STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

JACK MARKELL
GOVERNOR

PO BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

VIA OVERNIGHT DELIVERY

(302) 760-2030
FAX (302) 739-2254

October 13, 2015

Contract No. T200911303.01
Federal Aid Project No. NH-2015(23)
US 301, Levels Road to Summit Bridge Rd.
New Castle County

Ladies and Gentlemen:

Enclosed is Addendum No. 2 for the referenced contract consisting of the following:

1. One (1) page, Table of Contents, page xvii, revised, to be substituted for the same page in the Proposal.
2. One (1) page, Special Provisions 202508-Wetland Access Road Type II, page 76 has been revised, to be substituted for the same page in the Proposal.
3. Two (2) pages, Special Provisions 763626-Diesel Fuel Cost Price Adjustment, pages 282 & 283 have been revised, to be substituted for the same pages in the Proposal.
4. Five (5) pages, Bid Proposal Forms, pages 1, 3, 5, 6 & 8 revised, to be substituted for the same page in the Proposal.
5. Twenty Nine (29) pages, Bid Proposal Forms, pages 28 to 55 revised, to be substituted with pages 28 to 56.

   Quantities on the Bid Proposal Forms have been revised for the following items: 208000, 401833, 612022, 617003, 617005, 708052, 708053 & 708055.

   The following items have been added to the Bid Proposal Forms: 612034, 705005, 762003 & 715503.
6. Two (2) pages, Breakout Sheet-6, revised, to be substituted for the same page in the Proposal.
7. Two (2) pages, Breakout Sheets- 9 & 10, have been added to the Proposal.
8. The following Plan Sheets have been revised & replaced: 11, 18, 103, 108, 245, 263, 289, 290, 310, 338, 339, 378, 379, 426, 486, 503, 505, 551, 614, 616, 654, 668, 684, 731 & 821.
9. Expedite Bid File, Addendum No. 2.

Clarifications:

A. Addendum No. 1, Paragraph 4, Special Provision 732505-Soil Composting, referenced page number 75, the correct page number is 175.

B. Addendum No. 1, Paragraph 9, referenced Item Number 272003 as being deleted, the correct Item Number to be deleted was 727003.

Please note the revision listed above and submit your bid based upon this information.

Sincerely,

signature on file

James H. Hoagland
Contract Services Administrator

:jhh
Enclosure

STATE OF DELAWARE

DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T200911303.01

FEDERAL AID PROJECT NO. NH-2015(23)

US 301, LEVELS ROAD TO SUMMIT BRIDGE RD

NEW CASTLE COUNTY

ADVERTISEMENT DATE: September 14, 2015

COMPLETION TIME: 1,230 Calendar Days

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
DELAWARE DEPARTMENT OF TRANSPORTATION
AUGUST 2001

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware until 2:00 P.M. local time **October 20, 2015**

Addendum No. 2
October 13, 2015

The Contractor shall have the responsibility of monitoring weather forecasts for rain events and shall inspect the diversion systems for damage, pipe joint separation, etc., and shall immediately implement repairs in order to minimize impacts to the work area during storms.

The temporary access road shall be removed in its entirety upon completion of the construction activities that necessitated the access road. After the access road is no longer needed, carefully remove and dispose of all materials including geotextile fabric and stream diversion devices. Removal operations must be performed such that heavy equipment can be operated from the constructed and stable temporary surface. All wetland areas disturbed by the construction shall be restored using low ground pressure equipment to their original pre-construction condition including elevations, and re-seeded in accordance with the approved permit, as noted in the plans, or as may be directed by the Engineer. Erosion and Sediment Control devices shall not be removed until the Engineer and Erosion and Sediment Control inspector have provided final acceptance of all plantings. Upon removal of Erosion and Sediment Control and stream diversion devices, stabilize all areas disturbed by the process immediately.

Method of Measurement:

The item will be paid on a lump sum basis. No separate measurement will be made.

Basis of Payment:

Wetland Access Road, Type II will be paid at the lump sum price bid per designated location, which price shall be full compensation for all engineering, testing, and shop drawing preparation, as well as furnishing all materials, labor, tools, equipment, and incidentals necessary to construct and maintain temporary roads for the purpose of accessing wetlands with construction equipment. Payment includes all engineering, testing, and working drawing preparation, as well as furnishing, installation and maintenance of fill, geotextile fabric, R-4 rip-rap, Del. Number 1 Stone, Del. Number 57 Stone, temporary pipes, temporary stream diversions, clearing of necessary trees, wooden mats as necessary, erosion control measures, any seeding or planting and any other materials specified on the Plans. Payment shall also be full compensation for the proper maintenance and removal of all materials, restoration of the wetland site to original grades, and the seeding and planting at the conclusion of the work.

The Contractor may submit to the Engineer after the contract has been awarded a Value Engineering Proposal(s) (VEP) for modifying the Wetland Access Road, Type II for construction of structures in designated wetland areas as per section 104.12 of the Standard Specifications. All plan and specifications changes or other requirements of the contract for the purpose of reducing the cost of construction or otherwise modifying the access and restoration requirements will require written approval by the USACE and DNREC. No consideration will be given for delays or additional compensation as a result of processing the VEP to the USACE and DNREC or for the rejection of the VEP or modification. The Contractor is required to prepare the bid proposal as per the Wetland Access Road, Type II described by this specification.

Note:

When this item is required at more than one location, the Contractor shall submit a cost breakdown of his Lump Sum price bid for this item showing the dollar value amount for each location, the sum of which is to equal the lump sum bid. The breakout sheet attached to the Proposal shows all locations proposed for this item.

The Department reserves the right to delete from the Contract, construction at one or more locations, and the lump sum price to be paid will be reduced in accordance with the Contractor's itemized bid price list for that individual location. There shall be no extra compensation to the Contractor if such deletion is made.

~~7/28/2015~~ 10/9/15

~~The release date for the U.S. Department of Energy, U.S. Energy Information Administration average price data occurs the first Monday of the following month, i.e. October prices are released the first Monday of November and used as the November Price Index.~~ The applicable U.S. Department of Energy diesel fuel price is posted on the first Monday of the Month.

The Base ~~p~~Price ~~i~~Index, FB, is the index price posted by the Department, determined as specified above, on the project advertisement date.

BASE PRICE INDEX (FB) FOR DIESEL FUEL

PER GALLON = $

The price index for adjustment, FP, will be the index price posted by the Department, determined as specified above, for the month during which the Notice to Proceed (NTP) is issued, and the month that contains the first day of every 90 calendar days period thereafter.

III. Price Adjustment Criteria and Conditions. The following criteria and conditions will be considered in determining a price adjustment for diesel fuel cost fluctuations.

a. Price Adjustment Calculation. When the ratio FP/FB is calculated to be less than 0.95 or calculated to be greater than 1.05, the Department will adjust unit bid price prices in accordance with the following formula:

AUP = (FP-FB)(F)+(UBP)
where:
AUP = Adjusted Unit Price
FP = Fuel Price Index for the month in which prices are adjusted for applicable construction work.
FB = Fuel Price Index in the Bid Proposal
F = Diesel Fuel Usage Factor (See above chart in section 1.2 for usage factors)
UBP = Unit Bid Price specified in the Contractor's Bid Proposal

b. Payment of Adjusted Unit Prices. The unit bid prices of work items affected by the fuel escalation will be adjusted by ~~work~~ change order, either up or down, at Notice to Proceed and every 90 Calendar Days thereafter. The affected items will be calculated using the Diesel Fuel Price Index posted for the month in which the first day of the 90 day period falls. The diesel Fuel Price Index will be used for all the affected items performed during the 90 day period. Every 90 days, the newly posted Diesel Fuel Price Index will be used to t calculate the adjustment for the items performed in the next 90 days.

c. Expiration of Contract Time. If the Contractor exceeds the authorized allotted completion time, the adjusted item prices on the last authorized allotted work day shall be the prices used during the time liquidated damages are assessed. However, if the posted price for diesel fuel goes down, the item prices shall be adjusted downward accordingly

d. Final Quantities. Upon completion of the work and determination of final pay quantities, an adjusting work order will be prepared to reconcile any difference between estimated quantities previously paid and the final quantities. In this situation, the value for FP used in the price adjustment formula will be the average of all FP's previously used for computing price adjustments.

e. Inspection of Records. The Department reserves the right to inspect the records of the prime contractor and its subcontractors and material suppliers to ascertain actual pricing and cost information for the diesel fuel used in the performance of applicable items of work.

f. Extra Work. When applicable items of work, as specified herein, are added to the contract as Extra Work in accordance with the provisions of Section 110.03, no price adjustment will be made for fluctuations in the cost of diesel fuel consumed in the performance of the extra work, unless otherwise approved by the Engineer. The current price for diesel fuel is to be used when preparing required backup data for extra work to be performed at a negotiated price. For extra work performed on force account basis, reimbursement for material and equipment along with specified overhead and profit markups will be considered to include full compensation for the current cost of diesel fuel.

g. Subcontractors. Any Price Increases or Price Rebates that are calculated based on items of work performed by subcontractors will be added to or deducted from payments due to the Contractor in the appropriate pay period. The Contractor shall then accurately record on the appropriate CN-91 or CN-103 form the additions or deductions into adjusted contract value. The Contractor shall make payment to the subcontractor(s) who actually performed the work in accordance with DelCode Title 17, Chapter 8.

~~11/10/11~~ 10/9/15

DELAWARE DEPARTMENT OF TRANSPORTATION PAGE: 1
SCHEDULE OF ITEMS DATE:

CONTRACT ID: T200911303.01 PROJECT(S): NH-2015(23)

All figures must be typewritten.

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 ROAD					
0010	201000 CLEARING AND GRUBBING	LUMP	LUMP			
0020	202000 EXCAVATION AND EMBANKMENT	3351106.000 CY				
0030	202508 WETLAND ACCESS ROAD, TYPE II	LUMP	LUMP			
0040	202515 COMPACTING INSITU MATERIAL	223.000 SY				
0050	202555 SUBSOIL TILLAGE	389811.000 SY				
0060	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	20460.000 CY				
0070	208000 EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	5413.000 CY				
0080	209002 BORROW, TYPE B	31698.000 CY				
0090	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	LUMP			

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0200	401810 BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22	1657.000 TON				
0210	401813 BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22	2517.000 TON				
0220	401816 BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 76-22	1150.000 TON				
0230	401819 BITUMINOUS CONCRETE, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22	3095.000 TON				
0240	401827 BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)	4174.000 TON				
0250	401833 BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 76-22, (NON-CARBONATE STONE)	475.000 TON				
0260	501006 PORTLAND CEMENT CONCRETE PAVEMENT, 12"	184543.000 SY				
0270	601506 MAINTENANCE OF STREAM FLOW	LUMP	LUMP			

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0380	612032 REINFORCED CONCRETE PIPE, 15", CLASS V	729.000 LF				
0390	612039 REINFORCED CONCRETE PIPE, 36" CLASS V	72.000 LF				
0400	612041 REINFORCED CONCRETE PIPE, 54", CLASS V	124.000 LF				
0410	612043 REINFORCED CONCRETE PIPE, 42", CLASS V	293.000 LF				
0420	612051 REINFORCED CONCRETE PIPE, 60", CLASS V	120.000 LF				
0430	612205 REINFORCED CONCRETE ELLIPTICAL PIPE, 19"X30", CLASS IV	1957.000 LF				
0440	612208 REINFORCED CONCRETE ELLIPTICAL PIPE, 43"X68", CLASS IV	236.000 LF				
0450	612215 REINFORCED CONCRETE ELLIPTICAL PIPE, 38"X60", CLASS IV	867.000 LF				
0460	612216 REINFORCED CONCRETE ELLIPTICAL PIPE, 14"X23", CLASS IV	3694.000 LF				
0470	612219 REINFORCED CONCRETE ELLIPTICAL PIPE, 24"X38", CLASS IV	224.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0480	612220 REINFORCED CONCRETE ELLIPTICAL PIPE, 29"X45", CLASS IV	1154.000 LF				
0490	612221 REINFORCED CONCRETE ELLIPTICAL PIPE, 48"X76", CLASS IV	215.000 LF				
0500	612229 REINFORCED CONCRETE ELLIPTICAL PIPE, 53"X83", CLASS IV	827.000 LF				
0510	614588 DUCTILE IRON PIPE, 18"	50.000 LF				
0520	614665 DUCTILE IRON PIPE CLASS 52, CEMENT LINED, 24"	264.000 LF				
0530	614764 DUCTILE IRON PIPE, 36"	215.000 LF				
0540	617002 REINFORCED CONCRETE FLARED END SECTION, 15"	7.000 EACH				
0550	617003 REINFORCED CONCRETE FLARED END SECTION, 18"	48.000 EACH				
0560	617005 REINFORCED CONCRETE FLARED END SECTION, 24"	16.000 EACH				
0570	617007 REINFORCED CONCRETE FLARED END SECTION, 30"	3.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0680	701022 INTEGRAL PORTLAND CEMENT CONCRETE CURB & GUTTER, TYPE 3-8	1681.000 LF				
0690	705001 P.C.C. SIDEWALK, 4"	9117.000 SF				
0700	705002 P.C.C. SIDEWALK, 6"	5196.000 SF				
0710	707005 UNDERDRAIN OUTLET	50.000 EACH				
0720	708050 DRAINAGE INLET, 34" X 18"	44.000 EACH				
0730	708051 DRAINAGE INLET, 34" X 24"	43.000 EACH				
0740	708052 DRAINAGE INLET, 48" X 30"	81.000 EACH				
0750	708053 DRAINAGE INLET, 48" X 48"	25.000 EACH				
0760	708055 DRAINAGE INLET, 66" X 48"	2.000 EACH				
0770	708056 DRAINAGE INLET, 66" X 66"	5.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2700	910007 OUTLET STRUCTURE	LUMP	LUMP			
5200	612034 REINFORCED CONCRETE PIPE, 36", CLASS IV	130.000 LF				
5210	705005 P. C. C. SIDEWALK, 8"	667.000 SF				
5220	715503 TEMPORARY DRAINAGE PIPE, 48"	70.000 LF				
5230	762003 SAW CUTTING, CONCRETE, VARIABLE DEPTH	185.000 LF				
5280	763508 PROJECT CONTROL SYSTEM DEVELOPMENT PLAN	LUMP	LUMP			
5290	763509 CPM SCHEDULE UPDATES AND/OR REVISED UPDATES	40.000 EAMO				
	SECTION 0001 TOTAL					

SECTION 0002 BRIDGE 1-468 STANDARD ITEMS

2710	202505 SETTLEMENT PLATFORM	2.000 EACH				
2720	202518 SETTLEMENT MONUMENT	2.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2730	302012 DELAWARE NO. 57 STONE	172.000 TON				
2740	602003 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS A	207.000 CY				
2750	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	360.000 CY				
2760	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	408.000 CY				
2770	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	69.000 CY				
2780	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	98.000 CY				
2790	602772 MECHANICALLY STABILIZED EARTH WALLS	LUMP	LUMP			
2800	604000 BAR REINFORCEMENT, EPOXY COATED	207130.000 LB				
2810	605511 PREFABRICATED EXPANSION JOINT SYSTEM, 3"	250.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2820	619501 PRODUCTION PILE RESTRIKE	4.000 EACH	500.00000		2000.00	
2830	619502 TEST PILE RESTRIKE	4.000 EADY	1000.00000		4000.00	
2840	619519 DYNAMIC PILE TESTING BY CONTRACTOR	4.000 EACH				
2850	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	4.000 EACH				
2860	623000 PRESTRESSED REINFORCED CONCRETE MEMBERS	LUMP	LUMP			
	SECTION 0002 TOTAL					

SECTION 0003 BRIDGE 1-468 PILE ALTERNATE 1
ALT GROUP OA1

2870	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	2619.000 LF				
2880	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	368.000 LF				
2890	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	2619.000 LF				

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SCHEDULE OF ITEMS DATE:

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2900	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	368.000 LF				
	SECTION 0003 TOTAL					

SECTION 0004 BRIDGE 1-468 PILE ALTERNATIVE
ALT GROUP OA2

2910	618041 FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	2395.000 LF				
2920	618046 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	340.000 LF				
2930	619021 INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	2395.000 LF				
2940	619025 INSTALL CAST IN PLACE CONCRETE TEST PILES, 14"	340.000 LF				
	SECTION 0004 TOTAL					

SECTION 0005 BRIDGE 1-470 STANDARD ITEMS

2950	202505 SETTLEMENT PLATFORM	4.000 EACH				
2960	202518 SETTLEMENT MONUMENT	4.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2970	302012 DELAWARE NO. 57 STONE	203.000 TON				
2980	602003 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS A	257.000 CY				
2990	602006 PORTLAND CEMENT CONCRETE MASONRY, PIER FOOTING, CLASS B	176.000 CY				
3000	602007 PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	194.000 CY				
3010	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	865.000 CY				
3020	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	447.000 CY				
3030	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	88.000 CY				
3040	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	154.000 CY				
3050	602772 MECHANICALLY STABILIZED EARTH WALLS	LUMP	LUMP			

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3060	603000 BAR REINFORCEMENT	63740.000 LB				
3070	604000 BAR REINFORCEMENT, EPOXY COATED	364720.000 LB				
3080	605511 PREFABRICATED EXPANSION JOINT SYSTEM, 3"	289.000 LF				
3090	619501 PRODUCTION PILE RESTRIKE	10.000 EACH	500.00000		5000.00	
3100	619502 TEST PILE RESTRIKE	6.000 EADY	1000.00000		6000.00	
3110	619519 DYNAMIC PILE TESTING BY CONTRACTOR	6.000 EACH				
3120	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	6.000 EACH				
3130	623000 PRESTRESSED REINFORCED CONCRETE MEMBERS	LUMP	LUMP			
3140	745522 SUPPLY OF 3" SCHEDULE 80 PVC CONDUIT	295.000 LF				
3150	746596 JUNCTION BOX ON STRUCTURE	2.000 EACH				

CONTRACT ID: T200911303.01 PROJECT(S): NH-2015(23)

All figures must be typewritten.

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3160	760015 RUMBLE STRIPS, CONCRETE, SHALLOW DEPTH	848.000 LF				
	SECTION 0005 TOTAL					

SECTION 0006 BRIDGE 1-470 PILE ALTERNATIVE 1
ALT GROUP OB1

3170	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	7550.000 LF				
3180	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	370.000 LF				
3190	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	7550.000 LF				
3200	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	370.000 LF				
	SECTION 0006 TOTAL					

SECTION 0007 BRIDGE 1-470 PILE ALTERNATIVE 2
ALT GROUP OB2

3210	618041 FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	2803.000 LF				
3220	618042 FURNISH CAST-IN-PLACE CONCRETE PILES, 16"	3614.000 LF				

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3230	618046 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	275.000 LF				
3240	618047 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 16"	78.000 LF				
3250	619021 INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	2803.000 LF				
3260	619022 INSTALL CAST-IN-PLACE CONCRETE PILES, 16"	3614.000 LF				
3270	619025 INSTALL CAST IN PLACE CONCRETE TEST PILES, 14"	275.000 LF				
3280	619026 INSTALL CAST-IN-PLACE CONCRETE TEST PILES, 16"	78.000 LF				
	SECTION 0007 TOTAL					

SECTION 0008 BRIDGE 1-472 STANDARD ITEMS

3290	202505 SETTLEMENT PLATFORM	4.000 EACH				
3300	202518 SETTLEMENT MONUMENT	4.000 EACH				
3310	302012 DELAWARE NO. 57 STONE	156.000 TON				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3320	602003 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS A	180.000 CY				
3330	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	380.000 CY				
3340	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	352.000 CY				
3350	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	58.000 CY				
3360	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	82.000 CY				
3370	602772 MECHANICALLY STABILIZED EARTH WALLS	LUMP	LUMP			
3380	604000 BAR REINFORCEMENT, EPOXY COATED	192100.000 LB				
3390	605511 PREFABRICATED EXPANSION JOINT SYSTEM, 3"	226.000 LF				
3400	619501 PRODUCTION PILE RESTRIKE	4.000 EACH	500.00000		2000.00	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3410	619502 TEST PILE RESTRIKE	4.000 EADY	1000.00000		4000.00	
3420	619519 DYNAMIC PILE TESTING BY CONTRACTOR	4.000 EACH				
3430	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	4.000 EACH				
3440	623000 PRESTRESSED REINFORCED CONCRETE MEMBERS	LUMP	LUMP			
	SECTION 0008 TOTAL					

SECTION 0009 BRIDGE 1-472 PILE ALTERNATIVE 1
ALT GROUP OC1

3450	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	2104.000 LF				
3460	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	304.000 LF				
3470	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	2104.000 LF				
3480	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	304.000 LF				
	SECTION 0009 TOTAL					

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0010 BRIDGE 1-472 PILE ALTERNATIVE 2 ALT GROUP OC2					
3490	618041 FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	2104.000 LF				
3500	618046 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	304.000 LF				
3510	619021 INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	2104.000 LF				
3520	619025 INSTALL CAST IN PLACE CONCRETE TEST PILES, 14"	304.000 LF				
	SECTION 0010 TOTAL					
	SECTION 0011 BRIDGE 1-475 STANDARD ITEMS					
3530	202505 SETTLEMENT PLATFORM	2.000 EACH				
3540	202518 SETTLEMENT MONUMENT	2.000 EACH				
3550	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	75.000 CY				
3560	302012 DELAWARE NO. 57 STONE	12.000 TON				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3570	602006 PORTLAND CEMENT CONCRETE MASONRY, PIER FOOTING, CLASS B	38.000 CY				
3580	602007 PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	86.000 CY				
3590	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	235.000 CY				
3600	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	135.000 CY				
3610	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	75.000 CY				
3620	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	250.000 CY				
3630	602772 MECHANICALLY STABILIZED EARTH WALLS	LUMP	LUMP			
3640	603000 BAR REINFORCEMENT	25000.000 LB				
3650	604000 BAR REINFORCEMENT, EPOXY COATED	154000.000 LB				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3660	605511 PREFABRICATED EXPANSION JOINT SYSTEM, 3"	85.000 LF				
3670	605581 ELASTOMERIC BRIDGE BEARING PAD	20.000 EACH				
3680	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	900.000 LF				
3690	618083 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	820.000 LF				
3700	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	170.000 LF				
3710	618093 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	125.000 LF				
3720	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	900.000 LF				
3730	619063 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	820.000 LF				
3740	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	170.000 LF				
3750	619069 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	125.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3760	619501 PRODUCTION PILE RESTRIKE	10.000 EACH	500.00000		5000.00	
3770	619502 TEST PILE RESTRIKE	4.000 EADY	1000.00000		4000.00	
3780	619519 DYNAMIC PILE TESTING BY CONTRACTOR	4.000 EACH				
3790	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	8.000 EACH				
3800	623003 PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T BEAM	LUMP	LUMP			
3810	727004 CHAIN-LINK FENCE, 6' HIGH	302.000 LF				
	SECTION 0011 TOTAL					

