PROJECT NOTES:

1. LOCATION
   PROPOSED NEW STRUCTURE CARRYING JAMISON CORNER ROAD OVER US 301 IN NEW CASTLE COUNTY, DELAWARE.

2. ELEVATIONS
   VERTICAL DATUM IS REFERENCED TO NAVD 88.

3. DESIGN CRITERIA AND SPECIFICATIONS
   2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, INCLUDING 2008 AND 2009 INTERIM PROVISIONS AND THE 2005 DELDOT BRIDGE DESIGN MANUAL. PROVIDE MATERIAL AND PERFORM WORK IN ACCORDANCE WITH THE DELDOT STANDARD SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS AND THE CONTRACT SPECIAL PROVISIONS.

4. LOADING
   HL-93 AND DELAWARE LEGAL LOADS FOR LIVE LOAD WITH PROVISIONS FOR FUTURE 2" WEARING SURFACE AND 15 LBS/FT^2 FOR THE USE OF STEEL BRIDGE DECK FORMS WHICH REMAIN IN PLACE.

5. CONCRETE
   ALL CONCRETE PROPERTIES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

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

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

   ALL EXPOSED EDGES SHALL BE CHAMFERED ¾" UNLESS NOTED OTHERWISE.

6. REINFORCING STEEL
   ALL REINFORCING STEEL SHALL BE AASHTO M 31 (ASTM A 615), GRADE 60. EPOXY COATED REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY, CONFORMING TO AASHTO M 284 (ASTM A 775).

   EPOXY COATED REINFORCING STEEL SHALL BE USED IN THE FOLLOWING LOCATIONS:

   - SLEEPER SLAB
   - APPROACH SLABS
   - DECK SLAB
   - PARAPETS
   - ABUTMENTS

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

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

   MINIMUM CONCRETE COVER FOR REINFORCING STEEL UNLESS NOTED OTHERWISE SHALL BE:

   FOUNDATION ELEMENTS: 3"
   DECK SLABS: 2½" TOP OF SLAB (INCLUDES ½" INTEGRAL WEARING SURFACE)
   1" BOTTOM OF SLAB WHEN STAY-IN-PLACE FORMS ARE USED

7. STRUCTURAL STEEL
   ALL STRUCTURAL STEEL SHALL BE AASHTO M 270 (ASTM A 709), GRADE 50W INCLUDING THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M 270 FOR PRIMARY LOAD CARRYING MEMBERS UNDER TENSILE STRESS.

8. ELASTOMERIC BEARINGS AND TFE-STAINLESS STEEL BEARINGS
   FOR REQUIREMENTS OF THE ELASTOMERIC BEARINGS, SEE DWG. NO. BB-01. FOR REQUIREMENTS OF THE TFE-STAINLESS STEEL BEARINGS, SEE DWG. NO. BB-02.

9. PRESTRESSED CONCRETE PILES
   ALL PRESTRESSED CONCRETE PILES SHALL BE IN ACCORDANCE WITH SECTION 618 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS EXCEPT THAT SEVEN WIRE LOW RELAXATION STRAND SHALL BE USED.

10. STEEL H-PILES
    SEE PILE NOTE 6 ON DWG. NO. PL-01 REGARDING THE STEEL H-PILE ALTERNATIVE. STEEL H-PILES SHALL BE AASHTO M 270 (ASTM A 709), GRADE 50.

11. MSE WALLS
    FOR MSE WALL NOTES, SEE DWG. NO. AB-02.

12. FOUNDATION REQUIREMENTS
    FOR FOUNDATION REQUIREMENTS, SEE DWG. NOS. PL-01 AND PL-02. DELDOT STANDARD SPECIFICATION 619.11 (A)(6) SHALL BE MODIFIED BY REFERENCE TO SPECIAL PROVISIONS 619519 & 619539.

13. TRAFFIC CONTROL REQUIREMENTS
    FOR TRAFFIC CONTROL REQUIREMENTS, SEE DWG. NOS. CS-06 AND CS-08.

14. CONSTRUCTION JOINTS
    KEYED CONSTRUCTION JOINTS SHALL BE 2"x4" OR UNLESS NOTED OTHERWISE.
    ALL EXPOSED CONSTRUCTION JOINT EDGES SHALL HAVE A ¾" V-NOTCH UNLESS NOTED OTHERWISE.

15. MISCELLANEOUS
    ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE GRADED BACK TO THE ORIGINAL EXISTING GRADE, TOP SOILED, SEEDED AND MULCHED. PAYMENT SHALL BE INCIDENTAL TO THE CONTRACT. AS DIRECTED BY THE ENGINEER, ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATION RESULTING FROM UNAUTHORIZED ACTIVITIES OUTSIDE THE LIMIT OF CONSTRUCTION SHALL BE TOP SOILED,SEEDED, AND MULCHED AT THE CONTRACTOR'S EXPENSE.

16. STABILIZING STRUCTURAL EXCAVATIONS
    IN LIEU OF A 2:1 SLOPE, THE CONTRACTOR MAY USE SHORING FOR EXCAVATIONS EXCEEDING 5 FEET IN HEIGHT. THE COST OF THE SHORING SHALL BE INCIDENTAL TO ITEM 207000 - EXCAVATION AND BACKFILL FOR STRUCTURES.

17. LOAD RATINGS
    FOR LOAD AND RESISTANCE FACTOR RATING, SEE BRIDGE NO. 1-460A LOAD RATING SUMMARY ON THIS SHEET.

18. UTILITIES
    BEFORE BEGINNING WORK, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF 2 WORKING DAYS PRIOR TO START OF WORK. VERIFY AND LOCATE ALL UTILITIES PRIOR TO STARTING WORK.

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

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

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

BRIDGE NO. 1-460A INDEX OF SHEETS

LOAD RATING SUMMARY

DESIGN VEHICLE	*RATING FACTOR*	*RATING WEIGHT (TON)*	*CONTROLLING MEMBER*	*CONTROLLING POINT*	*LOAD EFFECT*
HL-93 TRUCK (INVENTORY)	*1.29*	*N/A*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
HL-93 TANDEM (INVENTORY)	*1.53*	*N/A*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
HL-93 TRUCK TRAIN (INVENTORY)	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
HS-20 (INVENTORY)	*1.99*	*71.58*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
HL-93 TRUCK (OPERATING)	*1.67*	*N/A*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
HL-93 TANDEM (OPERATING)	*1.98*	*N/A*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
HL-93 TRUCK TRAIN (OPERATING)	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
HS-20 (OPERATING)	*2.58*	*93.06*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S220 & LEGAL-LANE (LEGAL)	*3.48*	*69.57*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S335 & LEGAL-LANE (LEGAL)	*1.96*	*68.67*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S437 & LEGAL-LANE (LEGAL)	*1.87*	*68.48*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S330 & LEGAL-LANE (LEGAL)	*2.52*	*75.49*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S435 & LEGAL-LANE (LEGAL)	*2.18*	*76.36*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*
DE S540 & LEGAL-LANE (LEGAL)	*1.92*	*76.72*	*EXTERIOR GIRDER*	*MIDSPAN*	*FLEXURE*

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

BR1-8
PN-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: NOT TO SCALE

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

PROJECT NOTES

SHEET NO.
497
TOTAL SHTS.
875

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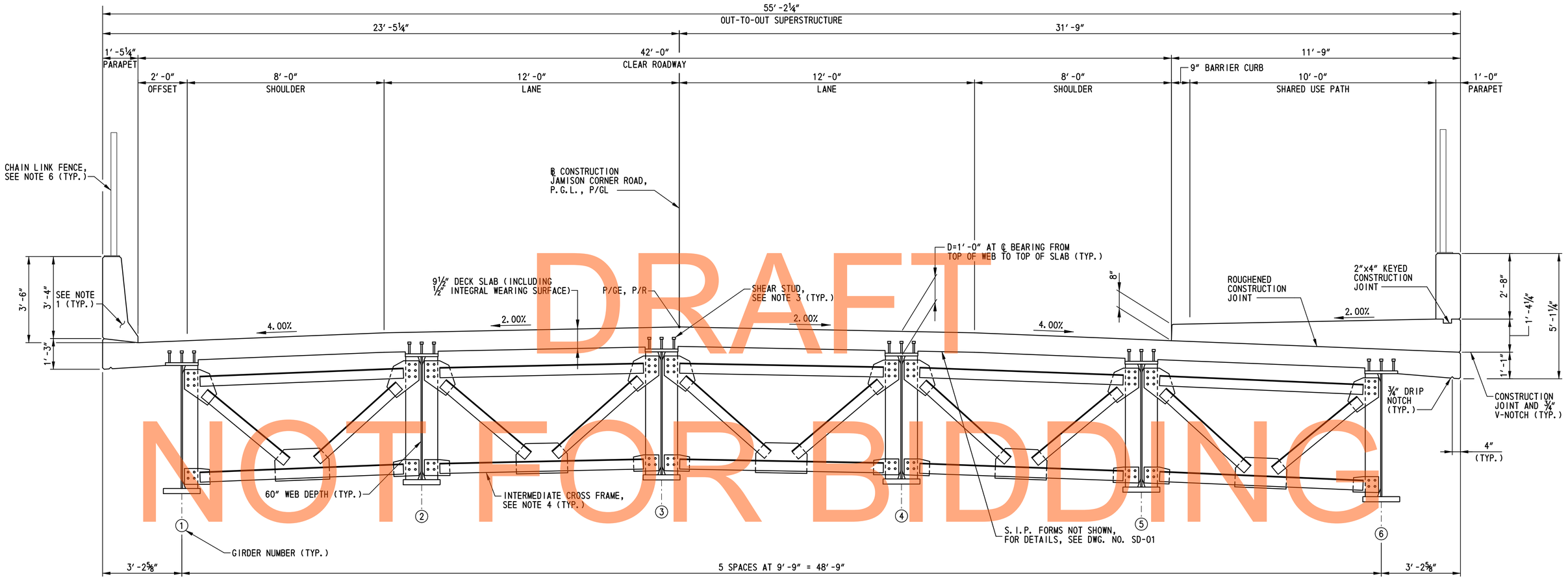
ITEM NO.	ITEM NAME	UNITS	QUANTITY
202000	Excavation and Embankment	CY	347
202505	Settlement Platform	EACH	4
202518	Settlement Monument	EACH	4
302011	Delaware No. 3 Stone	TON	91
302012	Delaware No. 57 Stone	TON	67
602003	Portland Cement Concrete Masonry, Abutment Footing, Class A	C.Y.	71
602013	Portland Cement Concrete Masonry, Superstructure, Class D	C.Y.	331
602014	Portland Cement Concrete Masonry, Approach Slab, Class D	C.Y.	163
602015	Portland Cement Concrete Masonry, Abutment Above Footing, Class A	C.Y.	37
602017	Portland Cement Concrete Masonry, Parapet, Class A	C.Y.	44
602772	Mechanically Stabilized Earth Walls	L.S.	1
604000	Bar Reinforcement, Epoxy Coated	LBS	117,736
605001	Steel Structures	LBS	354,900
605512	Prefabricated Expansion Joint System 4"	L.F.	56
605581	Elastomeric Bearing Pads	EACH	6
605639	TFE Stainless Steel Structural Bearings	EACH	6
618062	Steel H Piles, HP 14x73	L.F.	1,158
618065	Steel H Test Piles, HP 14x73	L.F.	426
618081	Furnish Precast Prestressed Concrete Piles, 14" x 14"	L.F.	874
618091	Furnish Precast Prestressed Concrete Test Piles, 14" x 14"	L.F.	312
619042	Install Steel H Piles, HP 14x73	L.F.	1,158
619045	Install Steel H Test Piles, HP 14x73	L.F.	426
619061	Install Precast Prestressed Concrete Piles, 14" x 14"	L.F.	874
619067	Install Precast Prestressed Concrete Test Piles, 14" x 14"	L.F.	312
619501	Production Pile Restrike	EACH	3
619502	Test Pile Restrike	EA.DY.	1
619519	Dynamic Pile Testing by Contractor	EACH	10
619539	Signal Matching Analysis by Contractor	EACH	10
727507	Bridge Safety Fence	L.F.	354

NOTES:

1. THE QUANTITY SUMMARY INCLUDES QUANTITIES FOR BRIDGE 1-460A STANDARD ITEMS, PILE ALTERNATIVE 1 (14" PRESTRESSED CONCRETE PILES) ITEMS AND PILE ALTERNATIVE 2 (HP 14X73 PILES) ITEMS. ITEM NOS. 618081, 618091, 619061 AND 619067 ARE APPLICABLE TO PILE ALTERNATIVE 1. ITEM NOS. 618062, 618065, 619042 AND 619045 ARE APPLICABLE TO PILE ALTERNATIVE 2. ALL OTHER ITEMS ARE STANDARD ITEMS. SEE PILE NOTE 6 ON DWG. NO. PL-01 FOR ADDITIONAL INFORMATION REGARDING PILE ALTERNATIVES.

2. ITEM 202000 IS REPRESENTED UNDER TYPE C MATERIAL REQUIRED, "TYPE C BACKFILL FOR STRUCTURES". SEE DRAWING EW-05.



SUPERSTRUCTURE TYPICAL SECTION

SCALE: ½″=1′-0″

NOTES:

1. PARAPETS SHALL NOT BE SLIP FORMED. FOR PARAPET AND PARAPET REINFORCEMENT DETAILS, SEE DWG. NOS. DK-01 THRU DK-03.
2. FOR DECK SLAB REINFORCEMENT DETAILS, SEE DWG. NOS. DK-01 THRU DK-03.
3. FOR SHEAR STUD DETAILS AND SPACING, SEE DWG. NOS. SD-01 AND BM-01.
4. FOR CONNECTION PLATE AND CROSS FRAME DETAILS (INTERMEDIATE AND ABUTMENT) AND SPACING, SEE DWG. NOS. BM-02 AND FR-01.
5. FOR GIRDER ELEVATION, SEE DWG. NO. BM-01.
6. FOR CHAIN LINK FENCE DETAILS, SEE DWG. NOS. FD-01 AND FD-02.
7. FOR SUPERSTRUCTURE DETAILS, SEE DWG. NO. SD-01.

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BR1-8
TS-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	B.K.B.
NEW CASTLE		

SUPERSTRUCTURE
TYPICAL SECTION

SHEET NO.
499
TOTAL SHTS.
875

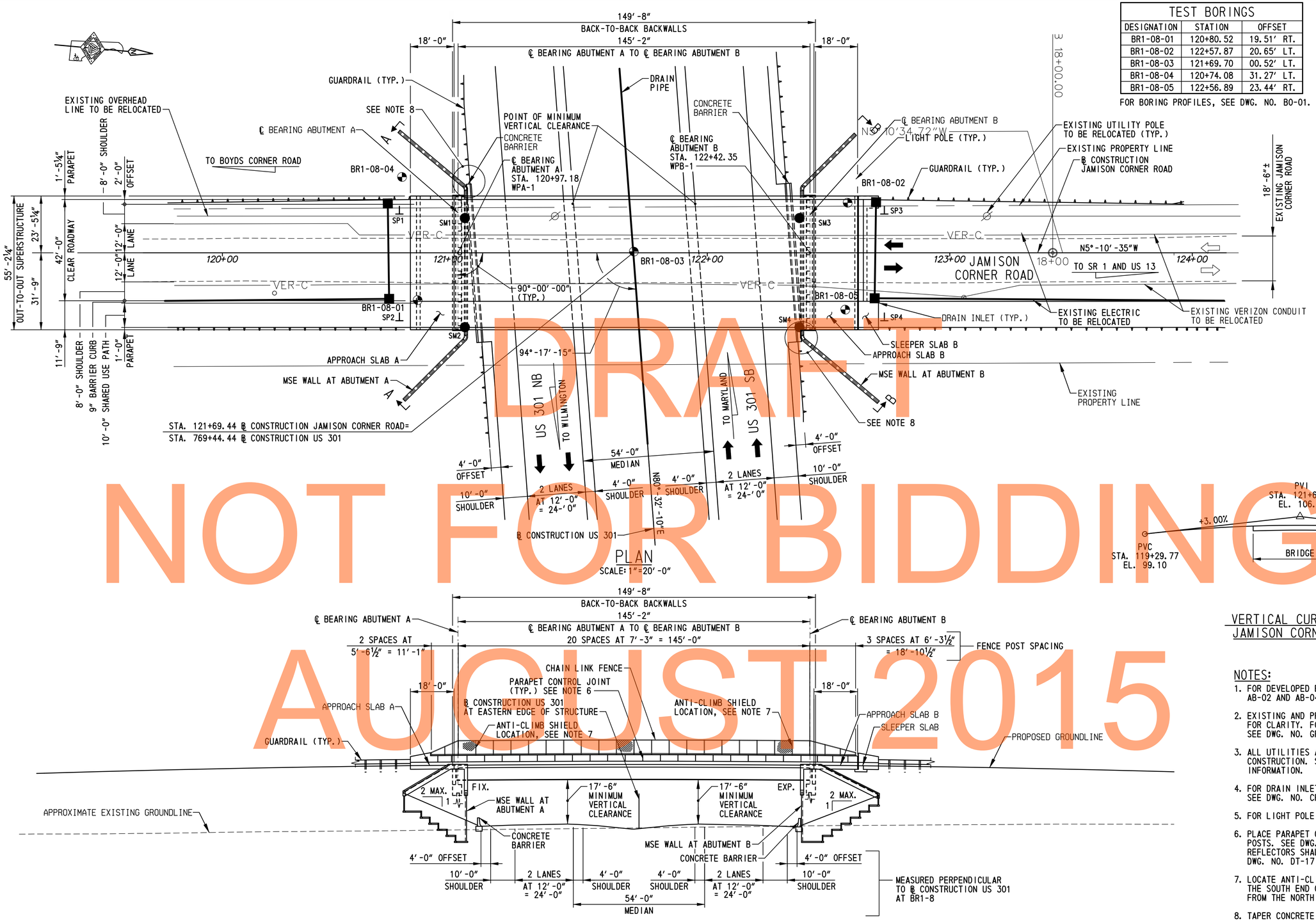
TEST BORINGS		
DESIGNATION	STATION	OFFSET
BR1-08-01	120+80.52	19.51' RT.
BR1-08-02	122+57.87	20.65' LT.
BR1-08-03	121+69.70	00.52' LT.
BR1-08-04	120+74.08	31.27' LT.
BR1-08-05	122+56.89	23.44' RT.

FOR BORING PROFILES, SEE DWG. NO. BO-01.

SETTLEMENT PLATFORMS		
DESIGNATION	STATION	OFFSET
SP1	120+73.00	16.00' LT.
SP2	120+73.00	28.00' RT.
SP3	122+73.00	16.00' LT.
SP4	122+73.00	28.00' RT.

SETTLEMENT MONUMENTS		
DESIGNATION	STATION	OFFSET
SM1	121+00	15.00' LT.
SM2	121+00	30.00' RT.
SM3	122+38	15.00' LT.
SM4	122+38	30.00' RT.

FOR SETTLEMENT PLATFORM DETAILS, SEE DWG. NO. FT-01. FOR SETTLEMENT MONUMENT DETAILS, SEE DWG. NO. PL-02. FOR SETTLEMENT MONITORING REQUIREMENTS, SEE THE SPECIAL PROVISIONS.



PLAN
SCALE: 1"=20'-0"

VERTICAL CURVE DATA
JAMISON CORNER ROAD

ELEVATION
SCALE: 1"=20'-0"

NOTES:

1. FOR DEVELOPED ELEVATIONS A-A AND B-B, SEE DWG. NOS. AB-02 AND AB-04.
2. EXISTING AND PROPOSED CONTOURS NOT SHOWN IN PLAN FOR CLARITY. FOR EXISTING AND PROPOSED CONTOURS, SEE DWG. NO. GR-01.
3. ALL UTILITIES ARE TO BE RELOCATED PRIOR TO BRIDGE CONSTRUCTION. SEE PROJECT NOTE 18 FOR ADDITIONAL INFORMATION.
4. FOR DRAIN INLET, DRAIN PIPE AND MANHOLE INFORMATION, SEE DWG. NO. CP-15.
5. FOR LIGHT POLE INFORMATION, SEE DWG. NO. LI-05.
6. PLACE PARAPET CONTROL JOINTS CENTERED BETWEEN FENCE POSTS. SEE DWG. NOS. FD-01 AND FD-02 FOR DETAILS. REFLECTORS SHALL BE INSTALLED ALONG EACH PARAPET. SEE DWG. NO. DT-17 FOR DETAILS.
7. LOCATE ANTI-CLIMB SHIELD AT THE FOURTH FENCE POST FROM THE SOUTH END OF EACH FENCE AND AT THE FIFTH FENCE POST FROM THE NORTH END OF EACH FENCE.
8. TAPER CONCRETE BARRIER FOOTING FROM 2'-7" (FULL WIDTH) TO 2'-0" AT THE WEST END OF ABUTMENT A AND 2'-0¼" AT THE EAST END OF ABUTMENT B TO FACILITATE MSE WALL CONSTRUCTION.

BR1-8
PE-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	B.K.B.
NEW CASTLE		

GENERAL PLAN AND ELEVATION

SHEET NO.	TOTAL SHTS.
500	875

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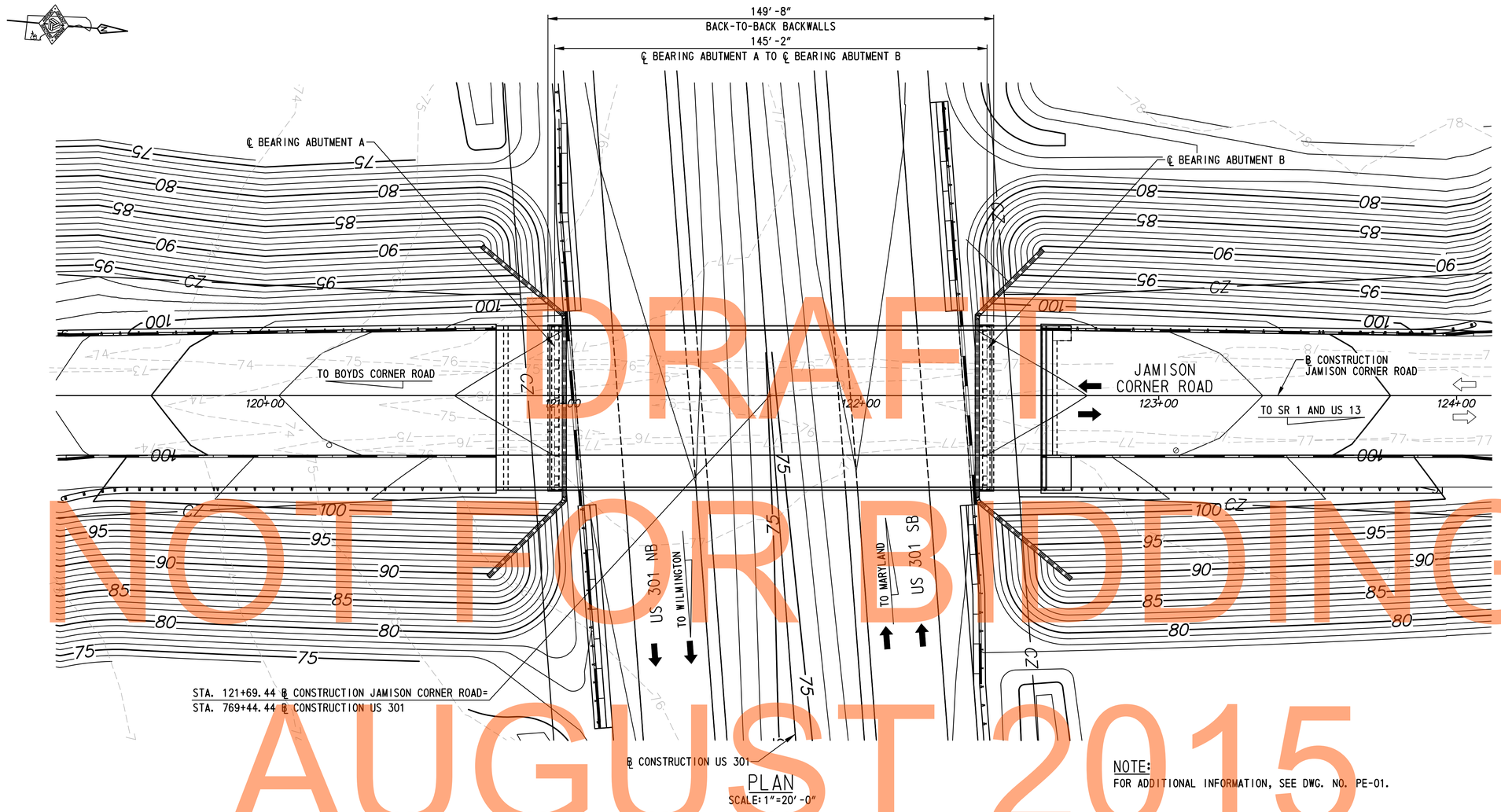

STA. 121+69.44 ℄ CONSTRUCTION JAMISON CORNER ROAD=
STA. 769+44.44 ℄ CONSTRUCTION US 301

℄ CONSTRUCTION US 301

PLAN
SCALE: 1″=20′-0″

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

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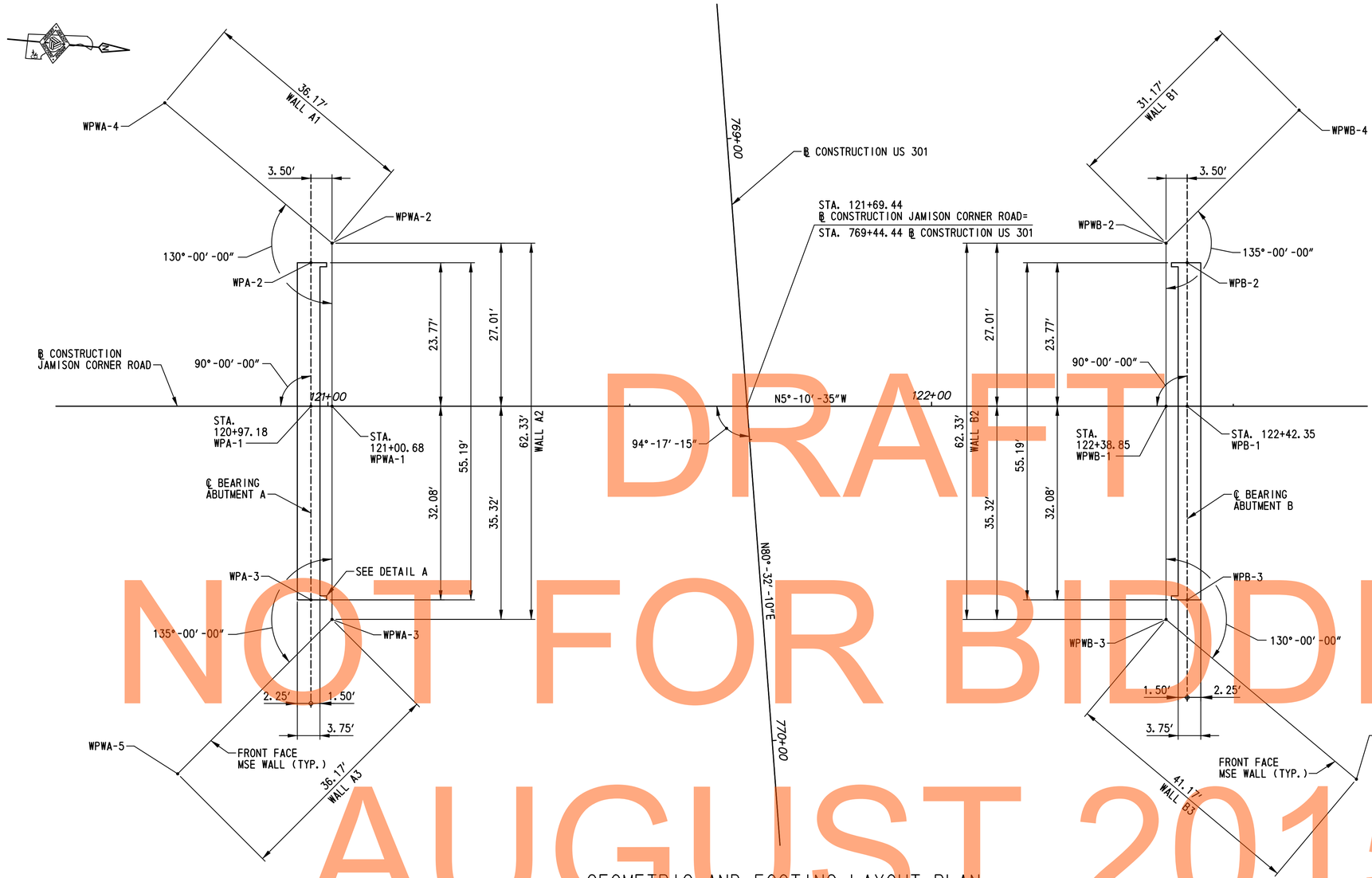
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	GRADING PLAN	BR1-8 GR-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 501
					CHECKED BY: K.W.F.		TOTAL SHTS. 875



GEOMETRIC AND FOOTING LAYOUT PLAN

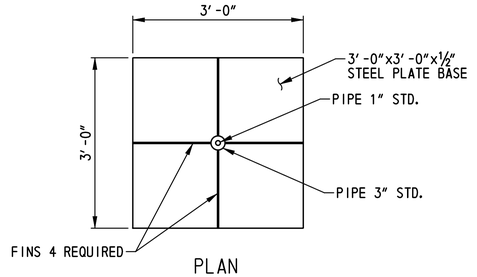
SCALE: 1"=10'-0"

DETAIL A

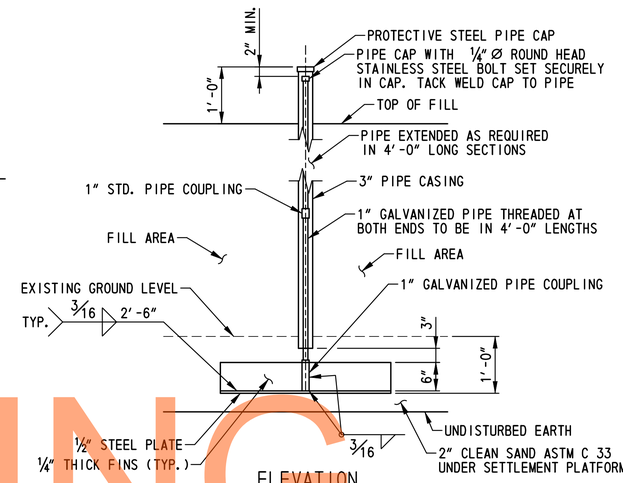
SCALE: 3/8"=1'-0"

NOTE:

DETAIL A SHOWN AT EAST END OF ABUTMENT A. WEST END OF ABUTMENT A AND BOTH ENDS OF ABUTMENT B SIMILAR.



PLAN



ELEVATION

SETTLEMENT PLATFORM DETAILS

SCALE: ¾"=1'-0"

NOTES:

1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-01.
2. FOR SETTLEMENT PLATFORM LOCATIONS, SEE DWG. NO. PE-01.

WORKING POINT LOCATION CHART

WORKING POINT	STATION	OFFSET	NORTHING	EASTING
WPA-1	120+97.18	0.00'	555141.8265	581966.0626
WPA-2	120+97.18	23.77' LT.	555139.6819	581942.3887
WPA-3	120+97.18	32.08' RT.	555144.7211	581998.0151
WPWA-1	121+00.68	0.00'	555145.3122	581965.7468
WPWA-2	121+00.68	27.01' LT.	555142.8754	581938.8465
WPWA-3	121+00.68	35.32' RT.	555148.4991	582000.9257
WPWA-4	120+72.97	50.26' LT.	555113.1857	581918.1934
WPWA-5	120+75.11	60.90' RT.	555125.3369	582028.7024
WPB-1	122+42.35	0.00'	555286.4011	581952.9656
WPB-2	122+42.35	23.77' LT.	555284.2565	581929.2916
WPB-3	122+42.35	32.08' RT.	555289.2957	581984.9180
WPWB-1	122+38.85	0.00'	555282.9154	581953.2813
WPWB-2	122+38.85	27.01' LT.	555300.4389	581902.4479
WPWB-3	122+38.85	35.33' RT.	555319.8968	582011.9721
WPWB-4	122+60.88	49.05' LT.	555300.4389	581902.4479
WPWB-5	122+70.38	61.79' RT.	555319.8968	582011.9721

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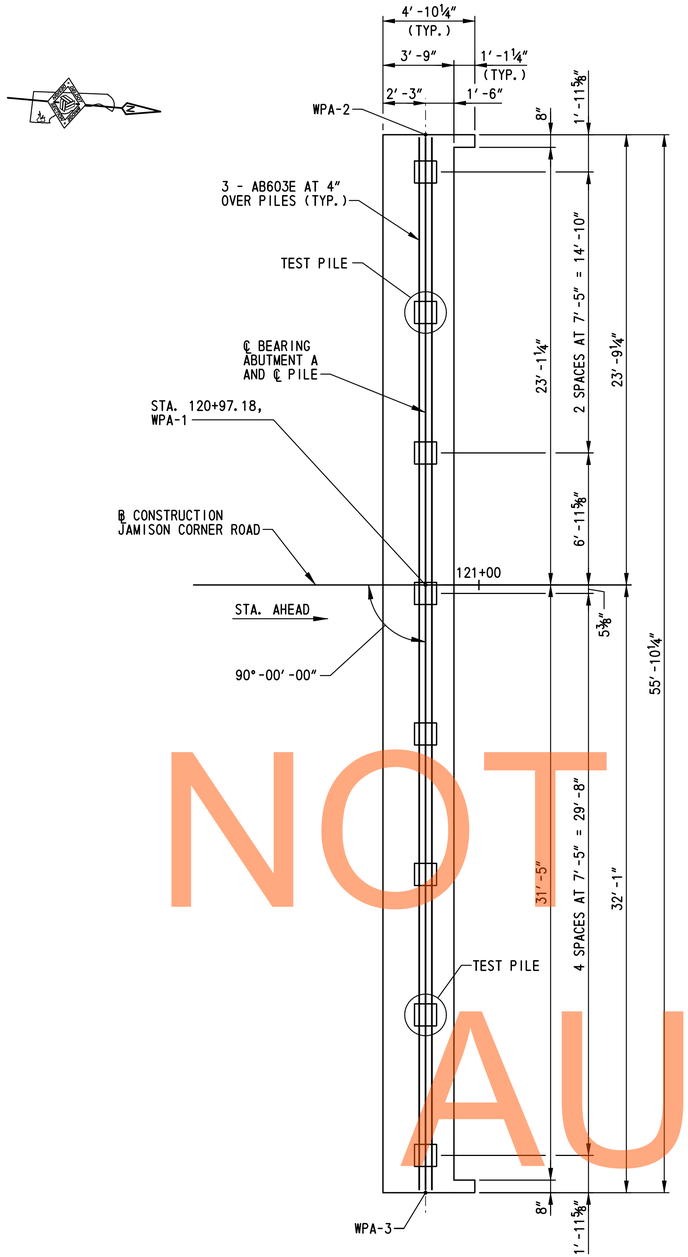
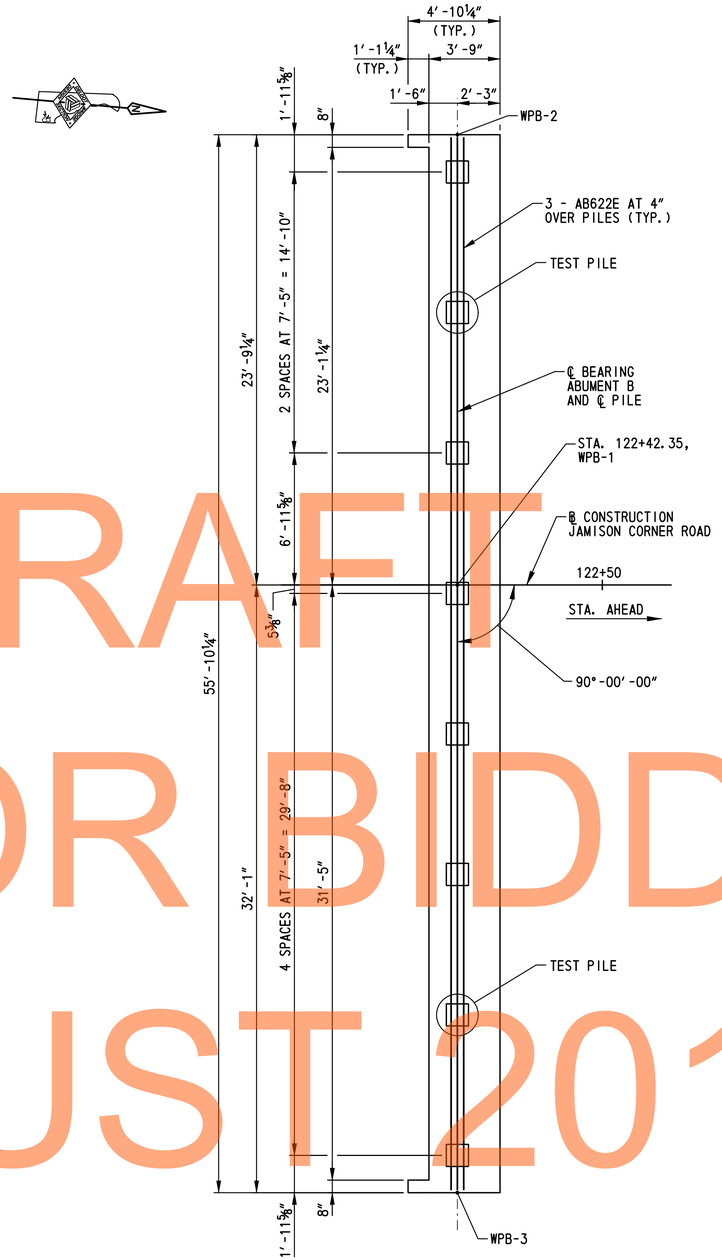
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	GEOMETRIC AND FOOTING LAYOUT PLAN	BR1-8 FT-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 502
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



ABUTMENT A



ABUTMENT B

PILE LAYOUT PLAN

SCALE: ¼″=1′-0″

PILE LEGEND:

1. □ DENOTES PLUMB 14″ SQUARE PRESTRESSED CONCRETE PILE, SEE PILE NOTE 6
2. ⊡ DENOTES LOCATION OF 14″ SQUARE PRESTRESSED CONCRETE PILE DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS, SEE PILE NOTE 6

PILE NOTES:

1. THE FACTORED RESISTANCE OF THE 14″ PRESTRESSED CONCRETE PILING IS 145 TONS. PILES SHALL BE DRIVEN AND TESTED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR DYNAMIC PILE TESTING TO A NOMINAL CAPACITY OF 225 TONS.
2. PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL RESISTANCE OF 225 TONS AND TO THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
3. DYNAMIC PILE TESTING SHALL BE PERFORMED AFTER CONSTRUCTION OF THE MSE WALL AND COMPLETION OF THE SETTLEMENT WAITING PERIOD AS DETERMINED BY THE ENGINEER, BASED ON THE RESULTS OF INSTRUMENTATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. UPON COMPLETION OF THE DYNAMIC PILE TESTING THE CONTRACTOR SHALL SUBMIT A SIGNAL MATCHING ANALYSIS TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
4. ALL TEST PILES SHALL BE 10 FEET LONGER THAN THE PILE LENGTH COMPUTED FROM THE PILE TIP DATA TABLE. PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY THE TEST PILES. DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID FOR AS FOLLOWS:

   A. ALL TEST PILES WILL BE RESTRUCK AFTER A WAITING PERIOD OF AT LEAST 48 HOURS. TEST PILE RESTRIKES SHALL BE INCIDENTAL TO THE INITIAL INSTALLATION OF THE PILE PROVIDED THEY ARE REQUESTED WITHIN FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE. IF RESTRIKES ARE REQUESTED AFTER FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE THEN THE TEST PILE RESTRIKE SHALL BE PAID FOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

   B. IF DIRECTED BY THE ENGINEER TO RESTRIKE A PRODUCTION PILE, THE RESTRIKE OF THE PRODUCTION PILE SHALL BE PAID SEPARATELY UNDER ITEM NO. 619501 - PRODUCTION PILE RESTRIKE.

   THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.

5. SEE DWG. NO. PE-01 FOR SETTLEMENT PLATFORM AND MONUMENT LOCATIONS. READINGS ON THE SETTLEMENT PLATFORMS SHALL BE MADE AFTER THE INITIAL INSTALLATION OF THE RISER AND CASING PIPES AND INSTALLATION RECORD SHEETS ARE APPROVED BY THE ENGINEER AND PRIOR TO FILL PLACEMENT. DURING FILL PLACEMENT, READINGS ON ALL SETTLEMENT PLATFORMS SHALL BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER COMPLETION OF THE FILL AND SURCHARGE PLACEMENT, INSTALL SETTLEMENT MONUMENTS IF INDICATED ON THE BRIDGE PLANS AND TAKE INITIAL READINGS. READINGS ON ALL SETTLEMENT MONITORING DEVICES SHALL THEN BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. IF THE SETTLEMENT HAS CEASED ON ALL MONITORED SETTLEMENT MONITORING DEVICES IN THE VICINITY OF THE SUBSTRUCTURE UNIT BY CALENDAR DAY 6, THAT IS THREE READINGS, AFTER THE COMPLETION OF THE FILL, SURCHARGE AND SETTLEMENT MONUMENT PLACEMENT, THE SUBSTRUCTURE WILL BE RELEASED BY THE ENGINEER FOR REMOVAL OF THE SURCHARGE AND INSTALLATION OF PRODUCTION PILES WITHIN THREE WORKING DAYS OF RECEIPT OF SETTLEMENT MONITORING RESULTS. AFTER COMPLETION OF THE ABUTMENT AND MSE WALL PANEL PLACEMENT, THE CONTRACTOR SHALL ESTABLISH REFERENCE POINTS TO MONITOR SETTLEMENT ON TOP OF THE ABUTMENT SEAT AND EITHER ON TOP OF THE MSE WALL PANELS OR ON TOP OF THE MSE WALL LEVELING PAD AT POINTS WITHIN FIVE FEET OF ALL ENDS AND CORNERS AND AT THE CENTER OF BRIDGES AND THE CENTERLINE OF US301. AFTER THE CONCRETE ABUTMENTS HAVE BEEN CONSTRUCTED AND THE MSE WALL PANELS HAVE BEEN PLACED, READINGS ON ALL SETTLEMENT MONITORING DEVICES AND REFERENCE POINTS SHALL CONTINUE TO BE TAKEN AT A MINIMUM OF 30-DAY INTERVALS FOR THE NEXT 6 MONTHS OR AS DIRECTED BY THE ENGINEER. SEE SPECIAL PROVISIONS FOR ADDITIONAL SETTLEMENT MONITORING REQUIREMENTS.
6. THROUGHOUT THE PLANS 14″ PRESTRESSED CONCRETE PILES ARE DEPICTED. THE CONTRACTOR HAS THE OPTION TO INSTALL HP 14x73 STEEL PILES AS AN ALTERNATIVE TO THE 14″ PRESTRESSED CONCRETE PILES SHOWN. THE HP 14x73 STEEL PILES SHALL BE INSTALLED IN THE SAME LOCATIONS AS THE 14″ PRESTRESSED CONCRETE PILES. PILE NOTES 1 THRU 4 AND THE PILE INSTALLATION SEQUENCE OF CONSTRUCTION ARE APPLICABLE TO THE HP 14x73 STEEL PILE ALTERNATIVE. THE ESTIMATED PILE TIP ELEVATION FOR THE HP 14x73 STEEL PILES IS SHOWN IN THE PILE TIP DATA TABLE. FOR ORIENTATION OF THE HP 14x73 STEEL PILES, SEE DWG. NO. PL-02.
7. FOR ADDITIONAL PILE DETAILS, SEE DWG. NO. PL-02.
8. FOR PILE INSTALLATION SEQUENCE OF CONSTRUCTION, SEE DWG. NO. PL-02.

PILE TIP DATA TABLE, SEE PILE NOTE 6

SUBSTRUCTURE UNIT	DESIGN DATA			ACTUAL FIELD DATA	
	MINIMUM TIP ELEVATION	14″ SQ. P.C.P. ESTIMATED TIP ELEVATION	HP 14x73 S.P. ESTIMATED TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUTMENT A	32.0	18.0	-6.0		
ABUTMENT B	38.0	18.0	-5.0		

ABUTMENT A PILE DRIVING INFORMATION

PILE SIZE AND TYPE:
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY: 45,000 LB-FT TO 75,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:

ABUTMENT B PILE DRIVING INFORMATION

PILE SIZE AND TYPE:
ACTUAL BEARING OBTAINED:
HAMMER TYPE:
PILE HAMMER ENERGY: 45,000 LB-FT TO 75,000 LB-FT
SPECIAL DRIVING CONDITIONS AND COMMENTS:

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

US 301, SR 896 TO SR 1

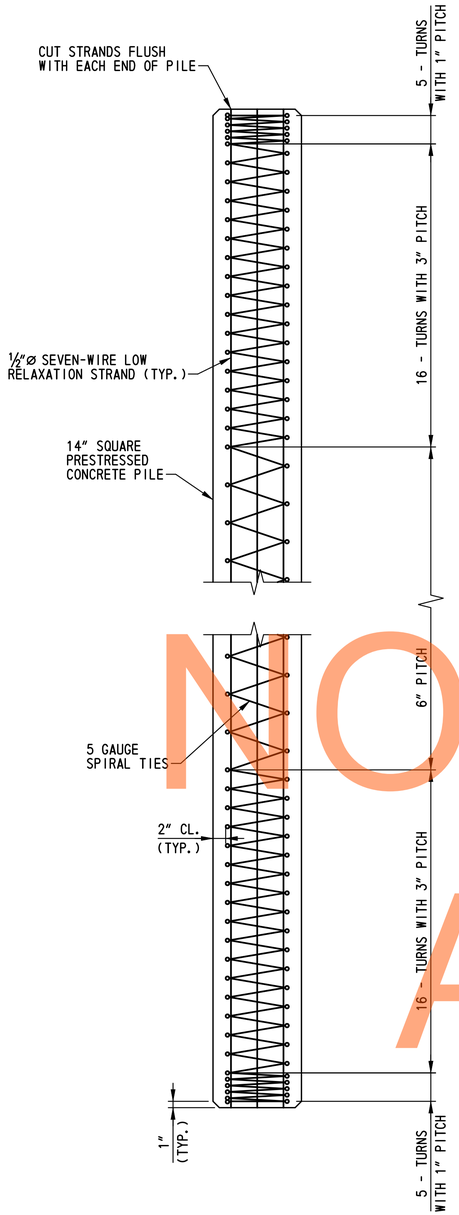
CONTRACT	BRIDGE NO. 1-460A
T200911308	DESIGNED BY: A.D.D.
COUNTY	CHECKED BY: B.K.B.
NEW CASTLE	

PILE LAYOUT PLAN

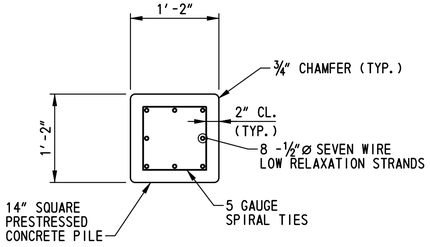
BR1-8 PL-01

SHEET NO. 503

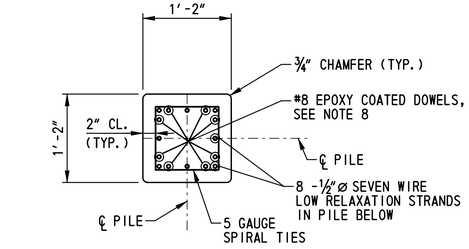
TOTAL SHTS. 875



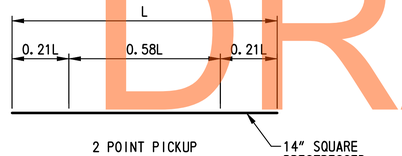
PILE ELEVATION
SCALE: 1"=1'-0"



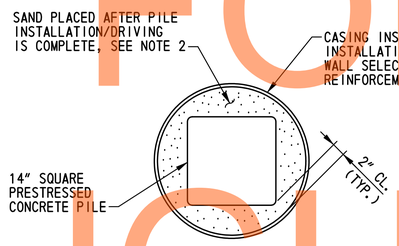
PILE TYPICAL SECTION
SCALE: 1"=1'-0"



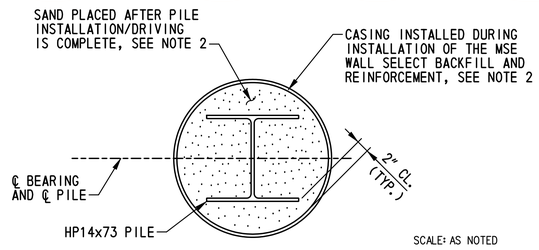
BUILD-UP TYPICAL SECTION
SCALE: 1"=1'-0"



PILE PICKUP DATA
NOT TO SCALE

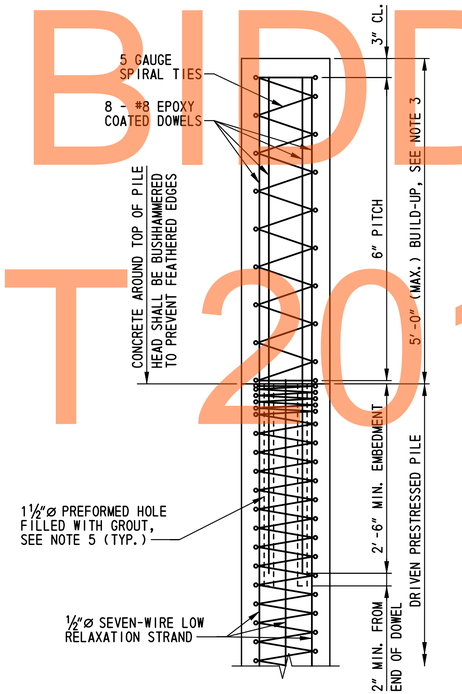


PILE CASING DETAIL
SCALE: 1"=1'-0"

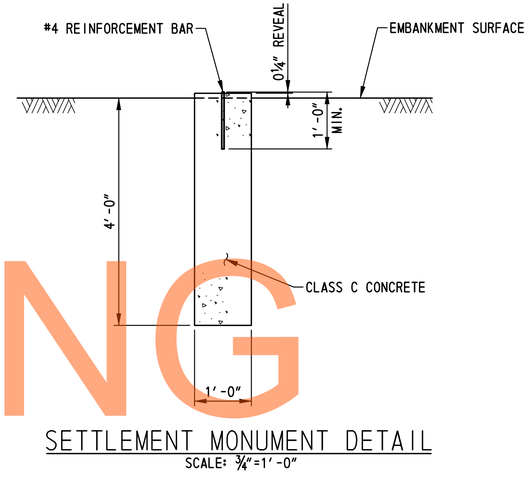


SCALE: AS NOTED

STEEL PILE ALTERNATIVE CASING DETAIL
SCALE: 1"=1'-0"



BUILD-UP WITHOUT DRIVING
SCALE: 1"=1'-0"



SETTLEMENT MONUMENT DETAIL
SCALE: ¾"=1'-0"

PILE INSTALLATION SEQUENCE OF CONSTRUCTION:

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

NOTES:

1. FOR ADDITIONAL PILE INFORMATION, SEE DWG. NO. PL-01.
2. PAYMENT FOR INSTALLATION OF CASING AND SAND WILL BE INCIDENTAL TO ITEM NO. 602772 - MECHANICALY STABILIZED EARTH WALLS. FOR INSTALLATION AND MATERIAL REQUIREMENTS OF SAND/CASING SEE THE SPECIAL PROVISIONS.
3. THE CAST-IN-PLACE CONCRETE PILE BUILD-UP SHALL BE USED WHERE PILES MUST BE DRIVEN TO AN ELEVATION WHICH RESULTS IN THE TOP OF PILE BEING LOWER THAN THE BOTTOM OF CAP TO ACHIEVE THE REQUIRED NOMINAL RESISTANCE. PILE BUILD-UP WILL BE MEASURED AND PAID FOR IN CONFORMANCE WITH SECTION 618 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
4. FOR SETTLEMENT MONUMENT LOCATIONS, SEE DWG. NO. PE-01.
5. PROVIDE 1½" DIAMETER PREFORMED HOLES IN PILE HEAD AT THE DOWEL LOCATIONS. DOWELS SHALL BE GROUTED INTO PLACE WITH AN APPROVED EPOXY GROUT. PRIOR TO THE GROUTING PROCEDURE, PREFORMED HOLES SHALL REMAIN PLUGGED TO ENSURE THAT WATER AND FOREIGN MATERIAL DOES NOT ENTER THE PREFORMED HOLES. HOLES SHALL BE GROUTED WHEN THE PILE BUILD-UP IS NOT NEEDED.
6. MINIMUM COMPRESSIVE STRENGTH OF EPOXY GROUT SHALL BE f'c=6,000 PSI.
7. THE COMPRESSIVE STRENGTH OF THE PILE BUILD-UP SHALL BE f'c=6,000 PSI.
8. DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN A 1" CLEAR DISTANCE FROM ALL PRESTRESSING STRANDS IN THE PILE.

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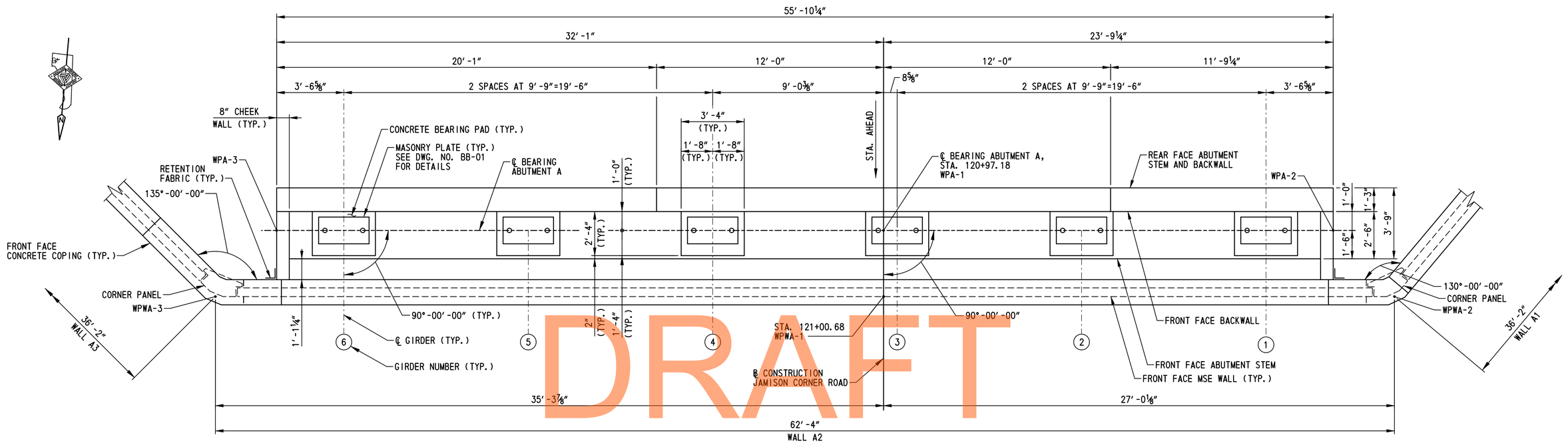
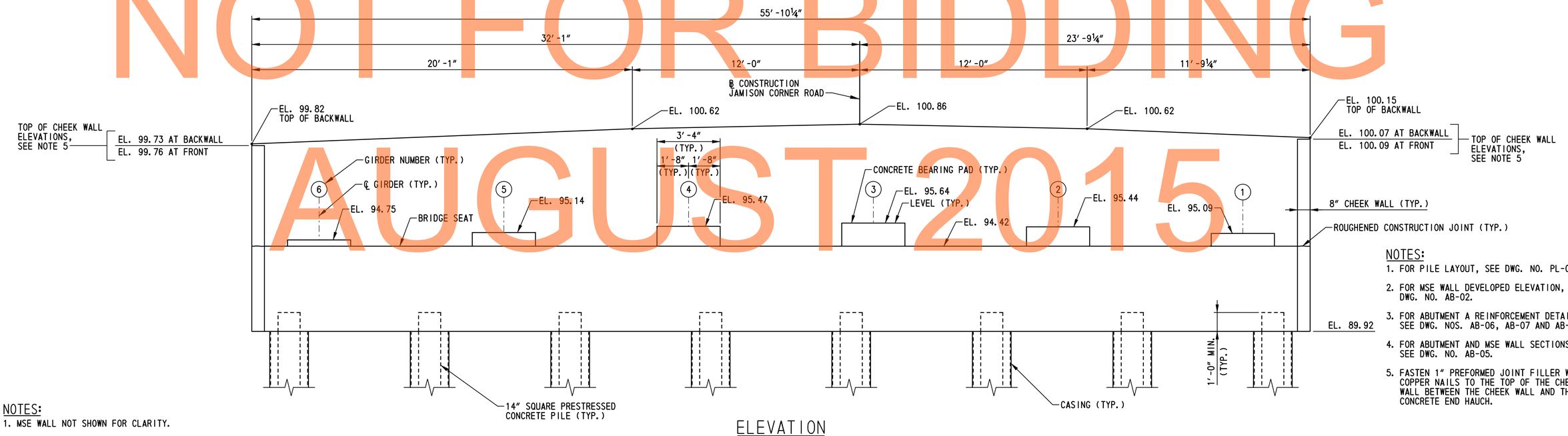
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	PILE DETAILS	BR1-8 PL-02
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 504
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



PLAN
SCALE: ⅜″=1′-0″

NOTE:
DIMENSIONS SHOWN FOR MSE WALLS ARE MEASURED WORKING POINT TO WORKING POINT ALONG FRONT FACE OF MSE WALL.



ELEVATION
SCALE: ⅜″=1′-0″

NOTES:
1. MSE WALL NOT SHOWN FOR CLARITY.
2. APPROXIMATE EXISTING GROUNDLINE AND PROPOSED GROUNDLINE LOCATED AROUND BOTTOM OF MSE WALL, APPROXIMATELY EL. 76.00 AND 78.00 RESPECTIVELY.

NOTES:
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
2. FOR MSE WALL DEVELOPED ELEVATION, SEE DWG. NO. AB-02.
3. FOR ABUTMENT A REINFORCEMENT DETAILS, SEE DWG. NOS. AB-06, AB-07 AND AB-10.
4. FOR ABUTMENT AND MSE WALL SECTIONS, SEE DWG. NO. AB-05.
5. FASTEN 1″ PREFORMED JOINT FILLER WITH COPPER NAILS TO THE TOP OF THE CHEEK WALL BETWEEN THE CHEEK WALL AND THE CONCRETE END HAUCH.

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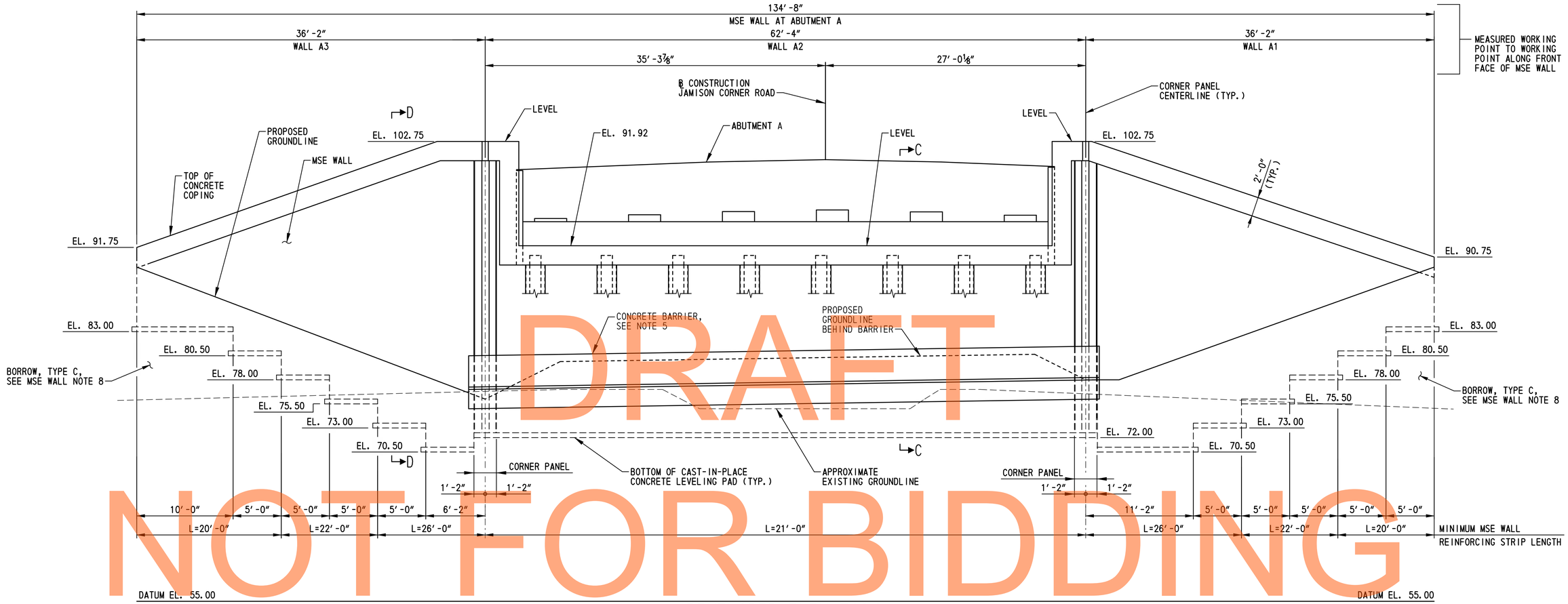
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	ABUTMENT A PLAN AND ELEVATION	BR1-8 AB-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 505
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



DEVELOPED ELEVATION A-A

SCALE: 3/16″=1′-0″

MSE WALL NOTES:

1. DESIGN CRITERIA
   SEE SPECIAL PROVISON FOR ITEM 602772.

2. CONCRETE
   ALL CONCRETE PROPERTIES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

   CLASS A - MSE WALL PANELS AND MSE WALL COPING (f′c = 4,500 PSI).

   CLASS B - MSE WALL LEVELING PADS (f′c = 3,000 PSI).

   ALL EXPOSED EDGES SHALL BE CHAMFERED ¾" UNLESS NOTED OTHERWISE.

3. REINFORCING STEEL
   ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM A615) , GRADE 60 AND SHALL BE PROTECTED WITH FUSION BONDED EPOXY, CONFORMING TO AASHTO M284 (ASTM A 775).

   MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 2" UNLESS NOTED OTHERWISE.

4. ARCHITECTURAL FINISH
   THE COMPONENTS OF THE MSE WALL SHALL HAVE THE ARCHITECTURAL TREATMENT AS SPECIFIED IN THE SPECIAL PROVISION FOR ITEM 602772.

5. REINFORCING STRIPS
   REINFORCING STRIPS SHALL BE LOCATED TO CLEAR THE PILE CASING WITH 2" MINIMUM CLEARANCE AND A MAXIMUM 15 DEGREE SKEW.

6. COPING
   THE MSE WALL COPING SHALL BE A PRECAST CONCRETE COPING INSTALLED IN CONFORMANCE WITH THE PROPRIETARY WALL MANUFACTURER'S RECOMMENDATIONS. FOR LOCATIONS ALONG THE MSE WALL WHERE A PRECAST CONCRETE COPING CANNOT BE UTILIZED A CAST-IN-PLACE CONCRETE COPING INSTALLED IN CONFORMANCE WITH THE PROPRIETARY MSE WALL MANUFACTURER'S RECOMMENDATIONS MAY BE UTILIZED.

7. LEVELING PAD
   THE LEVELING PAD STEPS MAY BE LOCATED AT THE DISCRETION OF THE PROPRIETARY WALL MANUFACTURER PROVIDED THAT THE MINIMUM EMBEDMENT IS MAINTAINED IN ACCORDANCE WITH THE SPECIFIED DESIGN CRITERIA. ANY CHANGES TO THE STEP LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

8. BACKFILL AND FOUNDATION SOILS
   MSE WALL BACKFILL SHALL CONSIST OF SELECT BACKFILL AND MEET THE REQUIREMENTS PROVIDED IN THE SPECIAL PROVISIONS. FOR ADDITIONAL REQUIREMENTS OF MSE WALL BACKFILL AND FOUNDATION SOILS, SEE THE SOIL PROPERTIES TABLE ON THIS SHEET. THE VERTICAL LIMIT OF BORROW, TYPE C SHALL BE FROM THE EXISTING GROUNDLINE TO THE BOTTOM OF THE LEVELING PAD. THE HORIZONTAL LIMIT OF BORROW, TYPE C SHALL BE FROM 4′-0" IN FRONT OF THE MSE WALL TO 1′-0" BEHIND THE END OF THE MSE WALL REINFORCEMENT. PAYMENT FOR BORROW, TYPE C WILL BE MADE UNDER ITEM NO. 202000 - EXCAVATION AND EMBANKMENT.

9. INTERNAL STABILITY
   THE INTERNAL STABILITY OF THE MSE WALL SHALL BE DESIGNED BY THE PROPRIETARY WALL MANUFACTURER USING THE SOIL PROPERTIES PROVIDED AT EACH MSE WALL LOCATION. THE INTERNAL STABILITY CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE AS INDICATED IN THE PROJECT SPECIFICATIONS.

10. QUARANTINE PERIOD
    ALLOW A MINIMUM OF 60 DAYS QUARANTINE PERIOD FOR SETTLEMENT MONITORING. BEGIN THE QUARANTINE PERIOD WHEN THE FULL HEIGHT OF THE MSE WALL IS ACHIEVED, THE APPROACH EMBANKMENTS ARE AT ITS FINAL ROADWAY SUBGRADE ELEVATION AND THE SETTLEMENT PLATFORMS ARE COMPLETELY CONSTRUCTED. THE ENGINEER WILL DETERMINE THE DURATION OF THE QUARANTINE PERIOD BASED ON THE SETTLEMENT READINGS. THE ENGINEER WILL NOTIFY THE CONTRACTOR, IN WRITING, WHEN THE QUARANTINE PERIOD CAN BE LIFTED BASED ON THE RESULTS OF THE SETTLEMENT READINGS.

11. SETTLEMENT REQUIREMENTS
    THE CONTRACTOR AND MSE WALL MANUFACTURER SHALL DESIGN AND CONSTRUCT THE FINAL WALL FACING SUCH THAT THE FINAL WALL FACING IS AT THE REQUIRED ELEVATIONS AFTER SETTLEMENT IS ACHIEVED. THE ANTICIPATED SETTLEMENT IS 4 INCHES AT THE FACE OF WALL.

12. SERVICE LIFE
    ALL MSE WALL COMPONENTS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS.

13. WALL SYSTEM
    ONLY ONE MSE WALL SYSTEM SHALL BE USED ON THIS PROJECT.

14. TEMPORARY SUPPORT OF EMBANKMENT
    TEMPORARY SUPPORT OF EMBANKMENT IS REQUIRED AT THE REAR FACE OF BOTH ABUTMENT STEMS AND BACKWALLS TO ALLOW THE UNDERLYING SOILS TO PRECONSOLIDATE UNDER THE FINAL REQUIRED SOIL PRESSURE PRIOR TO PILE INSTALLATION. THE LIMITS OF THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE THE FULL ABUTMENT HEIGHT OVER THE FULL ABUTMENT LENGTH. THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE DESIGNED BY THE MSE WALL DESIGNER TO RESIST THE FULL HORIZONTAL EARTH PRESSURE AND HORIZONTAL SOIL PRESSURE DUE TO SURCHARGE OF SOIL AND THE CONTRACTOR'S EQUIPMENT AND MATERIALS. ALL MSE WALL REINFORCING STRIPS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS. THE DESIGN OF THE TEMPORARY SUPPORT OF EMBANKMENT SHALL BE COMPATIBLE WITH THE ABUTMENT ANCHORS SHOWN ON DWG. NO. AB-05. PAYMENT FOR CONSTRUCTION OF THE TEMPORARY SUPPORT OF EMBANKMENT WILL BE MADE UNDER ITEM NO. 602772 - MECHANICALLY STABILIZED EARTH WALLS. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SOIL PROPERTIES TABLE

SOIL TYPE	UNIT WEIGHT (PCF)	DRAINED ANGLE OF FRICTION (DEGREES)	UNDRAINED SHEAR STRENGTH (PSF)
SELECT BACKFILL	125	34 (MIN.)	0
FOUNDATION SOIL (BORROW, TYPE C)	120	32	0
FOUNDATION SOIL	120	30	0
RETAINED FILL	120	30	0

NOTES:

1. FOR LOCATION OF DEVELOPED ELEVATION A-A, SEE DWG. NO. PE-01.
2. FOR SECTIONS C-C AND D-D, SEE DWG. NO. AB-05.
3. FOR ABUTMENT A DETAILS, SEE DWG. NO. AB-01.
4. FOR ADDITIONAL INFORMATION ON MSE WALL, SEE DWG. NO. FT-01.
5. FOR CONCRETE BARRIER DETAILS, SEE DWG. NO. DT-17.

BR1-8
AB-02

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

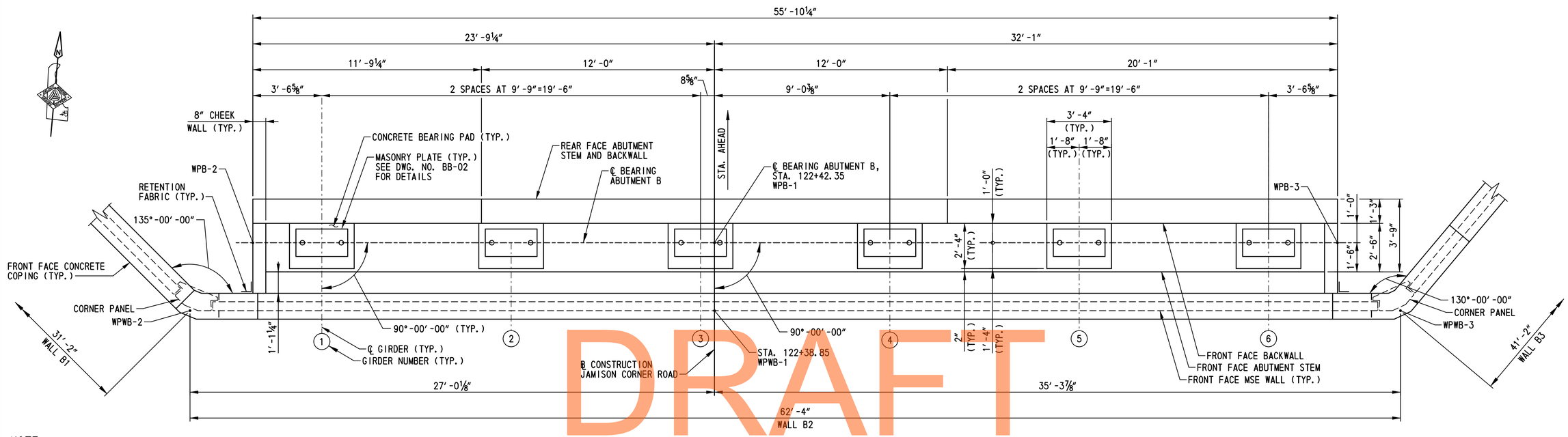
SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

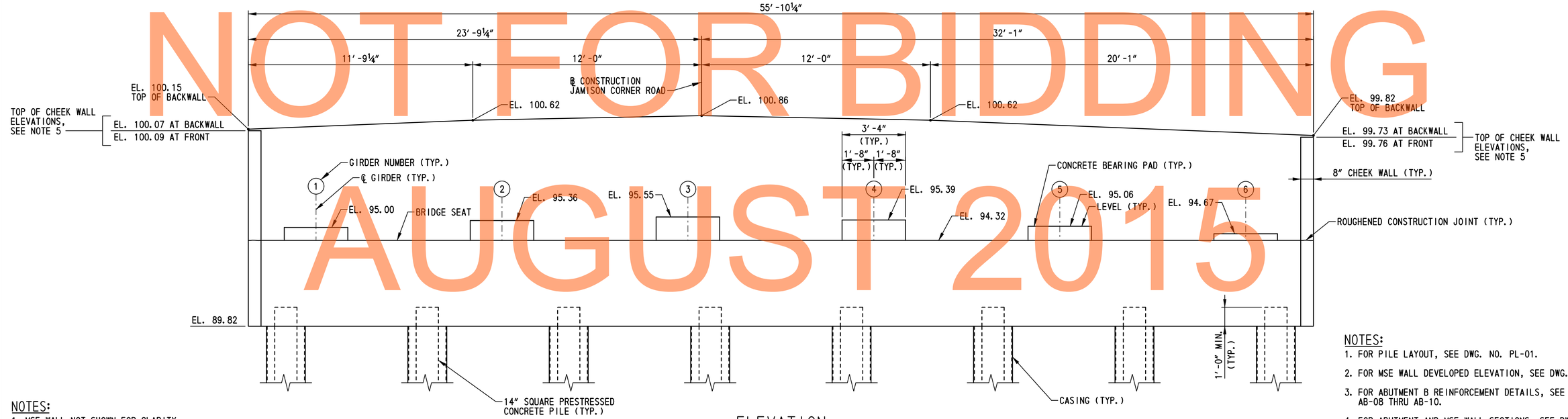
MSE WALL AT ABUTMENT A

SHEET NO.	TOTAL SHTS.
506	875



PLAN
SCALE: ⅜″=1′-0″

NOTE:
DIMENSIONS SHOWN FOR MSE WALLS ARE MEASURED WORKING POINT TO WORKING POINT ALONG FRONT FACE OF MSE WALL.



