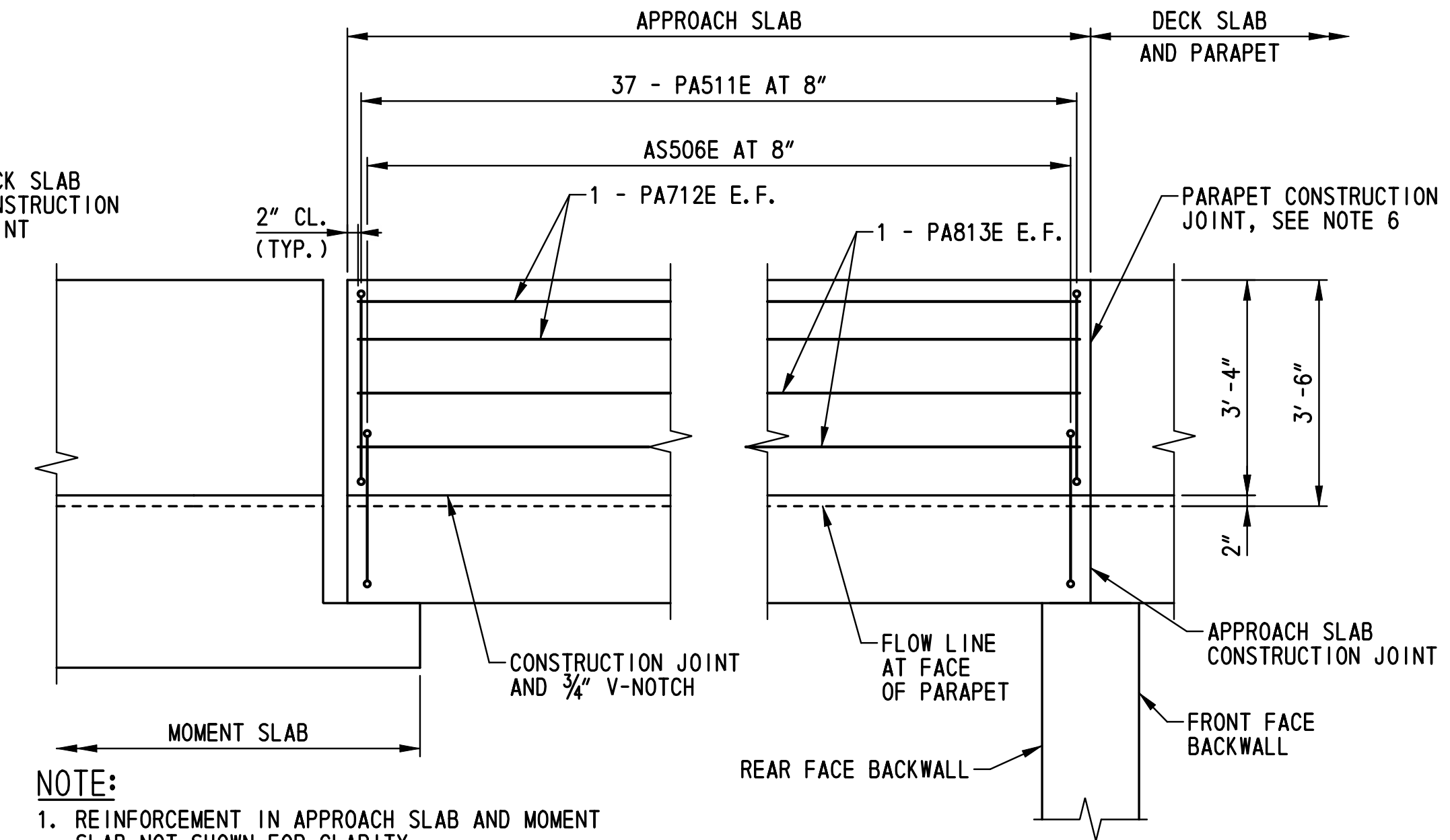
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

MOMENT AND SLEEPER SLAB A REINFORCEMENT PLAN

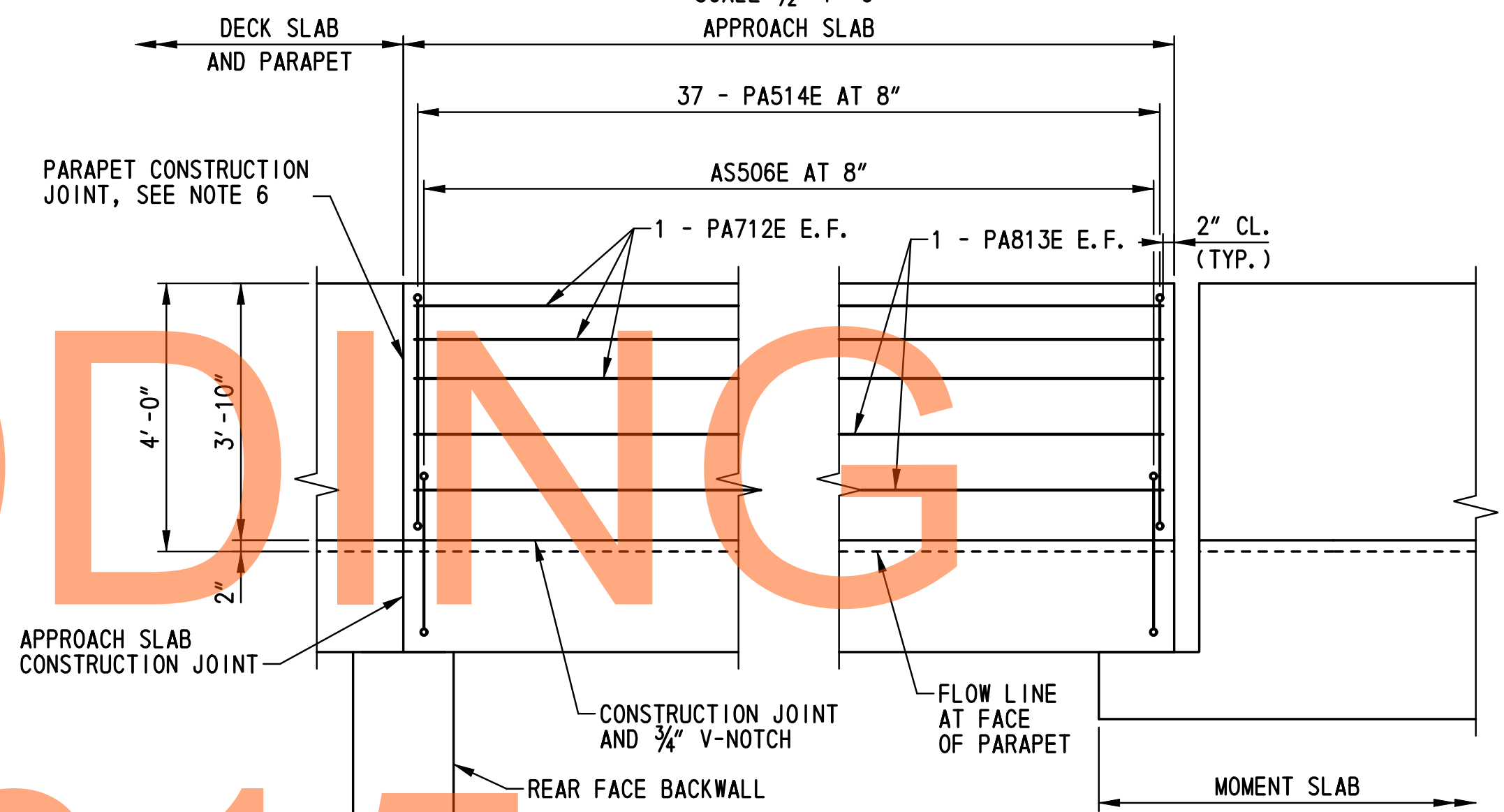
BR1-2 AS-06
SHEET NO.
196
TOTAL SHTS.
491



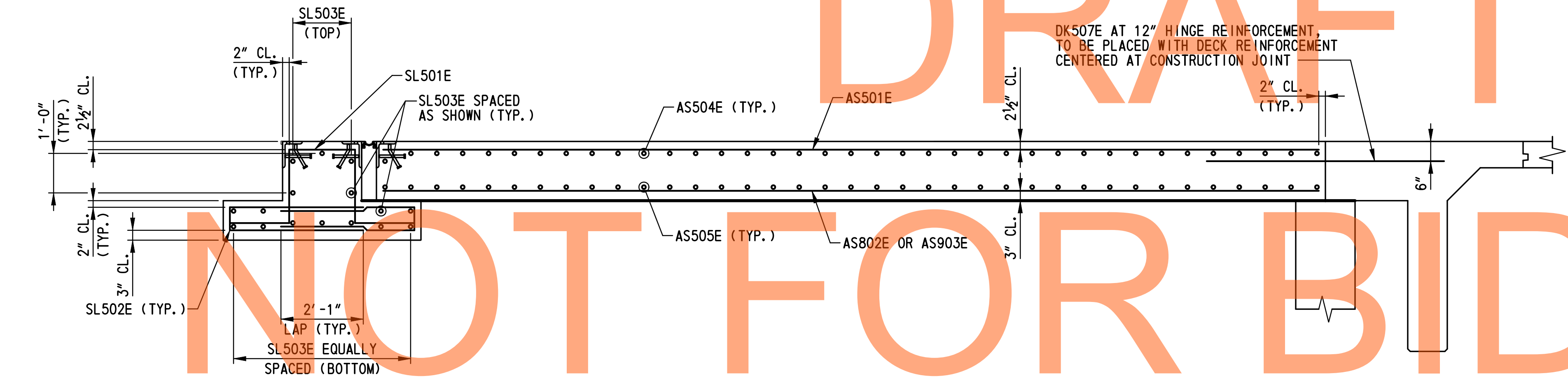
APPROACH SLAB A AND SLEEPER SLAB A TYPICAL SECTION
SCALE: 1/2"=1'-0"