SECTION 0012 BRIDGE 1-477 STANDARD ITEMS

3820	202505 SETTLEMENT PLATFORM	4.000 EACH				
3830	202518 SETTLEMENT MONUMENT	4.000 EACH				
3840	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	1900.000 CY				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3850	210000 FURNISHING BORROW TYPE "C" FOR PIPE, UTILITY TRENCH, AND STRUCTURE BACKFILL	4750.000 CY				
3860	302012 DELAWARE NO. 57 STONE	70.000 TON				
3870	602004 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS B	790.000 CY				
3880	602007 PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	66.000 CY				
3890	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	830.000 CY				
3900	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	520.000 CY				
3910	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	815.000 CY				
3920	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	133.000 CY				
3930	603000 BAR REINFORCEMENT	93000.000 LB				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3940	604000 BAR REINFORCEMENT, EPOXY COATED	421000.000 LB				
3950	605511 PREFABRICATED EXPANSION JOINT SYSTEM, 3"	266.000 LF				
3960	605581 ELASTOMERIC BRIDGE BEARING PAD	36.000 EACH				
3970	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	12800.000 LF				
3980	618083 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	1260.000 LF				
3990	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	260.000 LF				
4000	618093 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	60.000 LF				
4010	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	12800.000 LF				
4020	619063 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	1260.000 LF				
4030	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	260.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4040	619069 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	60.000 LF				
4050	619501 PRODUCTION PILE RESTRIKE	20.000 EACH	500.00000		10000.00	
4060	619502 TEST PILE RESTRIKE	8.000 EADY	1000.00000		8000.00	
4070	619519 DYNAMIC PILE TESTING BY CONTRACTOR	5.000 EACH				
4080	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	10.000 EACH				
4090	623003 PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T BEAM	LUMP	LUMP			
4100	712021 RIPRAP, R-5	495.000 TON				
4110	713003 GEOTEXTILES, RIPRAP	420.000 SY				
4120	745522 SUPPLY OF 3" SCHEDULE 80 PVC CONDUIT	515.000 LF				
4130	746596 JUNCTION BOX ON STRUCTURE	4.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4140	908009 TOPSOILING, 4" DEPTH	840.000 SY				
	SECTION 0012 TOTAL					

SECTION 0013 BRIDGE 1-479 STANDARD ITEMS

4150	202505 SETTLEMENT PLATFORM	2.000 EACH				
4160	202518 SETTLEMENT MONUMENT	2.000 EACH				
4170	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	559.000 CY				
4180	302012 DELAWARE NO. 57 STONE	13.000 TON				
4190	602004 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS B	252.000 CY				
4200	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	225.000 CY				
4210	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	209.000 CY				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4220	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	341.000 CY				
4230	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	58.000 CY				
4240	603000 BAR REINFORCEMENT	36886.000 LB				
4250	604000 BAR REINFORCEMENT, EPOXY COATED	126860.000 LB				
4260	605512 PREFABRICATED EXPANSION JOINT SYSTEM, 4"	95.000 LF				
4270	605581 ELASTOMERIC BRIDGE BEARING PAD	10.000 EACH				
4280	619501 PRODUCTION PILE RESTRIKE	6.000 EACH	500.00000		3000.00	
4290	619502 TEST PILE RESTRIKE	2.000 EADY	1000.00000		2000.00	
4300	619519 DYNAMIC PILE TESTING BY CONTRACTOR	4.000 EACH				
4310	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	4.000 EACH				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4320	623003 PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T BEAM	LUMP	LUMP			
4330	712006 RIPRAP, R-5	141.000 SY				
4340	713003 GEOTEXTILES, RIPRAP	141.000 SY				
4350	745522 SUPPLY OF 3" SCHEDULE 80 PVC CONDUIT	200.000 LF				
4360	746596 JUNCTION BOX ON STRUCTURE	2.000 EACH				
4370	908009 TOPSOILING, 4" DEPTH	282.000 SY				
	SECTION 0013 TOTAL					

SECTION 0014 BRIDGE 1-479 PILE ALTERNATIVE 1
ALT GROUP OD1

4380	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	6073.000 LF				
4390	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	118.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4400	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	6073.000 LF				
4410	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	118.000 LF				
	SECTION 0014 TOTAL					

SECTION 0015 BRIDGE 1-479 ALTERNATIVE 2
ALT GROUP OD2

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4420	618041 FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	5253.000 LF				
4430	618046 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	102.000 LF				
4440	619021 INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	5253.000 LF				
4450	619025 INSTALL CAST IN PLACE CONCRETE TEST PILES, 14"	102.000 LF				
	SECTION 0015 TOTAL					

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0016 BRIDGE 1-480 STANDARD ITEMS					
4460	202505 SETTLEMENT PLATFORM	4.000 EACH				
4470	202518 SETTLEMENT MONUMENT	4.000 EACH				
4480	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	1685.000 CY				
4490	302012 DELAWARE NO. 57 STONE	105.000 TON				
4500	602004 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS B	529.000 CY				
4510	602007 PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	100.000 CY				
4520	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	772.000 CY				
4530	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	438.000 CY				
4540	602015 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	807.000 CY				
4550	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	165.000 CY				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4560	603000 BAR REINFORCEMENT	89445.000 LB				
4570	604000 BAR REINFORCEMENT, EPOXY COATED	367527.000 LB				
4580	605512 PREFABRICATED EXPANSION JOINT SYSTEM, 4"	212.000 LF				
4590	605581 ELASTOMERIC BRIDGE BEARING PAD	40.000 EACH				
4600	619501 PRODUCTION PILE RESTRIKE	12.000 EACH	500.00000		6000.00	
4610	619502 TEST PILE RESTRIKE	6.000 EADY	1000.00000		6000.00	
4620	619519 DYNAMIC PILE TESTING BY CONTRACTOR	6.000 EACH				
4630	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	6.000 EACH				
4640	623003 PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T BEAM	LUMP	LUMP			
4650	712006 RIPRAP, R-5	458.000 SY				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4660	713003 GEOTEXTILES, RIPRAP	458.000 SY				
4670	908009 TOPSOILING, 4" DEPTH	458.000 SY				
5240	618083 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	2568.000 LF				
5250	618093 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	171.000 LF				
5260	619063 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 18" X 18"	2568.000 LF				
5270	619069 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 18" X 18"	171.000 LF				
	SECTION 0016 TOTAL					

SECTION 0017 BRIDGE 1-480 PILE ALTERNATIVE 1
ALT GROUP OE1

4680	618081 FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	12007.000 LF				
4700	618091 FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	226.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4720	619061 INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14" X 14"	12007.000 LF				
4740	619067 INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14" X 14"	226.000 LF				
	SECTION 0017 TOTAL					

SECTION 0018 BRIDGE 1-480 PILE ALTERNATIVE 2
ALT GROUP OE2

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4760	618041 FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	9600.000 LF				
4770	618046 FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	180.000 LF				
4780	619021 INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	9600.000 LF				
4790	619025 INSTALL CAST IN PLACE CONCRETE TEST PILES, 14"	180.000 LF				
	SECTION 0018 TOTAL					

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0019 BRIDGE 1-507 STANDARD ITEMS					
4800	202505 SETTLEMENT PLATFORM	4.000 EACH				
4810	202518 SETTLEMENT MONUMENT	4.000 EACH				
4820	602004 PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS B	100.000 CY				
4830	602013 PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	448.000 CY				
4840	602014 PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	332.000 CY				
4850	602017 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	98.000 CY				
4860	602772 MECHANICALLY STABILIZED EARTH WALLS	LUMP	LUMP			
4870	604000 BAR REINFORCEMENT, EPOXY COATED	194742.000 LB				
4880	605512 PREFABRICATED EXPANSION JOINT SYSTEM, 4"	180.000 LF				
4890	618069 STEEL H PILES, HP 12 X 84	2734.000 LF				
4900	618070 STEEL H TEST PILES, HP 12 X 84	382.000 LF				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4910	619049 INSTALL STEEL H PILES, HP 12 X 84	2734.000 LF				
4920	619050 INSTALL STEEL H TEST PILES, HP 12 X 84	382.000 LF				
4930	619501 PRODUCTION PILE RESTRIKE	4.000 EACH	500.00000		2000.00	
4940	619502 TEST PILE RESTRIKE	4.000 EADY	1000.00000		4000.00	
4950	619519 DYNAMIC PILE TESTING BY CONTRACTOR	4.000 EACH				
4960	619539 SIGNAL MATCHING ANALYSIS BY CONTRACTOR	4.000 EACH				
4970	623003 PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB T BEAM	LUMP	LUMP			
	SECTION 0019 TOTAL					

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0020 CULVERT 1-508A STANDARD ITEMS					
4980	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	2600.000 CY				
5000	602001 PORTLAND CEMENT CONCRETE MASONRY, CLASS A	140.000 CY				
5010	602506 PRECAST CONCRETE CULVERT	LUMP	LUMP			
5020	604000 BAR REINFORCEMENT, EPOXY COATED	26000.000 LB				
5030	712531 CHANNEL BED FILL	280.000 CY				
5040	713001 GEOTEXTILES, STABILIZATION	1060.000 SY				
5050	715001 PERFORATED PIPE UNDERDRAINS, 6"	45.000 LF				
5160	302005 GRADED AGGREGATE BASE COURSE, TYPE B	570.000 TON				
5170	727009 CHAIN-LINK FENCE, 5' HIGH	100.000 LF				
	SECTION 0020 TOTAL					

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS		UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0021 CULVERT 1-508B STANDARD ITEMS						
5060	207000 EXCAVATION AND BACKFILL FOR STRUCTURES	1090.000	CY				
5080	602002 PORTLAND CEMENT CONCRETE MASONRY, CLASS B	268.000	CY				
5090	602556 PRECAST P.C.C. ARCH	LUMP	LUMP				
5100	604000 BAR REINFORCEMENT, EPOXY COATED	22500.000	LB				
5110	712021 RIPRAP, R-5	620.000	TON				
5120	712531 CHANNEL BED FILL	288.000	CY				
5130	713001 GEOTEXTILES, STABILIZATION	385.000	SY				
5140	713003 GEOTEXTILES, RIPRAP	460.000	SY				
5180	302005 GRADED AGGREGATE BASE COURSE, TYPE B	210.000	TON				
5190	727009 CHAIN-LINK FENCE, 5' HIGH	195.000	LF				
	SECTION 0021 TOTAL						
	TOTAL BID						

BREAKOUT SHEET - 6 **CONTRACT NO. T200911303**

ITEM 763654 Section 0001 Beaver Dam Bypass Device

ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
1	30	LF	Sch. 80 PVC Pipe, 10” Dia.	$	$
2	12	EA	Sch. 80 PVC Socket Flange, 10” Dia.	$	$
3	3	EA	Sch. 80 PVC End Cap, 10” Dia.	$	$
4	3	EA	Stainless Steel Clamp Pipe	$	$
5	3	EA	Reducer, Ductile Iron Pipe, CL 350	$	$
6	3	EA	Elastomer Sleeve Coupling, 10” Dia.	$	$
7	3	EA	Elastomer Sleeve Coupling, 8” Dia.	$	$
8	120	SF	Stainless Steel Wire Cloth, 14 Gauge, 1” Mesh	$	$
9	200	LF	Stainless Steel Wire Ties, 14 Gauge	$	$
10	6	EA	Stainless Steel Saddle, 6” wide	$	$
11	~~1201~~ 3	EA	Stainless Steel Saddle, 9” wide	$	$
12	~~8~~ 18	EA	Stainless Steel Threaded Rod, ½” Dia. With Stainless Hex Nuts	$	$
13	~~8~~ 6	EA	Concrete Pedestal Supports, 24~~”~~“ x 84”, Class B Concrete	$	$
			Ductile Iron Pipe Run		
14	~~3~~ 1201	LF	Ductile Iron Pipe, 8” Dia., CL 50	$	$
15	8	EA	Concrete Seep Collars, Class B Concrete with Bar Reinforcement	$	$

BREAKOUT SHEET - 6 **CONTRACT NO. T200911303**

ITEM 763654 Section 0001 Beaver Dam Bypass Device

ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
16	8	EA	Megalug MJ 8” Restraint Fittings	$	$
			Riser Pipe Outlet Assembly		
17	3	EA	Ductile Iron Tee, 8” Dia., CL 350	$	$
18	3	EA	Concrete Pedestal Support, 24” x 84”, Class B Concrete	$	$
19	9	EA	Megalug MJ 8” Restraint Fittings	$	$
20	3	EA	Treaded Tap with 4” Dia. Malleable Iron Threaded Plug	$	$
21	3	EA	Stainless Steel Saddle, 3” wide	$	$
22	3	LF	Ductile Iron Riser Pipe, 8” Dia, CL 50	$	$
23	12	EA	Stainless Steel Anchor Bolts, ½” Dia., with Threaded Coupling	$	$
24	6	EA	Stainless Steel U-Bolts, 1/2” Dia.	$	$
25	3	EA	Elastomer Sleeve Coupling, 8” Dia.	$	$
26	15	EA	~~SR 1 NB (GM-6)~~ HDPE Pipe, SDR 17, 8" Dia.	$	$

Total 763654 Section 0001 -- Beaver Dam Bypass Device $_____
(LUMP SUM BID PRICE FOR ITEM 763654)

BREAKOUT SHEET - 9 **CONTRACT NO. T200911303.01**

ITEM 909005 Section 0001- Stream Diversion

ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
1	2327	HR	Water Pumping	$	$
2	8	EA	Sump Pit, Type 1	$	$
3	1086	CY	Sandbag Dikes	$	$
4	1400	CY	Geotextile Lined Channel Diversion	$	$
5	588	LF	Temporary Drainage Pipe, 48"	$	$
6	2	CY	P.C.C. Masonry, Class B	$	$
7	30	SY	Riprap, R-5	$	$

Total Lump Sum Bid for Item No. 909005 - STREAM DIVERSION $_____

(LUMP SUM BID PRICE FOR ITEM 909005 Section 0001)

BREAKOUT SHEET - 10 **CONTRACT NO. T200911303.01**

ITEM 202508 Section 0001 - Wetland Access Road, Type II

ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
1	1	LS	Construction Haul Road (Sta. 314+00 Rt.)	$	$
2	1	LS	Bridge 1-477 US 301 over Tributary to Sandy Branch	$	$
3	1	LS	Bridge 1-479 Ramp F over Sandy Branch	$	$
4	1	LS	Bridge 1-480 US 301 over Sandy Branch	$	$
5	1	LS	Bridge 1-508B Ramp C over Sandy Branch	$	$

ITEM 202508 - WETLAND ACCESS ROAD, TYPE II $_____

(LUMP SUM BID PRICE FOR ITEM 202508 Section 0001)

TOTAL EARTHWORK SUMMARY (FOR INFORMATION ONLY)

1. EXCAVATION	
a. From Cross Sections	2,786,142 C.Y.
1. Roadway	57,674 C.Y.
2. Borrow Site	2,714,079 C.Y.
3. Longitudinal Ditches	14,388 C.Y.
b. Plus Topsoil Removed in Fill	146,596 C.Y.
c. Plus Topsoil Placed in Cut	168,859 C.Y.
d. Plus Bituminous Pavement Removed under Fill	2,433 C.Y.
e. Less Rootmat Removed in Cut	1,662 C.Y.
f. Less Removal of Existing PCC Pavement, etc.	76 C.Y.
g. Less Rock Excavation	0 C.Y.
h. Plus Stormwater Management Pond Excavation	248,874 C.Y.
i. = Total Item 202000, Excavation and Embankment	**3,351,166 C.Y.**

2. STORMWATER MANAGEMENT POND EXCAVATION	
a. From Cross Sections	220,108 C.Y.
1. Excavation For Sediment Basins	86,349 C.Y.
2. Excavation For Final SWM Basins	133,759 C.Y.
b. Plus Topsoil Removed under Fill	24,902 C.Y.
c. Plus topsoil Placed in Cut	11,417 C.Y.
d. Less Rootmat Removed in Cut	7,553 C.Y.
e. Less Rock Excavation	0 C.Y.
f. = Stormwater Management Pond Excavation	**248,874 C.Y.**

3. EXCAVATION AVAILABLE FOR EMBANKMENT, TYPE F	
a. Total Item 202000, Excavation and Embankment	3,351,166 C.Y.
b. Plus Excavation and Backfilling for Structures	20,460 C.Y.
c. Plus Excavation and Backfilling for Pipe Trenches	5,152 C.Y.
d. Plus Channel Excavation	1,900 C.Y.
e. Plus Excavation from installation of underdrains	6,184 C.Y.
f. Plus Stockpiled Material from previous phases	0 C.Y.
g. Less Topsoil Removed in Cut and Fill	276,719 C.Y.
h. Less Unsuitable Excavation	0 C.Y.
i. Less Materials Used for Borrow Type A and Borrow Type D	141,907 C.Y.
j. Less Excavation Performed in Final Phase Construction	152,909 C.Y.
k. = Total Excavation Available for Embankment, Type F	**2,813,327 C.Y.**

3a. FINAL PHASE EMBANKMENT, REQUIRED	
a. Basin Embankment Required	61,096 C.Y.
b. Plus Topsoil Removed Under Fill	24,902 C.Y.
c. Plus Rootmat Removed Under Fill (not Backfilled with Borrow B)	10,178 C.Y.
d. Less Topsoil Placed on Fill Slopes	18,995 C.Y.
e. = Subtotal Basin Embankment Required	77,181 C.Y.
f. = Plus Embankment Required Adjustment Factor (0.2 +/-)	15,436 C.Y.
g. = Subtotal Adjusted Basin Embankment Required	92,618 C.Y.
h. Less Excavation Performed in Final Phase Construction	152,909 C.Y.
i. = Total Adjusted Final Phase Embankment Required (+ = Need, - = Excess)	**-60,291 C.Y.**

4. BORROW TYPE A, REQUIRED	
a. Borrow, Type A for Capping	104,234 C.Y.
b. Less Topsoil Placed on Fill Slopes Type A	22,867 C.Y.
c. = Subtotal Borrow, Type A Capping Required	81,367 C.Y.
d. Plus Capping Required x Adjustment Factor (0.20+/-)	16,273 C.Y.
e. = Subtotal Adjusted Borrow, Type A Capping Required	97,640 C.Y.
f. Less Excavation Available for Borrow Type A	97,640 C.Y.
g. = Total Borrow, Type A Required	**0 C.Y.**

5. BORROW TYPE D, REQUIRED	
a. Borrow, Type D for Soil Cement Base Course	36,889 C.Y.
b. Plus Capping Required x Adjustment Factor (0.20+/-)	7,378 C.Y.
c. = Subtotal Adjusted Borrow, Type D Required	44,267 C.Y.
d. Less Excavation Available for Borrow Type D	44,267 C.Y.
e. = Total Borrow, Type D Required	**0 C.Y.**

6. BORROW TYPE B, REQUIRED	
a. Backfill for Unstable Subgrades after Rootmat Removed Under Fill	26,415 C.Y.
b. Plus Backfill x Adjustment Factor (0.20+/-)	5,283 C.Y.
c. = Subtotal Adjusted Borrow, Type B Required	31,698 C.Y.
d. Less Excavation Available for Borrow Type B	0 C.Y.
e. = Total Item 209002, Borrow, Type B Required	**31,698 C.Y.**

7. EMBANKMENT AND BORROW, TYPE F, REQUIRED	
a. Embankment Required Below Capping (From Cross-Sections)	2,167,607 C.Y.
b. Plus Topsoil Removed under Fill	146,596 C.Y.
c. Plus Rootmat removed under fill (not backfilled with Borrow, Type B)	0 C.Y.
d. Plus Undercut material removed under fill	105,192 C.Y.
e. Plus PCC and bituminous pavement removed under fill	2,509 C.Y.
f. Less Topsoil Placed on Fill Slopes	68,113 C.Y.
	0 C.Y.
h. Less Excess Topsoil to be placed in outer embankments	0 C.Y.
i. Less MSE Wall or Other Retaining Wall & Backfill	29,178 C.Y.
j. Less Borrow, Type B placed above original ground	0 C.Y.
k. = Subtotal Embankment Required Below Capping	2,324,613 C.Y.
l. Plus Embankment Required x Adjustment Factor (0.20+/-)	464,923 C.Y.
m. = Subtotal Adjusted Embankment Required.	2,789,536 C.Y.
n. Less Total Excavation Available for Borrow, Type F	2,813,327 C.Y.
o. = Total Adjusted Borrow, Type F Required (+ = Need, - = Excess)	**-23,791 C.Y.**

8. BORROW TYPE C, REQUIRED	
a. Furnishing Borrow, Type C	6,678 C.Y.
b. = Plus Borrow, Type C x Adjustment Factor (0.20+/-)	1,336 C.Y.
c. = Subtotal Adjusted Borrow, Type C	8,014 C.Y.
d. Less Excavation Available for Borrow Type C	8,014 C.Y.
e. = Total Item 210000, Furnishing Borrow, Type C Required	**0 C.Y.**

9. CLAY BORROW	
a. Clay Borrow for SWM Basin Clay Core	4,465 C.Y.
b. = Subtotal Adjusted Clay Borrow	4,465 C.Y.
c. Less Excavation Available for Clay Borrow	0 C.Y.
d. = Total Item 274000, Clay Borrow, Required	**4,465 C.Y.**

10. TOPSOIL SUMMARY (SEE NOTE 1)	
a. Topsoil Salvaged from Cut and Fill	220,832 C.Y.
b. Plus Topsoil from Stormwater Management Pond	95,331 C.Y.
c. = Subtotal Topsoil Available	316,163 C.Y.
d. Less Topsoil placed on Fill Slopes	109,976 C.Y.
e. Less Topsoil placed on Cut Slopes	180,276 C.Y.
f. = Subtotal, Excess Topsoil (+) or Topsoil Need (-)	25,912 C.Y.
g. = Less Excess Topsoil placed in Berms	0 C.Y.
h. = Less Excess Topsoil placed in Outer Embankment	0 C.Y.
i. = Total Excess Topsoil	**25,912 C.Y.**

PROPOSAL QUANTITIES	
ITEM NO. 202000 EXCAVATION AND EMBANKMENT	3,351,166 C.Y.
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	20,460 C.Y.
ITEM NO. 208000 EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	5,413 C.Y.
ITEM NO. 209002 BORROW, TYPE B	31,698 C.Y.
ITEM NO. 210000 FURNISHING BORROW TYPE "C" FOR PIPE, UTILITY TRENCH, AND STRUCTURE BACKFILL	0 C.Y.
ITEM NO. 274000 CLAY BORROW, STORMWATER MANAGEMENT POND, TYPE I	4,465 C.Y.