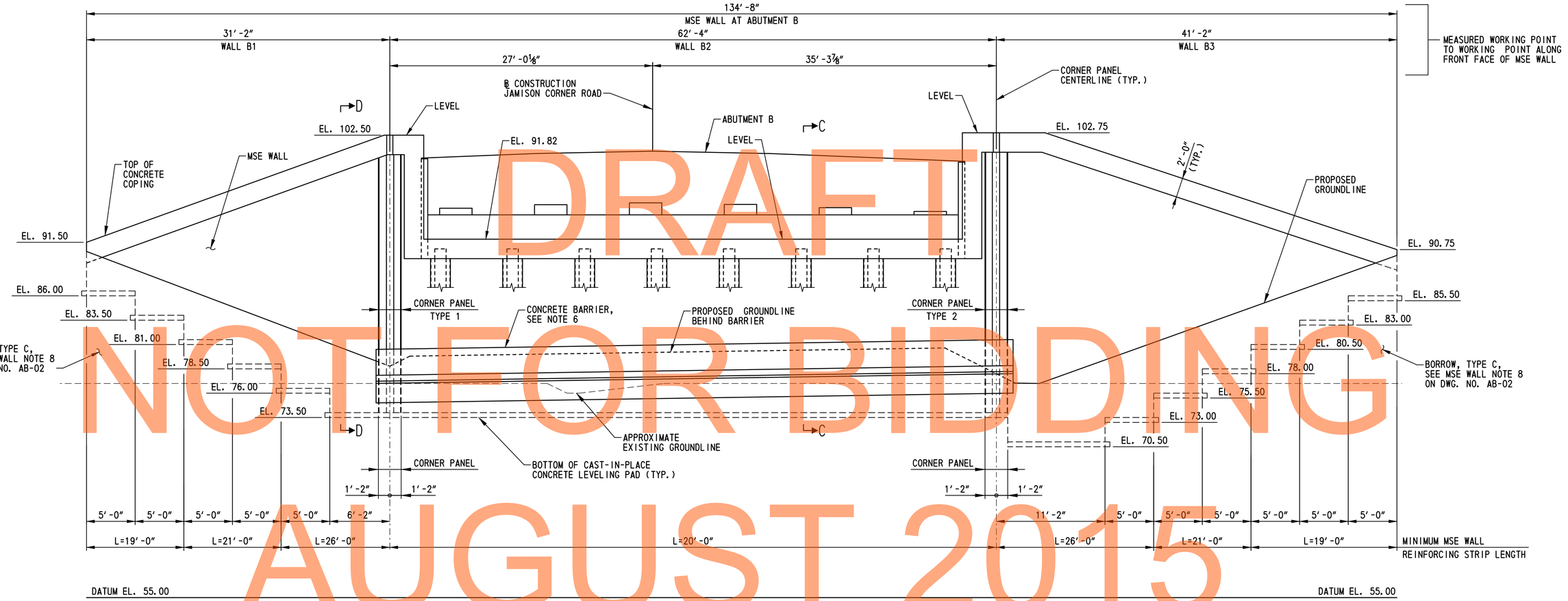
ELEVATION
SCALE: ⅜″=1′-0″

NOTES:
1. MSE WALL NOT SHOWN FOR CLARITY.
2. APPROXIMATE EXISTING GROUNDLINE AND PROPOSED GROUNDLINE LOCATED AROUND BOTTOM OF MSE WALL, APPROXIMATELY EL. 76.00 AND 77.00 RESPECTIVELY.

NOTES:
1. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
2. FOR MSE WALL DEVELOPED ELEVATION, SEE DWG. NO. AB-04.
3. FOR ABUTMENT B REINFORCEMENT DETAILS, SEE DWG. NOS. AB-08 THRU AB-10.
4. FOR ABUTMENT AND MSE WALL SECTIONS, SEE DWG. NO. AB-05.
5. FASTEN 1″ PREFORMED JOINT FILLER WITH COPPER NAILS TO THE TOP OF THE CHEEK WALL BETWEEN THE CHEEK WALL AND THE CONCRETE END HAUNCH. POLYETHYLENE FILM CONTINUOUS WITH THE POLYETHYLENE FILM LOCATED ON TOP OF THE BACKWALL AND UNDERNEATH APPROACH SLAB B SHALL BE PLACED ON TOP OF THE PREFORMED JOINT FILLER. FOR POLYETHYLENE FILM INFORMATION, SEE DWG. NO. AS-05.

BR1-8
AB-03

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	ABUTMENT B PLAN AND ELEVATION	SHEET NO. 507
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		TOTAL SHTS. 875
					CHECKED BY: B.K.B.		



DEVELOPED ELEVATION B-B

SCALE: ⅛″=1′-0″

NOTES:

1. FOR LOCATION OF DEVELOPED ELEVATION B-B, SEE DWG. NO. PE-01.
2. FOR SECTIONS C-C AND D-D, SEE DWG. NO. AB-05.
3. FOR ABUTMENT B DETAILS, SEE DWG. NO. AB-03.
4. FOR ADDITIONAL INFORMATION ON MSE WALL, SEE DWG. NO. FT-01.
5. FOR MSE WALL NOTES AND SOIL PROPERTIES, SEE DWG. NO. AB-02.
6. FOR CONCRETE BARRIER DETAILS, SEE DWG. NO. DT-17.

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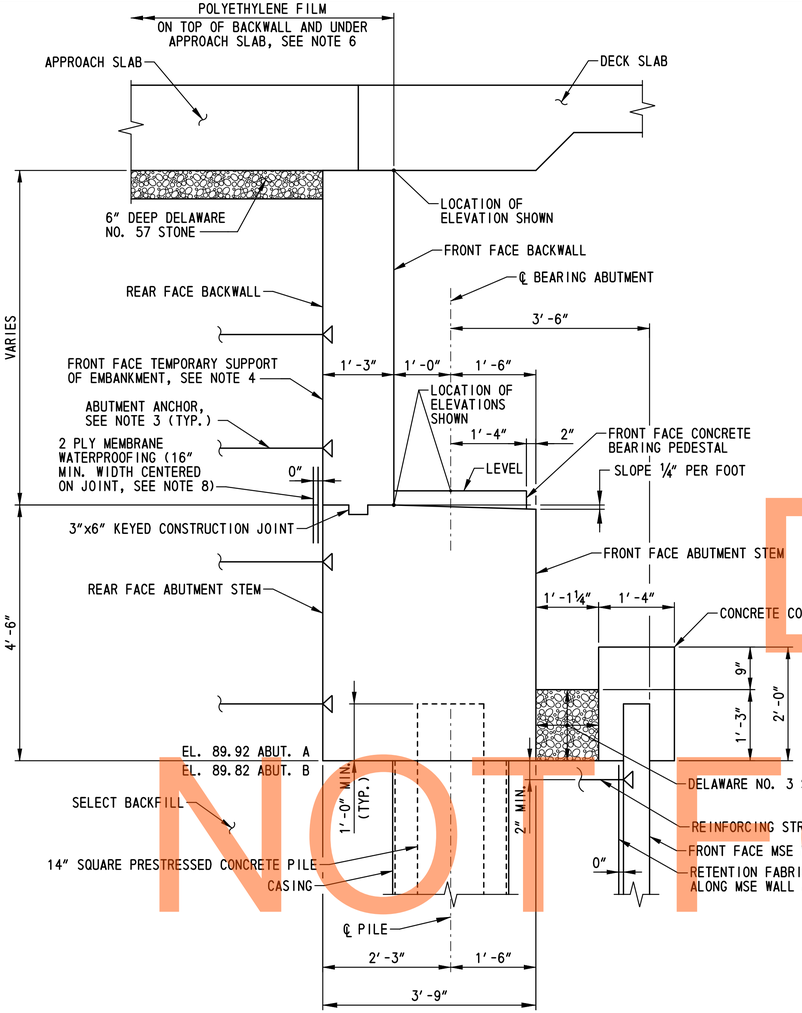
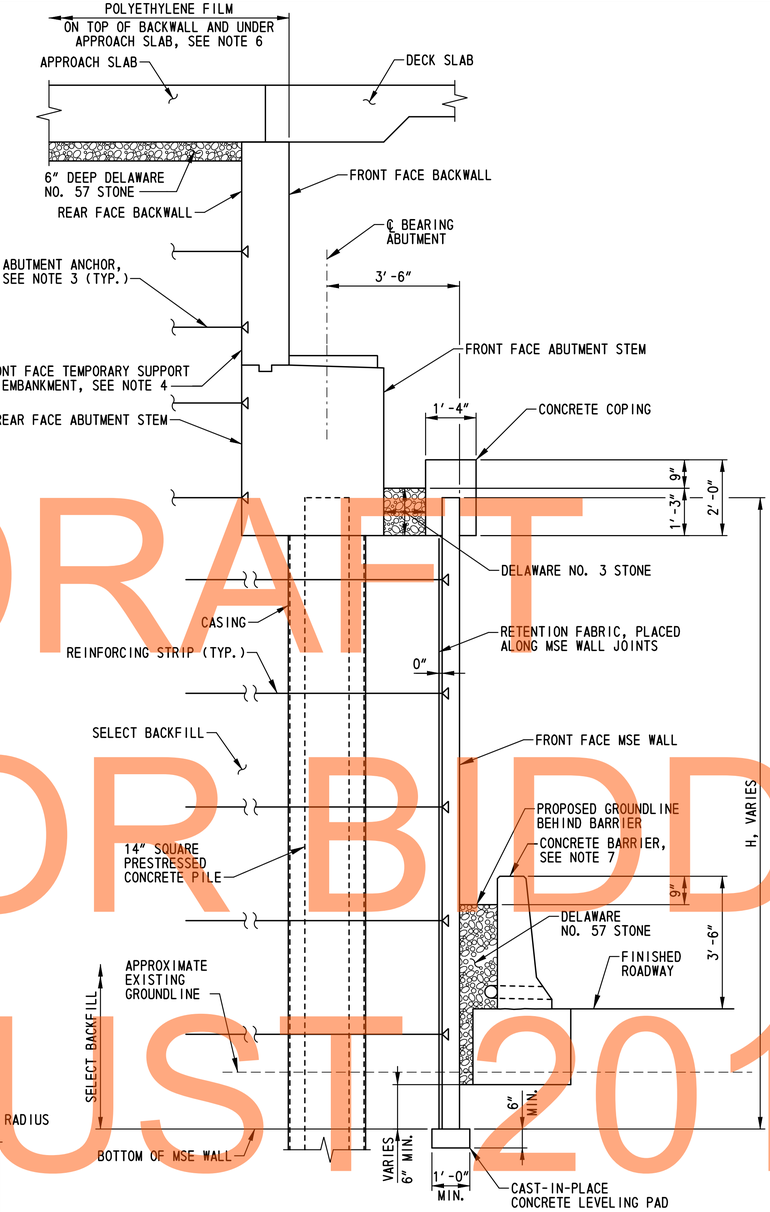
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	MSE WALL AT ABUTMENT B	BR1-8 AB-04
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 508
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



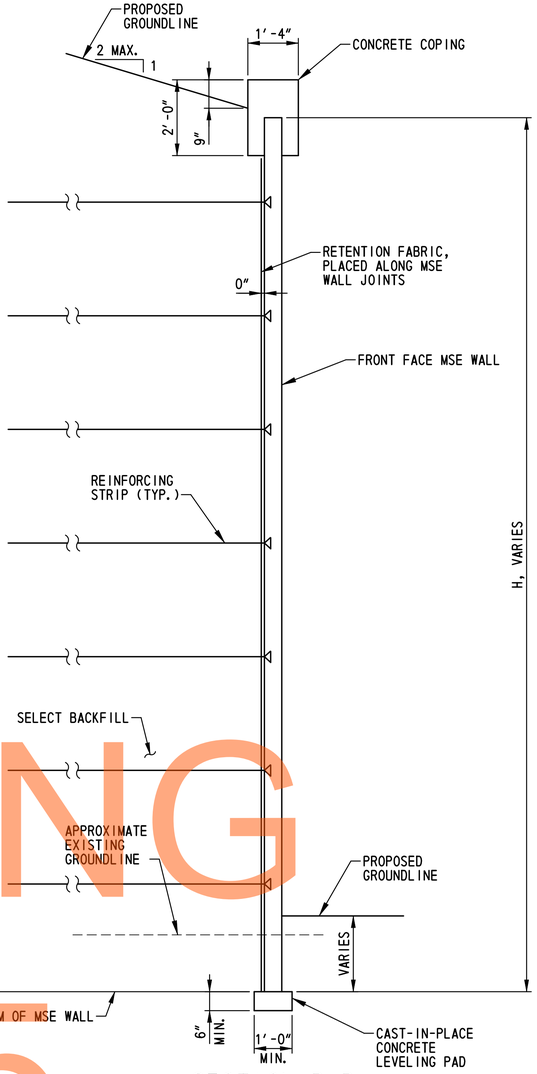
TYPICAL ABUTMENT SECTION

SCALE: ¾"=1'-0"



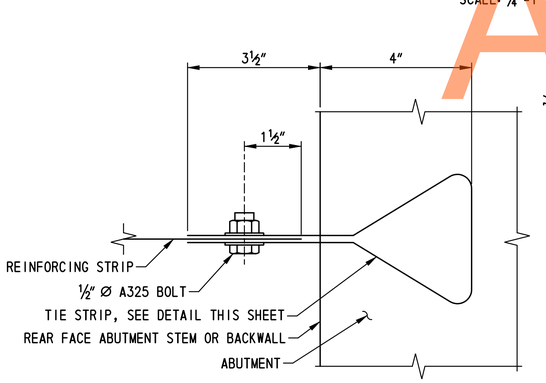
SECTION C-C

SCALE: ½"=1'-0"



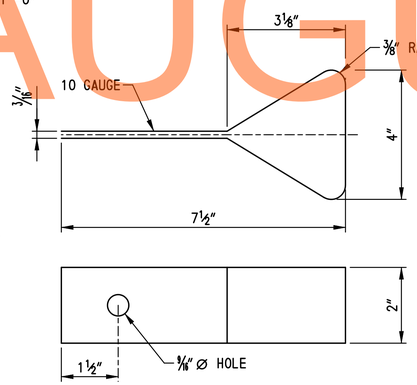
SECTION D-D

SCALE: ½"=1'-0"



ABUTMENT ANCHOR DETAIL

NOT TO SCALE



TIE STRIP DETAIL

NOT TO SCALE

ABUTMENT ANCHOR NOTES:

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

NOTES:

1. FOR LOCATIONS OF SECTIONS C-C AND D-D, SEE DWG. NOS. AB-02 AND AB-04.
2. FOR PILE LAYOUT, SEE DWG. NO. PL-01.
3. PROVIDE ABUTMENT ANCHORS IN SELECT BACKFILL. SEE ABUTMENT ANCHOR DETAIL THIS SHEET. THE ABUTMENT ANCHORS SHALL BE DESIGNED FOR A MINIMUM FACTORED HORIZONTAL FORCE OF 3.25 KLF AT ABUTMENT A AND 1.50 KLF AT ABUTMENT B. THE POINT OF APPLICATION OF FORCES SHALL BE AT THE CENTER OF BEARINGS. DESIGN OF ABUTMENT ANCHORS SHALL BE COMPATIBLE WITH THE TEMPORARY SUPPORT OF EMBANKMENT DESIGN. PAYMENT FOR ABUTMENT ANCHORS WILL BE INCIDENTAL TO ITEM NO. 602772 - MECHANICALLY STABILIZED EARTH WALLS.
4. FOR TEMPORARY SUPPORT OF EMBANKMENT INFORMATION, SEE MSE WALL NOTE 14 ON DWG. NO. AB-02.
5. FOR MSE WALL NOTES AND SOIL PROPERTIES, SEE DWG. NO. AB-02.
6. FOR POLYETHYLENE FILM INFORMATION, SEE DWG. NO. AS-05.
7. FOR CONCRETE BARRIER DETAILS, SEE DWG. NO. DT-17.
8. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P.C.C. MASONRY SURFACES FOR ADDITIONAL REQUIREMENTS.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

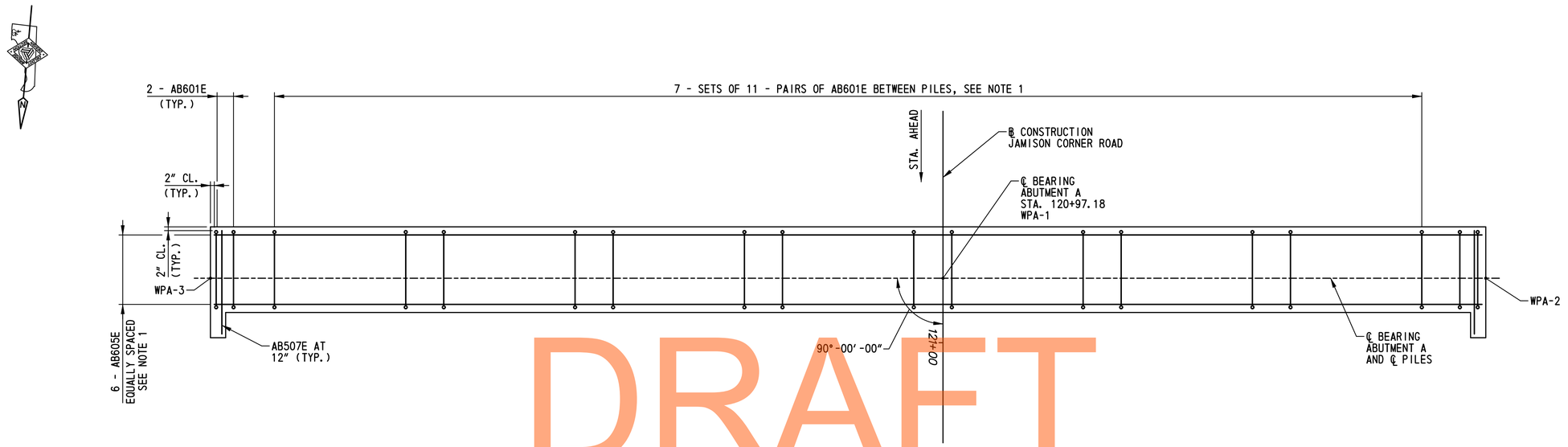
US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

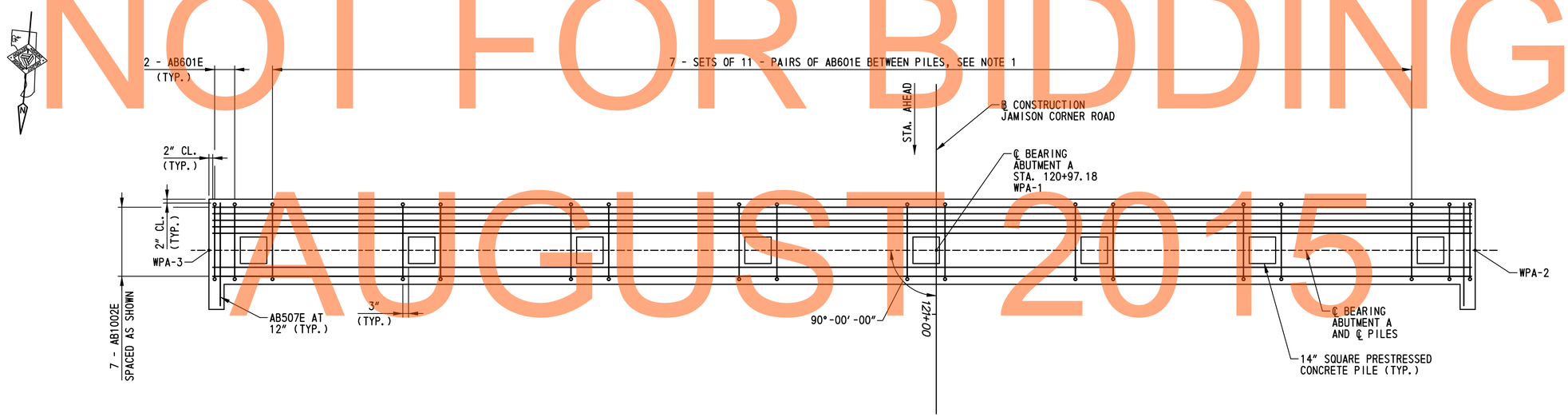
ABUTMENT AND MSE WALL SECTIONS

SHEET NO.
509
TOTAL SHTS.
875

BR1-8
AB-05



ABUTMENT A STEM
TOP MAT REINFORCEMENT PLAN
SCALE: ⅜"=1'-0"

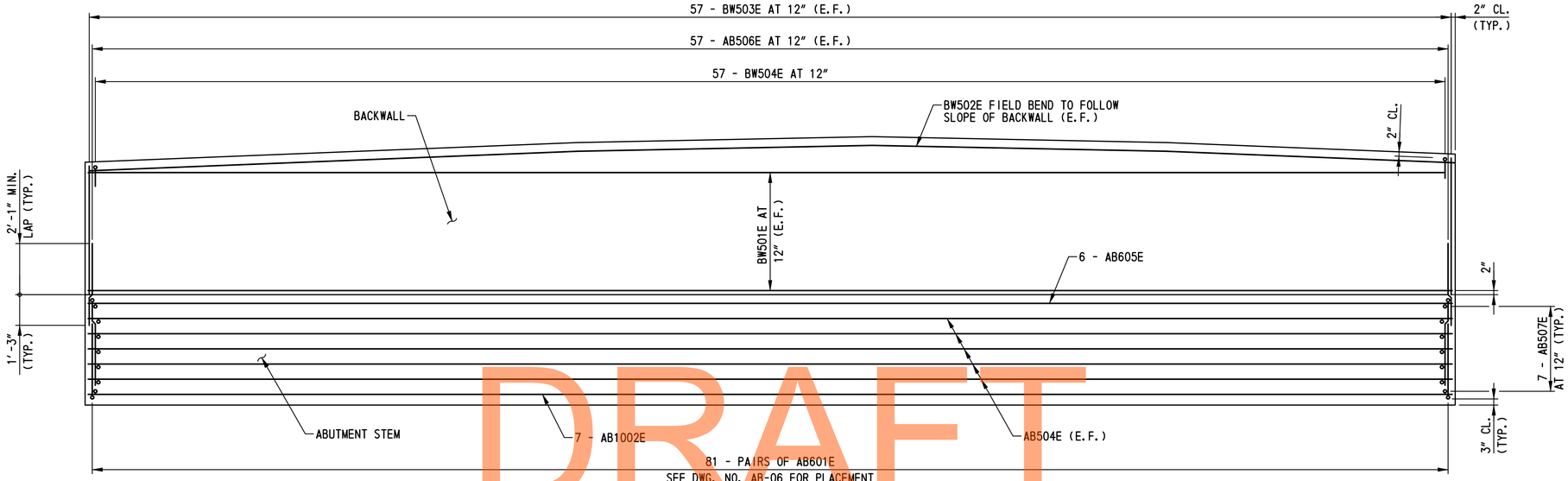


ABUTMENT A STEM
BOTTOM MAT REINFORCEMENT PLAN
SCALE: ⅜"=1'-0"

NOTES:

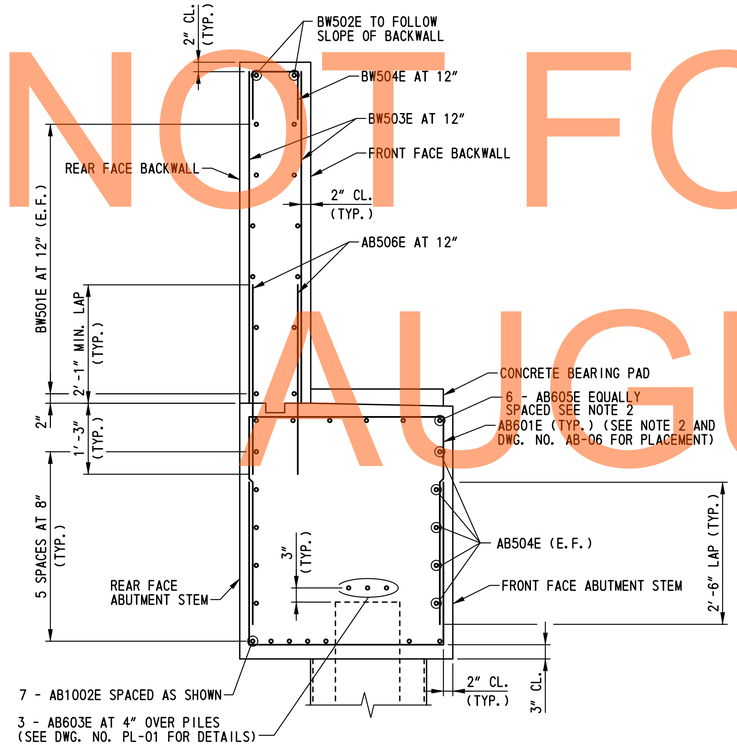
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-10.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-07 AND AB-10.
3. REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-01.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	ABUTMENT A REINFORCEMENT DETAILS - 1	BR1-8 AB-06
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 510
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



ABUTMENT A REINFORCEMENT ELEVATION

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



ABUTMENT A TYPICAL REINFORCEMENT SECTION

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

NOTES:

1. PILES NOT SHOWN FOR CLARITY. FOR PLACEMENT OF TRANSVERSE REINFORCEMENT BETWEEN PILES, SEE DWG. NO. AB-06.
2. CHEEK WALLS AND CONCRETE BEARING PADS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT IN CHEEK WALLS AND CONCRETE BEARING PADS, SEE DWG. NO. AB-10.

NOTES:

1. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG NOS. AB-06 AND AB-10.
2. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-01 AND AB-10.

BR1-8
AB-07

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. 1-460A / DESIGNED BY: A.D.D. / CHECKED BY: B.K.B.

ABUTMENT A REINFORCEMENT DETAILS – 2

SHEET NO. 511 / TOTAL SHTS. 875

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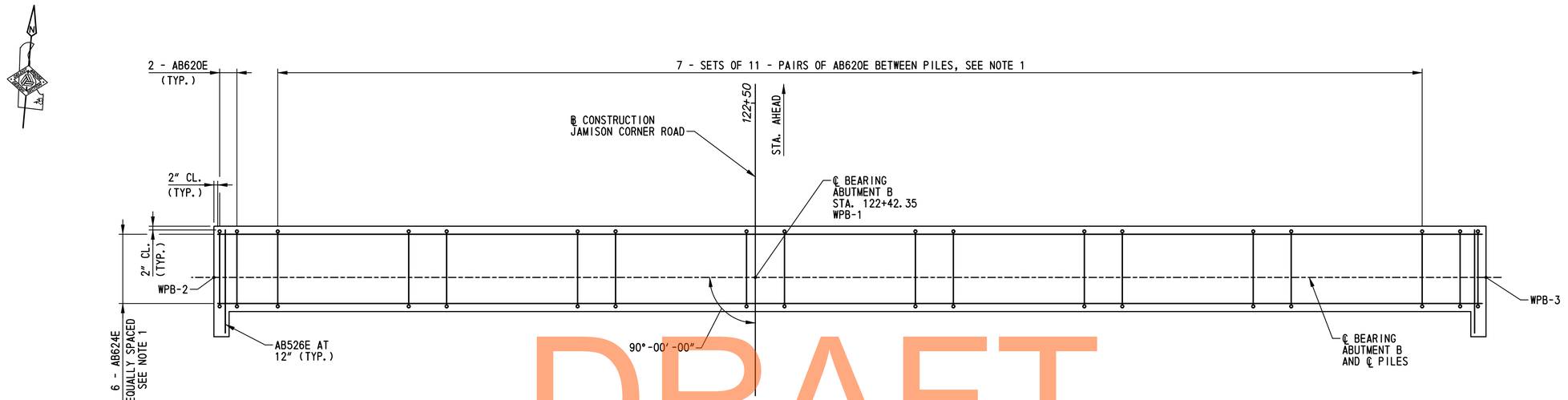
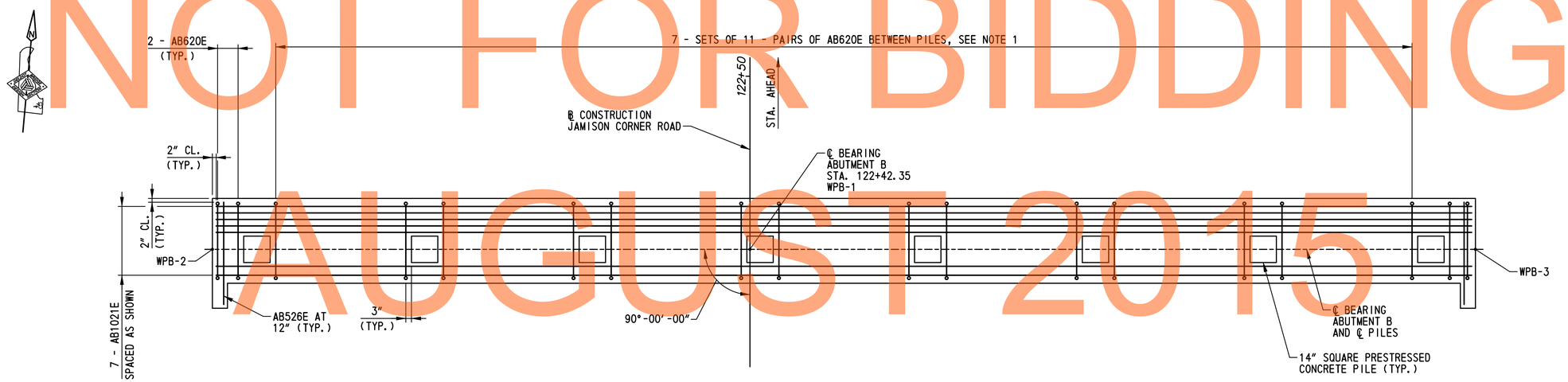


ABUTMENT B STEM
TOP MAT REINFORCEMENT PLAN
SCALE: ⅜"=1'-0"



ABUTMENT B STEM
BOTTOM MAT REINFORCEMENT PLAN
SCALE: ⅜"=1'-0"

NOTES:

1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-02 AND AB-10.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-09 AND AB-10.
3. REINFORCING STEEL OVER PILES NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMAITON, SEE DWG. NO. PL-01.

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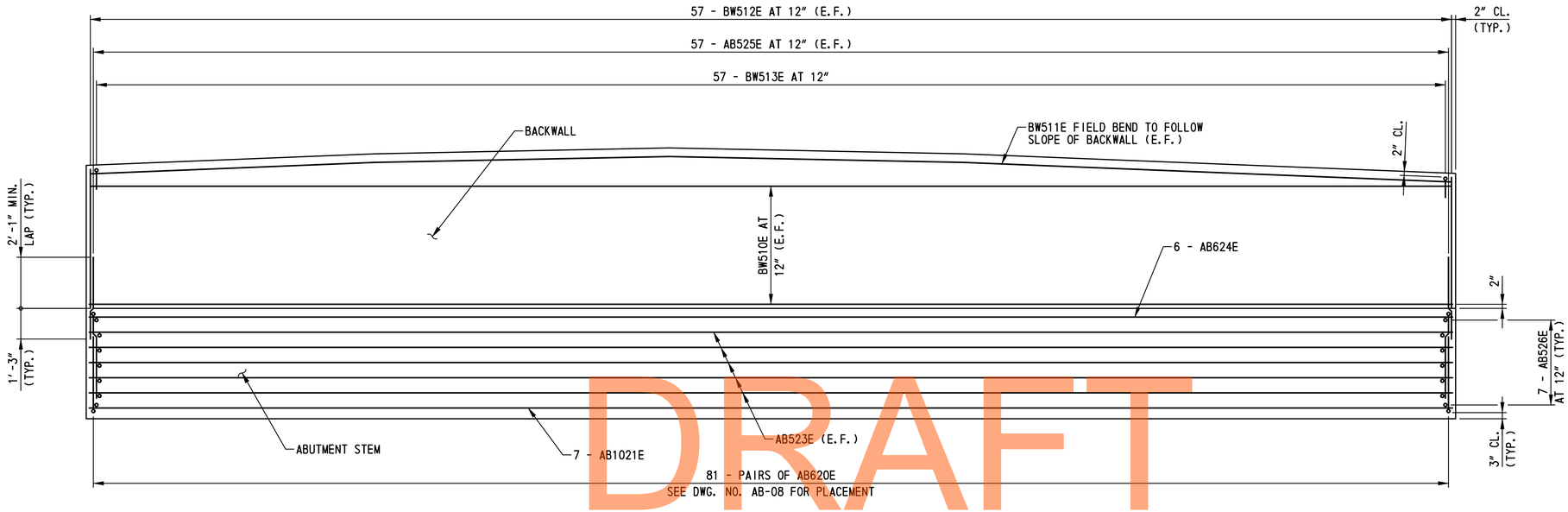
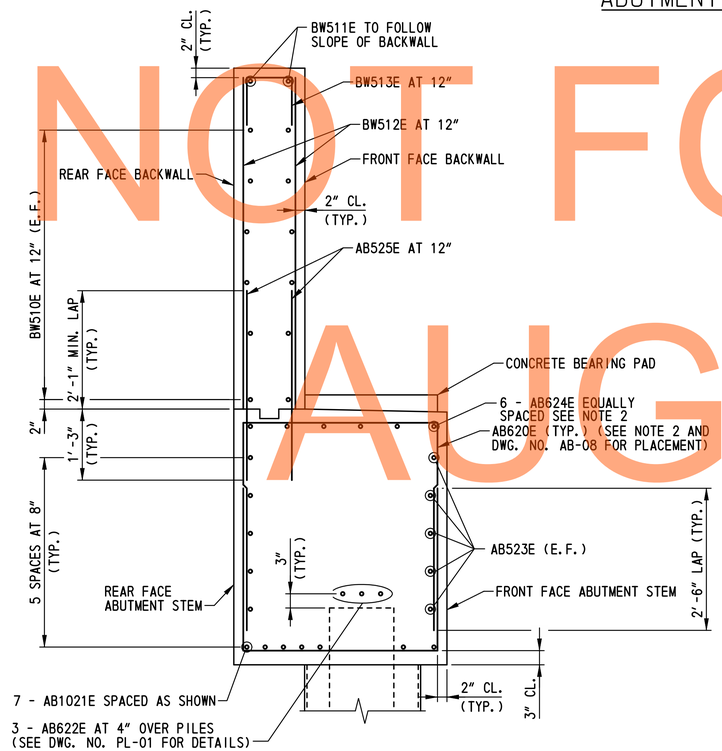
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	ABUTMENT B REINFORCEMENT DETAILS - 1	BR1-8 AB-08
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 512
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



ABUTMENT B REINFORCEMENT ELEVATION

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



ABUTMENT B TYPICAL REINFORCEMENT SECTION

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

NOTES:

1. PILES NOT SHOWN FOR CLARITY. FOR PLACEMENT OF TRANSVERSE REINFORCEMENT BETWEEN PILES, SEE DWG. NO. AB-08.
2. CHEEK WALLS AND CONCRETE BEARING PADS NOT SHOWN FOR CLARITY. FOR REINFORCEMENT IN CHEEK WALLS AND CONCRETE BEARING PADS, SEE DWG. NO. AB-10.