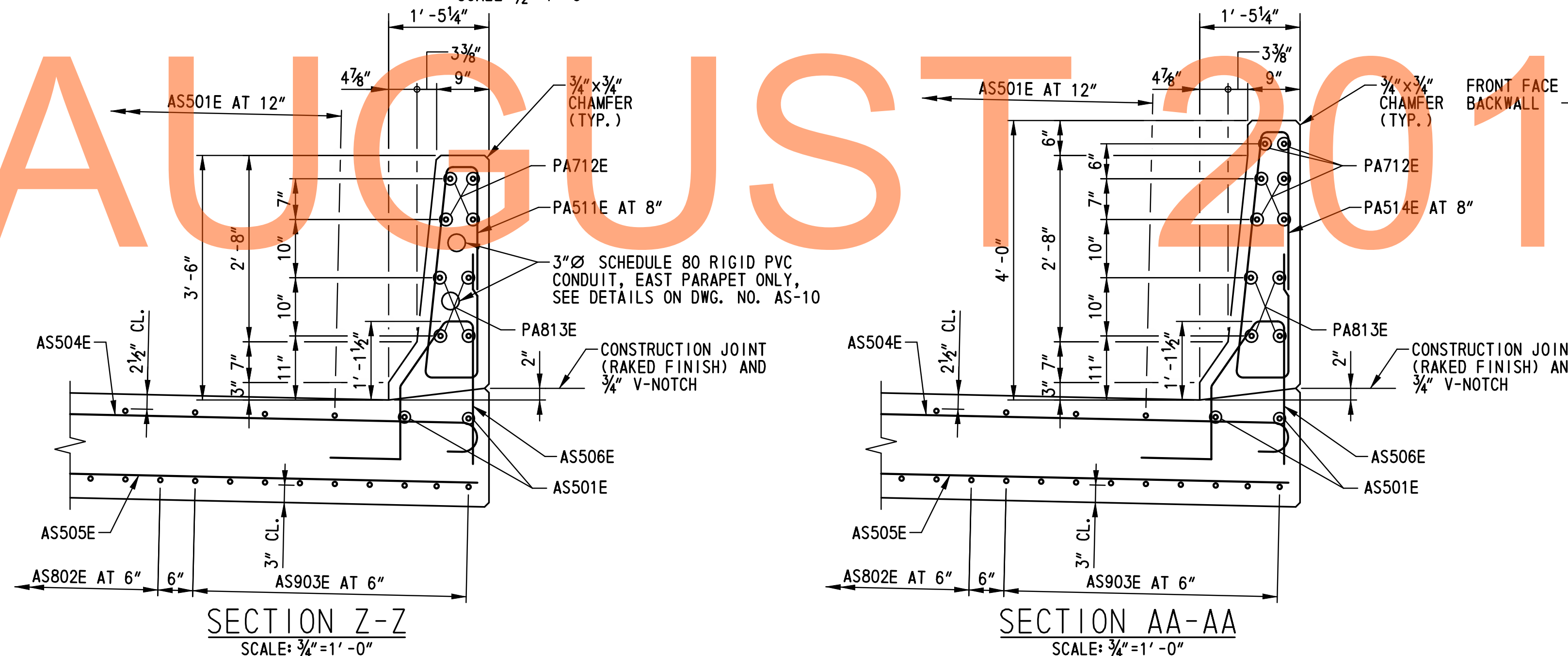
EAST PARAPET REINFORCEMENT ELEVATION
SCALE: 1/2"=1'-0"



WEST PARAPET REINFORCEMENT ELEVATION
SCALE: 1/2"=1'-0"

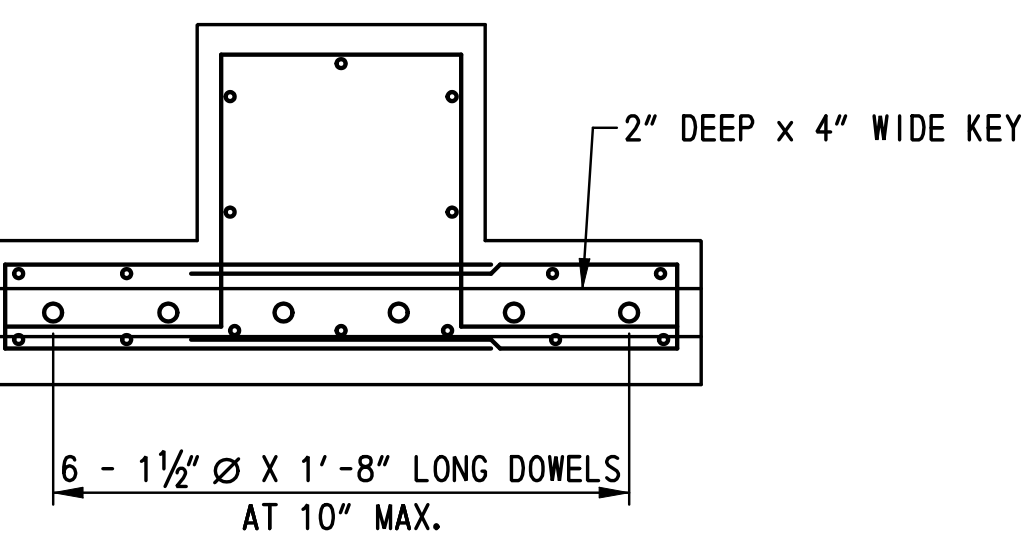


APPROACH SLAB A AND SLEEPER SLAB A TYPICAL REINFORCEMENT SECTION
SCALE: 1/2"=1'-0"



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

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



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

- NOTES:
- FOR ARMORED STRIP SEAL EXPANSION JOINT DETAILS, SEE DWG. NO. EX-01.
 - FOR ADDITIONAL APPROACH SLAB A REINFORCEMENT DETAILS, SEE DWG. NO. AS-02.
 - FOR ADDITIONAL SLEEPER SLAB A REINFORCEMENT DETAILS, SEE DWG. NO. AS-06.
 - PAYMENT FOR INSTALLATION OF 1" PREFORMED JOINT FILLER, HOT-POURED JOINT SEALANT, AND JOINT ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF SLEEPER SLAB WILL BE INCIDENTAL TO ITEM NO. 602018 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.
 - STEEL TROWEL FINISH SLEEPER SLAB AND APPLY 30 MIL. NOMINAL THICKNESS OF ASPHALT BOND BREAKER. TOP OF SLEEPER SLAB SHALL FOLLOW CROSS SLOPE AND GRADE OF PROPOSED APPROACH SLAB. COST SHALL BE INCIDENTAL TO ITEM 602018 - PORTLAND CEMENT CONCRETE MASONRY, CLASS D.
 - AN APPROVED BOND BREAKER SHALL BE PLACED ON 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-03.

18\31653\000\CONTRACT 18\CADD\Bridges\B-1-No2\AS07_brl-2.dgn
 2/2/2015 2:14:16 PM

ADDENDUMS / REVISIONS	

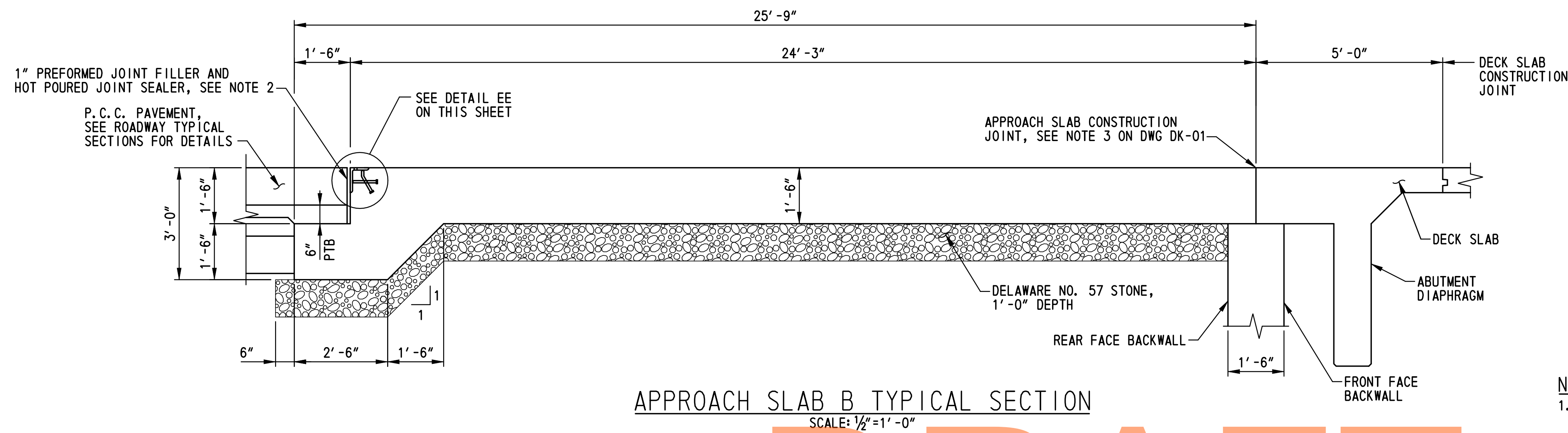
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

