

US 301 VERTICAL DATA

PVT 309+53.00 EL. 52.90	+0.72%	PVC 331+20.00 EL. 68.51
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US 301 HORIZONTAL DATA

TANGENT

RAMP C HORIZONTAL DATA

PI STA. 25+09.98
 $\Delta = 22^\circ 57' 21.10''$ RT.
 $D_c = 6^\circ 44' 55.03''$
 $R = 849.00'$
 $T = 172.39'$
 $L = 340.16'$

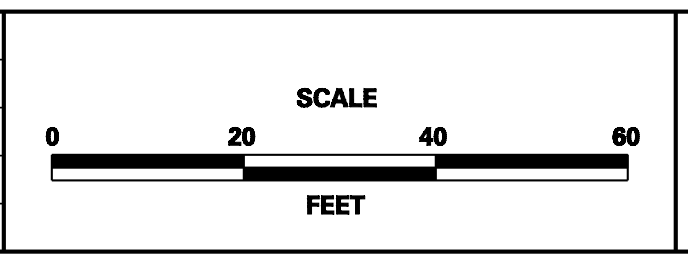
NOT FOR BIDDING

AUGUST 2015

- LEGEND**
- SETTLEMENT PLATFORM
 - ▲ SETTLEMENT MONUMENT
- CROSS REFERENCE NOTES:**
- FOR SETTLEMENT PLATFORM AND MONUMENT LOCATIONS AND DETAILS, SEE DWG. 1-477 DT-1.
 - RECESS AND COVER RIPRAP IN ACCORDANCE WITH THE STREAM RESTORATION AND SLOPE RIPRAP TREATMENT NOTES FOUND ON EC-05.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

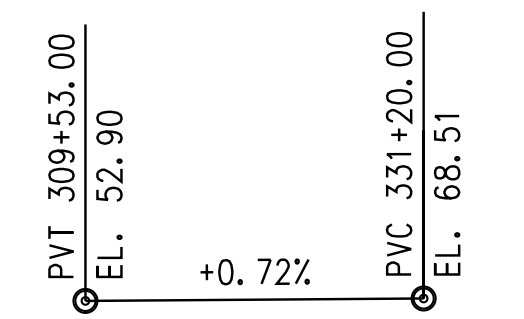


US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

CONTRACT T200511303	BRIDGE NO. 1-477N&S
COUNTY NEW CASTLE	DESIGNED BY: R. F. KIRCHNER
	CHECKED BY: G. P. MISTRY

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH SOUTHBOUND ROADWAY BRIDGE PLAN AND ELEVATION	1-477 PE-1 SHEET NO. 441 TOTAL SHTS. 1256
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US 301 VERTICAL DATA

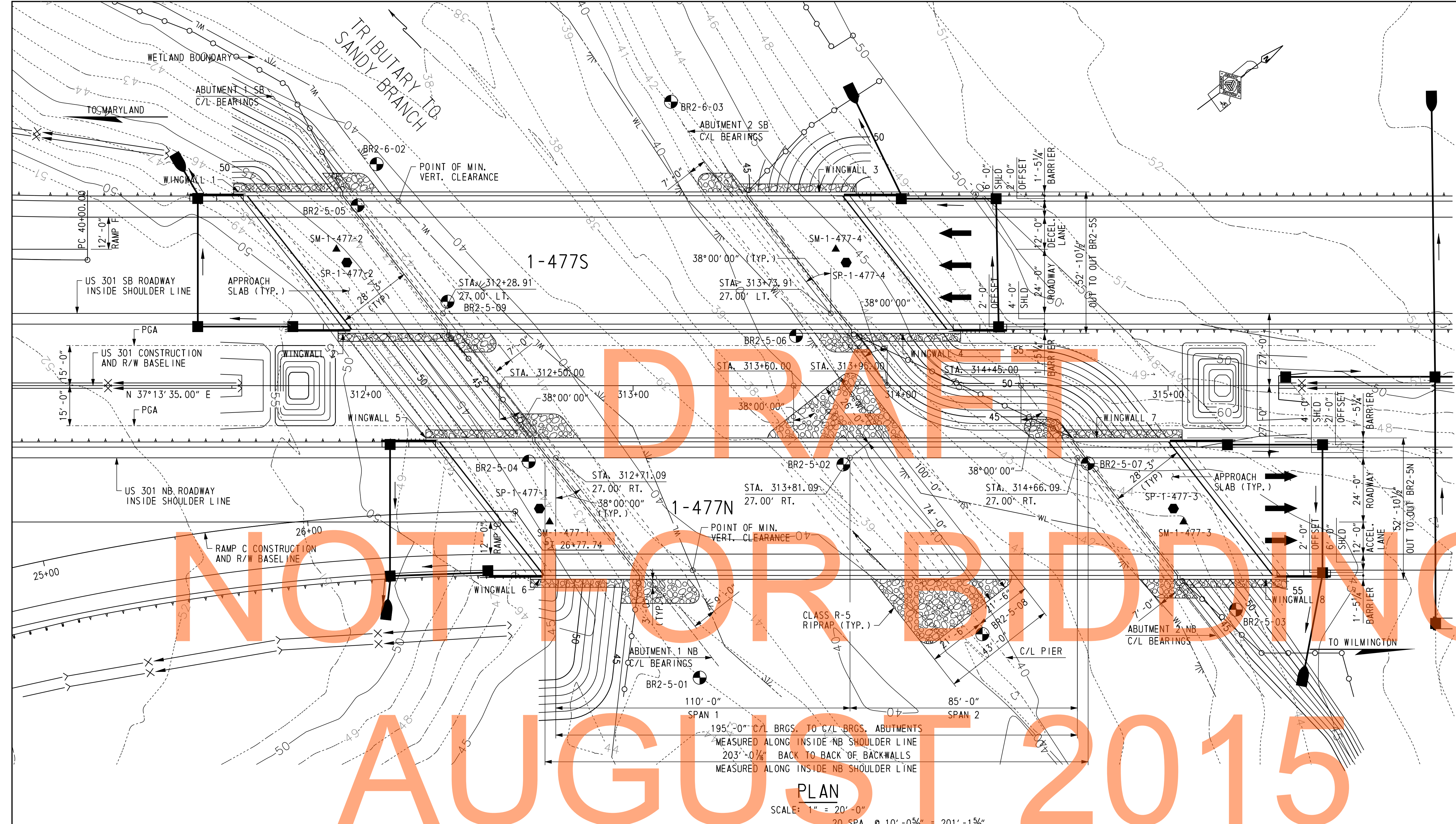


US 301 HORIZONTAL DATA

TANGENT

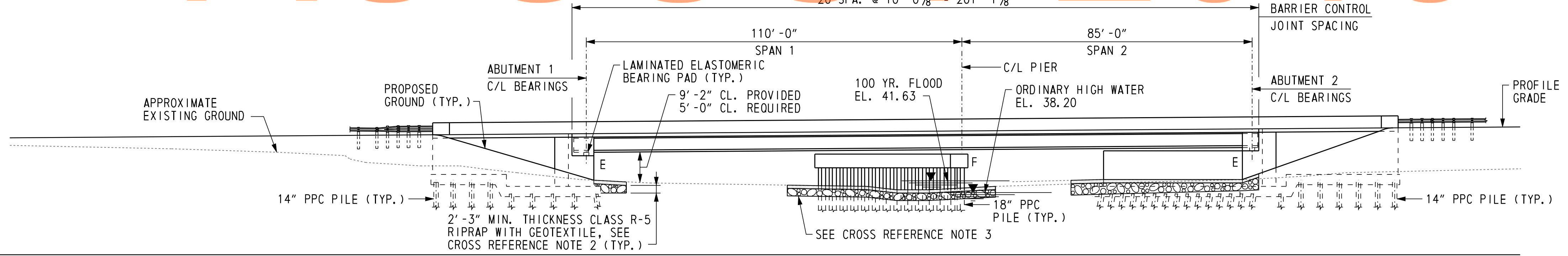
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PLAN

SCALE: 1" = 20'-0"
 20 SPA. @ 10'-0 5/8" = 201'-1 5/8"



ELEVATION - NORTHBOUND ROADWAY

SCALE: 1" = 20'-0"

LEGEND

- SETTLEMENT PLATFORM
- ▲ SETTLEMENT MONUMENT

CROSS REFERENCE NOTES:

1. FOR SETTLEMENT PLATFORM AND MONUMENT LOCATIONS AND DETAILS, SEE DWG. 1-477 DT-1.
2. RECESS AND COVER RIPRAP IN ACCORDANCE WITH THE STREAM RESTORATION AND SLOPE RIPRAP TREATMENT NOTES FOUND ON EC-05.
3. FOR PIER RIPRAP DETAIL AND NOTES, SEE DWG. 1-477 PR-1.

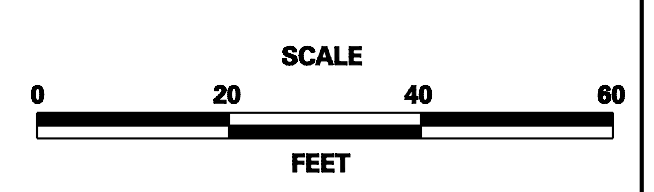
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1/8/2012

Steve_Lambert



ADDENDUMS / REVISIONS



US 301
 LEVELS ROAD
 TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

US 301 MAINLINE OVER
 TRIBUTARY TO SANDY BRANCH
 NORTHBOUND ROADWAY
 BRIDGE PLAN AND ELEVATION

1-477 PE-2
SHEET NO.
442
TOTAL SHTS.
1256

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
			SB ROADWAY	NB ROADWAY
202505	SETTLEMENT PLATFORM	EACH	2	2
202518	SETTLEMENT MONUMENT	EACH	2	2
207000	EXCAVATION AND BACKFILL FOR STRUCTURES	CY	950	950
210000	BORROW, TYPE C	CY	2,300	2,450
302012	DELAWARE NO. 57 STOME	TON	20	50
602004	PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS B	CY	395	395
602007	PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	CY	0	66
602013	PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	CY	360	470
602014	PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	CY	260	260
602015	PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	CY	375	440
602017	PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	CY	60	73
603000	BAR REINFORCEMENT	LB	40,000	53,000
604000	BAR REINFORCEMENT, EPOXY COATED	LB	192,000	229,000
605511	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	LF	133	133
605581	ELASTOMERIC BRIDGE BEARING PAD	EACH	12	24
618081	FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14"x14"	LF	6,400	6,400
618083	FURNISH PRECAST PRESTRESSED CONCRETE PILE, 18"x18"	LF	-	1,260
618091	FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14"x14"	LF	130	130
618093	FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 18"x18"	LF	-	60
619061	INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14"x14"	LF	6,400	6,400
619063	INSTALL PRECAST PRESTRESSED CONCRETE PILE, 18"x18"	LF	-	1,260
619067	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14"x14"	LF	130	130
619069	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 18"x18"	LF	-	60
619501	PRODUCTION PILE RESTRIKE	EACH	10	10
619502	TEST PILE RESTRIKE	EACH	4	4
619519	DYNAMIC PILE TESTING BY CONTRACTOR	EACH	2	3
619539	SIGNAL MATCHING ANALYSIS BY CONTRACTOR	EACH	4	6
623003	PRESTRESSED REINFORCED CONCRETE MEMBERS BULB-T BEAM	LS	1	1
712021	RIPRAP, CLASS 5	TON	235	840
712531	CHANNEL BED FILL	CY	0	40
713003	GEOTEXTILE, RIPRAP	SY	200	700
715001	PERFORATED PIPE UNDERDRAINS, 6"	LF	180	180
733001	TOPSOILING, 4" DEPTH	SY	400	1,200
745522	SUPPLY OF 3" SCH 80 PVC CONDUIT	LF	235	280
746596	JUNCTION BOX STRUCTURE	EA	2	2

INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	TITLE
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444	1-477 PN-2	GENERAL NOTES
445	1-477 FT-1	SOUTHBOUND ROADWAY GEOMETRIC LAYOUT
446	1-477 FT-2	NORTHBOUND ROADWAY GEOMETRIC LAYOUT
447	1-477 TS-1	TYPICAL SECTION
448	1-477 PL-1	PRESTRESSED CONCRETE PILE DETAILS
449	1-477 AB-1	ABUTMENT 1 - SOUTHBOUND ROADWAY PILE PLAN
450	1-477 AB-2	ABUTMENT 2 - SOUTHBOUND ROADWAY PILE PLAN
451	1-477 AB-3	ABUTMENT 1 - SOUTHBOUND ROADWAY PLAN AND ELEVATION
452	1-477 AB-4	ABUTMENT 2 - SOUTHBOUND ROADWAY PLAN AND ELEVATION
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454	1-477 AB-6	SOUTHBOUND ROADWAY TYPICAL ABUTMENT SECTION
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456	1-477 AB-8	ABUTMENT 2 - NORTHBOUND ROADWAY PILE PLAN
457	1-477 AB-9	ABUTMENT 1 - NORTHBOUND ROADWAY PLAN AND ELEVATION
458	1-477 AB-10	ABUTMENT 2 - NORTHBOUND ROADWAY PLAN AND ELEVATION
459	1-477 AB-11	NORTHBOUND ROADWAY WING WALL ELEVATIONS
460	1-477 AB-12	NORTHBOUND ROADWAY TYPICAL ABUTMENT SECTION
461	1-477 AB-13	ABUTMENT 1 - SOUTHBOUND ROADWAY REINFORCEMENT 1
462	1-477 AB-14	ABUTMENT 1 - SOUTHBOUND ROADWAY REINFORCEMENT 2
463	1-477 AB-15	ABUTMENT 1 - SOUTHBOUND ROADWAY REINFORCEMENT 3
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465	1-477 AB-17	ABUTMENT 1 - SOUTHBOUND ROADWAY REINFORCEMENT 5
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470	1-477 AB-22	ABUTMENT 2 - SOUTHBOUND ROADWAY REINFORCEMENT 5
471	1-477 AB-23	ABUTMENT 1 - SOUTHBOUND ROADWAY REINFORCING BAR LIST
472	1-477 AB-24	ABUTMENT 2 - SOUTHBOUND ROADWAY REINFORCING BAR LIST
473	1-477 AB-25	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCEMENT 1
474	1-477 AB-26	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCEMENT 2
475	1-477 AB-27	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCEMENT 3
476	1-477 AB-28	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCEMENT 4
477	1-477 AB-29	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCEMENT 5
478	1-477 AB-30	ABUTMENT 2 - NORTHBOUND ROADWAY REINFORCEMENT 1
479	1-477 AB-31	ABUTMENT 2 - NORTHBOUND ROADWAY REINFORCEMENT 2
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483	1-477 AB-35	ABUTMENT 1 - NORTHBOUND ROADWAY REINFORCING BAR LIST
484	1-477 AB-36	ABUTMENT 2 - NORTHBOUND ROADWAY REINFORCING BAR LIST

INDEX OF DRAWINGS (CONTINUED)

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488	1-477 BD-1	BEARING DETAILS
489	1-477 FR-1	SOUTHBOUND ROADWAY FRAMING PLAN AND GIRDER ELEVATION
490	1-477 BM-1	SOUTHBOUND ROADWAY GIRDER DETAILS
491	1-477 BM-2	SOUTHBOUND ROADWAY DIAPHRAGMS 1
492	1-477 BM-3	SOUTHBOUND ROADWAY DIAPHRAGMS 2
493	1-477 CT-1	SOUTHBOUND ROADWAY CAMBER TABLE
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495	1-477 BM-4	NORTHBOUND ROADWAY GIRDER DETAILS 1
496	1-477 BM-5	NORTHBOUND ROADWAY GIRDER DETAILS 2
497	1-477 BM-6	NORTHBOUND ROADWAY GIRDER DETAILS 3
498	1-477 BM-7	NORTHBOUND ROADWAY DIAPHRAGMS 1
499	1-477 BM-8	NORTHBOUND ROADWAY DIAPHRAGMS 2
500	1-477 CT-2	NORTHBOUND ROADWAY CAMBER TABLE
501	1-477 BM-9	GIRDERS AND DIAPHRAGMS REINFORCING BAR LIST
502	1-477 DK-1	BRIDGE DECK POURING SEQUENCE
503	1-477 DK-2	BRIDGE DECK AND BARRIER REINFORCEMENT 1
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506	1-477 DK-5	BRIDGE DECK AND BARRIER REINFORCEMENT 4
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509	1-477 FD-2	NORTHBOUND ROADWAY FINISHED DECK ELEVATIONS
510	1-477 EX-1	EXPANSION JOINT DETAILS
511	1-477 AS-1	SOUTHBOUND ROADWAY APPROACH SLAB PLANS
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513	1-477 AS-3	APPROACH SLAB DETAILS
514	1-477 AS-4	APPROACH SLABS - SB ROADWAY REINFORCEMENT 1
515	1-477 AS-5	APPROACH SLABS - SB ROADWAY REINFORCEMENT 2
516	1-477 AS-6	APPROACH SLABS - SB ROADWAY REINFORCING BAR LIST
517	1-477 AS-7	APPROACH SLABS - NB ROADWAY REINFORCEMENT 1
518	1-477 AS-8	APPROACH SLABS - NB ROADWAY REINFORCEMENT 2
519	1-477 AS-9	APPROACH SLABS - NB ROADWAY REINFORCING BAR LIST
520	1-477 DT-1	SETTLEMENT PLATFORM
521	1-477 BO-1	BORINGS 1
522	1-477 BO-2	BORINGS 2

NOT FOR AUGUST 2015

ADDENDUMS / REVISIONS



**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
INDEX OF DRAWINGS**

1-477 PN-1
SHEET NO.
443
TOTAL SHTS.
1256

GENERAL NOTES

1. DESIGN SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th EDITION, 2007, INCLUDING 2008 AND 2009 INTERIM REVISIONS, AND AS SUPPLEMENTED BY DELAWARE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, MAY 2005, INCLUDING LATEST REVISIONS.

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS, ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE AND CONTRACT SPECIAL PROVISIONS.

LIVE LOAD DISTRIBUTION TO GIRDERS IS BASED UPON ASSHTO DISTRIBUTION FACTORS.

2. LOADING:

UNIT WEIGHTS OF MATERIALS SHALL BE IN ACCORDANCE WITH THE DELAWARE BRIDGE DESIGN MANUAL.

FUTURE OVERLAY ALLOWANCE SHALL BE 25 LBS/SO FT.

STEEL BRIDGE DECK FORMS WHICH STAY IN PLACE (INCLUDING CONCRETE IN FORM CORRUGATIONS) SHALL BE 15 LBS/SO FT.

VEHICLE LIVE LOAD SHALL BE AASHTO HL-93 DESIGN VEHICLE, WHICH CONSISTS OF A DESIGN TRUCK OR TANDEM WITH DYNAMIC LOAD ALLOWANCE AND A LANE LOAD. RATING SHALL USE ALL DELAWARE LEGAL LOADS SPECIFIED IN THE BRIDGE DESIGN MANUAL.

BARRIER HAS BEEN DESIGNED FOR TEST LEVEL FOUR (TL-4).

FATIGUE DESIGN SHALL BE BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES (2030): DESIGN ADT = 57,000, DESIGN ADTT = 5,130

FOR THERMAL LOADS, CONSIDER THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68F.

FOR SEISMIC LOADS, CONSIDER SEISMIC PERFORMANCE ZONE 1, WITH A SITE CLASS = D AND IMPORTANCE CATEGORY - ESSENTIAL. ACCELERATION COEFFICIENT = 0.08.

3. PORTLAND CEMENT CONCRETE:

PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS SHALL BE AS FOLLOWS: (28 DAY COMPRESSIVE STRENGTH)

- ITEM NO. 602004 (CLASS B, F'c=3000 PSI) - ABUTMENT FOOTING
- ITEM NO. 602007 (CLASS A, F'c=4500 PSI) - PIER ABOVE FOOTING
- ITEM NO. 602013 (CLASS D, F'c=4500 PSI) - DECK AND DIAPHRAGMS
- ITEM NO. 602014 (CLASS D, F'c=4500 PSI) - APPROACH SLAB
- ITEM NO. 602015 (CLASS A, F'c=4500 PSI) - ABUTMENT ABOVE FOOTING
- ITEM NO. 602017 (CLASS A, F'c=4500 PSI) - BARRIER

RAKE FINISH ALL HORIZONTAL CONSTRUCTION, EXCEPT AS NOTED.

CONSTRUCT DECK SLAB TRANSVERSE CONSTRUCTION JOINTS PARALLEL TO BRIDGE CENTERLINE OF BEARING.

PLACE CHEEKWALL AND BACKWALL CONCRETE AFTER GIRDERS HAVE BEEN SET IN POSITION.

DECK SLAB THICKNESS INCLUDES 1/2" INTEGRAL WEARING SURFACE.

MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4" X 3/4" MILLED CHAMFER STRIPS UNLESS NOTED OTHERWISE, EXCEPT ON UNEXPOSED FOOTINGS OR WHERE INDICATED BY THE NOTATION ON THE PLANS, "DO NOT CHAMFER".

NO SLIP-FORMING OF BARRIERS IS PERMITTED, UNLESS NOTED OTHERWISE.

4. BAR REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.

ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" UNLESS OTHERWISE SPECIFIED ON THE PLANS.

FUSION-BONDED EPOXY COATED REINFORCING STEEL SHALL CONFORM TO AASHTO M284 (ASTM D3963), AND SHALL BE DENOTED WITH A SUFFIX "E" IN THE BAR MARKS.

DO NOT WELD GRADE 60 REINFORCING STEEL.

5. PRESTRESSED CONCRETE DESIGN:

THE PRECAST CONCRETE GIRDERS ARE DESIGNED AS NONCOMPOSITE SIMPLE SPANS FOR ALL DEAD LOADS EXCEPT THE BARRIERS AND FUTURE WEARING SURFACE. THE PRECAST GIRDERS ARE DESIGNED AS COMPOSITE CONTINUOUS SPANS FOR LIVE LOADS AS WELL AS THE BARRIER AND FUTURE WEARING SURFACE DEAD LOADS.

THE TIME FROM CASTING OF CONCRETE GIRDERS TO POURING OF PIER DIAPHRAGM SHALL BE NO LESS THAN 90 DAYS. IF TIME IS NOT SUFFICIENT, CONTRACTOR MUST SUBMIT DESIGN FOR APPROVAL SHOWING STRUCTURAL DESIGN CALCULATIONS TO ACCOUNT FOR RESTRAINT MOMENTS. FOR CONTINUOUS SPANS, PIER DIAPHRAGMS SHALL NOT BE POURED UNTIL DECK POURS 1 AND 2 ARE COMPLETED.

PRESTRESSED CONCRETE:

THE MINIMUM COMPRESSIVE STRENGTH FOR PRESTRESSED CONCRETE GIRDERS 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.

PRESTRESSED STEEL:

PRETENSIONING STEEL FOR GIRDERS SHALL CONSIST OF 0.60 INCH DIAMETER HIGH STRENGTH 7-WIRE LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF AASHTO M203 (ASTM A416) GRADE 270. EACH 0.60 INCH DIAMETER STRAND SHALL BE PRETENSIONED TO 43,942 LBS. (0.75 Fpu).

FOR BRIDGE NO. 1-477 SOUTHBOUND ROADWAY, AFTER ESTIMATED LOSSES OF 25,010 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 38,515 LBS. FOR BRIDGE NO. 1-477 NORTHBOUND ROADWAY, SPAN 1, AFTER ESTIMATED LOSSES OF 24,830 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 38,530 LBS. FOR BRIDGE NO. 1-477 NORTHBOUND ROADWAY, SPAN 2, AFTER ESTIMATED LOSSES OF 21,800 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 39,210 LBS.

6. SERVICEABILITY:

LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.

FOR REINFORCEMENT DISTRIBUTION REQUIREMENTS, CONSIDER CLASS 2 EXPOSURE CRITERIA FOR DECKS.

7. CONSTRUCTION JOINTS:

KEYED CONSTRUCTION JOINTS SHALL BE 2" X 4" OR AS NOTED. ALL EXPOSED CONSTRUCTION JOINT EDGES SHALL HAVE A 3/4" V-NOTCH, UNLESS NOTED OTHERWISE.

8. STRUCTURAL BACKFILL:

STRUCTURAL BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF BORROW TYPE C.

9. ROADWAY CLEARANCES:

A MINIMUM OF 5'-0" VERTICAL CLEARANCE SHALL BE MAINTAINED ABOVE WETLANDS. A MINIMUM OF 2'-0" HORIZONTAL CLEARANCE SHALL BE MAINTAINED FROM THE OUTSIDE EDGE OF SHOULDER OFFSET (FACE OF CURB) TO THE FACE OF ANY OBSTRUCTION. THESE CLEARANCES APPLY AT ALL TIMES INCLUDING DURING CONSTRUCTION.

10. UTILITIES:

COORDINATE ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH SECTION 107.04 OF THE STANDARD SPECIFICATIONS.

VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISION, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.

11. CONSTRUCTION NOTES:

- a) PROVIDE A MINIMUM TEMPORARY VERTICAL CLEARANCE OF 16'-6" AT ALL TIMES DURING CONSTRUCTION.
- b) DO NOT PICK OR LIFT OVER LANES AND/OR SHOULDERS OPEN TO TRAFFIC.
- c) DO NOT PERFORM ANY WORK DIRECTLY OVER OPEN LANES OF TRAFFIC WITHOUT ADEQUATE SHIELDING OR WORK PLATFORMS, LANE CLOSURES OR DETOURS IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS.
- d) INSTALL SIP FORMS, ADDITIONAL PROTECTIVE SHIELD SYSTEM, WORK PLATFORMS AND/OR OVERHANG FALSEWORK BEFORE BEGINNING ANY CONSTRUCTION OPERATIONS OVER TRAFFIC.
- e) IF THE CONTRACTOR DETERMINES THAT ADDITIONAL PROTECTIVE SHIELDING OR WORK PLATFORMS ARE NEEDED TO PROTECT TRAFFIC, SUBMIT PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL FOR PROTECTING TRAFFIC WHILE WORKING OVER TRAVELWAYS. HAVE THE DRAWINGS AND DESIGN CALCULATIONS PREPARED, SIGNED, AND SEALED BY A DELAWARE REGISTERED PROFESSIONAL ENGINEER. THE APPROVAL OF THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR THE SAFETY OF THE METHOD OR EQUIPMENT. BASED ON CONTRACTOR MEANS AND METHODS, DETERMINE AND CLEARLY DEFINE ALL DEAD AND LIVE LOADS FOR THIS SYSTEM, WHICH, AT A MINIMUM, SHALL BE INSTALLED WHERE TRAFFIC IS MAINTAINED. NO SEPARATE PAYMENT WILL BE MADE FOR ADDITIONAL PROTECTIVE SHIELDING OR WORK PLATFORMS.
- f) ALL FORMWORK INCLUDING STAY-IN-PLACE FORMS SHALL BE MORTAR TIGHT.
- g) WHILE PLACING DECK, DECK OVERHANG AND PARAPET CONCRETE OVER LANES OPEN TO TRAFFIC, NO CLOSURE OR DETOURS WILL BE ALLOWED DURING THESE OPERATIONS.
- h) THE MAINTENANCE OF TRAFFIC REQUIRED FOR THE INSTALLATION OF THESE ITEMS WILL BE PAID UNDER THE MAINTENANCE OF TRAFFIC UNIT BID ITEMS. CONTRACTOR SHALL ADHERE TO THE TRAFFIC CONTROL PLAN, DELAWARE MUTCD, AND TRAFFIC LANE CLOSURE AND WORK RESTRICTIONS PROVIDED IN THE CONTRACT DOCUMENTS.

**BRIDGE LOAD RATING (TONS)
SOUTHBOUND ROADWAY**

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.20	N/A	INTERIOR BEAM	105	FLEXURE
HL-93 TANDEM (INVENTORY)	1.42	N/A	INTERIOR BEAM	105	FLEXURE
HL-93 TRUCK TRAIN (INVENTORY)	N/A	N/A	N/A	N/A	N/A
HS20 (INVENTORY)	1.70	61.2	INTERIOR BEAM	105	FLEXURE
HL-93 TRUCK (OPERATING)	1.71	N/A	INTERIOR BEAM	100	SHEAR
HL-93 TANDEM (OPERATING)	2.08	N/A	INTERIOR BEAM	100	SHEAR
HL-93 TRUCK TRAIN (OPERATING)	N/A	N/A	N/A	N/A	N/A
HS20 (OPERATING)	2.65	95.4	INTERIOR BEAM	100	SHEAR
DE S220 & LEGAL-LANE (LEGAL)	2.59	51.8	INTERIOR BEAM	105	FLEXURE
DE S335 & LEGAL-LANE (LEGAL)	1.46	51.1	INTERIOR BEAM	105	FLEXURE
DE S437 & LEGAL-LANE (LEGAL)	1.39	50.9	INTERIOR BEAM	105	FLEXURE
DE T330 & LEGAL-LANE (LEGAL)	1.87	56.1	INTERIOR BEAM	105	FLEXURE
DE T435 & LEGAL-LANE (LEGAL)	1.62	56.7	INTERIOR BEAM	105	FLEXURE
DE T540 & LEGAL-LANE (LEGAL)	1.43	57.2	INTERIOR BEAM	105	FLEXURE

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

**BRIDGE LOAD RATING (TONS)
NORTHBOUND ROADWAY**

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.26	N/A	INTERIOR BEAM	110	SHEAR
HL-93 TANDEM (INVENTORY)	1.47	N/A	INTERIOR BEAM	105	FLEXURE
HL-93 TRUCK TRAIN (INVENTORY)	1.34	N/A	INTERIOR BEAM	110	FLEXURE
HS20 (INVENTORY)	1.71	61.6	INTERIOR BEAM	105	FLEXURE
HL-93 TRUCK (OPERATING)	1.74	N/A	INTERIOR BEAM	110	FLEXURE
HL-93 TANDEM (OPERATING)	1.93	N/A	INTERIOR BEAM	110	SHEAR
HL-93 TRUCK TRAIN (OPERATING)	1.74	N/A	INTERIOR BEAM	110	FLEXURE
HS20 (OPERATING)	2.72	97.9	INTERIOR BEAM	108	SHEAR
DE S220 & LEGAL-LANE (LEGAL)	2.45	49.0	INTERIOR BEAM	105	FLEXURE
DE S335 & LEGAL-LANE (LEGAL)	1.39	48.7	INTERIOR BEAM	105	FLEXURE
DE S437 & LEGAL-LANE (LEGAL)	1.31	48.0	INTERIOR BEAM	105	FLEXURE
DE T330 & LEGAL-LANE (LEGAL)	1.87	56.1	INTERIOR BEAM	105	FLEXURE
DE T435 & LEGAL-LANE (LEGAL)	1.61	56.4	INTERIOR BEAM	105	FLEXURE
DE T540 & LEGAL-LANE (LEGAL)	1.44	57.6	INTERIOR BEAM	105	FLEXURE

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

\$FILES

\$DATES

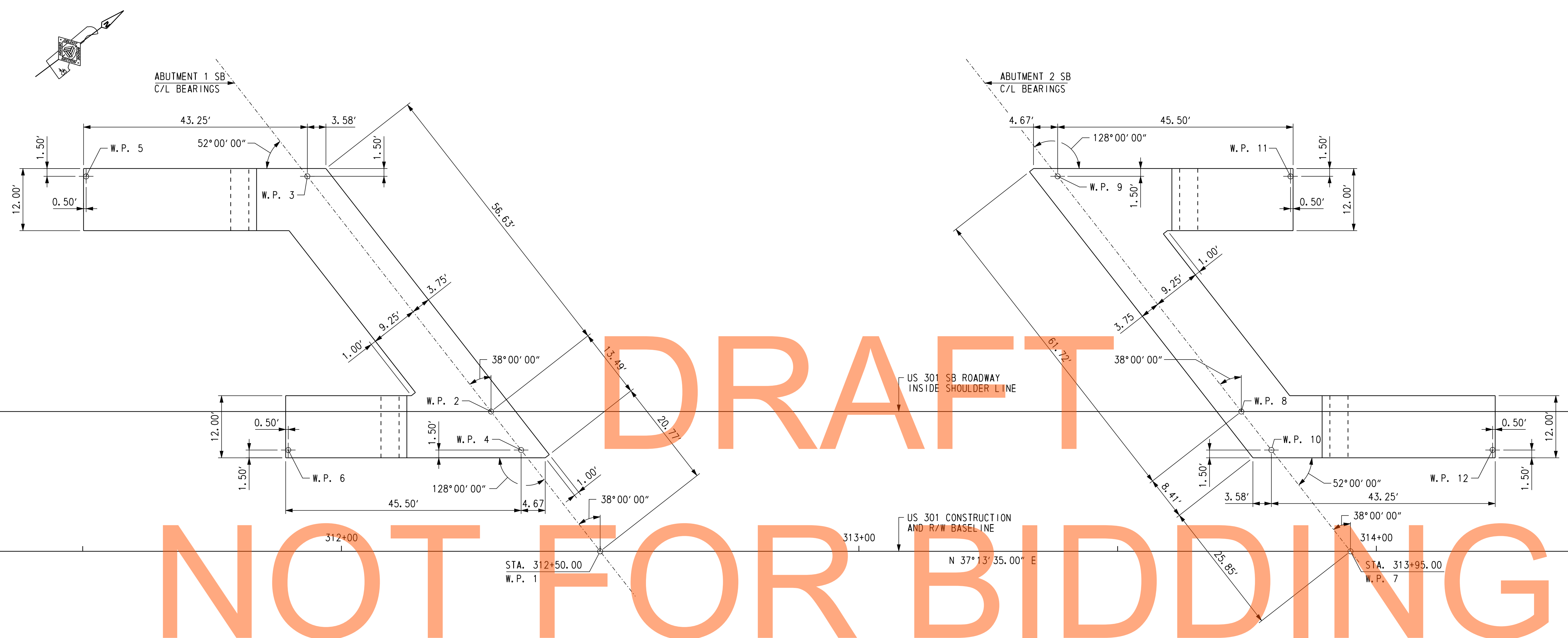
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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS		<p>US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD</p>	CONTRACT	BRIDGE NO.	1-477N&S	<p>US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH GENERAL NOTES</p>	1-477 PN-2
	T20051303	DESIGNED BY:		R. F. KIRCHNER	SHEET NO.	444		
	COUNTY	CHECKED BY:		G. P. MISTRY	TOTAL SHTS.	1256		
	NEW CASTLE							

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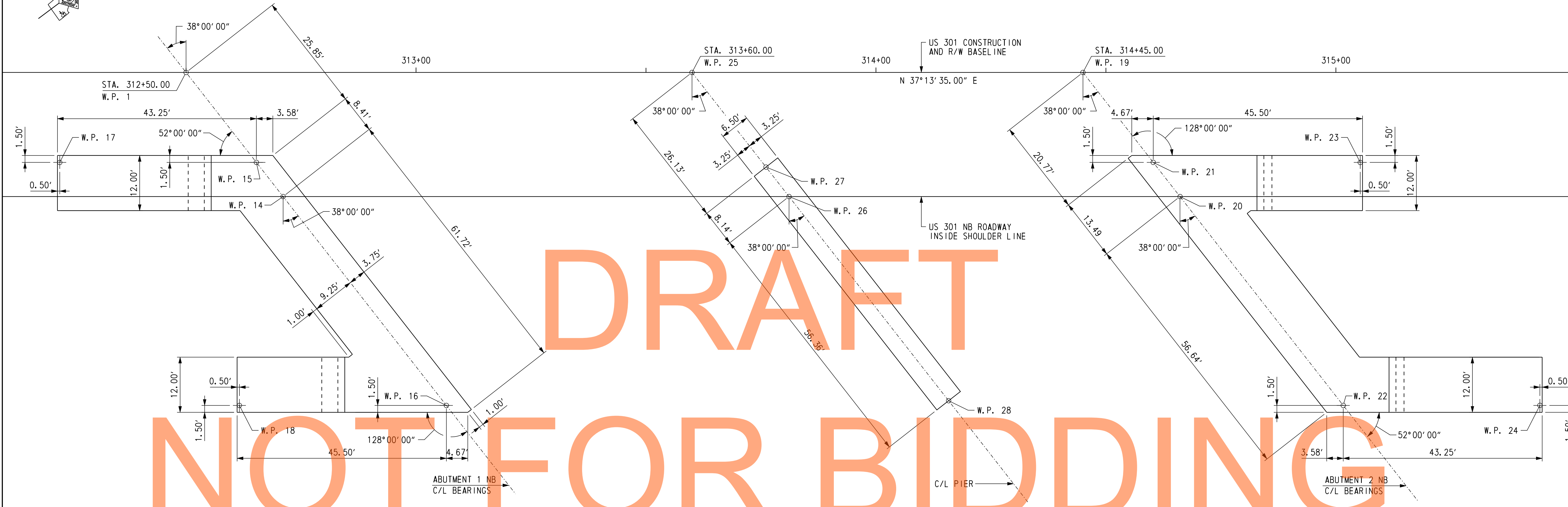
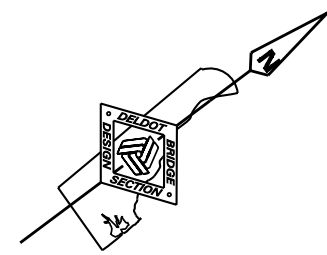
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NOT FOR BIDDING
AUGUST 2015

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

SB ROADWAY WORKING POINTS				
W. P. NO.	STATION	OFFSET	COORDINATES	
			NORTHING	EASTING
1	312+50.00	0.00'	527,706.4258	562,471.7190
2	312+28.91	27.00' LT.	527,705.9632	562,437.4586
3	311+93.41	72.44' LT.	527,705.1847	562,379.8029
4	312+34.72	19.56' LT.	527,706.0906	562,446.8961
5	311+50.66	72.44' LT.	527,671.1449	562,353.9406
6	311+89.72	19.56' LT.	527,670.2593	562,419.6726
7	313+95.00	0.00'	527,821.8823	562,559.4390
8	313+73.91	27.00' LT.	527,821.4197	562,525.1787
9	313+38.41	72.44' LT.	527,820.6411	562,467.5229
10	313+79.72	19.56' LT.	527,821.5471	562,534.6161
11	313+83.41	72.44' LT.	527,856.4724	562,494.7464
12	314+22.47	19.56' LT.	527,855.5868	562,560.4784



DRAFT
NOT FOR BIDDING

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

AUGUST 2015

NB ROADWAY WORKING POINTS				
W. P. NO.	STATION	OFFSET	COORDINATES	
			NORTHING	EASTING
13	312+50.00	0.00'	527,706.4258	562,471.7190
14	312+71.09	27.00' RT.	527,706.8884	562,505.9794
15	312+65.28	19.56' RT.	527,706.7610	562,496.5419
16	313+06.59	72.44' RT.	527,707.6670	562,563.6351
17	312+22.53	19.56' RT.	527,672.7213	562,470.6796
18	312+61.59	72.44' RT.	527,671.8356	562,536.4116
19	314+45.00	0.00'	527,861.6948	562,589.6873
20	314+66.09	27.00' RT.	527,862.1575	562,623.9477
21	314+60.28	19.56' RT.	527,862.0300	562,614.5102
22	315+01.59	72.44' RT.	527,862.9360	562,681.6035
23	315+05.28	19.56' RT.	527,897.8613	562,641.7337
24	315+44.34	72.44' RT.	527,896.9757	562,707.4658
25	313+60.00	0.00'	527,794.0135	562,538.2652
26	313+81.09	27.00' RT.	527,794.4761	562,572.5256
27	313+76.09	20.59' RT.	527,794.3662	562,564.3909
28	314+15.80	71.42' RT.	527,795.2371	562,628.8851

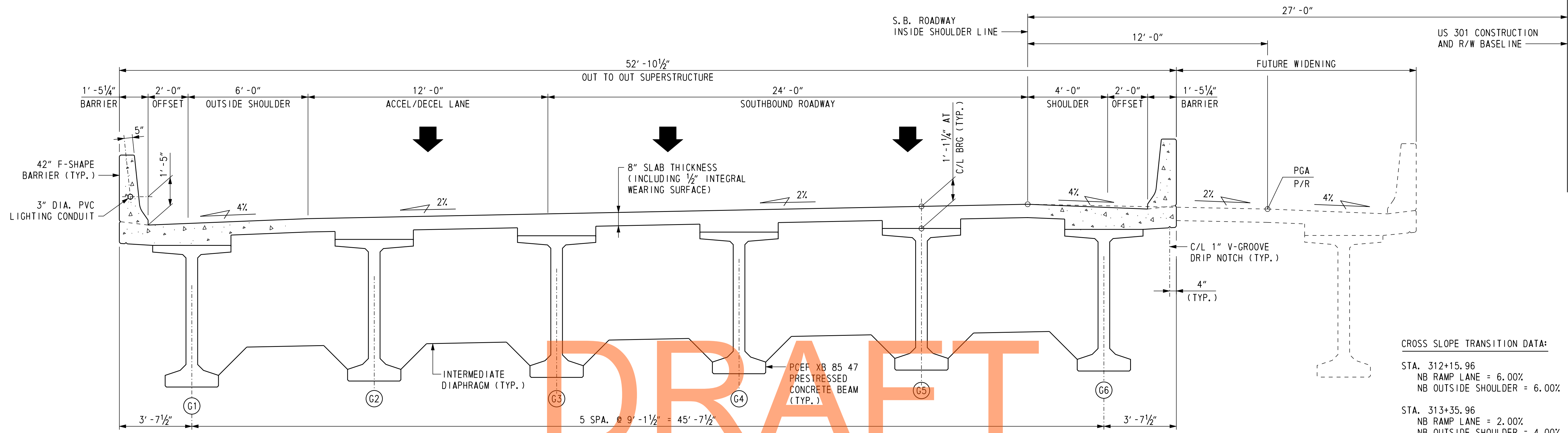
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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200511303	BRIDGE NO. 1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY GEOMETRIC LAYOUT	SHEET NO. 446
				COUNTY NEW CASTLE		DESIGNED BY: J. S. LI

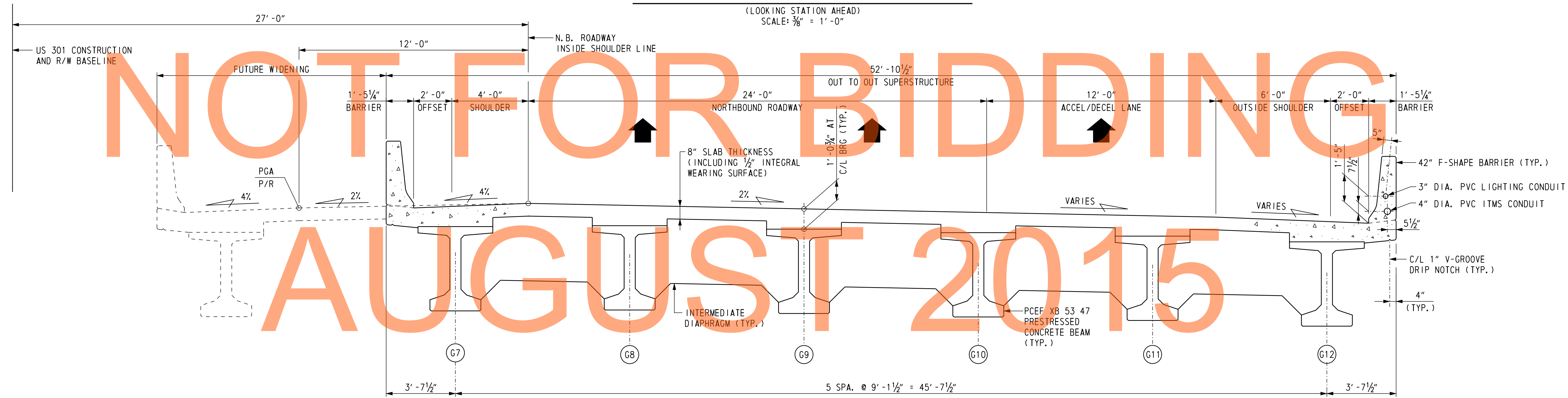
1-477 FT-2



CROSS SLOPE TRANSITION DATA:

STA. 312+15.96	NB RAMP LANE = 6.00%	NB OUTSIDE SHOULDER = 6.00%
STA. 313+35.96	NB RAMP LANE = 2.00%	NB OUTSIDE SHOULDER = 4.00%

TYPICAL SOUTHBOUND ROADWAY SECTION
(LOOKING STATION AHEAD)
SCALE: 3/8" = 1'-0"



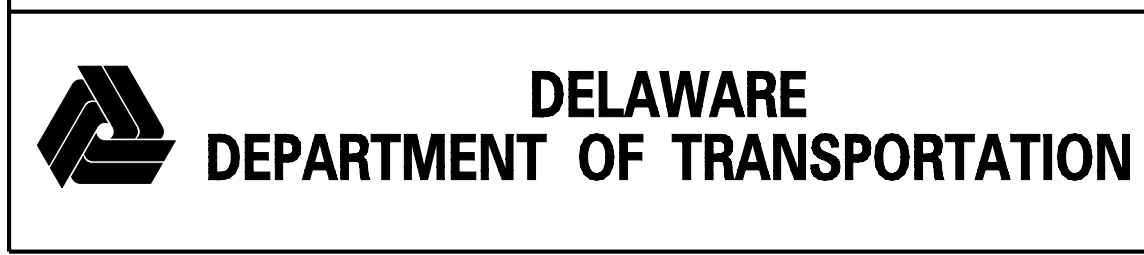
- CROSS REFERENCE NOTES:
- FOR FRAMING PLAN, SEE DWG. 1-477 FR-1 & 1-477 FR-2.
 - FOR DECK AND BARRIER REINFORCEMENT, SEE DWGS. 1-477 DK-2 THRU 1-477 DK-5.
 - FOR LOCATION OF CONDUITS AND JUNCTION BOXES, SEE DWG. L1-03 & L1-08. FOR ITMS AND LIGHTING CONDUITS, JUNCTION BOX DETAILS FOR LIGHTING CONDUITS, AND CONDUIT EXPANSION JOINT DETAILS, SEE DWG. L1-30. INSTALLATION OF CONDUITS, CONDUIT EXPANSION JOINTS AND JUNCTION BOXES SHALL BE INCIDENTAL TO ITEM 602017, PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A.

TYPICAL NORTHBOUND ROADWAY SECTION
(LOOKING STATION AHEAD)
SCALE: 3/8" = 1'-0"

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ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

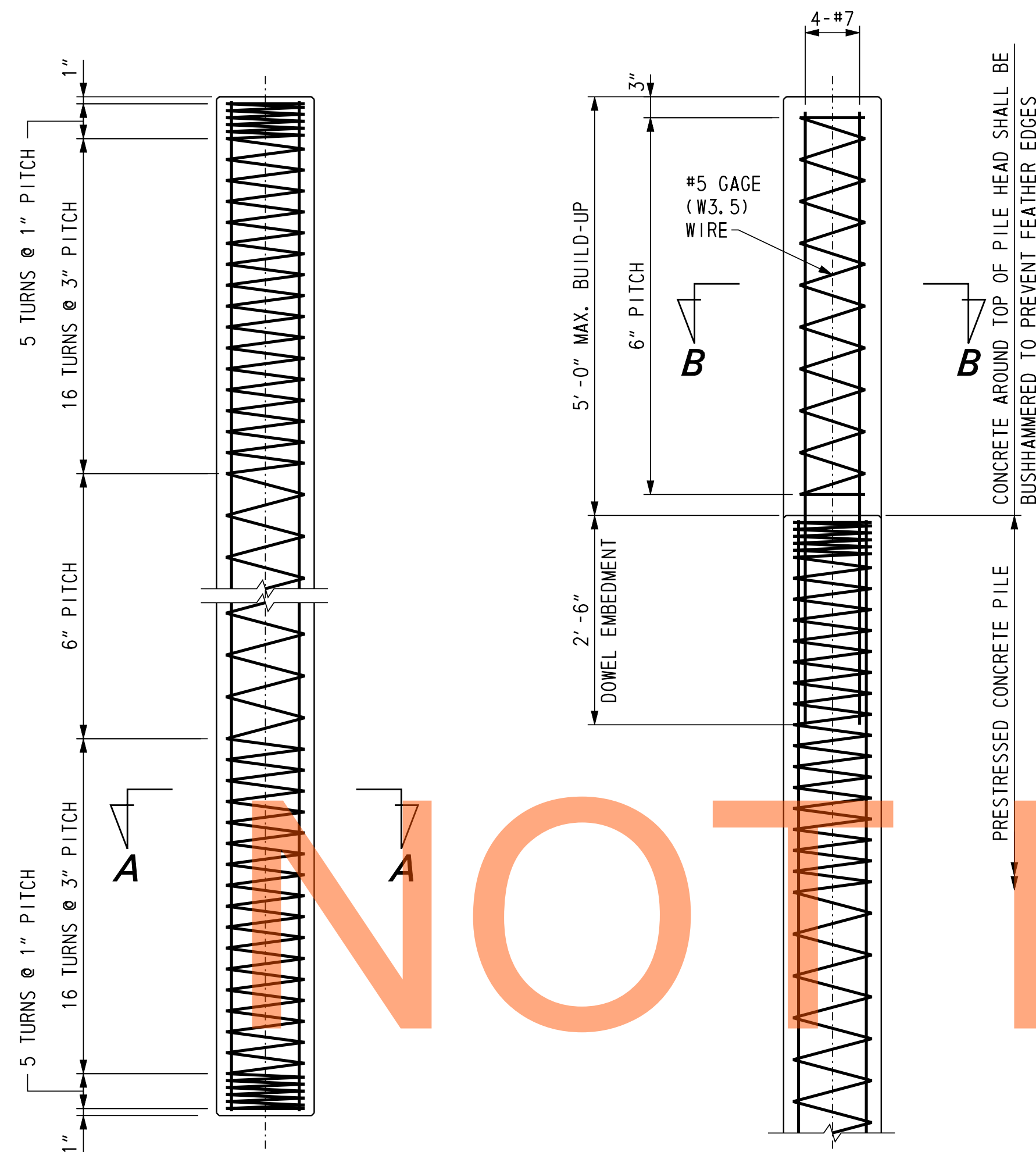
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
TYPICAL SECTION**

1-477 TS-1
SHEET NO.
447
TOTAL SHTS.
1256

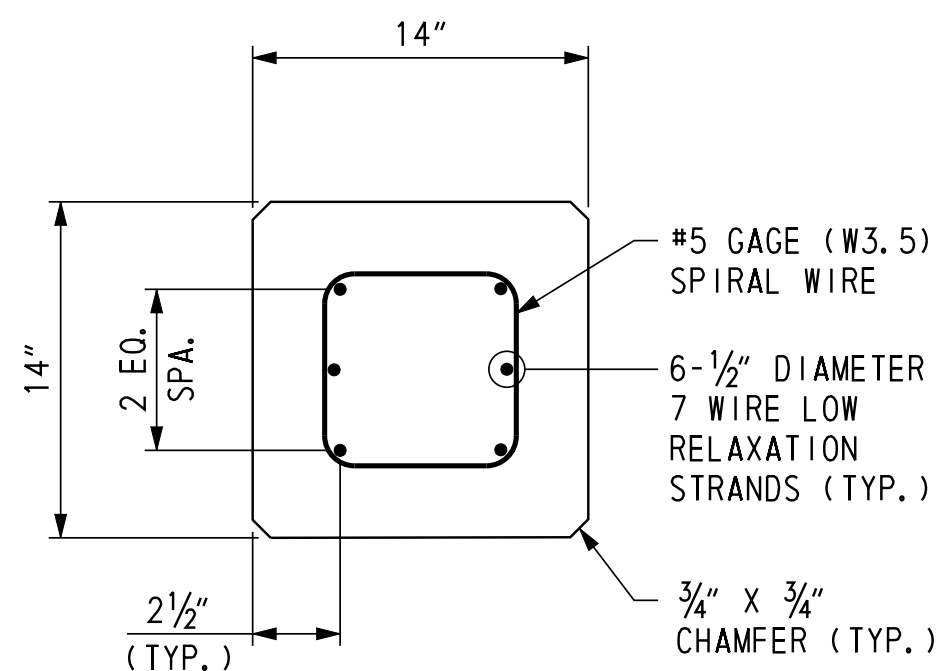
PILE PICK-UP NOTES:

- UNLESS SPECIAL LIFTING DEVICES ARE ATTACHED FOR PICK-UP, PICK-UP POINTS SHALL BE PLAINLY MARKED ON ALL PILES AFTER REMOVAL OF THE FORMS. THE PILE SHALL BE SUPPORTED ONLY AT THE INDICATED PICK-UP POINTS WHILE BEING STORED OR HANDLED.
- THE USE OF PROPER RIGGING IS REQUIRED TO INSURE THAT THE PICK-UP POINTS REMAIN IN A STRAIGHT LINE DURING LIFTING AND WHEN POSITIONING THE PILE FOR DRIVING.
- THE USE OF SPECIAL EMBEDDED OR ATTACHED LIFTING DEVICES, THE USE OF OTHER PICK-UP LOCATIONS OR ANY OTHER METHOD OF PICK-UP SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

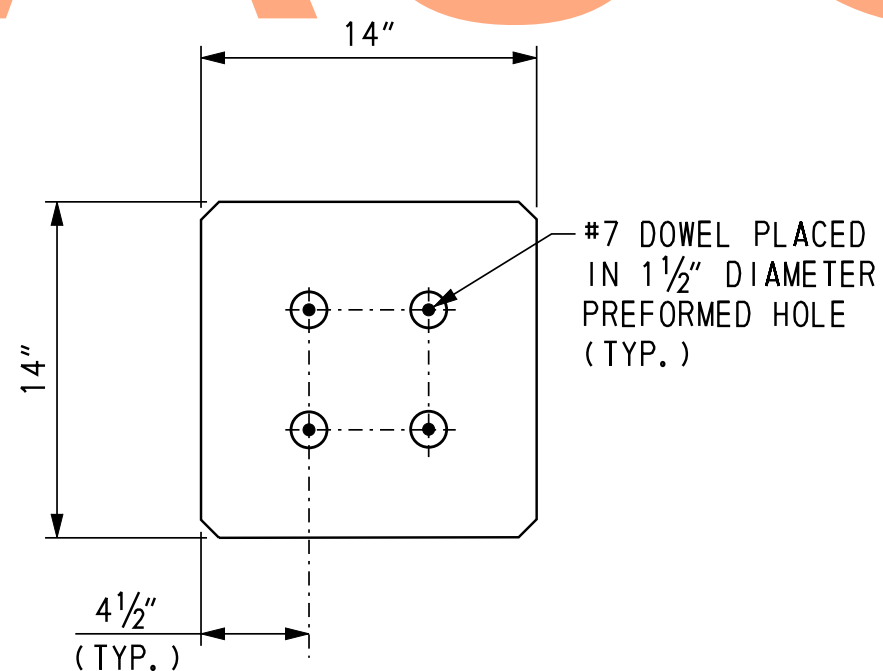


14" SQUARE PRESTRESSED CONCRETE PILE
SCALE: 3/4" = 1'-0"

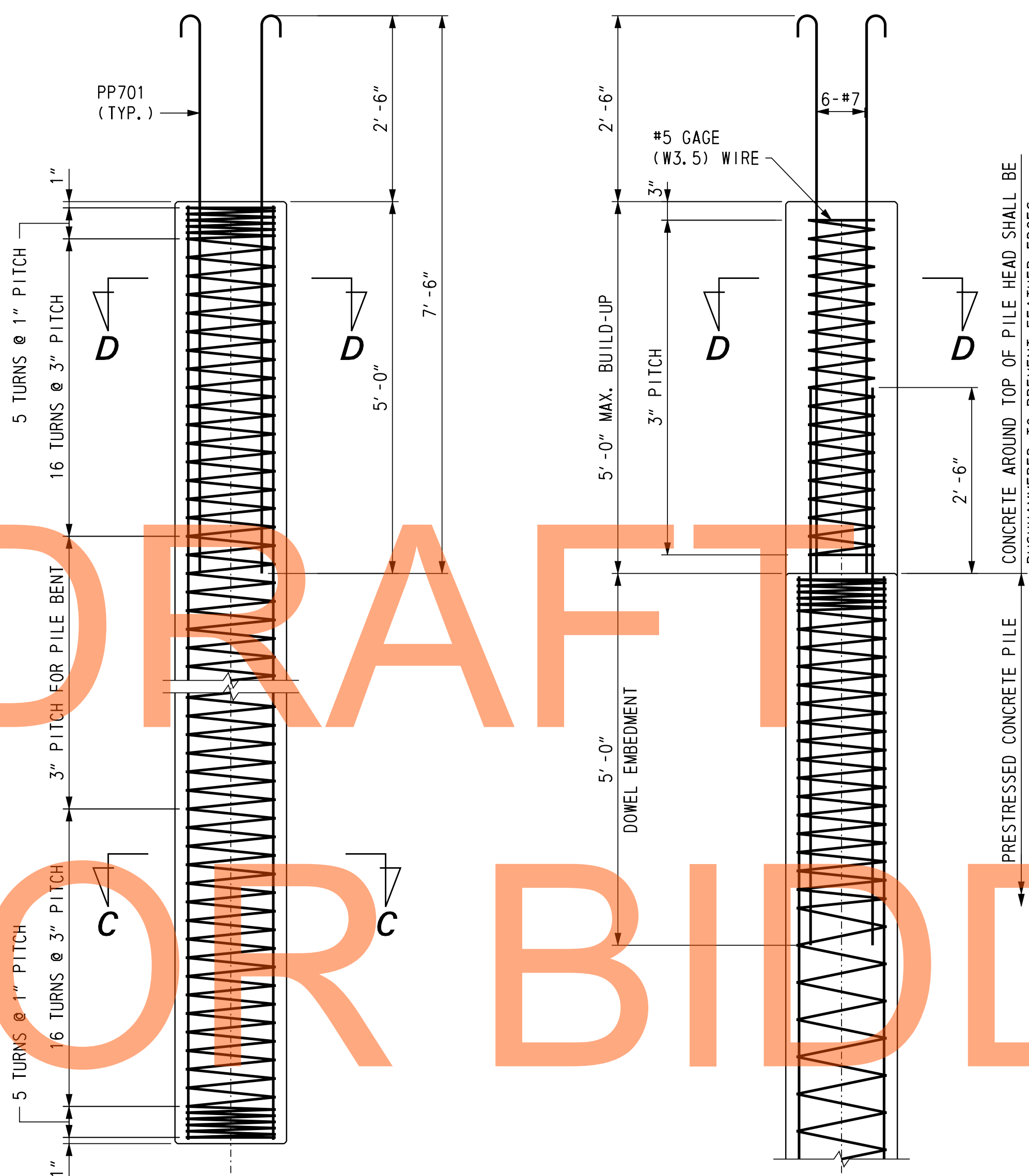
14" SQUARE PILE BUILD-UP DETAIL
SCALE: 3/4" = 1'-0"



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

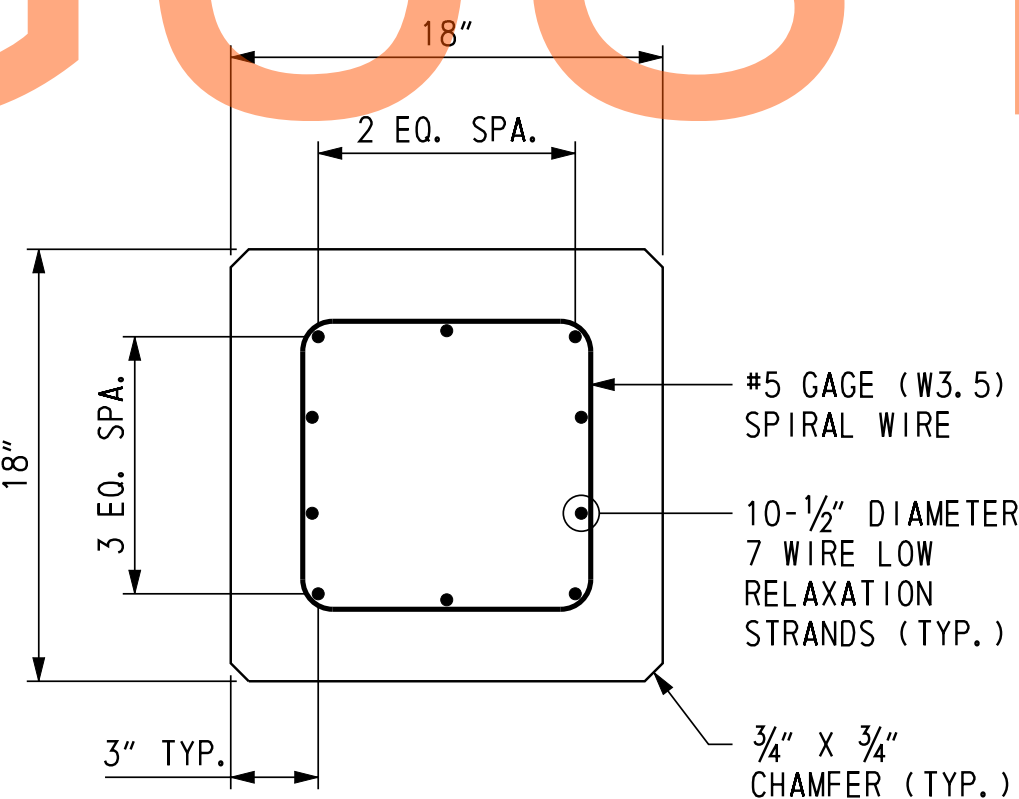


SECTION B-B
(STRANDS AND SPIRALS NOT SHOWN)
SCALE: 1 1/2" = 1'-0"

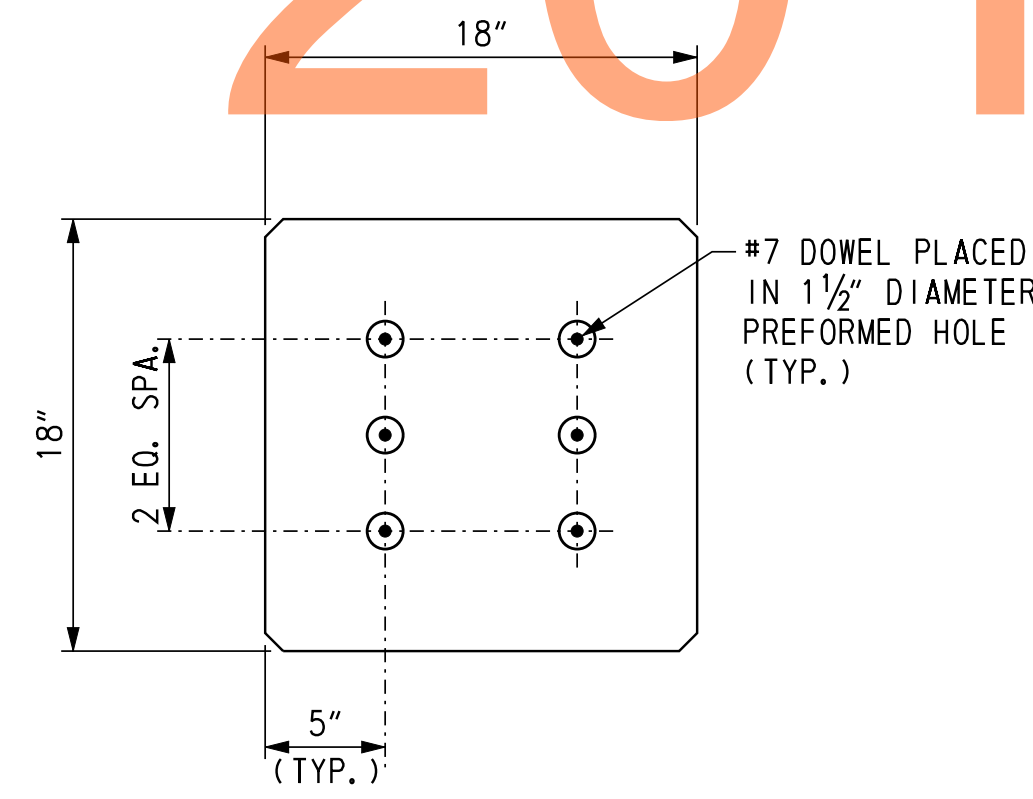


18" SQUARE PRESTRESSED CONCRETE PILE
SCALE: 3/4" = 1'-0"

18" SQUARE PILE BUILD-UP DETAIL
SCALE: 3/4" = 1'-0"



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



SECTION D-D
(STRANDS AND SPIRALS NOT SHOWN)
SCALE: 1 1/2" = 1'-0"

NOTES:

- ALL PILES SHALL BE 14" X 14" OR 18" X 18" PRECAST PRESTRESSED CONCRETE PILES AS DESIGNATED ON THE FOUNDATION PLANS. PILES SHALL NOT BE COATED.
- THE MINIMUM COMPRESSIVE STRENGTH FOR THE PRESTRESSED CONCRETE PILES AT THE AGE OF 28 DAYS SHALL BE $f_c' = 6000$ PSI. THE MINIMUM COMPRESSIVE STRENGTH AT TIME OF TRANSFER SHALL BE $f_c' = 4800$ PSI.
- ALL PRESTRESSING STRANDS SHALL MEET THE REQUIREMENTS OF ASTM A416, GRADE 270, LOW RELAXATION. STRANDS SHALL BE ONE HALF (1/2) INCH DIAMETER AND SHALL HAVE AN ULTIMATE STRENGTH OF 41,300 LBS. CUT STRANDS FLUSH WITH PILE HEAD AND PILE TIP.
- SPIRAL TIES SHALL BE #5 GAGE STEEL WIRE CONFORMING TO THE REQUIREMENTS OF ASTM A82.
- WHEN PILES ARE EXPOSED SUCH AS IN PILE BENTS, THE SPIRAL TIES AND PILE HEAD DOWELS SHALL BE EPOXY COATED.
- THE SPLICING OF PRESTRESSED PRECAST CONCRETE PILES SHALL NOT BE PERMITTED.
- PROVIDE 1 1/2" DIAMETER PREFORMED HOLES IN PILE HEAD AT THE DOWEL LOCATIONS. DOWELS SHALL BE GROUTED IN PLACE WITH AN APPROVED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF $f_c' = 6000$ PSI. THE CONTRACTOR SHALL SUBMIT A GROUT PLACEMENT PROCEDURE FOR APPROVAL, INCLUDING A METHOD FOR REMOVING WATER AND DEBRIS FROM THE HOLES PRIOR TO GROUTING.
- DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN A ONE INCH CLEAR DISTANCE FROM ALL PRESTRESSING STRANDS IN THE PILE.
- ALL TEST PILES SHALL BE TEN (10) FEET LONGER THAN THE PRODUCTION PILE LENGTH INDICATED ON PILE INSTALLATION DATA TABLE.
- ALL PILES SHALL BE DRIVEN TO THE NOMINAL PILE DRIVING RESISTANCE LISTED IN THE PILE INSTALLATION DATA TABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE NET CROSS-SECTIONAL AREA SHALL BE CONSIDERED IN THE WAVE EQUATION ANALYSIS. THE WAVE EQUATION AND HIGH-STRAIN DYNAMIC PILE TESTING MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- UPON COMPLETION OF THE HIGH-STRAIN DYNAMIC PILE TESTING, THE CONTRACTOR SHALL SUBMIT A SIGNAL MATCHING ANALYSIS TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- TO MINIMIZE THE EFFECT OF DOWNDRAG ON THE ABUTMENT PILES, THE APPROACH ROADWAY FILL SHALL BE PLACED PRIOR TO CONSTRUCTION OF THE ABUTMENT FOUNDATION. A MINIMUM QUARANTINE PERIOD OF THIRTY (30) DAYS SHALL BE REQUIRED AFTER THE FULL HEIGHT OF THE APPROACH ROADWAY FILL IS ACHIEVED.
- ABUTMENT PILES MAY NOT BE DRIVEN UNTIL AFTER THE COMPLETION OF THE THIRTY (30) DAY QUARANTINE PERIOD, UNLESS NOTED BELOW FOR TEST PILES.
- THE ENGINEER SHALL APPROVE THE COMPLETION OF THE WAITING PERIOD, BASED ON THE RESULTS OF INSTRUMENTATION.
- TEST PILES MAY BE DRIVEN PRIOR TO PLACING EMBANKMENT AND SURCHARGE MATERIAL. RESTRIKES OF THESE TEST PILES SHALL BE PERFORMED PRIOR TO PLACING EMBANKMENT IN ACCORDANCE WITH ITEM 619502-TEST PILE RESTRIKE. AFTER THE SETTLEMENT HAS BEEN ACHIEVED AND THE SUBSTRUCTURE HAS BEEN RELEASED BY THE ENGINEER, PRODUCTION PILES MAY BE INSTALLED. AT THIS POINT, THE TEST PILE SHALL BE ACTING AS A PRODUCTION PILE AND IT SHALL BE RE-STRUCK PRIOR TO PLACING ANY OTHER PRODUCTION PILES WITH PAYMENT UNDER ITEM 619501-PRODUCTION PILE RESTRIKE.
- SEE THE SPECIAL PROVISIONS 202505 AND 202518 FOR SETTLEMENT MONITORING REQUIREMENTS.
- PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY TEST PILES. A MINIMUM OF ONE PILE PER SUBSTRUCTURE, AS SHOWN ON THE PLANS, SHALL BE DYNAMICALLY TESTED WITH SIGNAL MATCHING ANALYSIS BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISION 619519 AND 619539. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID AS FOLLOWS:
 - ALL TEST PILE(S) 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 (5) WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE. IF TEST PILE RESTRIKES ARE REQUESTED AFTER THE FIVE (5) WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE THEN THE TEST PILE RESTRIKE SHALL BE PAID AS NOTED IN SPECIAL PROVISION 619502.
 - IF DIRECTED BY THE ENGINEER TO RESTRIKE A PRODUCTION PILE, THE RESTRIKE OF THE PRODUCTION PILE SHALL BE PAID SEPARATELY UNDER ITEM NO. 619501.
 - DELDOT STANDARD SPECIFICATION 619.11(a)(6) SHALL BE MODIFIED BY REFERENCE TO SPECIAL PROVISION 619519 AND 619539.
- THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC TESTING OF RESTRIKES.

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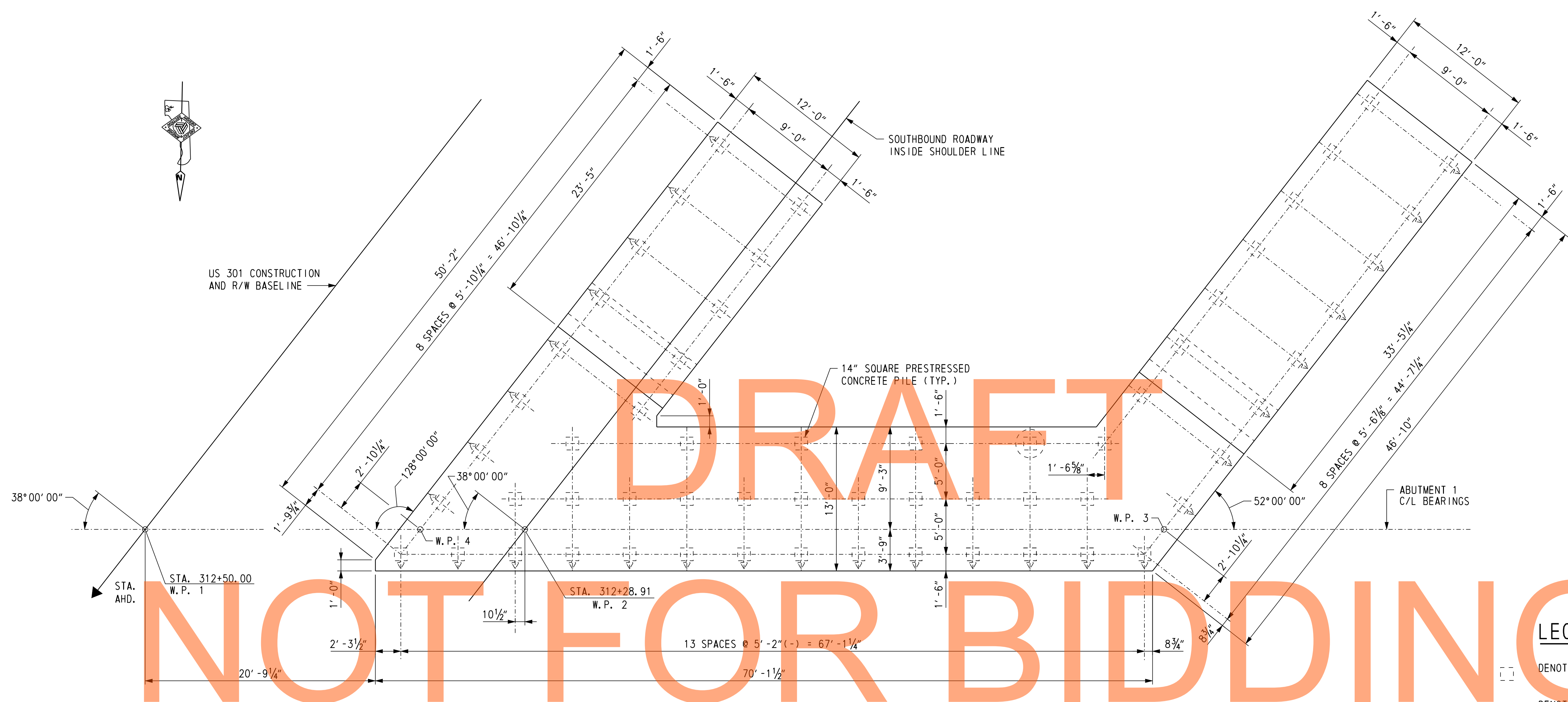
ADDENDUMS / REVISIONS	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
PRESTRESSED
CONCRETE PILE DETAILS

1-477N-PL-1	SHEET NO.	448
	TOTAL SHTS.	1256



ABUTMENT 1 SOUTHBOUND ROADWAY PILE PLAN

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

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LEGEND

- DENOTES PLUMB PILE
- DENOTES PILE BATTERED 1:4 AND DIRECTION OF BATTER
- DENOTES TEST PILE

NOTE:
TEST PILE SHALL BE TEN (10) FEET LONGER THAN THE PRODUCTION PILE LENGTH INDICATED IN THE PILE INSTALLATION DATA TABLE.

SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	NOMINAL PILE DRIVING RESISTANCE (KIPS)	MINIMUM PILE TIP ELEVATION	ESTIMATED PILE TIP ELEVATION	AVERAGE MINIMUM TIP ELEVATION	AVERAGE MAXIMUM TIP ELEVATION
ABUTMENT 1	400.0	-11.0	-16.0		
ABUTMENT 2	400.0	-11.0	-16.0		

ABUTMENT 1 PILE DRIVING INFORMATION

PILE SIZE AND TYPE: _____

ACTUAL BEARING OBTAINED: _____

HAMMER TYPE: _____

PILE HAMMER ENERGY: _____

SPECIAL DRIVING CONDITIONS AND COMMENTS: _____

ABUTMENT 2 PILE DRIVING INFORMATION

PILE SIZE AND TYPE: _____

ACTUAL BEARING OBTAINED: _____

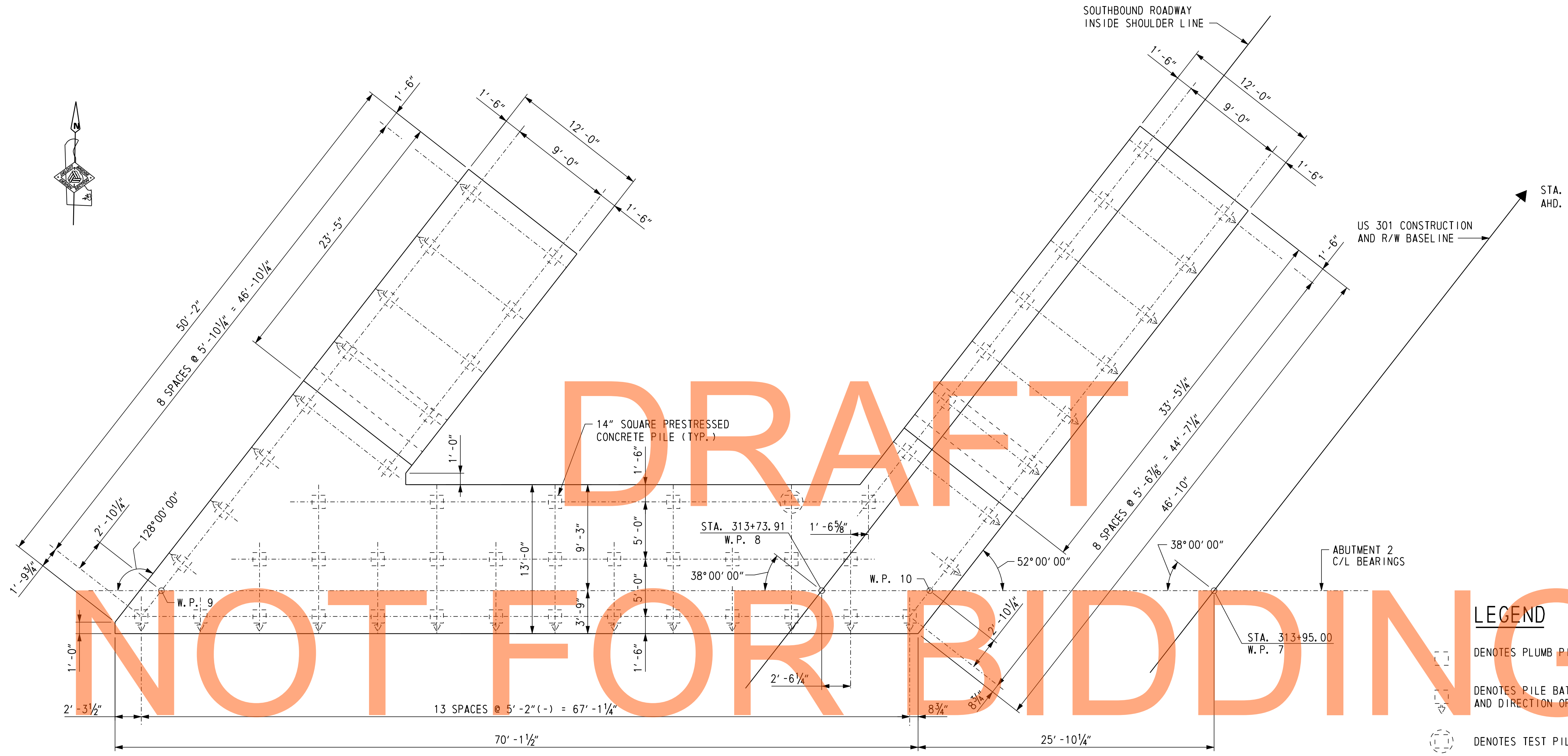
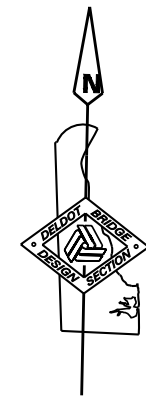
HAMMER TYPE: _____

PILE HAMMER ENERGY: _____

SPECIAL DRIVING CONDITIONS AND COMMENTS: _____

- CROSS REFERENCE NOTES:**
- FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
 - FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
 - FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-6.
 - FOR PILE DETAILS, SEE DWG. 1-477 PL-1.
 - FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-13 THRU 1-477 AB-17.

<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	<p>US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD</p>	CONTRACT	BRIDGE NO.	<p>US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 1 SB ROADWAY PILE PLAN</p>	SHEET NO.
			T200511303	1-477N&S		449
			COUNTY	DESIGNED BY: J. S. LI		TOTAL SHTS.
			NEW CASTLE	CHECKED BY: W. A. O'CONNOR		1256






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ABUTMENT 2 SOUTHBOUND ROADWAY PILE PLAN

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

LEGEND

-  DENOTES PLUMB PILE
-  DENOTES PILE BATTERED 1:4 AND DIRECTION OF BATTER
-  DENOTES TEST PILE

NOTE:

TEST PILE SHALL BE TEN (10) FEET LONGER THAN THE PRODUCTION PILE LENGTH INDICATED IN THE PILE INSTALLATION DATA TABLE.

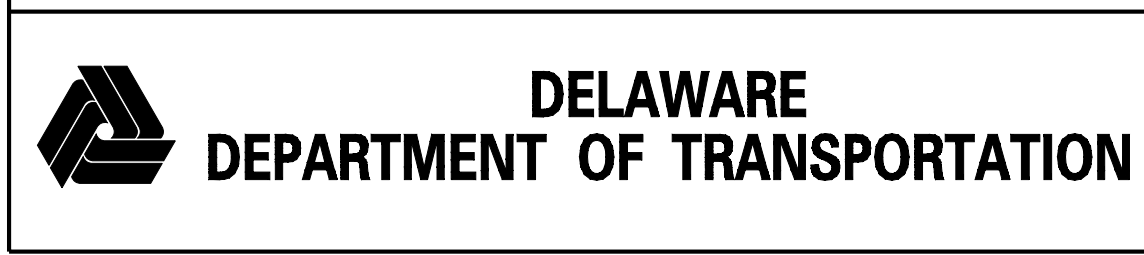
CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
3. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-6.
4. FOR PILE DETAILS, SEE DWG. 1-477 PL-1.
5. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-18 THRU 1-477 AB-22.

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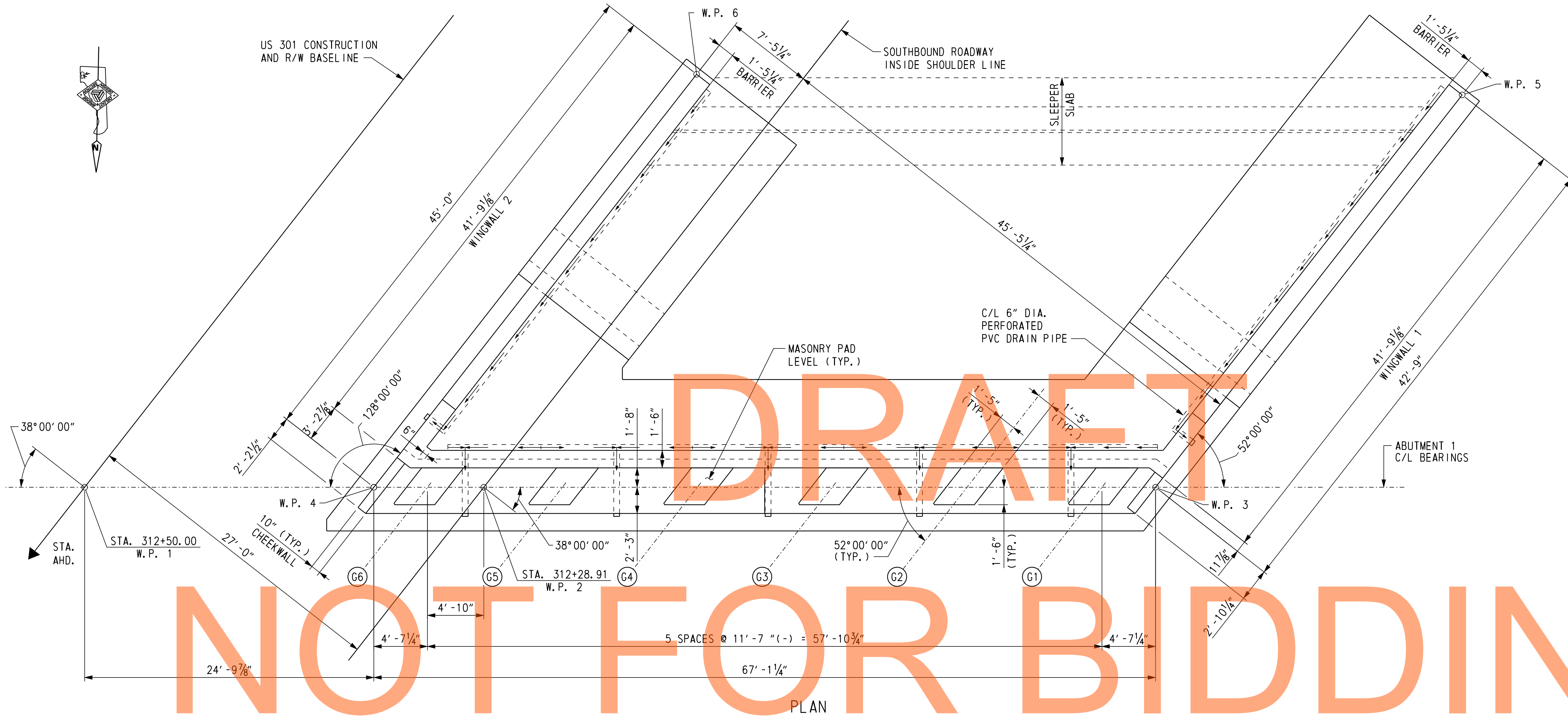
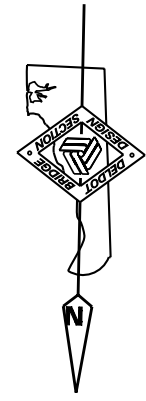
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

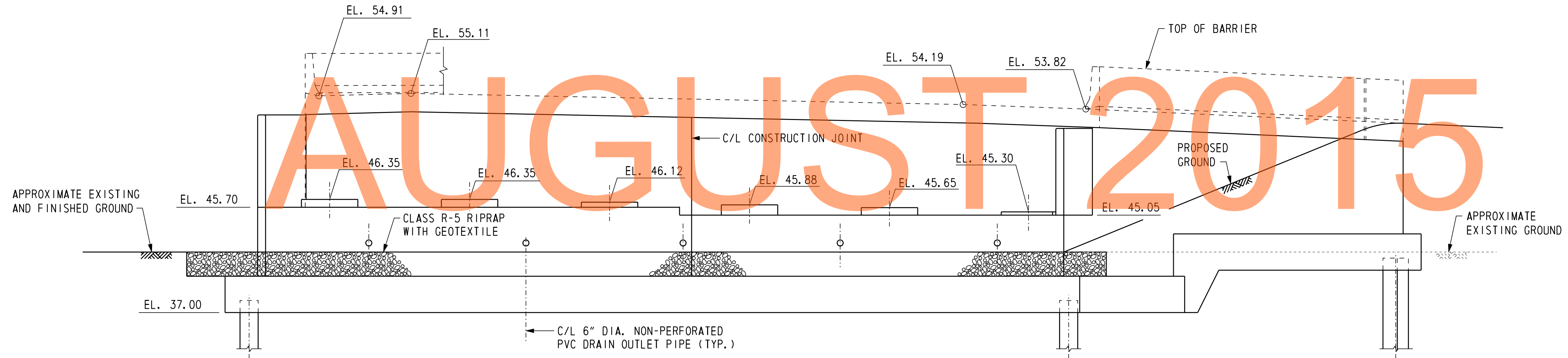
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 SB ROADWAY
PILE PLAN**

1-477 AB-2
SHEET NO.
450
TOTAL SHTS.
1256



PLAN



ELEVATION

ABUTMENT 1 - SOUTHBOUND ROADWAY

(LOOKING BACK STATION)
SCALE: 3/8" = 1'-0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

NOTES:

1. BEAM SEAT STEPS MIDWAY BETWEEN GIRDERS. BEAM SEAT ELEVATIONS ARE AT FRONT FACE OF BACKWALL.
2. BACKWALL ELEVATIONS SHOWN ARE TOP OF DECK AT FRONT FACE OF BACKWALL.

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
2. FOR GEOMETRIC LAYOUT, SEE DWG. 1-477 FT-1.
3. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-1.
4. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-5.
5. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-6.
6. FOR CONSTRUCTION AND EXPANSION JOINT DETAILS, SEE DWG. 1-447 AB-6.
7. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-13 THRU 1-477 AB-17.

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DELAWARE DEPARTMENT OF TRANSPORTATION

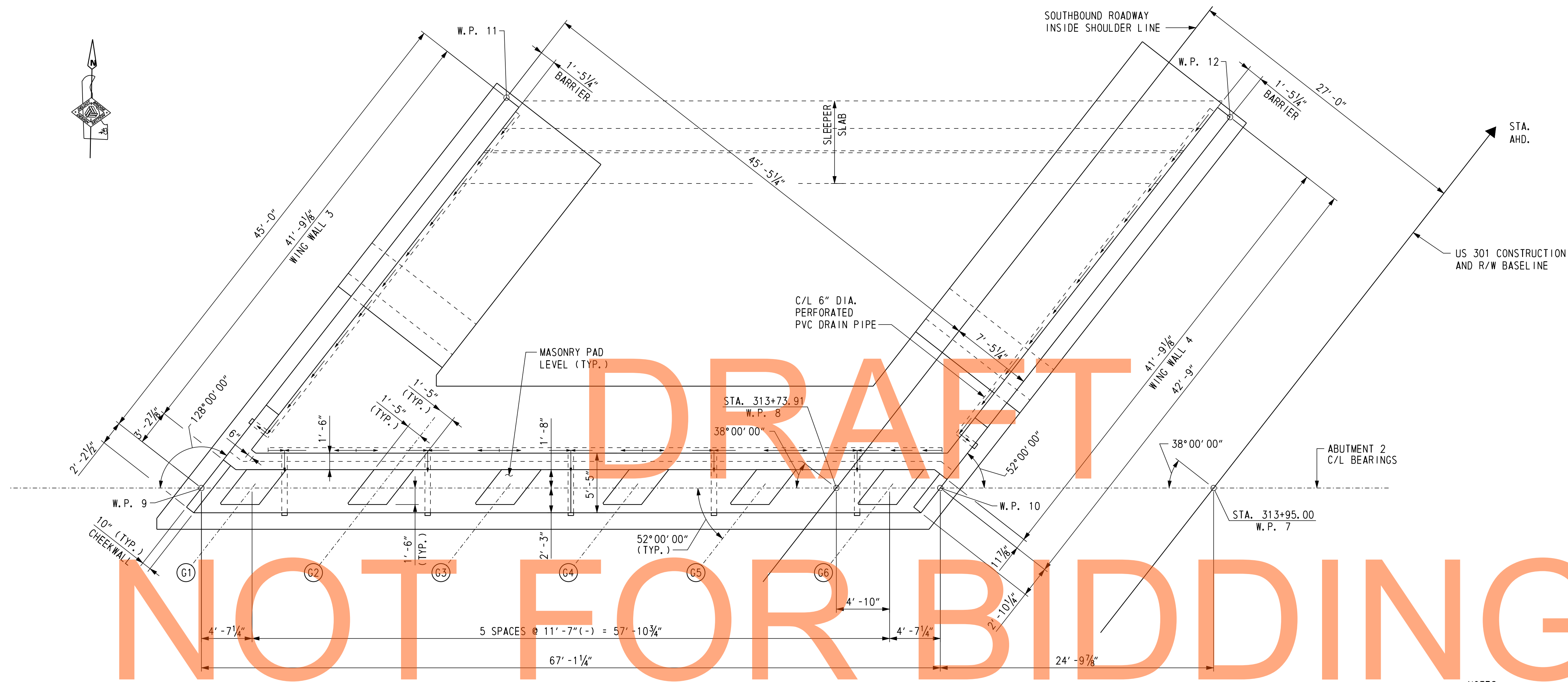
ADDENDUMS / REVISIONS	

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

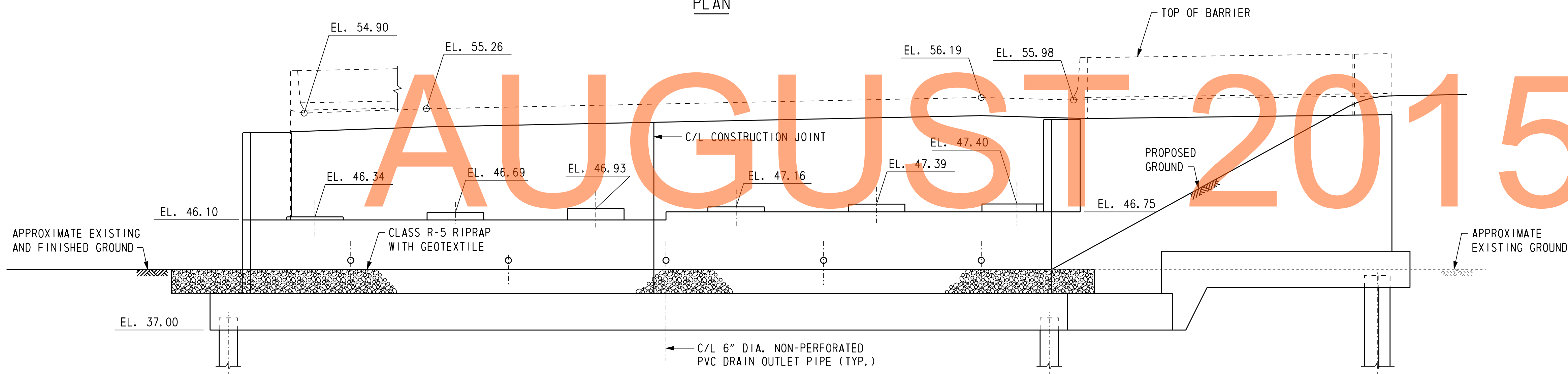
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 1 SB ROADWAY PLAN AND ELEVATION

1-477 AB-3
SHEET NO.
451
TOTAL SHTS.
1256



PLAN



ELEVATION

ABUTMENT 2 - SOUTHBOUND ROADWAY

(LOOKING AHEAD STATION)
SCALE: 3/8" = 1'-0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

NOTES:

1. BEAM SEAT STEPS MIDWAY BETWEEN GIRDERS. BEAM SEAT ELEVATIONS ARE AT FRONT FACE OF BACKWALL.
2. BACKWALL ELEVATIONS SHOWN ARE TOP OF DECK AT FRONT FACE OF BACKWALL.

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
2. FOR GEOMETRIC LAYOUT, SEE DWG. 1-477 FT-1.
3. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-2.
4. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-5.
5. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-6.
6. FOR CONSTRUCTION AND EXPANSION JOINT DETAILS, SEE DWG. 1-447 AB-6.
7. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-18 THRU 1-477 AB-22.