NOTES:

1. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG NOS. AB-08 AND AB-10.
2. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. BB-02 AND AB-10.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

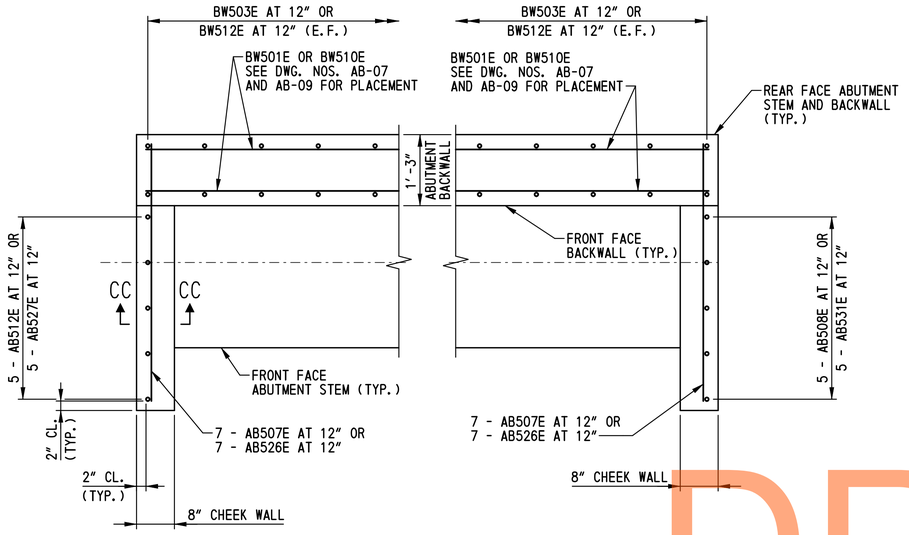
SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	B.K.B.
NEW CASTLE		

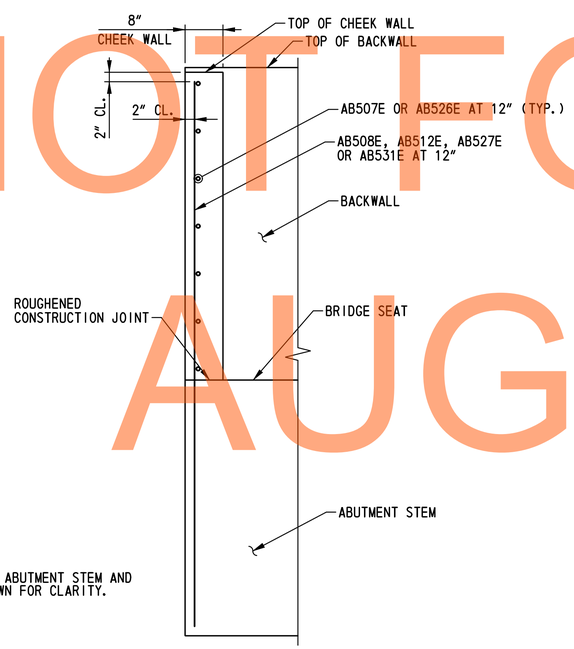
ABUTMENT B REINFORCEMENT DETAILS – 2

BR1-8 AB-09	
SHEET NO.	513
TOTAL SHTS.	875



ABUTMENT REINFORCEMENT PLAN ABOVE BEAM SEAT

SCALE: ¾"=1'-0"

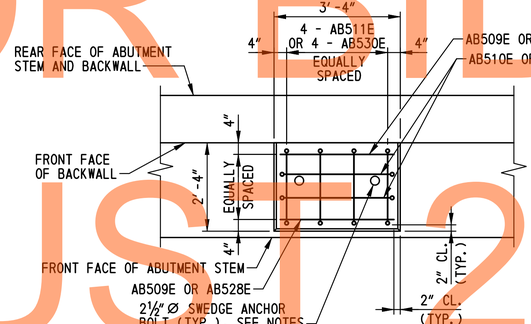


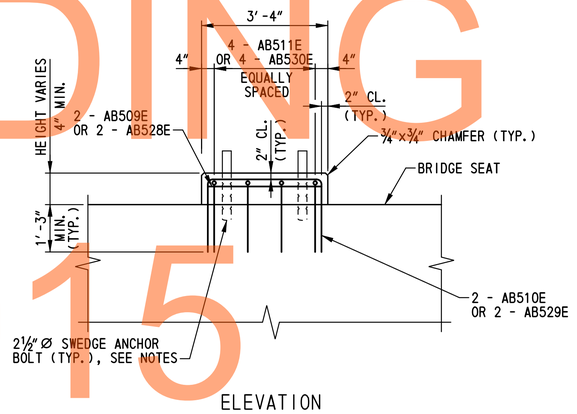
NOTE:

REINFORCEMENT IN ABUTMENT STEM AND BACKWALL NOT SHOWN FOR CLARITY.

CHEEK WALL TYPICAL REINFORCEMENT SECTION CC-CC

SCALE: ¾"=1'-0"





ABUTMENT CONCRETE BEARING PAD DETAILS

SCALE: ½"=1'-0"

NOTES:

1. FOR ANCHOR BOLT DIMENSIONS AND LOCATION, SEE DWG. NOS. BB-01 AND BB-02.
2. ANCHOR BOLTS SHALL BE CAST IN PLACE. A TEMPORARY CASTING TEMPLATE SHALL BE USED TO ENSURE THE ANCHOR BOLTS ARE PROPERLY ALIGNED AND PLUMB. THE TEMPLATE SHALL BE REMOVED AFTER THE CONCRETE HAS SET.
3. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

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

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
ABUTMENT A															
162	6	9-11 2	AB601E	17		3-03 1	3-05 0	3-03 1							
7	10	55-06 1	AB1002E	STR		55-06 1									
3	6	55-06 1	AB603E	STR		55-06 1									
10	5	55-06 1	AB504E	STR		55-06 1									
6	7	55-06 1	AB605E	STR		55-06 1									
114	5	4-04 2	AB506E	STR		4-04 2									
28	5	4-06 1	AB507E	STR		4-06 1									
5	5	9-08 3	AB508E	STR		9-08 3									
12	5	3-00 0	AB509E	STR		3-00 0									
12	5	7-08 0	AB510E	17		2-04 0	3-00 0	2-04 0							
24	5	6-08 0	AB511E	17		2-04 0	2-00 0	2-04 0							
5	5	9-04 3	AB512E	STR		9-04 3									
12	5	55-06 1	BW501E	STR		55-06 1									
2	5	55-06 2	BW502E	STR		55-06 2									
114	5	5-02 3	BW503E	STR		5-02 3									
57	5	2-07 0	BW504E	2		0-10 0	0-11 0	0-10 0							

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
ABUTMENT B															
162	6	9-11 2	AB620E	17		3-03 1	3-05 0	3-03 1							
7	10	55-06 1	AB1021E	STR		55-06 1									
3	6	55-06 1	AB622E	STR		55-06 1									
10	5	55-06 1	AB523E	STR		55-06 1									
6	7	55-06 1	AB624E	STR		55-06 1									
114	5	4-04 2	AB525E	STR		4-04 2									
28	5	4-06 1	AB526E	STR		4-06 1									
5	5	9-10 0	AB527E	STR		9-10 0									
12	5	3-00 0	AB528E	STR		3-00 0									
12	5	7-08 0	AB529E	17		2-04 0	3-00 0	2-04 0							
24	5	6-08 0	AB530E	17		2-04 0	2-00 0	2-04 0							
5	5	9-06 0	AB531E	STR		9-06 0									
12	5	55-06 1	BW510E	STR		55-06 1									
2	5	55-06 2	BW511E	STR		55-06 2									
114	5	5-02 3	BW512E	STR		5-02 3									
57	5	2-07 0	BW513E	2		0-10 0	0-11 0	0-10 0							

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

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIAMETER (INCHES)	NOMINAL AREA (INCHES²)	NOMINAL WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

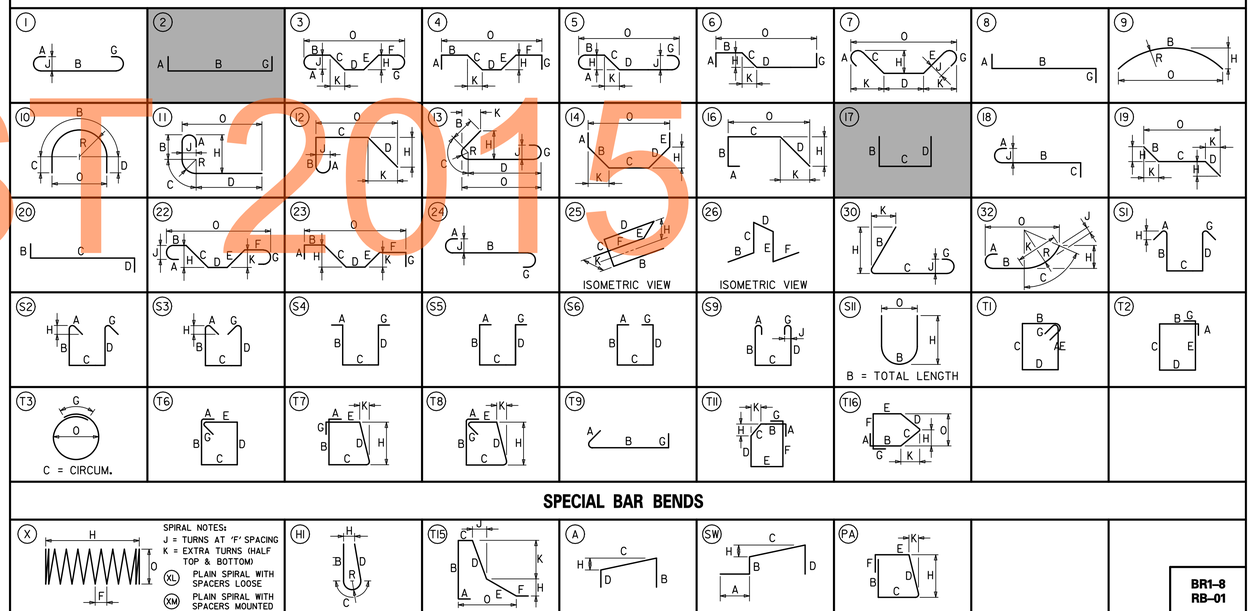
BAR SIZE	180° HOOKS D	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
3	2¼"	5"	3"	6"
4	3"	6"	4"	8"
5	3¾"	7"	5"	10"
6	4½"	8"	6"	1-0"
7	5¼"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9½"	1-3"	11¾"	1-7"
10	10¾"	1-5"	1-1¼"	1-10"
11	1-0"	1-7"	1-2¾"	2-0"
14	1-6¼"	2-3"	1-9¾"	2-7"
18	2-0"	3-0"	2-4½"	3-5"

STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

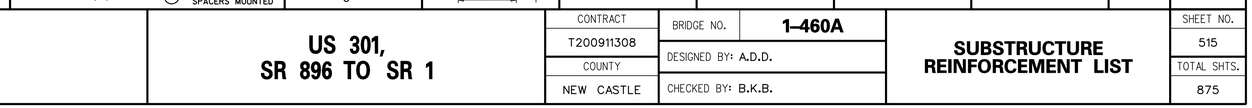
BAR SIZE	90° HOOK D	90° HOOK A OR G	135° HOOK A OR G	135° HOOK H
3	1½"	4"	4"	2½"
4	2"	4½"	4½"	3"
5	2½"	6"	5½"	3¾"
6	4½"	1-0"	8"	4½"
7	5¼"	1-2"	9"	5¼"
8	6"	1-4"	10½"	6"

NOTES:
1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

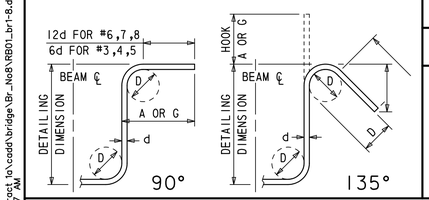
STANDARD BAR BENDS



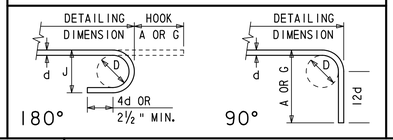
SPECIAL BAR BENDS

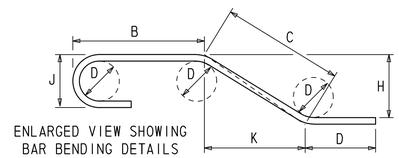


STIRRUP AND TIE HOOKS



180° AND 90° END HOOKS





ADDENDUMS / REVISIONS			

DELAWARE DEPARTMENT OF TRANSPORTATION

US 301, SR 896 TO SR 1

CONTRACT	T200911308
COUNTY	NEW CASTLE
BRIDGE NO.	1-460A
DESIGNED BY:	A.D.D.
CHECKED BY:	B.K.B.

SUBSTRUCTURE REINFORCEMENT LIST

BR1-8
RB-01

SHEET NO. 515
TOTAL SHTS. 875

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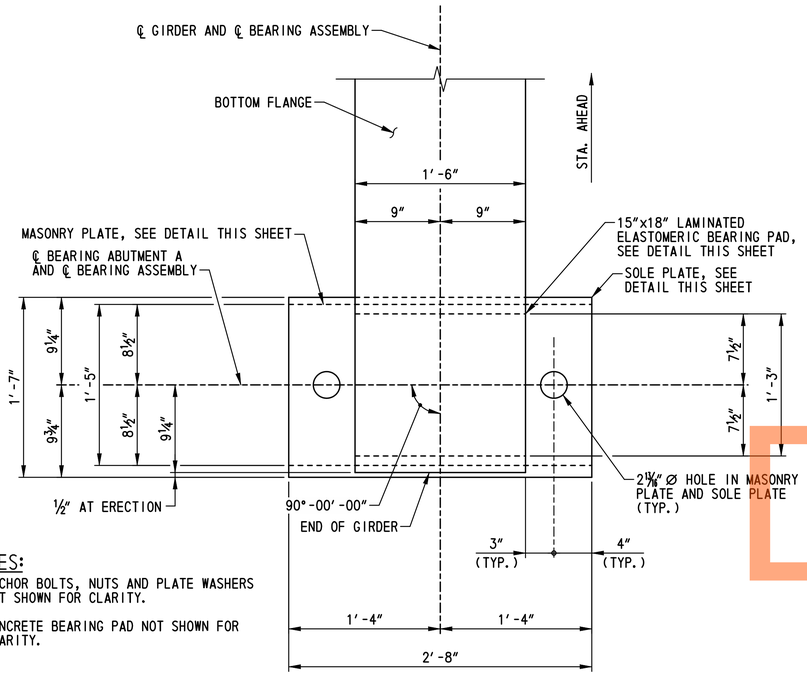
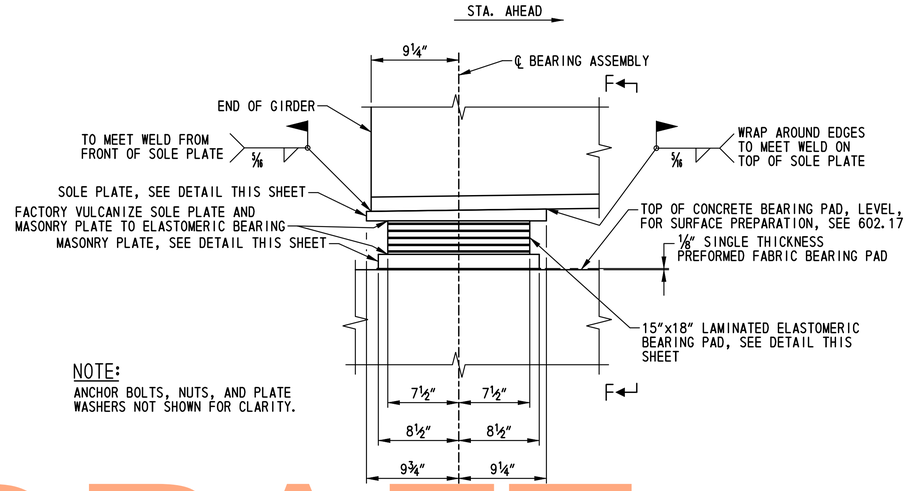


NOTES:

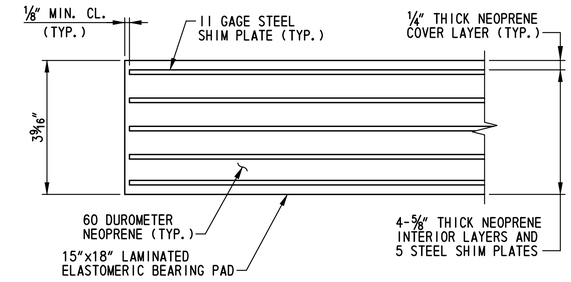
1. ANCHOR BOLTS, NUTS AND PLATE WASHERS NOT SHOWN FOR CLARITY.
2. CONCRETE BEARING PAD NOT SHOWN FOR CLARITY.

FIXED BEARING PLAN
SCALE: 1½″=1′-0″

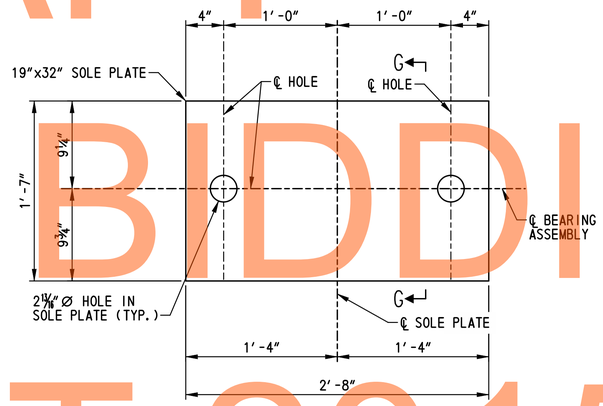


NOTE:
ANCHOR BOLTS, NUTS, AND PLATE WASHERS NOT SHOWN FOR CLARITY.

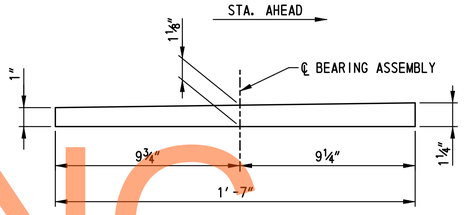
FIXED BEARING ELEVATION
SCALE: 1½″=1′-0″



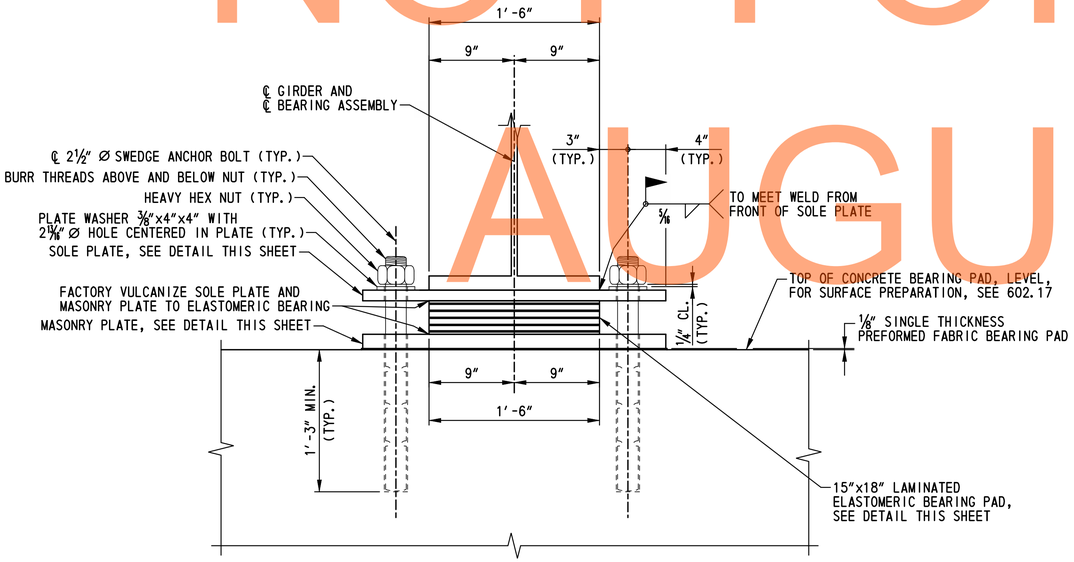
LAMINATED ELASTOMERIC BEARING PAD DETAIL
NOT TO SCALE



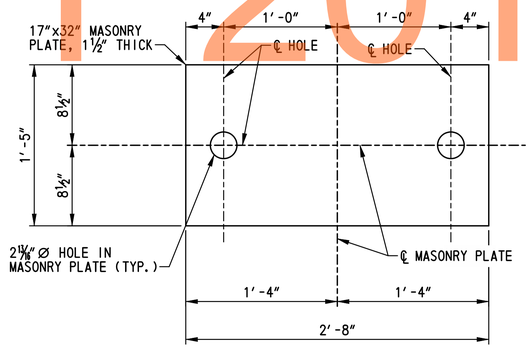
SOLE PLATE
SCALE: 1½″=1′-0″



SECTION G-G
SCALE: 3″=1′-0″



VIEW F-F
SCALE: 1½″=1′-0″



MASONRY PLATE
SCALE: 1½″=1′-0″

ABUTMENT A FIXED BEARING NOTES:

1. BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
2. SOLE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL. PLATES SHALL BE PAINTED WITH A URETHANE PAINT SYSTEM IN ACCORDANCE WITH SPECIAL PROVISION ITEM 605537 - URETHANE PAINT SYSTEM, NEW STEEL. TOPCOAT COLOR SHALL BE STANDARD COLOR NO. 10076 (BROWN) OF FEDERAL STANDARD NO. 595B. THE COST OF PAINTING SHALL BE INCIDENTAL TO ITEM 605581 - ELASTOMERIC BEARING PADS.
3. FILL HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
4. 1000 RMS FINISH ON ALL STEEL PLATES.
5. ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
6. ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO ASTM A 36.
7. THE SOLE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
8. BEARING MAXIMUM DESIGN LOAD: 290 KIPS.
9. CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AFTER WELDING THE SOLE PLATE TO THE GIRDER.
10. PAYMENT FOR ABUTMENT A FIXED BEARINGS WILL BE MADE UNDER ITEM NO. 605581 - ELASTOMERIC BEARING PADS.

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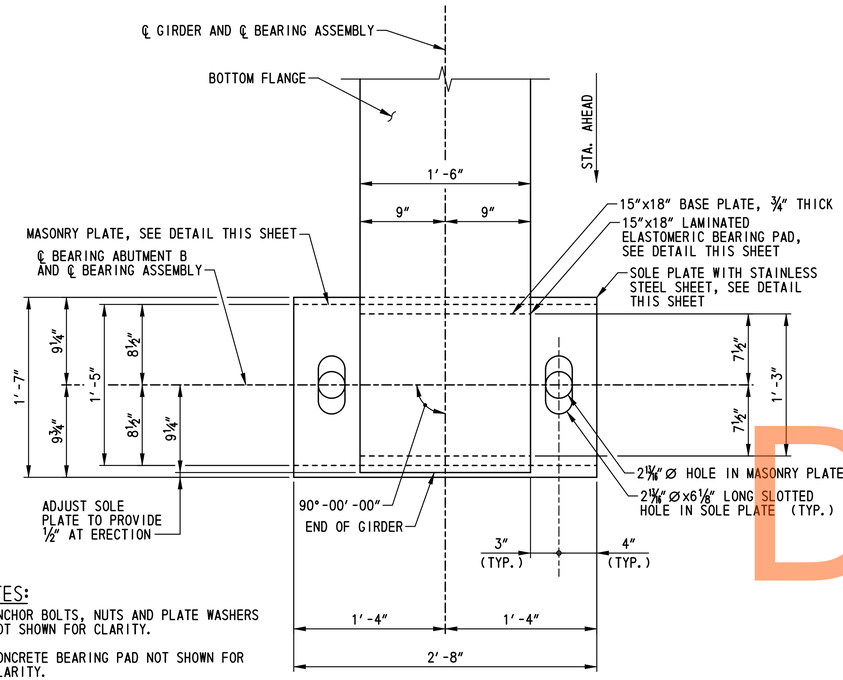
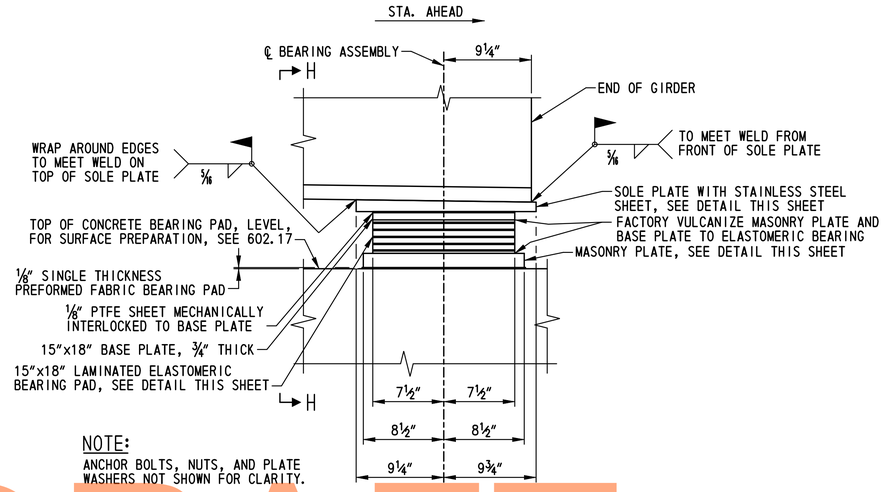
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	FIXED BEARING DETAILS – ABUTMENT A	BR1-8 BB-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 516
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



NOTES:

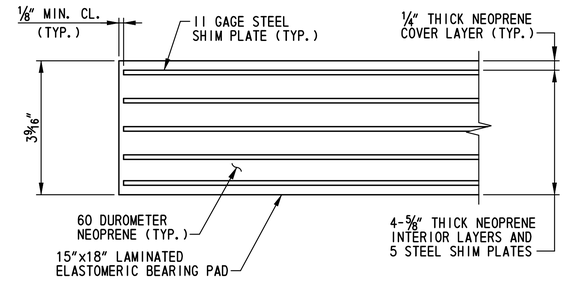
1. ANCHOR BOLTS, NUTS AND PLATE WASHERS NOT SHOWN FOR CLARITY.
2. CONCRETE BEARING PAD NOT SHOWN FOR CLARITY.

EXPANSION BEARING PLAN
SCALE: 1½″=1′-0″

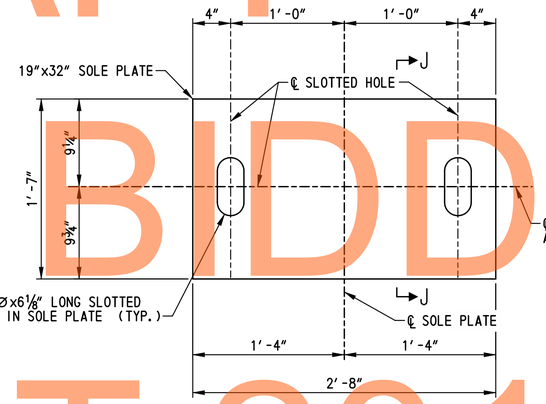


NOTE:
ANCHOR BOLTS, NUTS, AND PLATE WASHERS NOT SHOWN FOR CLARITY.

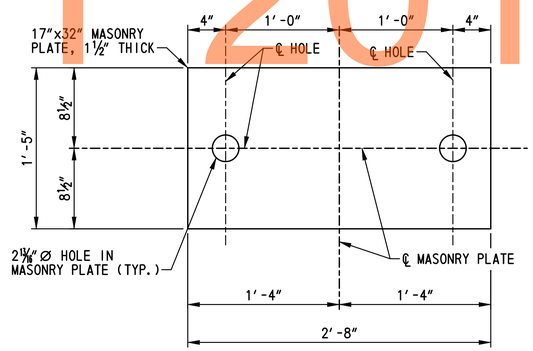
EXPANSION BEARING ELEVATION
SCALE: 1½″=1′-0″



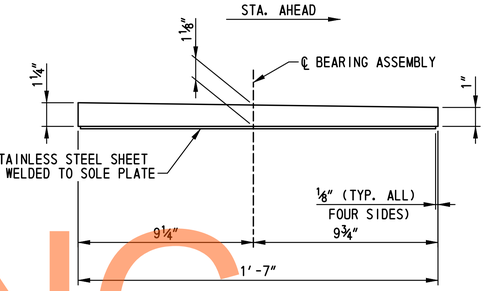
LAMINATED ELASTOMERIC BEARING PAD DETAIL
NOT TO SCALE



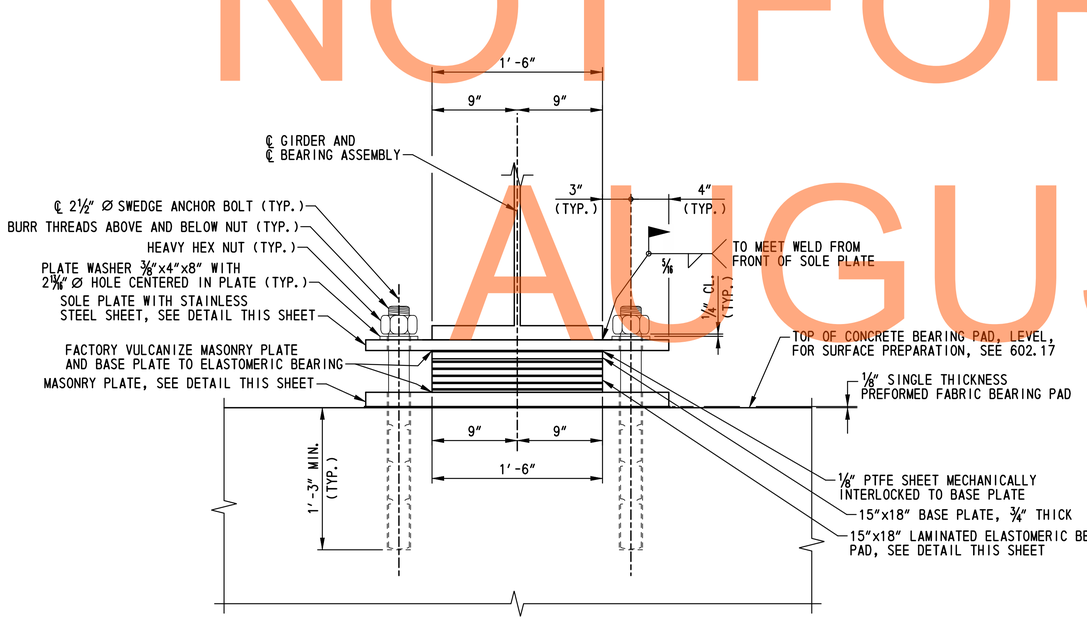
SOLE PLATE
SCALE: 1½″=1′-0″



MASONRY PLATE
SCALE: 1½″=1′-0″



SECTION J-J
SCALE: 3″=1′-0″



VIEW H-H
SCALE: 1½″=1′-0″

ABUTMENT B EXPANSION BEARING NOTES:

1. BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
2. SOLE PLATES, BASE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL. PLATES SHALL BE PAINTED WITH A URETHANE PAINT SYSTEM IN ACCORDANCE WITH SPECIAL PROVISION ITEM 605537 - URETHANE PAINT SYSTEM, NEW STEEL. TOPCOAT COLOR SHALL BE STANDARD COLOR NO. 10076 (BROWN) OF FEDERAL STANDARD NO. 595B. THE COST OF PAINTING SHALL BE INCIDENTAL TO ITEM 605639 - TFE STAINLESS STEEL STRUCTURAL BEARINGS.
3. FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
4. 1000 RMS FINISH ON ALL STEEL PLATES.
5. ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
6. ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO ASTM A 36.
7. STAINLESS STEEL SHEET SHALL BE ASTM A 167 OR A 264, TYPE 304, #8 MIRROR FINISH.
8. PTFE SHEET SHALL BE DIMPLED LUBRICATED MEETING THE REQUIREMENTS OF ASTM D 4894 OR D 4895. PTFE SHEET SHALL HAVE THE SAME PLAN AREA AS THE BASE PLATE.
9. THE BASE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
10. BEARING MAXIMUM DESIGN LOAD: 290 KIPS.
    BEARING DESIGN COEFFICIENT OF FRICTION: 0.04.
11. CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS, AFTER WELDING THE SOLE PLATE TO THE GIRDER.
12. PAYMENT FOR ABUTMENT B EXPANSION BEARINGS WILL BE MADE UNDER ITEM NO. 605639 - TFE STAINLESS STEEL STRUCTURAL BEARINGS.

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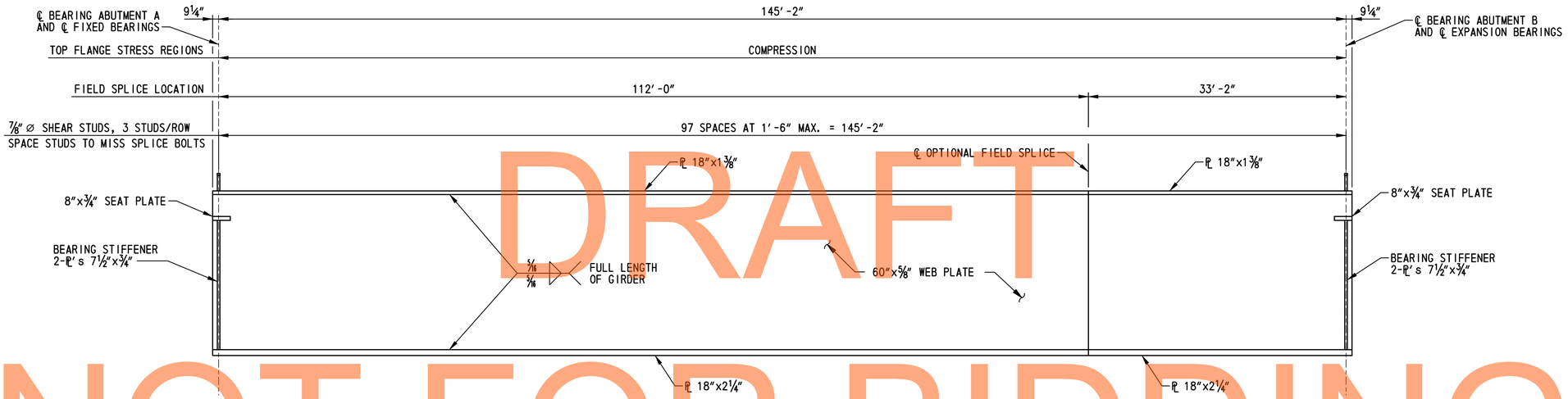
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. 1-460A; DESIGNED BY: A.D.D.; CHECKED BY: B.K.B.

EXPANSION BEARING DETAILS - ABUTMENT B

BR1-8
BB-02

SHEET NO. 517
TOTAL SHTS. 875



GIRDER ELEVATION
NOT TO SCALE

NOTES:

1. THE GIRDERS ARE REQUIRED TO BE PLUMB UNDER FULL DEAD LOAD.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE ERECTION OF THE BRIDGE. THE CONTRACTOR SHALL SUBMIT DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE, ILLUSTRATING FULLY THE PROPOSED METHOD OF ERECTION. THE DRAWINGS SHALL SHOW DETAILS OF ALL TEMPORARY SHORING, FALSEWORK, BRACING, GUYS, DEAD-MEN, LIFTING DEVICES, HOLD-DOWN DEVICES AND ATTACHMENTS TO THE BRIDGE MEMBERS. THE DRAWINGS SHALL ALSO INCLUDE THE SEQUENCE OF ERECTION, LOCATION OF CRANES, CRANE CAPACITIES, LOCATION OF LIFTING POINTS ON THE BRIDGE MEMBERS AND WEIGHTS OF MEMBERS. THE PLAN AND DRAWINGS SHALL BE COMPLETE IN DETAIL FOR ALL ANTICIPATED PHASES AND CONDITIONS DURING ERECTION. CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE ARE REQUIRED TO DEMONSTRATE THAT ALLOWABLE STRESSES ARE NOT EXCEEDED AND THAT MEMBER CAPACITIES AND FINAL GEOMETRY WILL BE CORRECT.
3. CROSS FRAME CONNECTION PLATE SPACING NOT SHOWN. FOR LOCATION OF CROSS FRAME CONNECTION PLATES, SEE DWG. NO. FR-01.
4. FOR BEARING STIFFENER AND CONNECTION PLATE DETAILS, SEE DWG. NO. BM-02.
5. FOR OPTIONAL FIELD SPLICE DETAILS, SEE DWG. NO. BM-03.
6. FOR SHEAR STUD DETAILS, SEE DWG. NO. SD-01.