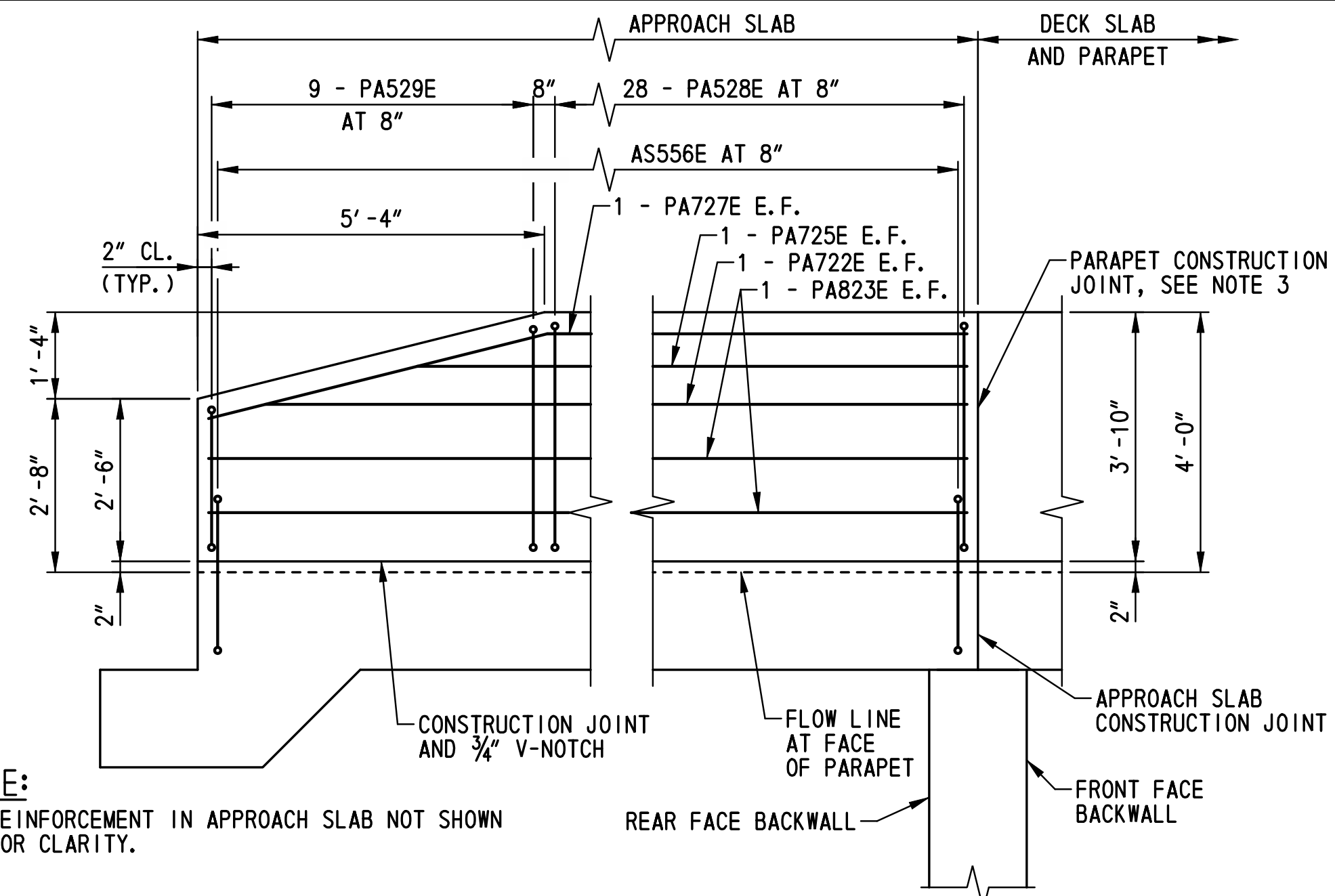
CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

APPROACH AND SLEEPER SLAB A REINFORCEMENT DETAILS

BR1-2 AS-07
SHEET NO.
197
TOTAL SHTS.
491

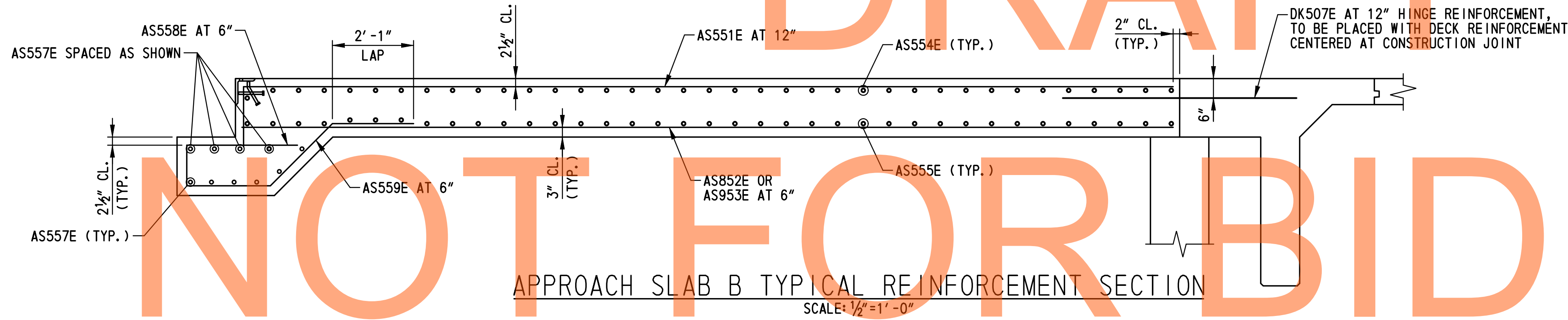


APPROACH SLAB B TYPICAL SECTION
SCALE: 1/2"=1'-0"

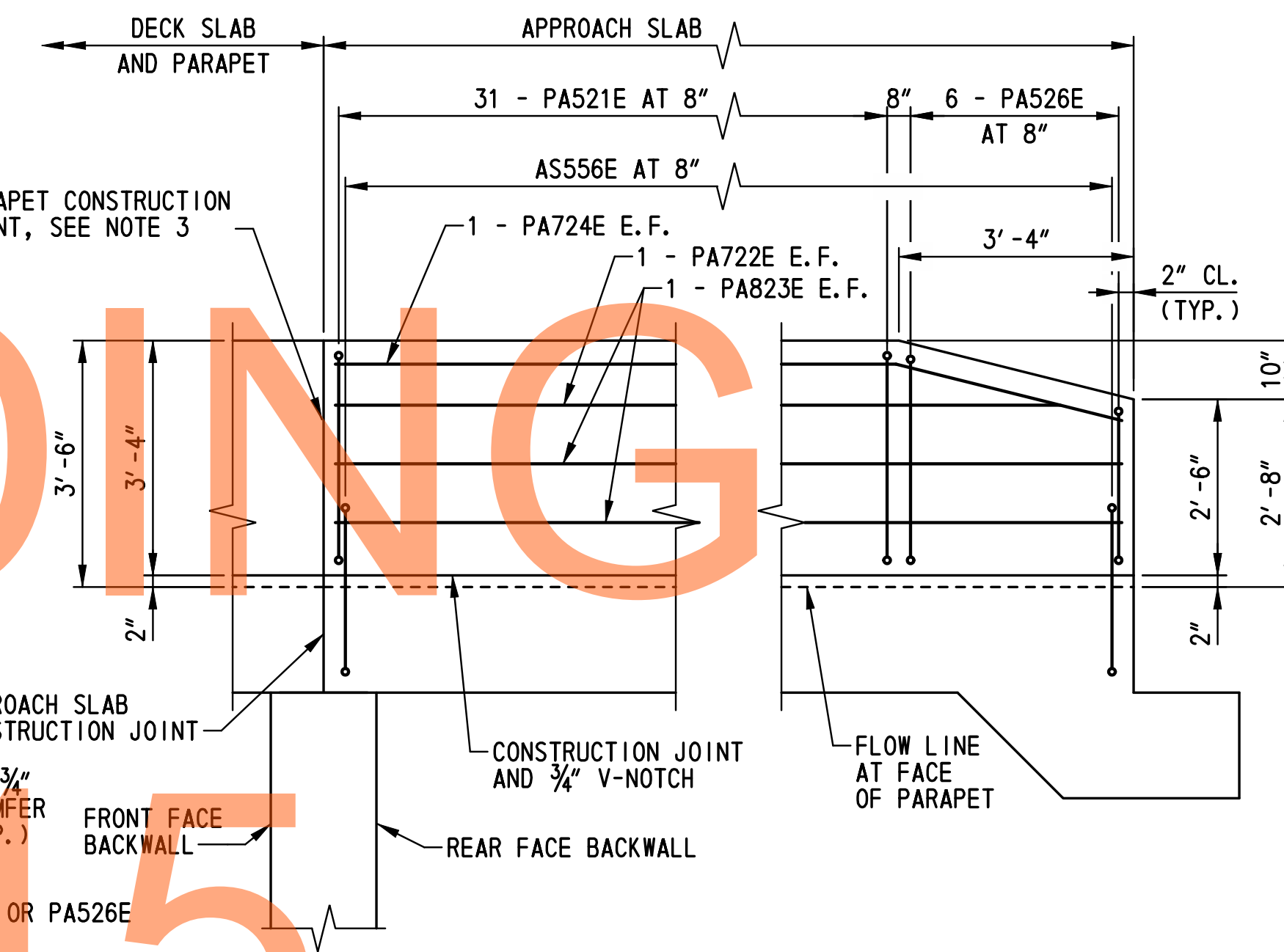


NOTE:
1. REINFORCEMENT IN APPROACH SLAB NOT SHOWN FOR CLARITY.

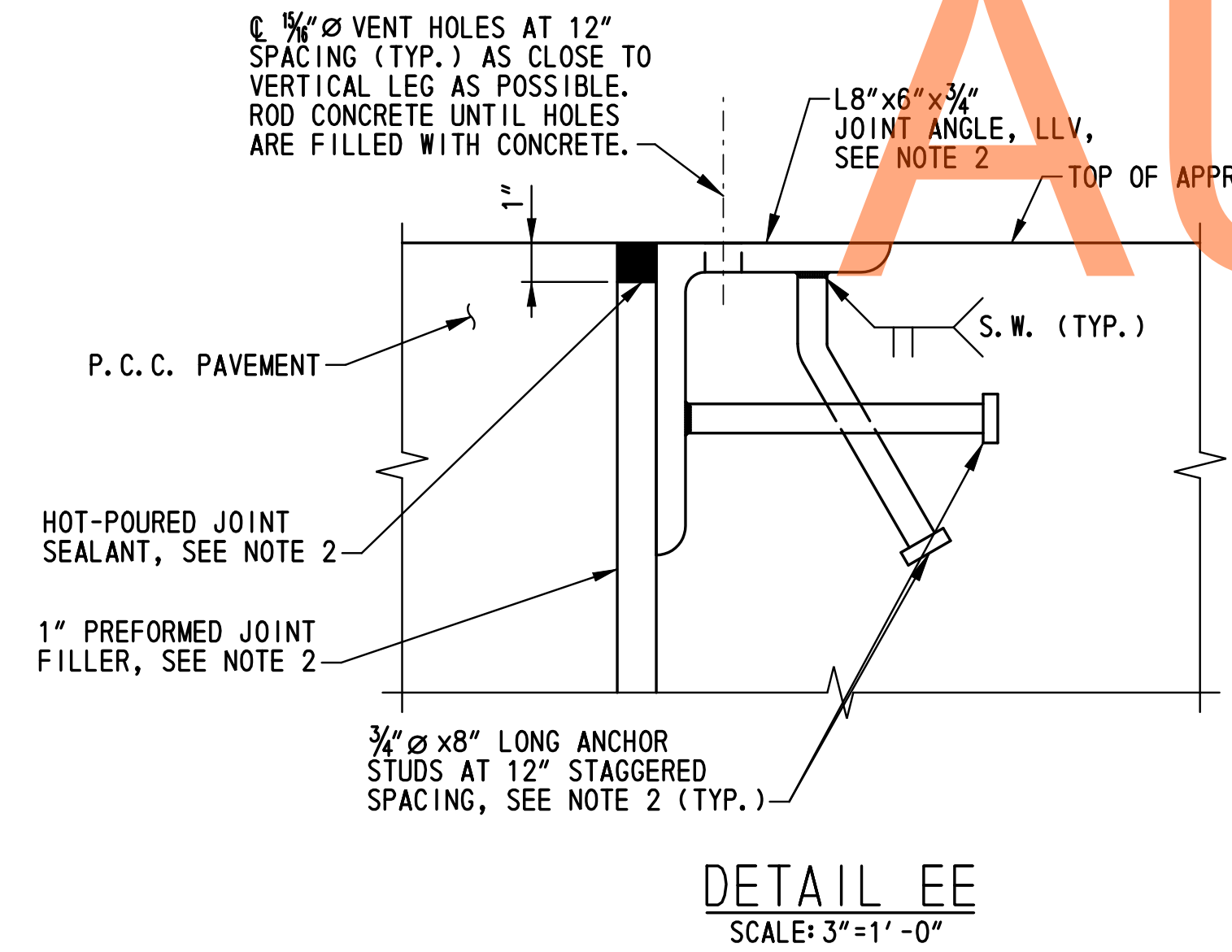
WEST PARAPET REINFORCEMENT ELEVATION
SCALE: 1/2"=1'-0"