2

NOTES:

1. *THE USE OF THE EXISTING TOPSOIL STOCKPILE IS PAID UNDER THE RESPECTIVE TOPSOIL ITEM.*

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
2 REVISED QUANTITIES DRB	

NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	AM JW
CHECKED BY:	DB SF

EARTHWORK SUMMARY

EW-01	
SHEET NO.	11
TOTAL SHTS.	1256

ZONE 7 EARTHWORK QUANTITIES

LOCATION	EXCAVATION (C.Y.)	TOP SOIL REMOVED		ROOT MAT		OVEREXCAVATION		EMBANKMENT			BORROW TYPE D	TOP SOIL PLACED (C.Y.)					REMARKS
		CUT (C.Y.)	FILL (C.Y.)	CUT (C.Y.)	FILL (C.Y.)	CUT (C.Y.)	FILL (C.Y.)	BELOW CAPPING TYPE F	BASIN	CAPPING (TYPE A)		CUT	FILL TYPE A	FILL TYPE B	FILL TYPE F <3:1	FILL TYPE F >3:1	
ROADWAY																	
SUMMIT BRIDGE ROAD WIDENING	112	436		0				1,074		0	5,571				166		
DITCH																	
BASIN																	
SED BASINS																	

ZONE 7 EARTHWORK SUMMARY (FOR INFORMATION ONLY)

1. EXCAVATION

a. From Cross Sections	112 C.Y.
1. Roadway	112 C.Y.
2. Borrow Site	0 C.Y.
3. Longitudinal Ditches	0 C.Y.
b. Plus Topsoil Removed in Fill	0 C.Y.
c. Plus Topsoil Placed in Cut	0 C.Y.
d. Plus Bituminous Pavement Removed under Fill	825 C.Y.
e. Less Rootmat Removed in Cut	0 C.Y.
f. Less Removal of Existing PCC Pavement, etc.	0 C.Y.
g. Less Rock Excavation	0 C.Y.
h. Plus Stormwater Management Pond Excavation	0 C.Y.
i. = Total Item 202000, Excavation and Embankment	**937 C.Y.**

2. STORMWATER MANAGEMENT PONDS

a. From Cross Sections	0 C.Y.
1. Excavation For Sediment Basins	0 C.Y.
2. Excavation For Final SWM Basins	0 C.Y.
b. Plus Topsoil Removed under Fill	0 C.Y.
c. Plus topsoil Placed in Cut	0 C.Y.
d. Less Rootmat Removed in Cut	0 C.Y.
e. Less Rock Excavation	0 C.Y.
f. = Total Item 271000, Stormwater Management Pond	**0 C.Y.**

3. EXCAVATION AVAILABLE FOR EMBANKMENT, TYPE F

a. Total Item 202000, Excavation and Embankment	937 C.Y.
b. Plus Excavation and Backfilling for Structures	0 C.Y.
c. Plus Excavation and Backfilling for Pipe Trenches	0 C.Y.
d. Plus Channel Excavation	0 C.Y.
e. Plus Excavation from installation of underdrains	0 C.Y.
f. Plus Stockpiled Material from previous phases	0 C.Y.
g. Less Topsoil Removed in Cut and Fill	436 C.Y.
h. Less Unsuitable Excavation	0 C.Y.
i. Less Materials Used for Borrow Type A and Borrow Type D	0 C.Y.
j. Less Excavation Performed in Final Phase Construction	0 C.Y.
k. = Total Excavation Available for Embankment, Type F	**501 C.Y.**

3a. FINAL PHASE EMBANKMENT, REQUIRED

a. Basin Embankment Required	0 C.Y.
b. Plus Topsoil Removed Under Fill	0 C.Y.
c. Plus Rootmat Removed Under Fill (not Backfilled with Borrow B)	0 C.Y.
d. Less Topsoil Placed on Fill Slopes	0 C.Y.
e. = Subtotal Basin Embankment Required	0 C.Y.
f. = Plus Embankment Required Adjustment Factor (0.2 +/-)	0 C.Y.
g. = Subtotal Adjusted Basin Embankment Required	0 C.Y.
h. Less Excavation Performed in Final Phase Construction	0 C.Y.
i. = Total Adjusted Final Phase Embankment Required (+ = Need, - = Excess)	**0 C.Y.**

4. BORROW TYPE A, REQUIRED

a. Borrow, Type A for Capping	0 C.Y.
b. Less Topsoil Placed on Fill Slopes Type A	0 C.Y.
c. = Subtotal Borrow, Type A Capping Required	0 C.Y.
d. Plus Capping Required x Adjustment Factor (0.20+/-)	0 C.Y.
e. = Subtotal Adjusted Borrow, Type A Capping Required	0 C.Y.
f. Less Excavation Available for Borrow Type A	0 C.Y.
g. = Total Borrow, Type A Required	**0 C.Y.**

5. BORROW TYPE D, REQUIRED

a. Borrow, Type D for Soil Cement Base Course	5,571 C.Y.
b. Plus Capping Required x Adjustment Factor (0.20+/-)	1,114 C.Y.
c. = Subtotal Adjusted Borrow, Type D Required	6,685 C.Y.
d. Less Excavation Available for Borrow Type D	0 C.Y.
e. = Total Borrow, Type D Required	**6,685 C.Y.**

6. BORROW TYPE B, REQUIRED

a. Backfill for Unstable Subgrades after Rootmat Removed Under Fill	0 C.Y.
b. Plus Backfill x Adjustment Factor (0.20+/-)	0 C.Y.
c. = Subtotal Adjusted Borrow, Type B Required	0 C.Y.
d. Less Excavation Available for Borrow Type B	0 C.Y.
e. = Total Item 209002, Borrow, Type B Required	**0 C.Y.**

7. EMBANKMENT AND BORROW, TYPE F, REQUIRED

a. Embankment Required Below Capping (From Cross-Sections)	1,074 C.Y.
b. Plus Topsoil Removed under Fill	0 C.Y.
c. Plus Rootmat removed under fill (not backfilled with Borrow, Type B)	0 C.Y.
d. Plus Undercut material removed under fill	0 C.Y.
e. Plus PCC and bituminous pavement removed under fill	825 C.Y.
f. Less Topsoil Placed on Fill Slopes	166 C.Y.
g. Plus Embankment required for Sediment Basins/Traps	0 C.Y.
h. Less Excess Topsoil to be placed in outer embankments	0 C.Y.
i. Less MSE Wall or Other Retaining Wall & Backfill	0 C.Y.
j. Less Borrow, Type B placed above original ground	0 C.Y.
k. = Subtotal Embankment Required Below Capping	1,733 C.Y.
l. Plus Embankment Required x Adjustment Factor (0.20+/-)	347 C.Y.
m. = Subtotal Adjusted Embankment Required.	2,080 C.Y.
n. Less Total Excavation Available for Borrow, Type F	501 C.Y.
o. = Total Adjusted Borrow, Type F Required (+ = Need, - = Excess)	**1,579 C.Y.**

8. BORROW TYPE C, REQUIRED

a. Furnishing Borrow, Type C	0 C.Y.
b. = Plus Borrow, Type C x Adjustment Factor (0.20+/-)	0 C.Y.
c. = Subtotal Adjusted Borrow, Type C	0 C.Y.
d. Less Excavation Available for Borrow Type C	0 C.Y.
e. = Total Item 210000, Furnishing Borrow, Type C Required	**0 C.Y.**

9. CLAY BORROW

a. Clay Borrow for SWM Basin Clay Core	0 C.Y.
b. = Subtotal Adjusted Clay Borrow	0 C.Y.
c. Less Excavation Available for Clay Borrow	0 C.Y.
d. = Total Item 274000, Clay Borrow, Required	**0 C.Y.**

10. TOPSOIL SUMMARY (SEE NOTE 1)

a. Topsoil Salvaged from Cut and Fill	436 C.Y.
b. Plus Topsoil from Stormwater Management Pond	0 C.Y.
c. = Subtotal Topsoil Available	436 C.Y.
d. Less Topsoil placed on Fill Slopes	166 C.Y.
e. Less Topsoil placed on Cut Slopes	0 C.Y.
f. = Subtotal, Excess Topsoil (+) or Topsoil Need (-)	270 C.Y.
g. = Less Excess Topsoil placed in Berms	0 C.Y.
h. = Less Excess Topsoil placed in Outer Embankment	0 C.Y.
i. = Total Excess Topsoil	**270 C.Y.**

PROPOSAL QUANTITIES

ITEM NO. 202000 EXCAVATION AND EMBANKMENT	937 C.Y.
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	0 C.Y.
ITEM NO. 208000 EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	267 C.Y.
ITEM NO. 209002 BORROW, TYPE B	0 C.Y.
ITEM NO. 210000 FURNISHING BORROW TYPE "C" FOR PIPE, UTILITY TRENCH, AND STRUCTURE BACKFILL	0 C.Y.
ITEM NO. 274000 CLAY BORROW, STORMWATER MANAGEMENT POND, TYPE I	0 C.Y.

2

NOTES:

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
2 REVISED QUANTITIES DRB	

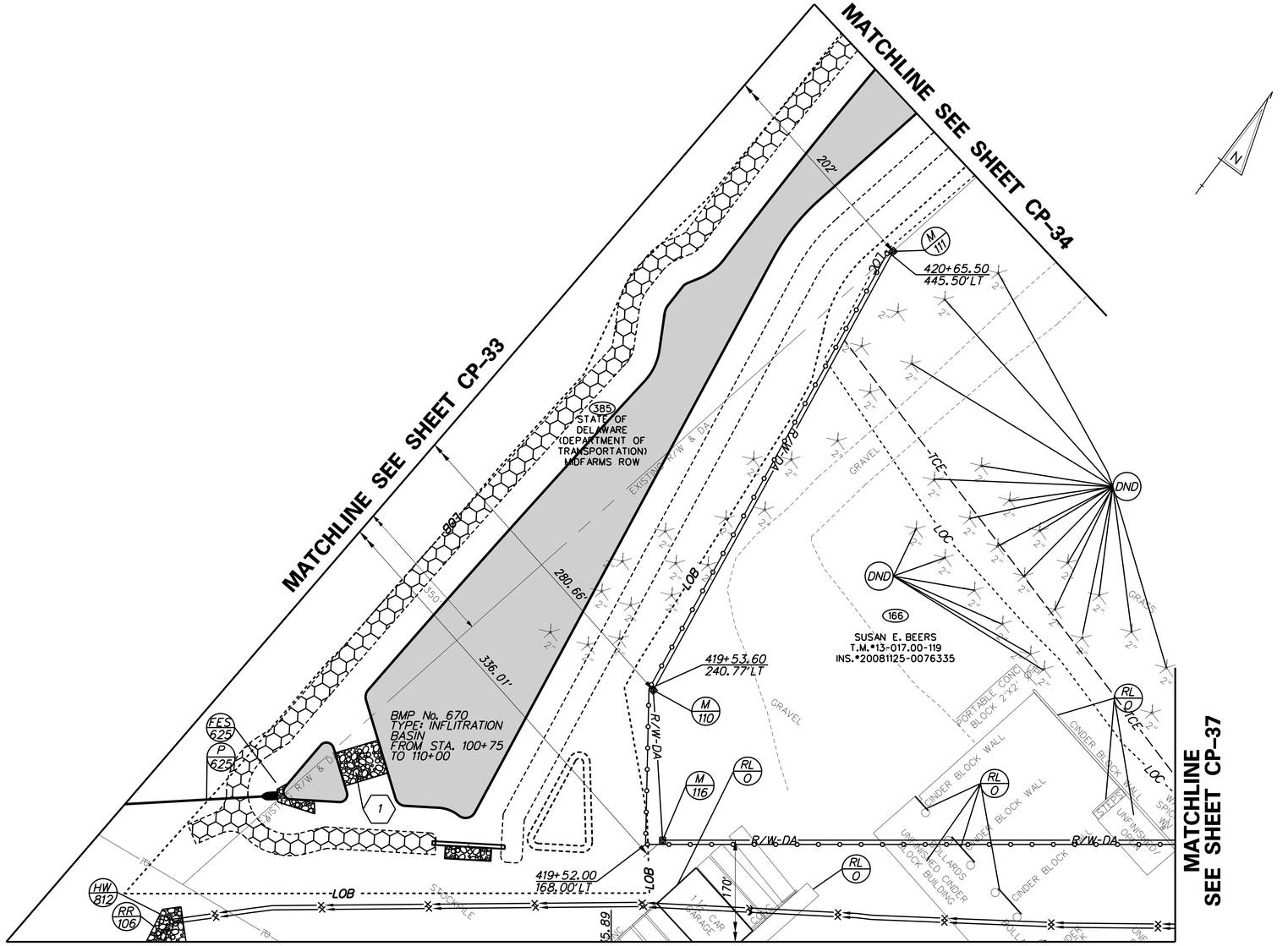
NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	JW
CHECKED BY:	SF

EARTHWORK SUMMARY

SHEET NO.	18
TOTAL SHTS.	1256



FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
625	24" RCP	0.0060	NO

NOTES:

1. REFER TO SWM PLANS FOR RIPRAP WITHIN BASINS (TYP)

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
2 REVISED ITEMS DRB

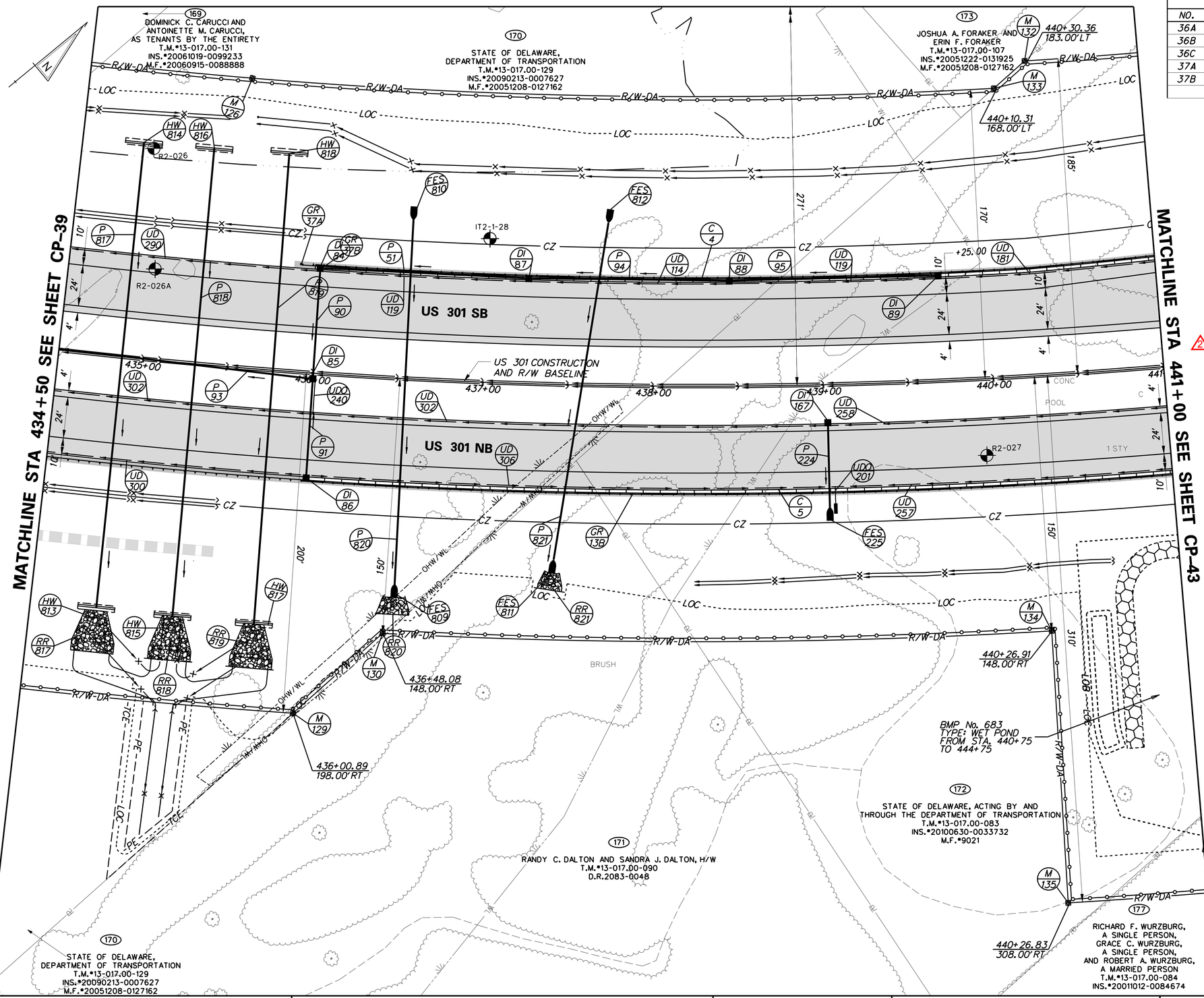
SCALE 0 30 60 90 FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	AW
CHECKED BY:	SF

CONSTRUCTION PLAN

CP-36
SHEET NO. 103
TOTAL SHTS. 1256



GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
36A	NOT USED			
36B	NOT USED			
36C	NOT USED			
37A	END ANCHORAGE TYPE 31	435+88.4	-62.92'	12.50'
37B	GALVANIZED SBGR, TYPE 1	435+02.3	-62.92'	1312.50'
A = OFFSET ATTENUATOR PER CONSTRUCTION DETAILS				

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
84	436+00.0	-62.9'	48" X 30"	SINGLE 2	77.59	72.76
85	436+00.0	3.3'	48" X 30"	SINGLE 2	77.34	72.38
86	436+00.0	62.9'	72" X 24"	DOUBLE 2	81.58	75.69
87	437+25.0	-62.9'	48" X 30"	SINGLE 2	78.79	73.32
88	438+45.0	-62.9'	48" X 30"	SINGLE 2	79.93	73.86
89	439+70.0	-62.9'	48" X 30"	SINGLE 2	81.12	74.42
167	439+02.0	21.1'	34" X 24"	SINGLE 2	83.27	78.73

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
51	18" RCP	IV	119.0'	0.0030	73.32	72.96
90	18" RCP	IV	63.0'	0.0030	72.76	72.58
91	18" RCP	IV	56.5'	0.0500	75.69	72.87
94	18" RCP	IV	114.0'	0.0030	73.86	73.52
95	18" RCP	IV	119.0'	0.0030	74.42	74.06
224	18" RCP	IV	51.0'	0.0127	78.73	78.08
817	53" x 83" HERCP	IV	275.0'	0.0020	62.63	62.08
818	53" x 83" HERCP	IV	275.0'	0.0020	62.59	62.04
819	53" x 83" HERCP	IV	277.0'	0.0020	63.63	62.08
820	19" x 30" HERCP	IV	230.0'	0.0020	63.95	63.49
821	19" x 30" HERCP	IV	200.0'	0.0020	64.50	64.10

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
4	CONCRETE CURB AND GUTTER, TYPE 1-4	494.00
5	CONCRETE CURB AND GUTTER, TYPE 1-4	513.00

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
225	18" RCP	0.0127	NO
809	19" x 30" HERCP	0.0020	YES
810	19" x 30" HERCP	0.0020	YES
811	19" x 30" HERCP	0.0020	YES
812	19" x 30" HERCP	0.0020	YES

RIPRAP SCHEDULE

NO.	TYPE	AREA (SY)
817	R-4	55
818	R-4	55
819	R-4	55
820	R-4	19
821	R-4	14

UNDERDRAIN OUTLETS

NO.	LENGTH	DIS. EL.
201	19	80.00
240	25	75.25

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
2 REVISED ITEMS DRB

SCALE
0 30 60 90
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	JW
CHECKED BY:	SF

CONSTRUCTION PLAN

	CP-41
SHEET NO.	108
TOTAL SHTS.	1256

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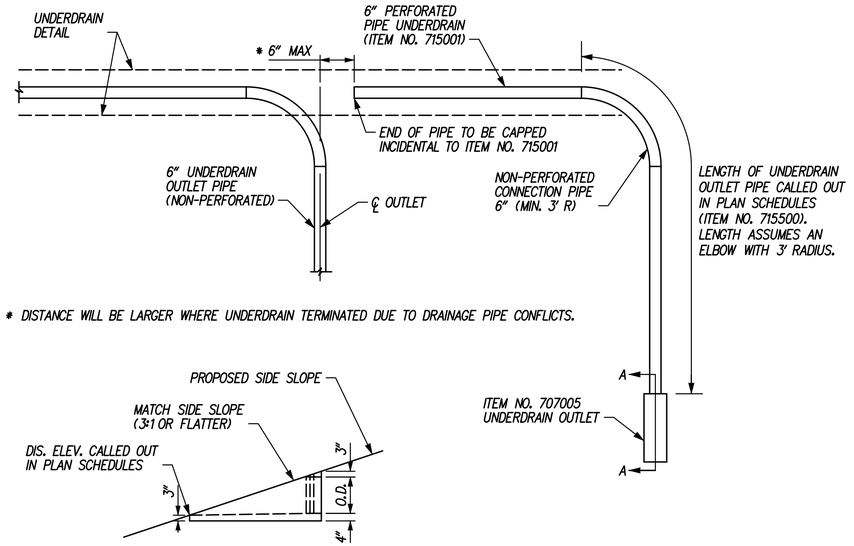


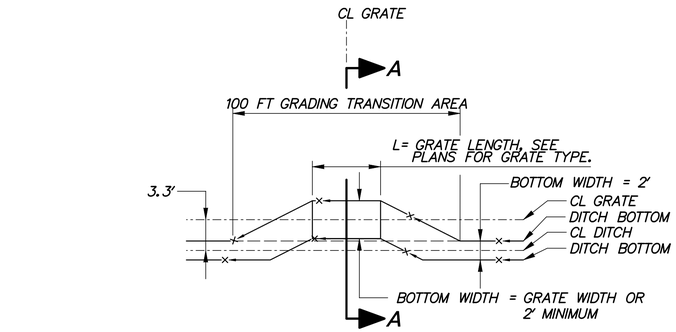
* DISTANCE WILL BE LARGER WHERE UNDERDRAIN TERMINATED DUE TO DRAINAGE PIPE CONFLICTS.