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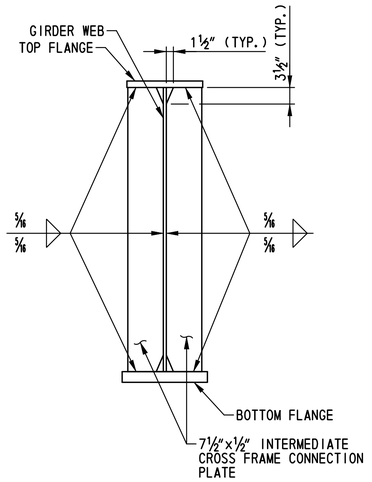
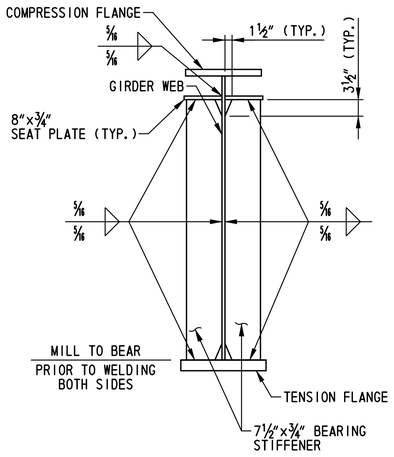
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	GIRDER ELEVATION	BR1-8 BM-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 518
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



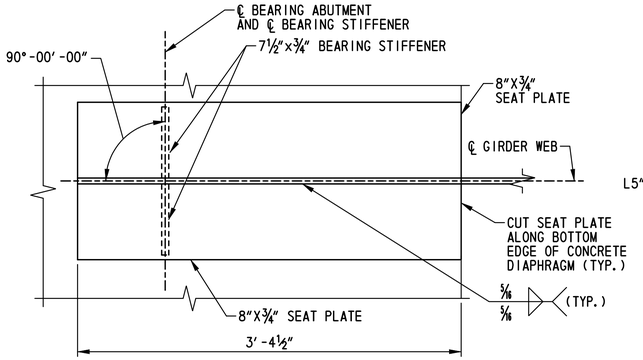
INTERMEDIATE CROSS FRAME CONNECTION PLATES

SCALE: ¾"=1'-0"



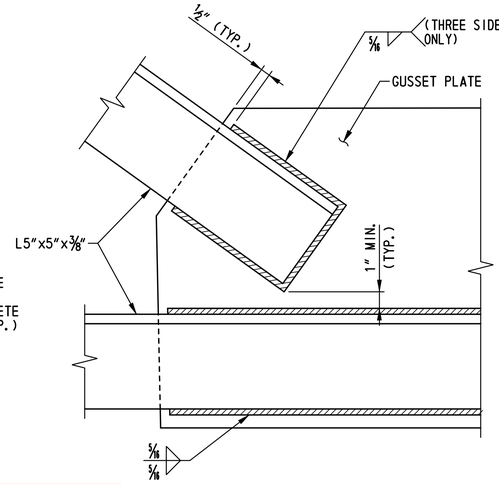
ABUTMENT BEARING STIFFENERS/ CROSS FRAME CONNECTION PLATES

SCALE: ¾"=1'-0"



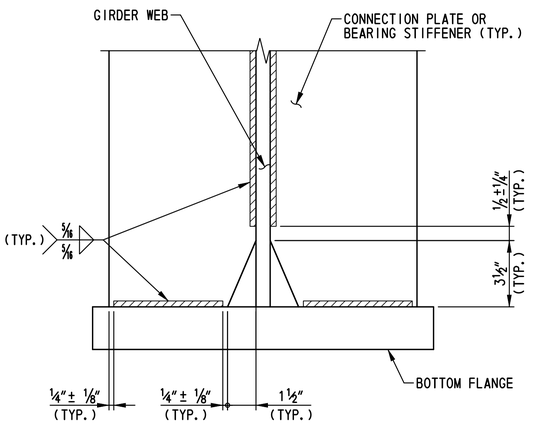
SEAT PLATE DETAIL

SCALE: 1½"=1'-0"



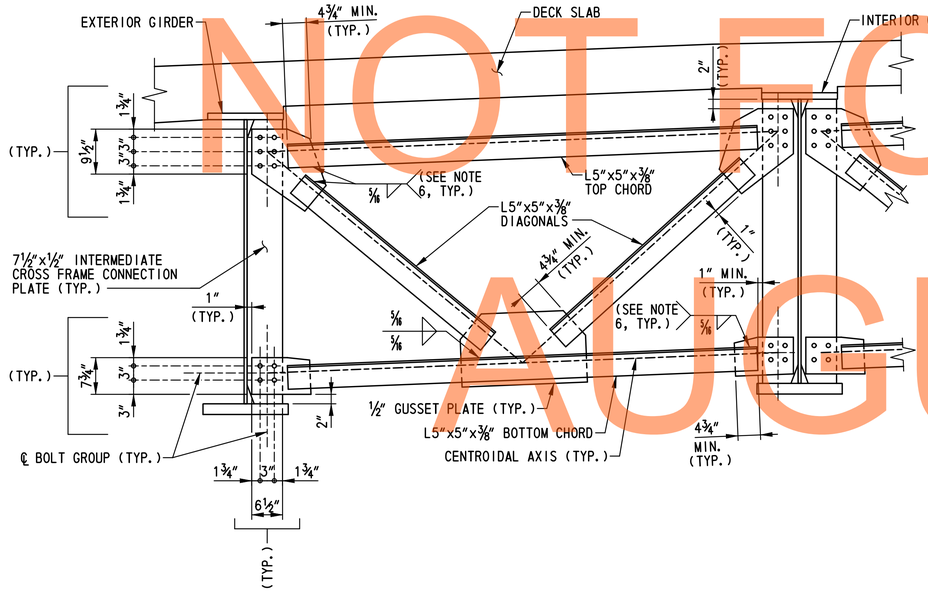
CROSS FRAME WELD DETAIL

SCALE: 3"=1'-0"



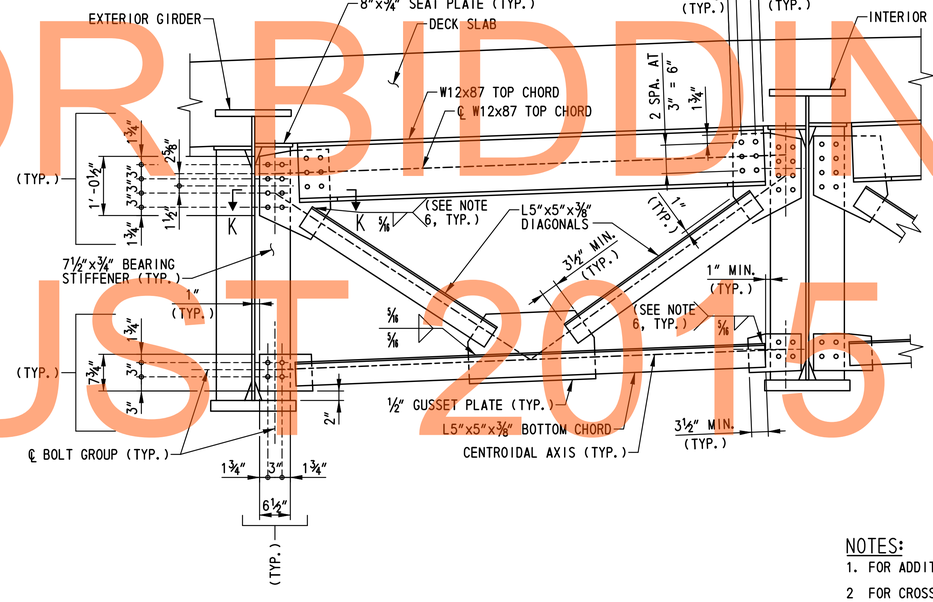
CONNECTION PLATE OR STIFFENER WELD TERMINATION DETAIL

SCALE: 3"=1'-0"



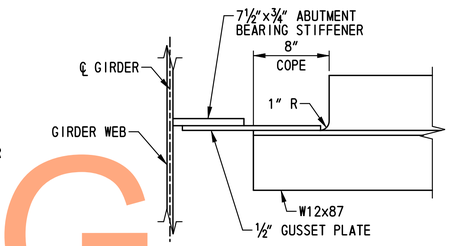
INTERMEDIATE CROSS FRAME DETAIL

SCALE: ¾"=1'-0"



ABUTMENT CROSS FRAME DETAIL

SCALE: ¾"=1'-0"



SECTION K-K

SCALE: 1½"=1'-0"

NOTES:

1. FOR ADDITIONAL BEARING STIFFENER INFORMATION, SEE DWG. NO. BM-01.
2. FOR CROSS FRAME LOCATIONS, SEE DWG. NO. FR-01.
3. ALL BOLTS TO BE ⅞" Ø HIGH STRENGTH BOLTS CONFORMING TO A 325, TYPE 3. ALL BOLTS HOLES SHALL BE 15/16" Ø. ALL BOLTS SHALL BE FABRICATED WITH THREADS THAT ARE EXCLUDED FROM THE SHEAR PLANE.
4. THE MINIMUM ACCEPTABLE EDGE DISTANCE FOR ANY HOLE SHALL BE 1½".
5. THE GIRDERS ARE REQUIRED TO BE PLUMB UNDER FULL DEAD LOAD.
6. ENDS OF TOP CHORD (INTERMEDIATE CROSS FRAME ONLY), DIAGONALS AND BOTTOM CHORD SHALL BE WELDED ALONG ALL THREE SIDES ON THE NEAR FACE OF THE GUSSET PLATES.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

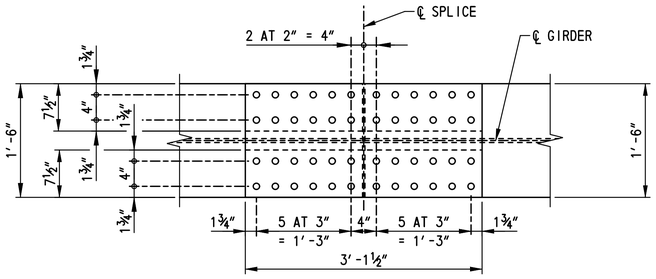
US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

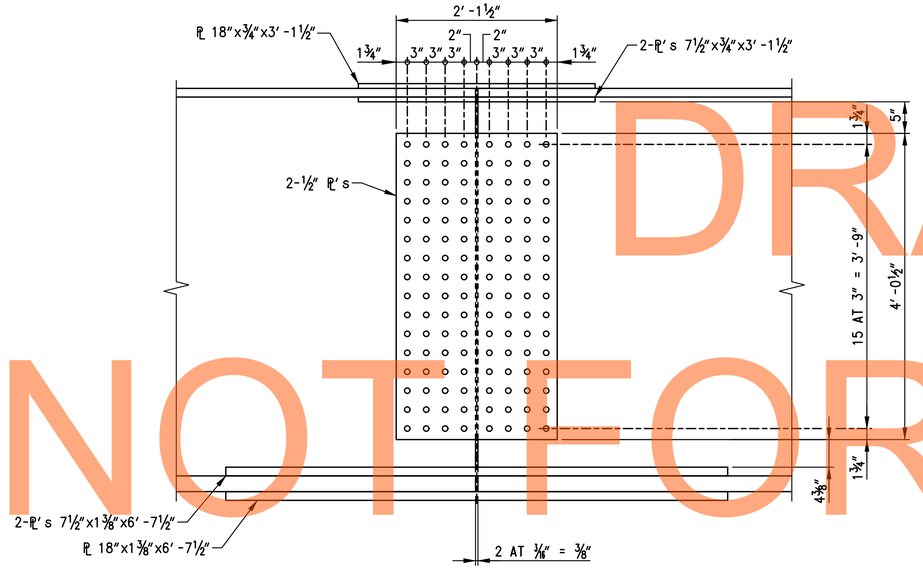
STRUCTURAL STEEL DETAILS

BR1-8
BM-02

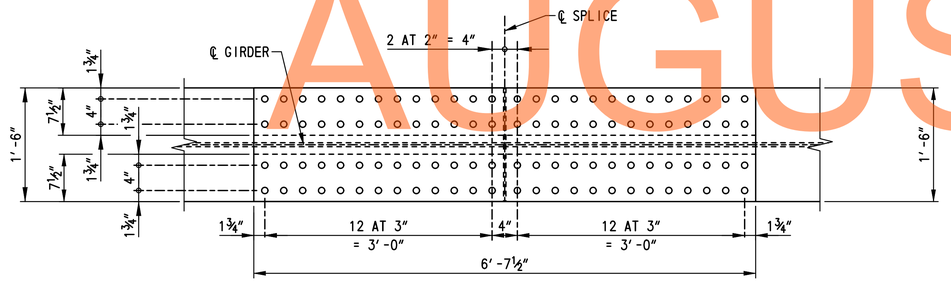
SHEET NO.	519
TOTAL SHTS.	875



TOP FLANGE



WEB



BOTTOM FLANGE

FIELD SPLICE DETAIL

SCALE: 1″=1′-0″

SPLICE NOTES:

1. FOR LOCATION OF OPTIONAL FIELD SPLICE, SEE DWG. NOS. BM-01 AND FR-01.
2. THE CONTRACTOR HAS THE OPTION OF FABRICATING THE GIRDERS IN ONE PIECE, OR USING THE FIELD SPLICE SHOWN; HOWEVER, NO ADDITIONAL COMPENSATION TO THE CONTRACTOR WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED. THE CONTRACTOR AND FABRICATOR SHALL ENSURE THAT THE GIRDER IS NOT OVERSTRESSED AND REMAINS STABLE DURING FABRICATION, SHIPPING AND ERECTION IF THE OPTIONAL FIELD SPLICE IS NOT USED.
3. FIELD SPLICE DESIGNED AS A SLIP CRITICAL CONNECTION WITH CLASS A SURFACE CONDITIONS.
4. ALL BOLTS TO BE ⅞″ Ø HIGH STRENGTH BOLTS CONFORMING TO A 325, TYPE 3. ALL BOLT HOLES SHALL BE 15/16″ Ø . ALL BOLTS SHALL BE FABRICATED WITH THREADS THAT ARE EXCLUDED FROM THE SHEAR PLANE.
5. THE MINIMUM ACCEPTABLE EDGE DISTANCE FOR ANY HOLE SHALL BE 1½″.
6. BOLT HEADS SHALL BE ON THE EXTERIOR FACE OF THE EXTERIOR GIRDERS AND THE BOTTOM OF THE BOTTOM FLANGES.
7. BOLTS NOT SHOWN IN SPLICE.
8. SPACE SHEAR STUDS TO MISS TOP FLANGE SPLICE BOLTS.
9. ON EACH SIDE OF THE ℄ OF SPLICE A MINIMUM OF 50 PERCENT OF THE WEB, TOP FLANGE, AND BOTTOM FLANGE SPLICE BOLTS SHALL BE IN PLACE BEFORE THE GIRDER IS LEFT UNSUPPORTED.
10. FIELD SPLICES SHALL BE COMPLETELY SHOP ASSEMBLED AND MATCH MARKED AFTER ALL SHOP WELDING HAS BEEN COMPLETED. CONTACT SURFACES SHALL BE FREE OF ALL OIL AND DIRT.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

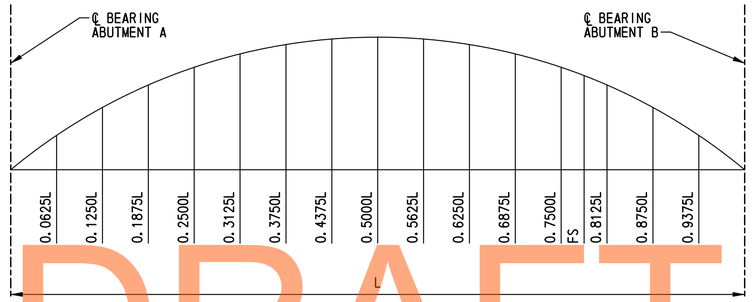
US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

SPLICE DETAILS

BR1-8
BM-03

SHEET NO.
520
TOTAL SHTS.
875



DEFLECTION AND TOTAL CAMBERS (IN.)

	LOCATION	℄ BRG. ABUT. A	0.0625L	0.1250L	0.1875L	0.2500L	0.3125L	0.3750L	0.4375L	0.5000L	0.5625L	0.6250L	0.6875L	0.7500L	FS	0.8125L	0.8750L	0.9375L	℄ BRG. ABUT. B
GIRDERS 1 AND 6	DLS	0	3/8	3/4	1 1/16	1 5/16	1 1/16	1 3/4	1 7/8	1 7/8	1 7/8	1 3/4	1 11/16	1 5/16	1 1/4	1 1/16	3/4	3/8	0
	DLC	0	1 1/8	2 3/16	3 1/4	4 1/16	4 13/16	5 5/16	5 5/8	5 3/4	5 5/8	5 5/16	4 13/16	4 1/16	3 13/16	3 1/4	2 3/16	1 1/8	0
	SDL	0	3/8	3/4	1 1/16	1 5/16	1 1/16	1 3/4	1 11/16	1 7/8	1 11/16	1 3/4	1 5/16	1 5/16	1 1/4	1 1/16	3/4	3/8	0
	TD&C	0	1 7/8	3 11/16	5 3/8	6 11/16	7 15/16	8 13/16	9 5/16	9 1/2	9 5/16	8 13/16	7 15/16	6 11/16	6 5/16	5 3/8	3 11/16	1 7/8	0
	VCO	0	15/16	1 3/4	2 1/16	2 5/16	3 3/8	3 11/16	3 7/8	3 15/16	3 7/8	3 11/16	3 3/8	2 5/16	2 5/8	2 1/16	1 3/4	15/16	0
	TRC	0	2 11/16	5 1/16	7 15/16	9 5/8	11 1/16	12 1/2	13 3/4	13 13/16	13 3/4	12 1/2	11 1/16	9 5/8	8 15/16	7 1/16	5 1/16	2 11/16	0

	LOCATION	℄ BRG. ABUT. A	0.0625L	0.1250L	0.1875L	0.2500L	0.3125L	0.3750L	0.4375L	0.5000L	0.5625L	0.6250L	0.6875L	0.7500L	FS	0.8125L	0.8750L	0.9375L	℄ BRG. ABUT. B
GIRDERS 2 - 5	DLS	0	3/8	3/4	1 1/16	1 5/16	1 1/16	1 3/4	1 7/8	1 15/16	1 7/8	1 3/4	1 11/16	1 3/8	1 1/4	1 1/16	3/4	3/8	0
	DLC	0	1 5/16	2 5/16	3 11/16	4 11/16	5 1/2	6 1/16	6 1/16	6 5/8	6 1/16	6 1/16	5 1/2	4 11/16	4 5/16	3 11/16	2 5/16	1 5/16	0
	SDL	0	3/8	11/16	1	1 1/4	1 1/2	1 5/8	1 11/16	1 3/4	1 11/16	1 5/8	1 1/2	1 1/4	1 3/16	1	11/16	3/8	0
	TD&C	0	2 1/8	4	5 3/4	7 1/4	8 1/16	9 1/16	10	10 5/16	10	9 1/16	8 1/16	7 1/16	6 3/4	5 3/4	4	2 1/16	0
	VCO	0	15/16	1 3/4	2 1/16	2 5/16	3 3/8	3 11/16	3 7/8	3 15/16	3 7/8	3 11/16	3 3/8	2 5/16	2 3/4	2 1/16	1 3/4	15/16	0
	TRC	0	3	5 3/4	8 1/16	10 3/16	11 5/16	13 1/8	13 7/8	14 1/4	13 7/8	13 1/8	11 5/16	10 1/4	9 1/2	8 1/16	5 3/4	3	0

NOTES:

1. ALL GIRDERS OF ALL SPANS SHALL BE CAMBERED FOR DEAD LOAD DEFLECTION TO THE DIMENSIONS SHOWN ON THIS PLAN. THE CAMBER TOLERANCE IS NOTHING UNDER TO 3/4 INCH OVER.
2. CAMBERS ARE SHOWN IN INCHES.
3. POSITIVE DEFLECTIONS ARE MEASURED IN THE DOWNWARD DIRECTION. POSITIVE VERTICAL CURVE ORDINATE AND POSITIVE CAMBER ARE MEASURED IN THE UPWARD DIRECTION.

LEGEND:

DLS- DENOTES DEFLECTION DUE TO STRUCTURAL STEEL

DLC- DENOTES DEFLECTION DUE TO CONCRETE SLAB

SDL- DENOTES DEFLECTION DUE TO PARAPET AND FUTURE WEARING SURFACE

TD&C- DENOTES TOTAL DEAD LOAD DEFLECTION AND CAMBER

VCO- DENOTES CAMBER FOR VERTICAL CURVE ORDINATE DUE TO ROADWAY PROFILE

TRC- TOTAL REQUIRED CAMBER = TD&C + VCO

FS- FIELD SPLICE (OPTIONAL)

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

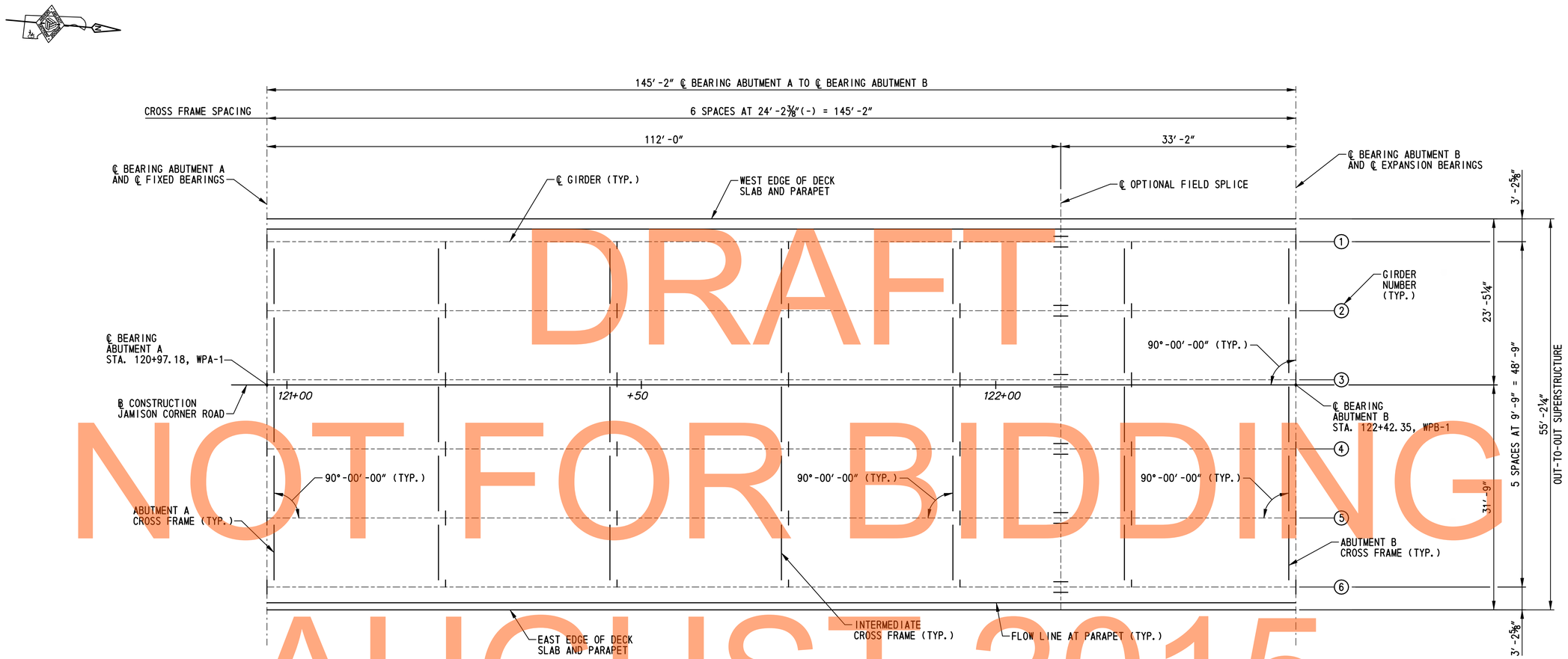
US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

CAMBER DIAGRAM

BR1-8
CT-01

SHEET NO.
521
TOTAL SHTS.
875



FRAMING PLAN
SCALE: 1/16″=1′-0″

NOTES:
1. FOR CROSS FRAME DETAILS, SEE DWG. NO. BM-02.
2. FOR OPTIONAL FIELD SPLICE DETAILS, SEE DWG. NO. BM-03.

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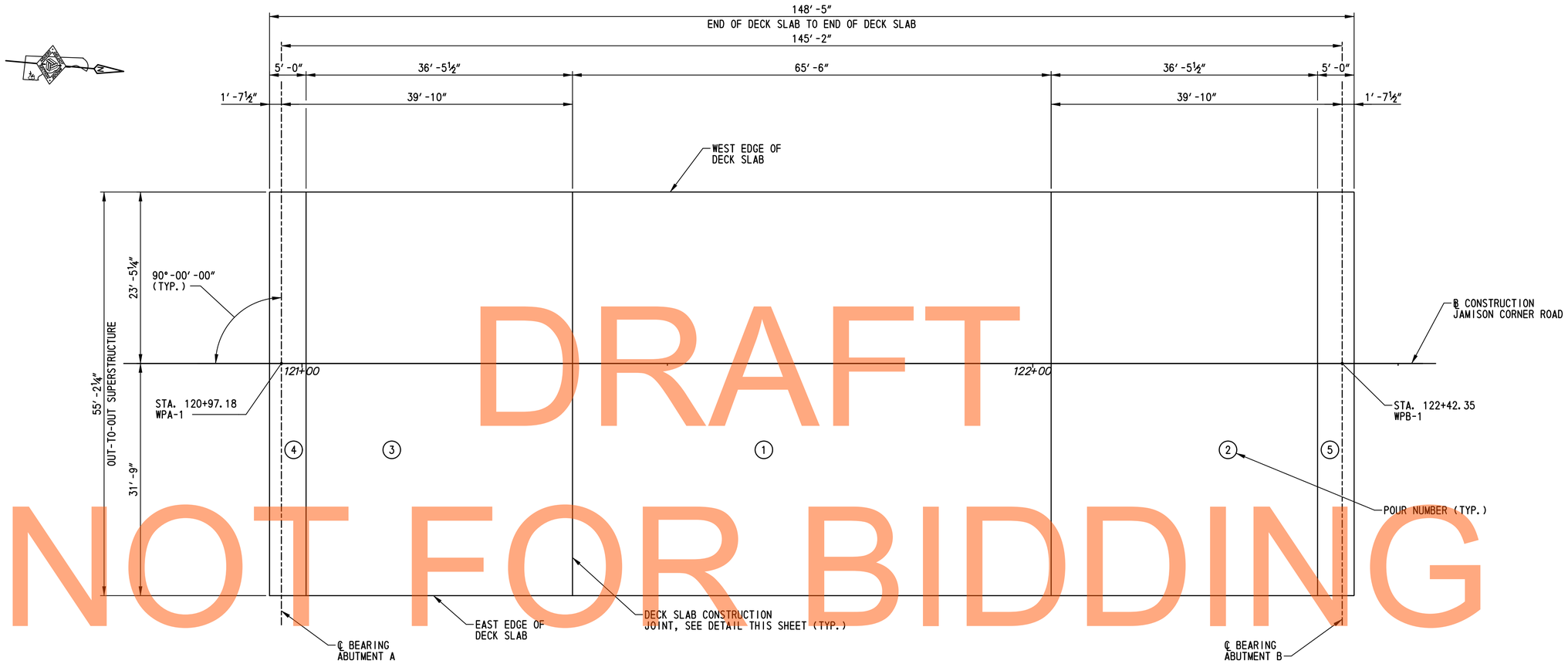
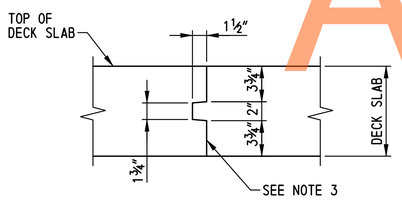
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	FRAMING PLAN	BR1-8 FR-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 522
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



DECK SLAB POURING SEQUENCE PLAN

SCALE: ⅛″=1′-0″



DECK SLAB CONSTRUCTION JOINT DETAIL

SCALE: 1½″=1′-0″

NOTES:

1. THE POURING SEQUENCE FOR THE 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. THE CONTRACTOR MAY REVERSE THE ORDER OF POURS NUMBERED 2 AND 3 AND 4 AND 5. THE CONTRACTOR MAY MAKE POURS NUMBERED 2 AND 3 AND 4 AND 5 WITHOUT ANY DELAY BETWEEN THEM.
2. THE CONTRACTOR SHALL FOLLOW THE POURING SEQUENCE SHOWN ON THESE PLANS. NO OTHER ALTERNATIVE POURING SEQUENCE WILL BE ALLOWED FOR THIS PROJECT.
3. ENTIRE FACE OF CONSTRUCTION JOINT SHALL BE COATED WITH AN APPROVED EPOXY BONDING COMPOUND.
4. FOR FINISHED ROADWAY ELEVATIONS, SEE DWG. NO. RE-01.
5. FOR DECK SLAB REINFORCEMENT, SEE DWG. NOS. DK-01 THRU DK-03.

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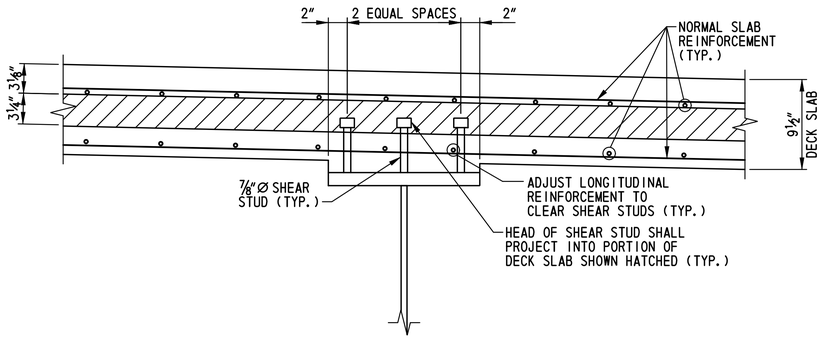
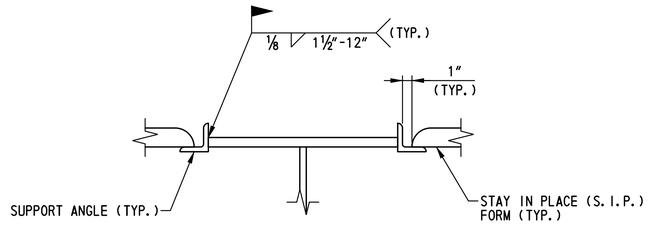
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	DECK SLAB POURING SEQUENCE	BR1-8 PS-01
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.		SHEET NO. 523
					CHECKED BY: B.K.B.		TOTAL SHTS. 875

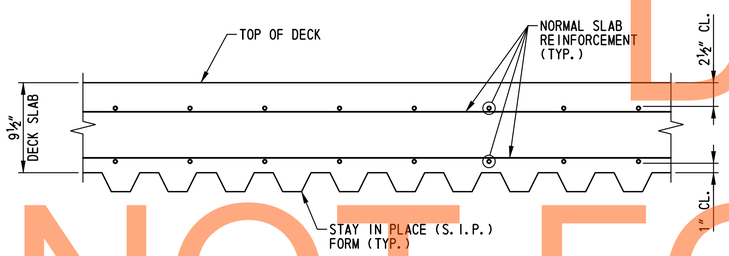


SHEAR STUD DETAIL
SCALE: 1½"=1'-0"

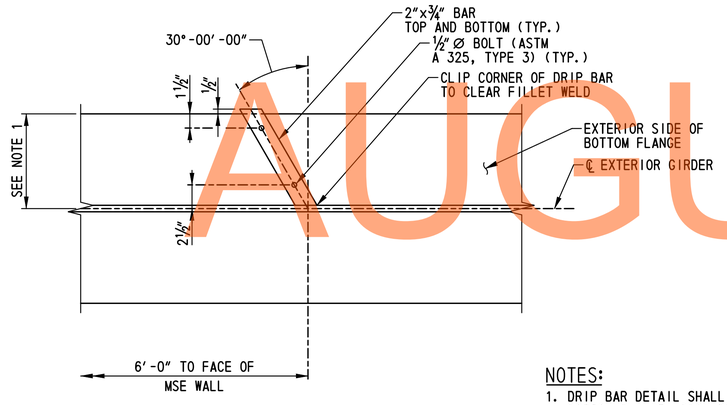


S.I.P. FORM ATTACHMENT DETAIL
SCALE: 1½"=1'-0"

NOTES:
1. S.I.P. FORMS NOT SHOWN FOR CLARITY.
2. FOR LONGITUDINAL SPACING OF SHEAR STUDS SEE DWG. NO. BM-01.



S.I.P. FORM PLACEMENT DETAIL
SCALE: 1½"=1'-0"



DRIP BAR DETAIL
SCALE: 1½"=1'-0"

NOTES:
1. DRIP BAR DETAIL SHALL BE PLACED ON BOTTOM FLANGE. PROVIDE DRIP BAR FOR EXTERIOR FACE OF GIRDER NOS. 1 AND 6 ONLY.
2. DRIP BARS ARE PLACED ADJACENT TO SUPPORTS TO PREVENT WATER FLOW ONTO SUPPORT.
3. DRIP BARS SHALL BE CAULKED AGAINST FLANGE, WEB AND FILLET WELD WITH AN APPROVED NONHARDENING CAULKING COMPOUND.