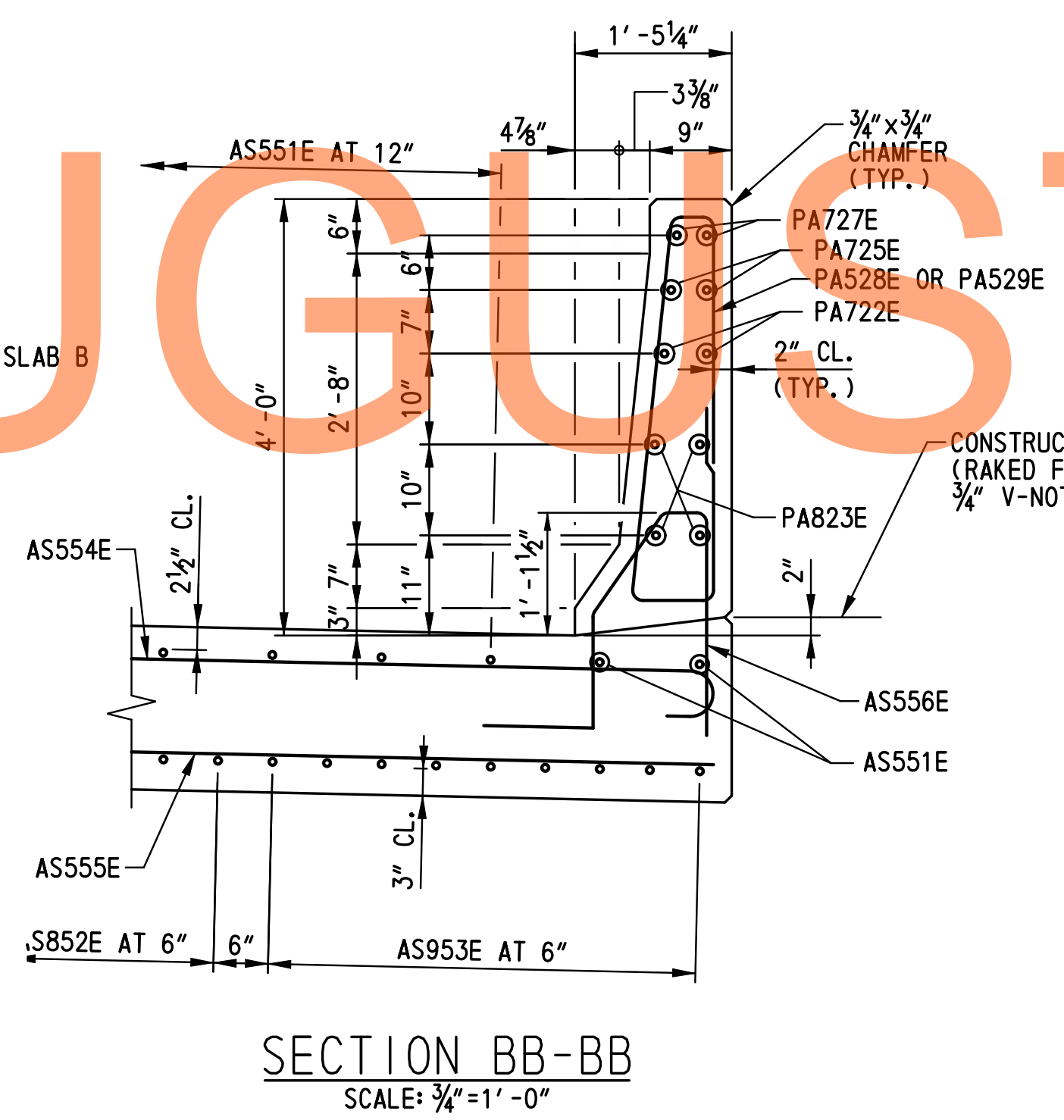
APPROACH SLAB B TYPICAL REINFORCEMENT SECTION
SCALE: 1/2"=1'-0"



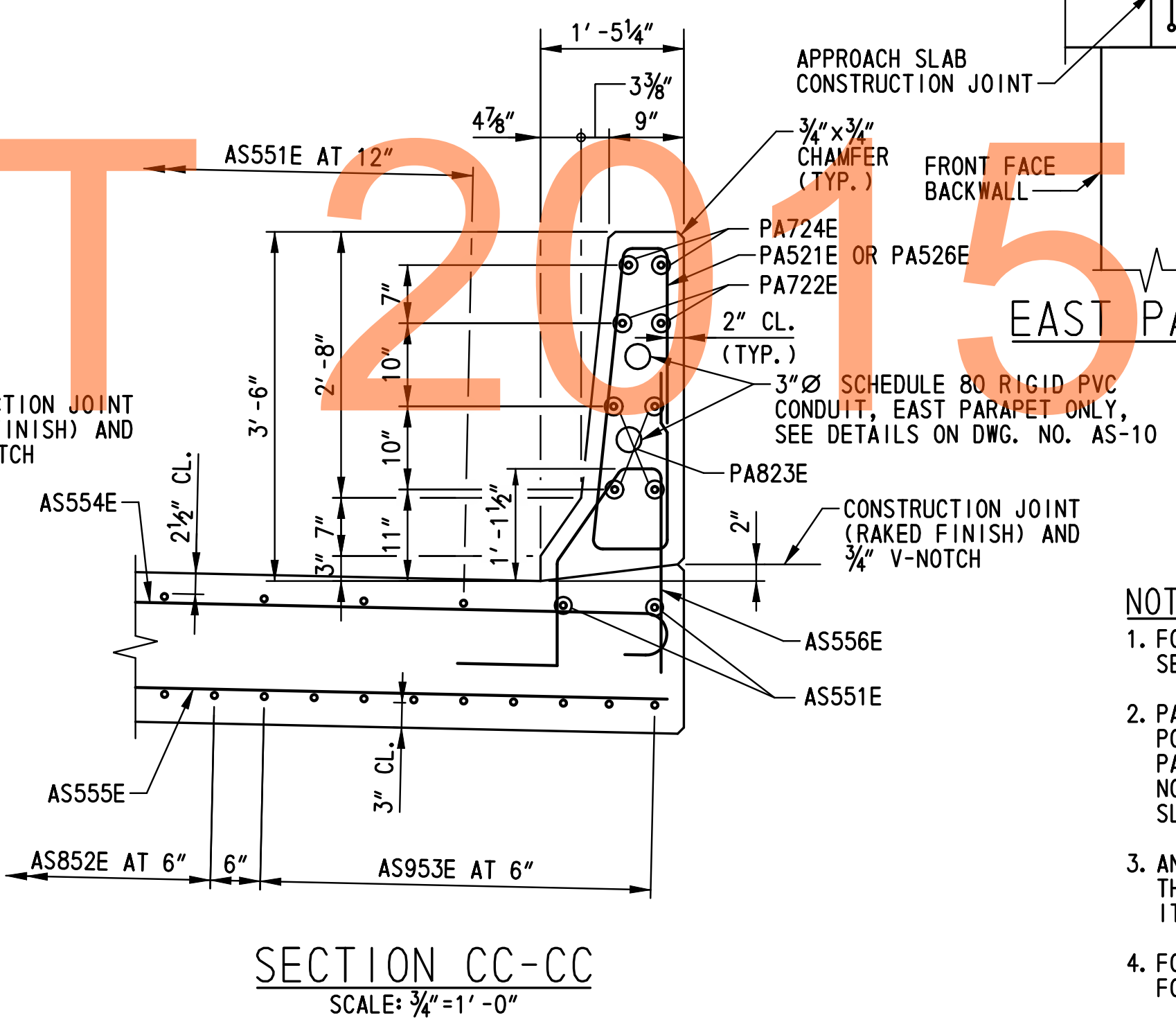
EAST PARAPET REINFORCEMENT ELEVATION
SCALE: 1/2"=1'-0"