SECTION A-A

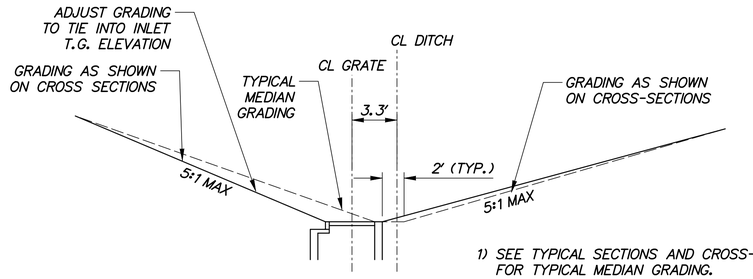
UNDERDRAIN CONNECTION TO UNDERDRAIN OUTLET
N. T. S.

UNDERDRAIN CONNECTION NOTES:

1. SEE D-9.
2. CONNECT PIPE UNDERDRAINS TO INLETS USING A MINIMUM THREE FOOT LENGTH OF NON-PERFORATED CONNECTION PIPE. FURNISHING AND INSTALLING CONNECTION PIPE AND PIPE END CAPS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM NO. 715001 - PERFORATED PIPE UNDERDRAINS, 6". CONNECTION PIPES AND END CAPS SHALL BE THE SAME MATERIAL AS FOR PERFORATED PIPE UNDERDRAINS.
3. PAYMENT FOR CONNECTING PIPE UNDERDRAINS OR UNDERDRAIN OUTLET PIPE TO INLETS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEM.
4. CONNECTION PIPE SHALL BE INSTALLED WITH A MINIMUM RADIUS OF 3 FEET.
5. CUT GEOTEXTILE IN WALL OF UNDERDRAIN TRENCH FOR CONNECTION PIPE SO AS TO MINIMIZE EXPOSURE OF TRENCH. WRAP SECTION OF CONNECTION PIPE OUTSIDE TRENCH IN GEOTEXTILE AND PROVIDE SIX INCH LAP AROUND CONNECTION PIPE AT UNDERDRAIN TRENCH WALL. GEOTEXTILE TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM NO. 715001 - PERFORATED PIPE UNDERDRAINS, 6".
6. NON-PERFORATED UNDERDRAIN OUTLET PIPE SHALL HAVE A SMOOTH INSIDE WALL AND BE THE SAME MATERIAL AS FOR PERFORATED PIPE UNDERDRAINS OR AS APPROVED BY THE ENGINEER. ALL REQUIRED CONNECTIONS SHALL BE INCIDENTAL TO ITEM NO. 715001, UNDERDRAIN OUTLET PIPE, 6".
7. SLOPE OF UNDERDRAIN OUTLET SHALL MATCH THE ROAD SIDE SLOPE AT OUTLET LOCATION. FOR SLOPES STEEPER THAN 3:1, USE A 3:1 SLOPED UNDERDRAIN OUTLET. THE COST IS INCIDENTAL TO ITEM 715001.
8. CONNECT UNDERDRAIN OUTLET PIPE TO INLET USING DETAIL A WHEN INVERT OF UNDERDRAIN OUTLET PIPE IS A MIN. OF 6" ABOVE THE TOP OF DRAINAGE PIPE.
9. CONNECT UNDERDRAIN OUTLET PIPE TO INLET USING DETAIL B WHEN INVERT OF UNDERDRAIN OUTLET PIPE IS LESS THAN 6" ABOVE THE TOP DRAINAGE OF PIPE.



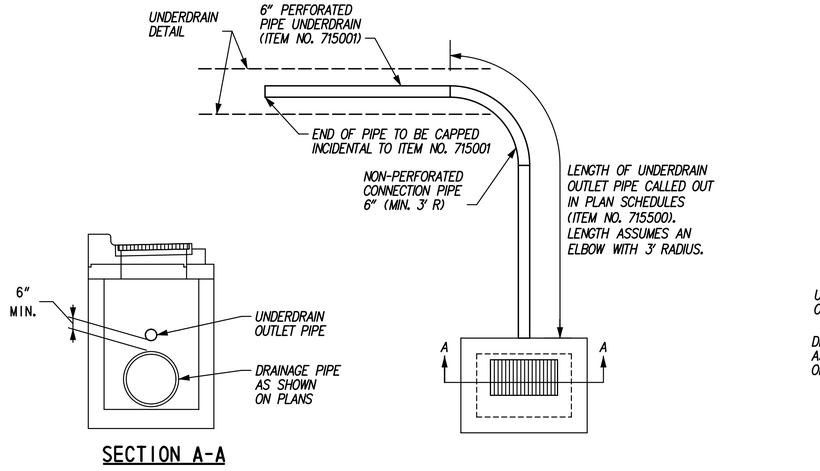
PLAN
N. T. S



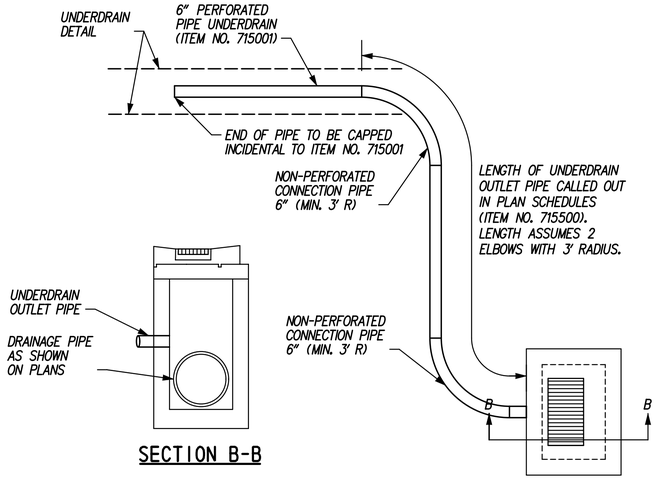
SECTION A-A
N. T. S

1) SEE TYPICAL SECTIONS AND CROSS-SECTIONS FOR TYPICAL MEDIAN GRADING.
2) OFFSET MAY BE LT OR RT. SEE CONSTRUCTION PLANS.
3) IF INLET IS WITHIN 100 FT. OF ADJACENT INLET, MAINTAIN DITCH OFFSET BETWEEN INLETS.

MEDIAN INLET GRADING
N. T. S



SECTION A-A

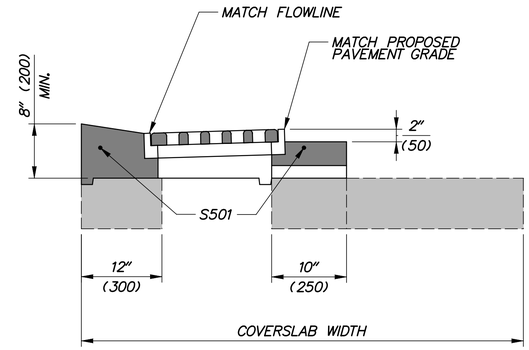


SECTION B-B

A

B

UNDERDRAIN CONNECTION TO DRAINAGE INLET
N. T. S.



2 TYPE C MODIFIED DRAINAGE INLET TOP UNIT FOR DRAINAGE INLET, SPECIAL I, II, AND III
N. T. S

1) SEE STANDARD DELDOT DETAIL D-5.
2) THIS MODIFIED INLET TOP APPLIES TO INLETS IN SHOULDERS WITHOUT CURB.

G:\60049040 US301\CIVIL\PLANS\2A\CP\DT-10.DGN

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
2 DETAIL CLARIFICATION DRB	

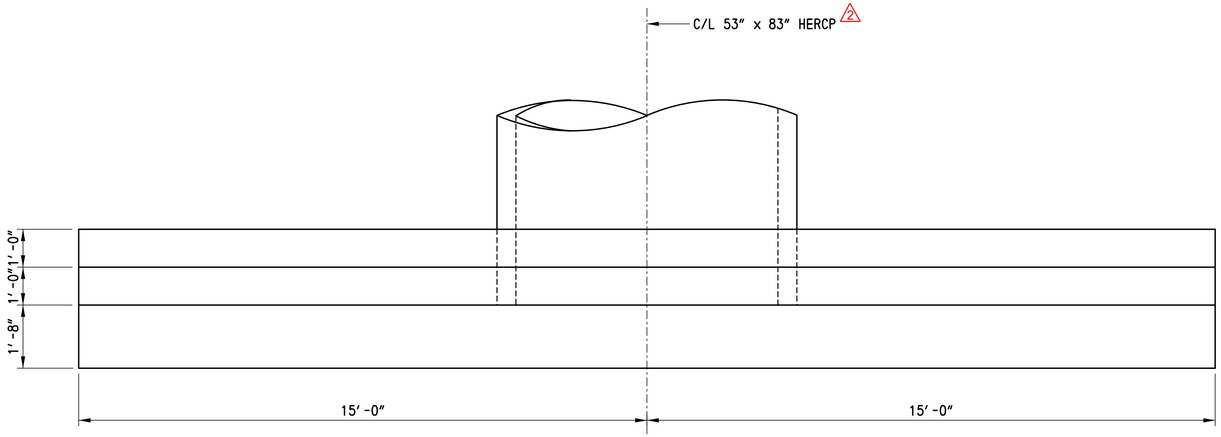
NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

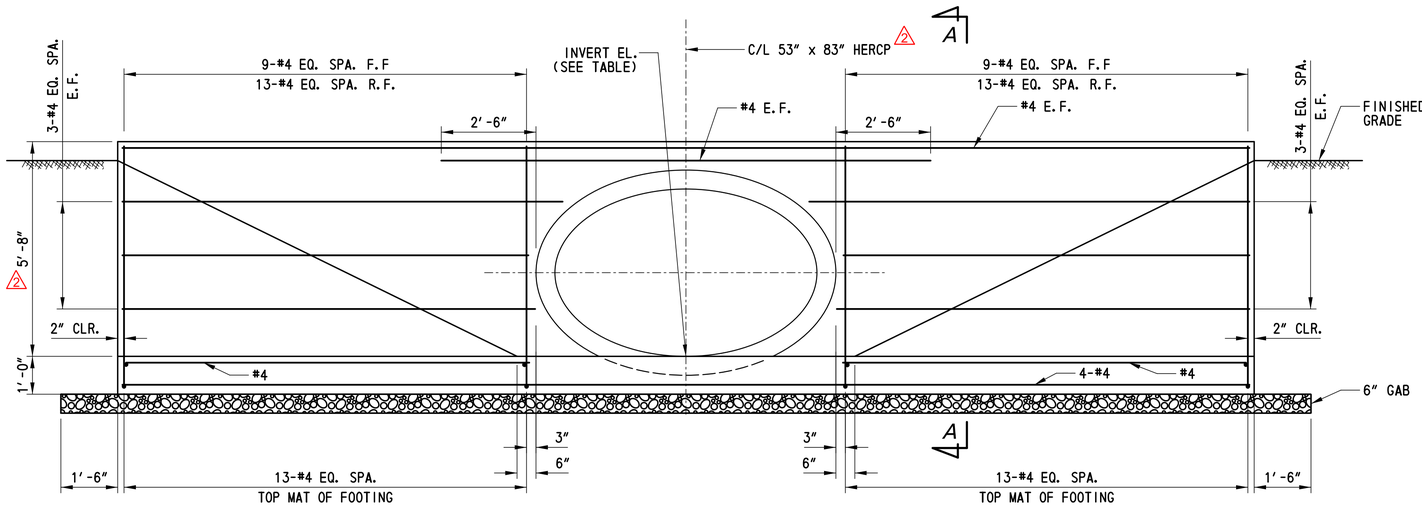
CONTRACT	BRIDGE NO.	
T200911303	DESIGNED BY: DB	
COUNTY	CHECKED BY: JZ	
NEW CASTLE		

CONSTRUCTION DETAILS

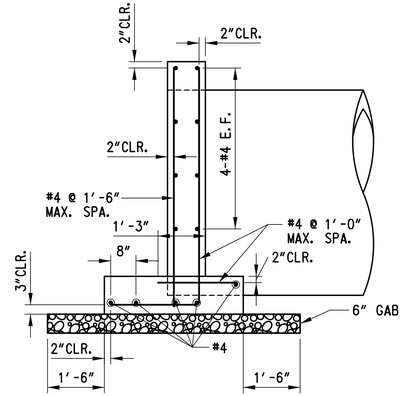
DT-10
SHEET NO.
245
TOTAL SHTS.
1256



PLAN VIEW



ELEVATION



SECTION A-A

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

HEADWALL NO.	INVERT EL.	
HW 813	62.08	2
HW 814	62.63	2
HW 815	62.04	2
HW 816	62.59	2
HW 817	62.08	2
HW 818	63.63	2

ITEM 617518 - HEAD WALL SPECIAL, TYPE 3

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

NOTES:

1. ALL CONCRETE SHALL BE PRECAST CLASS A WITH A 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH SECTION 812 OF THE STANDARD SPECIFICATION.
2. BAR REINFORCEMENT SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 824 OF THE STANDARD SPECIFICATION.
3. CHAMFER AT EXPOSED EDGES 1" x 1".
4. GAB IS INCIDENTAL TO WALL CONSTRUCTION.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
2 REVISED PIPE DIMENSION, AH

SCALE
0 2 4 6
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

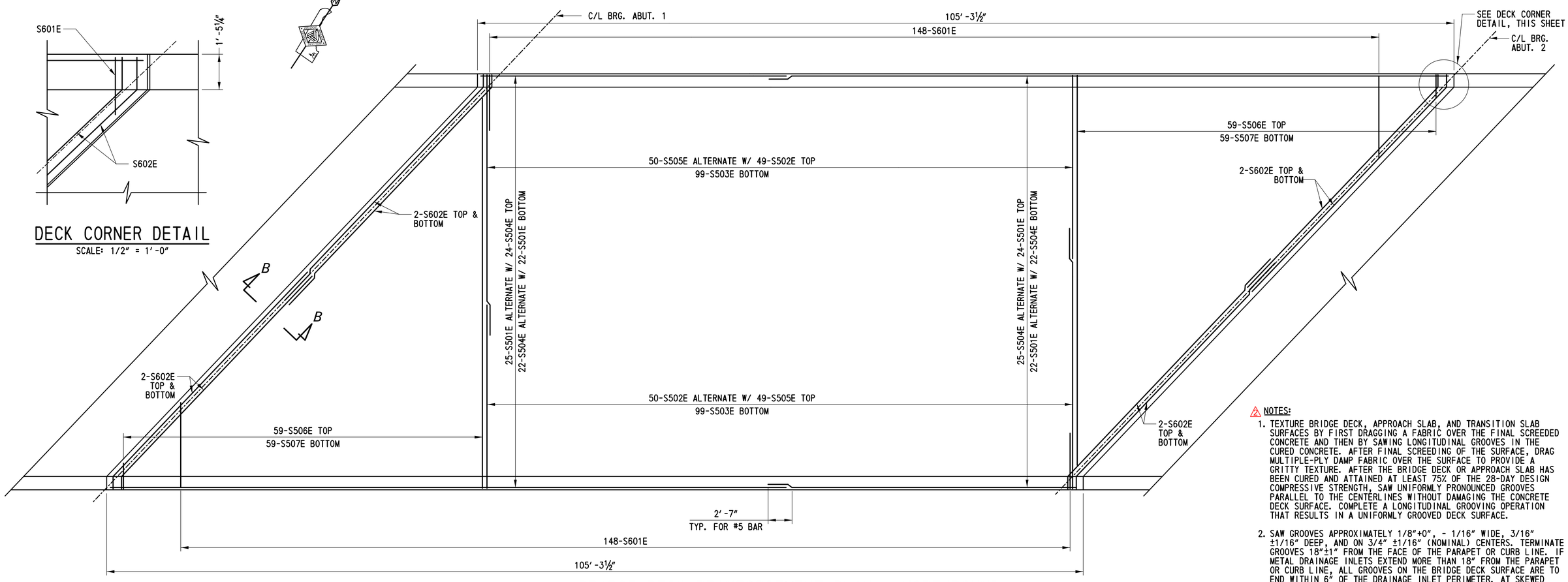
CONTRACT T200911303
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: AY
CHECKED BY: AH

CONSTRUCTION DETAILS

DT-28
SHEET NO. 263
TOTAL SHTS. 1256

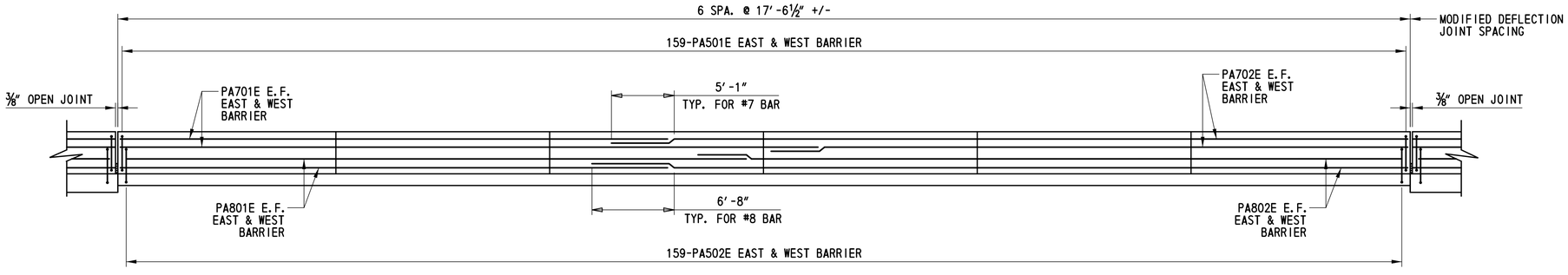
DECK CORNER DETAIL

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



BRIDGE DECK REINFORCEMENT PLAN - NORTHBOUND

SCALE: 3/16" = 1'-0"



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: 3/16" = 1'-0"

△2 NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.
2. SAW GROOVES APPROXIMATELY 1/8"+0", - 1/16" WIDE, 3/16" ±1/16" DEEP, AND ON 3/4" ±1/16" (NOMINAL) CENTERS. TERMINATE GROOVES 18"±1" FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18" FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6" OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6" OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6" IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN 1/2" WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, ±1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN WASHED AND CLEAN CONDITION.
3. AFTER THE CONCRETE HAS CURED, TEST THE SURFACES OF ALL DECKS, APPROACH SLABS, AND TRANSITION SLABS FOR SMOOTHNESS USING AN INERTIAL PROFILER. TESTING AND CORRECTIVE WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIAL PROVISION SECTION 501.14, PAVEMENT SMOOTHNESS TESTING. SEAL OR REPAIR ANY CRACKS IN THE DECKS, APPROACH SLABS, OR TRANSITION SLABS WHICH OCCUR PRIOR TO OPENING TO TRAFFIC, IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. SOUND THE RIDING SURFACES, THEN REMOVE AND REPLACE ANY DELAMINATED AREAS IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.

CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-468 PN-1.
2. FOR TYPICAL DECK & BARRIER SECTION, SEE DWG. 1-468 PA-1.
3. FOR REINFORCEMENT SCHEDULE, SEE DWG. 1-468 BR-3.
4. FOR MODIFIED DEFLECTION CONTROL JOINT, SEE DWG. 1-468 DK-2.
5. FOR SECTION B-B, SEE DWG. 1-468 PA-1.