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11/8/2012

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ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

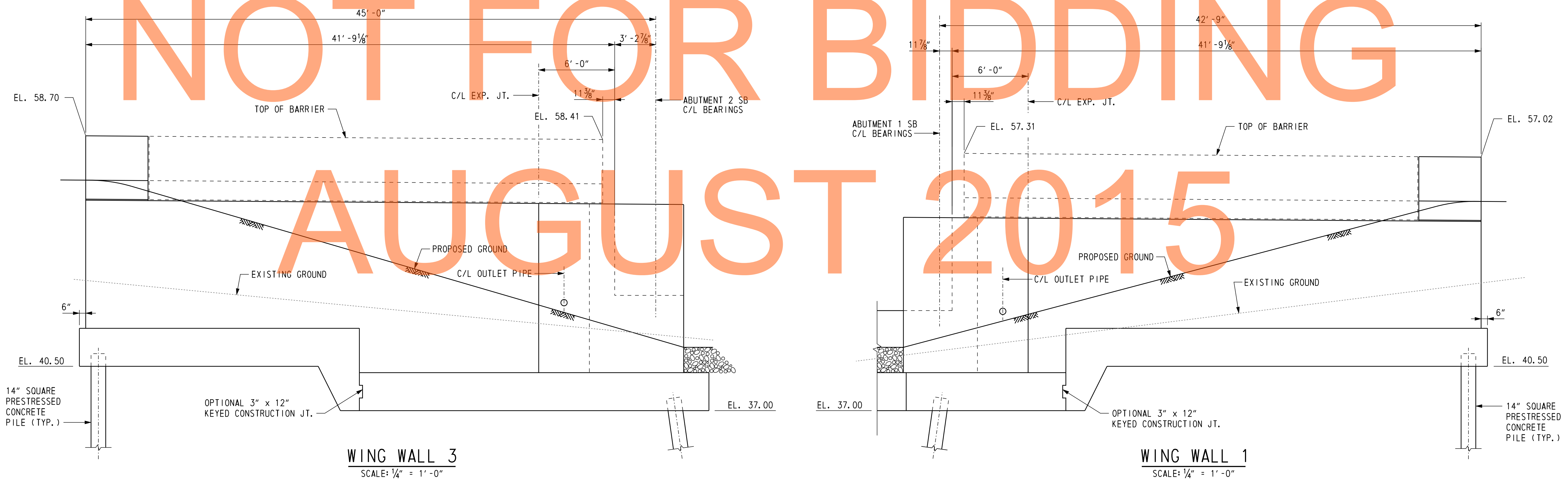
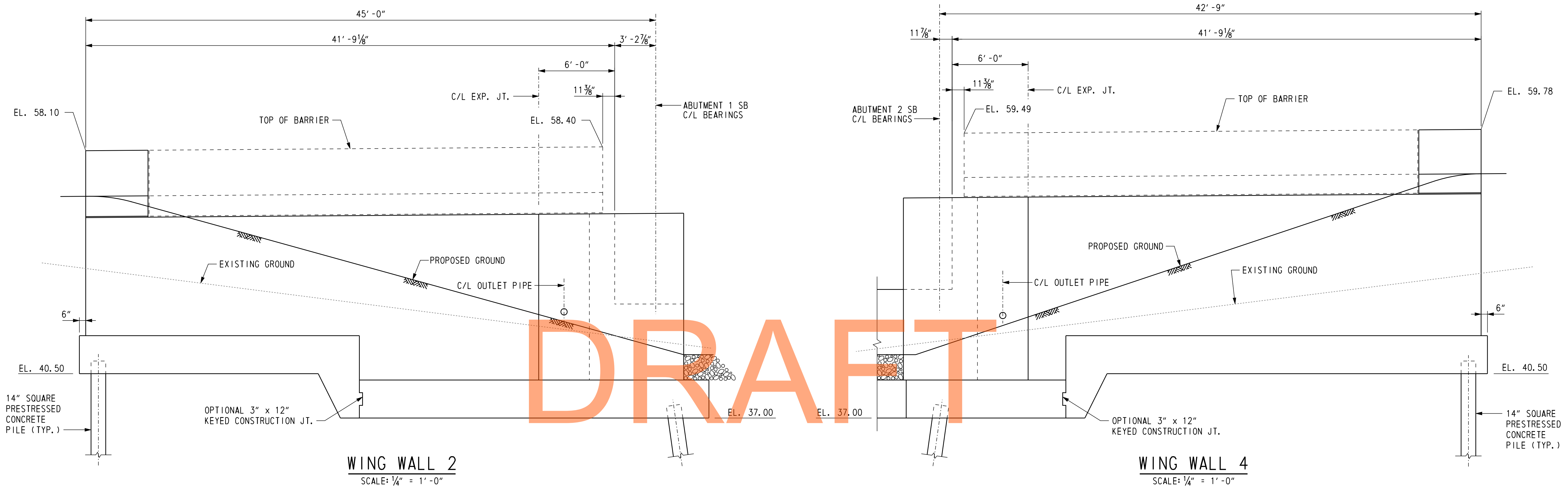
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 SB ROADWAY
PLAN AND ELEVATION**

1-477 AB-4
SHEET NO.
452
TOTAL SHTS.
1256

U:\Projects\AA\21387385\CAD\Bridge\BR2-5\ab05_BR2-5_US301.dgn

11/8/2012

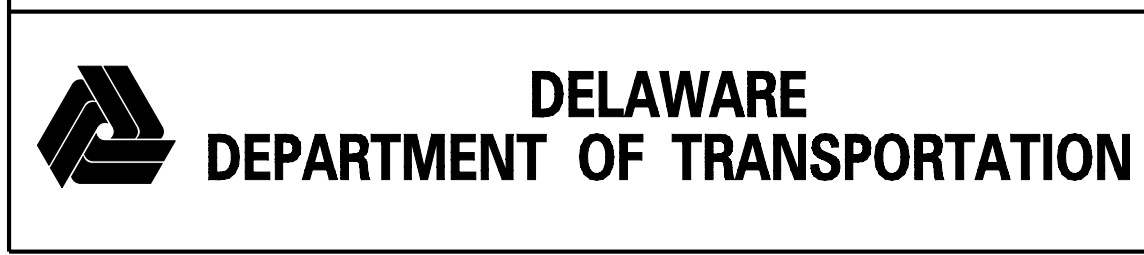
Steve_Lambert



DRAFT

NOT FOR BIDDING

AUGUST 2015



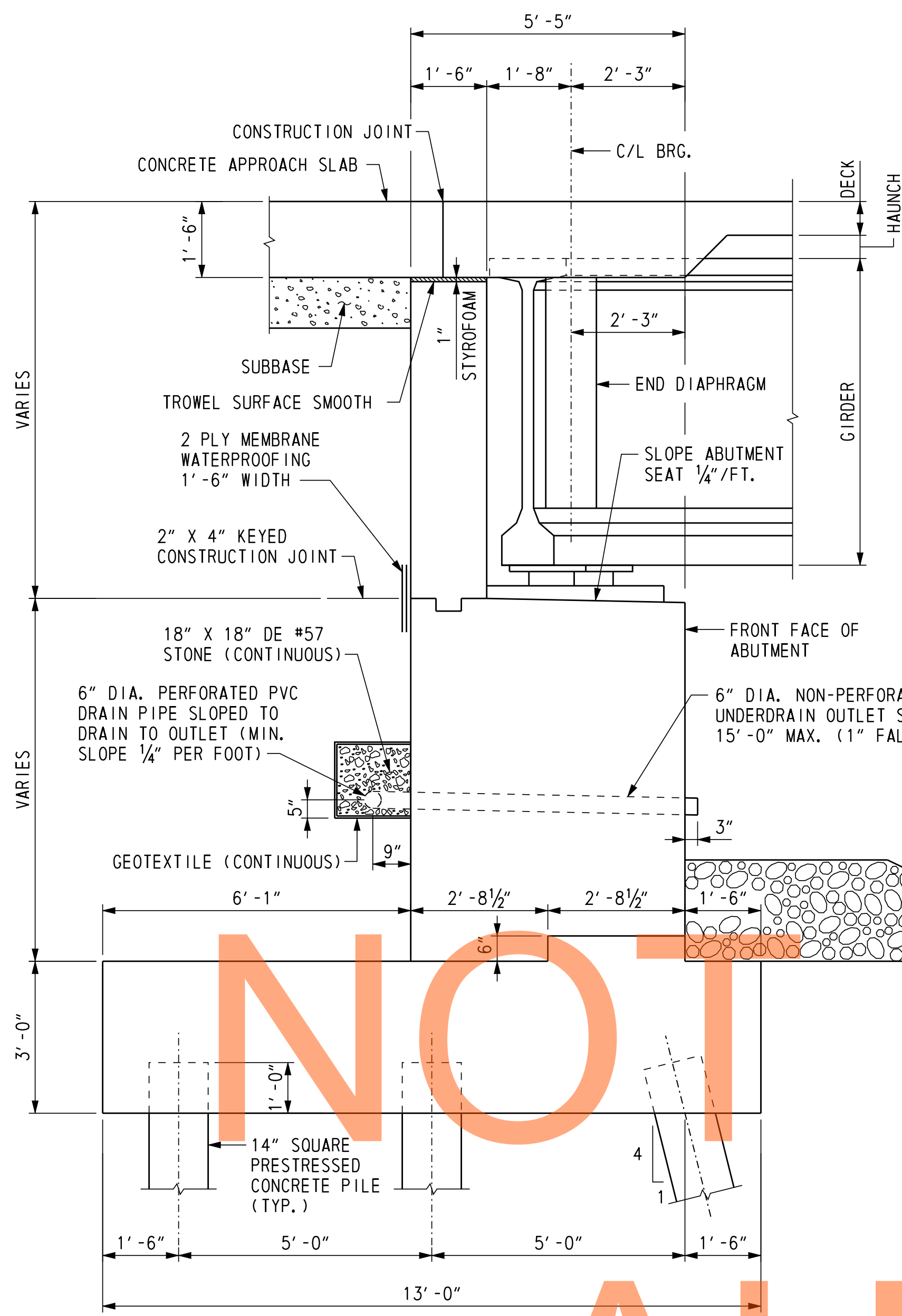
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

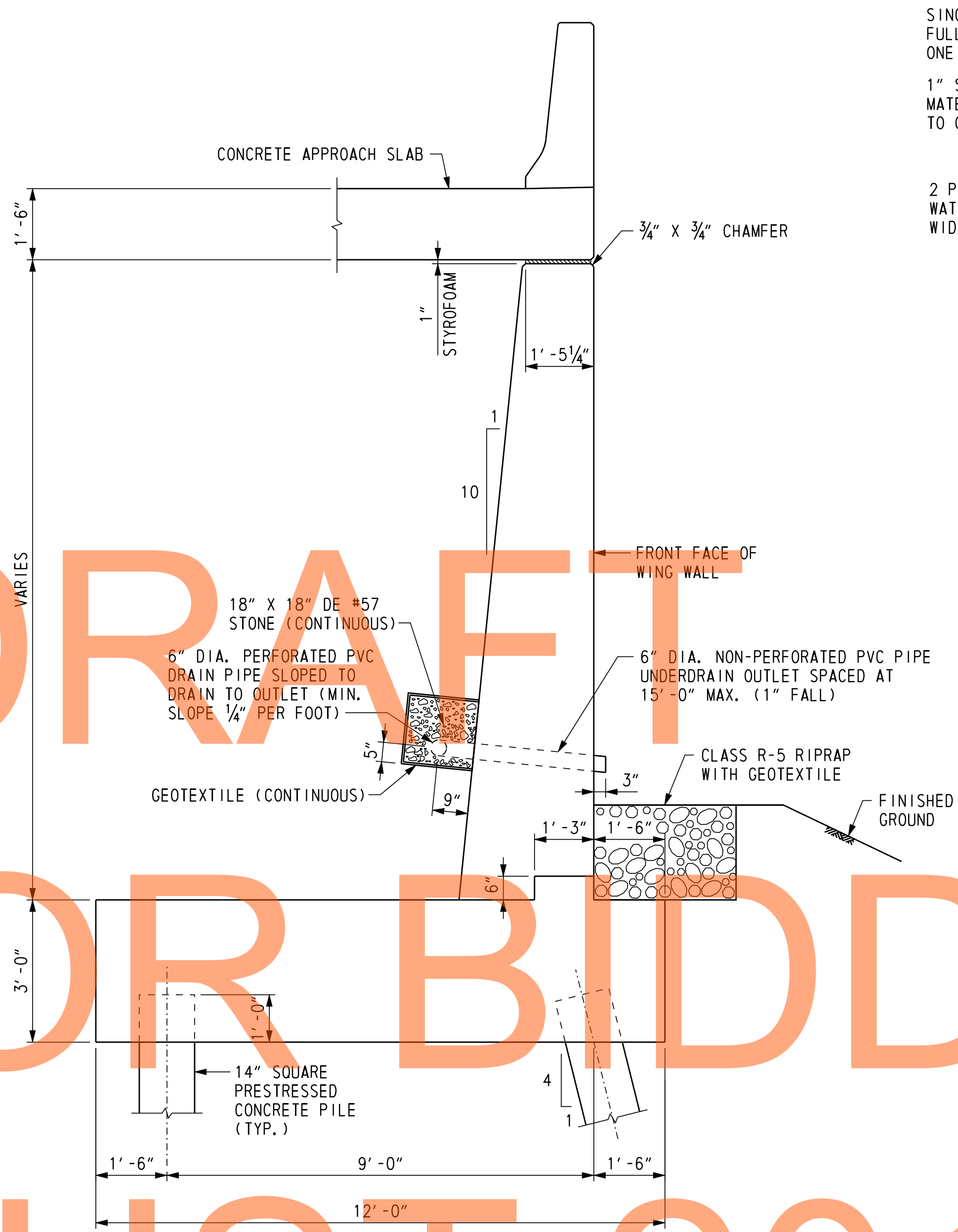
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
SOUTHBOUND ROADWAY
WING WALL ELEVATIONS**

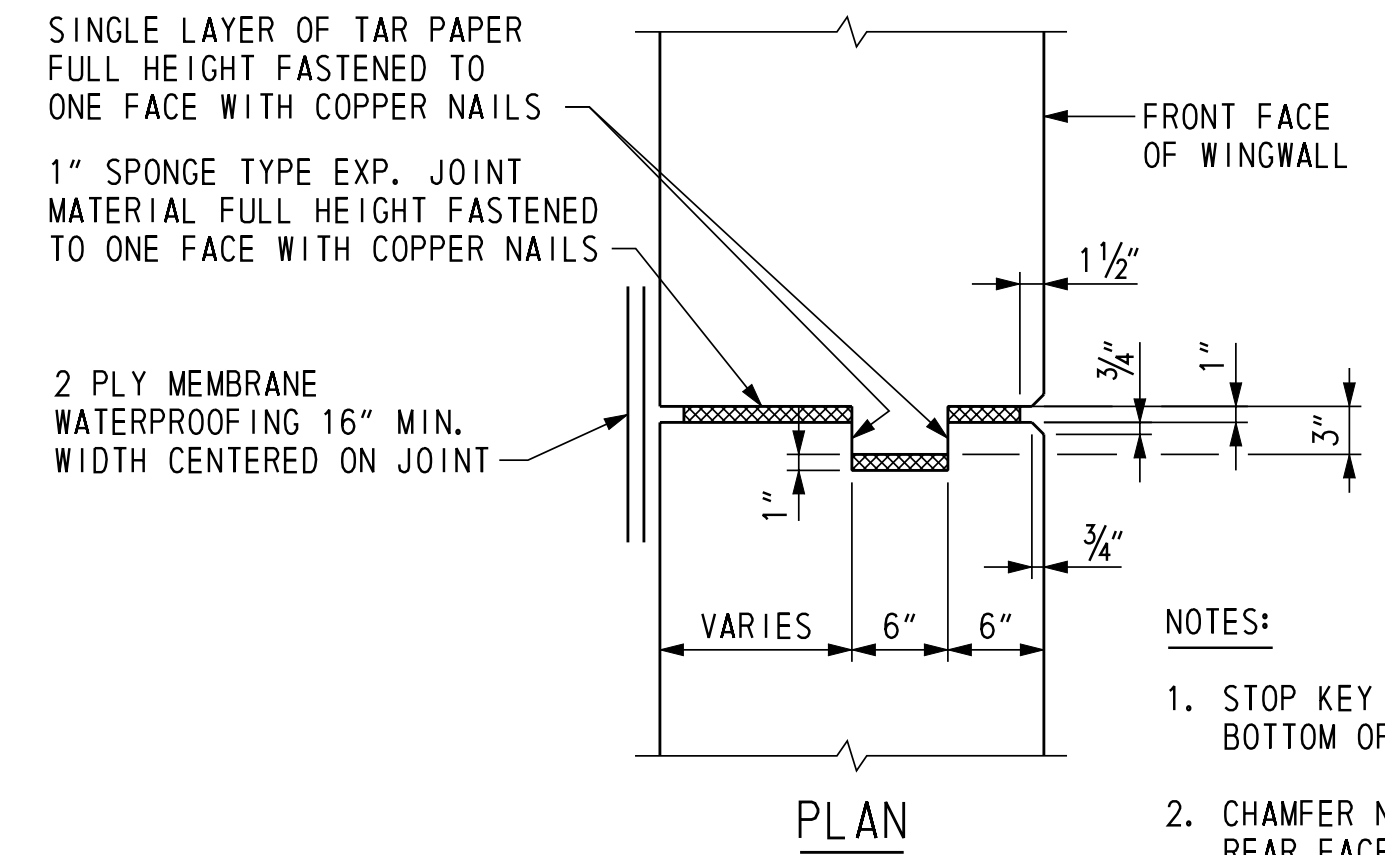
1-477 AB-5
SHEET NO.
453
TOTAL SHTS.
1256



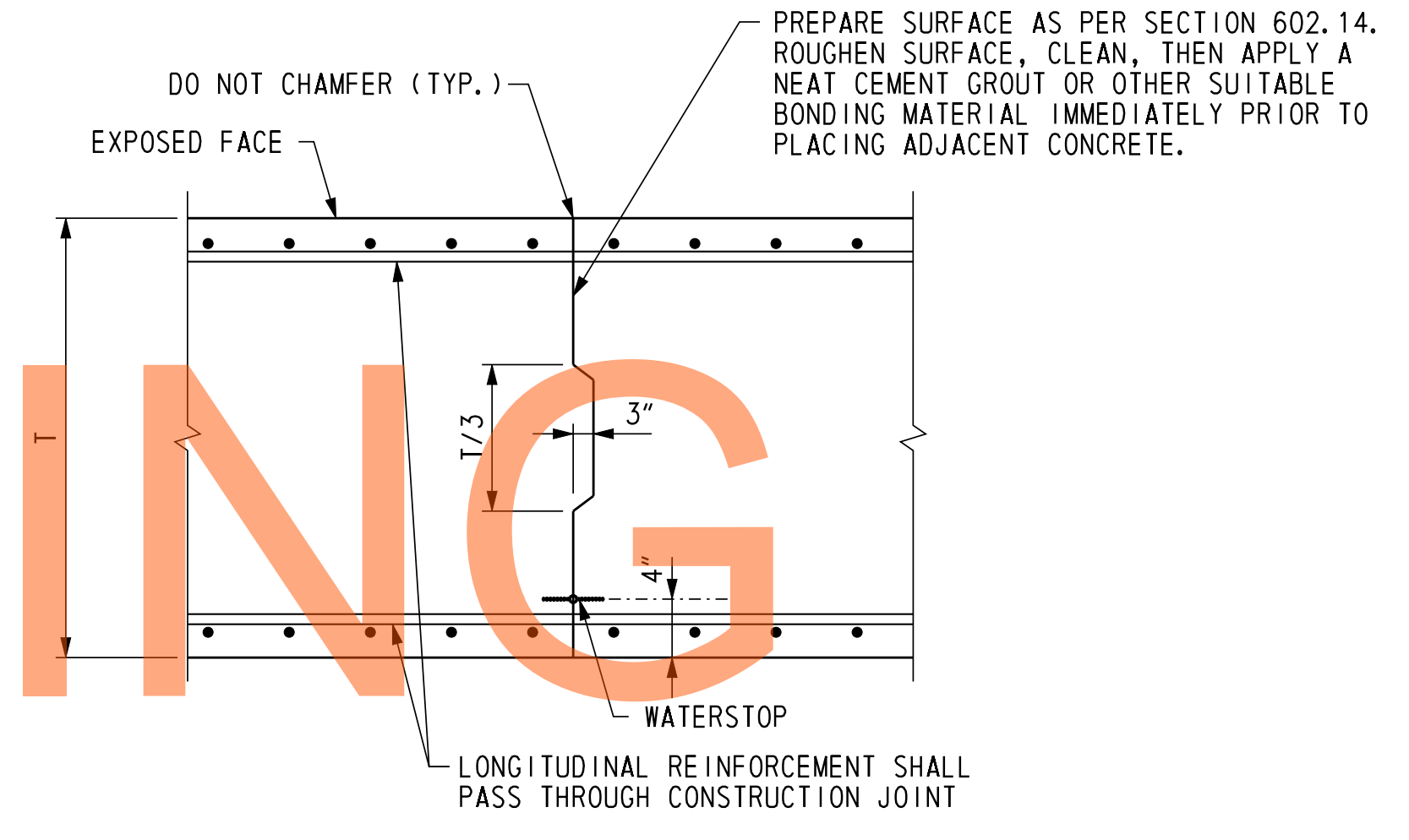
TYPICAL SOUTHBOUND ABUTMENT SECTION
SCALE: 1/2" = 1'-0"



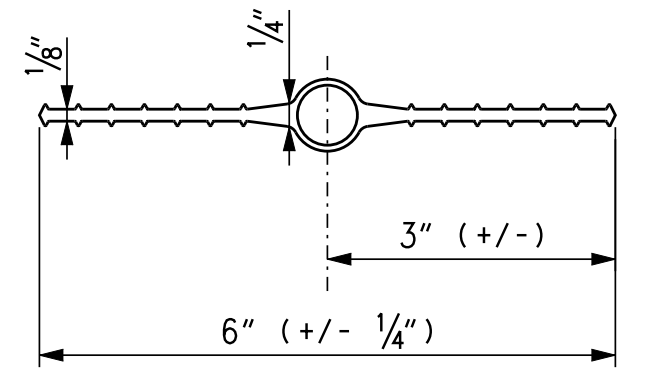
TYPICAL WING WALL SECTION
SCALE: 1/2" = 1'-0"



WINGWALL EXPANSION JOINT DETAIL
SCALE: 1" = 1'-0"



ABUTMENT CONSTRUCTION JOINT DETAIL
NOT TO SCALE



PVC WATERSTOP DETAIL
NOT TO SCALE

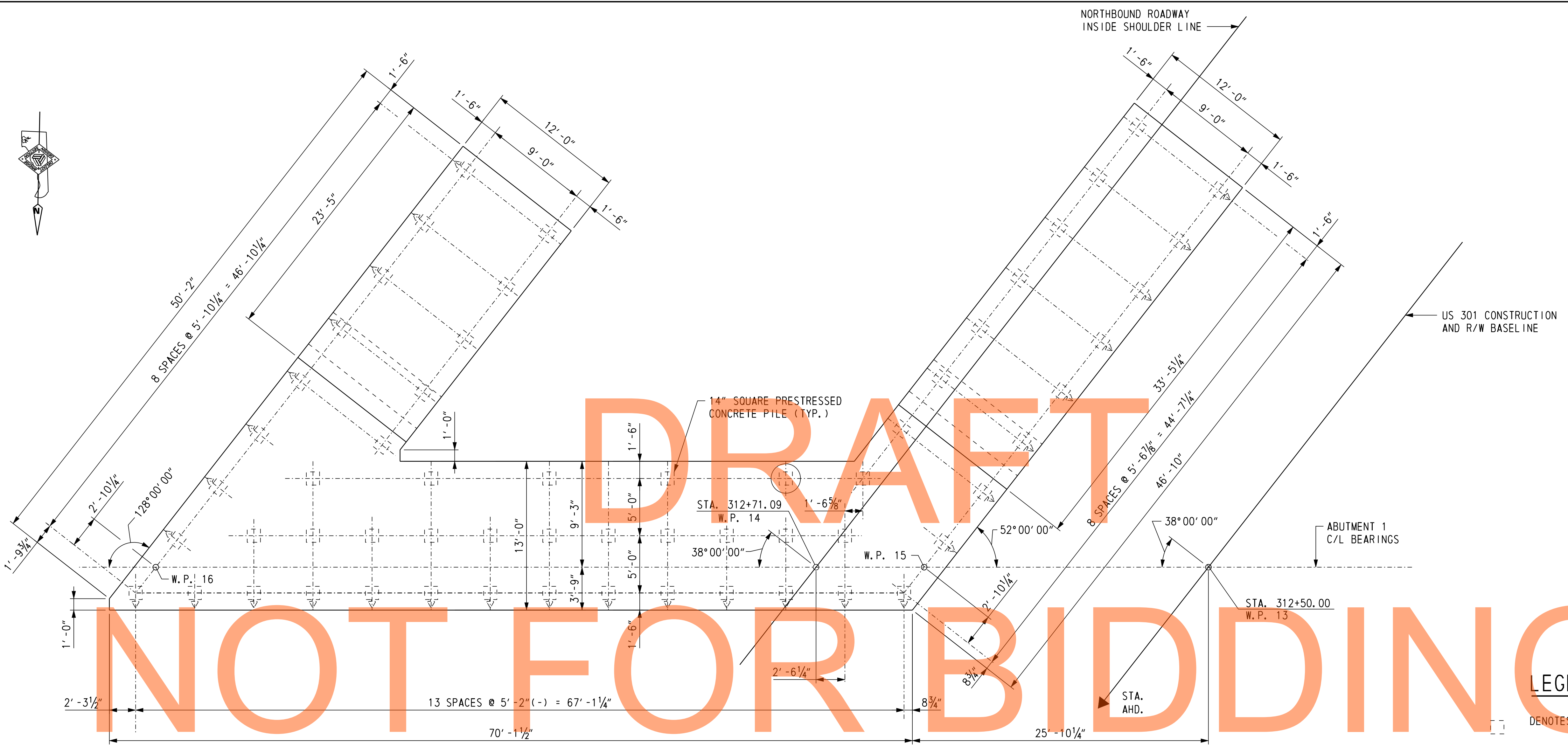
- NOTES:
1. STOP KEY 9" FROM TOP AND BOTTOM OF WALL.
 2. CHAMFER NOT REQUIRED ON REAR FACE OF WALL.
 3. PREPARE SURFACE AS PER SECTION 602.14. ROUGHEN SURFACE, CLEAN, THEN APPLY A NEAT CEMENT GROUT OR OTHER SUITABLE BONDING MATERIAL IMMEDIATELY PRIOR TO PLACING ADJACENT CONCRETE.
 4. LONGITUDINAL REINFORCEMENT SHALL PASS THROUGH CONSTRUCTION JOINT.
 5. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM NO. 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-1 & 1-477 AB-2.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-3 & 1-477 AB-4.
 3. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-5.
 4. FOR ABUTMENT AND WINGWALL REINFORCEMENT, SEE DWGS. 1-477 AB-13 THRU 1-477 AB-22.
 5. FOR APPROACH ROADWAY FILL DETAIL, SEE DWG. 1-477 AB-12.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

1-477 AB-6
SHEET NO.
454
TOTAL SHTS.
1256



ABUTMENT 1 NORTHBOUND ROADWAY PILE PLAN
SCALE: 3/8" = 1'-0"

DRAFT
NOT FOR BIDDING

LEGEND

- DENOTES PLUMB PILE
- DENOTES PILE BATTERED 1:4 AND DIRECTION OF BATTER
- DENOTES TEST PILE

PILE INSTALLATION DATA

SUBSTRUCTURE UNIT	NOMINAL PILE DRIVING RESISTANCE (KIPS)	DESIGN DATA		ACTUAL FIELD DATA	
		MINIMUM PILE TIP ELEVATION	ESTIMATED PILE TIP ELEVATION	AVERAGE MINIMUM TIP ELEVATION	AVERAGE MAXIMUM TIP ELEVATION
ABUTMENT 1	400.0	-11.0	-16.0		
ABUTMENT 2	400.0	-11.0	-16.0		

NOTE:
TEST PILE SHALL BE TEN (10) FEET LONGER THAN THE PRODUCTION PILE LENGTH INDICATED IN THE PILE INSTALLATION DATA TABLE.

ABUTMENT 1 PILE DRIVING INFORMATION

PILE SIZE AND TYPE:
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

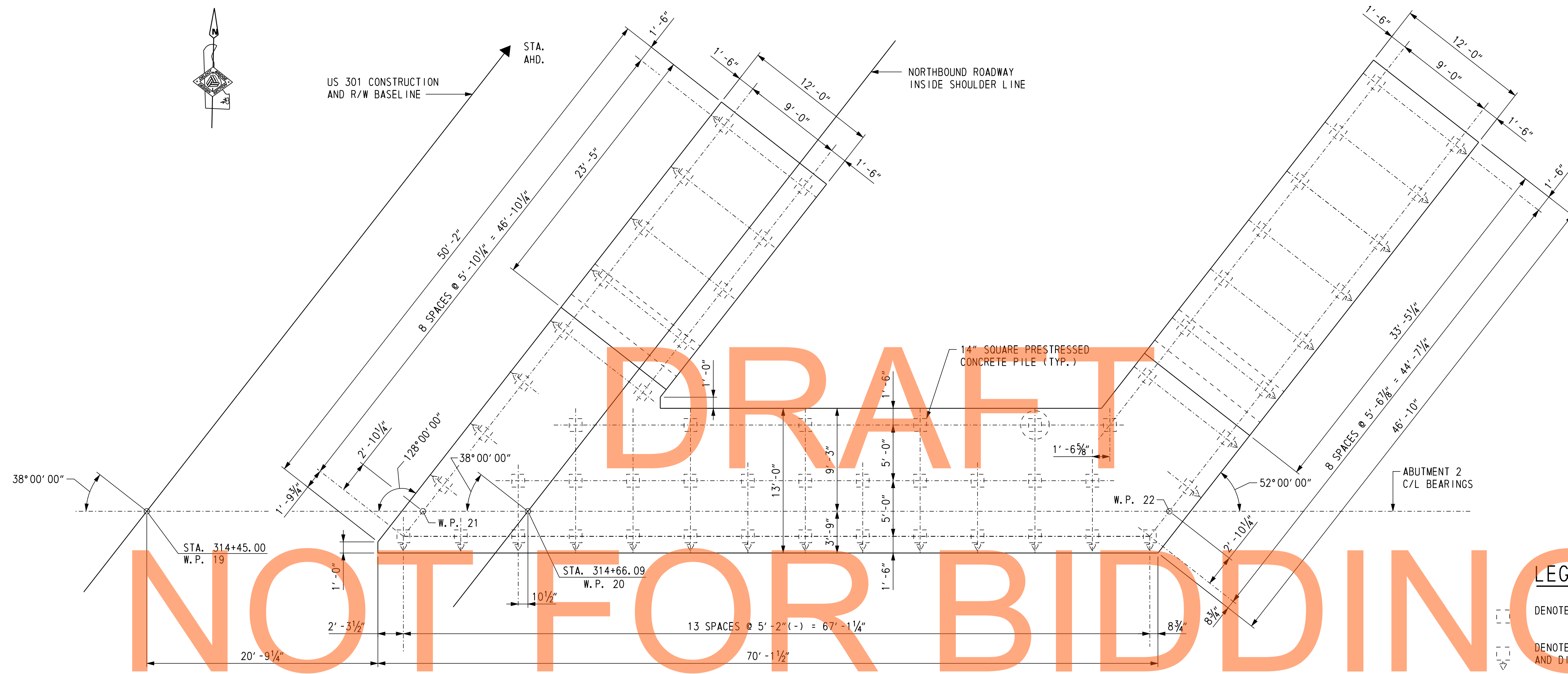
ABUTMENT 2 PILE DRIVING INFORMATION

PILE SIZE AND TYPE:
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY:
SPECIAL DRIVING CONDITIONS AND COMMENTS:

- CROSS REFERENCE NOTES:
- FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
 - FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
 - FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-12.
 - FOR PILE DETAILS, SEE DWG. 1-477 PL-1.
 - FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-25 THRU 1-477 AB-29.

ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		



ABUTMENT 2 NORTHBOUND ROADWAY PILE PLAN

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

DRAFT
NOT FOR BIDDING
AUGUST 2015

LEGEND

- DENOTES PLUMB PILE
- DENOTES PILE BATTERED 1:4 AND DIRECTION OF BATTER
- DENOTES TEST PILE

NOTE:

TEST PILE SHALL BE TEN (10) FEET LONGER THAN THE PRODUCTION PILE LENGTH INDICATED IN THE PILE INSTALLATION DATA TABLE.

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-10.
3. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-12.
4. FOR PILE DETAILS, SEE DWG. 1-477 PL-1.
5. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-30 THRU 1-477 AB-34.



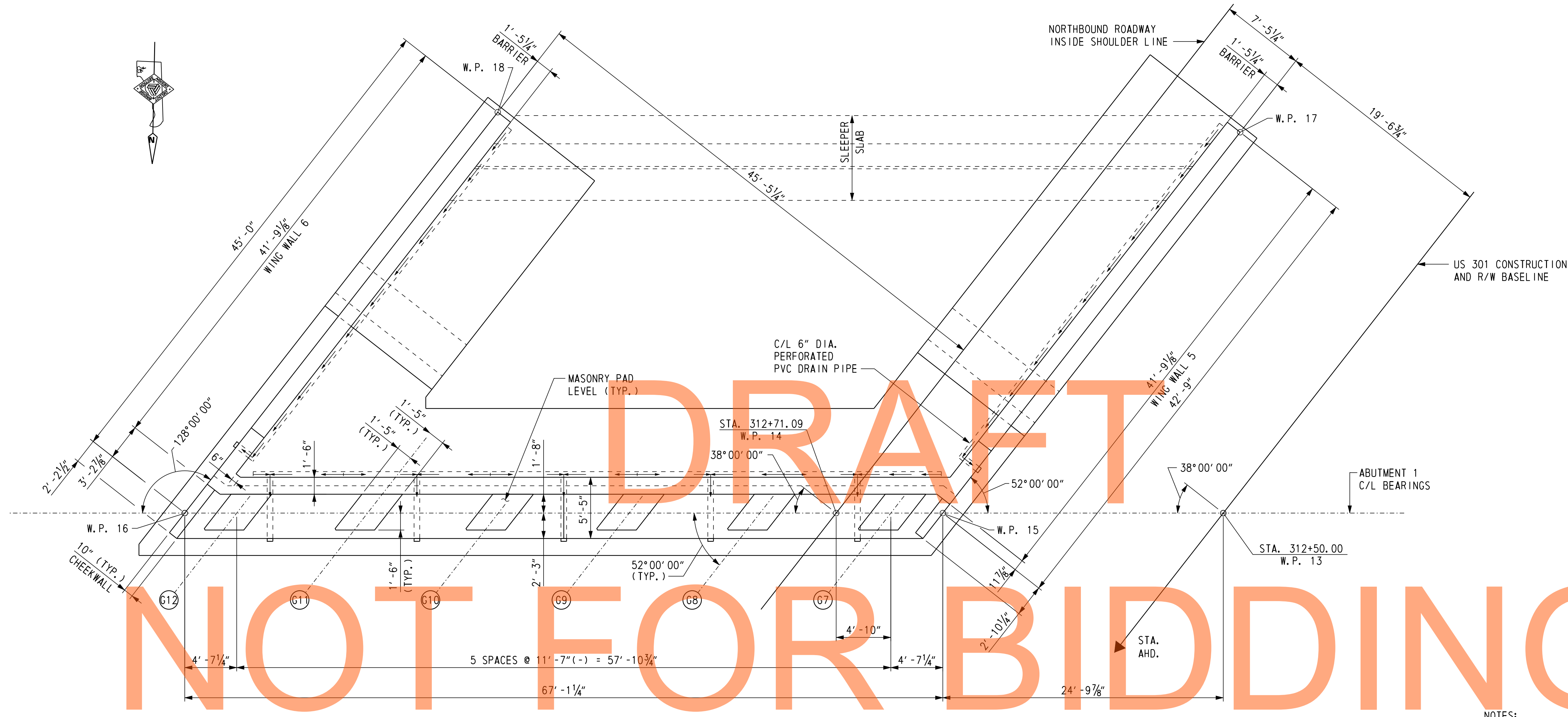
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 NB ROADWAY
PILE PLAN**

1-477 AB-8
SHEET NO.
456
TOTAL SHTS.
1256



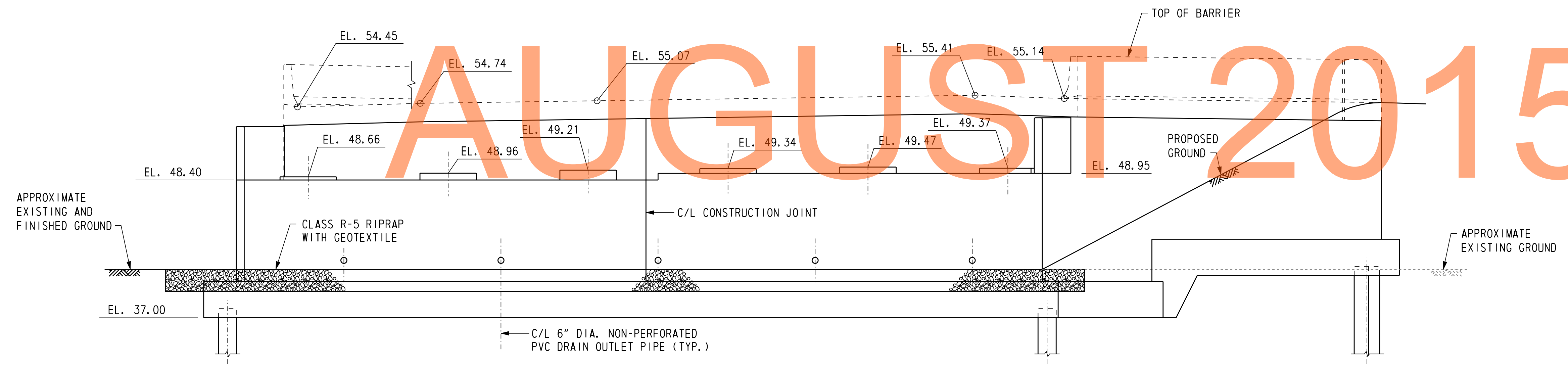
PLAN

NOTES:

1. BEAM SEAT STEPS MIDWAY BETWEEN GIRDERS. BEAM SEAT ELEVATIONS ARE AT FRONT FACE OF BACKWALL.
2. BACKWALL ELEVATIONS SHOWN ARE TOP OF DECK AT FRONT FACE OF BACKWALL.

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
2. FOR GEOMETRIC LAYOUT, SEE DWG. 1-477 FT-2.
3. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-7.
4. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-11.
5. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-12.
6. FOR CONSTRUCTION AND EXPANSION JOINT DETAILS, SEE DWG. 1-477 AB-6.
7. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-25 THRU 1-477 AB-29.



ELEVATION

ABUTMENT 1 - NORTHBOUND ROADWAY
(LOOKING BACK STATION)
SCALE: 3/8" = 1'-0"

ADDENDUMS / REVISIONS

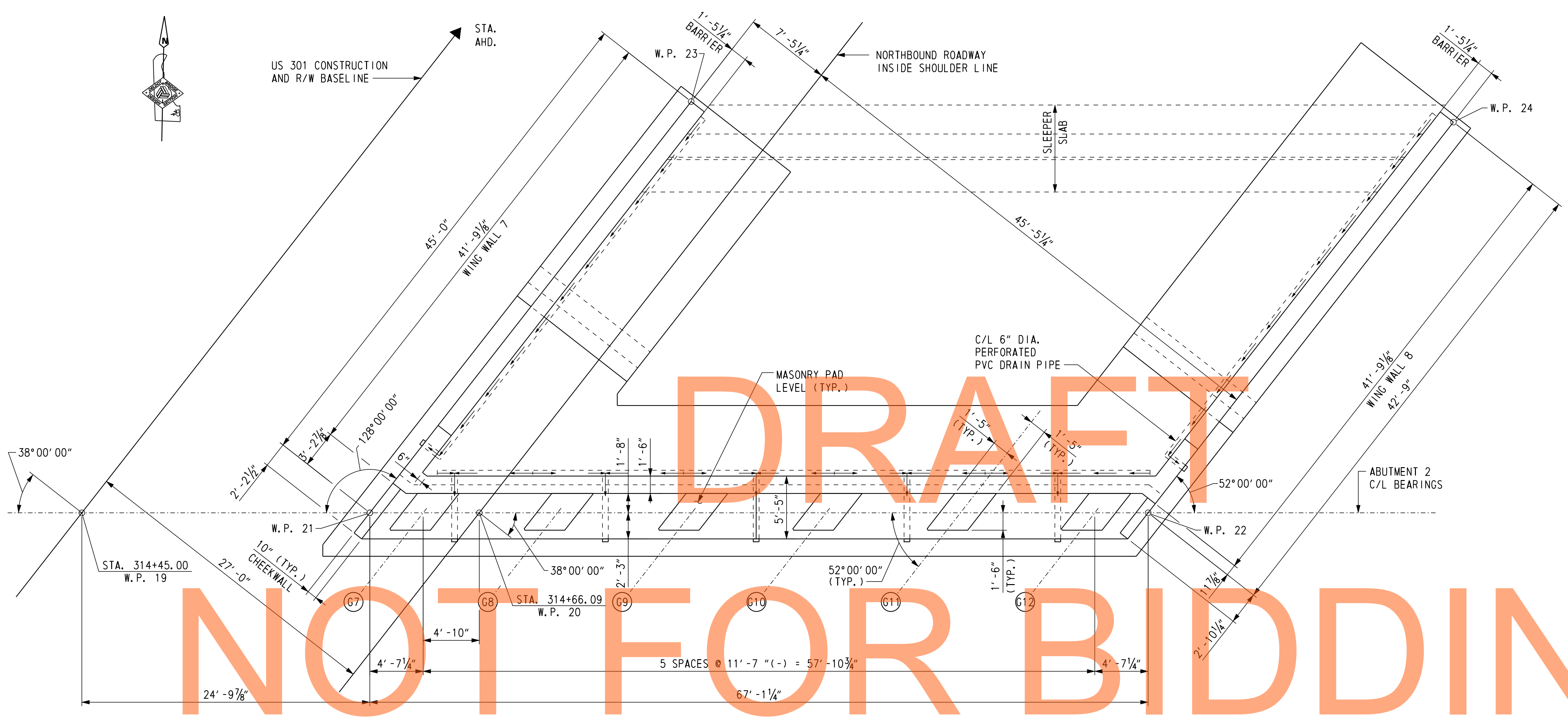
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

1-477 AB-9
SHEET NO.
457
TOTAL SHTS.
1256

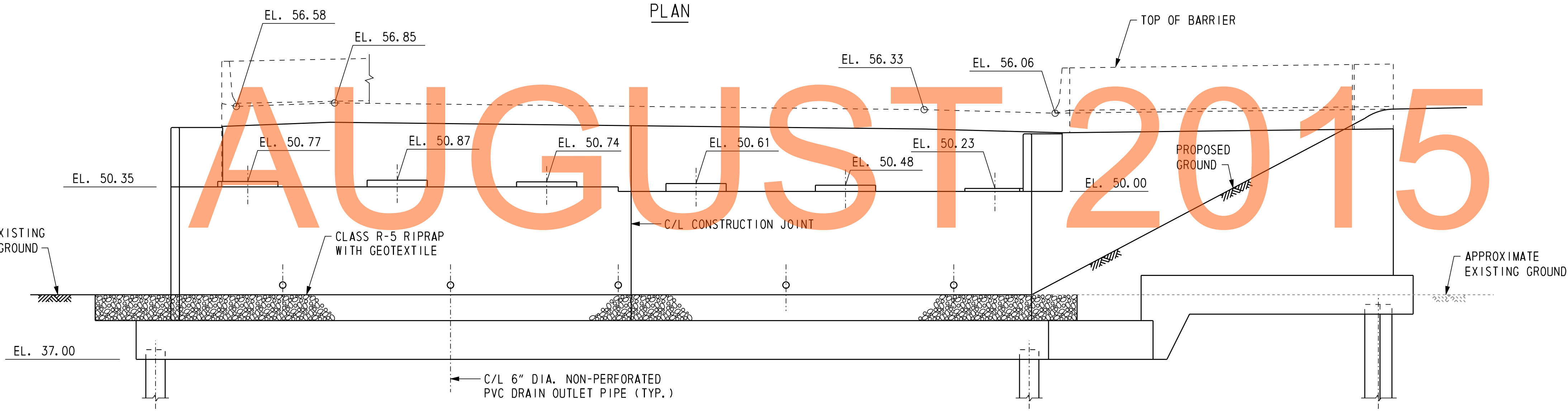


US 301 CONSTRUCTION AND R/W BASELINE

STA. AHD.



PLAN



ELEVATION

ABUTMENT 2 - NORTHBOUND ROADWAY
(LOOKING STATION AHEAD)
SCALE: 3/4" = 1' - 0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

NOTES:

1. BEAM SEAT STEPS MIDWAY BETWEEN GIRDERS. BEAM SEAT ELEVATIONS ARE AT FRONT FACE OF BACKWALL.
2. BACKWALL ELEVATIONS SHOWN ARE TOP OF DECK AT FRONT FACE OF BACKWALL.

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
2. FOR GEOMETRIC LAYOUT, SEE DWG. 1-477 FT-2.
3. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-8.
4. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-11.
5. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-12.
6. FOR CONSTRUCTION AND EXPANSION JOINT DETAILS, SEE DWG. 1-477 AB-6.
7. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-30 THRU 1-477 AB-34.

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11/8/2012

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ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

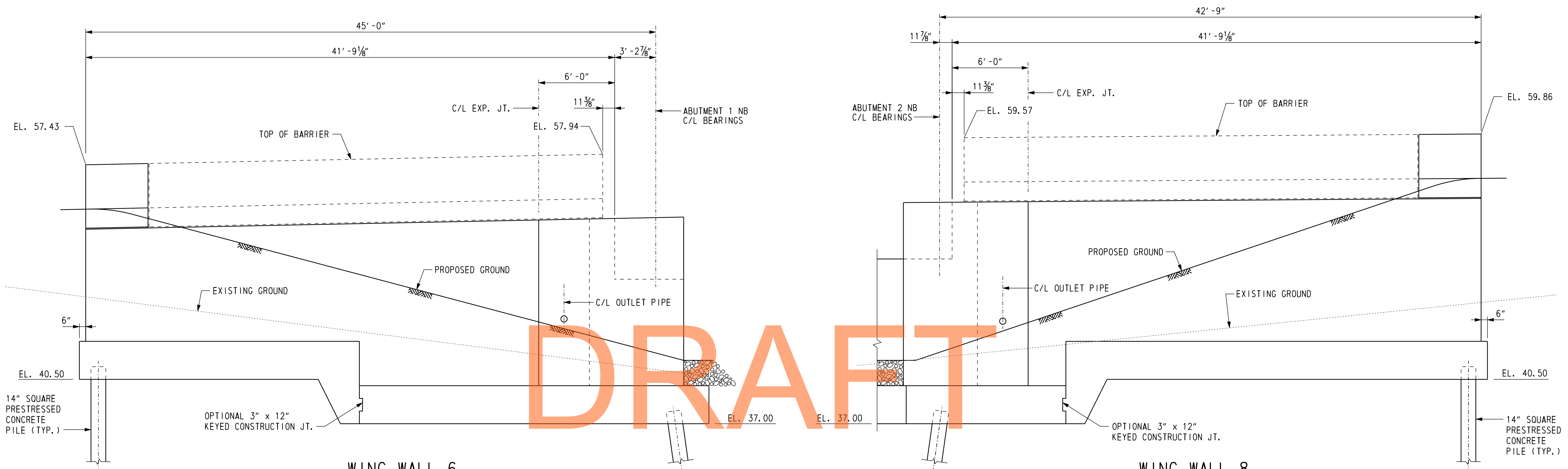
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 NB ROADWAY
PLAN AND ELEVATION**

1-477 AB-10
SHEET NO.
458
TOTAL SHTS.
1256

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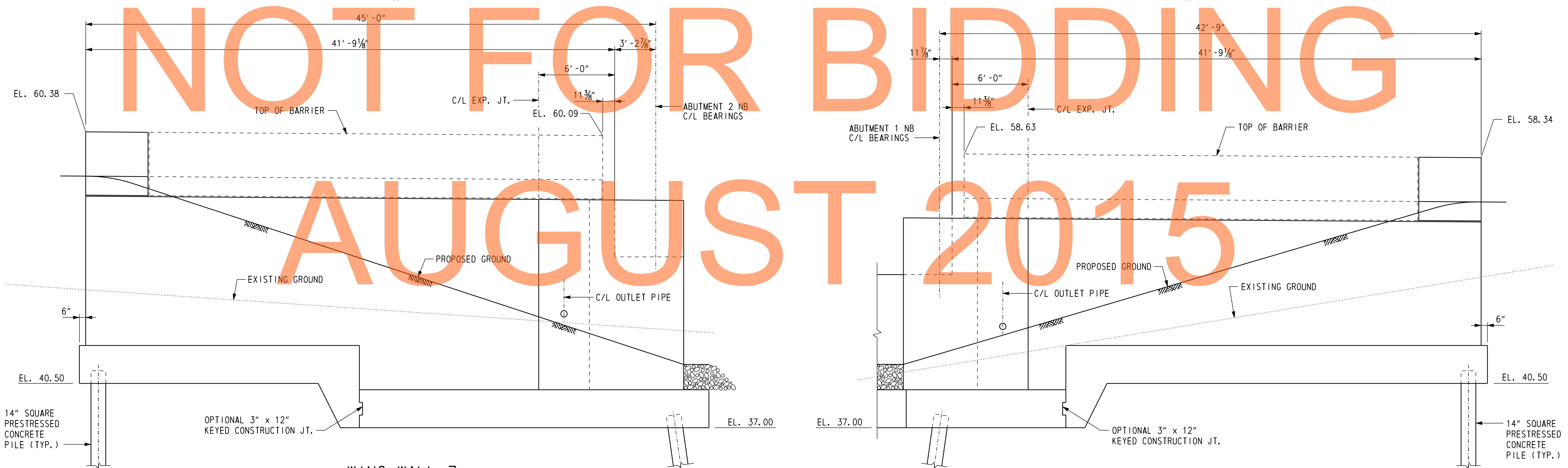
1/8/2012

Steve_Lambert



WING WALL 6
SCALE: 1/4" = 1'-0"

WING WALL 8
SCALE: 1/4" = 1'-0"



WING WALL 7
SCALE: 1/4" = 1'-0"

WING WALL 5
SCALE: 1/4" = 1'-0"

NOT FOR BIDDING
AUGUST 2015



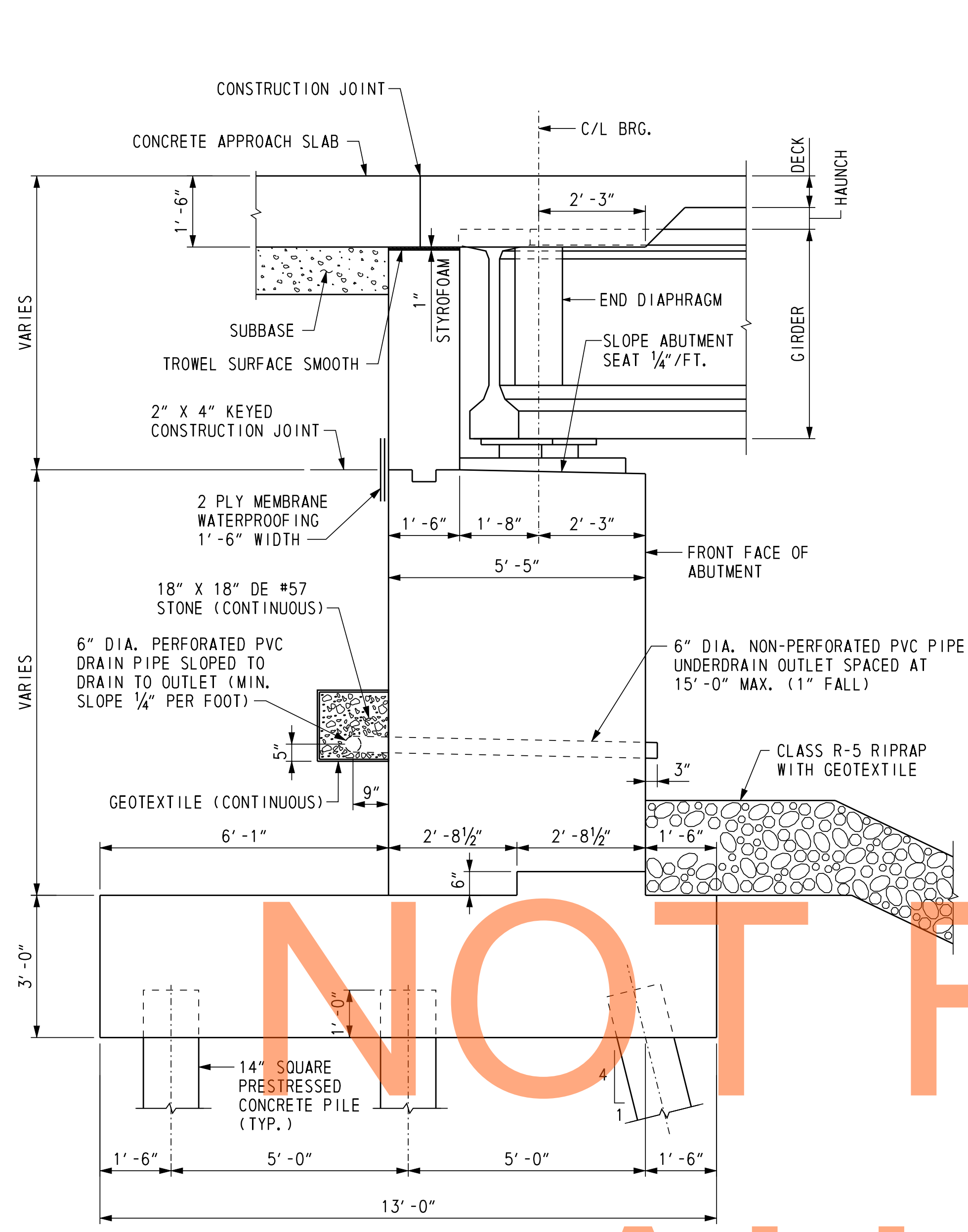
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

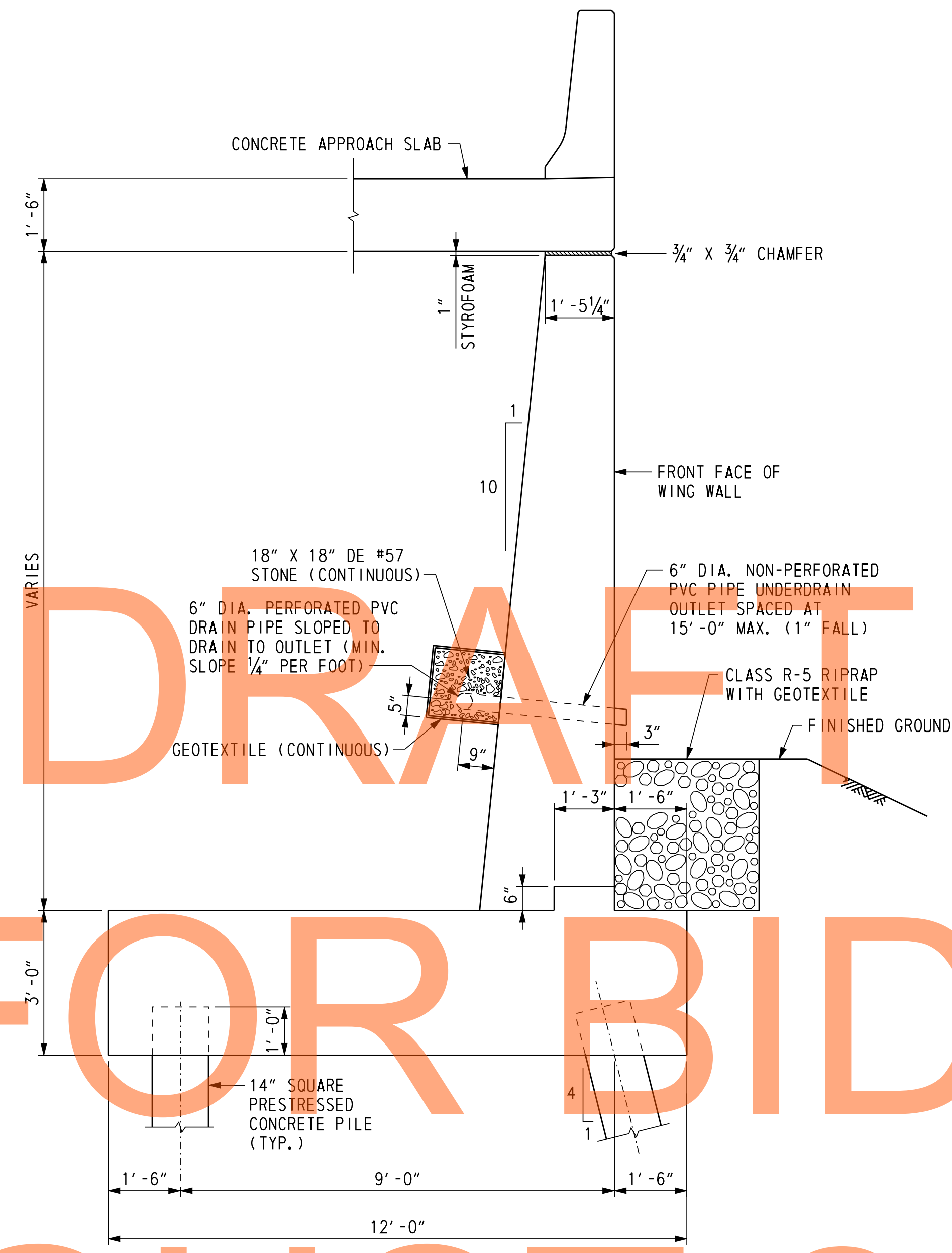
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
NORTHBOUND ROADWAY
WING WALL ELEVATIONS**

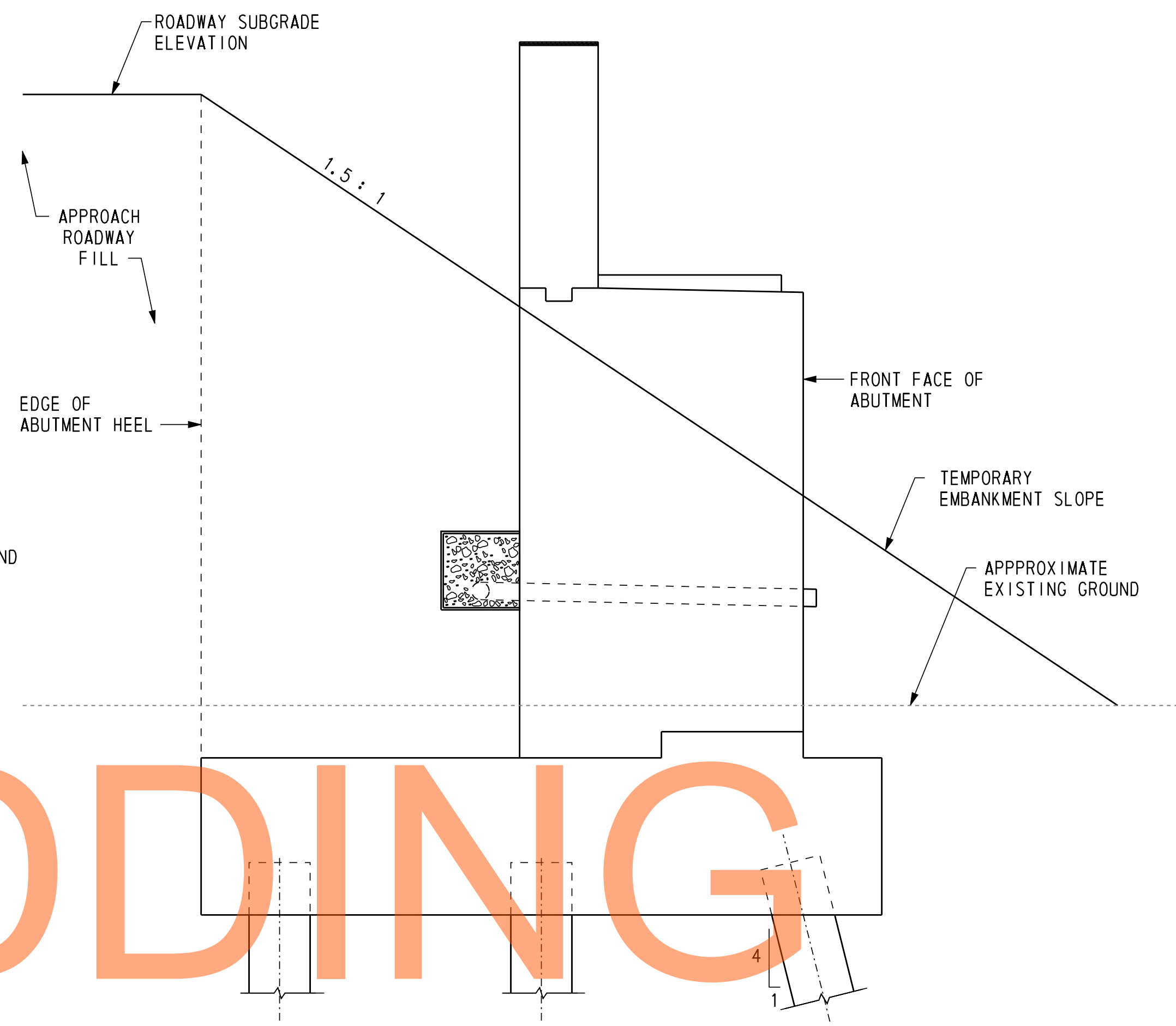
1-477 AB-11
SHEET NO.
459
TOTAL SHTS.
1256



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



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



APPROACH ROADWAY FILL DETAIL
SCALE: 1/2" = 1'-0"

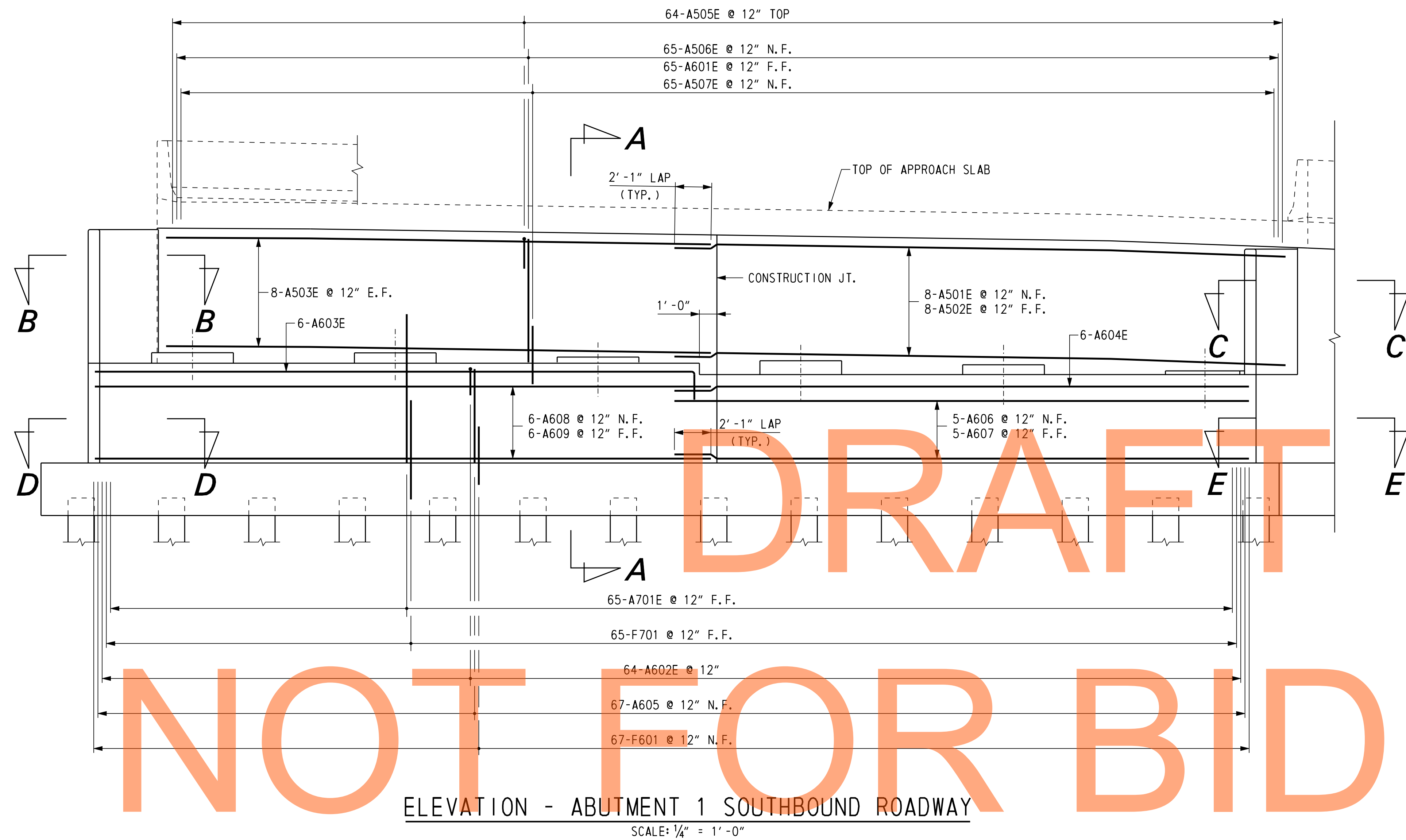
- NOTES:
1. APPROACH ROADWAY FILL SHALL BE PLACED PRIOR TO CONSTRUCTION OF ABUTMENT.
 2. TOE OF TEMPORARY EMBANKMENT SLOPE FALL OUTSIDE OF LIMIT OF WETLANDS.
 3. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM NO. 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-7 & 1-477 AB-8.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-9 & 1-477 AB-10.
 3. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-11.
 4. FOR ABUTMENT AND WINGWALL REINFORCEMENT, SEE DWGS. 1-477 AB-25 THRU 1-477 AB-34.
 5. FOR ABUTMENT CONSTRUCTION JOINT DETAIL AND WINGWALL EXPANSION JOINT DETAIL, SEE DWG. 1-477 AB-6.
 6. FOR ABUTMENT SEQUENCE OF CONSTRUCTION, SEE DWG. 1-477 PL-1.

ADDENDUMS / REVISIONS	

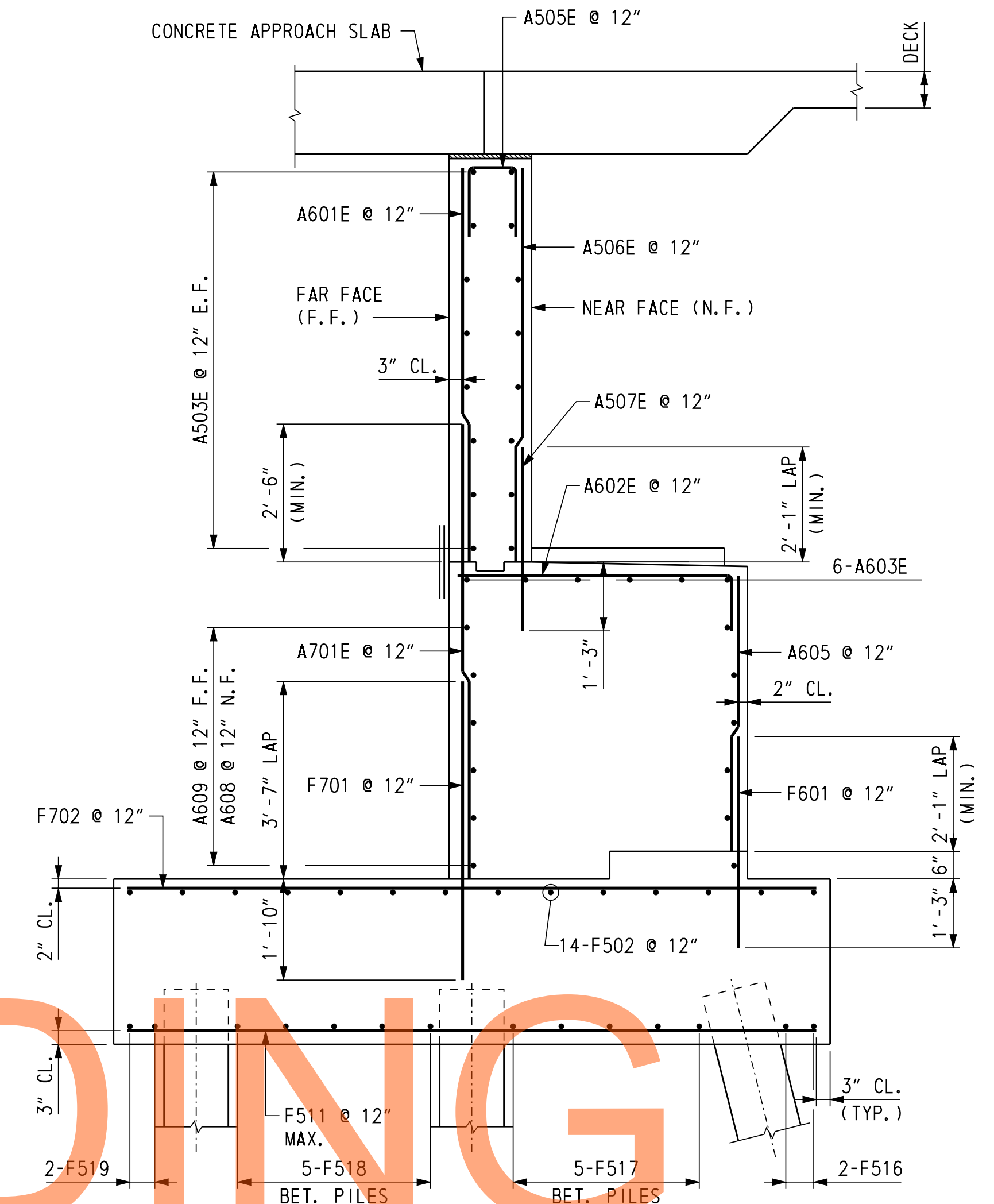
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. Li
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

1-477 AB-12
SHEET NO.
460
TOTAL SHTS.
1256



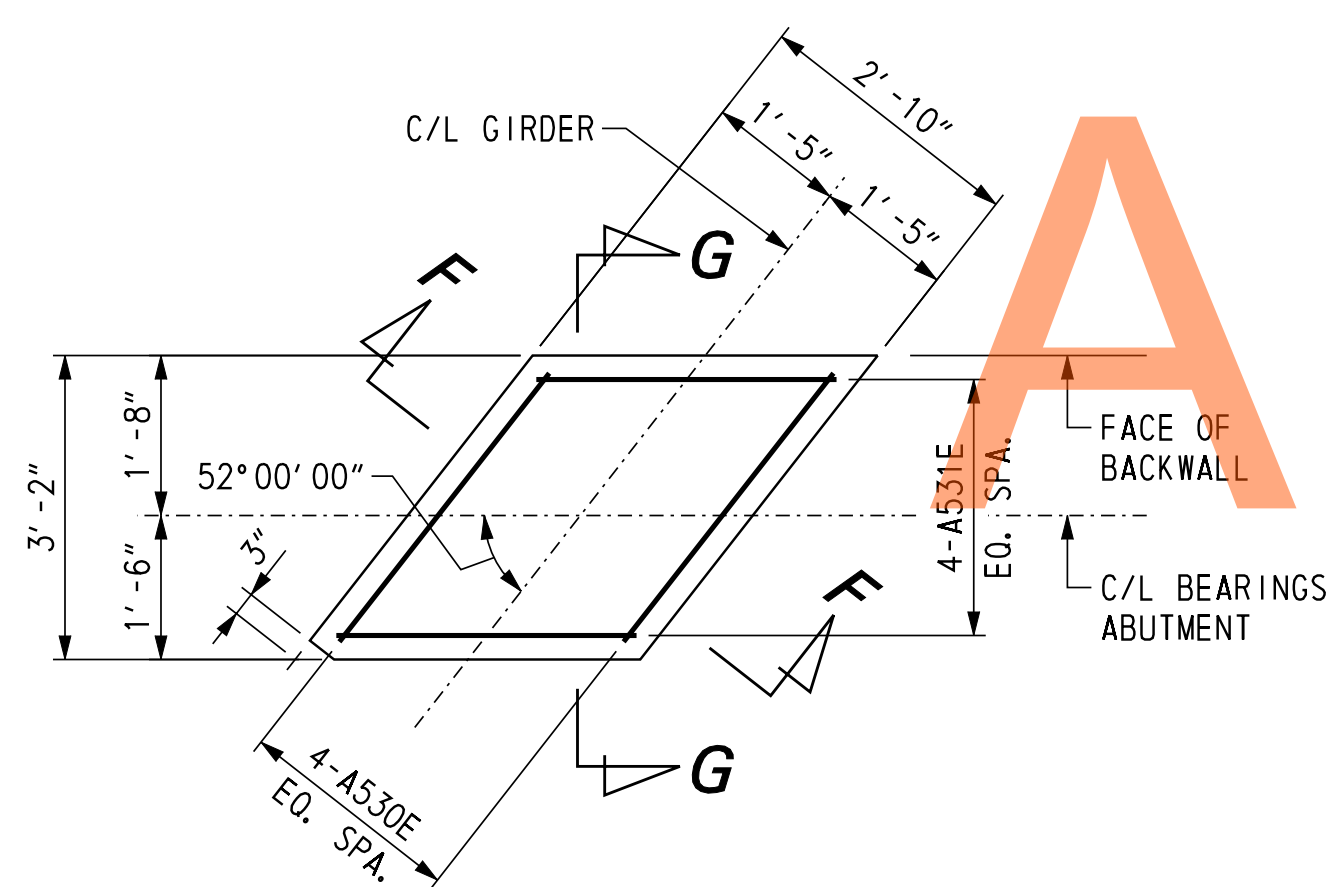
ELEVATION - ABUTMENT 1 SOUTHBOUND ROADWAY

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



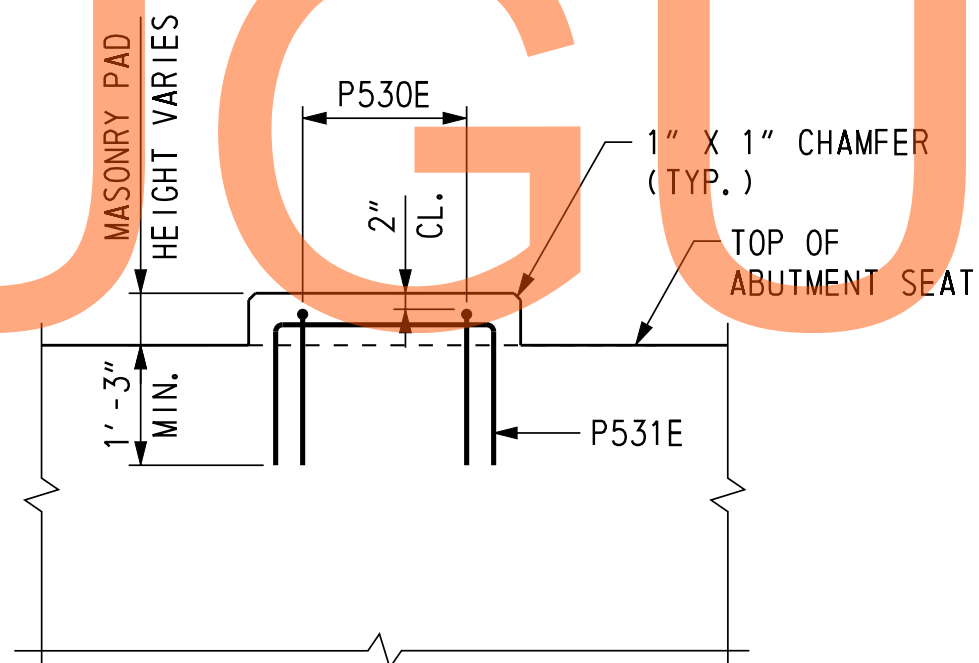
SECTION A-A

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



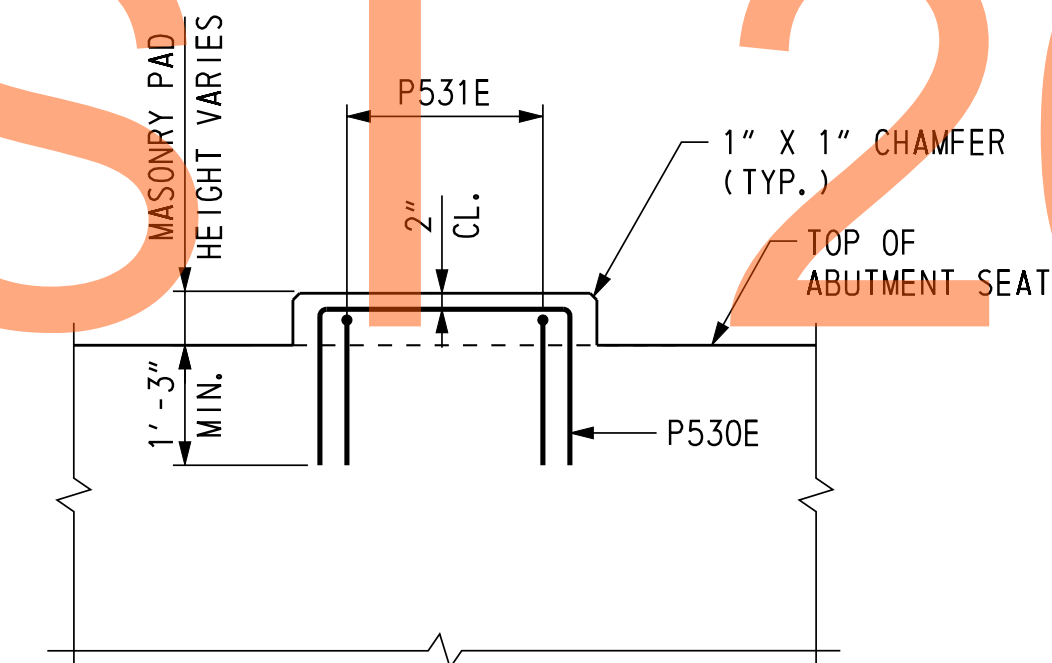
PLAN - ABUTMENT MASONRY PAD

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



SECTION F-F

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



SECTION G-G

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

NOTES:

1. ABUTMENT 1 SOUTHBOUND ROADWAY MASONRY PAD REINFORCEMENT APPLIES AT GIRDERS G2 THROUGH G6.

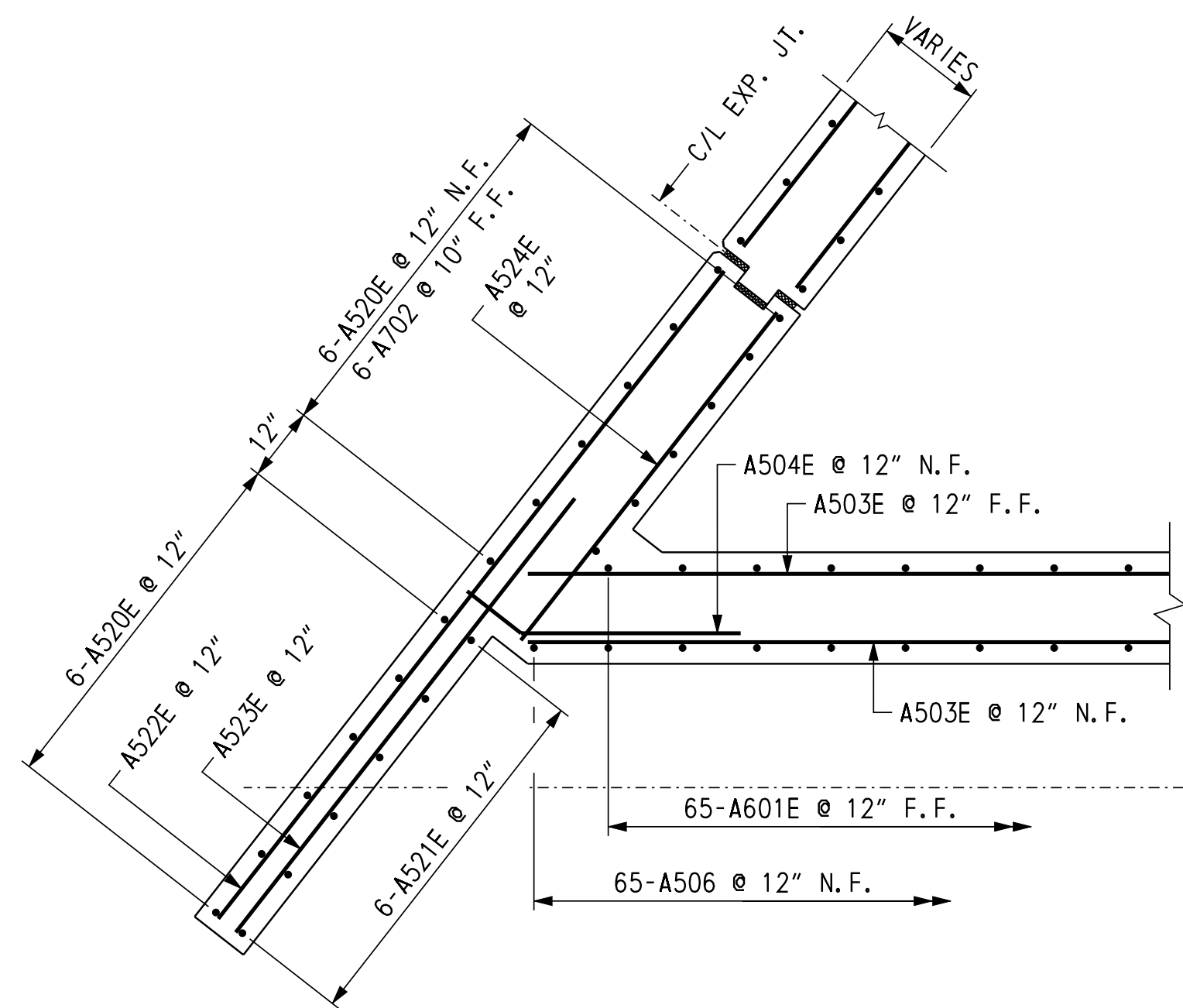
CROSS REFERENCE NOTES:

1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-1.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
3. FOR WINGWALL ELEVATION, SEE DWG. 1-477 AB-5.
4. FOR SECTIONS B-B TO E-E, SEE DWG. 1-477 AB-14.
5. FOR FOOTING REINFORCEMENT PLAN, SEE DWG. 1-477 AB-16 AND 1-477 AB-17.
6. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-15.
7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-23.
8. FOR END DIAPHRAGM DOWELS, SEE DWG. 1-477 BM-2.

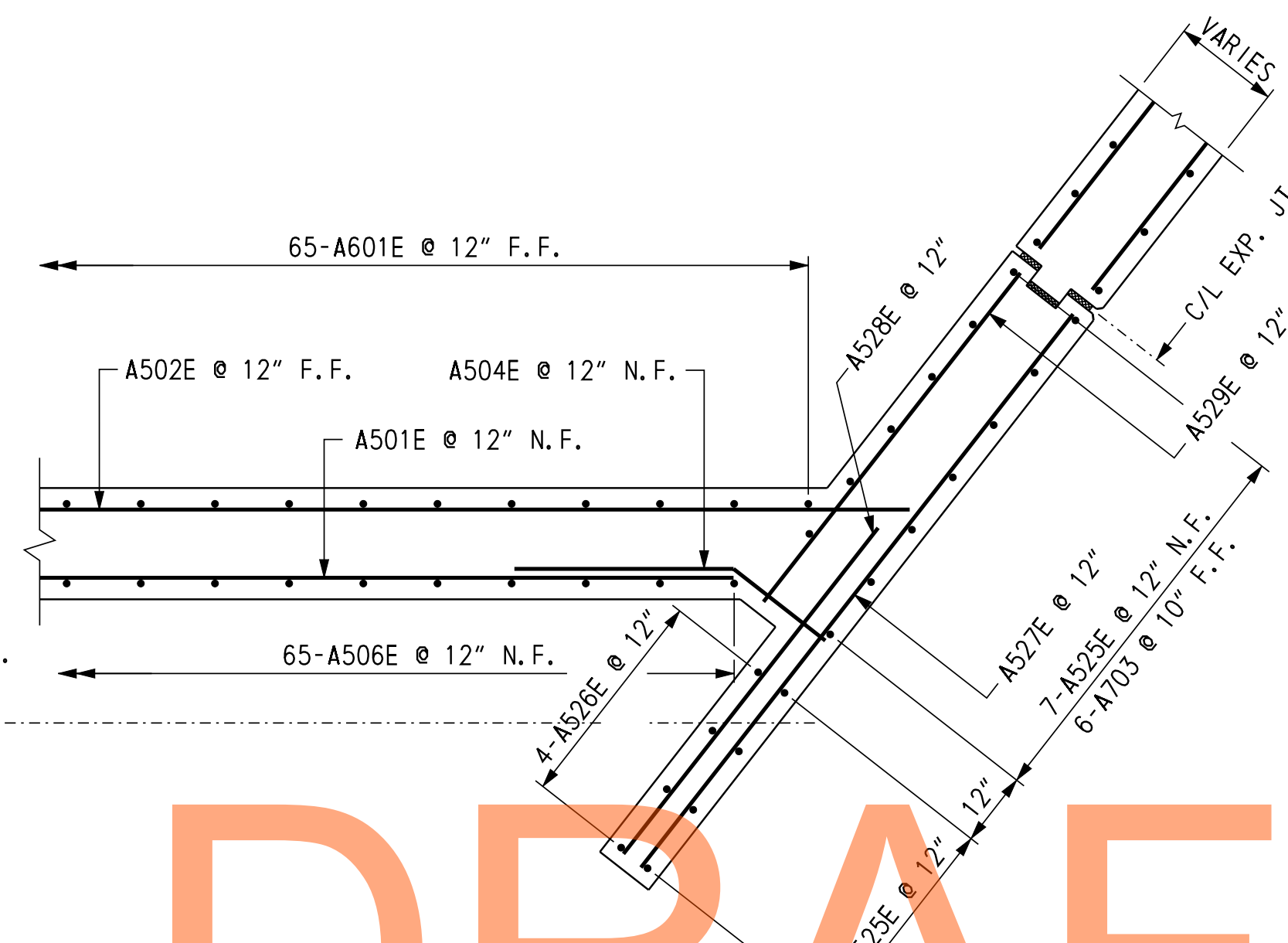
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

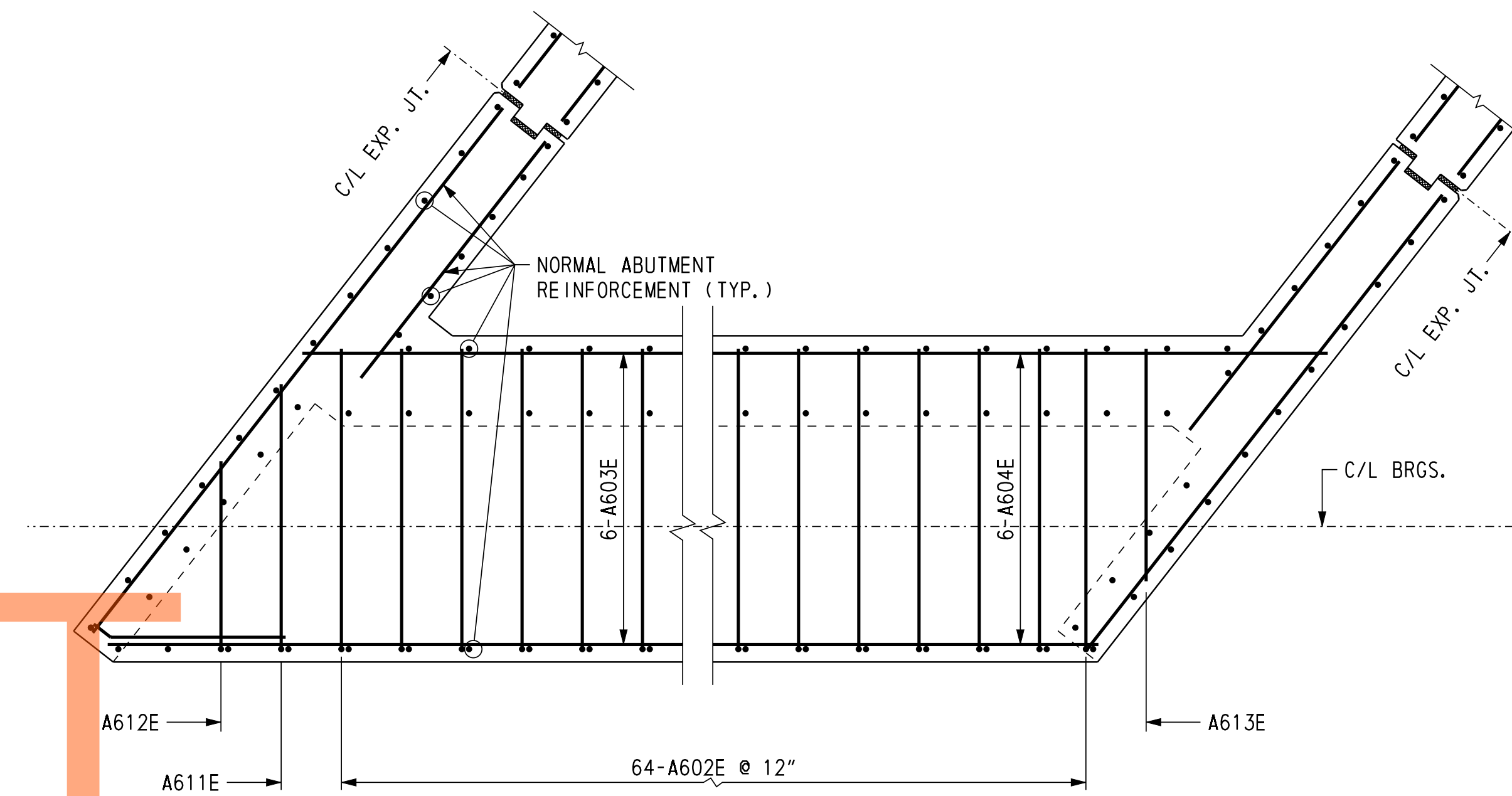
1-477 AB-13
SHEET NO.
461
TOTAL SHTS.
1256



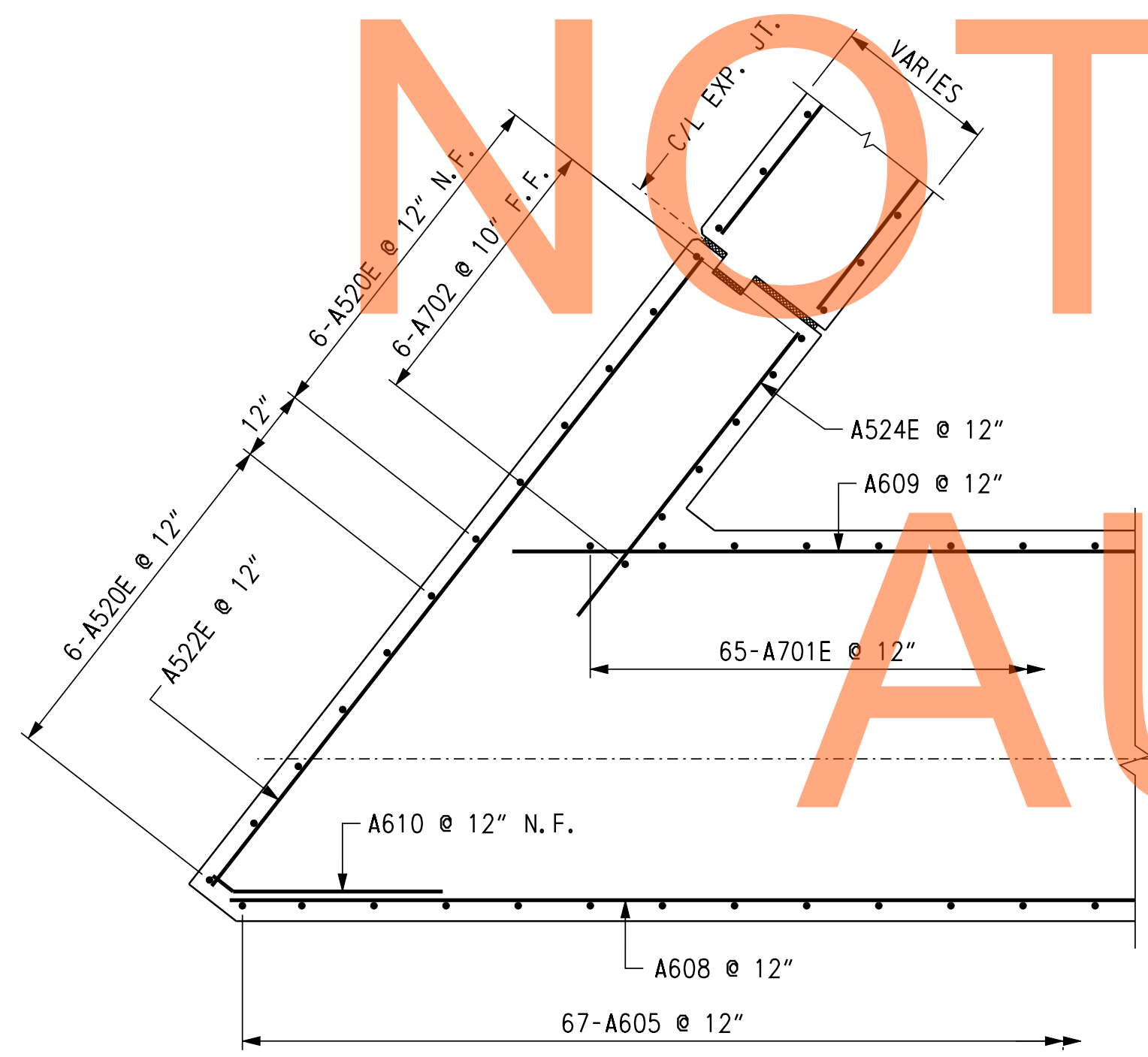
SECTION B-B
SCALE: 1/2" = 1'-0"



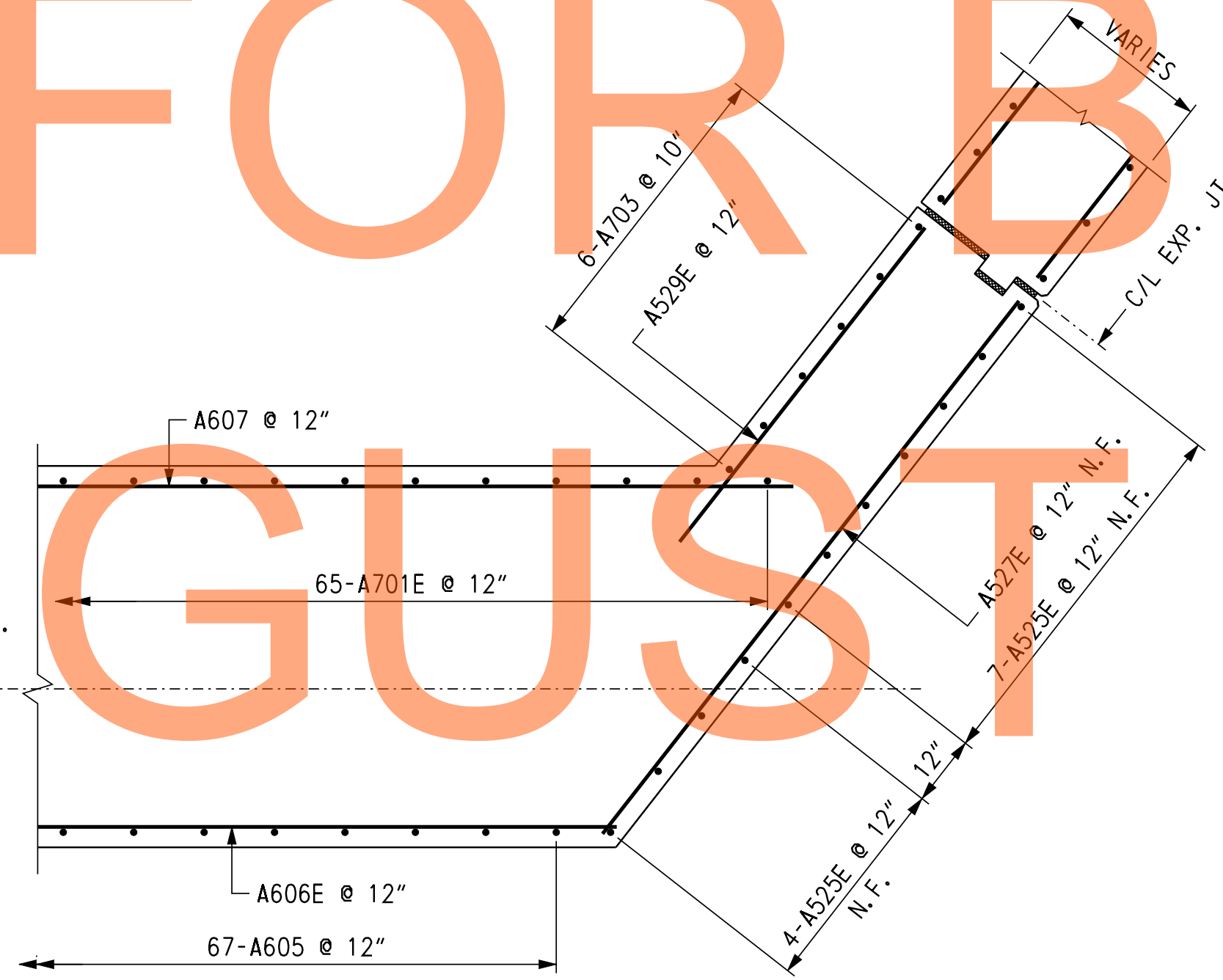
SECTION C-C
SCALE: 1/2" = 1'-0"



PLAN - BEAM SEAT DETAIL
SCALE: 1/2" = 1'-0"



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



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

DRAFT

NOT FOR BIDDING

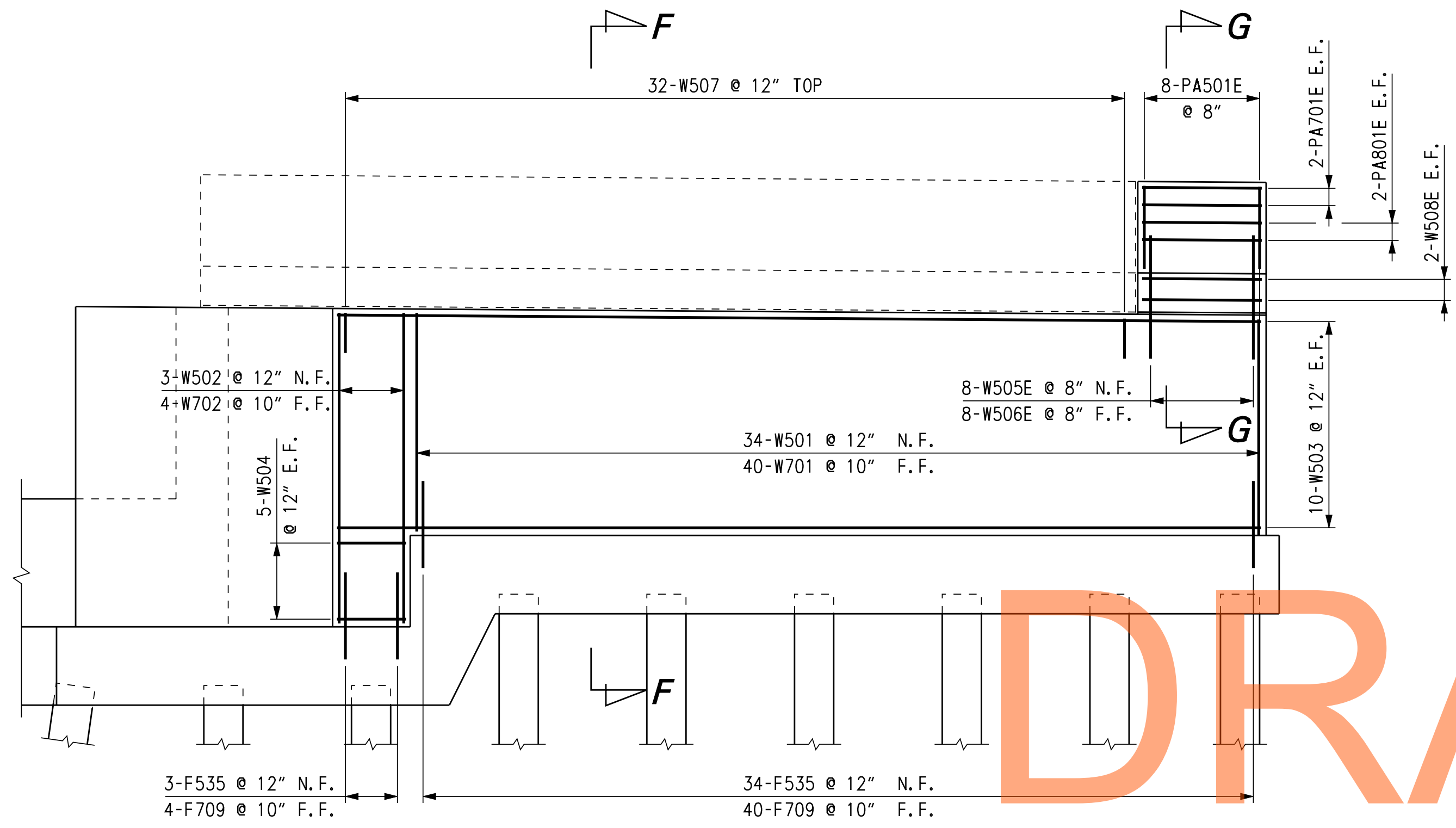
AUGUST 2015

NOTES:

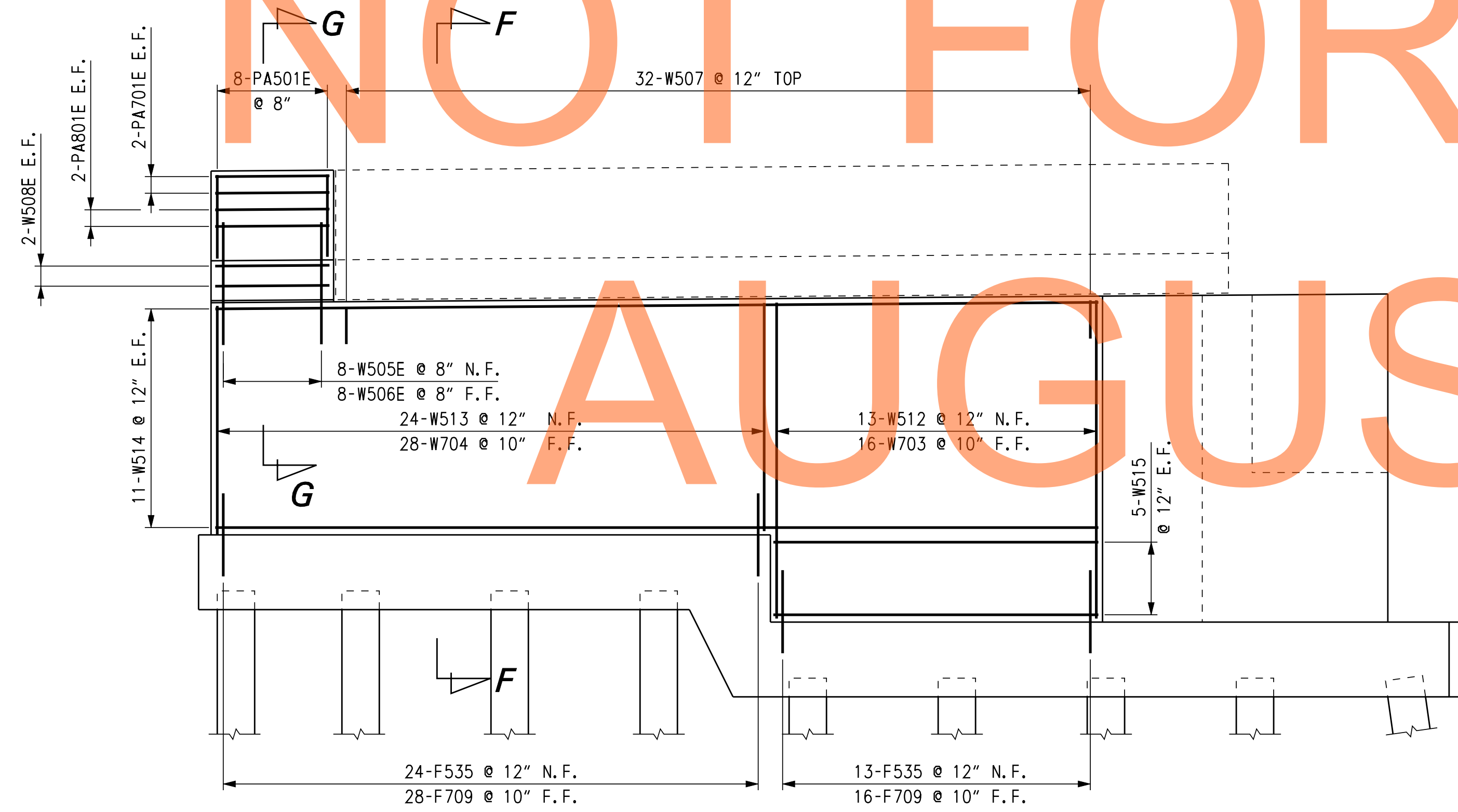
1. BARS A520E AND A525E LAP WITH F501 DOWELS (LAP = 2'-1" MIN.). EMBED DOWELS 1'-0" IN FOOTING.

CROSS REFERENCE NOTES:

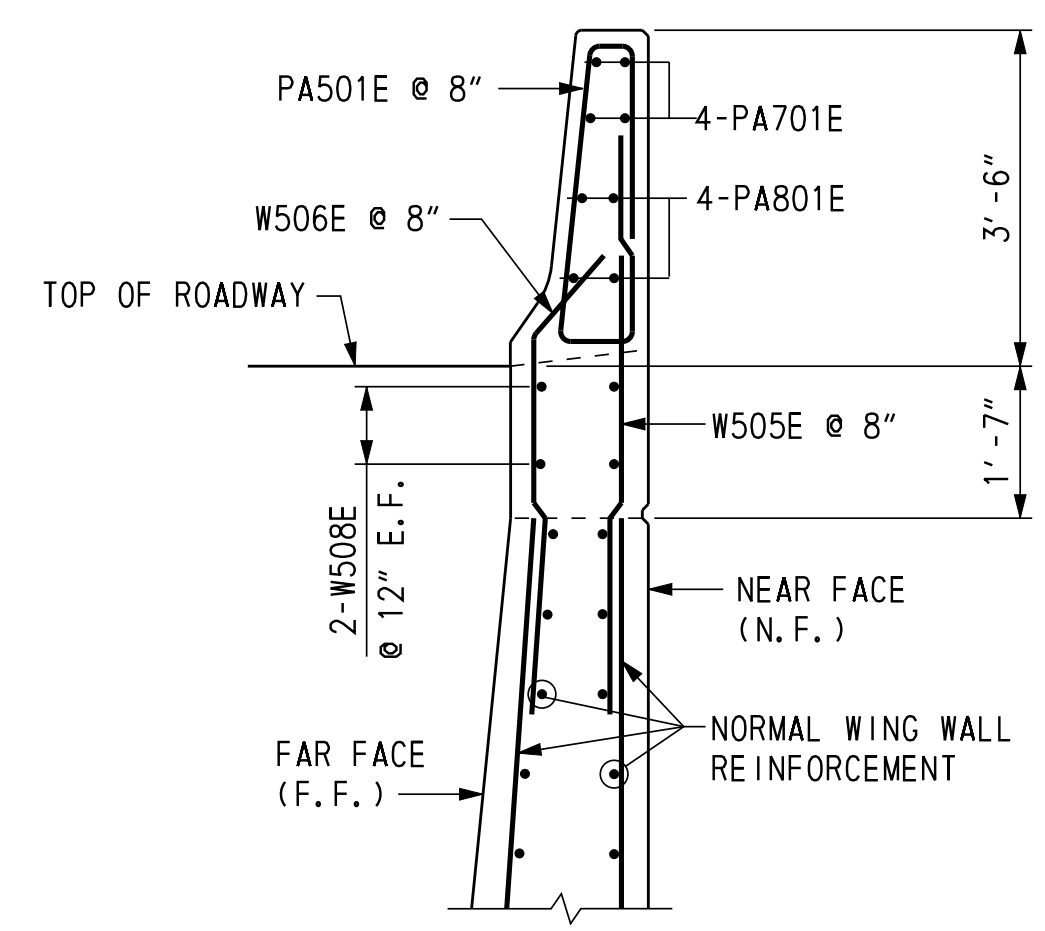
1. FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-13.
2. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-15.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-23.



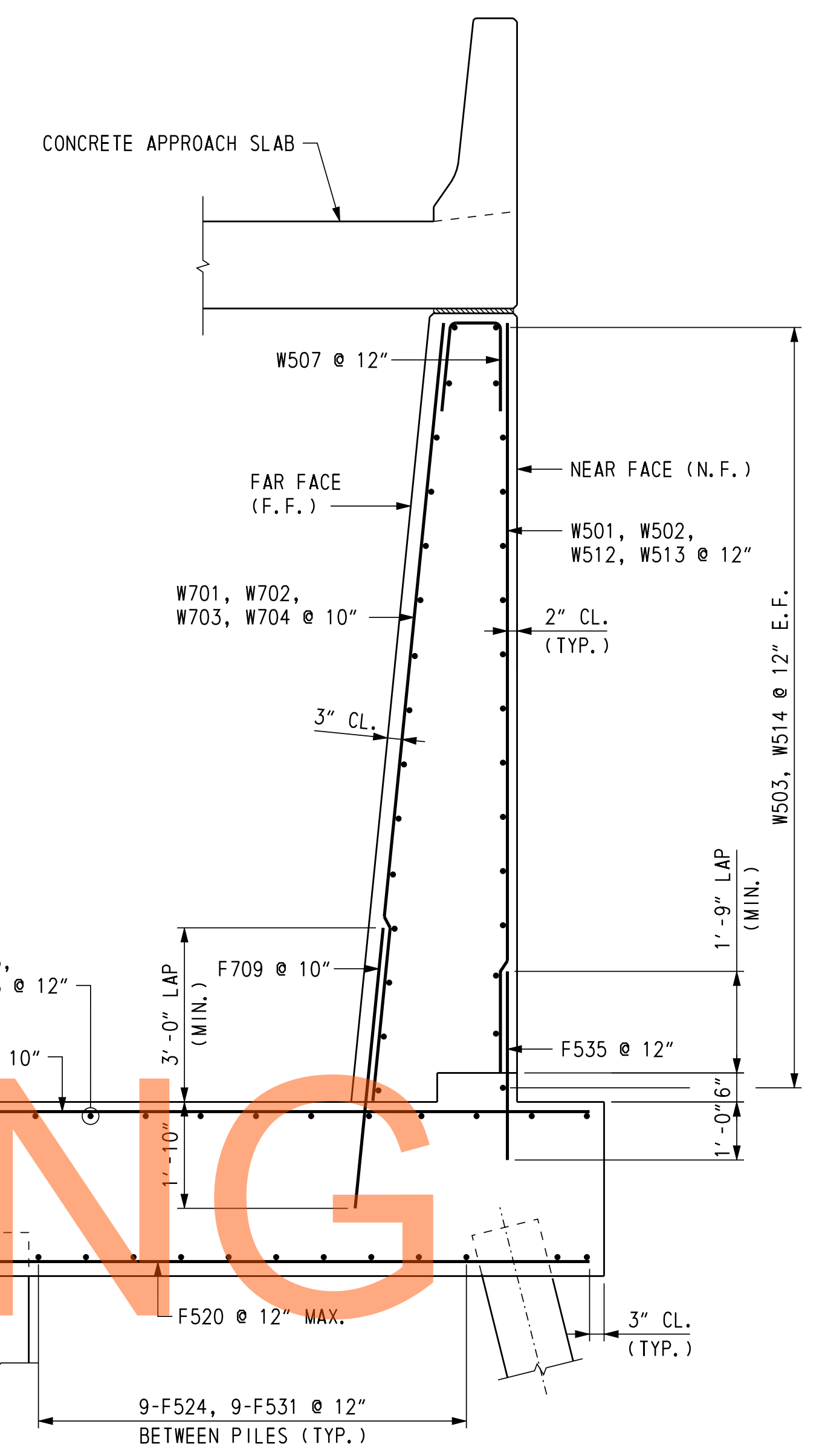
WING WALL 1
SCALE: 1/4" = 1'-0"



WING WALL 2
SCALE: 1/4" = 1'-0"



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



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

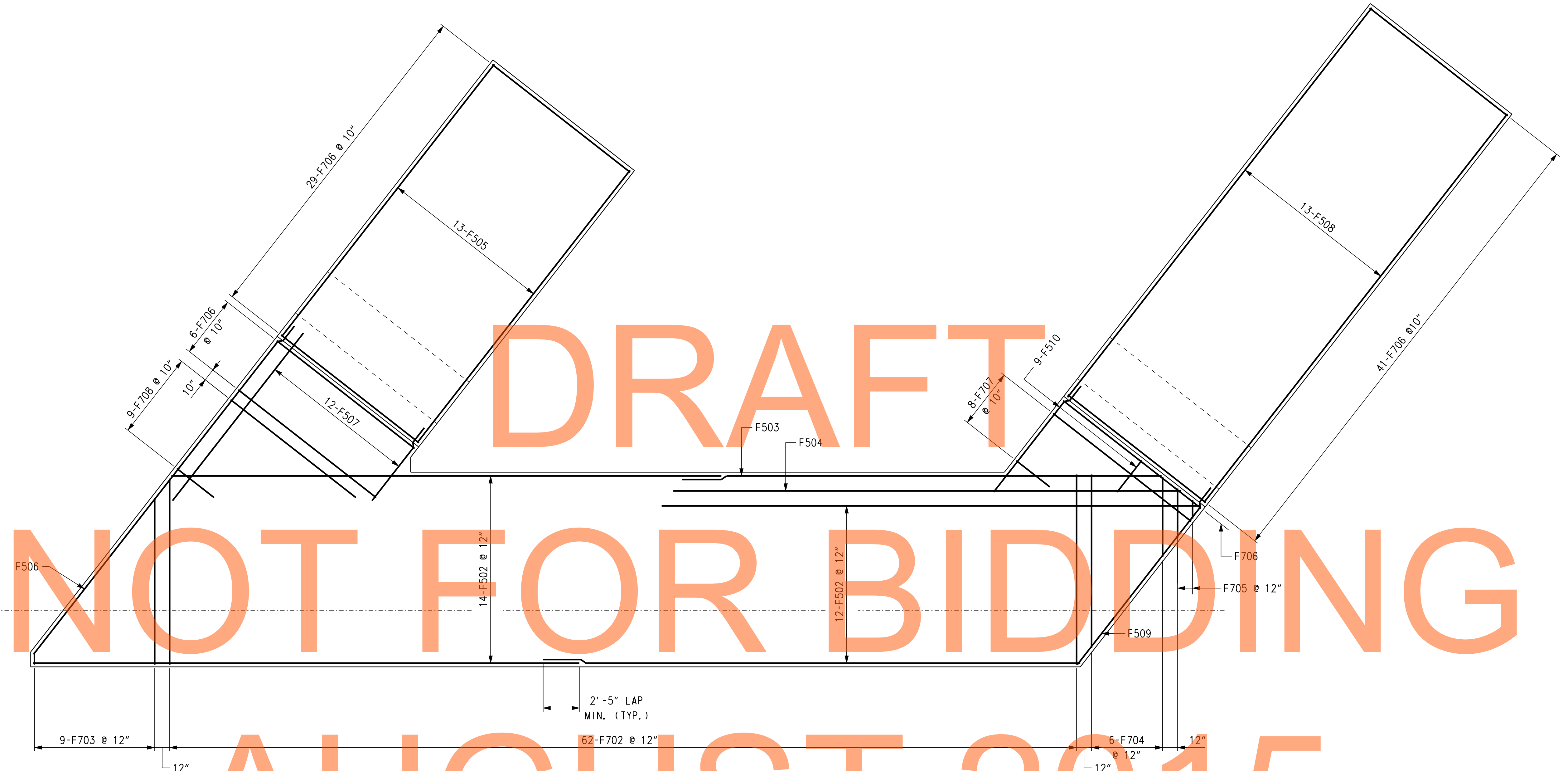
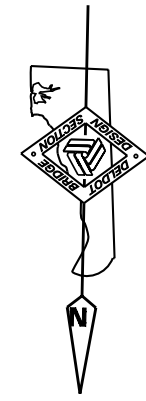
DRAFT
NOT FOR BIDDING
AUGUST 2015

- CROSS REFERENCE NOTES:**
- FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-5.
 - FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-13 AND 1-477 AB-14.
 - FOR FOOTING REINFORCEMENT, SEE DWGS. 1-477 AB-16 AND 1-477 AB-17.
 - FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-23.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

1-477 AB-15
SHEET NO.
463
TOTAL SHTS.
1256



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PLAN - TOP MAT FOOTING REINFORCEMENT
SCALE: 1/4" = 1'-0"

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-1.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
 3. FOR FOOTING STEP DETAIL, SEE DWG. 1-477 AB-17.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-23.