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



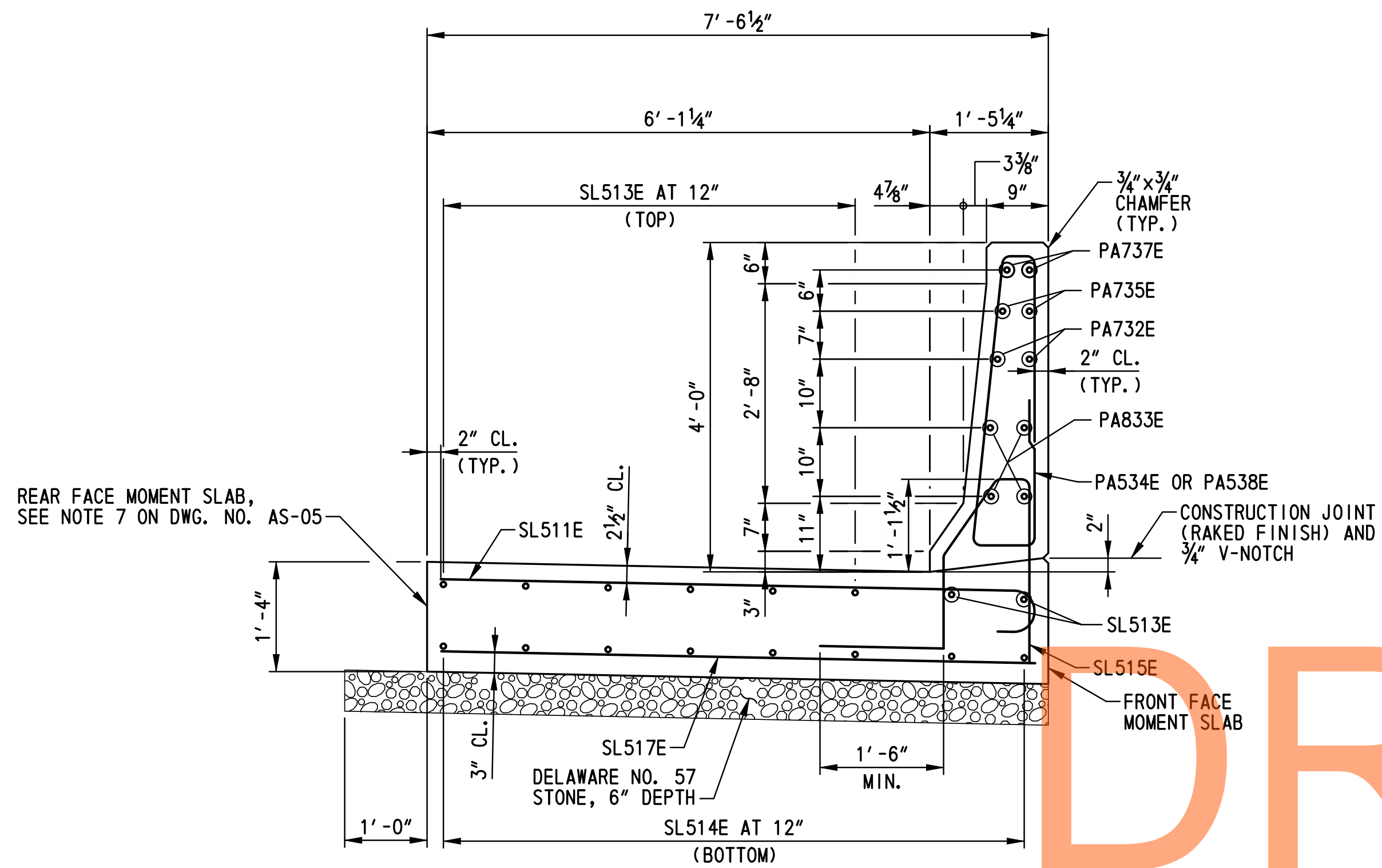
SECTION BB-BB
SCALE: 3/4"=1'-0"



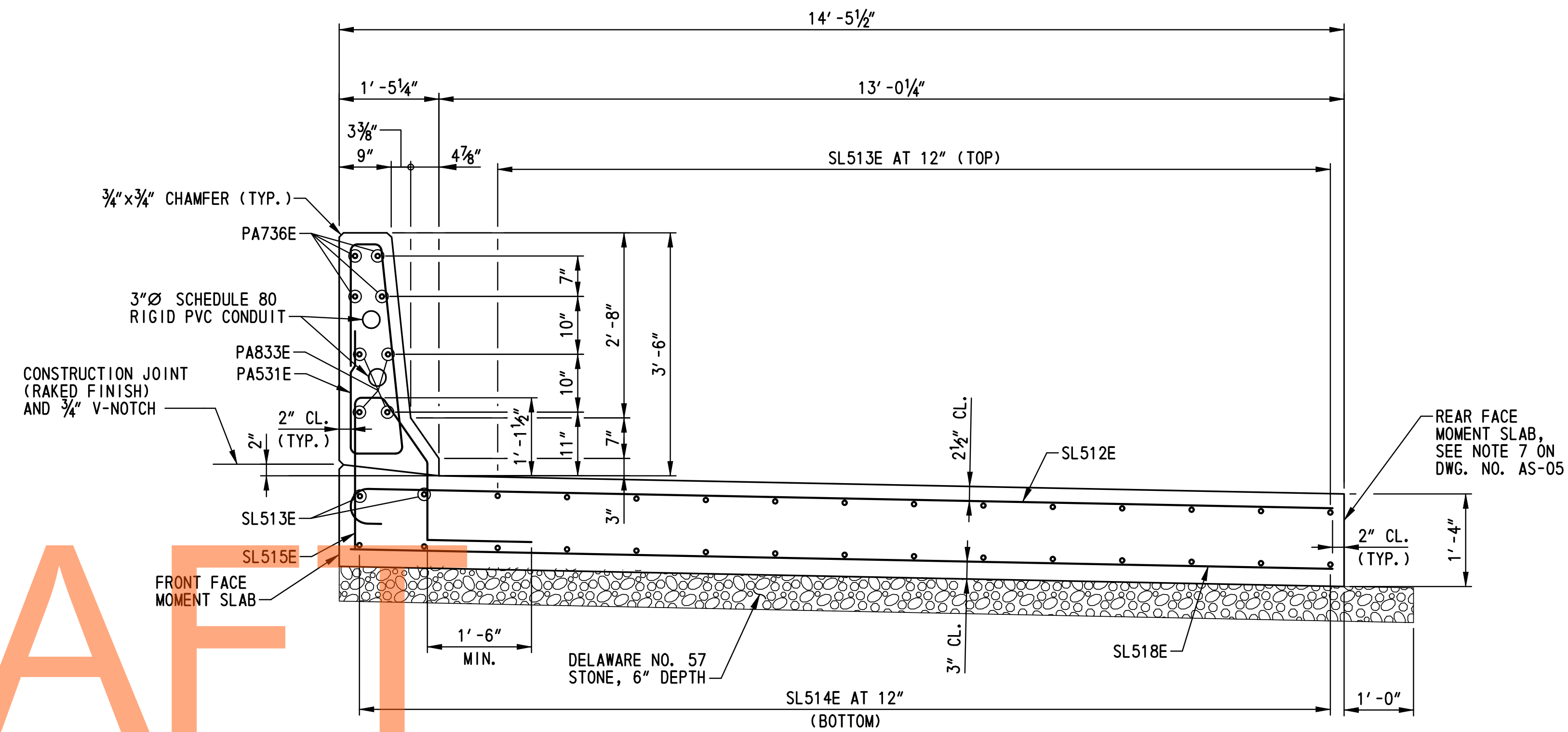
SECTION CC-CC
SCALE: 3/4"=1'-0"

- NOTES:
- FOR ADDITIONAL APPROACH SLAB B REINFORCEMENT DETAILS, SEE DWG. NO. AS-04.
 - PAYMENT FOR INSTALLATION OF 1" PREFORMED JOINT FILLER, HOT Poured JOINT SEALANT, AND JOINT ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF APPROACH SLAB WILL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
 - AN APPROVED BOND BREAKER SHALL BE PLACED ON 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-03.

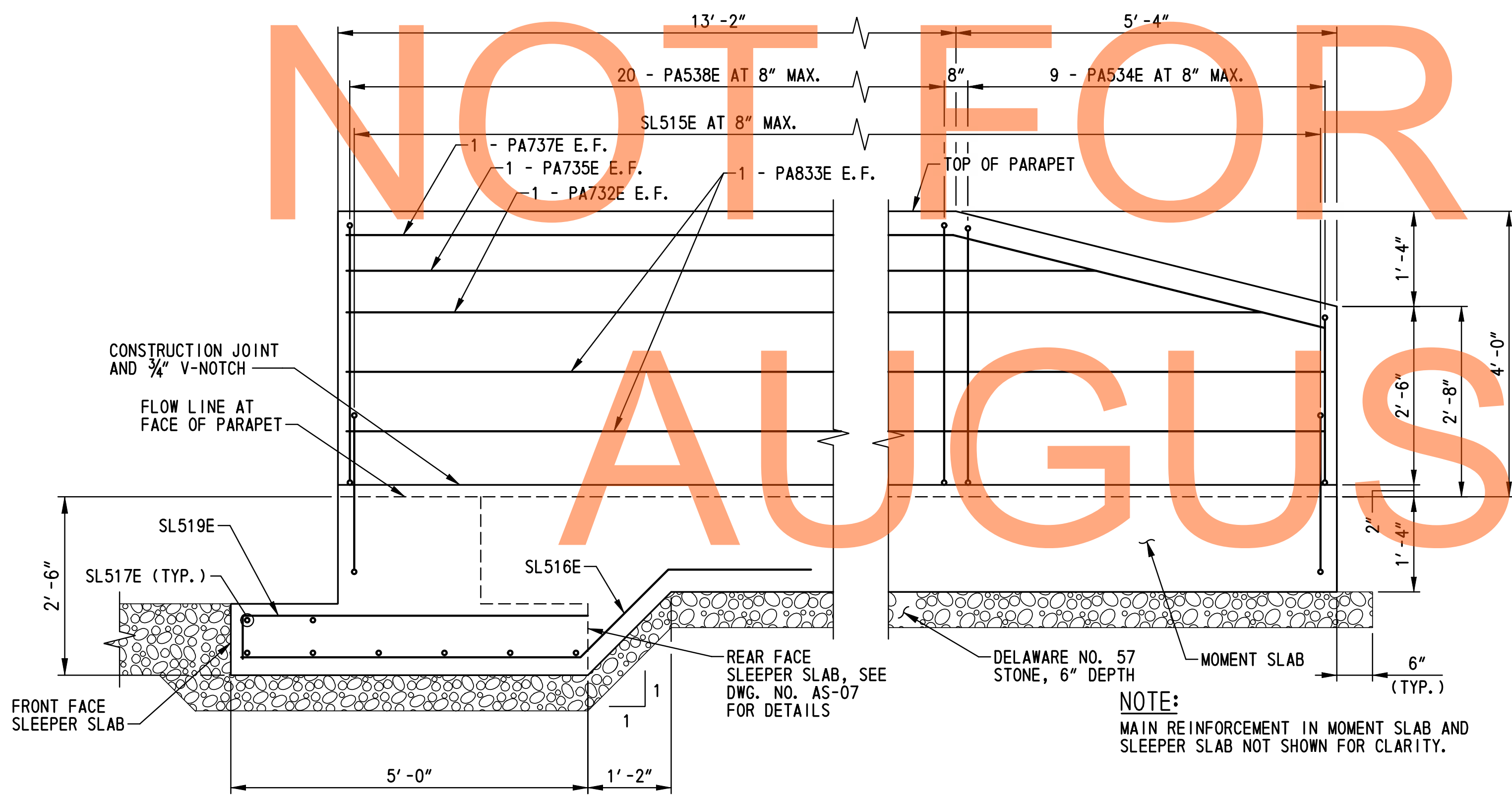
M:\31653\000\CONTRACT 18\CAD\Drawings\Bridg\Bridg-No2\AS08_brl-2.dgn 2/27/2015 3:53:06 PM