1-468 DK-1

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
△2 DECK TEXTURE NOTES ADDED, AH

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-468N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

US 301 MAINLINE OVER NORFOLK SOUTHERN RAILROAD
BRIDGE DECK REINFORCEMENT - NB

SHEET NO.	289
TOTAL SHTS.	1256

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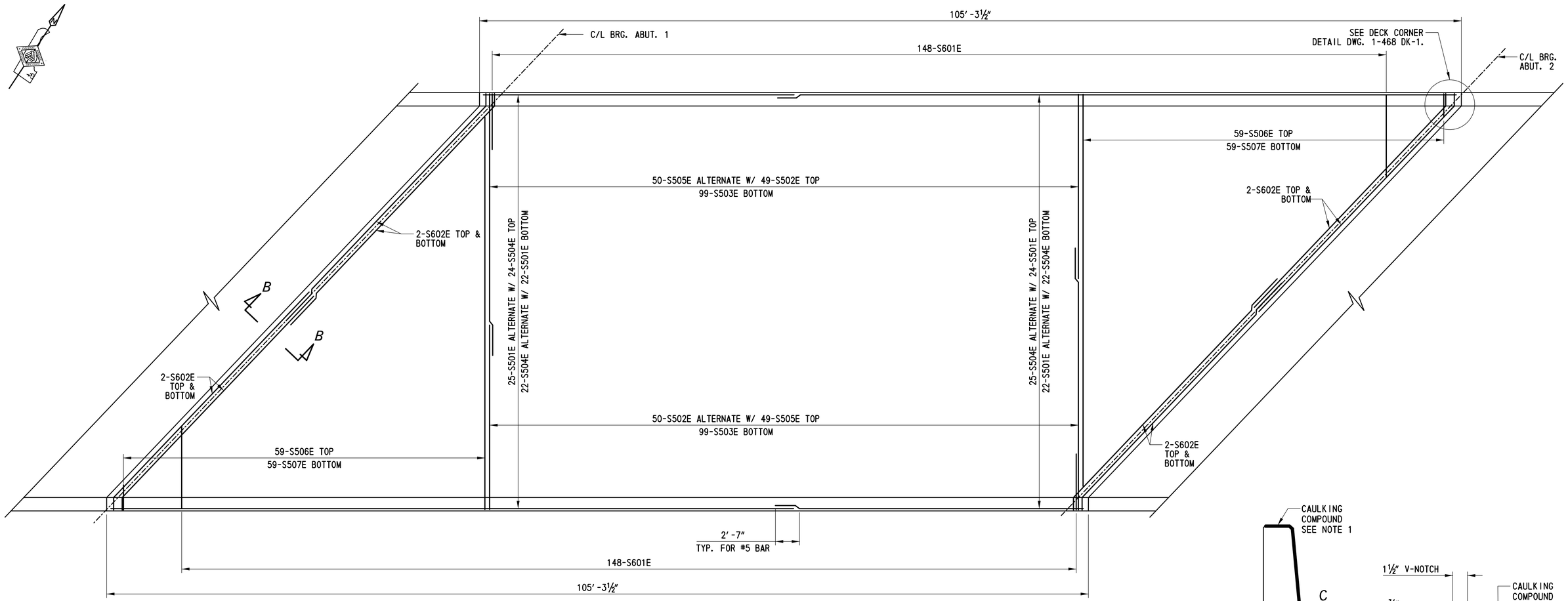
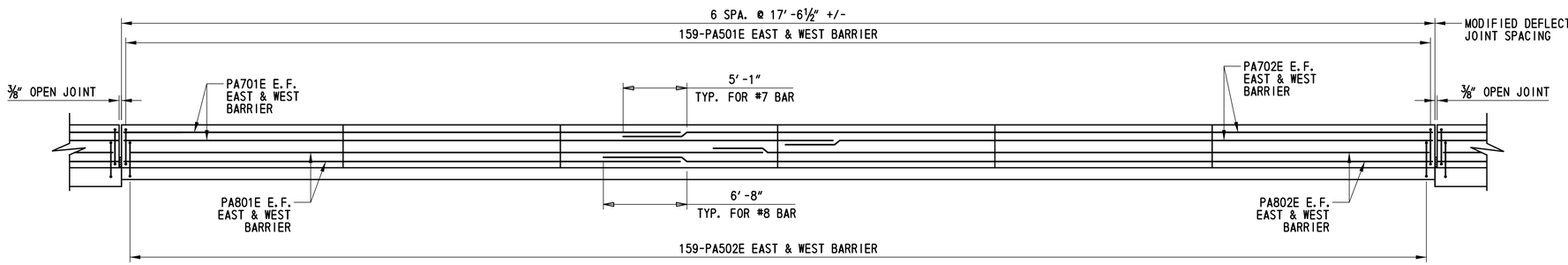


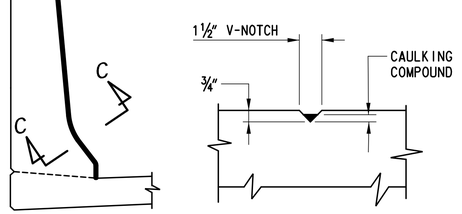
BRIDGE DECK REINFORCEMENT PLAN - SOUTHBOUND

SCALE: 3/16″ = 1′-0″



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: 3/16″ = 1′-0″



BARRIER SECTION C-C

MODIFIED DEFLECTION JOINT DETAIL

SCALE: NTS

NOTE:
1. CAULKING COMPOUND SHALL CONFORM TO THE REQUIREMENTS OF ASTM C834 OR C920.
2. MODIFIED DEFLECTION JOINT DETAIL INCIDENTAL TO ITEM 602017.

CROSS REFERENCE NOTES:
1. FOR PROJECT NOTES, SEE DWG. 1-468 PN-1.
2. FOR TYPICAL DECK AND BARRIER SECTION, SEE DWG. 1-468 PA-1.
3. FOR REINFORCEMENT SCHEDULE, SEE DWG. 1-468 BR-2.
4. FOR SECTION B-B, SEE DWG. 1-468 PA-1.
5. FOR BRIDGE DECK TEXTURE NOTES, SEE DWG. 1-468 DK-1.

1-468 DK-2

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
CROSS REFERENCE NOTE ADDED, AH

SCALE
2 0 2 4 6
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-468N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

US 301 MAINLINE OVER NORFOLK SOUTHERN RAILROAD BRIDGE DECK REINFORCEMENT - SB

SHEET NO.	290
TOTAL SHTS.	1256

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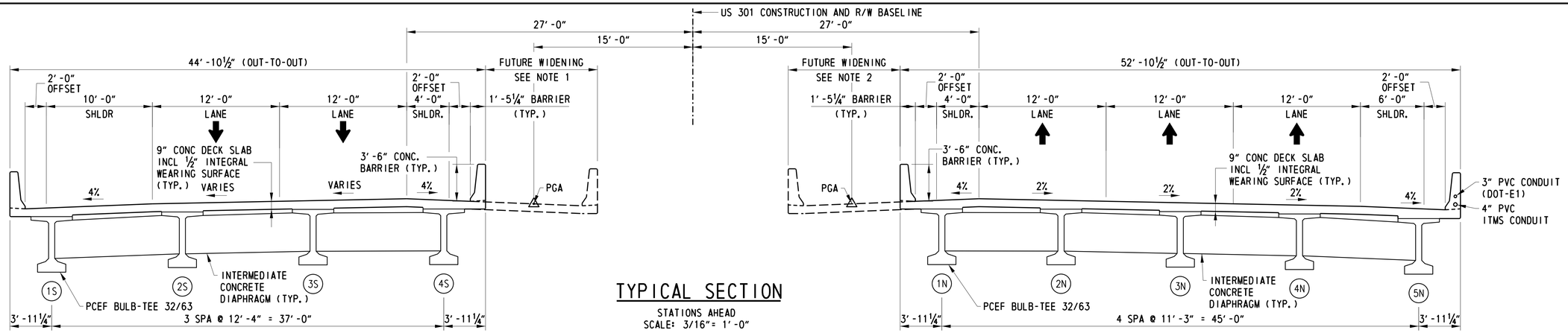

TYPICAL SECTION

STATIONS AHEAD
SCALE: 3/16"= 1'-0"

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	NORTHBOUND QUANTITIES	SOUTHBOUND QUANTITIES	TOTAL
202505	SETTLEMENT PLATFORM	EA	2	2	4
202518	SETTLEMENT MONUMENT	EA	2	2	4
302012	DELAWARE NO. 57 STONE	TON	106	97	203
602003	PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS A	CY	136	121	257
602006	PORTLAND CEMENT CONCRETE MASONRY, PIER FOOTING, CLASS B	CY	88	88	176
602007	PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A	CY	100	94	194
602013	PORTLAND CEMENT CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D	CY	470	395	865
602014	PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D	CY	235	212	447 (2)
602015	PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT, ABOVE FOOTING, CLASS A	CY	46	42	88
602017	PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	CY	77	77	154
602772	MECHANICALLY STABILIZED EARTH WALLS	LS	-	-	-
603000	BAR REINFORCEMENT	LBS	35,270	28,470	63,740
604000	BAR REINFORCEMENT, EPOXY COATED	LBS	193,840	170,880	364,720
605511	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	LF	156	133	289
618041 (ALTERNATE)	FURNISH CAST-IN-PLACE CONCRETE PILES, 14"	LF	1,499	1,304	2,803
618042 (ALTERNATE)	FURNISH CAST-IN-PLACE CONCRETE PILES, 16"	LF	1,803	1,811	3,614
618046 (ALTERNATE)	FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 14"	LF	136	139	275

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	NORTHBOUND QUANTITIES	SOUTHBOUND QUANTITIES	TOTAL
618047 (ALTERNATE)	FURNISH CAST-IN-PLACE CONCRETE TEST PILES, 16"	LF	39	39	78
618081	FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14"x14"	LF	3,868	3,682	7,550
618091	FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14"x14"	LF	183	187	370
619021 (ALTERNATE)	INSTALL CAST-IN-PLACE CONCRETE PILES, 14"	LF	1,499	1,304	2,803
619022 (ALTERNATE)	INSTALL CAST-IN-PLACE CONCRETE PILES, 16"	LF	1,803	1,811	3,614
619025 (ALTERNATE)	INSTALL CAST-IN-PLACE CONCRETE TEST PILES, 14"	LF	136	139	275
619026 (ALTERNATE)	INSTALL CAST-IN-PLACE CONCRETE TEST PILES, 16"	LF	39	39	78
619061	INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14"x14"	LF	3,868	3,682	7,550
619067	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14"x14"	LF	183	187	370
619501	PRODUCTION PILE RESTRIKE	EA	5	5	10
619502	TEST PILE RESTRIKE	EA DY	3	3	6
619519	DYNAMIC PILE TESTING BY CONTRACTOR	EA	3	3	6
619539	SIGNAL MATCHING ANALYSIS BY CONTRACTOR	EA	3	3	6
623000	PRESTRESSED REINFORCED CONCRETE MEMBERS	LS	-	-	-
745522	SUPPLY OF 3" SCHEDULE 80 PVC CONDUIT	LF	295	-	295
746596	JUNCTION BOX ON STRUCTURE	EA	2	-	2
760015	RUMBLE STRIPS, CONCRETE, SHALLOW DEPTH	LF	584	588	1172

SUPERELEVATION TABLE

NORTHBOUND			
STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	ROADWAY
483+57.50	0.04 FT/FT LT	0.04 FT/FT RT	0.04 FT/FT RT
484+78.00	0.04 FT/FT LT	0.04 FT/FT RT	0.02 FT/FT RT
SOUTHBOUND			
STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	ROADWAY
484+78.00	0.04 FT/FT RT	0.04 FT/FT LT	0.02 FT/FT RT
485+99.00	0.04 FT/FT RT	0.04 FT/FT LT	0.00 FT/FT
487+20.00	0.04 FT/FT RT	0.04 FT/FT LT	0.02 FT/FT LT

CROSS REFERENCE NOTES:

1. FOR LOCATIONS OF CONDUITS AND JUNCTION BOXES, SEE DWG. LI-25.
2. FOR LIGHTING CONDUIT, JUNCTION BOX DETAILS, AND CONDUIT EXPANSION JOINT DETAILS, SEE DWG. LI-30.
3. FOR ITMS CONDUIT, SEE DWG. DT-07.
4. INSTALLATION OF CONDUIT, CONDUIT EXPANSION JOINTS, AND JUNCTION BOXES SHALL BE INCIDENTAL TO ITEM 602017, PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A.
5. FOR DEPTH OF DECK AT CENTER LINE OF BEARING. SEE DWG. 1-470 PA-1.

NOTES:

1. CROSS SLOPE OF FUTURE LANE SLOPES AT 2% DOWN TO PGA. THE CURRENT FASCIA BEAM HAUNCH WOULD NEED TO BE INCREASED TO ACCOUNT FOR CHANGE IN ELEVATION OF DECK SLAB.
2. CROSS SLOPE OF FUTURE LANE TRANSITIONS FROM SUPER ELEVATION TO 2% DOWN TO THE PGA. THE CURRENT FASCIA BEAM HAUNCH WOULD NEED TO BE ADJUSTED TO ACCOUNT FOR CHANGE IN ELEVATION OF DECK SLAB.
3. PROVIDE RUMBLE STRIPS IN ACCORDANCE WITH DWG. SS-58.

1-470 TS-1

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
(2) REVISED QUANTITIES ADH

SCALE
2 0 2 4 6
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-470N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

US 301 MAINLINE OVER SUMMIT BRIDGE ROAD
TYPICAL SECTION AND QUANTITIES

SHEET NO. 310
TOTAL SHTS. 1256

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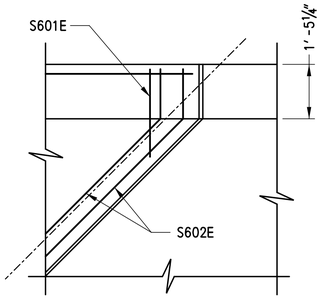
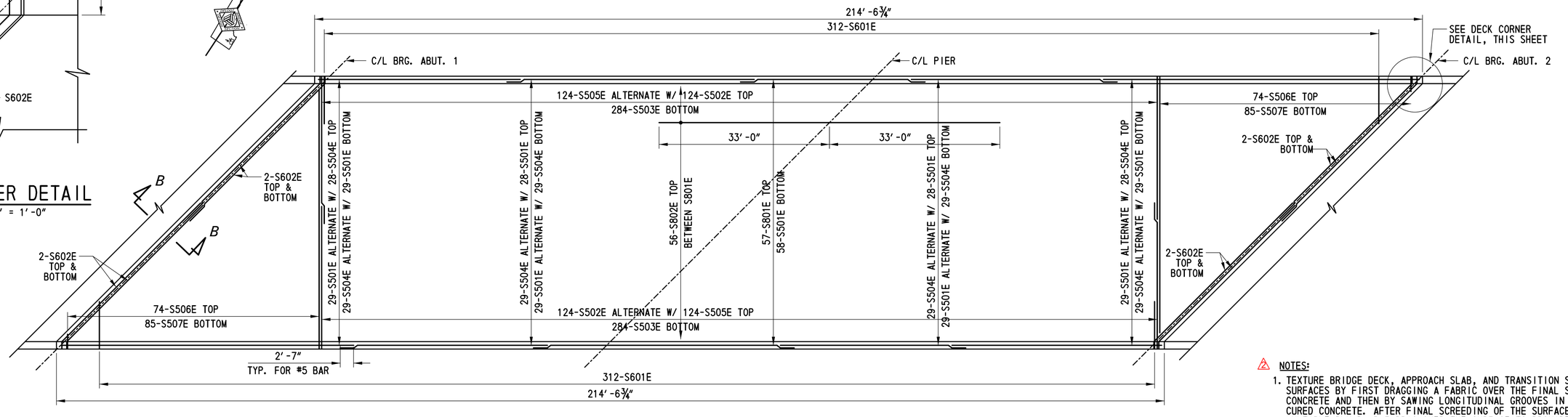


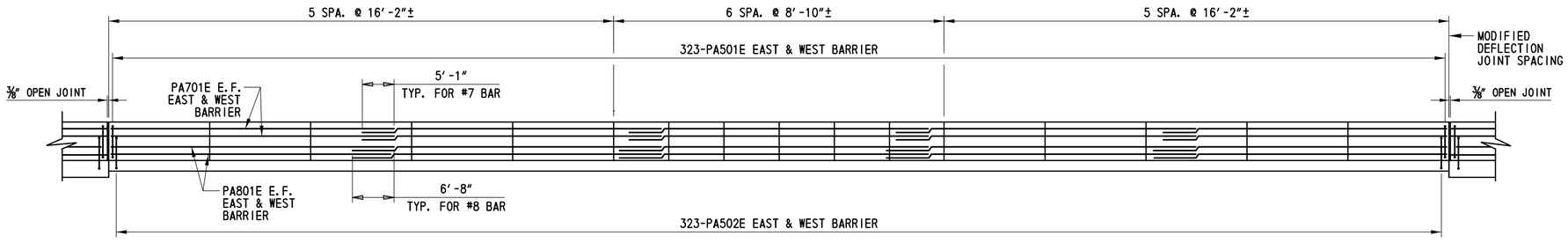
DECK CORNER DETAIL

SCALE: 1/2″ = 1′-0″



BRIDGE DECK REINFORCEMENT PLAN - NORTHBOUND

SCALE: 3/32″ = 1′-0″



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: NTS

NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.
2. SAW GROOVES APPROXIMATELY 1/8″+0″, - 1/16″ WIDE, 3/16″ ±1/16″ DEEP, AND ON 3/4″ ±1/16″ (NOMINAL) CENTERS. TERMINATE GROOVES 18″±1″ FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18″ FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6″ OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6″ OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6″ IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN 1/2″ WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, ±1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN WASHED AND CLEAN CONDITION.
3. AFTER THE CONCRETE HAS CURED, TEST THE SURFACES OF ALL DECKS, APPROACH SLABS, AND TRANSITION SLABS FOR SMOOTHNESS USING AN INERTIAL PROFILER. TESTING AND CORRECTIVE WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIAL PROVISION SECTION 501.14, PAVEMENT SMOOTHNESS TESTING. SEAL OR REPAIR ANY CRACKS IN THE DECKS, APPROACH SLABS, OR TRANSITION SLABS WHICH OCCUR PRIOR TO OPENING TO TRAFFIC, IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. SOUND THE RIDING SURFACES, THEN REMOVE AND REPLACE ANY DELAMINATED AREAS IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.

NOTE:

1. S801E BARS TO BE CENTERED OVER PIER.

CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-470 PN-1.
2. FOR TYPICAL SECTION, SEE DWG. 1-470 PA-1.
3. FOR REINFORCEMENT BAR SCHEDULE, SEE DWG. 1-470 BR-3.
4. FOR MODIFIED DEFLECTION CONTROL JOINT, SEE DWG. 1-470 AS-5.

1-470 DK-1

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
⚠ DECK TEXTURE NOTES ADDED, AH	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303	BRIDGE NO.	1-470N&S
COUNTY	NEW CASTLE	DESIGNED BY: ADH	
		CHECKED BY: DHG	

US 301 MAINLINE OVER SUMMIT BRIDGE ROAD BRIDGE DECK REINFORCEMENT - NORTHBOUND

SHEET NO.	338
TOTAL SHTS.	1256

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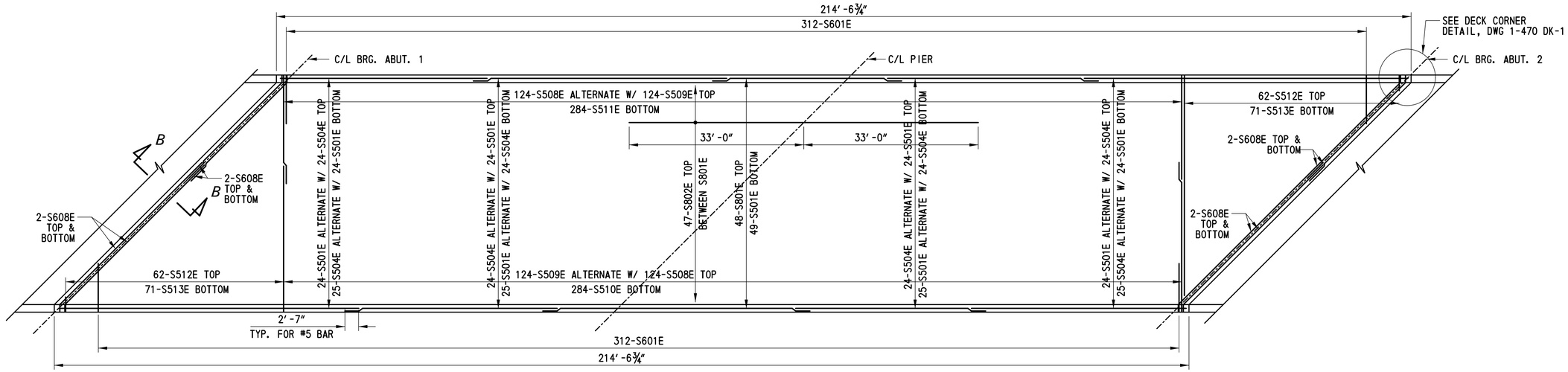
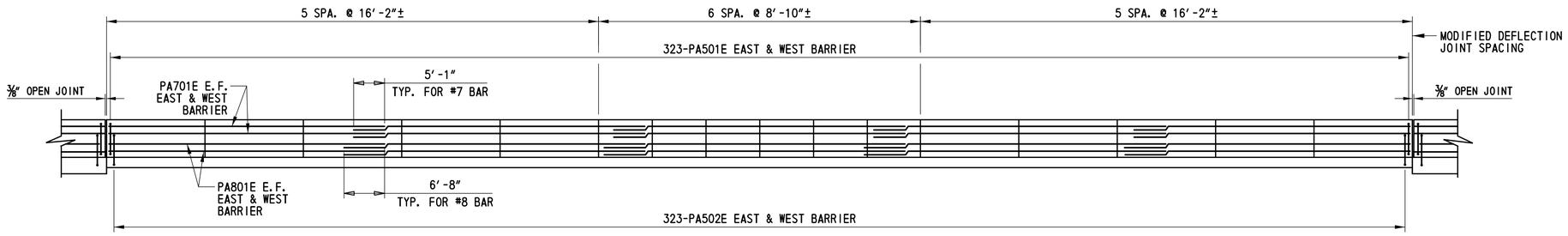


BRIDGE DECK REINFORCEMENT PLAN - SOUTHBOUND

SCALE: 3/32″ = 1′-0″



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: 3/32″ = 1′-0″

NOTE:

1. S801E BARS TO BE CENTERED OVER PIER.

CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-470 PN-1.
2. FOR TYPICAL SECTION, SEE DWG. 1-470 PA-1.
3. FOR REINFORCEMENT BAR SCHEDULE, SEE DWG. 1-470 BR-3.
4. FOR MODIFIED DEFLECTION CONTROL JOINT, SEE DWG. 1-470 AS-5.
5. FOR BRIDGE DECK TEXTURE NOTES, SEE DWG. 1-470 DK-1.