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DELAWARE DEPARTMENT OF TRANSPORTATION

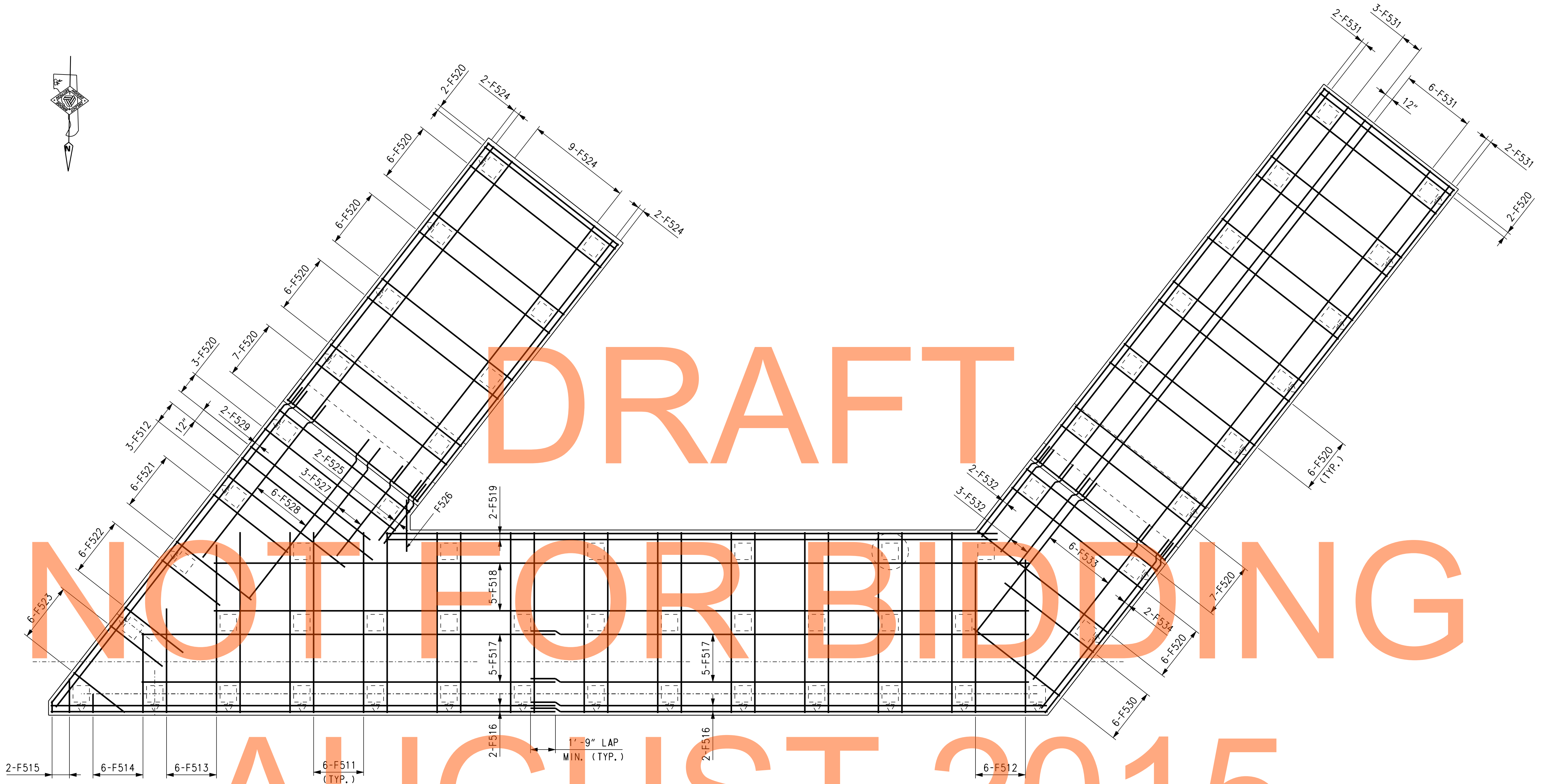
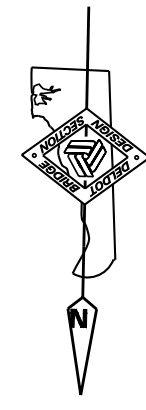
ADDENDUMS / REVISIONS	

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

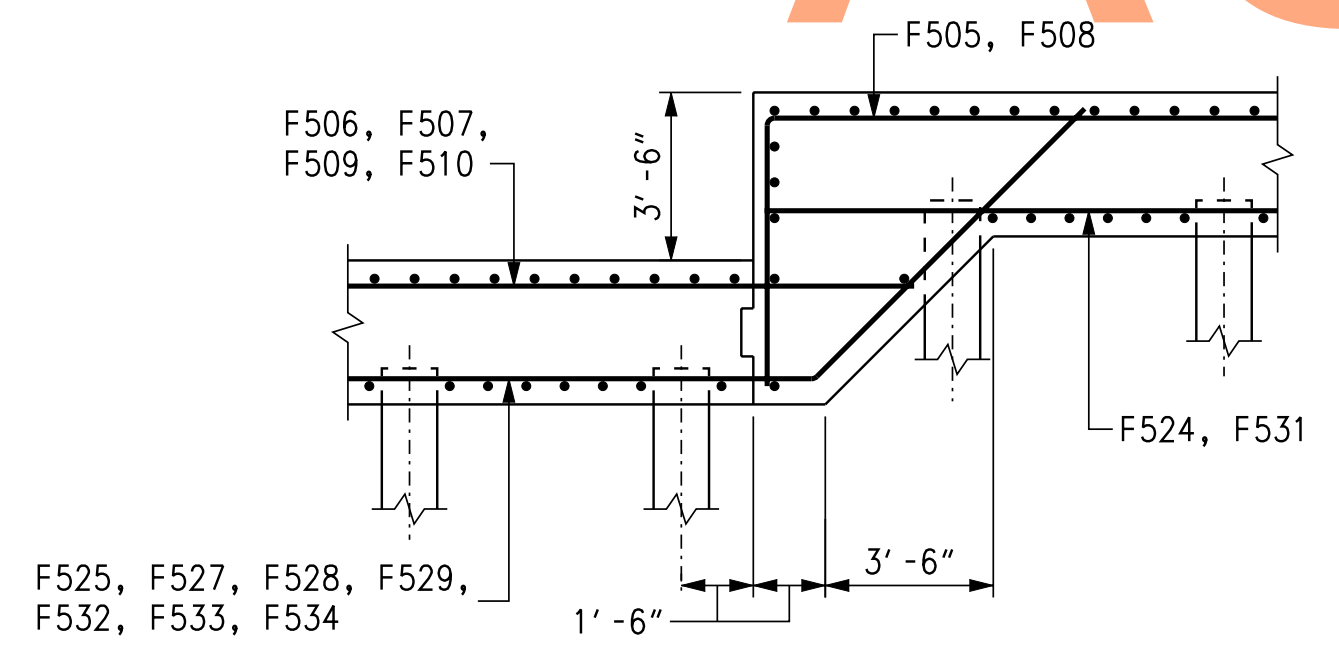
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 1 SB ROADWAY REINFORCEMENT 4

1-477 AB-16
SHEET NO.
464
TOTAL SHTS.
1256



PLAN - BOTTOM MAT FOOTING REINFORCEMENT
SCALE: 1/4" = 1'-0"



FOOTING STEP DETAIL
SCALE: 1/4" = 1'-0"

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AUGUST 2015

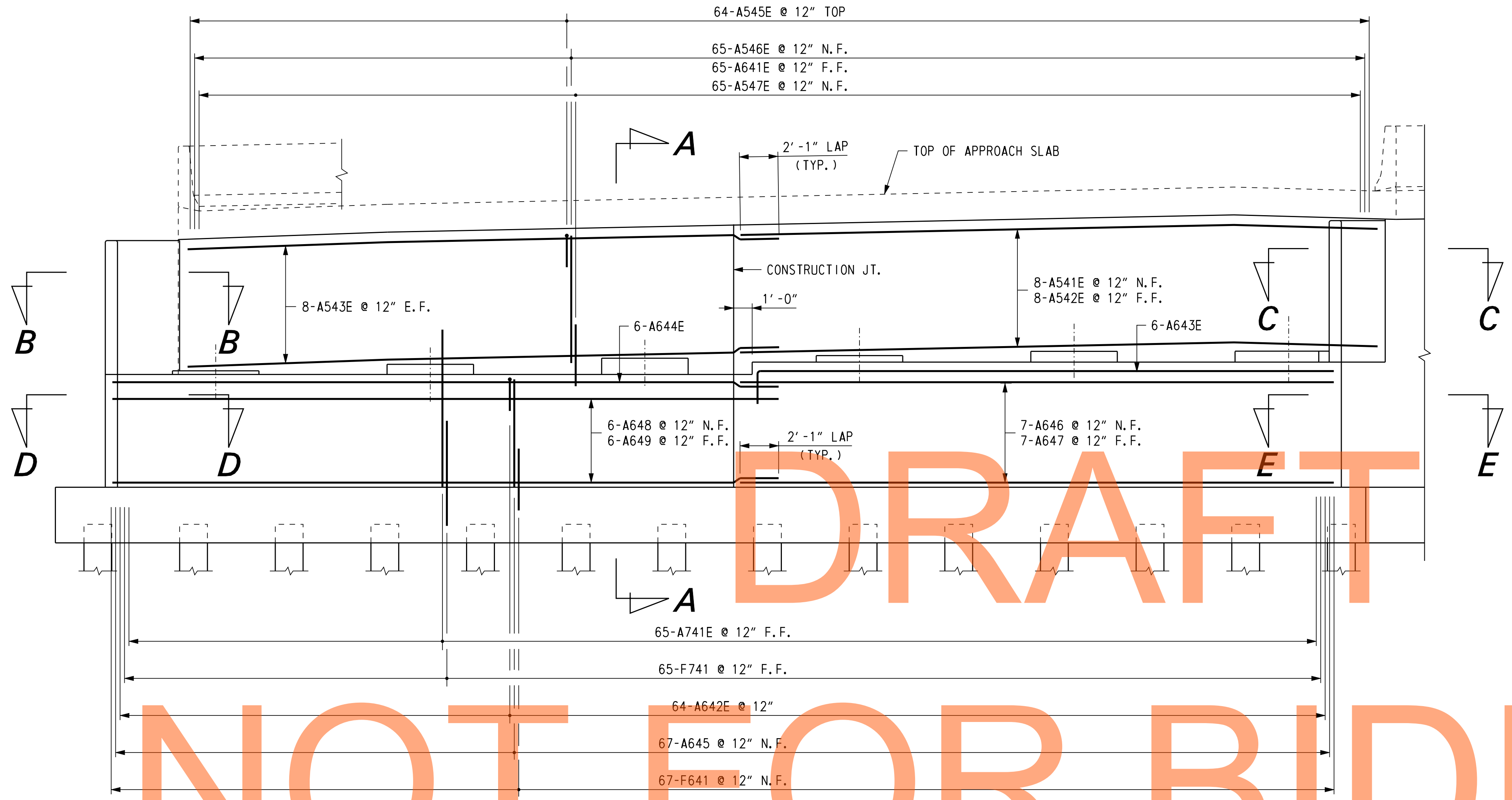
- CROSS REFERENCE NOTES:
- FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-1.
 - FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
 - FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-23.

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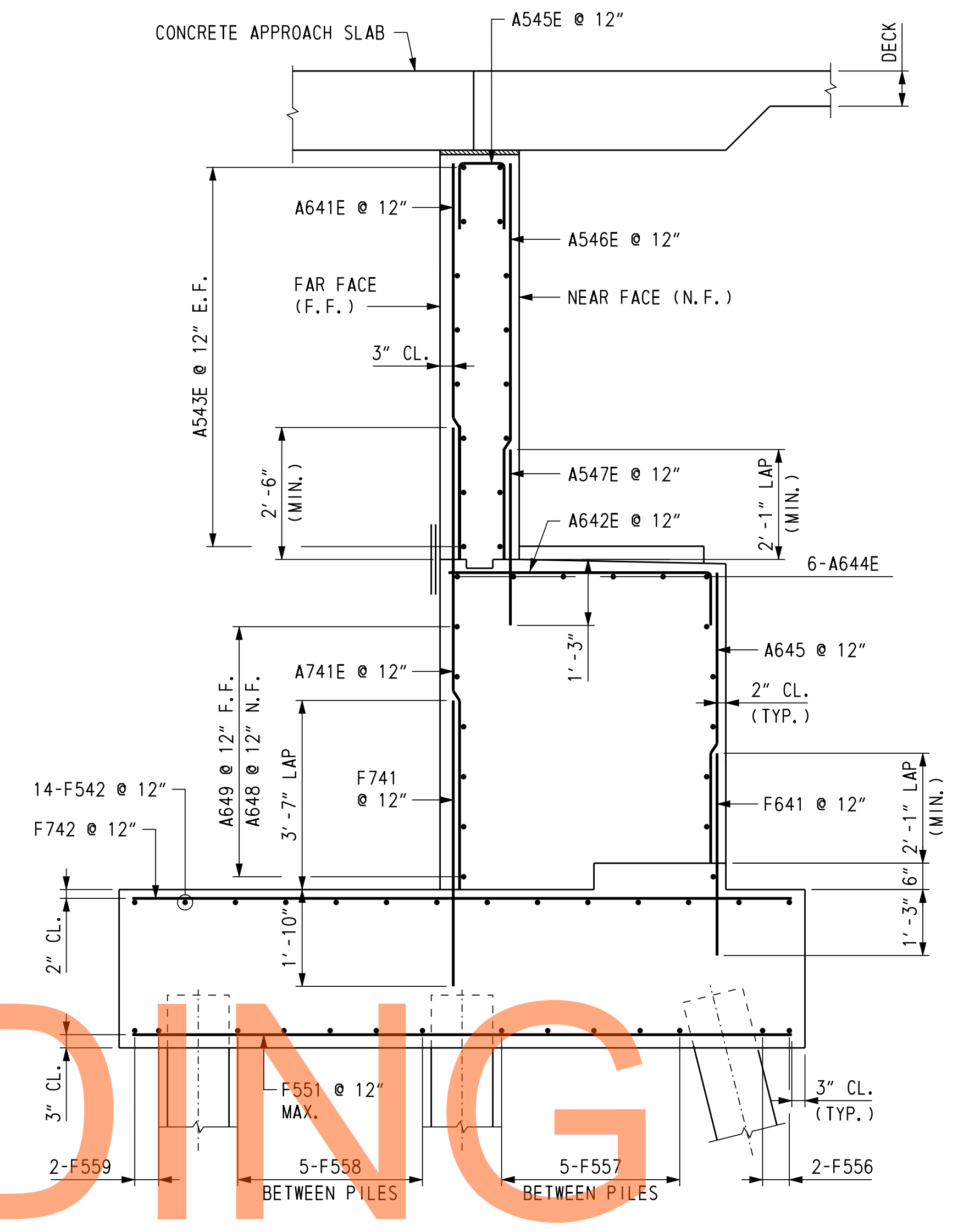
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT	BRIDGE NO.	1-477N&S US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 1 SB ROADWAY REINFORCEMENT 5	1-477 AB-17
			T200511303	DESIGNED BY: J. S. LI		SHEET NO. 465
			COUNTY	CHECKED BY: W. A. O'CONNOR	TOTAL SHTS. 1256	
			NEW CASTLE			

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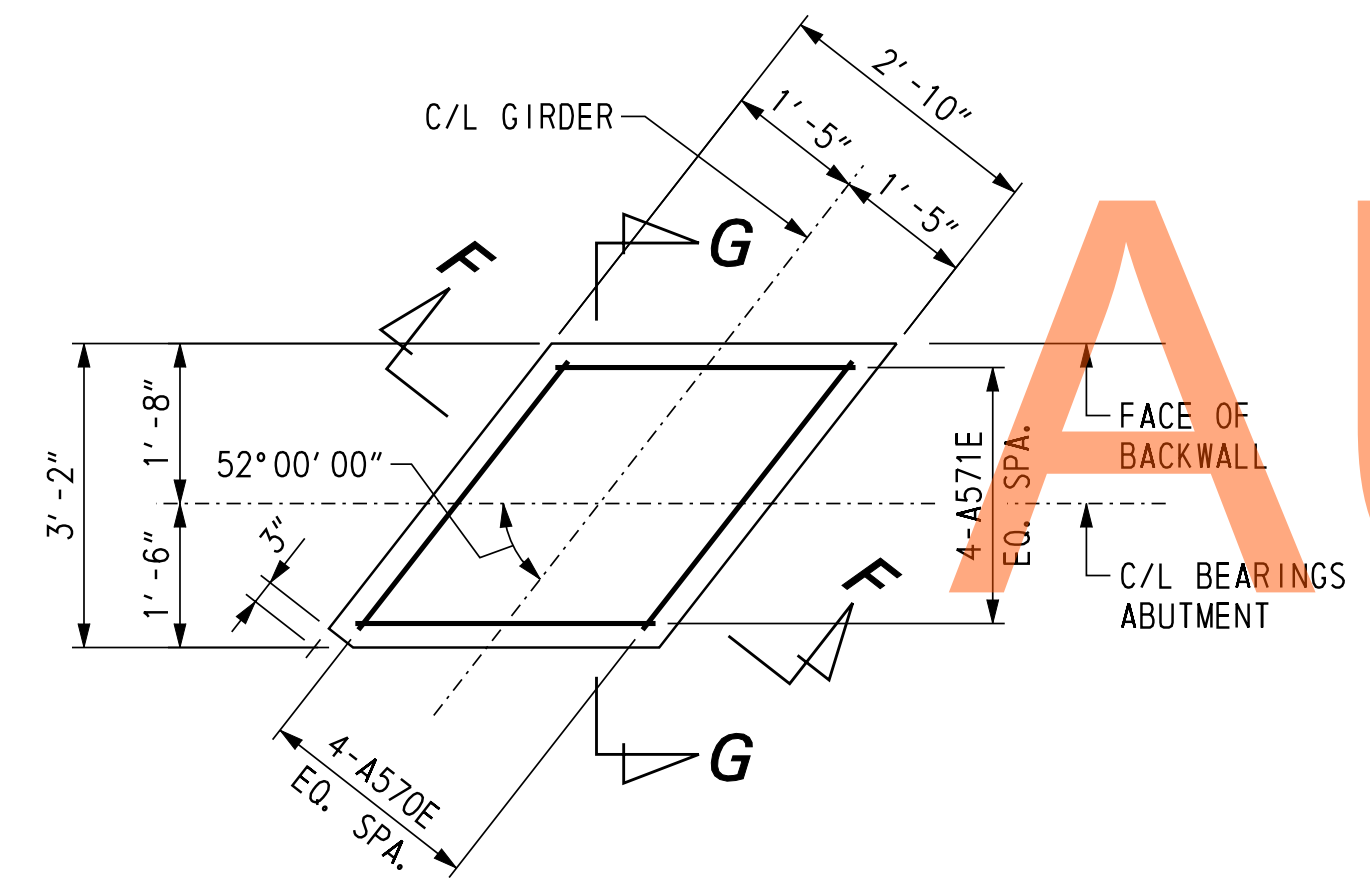
NOT FOR BIDDING



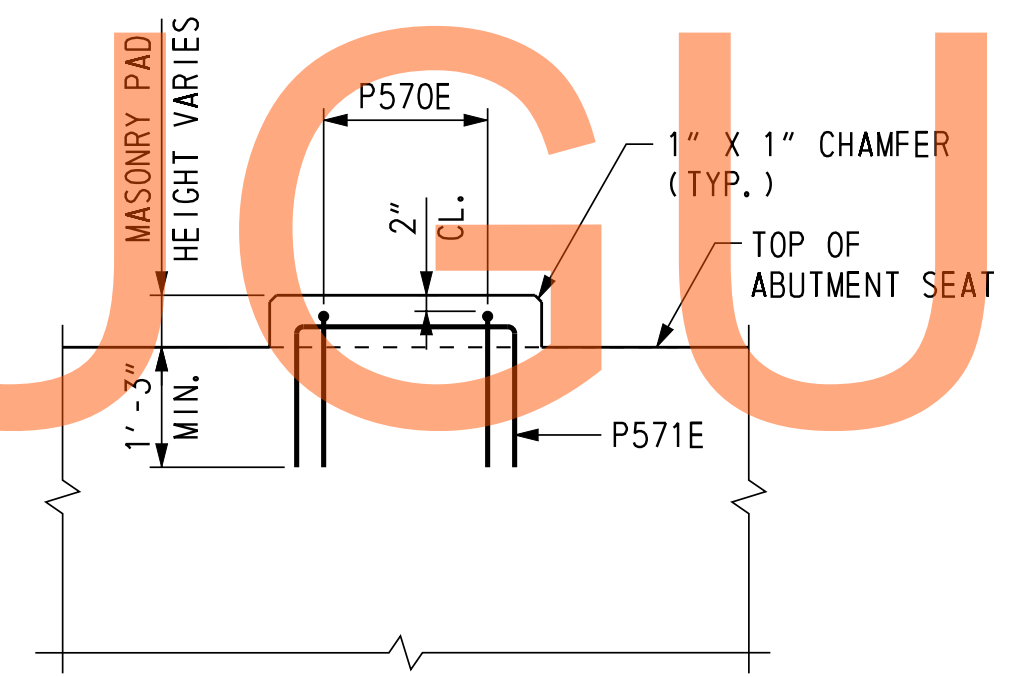
ELEVATION - ABUTMENT 2 SOUTHBOUND ROADWAY
SCALE: 1/4" = 1'-0"



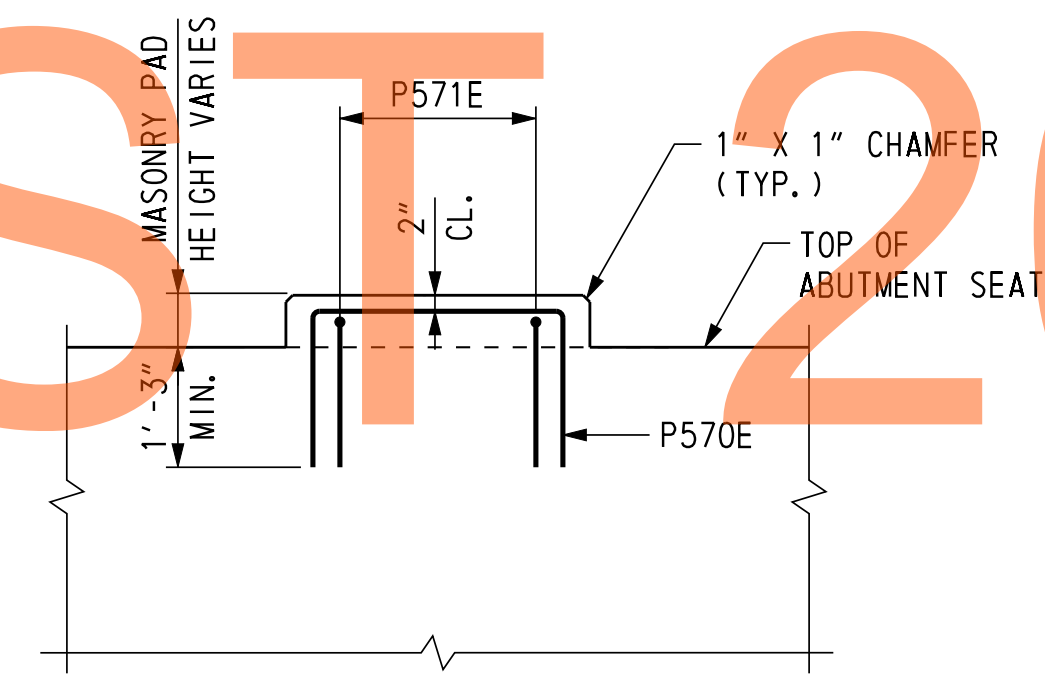
SECTION A-A
SCALE: 1/2" = 1'-0"



PLAN - ABUTMENT MASONRY PAD
SCALE: 1/2" = 1'-0"



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



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

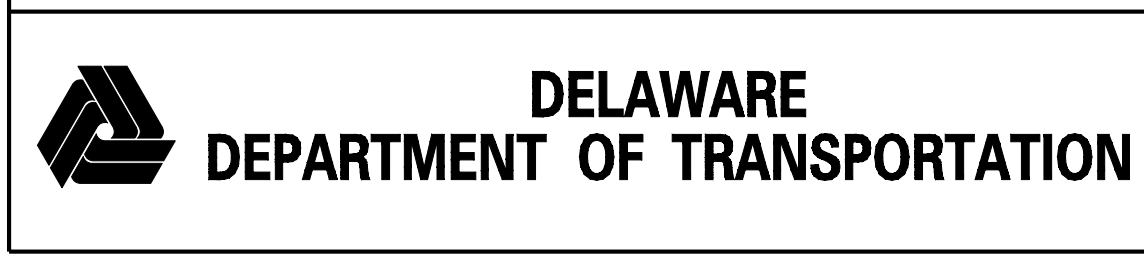
NOTES:
1. ABUTMENT 2 SOUTHBOUND ROADWAY MASONRY PAD REINFORCEMENT APPLIES AT GIRDERS G2 THROUGH G6.

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-2.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
 3. FOR WINGWALL ELEVATION, SEE DWG. 1-477 AB-5.
 4. FOR SECTIONS B-B TO E-E, SEE DWG. 1-477 AB-19.
 5. FOR FOOTING REINFORCEMENT PLAN, SEE DWGS. 1-477 AB-21 AND 1-477 AB-22.
 6. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-20.
 7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-24.

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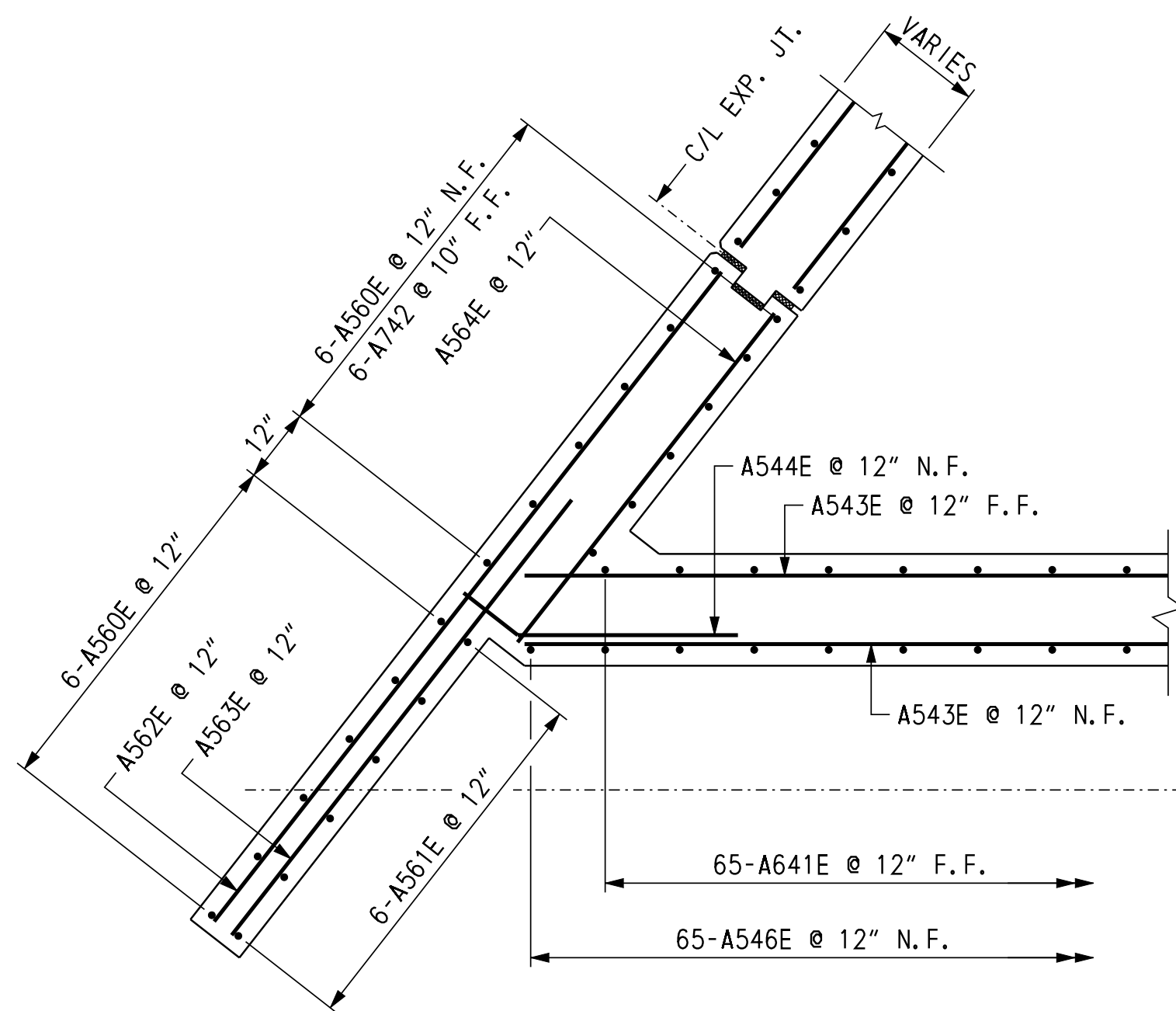
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

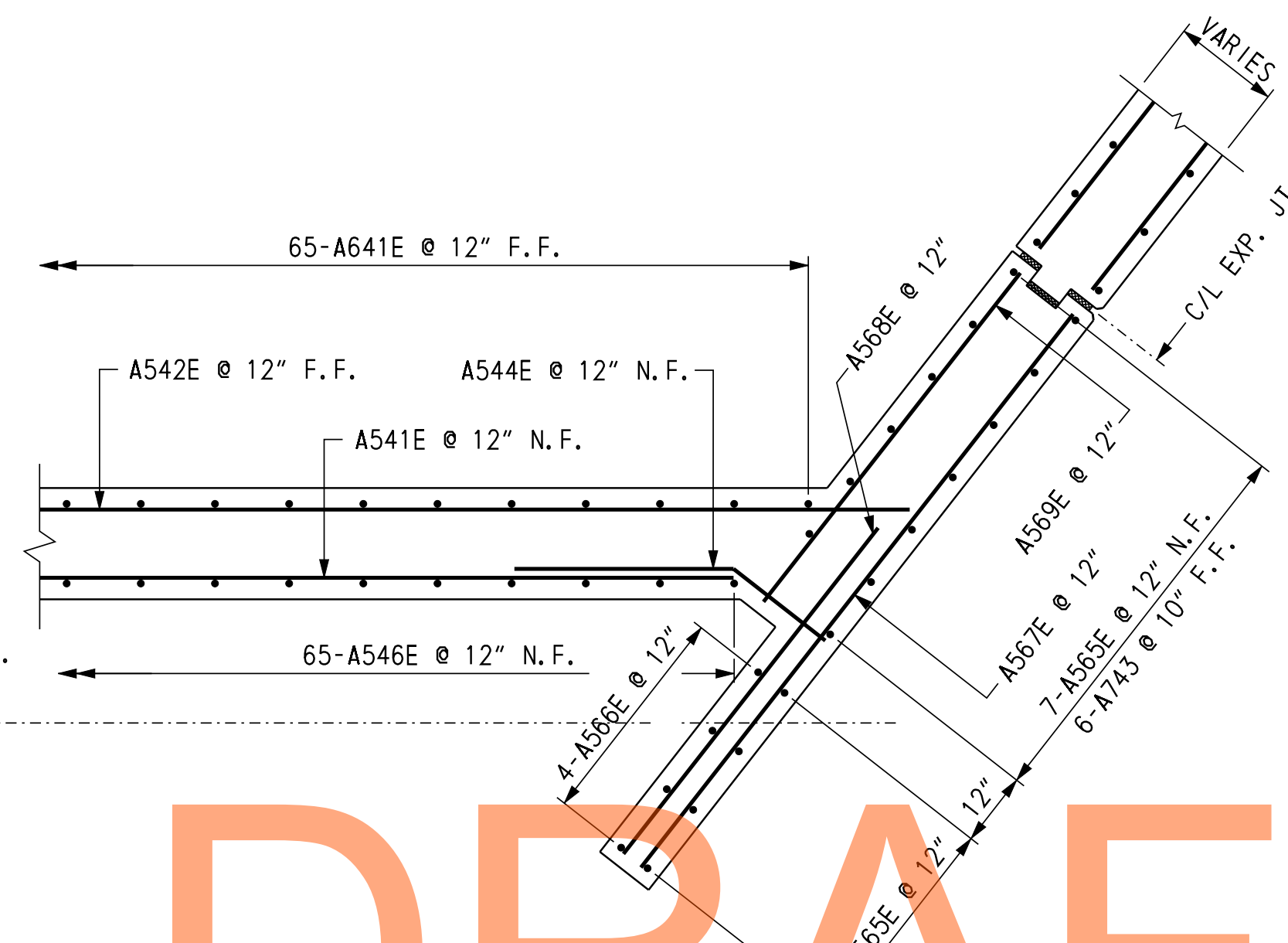
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 SB ROADWAY
REINFORCEMENT 1**

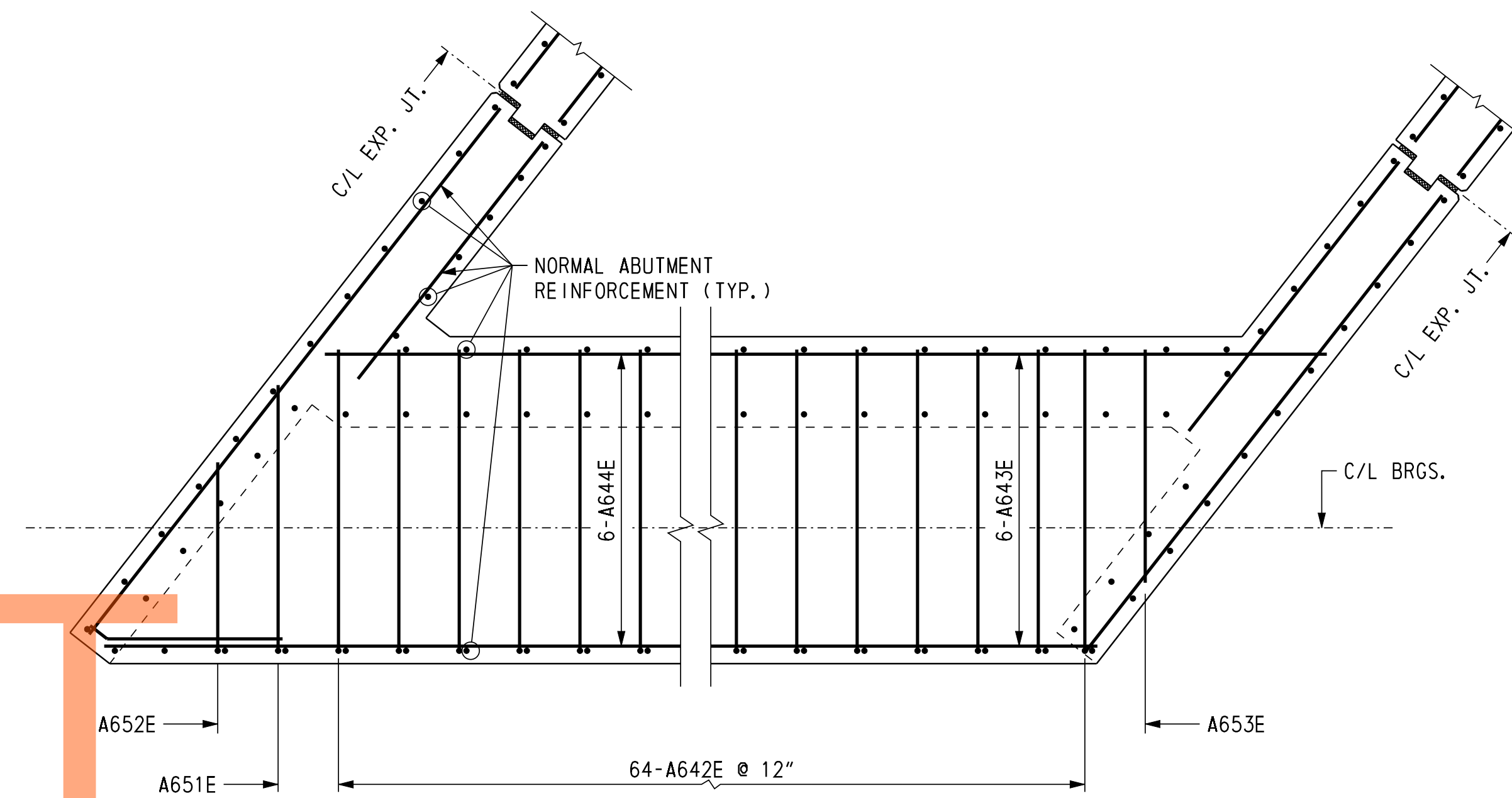
1-477 AB-18
SHEET NO.
466
TOTAL SHTS.
1256



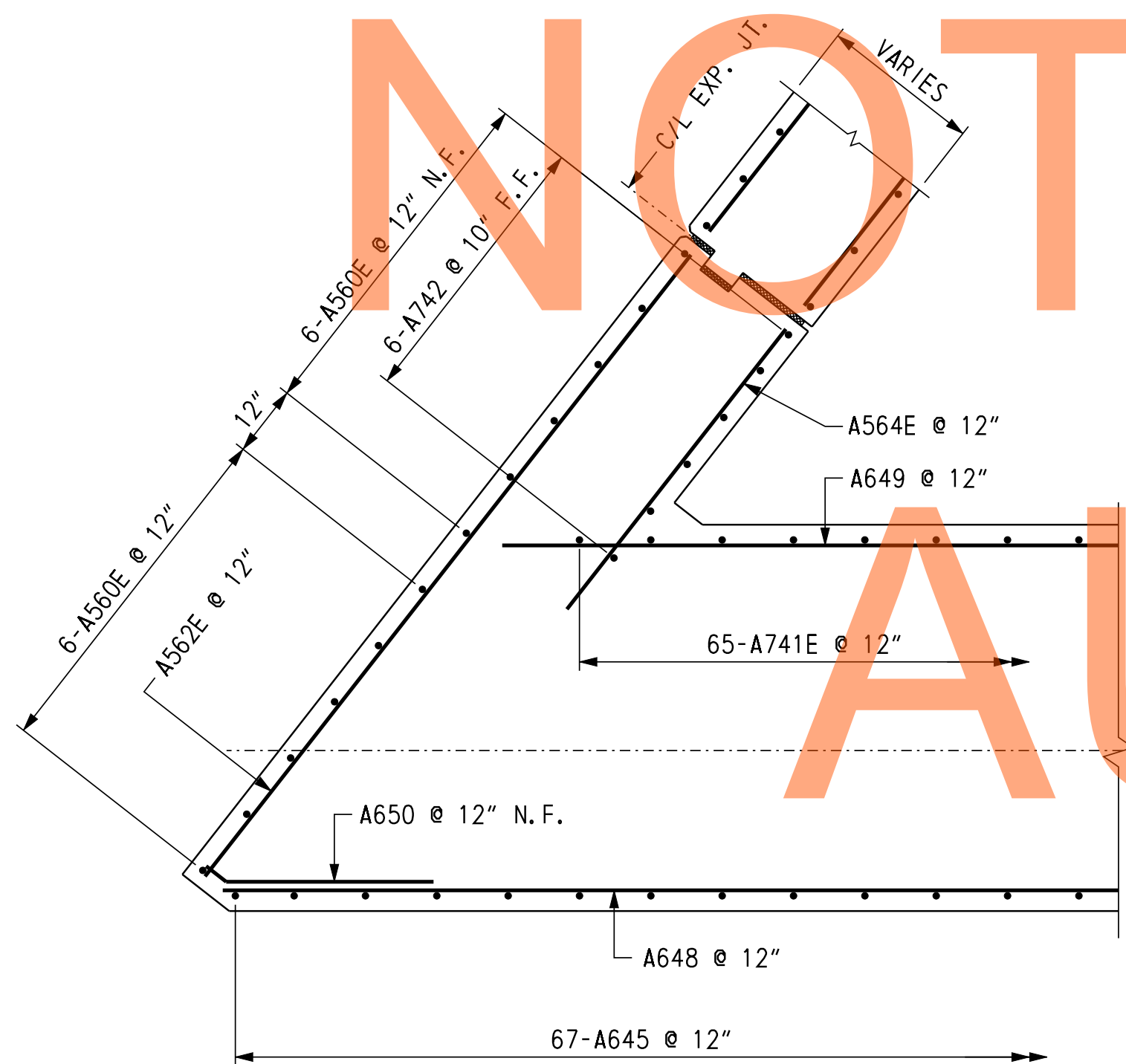
SECTION B-B
SCALE: 1/2" = 1'-0"



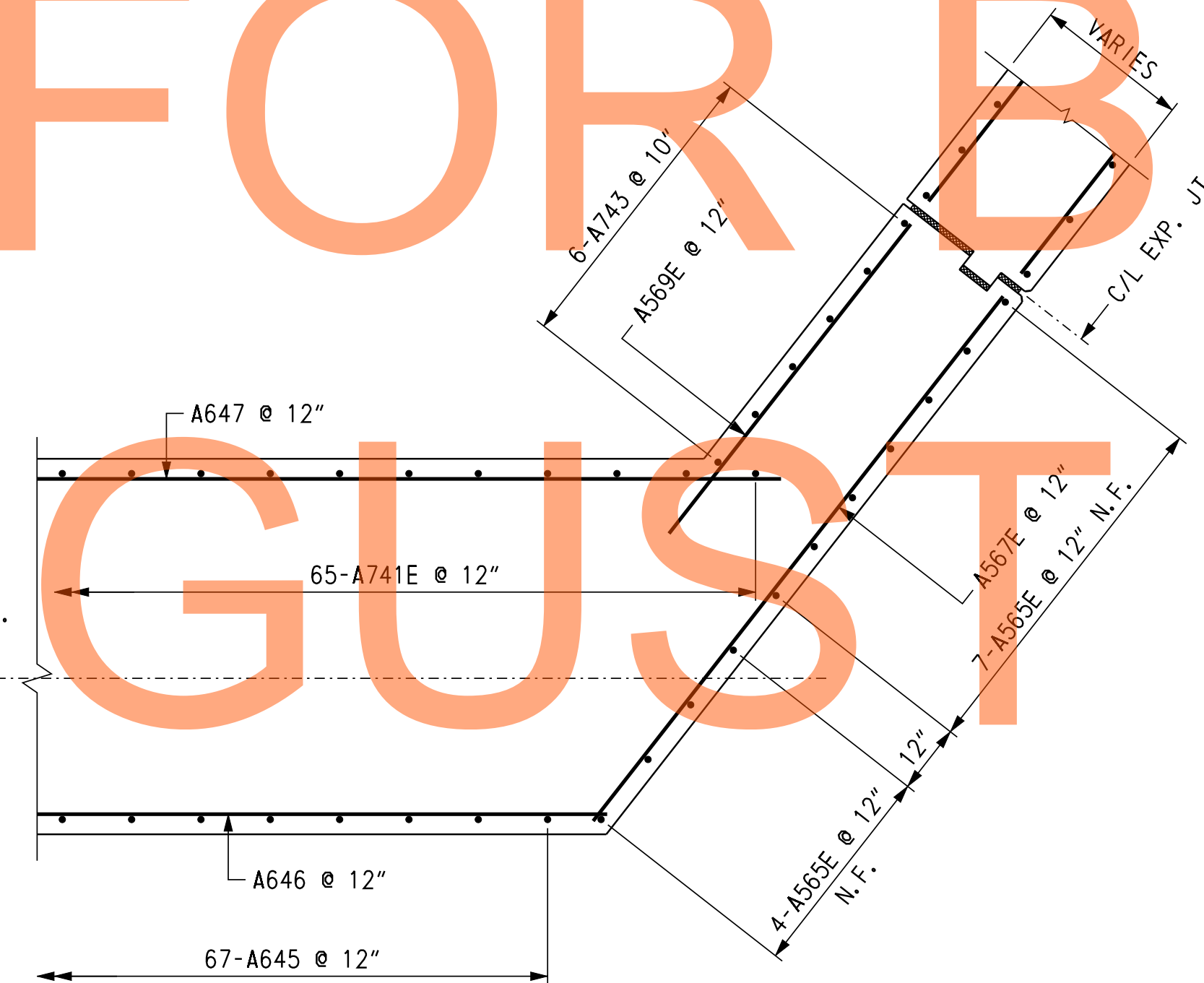
SECTION C-C
SCALE: 1/2" = 1'-0"



PLAN - BEAM SEAT DETAIL
SCALE: 1/2" = 1'-0"



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



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

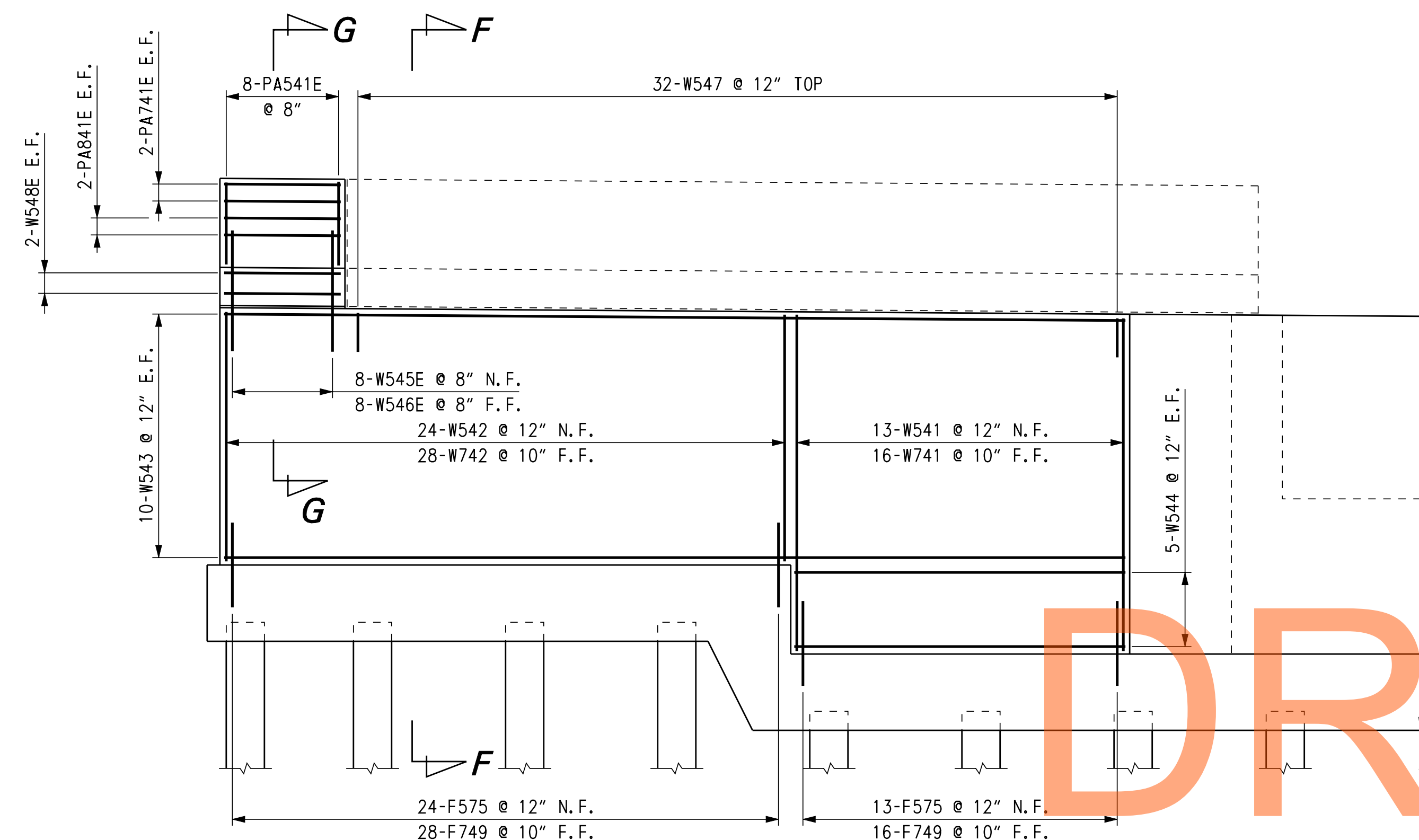
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NOTES:

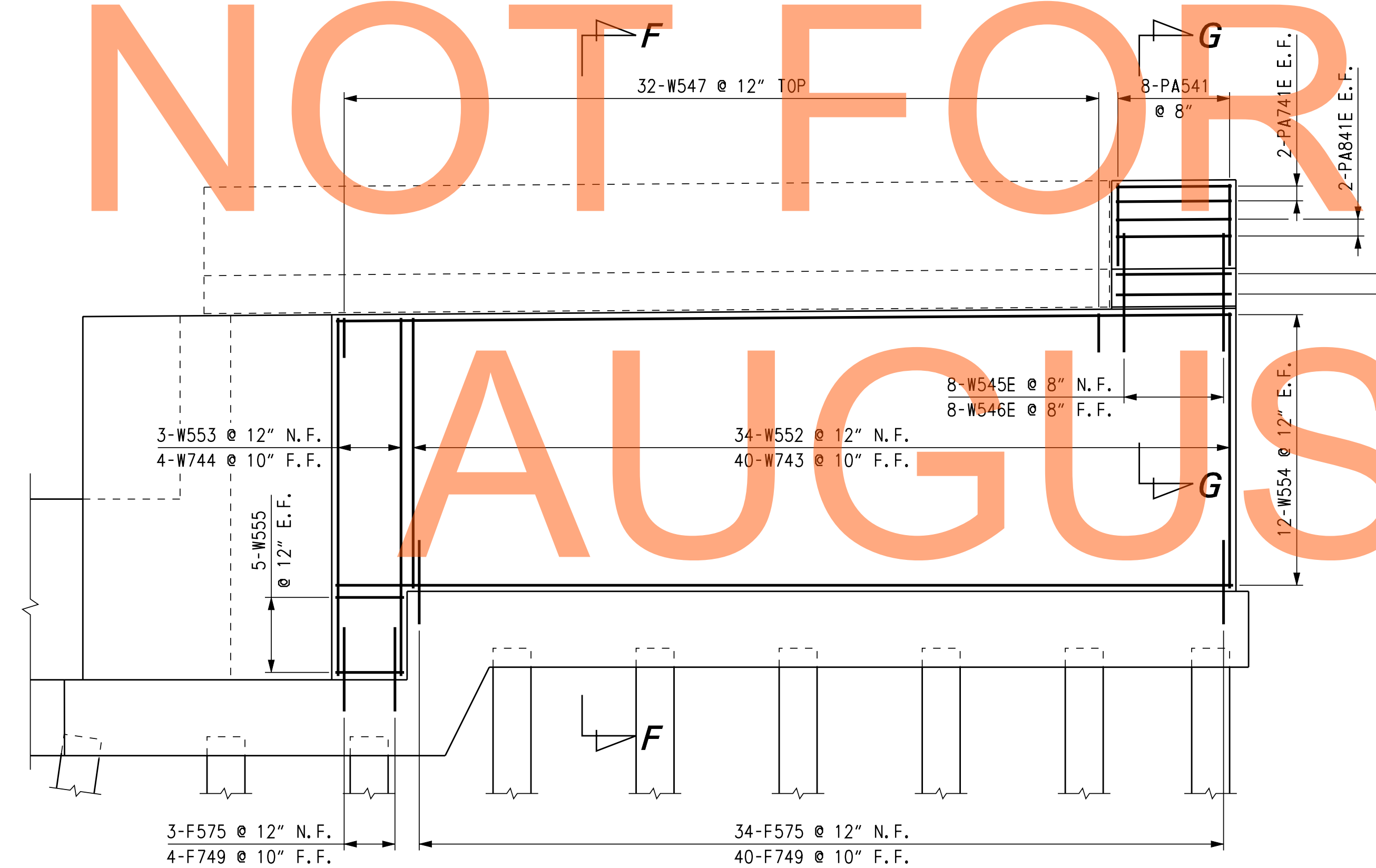
1. BARS A560E AND A565E LAP WITH F541 DOWELS (LAP = 2'-1" MIN.). EMBED DOWELS 1'-0" IN FOOTING.

CROSS REFERENCE NOTES:

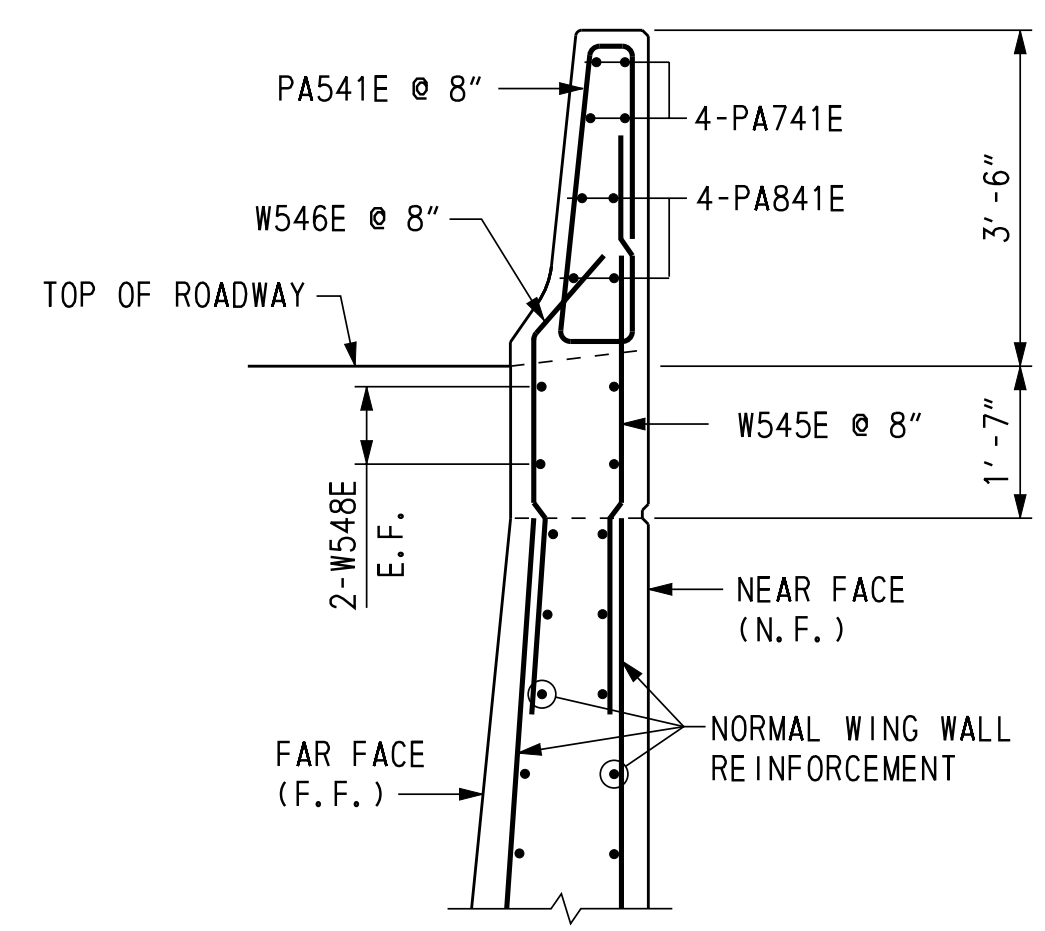
1. FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-18.
2. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-20.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-24.



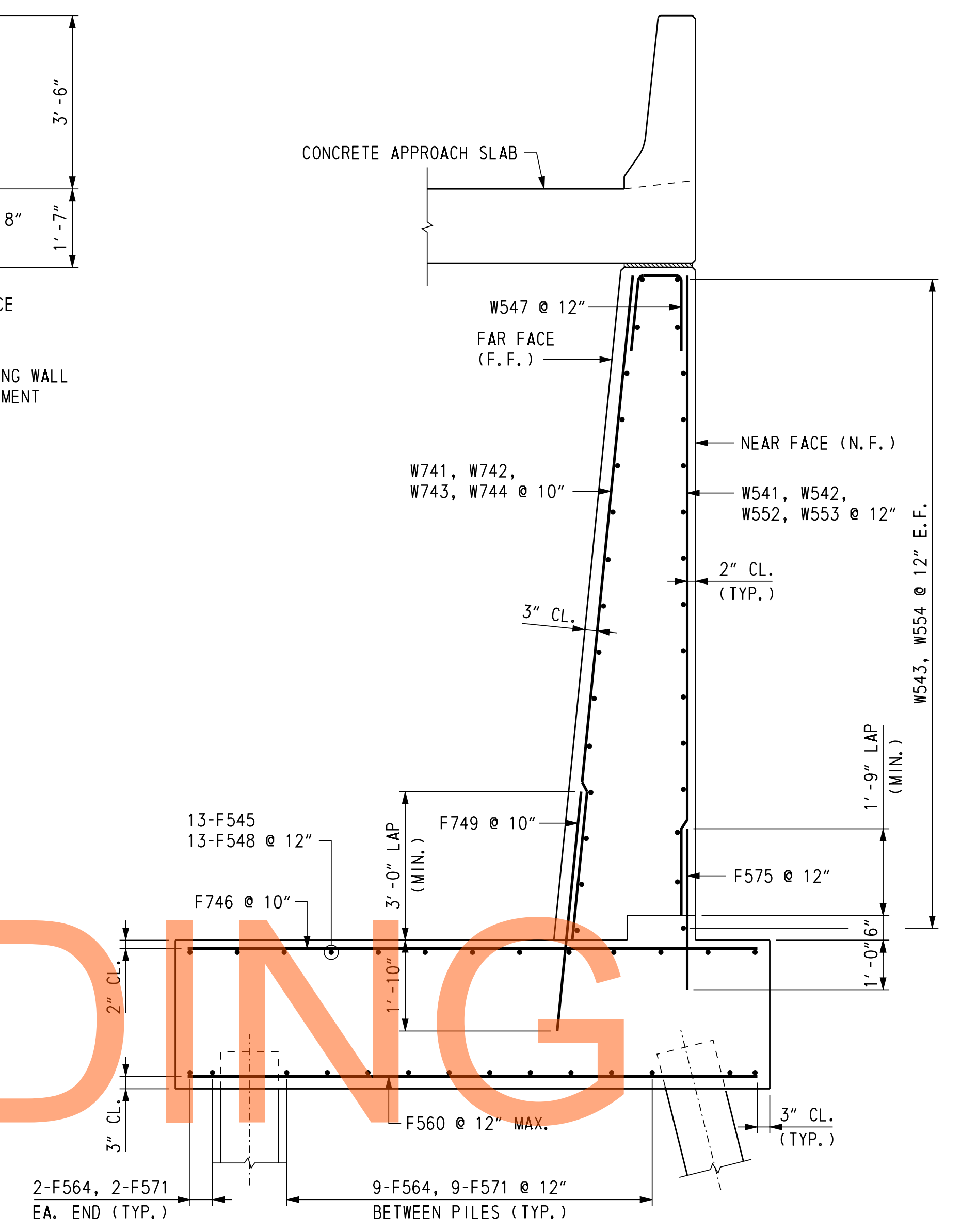
WING WALL 3
SCALE: 1/4" = 1'-0"



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



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

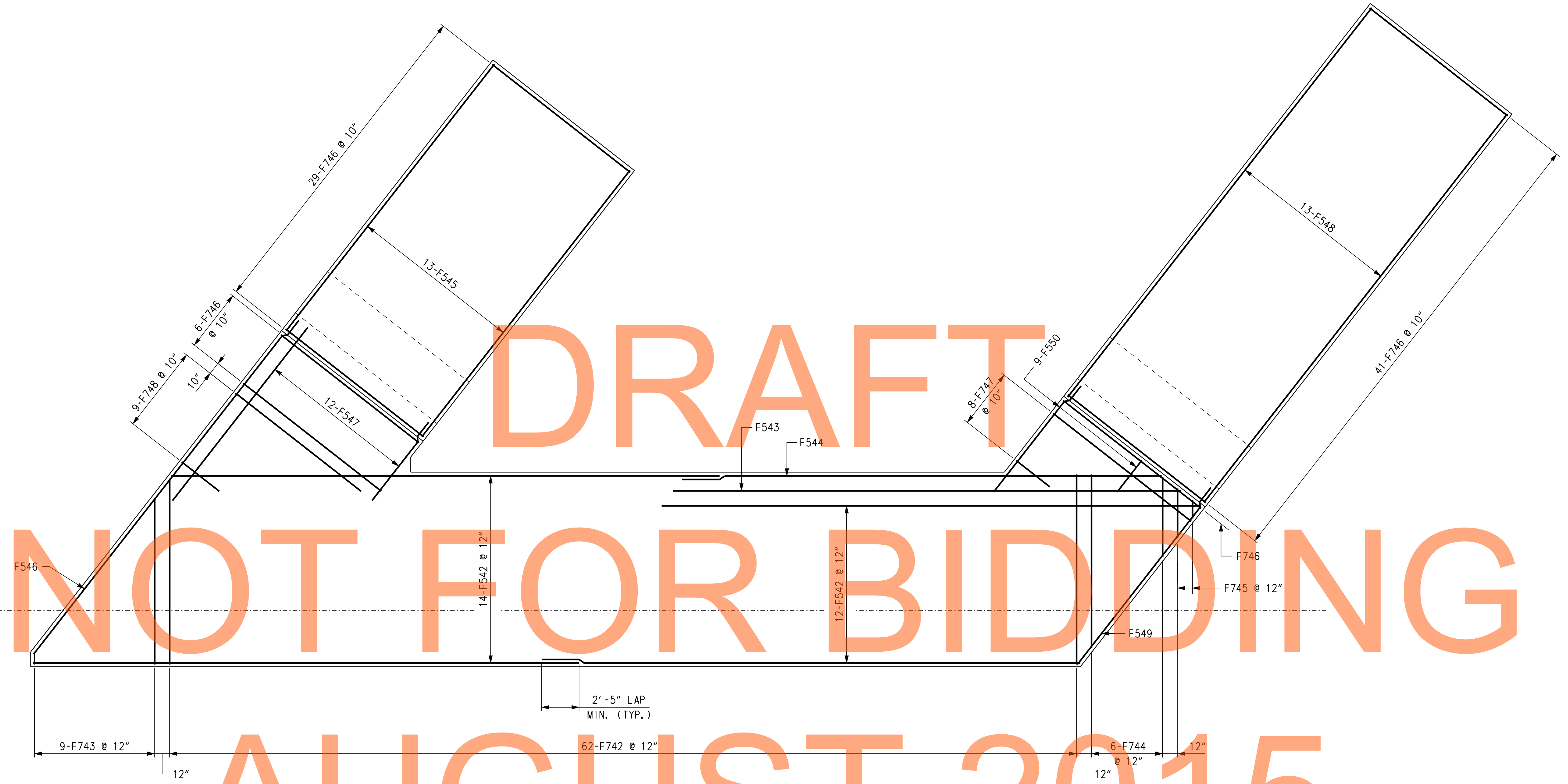
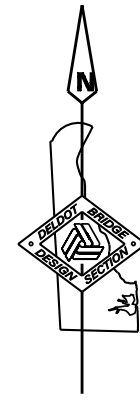


SECTION F-F
SCALE: 1/2" = 1'-0"

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- CROSS REFERENCE NOTES:**
- FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-5.
 - FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-18 AND 1-477 AB-19.
 - FOR FOOTING REINFORCEMENT, SEE DWGS. 1-477 AB-21 AND 1-477 AB-22.
 - FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-24.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT	BRIDGE NO.	1-477N&S US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 2 SB ROADWAY REINFORCEMENT 3	1-477 AB-20	
			T200511303	DESIGNED BY: J. S. LI		SHEET NO.	468
			COUNTY	CHECKED BY: W. A. O'CONNOR		TOTAL SHTS.	1256
			NEW CASTLE				



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PLAN - TOP MAT FOOTING REINFORCEMENT
SCALE: 1/4" = 1'-0"

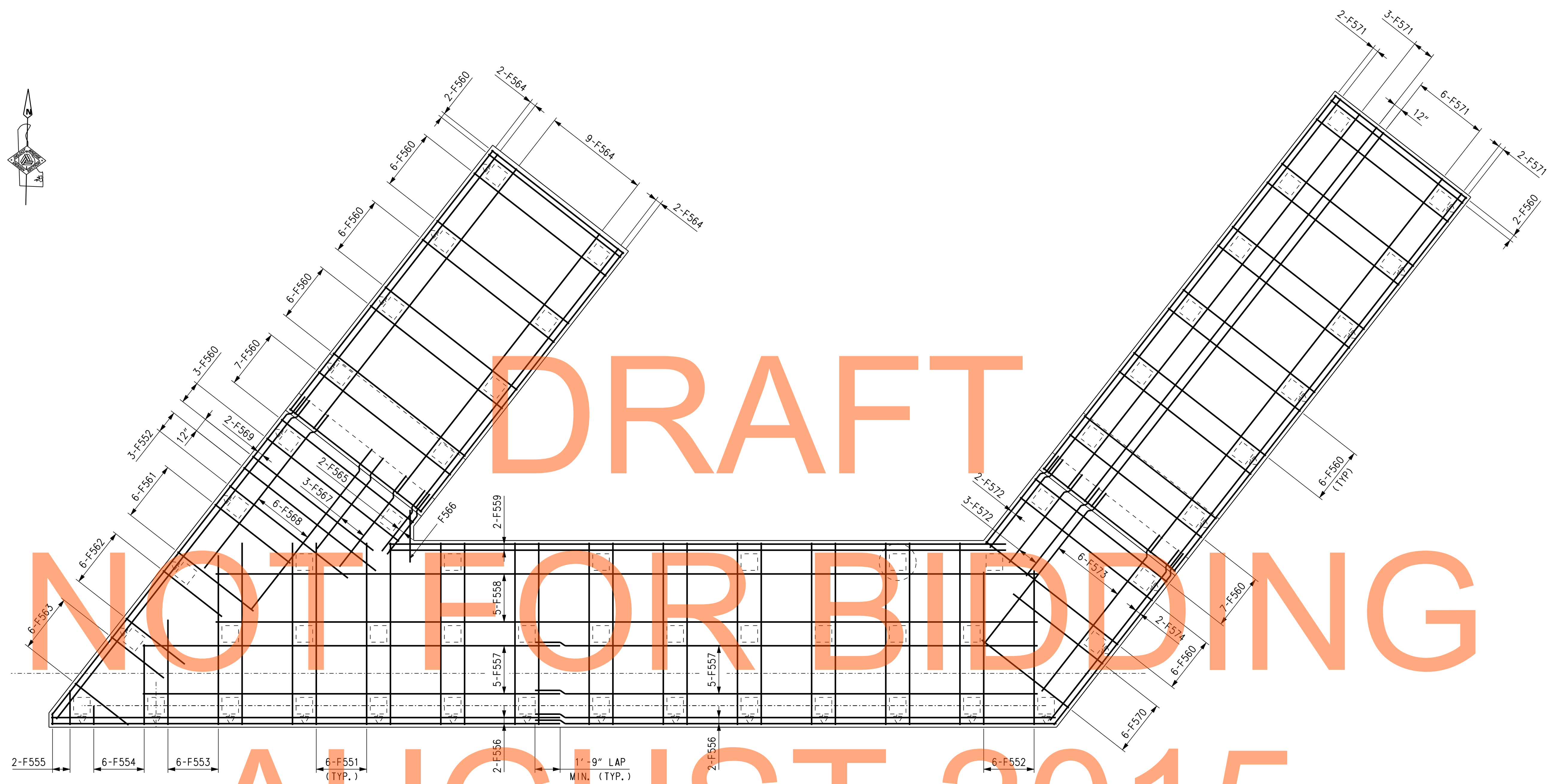
- CROSS REFERENCE NOTES:**
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-2.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
 3. FOR FOOTING STEP DETAIL, SEE DWG. 1-477 AB-22.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-24.

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11/8/2012
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ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. Li
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

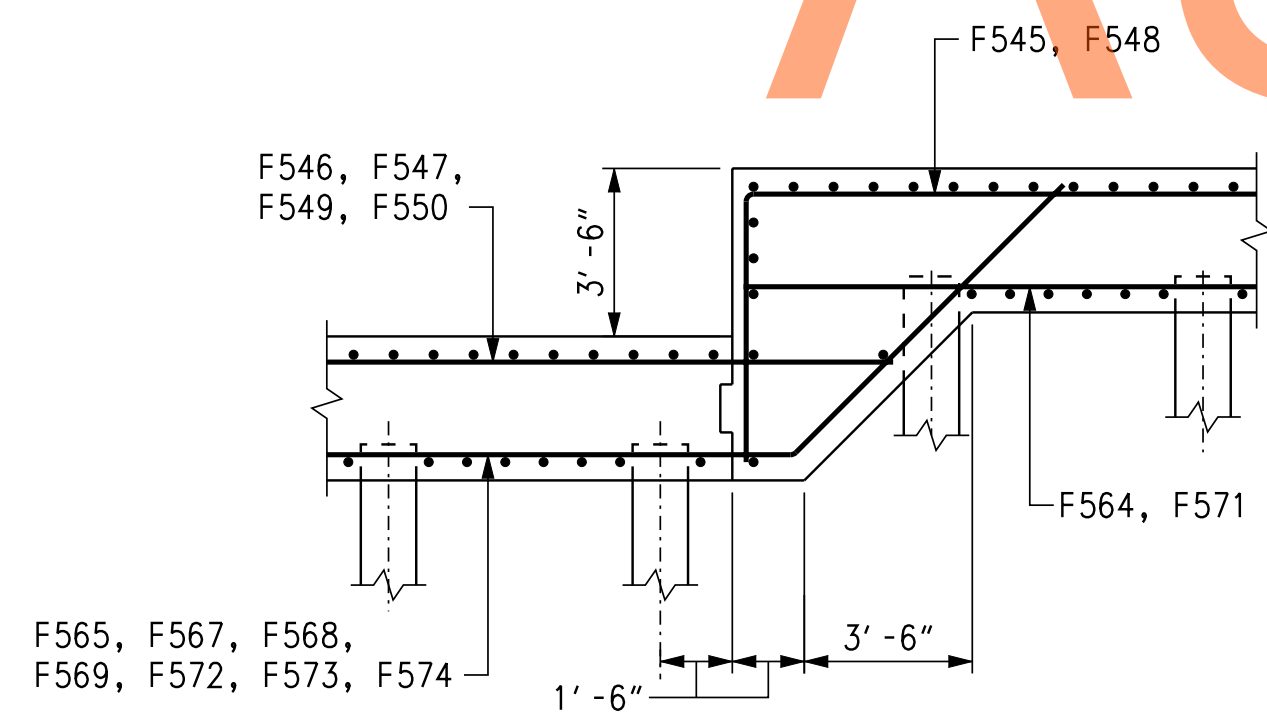
1-477N AB-21
SHEET NO.
469
TOTAL SHTS.
1256



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AUGUST 2015

PLAN - BOTTOM MAT FOOTING REINFORCEMENT

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



FOOTING STEP DETAIL

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

CROSS REFERENCE NOTES:

1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-2.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-24.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

REINFORCING BAR LIST

BENDING DIAGRAMS

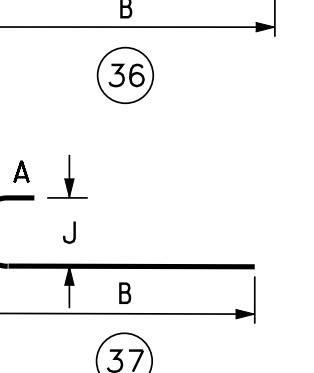
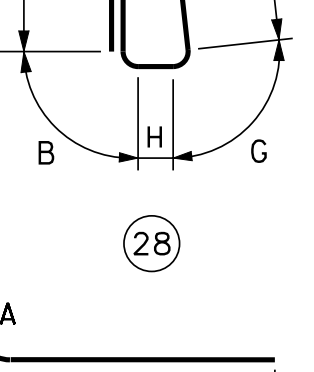
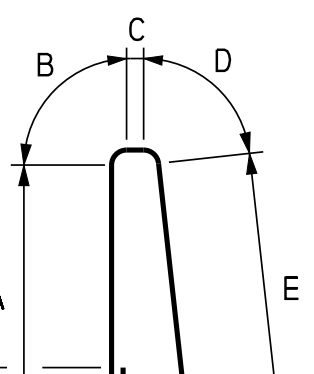
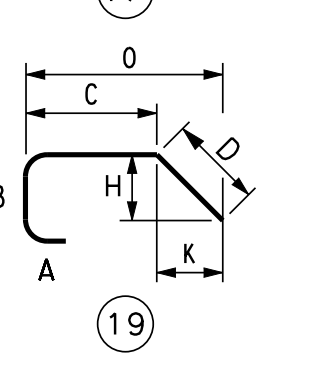
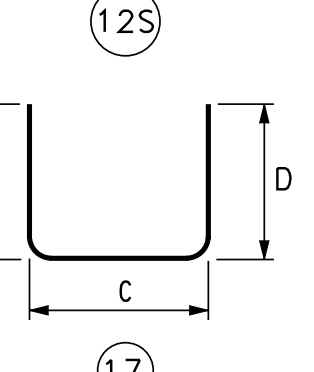
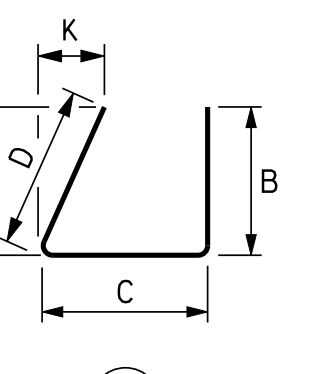
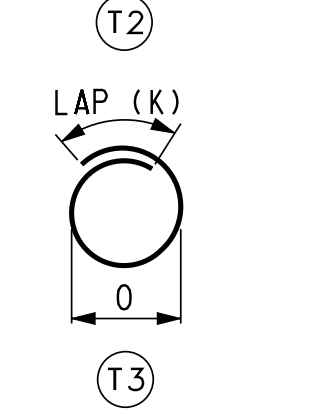
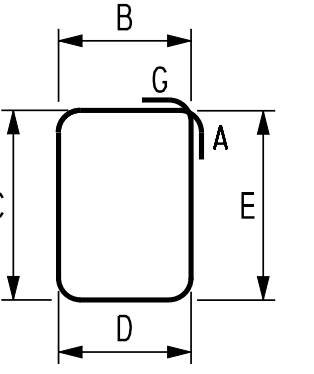
ABUTMENT 1 SOUTHBOUND ROADWAY

ABUTMENT 1 SOUTHBOUND ROADWAY

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
A501E	34'-3"	8	STR.										
A502E	36'-11"	8	STR.										
A503E	31'-3"	16	STR.										
A504E	3'-3"	16	19		1'-2"	2'-1"				0'-8 5/8"		0'-11"	
A505E	5'-4"	64	17		2'-1"	1'-2"	2'-1"						
A506E	7'-0"	65	STR.										
A507E	4'-2"	65	STR.										
A520E	12'-8"	12	STR.										
A521E	8'-9"	6	STR.										
A522E	11'-1"	14	STR.										
A523E	6'-6 1/2"	8	STR.										
A524E	5'-8"	14	STR.										
A525E	11'-5"	11	STR.										
A526E	8'-4"	4	STR.										
A527E	9'-6"	13	STR.										
A528E	4'-11"	8	STR.										
A529E	5'-8"	13	STR.										
A530E	7'-5"	20	17		1'-11"	3'-7"	1'-11"						
A531E	7'-0"	20	17		1'-11"	3'-2"	1'-11"						
A601E	7'-0"	65	STR.										
A602E	6'-0"	64	36	1'-0"	5'-0"								
A603E	32'-0" TO 34'-11"	6	36	1'-0"	31'-0" TO 33'-11"								Δ = 7"
A604E	33'-3" TO 37'-0"	6	STR.										Δ = 9"
A605	4'-5"	67	STR.										
A606	33'-0"	5	STR.										
A607	36'-10"	5	STR.										
A608	34'-11"	6	STR.										
A609	32'-0"	6	STR.										
A610	2'-7"	7	19		0'-6"	2'-1"				0'-3 5/8"		0'-4 3/4"	
A611E	4'-9"	1	36	1'-0"	3'-9"								
A612E	3'-6"	1	36	1'-0"	2'-6"								
A613E	3'-9"	1	STR.										
A701E	8'-5"	65	STR.										
A702	13'-2"	6	STR.										
A703	12'-1"	6	STR.										
F501	4'-3"	23	STR.										
F502	36'-7 3/4"	26	STR.										
F503	32'-4 1/2"	1	STR.										
F504	34'-5 1/4"	1	STR.										
F505	28'-11"	13	36	6'-0"	22'-11"								
F506	30'-6"	1	STR.										
F507	8'-3 7/8" TO 16'-6 1/4"	12	STR.										Δ = 9"
F508	38'-11"	13	36	6'-0"	32'-11"								
F509	17'-2"	1	STR.										
F510	5'-10" TO 11'-11"	9	STR.										Δ = 9 1/8"
F511	12'-6"	60	STR.										
F512	10'-7"	9	STR.										
F513	8'-9" TO 10'-7"	6	STR.										Δ = 4 3/8"
F514	2'-2" TO 5'-4"	6	STR.										Δ = 7 5/8"
F515	1'-0" TO 1'-11"	2	STR.										Δ = 11"
F516	35'-10 1/4"	4	STR.										
F517	33'-1"	10	STR.										
F518	57'-2"	5	STR.										
F519	41'-4"	2	STR.										
F520	11'-6"	75	STR.										

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
F521	6'-6"	6	STR.										
F522	5'-3"	6	STR.										
F523	4'-3"	6	STR.										
F524	22'-11"	13	STR.										
F525	13'-3"	2	19			4'-8"	8'-7"			6'-1"		6'-1"	
F526	2'-6"	1	STR.										
F527	17'-0"	3	19			8'-5"	8'-7"			6'-1"		6'-1"	
F528	22'-10 1/2"	6	19			14'-3 1/2"	8'-7"			6'-1"		6'-1"	
F529	36'-7"	2	19			28'-0"	8'-7"			6'-1"		6'-1"	
F530	7'-6"	6	STR.										
F531	32'-11"	13	STR.										
F532	16'-7"	5	19			8'-0"	8'-7"			6'-1"		6'-1"	
F533	22'-2"	6	19			13'-7"	8'-7"			6'-1"		6'-1"	
F534	23'-2"	2	19			14'-7"	8'-7"			6'-1"		6'-1"	
F535	3'-9"	74	STR.										
F601	4'-6"	67	STR.										
F701	6'-1"	77	STR.										
F702	12'-6"	62	STR.										
F703	0'-10" TO 11'-3"	9	STR.										Δ = 1'-3 5/8"
F704	5'-7 5/8" TO 11'-3"	6	STR.										Δ = 1'-1 1/2"
F705	1'-0" TO 3'-1"	2	STR.										Δ = 2'-1"
F706	11'-6"	77	STR.										
F707	1'-4" TO 7'-10"	8	STR.										Δ = 0'-11"
F708	1'-4" TO 10'-10"	9	STR.										Δ = 1'-2 1/4"
F709	5'-4"	88	STR.										
PA501E	7'-6 1/4"	16	28	2'-9 1/4"	0'-2 3/4"	0'-1 5/8"	0'-2 3/4"	2'-9 1/2"	0'-3 1/8"	0'-5 1/8"			
PA701E	4'-8"	8	STR.										
PA801E	4'-8"	8	STR.										
W501	7'-7"	34	STR.										
W502	11'-1"	3	STR.										
W503	35'-5"	20	STR.										
W504	2'-6"	10	STR.										
W505E	5'-7"	16	STR.										
W506E	5'-8"	16	19			4'-1"	1'-9"			1'-0"		1'-5 1/4"	
W507	2'-8"	64	12S			0'-10"	1'-0"	0'-10"		0'-10"		0'-1"	
W508E	4'-8"	8	STR.										
W512	12'-2"	13	STR.										
W513	8'-8"	24	STR.										
W514	35'-5"	22	STR.										
W515	12'-6"	10	STR.										
W701	8'-1 1/4"	40	STR.										
W702	11'-7 1/4"	4	STR.										
W703	12'-8 1/4"	16	STR.										
W704	9'-2 1/8"	28	STR.										

ALL DIMENSIONS ARE FROM OUT TO OUT.



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REINFORCING BAR LIST

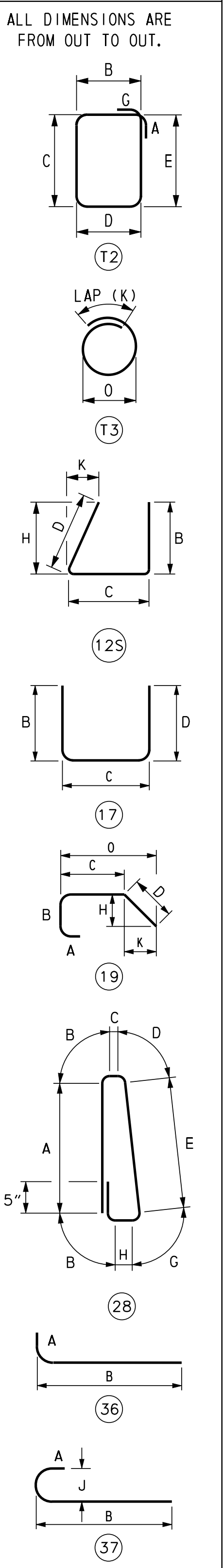
BENDING DIAGRAMS

ABUTMENT 2 SOUTHBOUND ROADWAY

ABUTMENT 2 SOUTHBOUND ROADWAY

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
A541E	33' - 10 1/2"	8	STR.										
A542E	36' - 6"	8	STR.										
A543E	31' - 8"	16	STR.										
A544E	3' - 3"	16	19		1' - 2"	2' - 1"				0' - 8 5/8"		0' - 11"	
A545E	5' - 4"	64	17		2' - 1"	1' - 2"	2' - 1"						
A546E	7' - 0"	65	STR.										
A547E	4' - 1"	65	STR.										
A560E	12' - 7"	12	STR.										
A561E	8' - 4"	6	STR.										
A562E	11' - 1"	14	STR.										
A563E	6' - 6 1/2"	8	STR.										
A564E	5' - 8"	14	STR.										
A565E	13' - 9"	11	STR.										
A566E	8' - 9"	4	STR.										
A567E	9' - 6"	15	STR.										
A568E	4' - 11"	8	STR.										
A569E	5' - 8"	15	STR.										
A570E	7' - 5"	20	17		1' - 11"	3' - 7"	1' - 11"						
A571E	7' - 0"	20	17		1' - 11"	3' - 2"	1' - 11"						
A641E	7' - 0"	65	STR.										
A642E	6' - 0"	64	36	1' - 0"	5' - 0"								
A643E	32' - 7" TO 36' - 4"	6	36	1' - 0"	31' - 7" TO 35' - 4"								Δ = 9"
A644E	32' - 7" TO 35' - 6"	6	STR.										Δ = 7"
A645	5' - 5"	67	STR.										
A646	32' - 7"	7	STR.										
A647	36' - 4"	7	STR.										
A648	35' - 4"	6	STR.										
A649	32' - 5"	6	STR.										
A650	2' - 7"	7	19		0' - 6"	2' - 1"				0' - 3 5/8"		0' - 4 3/4"	
A651E	4' - 9"	1	36	1' - 0"	3' - 9"								
A652E	3' - 6"	1	36	1' - 0"	2' - 6"								
A653E	3' - 9"	1	STR.										
A741E	9' - 4"	65	STR.										
A742	13' - 2"	6	STR.										
A743	14' - 3"	6	STR.										
F541	4' - 3"	23	STR.										
F542	36' - 7 3/4"	26	STR.										
F543	32' - 4 1/2"	1	STR.										
F544	34' - 5 1/4"	1	STR.										
F545	28' - 11"	13	36	6' - 0"	22' - 11"								
F546	30' - 6"	1	STR.										
F547	8' - 3 7/8" TO 16' - 6 1/4"	12	STR.										Δ = 9"
F548	38' - 11"	13	36	6' - 0"	32' - 11"								
F549	17' - 2"	1	STR.										
F550	5' - 10" TO 11' - 11"	9	STR.										Δ = 9 1/8"
F551	12' - 6"	60	STR.										
F552	10' - 7"	9	STR.										
F553	8' - 9" TO 10' - 7"	6	STR.										Δ = 4 3/8"
F554	2' - 2" TO 5' - 4"	6	STR.										Δ = 7 5/8"
F555	1' - 0" TO 1' - 11"	2	STR.										Δ = 11"
F556	35' - 10 1/4"	4	STR.										
F557	33' - 1"	10	STR.										
F558	57' - 2"	5	STR.										
F559	41' - 4"	2	STR.										

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
F560	11' - 6"	75	STR.										
F561	6' - 6"	6	STR.										
F562	5' - 3"	6	STR.										
F563	4' - 3"	6	STR.										
F564	22' - 11"	13	STR.										
F565	13' - 3"	2	19			4' - 8"	8' - 7"			6' - 1"		6' - 1"	
F566	2' - 6"	1	STR.										
F567	17' - 0"	3	19			8' - 5"	8' - 7"			6' - 1"		6' - 1"	
F568	22' - 10 1/2"	6	19			14' - 3 1/2"	8' - 7"			6' - 1"		6' - 1"	
F569	36' - 7"	2	19			28' - 0"	8' - 7"			6' - 1"		6' - 1"	
F570	7' - 6"	6	STR.										
F571	32' - 11"	13	STR.										
F572	16' - 7"	5	19			8' - 0"	8' - 7"			6' - 1"		6' - 1"	
F573	22' - 2"	6	19			13' - 7"	8' - 7"			6' - 1"		6' - 1"	
F574	23' - 2"	2	19			14' - 7"	8' - 7"			6' - 1"		6' - 1"	
F575	3' - 9"	74	STR.										
F641	4' - 6"	67	STR.										
F741	6' - 1"	77	STR.										
F742	12' - 6"	62	STR.										
F743	0' - 10" TO 11' - 3"	9	STR.										Δ = 1' - 3 5/8"
F744	5' - 7 5/8" TO 11' - 3"	6	STR.										Δ = 1' - 1 1/2"
F745	1' - 0" TO 3' - 1"	2	STR.										Δ = 2' - 1"
F746	11' - 6"	77	STR.										
F747	1' - 4" TO 7' - 10"	8	STR.										Δ = 0' - 11"
F748	1' - 4" TO 10' - 10"	9	STR.										Δ = 1' - 2 1/4"
F749	5' - 4"	88	STR.										
PA541E	7' - 6 1/4"	16	28	2' - 9 1/4"	0' - 2 3/4"	0' - 1 5/8"	0' - 2 3/4"	2' - 9 1/2"	0' - 3 1/8"	0' - 5 1/8"			
PA741E	4' - 8"	8	STR.										
PA841E	4' - 8"	8	STR.										
W541	12' - 6"	13	STR.										
W542	9' - 0"	24	STR.										
W543	35' - 5"	20	STR.										
W544	12' - 6"	10	STR.										
W545E	5' - 7"	16	STR.										
W546E	5' - 8"	16	19					4' - 1"	1' - 9"	1' - 0"		1' - 5 1/4"	
W547	2' - 8"	64	12S			0' - 10"	1' - 0"	0' - 10"		0' - 10"		0' - 1"	
W548E	4' - 8"	8	STR.										
W552	10' - 1"	34	STR.										
W553	13' - 7"	3	STR.										
W554	35' - 5"	24	STR.										
W555	2' - 6"	10	STR.										
W741	13' - 0"	16	STR.										
W742	9' - 6"	28	STR.										
W743	10' - 6 7/8"	40	STR.										
W744	14' - 0 7/8"	4	STR.										



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NOT FOR BIDDING

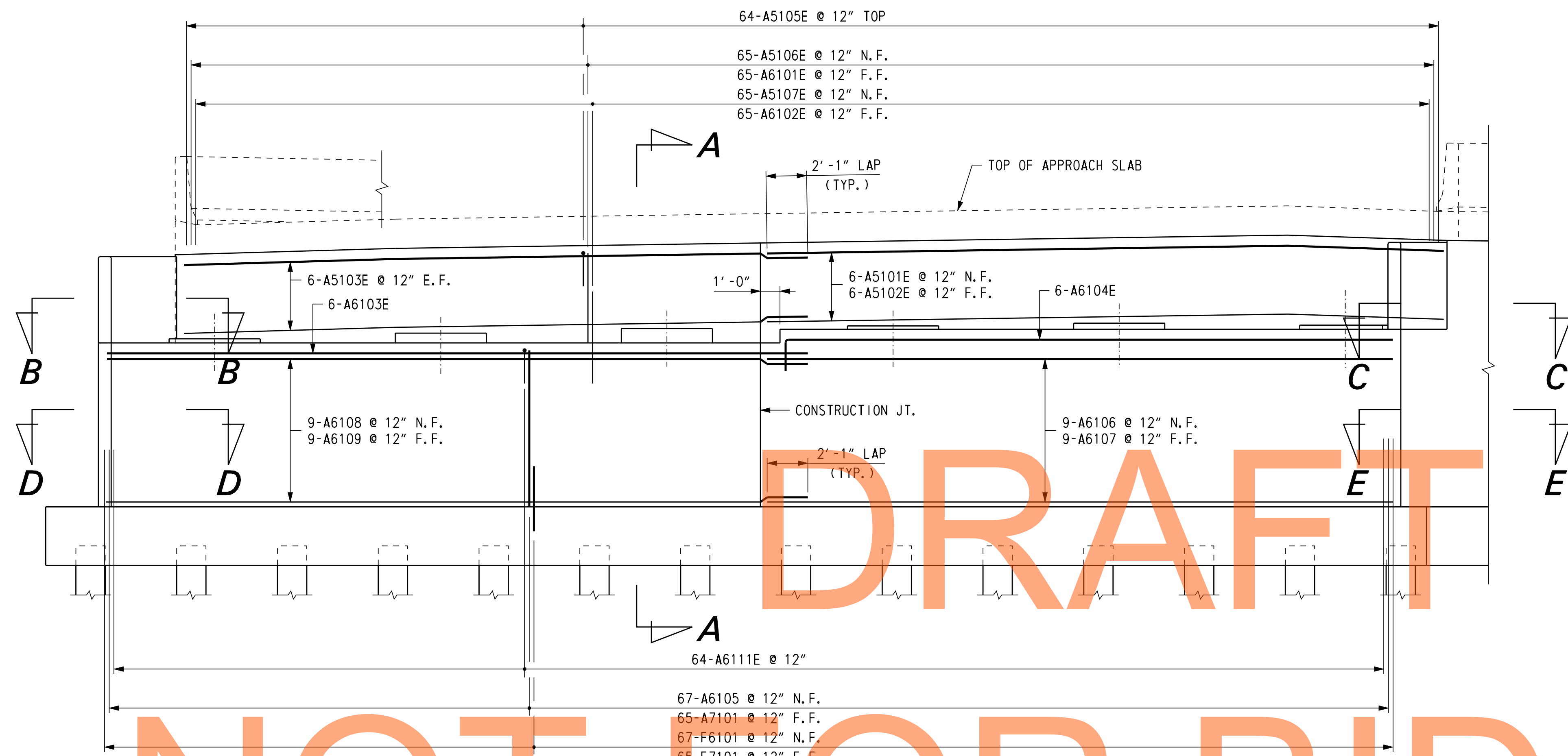
AUGUST 2015

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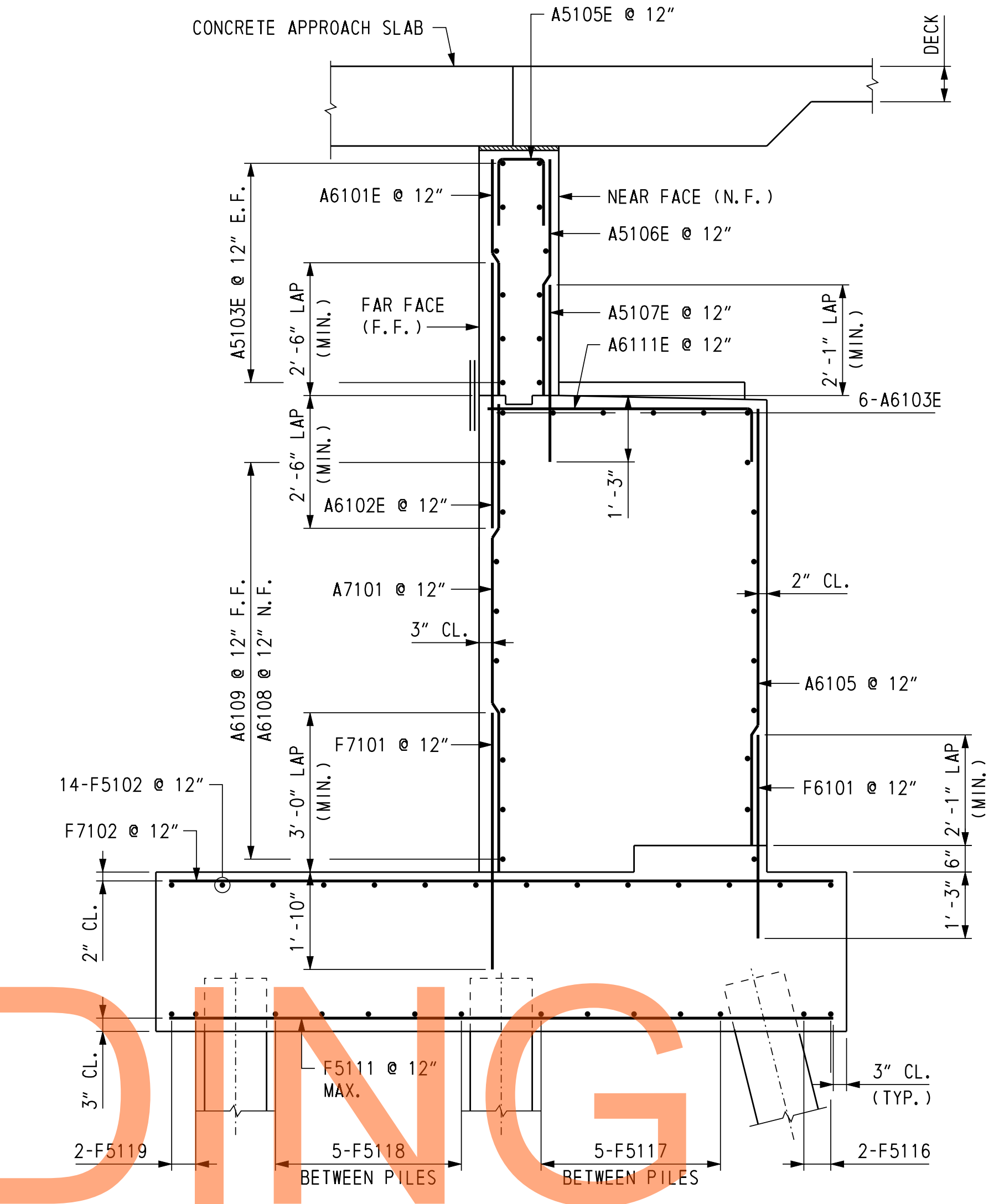
11/8/2012

Steve_Lambert

 DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200511303	BRIDGE NO. 1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 2 SB ROADWAY REINFORCING BAR LIST	SHEET NO. 472
			COUNTY NEW CASTLE	DESIGNED BY: J. S. LI		CHECKED BY: W. A. O'CONNOR



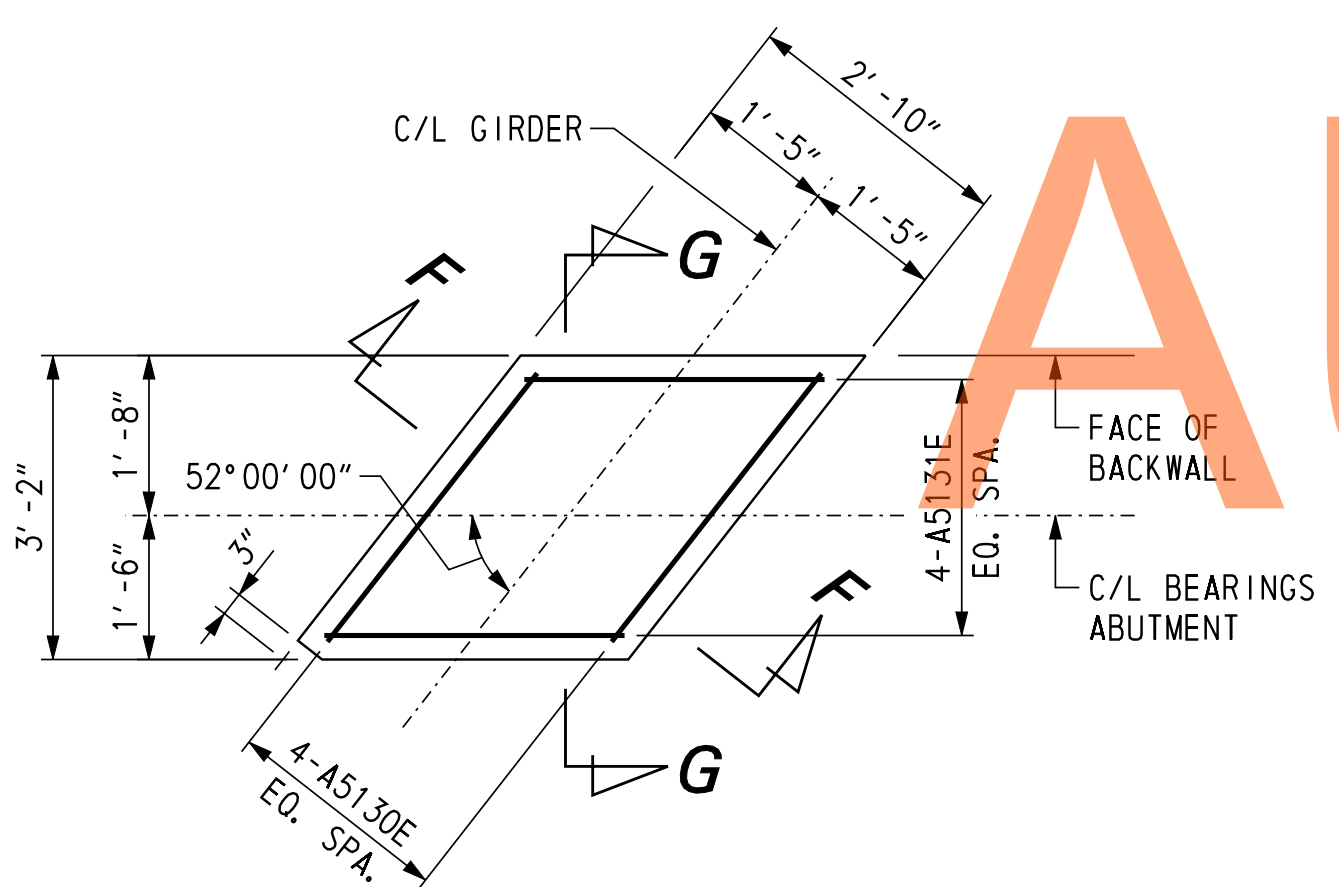
ELEVATION - ABUTMENT 1 NORTHBOUND ROADWAY
 SCALE: 1/4" = 1'-0"



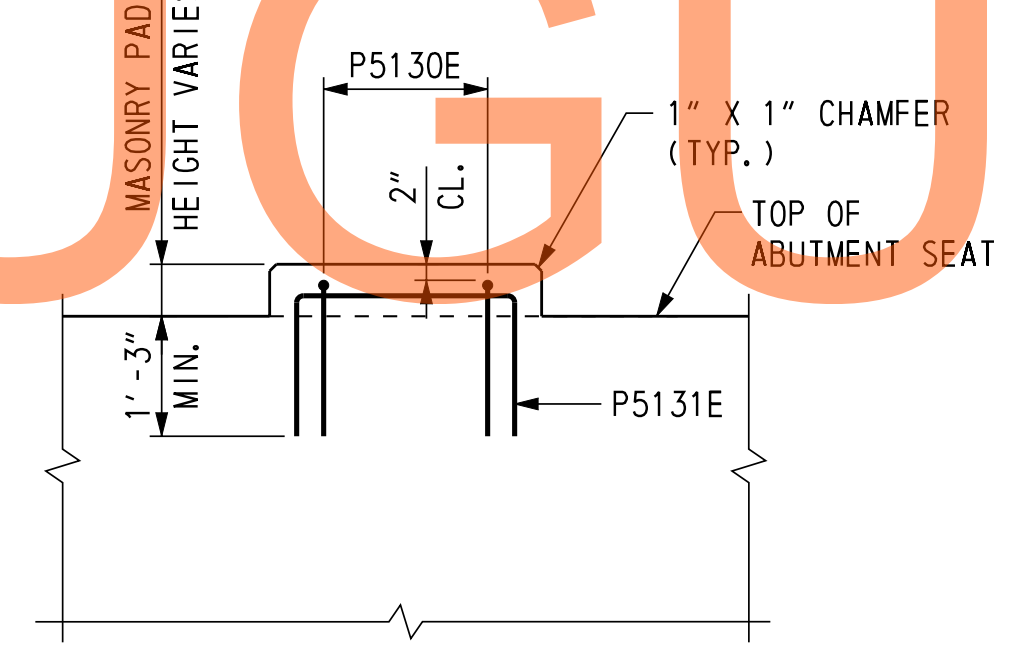
SECTION A-A
 SCALE: 1/2" = 1'-0"

NOTES:
 1. ABUTMENT 1 NORTHBOUND ROADWAY MASONRY PAD REINFORCEMENT APPLIES AT GIRDERS G7 THROUGH G11.

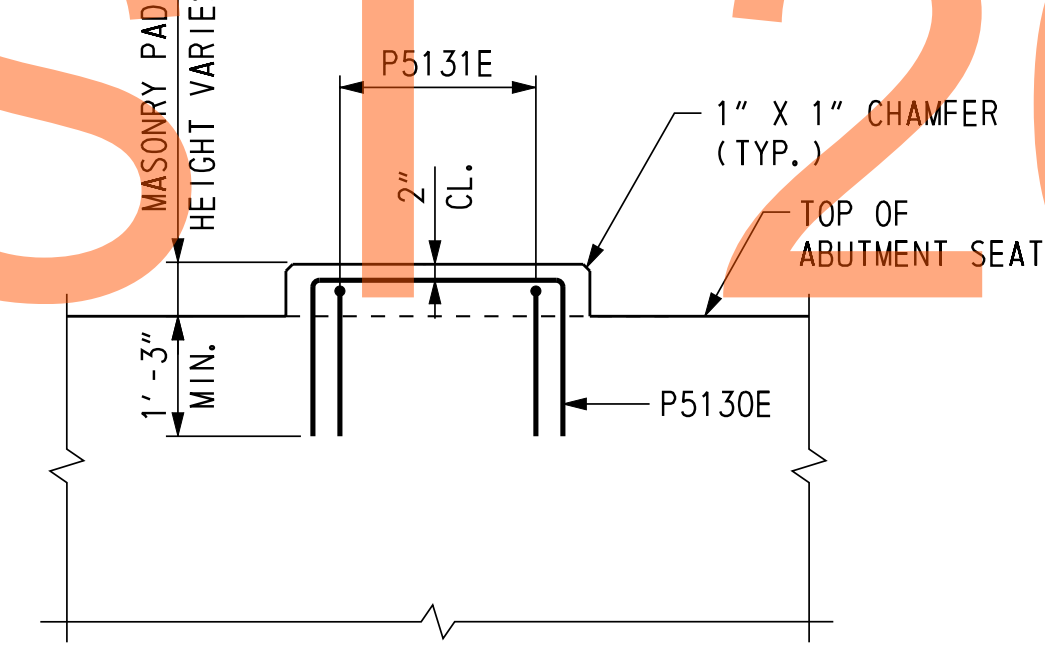
- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-7.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
 3. FOR WINGWALL ELEVATION, SEE DWG. 1-477 AB-11.
 4. FOR SECTIONS B-B TO E-E, SEE DWG. 1-477 AB-26.
 5. FOR FOOTING REINFORCEMENT PLAN, SEE DWGS. 1-477 AB-28 AND 1-477 AB-29.
 6. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-27.
 7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-35.