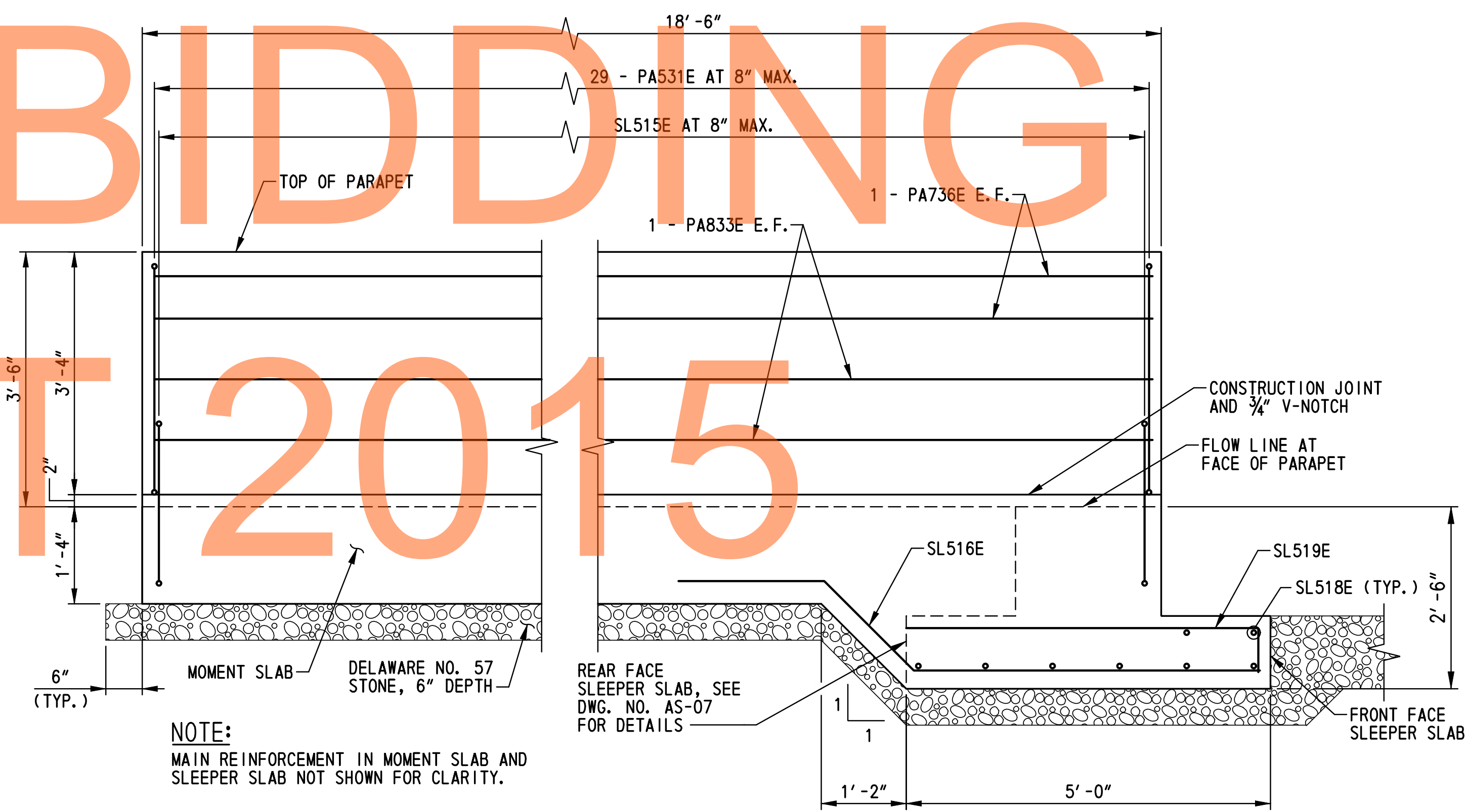
SECTION FF-FF
SCALE: 3/4"=1'-0"



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



MOMENT SLAB A1 PARAPET REINFORCEMENT ELEVATION
SCALE: 3/4"=1'-0"



MOMENT SLAB A2 PARAPET REINFORCEMENT ELEVATION
SCALE: 3/4"=1'-0"

- NOTES:
1. FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. FOR PARAPET CONTROL JOINT DETAILS, SEE DWG. NO. DK-03.
 2. FOR LOCATIONS OF SECTIONS EE-EE AND FF-FF, SEE DWG. NO. AS-06.