1-470 DK-2

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

⚠ CROSS REFERENCE NOTE ADDED, AH

SCALE
4 0 4 8 12
FEET

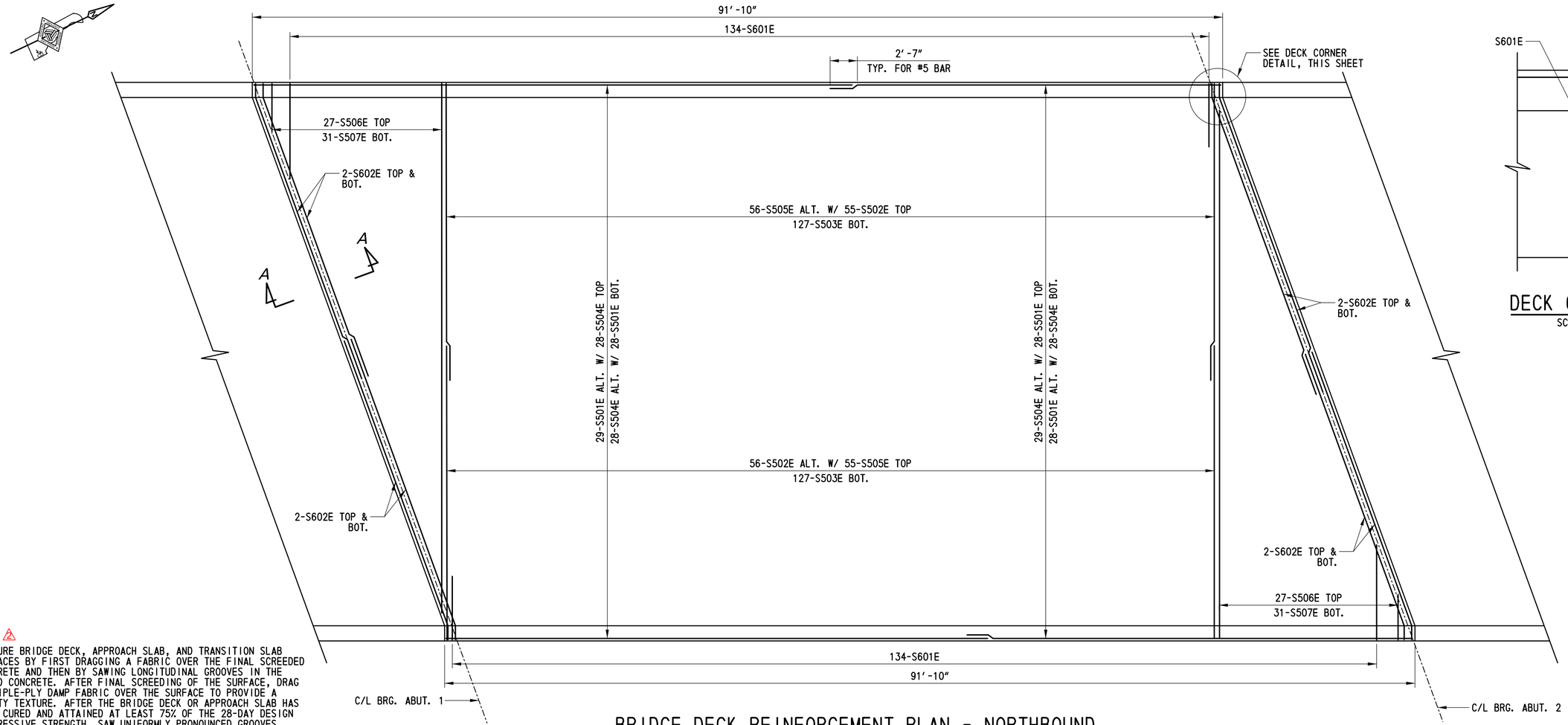
US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-470N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

US 301 MAINLINE OVER SUMMIT BRIDGE ROAD BRIDGE DECK REINFORCEMENT - SOUTHBOUND

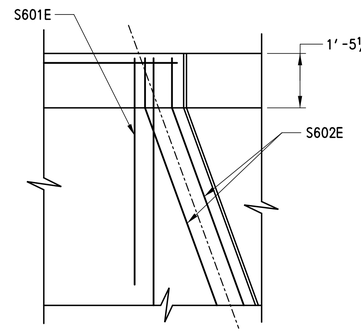
SHEET NO.	339
TOTAL SHTS.	1256

P:\cadd2\60049040 US301\Structure\Plans\FINAL\B2-2NS\BR2-2DK-02.dgn



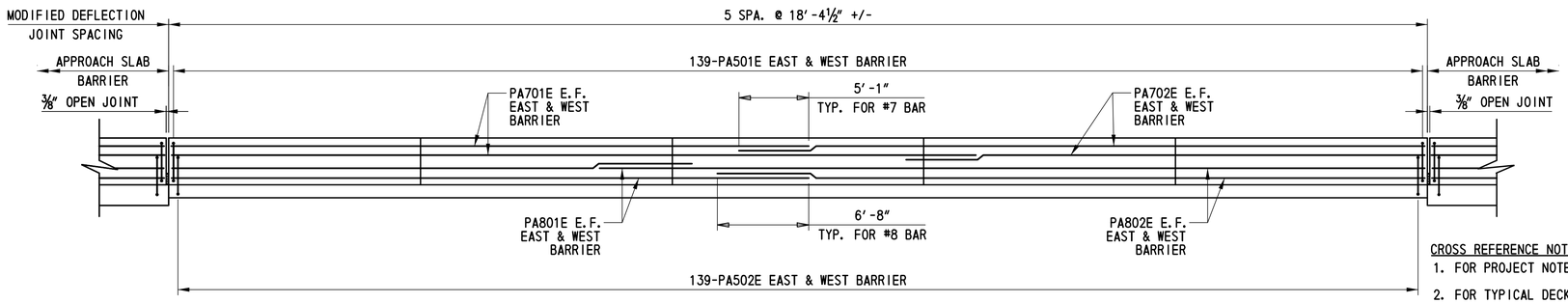
BRIDGE DECK REINFORCEMENT PLAN - NORTHBOUND

SCALE: 3/16″ = 1′-0″



DECK CORNER DETAIL

SCALE: 1/2″ = 1′-0″



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: 3/16″ = 1′-0″

NOTES: ⚠

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.
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CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-472 PN-1.
2. FOR TYPICAL DECK AND BARRIER SECTION, SEE DWG. 1-472 PA-1.
3. FOR REINFORCEMENT BAR SCHEDULE, SEE DWG. 1-472 BR-2.
4. FOR SECTION A-A, SEE DWG. 1-472 PA-1.
5. FOR MODIFIED DEFLECTION CONTROL JOINT, SEE DWG. 1-472 DK-2.

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1-472 DK-1

DELAWARE
DEPARTMENT OF TRANSPORTATION

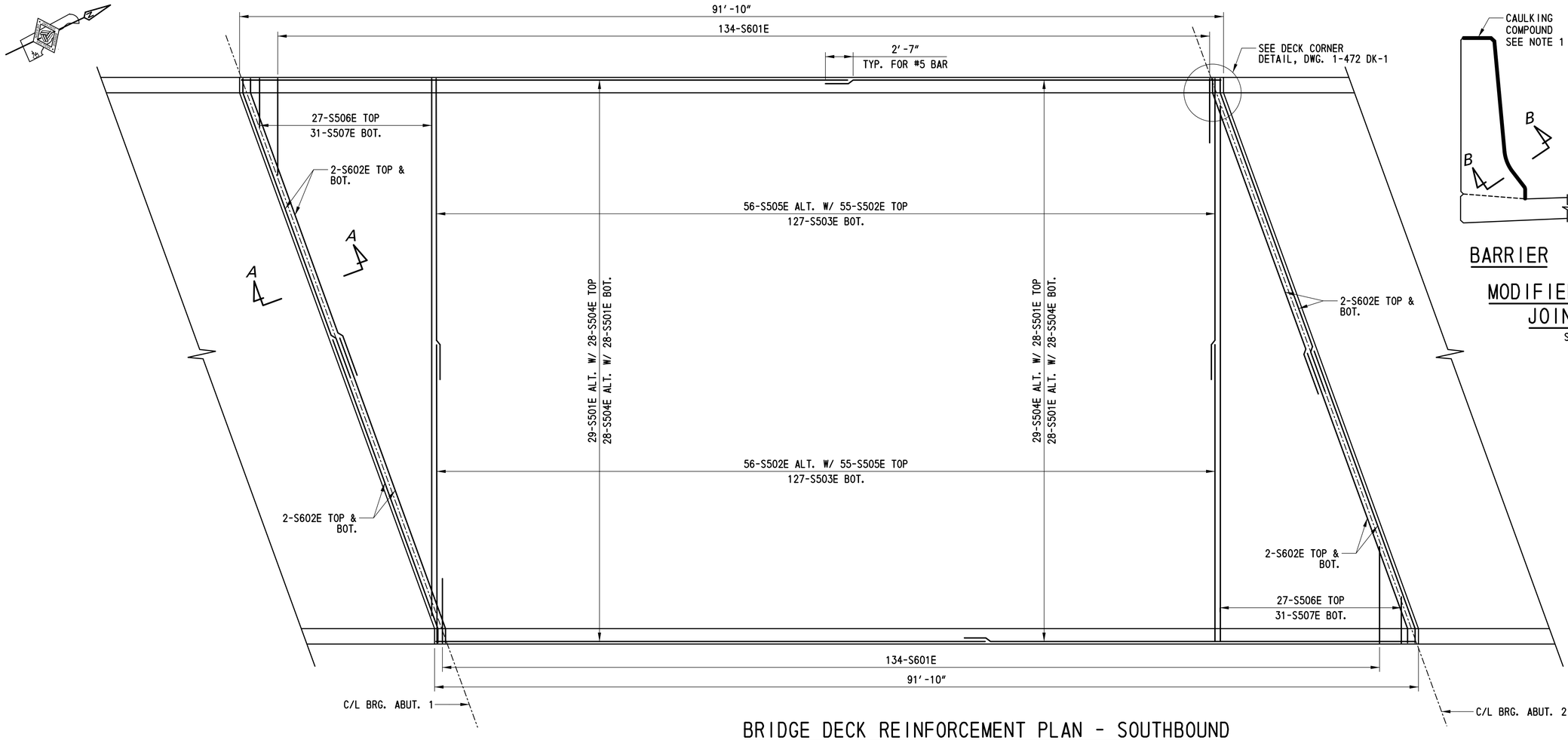
ADDENDUMS / REVISIONS	
⚠ DECK TEXTURE NOTES ADDED, AH	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-472N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

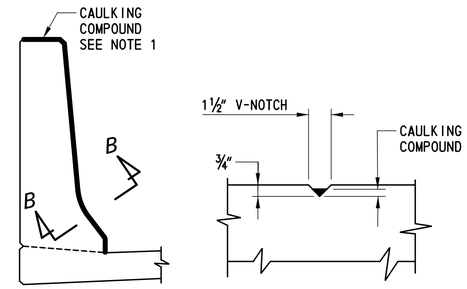
US 301 MAINLINE OVER ARMSTRONG CORNER ROAD BRIDGE DECK REINFORCEMENT - NORTHBOUND

SHEET NO.
378
TOTAL SHTS.
1256



BRIDGE DECK REINFORCEMENT PLAN - SOUTHBOUND

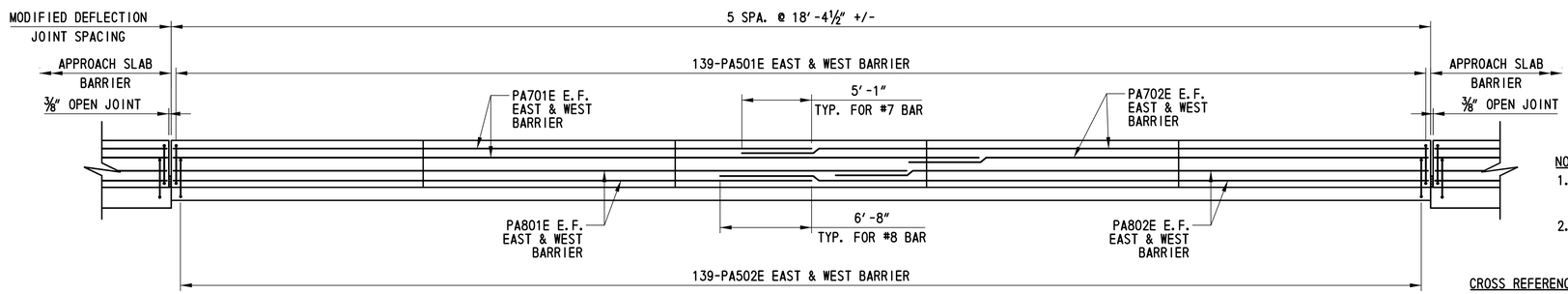
SCALE: 3/16″ = 1′-0″



BARRIER SECTION B-B

MODIFIED DEFLECTION JOINT DETAIL

SCALE: NTS



ELEVATION - DECK AND BARRIER REINFORCEMENT

SCALE: 3/16″ = 1′-0″

NOTES:

1. CAULKING COMPOUND SHALL CONFORM TO THE REQUIREMENTS OF ASTM C834 OR C920.
2. MODIFIED DEFLECTION JOINT DETAIL INCIDENTAL TO ITEM 602017.

CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-472 PN-1.
2. FOR TYPICAL DECK AND BARRIER SECTION, SEE DWG. 1-472 PA-1.
3. FOR REINFORCEMENT BAR SCHEDULE, SEE DWG. 1-472 BR-2.
4. FOR SECTION A-A, SEE DWG. 1-472 PA-1.
5. FOR BRIDGE DECK TEXTURE NOTES, SEE DWG. 1-472 DK-1.

1-472 DK-2

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
2 CROSS REFERENCE NOTE ADDED, AH

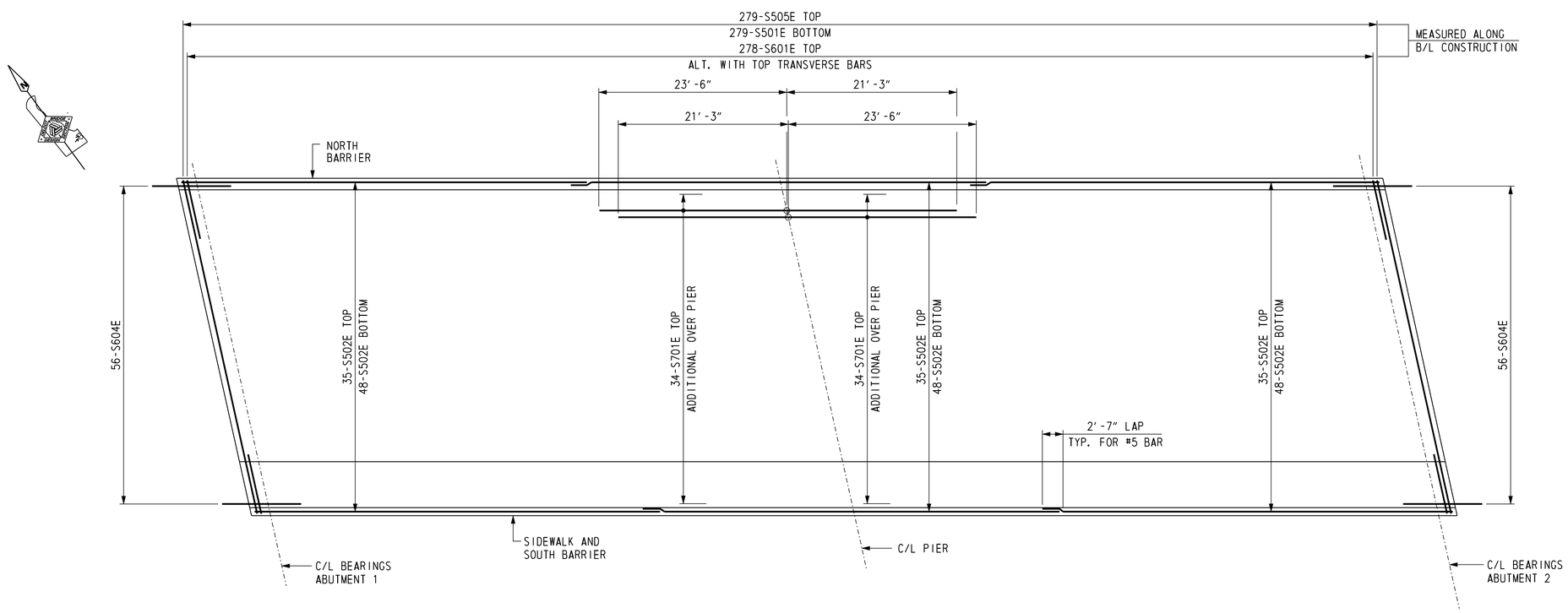
SCALE
2 0 2 4 6
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-472N&S
T200911303	DESIGNED BY: ADH	
COUNTY	CHECKED BY: DHG	
NEW CASTLE		

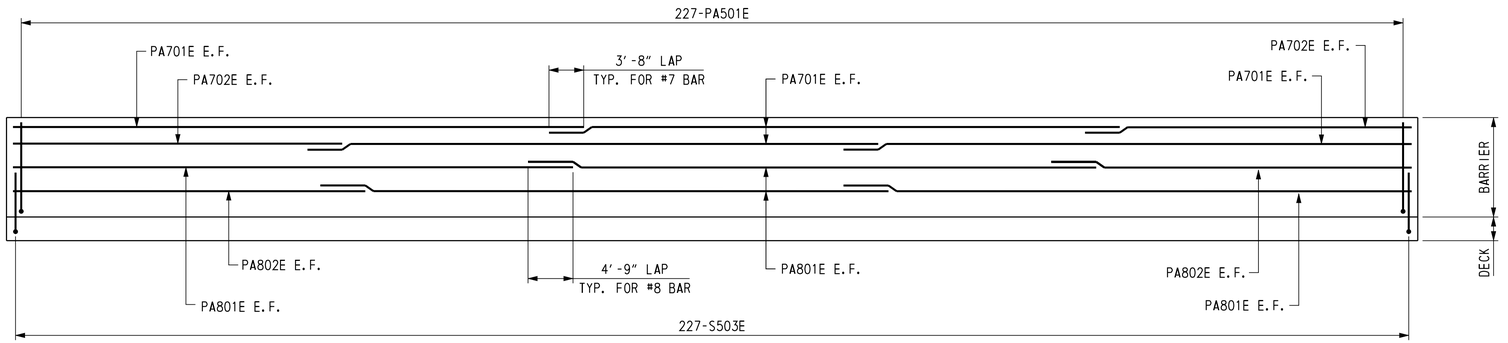
US 301 MAINLINE OVER ARMSTRONG CORNER ROAD BRIDGE DECK REINFORCEMENT - SOUTHBOUND

SHEET NO.	TOTAL SHTS.
379	1256



BRIDGE DECK REINFORCEMENT PLAN

SCALE: 1/8″ = 1′-0″



ELEVATION - DECK AND NORTH BARRIER REINFORCEMENT

NOT TO SCALE

△2 BRIDGE DECK TEXTURE NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.

2. SAW GROOVES APPROXIMATELY 1/8″ +0″, -1/16″ WIDE, 3/16″ +/- 1/16″ DEEP, AND ON 3/4″ +/-1/8″ (NOMINAL) CENTERS. TERMINATE GROOVES 18″ +/- 1″ FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18″ FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6″ OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6″ OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6″ IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN 1/2″ WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, +/- 1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN A WASHED AND CLEAN CONDITION.

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CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-475 PN-2.
2. FOR TYPICAL SECTION, SEE DWG. 1-475 TS-1.
3. FOR TYPICAL DECK AND BARRIER REINFORCEMENT SECTIONS, SEE DWG. 1-475 DK-4.
4. FOR REINFORCING BAR LIST, SEE DWG. 1-475 DK-5.

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10/6/2015
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION

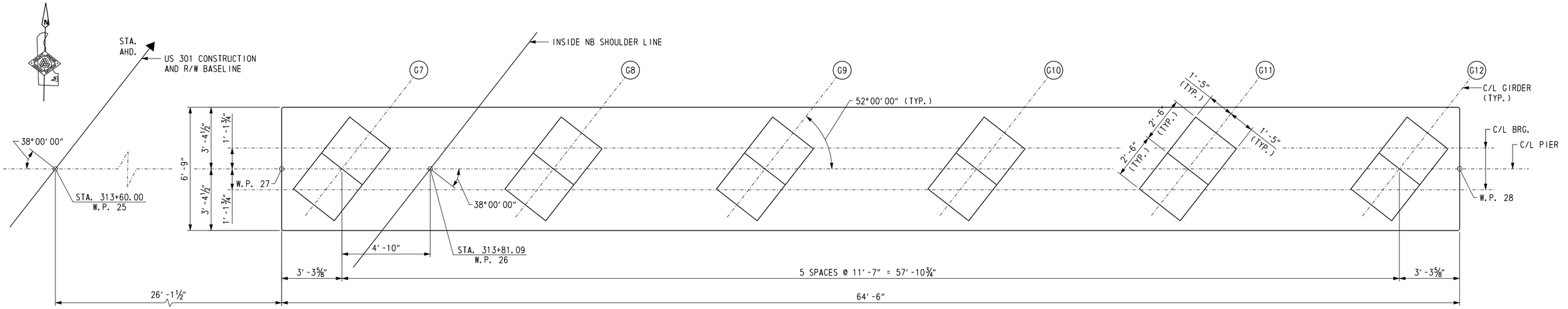
ADDENDUMS / REVISIONS	
△2 ADDED BRIDGE DECK TEXTURE NOTES, RFK	

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

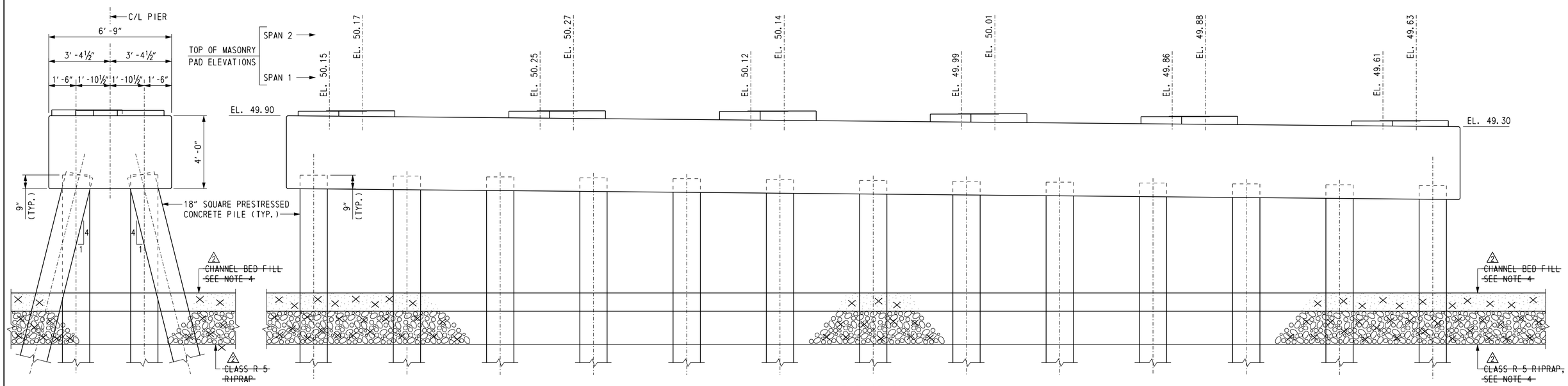
CONTRACT T200511303	BRIDGE NO.	1-475
COUNTY NEW CASTLE	DESIGNED BY: K. D. BEAVER	
	CHECKED BY: J. S. LI	

BUNKER HILL ROAD OVER US 301 MAINLINE BRIDGE DECK AND BARRIER REINFORCEMENT 1

1-475-DK-2	
SHEET NO.	426
TOTAL SHTS.	1256



PLAN



END VIEW
SCALE: ⅜" = 1'-0"