PLAN - ABUTMENT MASONRY PAD
 SCALE: 1/2" = 1'-0"



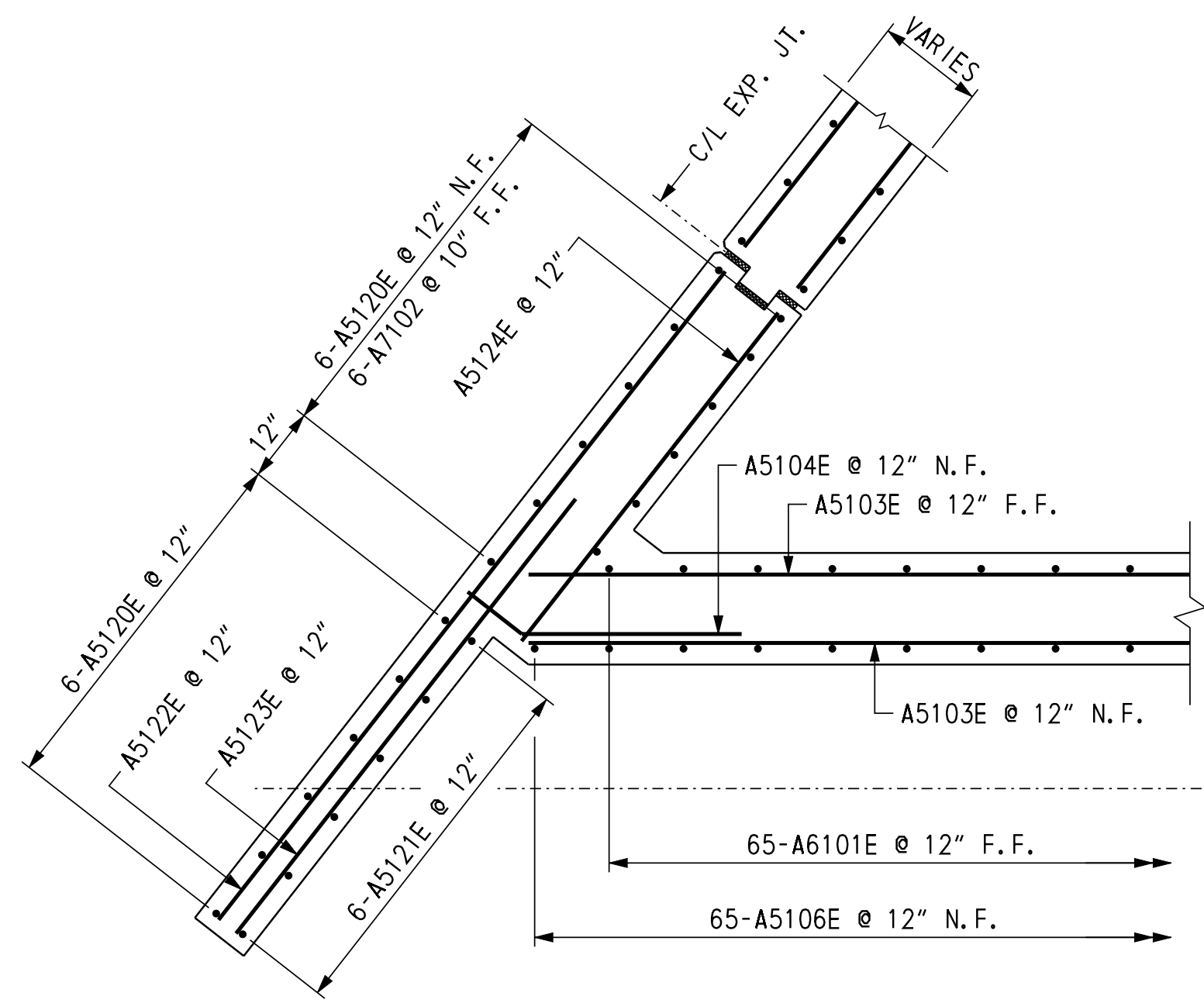
SECTION F-F
 SCALE: 1/2" = 1'-0"



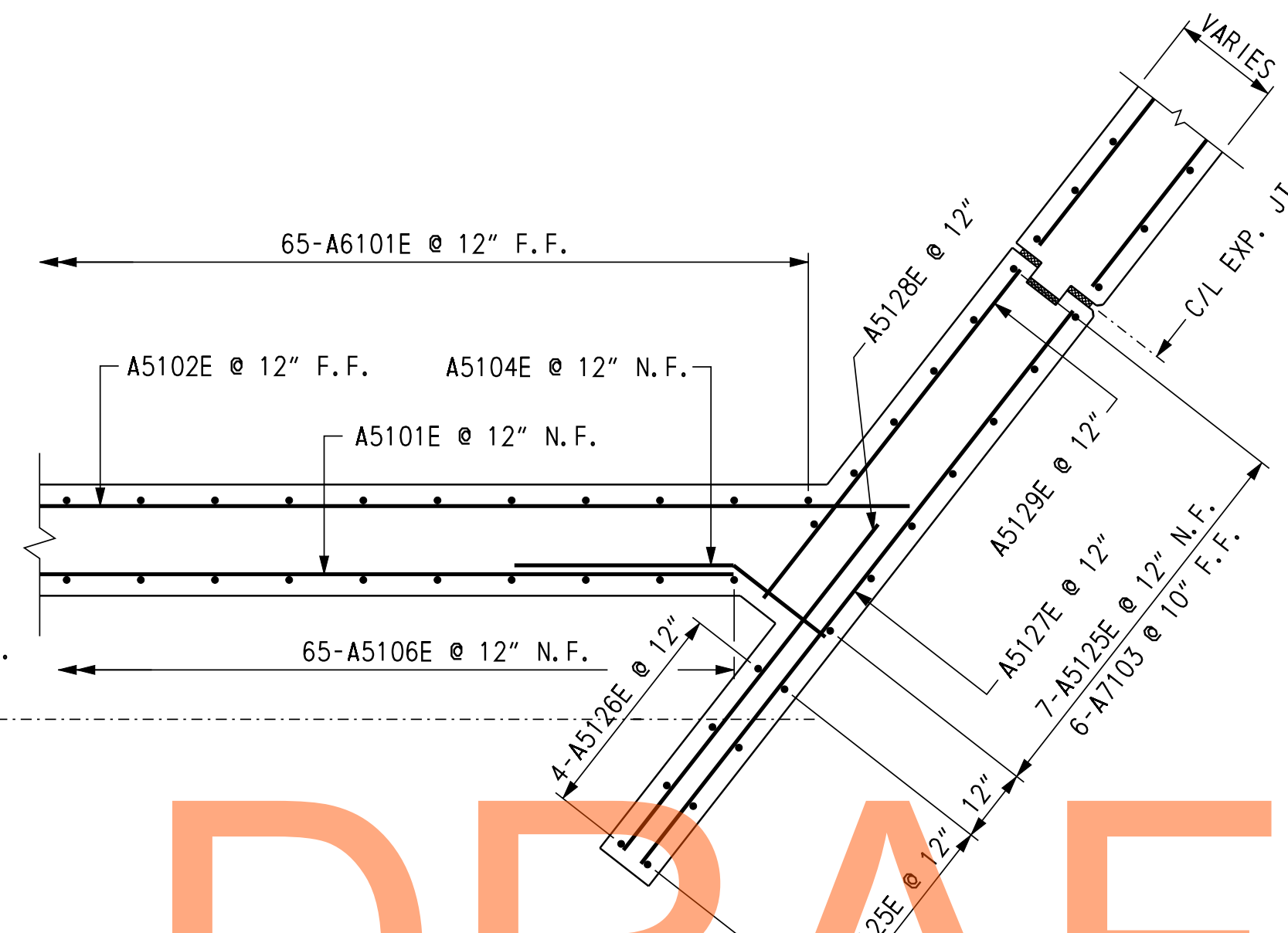
SECTION G-G
 SCALE: 1/2" = 1'-0"

ADDENDUMS / REVISIONS

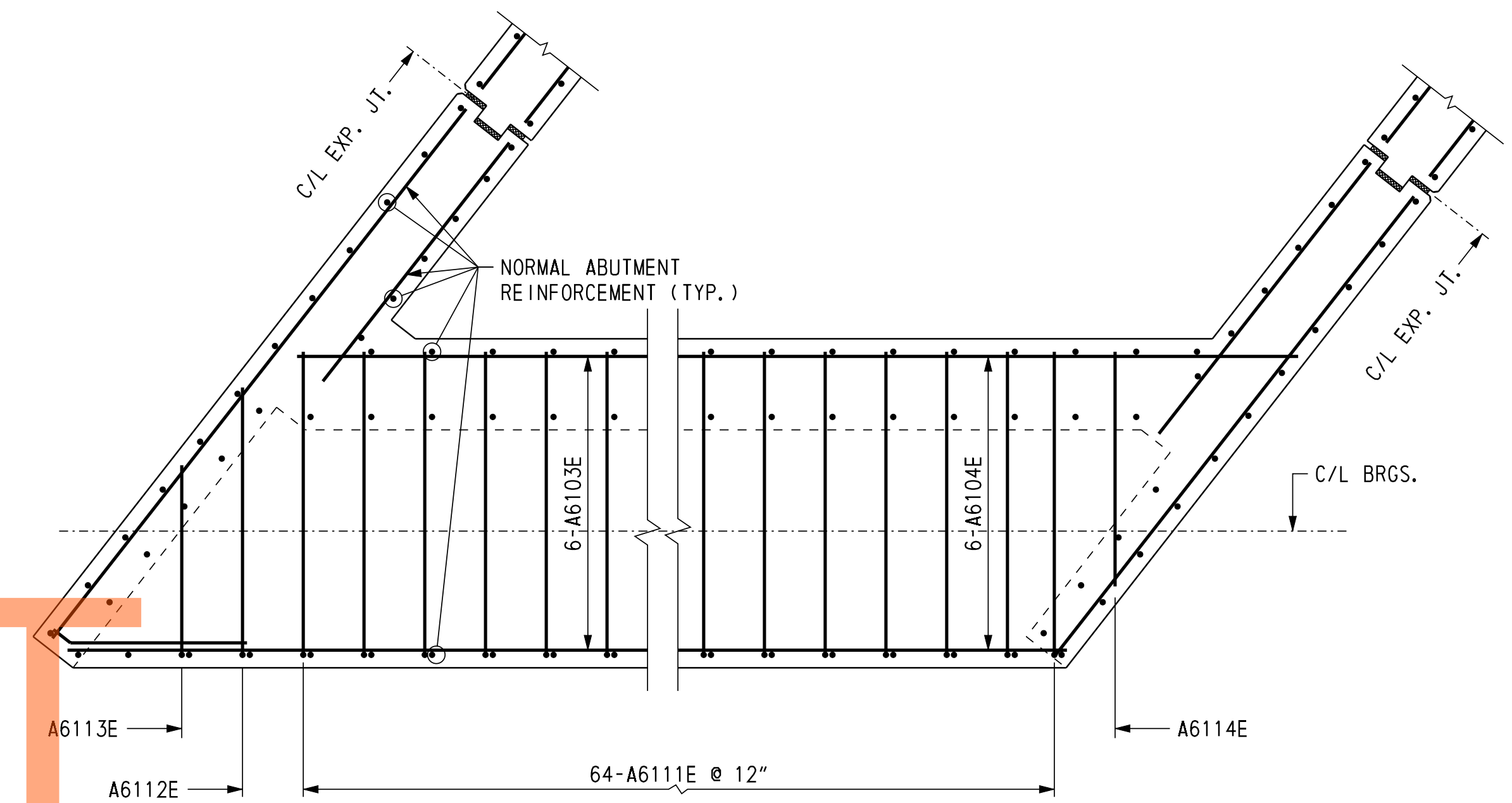
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		



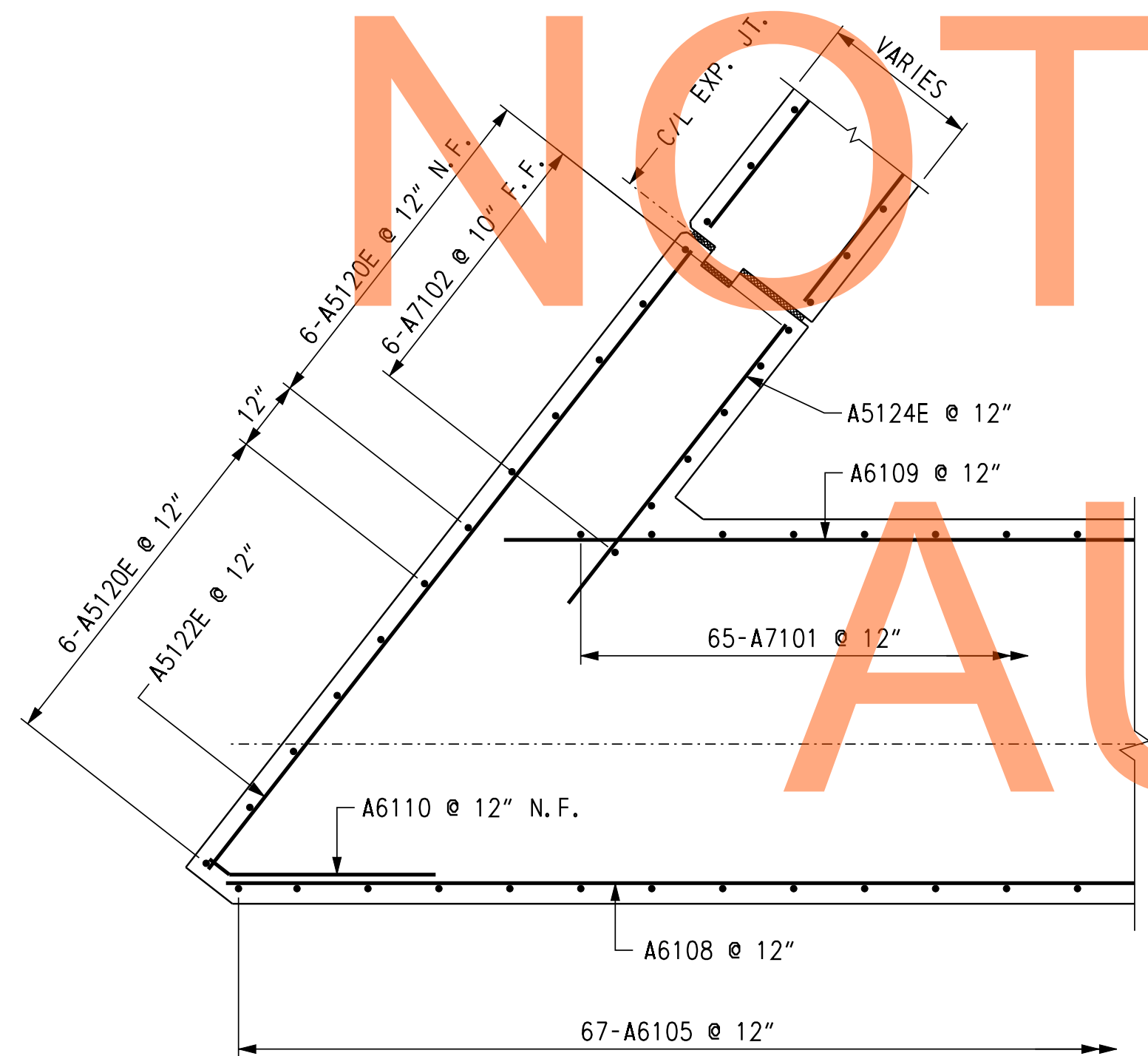
SECTION B-B
SCALE: 1/2" = 1'-0"



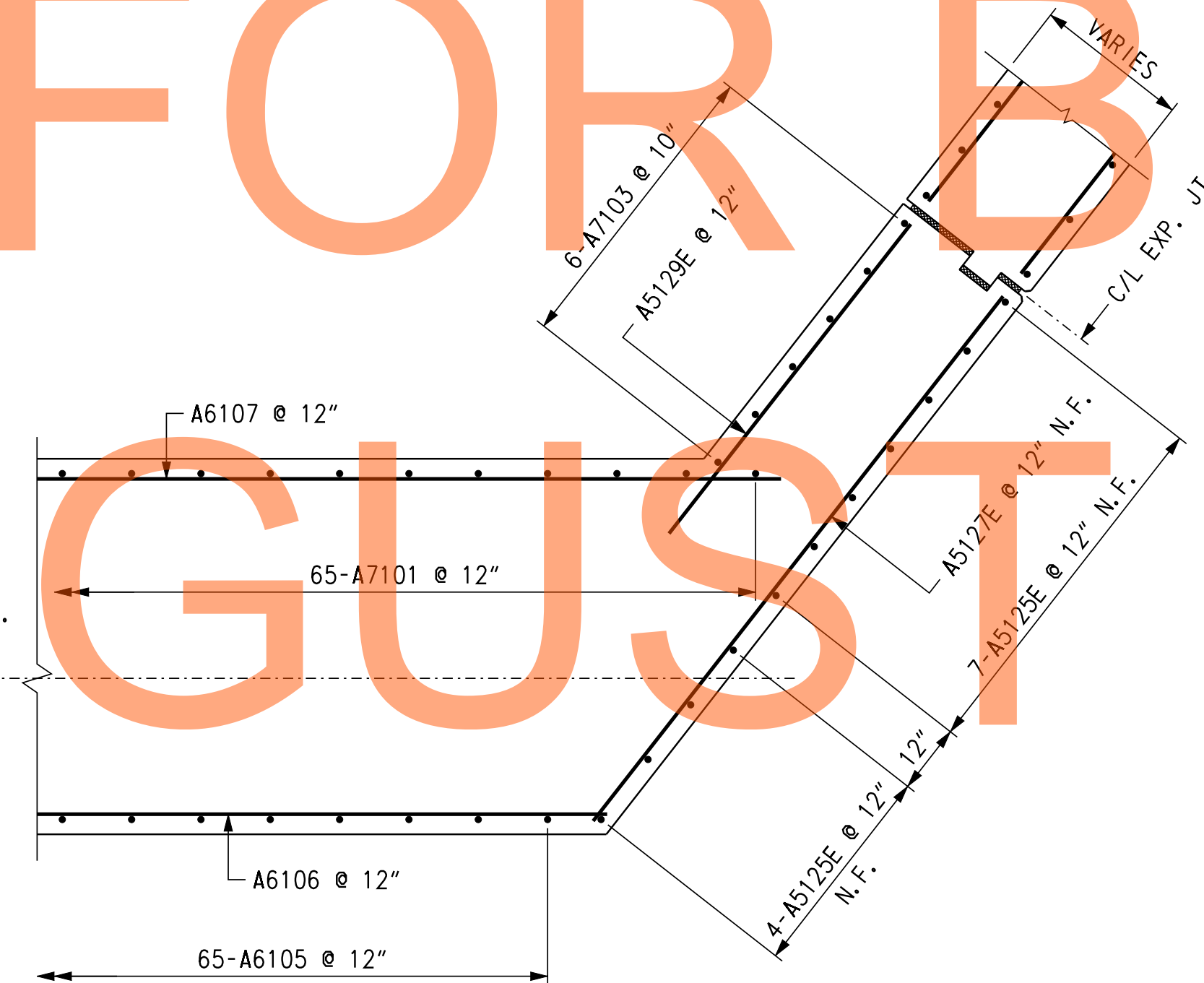
SECTION C-C
SCALE: 1/2" = 1'-0"



PLAN - BEAM SEAT DETAIL
SCALE: 1/2" = 1'-0"



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



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

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NOT FOR BIDDING

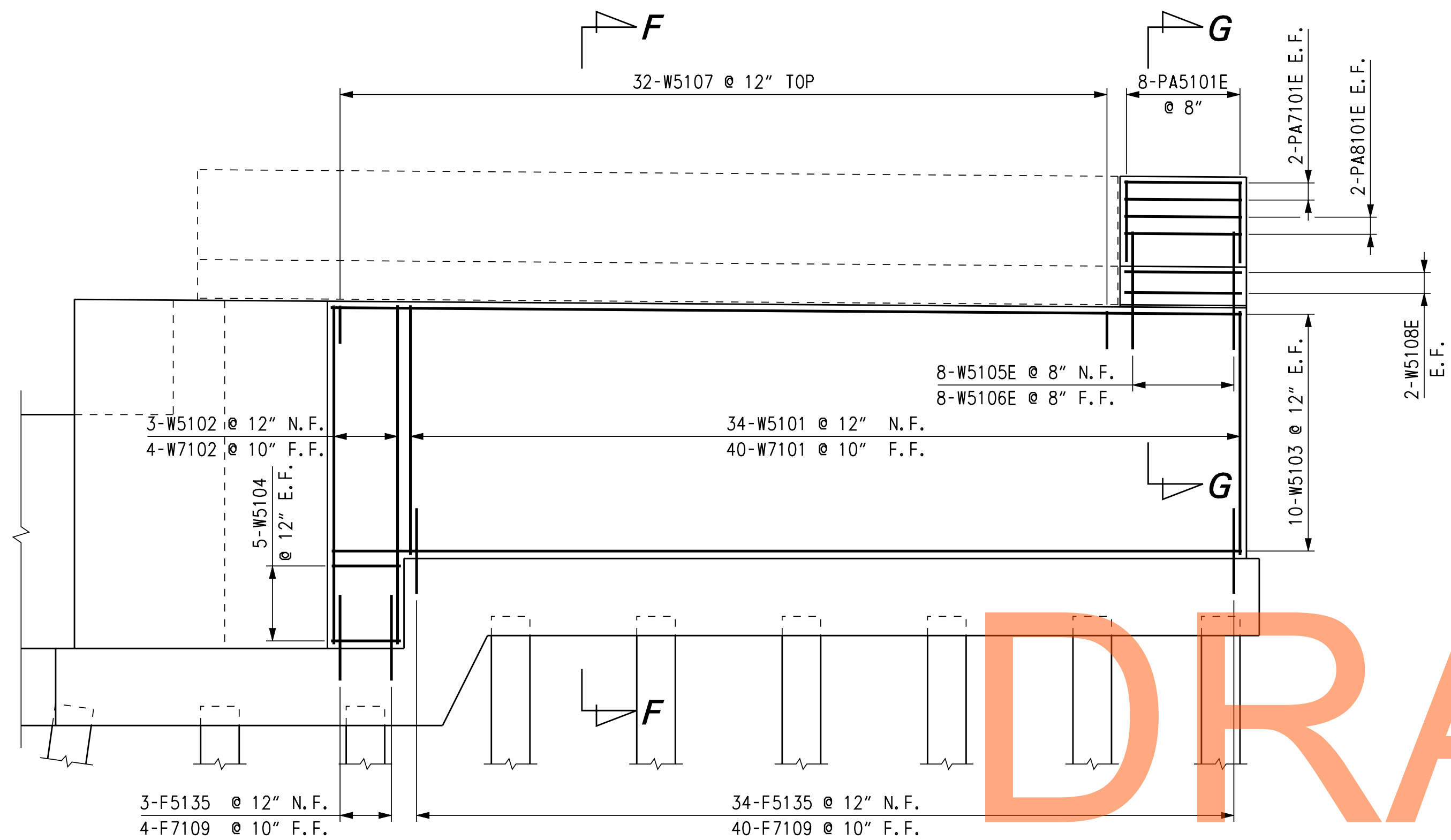
AUGUST 2015

NOTES:

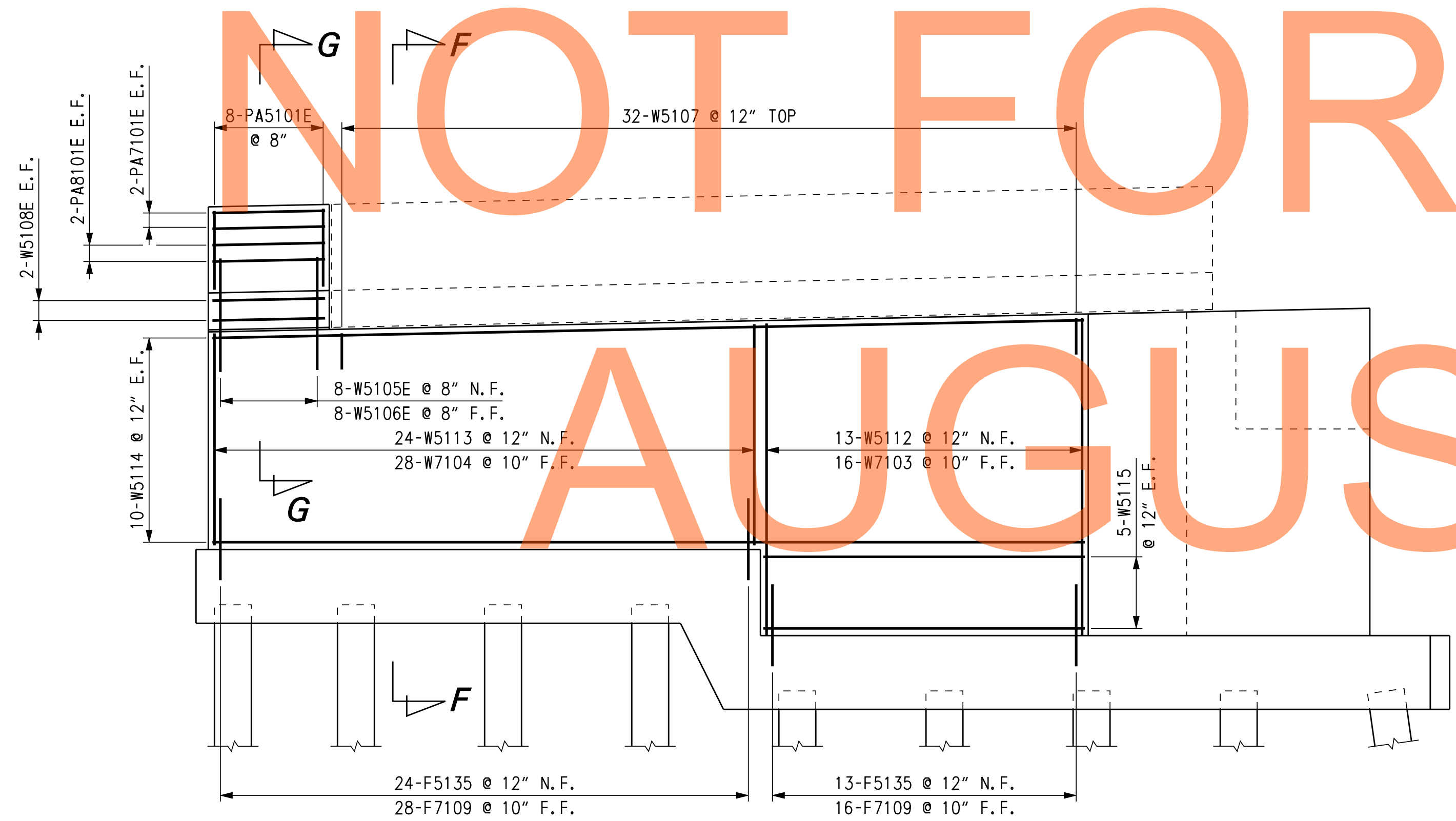
1. BARS A5120E AND A5125E LAP WITH F5101 DOWELS (LAP = 2'-1" MIN.). EMBED DOWELS 1'-0" IN FOOTING.

CROSS REFERENCE NOTES:

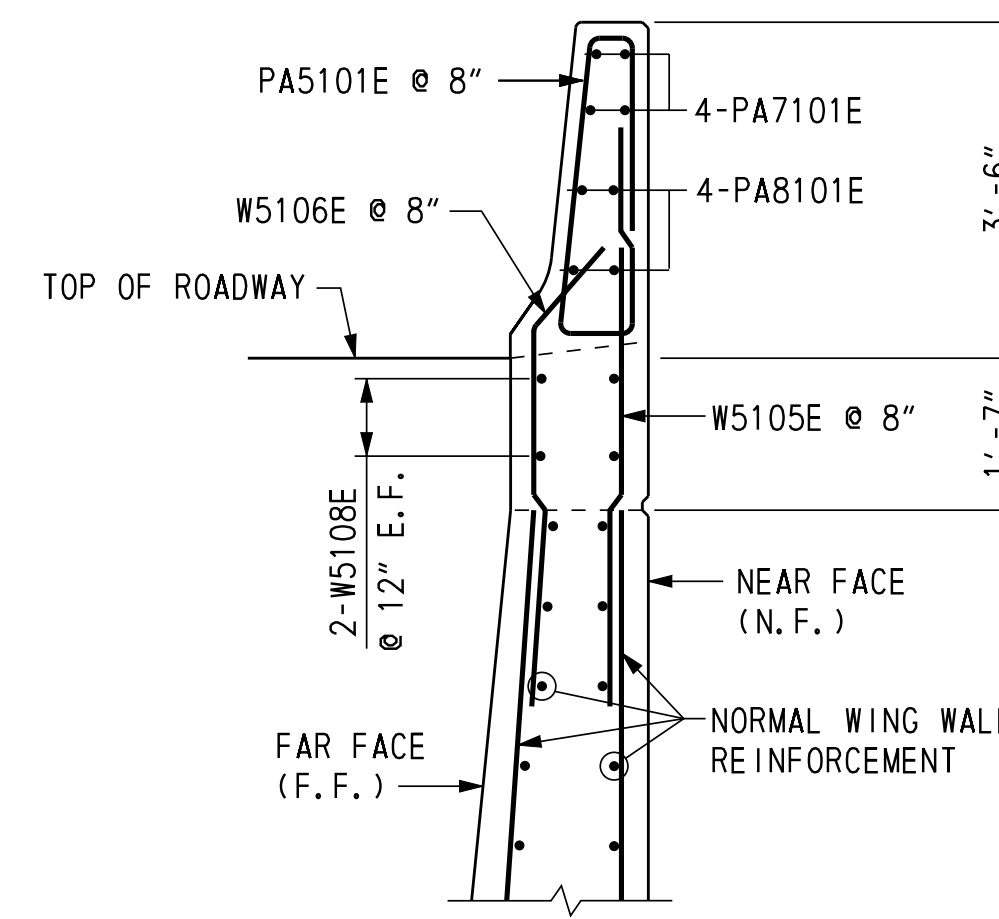
1. FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-25.
2. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-27.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-35.



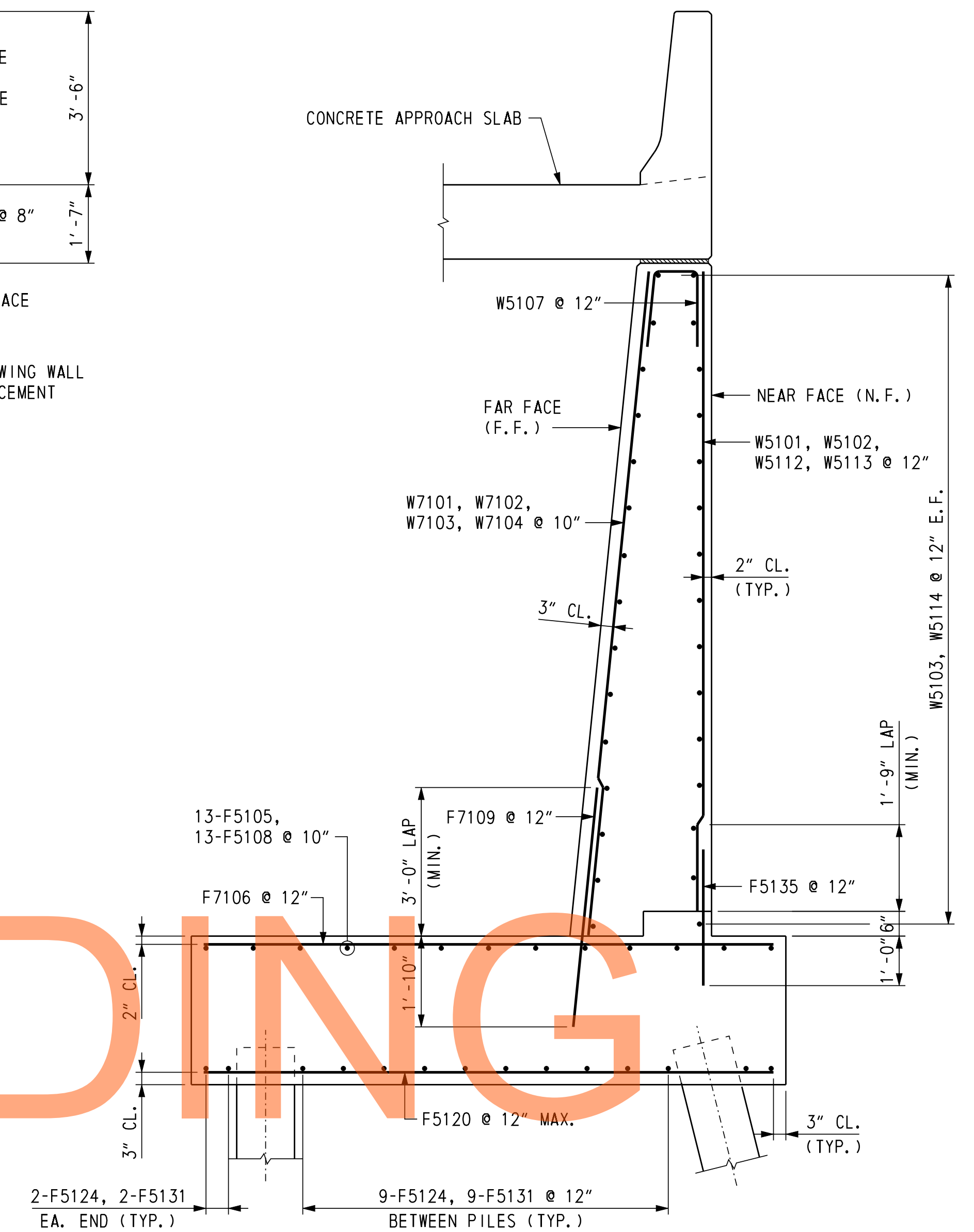
WING WALL 5
SCALE: 1/4" = 1'-0"



WING WALL 6
SCALE: 1/4" = 1'-0"



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



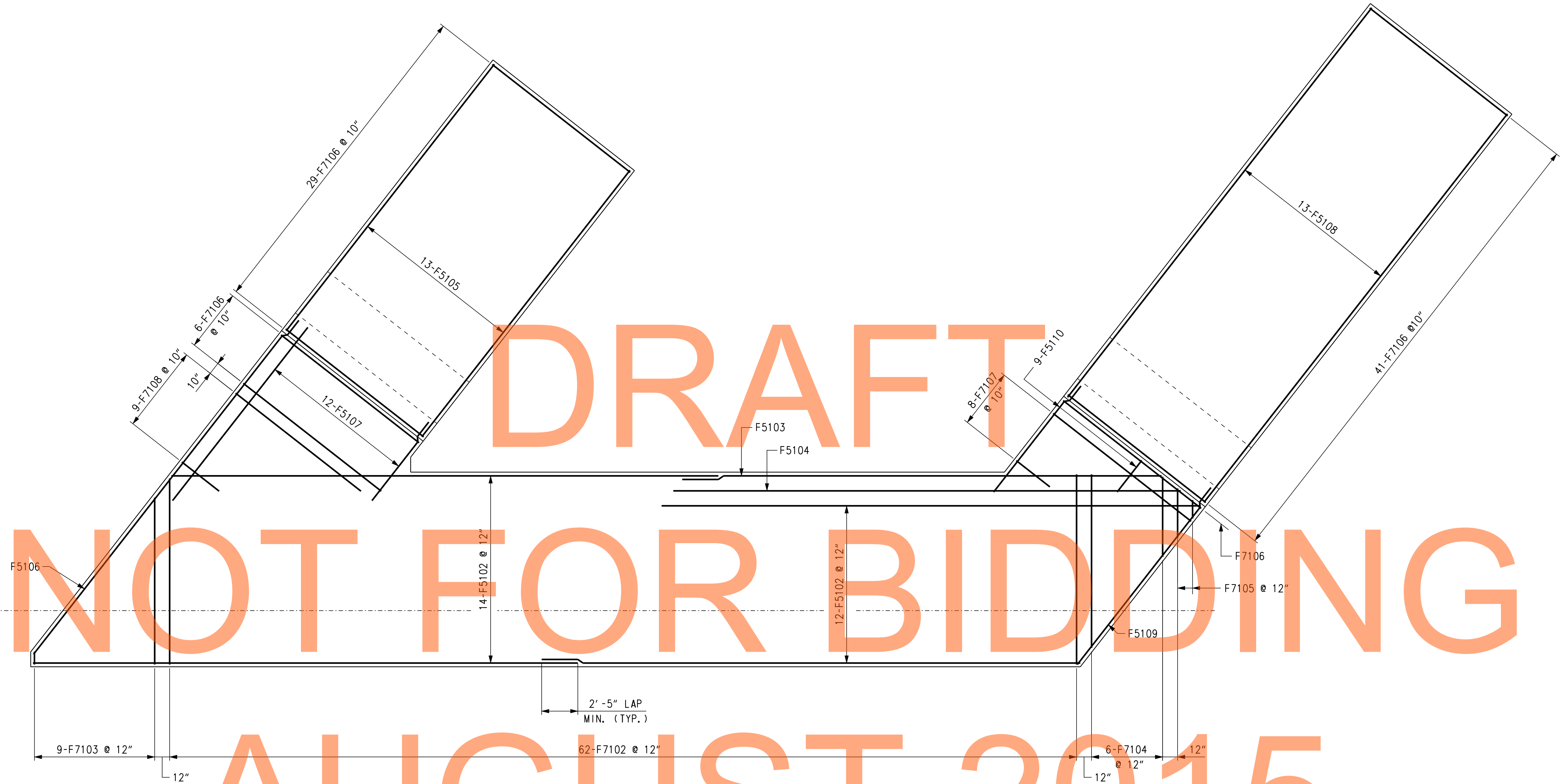
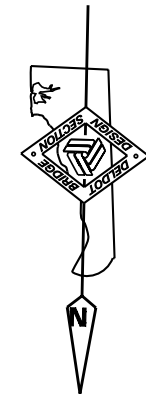
SECTION F-F
SCALE: 1/2" = 1'-0"

CROSS REFERENCE NOTES:

1. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-11.
2. FOR ABUTMENT REINFORCEMENT, SEE DWGS. 1-477 AB-25 AND 1-477 AB-26.
3. FOR FOOTING REINFORCEMENT, SEE DWGS. 1-477 AB-28 AND 1-477 AB-29.
4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-35.

ADDENDUMS / REVISIONS

CONTRACT	T200511303
COUNTY	NEW CASTLE
BRIDGE NO.	1-477N&S
DESIGNED BY:	J. S. LI
CHECKED BY:	W. A. O'CONNOR



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PLAN - TOP MAT FOOTING REINFORCEMENT
SCALE: 1/4" = 1'-0"

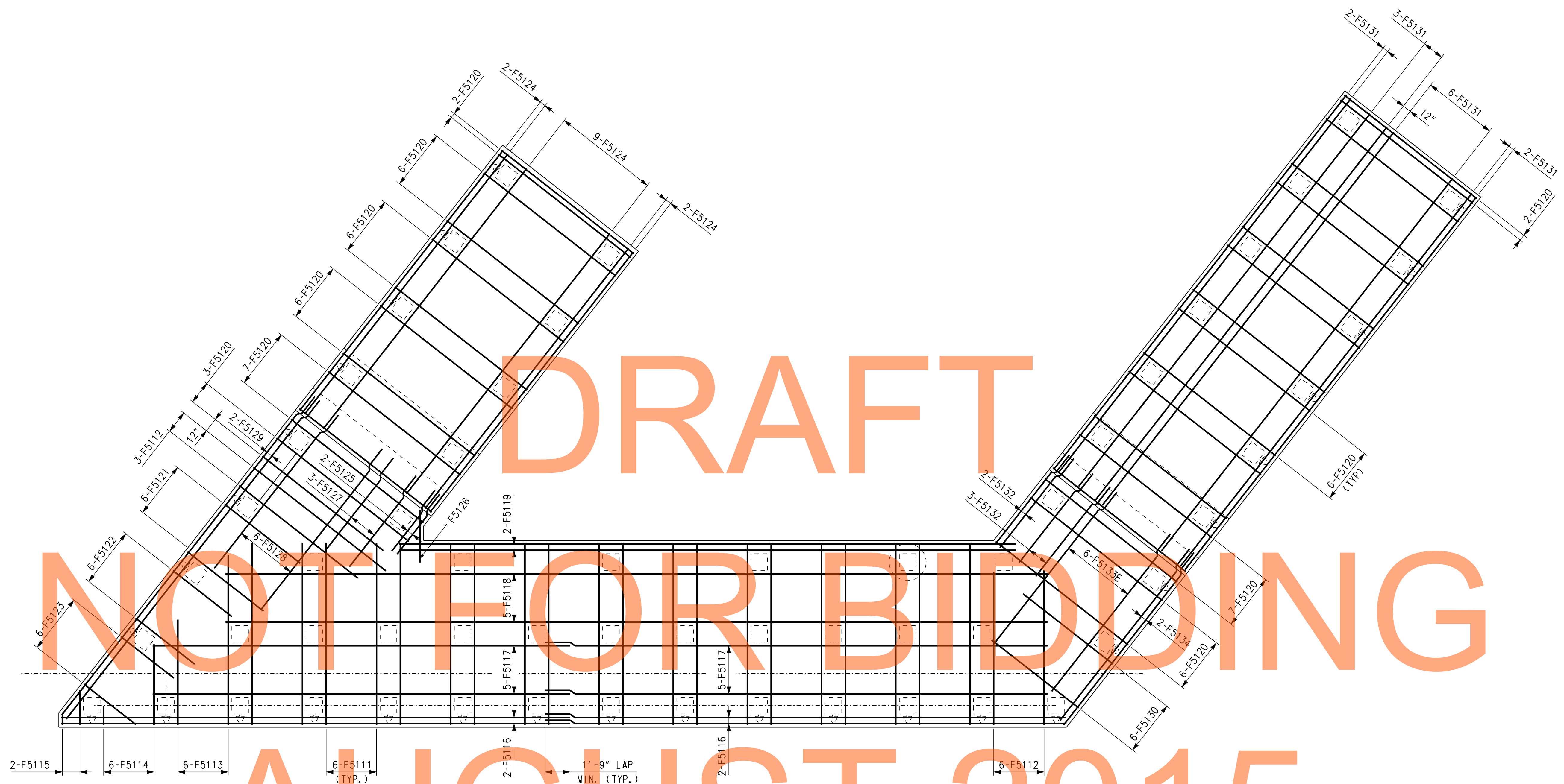
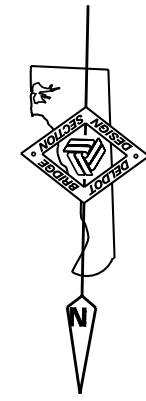
- CROSS REFERENCE NOTES:**
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-7.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
 3. FOR FOOTING STEP DETAIL, SEE DWG. 1-477 AB-29.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-35.

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11/8/2012
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ADDENDUMS / REVISIONS	

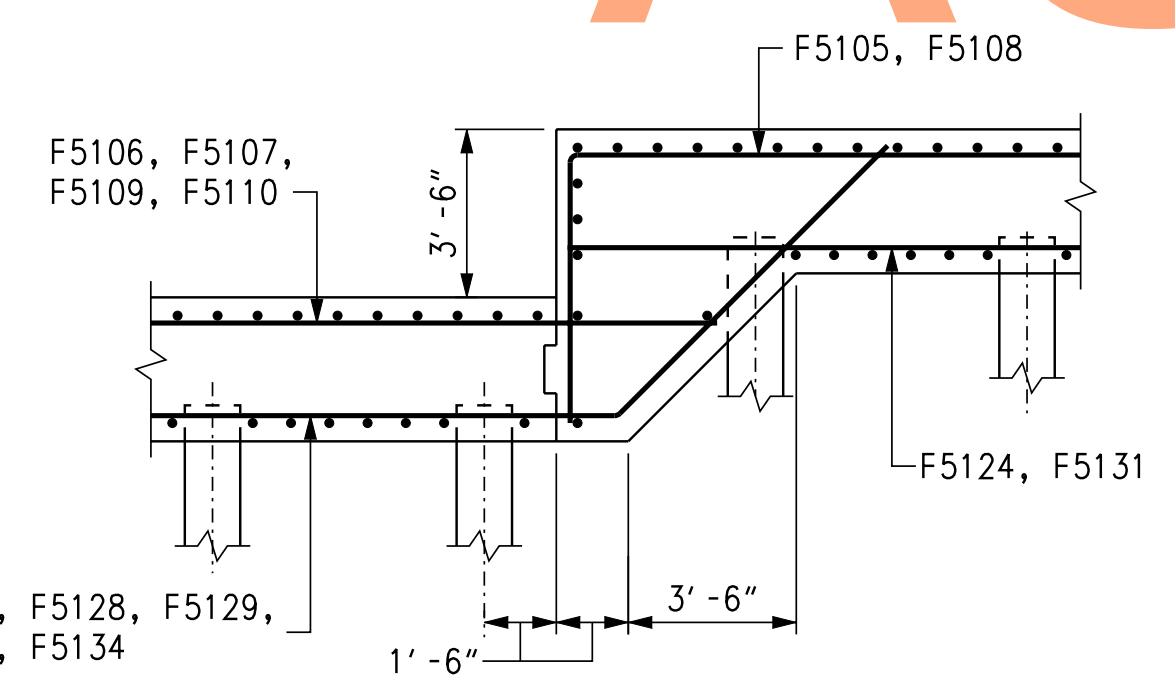
CONTRACT T200511303	BRIDGE NO. 1-477N&S
COUNTY NEW CASTLE	DESIGNED BY: J. S. LI
	CHECKED BY: W. A. O'CONNOR

1-477 AB-28
SHEET NO. 476
TOTAL SHTS. 1256



PLAN - BOTTOM MAT FOOTING REINFORCEMENT

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



FOOTING STEP DETAIL

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

CROSS REFERENCE NOTES:

1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-7.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-35.

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DEPARTMENT OF TRANSPORTATION

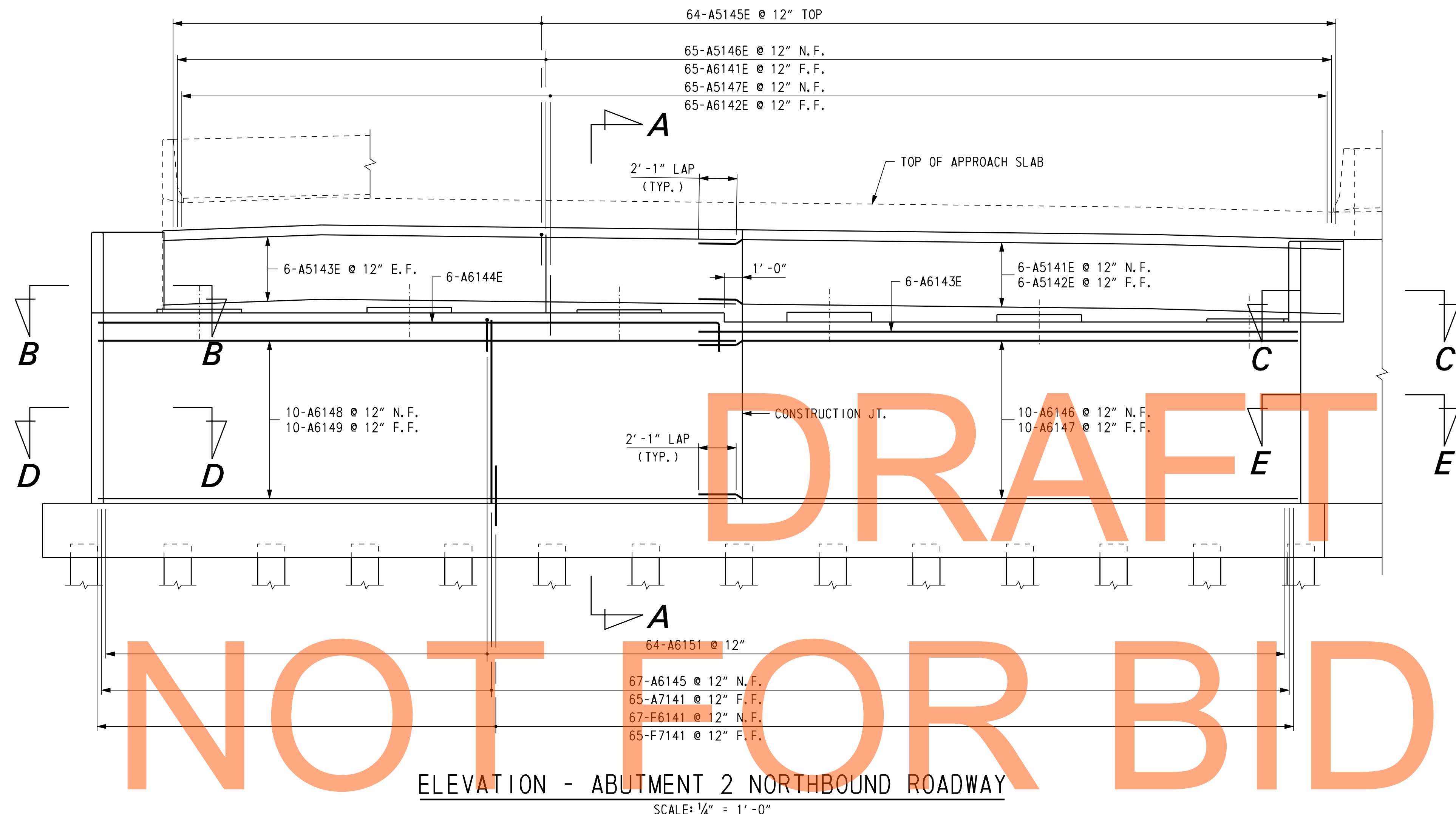
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

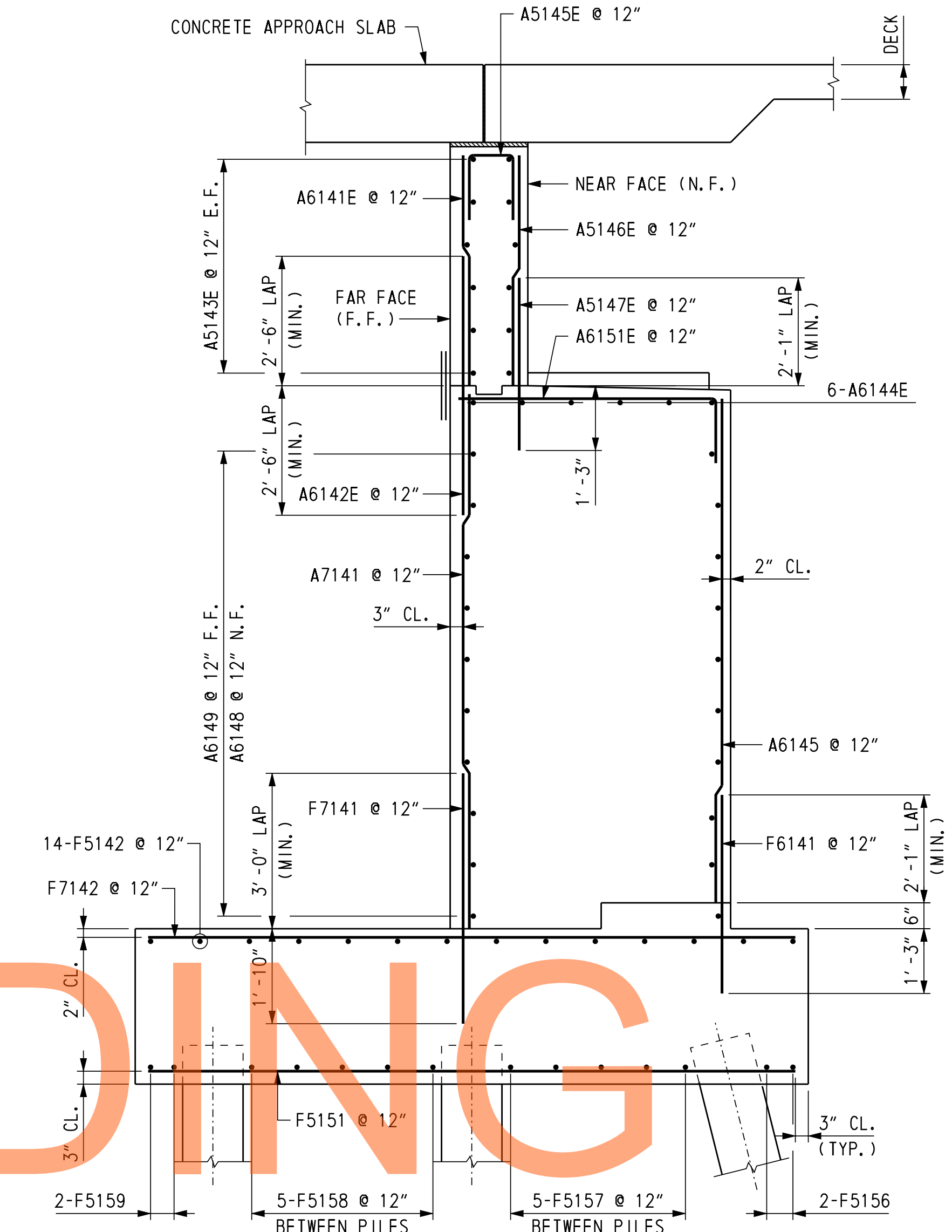
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 1 NB ROADWAY
REINFORCEMENT 5**

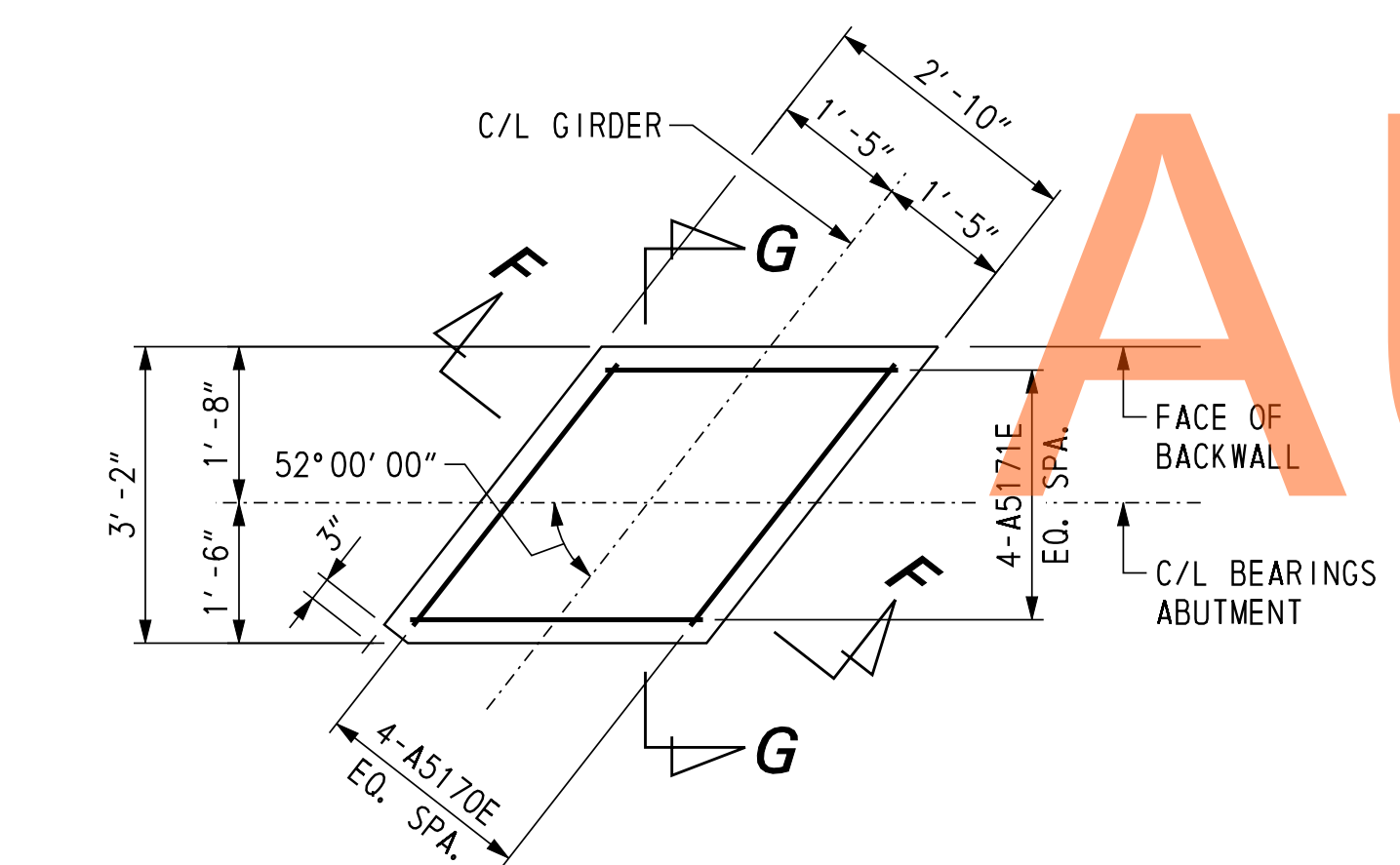
1-477 AB-29
SHEET NO.
477
TOTAL SHTS.
1256



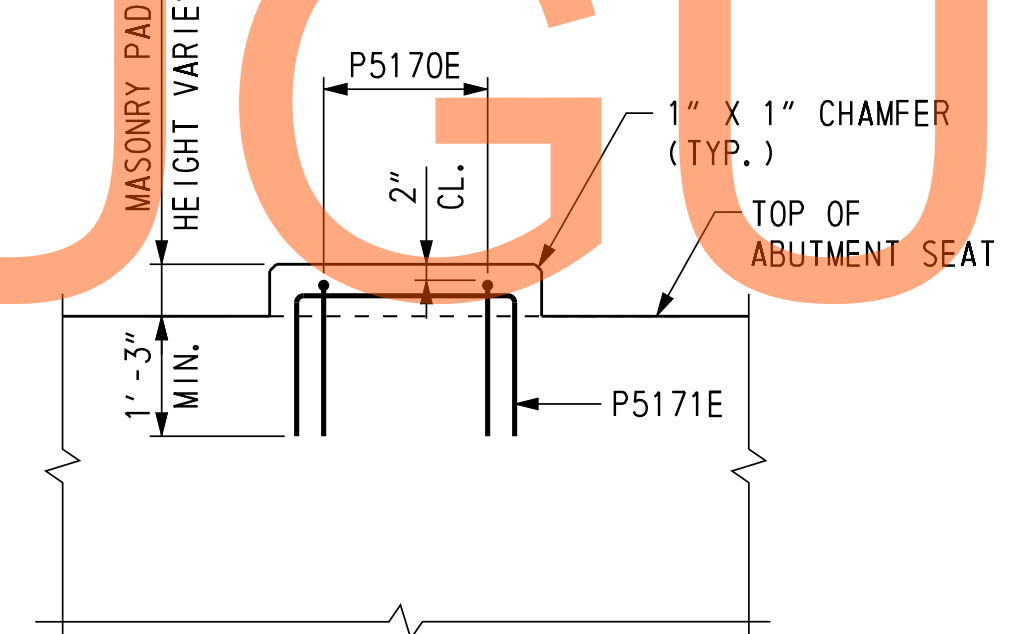
ELEVATION - ABUTMENT 2 NORTHBOUND ROADWAY
SCALE: 1/4" = 1'-0"



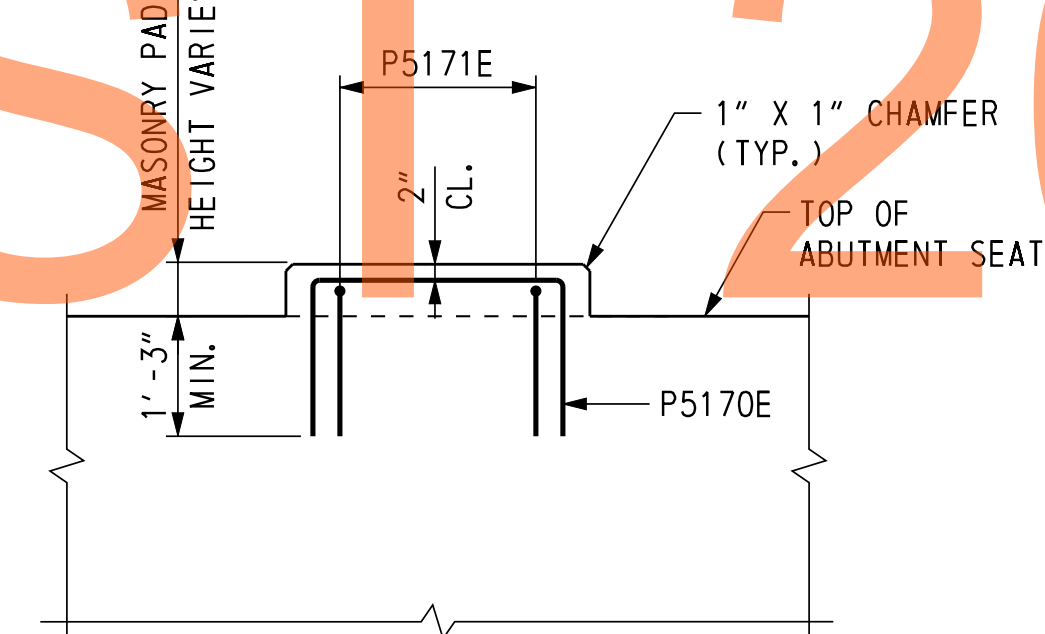
SECTION A-A
SCALE: 1/2" = 1'-0"



PLAN - ABUTMENT MASONRY PAD
SCALE: 1/2" = 1'-0"



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



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

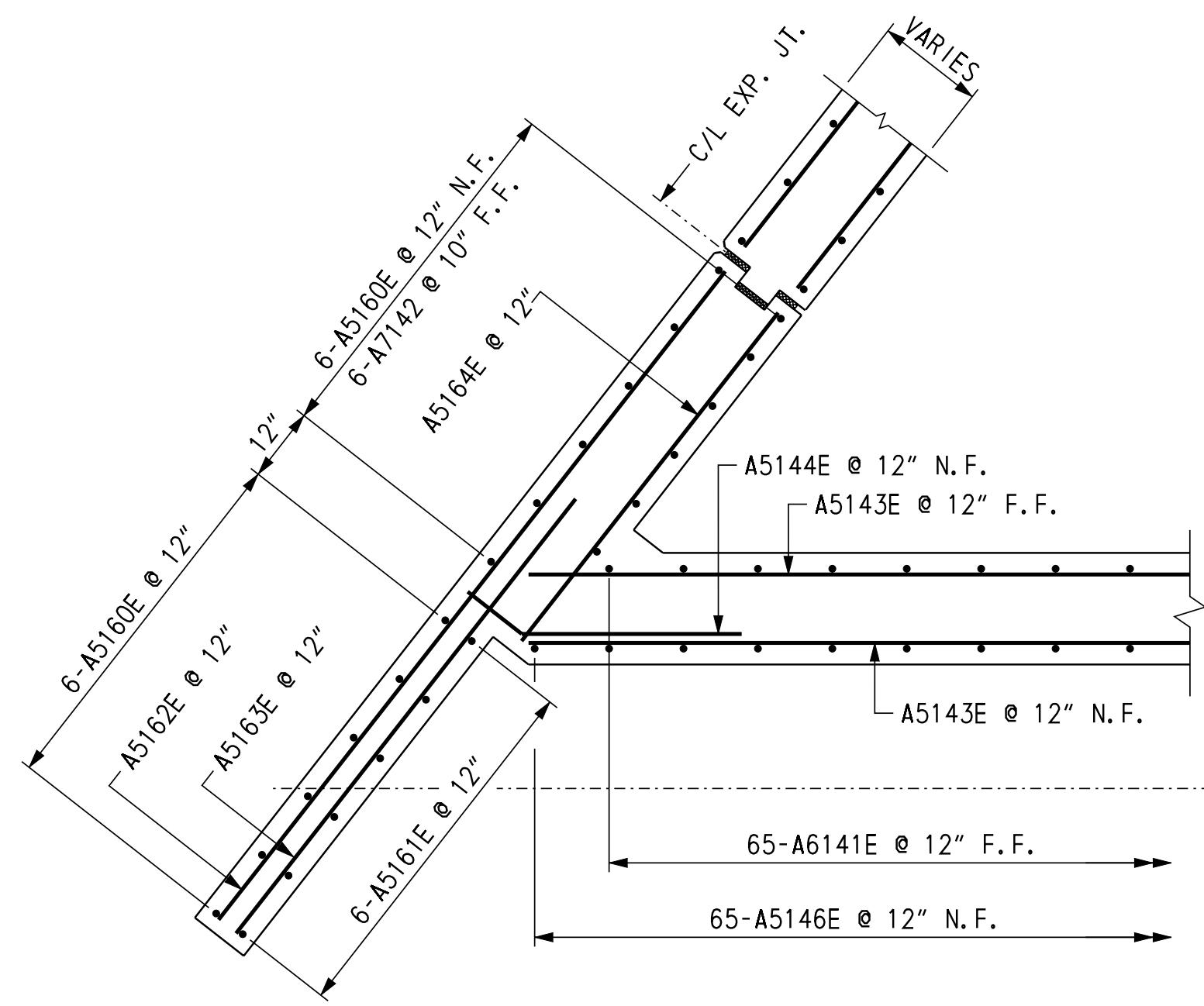
NOTES:
1. ABUTMENT 2 NORTHBOUND ROADWAY MASONRY PAD REINFORCEMENT APPLIES AT GIRDERS G7 THROUGH G11.

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-8.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-10.
 3. FOR WINGWALL ELEVATION, SEE DWG. 1-477 AB-11.
 4. FOR SECTIONS B-B TO E-E, SEE DWG. 1-477 AB-31.
 5. FOR FOOTING REINFORCEMENT PLAN, SEE DWG. 1-477 AB-33 AND 1-477 AB-34.
 6. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-32.
 7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-36.

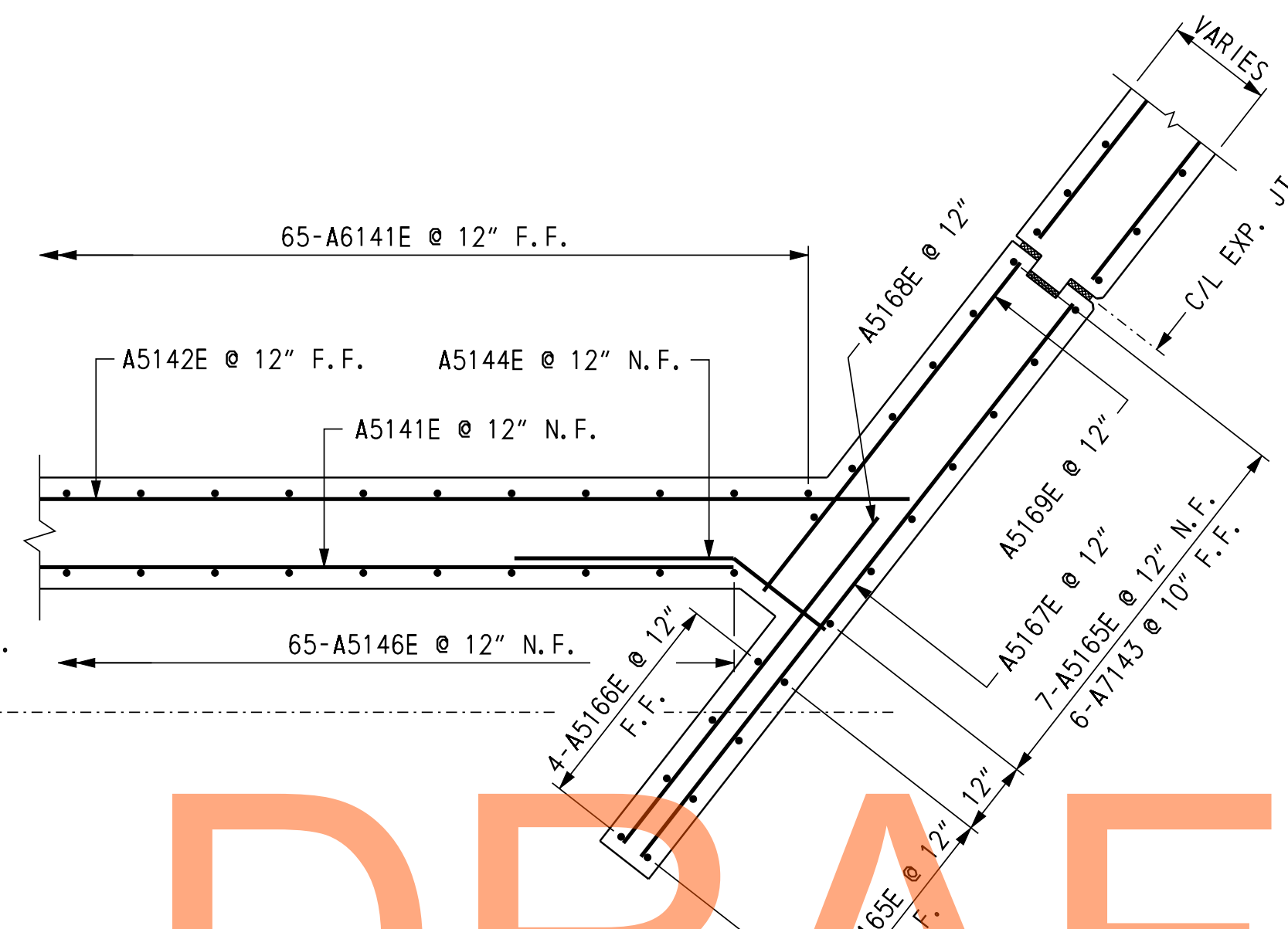
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

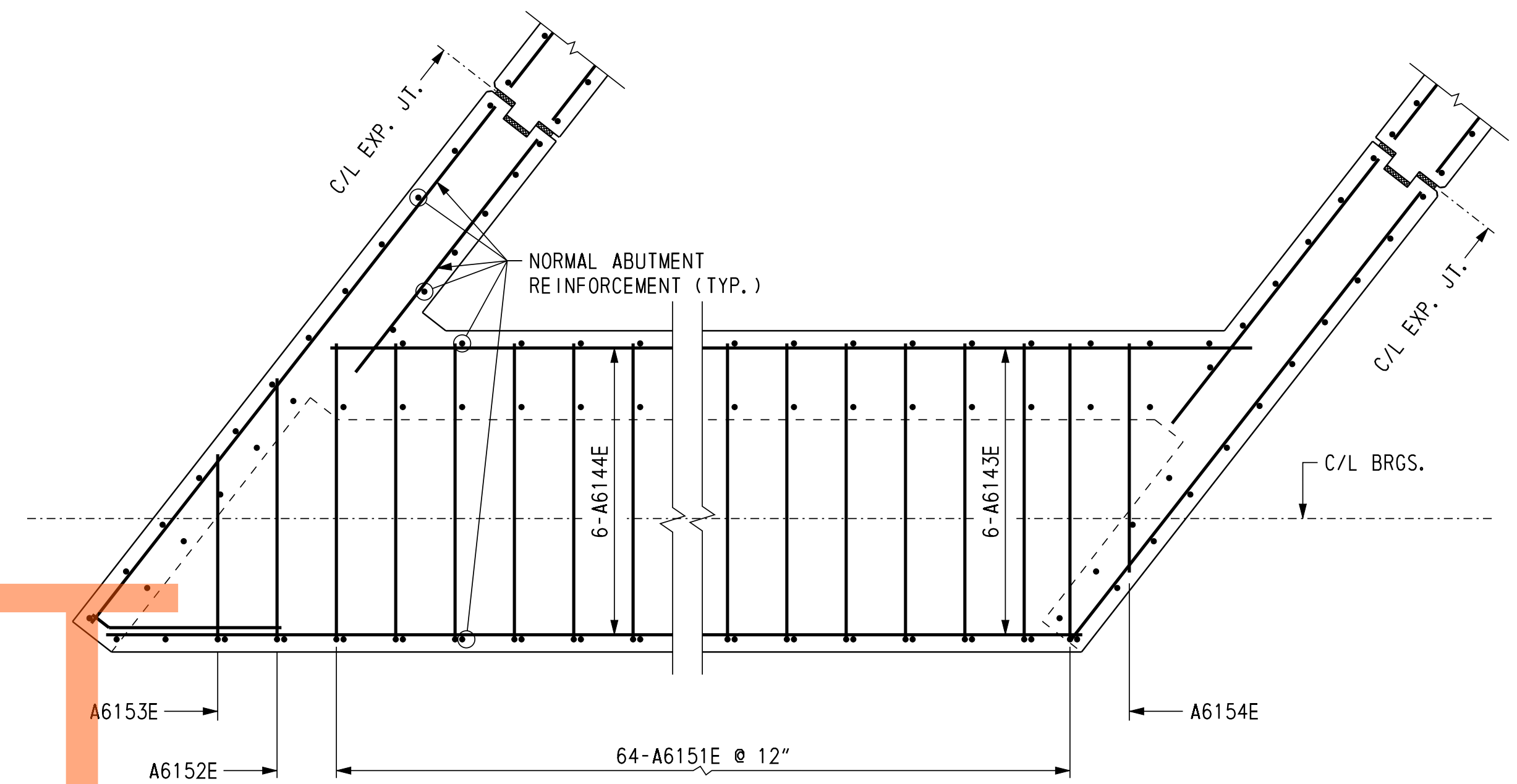
1-477 AB-30
SHEET NO.
478
TOTAL SHTS.
1256



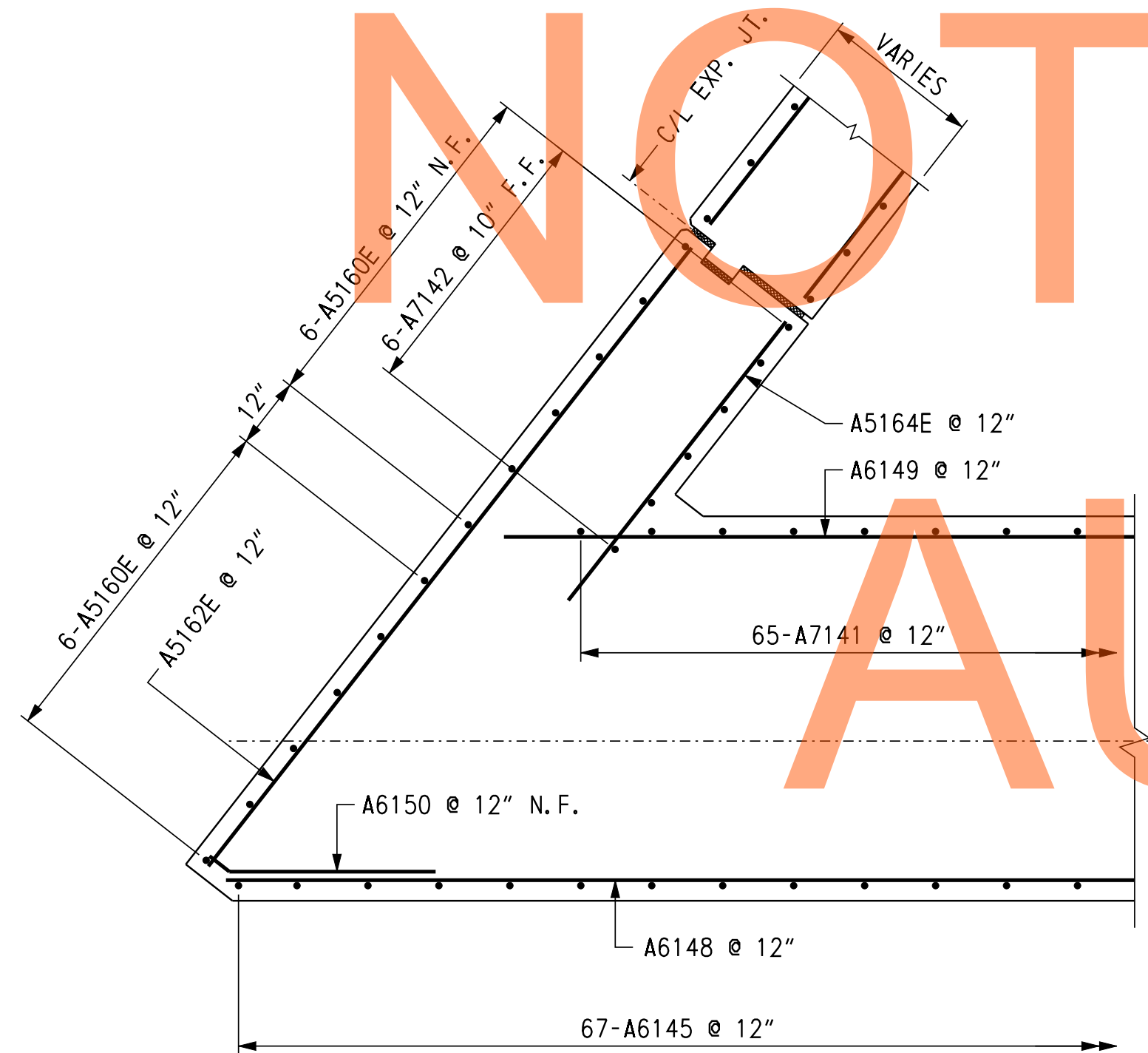
SECTION B-B
SCALE: 1/2" = 1'-0"



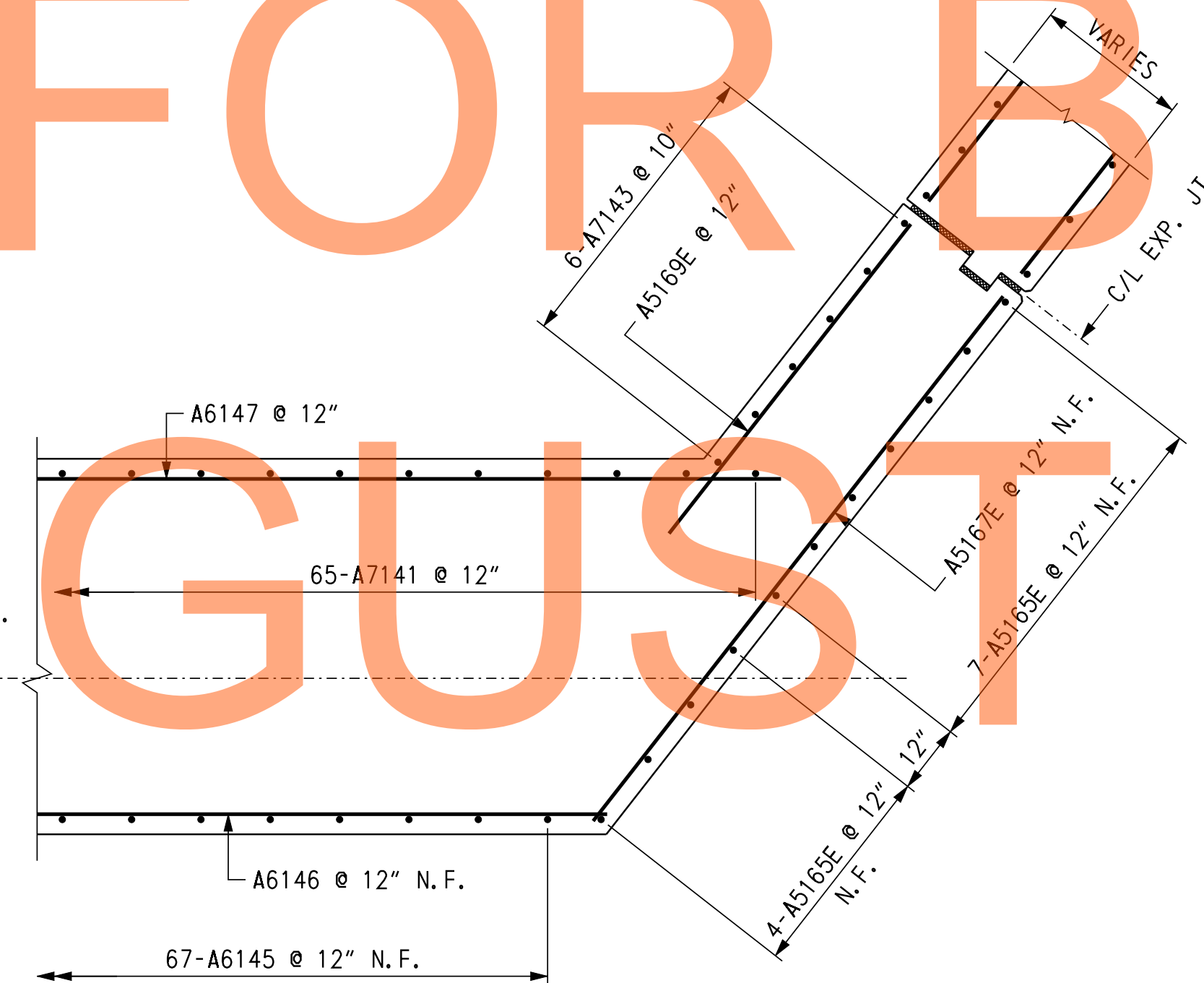
SECTION C-C
SCALE: 1/2" = 1'-0"



PLAN - BEAM SEAT DETAIL
SCALE: 1/2" = 1'-0"



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



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

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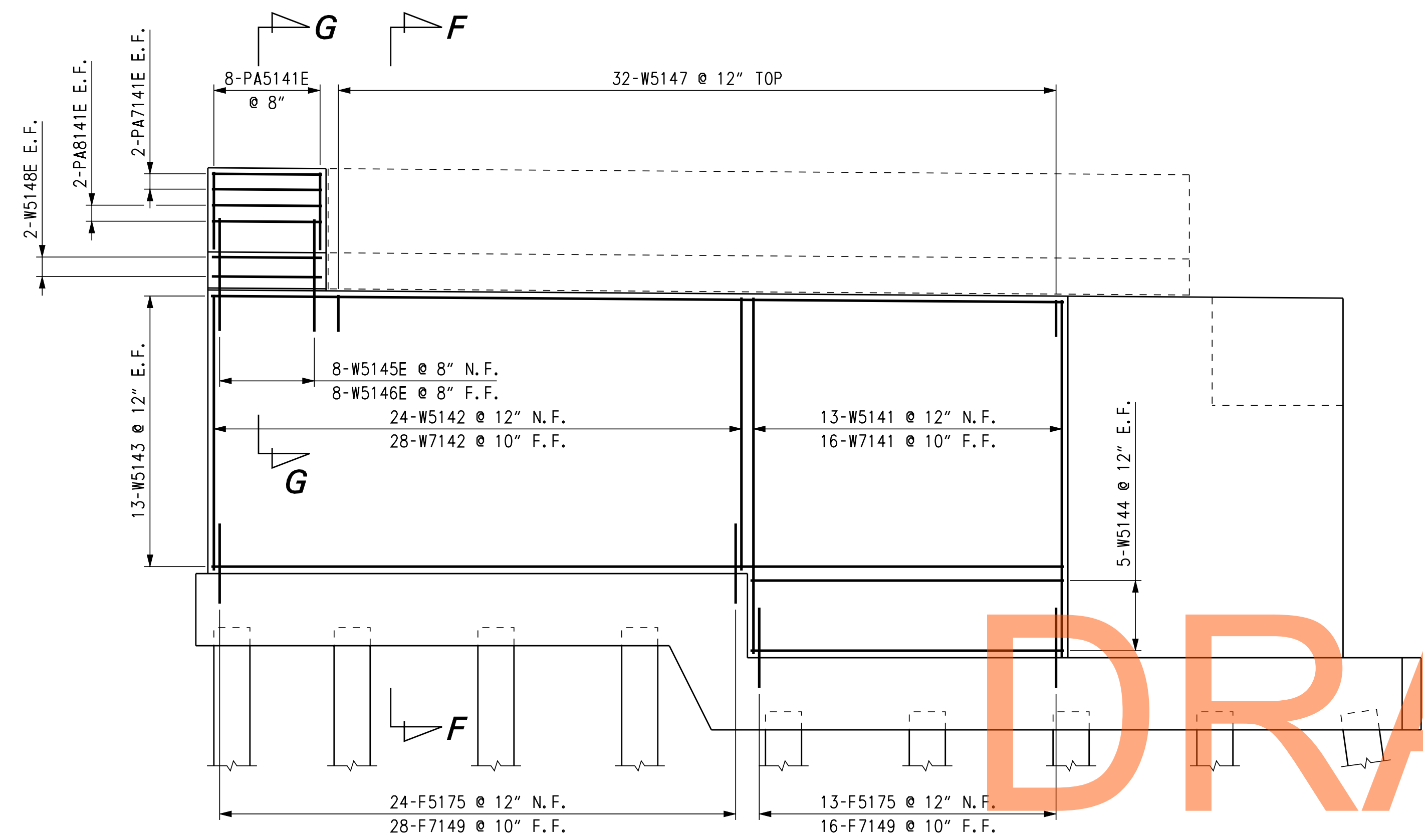
AUGUST 2015

NOTES:

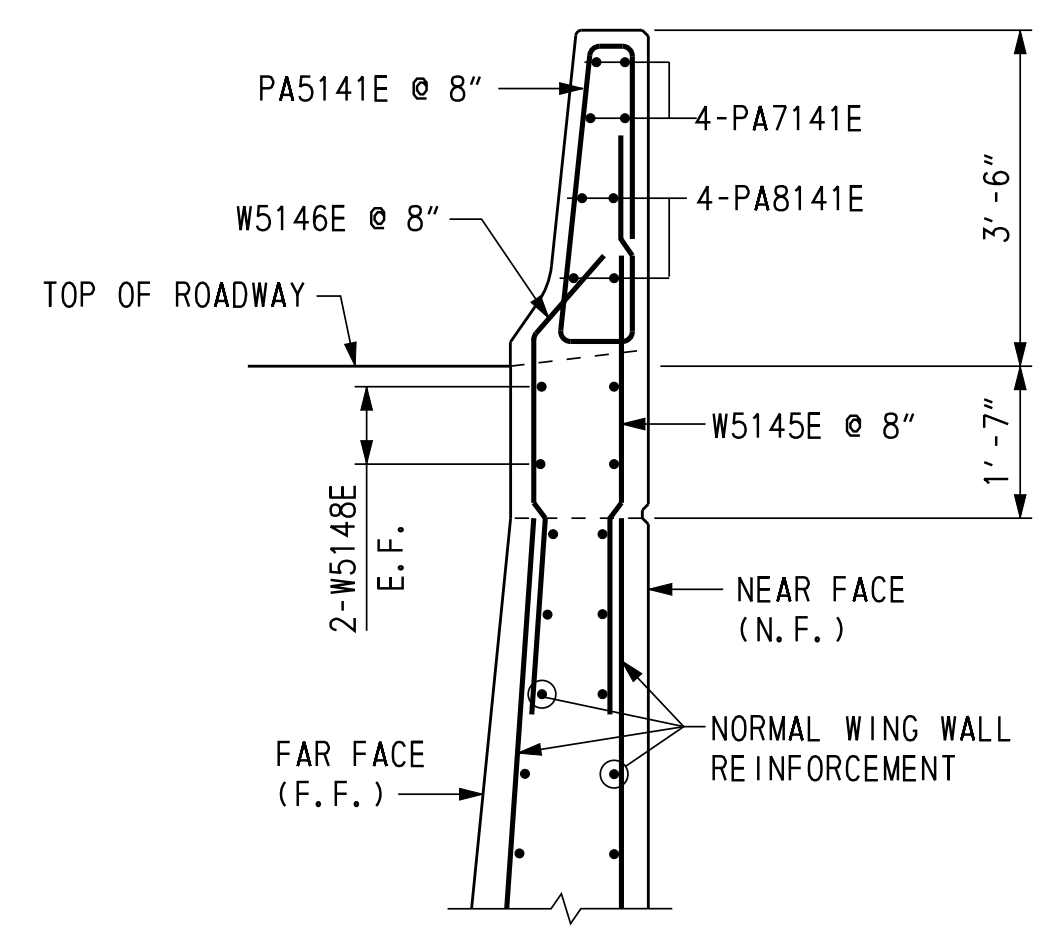
1. BARS A5160E AND A5165E LAP WITH F5141 DOWELS (LAP = 2'-1" MIN.). EMBED DOWELS 1'-0" IN FOOTING.

CROSS REFERENCE NOTES:

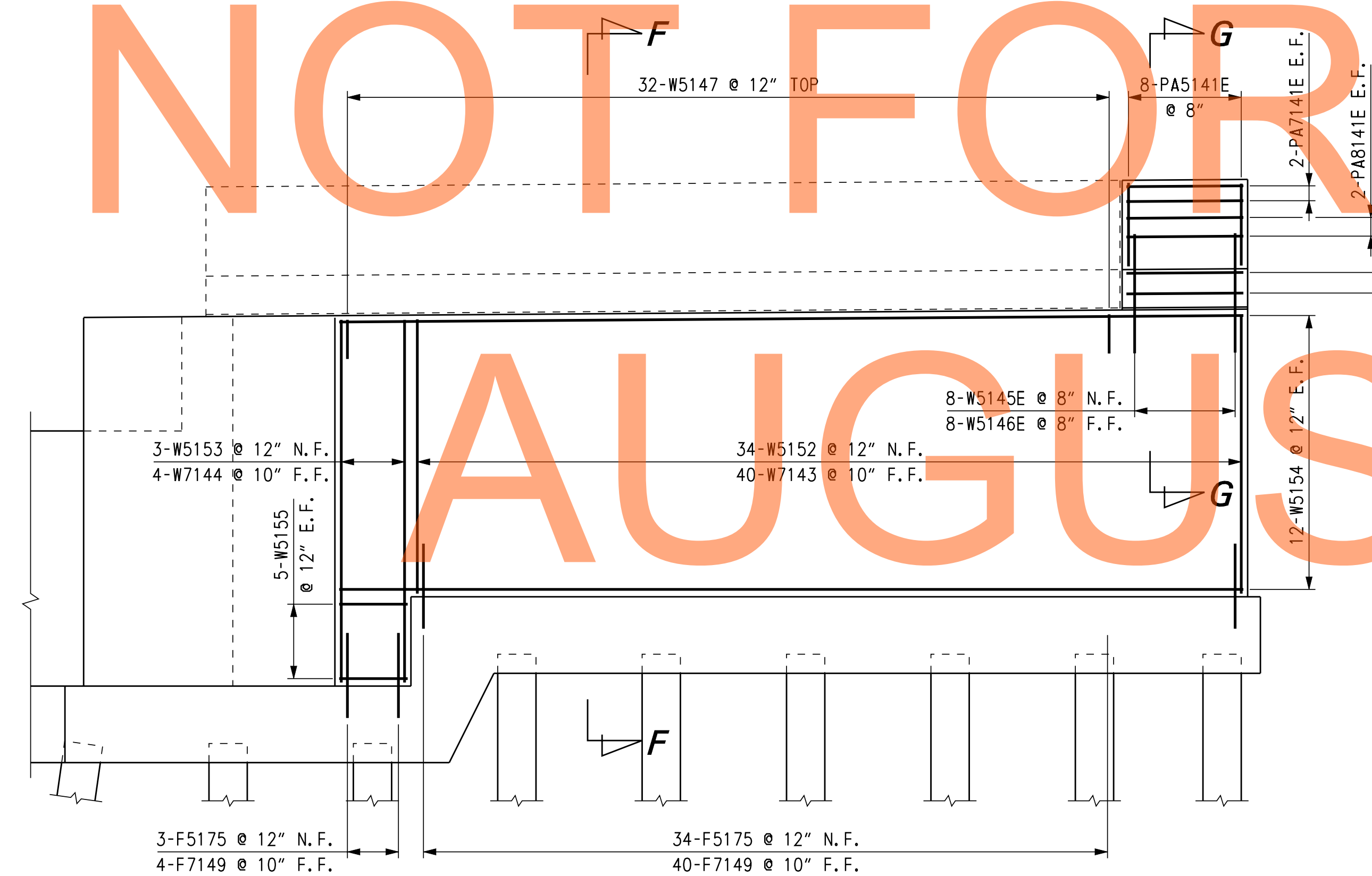
1. FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-30.
2. FOR WINGWALL REINFORCEMENT, SEE DWG. 1-477 AB-32.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-36.



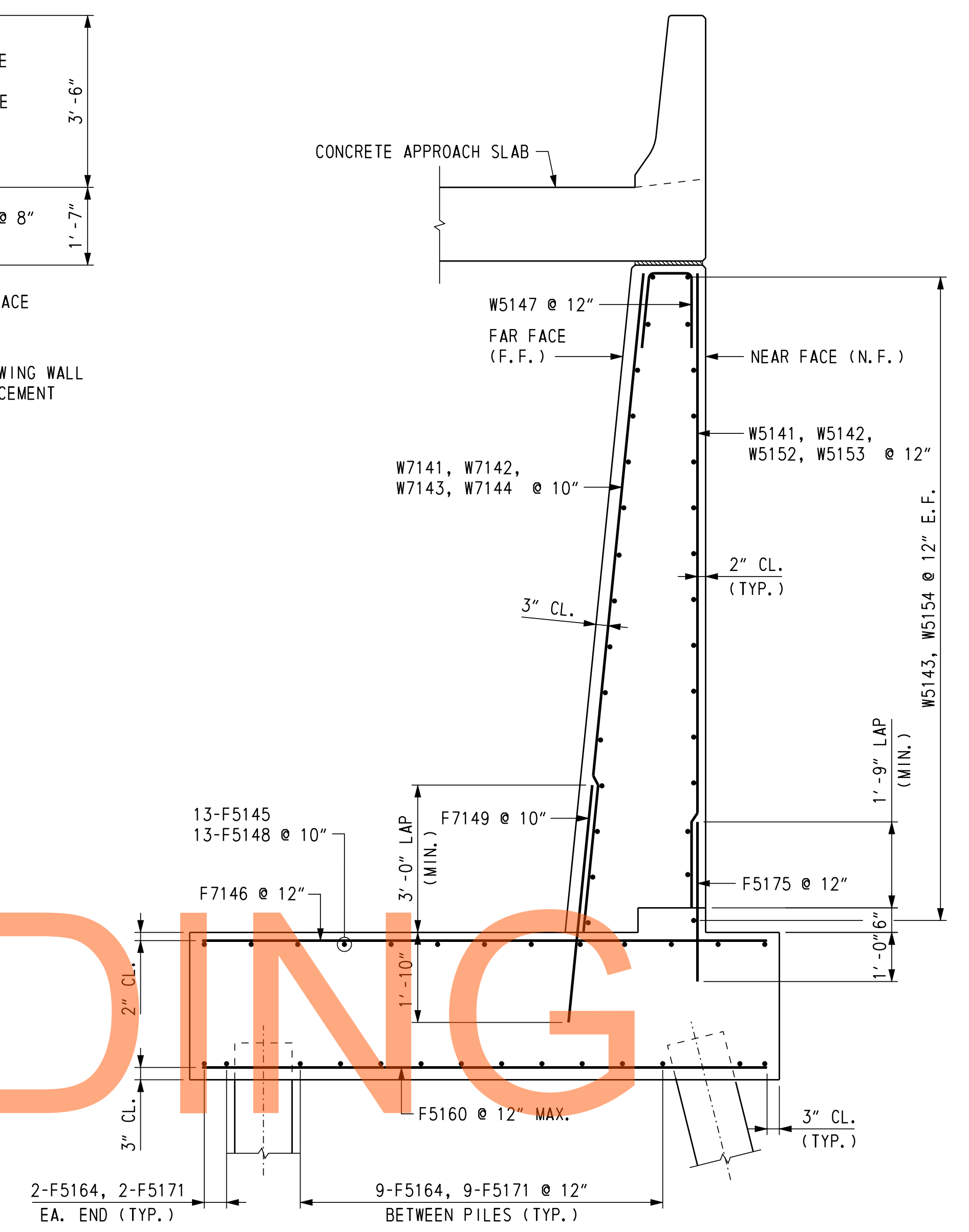
WING WALL 7
SCALE: 1/4" = 1'-0"



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



WING WALL 8
SCALE: 1/4" = 1'-0"



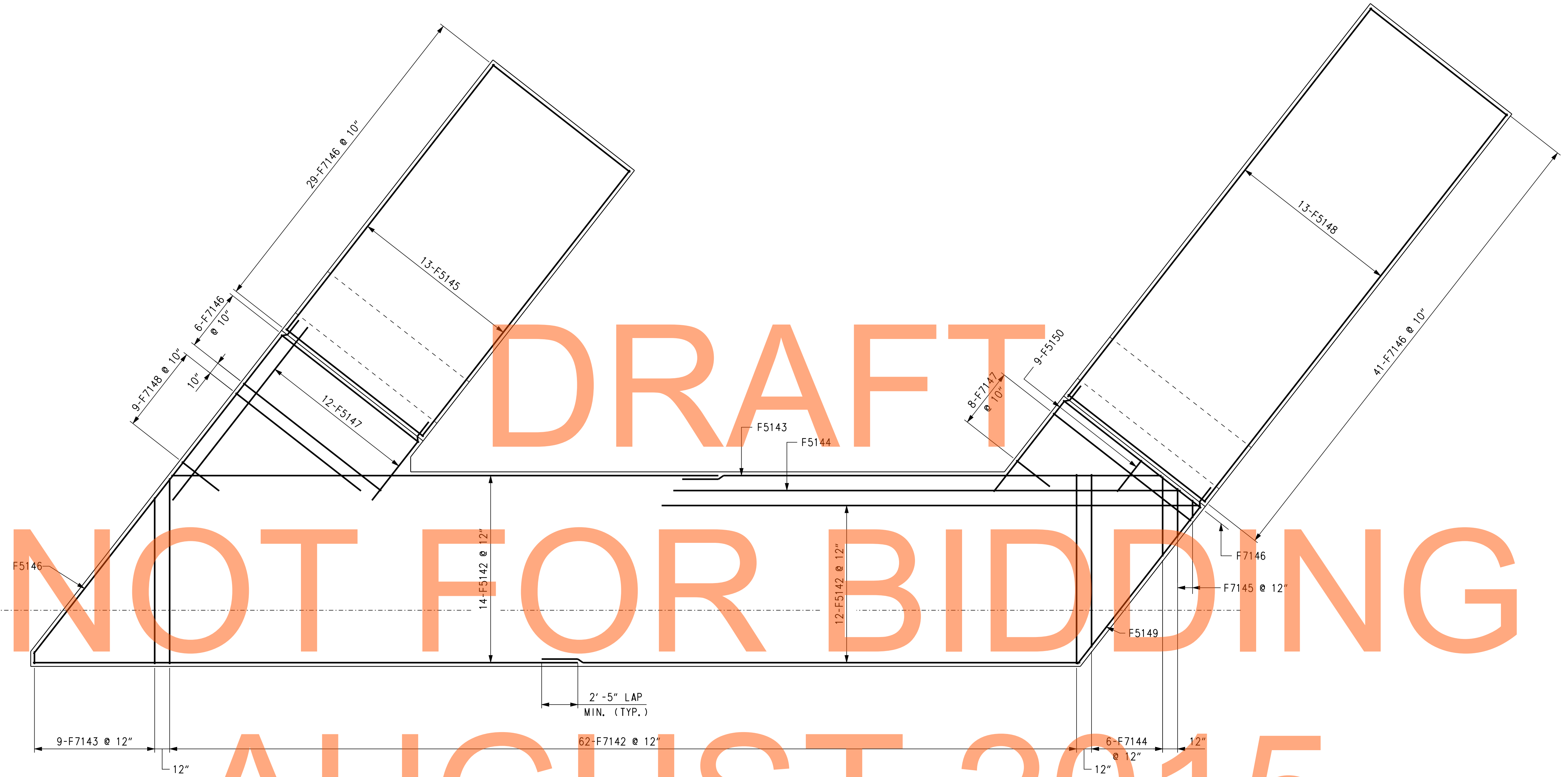
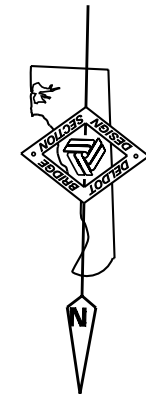
SECTION F-F
SCALE: 1/2" = 1'-0"

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NOT FOR BIDDING
AUGUST 2015

- CROSS REFERENCE NOTES:**
1. FOR WINGWALL ELEVATIONS, SEE DWG. 1-477 AB-11.
 2. FOR ABUTMENT REINFORCEMENT, SEE DWG. 1-477 AB-30 AND 1-477 AB-31.
 3. FOR FOOTING REINFORCEMENT, SEE DWG. 1-477 AB-33 AND 1-477 AB-34.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-36.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		



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AUGUST 2015

PLAN - TOP MAT FOOTING REINFORCEMENT
SCALE: 1/4" = 1'-0"

- CROSS REFERENCE NOTES:
1. FOR FOUNDATION PLAN, SEE DWG. 1-477 AB-8.
 2. FOR ABUTMENT PLAN AND ELEVATION, SEE DWG. 1-477 AB-10.
 3. FOR FOOTING STEP DETAIL, SEE DWG. 1-477 AB-34.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AB-36.

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11/8/2012
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	J. S. LI
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH ABUTMENT 2 NB ROADWAY REINFORCEMENT 4

1-477 AB-33
SHEET NO. 481
TOTAL SHTS. 1256

REINFORCING BAR LIST

ABUTMENT 1 NORTHBOUND

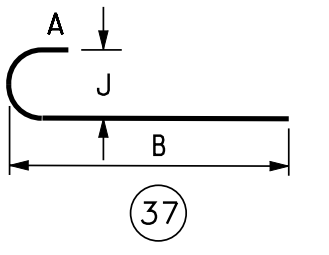
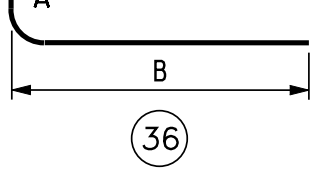
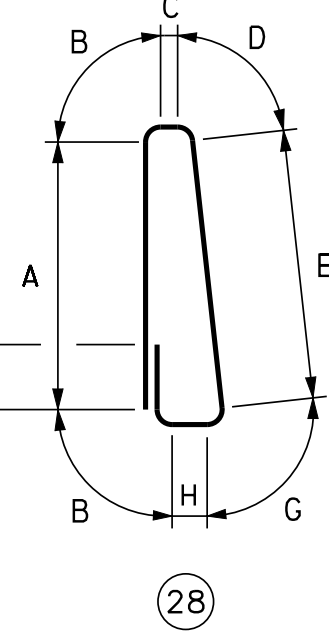
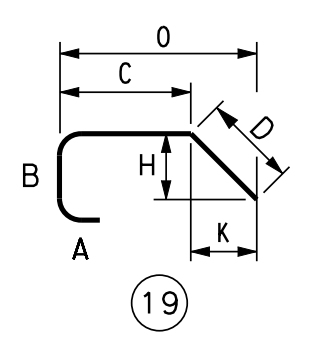
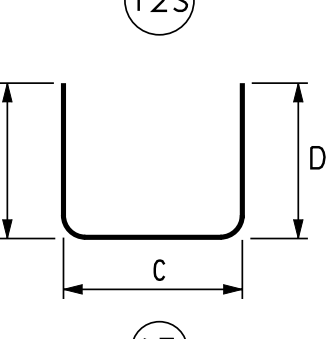
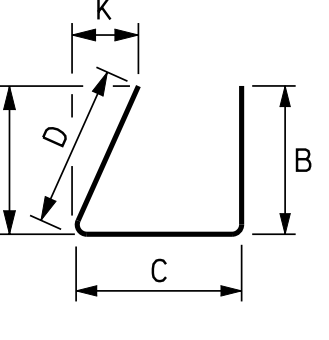
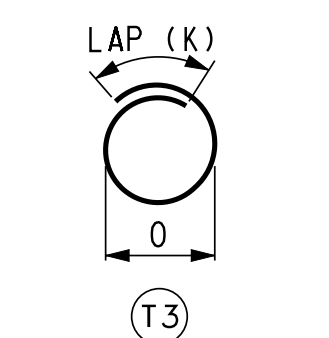
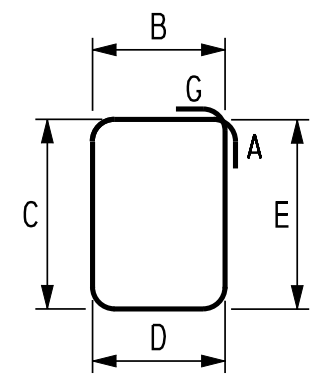
ABUTMENT 1 NORTHBOUND

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
A5101E	33' -10"	6	STR.										
A5102E	36' -6"	6	STR.										
A5103E	31' -8"	12	STR.										
A5104E	3' -3"	12	19		1' -2"	2' -1"				0' -8 5/8"		0' -11"	
A5105E	5' -4"	64	17		2' -1"	1' -2"	2' -1"						
A5106E	4' -3"	65	STR.										
A5107E	4' -0"	65	STR.										
A5120E	12' -3"	12	STR.										
A5121E	5' -7"	6	STR.										
A5122E	11' -1"	14	STR.										
A5123E	6' -6 1/2"	6	STR.										
A5124E	5' -8"	14	STR.										
A5125E	12' -11"	11	STR.										
A5126E	5' -8"	4	STR.										
A5127E	9' -6"	15	STR.										
A5128E	4' -11"	6	STR.										
A5129E	5' -8"	15	STR.										
A5130E	7' -5"	20	17		1' -11"	3' -7"	1' -11"						
A5131E	7' -0"	20	17		1' -11"	3' -2"	1' -11"						
A6101E	4' -3"	65	STR.										
A6102E	5' -10"	65	STR.										
A6103E	32' -7" TO 35' -6"	6	STR.										Δ = 7"
A6104E	32' -7" TO 36' -4"	6	36	1' -0"	31' -7" TO 35' -4"								Δ = 9"
A6105	7' -9"	67	STR.										
A6106	32' -7"	9	STR.										
A6107	36' -4"	9	STR.										
A6108	35' -4"	8	STR.										
A6109	32' -5"	8	STR.										
A6110	2' -7"	9	19		0' -6"	2' -1"				0' -3 5/8"		0' -4 3/4"	
A6111E	6' -0"	64	36	1' -0"	5' -0"								
A6112E	4' -9"	1	36	1' -0"	3' -9"								
A6113E	3' -6"	1	36	1' -0"	2' -6"								
A6114E	3' -9"	1	STR.										
A7101	8' -3"	65	STR.										
A7102	12' -8"	6	STR.										
A7103	13' -4"	6	STR.										
F5101	4' -2"	23	STR.										
F5102	36' -7 3/4"	26	STR.										
F5103	32' -4 1/2"	1	STR.										
F5104	34' -5 1/4"	1	STR.										
F5105	28' -11"	13	36	6' -0"	22' -11"								
F5106	30' -6"	1	STR.										
F5107	8' -3 7/8" TO 16' -6 1/4"	12	STR.										Δ = 9"
F5108	38' -11"	13	36	6' -0"	32' -11"								
F5109	17' -2"	1	STR.										
F5110	5' -10" TO 11' -11"	9	STR.										Δ = 9 1/8"
F5111	12' -6"	60	STR.										
F5112	10' -7"	9	STR.										
F5113	8' -9" TO 10' -7"	6	STR.										Δ = 4 3/8"
F5114	2' -2" TO 5' -4"	6	STR.										Δ = 7 5/8"
F5115	1' -0" TO 1' -11"	2	STR.										Δ = 11"

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
F5116	35' -10 1/4"	4	STR.										
F5117	33' -1"	10	STR.										
F5118	57' -2"	5	STR.										
F5119	41' -4"	2	STR.										
F5120	11' -6"	75	STR.										
F5121	6' -6"	6	STR.										
F5122	5' -3"	6	STR.										
F5123	4' -3"	6	STR.										
F5124	22' -11"	13	STR.										
F5125	13' -3"	2	19			4' -8"	8' -7"			6' -1"		6' -1"	
F5126	2' -6"	1	STR.										
F5127	17' -0"	3	19			8' -5"	8' -7"			6' -1"		6' -1"	
F5128	22' -10 1/2"	6	19			14' -3 1/2"	8' -7"			6' -1"		6' -1"	
F5129	36' -7"	2	19			28' -0"	8' -7"			6' -1"		6' -1"	
F5130	7' -6"	6	STR.										
F5131	32' -11"	13	STR.										
F5132	16' -7"	5	19			8' -0"	8' -7"			6' -1"		6' -1"	
F5133	22' -2"	6	19			13' -7"	8' -7"			6' -1"		6' -1"	
F5134	23' -2"	2	19			14' -7"	8' -7"			6' -1"		6' -1"	
F5135	3' -11"	74	STR.										
F6101	4' -5"	67	STR.										
F7101	5' -5"	77	STR.										
F7102	12' -6"	62	STR.										
F7103	0' -10" TO 11' -3"	9	STR.										Δ = 1' -3 5/8"
F7104	5' -7 5/8" TO 11' -3"	6	STR.										Δ = 1' -1 1/2"
F7105	1' -0" TO 3' -1"	2	STR.										Δ = 2' -1"
F7106	11' -6"	77	STR.										
F7107	1' -4" TO 7' -10"	6	STR.										Δ = 0' -11"
F7108	1' -4" TO 10' -10"	8	STR.										Δ = 1' -2 1/4"
F7109	5' -6"	88	STR.										
PA5101E	7' -6 1/4"	16	28	2' -9 1/4"	0' -2 5/8"	0' -1 5/8"	0' -2 3/4"	2' -9 1/2"	0' -3 1/8"	0' -5 1/8"			
PA7101E	4' -8"	8	STR.										
PA8101E	4' -8"	8	STR.										
W5101	8' -11"	34	STR.										
W5102	12' -5"	3	STR.										
W5103	35' -5"	20	STR.										
W5104	2' -6"	10	STR.										
W5105E	5' -7"	16	STR.										
W5106E	5' -8"	16	19			4' -1"	1' -9"			1' -0"		1' -5 1/4"	
W5107	2' -8"	64	12S			0' -10"	1' -0"	0' -10"		0' -10"		0' -1"	
W5108E	4' -8"	8	STR.										
W5112	11' -6"	13	STR.										
W5113	8' -0"	24	STR.										
W5114	35' -5"	20	STR.										
W5115	12' -6"	10	STR.										
W7101	9' -5"	40	STR.										
W7102	12' -11"	4	STR.										
W7103	12' -0"	16	STR.										
W7104	8' -6"	28	STR.										

BENDING DIAGRAMS

ALL DIMENSIONS ARE FROM OUT TO OUT.