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

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

SUPERSTRUCTURE DETAILS

BR1-8 SD-01	
SHEET NO.	524
TOTAL SHTS.	875

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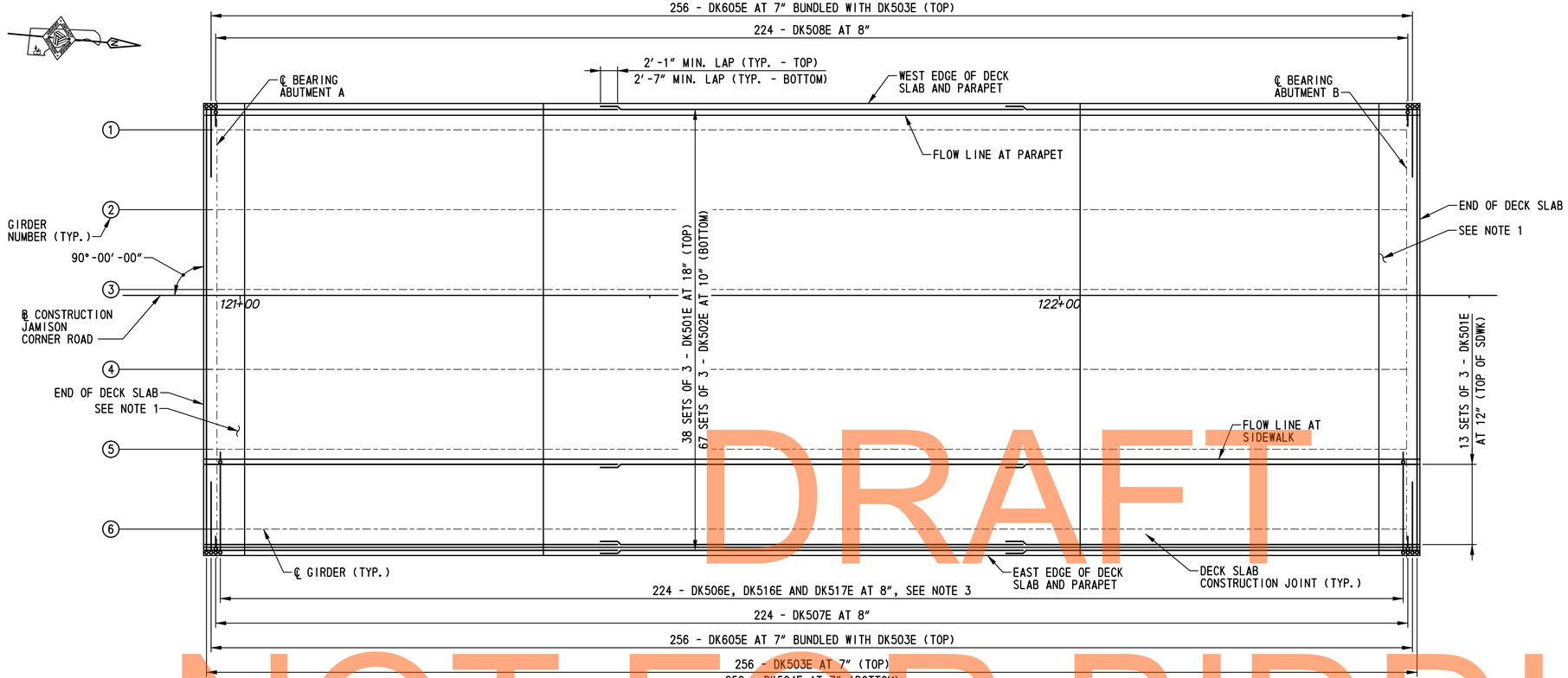
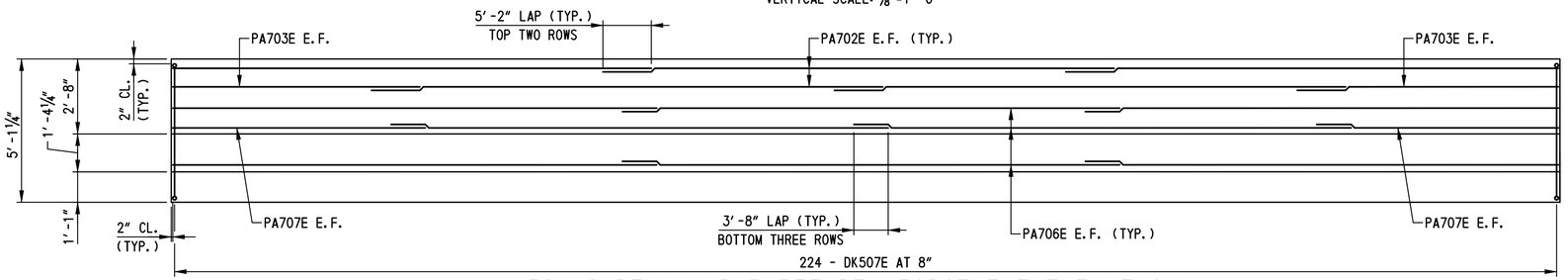


DECK SLAB REINFORCEMENT PLAN

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

42" F-SHAPE PARAPET REINFORCEMENT ELEVATION

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



32" SIDEWALK PARAPET REINFORCEMENT ELEVATION

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

NOTES:

1. FOR ADDITIONAL REINFORCEMENT IN END HAUNCH, SEE DWG. NO. DK-03.
2. FOR ADDITIONAL DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DWG. NOS. DK-02 AND DK-03.
3. FOR INFORMATION ON DK506E, DK516E AND DK517E AND ASSOCIATED MECHANICAL COUPLER, SEE DWG. NO. DK-02.
4. FOR DECK SLAB CONSTRUCTION JOINT LOCATIONS AND DECK SLAB POURING SEQUENCE, SEE DWG. NO. PS-01.
5. PARAPET CONTROL JOINTS NOT SHOWN FOR CLARITY. FOR PARAPET CONTROL JOINT LOCATIONS, SEE DWG. NO. PE-01. FOR PARAPET CONTROL JOINT DETAILS, SEE DWG. NO. FD-01.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

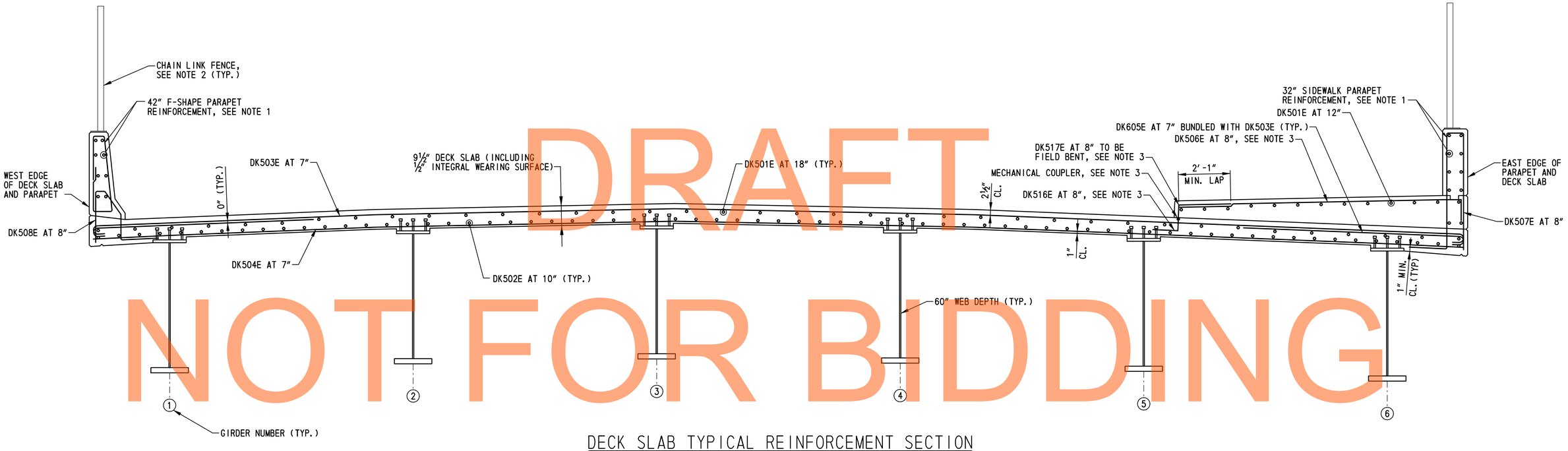
US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

DECK SLAB AND PARAPET REINFORCEMENT

BR1-8
DK-01

SHEET NO. 525
TOTAL SHTS. 875



DECK SLAB TYPICAL REINFORCEMENT SECTION

SCALE: ½"=1'-0"

NOTES:

1. FOR 42" F-SHAPE PARAPET AND 32" SIDEWALK PARAPET REINFORCEMENT, SEE DWG. NO. DK-03.
2. FOR CHAIN LINK FENCE DETAILS, SEE DWG. NOS. FD-01 AND FD-02.
3. THE CONTRACTOR HAS THE OPTION OF UTILIZING ONE REINFORCEMENT BAR RATHER THAN A DK506E, DK516E, DK517E AND A MECHANICAL COUPLER. HOWEVER NO ADDITIONAL COMPENSATION TO THE CONTRACTOR WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

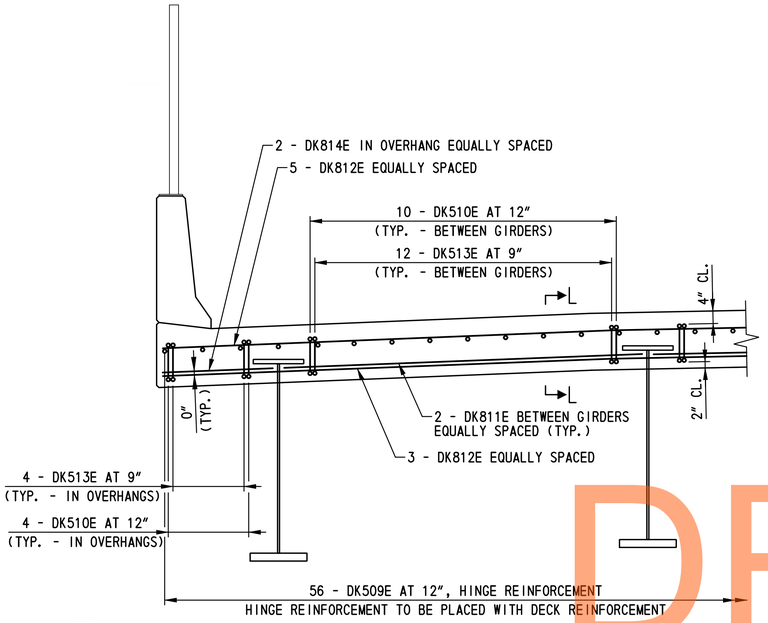
US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	B.K.B.
NEW CASTLE		

DECK SLAB AND PARAPET REINFORCEMENT DETAILS - 1

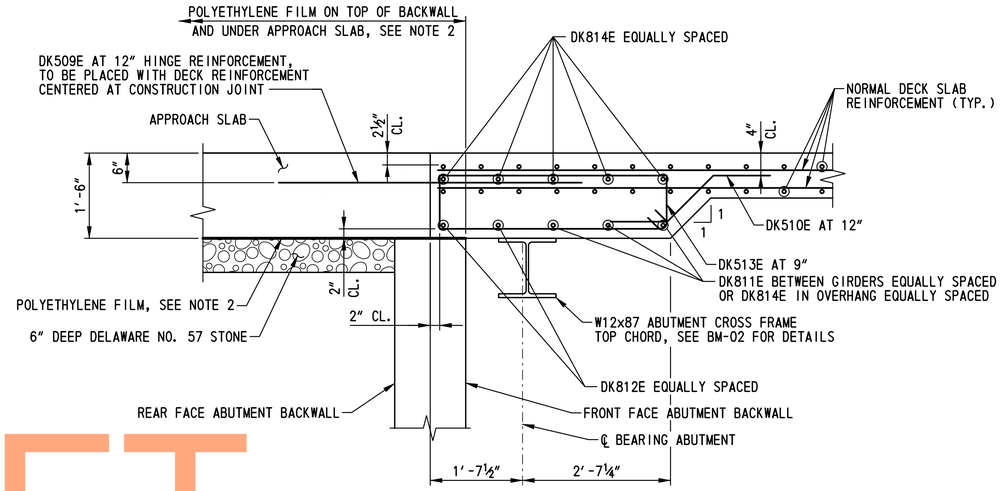
BR1-8
DK-02

SHEET NO.	TOTAL SHTS.
526	875



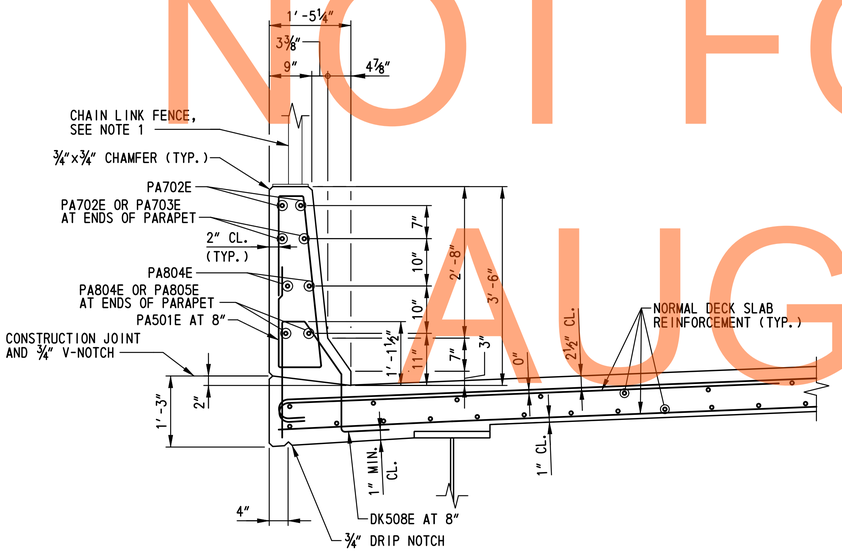
NOTE:
NORMAL SLAB AND PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY.

CONCRETE END HAUNCH TYPICAL REINFORCEMENT SECTION
SCALE: ½"=1'-0"

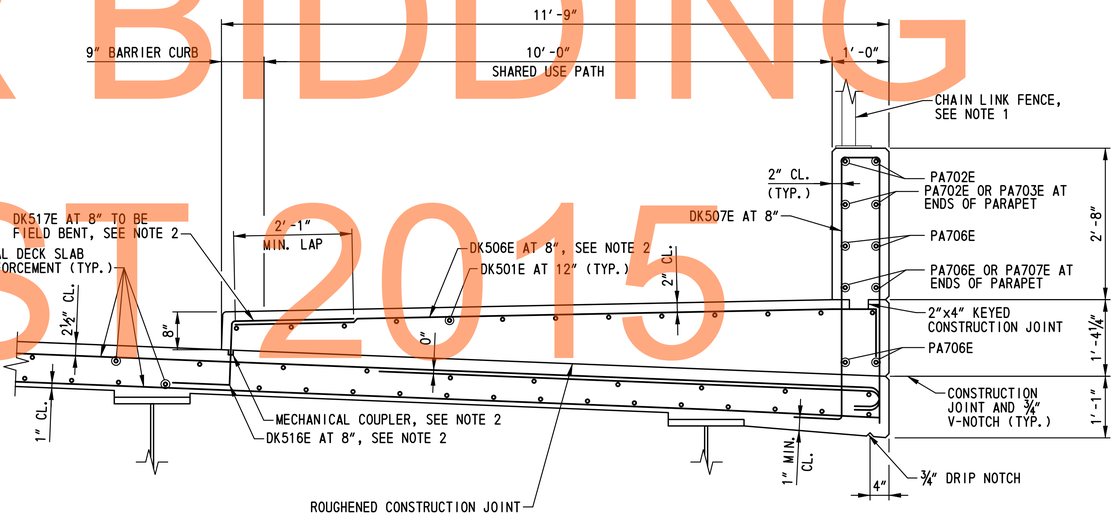


SECTION L-L
SCALE: ¾"=1'-0"

NOTES:
1. APPROACH SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
2. POLYETHYLENE FILM LOCATED AT ABUTMENT B BACKWALL AND APPROACH SLAB B ONLY. FOR POLYETHYLENE FILM INFORMATION, SEE DWG. NO. AS-05.



42" F-SHAPE PARAPET REINFORCEMENT TYPICAL SECTION
SCALE: ¾"=1'-0"



32" SIDEWALK PARAPET TYPICAL REINFORCEMENT SECTION
SCALE: ¾"=1'-0"

NOTES:
1. FOR CHAIN LINK FENCE DETAILS, SEE DWG. NOS. FD-01 THRU FD-02.
2. THE CONTRACTOR HAS THE OPTION OF UTILIZING ONE REINFORCEMENT BAR RATHER THAN A DK506E, DK516E, DK517E AND A MECHANICAL COUPLER. HOWEVER NO ADDITIONAL COMPENSATION TO THE CONTRACTOR WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY:	A.D.D.
COUNTY	CHECKED BY:	B.K.B.
NEW CASTLE		

DECK SLAB AND
PARAPET REINFORCEMENT
DETAILS - 2

BR1-8 DK-03	
SHEET NO.	527
TOTAL SHTS.	875

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

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

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
DECK SLAB															
153	5	50-09 0	DK501E	STR		50-09 0									
201	5	51-01 0	DK502E	STR		51-01 0									
256	5	56-00 1	DK503E	1	0-07 0	54-10 1					0-07 0		0-05 0		
256	5	54-10 1	DK504E	STR		54-10 1									
512	6	9-05 3	DK605E	1	0-08 0	8-09 3							0-06 0		
224	5	11-05 0	DK506E	2		11-05 0									
224	5	11-02 2	DK507E	T15		4-09 1	0-08 0	4-09 1	1-00 0					4-09 1	1-08 0
224	5	5-07 1	DK508E	T15		2-00 1	0-05 2	1-01 2	1-00 0	1-00 0			0-07 3	0-11 0	1-01 1
112	5	6-00 0	DK509E	STR		6-00 0									
116	5	3-02 3	DK510E	6		1-00 0	1-02 3	1-00 0				0-10 2		0-10 2	2-10 2
30	8	9-04 2	DK811E	STR		9-04 2									
14	8	54-10 1	DK812E	STR		54-10 1									
136	5	10-08 2	DK513E	T1	0-05 2	3-10 3	1-00 0	3-10 3	1-00 0		0-05 2				
12	8	2-10 1	DK814E	STR		2-10 1									
224	5	1-05 1	DK515E	2		0-10 0	0-07 1								
224	5	2-08 1	DK516E	STR		2-08 1									
224	5	9-03 1	PA501E	PA		2-06 2	0-09 0	3-00 1	0-05 0	2-06 2		3-00 0		0-04 0	
20	7	52-09 3	PA702E	STR		52-09 3									
8	7	28-11 3	PA703E	STR		28-11 3									
10	8	52-06 2	PA804E	STR		52-06 2									
4	8	28-07 2	PA805E	STR		28-07 2									
16	7	51-09 3	PA706E	STR		51-09 3									
4	7	27-08 3	PA707E	STR		27-08 3									

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

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

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIMENSIONS: DIAMETER (INCHES)	AREA (INCHES²)	WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

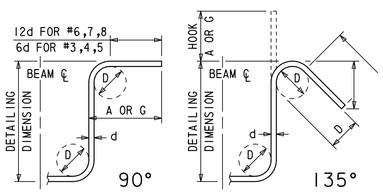
	180° HOOKS		90° HOOKS
	D	A OR G	J	A OR G
3	2¼"	5"	3"	6"
4	3"	6"	4"	8"
5	3¾"	7"	5"	10"
6	4½"	8"	6"	1-0"
7	5¼"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9½"	1-3"	11¾"	1-7"
10	10¾"	1-5"	1-1¼"	1-10"
11	1-0"	1-7"	1-2¾"	2-0"
14	1-6¼"	2-3"	1-9¾"	2-7"
18	2-0"	3-0"	2-4½"	3-5"

STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

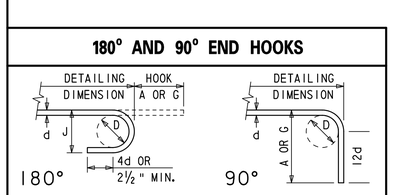
	90° HOOK	135° HOOK	
	D	A OR G	A OR G	H
3	1½"	4"	4"	2½"
4	2"	4½"	4½"	3"
5	2½"	6"	5½"	3¾"
6	4½"	1-0"	8"	4½"
7	5¼"	1-2"	9"	5¼"
8	6"	1-4"	10½"	6"

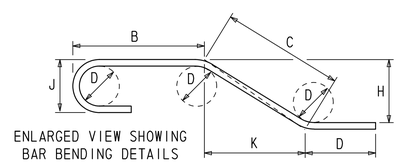
NOTES:
1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

STIRRUP AND TIE HOOKS

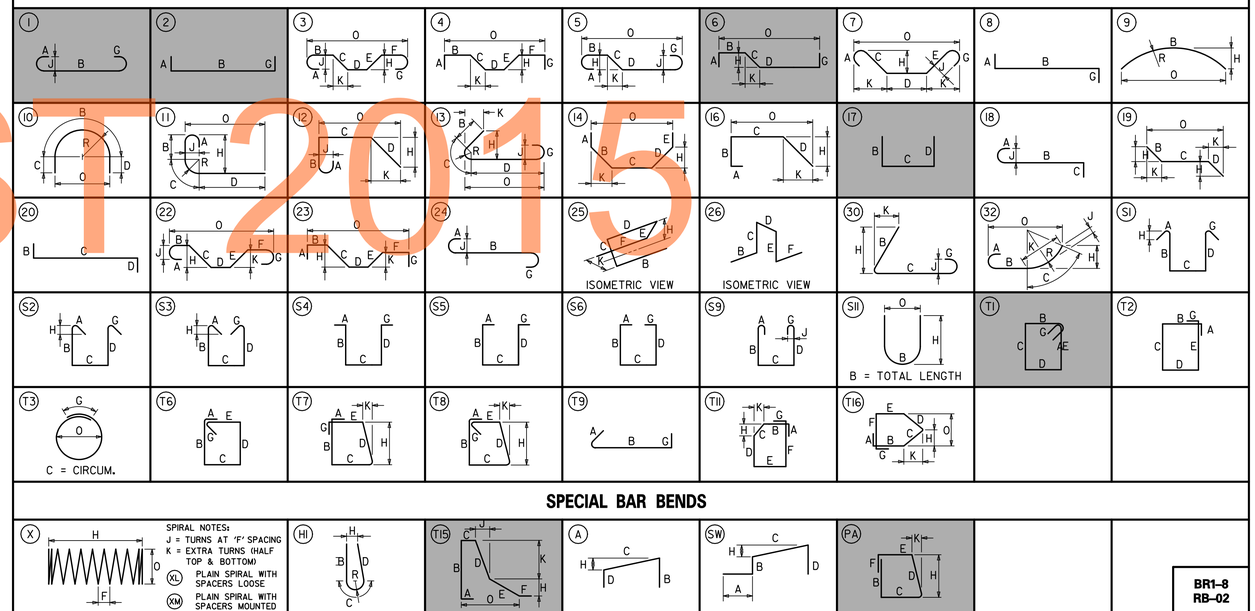


180° AND 90° END HOOKS





STANDARD BAR BENDS



SPECIAL BAR BENDS

BR1-8
RB-02

ADDENDUMS / REVISIONS		

DELAWARE DEPARTMENT OF TRANSPORTATION

US 301, SR 896 TO SR 1

CONTRACT	T200911308
COUNTY	NEW CASTLE

BRIDGE NO.	1-460A
DESIGNED BY:	A.D.D.
CHECKED BY:	B.K.B.

SUPERSTRUCTURE REINFORCEMENT LIST

SHEET NO.	528
TOTAL SHTS.	875

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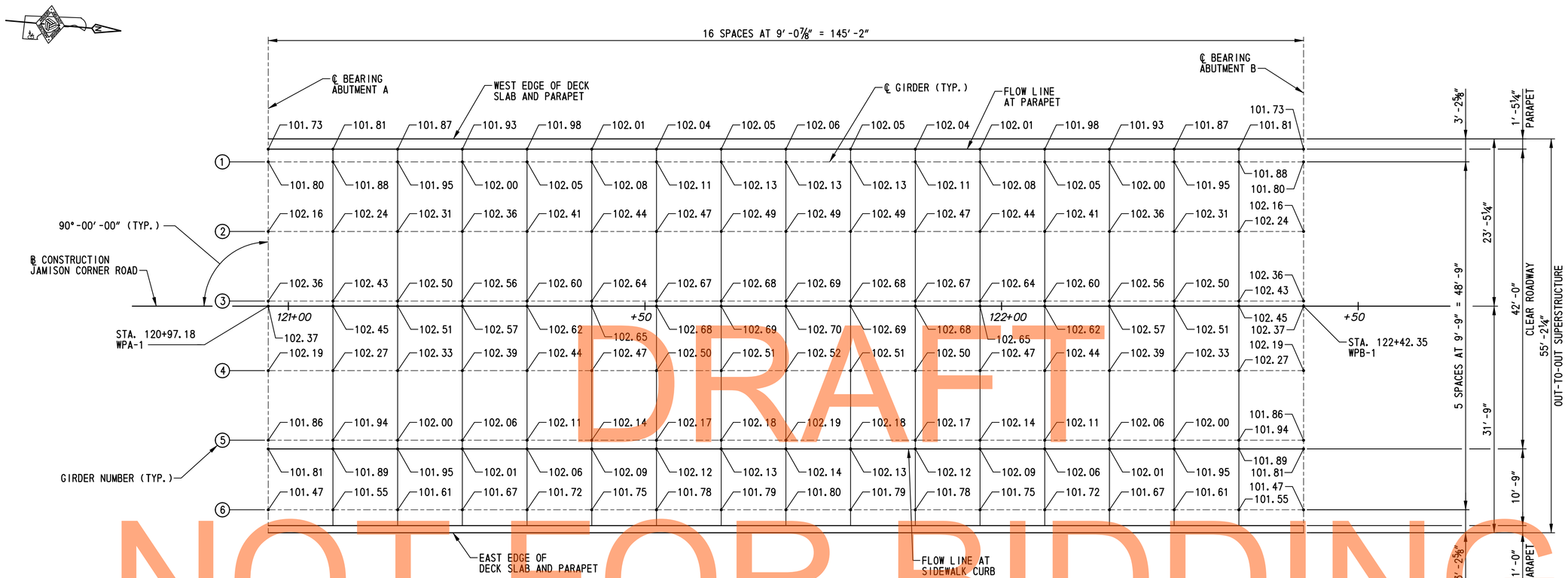
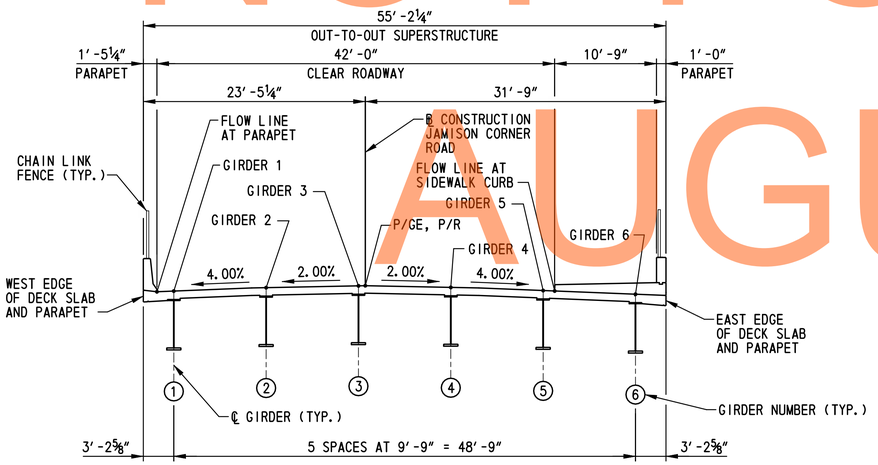


FINISHED ROADWAY ELEVATIONS
SCALE: ⅛″=1′-0″



LOCATIONS OF FINISHED ROADWAY ELEVATIONS
SCALE: ⅛″=1′-0″

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

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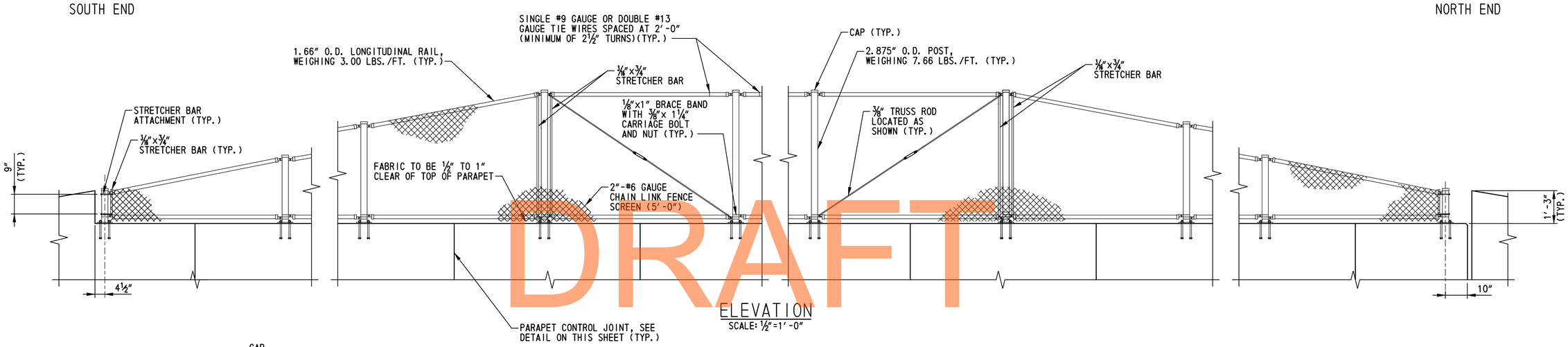
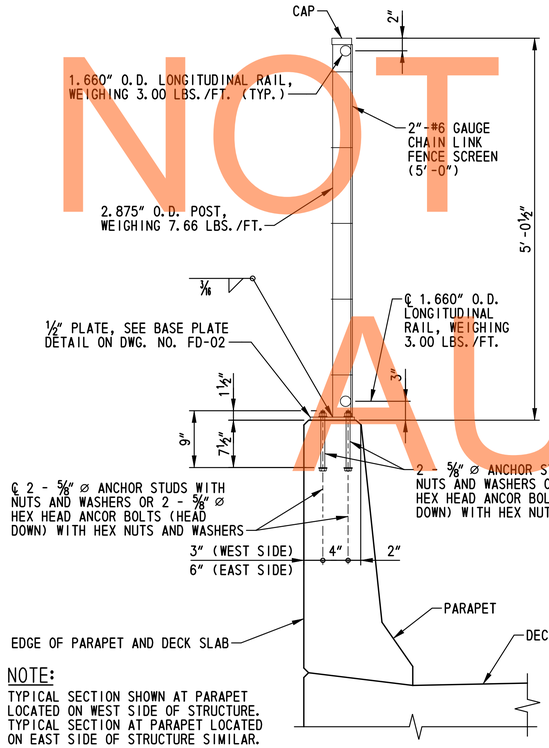
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	FINISHED ROADWAY ELEVATIONS
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.	
					CHECKED BY: B.K.B.	

BR1-8
RE-01

SHEET NO.	TOTAL SHTS.
529	875

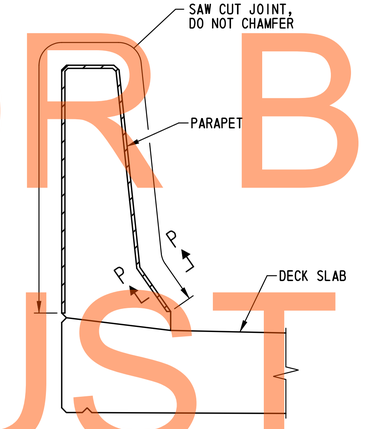


ELEVATION
SCALE: ½"=1'-0"

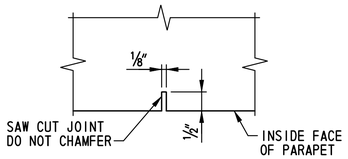


NOTE:
TYPICAL SECTION SHOWN AT PARAPET LOCATED ON WEST SIDE OF STRUCTURE. TYPICAL SECTION AT PARAPET LOCATED ON EAST SIDE OF STRUCTURE SIMILAR.

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



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



SECTION P-P
NOT TO SCALE

NOTE:
PLACE PARAPET CONTROL JOINT CENTERED BETWEEN FENCE POSTS.

CHAIN LINK FENCE NOTES:

1. FOR FENCE POST SPACING, SEE DWG. NO. PE-01. FOR ADDITIONAL FENCE POST DETAILS, SEE DWG. NO. FD-02.
2. POSTS AND RAILS SHALL CONFORM TO ASTM F 1083, SCHEDULE 80. FABRIC SHALL BE 2"-#6 GAUGE CHAIN LINK FENCE (5'-0") IN CONFORMANCE WITH AASHTO M 181.
3. ALL POSTS, BRACES, FITTINGS AND HARDWARE SHALL BE GALVANIZED.
4. ALL PLATES SHALL BE STEEL CONFORMING TO ASTM A 709, GRADE 36.
5. ANCHOR STUDS OR ANCHOR BOLTS SHALL CONFORM TO ASTM A 276, TYPE 430 OR TYPE 304 STAINLESS STEEL ANNEALED, HOT-FINISHED, ULTIMATE STRENGTH 70,000 psi MIN., 20% MIN. ELONGATION. THREADS MAY BE ROLLED OR CUT.
6. EPOXY GROUT FOR ANCHOR STUDS IN CORED HOLES SHALL BE A SAND AND EPOXY MIXED BY VOLUME IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE GROUT SHALL BE CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 6500 PSI IN 72 HOURS WHEN TESTED IN CONFORMANCE WITH ASTM C 579.
7. ALL LONGITUDINAL RAILS SHALL BE PARALLEL TO TOP OF PARAPET.
8. ALL POSTS SHALL BE SET NORMAL TO TOP OF PARAPET.
9. THE CHAIN LINK FENCE SHALL BE TRUE TO LINE, TAUT, TIGHT FIT TO TOP OF PARAPET, WITH ½" TO 1" CLEAR TO TOP OF PARAPET, AND SHALL COMPLY WITH THE BEST PRACTICE FOR FENCE CONTRUCTION OF THIS TYPE.
10. POSTS AND RAILS SHALL BE PERMANENTLY POSITIONED BEFORE FABRIC IS PLACED.
11. BEFORE PLACING FENCING, PLACE ½" TO 1" THICK MATERIAL (WOOD, ETC.) ON TOP OF PARAPET TO ENSURE THE DESIRED GAP IS ACHIEVED. AFTER FENCE IS RIGIDLY ATTACHED, THIS TEMPORARY BLOCKING SHALL BE REMOVED.
12. AS AN OPTION, THE CONTRACTOR MAY SET THE ANCHOR STUDS AFTER PLACING CONCRETE BARRIER USING ⅞" DIA. CORED HOLES AND AN APPROVED EPOXY GROUT. NUTS AND WASHERS SHALL BE OMITTED FROM THE EMBEDDED ENDS OF ANCHOR STUDS. IF CONTRACTOR ELECTS TO PLACE ANCHOR STUDS AFTER PLACING CONCRETE PARAPET, NEWLY PLACED REBARS SHALL BE LOCATED SO THAT CORING DOES NOT DAMAGE THE REBAR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS OPTION.
13. COAT ALL SURFACES OF BASE PLATES IN CONTACT WITH CONCRETE WITH A CAULKING COMPOUND JUST PRIOR TO BASE PLATE INSTALLATION. AFTER POSTS AND RAILS ARE PERMANENTLY POSITIONED SEAL THE ENTIRE PERIMETER OF THE BASE PLATE BETWEEN METAL SURFACES AND THE CONCRETE WITH A CAULKING COMPOUND. CAULKING COMPOUND SHALL ADHERE TO STEEL AND CONCRETE SURFACES AND MEET THE REQUIREMENTS OF ASTM C 834 OR ASTM C 920. PAYMENT FOR THE CAULKING COMPOUND SHALL BE INCIDENTAL TO ITEM 727507 - BRIDGE SAFETY FENCE.
14. FOR ANTI-CLIMB SHIELD LOCATIONS, SEE DWG. NO. PE-01. FOR ANTI-CLIMB SHIELD DETAILS, SEE DWG. NO. FD-02. PAYMENT FOR INSTALLATION OF ANTI-CLIMB SHIELDS WILL BE INCIDENTAL TO ITEM NO. 727507 - BRIDGE SAFETY FENCE.

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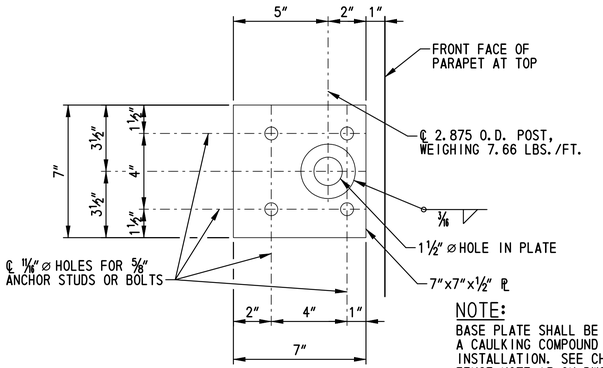
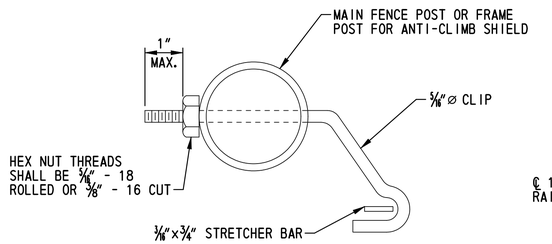
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	FENCE DETAILS – 1	BR1-8 FD-01
				COUNTY NEW CASTLE	DESIGNED BY: B.K.B.		SHEET NO. 530
					CHECKED BY: W.A.G.		TOTAL SHTS. 875



BASE PLATE DETAIL

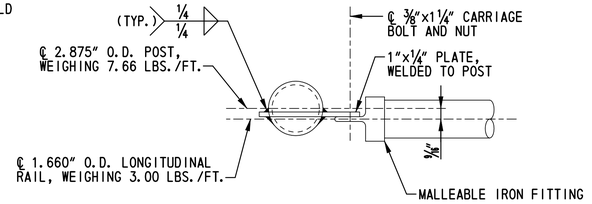
SCALE: 3"=1'-0"

NOTE:
BASE PLATE SHALL BE COATED WITH A CAULKING COMPOUND PRIOR TO INSTALLATION. SEE CHAIN LINK FENCE NOTE 13 ON DWG. NO. FD-01 FOR ADDITIONAL INFORMATION.