M:\31653\000\CONTRACT 18\CAD\Bridges\B-1-No2\AS09_brl-2.dgn 2/27/2015 3:44:16 PM



ADDENDUMS / REVISIONS	

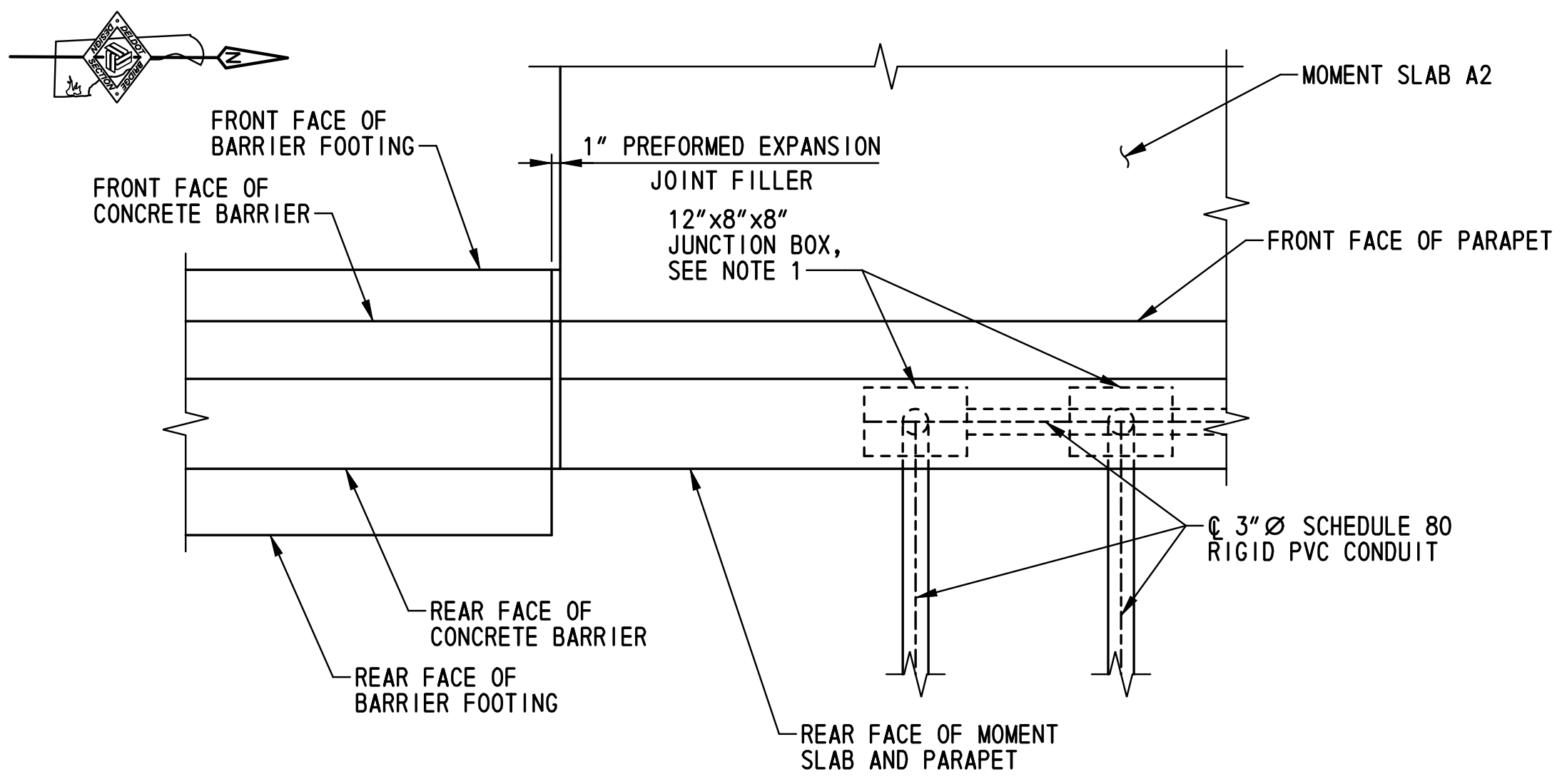
SCALE: AS SHOWN

US 301 &
SR 1 INTERCHANGE

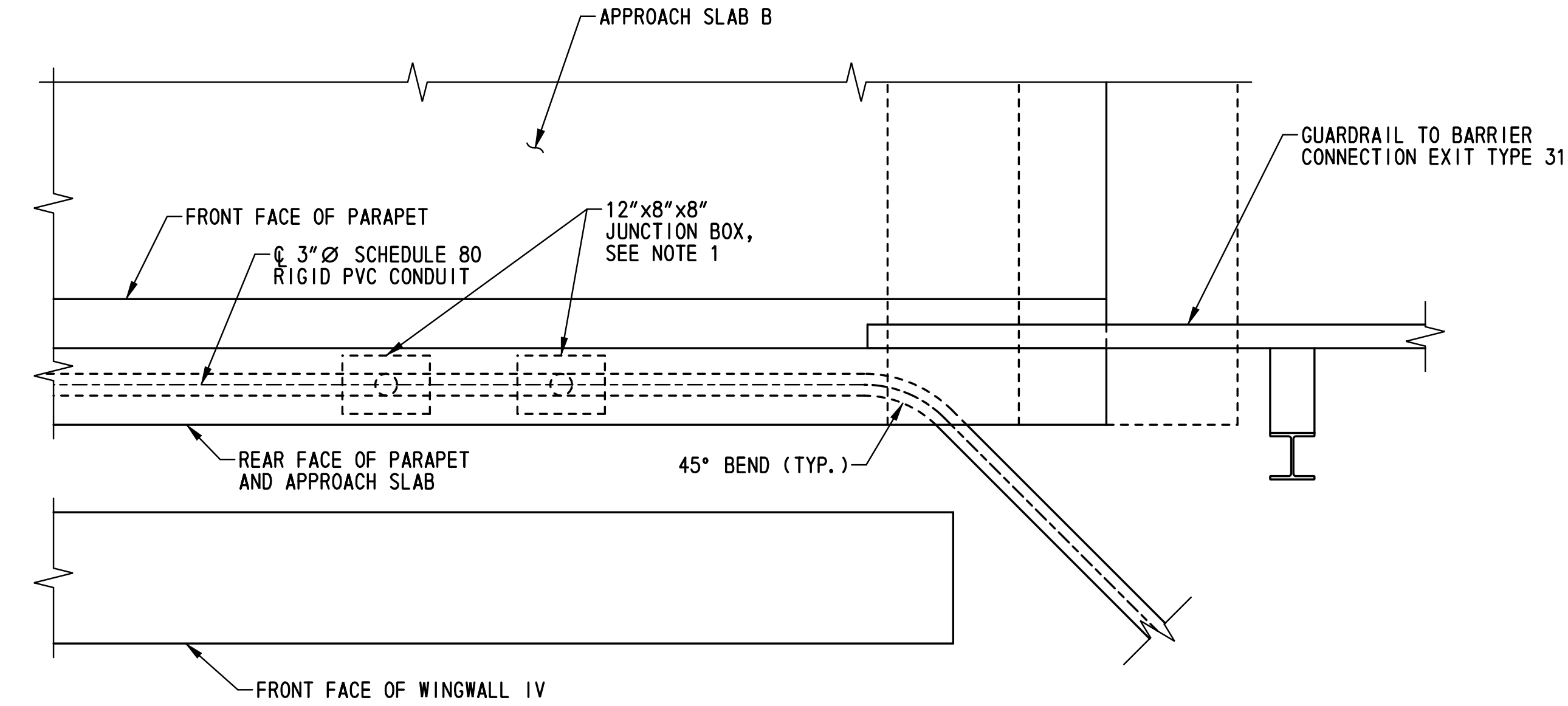
CONTRACT T200911302	BRIDGE NO. 1-432
COUNTY NEW CASTLE	DESIGNED BY: A.J.F. CHECKED BY: P.S.D.

**MOMENT SLAB
REINFORCEMENT DETAILS**

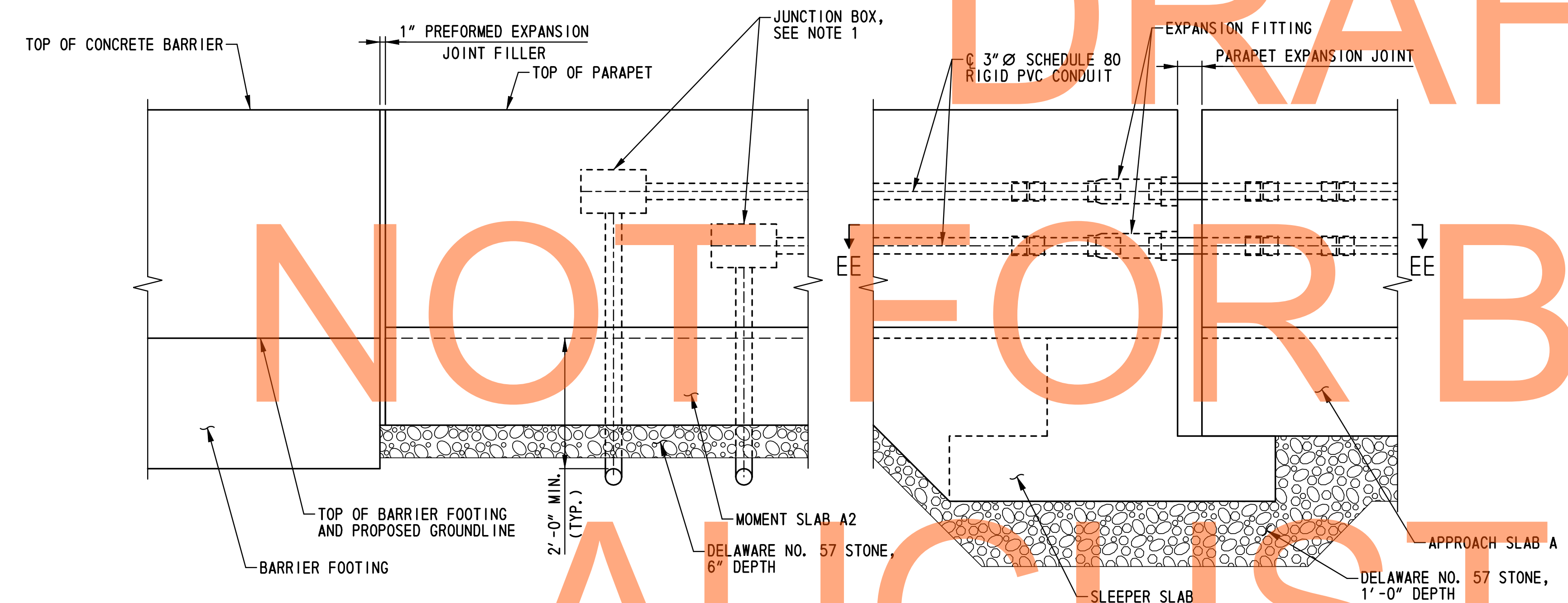
BR1-2 AS-09
SHEET NO. 199
TOTAL SHTS. 491



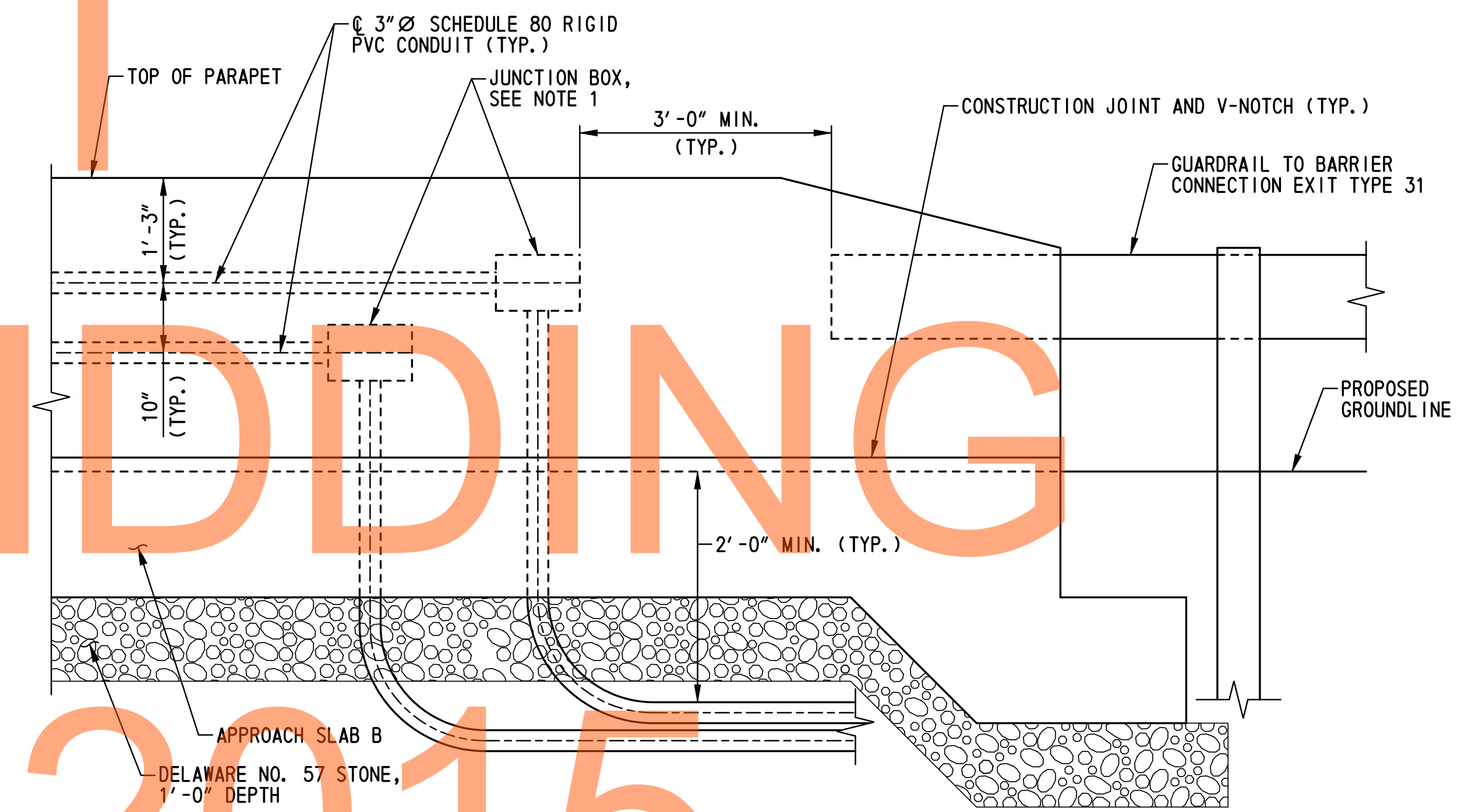
PLAN - EAST PARAPET AT MOMENT SLAB A2
SCALE: 3/4"=1'-0"