DRAFT
NOT FOR BIDDING
AUGUST 2015

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11/8/2012
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REINFORCING BAR LIST

ABUTMENT 2 NORTHBOUND

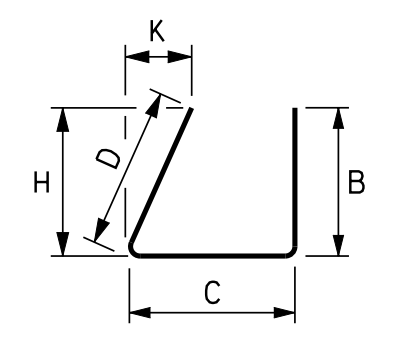
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A5141E	34' - 3"	6	STR.										
A5142E	36' - 11"	6	STR.										
A5143E	31' - 3"	12	STR.										
A5144E	3' - 3"	12	19		1' - 2"	2' - 1"				0' - 8 5/8"		0' - 11"	
A5145E	5' - 4"	64	17		2' - 1"	1' - 2"	2' - 1"						
A5146E	4' - 4"	65	STR.										
A5147E	3' - 11"	65	STR.										
A5160E	14' - 3"	12	STR.										
A5161E	5' - 9"	6	STR.										
A5162E	11' - 1"	17	STR.										
A5163E	6' - 6 1/2"	6	STR.										
A5164E	5' - 8"	17	STR.										
A5165E	13' - 9"	11	STR.										
A5166E	5' - 7"	4	STR.										
A5167E	9' - 6"	16	STR.										
A5168E	4' - 11"	6	STR.										
A5169E	5' - 8"	16	STR.										
A5170E	7' - 5"	20	17		1' - 11"	3' - 7"	1' - 11"						
A5171E	7' - 0"	20	17		1' - 11"	3' - 2"	1' - 11"						
A6141E	4' - 4"	65	STR.										
A6142E	5' - 9"	65	STR.										
A6143E	33' - 3" TO 37' - 0"	6	STR.										Δ = 9"
A6144E	32' - 0" TO 34' - 11"	6	36	1' - 0"	31' - 0" TO 33' - 11"								Δ = 7"
A6145	9' - 4"	67	STR.										
A6146	33' - 0"	10	STR.										
A6147	36' - 10"	10	STR.										
A6148	34' - 11"	10	STR.										
A6149	32' - 0"	10	STR.										
A6150	2' - 7"	11	19		0' - 6"	2' - 1"				0' - 3 5/8"		0' - 4 3/4"	
A6151E	6' - 0"	64	36	1' - 0"	5' - 0"								
A6152E	4' - 9"	1	36	1' - 0"	3' - 9"								
A6153E	3' - 6"	1	36	1' - 0"	2' - 6"								
A6154E	3' - 9"	1	STR.										
A7141	9' - 10"	65	STR.										
A7142	14' - 10"	6	STR.										
A7143	14' - 3"	6	STR.										
F5141	4' - 0"	23	STR.										
F5142	36' - 7 3/4"	26	STR.										
F5143	32' - 4 1/2"	1	STR.										
F5144	34' - 5 1/4"	1	STR.										
F5145	28' - 11"	13	36	6' - 0"	22' - 11"								
F5146	30' - 6"	1	STR.										
F5147	8' - 3 3/8" TO 16' - 6 1/4"	12	STR.										Δ = 9"
F5148	38' - 11"	13	36	6' - 0"	32' - 11"								
F5149	17' - 2"	1	STR.										
F5150	5' - 10" TO 11' - 11"	9	STR.										Δ = 9 1/8"
F5151	12' - 6"	60	STR.										
F5152	10' - 7"	9	STR.										
F5153	8' - 9" TO 10' - 7"	6	STR.										Δ = 4 3/8"
F5154	2' - 2" TO 5' - 4"	6	STR.										Δ = 7 5/8"
F5155	1' - 0" TO 1' - 11"	2	STR.										Δ = 11"
F5156	35' - 10 1/4"	4	STR.										
F5157	33' - 1"	10	STR.										
F5158	57' - 2"	5	STR.										
F5159	41' - 4"	2	STR.										

ABUTMENT 2 NORTHBOUND

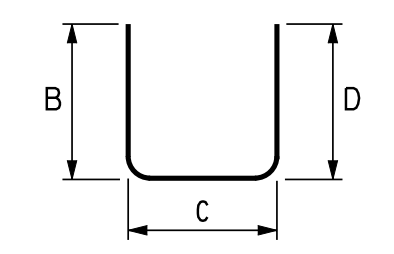
MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
F5160	11' - 6"	75	STR.										
F5161	6' - 6"	6	STR.										
F5162	5' - 3"	6	STR.										
F5163	4' - 3"	6	STR.										
F5164	22' - 11"	13	STR.										
F5165	13' - 3"	2	19			4' - 8"	8' - 7"			6' - 1"		6' - 1"	
F5166	2' - 6"	1	STR.										
F5167	17' - 0"	3	19			8' - 5"	8' - 7"			6' - 1"		6' - 1"	
F5168	23' - 10 1/2"	6	19			14' - 3 1/2"	8' - 7"			6' - 1"		6' - 1"	
F5169	36' - 7"	2	19			28' - 0"	8' - 7"			6' - 1"		6' - 1"	
F5170	7' - 6"	6	STR.										
F5171	32' - 11"	13	STR.										
F5172	16' - 7"	5	19			8' - 0"	8' - 7"			6' - 1"		6' - 1"	
F5173	22' - 2"	6	19			13' - 7"	8' - 7"			6' - 1"		6' - 1"	
F5174	23' - 2"	2	19			14' - 7"	8' - 7"			6' - 1"		6' - 1"	
F5175	3' - 11"	74	STR.										
F6141	4' - 3"	67	STR.										
F7141	5' - 3"	77	STR.										
F7142	12' - 6"	62	STR.										
F7143	0' - 10" TO 11' - 3"	9	STR.										Δ = 1' - 3 5/8"
F7144	5' - 7 3/8" TO 11' - 3"	6	STR.										Δ = 1' - 1 1/2"
F7145	1' - 0" TO 3' - 1"	2	STR.										Δ = 2' - 1"
F7146	11' - 6"	77	STR.										
F7147	1' - 4" TO 7' - 10"	6	STR.										Δ = 0' - 11"
F7148	1' - 4" TO 10' - 10"	9	STR.										Δ = 1' - 2 1/4"
F7149	5' - 6"	88	STR.										
PA5141E	7' - 6 1/4"	16	28	2' - 9 1/4"	0' - 2 3/4"	0' - 1 5/8"	0' - 2 3/4"	2' - 9 1/2"	0' - 3 1/8"	0' - 5 1/8"			
PA7141E	4' - 8"	8	STR.										
PA8141E	4' - 8"	8	STR.										
W5141	14' - 2"	13	STR.										
W5142	10' - 8"	24	STR.										
W5143	35' - 5"	26	STR.										
W5144	12' - 6"	10	STR.										
W5145E	5' - 7"	16	STR.										
W5146E	5' - 8"	16	19			4' - 1"	1' - 9"			1' - 0"		1' - 5 1/4"	
W5147	2' - 8"	64	12S			0' - 10"	1' - 0"	0' - 10"		0' - 10"		0' - 1"	
W5148E	4' - 8"	8	STR.										
W5152	10' - 2"	34	STR.										
W5153	13' - 8"	3	STR.										
W5154	35' - 5"	24	STR.										
W5155	2' - 6"	10	STR.										
W7141	14' - 8"	16	STR.										
W7142	11' - 2"	28	STR.										
W7143	10' - 7 7/8"	40	STR.										
W7144	14' - 1 7/8"	4	STR.										

BENDING DIAGRAMS

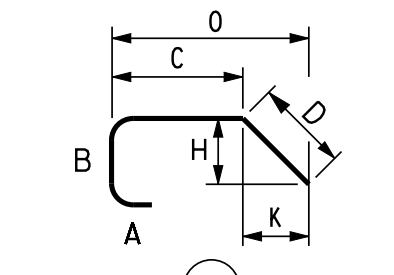
ALL DIMENSIONS ARE FROM OUT TO OUT.



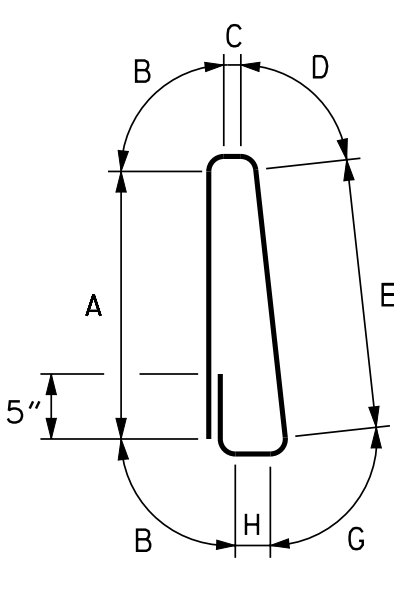
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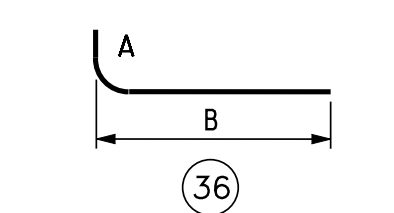
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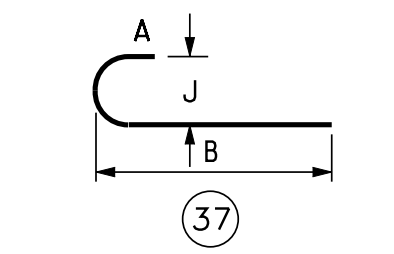
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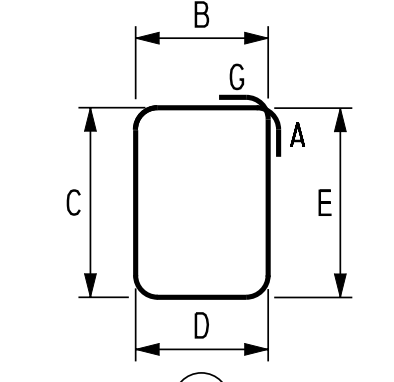
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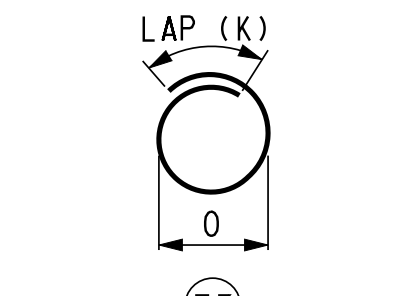
(36)



(37)



(T2)



(T3)

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11/8/2012

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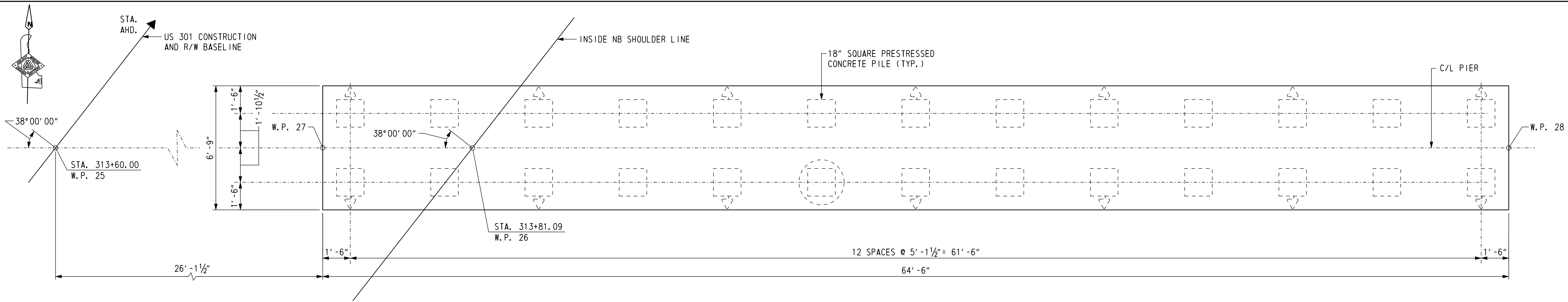
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT T200511303	BRIDGE NO. 1-477N&S
COUNTY NEW CASTLE	DESIGNED BY: J. S. LI
	CHECKED BY: W. A. O'CONNOR

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
ABUTMENT 2 NB ROADWAY
REINFORCING BAR LIST**

1-477 AB-36
SHEET NO. 484
TOTAL SHTS. 1256



PIER FOUNDATION PLAN

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

DRAFT

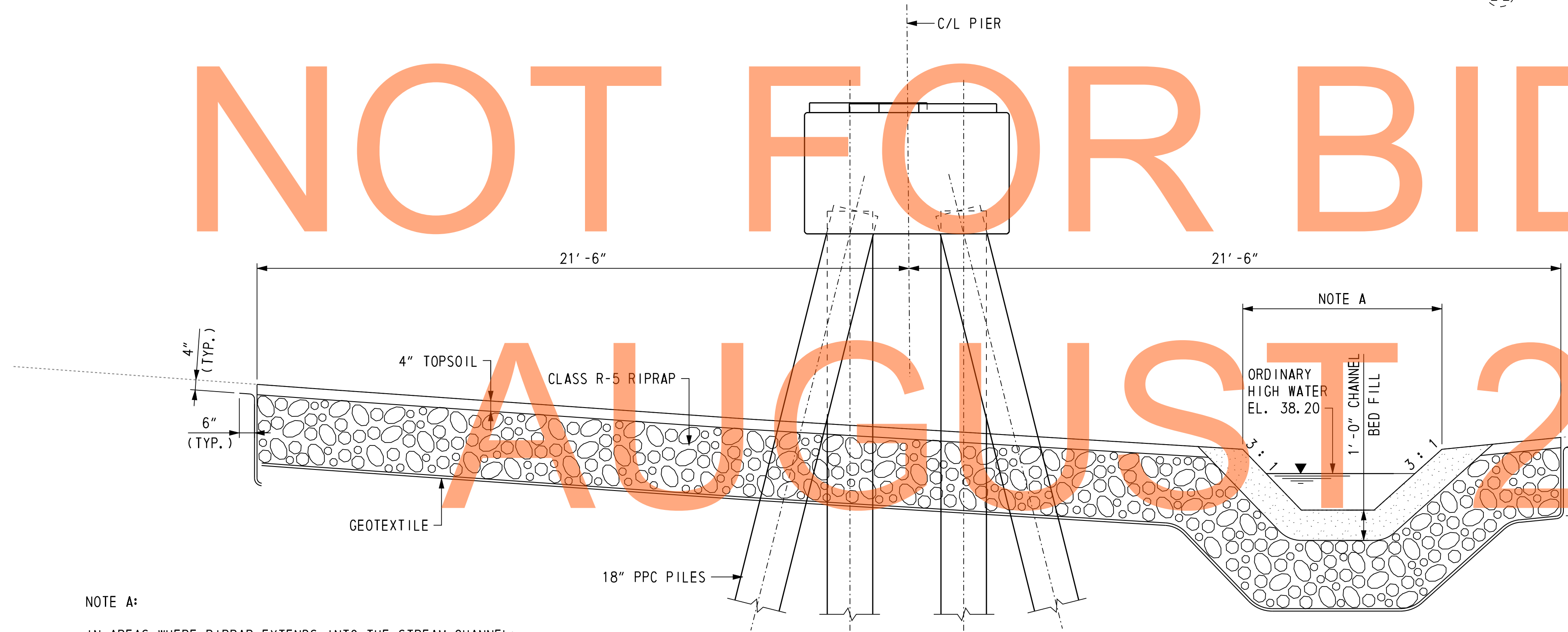
LEGEND

- DENOTES PLUMB PILE
- DENOTES PILE BATTERED 1:4 AND DIRECTION OF BATTER
- DENOTES TEST PILE

PILE INSTALLATION DATA					
SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	NOMINAL PILE DRIVING RESISTANCE (KIPS)	MINIMUM PILE TIP ELEVATION	ESTIMATED PILE TIP ELEVATION	AVERAGE MINIMUM TIP ELEVATION	AVERAGE MAXIMUM TIP ELEVATION
PIER	400.0	+2.0	-3.0		

PIER PILE DRIVING INFORMATION	
PILE SIZE AND TYPE:	
ACTUAL BEARING OBTAINED:	
HAMMER TYPE:	
PILE HAMMER ENERGY:	
SPECIAL DRIVING CONDITIONS AND COMMENTS:	

NOT FOR BIDDING



PIER RIPRAP DETAIL

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

- NOTE A:
- IN AREAS WHERE RIPRAP EXTENDS INTO THE STREAM CHANNEL:
- a.) RECORD STREAM CHANNEL WIDTH AND CHANNEL BOTTOM ELEVATION.
 - b.) EXCAVATE BELOW STREAM BOTTOM TO PLACE GEOTEXTILE AND RIPRAP.
 - c.) PLACE TOP OF RIPRAP ONE FOOT BELOW EXISTING STREAM BOTTOM ELEVATION.
 - d.) PLACE UPSTREAM AND DOWNSTREAM CHANNEL BED FILL ONE FOOT THICK OVER RIPRAP. MATCH EXISTING UPSTREAM AND DOWNSTREAM STREAM BED ELEVATIONS AND CHANNEL WIDTH.

- CROSS REFERENCE NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
 2. FOR PIER PLAN AND ELEVATION, SEE DWG. 1-477 PR-2.
 3. FOR PRESTRESSED CONCRETE PILE DETAILS, SEE DWG. 1-477 PL-1.
 4. BELOW ORDINARY HIGH WATER ELEVATION, RECESS RIPRAP ONE FOOT AND COVER WITH CHANNEL BED FILL IN ACCORDANCE WITH THE STREAM RESTORATION AND SLOPE RIPRAP TREATMENT NOTES FOUND ON EC-05. ABOVE ORDINARY HIGH WATER ELEVATION, RECESS RIPRAP FOUR (4) INCHES. CHOKE WITH DELAWARE #57 STONE, ITEM NO. 302012, CHOKE WITH FOUR (4) INCHES OF TOPSOIL AND BACKFILL WITH FOUR (4) INCHES TOPSOIL

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11/8/2012

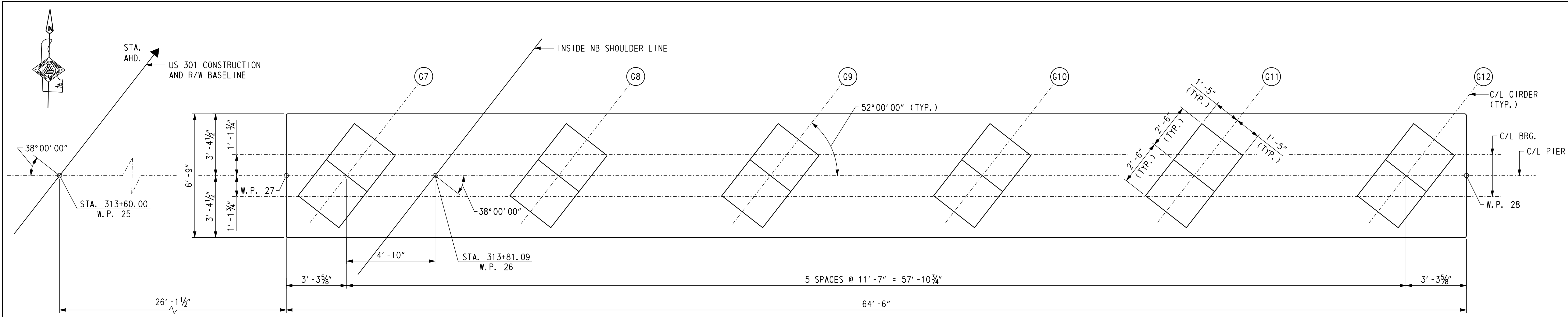
Steve_Lambert

	ADDENDUMS / REVISIONS	<p style="font-weight: bold; font-size: 1.2em;">US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD</p>	CONTRACT	BRIDGE NO.	1-477N&S	<p style="font-weight: bold; font-size: 0.8em;">US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY PIER FOUNDATION PLAN</p>	SHEET NO.
				T200511303	DESIGNED BY:		K.D.BEAVER
			COUNTY	CHECKED BY:	G.P.MISTRY	TOTAL SHTS.	1256
			NEW CASTLE				

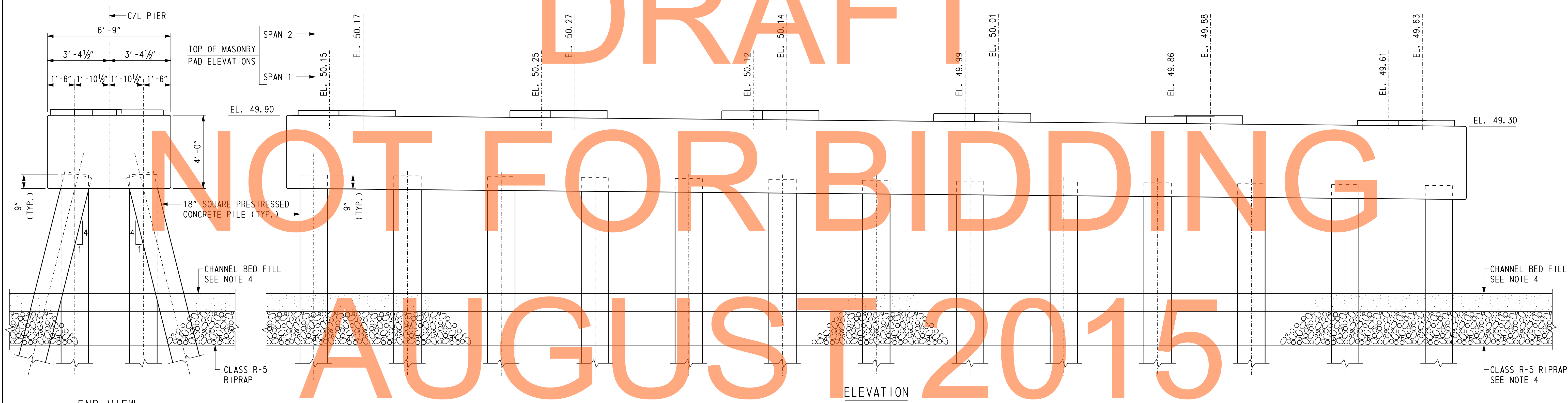
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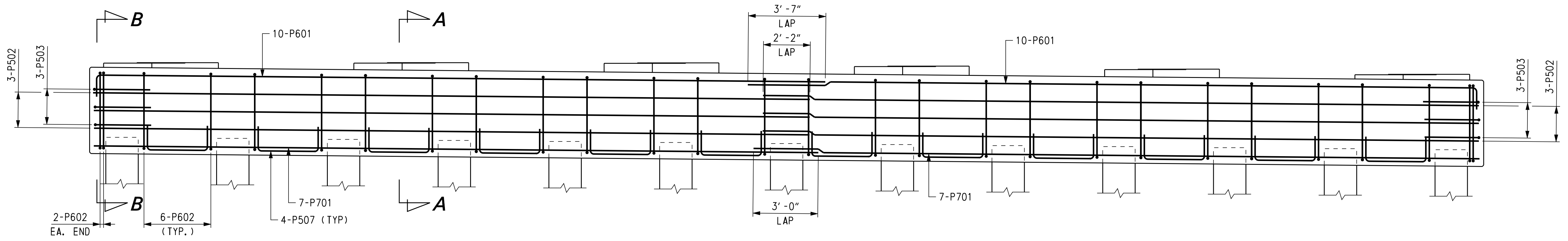
END VIEW
SCALE: 3/8" = 1'-0"

PIER
(LOOKING STATION AHEAD)
SCALE: 3/8" = 1'-0"

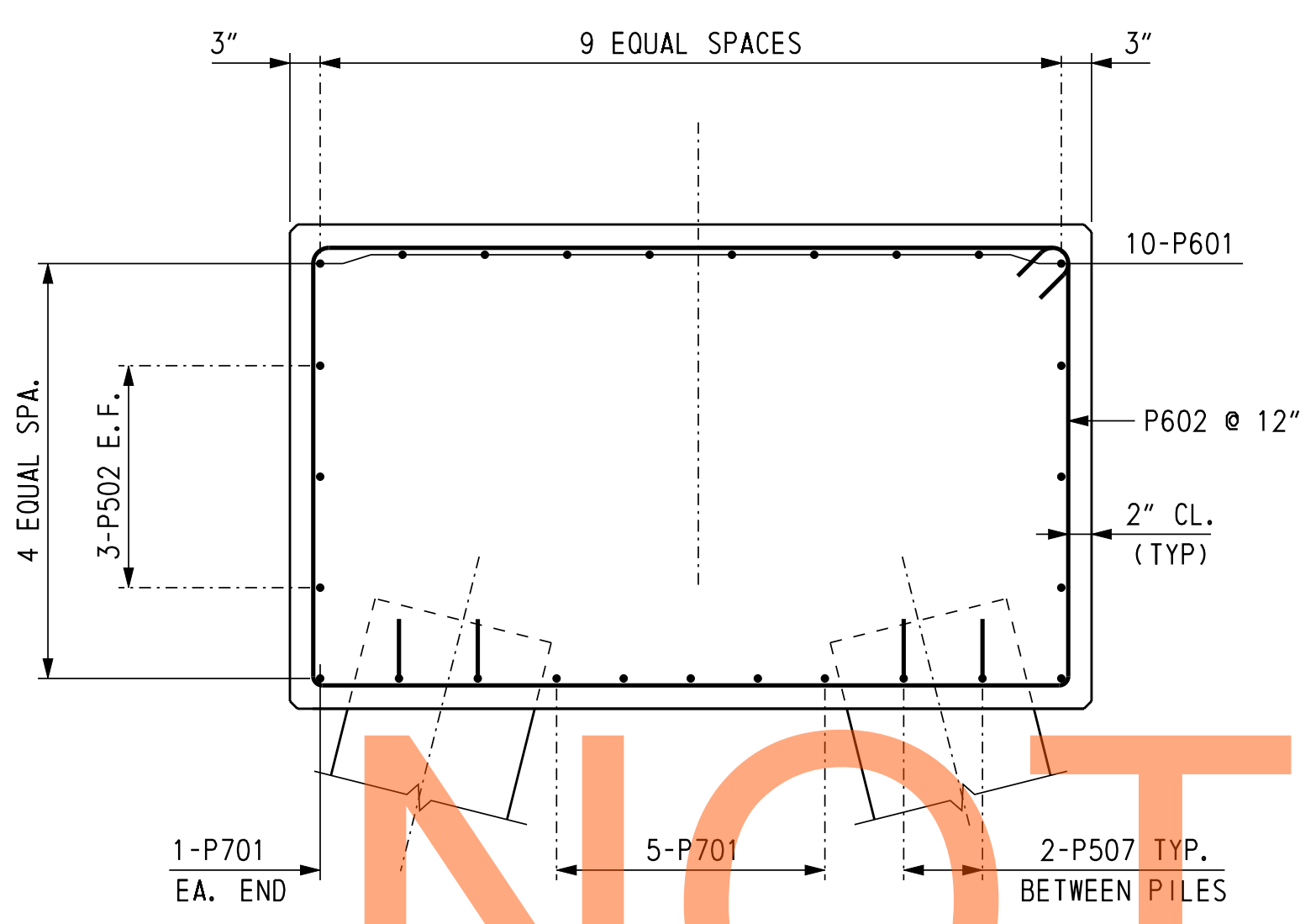
CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
2. FOR GEOMETRIC LAYOUT, SEE DWG. 1-477 FT-2.
3. FOR PIER FOUNDATION PLAN, SEE DWG. 1-477 PR-1.
4. FOR PIER RIPRAP DETAIL, SEE DWG. 1-477 PR-1
5. FOR PIER REINFORCING DETAILS, SEE DWG. 1-477 PR-3.

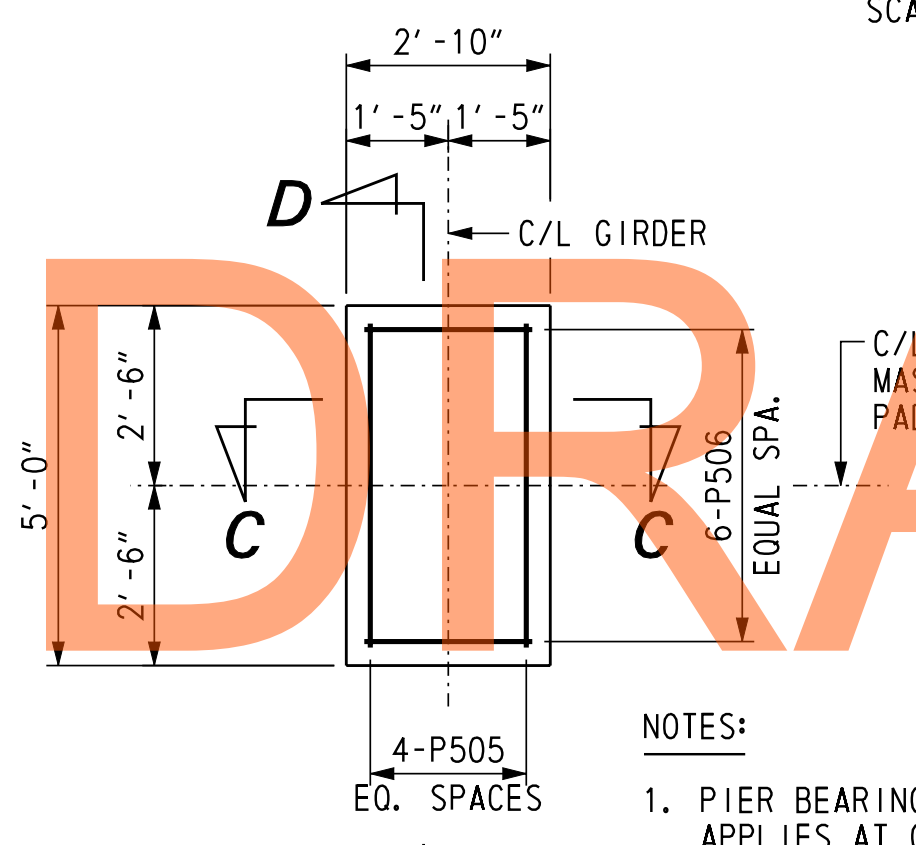
	DELWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200511303 COUNTY NEW CASTLE	BRIDGE NO. 1-477N&S DESIGNED BY: K.D.BEAVER CHECKED BY: G.P.MISTRY	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY PIER PLAN AND ELEVATION	1-477 PR-2 SHEET NO. 486 TOTAL SHTS. 1256



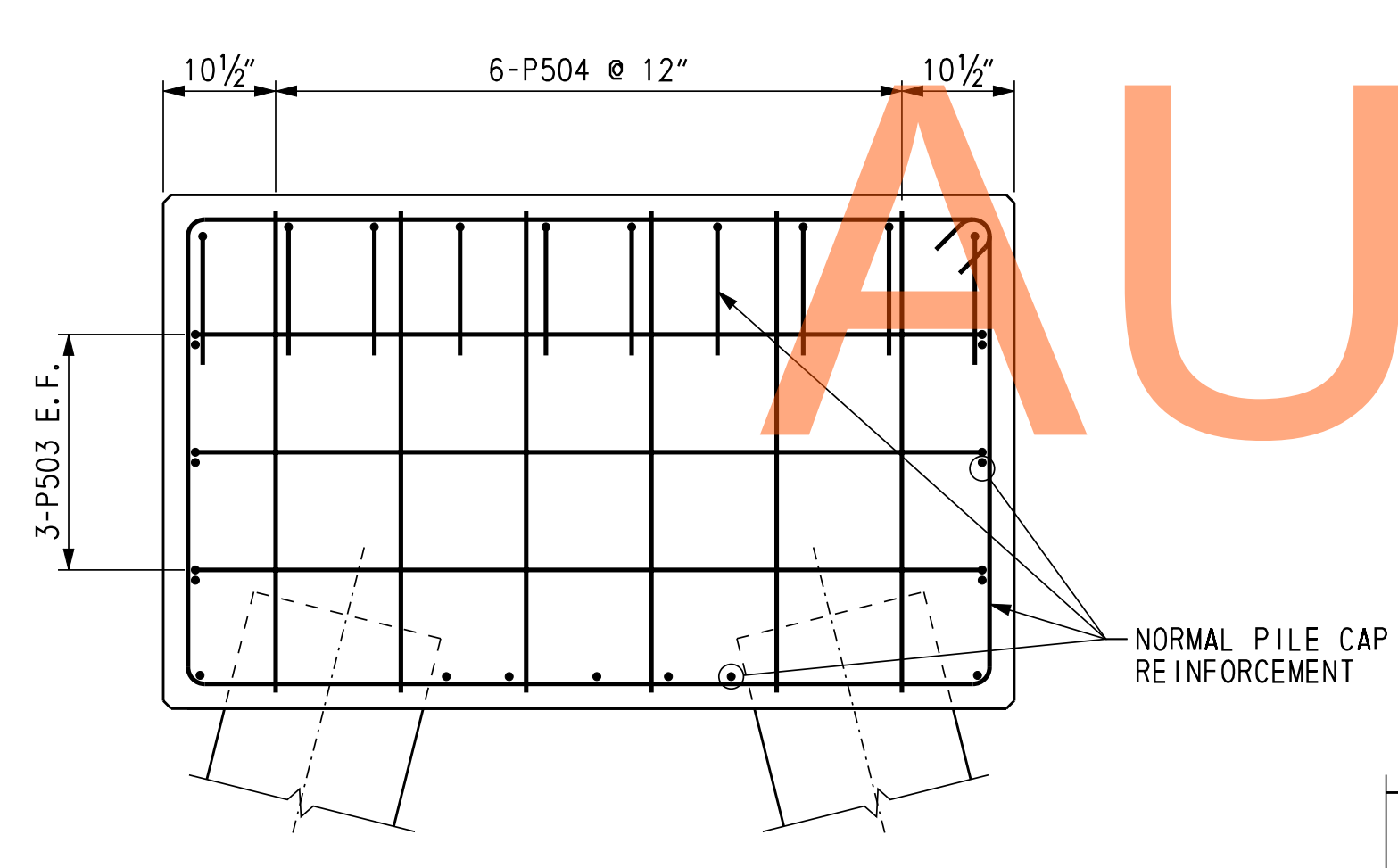
PIER ELEVATION
SCALE: 3/8" = 1'-0"



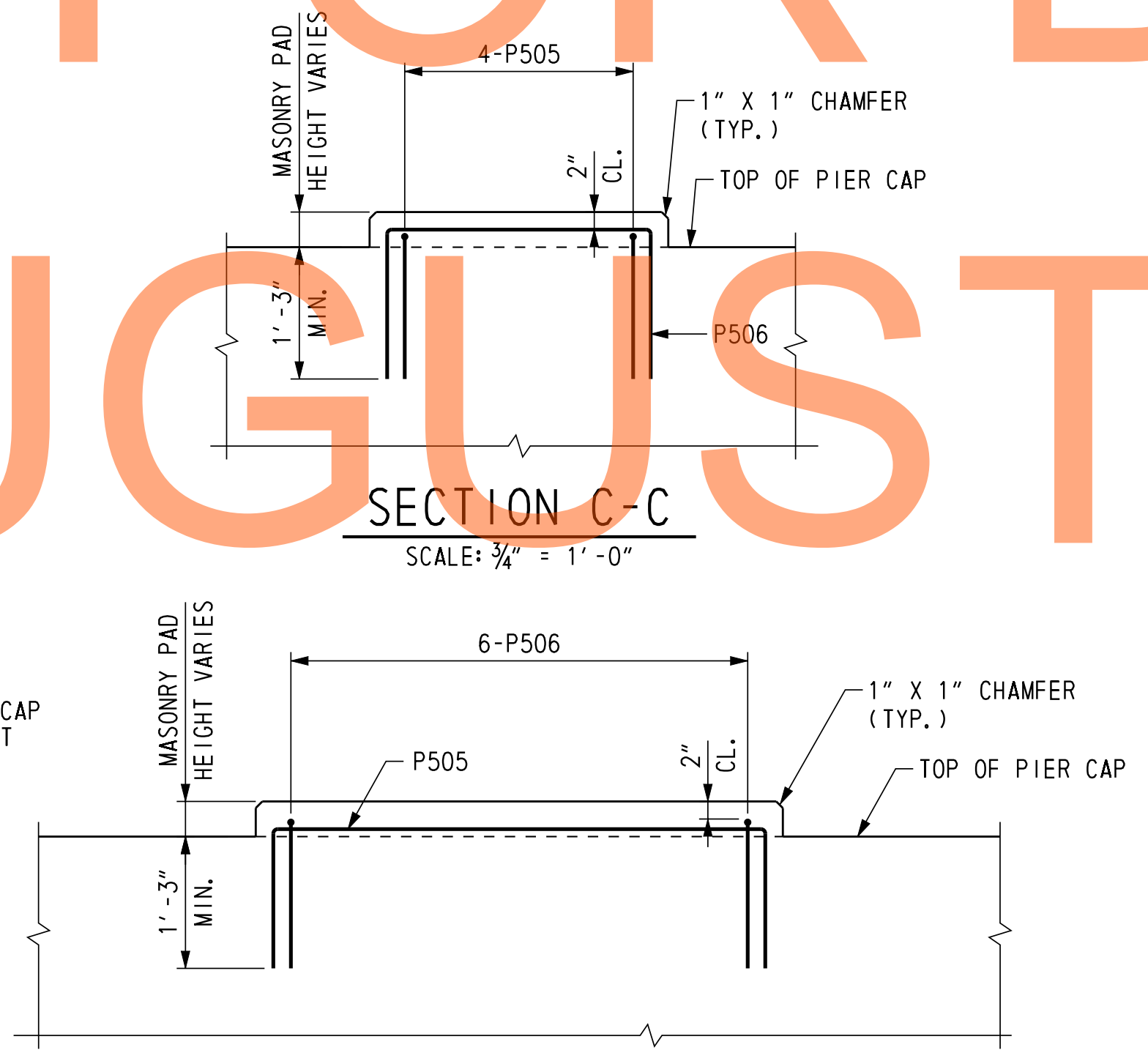
SECTION A-A
SCALE: 3/4" = 1'-0"



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



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



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

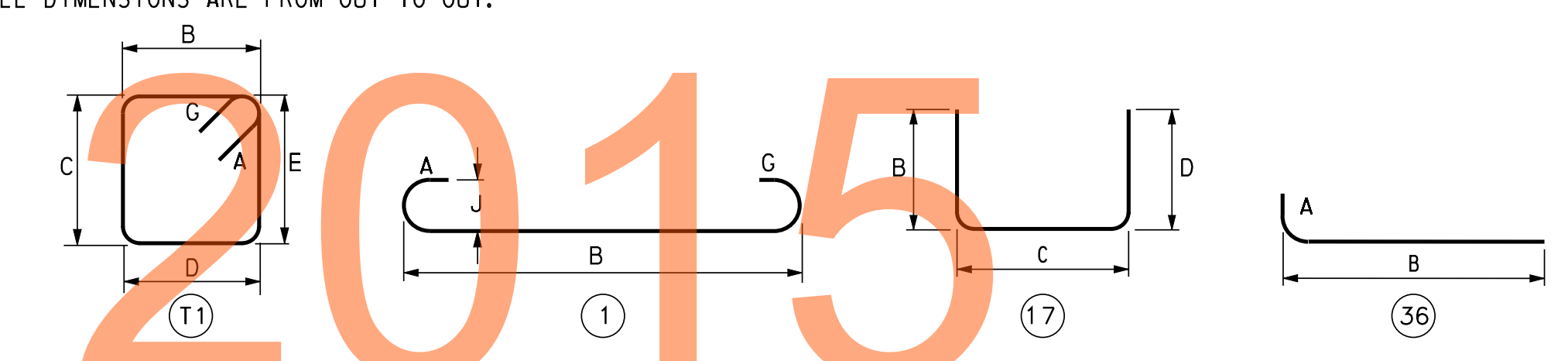
SECTION D-D
SCALE: 3/4" = 1'-0"

REINFORCING BAR LIST
PIER CAP

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	F	G	J	R	REMARKS
P502	33'-2"	12	STR										
P503	10'-9"	6	17		2'-2"	6'-5"	2'-2"						
P504	3'-8"	12	STR										
P505	7'-10"	16	17		1'-7"	4'-8"	1'-7"						
P506	5'-8"	24	17		1'-7"	2'-6"	1'-7"						
P507	5'-6"	48	17		1'-0"	3'-6"	1'-0"						
P601	34'-11"	20	36	1'-0"	33'-11"								
P602	21'-6"	76	T1	0'-8"	6'-5"	3'-8"	6'-5"	3'-8"		0'-8"			
P701	33'-7"	14	STR										
PP701	8'-4"	156	1	0'-10"	7'-6"						0'-7"		

BENDING DIAGRAMS

ALL DIMENSIONS ARE FROM OUT TO OUT.



CROSS REFERENCE NOTES:

- FOR PIER PLAN AND ELEVATION, SEE DWG. 1-477 PR-2.
- FOR PIER FOUNDATION PLAN, SEE DWG. 1-477 PR-1.
- FOR PRESTRESSED CONCRETE PILE REINFORCEMENT, SEE DWG. 1-477 PL-1.
- FOR PIER DIAPHRAGM REINFORCEMENT, SEE DWG 1-477 BM-8.

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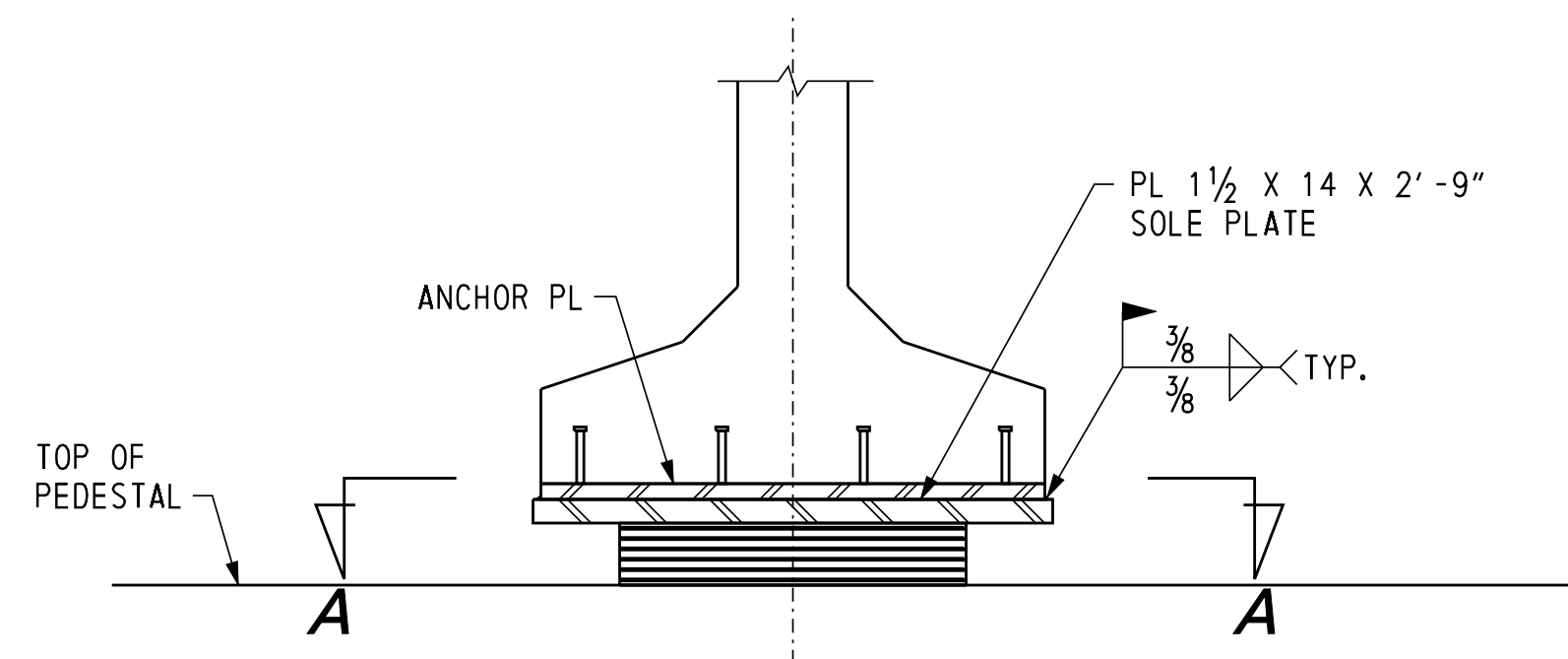
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

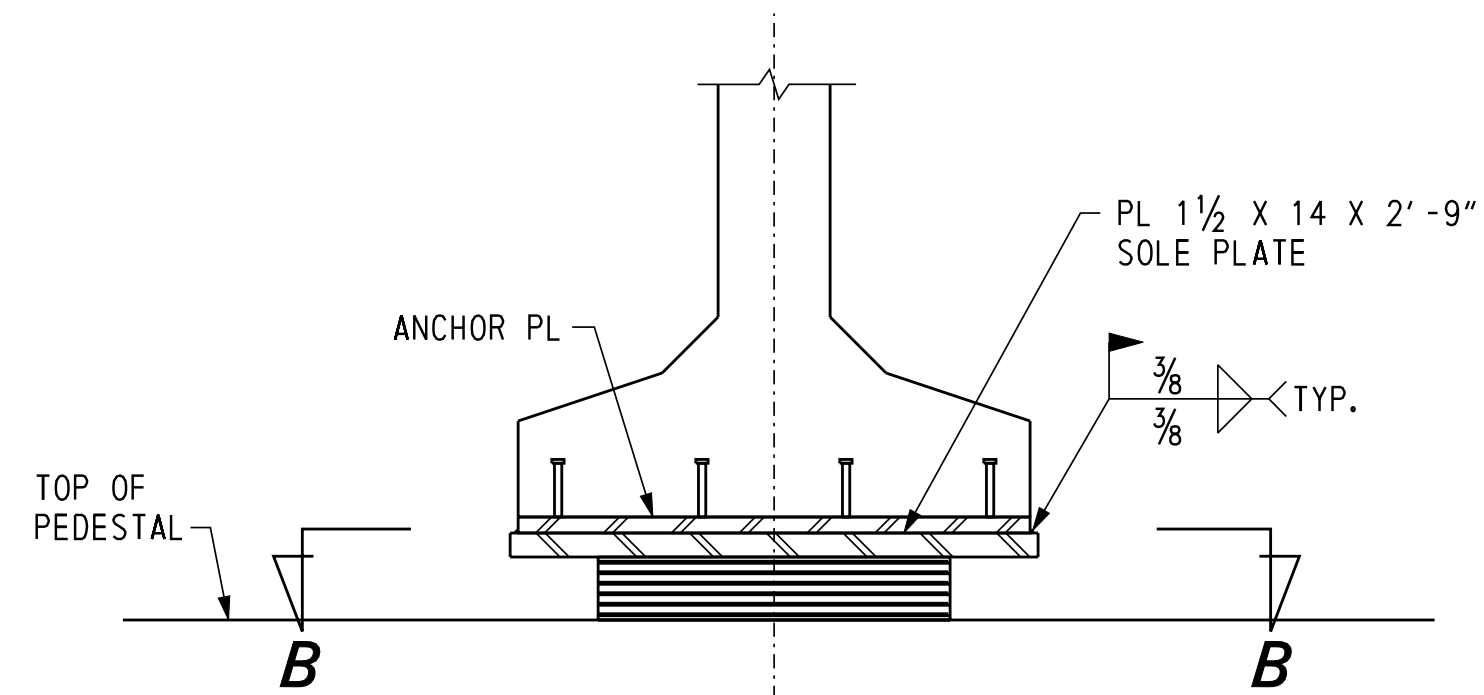
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
NORTHBOUND ROADWAY
PIER REINFORCEMENT**

1-477 PR-3
SHEET NO.
487
TOTAL SHTS.
1256



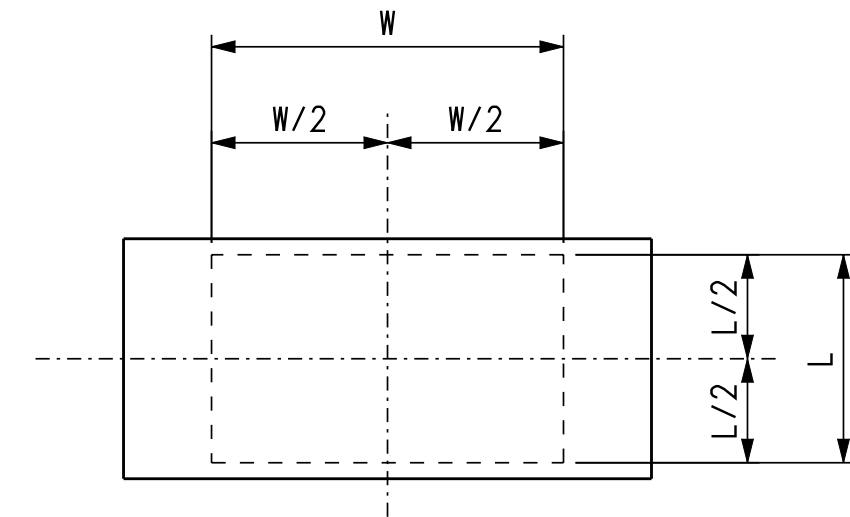
FIXED BEARING DETAIL - ELEVATION

SCALE: 1" = 1'-0"



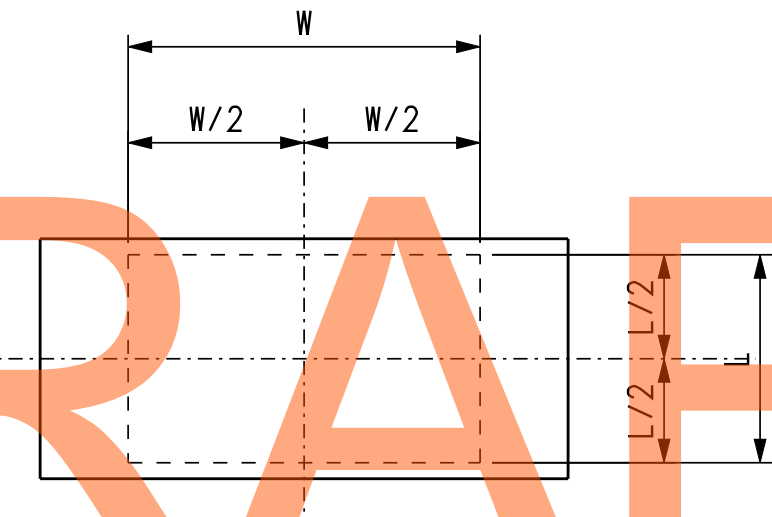
EXPANSION BEARING DETAIL - ELEVATION

SCALE: 1" = 1'-0"



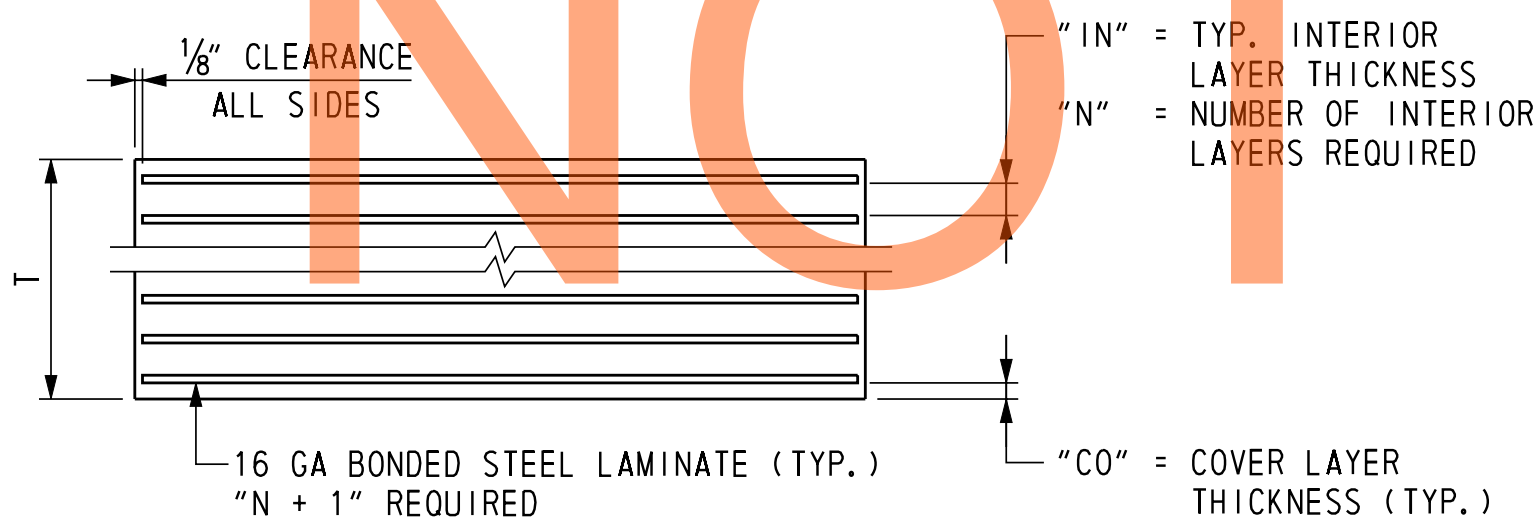
FIXED BEARING DETAIL - SECTION A-A

SCALE: 1" = 1'-0"



EXPANSION BEARING DETAIL - SECTION B-B

SCALE: 1" = 1'-0"



TYPICAL LAMINATED ELASTOMERIC PAD SECTION

NOT TO SCALE

LOCATION	TYPE	QUANTITY	L	W	T	N	N+1	IN	CO
ABUTMENT 1SB	FIX	6	12	22	3 3/8	6	7	1/2	1/4
ABUTMENT 2SB	EXP	6	12	22	3 3/8	6	7	1/2	1/4

L = LENGTH OF PAD ALONG C/L GIRDER
W = WIDTH OF PAD

LOCATION	TYPE	QUANTITY	L	W	T	N	N+1	IN	CO
ABUTMENT 1NB	EXP	6	12	20	3 3/8	5	6	1/2	1/4
PIER	FIX	12	12	20	3 3/8	5	6	1/2	1/4
ABUTMENT 2NB	EXP	6	12	20	3 3/8	5	6	1/2	1/4

L = LENGTH OF PAD ALONG C/L GIRDER
W = WIDTH OF PAD

BEARING NOTES:

- WHEN WELDING, THE TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER SHOULD BE KEPT BELOW 250° F. THE TEMPERATURE SHALL BE CONTROLLED BY THE WELDING PROCEDURE. TEMPERATURE INDICATING CRAYONS, OR OTHER HEAT INDICATING DEVICES APPROVED BY THE ENGINEER SHALL BE USED FOR INSPECTION. SHOULD THE HEAT INTENSITY CAUSE CRACKING OR SPALLING ON THE SURFACE OF THE ADJACENT CONCRETE BEAM, ALTERNATE WELDING PROCEDURES SHALL BE USED.
- THE ELASTOMERIC BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS BETWEEN 43° AND 72° F.
- ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- STEEL LAMINATE SHALL CONFORM TO AASHTO M270 GRADE 36 OR BETTER. ALL STRUCTURAL STEEL FOR THE BEARINGS SHALL CONFORM TO AASHTO M270 GRADE 50 AND SHALL BE GALVANIZED.
- 1000 RMS (FINISH ALL OVER) ALL PLATES EXCEPT WHERE OTHERWISE NOTED ON THESE PLANS OR IN THE CONTRACT SPECIFICATIONS.
- BEARINGS SHALL BE PLACED NORMAL TO THE CENTER LINE OF GIRDER.
- ALL CENTER LINES OF BEARING AND CENTER LINE OF PADS ARE COINCIDENTS.
- ALL BEARING SHOES ARE TO BE SHIPPED ASSEMBLED AS UNITS.
- MAXIMUM VERTICAL SERVICE LOAD FOR THE FIXED BEARING(S):

1-477S:	DL=194 KIPS	LL=134 KIPS
1-477N:	DL=131 KIPS	LL=135 KIPS
- MAXIMUM VERTICAL SERVICE LOAD FOR THE EXPANSION BEARING(S):

1-477S:	DL=194 KIPS	LL=134 KIPS
1-477N:	DL=122 KIPS	LL=118 KIPS
- COST FOR MATERIALS, FABRICATION AND INSTALLATION OF ELASTOMERIC BEARING PADS INCLUDING SOLE PLATES SHALL BE PAID UNDER ITEM 605581.

LAMINATED ELASTOMERIC BEARING PAD NOTES:

- MANUFACTURE ALL BEARINGS IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL BEARING PADS SHALL BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
- HOLES ARE NOT PERMITTED IN ELASTOMERIC BEARINGS.
- PROVIDE NEOPRENE 60 DUROMETER.
- VULCANIZE PATCH PIN GROOVES.
- PROVIDE MINIMUM LOW-TEMPERATURE NEOPRENE GRADE 3.
- ELASTOMERIC BEARING PAD SHALL BE FACTORY VULCANIZED TO THE SOLE PLATE.

CROSS REFERENCE NOTE:

FOR ANCHOR PLATE DETAILS, SEE DWG. 1-477 BM-1 AND 1-477 BM-6.

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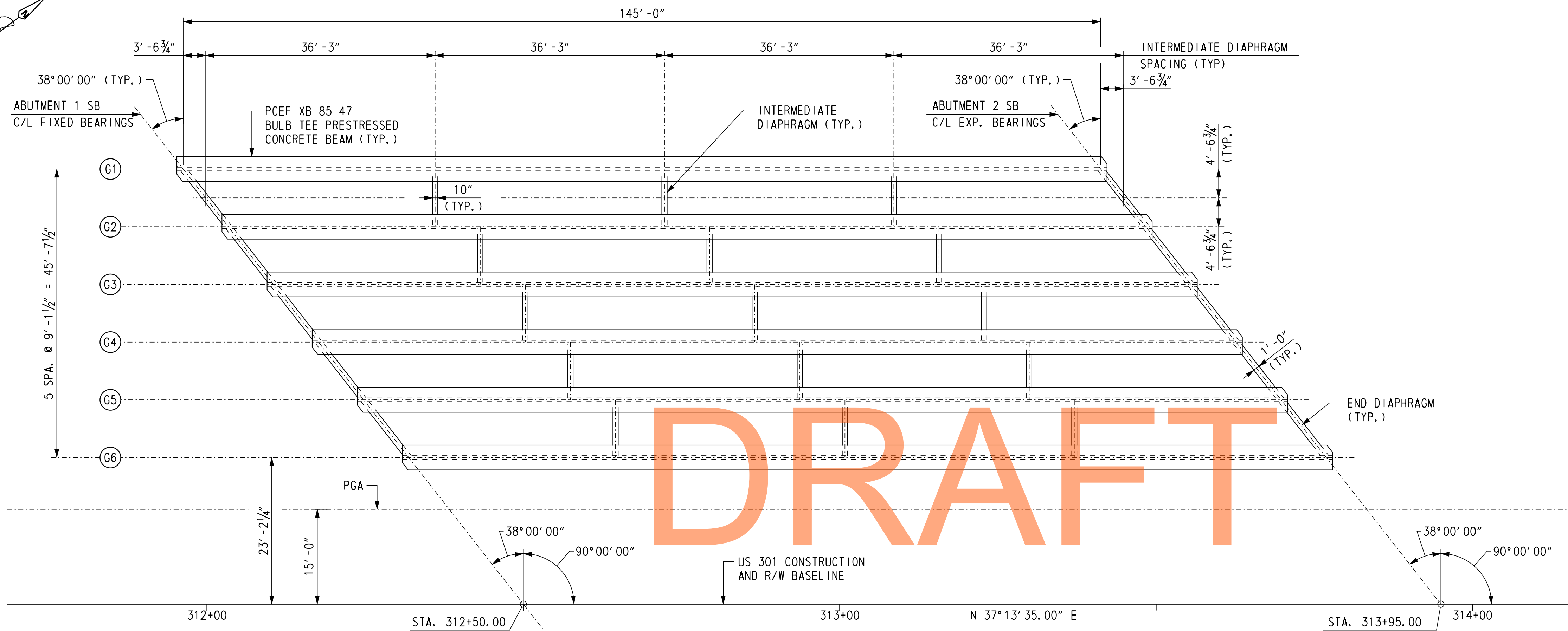
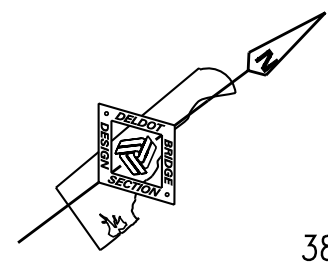
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

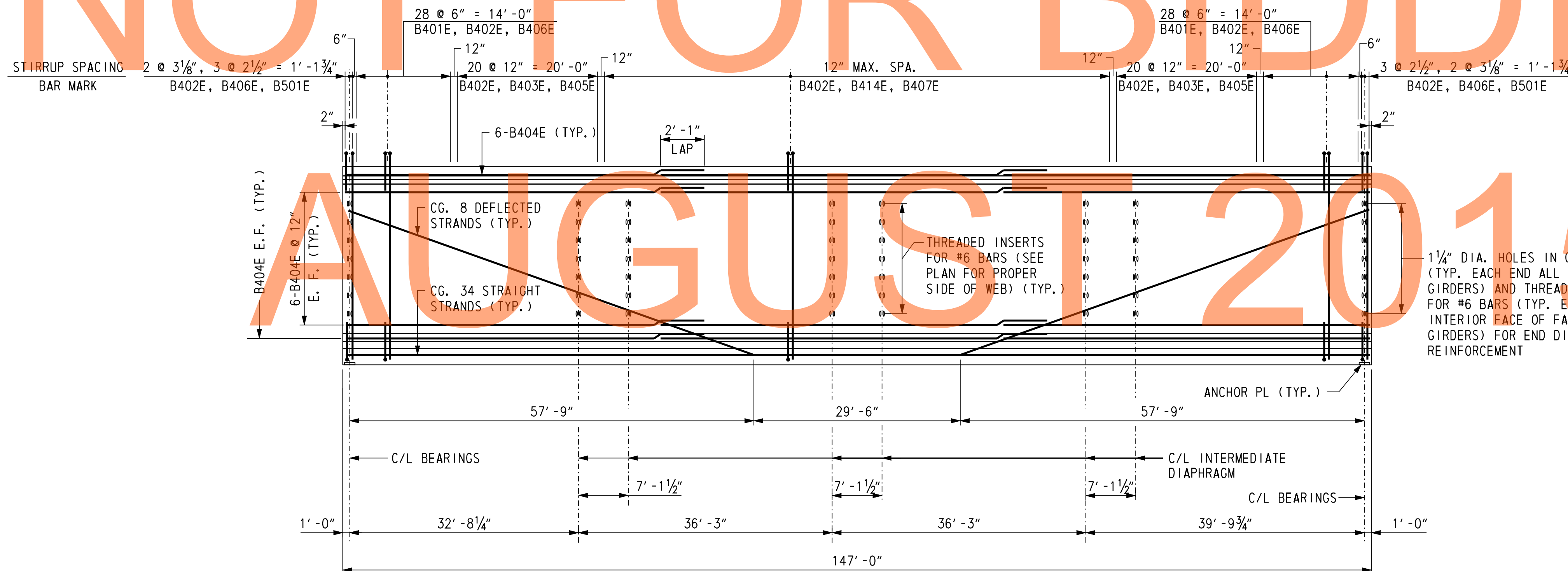
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	W. A. O'CONNOR
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
BEARING DETAILS**

1-477 BD-1
SHEET NO.
488
TOTAL SHTS.
1256



NOT FOR BIDDING



NOTES:

1. GIRDERS ARE PCEF XB 85 47 BULB TEE CONCRETE.
2. GIRDER LENGTHS IN CASTING BED SHALL BE DETERMINED AND DEPICTED IN SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO PRESTRESS EFFECT.
3. TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING.
4. NO CLEAR COVER LESS THAN AS SHOWN ON THESE PLANS WILL BE ACCEPTED.
5. THREADED INSERTS PROVIDED FOR DIAPHRAGM REINFORCEMENT SHALL BE ABLE TO DEVELOP FULL STRENGTH OF THE REINFORCEMENT.
6. CLIP FLANGE AT ABUTMENT ENDS OF GIRDERS. CLIPPED FLANGE REINFORCEMENT DETAILS APPLY AS SHOWN ON GIRDER DETAILS SHEET.

CROSS REFERENCE NOTES:

1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
2. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
3. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
4. FOR GIRDER DETAILS, SEE DWG. 1-477 BM-1.
5. FOR DIAPHRAGM DETAILS, SEE DWG. 1-477 BM-2 AND 1-477 BM-3.
6. FOR CAMBER TABLE, SEE DWG. 1-477 CT-1.
7. FOR CLIPPED FLANGE DETAIL AT END OF GIRDER, SEE DWG. 1-477 BM-1.
8. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

GIRDER ELEVATION

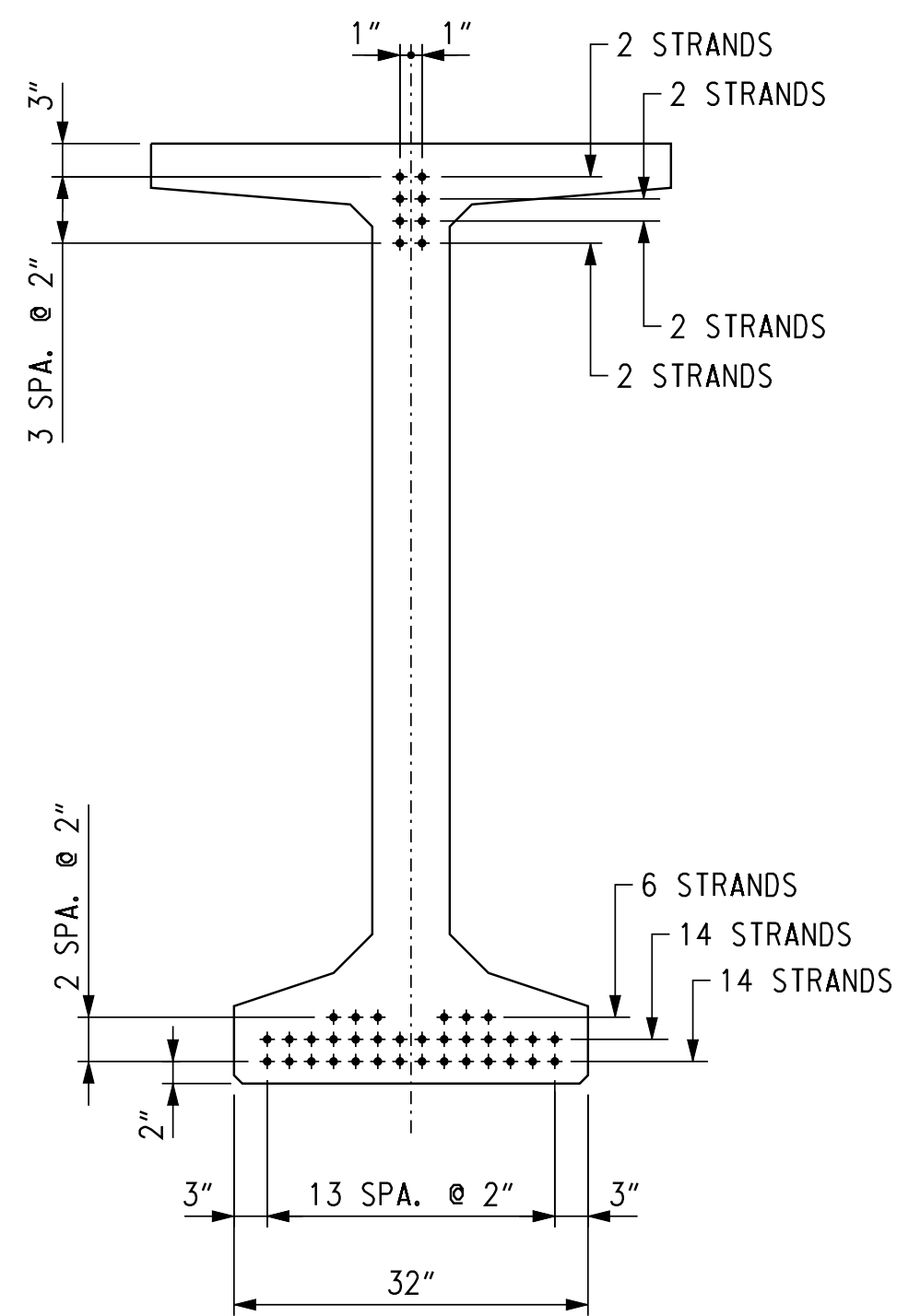
SCALE: 1/8" = 1'-0" HORIZ.
3/8" = 1'-0" VERT.

ADDENDUMS / REVISIONS

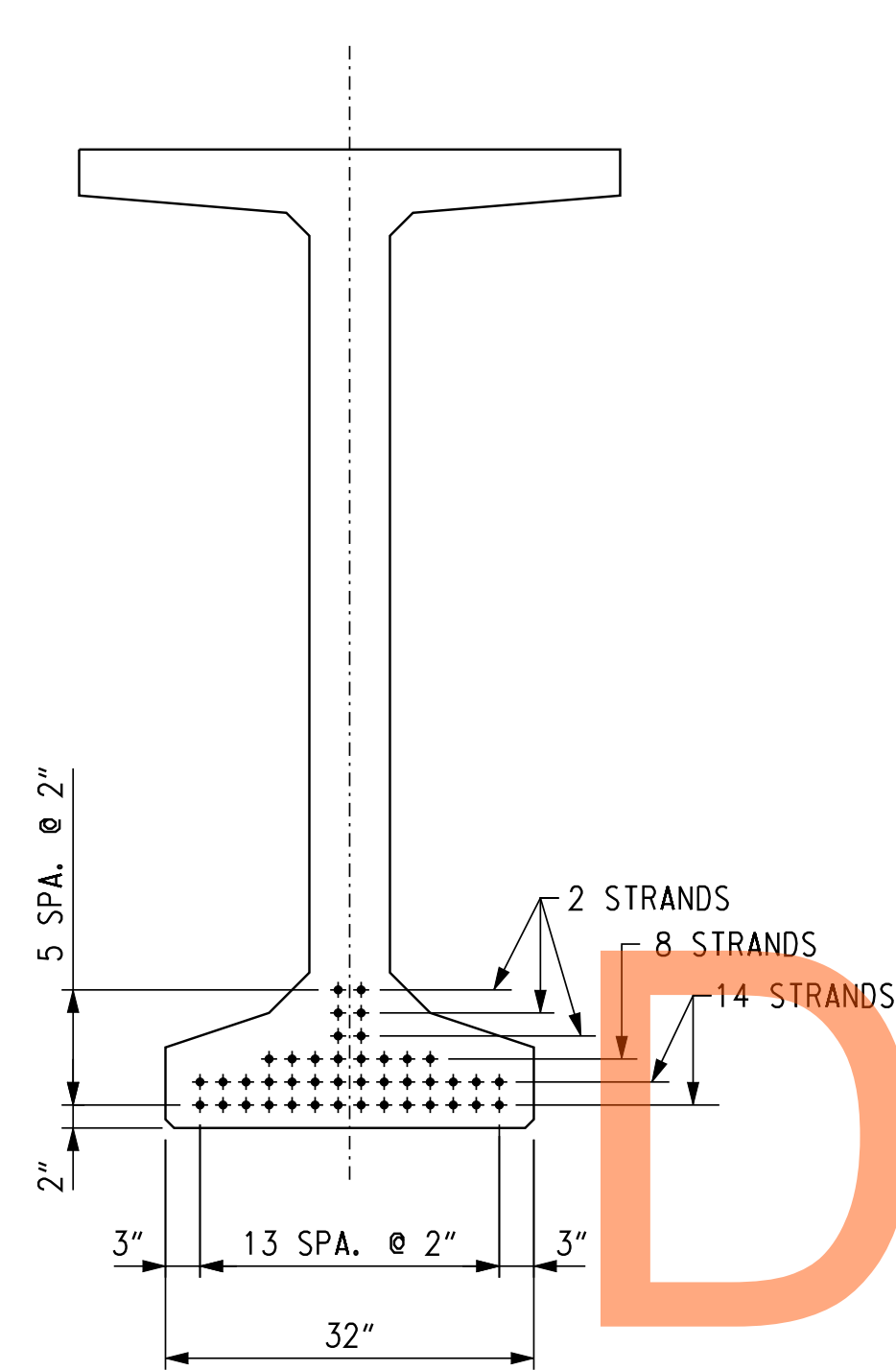
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	R. F. KIRCHNER
NEW CASTLE		

1-477 FR-1
SHEET NO.
489
TOTAL SHTS.
1256

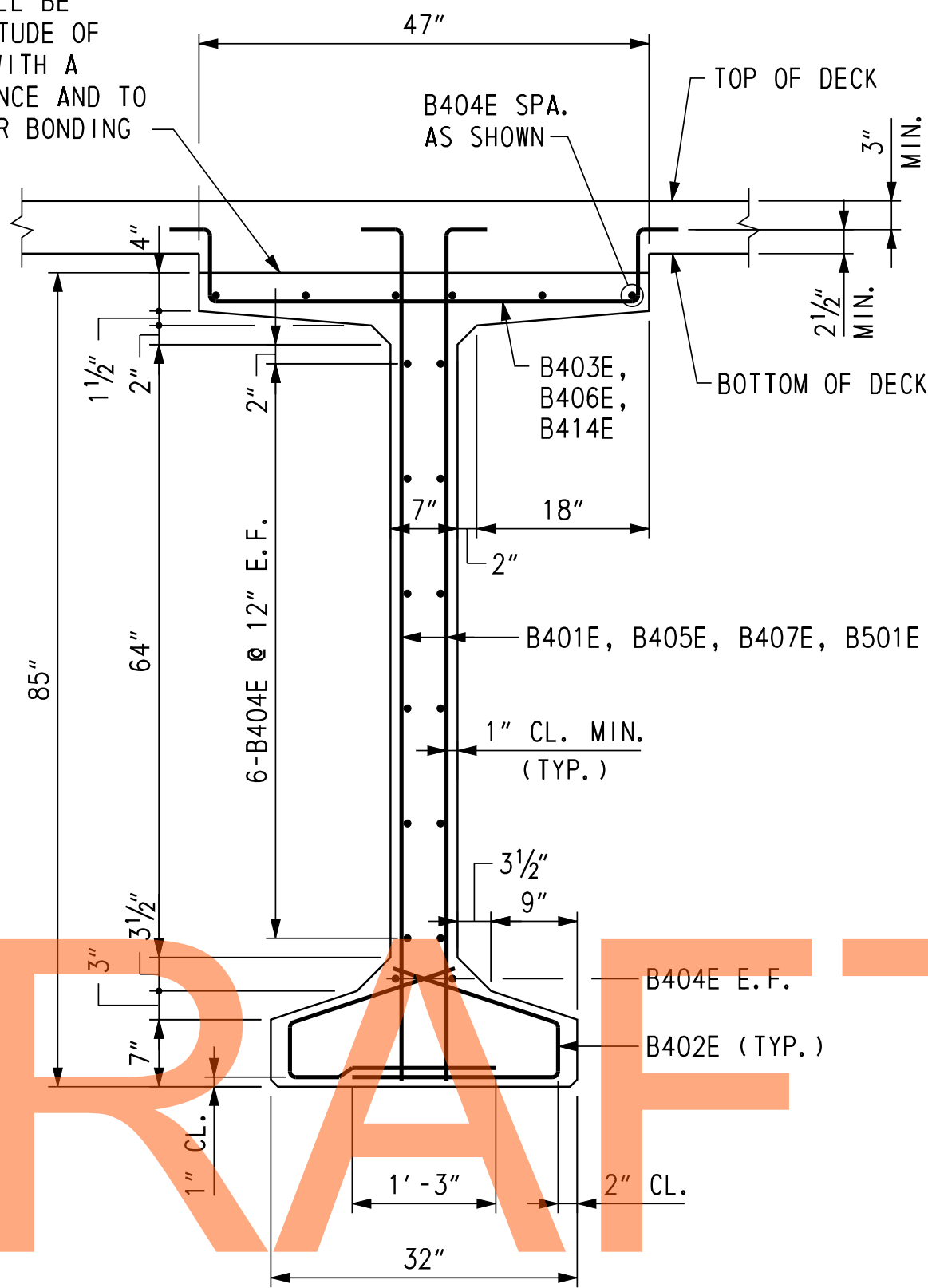
TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING



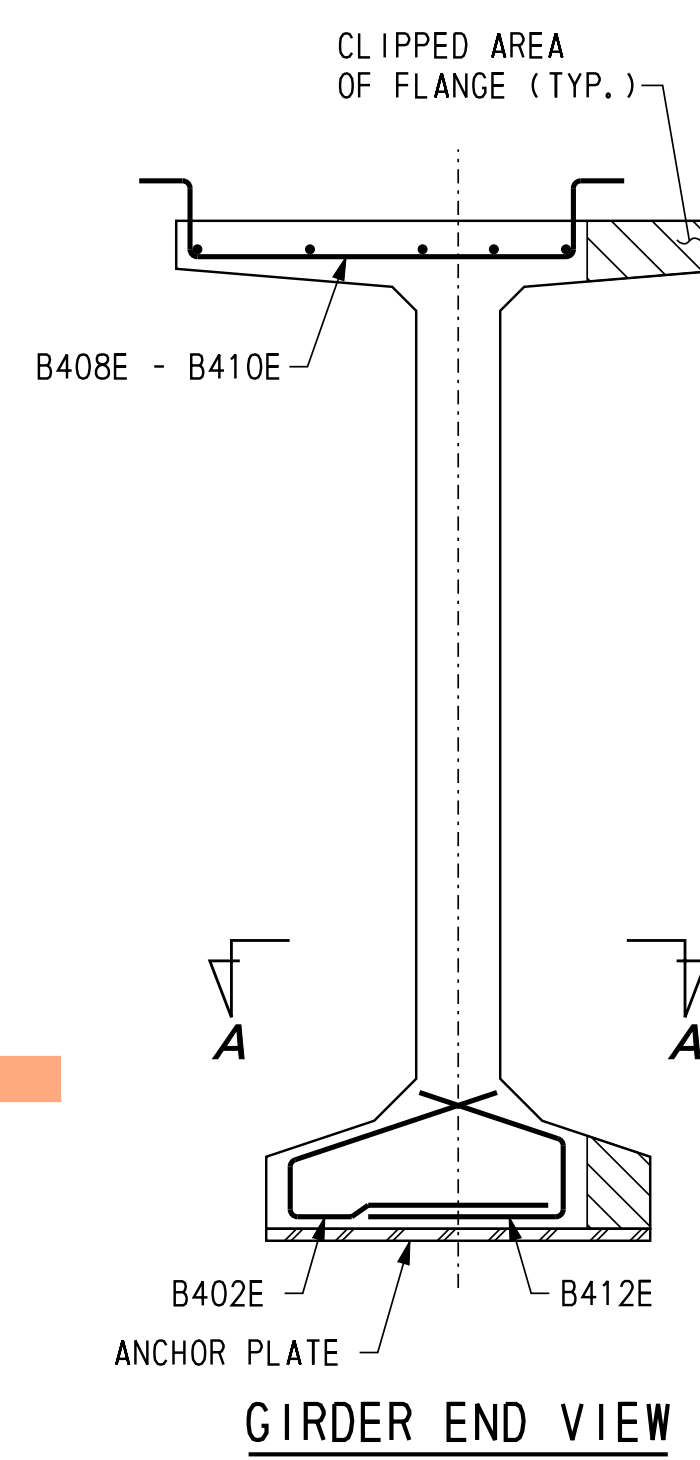
PRESTRESSING AT GIRDER ENDS



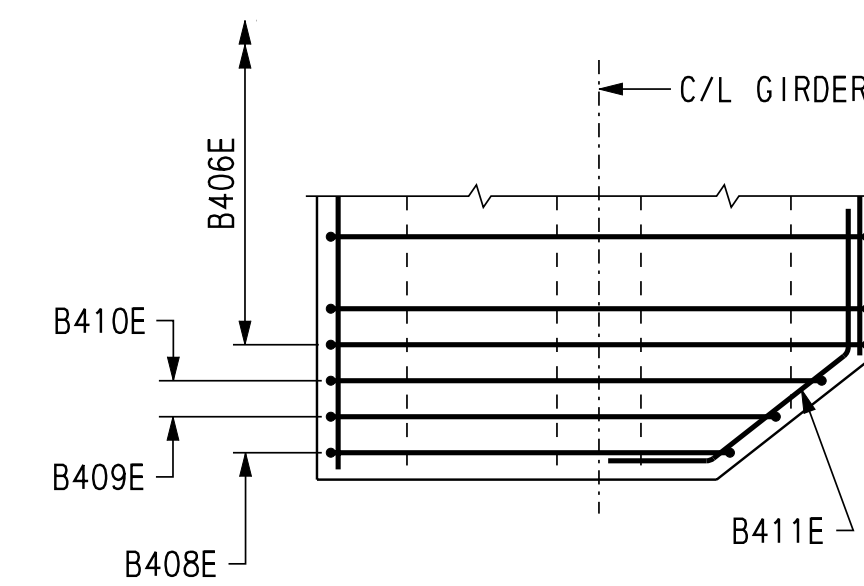
PRESTRESSING AT MIDSPAN



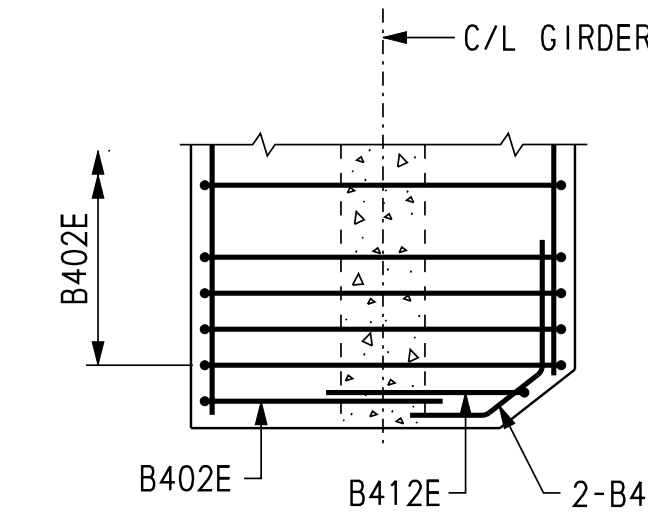
BAR REINFORCEMENT



GIRDER END VIEW



PLAN - TOP FLANGE

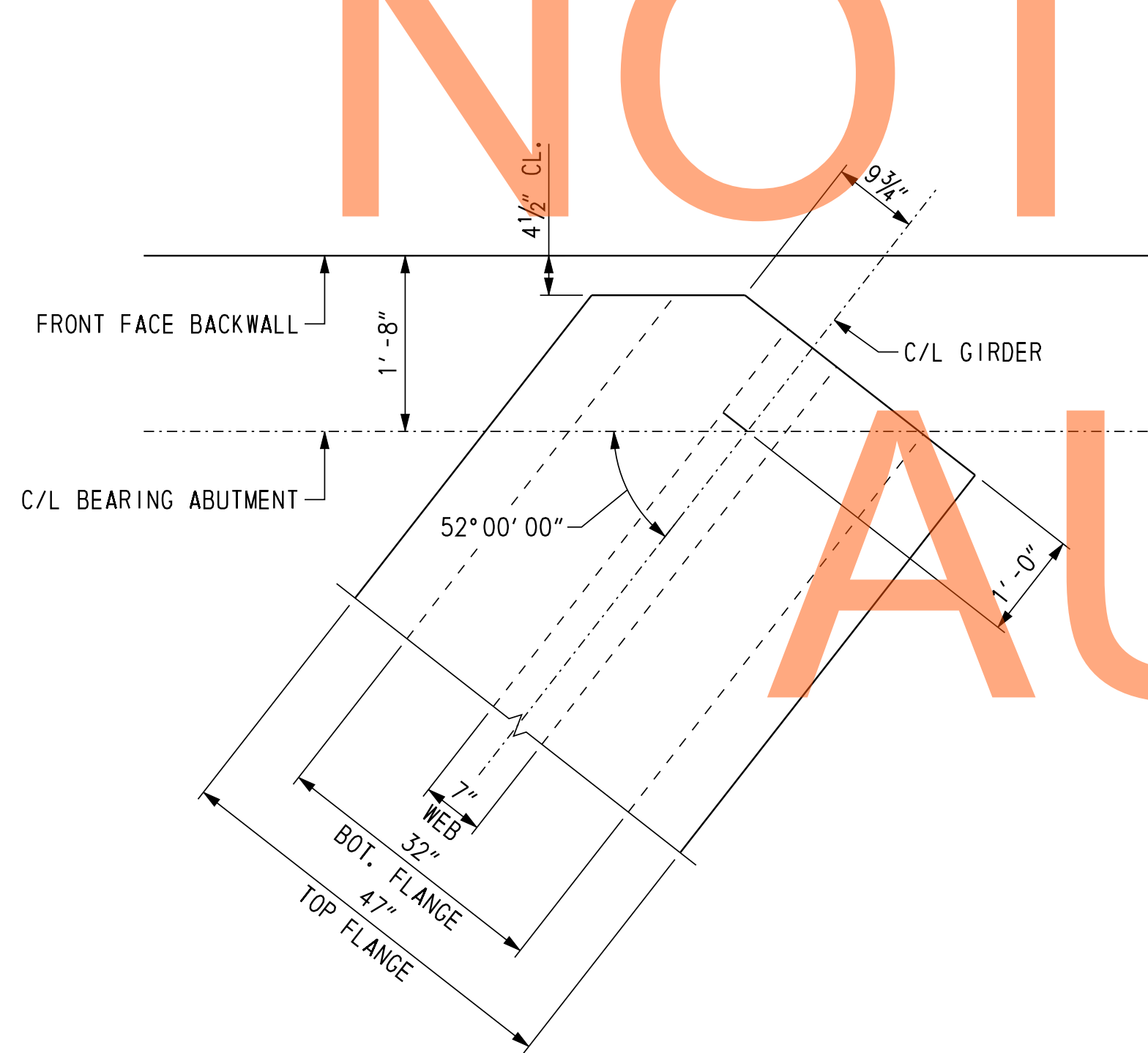


SECTION A-A - BOTTOM FLANGE

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

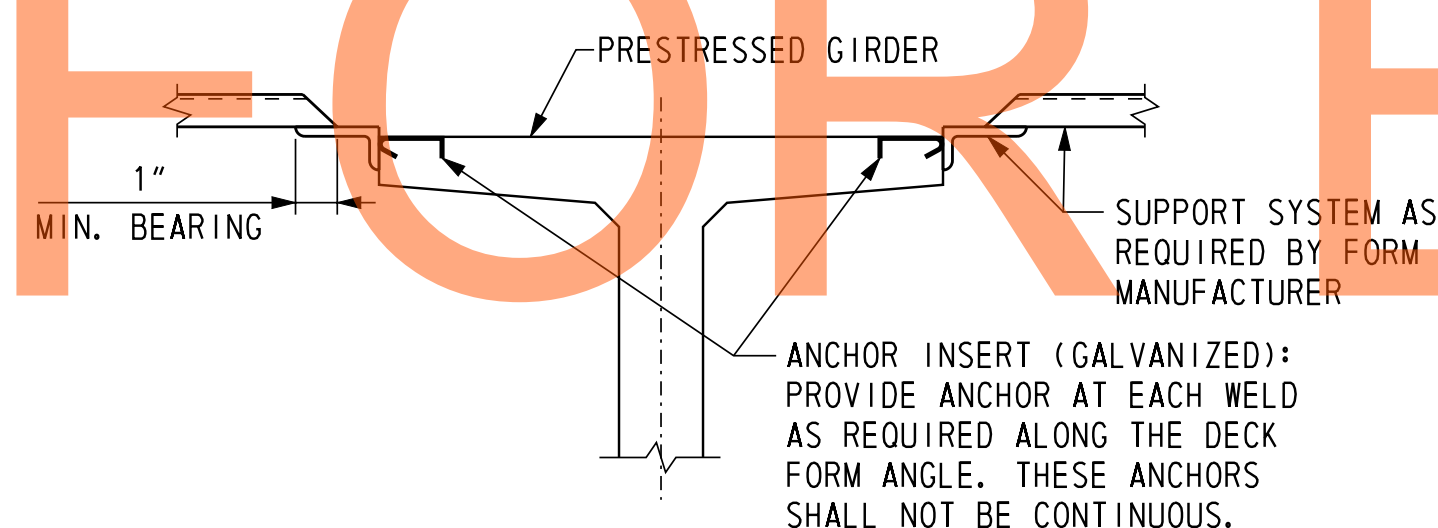
SECTION - PCEF BULB TEE SERIES XB 85 47

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



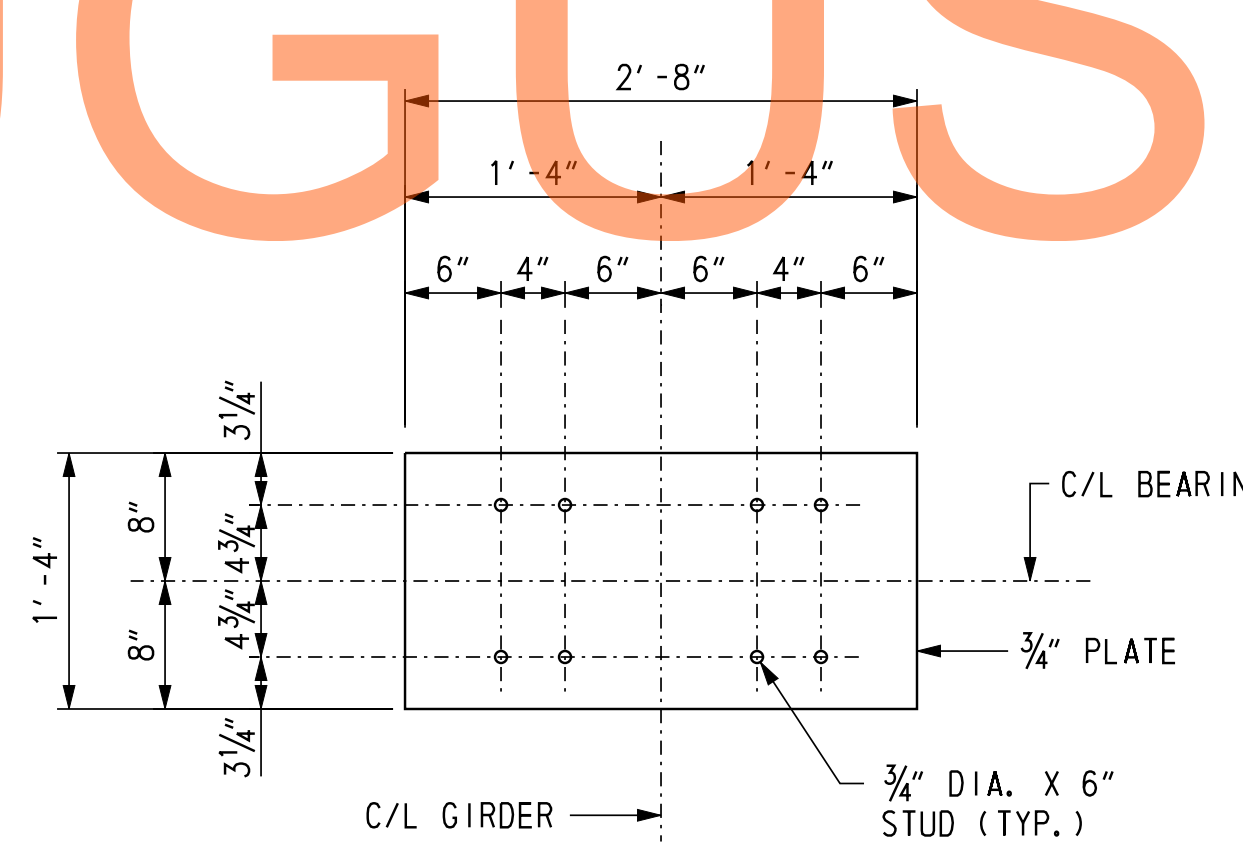
END OF GIRDER DETAIL AT ABUTMENTS

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



FORM ANCHOR DETAIL

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



ANCHOR PLATE DETAIL

SCALE: 1" = 1'-0"

NOT FOR BIDDING

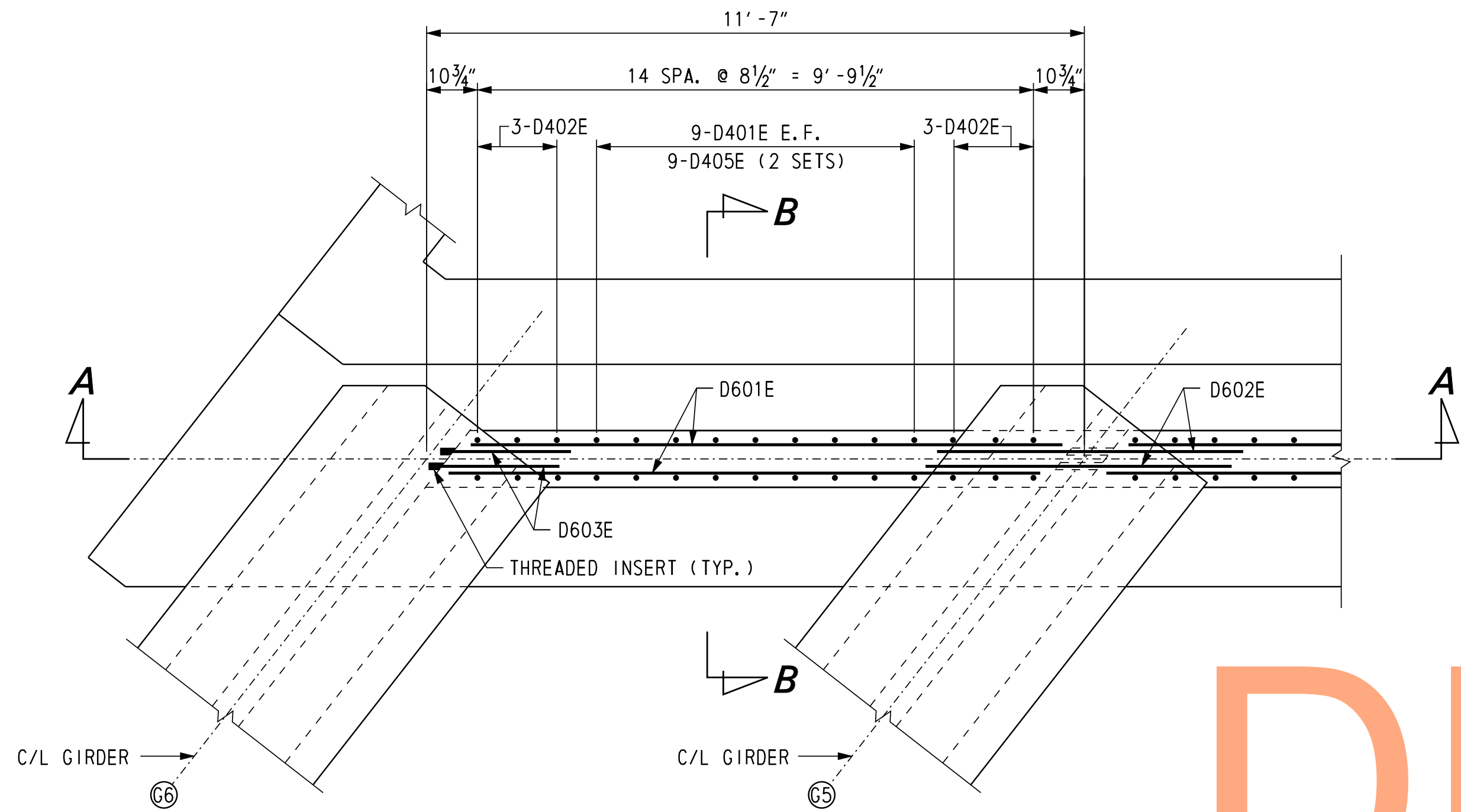
AUGUST 2015

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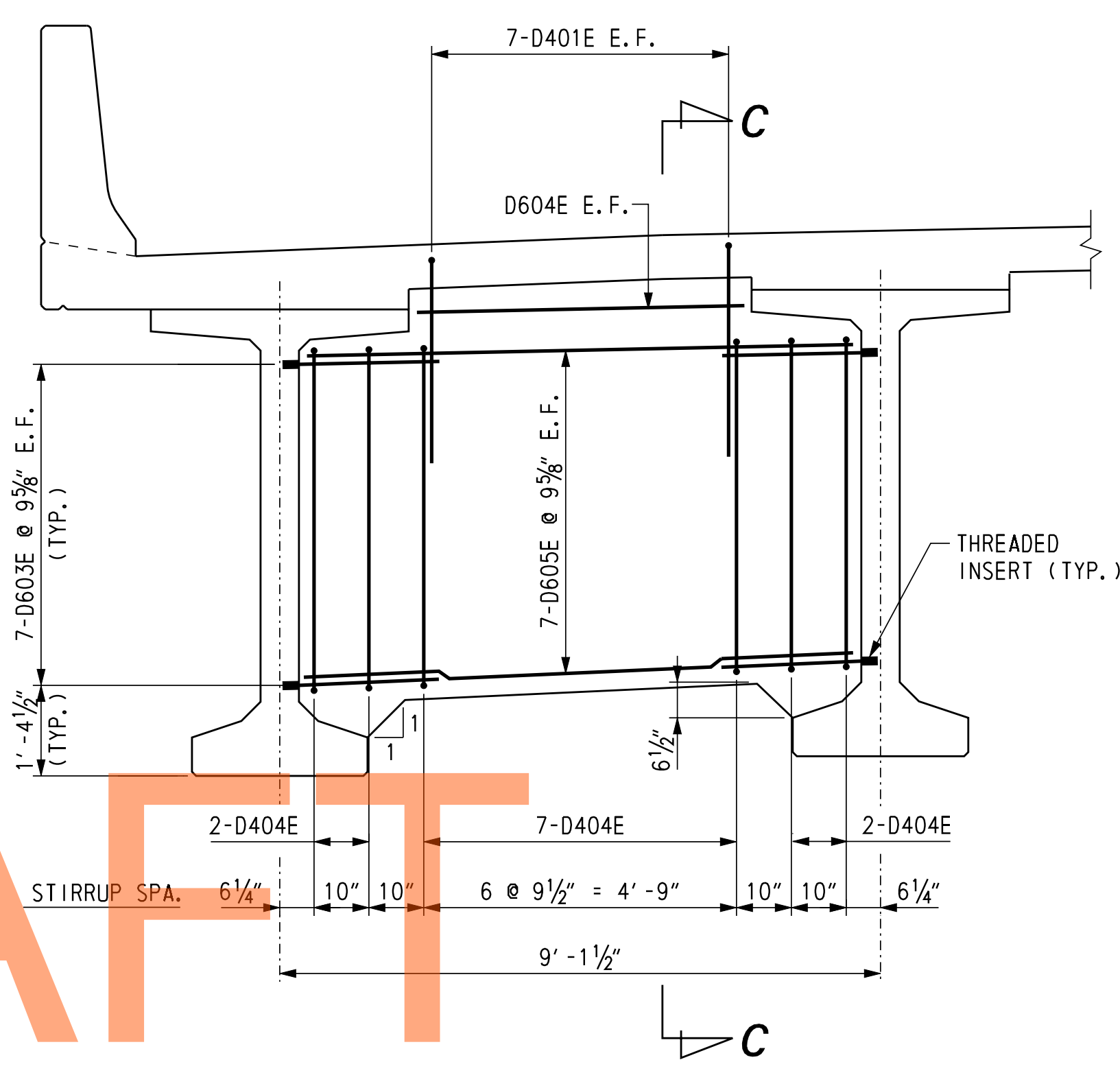
1. PERMANENT STEEL BRIDGE DECK FORMS AND SUPPORTS SHALL BE PROVIDED CONFORMING TO THE REQUIREMENTS OF SECTION 602 OF THE DELDOT STANDARD SPECIFICATIONS.
2. ANY PERMANENTLY EXPOSED FORM METAL WHERE THE GALVANIZED COATING HAS BEEN DAMAGED SHALL BE THOROUGHLY CLEANED, WIRE BRUSHED AND PAINTED WITH TWO COATS OF ZINC DUST - ZINC OXIDE PAINT, NO COLOR ADDED, TO THE SATISFACTION OF THE ENGINEER. MINOR HEAT DISCOLORATION IN AREAS OF WELDS NEED NOT BE TOUCHED UP.
3. CLIP ANCHOR PLATE AT ABUTMENTS TO REMAIN FLUSH WITH GIRDER FLANGE.
4. GIRDER LIFTING DETAILS SHALL BE PROVIDED BY THE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CROSS REFERENCE NOTES:

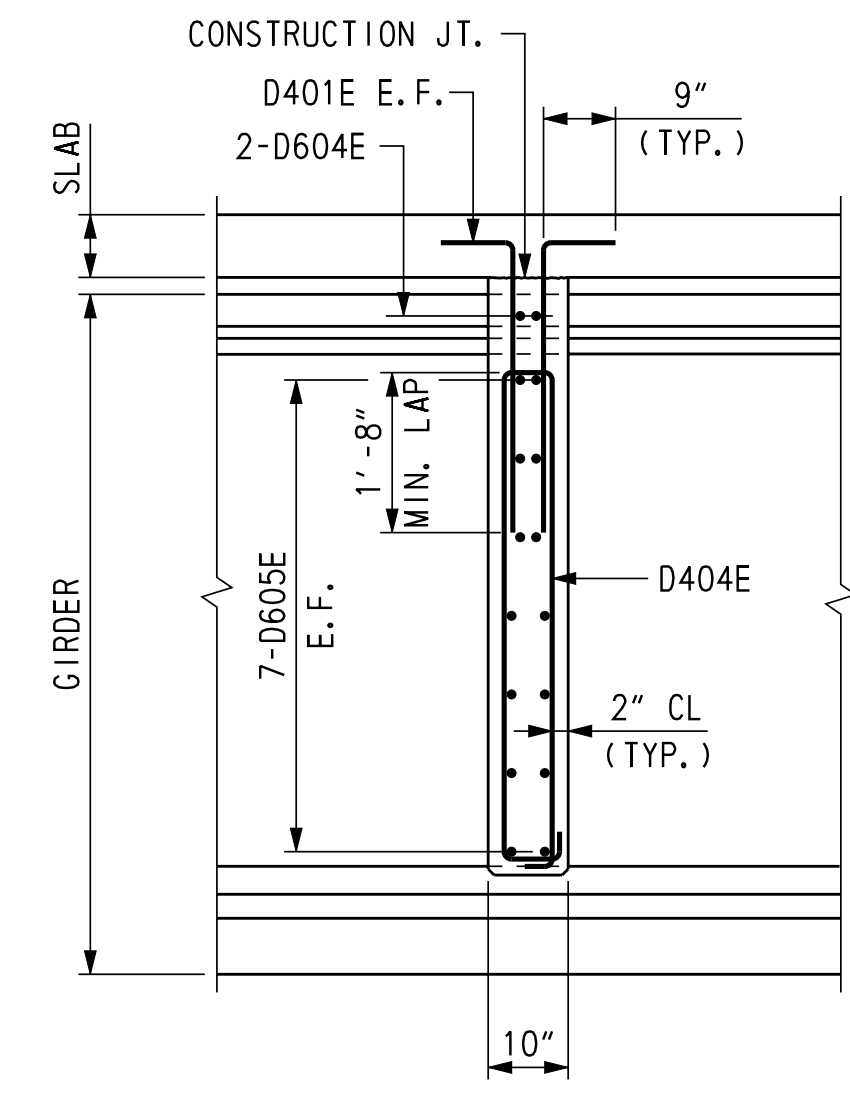
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
3. FOR FRAMING PLAN AND GIRDER ELEVATION, SEE DWG. 1-477 FR-1.