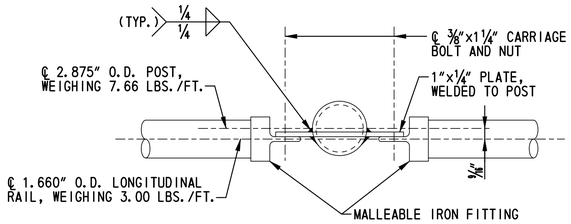


STRETCHER BAR ATTACHMENT

NOT TO SCALE



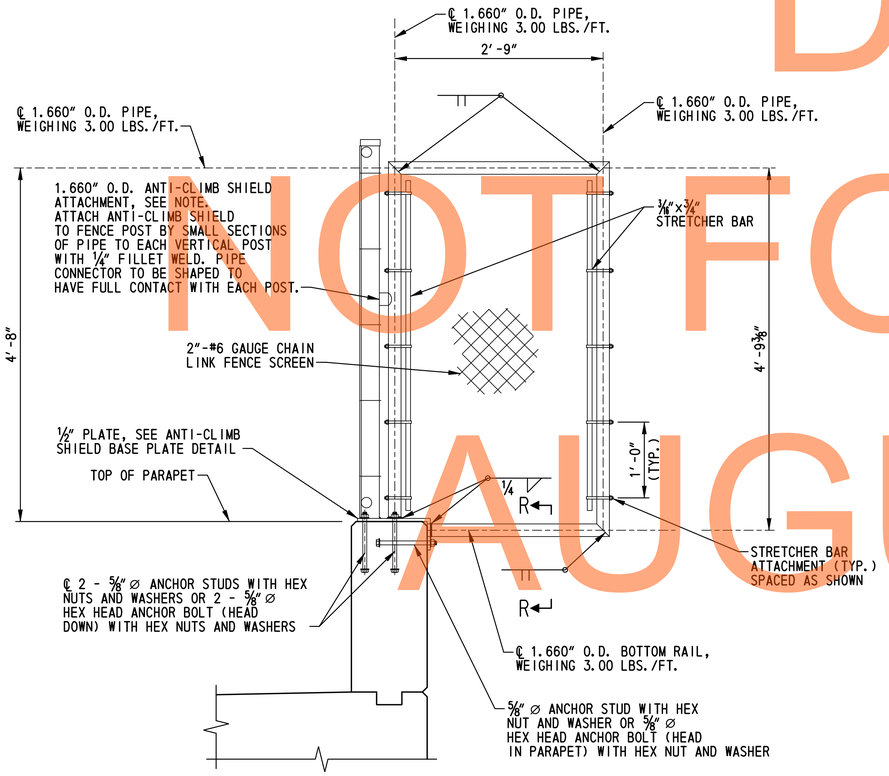
END POST



INTERMEDIATE POST

TOP LONGITUDINAL RAIL - POST ATTACHMENT

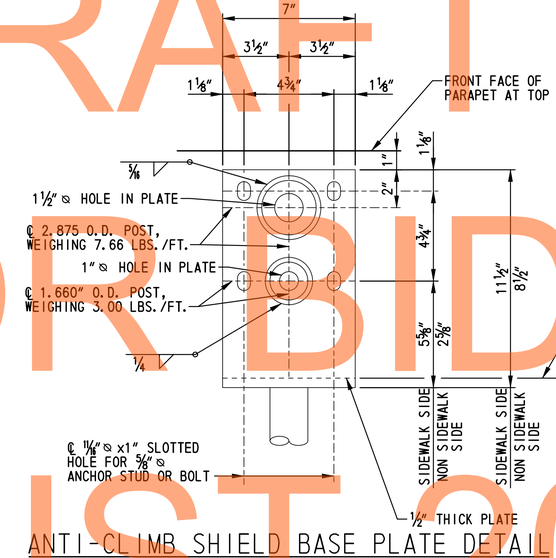
SCALE: 3"=1'-0"



ANTI-CLIMB SHIELD DETAIL

SCALE: 1"=1'-0"

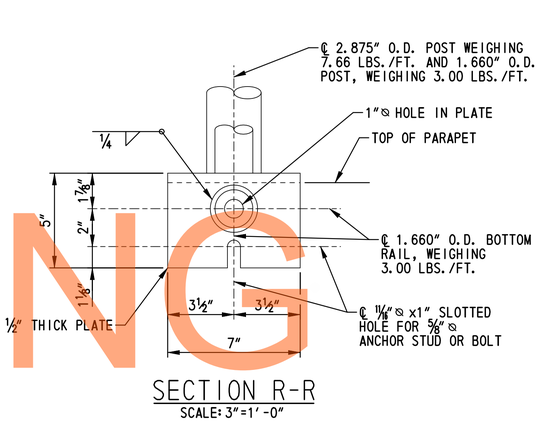
NOTE:
FOR LOCATIONS OF ANTI-CLIMB SHIELD, SEE DWG. NO. PE-01.



ANTI-CLIMB SHIELD BASE PLATE DETAIL

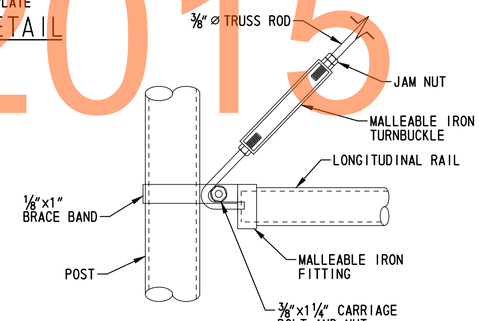
SCALE: 3"=1'-0"

NOTE:
BASE PLATE SHALL BE COATED WITH A CAULKING COMPOUND PRIOR TO INSTALLATION. SEE CHAIN LINK FENCE NOTE 13 ON DWG. NO. FD-01 FOR ADDITIONAL INFORMATION.



SECTION R-R

SCALE: 3"=1'-0"



TRUSS ROD ATTACHMENT

SCALE: 3"=1'-0"

NOTE:
FOR CHAIN LINK FENCE NOTES, SEE DWG. NO. FD-01.

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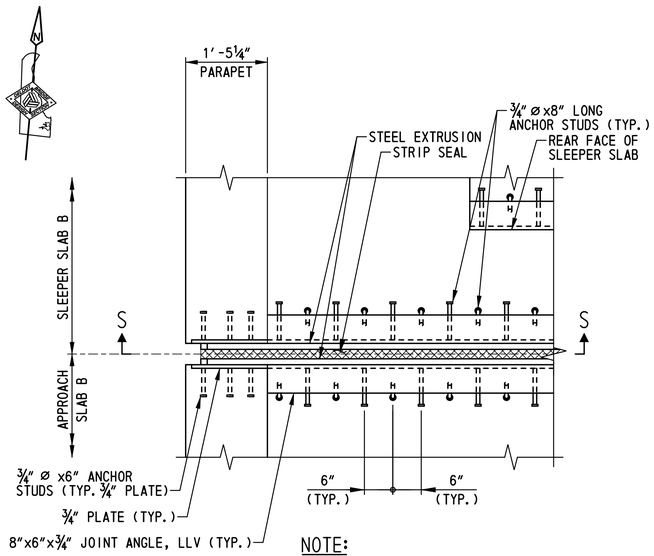
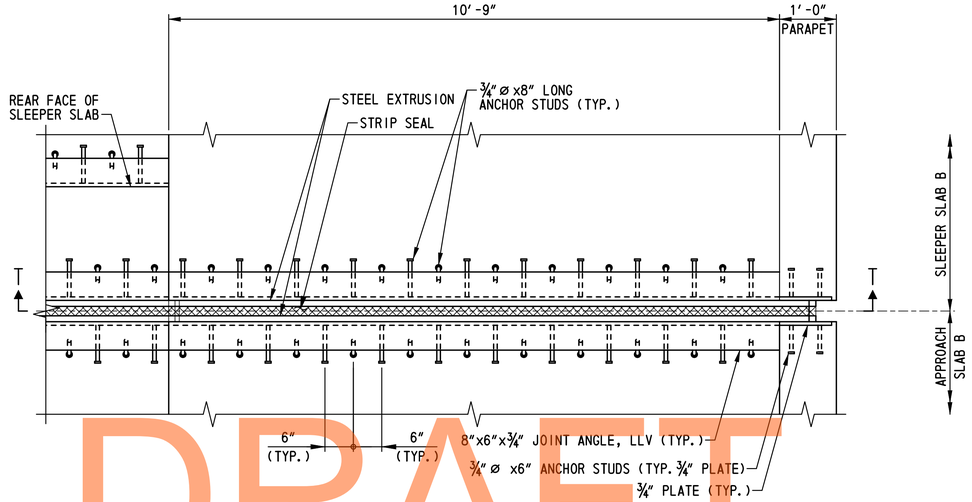
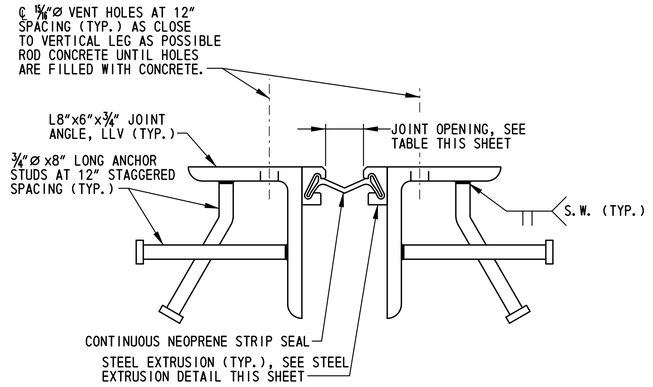
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	**US 301, SR 896 TO SR 1**	CONTRACT T200911308	BRIDGE NO. **1-460A**	**FENCE DETAILS – 2**	BR1-8 FD-02
				COUNTY NEW CASTLE	DESIGNED BY: B.K.B.		SHEET NO. 531
					CHECKED BY: W.A.G.		TOTAL SHTS. 875



NOTE:
FOR APPROACH B AND SLEEPER SLAB B TYPICAL SECTION, SEE DWG. NO. AS-05. FOR DETAIL OF JOINT ANGLE AT REAR FACE OF SLEEPER SLAB, SEE DWG. NO. AS-02.



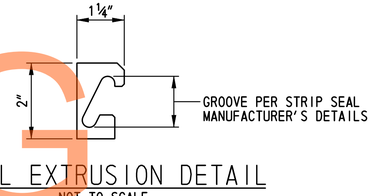
ARMORED STRIP SEAL JOINT PLAN
SCALE: ¾″=1′-0″



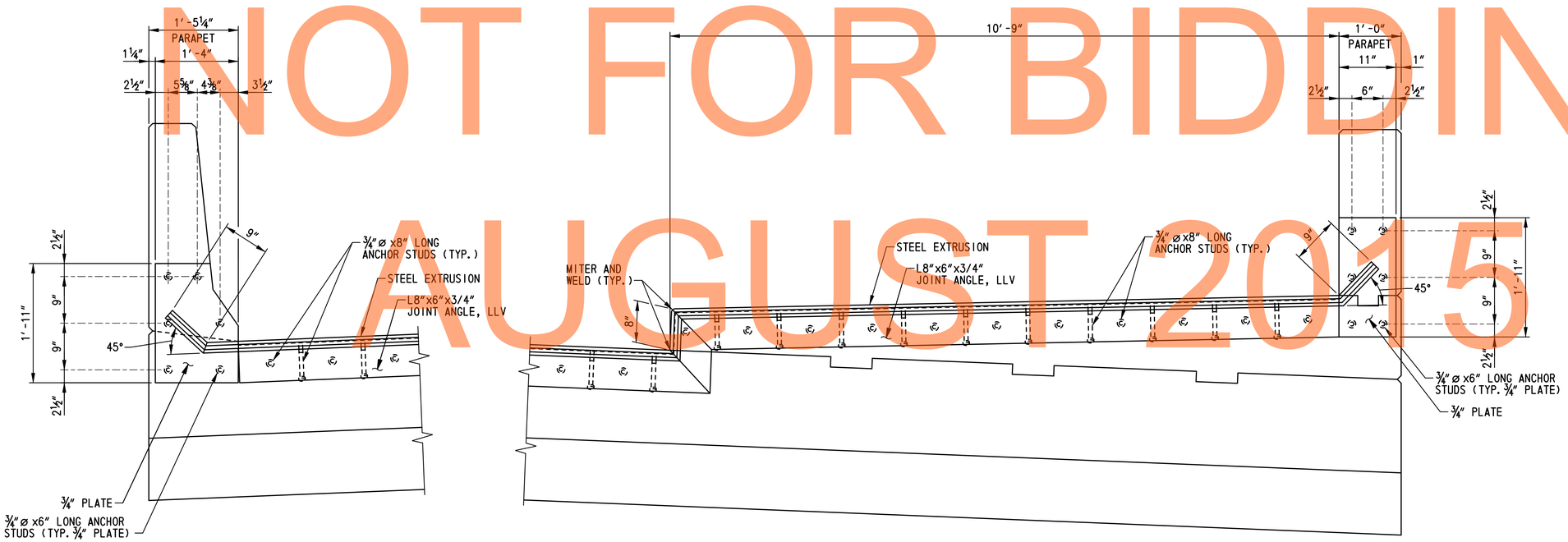
ARMORED STRIP SEAL JOINT ASSEMBLY DETAIL
SCALE: 3″=1′-0″

JOINT OPENING TABLE

LOCATION	TEMPERATURE (°F)									
	0	10	20	30	40	50	60	70	80	90	100
APPROACH SLAB B	2 1/16″	2 1/16″	2 1/16″	2 3/16″	2 1/4″	2 1/8″	2″	1 7/8″	1 3/4″	1 11/16″	1 5/8″



STEEL EXTRUSION DETAIL
NOT TO SCALE



SECTION S-S
SCALE: 1″=1′-0″

SECTION T-T
SCALE: 1″=1′-0″

NOTE:
PAYMENT FOR CONSTRUCTION OF THE ARMORED STRIP SEAL JOINT WILL BE MADE UNDER ITEM NO. 605512 - PREFABRICATED EXPANSION JOINT SYSTEM 4″. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

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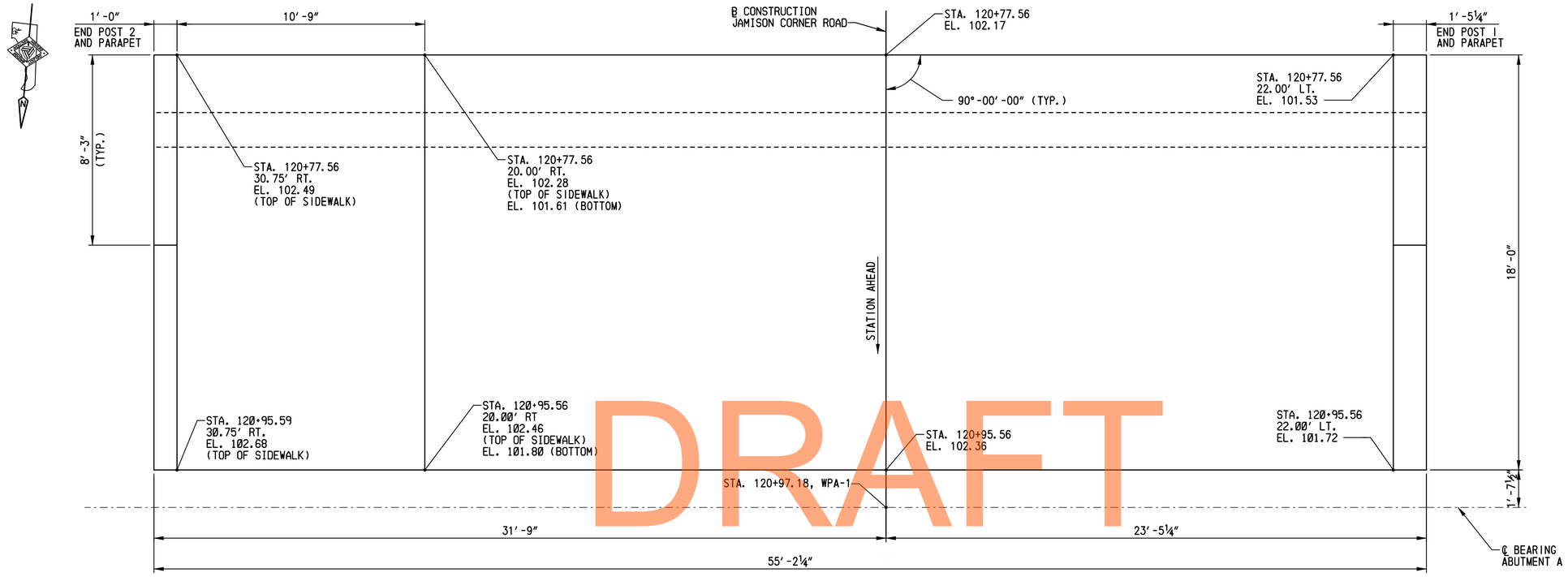
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	ARMORED STRIP SEAL JOINT DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: A.D.D.	
					CHECKED BY: B.K.B.	

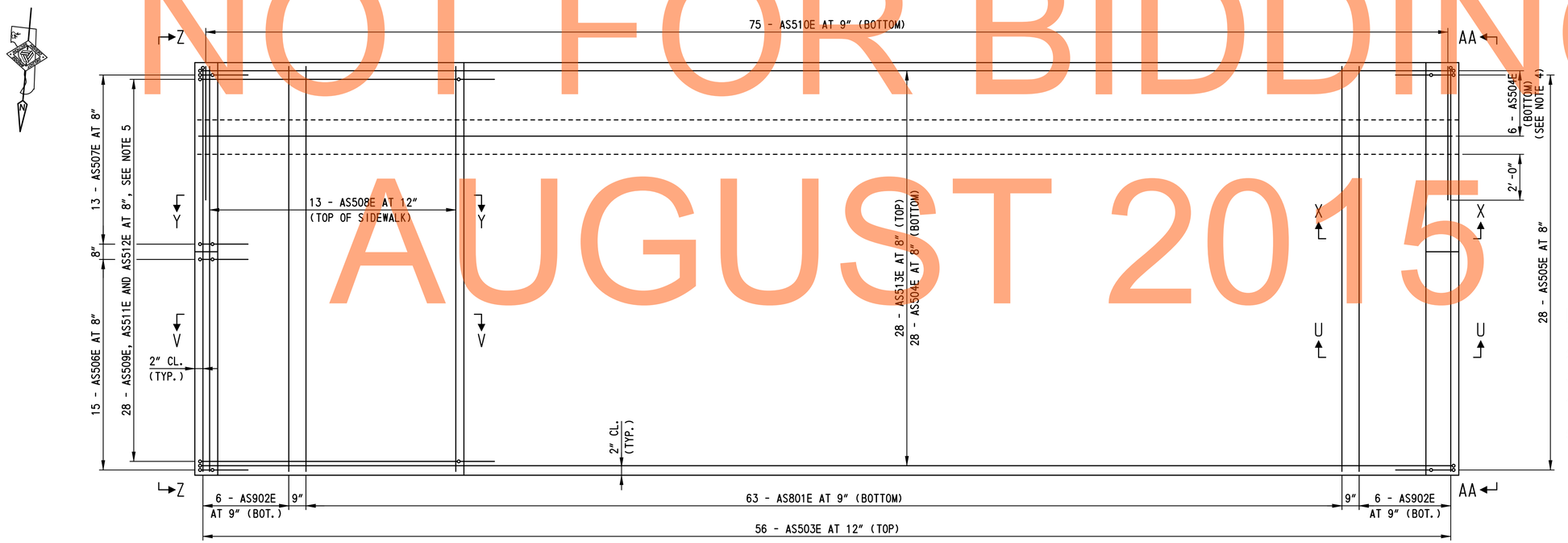
BR1-8
EX-01

SHEET NO.	TOTAL SHTS.
532	875



APPROACH SLAB A PLAN

SCALE: ⅜″=1′-0″



APPROACH SLAB A REINFORCEMENT PLAN

SCALE: ⅜″=1′-0″

NOTES:

1. FOR APPROACH SLAB A TYPICAL SECTION, SEE DWG. NO. AS-02.
2. FOR SECTIONS U-U, V-V, X-X AND Y-Y, SEE DWG. NO. AS-06.
3. FOR VIEWS Z-Z AND AA-AA, SEE DWG. NO. AS-02.
4. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AS-02 AND AS-06.
5. FOR INFORMATION ON AS509E, AS511E AND AS512E AND ASSOCIATED MECHANICAL COUPLER, SEE DWG.NO. AS-06. THE CONTRACTOR HAS THE OPTION OF UTILIZING ONE REINFORCEMENT BAR RATHER THAN A AS509E, AS511E, AS512E AND A MECHANICAL COUPLER. HOWEVER NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

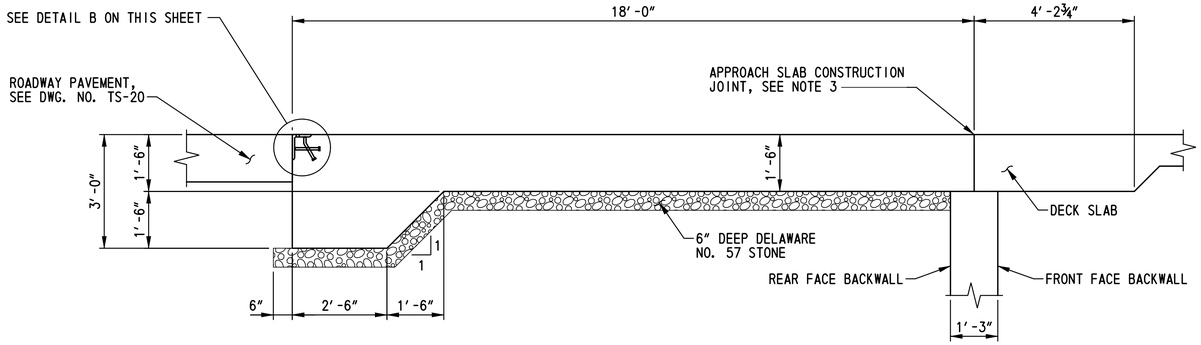
US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE

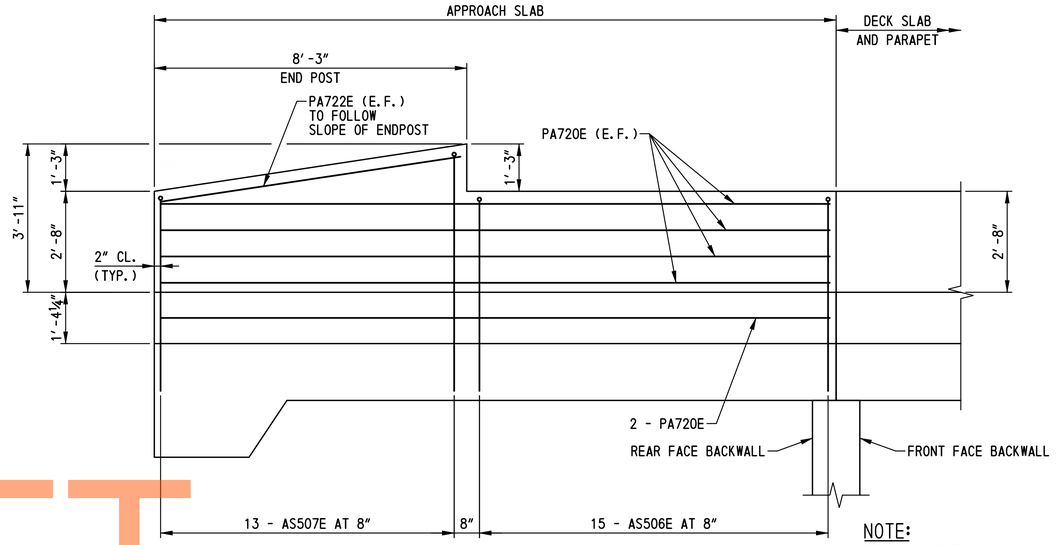
BRIDGE NO. 1-460A
DESIGNED BY: L.M.B.
CHECKED BY: B.K.B.

APPROACH SLAB A
PLAN AND
REINFORCEMENT PLAN

BR1-8
AS-01
SHEET NO. 533
TOTAL SHTS. 875

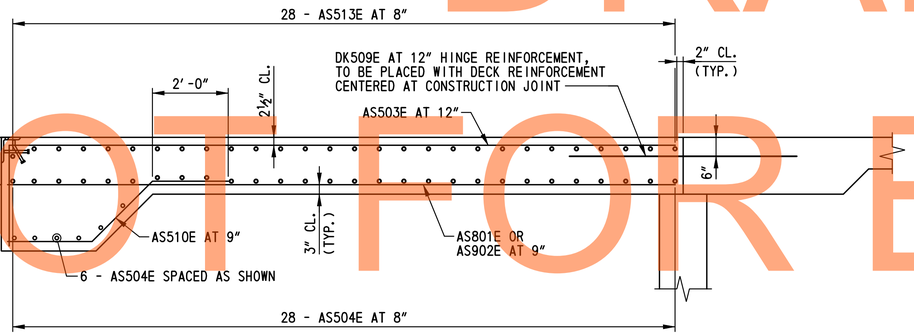


APPROACH SLAB A TYPICAL SECTION
SCALE: ½″=1′-0″

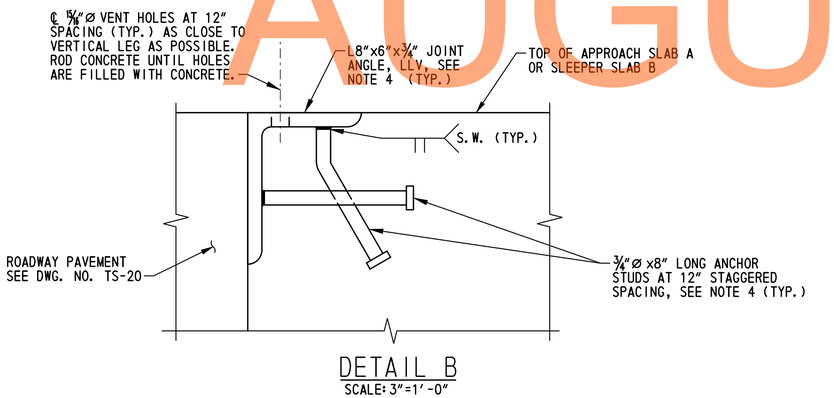


NOTE:
REINFORCEMENT IN APPROACH SLAB NOT SHOWN FOR CLARITY. FENCING NOT SHOWN FOR CLARITY.

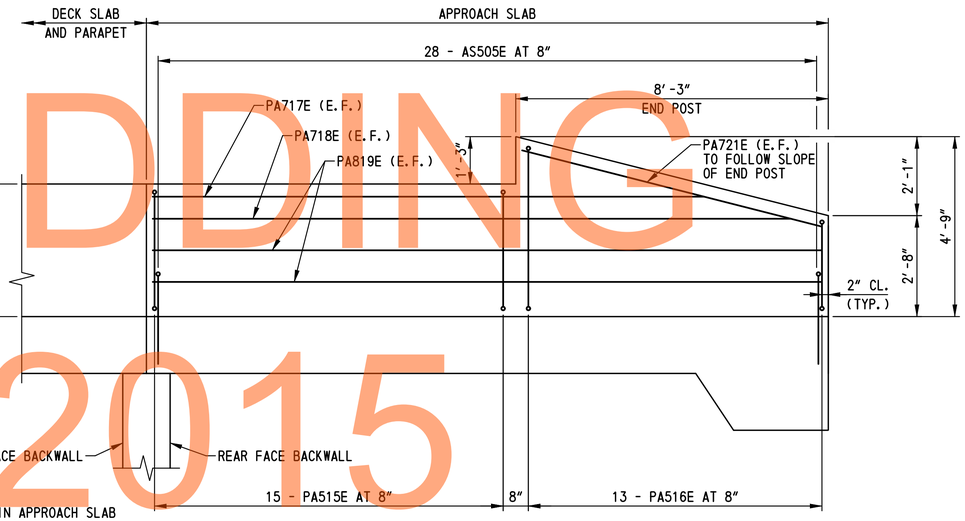
VIEW Z-Z
SCALE: ½″=1′-0″



APPROACH SLAB A TYPICAL REINFORCEMENT SECTION
SCALE: ½″=1′-0″



DETAIL B
SCALE: 3″=1′-0″



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

VIEW AA-AA
SCALE: ½″=1′-0″

NOTES:

1. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AS-01 AND AS-06.
2. FOR LOCATION OF VIEWS Z-Z AND AA-AA, SEE DWG. NO. AS-01.
3. THE APPROACH SLAB SHALL BE POURED AFTER THE DECK SLAB. THE APPROACH SLAB SHALL BE POURED STARTING AT THE ROADWAY PAVEMENT END. THE APPROACH SLAB CONSTRUCTION JOINT SHALL CONSIST OF A 3″ DEEP SAWCUT MADE WITHIN 36 HOURS OF APPROACH SLAB CONCRETE PLACEMENT. THE SAWCUT SHALL BE SEALED WITH AN APPROVED COLD APPLIED SILICONE SEALER PLACED IN A CLEAN AIR-BLOWN NOTCH FREE OF MOISTURE. PAYMENT FOR INSTALLATION OF CONSTRUCTION JOINT WILL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
4. FOR LIMITS OF ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF SLEEPER SLAB B, SEE DWG. NO. EX-01. LIMITS OF ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF APPROACH SLAB A SHALL BE FROM THE FRONT OF THE WEST PARAPET TO THE FRONT OF THE BARRIER CURB. PAYMENT FOR INSTALLATION OF ANGLES AND STUDS AT APPROACH PAVEMENT EDGE OF SLEEPER SLAB B AND APPROACH SLAB A WILL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	APPROACH SLAB A DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: L.M.B.	
					CHECKED BY: B.K.B.	

BR1-8
AS-02

SHEET NO. 534
TOTAL SHTS. 875

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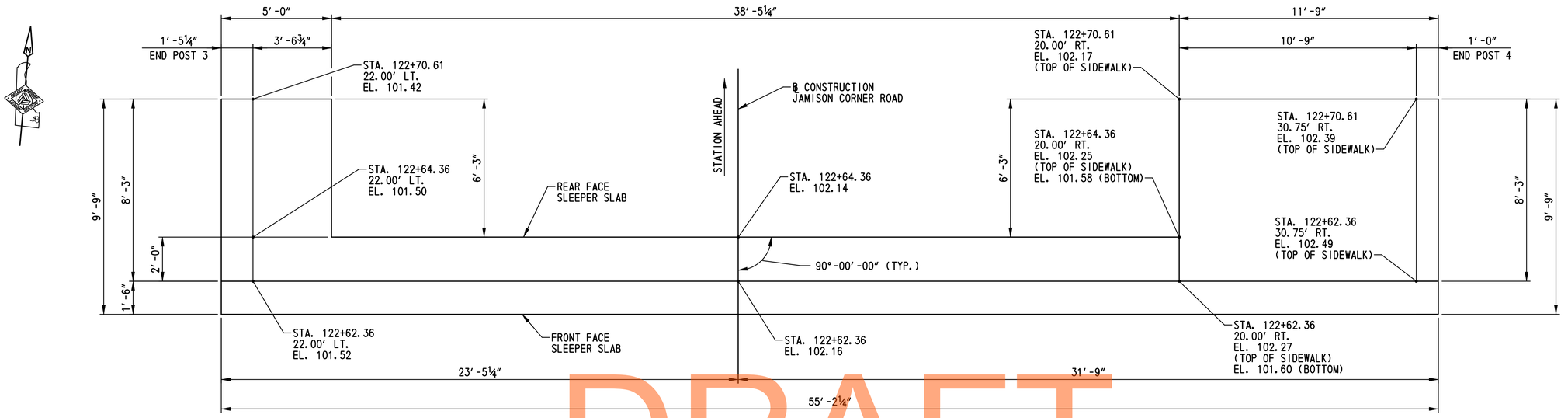
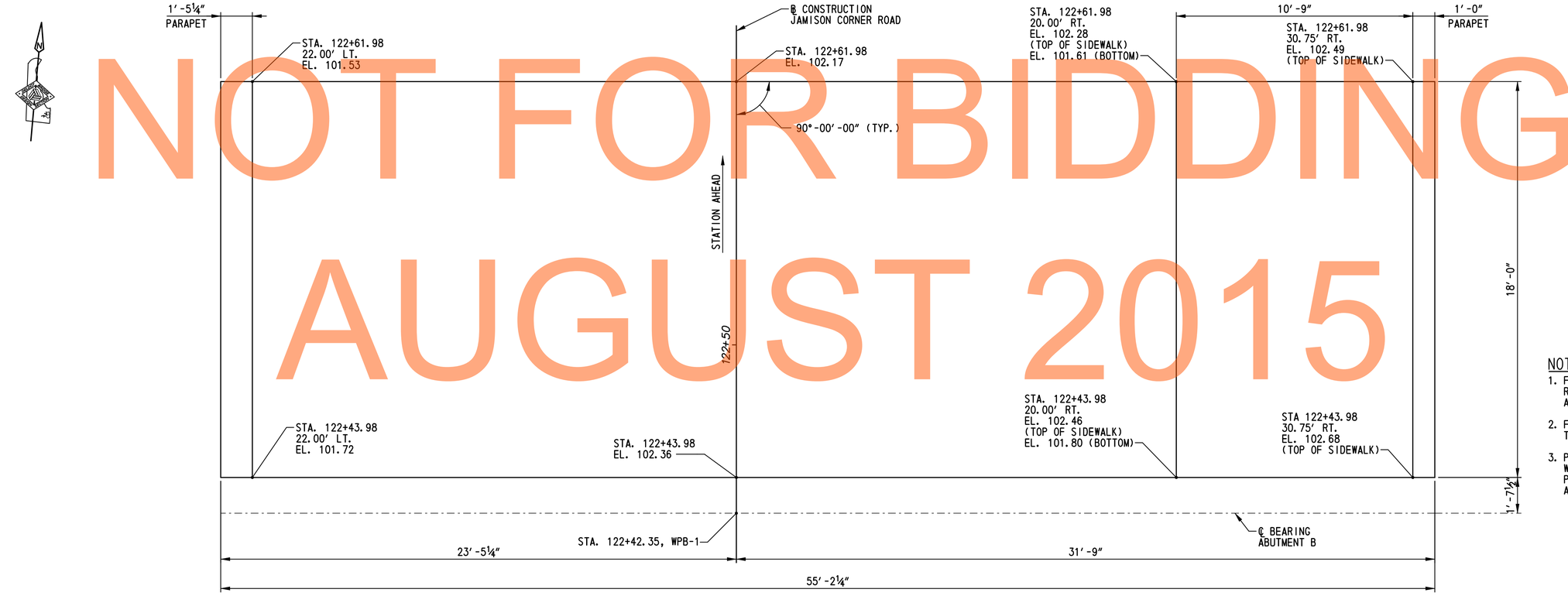


SLEEPER SLAB B PLAN

SCALE: ⅜″=1′-0″



APPROACH SLAB B PLAN

SCALE: ⅜″=1′-0″

NOTES:

1. FOR APPROACH SLAB B AND SLEEPER SLAB REINFORCEMENT, SEE DWG. NOS. AS-04 THRU AS-06.
2. FOR APPROACH SLAB B AND SLEEPER SLAB TYPICAL SECTIONS, SEE DWG. NO. AS-05.
3. PAYMENT FOR CONSTRUCTION OF SLEEPER SLAB WILL BE MADE UNDER ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

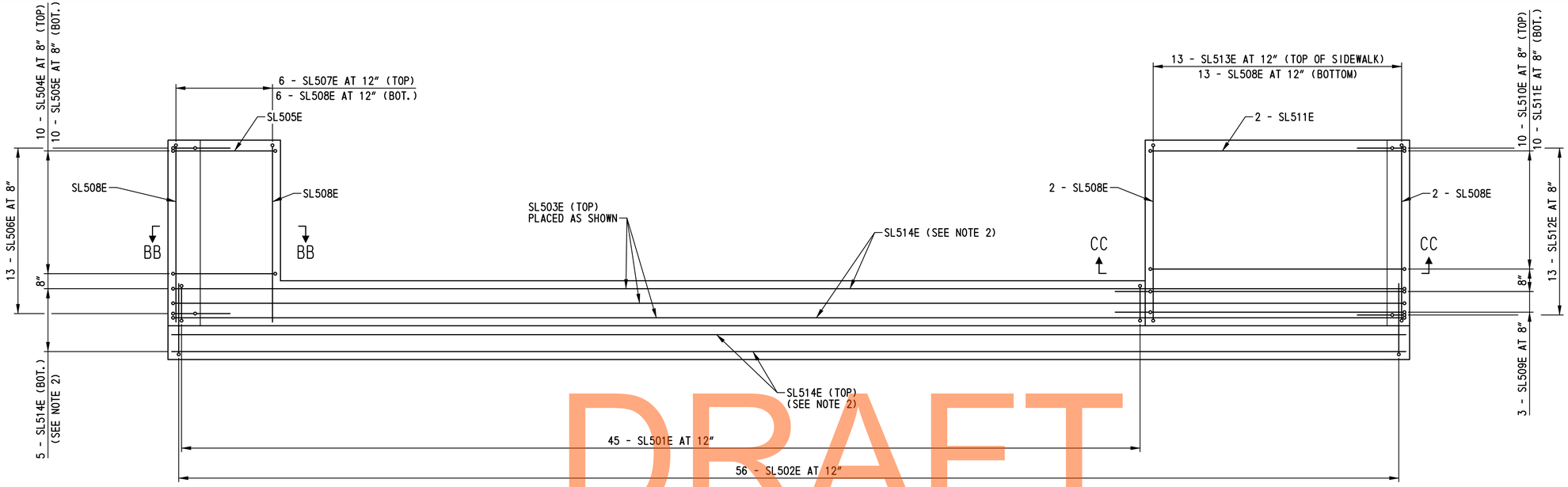
SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: L.M.B.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

APPROACH SLAB B AND SLEEPER SLAB B PLAN

BR1-8 AS-03	
SHEET NO.	535
TOTAL SHTS.	875



SLEEPER SLAB B REINFORCEMENT PLAN

SCALE: ⅜"=1'-0"

APPROACH SLAB B REINFORCEMENT PLAN

SCALE: ⅜"=1'-0"

NOTES:

1. FOR SECTIONS U-U, V-V, BB-BB AND CC-CC, SEE DWG. NO. AS-06.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AS-05 AND AS-06.
3. FOR INFORMATION ON AS527E, AS528E AND AS529E AND ASSOCIATED MECHANICAL COUPLER, SEE DWG. NO. AS-06. THE CONTRACTOR HAS THE OPTION OF UTILIZING ONE REINFORCEMENT BAR RATHER THAN A AS527E, AS528E, AS529E AND A MECHANICAL COUPLER. HOWEVER NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED.