ELEVATION

PIER
(LOOKING STATION AHEAD)
SCALE: ⅜" = 1'-0"

CROSS REFERENCE NOTES:

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

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
2 REMOVED CHANNEL BED FILL & RIPRAP, RFK	

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

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

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

1-477 PR-2
SHEET NO.
486
TOTAL SHTS.
1256

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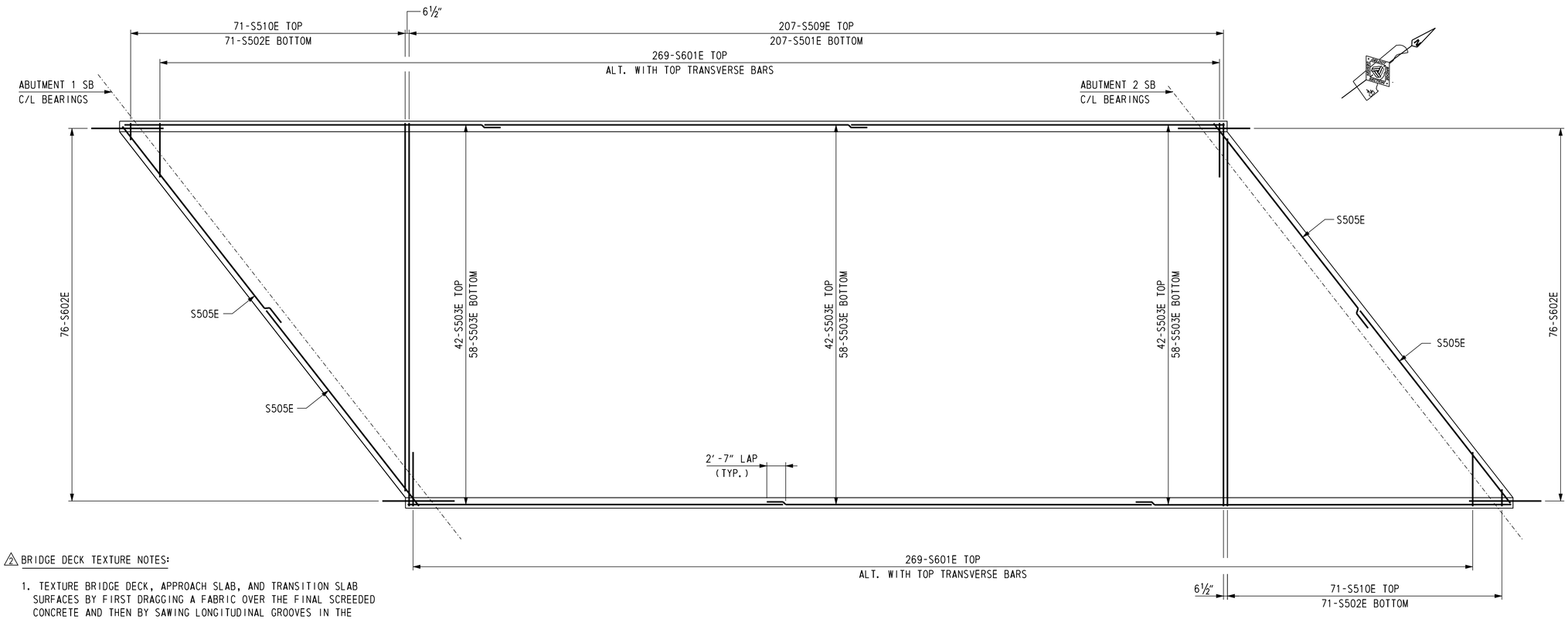
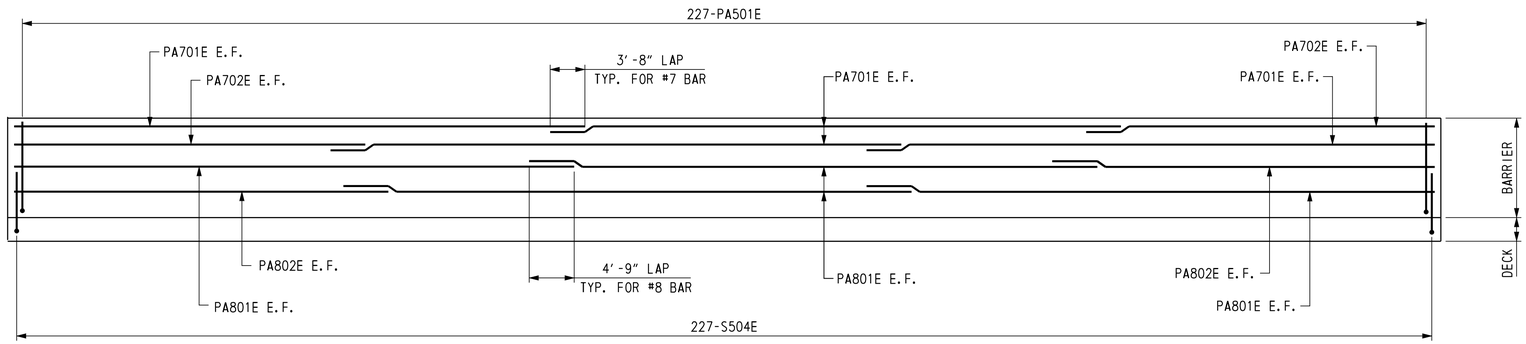
10/8/2015
Steve_Lambert



PLAN - SOUTHBOUND ROADWAY DECK REINFORCEMENT

SCALE: ⅛" = 1'-0"



ELEVATION - SOUTHBOUND ROADWAY DECK AND BARRIER REINFORCEMENT

NOT TO SCALE

⚠2 BRIDGE DECK TEXTURE NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.

2. SAW GROOVES APPROXIMATELY ⅛" +0", -1/16" WIDE, 3/16" +/- 1/16" DEEP, AND ON ¾" +/-⅛" (NOMINAL) CENTERS. TERMINATE GROOVES 18" +/- 1" FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18" FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6" OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6" OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6" IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN ½" WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, +/- 1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN A WASHED AND CLEAN CONDITION.

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CROSS REFERENCE NOTES:

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

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10/8/2015
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION

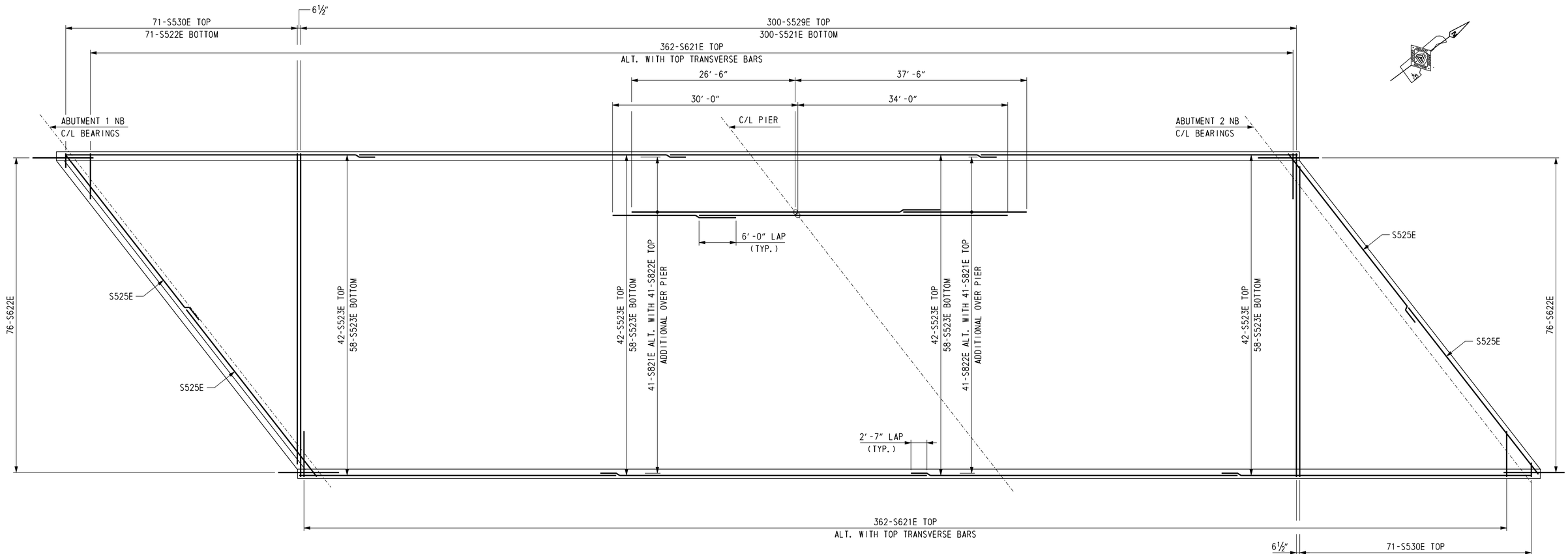
ADDENDUMS / REVISIONS	
⚠2 ADDED BRIDGE DECK TEXTURE NOTES, RFK	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

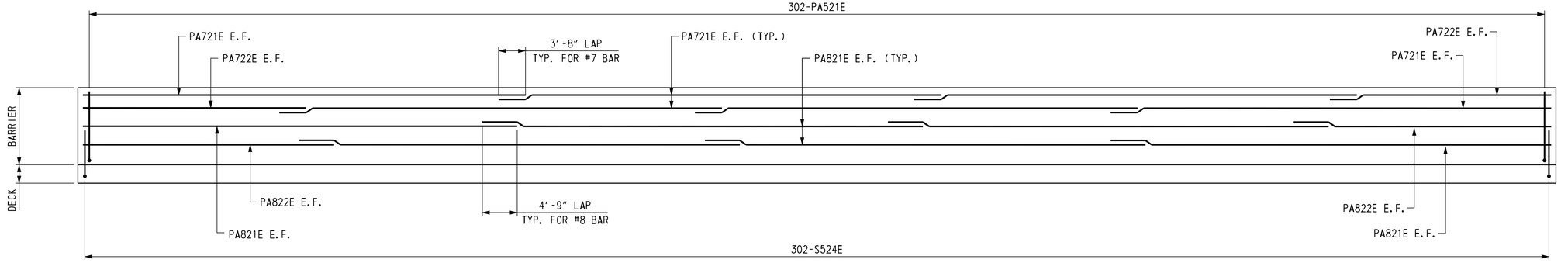
US 301 MAINLINE OVER TRIBUTARY TO SANDY BRANCH BRIDGE DECK AND BARRIER REINFORCEMENT 1

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



PLAN - NORTHBOUND ROADWAY DECK REINFORCEMENT

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



ELEVATION - NORTHBOUND ROADWAY DECK AND BARRIER REINFORCEMENT

NOT TO SCALE

CROSS REFERENCE NOTES:

1. FOR PROJECT NOTES, SEE DWG. 1-477 PN-2.
2. FOR TYPICAL SECTION, SEE SEE DWG. 1-477 DK-5.
3. FOR REINFORCING BAR LIST, SEE DWG. 1-477 DK-6.
4. FOR BRIDGE DECK TEXTURE NOTES, SEE DWG. 1-477 DK-2 (2)

U:\Projects\AA\21987385\CAD\Bridge\BR2-5\dk04_BR2-5_US301.dgn
10/8/2015
Steve_Lambert

DELAWARE DEPARTMENT OF TRANSPORTATION

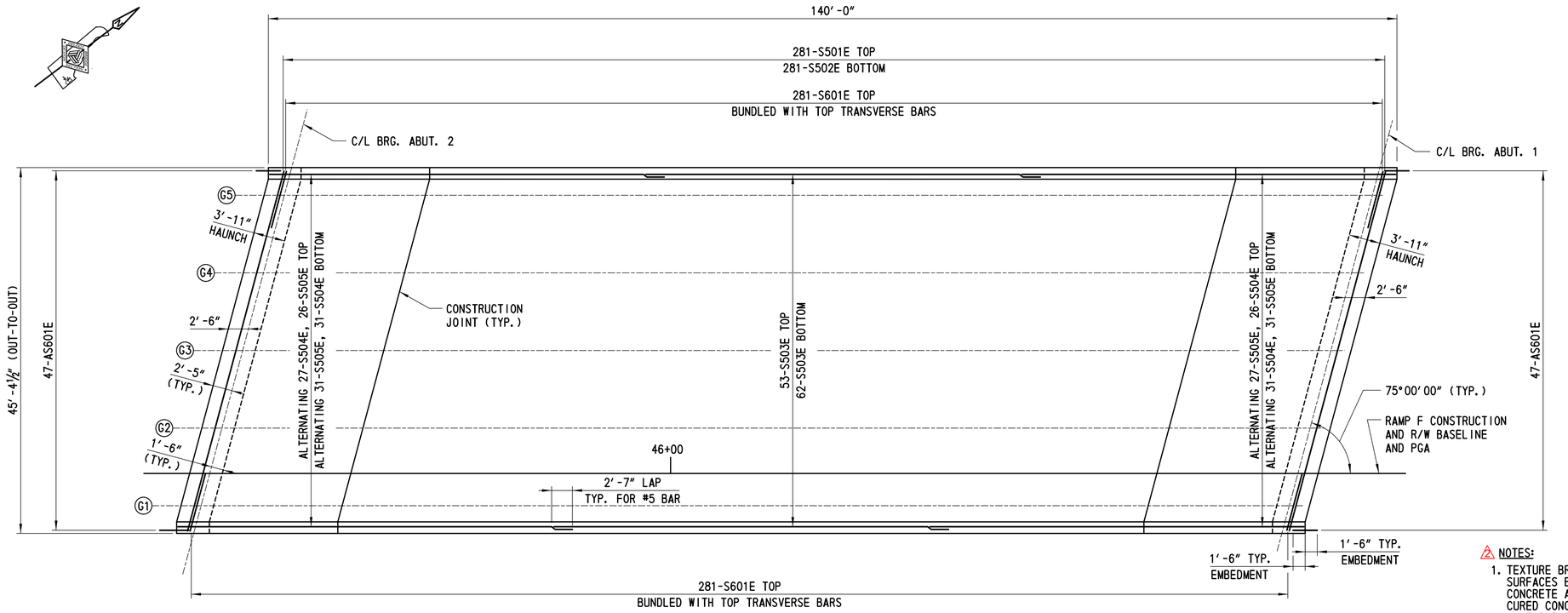
ADDENDUMS / REVISIONS	
(2) ADDED NOTE 4, RFK	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

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

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

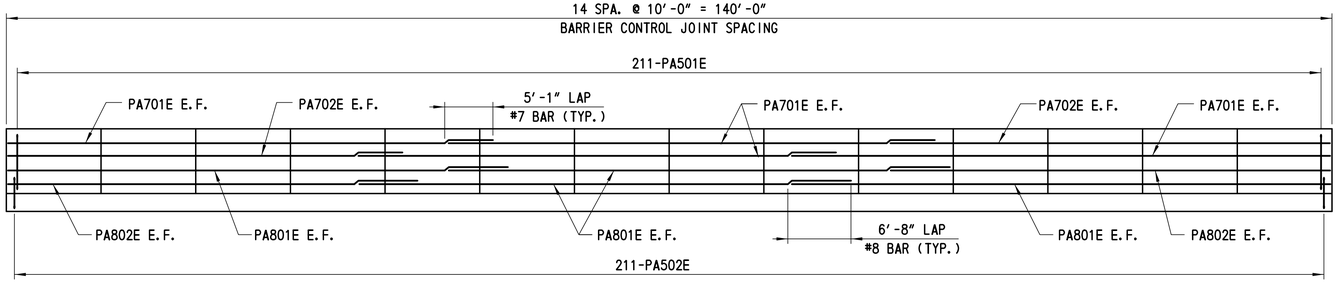


BRIDGE DECK REINFORCEMENT PLAN

SCALE: ⅛″= 1′-0″

NOTE:

BARRIER REINFORCEMENT NOT SHOWN IN PLAN VIEW FOR CLARITY.



ELEVATION - DECK AND BARRIER REINFORCEMENT

NTS

⚠ NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.
2. SAW GROOVES APPROXIMATELY 1/8″+0″, - 1/16″ WIDE, 3/16″ ±1/16″ DEEP, AND ON 3/4″ ±1/16″ (NOMINAL) CENTERS. TERMINATE GROOVES 18″±1″ FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18″ FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6″ OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6″ OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6″ IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN 1/2″ WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, ±1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN WASHED AND CLEAN CONDITION.
3. AFTER THE CONCRETE HAS CURED, TEST THE SURFACES OF ALL DECKS, APPROACH SLABS, AND TRANSITION SLABS FOR SMOOTHNESS USING AN INERTIAL PROFILER. TESTING AND CORRECTIVE WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIAL PROVISION SECTION 501.14, PAVEMENT SMOOTHNESS TESTING. SEAL OR REPAIR ANY CRACKS IN THE DECKS, APPROACH SLABS, OR TRANSITION SLABS WHICH OCCUR PRIOR TO OPENING TO TRAFFIC, IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. SOUND THE RIDING SURFACES, THEN REMOVE AND REPLACE ANY DELAMINATED AREAS IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.

CROSS REFERENCE NOTES:

1. FOR TYPICAL DECK AND PARAPET REINFORCEMENT SECTIONS, SEE DWG. NO. 1-479 DK-3.
2. FOR FINISHED DECK ELEVATIONS, SEE DWG. NO. 1-479 FD-1.
3. FOR REINFORCING BAR SCHEDULE, SEE DWG. NO. 1-479 BR-3.
4. FOR BARRIER CONTROL JOINT DETAIL, SEE DWG. NO. 1-479 DK-3.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
⚠ DECK TEXTURE NOTES ADDED, AH	

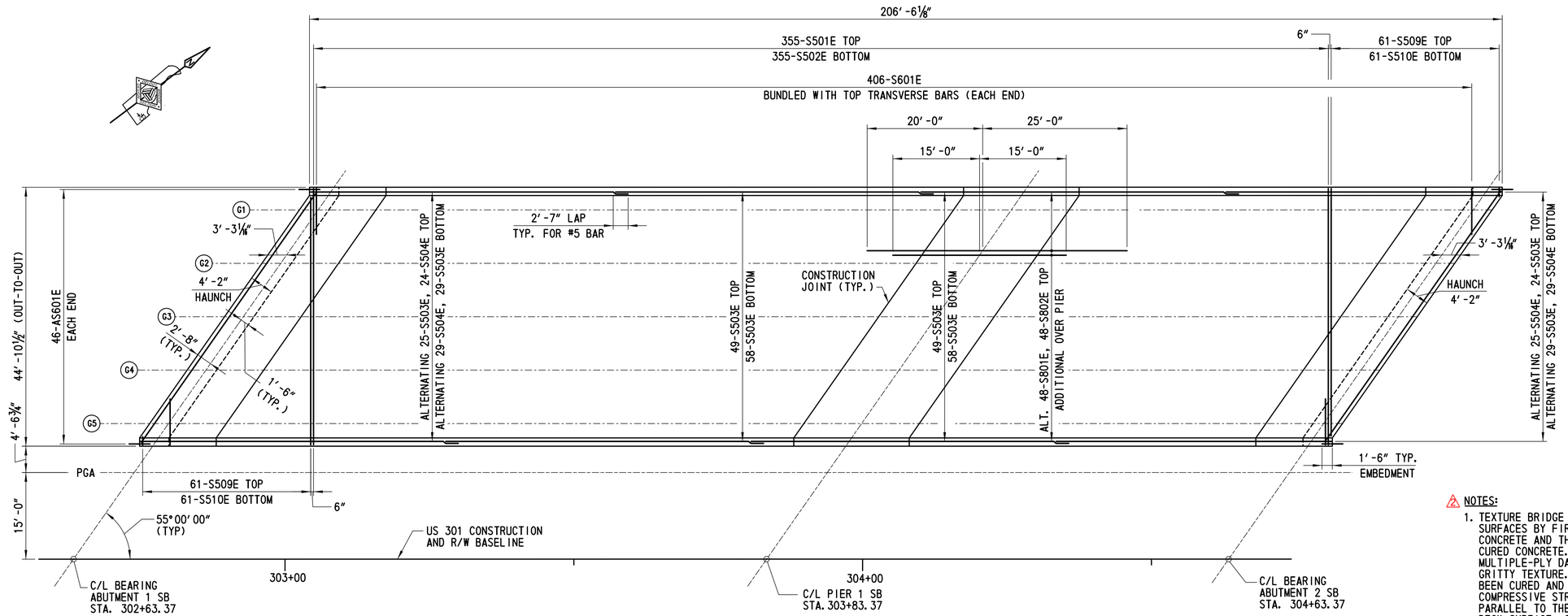
SCALE
0 4 16
2 8
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-479
T200911303	DESIGNED BY:	EE
COUNTY	CHECKED BY:	BCW
NEW CASTLE		

RAMP F OVER SANDY BRANCH
DECK AND BARRIER REINFORCEMENT

1-479 DK-2
SHEET NO.
551
TOTAL SHTS.
1256

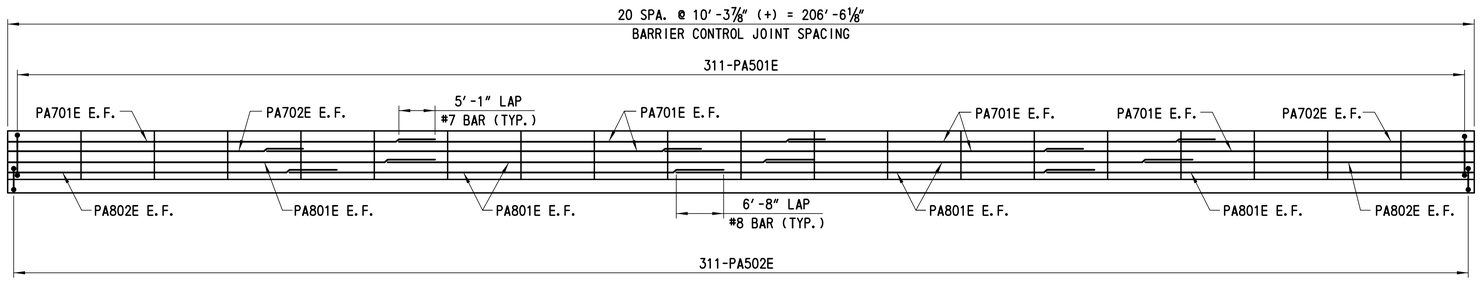


SB BRIDGE DECK REINFORCEMENT PLAN

SCALE: ½″= 1′-0″

NOTE:

BARRIER REINFORCEMENT NOT SHOWN IN PLAN VIEW FOR CLARITY.