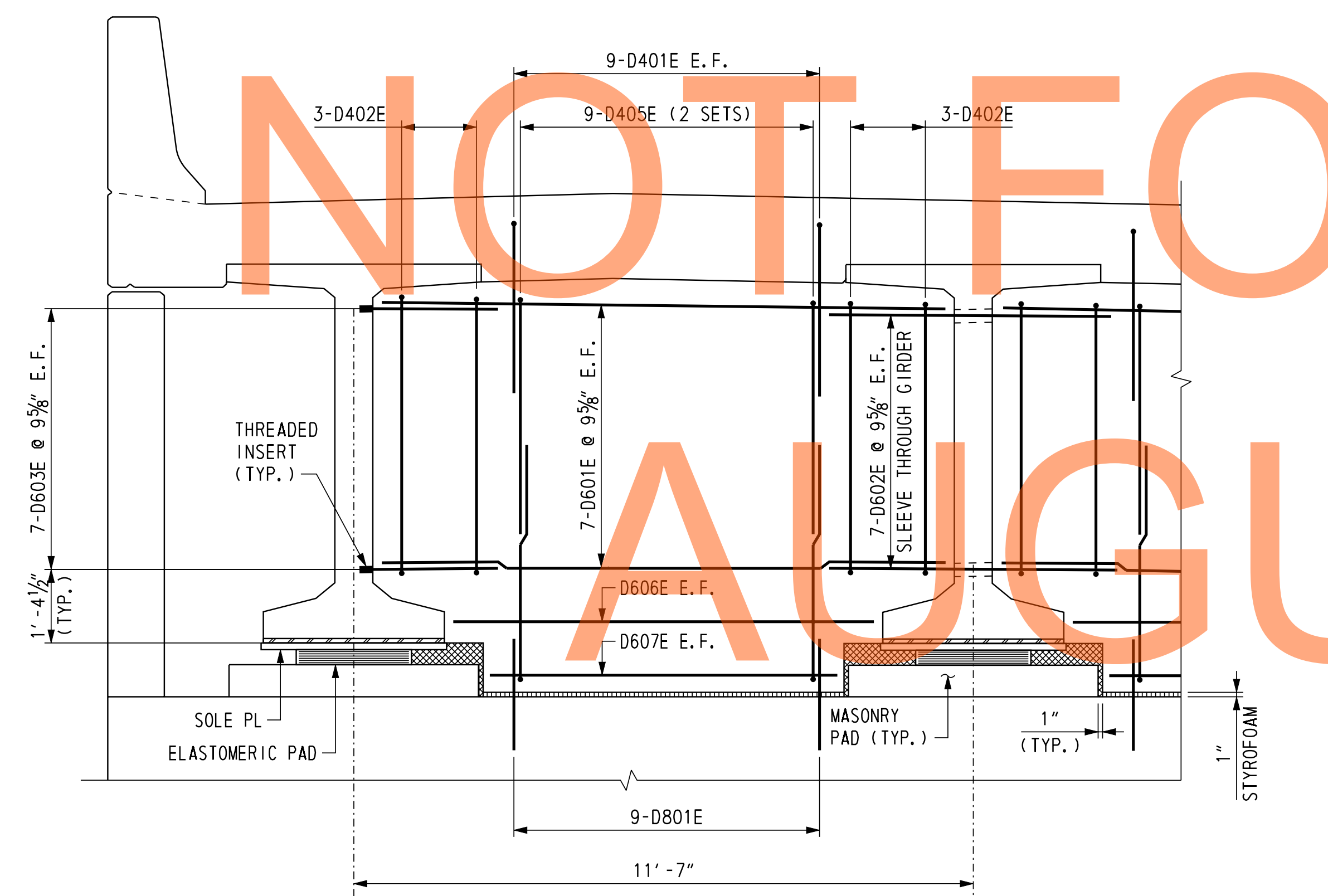
END DIAPHRAGM PLAN - ABUTMENT 1
SCALE: 1/2" = 1'-0"



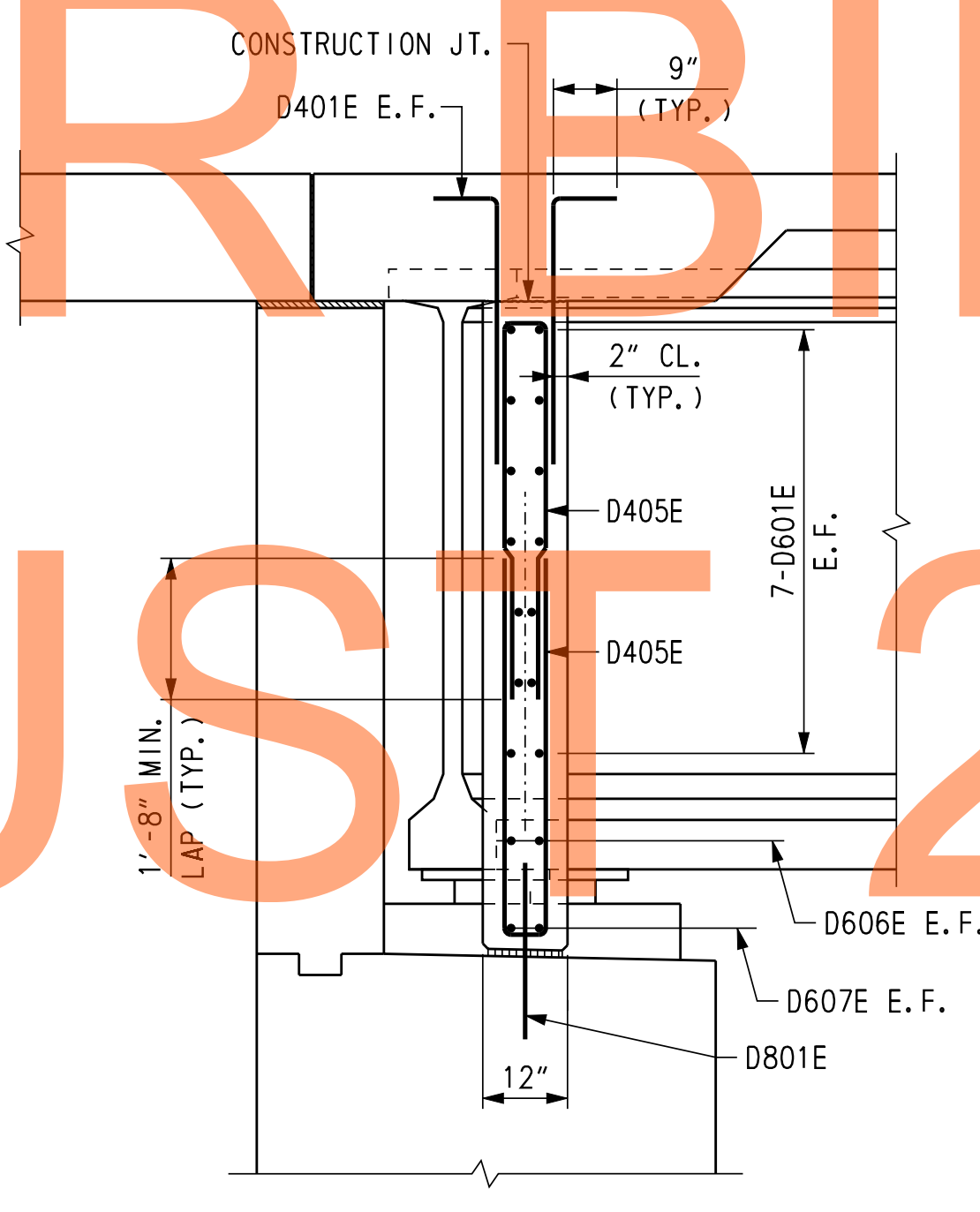
INTERMEDIATE DIAPHRAGM
SCALE: 1/2" = 1'-0"



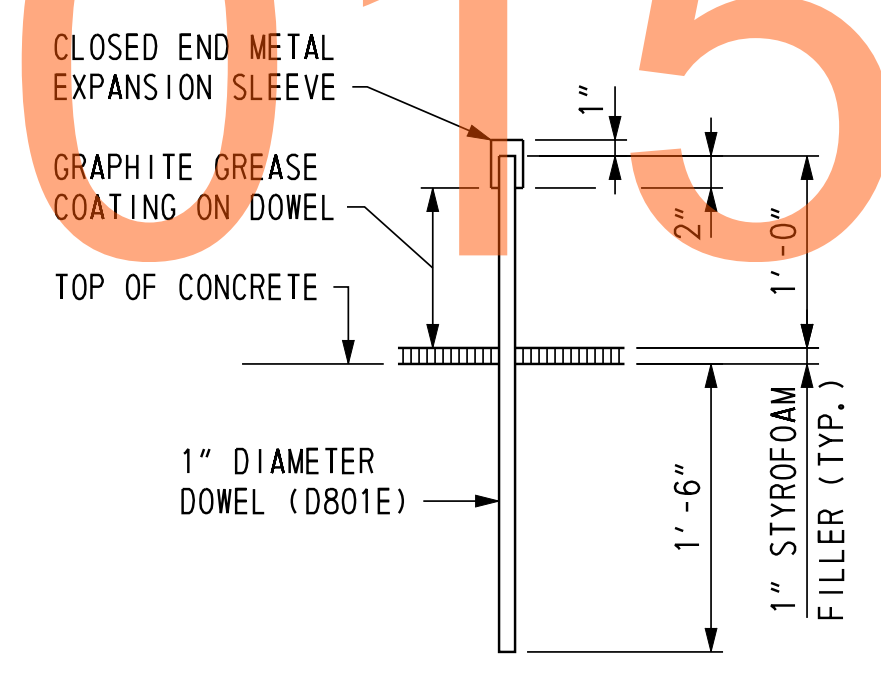
SECTION C-C
SCALE: 1/2" = 1'-0"



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



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



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

NOTE:
D801E DOWELS SHALL BE 1" DIAMETER PLAIN BARS CAPPED WITH A SNUG FIT, CLOSED END METAL EXPANSION SLEEVE, TEMPORARILY SECURED TO THE DOWEL SO AS TO PROVIDE A 1" LONG SOCKET BEYOND THE BAR END AND TO LAP BACK 2" ON THE BAR. IMMEDIATELY PRIOR TO POURING DIAPHRAGM CONCRETE, DOWELS SHALL BE COATED WITH GRAPHITE GREASE.

- CROSS REFERENCE NOTES:**
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
 3. FOR FRAMING PLAN, SEE DWG. 1-477 FR-1.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

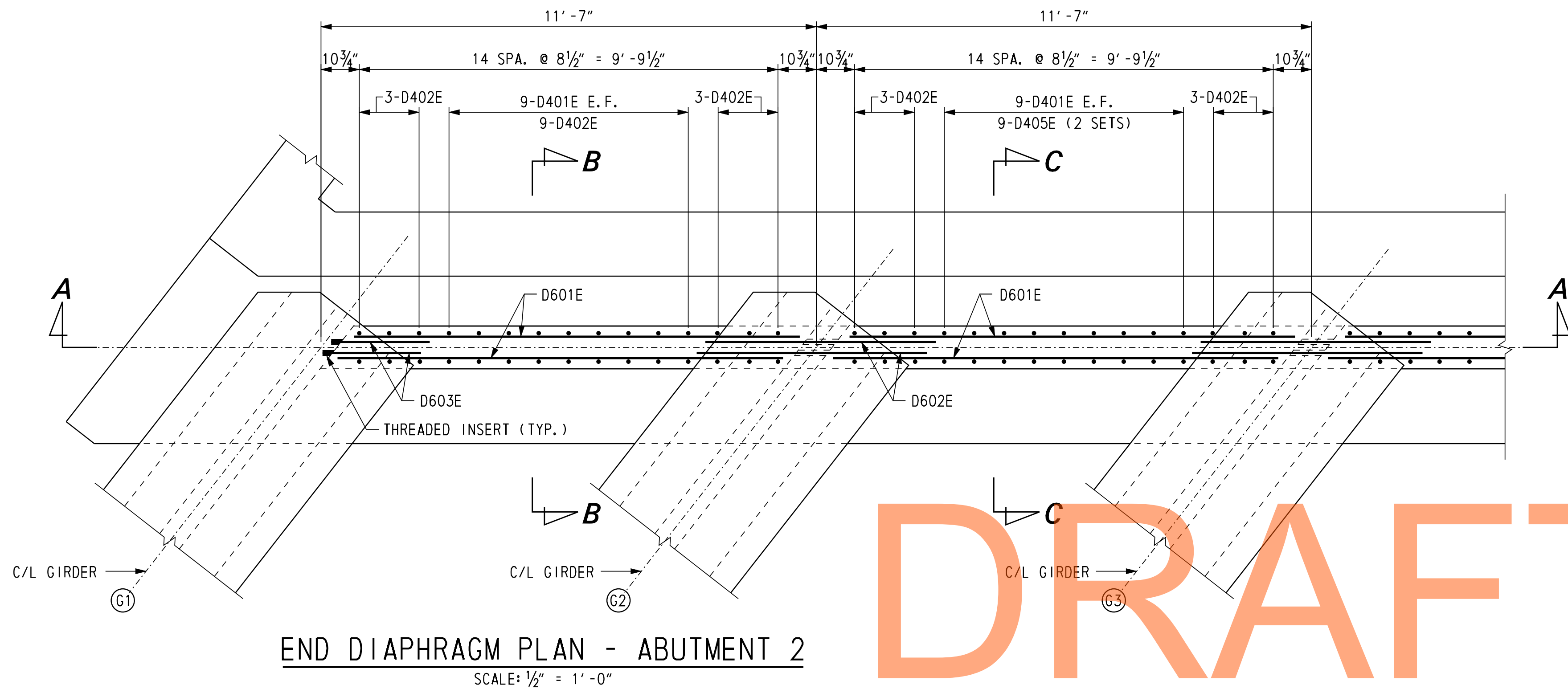
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11/8/2012

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AUGUST 2015

<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	<p>US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD</p>	CONTRACT	BRIDGE NO.	1-477N&S	<p>US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH SOUTHBOUND ROADWAY DIAPHRAGMS 1</p>	1-477 BM-2
			T200511303	DESIGNED BY:	K. D. BEAVER		SHEET NO.
			COUNTY	CHECKED BY:	J. S. LI		491
			NEW CASTLE				TOTAL SHTS.
					1256		

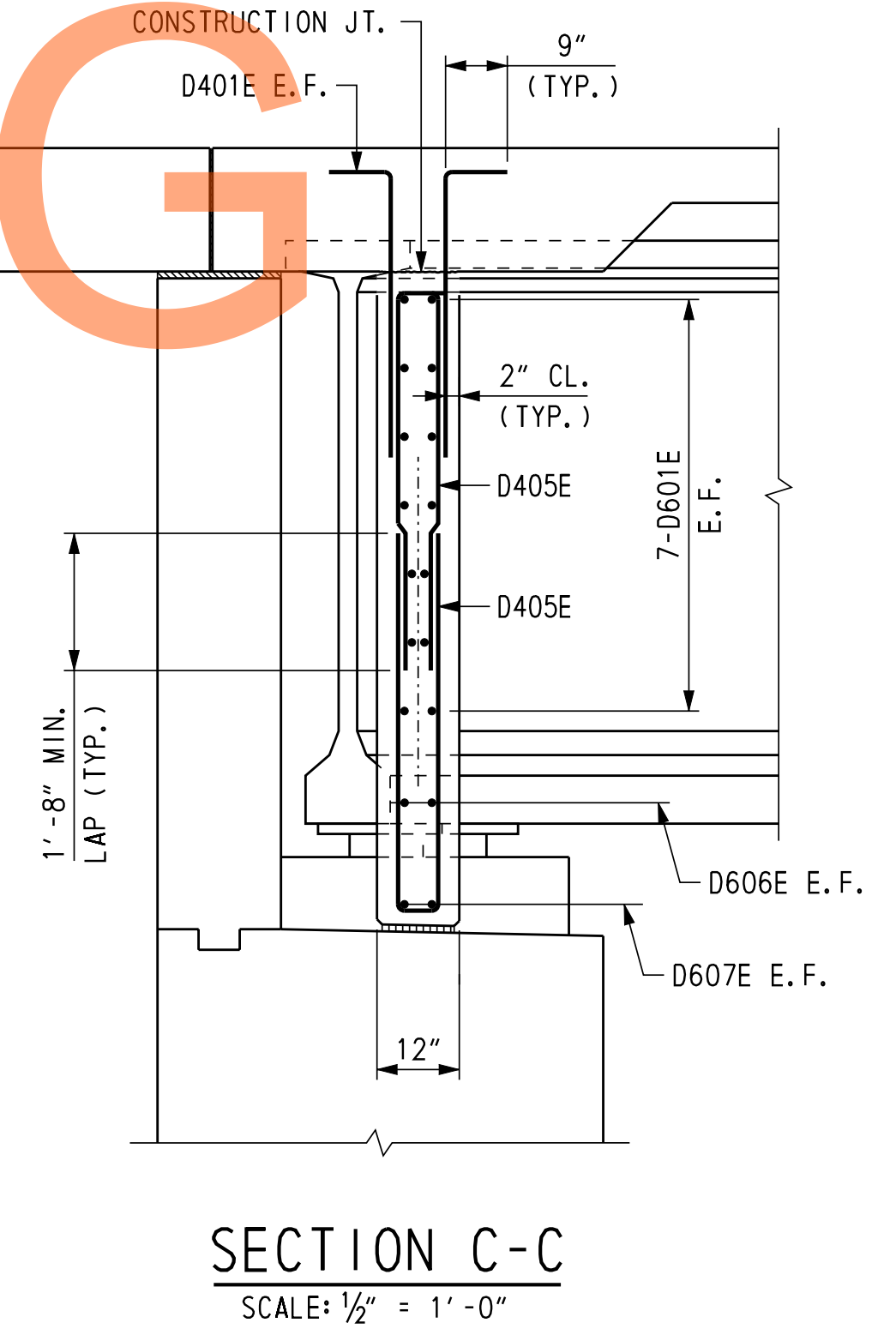
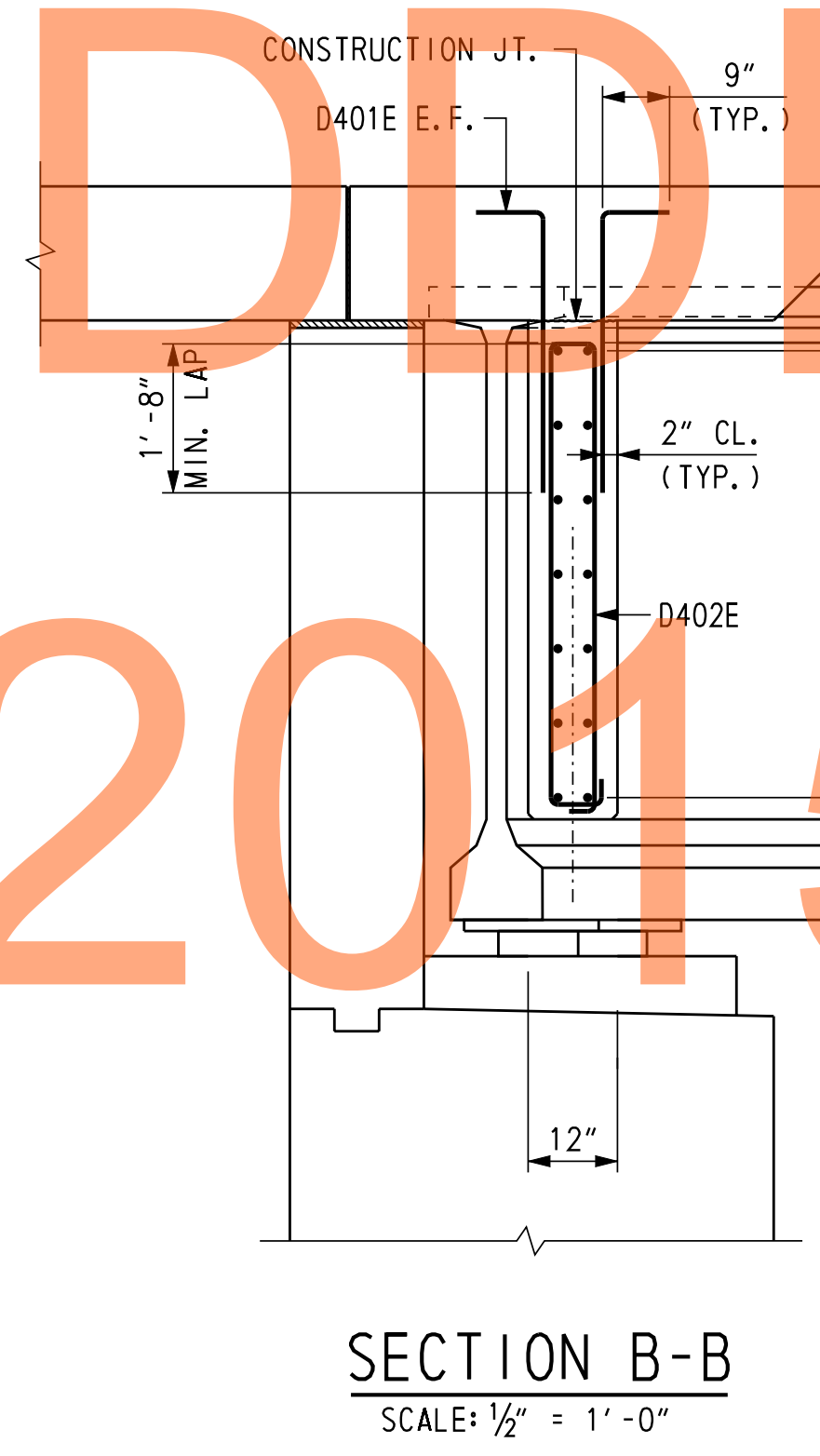
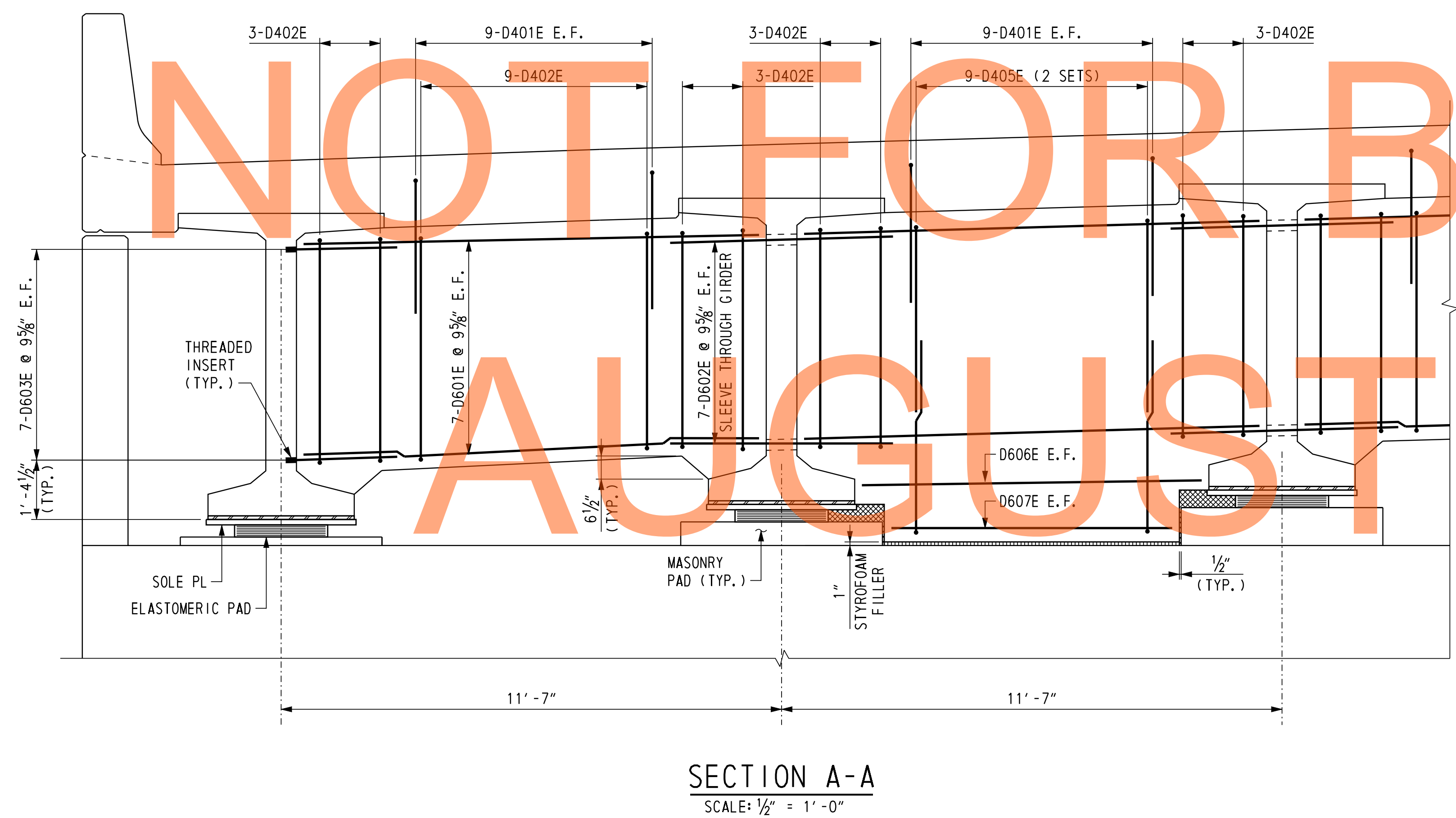


- NOTES:
1. FULL DEPTH END DIAPHRAGM APPLIES BETWEEN GIRDERS G2 & G3 AS WELL AS BETWEEN GIRDERS G4 & G5.
- CROSS REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
 3. FOR FRAMING PLAN, SEE DWG. 1-477 FR-1.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

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NOT FOR BIDDING

AUGUST 2015



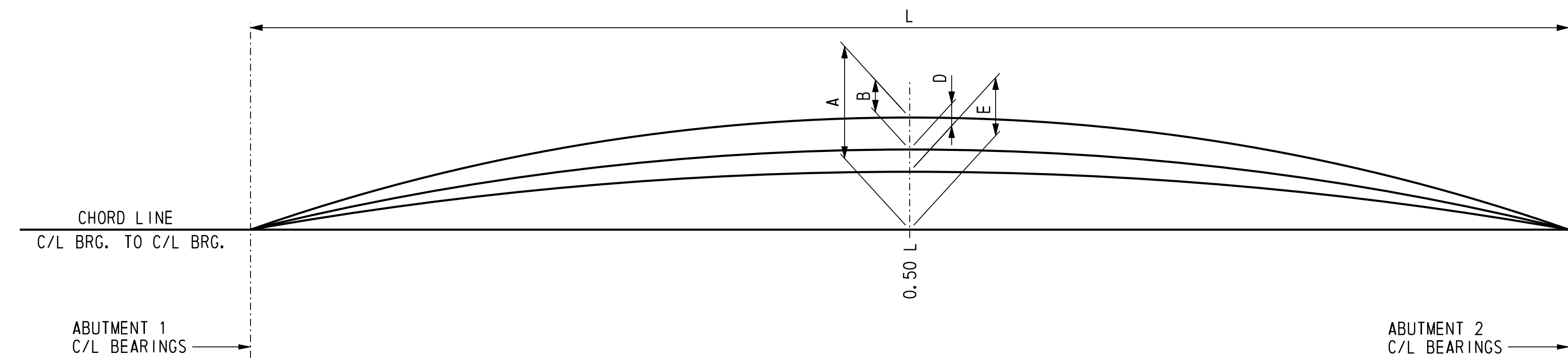
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11/8/2012

Steve_Lambert

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		



GIRDER CAMBER DIAGRAM

NOT TO SCALE

DRAFT

CAMBER ORDINATES (INCHES)

GIRDER NO.	ITEM	ABUT. 1 C/L BRG.	SPAN 1	ABUT. 2 C/L BRG.
			0.5L	
G1 & G6	A	0	8 1/16	0
	B	0	-4 3/16	0
	C	0	4 3/8	0
	D	0	-2 1/16	0
	E	0	2 3/16	0
	F	0	0	0
G2 - G5	A	0	8 1/16	0
	B	0	-4 3/16	0
	C	0	4 3/8	0
	D	0	-2 1/16	0
	E	0	1 5/16	0
	F	0	0	0

NOT FOR BIDDING

AUGUST 2015

LEGEND

- A = DENOTES CAMBER DUE TO PRESTRESS AT ERECTION, CREEP MULTIPLIER = 1.8.
- B = DENOTES DEFLECTION DUE TO GIRDER DEAD LOAD AT ERECTION, CREEP MULTIPLIER = 1.85.
- C = A+B
- D = DENOTES DEFLECTION DUE TO SLAB AND DIAPHRAGMS.
- E = DENOTES NET CAMBER AT ERECTION, C+D.
- F = DENOTES VERTICAL CURVE ORDINATE MEASURED FROM ROADWAY PROFILE TO CHORD LINE BETWEEN BEARINGS.

NOTES:

1. CAMBER VALUES ARE THEORETICAL VALUES AND MAY VARY WITH CONCRETE STRENGTH (AGE), PRESTRESSING CONDITIONS, CREEP MULTIPLIER AND PRESTRESS LOSSES.
2. THICKNESS OF CONCRETE HAUNCH VARIES TO OBTAIN VERTICAL CURVE PROFILE.

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11/8/2012

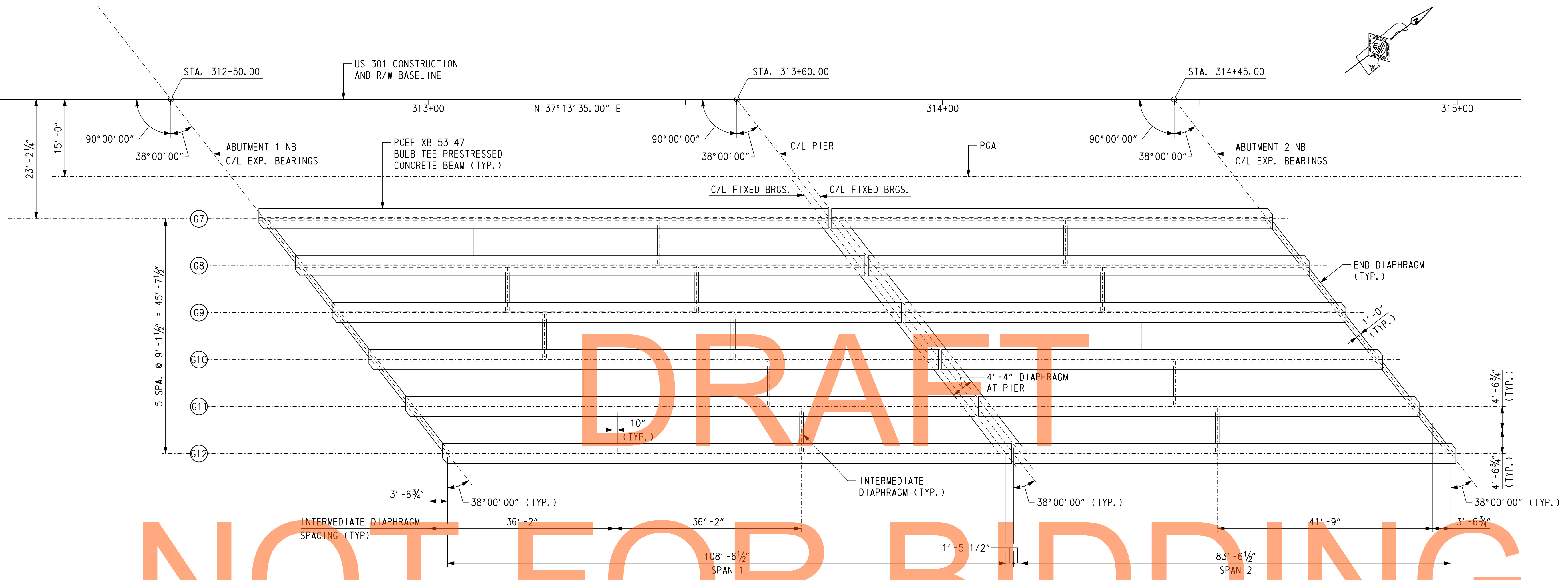
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT	BRIDGE NO.	1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH SOUTHBOUND ROADWAY CAMBER TABLE	SHEET NO.
			T200511303	DESIGNED BY: K. D. BEAVER			493
			NEW CASTLE	CHECKED BY: J. S. LI			TOTAL SHTS.
							1256

DRAFT

NOT FOR BIDDING

AUGUST 2015



FRAMING PLAN - NORTHBOUND ROADWAY
SCALE: 1/4" = 1'-0"

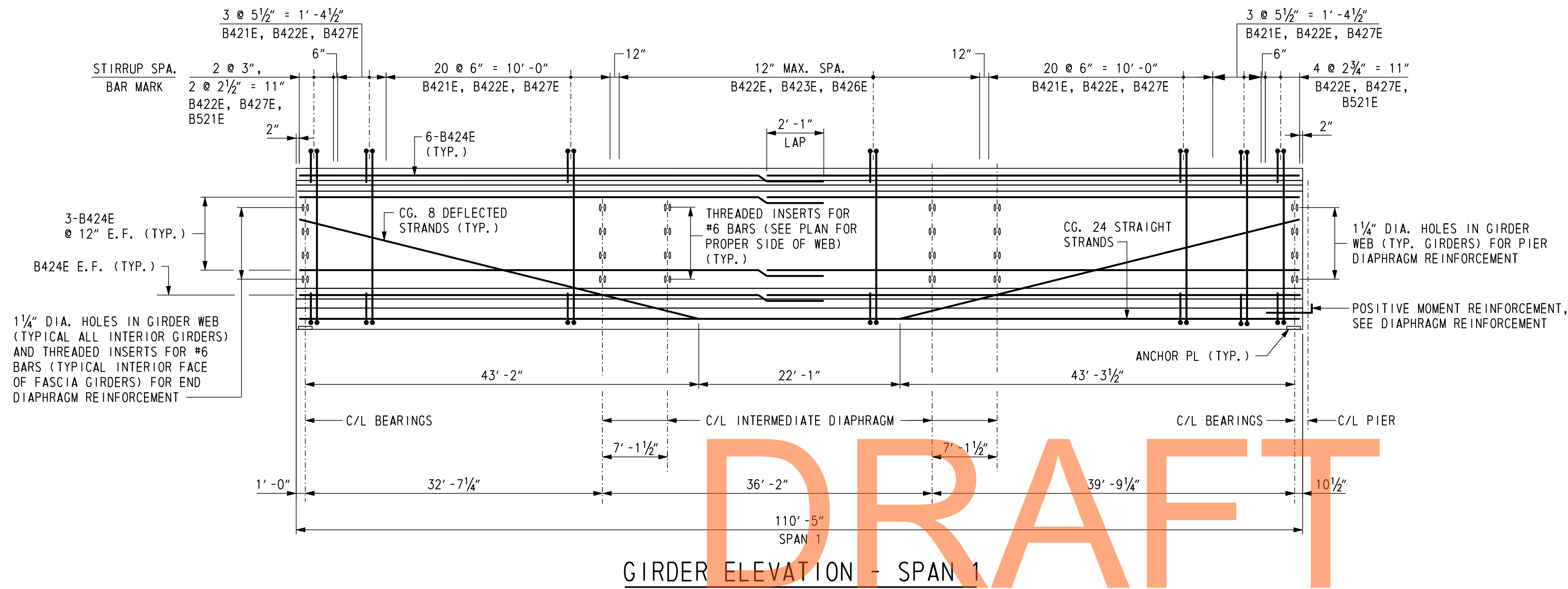
- CROSS REFERENCE NOTES:**
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
 3. FOR GIRDER ELEVATION, SEE DWG. 1-477 BM-4.
 4. FOR GIRDER DETAILS, SEE DWGS. 1-477 BM-4 THRU 1-477 BM-6.
 5. FOR DIAPHRAGM DETAILS, SEE DWGS. 1-477 BM-7 & 1-477 BM-8.
 6. FOR CAMBER TABLE, SEE DWG. 1-477 CT-2.

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11/8/2012

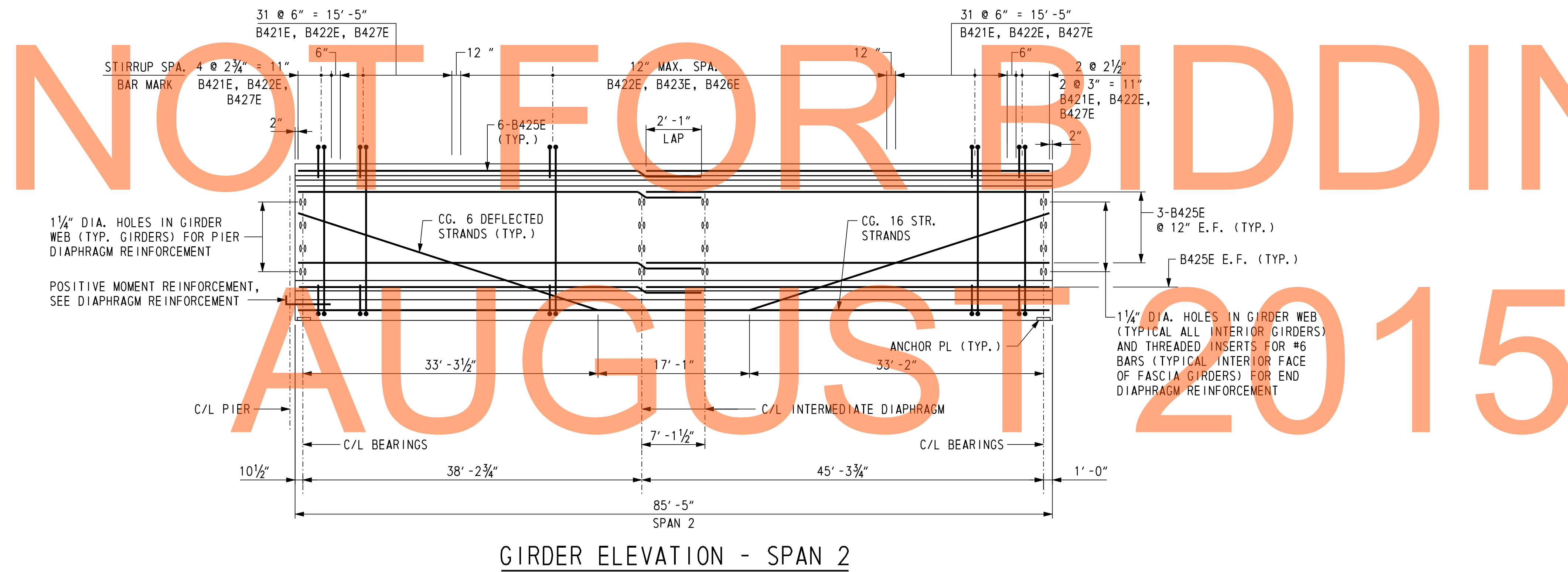
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200511303	BRIDGE NO. 1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY FRAMING PLAN	SHEET NO. 494
			COUNTY NEW CASTLE	DESIGNED BY: K. D. BEAVER		TOTAL SHTS. 1256
				CHECKED BY: R. F. KIRCHNER		



GIRDER ELEVATION - SPAN 1

SCALE: 1/8" = 1'-0" HORIZ.
1/2" = 1'-0" VERT.



GIRDER ELEVATION - SPAN 2

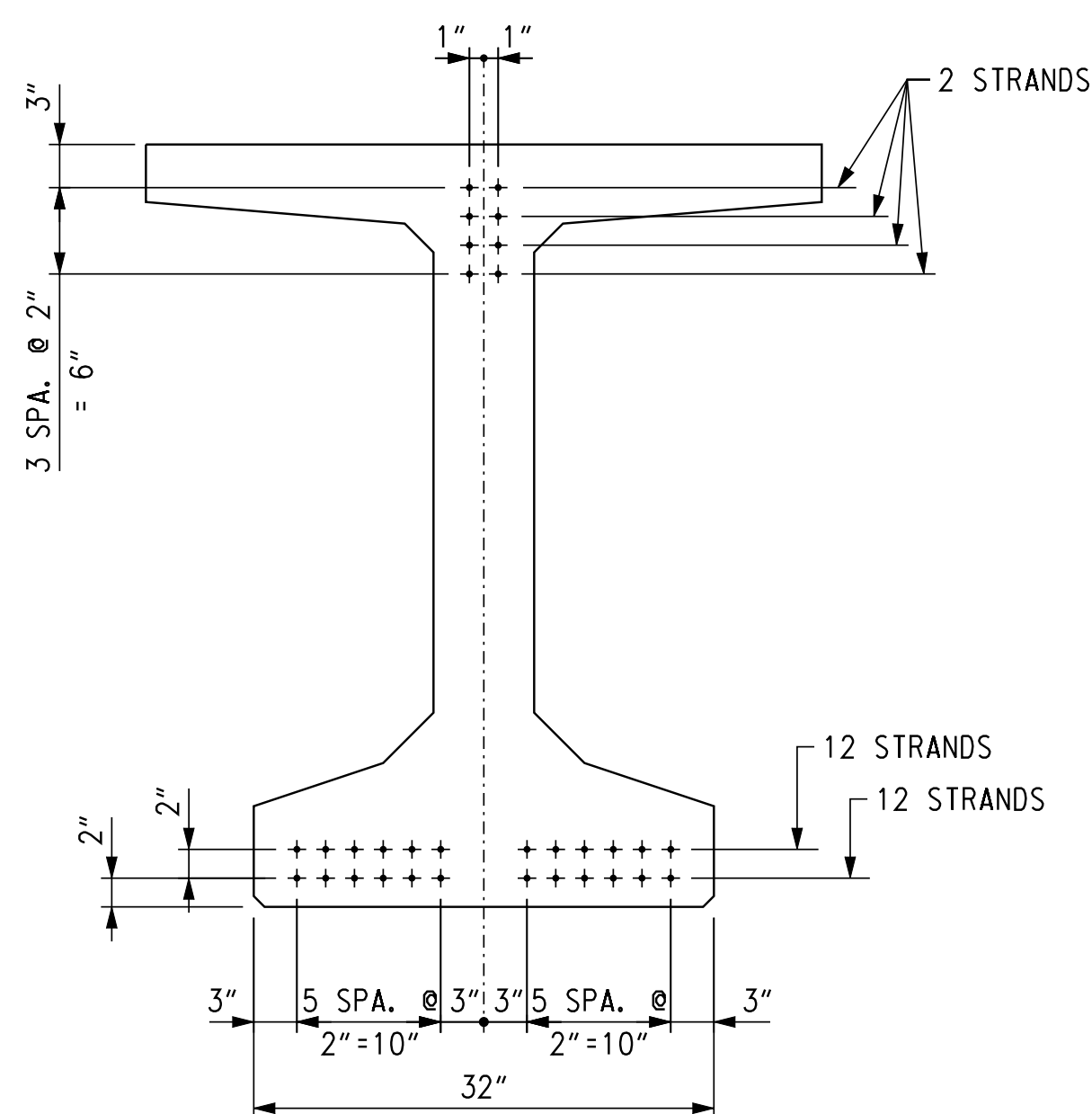
SCALE: 1/8" = 1'-0" HORIZ.
1/2" = 1'-0" VERT.

NOTES:

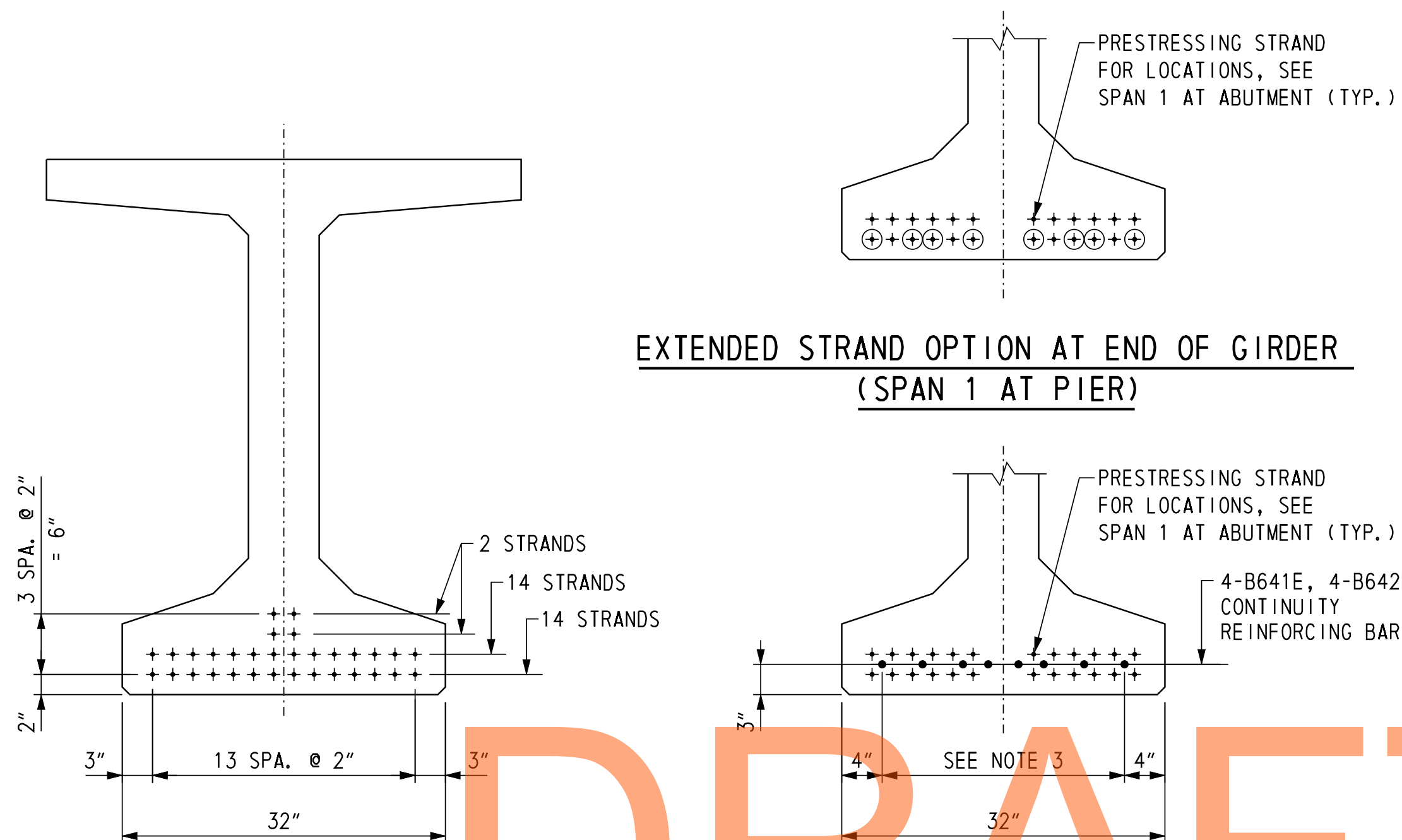
- GIRDERS ARE PCEF XB 53 47 BULB TEE CONCRETE.
- GIRDER LENGTHS IN CASTING BED SHALL BE DETERMINED AND DEPICTED IN SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO PRESTRESS EFFECT.
- TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING.
- NO CLEAR COVER LESS THAN AS SHOWN ON THESE PLANS WILL BE ACCEPTED.
- THREADED INSERTS PROVIDED FOR DIAPHRAGM REINFORCEMENT SHALL BE ABLE TO DEVELOP FULL STRENGTH OF THE REINFORCEMENT.
- CLIP FLANGE AT ABUTMENT ENDS OF GIRDERS. CLIPPED FLANGE REINFORCEMENT DETAILS APPLY AS SHOWN ON GIRDER DETAILS SHEET.

CROSS REFERENCE NOTES:

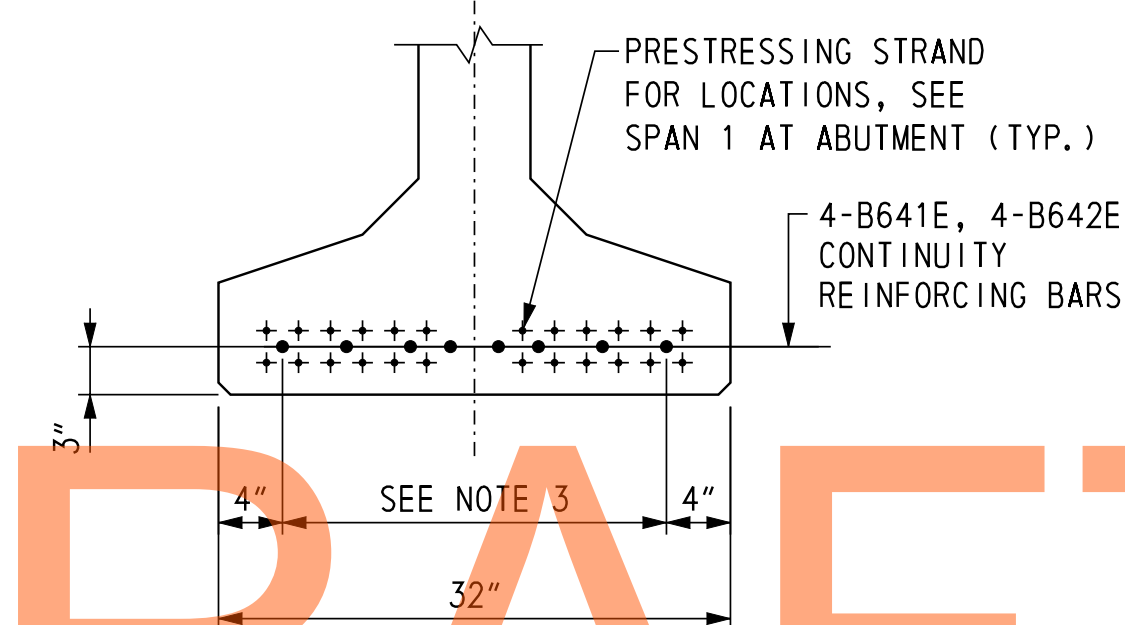
- FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
- FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
- FOR FRAMING PLAN, SEE DWG. 1-477 FR-2.
- FOR GIRDER DETAILS, SEE DWG. 1-477 BM-5 AND 1-477 BM-6.
- FOR DIAPHRAGM REINFORCEMENT, SEE DWG. 1-477 BM-7 AND 1-477 BM-8.
- FOR CAMBER TABLE, SEE DWG. 1-477 CT-2.
- FOR CLIPPED FLANGE DETAIL AT ABUTMENT END OF GIRDER, SEE DWG. 1-477 BM-6.



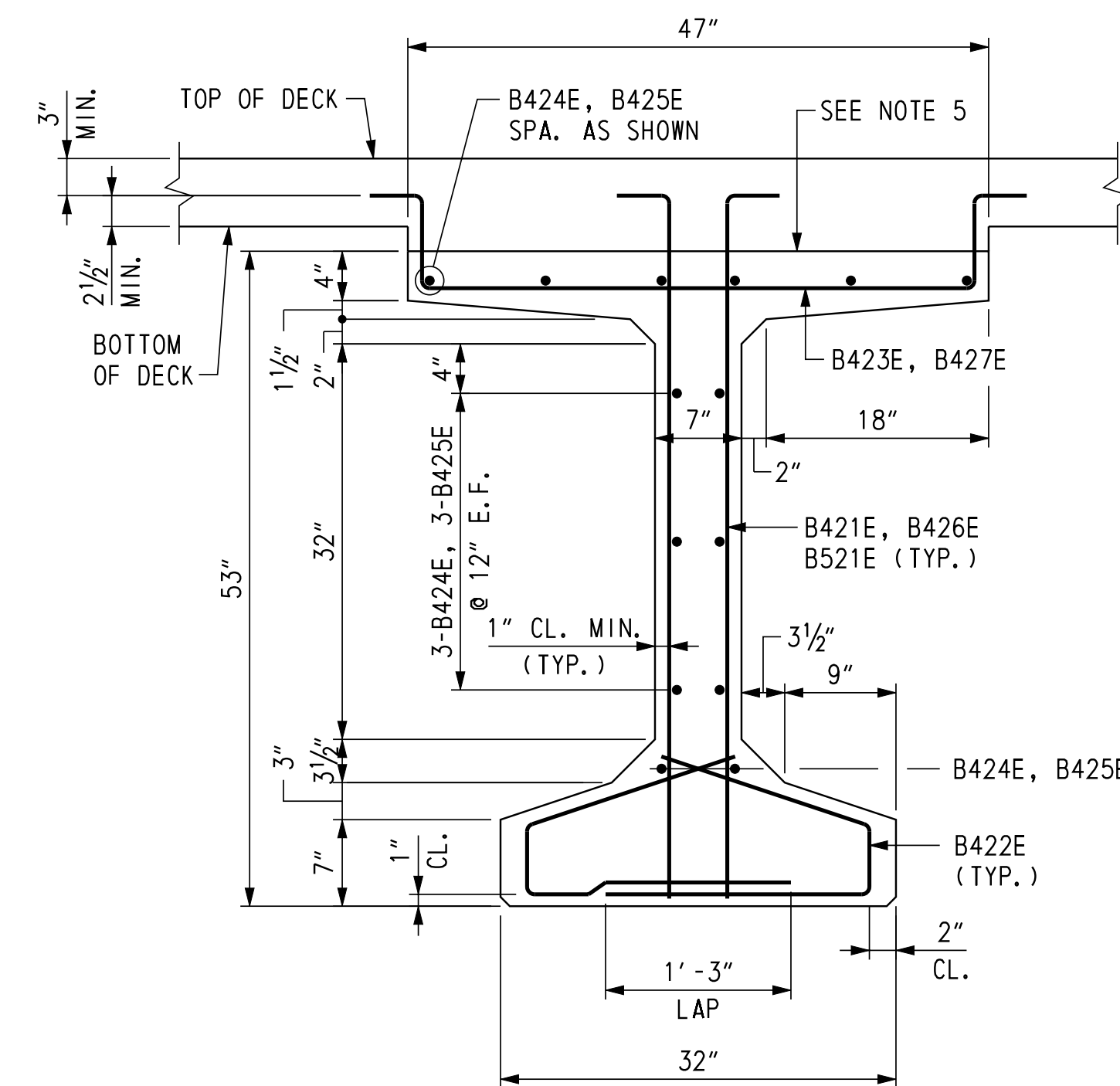
STRAND LOCATION AT END OF GIRDER
(SPAN 1 AT ABUTMENT)



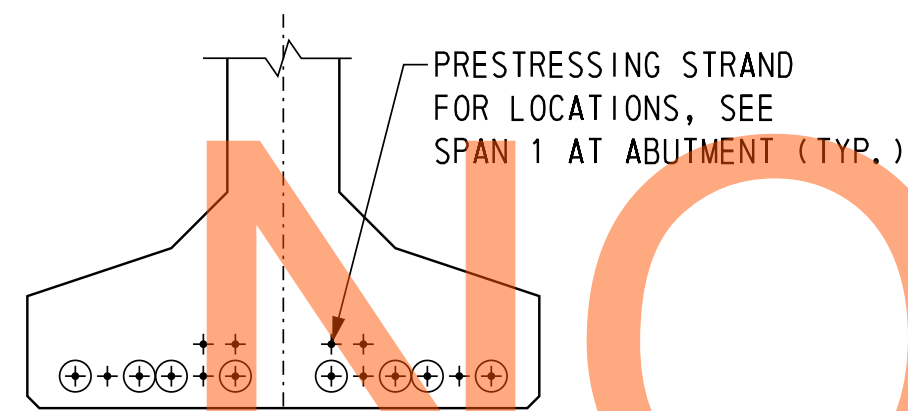
STRAND LOCATION AT MID-SPAN
(SPAN 1)



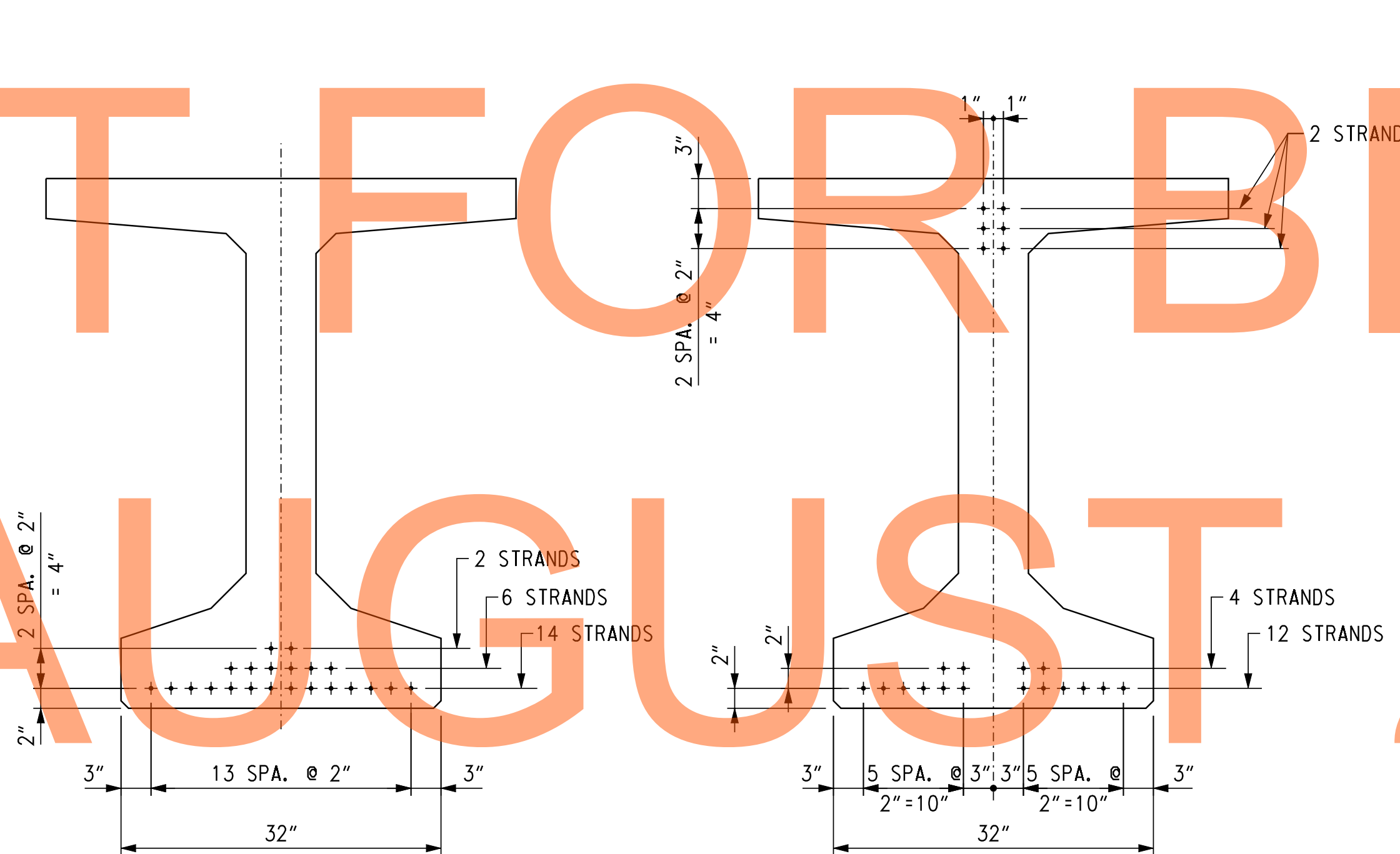
REBAR OPTION AT END OF GIRDER
(SPAN 1 AT PIER)



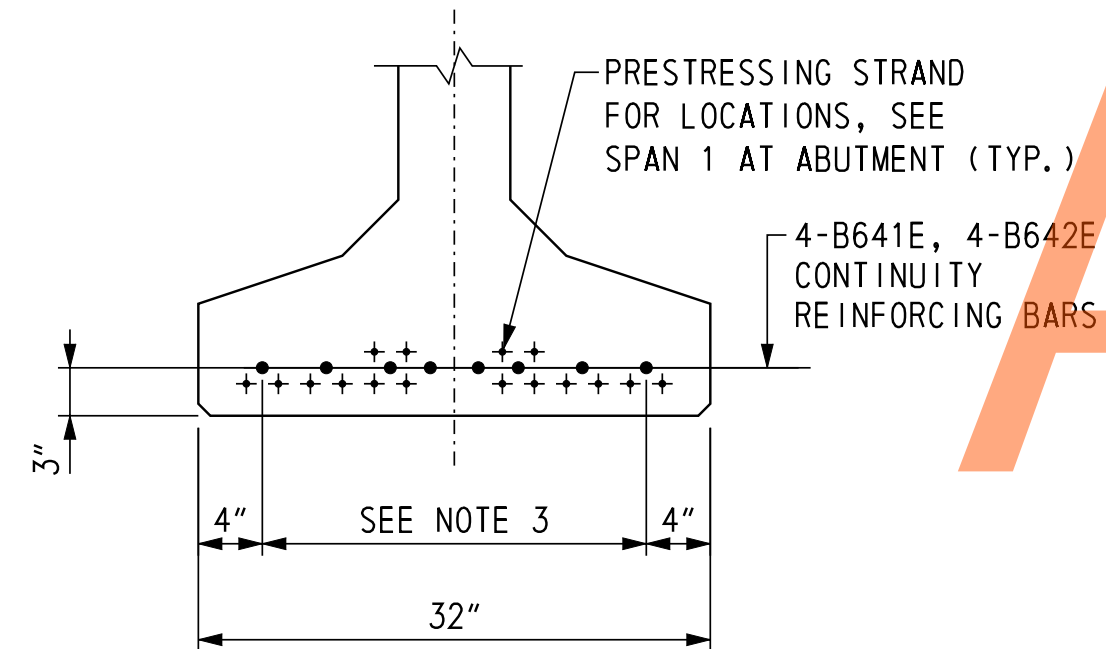
TYPICAL BAR REINFORCEMENT
SCALE: 1" = 1'-0"



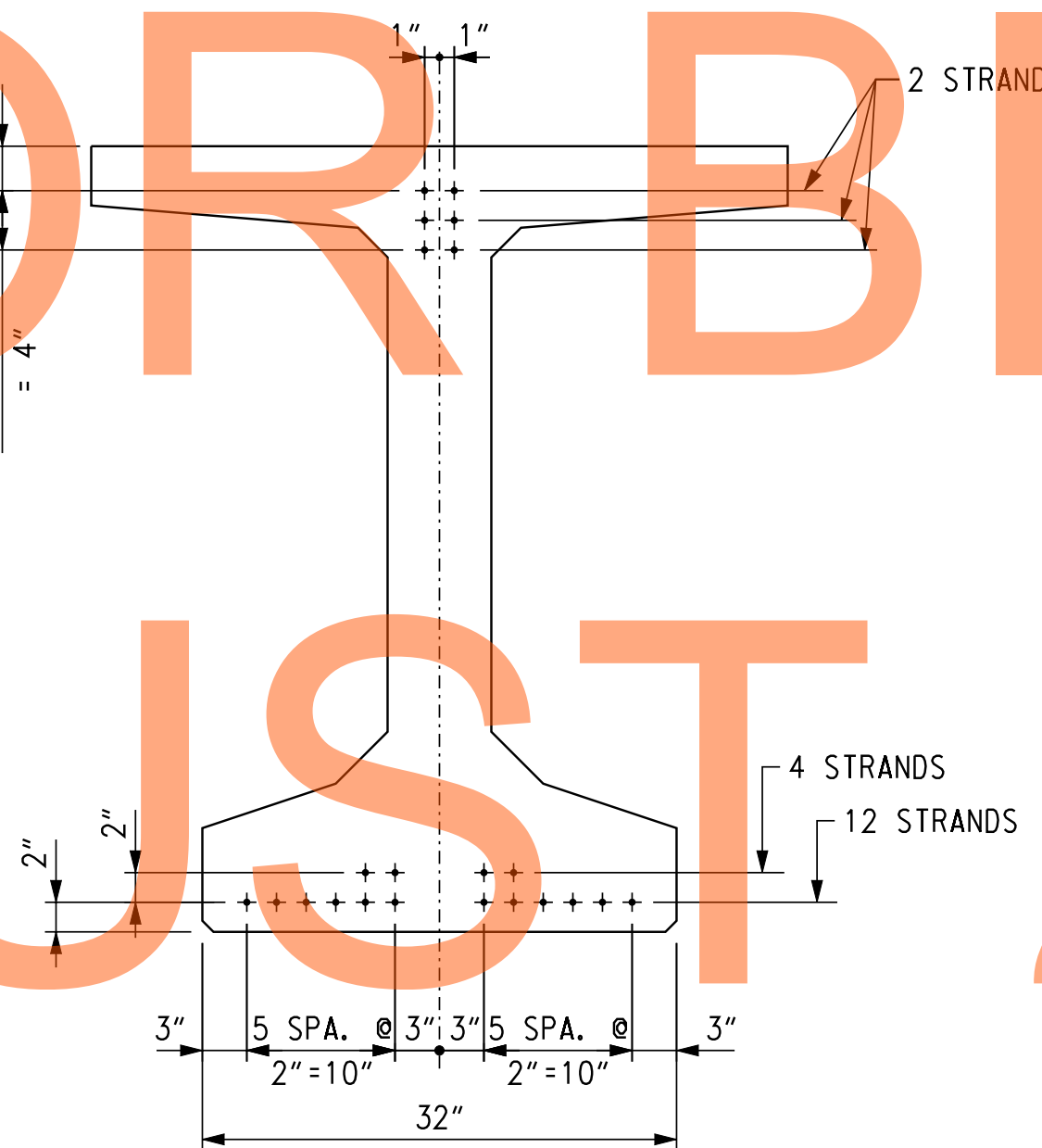
EXTENDED STRAND OPTION AT END OF GIRDER
(SPAN 2 AT PIER)



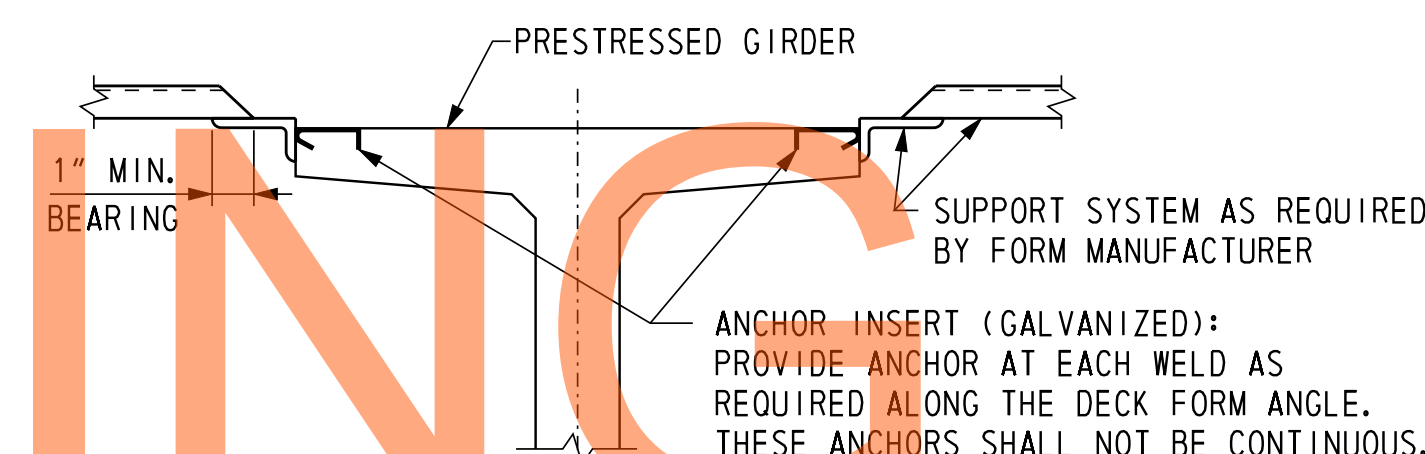
STRAND LOCATION AT MID-SPAN
(SPAN 2)



REBAR OPTION AT END OF GIRDER
(SPAN 2 AT PIER)



STRAND LOCATION AT END OF GIRDER
(SPAN 2 AT ABUTMENT)



FORM ANCHOR DETAIL
SCALE: 3/4" = 1'-0"

NOTES:

- PERMANENT STEEL BRIDGE DECK FORMS AND SUPPORTS SHALL BE PROVIDED CONFORMING TO THE REQUIREMENTS OF SECTION 602 OF THE DELDOT STANDARD SPECIFICATIONS.
- 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 DUST - ZINC OXIDE PAINT, NO COLOR ADDED, TO THE SATISFACTION OF THE ENGINEER. MINOR HEAT DISCOLORATION IN AREAS OF WELDS NEED NOT BE TOUCHED UP.
- LATERAL SPACING OF CONTINUITY BARS IS APPROXIMATE. BARS AT ADJACENT ENDS OF GIRDERS AT PIER SHALL BE OFFSET TO ALLOW GIRDER PLACEMENT AT ERECTION.
- EXTENDED STRANDS AT ENDS OF GIRDER MUST BE BENT SLIGHTLY TO PROPERLY POSITION GIRDER DURING ERECTION.
- TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING.

LEGEND

- + PRESTRESSING STRAND
- ⊕ EXTENDED STRAND, SEE NOTE 4 (MAX. 6" TRANSVERSE SPA.)

CROSS REFERENCE NOTES:

- FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
- FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
- FOR FRAMING PLAN, SEE DWG. 1-477 FR-2.
- FOR GIRDER ELEVATION, SEE DWG. 1-477 BM-4.
- FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

SECTION - PCEF BULB TEE SERIES XB 53 47
SCALE: 1" = 1'-0"

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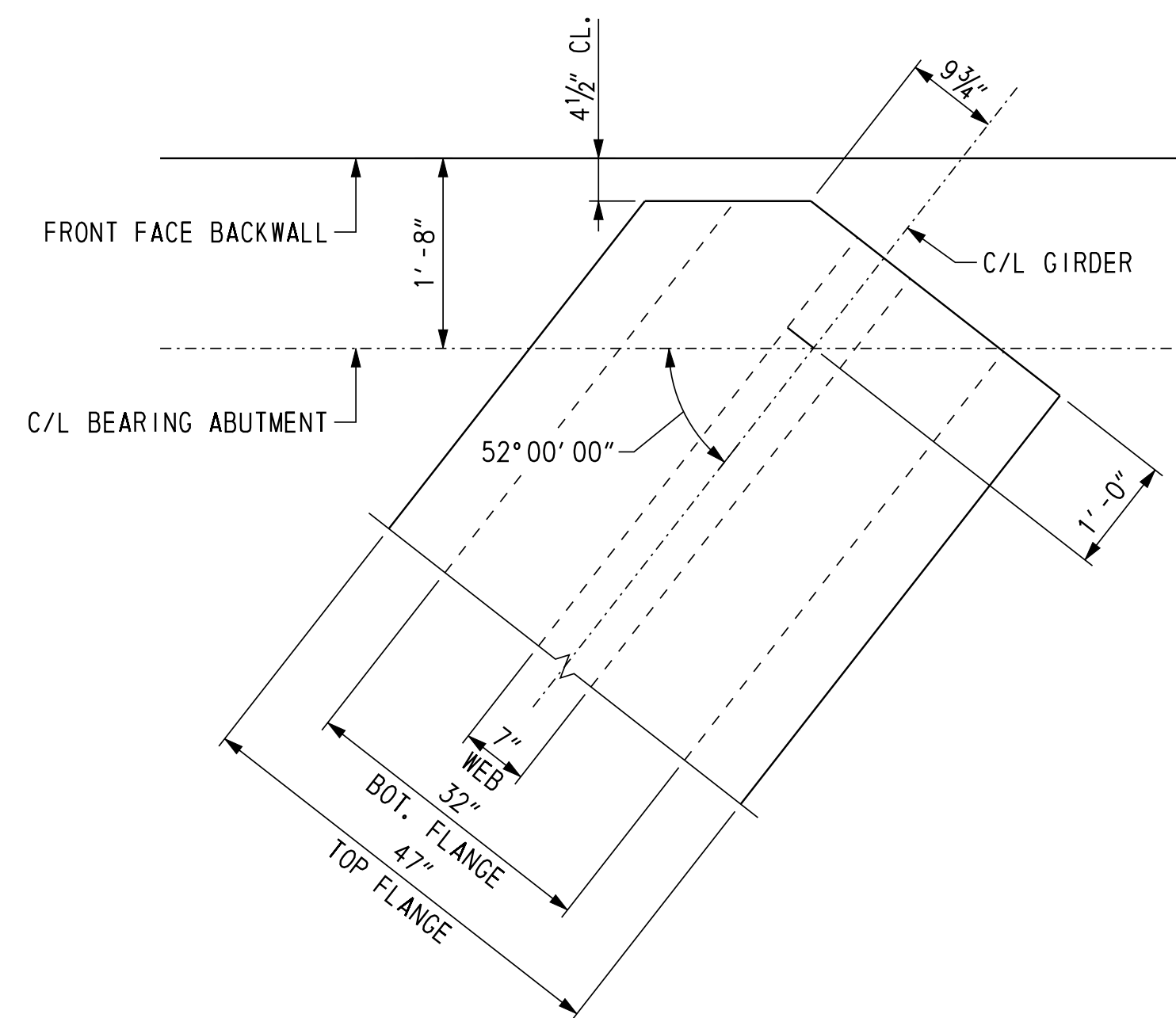
ADDENDUMS / REVISIONS	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

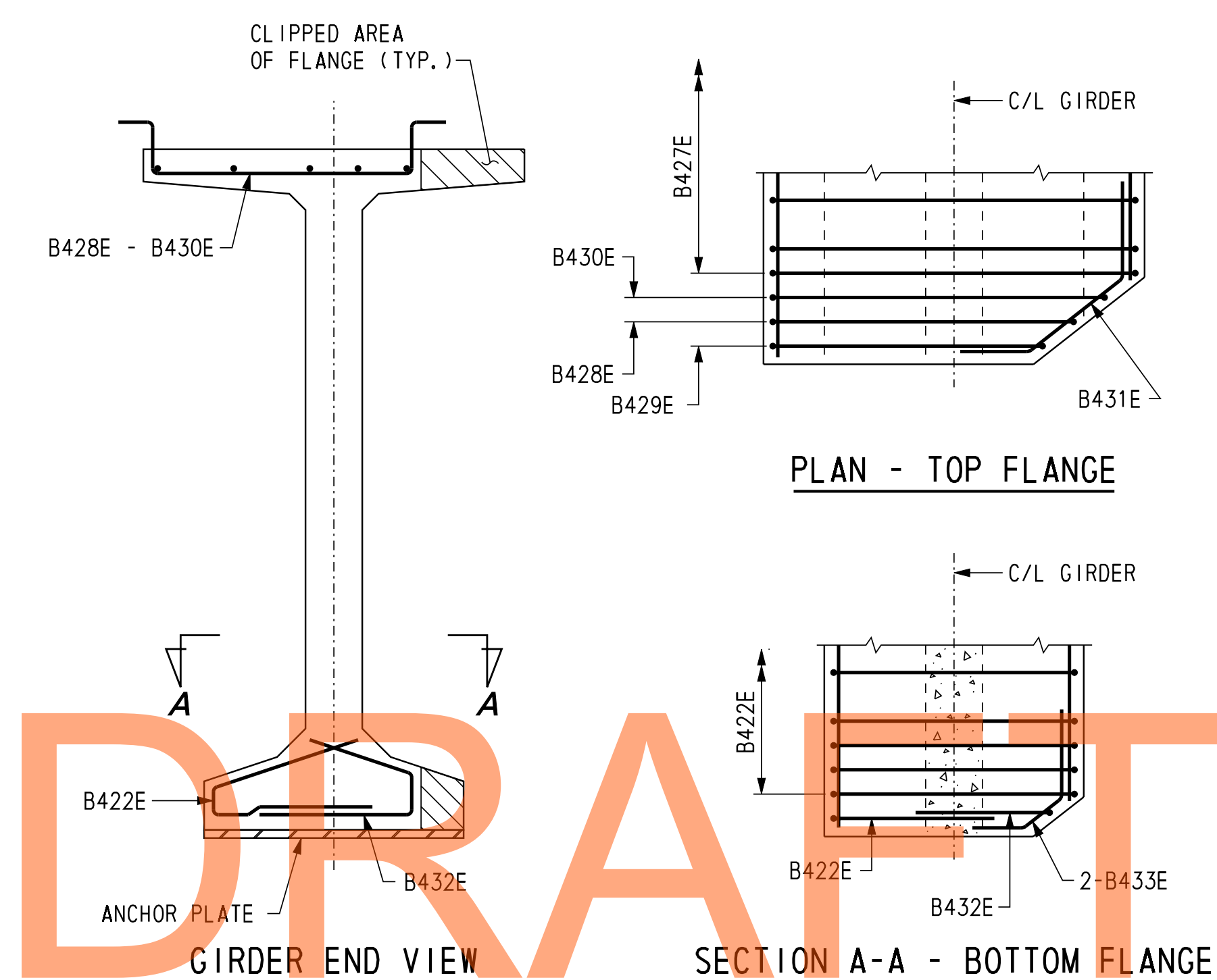
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	R. F. KIRCHNER
NEW CASTLE		

US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
NORTHBOUND ROADWAY
GIRDER DETAILS 2

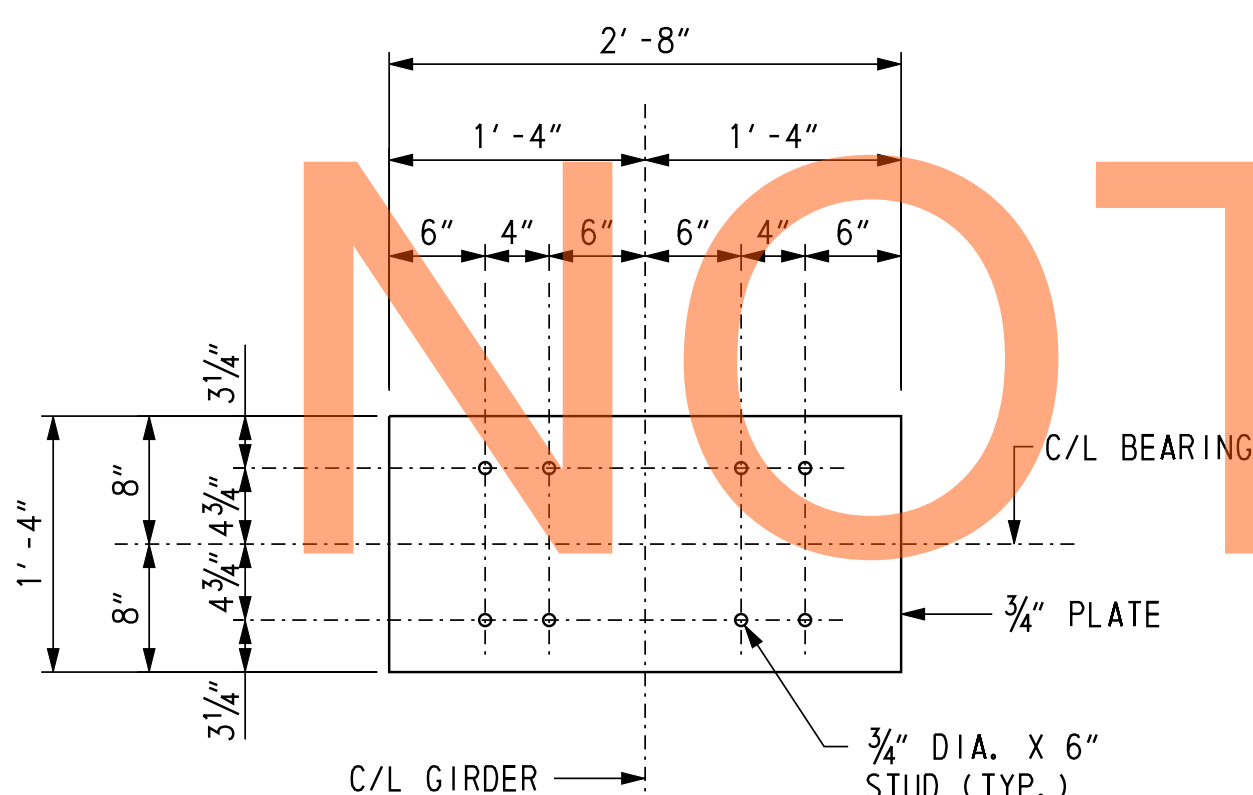
1-477 BM-5
SHEET NO.
496
TOTAL SHTS.
1256



END OF GIRDER DETAIL AT ABUTMENTS
SCALE: 3/4" = 1'-0"



CLIPPED FLANGE REINFORCEMENT DETAILS
SCALE: 3/4" = 1'-0"



ANCHOR PLATE DETAIL
SCALE: 1" = 1'-0"

NOT FOR BIDDING
AUGUST 2015

NOTES:

1. CLIP ANCHOR PLATE AT ABUTMENTS TO REMAIN FLUSH WITH GIRDER FLANGE.
2. GIRDER LIFTING DETAILS SHALL BE PROVIDED BY THE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.

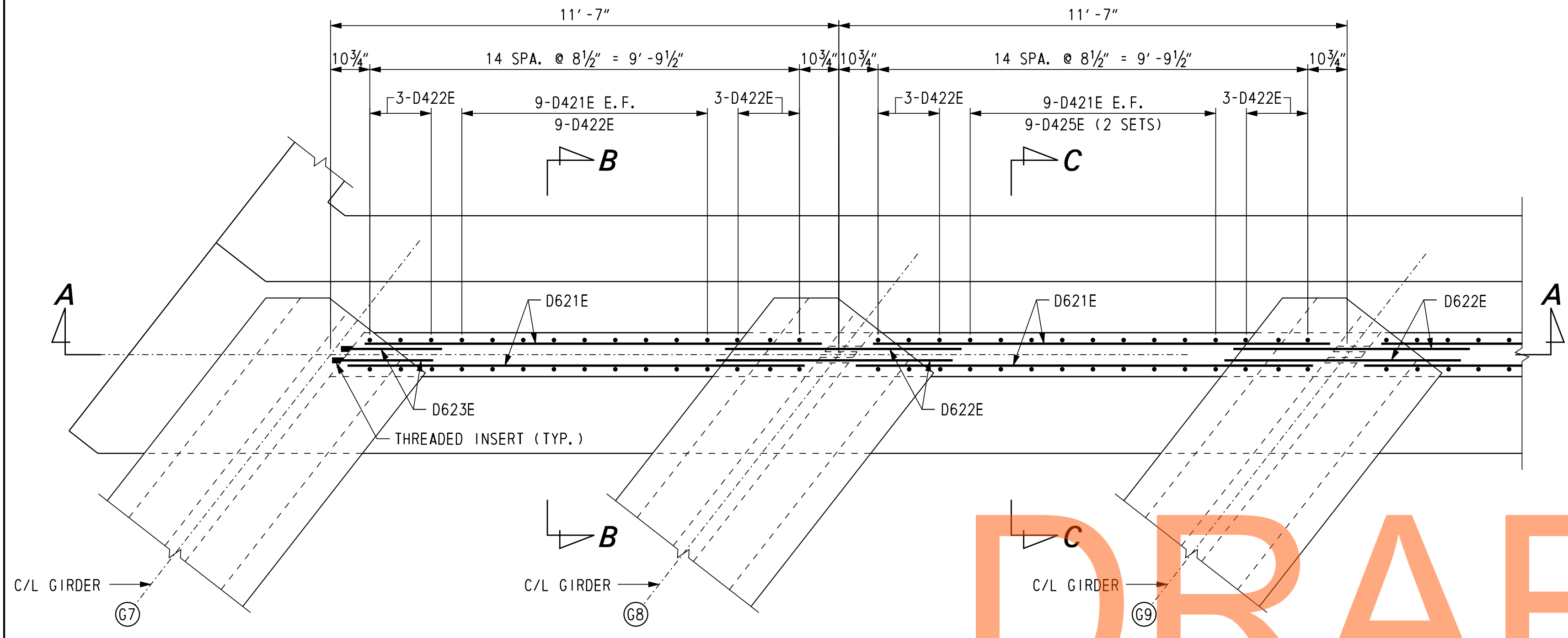
CROSS REFERENCE NOTES:

1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
3. FOR FRAMING PLAN, SEE DWG. 1-477 FR-2.
4. FOR GIRDER ELEVATION, SEE DWG. 1-477 BM-4.
5. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

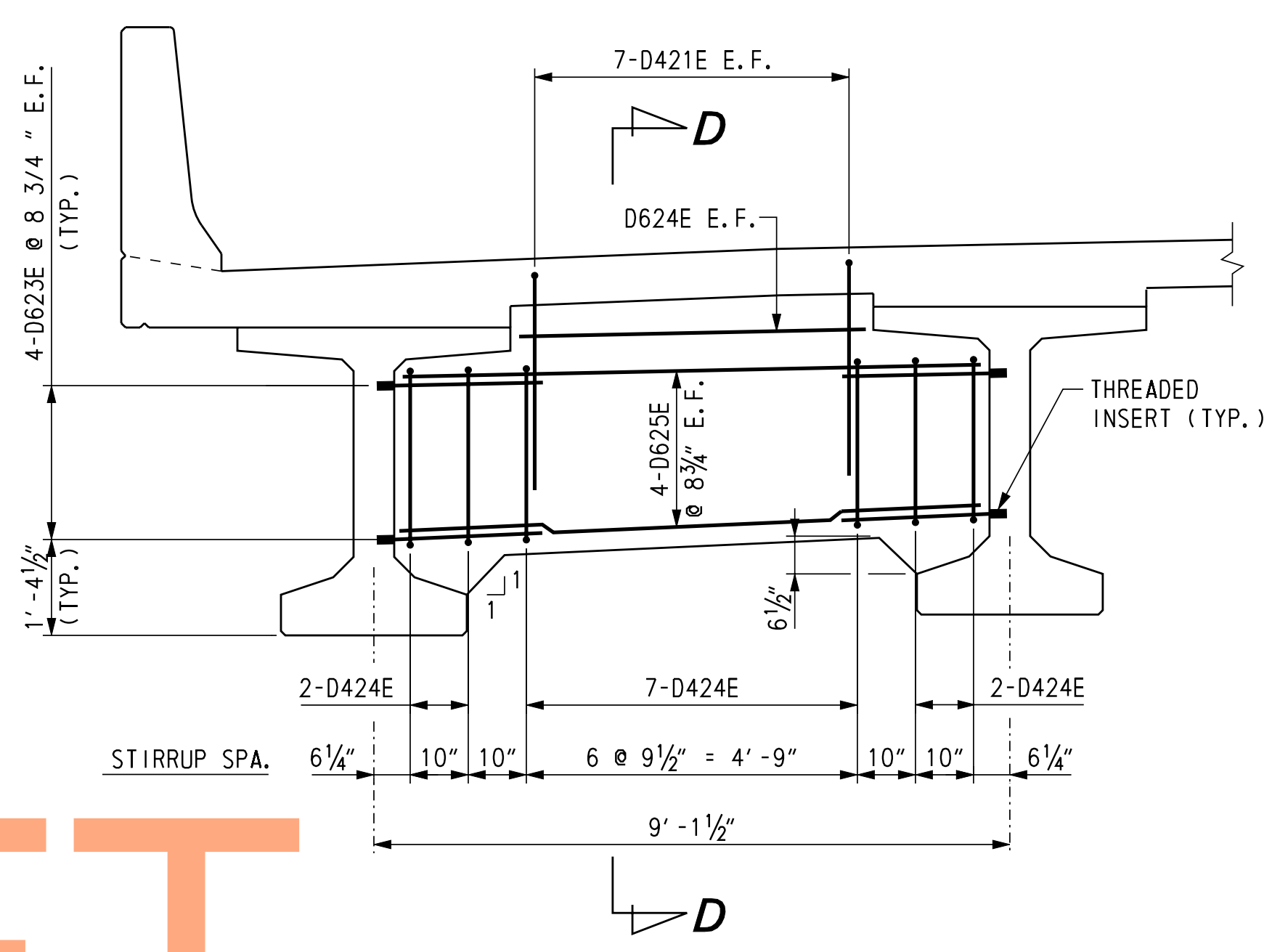
ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	R. F. KIRCHNER
NEW CASTLE		

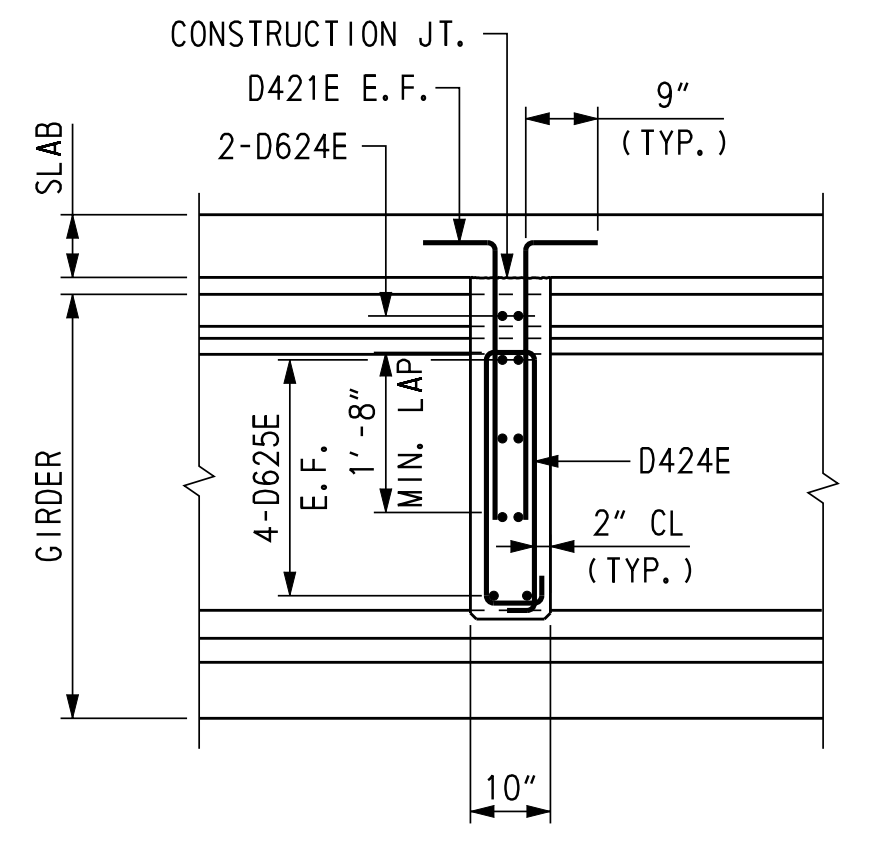
1-477 BM-6
SHEET NO.
497
TOTAL SHTS.
1256



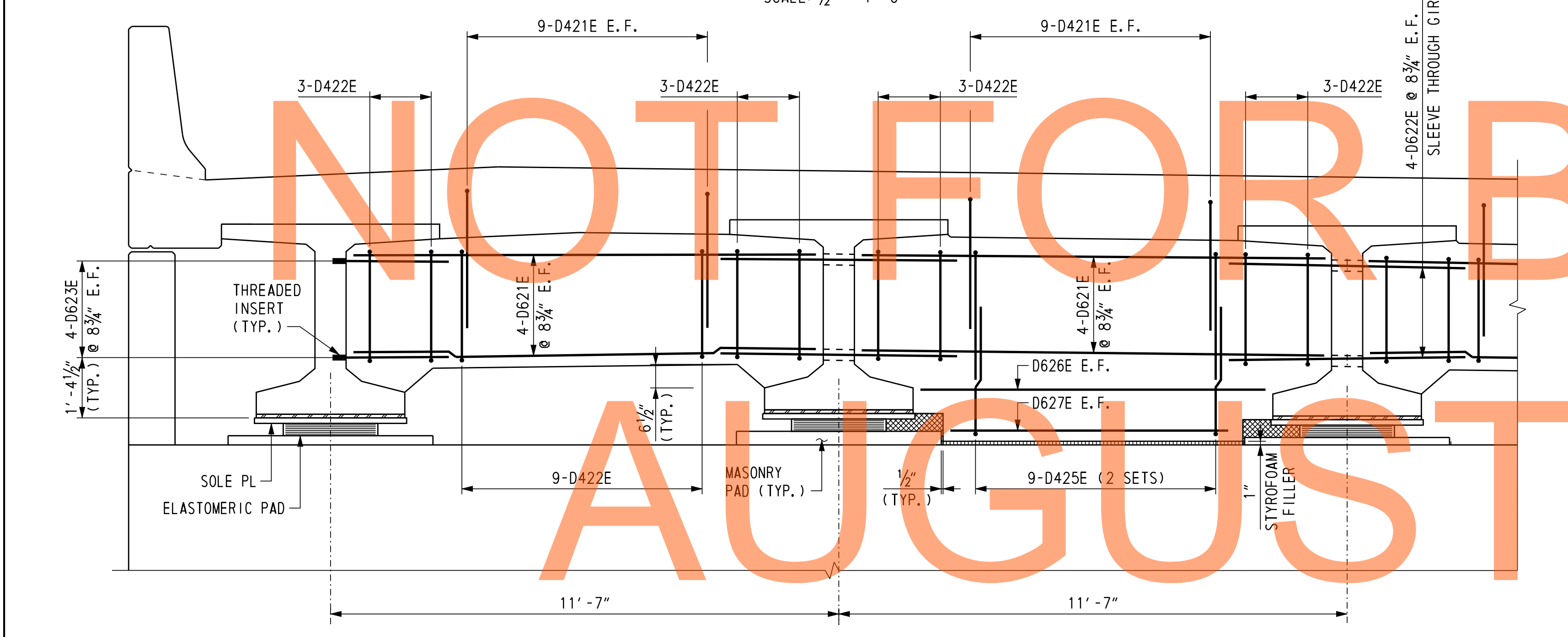
END DIAPHRAGM PLAN



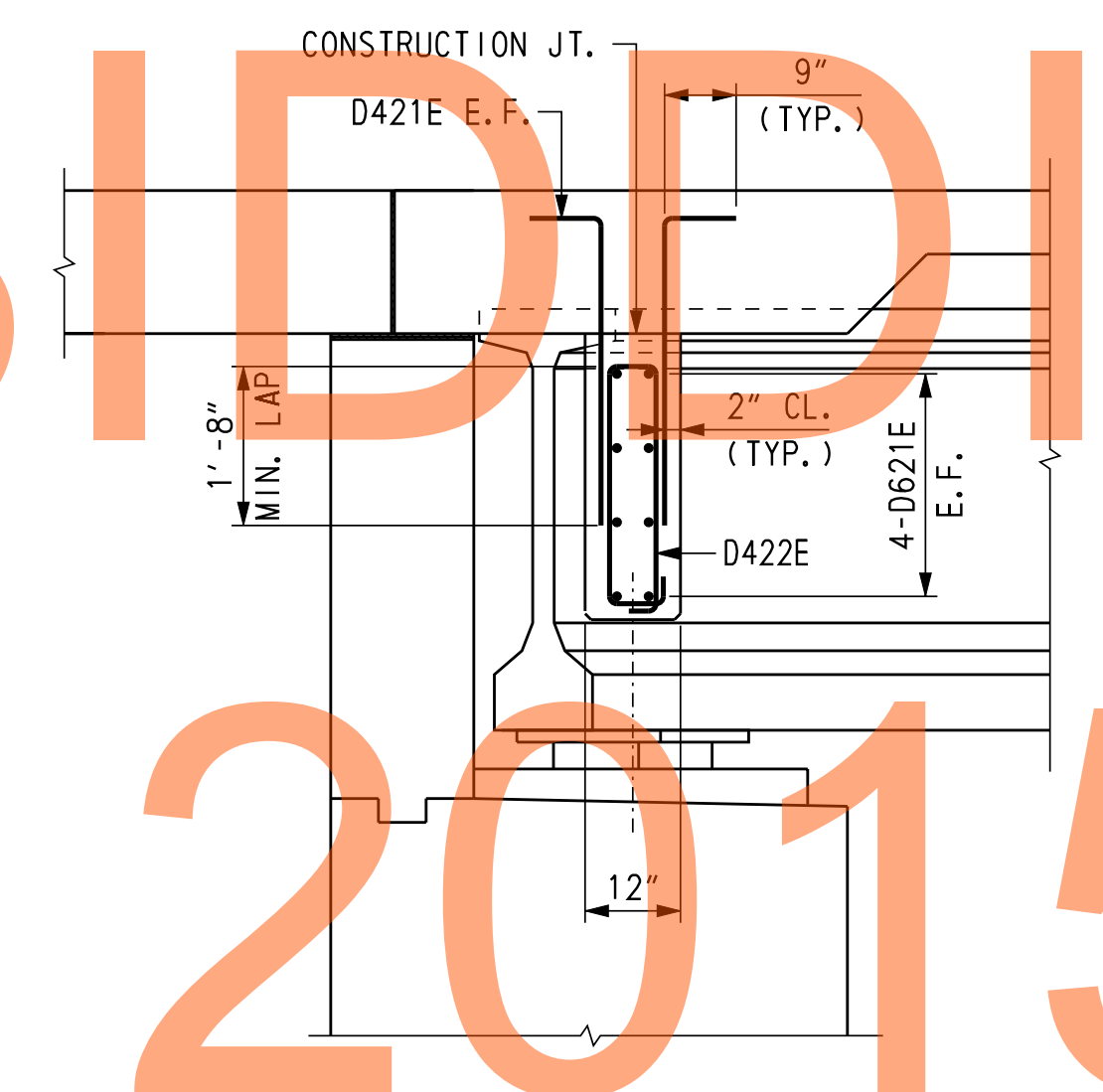
INTERMEDIATE DIAPHRAGM



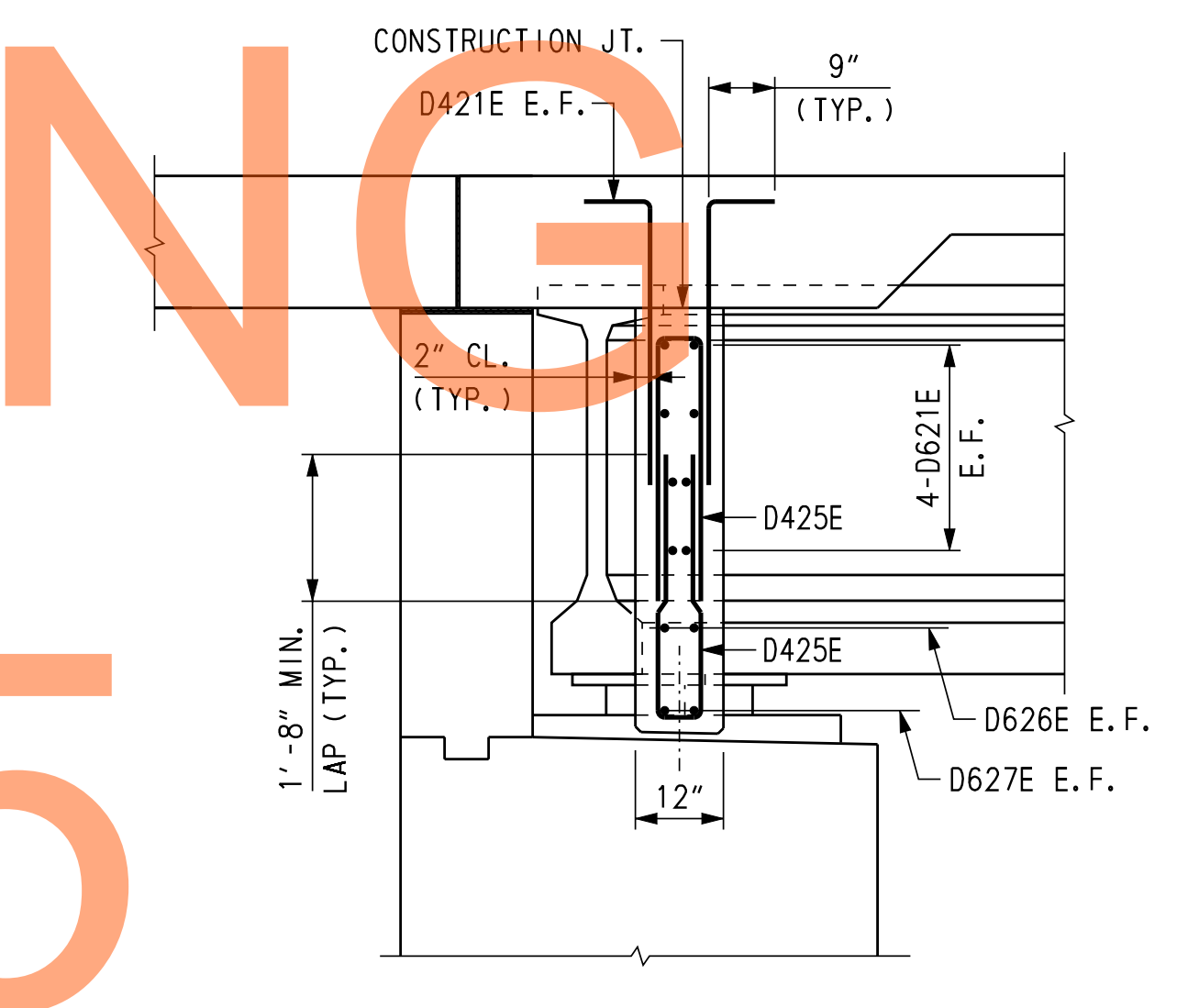
SECTION D-D



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

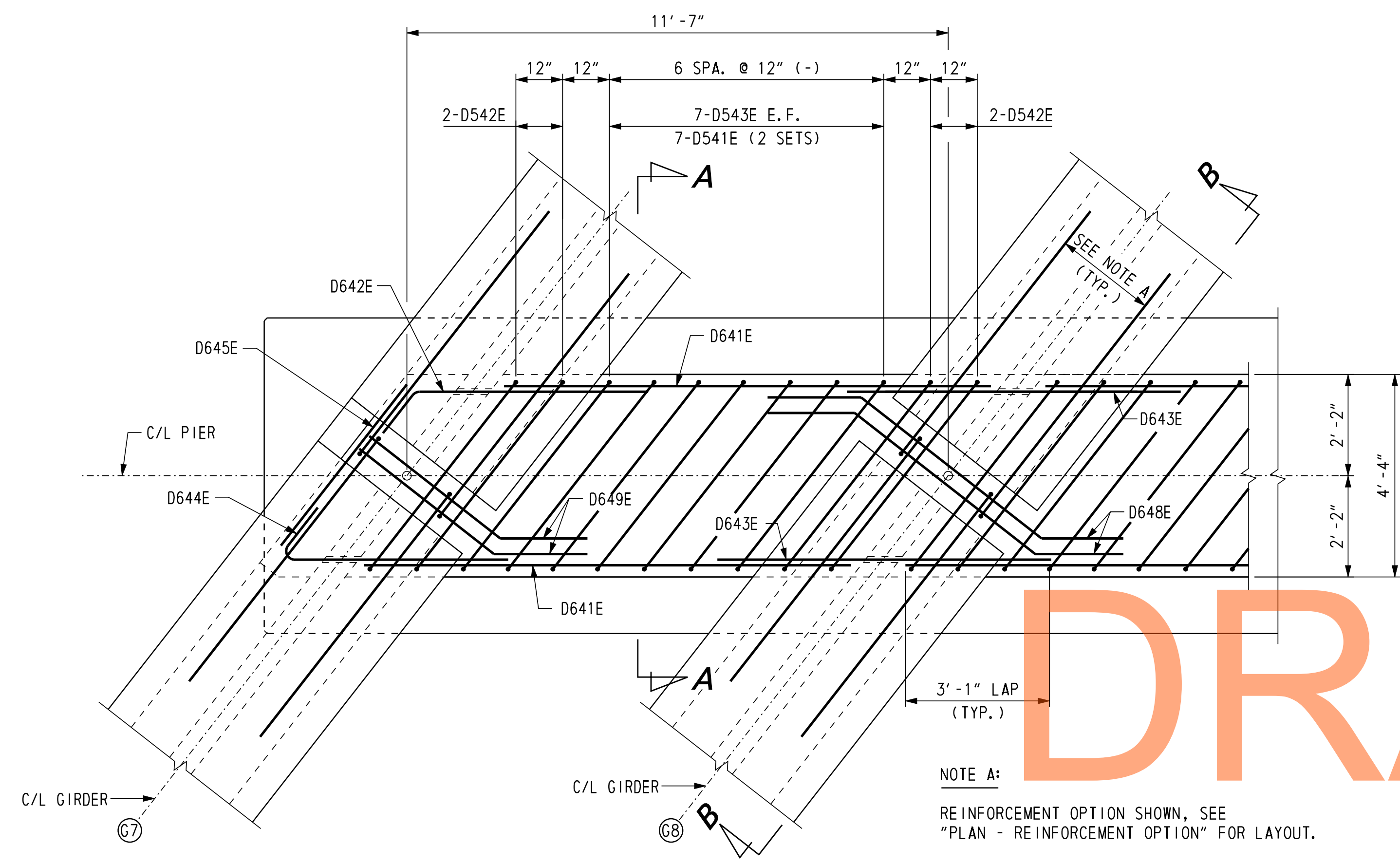
1. FULL DEPTH END DIAPHRAGM APPLIES BETWEEN GIRDERS G8 & G9 AS WELL AS BETWEEN GIRDERS G10 & G11.

CROSS REFERENCE NOTES:

1. FOR GENERAL NOTES, SEE DWG. 1-475 PN-2.
2. FOR TYPICAL SECTION, SEE DWG. 1-475 TS-1.
3. FOR FRAMING PLAN, SEE DWG. 1-475 FR-2.
4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.

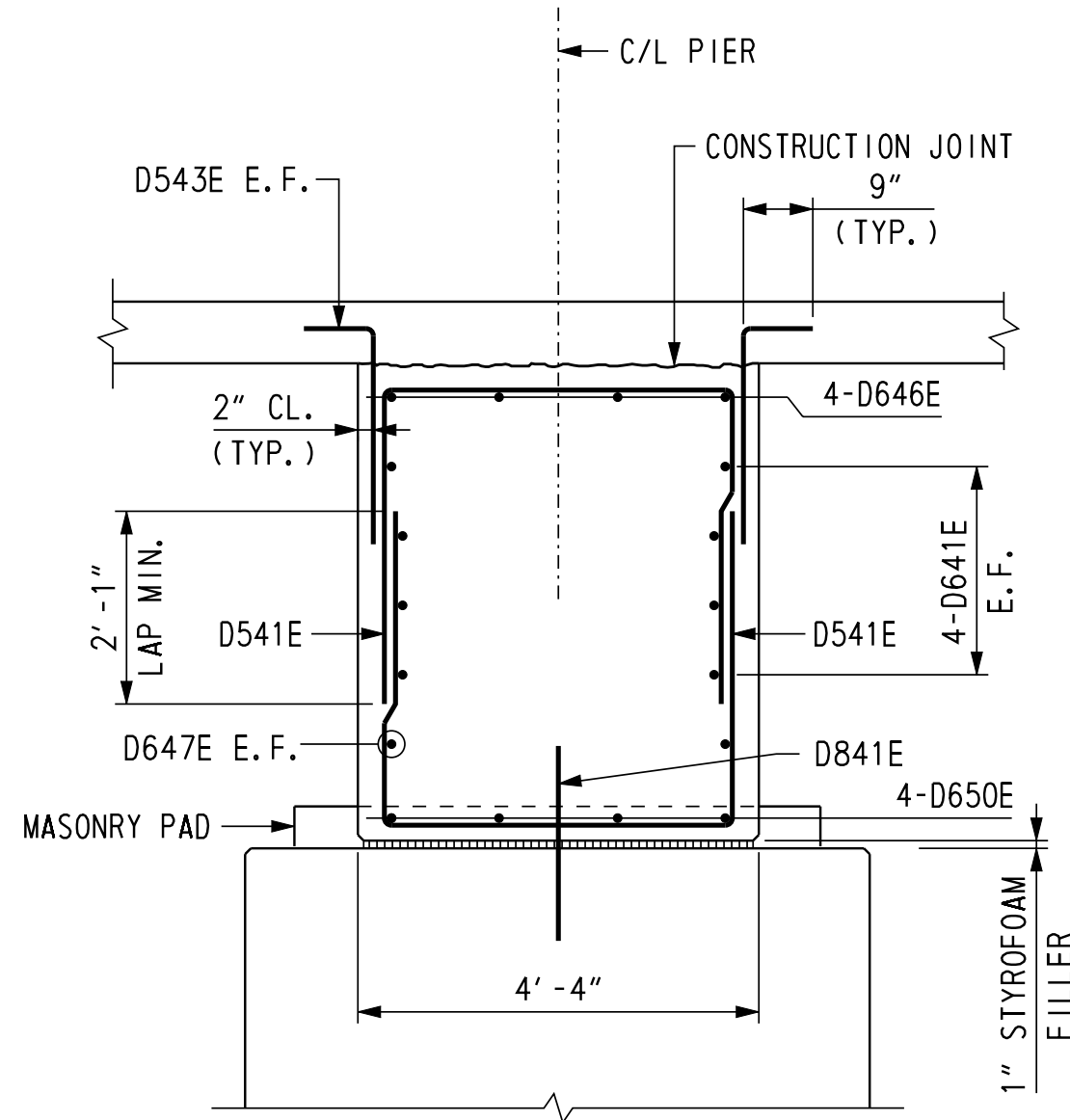
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

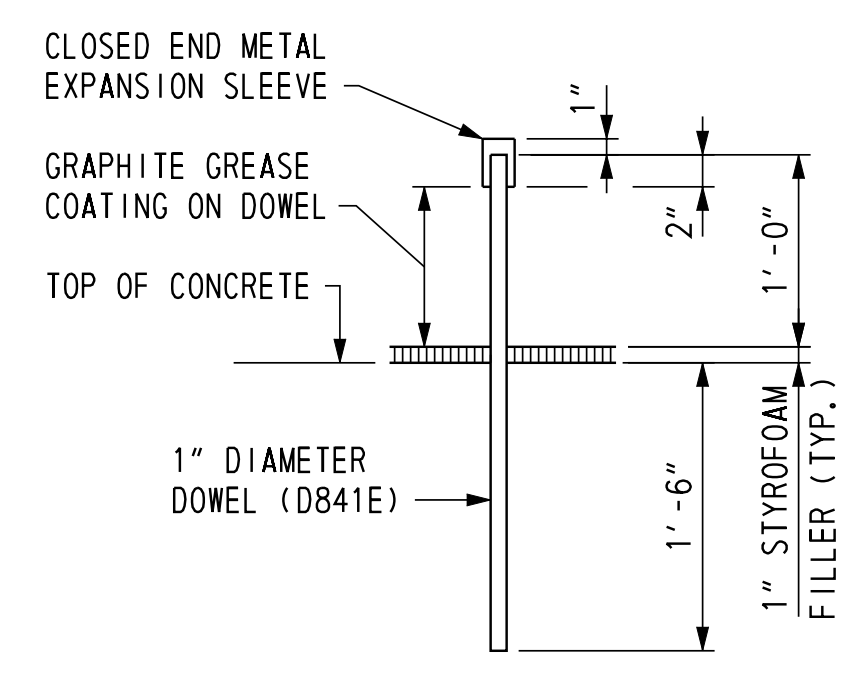


PLAN
SCALE: 1/2" = 1'-0"

NOTE A:
REINFORCEMENT OPTION SHOWN, SEE
"PLAN - REINFORCEMENT OPTION" FOR LAYOUT.