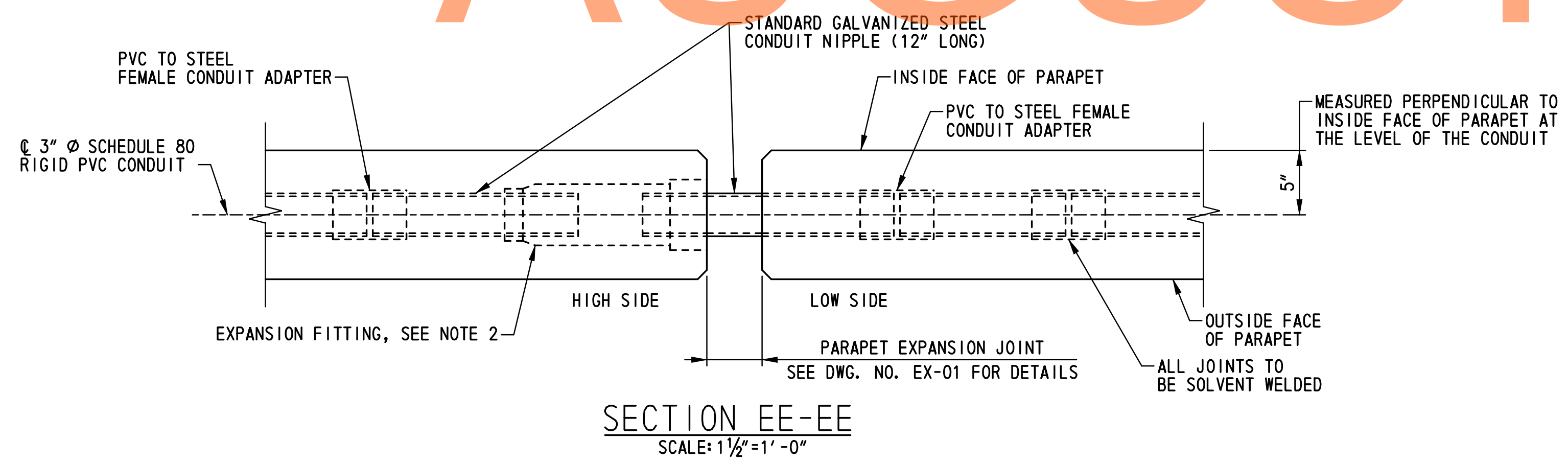
PLAN - EAST PARAPET AT APPROACH SLAB B
SCALE: 3/4"=1'-0"



ELEVATION - EAST PARAPET AT MOMENT SLAB A2
SCALE: 3/4"=1'-0"



ELEVATION - EAST PARAPET AT APPROACH SLAB B
SCALE: 3/4"=1'-0"



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

- NOTES:**
- ALL JUNCTION BOXES SHALL BE 12" LONG x 8" HIGH x 8" DEEP NEMA 4X STAINLESS STEEL JUNCTION BOXES WITH COVERS MOUNTED IN THE FRONT FACE OF THE PARAPET.
 - EXPANSION FITTINGS FOR USE WITH RIGID GALVANIZED STEEL CONDUIT SHALL CONSIST OF A MALLEABLE IRON HEAD AND STEEL SLEEVE WHICH SHALL BE HOT-DIPPED GALVANIZED AND ASSEMBLED WITH A WATERTIGHT PACKING GLAND, AN INSULATED BUSHING, PRESSURE RING AND GASKET AND A TINNED-COPPER BOND TO ASSURE CONTINUITY OF GROUND. THE FITTING SHALL PROVIDE 4" OF MOVEMENT.
 - ALL PIPE AND EXPANSION FITTINGS SHALL BE U.L. APPROVED FOR ENCASEMENT IN CONCRETE.
 - CONDUITS AND JUNCTION BOXES INSTALLED IN THE BRIDGE, APPROACH SLAB AND MOMENT SLAB PARAPETS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT WILL BE INCIDENTAL TO ITEM 602017 - PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A. CONDUITS AND ALL NECESSARY FITTINGS SUPPLIED FOR INSTALLATION IN PARAPETS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM NO. 745522 - SUPPLY OF 3" SCHEDULE 80 PVC CONDUIT.

M:\31653\000\Contract\1B\CADD\Bridges\BR_No2\AS10_brl-2.dgn 2/2/2015 9:21:51 AM



ADDENDUMS / REVISIONS	

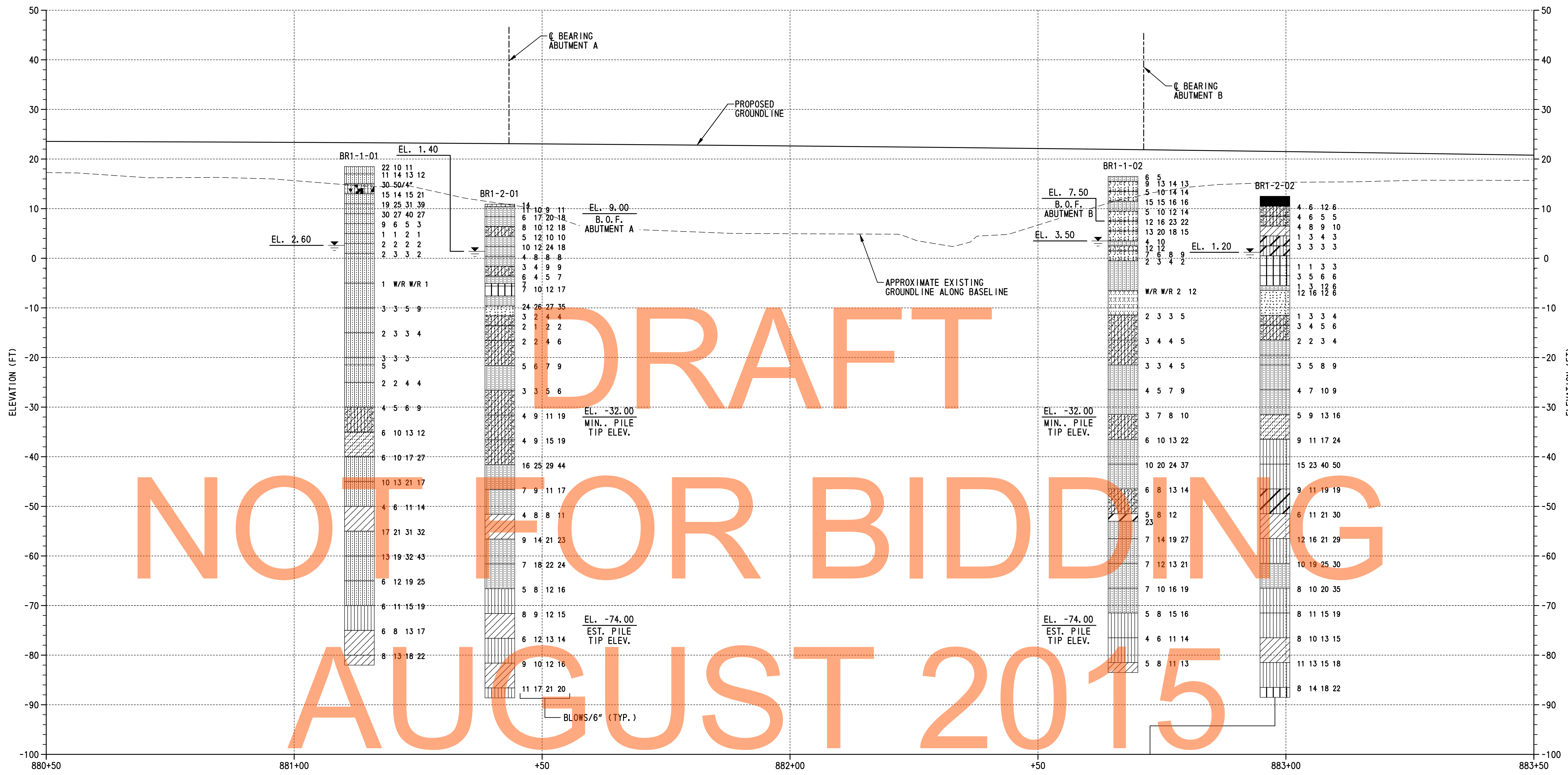
SCALE: AS SHOWN

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	1-432
T200911302	DESIGNED BY:	A.J.F.
COUNTY	CHECKED BY:	P.S.D.
NEW CASTLE		

APPROACH SLAB AND MOMENT SLAB PARAPET CONDUIT DETAILS

BR1-2 AS-10
SHEET NO.
200
TOTAL SHTS.
491



DRAFT

NOT FOR BIDDING

AUGUST 2015

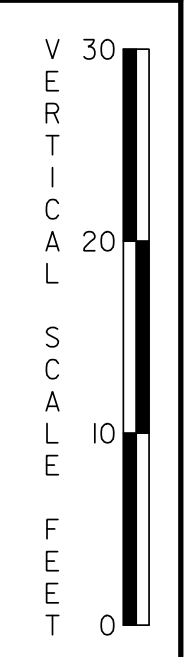
BORING PROFILE
SCALE: 1"=10'-0"

LEGEND:

	POORLY GRADED SAND WITH SILT		ELASTIC SILT		SILTY LOW PLASTICITY CLAY		PAVING
	SILTY SAND		POORLY GRADED SAND		CLAYEY SAND		WATER TABLE AT BORING COMPLETION
	POORLY GRADED CLAYEY SILTY SAND		LOW PLASTICITY CLAY		SILT		W/R = WEIGHT OF ROD

TEST BORINGS				
BORING DESIGNATION	STATION	OFFSET	NORTHING	EASTING
BR1-1-01	881+13.52	7.68' LT.	559294.3000	590558.4000
BR1-2-01	881+41.48	50.75' RT.	559322.0000	590617.0000
BR1-1-02	882+67.15	11.22' RT.	559448.0000	590577.0000
BR1-2-02	882+72.59	56.29' RT.	559454.0000	590622.0000

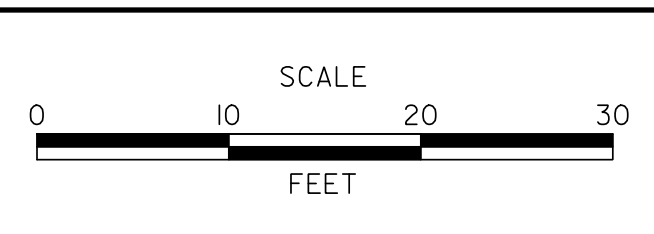
- NOTES:**
- FOR BORING LOCATIONS, SEE DWG. NO. PE-01.
 - BORING BR1-2-02 SHOWN OFFSET AS INDICATED FOR CLARITY.
 - RESULTS CONDUCTED ON SAMPLES RECOVERED ARE REPORTED ON THE BORING LOGS, LOGS AND LABORATORY TESTING ARE INCLUDED AS PART OF THE CONTRACT DOCUMENTS, SEE CD.



M:\31653-000\Contract\IB\CADD\Bridges\Br-No2\B001-br1-2.dgn 2/2/2015 9:22:02 AM



ADDENDUMS / REVISIONS	



**US 301 &
SR 1 INTERCHANGE**

CONTRACT	T200911302	BRIDGE NO.	1-432
COUNTY	NEW CASTLE	DESIGNED BY:	A.J.F.
		CHECKED BY:	P.S.D.

BORING PROFILE	
SHEET NO.	202
TOTAL SHTS.	491