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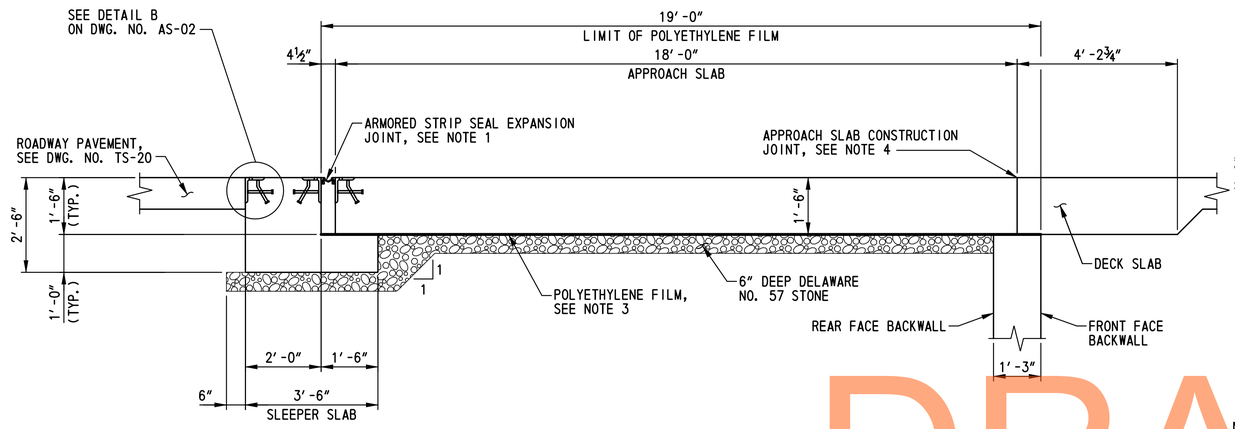
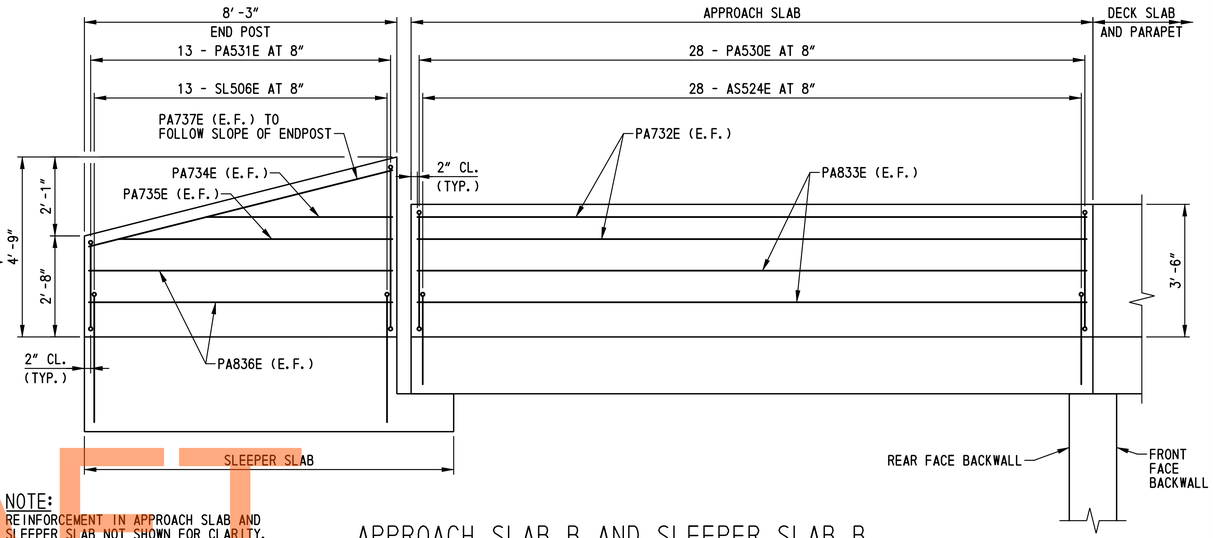
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	APPROACH SLAB B AND SLEEPER SLAB B REINFORCEMENT PLANS	BR1-8 AS-04
				COUNTY NEW CASTLE	DESIGNED BY: L.M.B.		SHEET NO. 536
					CHECKED BY: B.K.B.		TOTAL SHTS. 875



APPROACH SLAB B AND SLEEPER SLAB B TYPICAL SECTION

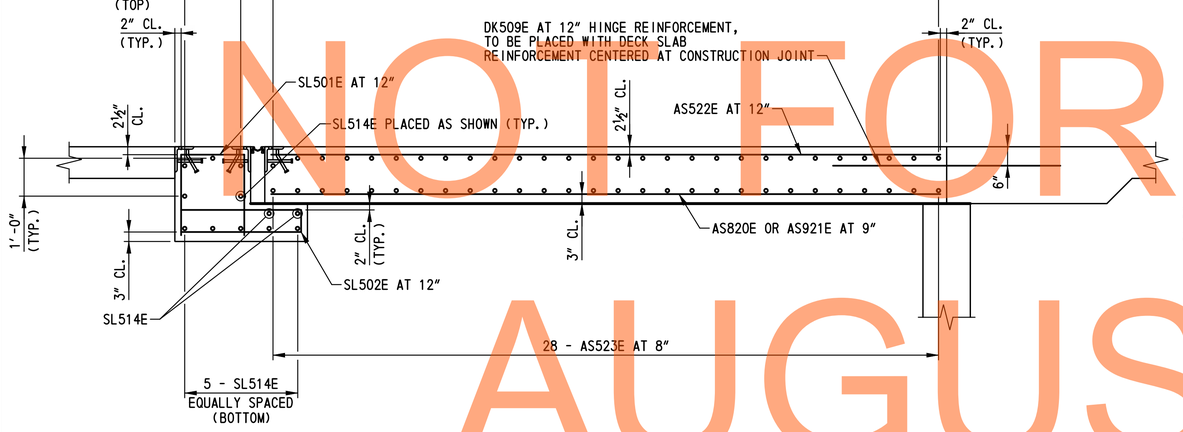
SCALE: ½″=1′-0″



NOTE:
REINFORCEMENT IN APPROACH SLAB AND SLEEPER SLAB NOT SHOWN FOR CLARITY.
FENCING NOT SHOWN FOR CLARITY.

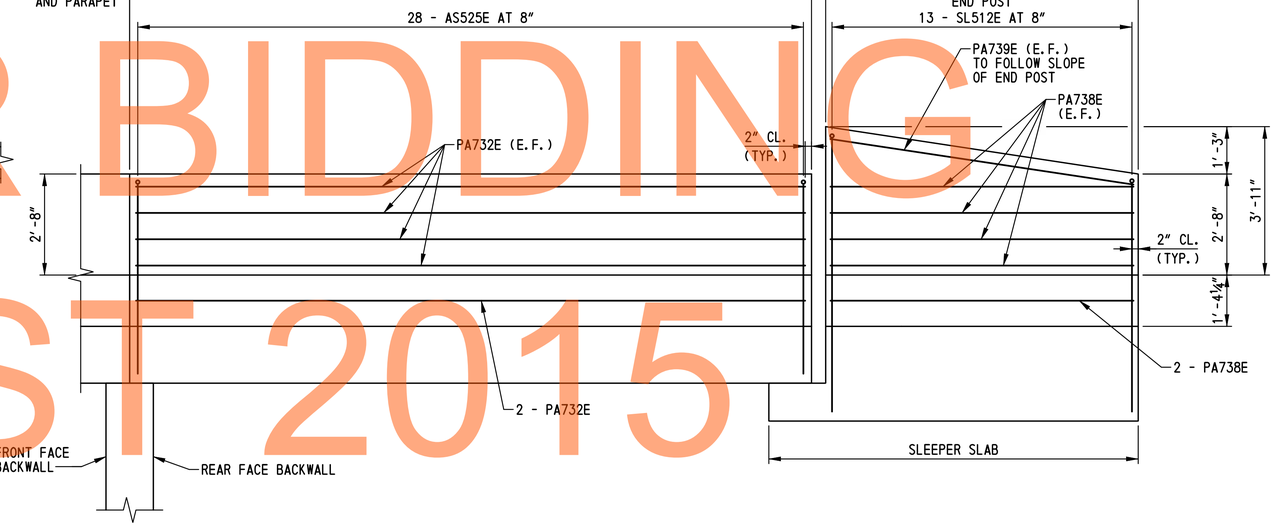
APPROACH SLAB B AND SLEEPER SLAB B
WEST SIDE REINFORCEMENT ELEVATION

SCALE: ½″=1′-0″



APPROACH SLAB B AND SLEEPER SLAB B TYPICAL REINFORCEMENT SECTION

SCALE: ½″=1′-0″



NOTE:
REINFORCEMENT IN APPROACH SLAB AND SLEEPER SLAB NOT SHOWN FOR CLARITY.
FENCING NOT SHOWN FOR CLARITY.

APPROACH SLAB B AND SLEEPER SLAB B
EAST SIDE REINFORCEMENT ELEVATION

SCALE: ½″=1′-0″

NOTES:

1. FOR ARMORED STRIP SEAL EXPANSION JOINT DETAILS, SEE DWG. NO. EX-01.
2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AS-04 AND AS-06.
3. POLYETHYLENE FILM SHALL BE A WHITE OPAQUE POLYETHYLENE FILM CONFORMING TO ASTM C 171 AND SHALL BE PLACED IN TWO LAYERS PRIOR TO THE PLACEMENT FOR THE APPROACH SLAB AND DECK SLAB REINFORCEMENT. THE POLYETHYLENE FILM SHALL BE FASTENED TO THE FRONT OF THE BACKWALL AND LAPPED 2′-0″ MINIMUM WITH THE FILM PLACED ON THE FINISHED SUBGRADE FOR THE APPROACH SLAB. PAYMENT FOR INSTALLATION OF POLYETHYLENE FILM WILL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
4. THE APPROACH SLAB SHALL BE POURED AFTER THE DECK SLAB. THE APPROACH SLAB SHALL BE POURED STARTING AT THE SLEEPER SLAB END. THE APPROACH SLAB CONSTRUCTION JOINT SHALL CONSIST OF A 3″ DEEP SAWCUT MADE WITHIN 36 HOURS OF APPROACH SLAB CONCRETE PLACEMENT. THE SAWCUT SHALL BE SEALED WITH AN APPROVED COLD APPLIED SILICONE SEALER PLACED IN A CLEAN AIR-BLOWN NOTCH FREE OF MOISTURE. PAYMENT FOR INSTALLATION OF CONSTRUCTION JOINT WILL BE INCIDENTAL TO ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.
5. PAYMENT FOR CONSTRUCTION OF SLEEPER SLAB WILL BE MADE UNDER ITEM NO. 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

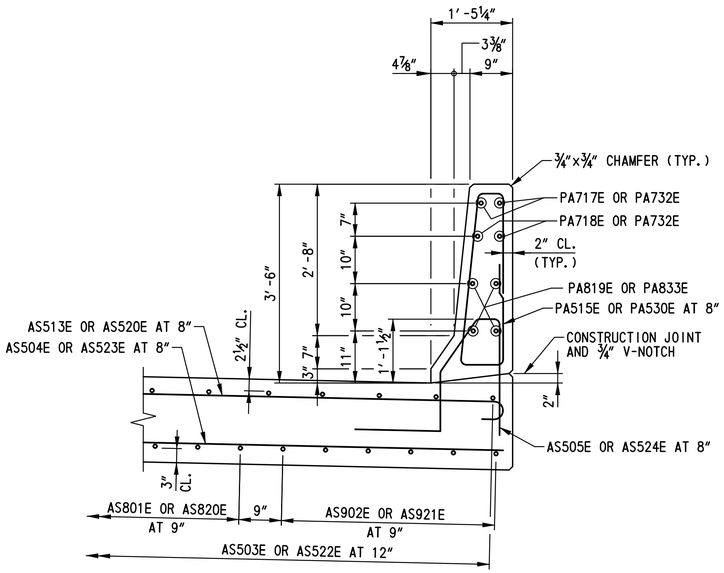
SCALE: AS NOTED

US 301,
SR 896 TO SR 1

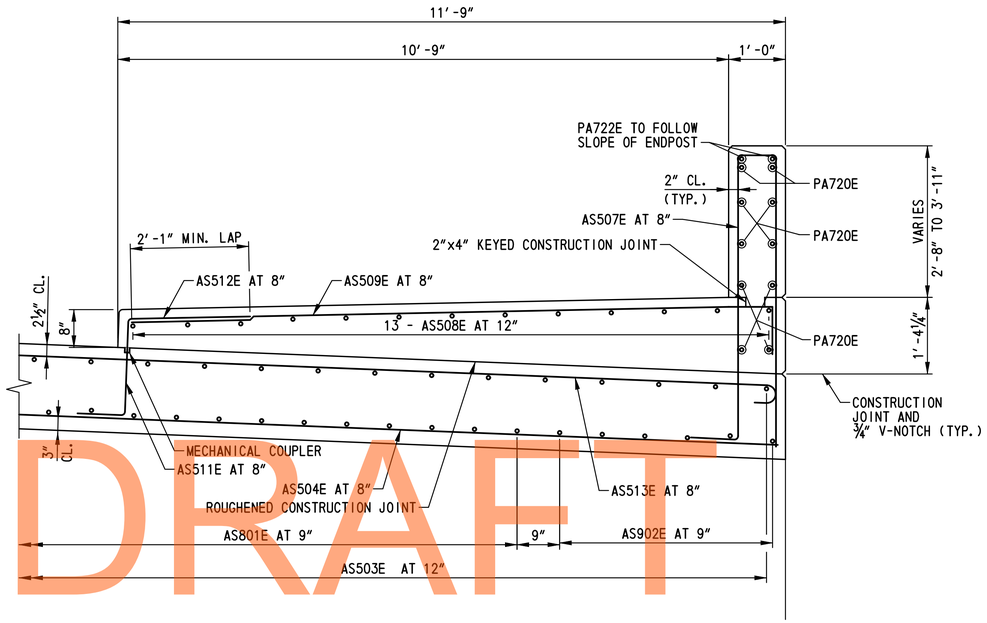
CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: L.M.B.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

APPROACH SLAB B AND SLEEPER SLAB B DETAILS

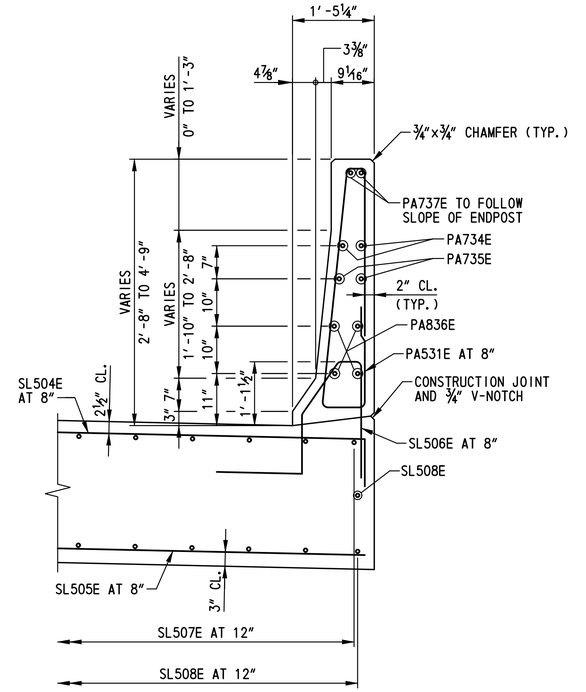
BR1-8 AS-05	
SHEET NO.	537
TOTAL SHTS.	875



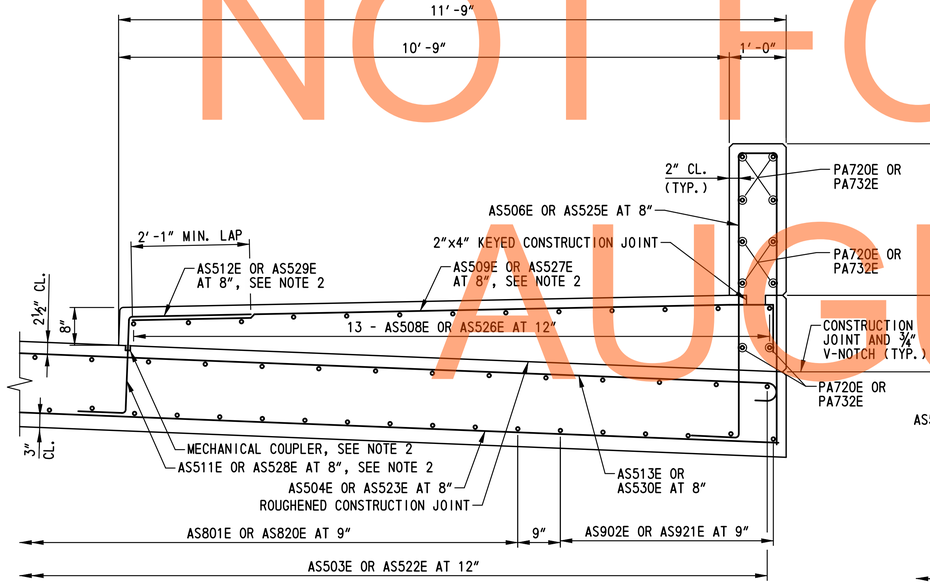
SECTION U-U
SCALE: ¾″=1′-0″



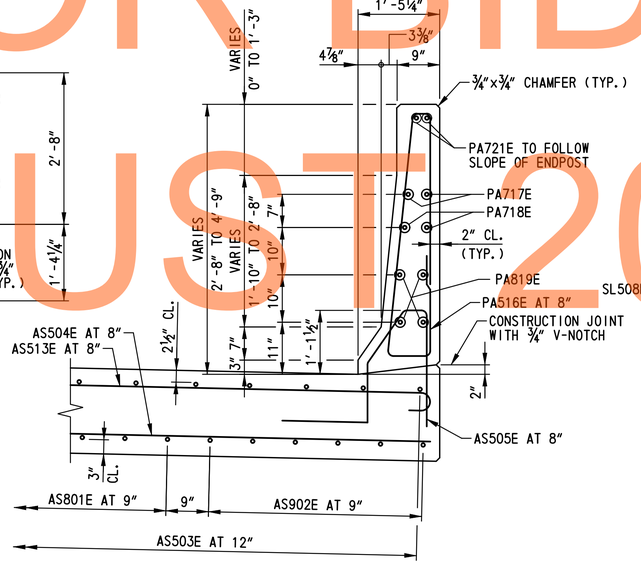
SECTION Y-Y
SCALE: ¾″=1′-0″



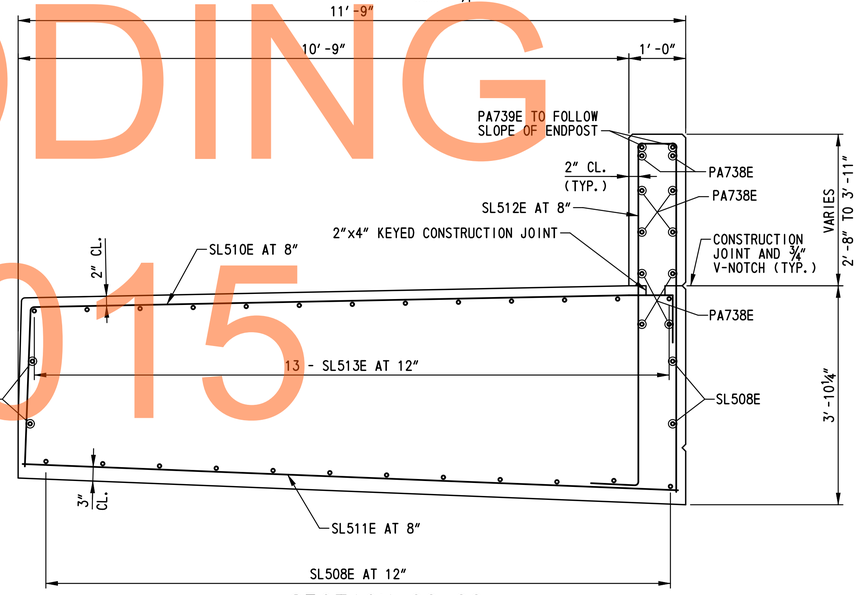
SECTION BB-BB
SCALE: ¾″=1′-0″



SECTION V-V
SCALE: ¾″=1′-0″



SECTION X-X
SCALE: ¾″=1′-0″



SECTION CC-CC
SCALE: ¾″=1′-0″

NOTES:

1. FOR LOCATIONS OF SECTIONS U-U, V-V, X-X, Y-Y, BB-BB AND CC-CC, SEE DWG. NOS. AS-01 AND AS-04.
2. THE CONTRACTOR HAS THE OPTION OF UTILIZING ONE REINFORCEMENT BAR RATHER THAN A AS509E, AS511E, AS512E AND A MECHANICAL COUPLER. HOWEVER NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR WHICHEVER ALTERNATIVE IS SELECTED.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-460A	APPROACH SLAB AND SLEEPER SLAB DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: L.M.B.	
					CHECKED BY: B.K.B.	

BR1-8 AS-06

SHEET NO. 538

TOTAL SHTS. 875

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

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

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
APPROACH SLAB A															
63	8	17-08 0	AS801E	STR		17-08 0									
12	9	17-08 0	AS902E	STR		17-08 0									
56	5	20-03 0	AS503E	17		2-07 0	17-08 0								
34	5	54-10 1	AS504E	STR		54-10 1									
28	5	5-01 1	AS505E	T15		2-00 1	0-05 2	1-01 2	1-00 0	0-06 0			0-07 3	0-11 0	1-01 1
15	5	11-10 2	AS506E	T15		5-01 1	0-08 0	5-01 1	1-00 0					5-01 1	1-08 0
13●	5	11-09 0	AS507E	T15		5-00 2	0-08 0	5-00 2	1-00 0					5-00 2	1-08 0
		T0				T0		T0						T0	
		12-07 0				6-03 2		6-03 2						6-03 2	
13	5	17-08 0	AS508E	STR		17-08 0									
28	5	12-03 0	AS509E	2	0-10 0	11-05 0						0-02 3			
75	5	6-04 1	AS510E	6		2-00 0	2-01 2	2-02 3				1-06 0		1-06 0	5-08 3
28	5	1-11 3	AS511E	2		0-10 0	1-01 3								
28	5	2-08 1	AS512E	STR		2-08 1									
28	5	56-00 1	AS513E	1	0-07 0	54-10 1					0-07 0		0-05 0		
15	5	9-03 1	PA515E	PA		2-06 2	0-09 0	3-00 1	0-05 0	2-06 2		3-00 0		0-04 0	
13●	5	7-08 2	PA516E	PA		2-01 2	0-09 0	2-02 1	0-06 1	2-01 2		2-02 0		0-02 3	
		T0				T0		T0	T0	T0		T0		T0	
		10-11 0				3-02 0		4-03 1	0-03 3	3-02 0		4-03 0		0-05 1	
2	7	14-11 2	PA717E	STR		14-11 2									
2	7	17-03 1	PA718E	STR		17-03 1									
4	8	17-08 0	PA819E	STR		17-08 0									
10	7	17-08 0	PA720E	STR		17-08 0									
2	7	8-02 0	PA721E	STR		8-02 0									
2	7	8-00 1	PA722E	STR		8-00 1									

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
APPROACH SLAB B															
63	8	17-08 0	AS820E	STR		17-08 0									
12	9	17-08 0	AS921E	STR		17-08 0									
56	5	17-08 0	AS522E	STR		17-08 0									
28	5	54-10 1	AS523E	STR		54-10 1									
28	5	5-01 1	AS524E	T15		2-00 1	0-05 2	1-01 2	1-00 0	0-06 0			0-07 3	0-11 0	1-01 1
28	5	11-10 2	AS525E	T15		5-01 1	0-08 0	5-01 1	1-00 0					5-01 1	1-08 0
13	5	17-08 0	AS526E	STR		17-08 0									
28	5	12-03 0	AS527E	2	0-10 0	11-05 0									
28	5	1-11 3	AS528E	2		0-10 0	1-01 3								
28	5	2-08 1	AS529E	STR		2-08 1									
28	5	56-00 1	AS530E	1	0-07 0	54-10 1					0-07 0		0-05 0		
45	5	5-09 0	SL501E	17		2-00 2	1-08 0	2-00 2							
56	5	6-11 0	SL502E	17		3-02 0	0-07 0	3-02 0							
3	5	56-00 1	SL503E	1	0-07 0	54-10 1					0-07 0		0-05 0		
10	5	8-09 0	SL504E	17		2-00 2	4-08 0	2-00 2							
10	5	4-08 0	SL505E	STR		4-08 0									
13	5	5-01 1	SL506E	T15		2-00 1	0-05 2	1-01 2	1-00 0	0-06 0			0-07 3	0-11 0	1-01 1
6	5	9-11 2	SL507E	17		2-00 2	7-11 0								
25	5	7-11 0	SL508E	STR		7-11 0									
3	5	15-10 2	SL509E	SW	1-00 0	2-08 2	11-04 0	0-10 0							
10	5	15-11 0	SL510E	17		0-10 0	11-04 0	3-09 0							
11	5	11-05 0	SL511E	STR		11-05 0									
13●	5	13-09 0	SL512E	T15		6-00 2	0-08 0	6-00 2	1-00 0					6-00 2	1-08 0
		T0				T0		T0						T0	
		14-07 0				7-03 2		7-03 2						7-03 2	
13	5	13-04 0	SL513E	17		2-08 2	7-11 0	2-08 2							
9	5	54-10 1	SL514E	STR		54-10 1									
28	5	9-03 1	PA530E	PA		2-06 2	0-09 0	3-00 1	0-05 0	2-06 2		3-00 0		0-04 0	
13●	5	7-08 2	PA531E	PA		2-01 2	0-09 0	2-02 1	0-06 1	2-01 2		2-02 0		0-02 3	
		T0				T0		T0	T0	T0		T0		T0	
		10-11 0				3-02 0		4-03 1	0-03 3	3-02 0		4-03 0		0-05 1	
14	7	17-08 0	PA732E	STR		17-08 0									
4	8	17-08 0	PA833E	STR		17-08 0									
2	7	5-03 0	PA734E	STR		5-03 0									
2	7	7-06 2	PA735E	STR		7-06 2									
4	8	7-11 0	PA836E	STR		7-11 0									
2	7	8-02 0	PA737E	STR		8-02 0									

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
10	7	7-11 0	PA738E	STR		7-11 0									
2	7	8-00 1	PA739E	STR		8-00 1									

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIMENSIONS DIAMETER (INCHES)	AREA (INCHES²)	WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

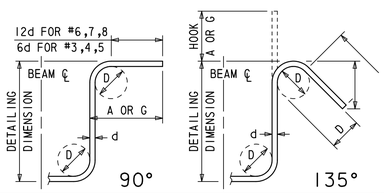
BAR SIZE	180° HOOKS D	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
3	2¼"	5"	3"	6"
4	3"	6"	4"	8"
5	3¾"	7"	5"	10"
6	4½"	8"	6"	1-0"
7	5¼"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9½"	1-3"	11¾"	1-7"
10	10¾"	1-5"	1-1¼"	1-10"
11	1-0"	1-7"	1-2¾"	2-0"
14	1-6¼"	2-3"	1-9¾"	2-7"
18	2-0"	3-0"	2-4½"	3-5"

STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

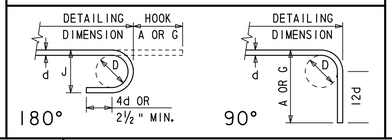
BAR SIZE	90° HOOK D	90° HOOK A OR G	135° HOOK A OR G	135° HOOK H
3	1½"	4"	4"	2½"
4	2"	4½"	4½"	3"
5	2½"	6"	5½"	3¾"
6	4½"	1-0"	8"	4½"
7	5½"	1-2"	9"	5¼"
8	6"	1-4"	10½"	6"

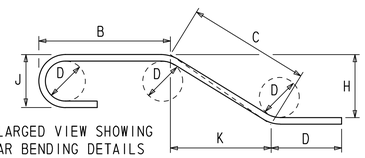
NOTES:
1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

STIRRUP AND TIE HOOKS

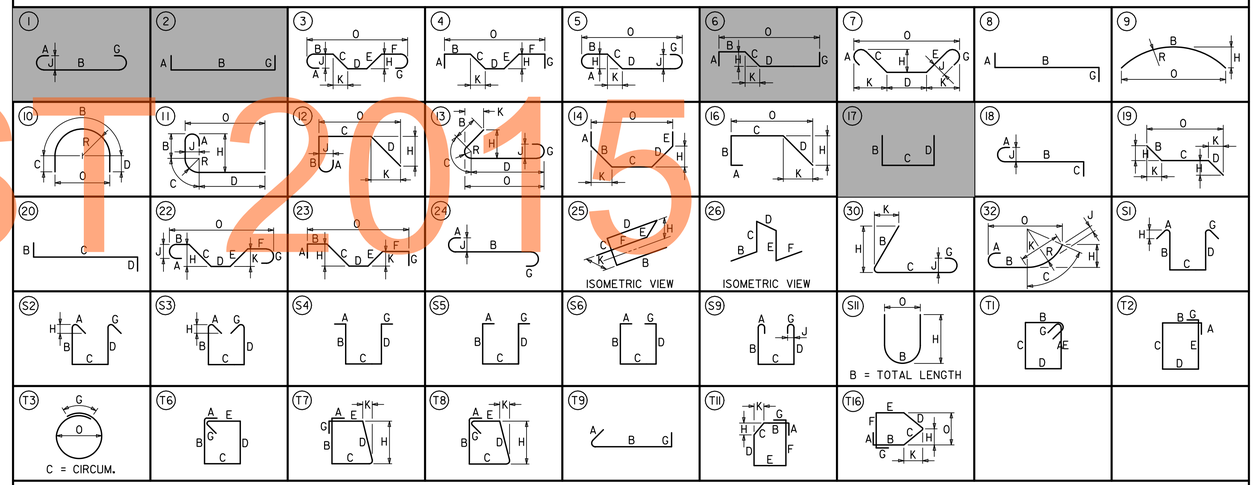


180° AND 90° END HOOKS

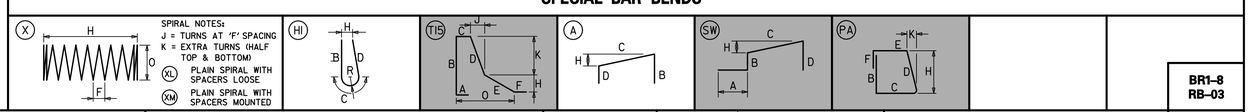




STANDARD BAR BENDS



SPECIAL BAR BENDS



BR1-8
RB-03

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-460A
T200911308	DESIGNED BY: A.D.D.	
COUNTY	CHECKED BY: B.K.B.	
NEW CASTLE		

APPROACH SLAB AND SLEEPER SLAB REINFORCEMENT LIST

SHEET NO.	TOTAL SHTS.
539	875

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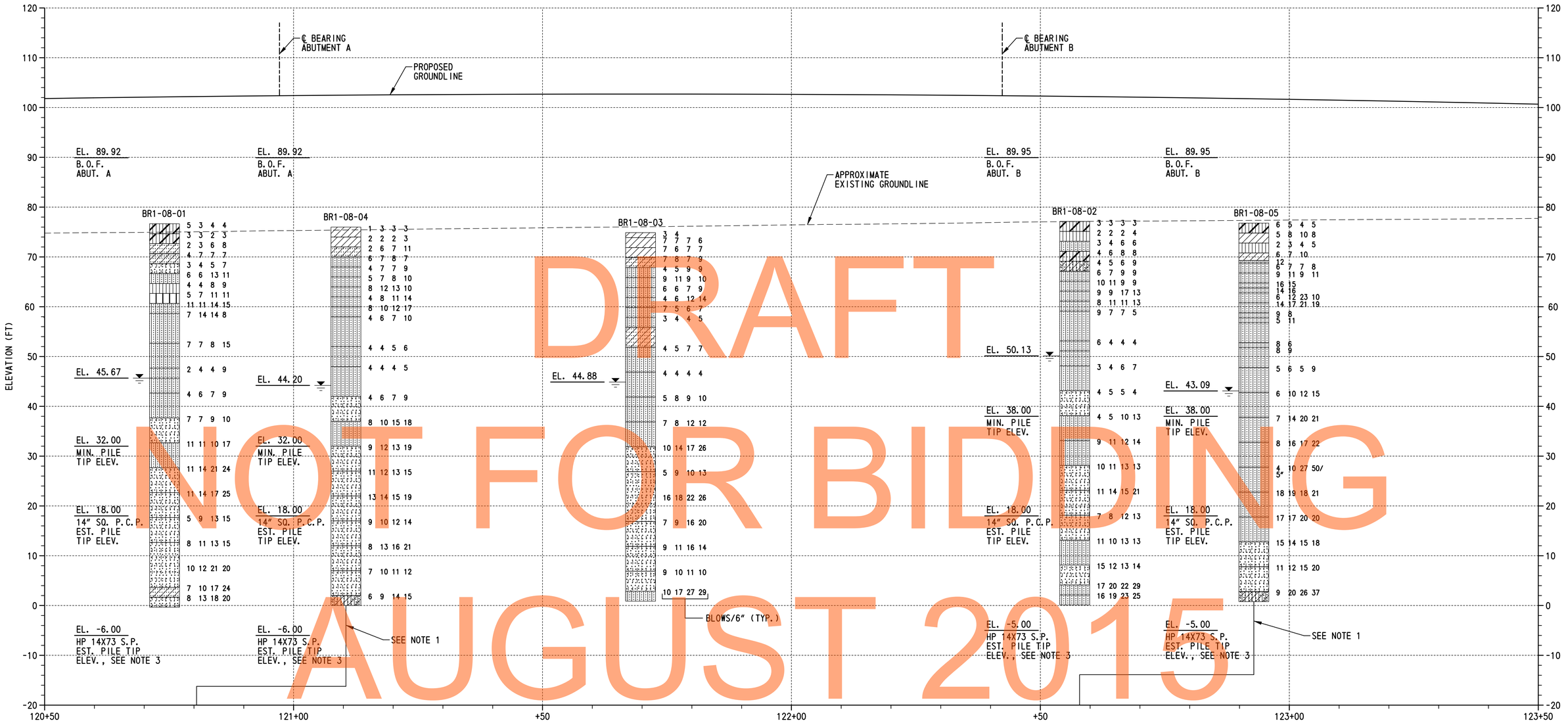

STATION (FT)

BORING PROFILE

SCALE: 1" = 10'-0"

LEGEND:

- SILTY LOW PLASTICITY CLAY
- CLAYEY SNAD
- POORLY GRADED SAND WITH SILT
- SILTY SAND
- SILT
- ELASTIC SILT
- POORLY GRADED CLAYEY SILTY SAND
- LOW PLASTICITY CLAY
- WATER TABLE AT BORING COMPLETION

TEST BORINGS

DESIGNATION	STATION	OFFSET	NORTHING	EASTING
BR1-08-01	120+80.52	19.51' RT.	555127	581987
BR1-08-02	122+57.87	20.65' LT.	555300	581931
BR1-08-03	121+69.70	00.52' LT.	555214	581959
BR1-08-04	120+74.08	31.27' LT.	555116	581937
BR1-08-05	122+56.89	23.44' RT.	555303	581975

NOTES:

1. BORINGS BR1-08-01 AND BR1-08-02 ARE SHOWN 30'-0" AND 35'-0" DOWNSTATION FROM ACTUAL BORING LOCATIONS FOR CLARITY.
2. FOR ADDITIONAL BORING INFORMATION, SEE DWG. NO. PE-01.
3. SEE PILE NOTE 6 ON DWG. NO. PL-01 REGARDING THE STEEL H-PILE ALTERNATIVE.

BR1-8
BO-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: NOT TO SCALE

US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO. 1-460A
DESIGNED BY: A.D.D.
CHECKED BY: B.K.B.

BORING PROFILE

SHEET NO. 540
TOTAL SHTS. 875

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