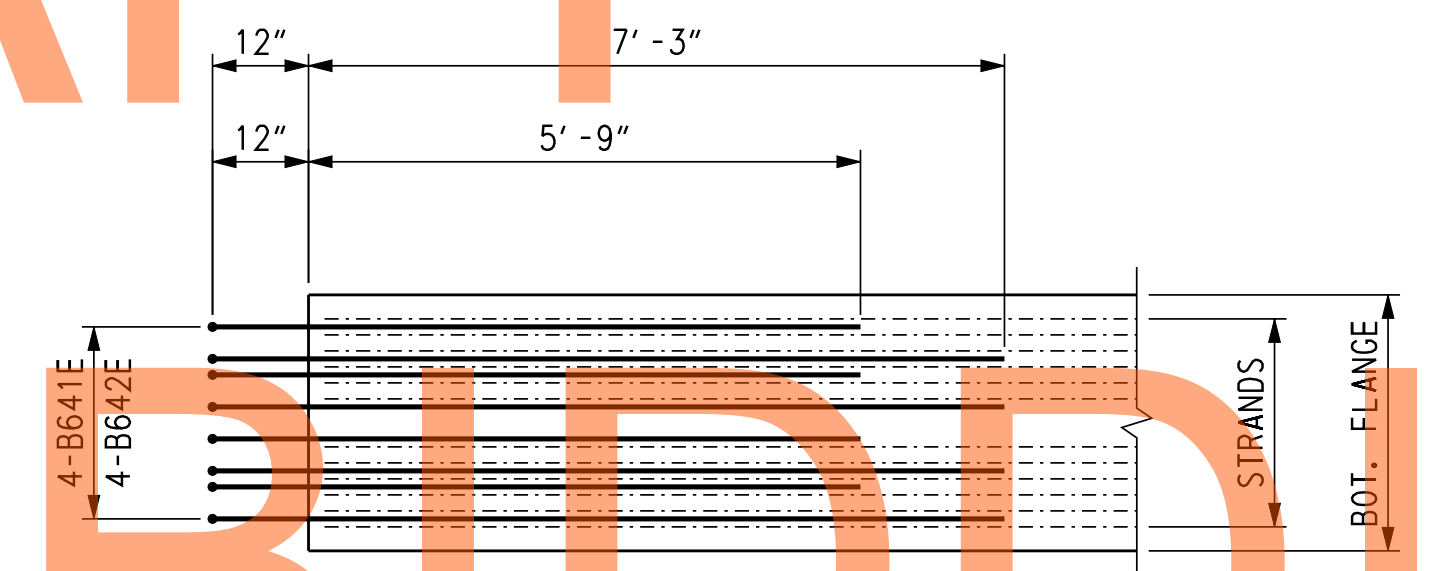
SECTION A-A
SCALE: 1/2" = 1'-0"



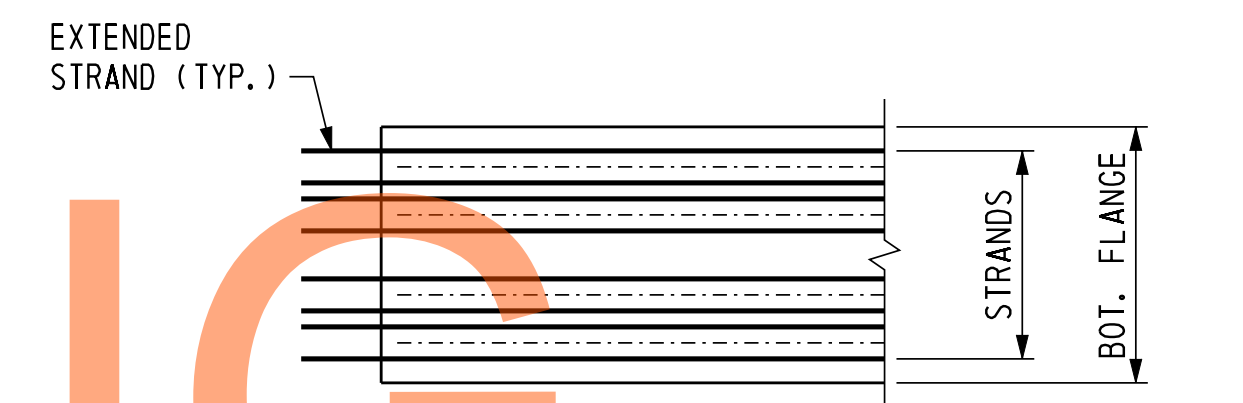
DOWEL DETAIL
SCALE: 1" = 1'-0"

NOTE:
D841E DOWELS SHALL BE 1" DIAMETER PLAIN BARS CAPPED WITH A SNUG FIT, CLOSED END METAL EXPANSION SLEEVE, TEMPORARILY SECURED TO THE DOWEL SO AS TO PROVIDE A 1" LONG SOCKET BEYOND THE BAR END AND TO LAP BACK 2" ON THE BAR. IMMEDIATELY PRIOR TO POURING DIAPHRAGM CONCRETE, DOWELS SHALL BE COATED WITH GRAPHITE GREASE.

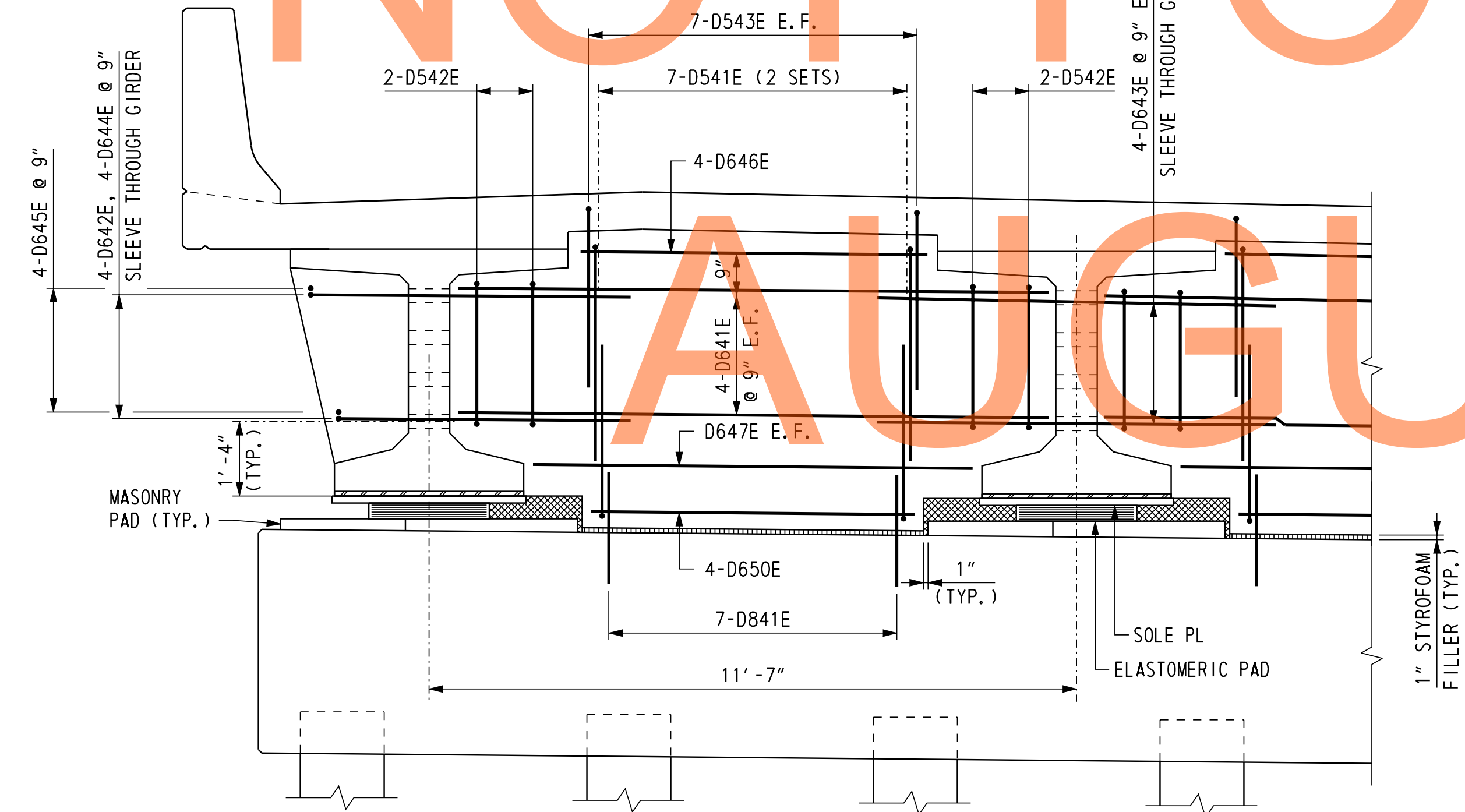
- CROSS REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
 3. FOR FRAMING PLAN, SEE DWG. 1-477 FR-2.
 4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 BM-9.



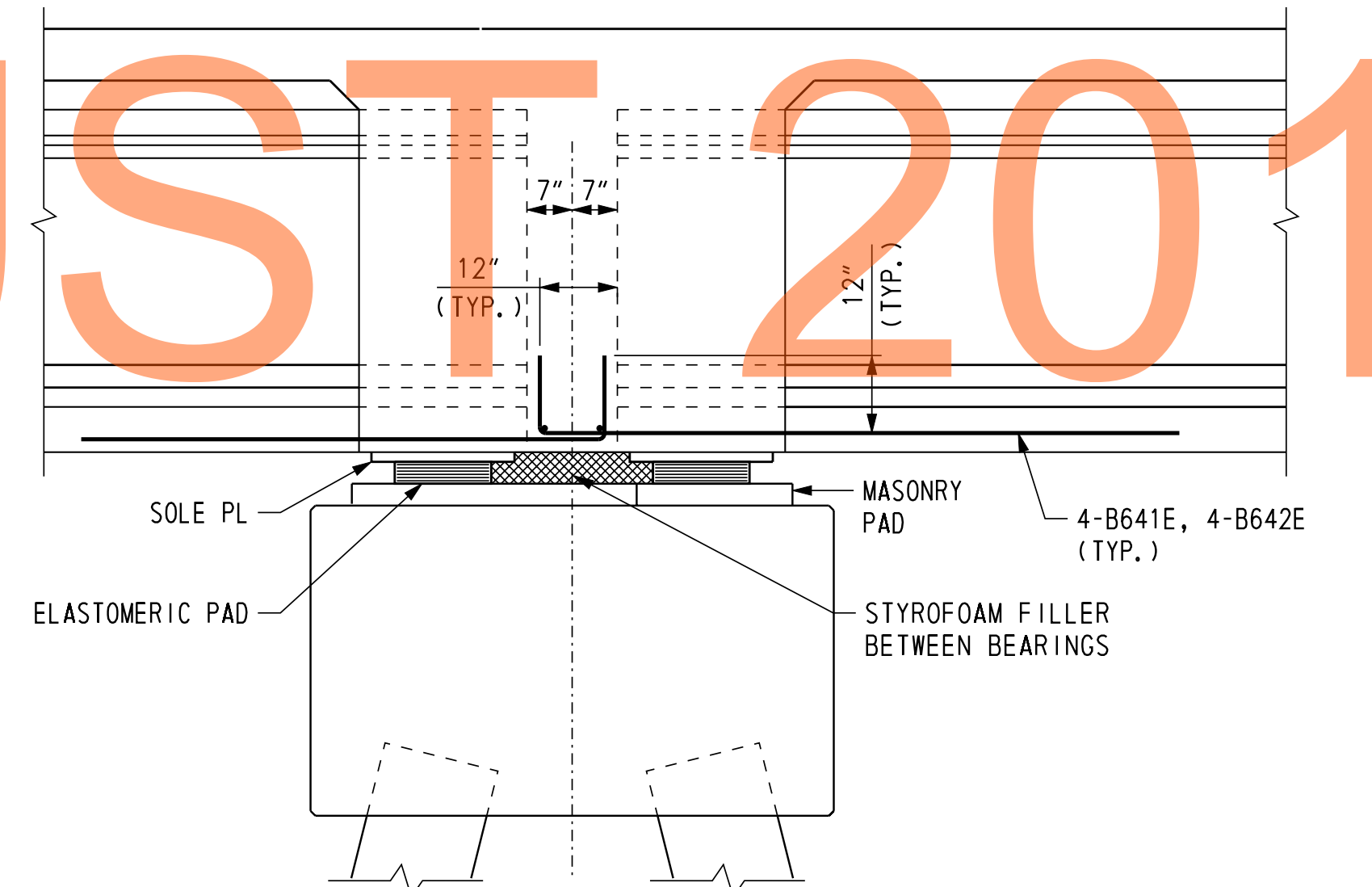
PLAN - REINFORCEMENT OPTION
SCALE: 1/2" = 1'-0"



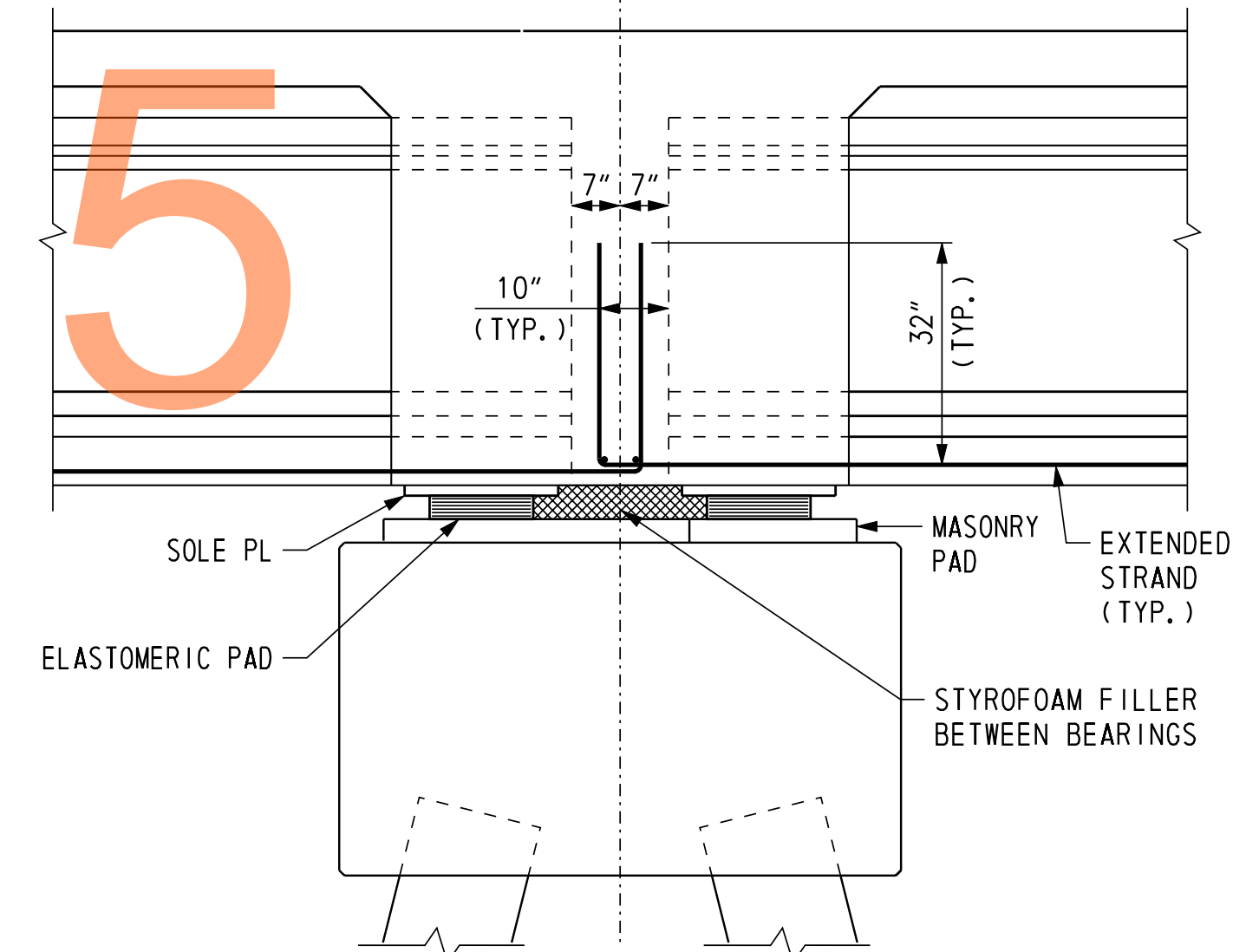
PLAN - EXTENDED STRAND OPTION
SCALE: 1/2" = 1'-0"



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



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

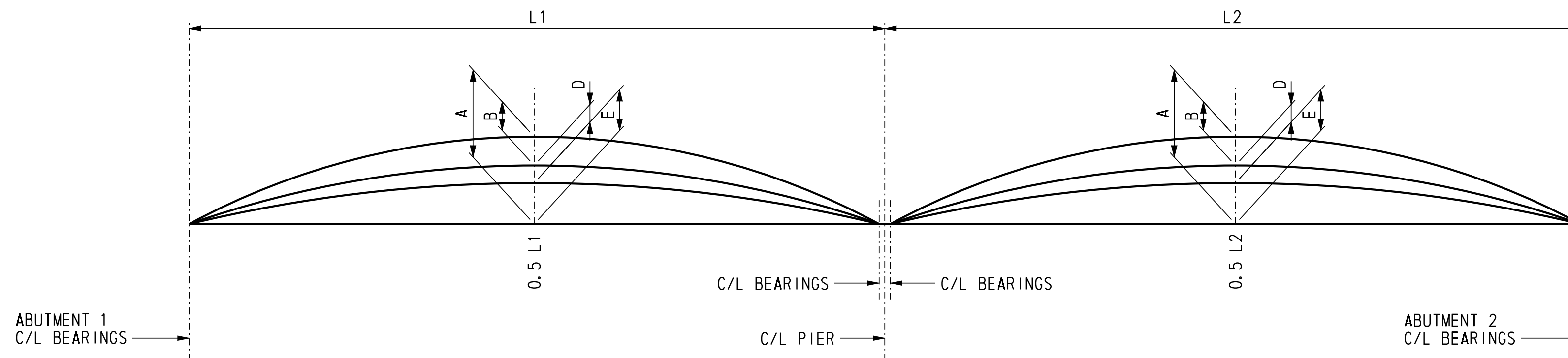


SECTION B-B - EXTENDED STRAND OPTION
SCALE: 1/2" = 1'-0"

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	W. A. O'CONNOR
COUNTY	CHECKED BY:	G. P. MISTRY/W. A. O'CONNOR
NEW CASTLE		

1-477 BM-8
SHEET NO.
499
TOTAL SHTS.
1256



GIRDER CAMBER DIAGRAM

NOT TO SCALE

DRAFT
NOT FOR CONSTRUCTION
AUGUST 2015

CAMBER ORDINATES (INCHES)

GIRDER NO.	ITEM	SPAN 1		C/L PIER	SPAN 2	
		ABUT. 1 C/L BRGS.	0.5L1		0.5L2	ABUT. 2 C/L BRGS.
G1 & G6	A	0	7 1/8	0	3 1/8	0
	B	0	-3 1/8	0	-1 1/4	0
	C	0	3 3/4	0	1 9/8	0
	D	0	-2	0	-3/4	0
	E	0	1 3/4	0	1 1/8	0
	F	0	0	0	0	0
G2 - G5	A	0	7 1/8	0	3 1/8	0
	B	0	-3 1/8	0	-1 1/4	0
	C	0	3 3/4	0	1 9/8	0
	D	0	-2 3/8	0	-1/8	0
	E	0	1 1/8	0	1	0
	F	0	0	0	0	0

LEGEND:

- A = DENOTES CAMBER DUE TO PRESTRESS AT ERECTION, CREEP MULTIPLIER = 1.8.
- B = DENOTES DEFLECTION DUE TO GIRDER DEAD LOAD AT ERECTION, CREEP MULTIPLIER = 1.85.
- C = A+B
- D = DENOTES DEFLECTION DUE TO SLAB AND DIAPHRAGMS.
- E = DENOTES NET CAMBER AT ERECTION, C+D.
- F = DENOTES VERTICAL CURVE ORDINATE MEASURED FROM ROADWAY PROFILE TO CHORD LINE BETWEEN SUPPORTS.

NOTES:

1. CAMBER VALUES ARE THEORETICAL VALUES AND MAY VARY WITH CONCRETE STRENGTH (AGE), PRESTRESSING CONDITIONS, CREEP MULTIPLIER AND PRESTRESS LOSSES.
2. THICKNESS OF CONCRETE HAUNCH VARIES TO OBTAIN VERTICAL CURVE PROFILE.

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11/8/2012

Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT	BRIDGE NO.	1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY CAMBER TABLE	SHEET NO.
			T200511303	DESIGNED BY: K. D. BEAVER			500
			NEW CASTLE	CHECKED BY: J. S. LI			TOTAL SHTS.
							1256

1-477 CT-2

REINFORCING BAR LIST

GIRDER AND DIAPHRAGMS - SOUTHBOUND ROADWAY

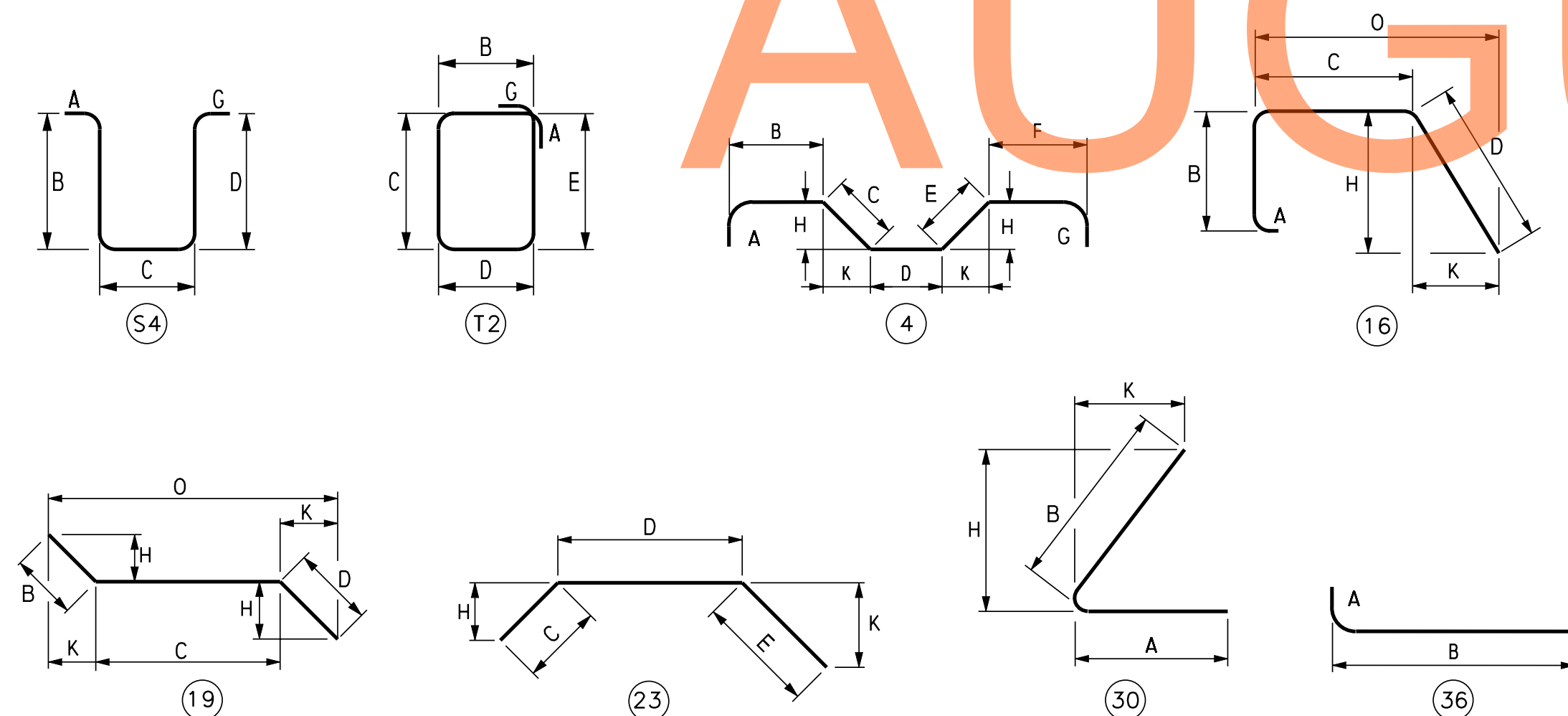
MARK	LENGTH	NO. BARS	TYPE	DIMENSIONS (A-K)										REMARKS		
				A	B	C	D	E	F	G	H	J	K			
B401E	8' - 3 1/2"	696	17		0' - 8"	7' - 7 1/2"										
B402E	3' - 8"	2,220	16		1' - 10"	0' - 5"	1' - 5"					1' - 3 1/2"		0' - 6"		
B403E	6' - 8"	252	S4	0' - 8"	0' - 10"	3' - 8"	0' - 10"					0' - 8"				
B404E	50' - 3"	360	STR.													
B405E	8' - 2 1/2"	504	17		0' - 8"	7' - 6 1/2"										
B406E	6' - 10"	420	S4	0' - 8"	0' - 11"	3' - 8"	0 - 11"					0' - 8"				
B407E	8' - 1 1/2"	876	17		0' - 8"	7' - 5 1/2"										
B408E	5' - 11"	12	S4	0' - 8"	0' - 11"	2' - 9"	0' - 11"					0' - 8"				
B409E	6' - 3"	12	S4	0' - 8"	0' - 11"	3' - 1"	0' - 11"					0' - 8"				
B410E	6' - 7"	12	S4	0' - 8"	0' - 11"	3' - 5"	0' - 11"					0' - 8"				
B411E	3' - 4"	12	23			1' - 0"	1' - 4"	1' - 0"				0' - 9 1/2"		0' - 7 1/2"		
B412E	3' - 3 1/2"	12	16		1' - 8"	0' - 5 1/2"	1' - 2"					1' - 1 1/2"		0' - 4 1/2"		
B413E	2' - 6"	24	23			1' - 0"	0' - 6"	1' - 0"				0' - 9 1/2"		0' - 7 1/2"		
B414E	6' - 6"	438	S4	0' - 8"	0' - 9"	3' - 8"	0' - 9"					0' - 8"				
B501E	8' - 5 1/2"	144	17		0' - 10"	7' - 7 1/2"										
D401E	4' - 3"	390	36	0' - 9"	3' - 6"											
D402E	12' - 1"	87	T2	0' - 4 1/2"	0' - 8"	5' - 0"	0' - 8"	5' - 0"				0' - 4 1/2"				
D404E	11' - 9"	165	T2	0' - 4 1/2"	0' - 6"	5' - 0"	0' - 6"	5' - 0"				0' - 4 1/2"				
D405E	9' - 8"	126	17		4' - 6"	0' - 8"	4' - 6"									
D601E	10' - 6"	140	STR.													
D602E	7' - 1"	112	STR.													
D603E	3' - 7"	476	STR.													ONE END THREADED
D604E	4' - 10 1/2"	30	STR.													
D605E	8' - 2 1/2"	210	STR.													
D606E	7' - 9"	14	STR.													
D607E	7' - 4"	14	STR.													
D801E	2' - 7"	45	STR.													

GIRDER AND DIAPHRAGMS - NORTHBOUND ROADWAY

MARK	LENGTH	NO. BARS	TYPE	DIMENSIONS (A-K)										REMARKS		
				A	B	C	D	E	F	G	H	J	K			
B421E	5' - 7"	1,464	17		0' - 8"	4' - 11"										
B422E	3' - 8"	3,204	16		1' - 10"	0' - 5"	1' - 5"					1' - 3 1/2"		0' - 6"		
B423E	6' - 7"	810	S4	0' - 8"	0' - 9 1/2"	3' - 8"	0' - 9 1/2"					0' - 8"				
B424E	56' - 1"	168	STR.													
B425E	43' - 7"	168	STR.													
B426E	5' - 6"	1,620	17		0' - 8"	4' - 10"										
B427E	6' - 9"	792	S4	0' - 8"	0' - 10 1/2"	3' - 8"	0' - 10 1/2"					0' - 8"				
B428E	5' - 10"	12	S4	0' - 8"	0' - 10 1/2"	2' - 9"	0' - 10 1/2"					0' - 8"				
B429E	6' - 2"	12	S4	0' - 8"	0' - 10 1/2"	3' - 1"	0' - 10 1/2"					0' - 8"				
B430E	6' - 6"	12	S4	0' - 8"	0' - 10 1/2"	3' - 5"	0' - 10 1/2"					0' - 8"				
B431E	3' - 4"	12	23			1' - 0"	1' - 4"	1' - 0"				0' - 9 1/2"		0' - 7 1/2"		
B432E	3' - 3 1/2"	12	16		1' - 8"	0' - 5 1/2"	1' - 2"					1' - 1 1/2"		0' - 4 1/2"		
B433E	2' - 6"	24	23			1' - 0"	0' - 6"	1' - 0"				0' - 9 1/2"		0' - 7 1/2"		
B521E	5' - 9"	120	17		0' - 10"	4' - 11"										
B641E	7' - 9"	48	17		1' - 0"	6' - 9"										
B642E	9' - 3"	48	17		1' - 0"	8' - 3"										
D421E	4' - 2"	390	36	0' - 9"	3' - 5"											
D422E	6' - 9"	114	T2	0' - 4 1/2"	0' - 8"	2' - 4"	0' - 8"	2' - 4"	0' - 4 1/2"							
D424E	6' - 5"	165	T2	0' - 4 1/2"	0' - 6"	2' - 4"	0' - 6"	2' - 4"	0' - 4 1/2"							
D425E	7' - 0"	72	17		3' - 2"	0' - 8"	3' - 2"									
D541E	12' - 7"	70	17		3' - 9"	5' - 1"	3' - 9"									
D542E	16' - 0"	20	T2	0' - 6"	5' - 1"	2' - 5"	5' - 1"	2' - 5"	0' - 6"							
D543E	3' - 7"	70	36	0' - 10"	2' - 9"											
D621E	10' - 6"	80	STR.													
D622E	7' - 1"	64	STR.													
D623E	3' - 7"	272	STR.													ONE END THREADED
D624E	4' - 10 1/2"	30	STR.													
D625E	8' - 2 1/2"	120	STR.													
D626E	7' - 9"	8	STR.													
D627E	7' - 4"	8	STR.													
D641E	10' - 6"	40	STR.													
D642E	8' - 4"	8	19		2' - 6"	5' - 10"						1' - 11 1/2"		1' - 6 1/2"		
D643E	7' - 1"	32	STR.													
D644E	8' - 4"	8	30	5' - 10"	2' - 6"							1' - 11 1/2"		1' - 6 1/2"		
D645E	5' - 1"	8	STR.													
D646E	6' - 3"	20	STR.													
D647E	7' - 10"	10	STR.													
D648E	7' - 10"	8	4		1' - 2"	5' - 6"	1' - 2"					3' - 4 1/2"		4' - 4"		
D649E	4' - 9"	4	16			1' - 0"	3' - 9"					2' - 5"		2' - 10"		
D650E	7' - 4"	20	STR.													
D841E	2' - 7"	35	STR.													

BENDING DIAGRAM

ALL DIMENSIONS ARE FROM OUT TO OUT.



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11/8/2012

Steve_Lambert



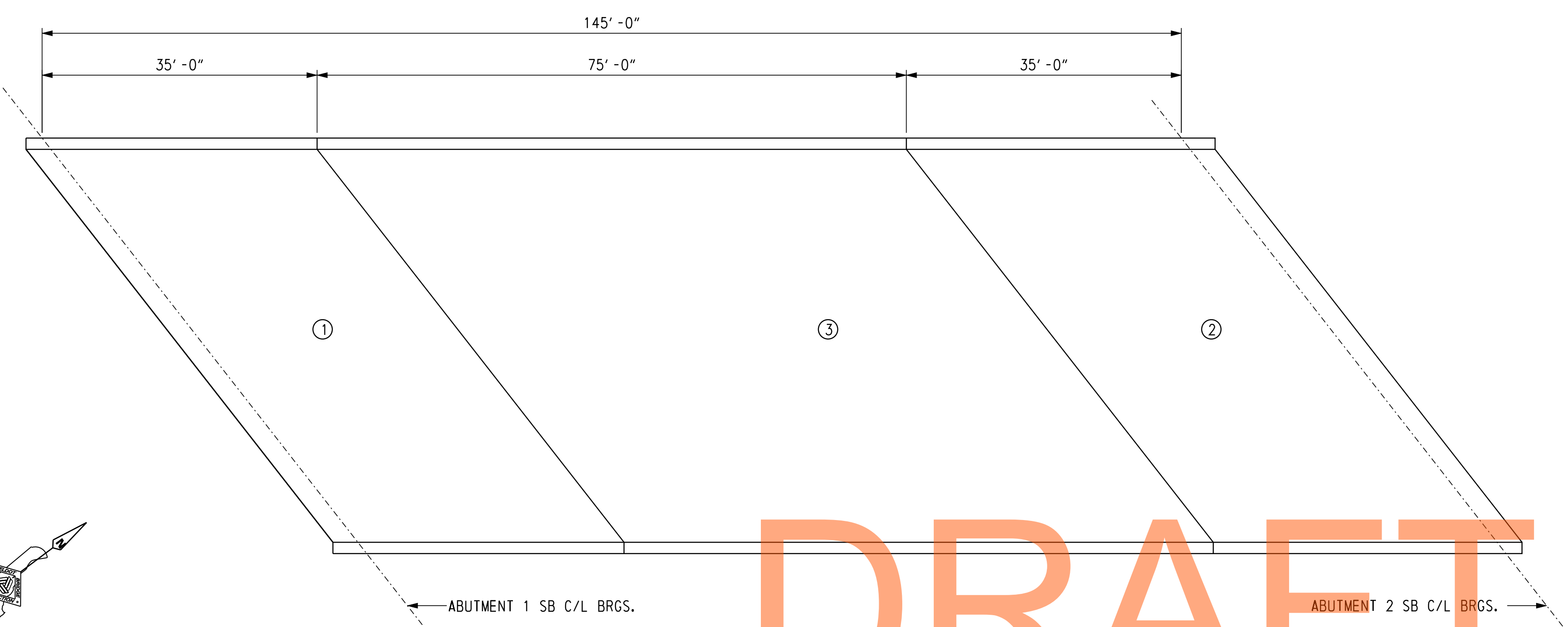
ADDENDUMS / REVISIONS

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

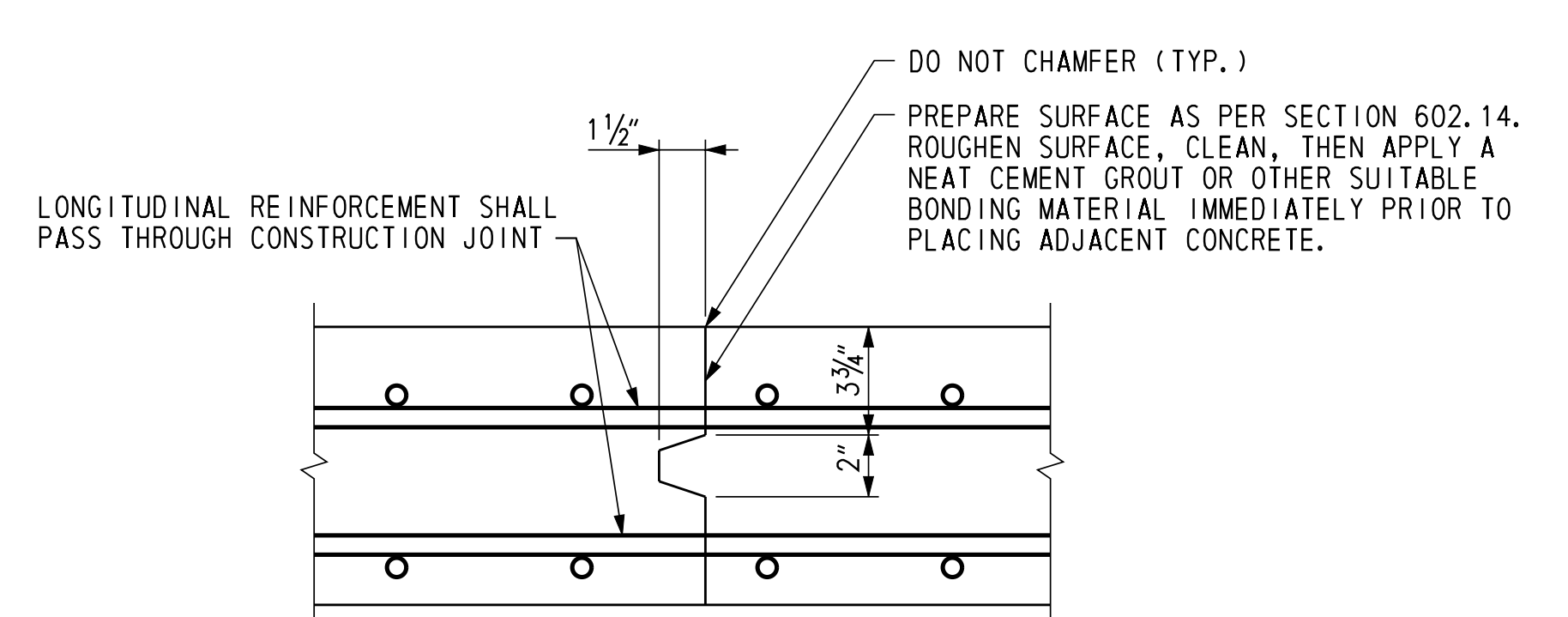
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI/W. A. O'CONNOR
NEW CASTLE		

US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
GIRDER AND DIAPHRAGMS
REINFORCING BAR LIST

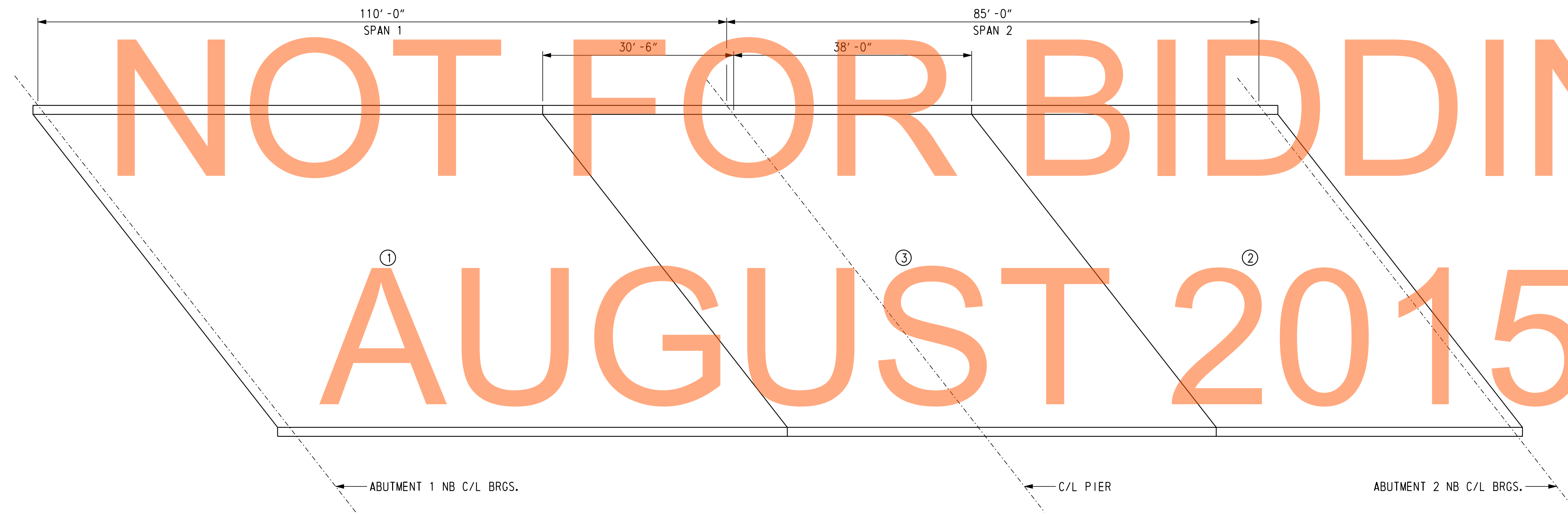
1-477 BM-9
SHEET NO.
501
TOTAL SHTS.
1256



BRIDGE DECK POURING SEQUENCE SOUTHBOUND ROADWAY
SCALE: 3/8" = 1'-0"



BRIDGE DECK CONSTRUCTION JOINT
NOT TO SCALE



BRIDGE DECK POURING SEQUENCE NORTHBOUND ROADWAY
SCALE: 3/8" = 1'-0"

PLACEMENT SEQUENCE:

1. CAST INTERMEDIATE AND END DIAPHRAGMS AT ABUTMENTS.
2. CAST POSITIVE MOMENT REGIONS ADJACENT TO ABUTMENTS IN THE NUMBER ORDER INDICATED ON THE PLAN.
3. CAST CONTINUITY DIAPHRAGMS AT PIER.
4. CAST NEGATIVE MOMENT REGION.

NOTES:

1. THE POURING SEQUENCE FOR THE BRIDGE DECK SLAB SHALL BE MADE IN THE NUMBERED ORDER INDICATED. THERE MUST BE AT LEAST FORTY (40) HOURS BETWEEN THE COMPLETION OF ONE NUMBERED POUR AND THE START OF THE NEXT NUMBERED POUR.
2. AS AN ALTERNATE, CONTRACTOR MAY UTILIZE TWO CREWS AND TWO SETS OF EQUIPMENT TO CONSTRUCT POURS NUMBER 1 AND 2 SIMULTANEOUSLY.
3. ALLOW SUFFICIENT TIME FOR DIAPHRAGMS TO REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE POURING DECK ABOVE DIAPHRAGM.

CROSS REFERENCE NOTES:

1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
2. FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.

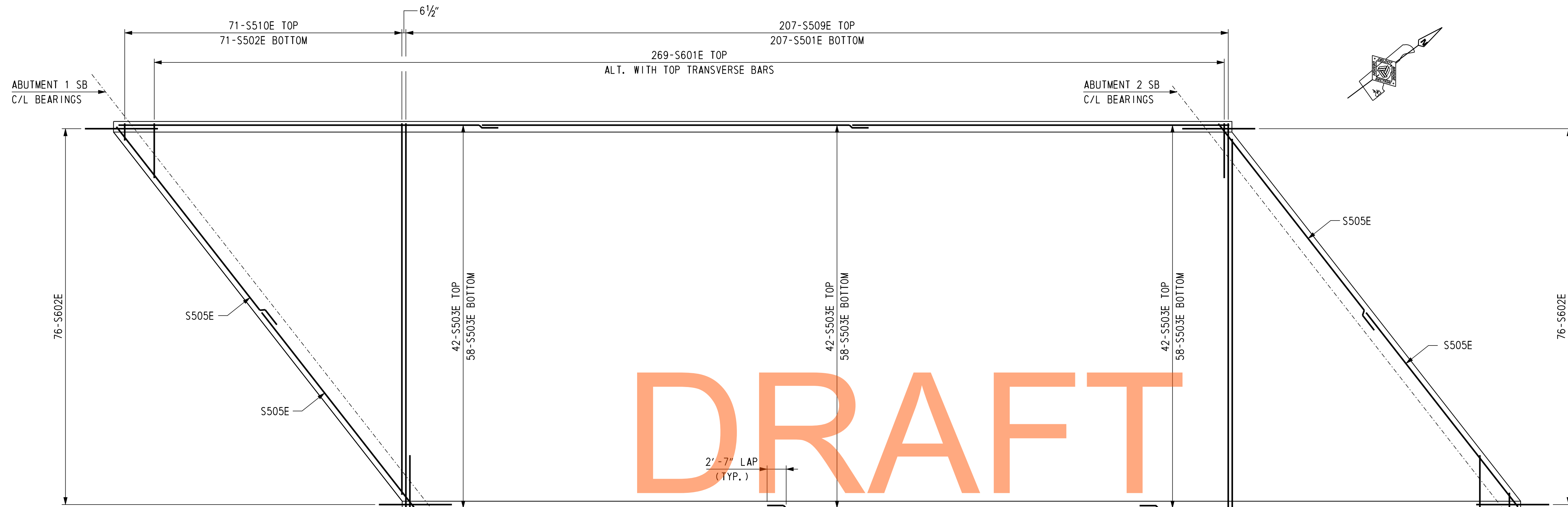
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NOT FOR BIDDING
AUGUST 2015

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11/8/2012

Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT	BRIDGE NO.	1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH BRIDGE DECK POURING SEQUENCE	SHEET NO.	502
				T200511303	DESIGNED BY:	R. F. KIRCHNER		TOTAL SHTS.	1256
				NEW CASTLE	CHECKED BY:	G.P. MISTRY			

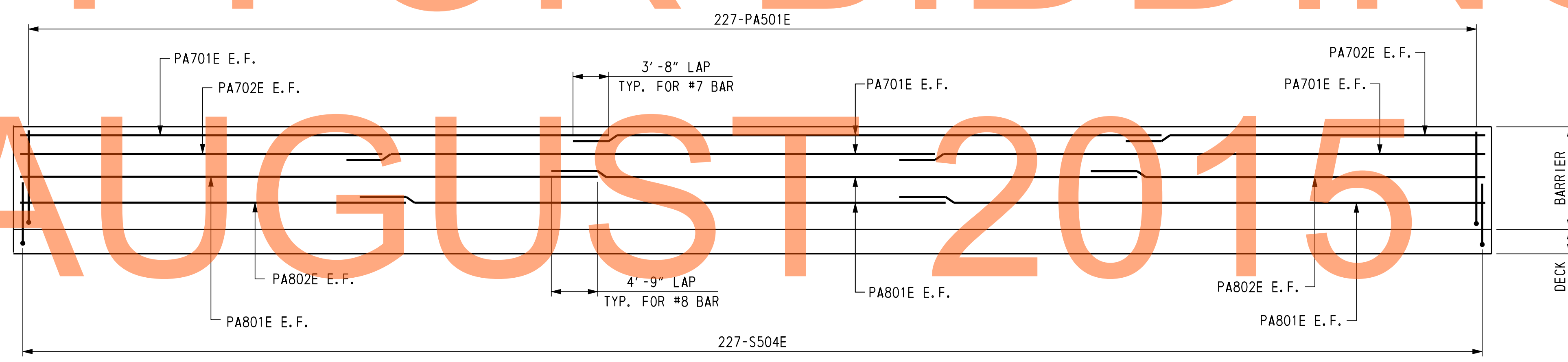


DRAFT

NOT FOR BIDDING

AUGUST 2015

PLAN - SOUTHBOUND ROADWAY DECK REINFORCEMENT
SCALE: 1/8" = 1' - 0"



ELEVATION - SOUTHBOUND ROADWAY DECK AND BARRIER REINFORCEMENT
NOT TO SCALE

- CROSS REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 DK-3.
 3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.

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11/8/2012

Steve_Lambert

DELAWARE
DEPARTMENT OF TRANSPORTATION

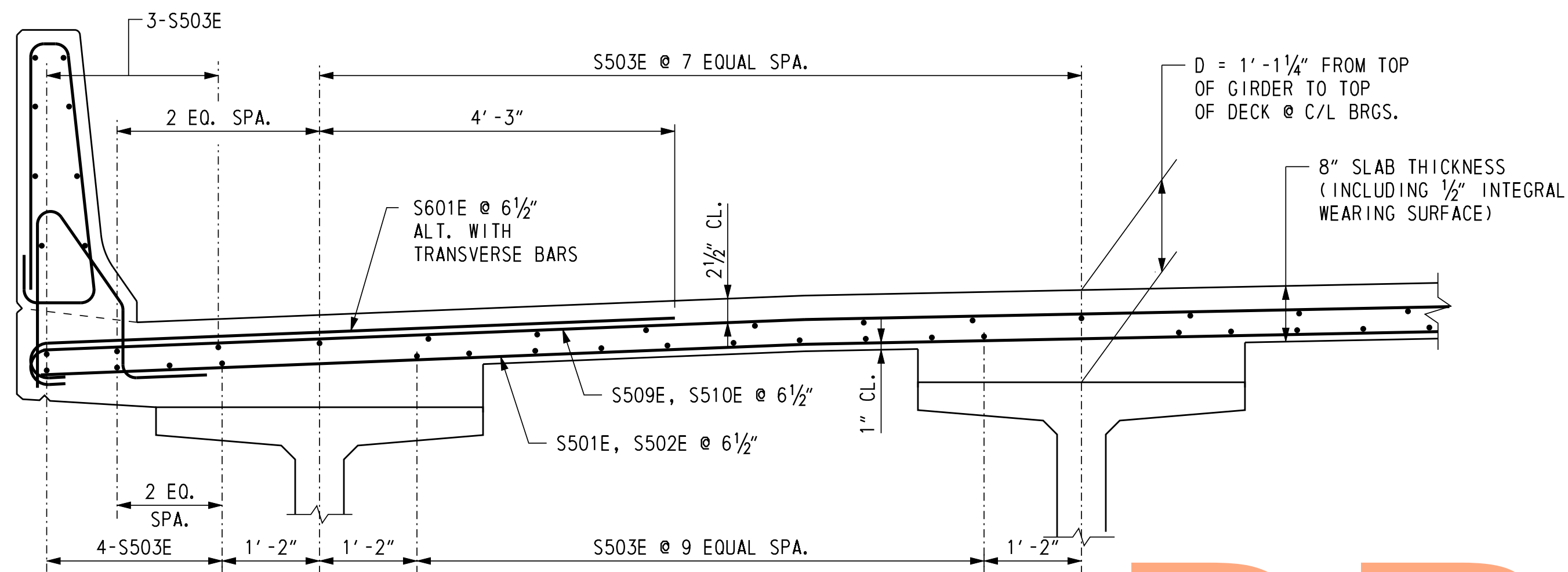
ADDENDUMS / REVISIONS	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

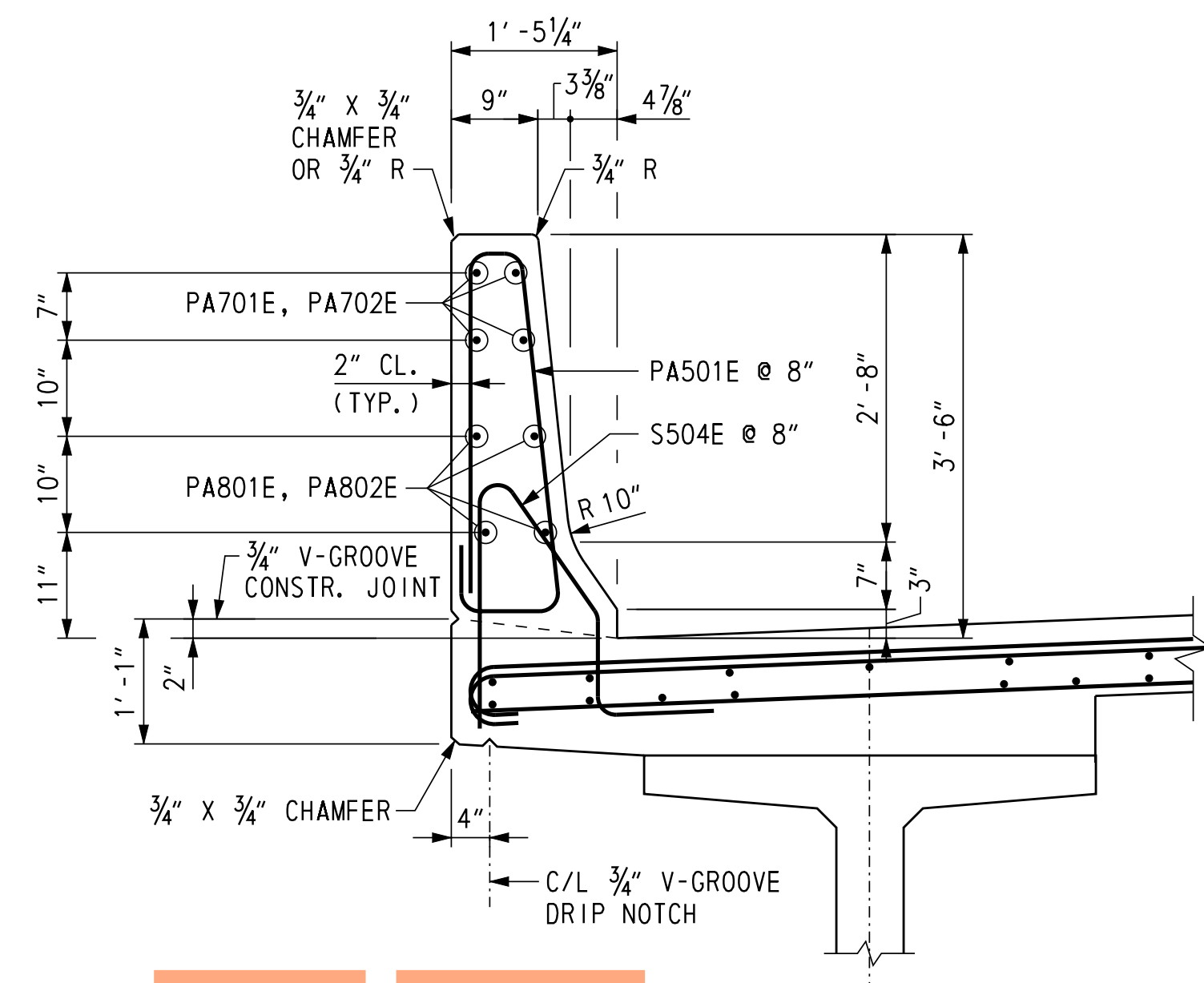
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
BRIDGE DECK AND BARRIER
REINFORCEMENT 1

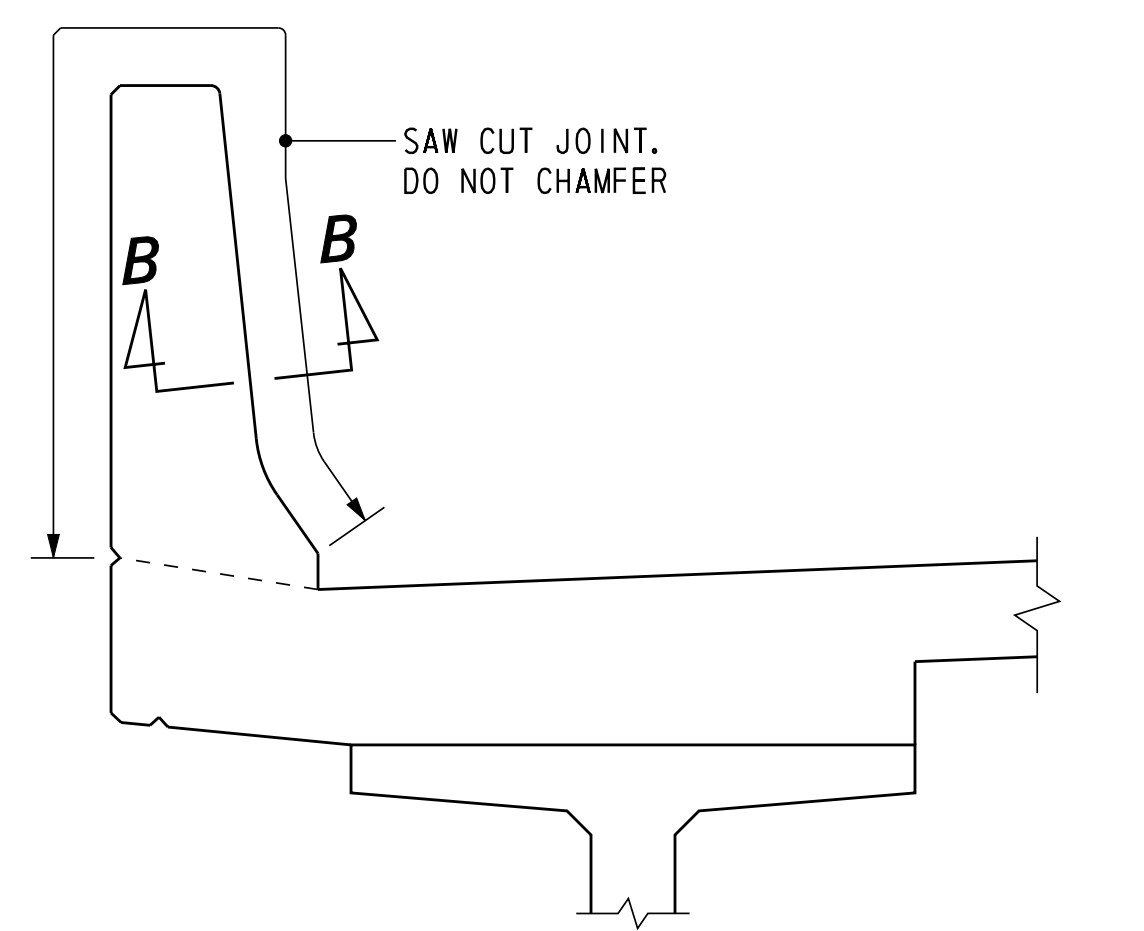
1-477 DK-2
SHEET NO.
503
TOTAL SHTS.
1256



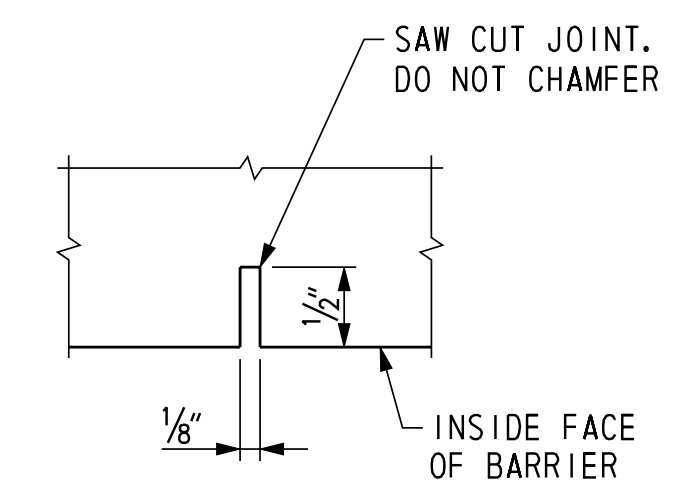
TYPICAL SOUTHBOUND ROADWAY DECK REINFORCEMENT SECTION
SCALE: 3/4" = 1'-0"



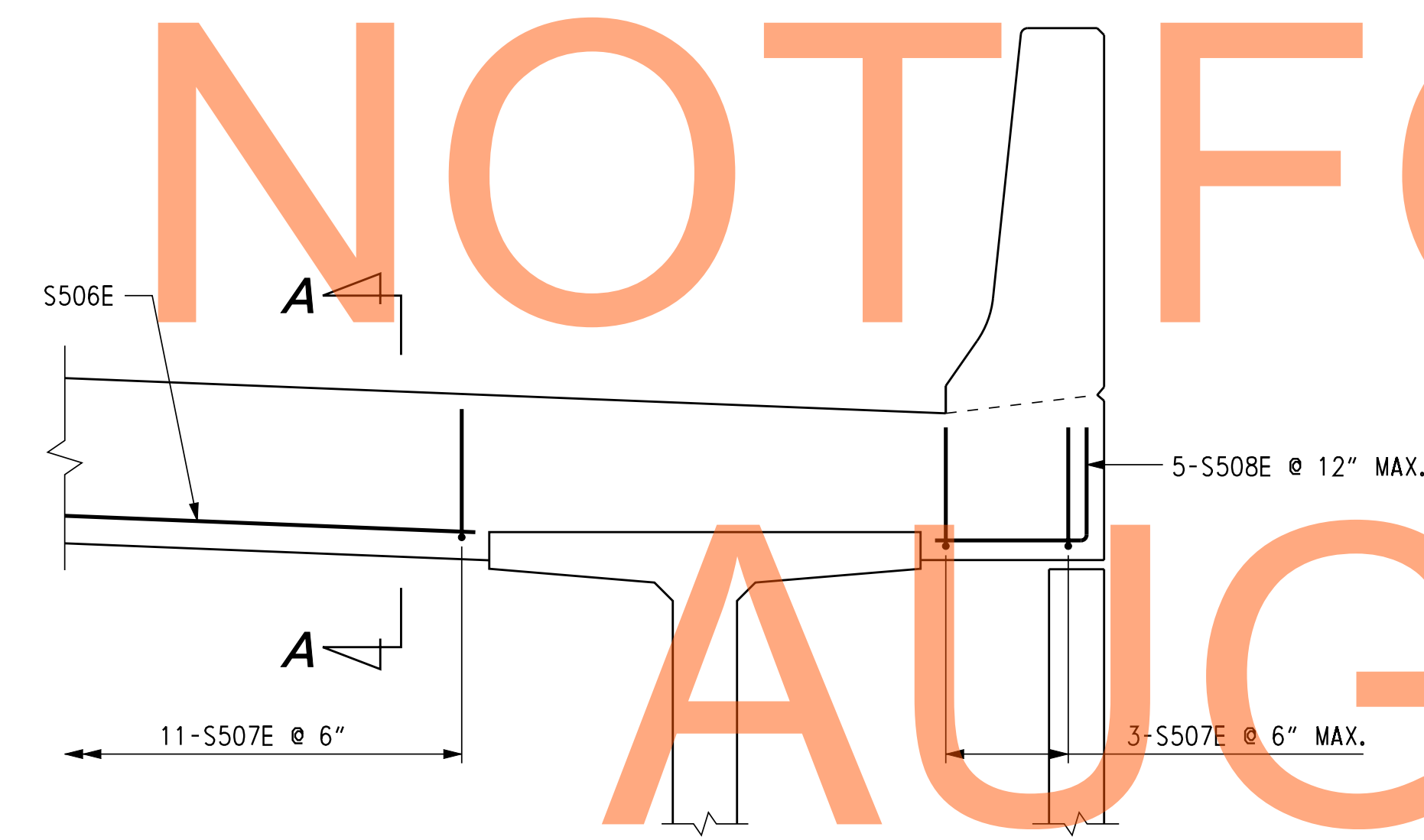
TYPICAL SOUTHBOUND ROADWAY BARRIER REINFORCEMENT SECTION
SCALE: 3/4" = 1'-0"



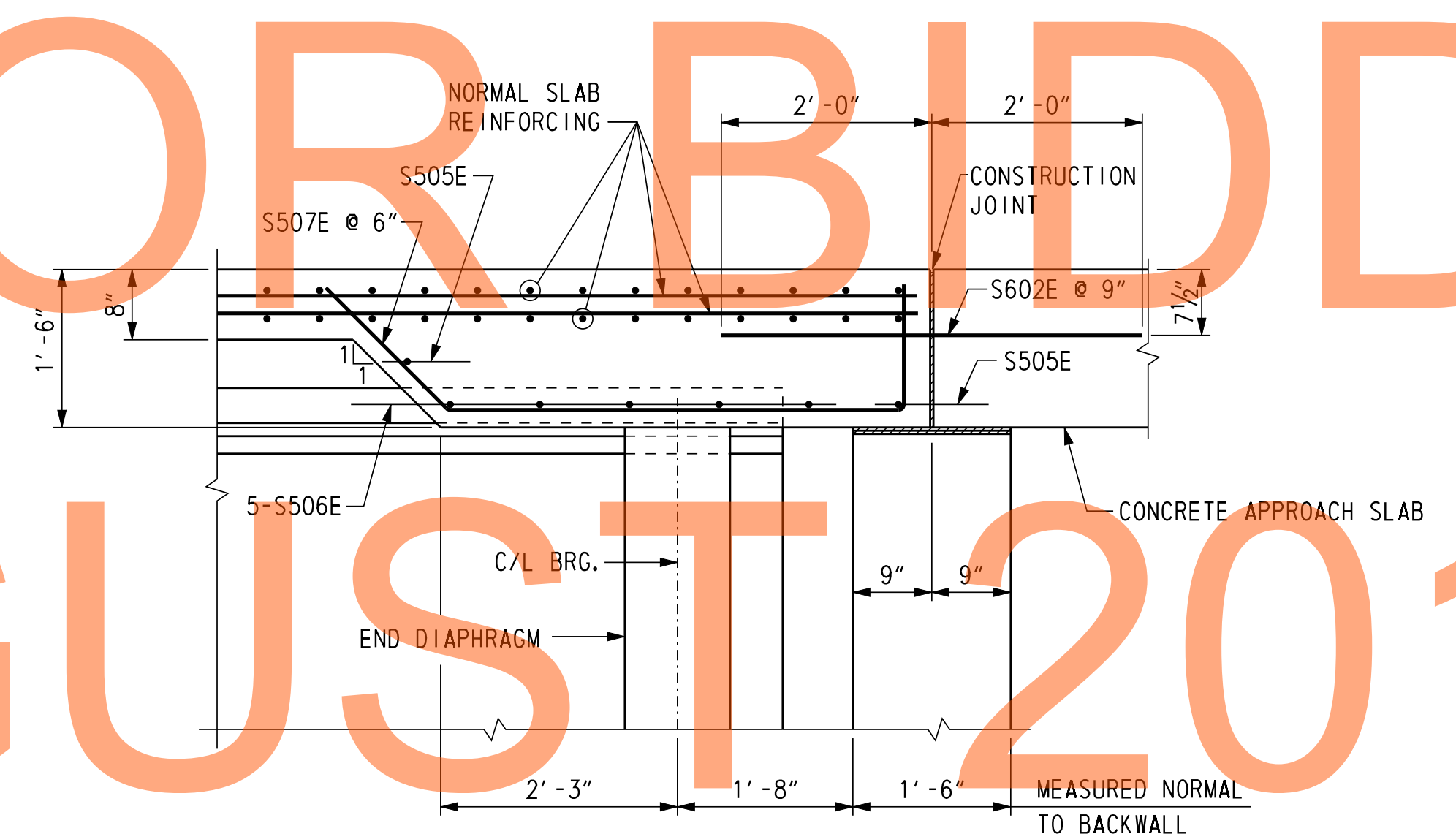
BARRIER CONTROL JOINT DETAIL
SCALE: 3/4" = 1'-0"



SECTION B-B
NOT TO SCALE



TYPICAL SOUTHBOUND ROADWAY CONCRETE END HAUNCH SECTION
SCALE: 3/4" = 1'-0"



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

- NOTES:
1. LONGITUDINAL SLAB REINFORCEMENT IS SET TO PASS THROUGH TRANSVERSE BARRIER BARS AS SHOWN.
 2. ALL LONGITUDINAL BARRIER BARS SHALL BE PLACED CONTINUOUSLY IN BARRIER, LAPPING AS NECESSARY. BARRIER IS PLACED CONTINUOUSLY.
 3. FRONT FACE OF BARRIER DIMENSIONED FROM PLUMB LINE.
 4. SAW CUT CONTROL JOINTS THE SAME DAY THAT THE FORMS ARE STRIPPED.
 5. CONCRETE END HAUNCH REINFORCEMENT IS PLACED PARALLEL TO SKEWED SUPPORTS AND PARALLEL TO LONGITUDINAL SLAB REINFORCEMENT.

- CROSS REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR DECK REINFORCEMENT PLAN, SEE DWG. 1-477 DK-2.
 3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.
 4. FOR LOCATION OF CONDUITS IN BARRIER, SEE DWG. 1-477 TS-1.

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11/8/2012

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ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

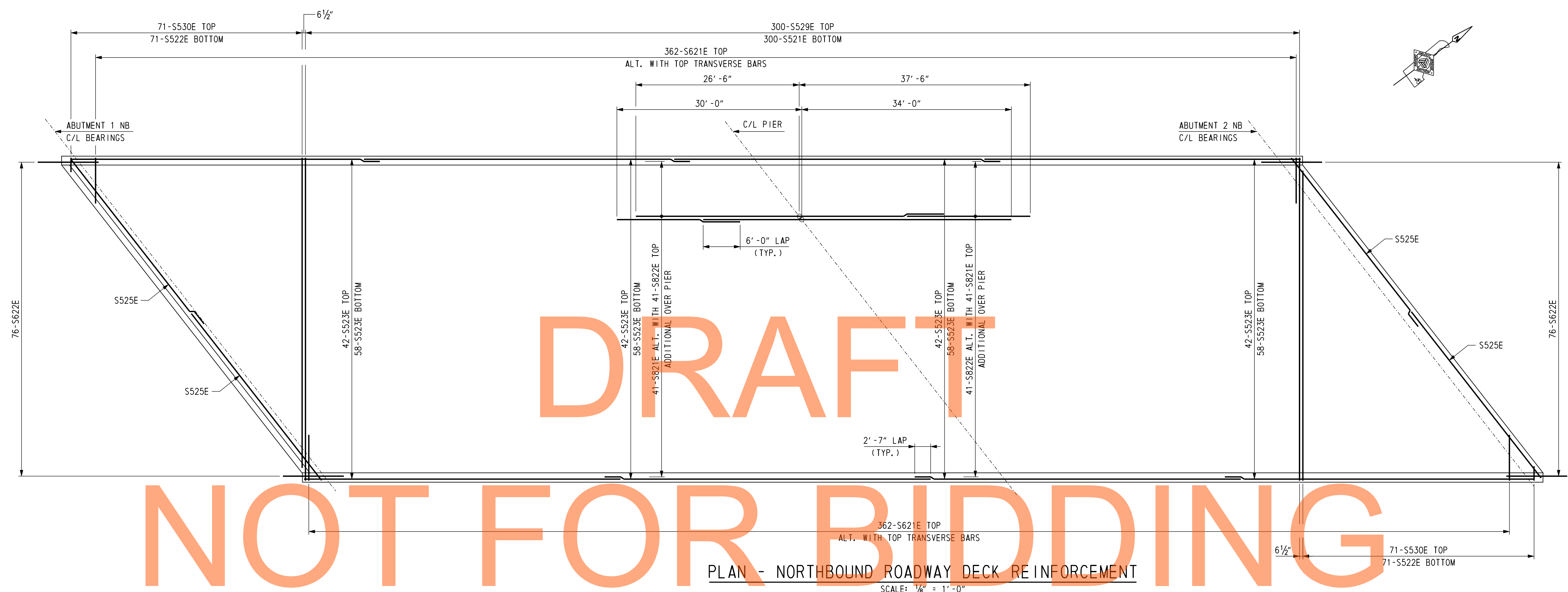
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
BRIDGE DECK AND
BARRIER REINFORCEMENT 2**

1-477 DK-3
SHEET NO.
504
TOTAL SHTS.
1256

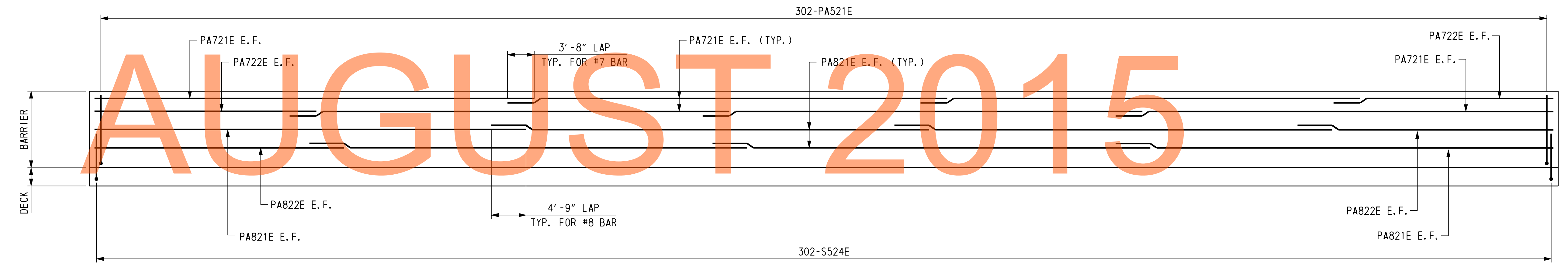
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11/8/2012

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PLAN - NORTHBOUND ROADWAY DECK REINFORCEMENT
SCALE: 1/8" = 1'-0"



ELEVATION - NORTHBOUND ROADWAY DECK AND BARRIER REINFORCEMENT
NOT TO SCALE

- CROSS REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
 2. FOR TYPICAL SECTION, SEE DWG. 1-477 DK-5.
 3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.



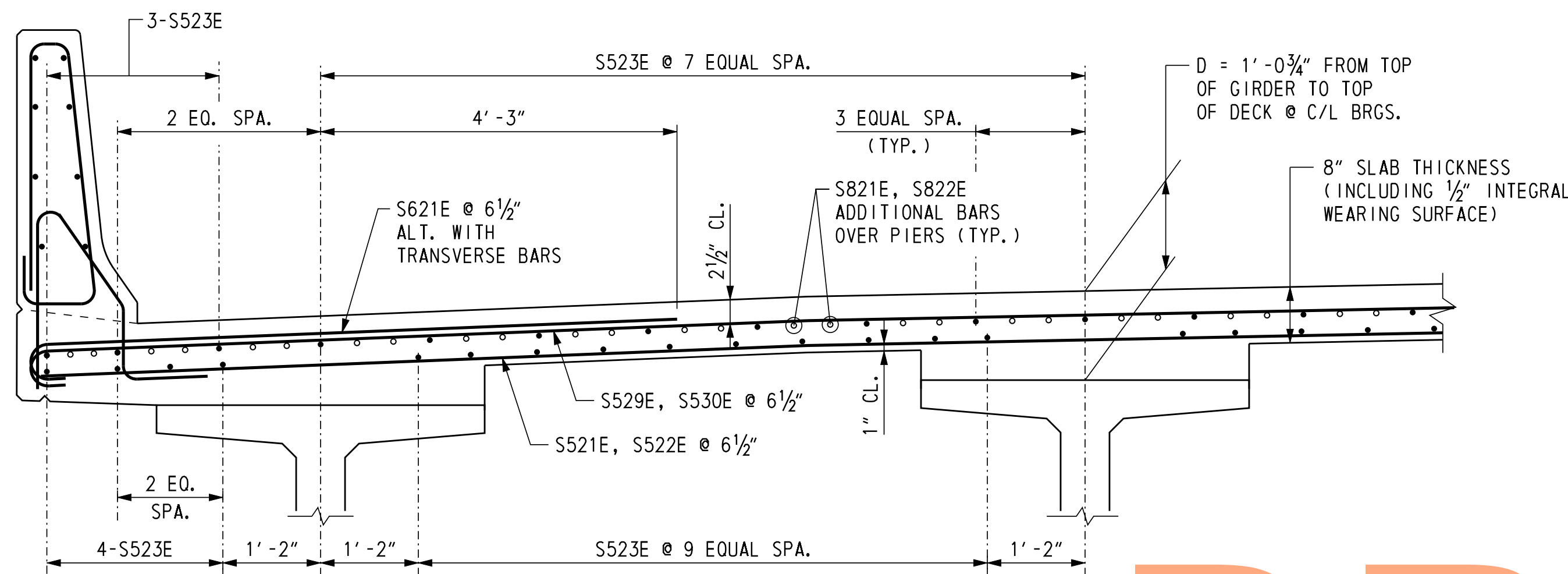
ADDENDUMS / REVISIONS	

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

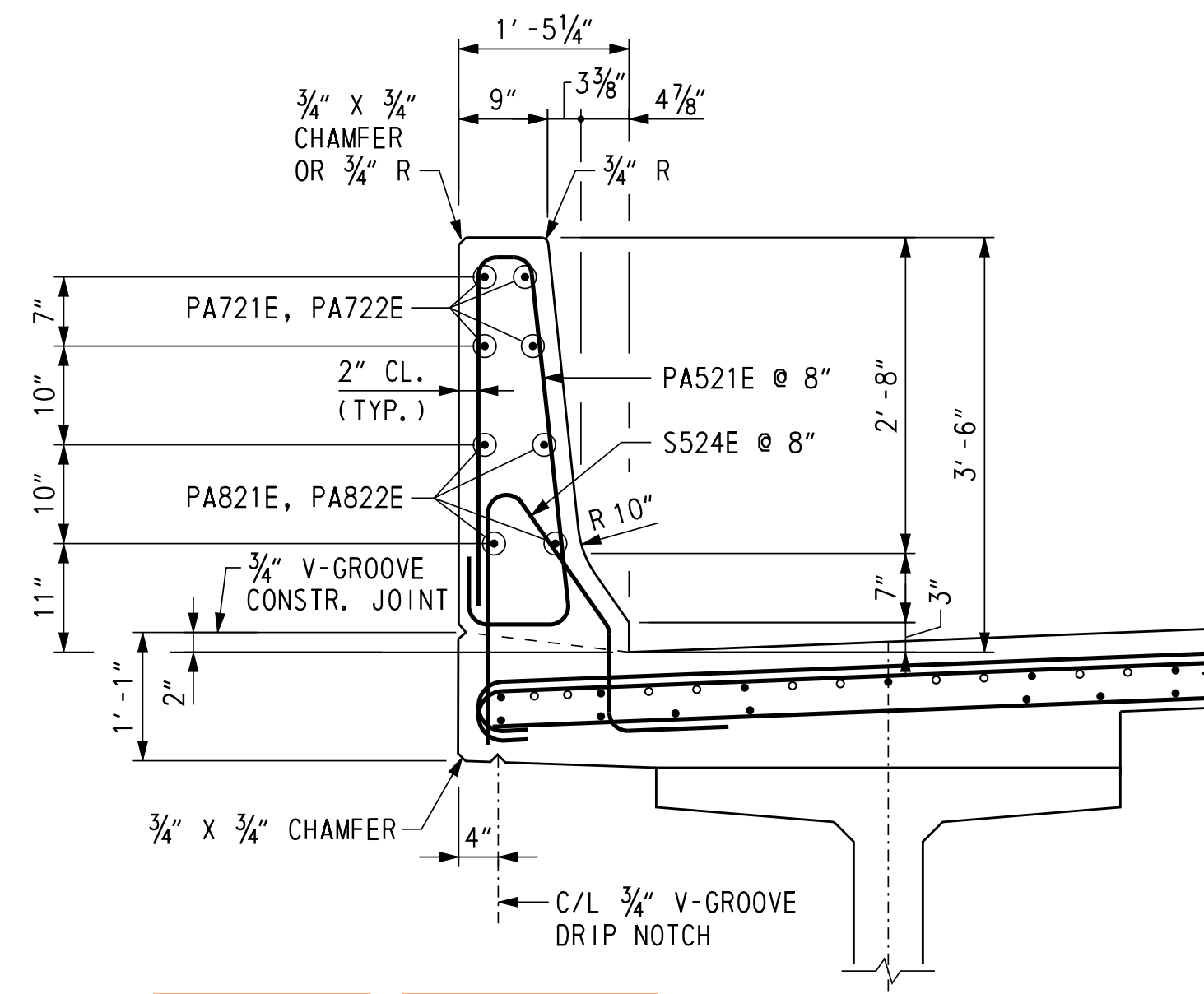
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
BRIDGE DECK AND BARRIER
REINFORCEMENT 3**

1-477 DK-4
SHEET NO.
505
TOTAL SHTS.
1256



TYPICAL NORTHBOUND ROADWAY DECK REINFORCEMENT SECTION

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



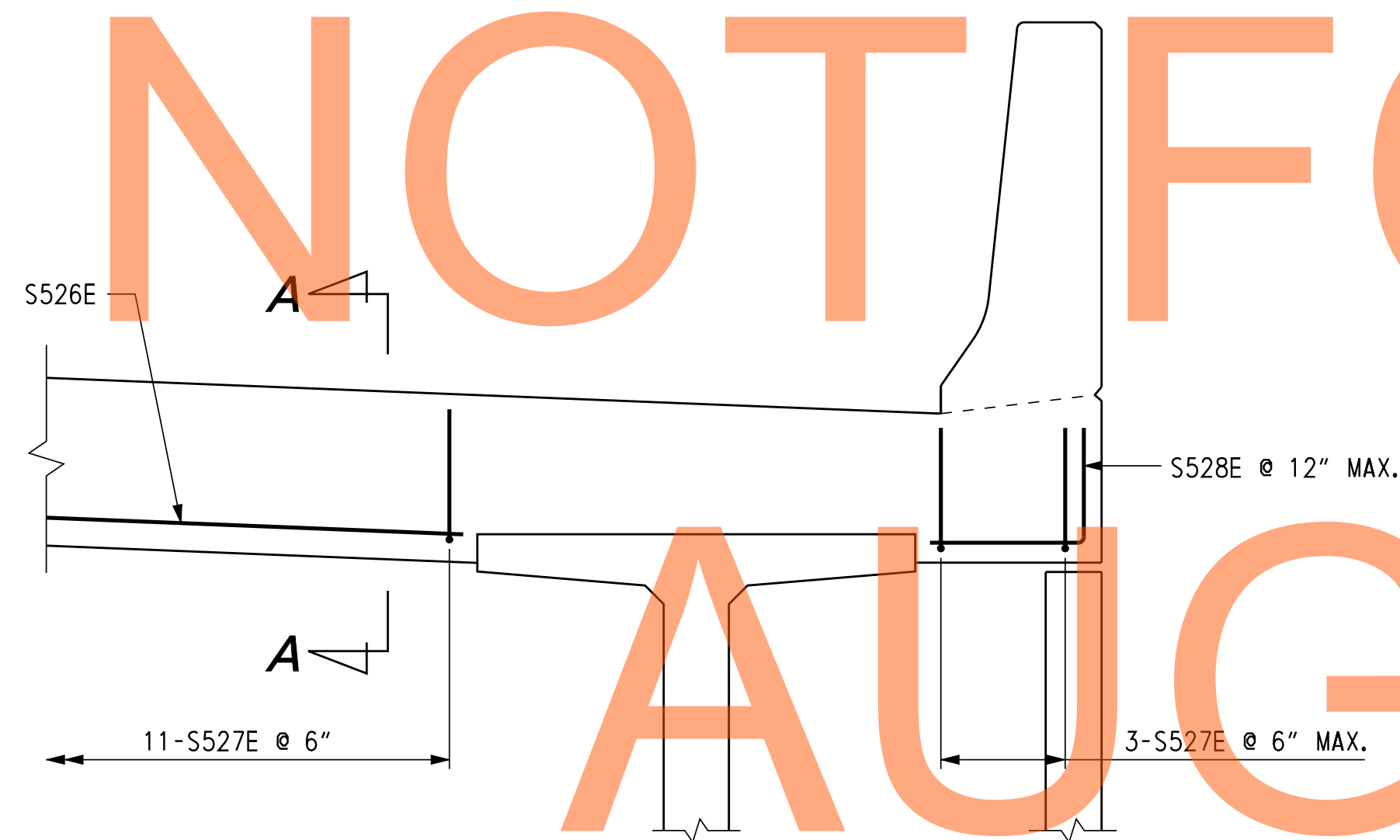
TYPICAL NORTHBOUND ROADWAY BARRIER REINFORCEMENT SECTION

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

DRAFT

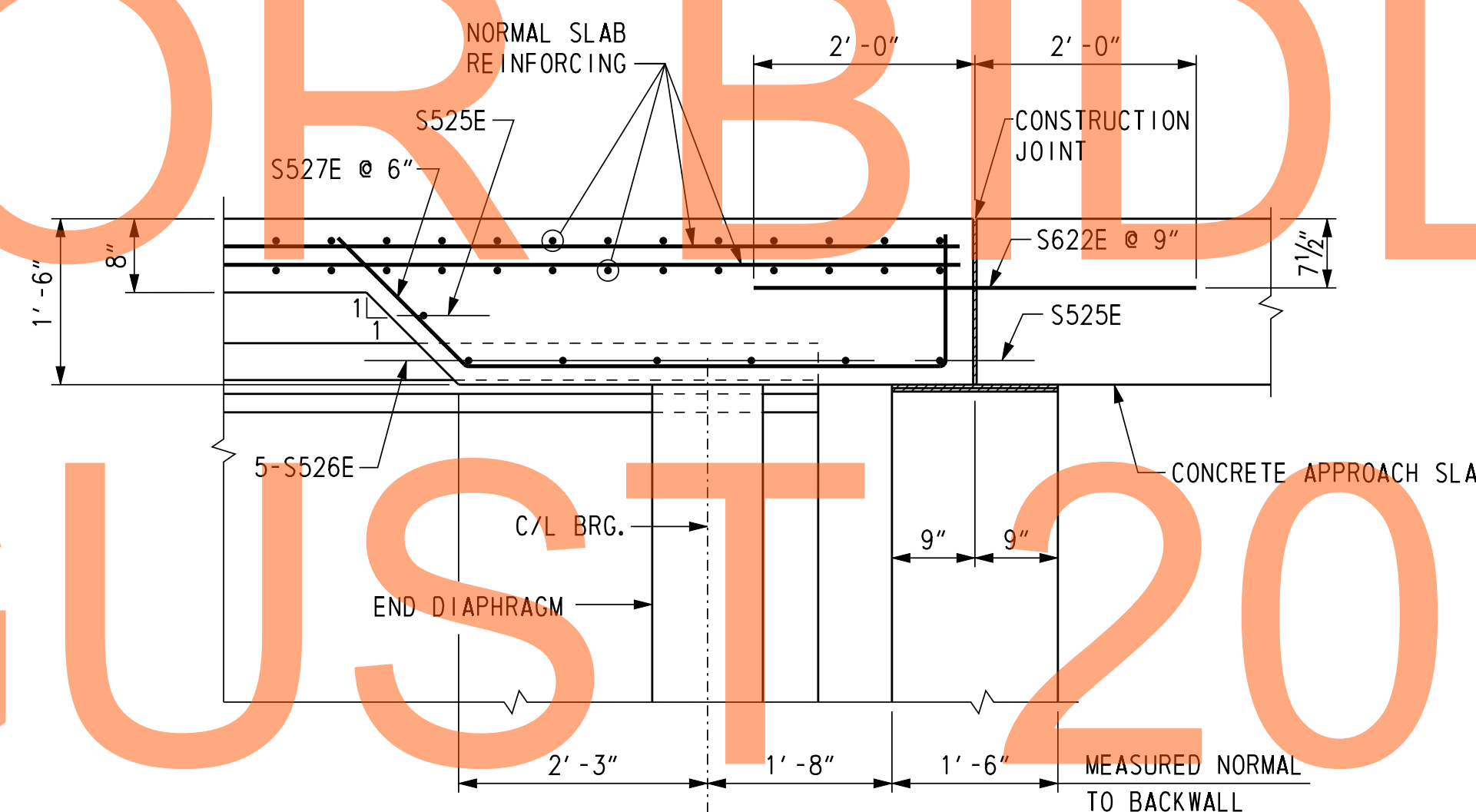
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TYPICAL NORTHBOUND ROADWAY CONCRETE END HAUNCH SECTION

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



SECTION A-A

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

NOTES:

1. LONGITUDINAL SLAB REINFORCEMENT IS SET TO PASS THROUGH TRANSVERSE BARRIER BARS AS SHOWN.
2. ALL LONGITUDINAL BARRIER BARS SHALL BE PLACED CONTINUOUSLY IN BARRIER, LAPPING AS NECESSARY. BARRIER IS PLACED CONTINUOUSLY.
3. FRONT FACE OF BARRIER DIMENSIONED FROM PLUMB LINE.
4. SAW CUT CONTROL JOINTS THE SAME DAY THAT THE FORMS ARE STRIPPED.
5. CONCRETE END HAUNCH REINFORCEMENT IS PLACED PARALLEL TO SKEWED SUPPORTS AND PARALLEL TO LONGITUDINAL SLAB REINFORCEMENT.

CROSS REFERENCE NOTES:

1. FOR GENERAL NOTES, SEE DWG. 1-477 PN-2.
2. FOR DECK REINFORCEMENT PLAN, SEE DWG. 1-477 DK-4.
3. FOR BARRIER CONTROL JOINT DETAIL, SEE DWG. 1-477 DK-3.
4. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.
5. FOR LOCATION OF CONDUITS IN BARRIER, SEE DWG. 1-477 TS-1.

REINFORCING BAR LIST

SOUTHBOUND ROADWAY BRIDGE DECK AND BARRIER

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
S501E	52'-6"	207	STR.										
S502E	2'-8" TO 50'-10"	142	STR.										Δ=8¼", 2 SETS OF 71 BARS
S503E	52'-0"	300	STR.										
S504E	5'-0½"	454	43	1'-1"	0'-8¾"	0'-10"	1'-6⅞"	0'-1"	0'-7⅝"	0'-7"	0'-3"	0'-10"	
S505E	34'-8"	16	STR.										
S506E	6'-3"	50	STR.										
S507E	8'-6"	122	16		1'-2"	5'-6"	1'-10"			1'-2"		1'-5½"	
S508E	2'-10"	20	17		1'-2"	1'-8"							
S509E	53'-8"	207	1	0'-7"	52'-6"				0'-7"		0'-5"		
S510E	3'-3" TO 51'-5"	142	1	0'-7"	2'-8" TO 50'-10"						0'-5"		Δ=8½", 2 SETS OF 71 BARS
S601E	8'-5"	538	1	0'-8"	7'-9"						0'-6"		
S602E	4'-0"	152	STR.										
PA501E	7'-6¼"	454	28	2'-9¼"	0'-2¼"	0'-1⅝"	0'-2¾"	2'-9½"	0'-3⅞"	0'-5⅞"			
PA701E	60'-0"	16	STR.										
PA702E	38'-2"	8	STR.										
PA801E	60'-0"	16	STR.										
PA802E	40'-4"	8	STR.										

NORTHBOUND ROADWAY BRIDGE DECK AND BARRIER

MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	G	H	J	K	REMARKS
S521E	52'-6"	300	STR.										
S522E	2'-8" TO 50'-10"	142	STR.										Δ=8¼", 2 SETS OF 71 BARS
S523E	52'-2"	400	STR.										
S524E	5'-0½"	604	43	1'-1"	0'-8¾"	0'-10"	1'-6⅞"	0'-1"	0'-7⅝"	0'-7"	0'-3"	0'-10"	
S525E	34'-8"	16	STR.										
S526E	6'-3"	50	STR.										
S527E	8'-6"	122	16		1'-2"	5'-6"	1'-10"			1'-2"		1'-5½"	
S528E	2'-10"	20	17		1'-2"	1'-8"							
S529E	53'-8"	300	1	0'-7"	52'-6"				0'-7"		0'-5"		
S530E	3'-3" TO 51'-5"	142	1	0'-7"	2'-8" TO 50'-10"						0'-5"		Δ=8½", 2 SETS OF 71 BARS
S621E	8'-5"	724	1	0'-8"	7'-9"						0'-6"		
S622E	4'-0"	152	STR.										
S821E	50'-0"	82	STR.										
S822E	20'-0"	82	STR.										
PA521E	7'-6¼"	604	28	2'-9¼"	0'-2¼"	0'-1⅝"	0'-2¾"	2'-9½"	0'-3⅞"	0'-5⅞"			
PA721E	58'-0"	24	STR.										
PA722E	37'-10"	8	STR.										
PA821E	58'-0"	24	STR.										
PA822E	41'-1"	8	STR.										

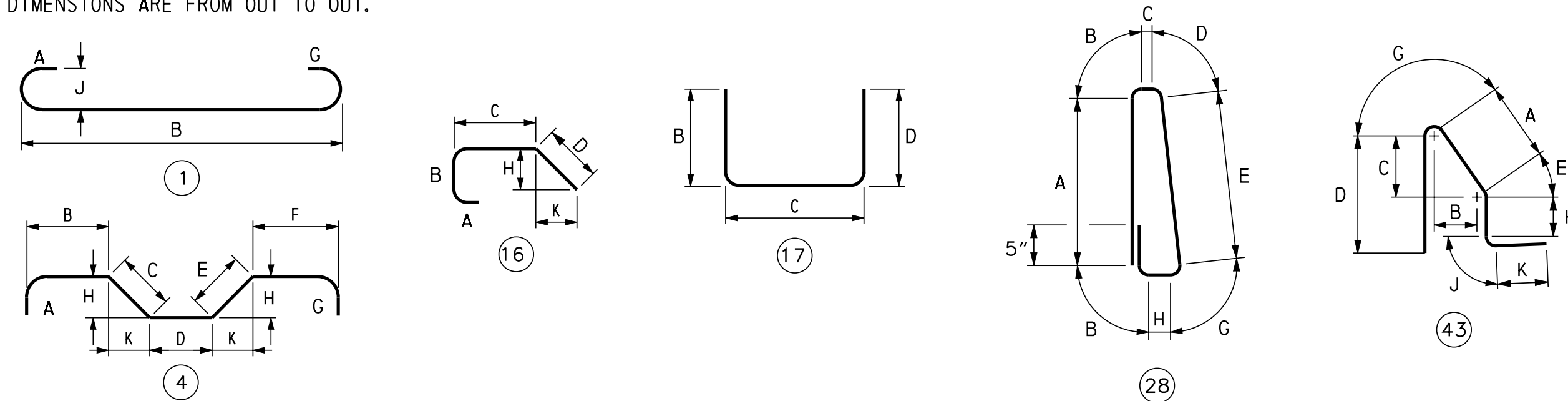
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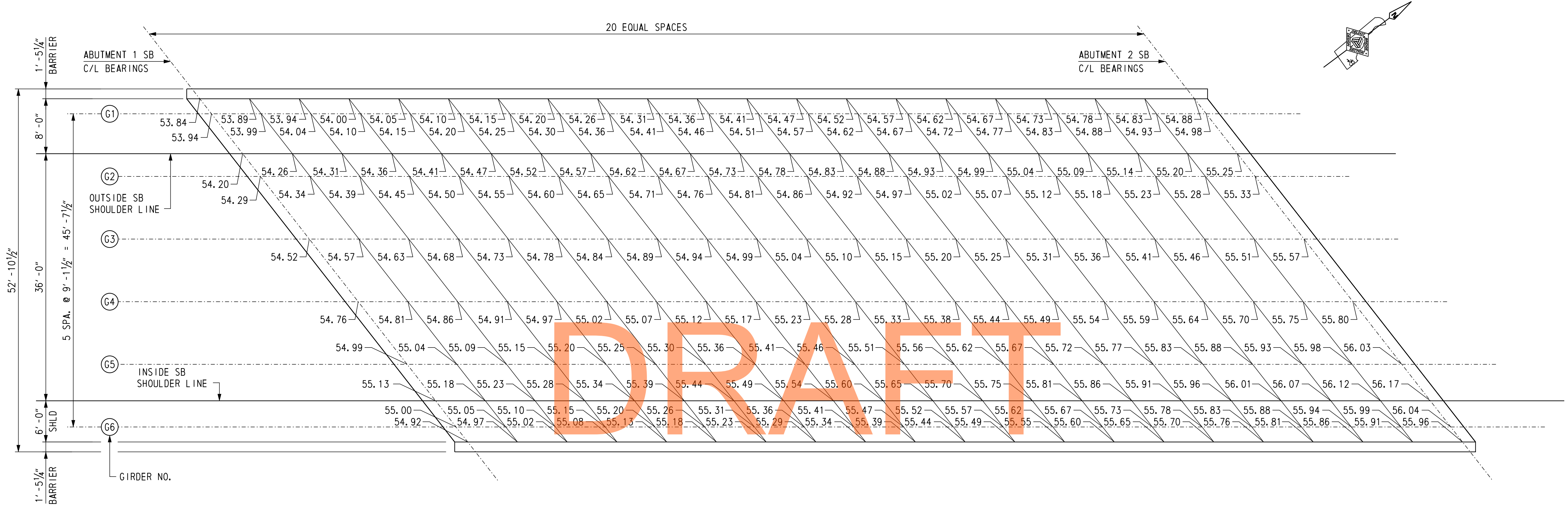
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AUGUST 2015

BENDING DIAGRAMS

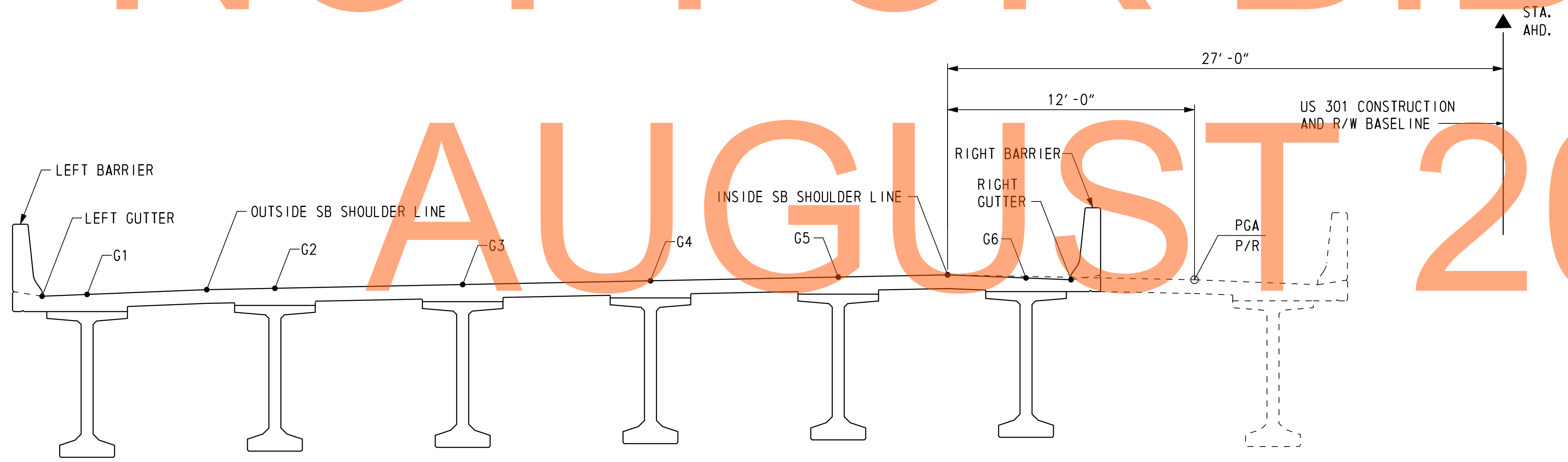
ALL DIMENSIONS ARE FROM OUT TO OUT.





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AUGUST 2015



TYPICAL SOUTHBOUND ROADWAY SECTION
(LOOKING STATION AHEAD)
SCALE: 1/4" = 1'-0"

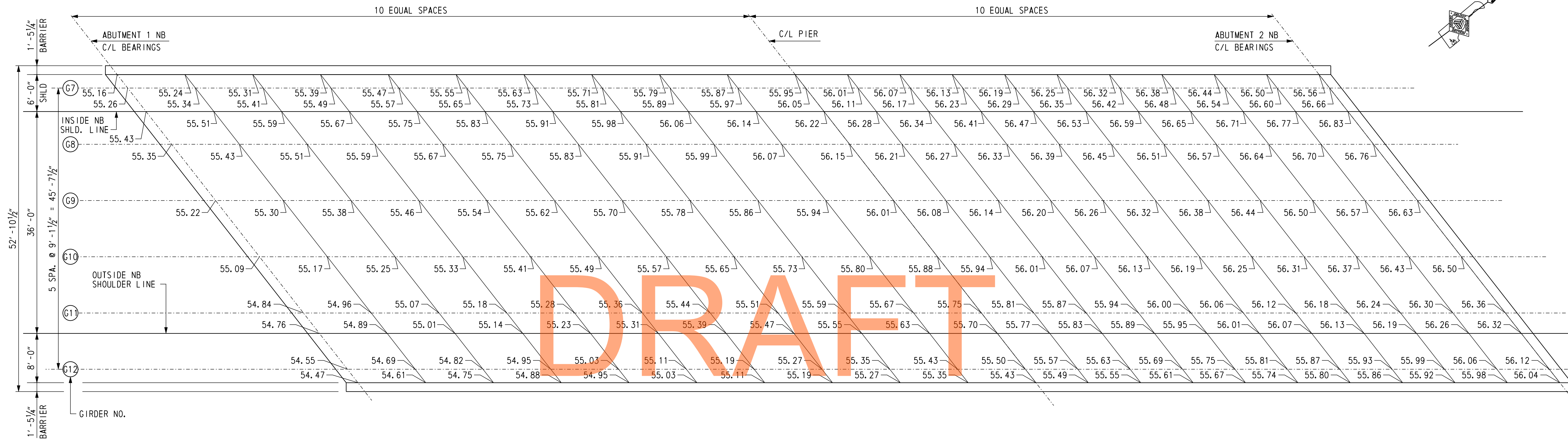
NOTE:
THE FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TO TOP OF CONCRETE DECK.

- CROSS REFERENCE NOTES:
1. FOR VERTICAL CURVE DATA, SEE DWG. 1-477 PE-1.
 2. FOR GIRDER ELEVATION, SEE DWG. 1-477 FR-1.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

1-477 FD-1
SHEET NO.
508
TOTAL SHTS.
1256

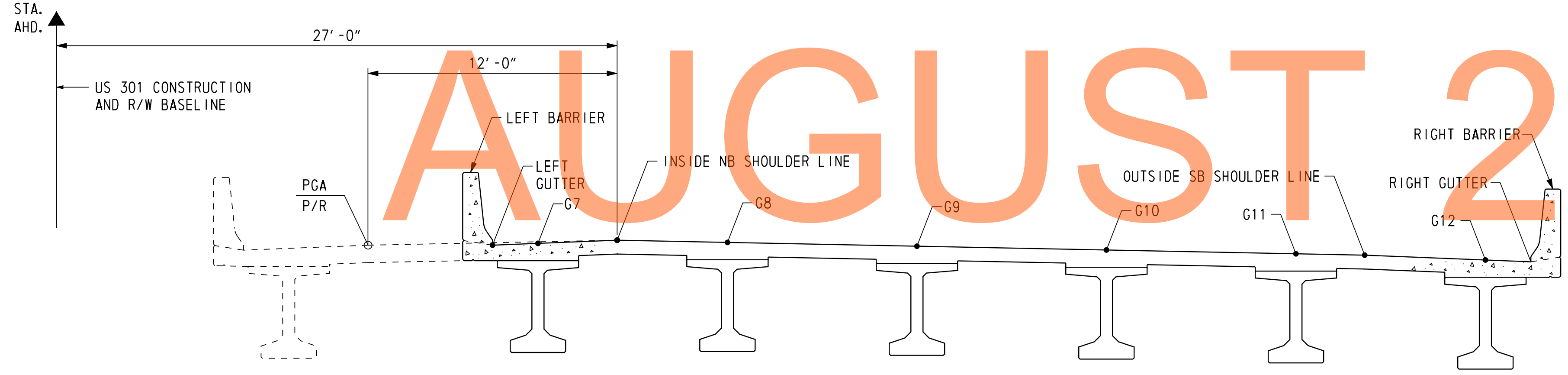


NOT FOR BIDDING

FINISHED DECK ELEVATIONS

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

AUGUST 2015



TYPICAL NORTHBOUND ROADWAY SECTION

(LOOKING STATION AHEAD)
SCALE: 3/8" = 1'-0"

NOTE:
THE FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TO TOP OF CONCRETE DECK.

- CROSS REFERENCE NOTES:
- FOR VERTICAL CURVE DATA, SEE DWG. 1-477 PE-2.
 - FOR GIRDER ELEVATION, SEE DWG. 1-477 BM-4.

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11/8/2012

Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION

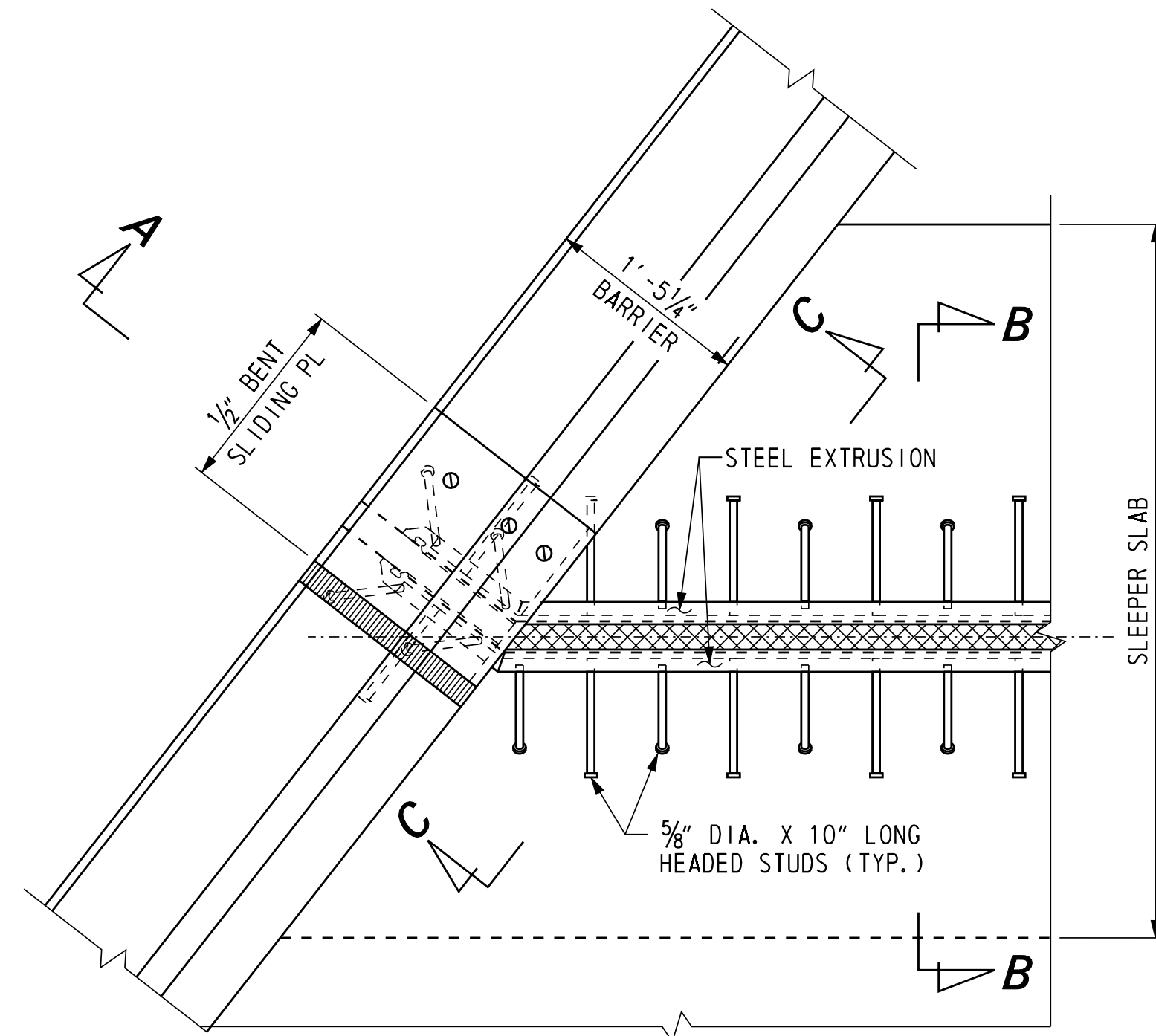
ADDENDUMS / REVISIONS

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

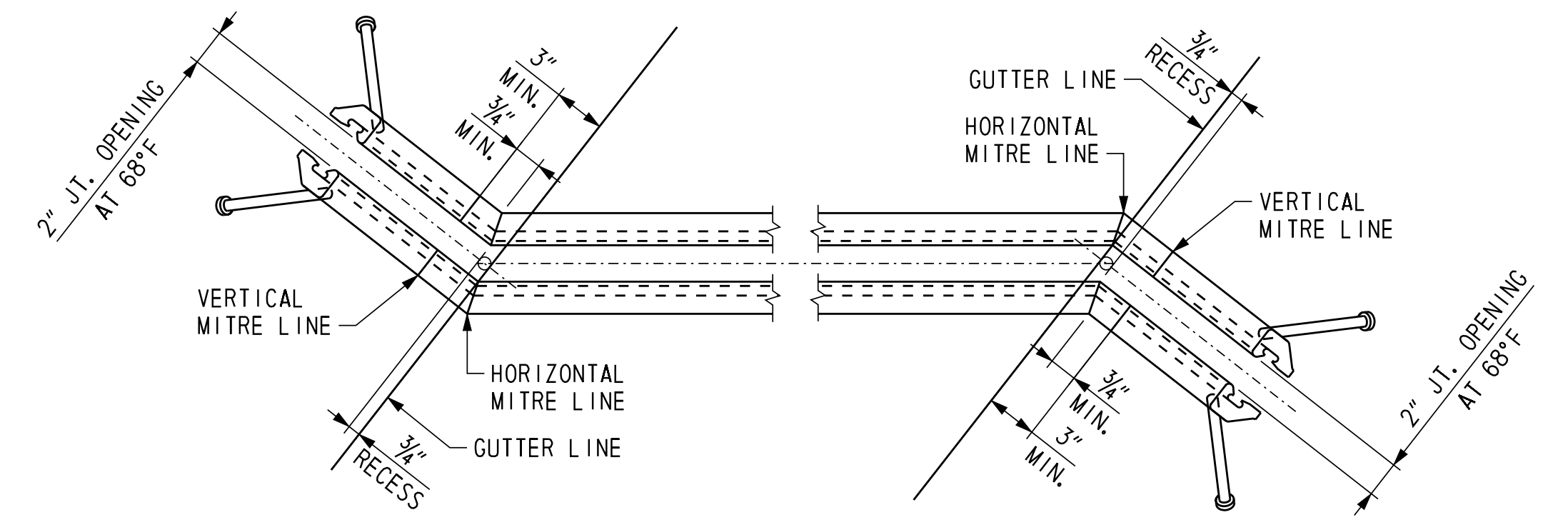
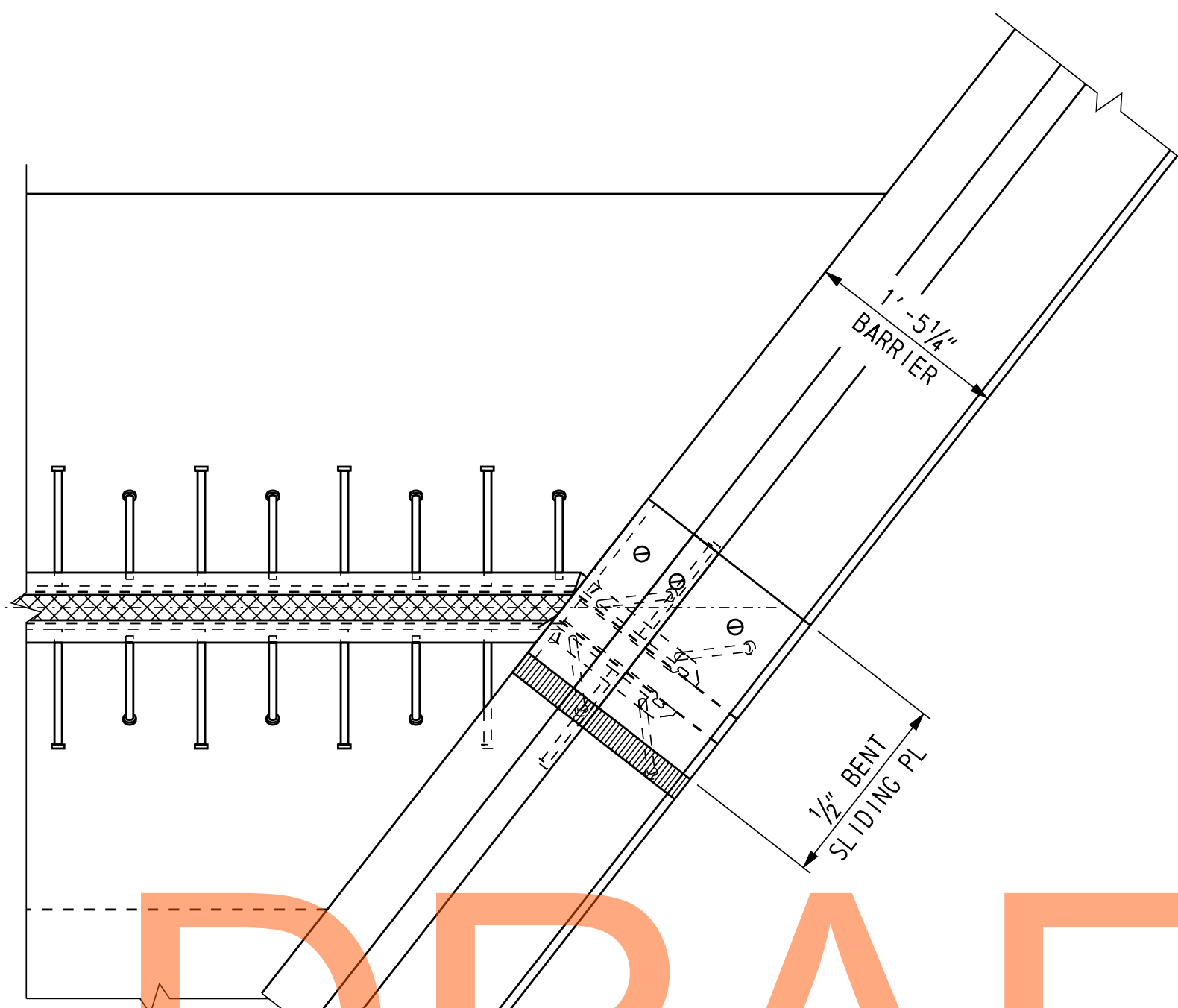
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	K. D. BEAVER
COUNTY	CHECKED BY:	J. S. LI
NEW CASTLE		

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY FINISHED DECK ELEVATIONS

1-477 FD-2
SHEET NO.
509
TOTAL SHTS.
1256

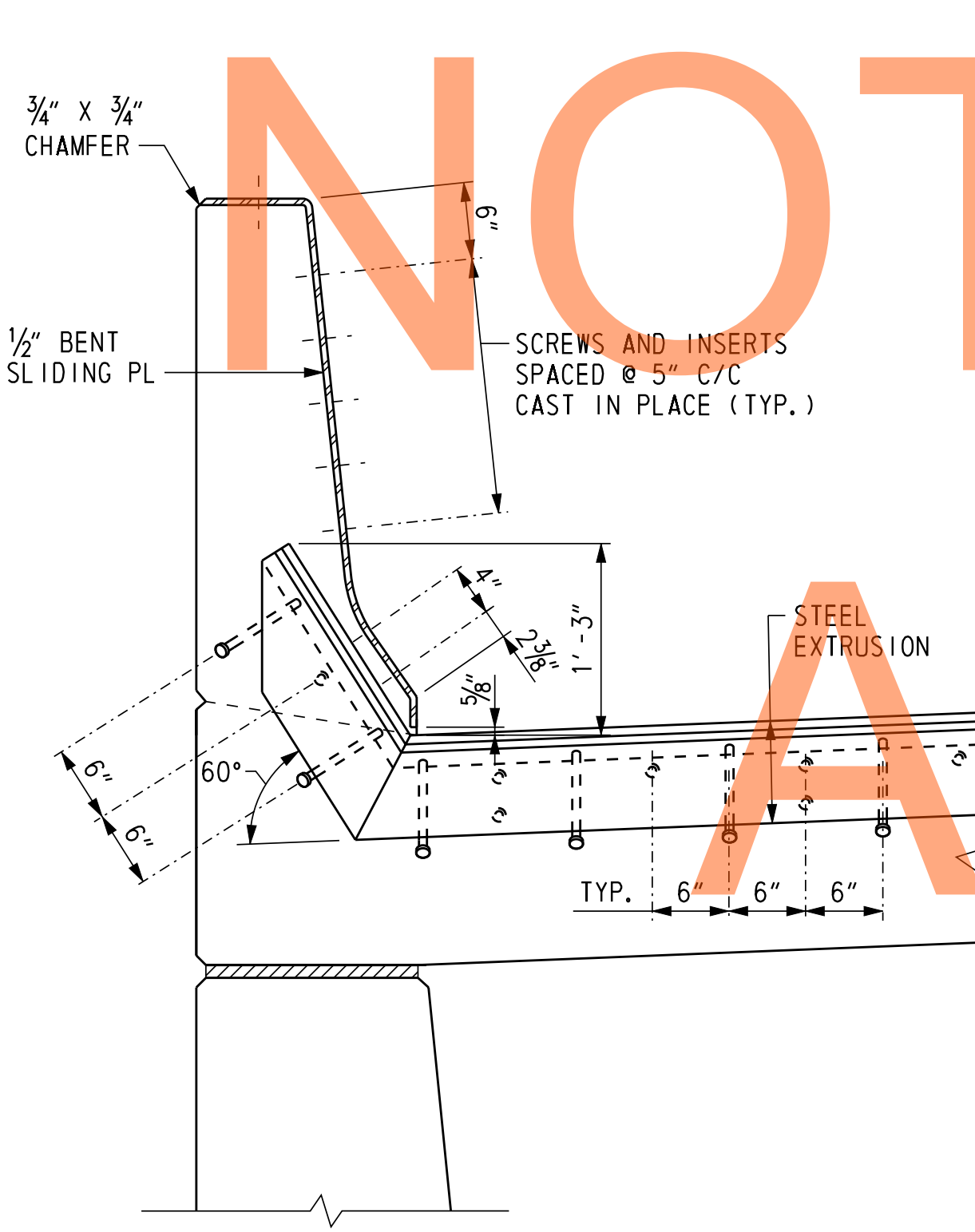


PLAN
SCALE: 1" = 1'-0"

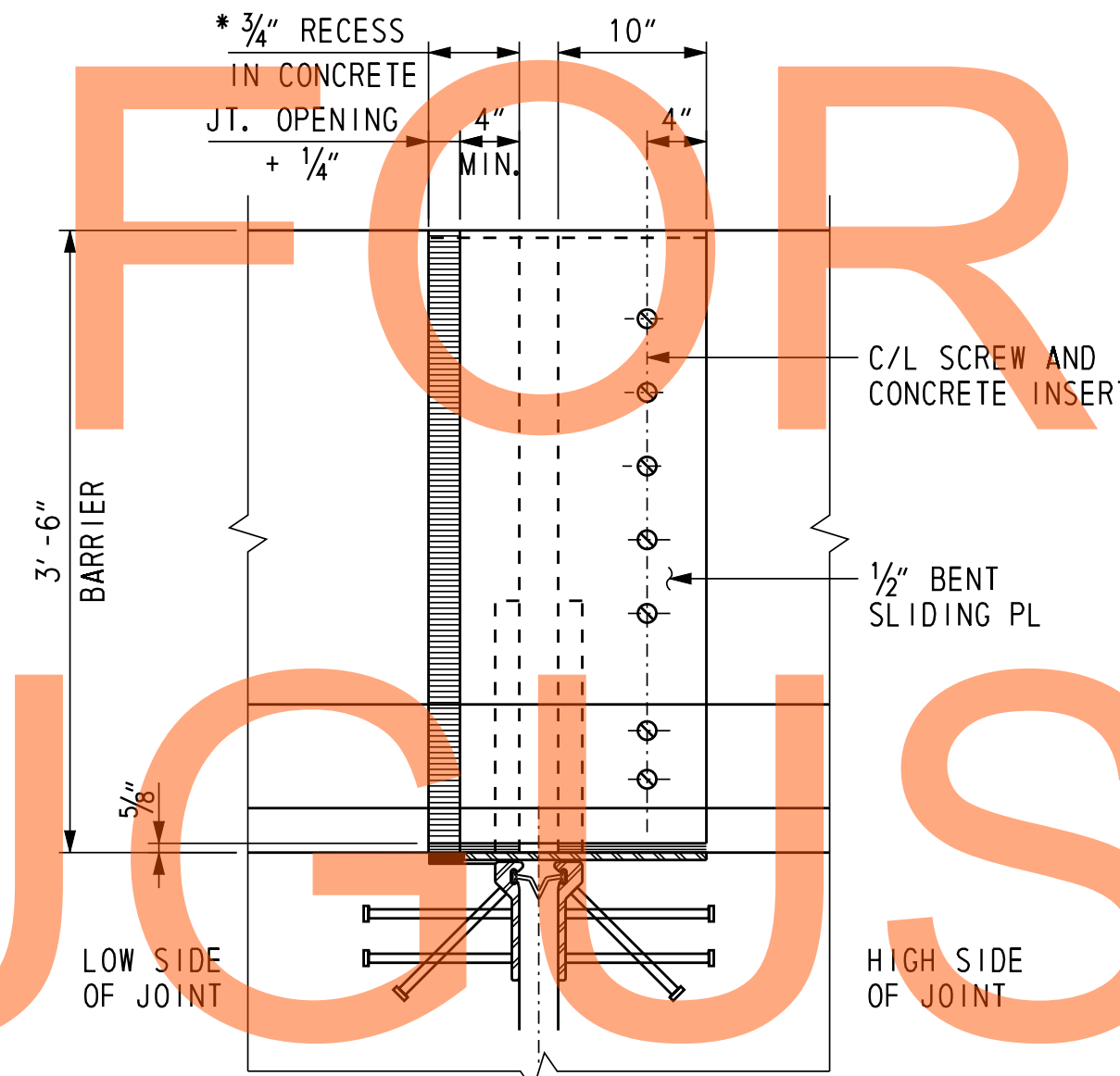


EXPANSION JOINT SKEW DETAIL
SCALE: 1 1/2" = 1'-0"

DRAFT

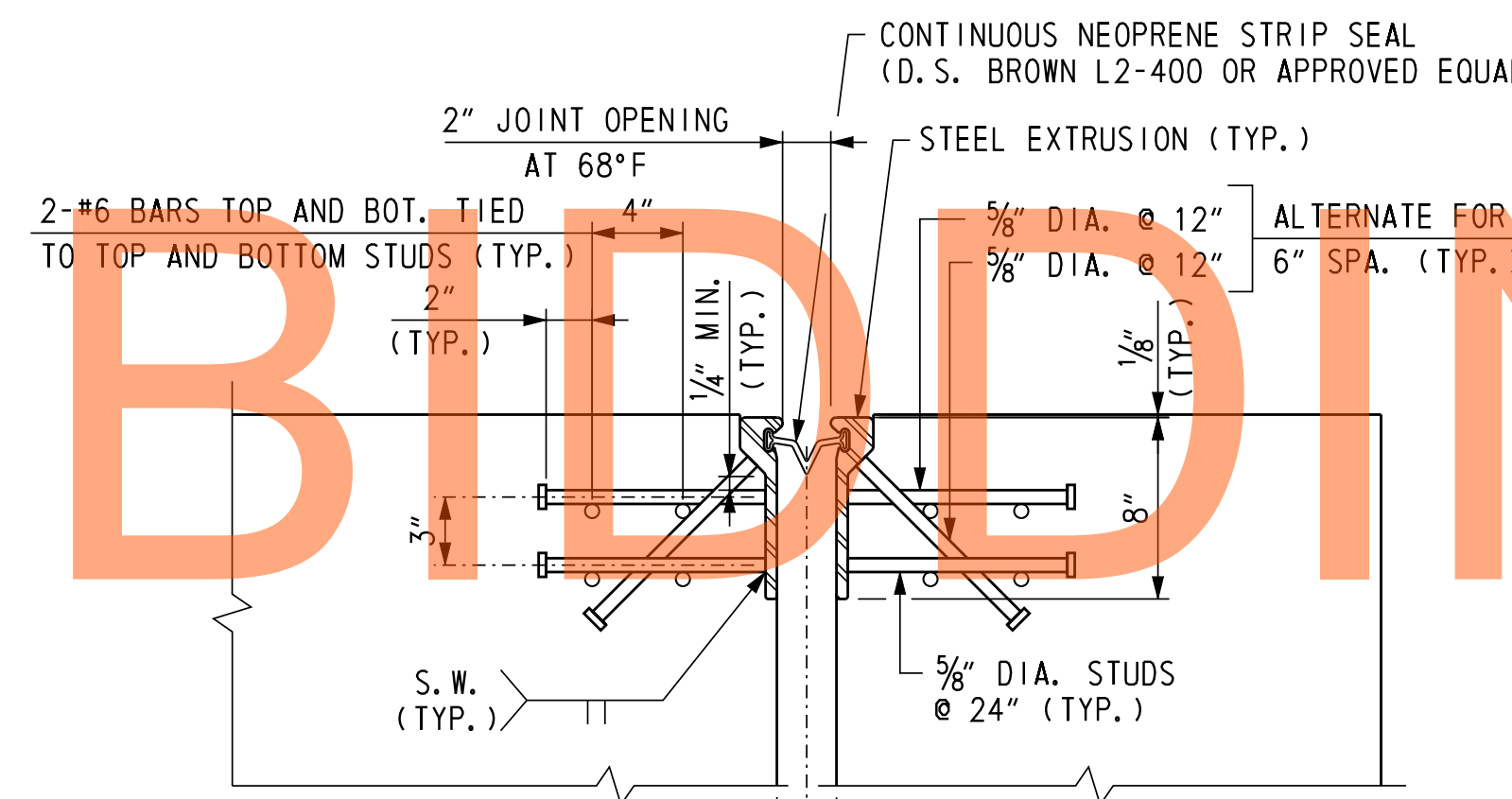


SECTION A-A
SCALE: 1" = 1'-0"



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

* FORM CONCRETE RECESS AREA IN BARRIER AND GRIND TO PROVIDE SMOOTH SURFACE. APPLY ONE COAT OF ASPHALT CEMENT PAINT TO ALLOW BENT SLIDING PLATE TO MOVE FREELY WITHOUT FRICTION.



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

NOTES:

- STRUCTURAL STEEL FOR DECK JOINTS SHALL CONFORM TO AASHTO M270, GRADE 36.
- STEEL EXTRUSIONS FOR DECK JOINTS SHALL CONFORM TO AASHTO M270, GRADE 36.
- THE NEOPRENE STRIP SEAL SHALL BE PROVIDED CONTINUOUS THROUGHOUT THE LIMITS OF THE DECK. SPLICING OF THE NEOPRENE STRIP SEAL IS NOT PERMITTED.
- USE FLATHEAD STAINLESS STEEL ASTM F 738M OR F 593 (TYPE 304) FOR COUNTERSUNK SCREWS WITH INSERTS. ALL CONCRETE INSERTS AND M 20 COUNTERSUNK MACHINE SCREWS ARE 3/4" DIAMETER UNLESS OTHERWISE NOTED.
- CONSTRUCT EXPANSION JOINT TO MATCH ROADWAY GRADE AND CROSS SLOPE.
- GRIND ALL STEEL EDGES EXPOSED TO TRAFFIC OR PEDESTRIANS TO 3/16" MIN. RADIUS.
- COST FOR MATERIALS, FABRICATION AND INSTALLATION OF STRIP SEAL EXPANSION JOINTS, 3" MOVEMENT CLASSIFICATION, WITH STEEL ELEMENTS INCLUDING STUDS, SLIDING PLATES AND STEEL EXTRUSIONS, SHALL BE PAID FOR UNDER ITEM 605511.

LOCATION	JOINT OPENING (INCH)											MOVEMENT CLASSIFICATION
	TEMPERATURE (°F)											
	0	10	20	30	40	50	60	68	80	90	100	
ABUTMENT 1 SB ROADWAY	2	2	2	2	2	2	2	2	2	2	2	3"
ABUTMENT 2 SB ROADWAY	2 7/8	2 3/4	2 5/8	2 1/2	2 3/8	2 1/4	2 1/8	2	1 7/8	1 3/4	1 5/8	3"
ABUTMENT 1 NB ROADWAY	2 1/8	2 5/8	2 1/2	2 3/8	2 3/8	2 3/8	2 1/8	2	1 7/8	1 1/8	1 1/8	3"
ABUTMENT 2 NB ROADWAY	2 3/8	2 1/2	2 3/8	2 3/8	2 1/4	2 3/8	2 1/8	2	1 5/8	1 1/8	1 3/4	3"

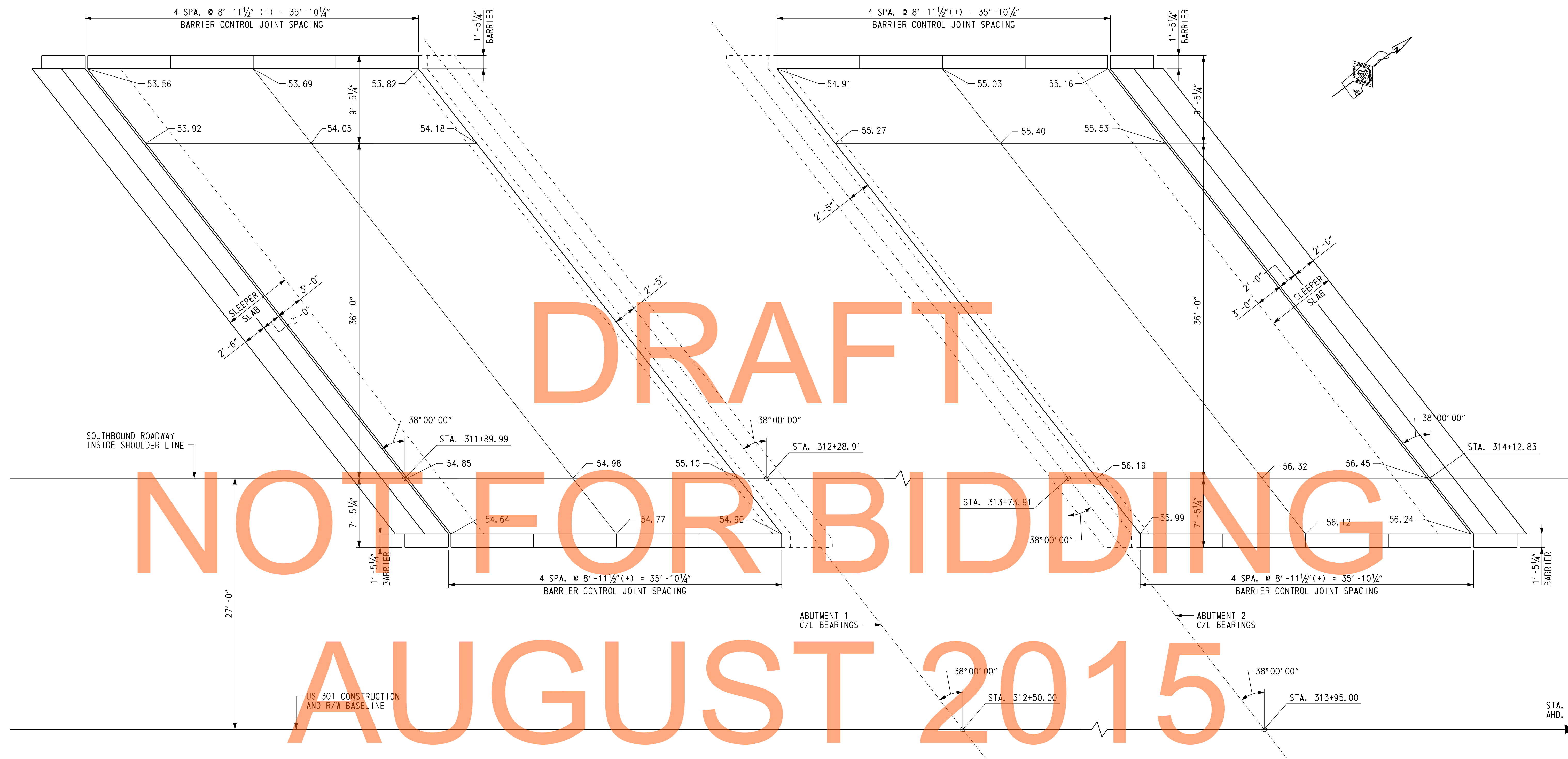
CROSS REFERENCE NOTES:

- FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1 & 1-477 PE-2.
- FOR TYPICAL SECTION, SEE DWG. 1-477 TS-1.
- FOR APPROACH SLAB PLANS, SEE DWG. 1-477 AS-1 & 1-477 AS-2.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	W. A. O'CONNOR
NEW CASTLE		

1-477 EX-1
SHEET NO.
510
TOTAL SHTS.
1256



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AUGUST 2015

PLAN - APPROACH SLABS AT SOUTHBOUND ROADWAY ABUTMENTS
SCALE: 3/16" = 1' - 0"

- CROSS REFERENCE NOTES:**
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
 2. FOR ABUTMENT 1 PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
 3. FOR ABUTMENT 2 PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
 4. FOR APPROACH SLAB DETAILS, SEE DWG. 1-477 AS-3.
 5. FOR APPROACH SLAB REINFORCING, SEE DWG. 1-477 AS-4 AND 1-477 AS-5.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

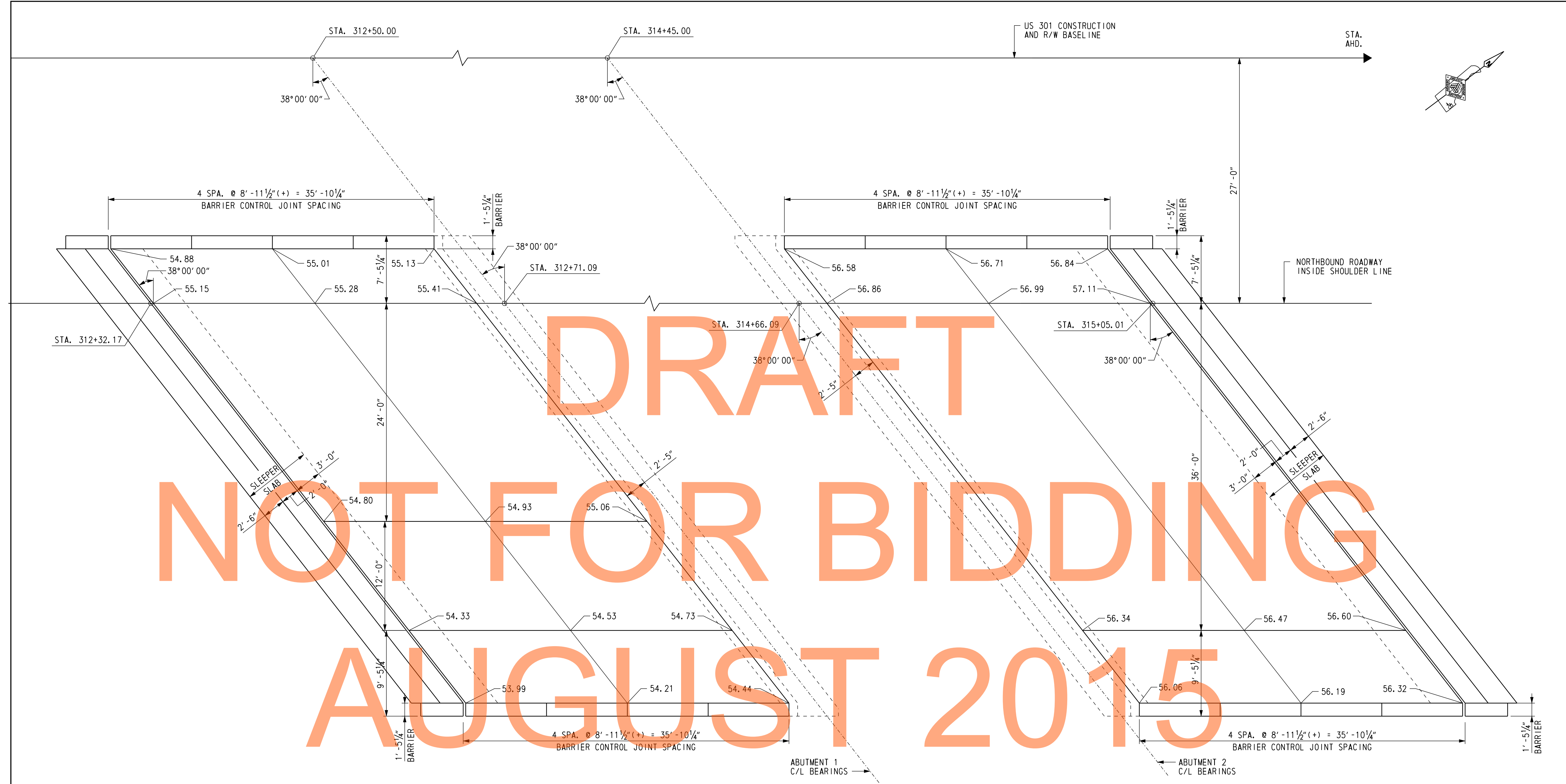
US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH SOUTHBOUND ROADWAY APPROACH SLAB PLANS

1-477 AS-1
SHEET NO.
511
TOTAL SHTS.
1256

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11/8/2012

Steve_Lambert



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NOT FOR BIDDING
AUGUST 2015

PLAN - APPROACH SLABS AT NORTHBOUND ROADWAY ABUTMENTS
SCALE: 3/16" = 1'-0"

- CROSS REFERENCE NOTES:**
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
 2. FOR ABUTMENT 1 PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
 3. FOR ABUTMENT 2 PLAN AND ELEVATION, SEE DWG. 1-477 AB-10.
 4. FOR APPROACH SLAB DETAILS, SEE DWG. 1-477 AS-3.
 5. FOR APPROACH SLAB REINFORCING, SEE DWG. 1-477 AS-7 AND 1-477 AS-8.

DELAWARE DEPARTMENT OF TRANSPORTATION

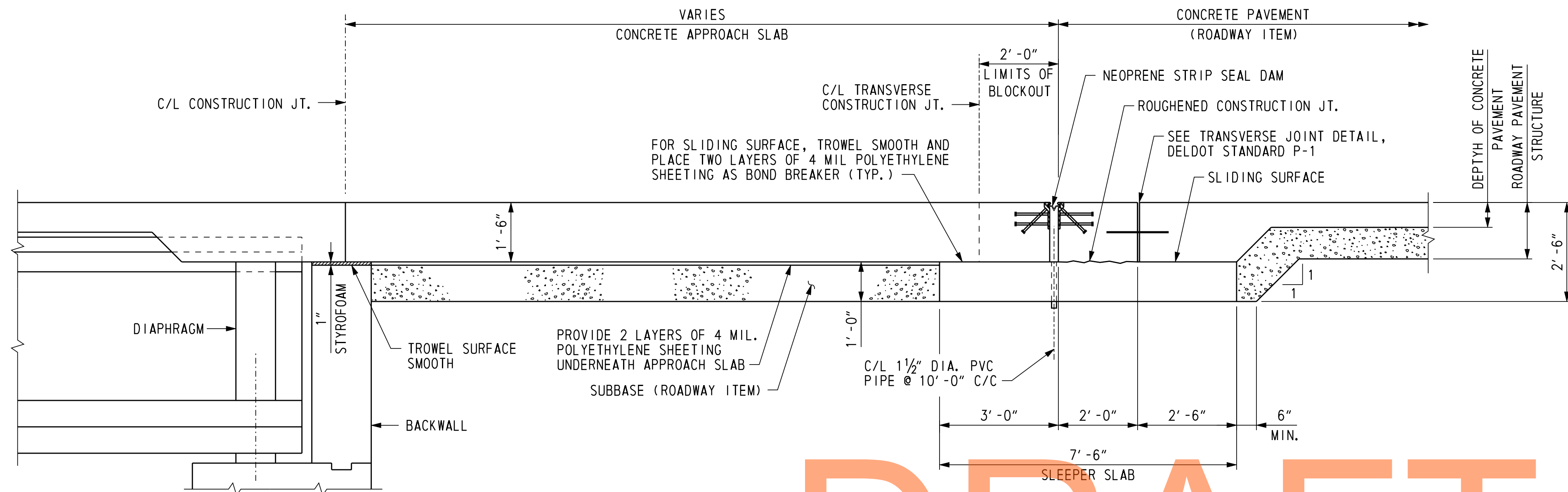
ADDENDUMS / REVISIONS

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

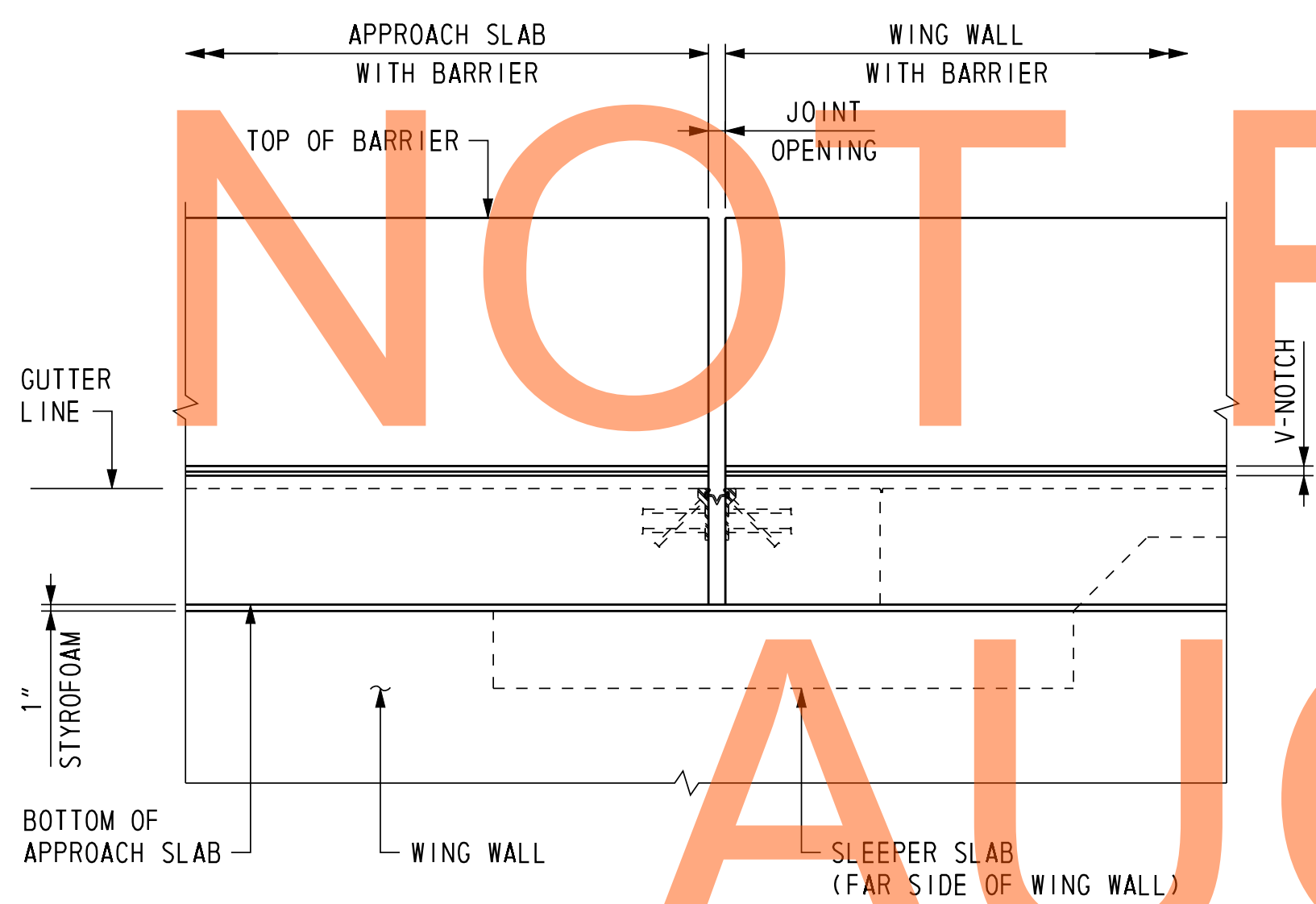
CONTRACT T200511303	BRIDGE NO. 1-477N&S
COUNTY NEW CASTLE	DESIGNED BY: R. F. KIRCHNER
	CHECKED BY: G. P. MISTRY

US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH NORTHBOUND ROADWAY APPROACH SLAB PLANS

1-477 AS-2
SHEET NO. 512
TOTAL SHTS. 1256



BRIDGE APPROACH SLAB - LONGITUDINAL SECTION
SCALE: 1/2" = 1'-0"



WING WALL ELEVATION AT SLEEPER SLAB
SCALE: 1/2" = 1'-0"

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NOT FOR BIDDING

AUGUST 2015

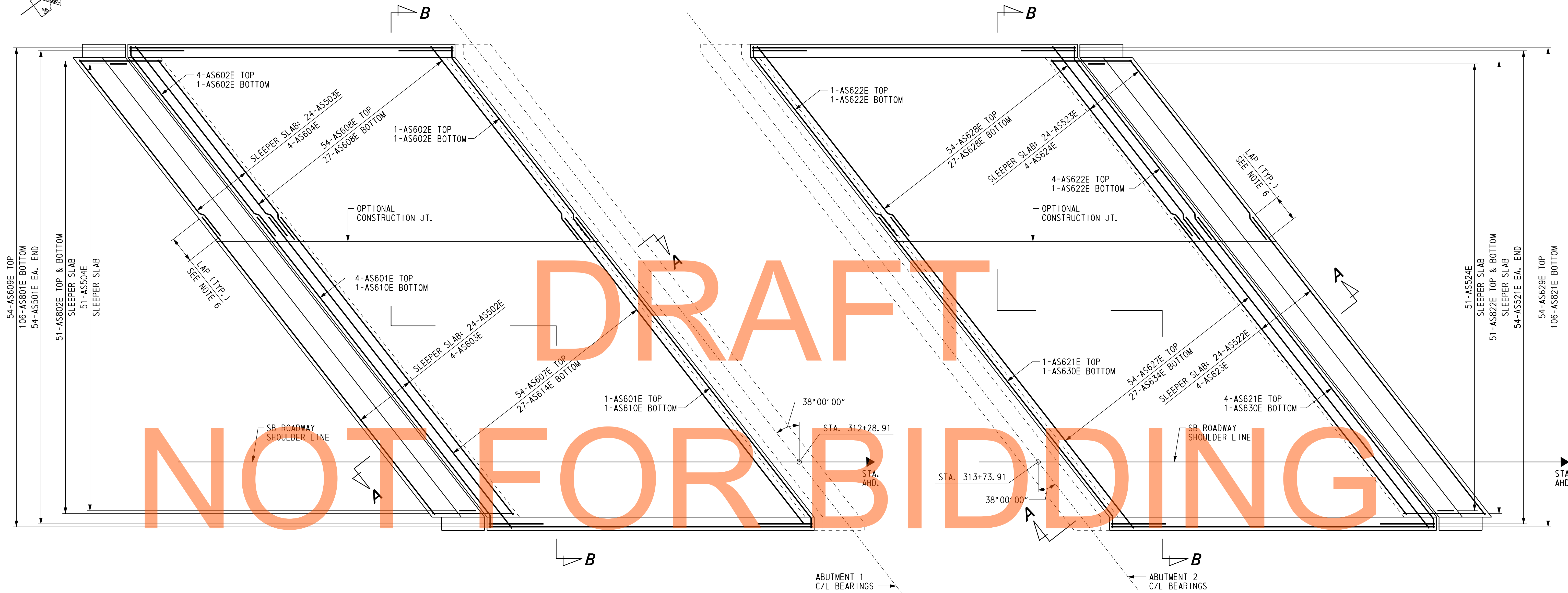
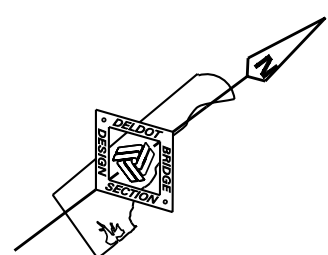
CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1 & 1-477 PE-2.
2. FOR APPROACH SLAB PLANS, SEE DWG. 1-477 AS-1 & 1-477 AS-2.
3. FOR TYPICAL ABUTMENT AND WINGWALL SECTIONS, SEE DWG. 1-477 AB-6 & 1-477 AB-12.
4. FOR APPROACH SLAB REINFORCING, SEE DWG. 1-477 AS-4, 1-477 AS-5, 1-477 AS-7 & 1-477 AS-8.

ADDENDUMS / REVISIONS

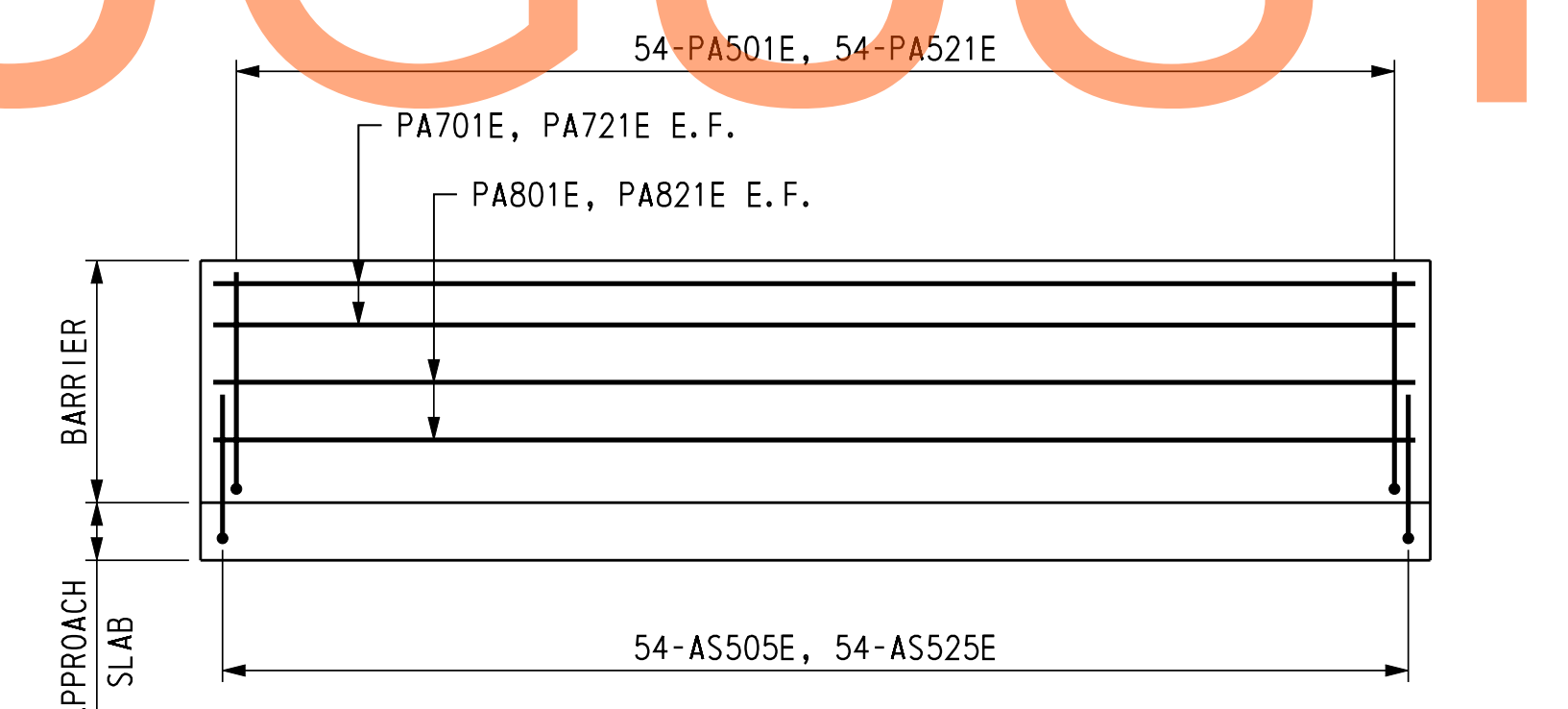
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

1-477 AS-3
SHEET NO.
513
TOTAL SHTS.
1256



PLAN - APPROACH SLAB AT ABUTMENT 1 SOUTHBOUND ROADWAY
SCALE: 3/16" = 1'-0"

PLAN - APPROACH SLAB AT ABUTMENT 2 SOUTHBOUND ROADWAY
SCALE: 3/16" = 1'-0"



ELEVATION - DECK AND BARRIER REINFORCEMENT
NOT TO SCALE

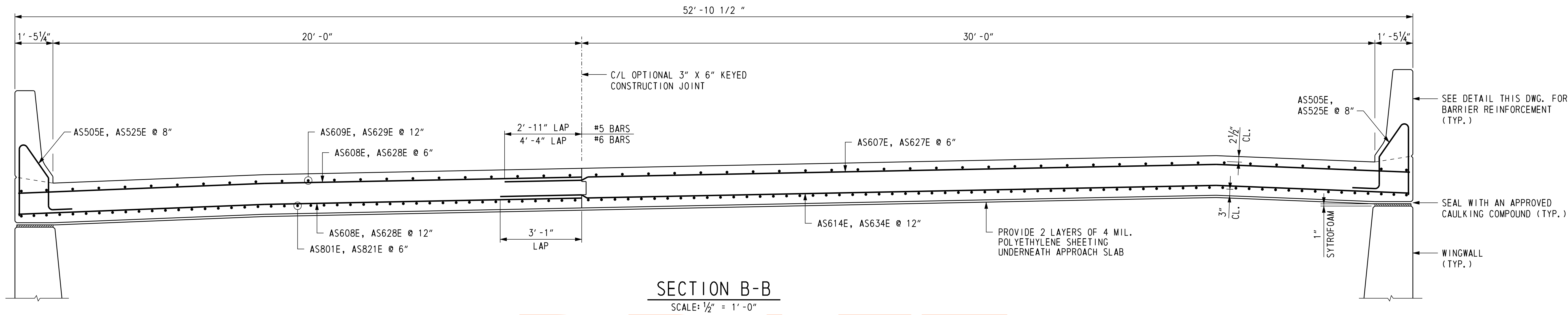
- CROSS REFERENCE NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
 2. FOR ABUTMENT 1 PLAN AND ELEVATION, SEE DWG. 1-477 AB-3.
 3. FOR ABUTMENT 2 PLAN AND ELEVATION, SEE DWG. 1-477 AB-4.
 4. FOR APPROACH SLAB PLANS, SEE DWG. 1-477 AS-1.
 5. FOR SECTIONS A-A AND B-B, SEE DWG. 1-477 AS-5.
 6. FOR BAR LAP LENGTHS, SEE DWG. 1-477 AS-5.
 7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AS-6.
 8. FOR SLAB DOWELS, SEE DWG. 1-477 DK-2.

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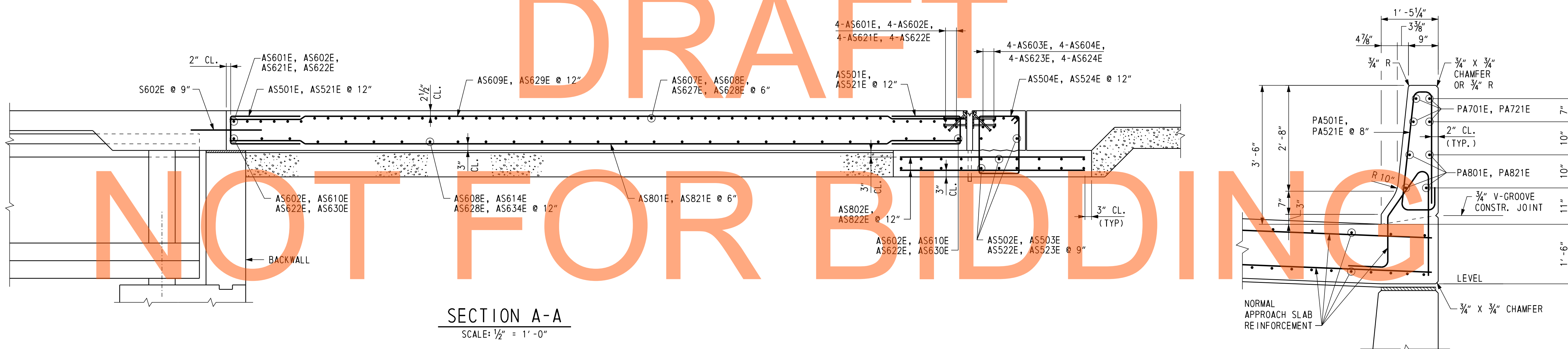
ADDENDUMS / REVISIONS	

CONTRACT	T200511303
COUNTY	NEW CASTLE
BRIDGE NO.	1-477N&S
DESIGNED BY:	R. F. KIRCHNER
CHECKED BY:	G. P. MISTRY

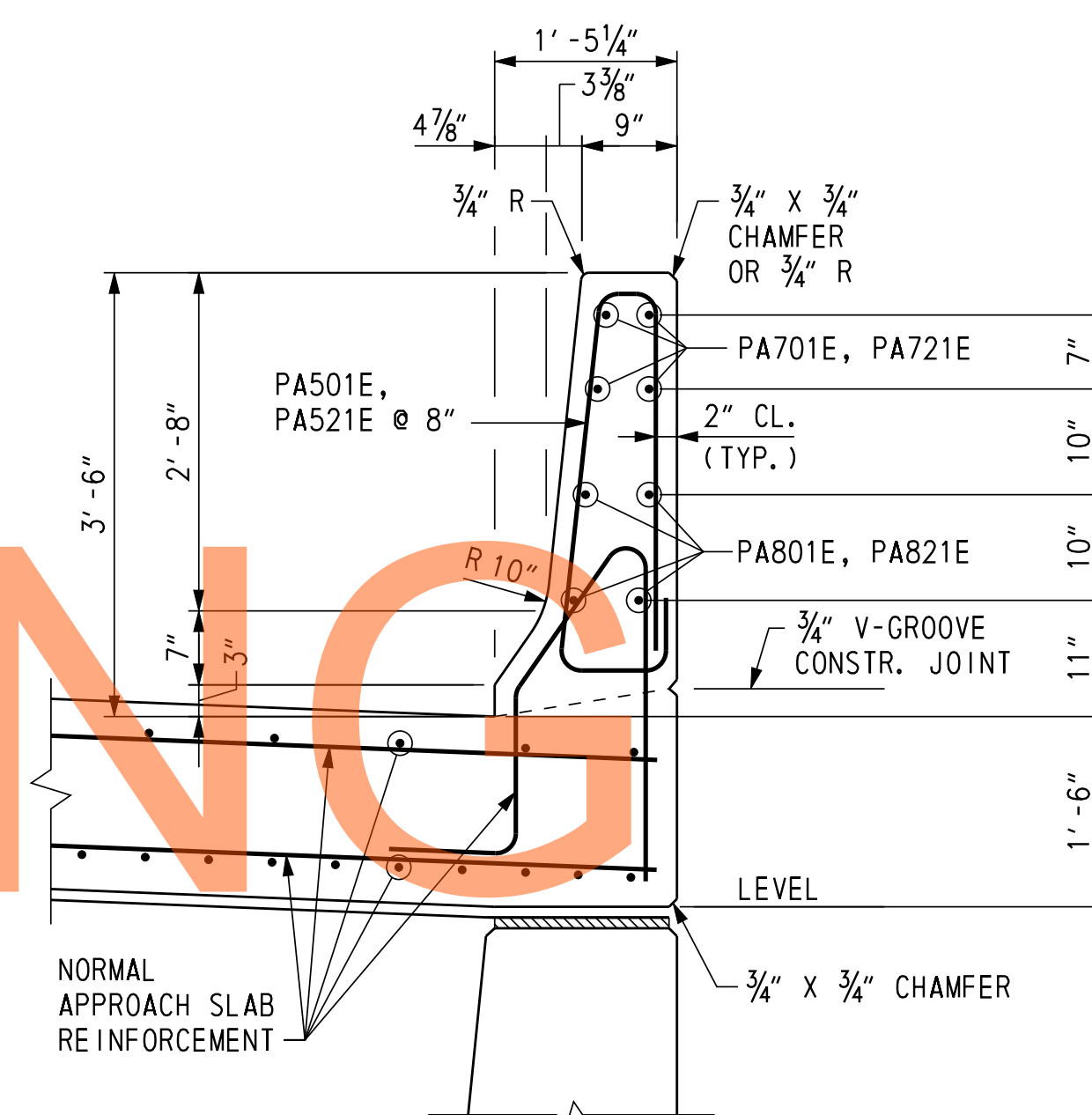
1-477 AS-4
SHEET NO.
514
TOTAL SHTS.
1256



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

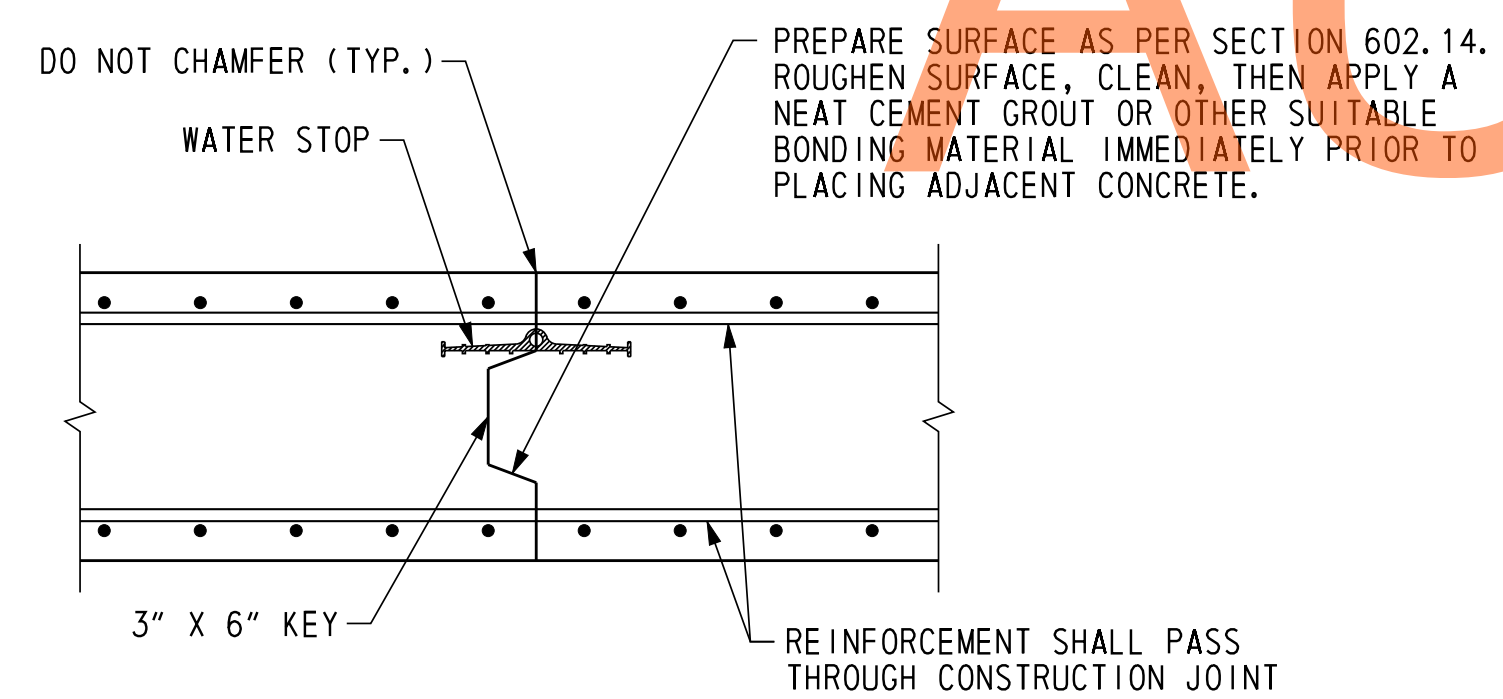


SECTION A-A
SCALE: 1/2" = 1'-0"

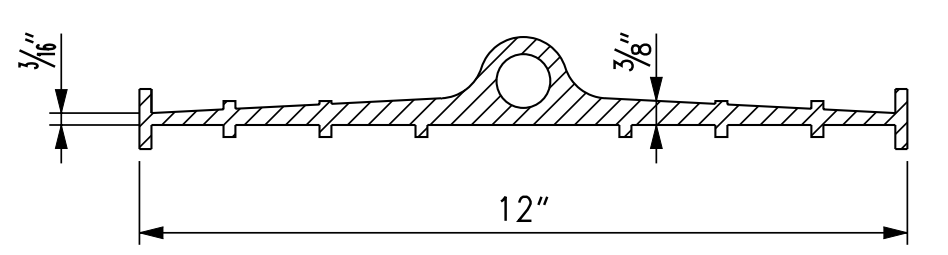


TYPICAL BARRIER REINFORCEMENT SECTION
SCALE: 3/4" = 1'-0"

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AUGUST 2015



OPTIONAL CONSTRUCTION JOINT DETAIL
NOT TO SCALE



PVC WATER STOP DETAIL
NOT TO SCALE

- CROSS REFERENCE NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-1.
 2. FOR APPROACH SLAB PLAN AT ABUTMENTS, SEE DWG. 1-477 AS-1.
 3. FOR APPROACH SLAB DETAILS, SEE DWG. 1-477 AS-3.
 4. FOR APPROACH SLAB REINFORCEMENT PLAN, SEE DWG. 1-477 AS-4.
 5. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AS-6.
 6. FOR LOCATION OF CONDUITS IN BARRIER, SEE DWG. 1-477 TS-1.

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11/8/2012
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200511303	BRIDGE NO. 1-477N&S	US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH APPROACH SLABS - SB ROADWAY REINFORCEMENT 2	SHEET NO. 515
			COUNTY NEW CASTLE	DESIGNED BY: R. F. KIRCHNER		CHECKED BY: G. P. MISTRY

REINFORCING BAR LIST

APPROACH AND SLEEPER SLAB AT ABUTMENT 1 SOUTHBOUND ROADWAY															
MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	F	G	H	J	K	R	REMARKS
AS501E	6' - 2 1/2"	108	17		2' - 7"	1' - 0 1/2"	2' - 7"								
AS502E	41' - 0"	24	STR.												LAP = 2' - 11"
AS503E	25' - 1"	24	STR.												LAP = 2' - 11"
AS504E	8' - 11"	51	T1	0' - 6"	1' - 11"	2' - 0 1/2"	1' - 11"	2' - 0 1/2"		0' - 6"					
AS505E	6' - 2 1/2"	108	43	1' - 1"	0' - 8 3/8"	0' - 10"	2' - 1 7/8"	0' - 1"		0' - 7 5/8"	1' - 2"	0' - 3"	0' - 10"		
AS601E	43' - 10"	5	4		42' - 7"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS602E	26' - 5"	7	4		25' - 2"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS603E	42' - 5"	4	STR.												LAP = 4' - 4"
AS604E	25' - 0"	4	STR.												LAP = 4' - 4"
AS607E	44' - 3"	54	STR.												LAP = 4' - 4"
AS608E	26' - 10"	81	STR.												LAP = 4' - 4"
AS609E	35' - 1"	54	STR.												LAP = 4' - 4"
AS610E	42' - 7"	2	4		41' - 4"	1' - 3"				0' - 9"		1' - 0"			LAP = 3' - 1"
AS614E	43' - 0"	27	STR.												LAP = 3' - 1"
AS801E	35' - 1"	106	STR.												
AS802E	8' - 10"	102	STR.												

APPROACH AND SLEEPER SLAB AT ABUTMENT 2 SOUTHBOUND ROADWAY															
MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	F	G	H	J	K	R	REMARKS
AS521E	6' - 2 1/2"	108	17		2' - 7"	1' - 0 1/2"	2' - 7"								
AS522E	41' - 0"	24	STR.												LAP = 2' - 11"
AS523E	25' - 1"	24	STR.												LAP = 2' - 11"
AS524E	8' - 11"	51	T1	0' - 6"	1' - 11"	2' - 0 1/2"	1' - 11"	2' - 0 1/2"		0' - 6"					
AS525E	6' - 2 1/2"	108	43	1' - 1"	0' - 8 3/8"	0' - 10"	2' - 1 7/8"	0' - 1"		0' - 7 5/8"	1' - 2"	0' - 3"	0' - 10"		
AS621E	43' - 10"	5	4		42' - 7"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS622E	26' - 5"	7	4		25' - 2"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS623E	42' - 5"	4	STR.												LAP = 4' - 4"
AS624E	25' - 0"	4	STR.												LAP = 4' - 4"
AS627E	44' - 3"	54	STR.												LAP = 4' - 4"
AS628E	26' - 10"	81	STR.												LAP = 4' - 4"
AS629E	35' - 1"	54	STR.												LAP = 4' - 4"
AS630E	42' - 7"	2	4		41' - 4"	1' - 3"				0' - 9"		1' - 0"			LAP = 3' - 1"
AS634E	43' - 0"	27	STR.												LAP = 3' - 1"
AS821E	35' - 1"	106	STR.												
AS822E	8' - 10"	102	STR.												
PA521E	7' - 6 1/4"	108	28	2' - 9 1/4"	0' - 2 1/8"	0' - 1 5/8"	0' - 2 3/4"	2' - 9 1/2"		0' - 3 1/8"	0' - 5 1/8"				
PA721E	35' - 3"	8	STR.												
PA821E	35' - 3"	8	STR.												

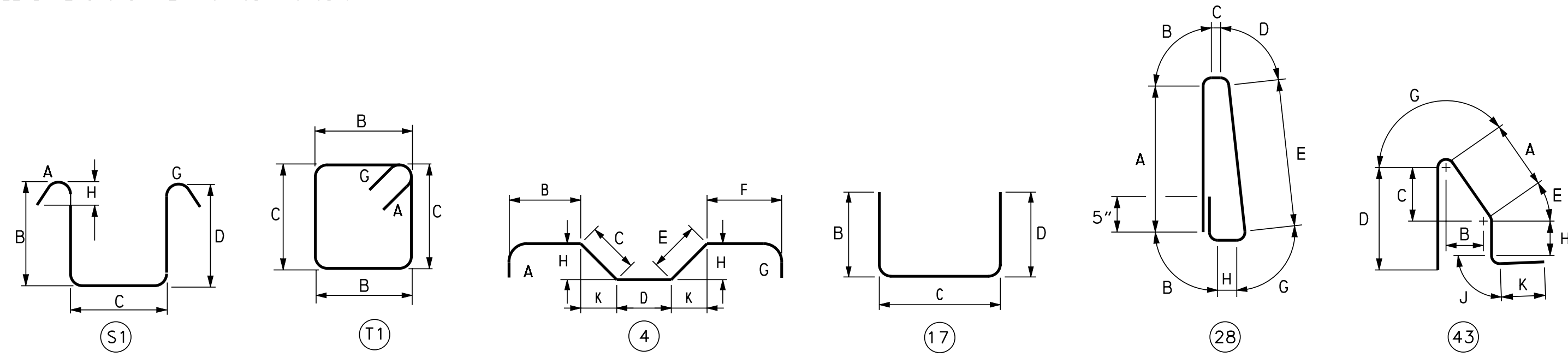
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BENDING DIAGRAM

ALL DIMENSIONS ARE FROM OUT TO OUT.



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11/8/2012

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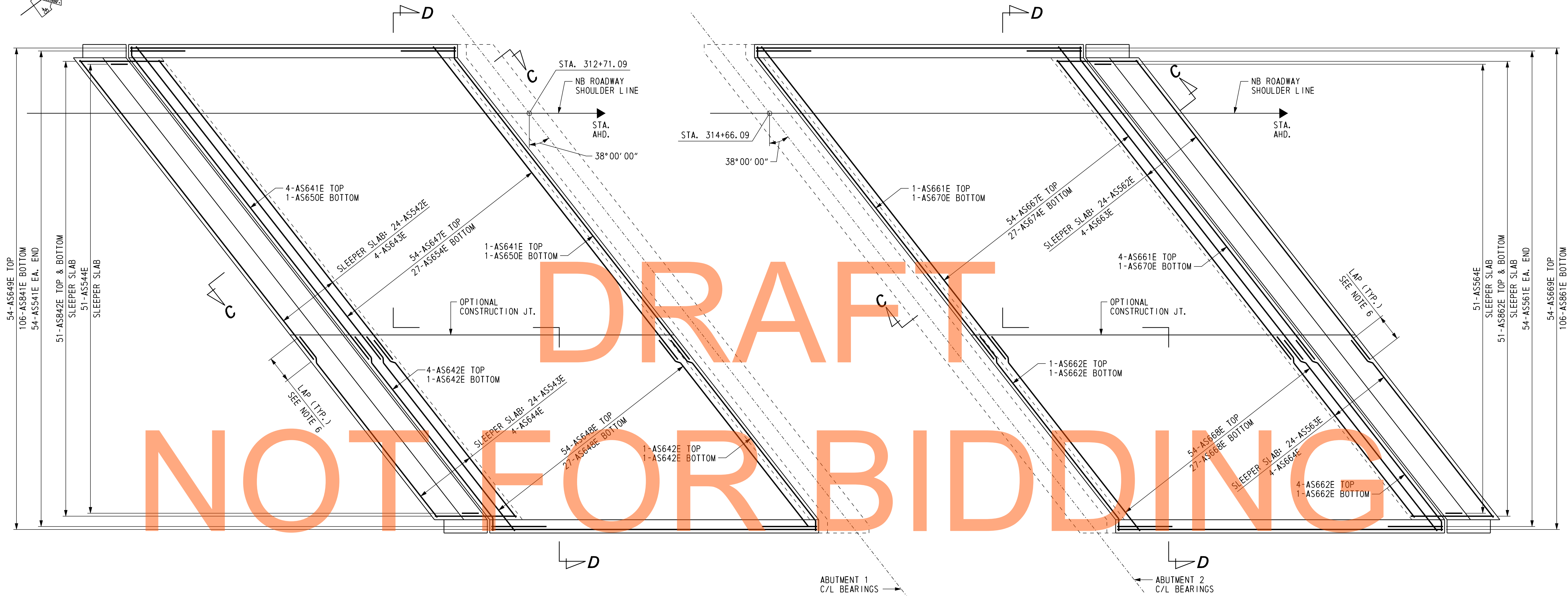
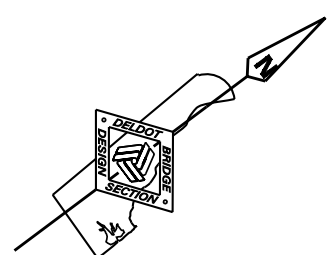
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

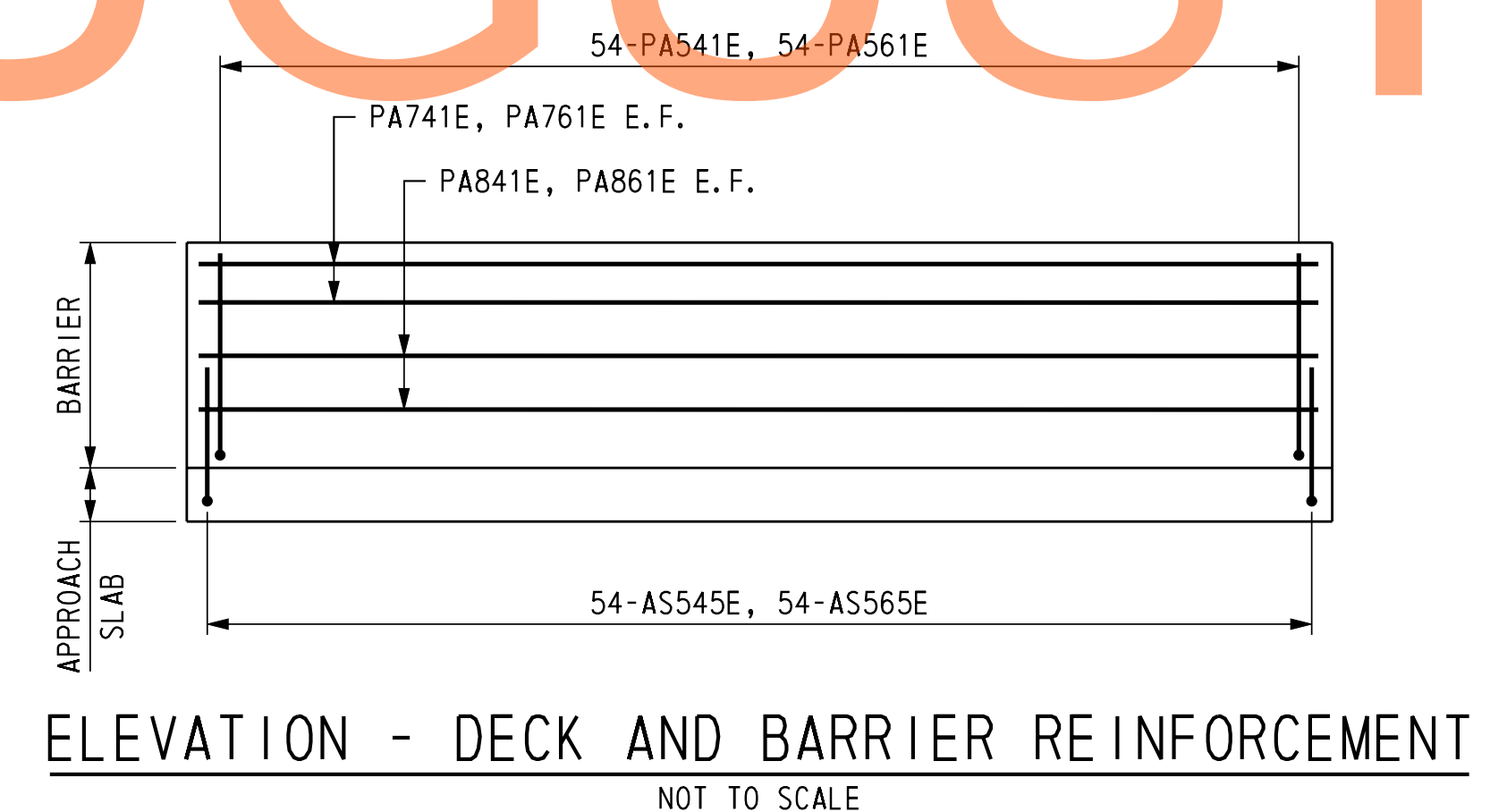
**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
APPROACH SLABS - SB ROADWAY
REINFORCING BAR LIST**

1-477 AS-6
SHEET NO.
516
TOTAL SHTS.
1256



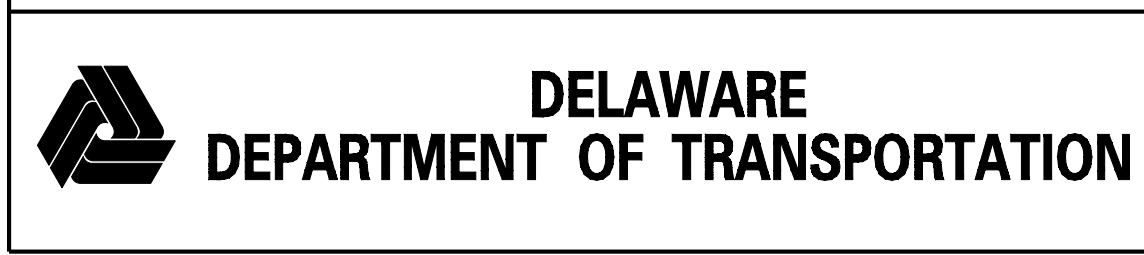
PLAN - APPROACH SLAB AT ABUTMENT 1 NORTHBOUND ROADWAY
SCALE: 3/16" = 1'-0"

PLAN - APPROACH SLAB AT ABUTMENT 2 NORTHBOUND ROADWAY
SCALE: 3/16" = 1'-0"



- CROSS REFERENCE NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
 2. FOR ABUTMENT 1 PLAN AND ELEVATION, SEE DWG. 1-477 AB-9.
 3. FOR ABUTMENT 2 PLAN AND ELEVATION, SEE DWG. 1-477 AB-10.
 4. FOR APPROACH SLAB PLANS, SEE DWG. 1-477 AS-2.
 5. FOR SECTIONS C-C AND D-D, SEE DWG. 1-477 AS-8.
 6. FOR BAR LAP LENGTHS, SEE DWG. 1-477 AS-8.
 7. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AS-9.
 8. FOR SLAB DOWELS, SEE DWG. 1-477 DK-4.

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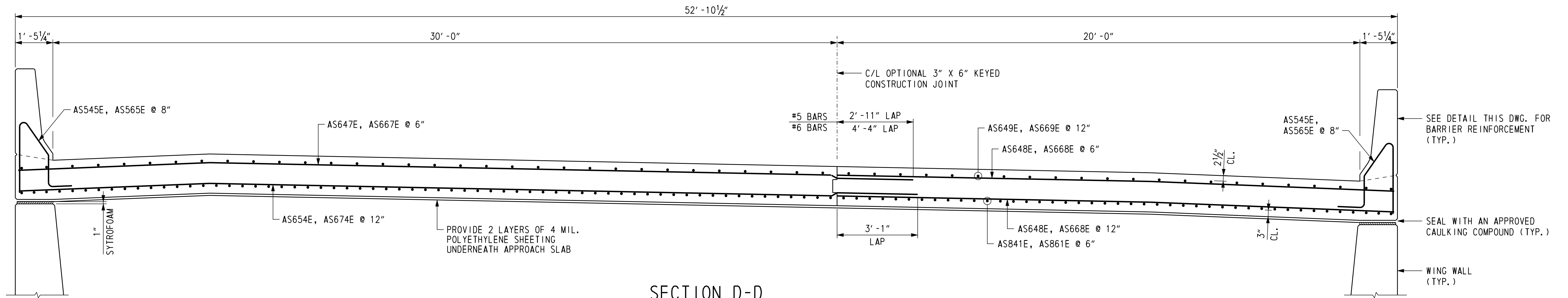
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

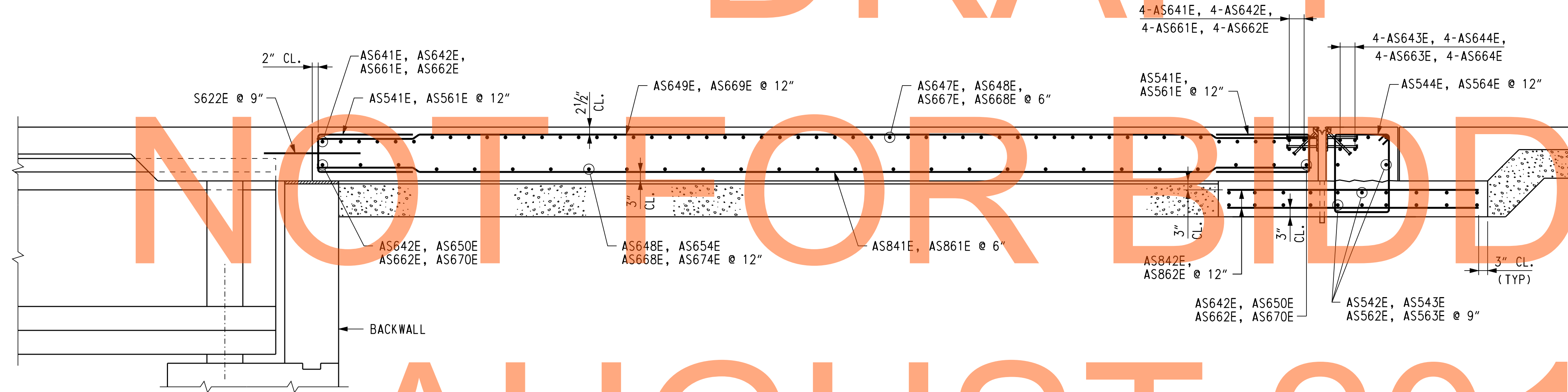
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
APPROACH SLABS - NB ROADWAY
REINFORCEMENT 1**

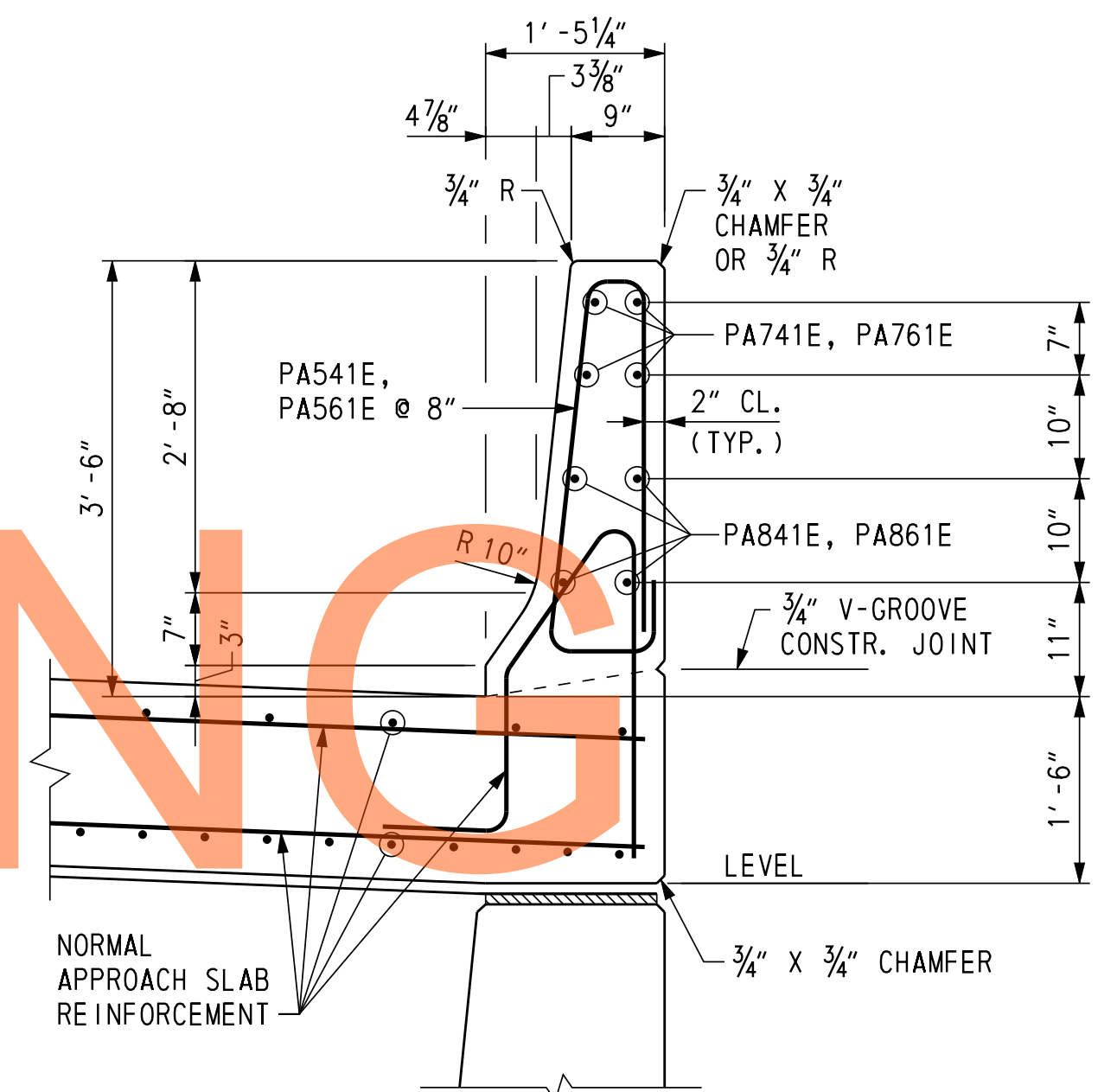
1-477 AS-7
SHEET NO.
517
TOTAL SHTS.
1256



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



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



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

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NOT FOR BIDDING
AUGUST 2015

CROSS REFERENCE NOTES:

1. FOR BRIDGE PLAN AND ELEVATION, SEE DWG. 1-477 PE-2.
2. FOR APPROACH SLAB PLAN AT ABUTMENTS, SEE DWG. 1-477 AS-2.
3. FOR APPROACH SLAB DETAILS, SEE DWG. 1-477 AS-3.
4. FOR OPTIONAL CONSTRUCTION JOINT DETAIL, SEE DWG. 1-477 AS-5.
5. FOR APPROACH SLAB REINFORCEMENT PLAN, SEE DWG. 1-477 AS-7.
6. FOR REINFORCING BAR LIST, SEE DWG. 1-477 AS-9.
7. FOR LOCATION OF CONDUITS IN BARRIER, SEE DWG. 1-477 TS-1.

REINFORCING BAR LIST

APPROACH AND SLEEPER SLAB AT ABUTMENT 1 NORTHBOUND ROADWAY															
MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	F	G	H	J	K	R	REMARKS
AS541E	6' - 2 1/2"	108	17		2' - 7"	1' - 0 1/2"	2' - 7"								
AS542E	41' - 0"	24	STR.												LAP = 2' - 11"
AS543E	25' - 1"	24	STR.												LAP = 2' - 11"
AS544E	8' - 11"	51	T1	0' - 6"	1' - 11"	2' - 0 1/2"	1' - 11"	2' - 0 1/2"		0' - 6"					
AS545E	6' - 2 1/2"	108	43	1' - 1"	0' - 8 3/8"	0' - 10"	2' - 1 7/8"	0' - 1"		0' - 7 5/8"	1' - 2"	0' - 3"	0' - 10"		
AS641E	43' - 10"	5	4		42' - 7"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS642E	26' - 5"	7	4		25' - 2"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS643E	42' - 5"	4	STR.												LAP = 4' - 4"
AS644E	25' - 0"	4	STR.												LAP = 4' - 4"
AS647E	44' - 3"	54	STR.												LAP = 4' - 4"
AS648E	26' - 10"	81	STR.												LAP = 4' - 4"
AS649E	35' - 1"	54	STR.												LAP = 4' - 4"
AS650E	42' - 7"	2	4		41' - 4"	1' - 3"				0' - 9"		1' - 0"			LAP = 3' - 1"
AS654E	43' - 0"	27	STR.												LAP = 3' - 1"
AS841E	35' - 1"	106	STR.												
AS842E	8' - 10"	102	STR.												

APPROACH AND SLEEPER SLAB AT ABUTMENT 2 NORTHBOUND ROADWAY															
MARK	LENGTH	NO. BARS	TYPE	A	B	C	D	E	F	G	H	J	K	R	REMARKS
AS561E	6' - 2 1/2"	108	17		2' - 7"	1' - 0 1/2"	2' - 7"								
AS562E	41' - 0"	24	STR.												LAP = 2' - 11"
AS563E	25' - 1"	24	STR.												LAP = 2' - 11"
AS564E	8' - 11"	51	T1	0' - 6"	1' - 11"	2' - 0 1/2"	1' - 11"	2' - 0 1/2"		0' - 6"					
AS565E	6' - 2 1/2"	108	43	1' - 1"	0' - 8 3/8"	0' - 10"	2' - 1 7/8"	0' - 1"		0' - 7 5/8"	1' - 2"	0' - 3"	0' - 10"		
AS661E	43' - 10"	5	4		42' - 7"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS662E	26' - 5"	7	4		25' - 2"	1' - 3"					0' - 9"		1' - 0"		LAP = 4' - 4"
AS663E	42' - 5"	4	STR.												LAP = 4' - 4"
AS664E	25' - 0"	4	STR.												LAP = 4' - 4"
AS667E	44' - 3"	54	STR.												LAP = 4' - 4"
AS668E	26' - 10"	81	STR.												LAP = 4' - 4"
AS669E	35' - 1"	54	STR.												LAP = 4' - 4"
AS670E	42' - 7"	2	4		41' - 4"	1' - 3"				0' - 9"		1' - 0"			LAP = 3' - 1"
AS674E	43' - 0"	27	STR.												LAP = 3' - 1"
AS861E	35' - 1"	106	STR.												
AS862E	8' - 10"	102	STR.												
PA561E	7' - 6 1/4"	108	28	2' - 9 1/4"	0' - 2 1/8"	0' - 1 5/8"	0' - 2 3/4"	2' - 9 1/2"		0' - 3 1/8"	0' - 5 1/8"				
PA761E	35' - 3"	8	STR.												
PA861E	35' - 3"	8	STR.												

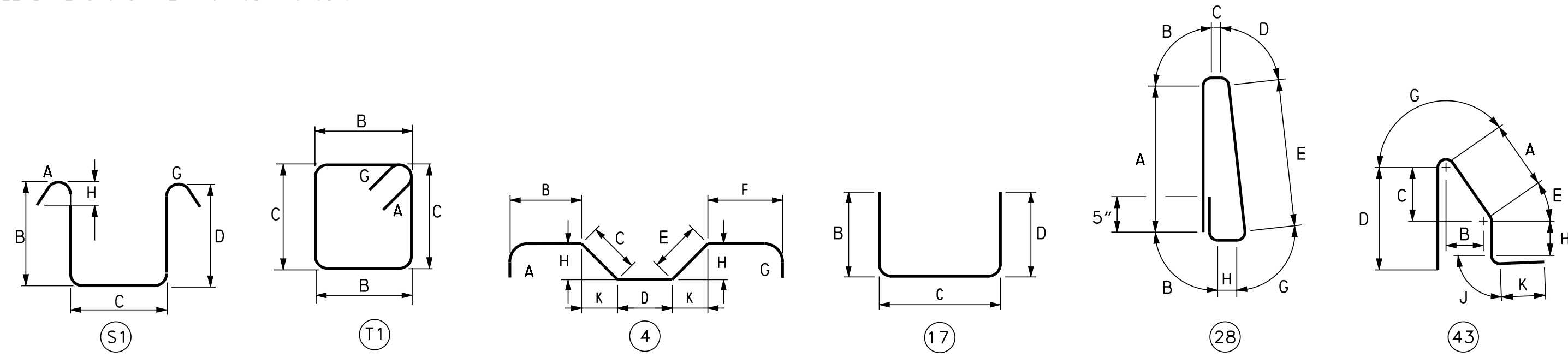
DRAFT

NOT FOR BIDDING

AUGUST 2015

BENDING DIAGRAMS

ALL DIMENSIONS ARE FROM OUT TO OUT.



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11/8/2012

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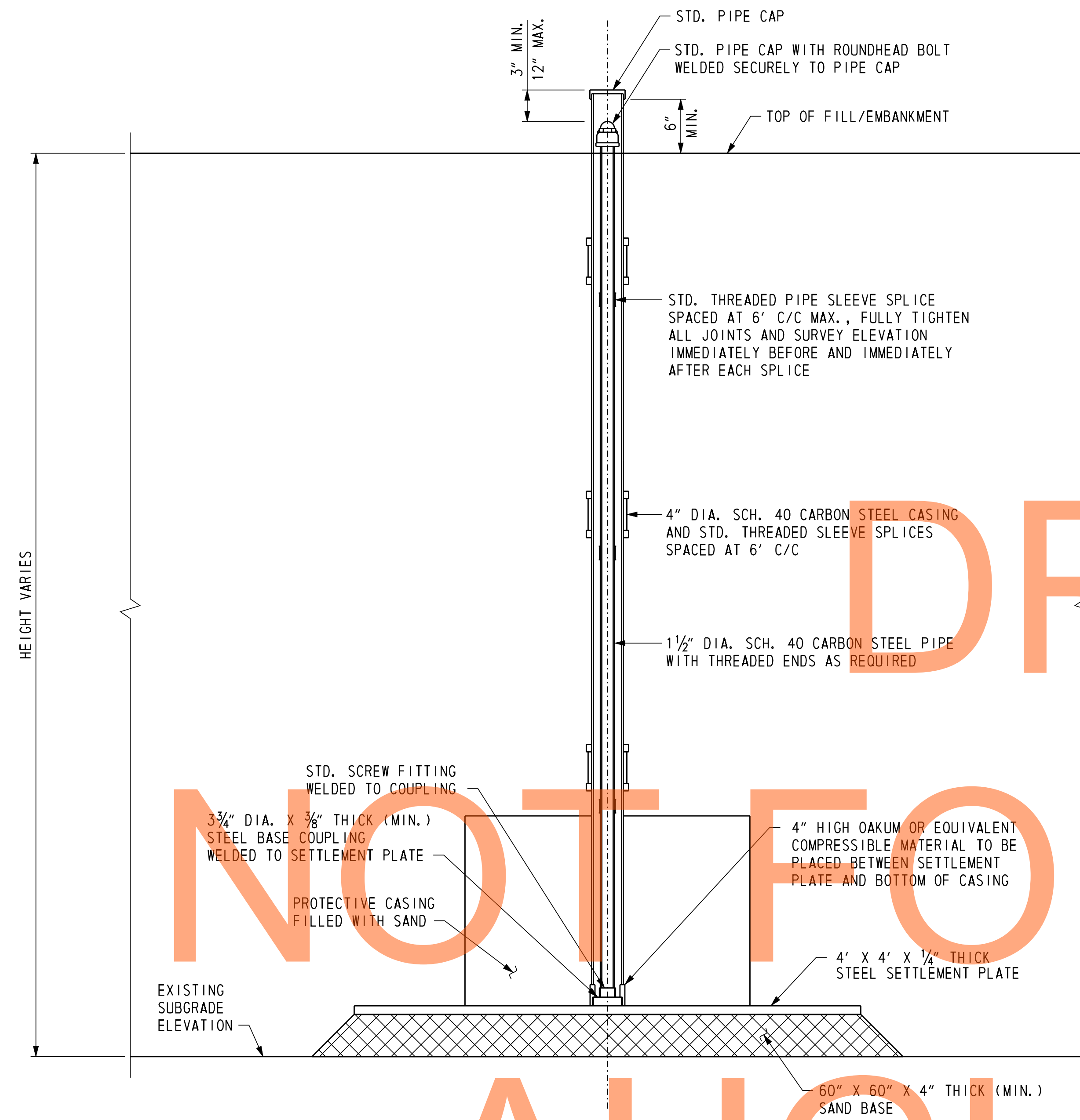
ADDENDUMS / REVISIONS

**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	R. F. KIRCHNER
COUNTY	CHECKED BY:	G. P. MISTRY
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
APPROACH SLABS - NB ROADWAY
REINFORCING BAR LIST**

1-477 AS-9
SHEET NO.
519
TOTAL SHTS.
1256



SETTLEMENT PLATFORM
NOT TO SCALE

SETTLEMENT PLATFORM	STATION	OFFSET	SETTLEMENT MONUMENT	STATION	OFFSET
SP-1-477-1	312+65.00	46.00' RT	SM-1-477-1	312+69.00	51.00' RT
SP-1-477-2	311+93.00	46.00' LT	SM-1-477-2	311+89.00	51.00' LT
SP-1-477-3	315+02.00	46.00' RT	SM-1-477-3	315+06.00	51.00' RT
SP-1-477-4	313+80.00	46.00' LT	SM-1-477-4	313+76.00	51.00' LT

SETTLEMENT NOTE

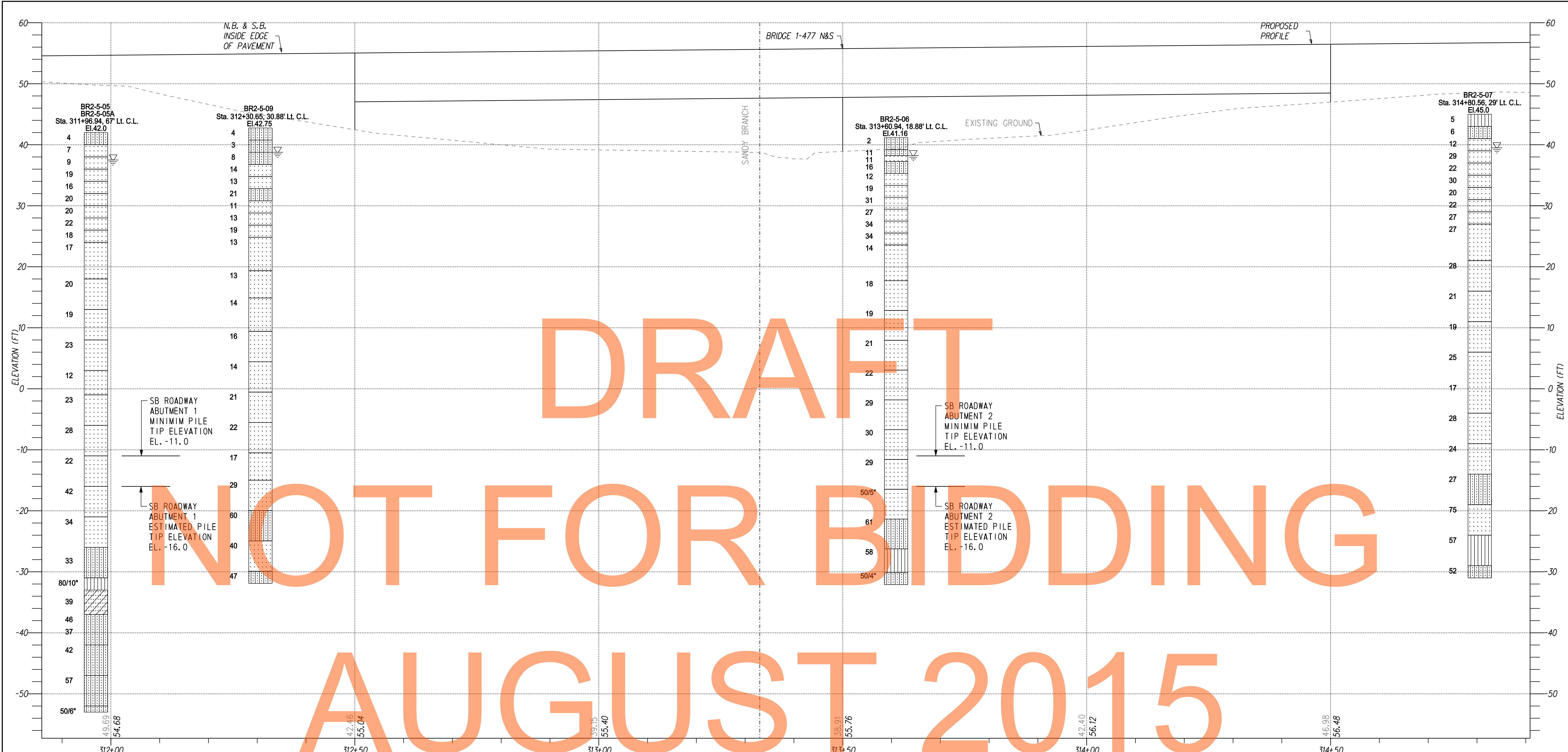
READINGS ON THE SETTLEMENT PLATFORMS SHALL BE MADE AFTER THE INITIAL INSTALLATION OF THE RISER AND CASING PIPES AND INSTALLATION RECORD SHEETS ARE APPROVED BY THE ENGINEER AND PRIOR TO FILL PLACEMENT. DURING FILL PLACEMENT, READINGS ON ALL SETTLEMENT PLATFORMS SHALL BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER COMPLETION OF THE FILL AND SURCHARGE PLACEMENT, INSTALL SETTLEMENT MONUMENTS AS INDICATED ON THE BRIDGE PLANS AND TAKE INITIAL READINGS. READINGS ON ALL SETTLEMENT MONITORING DEVICES SHALL THEN BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER THE FILL HAS BEEN COMPLETED AND TWO (2) SUCCESSIVE READINGS OF EACH DEVICE HAVE BEEN RECORDED LESS THAN OR EQUAL TO 0.1", THE IMMEDIATE SETTLEMENT WILL BE DEEMED COMPLETE AND THE GEOTECHNICAL ENGINEER CAN RELEASE THE SUBSTRUCTURE FOR REMOVAL OF SURCHARGE AND INSTALLATION OF PRODUCTION PILES. AFTER COMPLETION OF THE ABUTMENT, THE CONTRACTOR SHALL ESTABLISH REFERENCE POINTS TO MONITOR SETTLEMENT ON TOP OF THE ABUTMENT SEAT WITHIN FIVE (5) FEET OF ALL ENDS AND CORNERS AND AT THE CENTER OF BRIDGES AND THE CENTERLINE OF US 301. AFTER THE CONCRETE ABUTMENTS HAVE BEEN CONSTRUCTED, READINGS ON ALL SETTLEMENT MONITORING DEVICES AND REFERENCE POINTS SHALL CONTINUE TO BE TAKEN AT A MINIMUM OF 30-DAY INTERVALS FOR THE NEXT SIX (6) MONTHS OR AS DIRECTED BY THE ENGINEER.

NOTE:

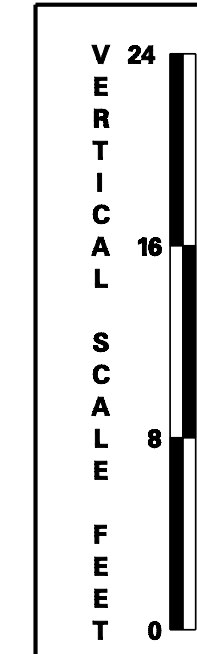
THE BASE OF THE SETTLEMENT PLATFORM SHALL BE PLACED ON THE TOP OF EXISTING GROUND.

CROSS REFERENCE NOTE:

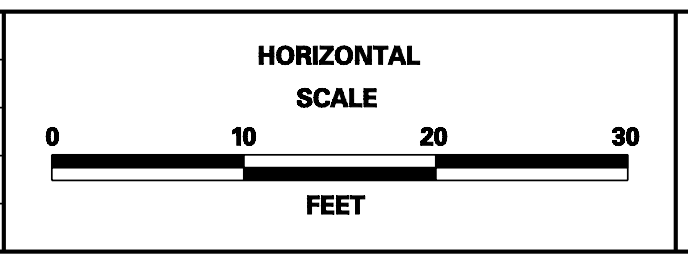
FOR LOCATION OF SETTLEMENT PLATFORMS AND MONUMENTS, SEE DWGS. 1-477 PE-1 AND 1-477 PE-2.



KEY TO SYMBOLS	
SYMBOL DESCRIPTION	MISC. SYMBOLS
STRATA SYMBOLS	WATER TABLE DURING DRILLING
SILT	
SAND	
SILTY SAND	
ELASTIC SILT	
CLAYEY SAND	
POORLY GRADED CLAYEY SILTY SAND	



ADDENDUMS / REVISIONS



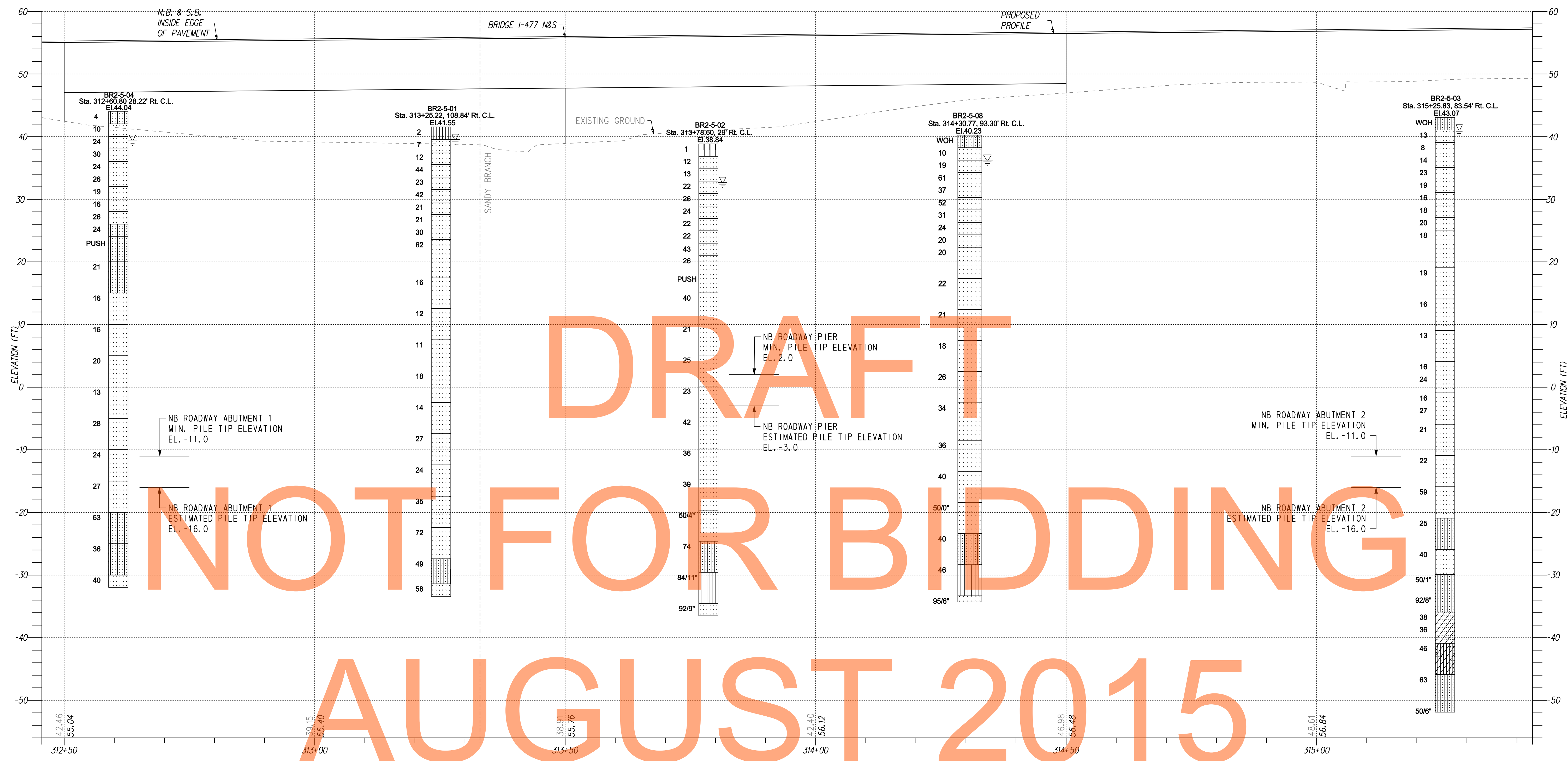
CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	ZH
COUNTY	CHECKED BY:	RDB
NEW CASTLE		

1-477 B0-1
SHEET NO.
521
TOTAL SHTS.
1256

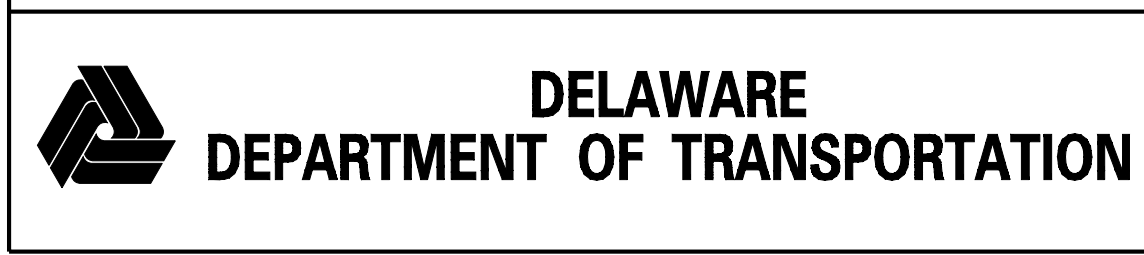
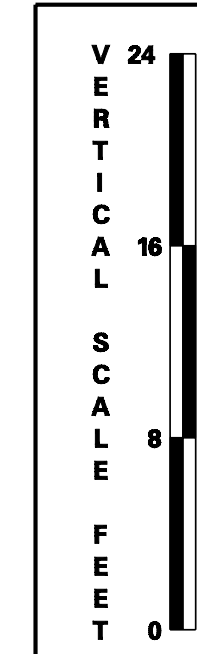
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11/8/2012

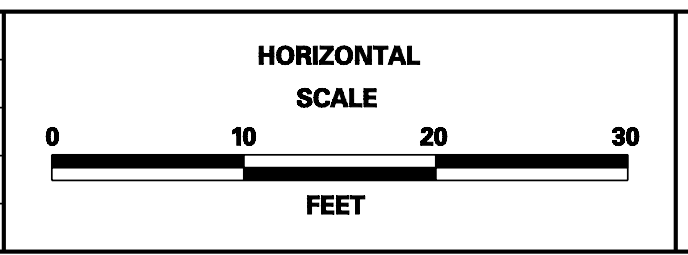
Steve_Lambert



KEY TO SYMBOLS	
SYMBOL DESCRIPTION	MISC. SYMBOLS
SILT	WATER TABLE DURING DRILLING
SAND	
SILTY SAND	
ELASTIC SILT	
CLAYEY SAND	
POORLY GRADED CLAYEY SILTY SAND	



ADDENDUMS / REVISIONS



**US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD**

CONTRACT	BRIDGE NO.	1-477N&S
T200511303	DESIGNED BY:	ZH
COUNTY	CHECKED BY:	RDB
NEW CASTLE		

**US 301 MAINLINE OVER
TRIBUTARY TO SANDY BRANCH
BORINGS 2**

1-477 B0-2
SHEET NO.
522
TOTAL SHTS.
1256