ELEVATION - DECK AND BARRIER REINFORCEMENT

NTS

⚠ NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.
2. SAW GROOVES APPROXIMATELY 1/8″+0″, - 1/16″ WIDE, 3/16″ ±1/16″ DEEP, AND ON 3/4″ ±1/16″ (NOMINAL) CENTERS. TERMINATE GROOVES 18″±1″ FROM THE FACE OF THE PARAPET OR CURB LINE. IF METAL DRAINAGE INLETS EXTEND MORE THAN 18″ FROM THE PARAPET OR CURB LINE, ALL GROOVES ON THE BRIDGE DECK SURFACE ARE TO END WITHIN 6″ OF THE DRAINAGE INLET PERIMETER. AT SKEWED METAL EDGED EXPANSION JOINTS, END ALL GROOVES WITHIN 6″ OF THE JOINT LEAVING NO UNGROOVED SURFACE ADJACENT TO EACH SIDE OF THE JOINT GREATER THAN 6″ IN WIDTH ON THE DECK SIDE OF THE EXPANSION JOINTS. PRODUCE GROOVES THAT ARE CONTINUOUS ACROSS CONSTRUCTION JOINTS OR OTHER JOINTS IN THE CONCRETE DECK SURFACE LESS THAN 1/2″ WIDE. DO NOT SAW GROOVES FOR A WIDTH OF 10 INCHES, ±1 INCH AT LOCATIONS OF PERMANENT STRIPING LINES IN ORDER TO PROVIDE A SMOOTH SURFACE FOR PLACEMENT OF PERMANENT ROADWAY STRIPING. PERFORM CONTINUOUS REMOVAL OF ALL WASTE MATERIALS, INCLUDING SLURRY, RESULTING FROM THE GROOVING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 106.09 AND 110.17, LEAVING ALL SURFACES IN WASHED AND CLEAN CONDITION.
3. AFTER THE CONCRETE HAS CURED, TEST THE SURFACES OF ALL DECKS, APPROACH SLABS, AND TRANSITION SLABS FOR SMOOTHNESS USING AN INERTIAL PROFILER. TESTING AND CORRECTIVE WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIAL PROVISION SECTION 501.14, PAVEMENT SMOOTHNESS TESTING. SEAL OR REPAIR ANY CRACKS IN THE DECKS, APPROACH SLABS, OR TRANSITION SLABS WHICH OCCUR PRIOR TO OPENING TO TRAFFIC, IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. SOUND THE RIDING SURFACES, THEN REMOVE AND REPLACE ANY DELAMINATED AREAS IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.

CROSS REFERENCE NOTES:

1. FOR TYPICAL DECK AND PARAPET REINFORCEMENT SECTIONS, SEE DWG. NO. 1-480 DK-5.
2. FOR FINISHED DECK ELEVATIONS, SEE DWG. NOS. 1-480 FD-1 AND 1-480 FD-2.
3. FOR REINFORCING BAR SCHEDULE, SEE DWG. NO. 1-480 BR-6.
4. FOR DECK POURING SEQUENCE, SEE DWG. NO. 1-480 DK-1.
5. FOR BARRIER CONTROL JOINT DETAIL. SEE DWG. NO. 1-480 DK-5.

DELAWARE
DEPARTMENT OF TRANSPORTATION

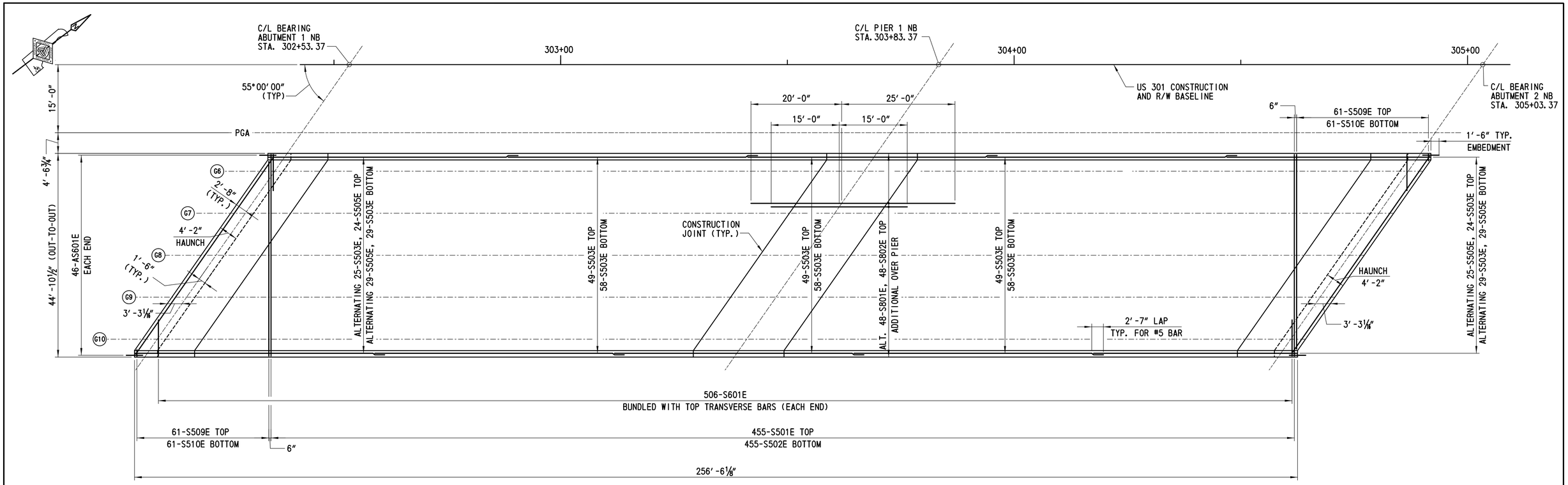
ADDENDUMS / REVISIONS	
⚠ DECK TEXTURE NOTES ADDED, AH	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	1-480N&S
DESIGNED BY:	EE
CHECKED BY:	BCW

US 301 MAINLINE OVER SANDY BRANCH
SB DECK AND BARRIER REINFORCEMENT

	1-480 DK-2
SHEET NO.	614
TOTAL SHTS.	1256

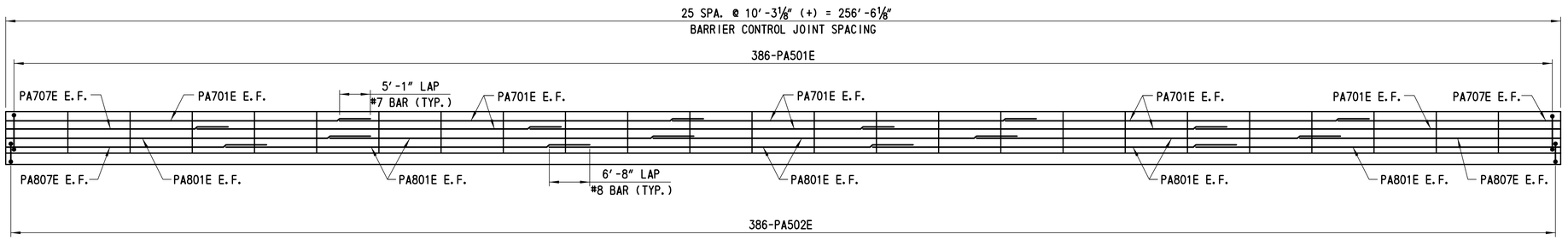


NB BRIDGE DECK REINFORCEMENT PLAN

SCALE: ½" = 1'-0"

NOTE:

BARRIER REINFORCEMENT NOT SHOWN IN PLAN VIEW FOR CLARITY.



ELEVATION - DECK AND BARRIER REINFORCEMENT

NTS

CROSS REFERENCE NOTES:

1. FOR TYPICAL DECK AND PARAPET REINFORCEMENT SECTIONS, SEE DWG. NO. 1-480 DK-5.
2. FOR FINISHED DECK ELEVATIONS, SEE DWG. NOS. 1-480 FD-3 AND 1-480 FD-4.
3. FOR REINFORCING BAR SCHEDULE, SEE DWG. NO. 1-480 BR-7.
4. FOR DECK POURING SEQUENCE, SEE DWG. NO. 1-480 DK-3.
5. FOR BARRIER CONTROL JOINT DETAIL, SEE DWG. NO. 1-480 DK-5.
6. FOR BRIDGE DECK TEXTURE NOTES, SEE DWG. 1-480 DK-2.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

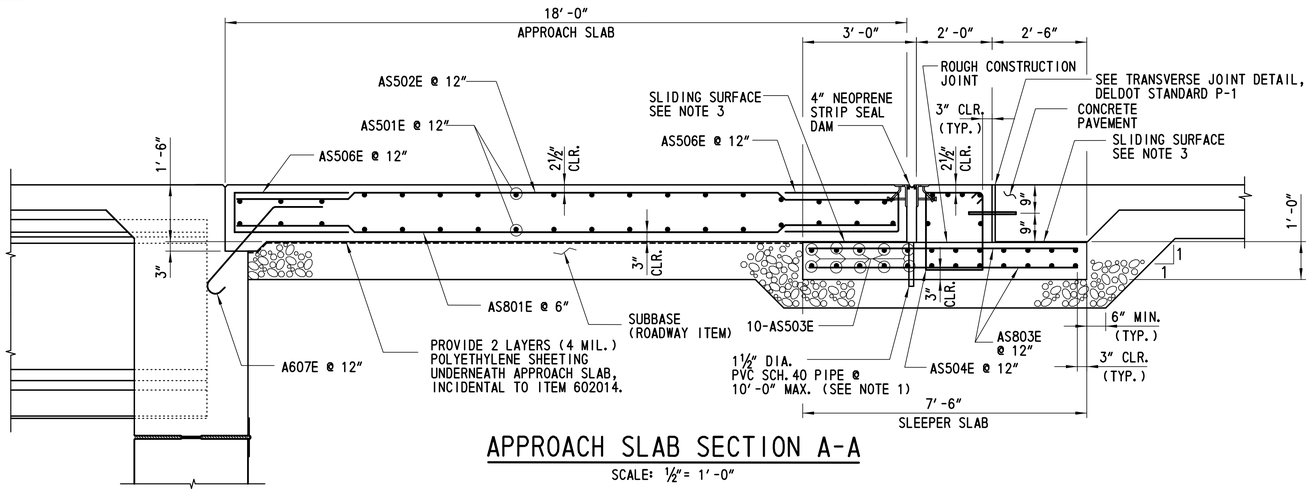
2 CROSS REFERENCE NOTE ADDED, AH	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	1-480N&S
DESIGNED BY:	EE
CHECKED BY:	BCW

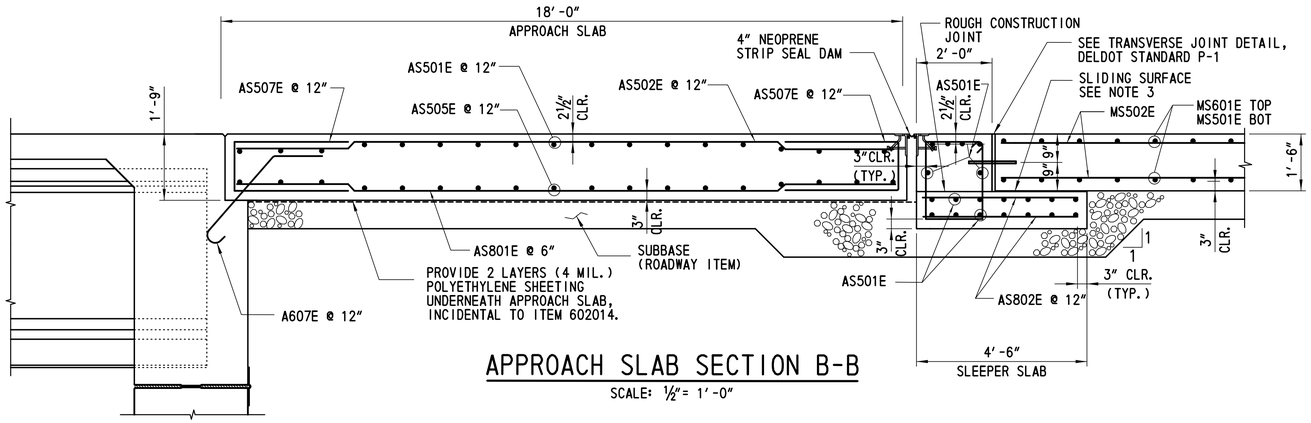
US 301 MAINLINE OVER SANDY BRANCH
NB DECK AND BARRIER REINFORCEMENT

	1-480 DK-4
SHEET NO.	616
TOTAL SHTS.	1256



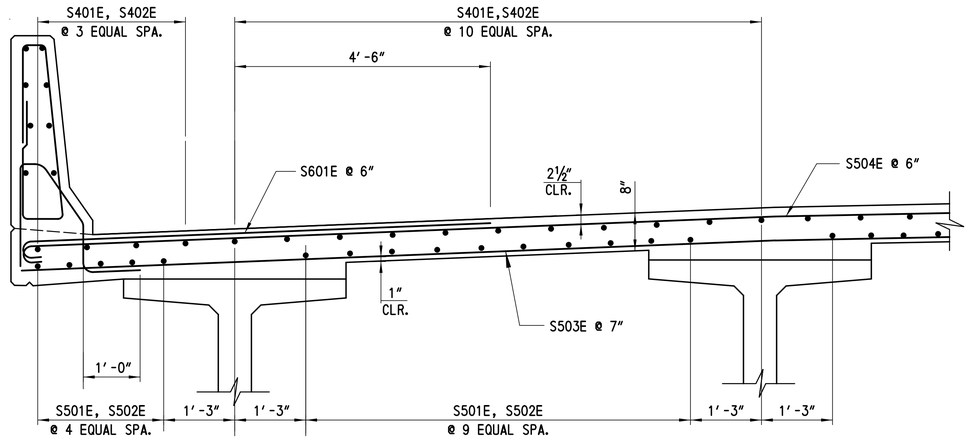
APPROACH SLAB SECTION A-A

SCALE: ½″= 1′-0″



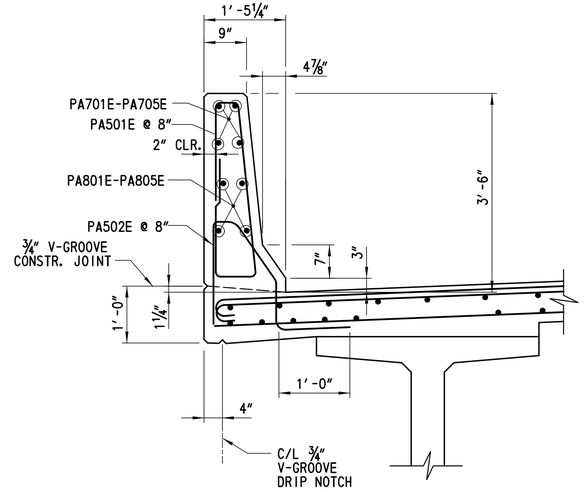
APPROACH SLAB SECTION B-B

SCALE: ½″= 1′-0″



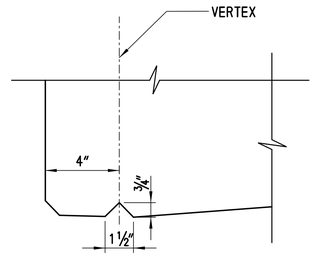
TYPICAL DECK REINFORCEMENT SECTION

SCALE: ¾″= 1′-0″



TYPICAL BARRIER REINFORCEMENT SECTION

(CONDUIT NOT SHOWN FOR CLARITY)
SCALE: ¾″= 1′-0″



DRIP NOTCH DETAIL

SCALE: 3″= 1′-0″

⚠2 NOTES:

1. TEXTURE BRIDGE DECK, APPROACH SLAB, AND TRANSITION SLAB SURFACES BY FIRST DRAGGING A FABRIC OVER THE FINAL SCREEDED CONCRETE AND THEN BY SAWING LONGITUDINAL GROOVES IN THE CURED CONCRETE. AFTER FINAL SCREEDING OF THE SURFACE, DRAG MULTIPLE-PLY DAMP FABRIC OVER THE SURFACE TO PROVIDE A GRITTY TEXTURE. AFTER THE BRIDGE DECK OR APPROACH SLAB HAS BEEN CURED AND ATTAINED AT LEAST 75% OF THE 28-DAY DESIGN COMPRESSIVE STRENGTH, SAW UNIFORMLY PRONOUNCED GROOVES PARALLEL TO THE CENTERLINES WITHOUT DAMAGING THE CONCRETE DECK SURFACE. COMPLETE A LONGITUDINAL GROOVING OPERATION THAT RESULTS IN A UNIFORMLY GROOVED DECK SURFACE.

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3. AFTER THE CONCRETE HAS CURED, TEST THE SURFACES OF ALL DECKS, APPROACH SLABS, AND TRANSITION SLABS FOR SMOOTHNESS USING AN INERTIAL PROFILER. TESTING AND CORRECTIVE WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIAL PROVISION SECTION 501.14, PAVEMENT SMOOTHNESS TESTING. SEAL OR REPAIR ANY CRACKS IN THE DECKS, APPROACH SLABS, OR TRANSITION SLABS WHICH OCCUR PRIOR TO OPENING TO TRAFFIC, IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. SOUND THE RIDING SURFACES, THEN REMOVE AND REPLACE ANY DELAMINATED AREAS IN A MANNER APPROVED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.

4. PVC PIPE TO BE INCIDENTAL TO ITEM 602014.

CROSS REFERENCE NOTES:

1. FOR PLAN VIEW OF DECK AND APPROACH SLAB, SEE DWG. 1-507 DK-1 AND 1-507 DK-2.
2. FOR EXPANSION JOINT DETAIL, SEE DWG. 1-507 EX-1.
3. TROWEL SMOOTH AND PLACE 2 LAYERS OF 4 MIL. POLYETHYLENE SHEETING AS BOND BREAKER.
4. FOR CONDUIT DETAILS, SEE DWG. TS-1.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
⚠2 DECK TEXTURE NOTES ADDED, AH	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-507N&S
T200911303	DESIGNED BY: LT	
COUNTY	CHECKED BY: JW	
NEW CASTLE		

US 301 MAINLINE OVER CONNECTOR ROAD
DECK AND APPROACH SLAB REINFORCEMENT

1-507 DK-3	
SHEET NO.	654
TOTAL SHTS.	1256

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
207000	EXCAVATION AND BACKFILL FOR STRUCTURES	CY	2,600
~~302007~~ △1 302005	GRADED AGGREGATE BASE COURSE, TYPE B (FOR FOUNDATION STABILIZATION)	TON	570
602001	PORTLAND CEMENT CONCRETE MASONRY, CLASS A	CY	140
602506	PRECAST CONCRETE CULVERT	LS	1
604000	BAR REINFORCEMENT, EPOXY COATED	LB	26,000
712531	CHANNEL BED FILL	CY	280
713001	GEOTEXTILE (FOR GRADED AGGREGATE BASE)	SY	1,060
715001	PERFORATED PIPE UNDERDRAIN, 6"	LF	45
727009	CHAIN LINK FENCE	LF	100

INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	TITLE
667	1-508A PE-1	PLAN AND SECTION
668	1-508A PN-1	INDEX OF DRAWINGS
669	1-508A CU-1	ELEVATIONS AND SECTIONS
670	1-508A CU-2	CAST IN PLACE CULVERT PLAN
671	1-508A CU-3	UPSTREAM FOOTING PLAN
672	1-508A CU-4	WINGWALL REINFORCEMENT 1
673	1-508A CU-5	DOWNSTREAM FOOTING PLAN
674	1-508A CU-6	WINGWALL REINFORCEMENT 2
675	1-508A CU-7	CIP CULVERT REINFORCEMENT 1
676	1-508A CU-8	CIP CULVERT REINFORCEMENT 2
677	1-508A CU-9	REINFORCING BAR LIST 1
678	1-508A CU-10	REINFORCING BAR LIST 2
679	1-508A CU-11	PRECAST BOX REINFORCEMENT
680	1-508A BO-1	BORINGS 1
681	1-508A BO-2	BORINGS 2

PROJECT NOTES

SPECIFICATIONS: DELDOT BRIDGE DESIGN MANUAL, MAY 2005, WITH JANUARY 2008 REVISIONS; DELDOT STANDARD SPECIFICATIONS, 2001, WITH 2009 REVISIONS; AASHTO, LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, WITH 2009 INTERIM; US 301 DESIGN MANUAL.

DESIGN: LRFD DESIGN METHOD.

LOADING: HL 93 TRUCK LOADING.

CONCRETE: ALL CAST IN PLACE CONCRETE SHALL BE CLASS A (4,500 PSI). WINGWALLS AND HEADWALLS SHALL BE CAST IN PLACE. ALL PRECAST CONCRETE SHALL BE f'c = 5000 PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL BE AASHTO M31, GRADE 60 UNLESS OTHERWISE NOTED AND SHALL BE PROTECTED WITH FUSION BONDED EPOXY CONFORMING TO AASHTO M284 WHERE INDICATED ON PLANS. ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF TWO (2) INCHES UNLESS OTHERWISE SPECIFIED ON THE PLANS.

POST TENSIONING STEEL: FOUR LONGITUDINAL ONE HALF INCH DIAMETER, 270 ksi LOW RELAXATION POLYPROPYLENE SHEATHED PRESTRESSING STRANDS WITH CORROSION INHIBITOR OR OTHER APPROVED POST-TENSIONING DEVICE, SHALL BE PLACED IN POSITION THROUGH PREFORMED HOLES IN THE CORNERS OF PRECAST UNITS. THESE SHEATHED PRESTRESSING STRANDS SHALL BE STRESSED TO A TENSION OF 31 KIPS PER STRAND. THE MINIMUM ULTIMATE STRENGTH OF EACH STRAND SHALL BE 41 KIPS.

HYDRAULIC DATA:
DRAINAGE AREA = 0.70 SQ. MI.
DESIGN FREQUENCY = 100 YEARS
DESIGN FLOOD ELEVATION = 62.5
50 YEAR FLOOD ELEVATION = 61.4
DESIGN DISCHARGE = 509 CFS
PROPOSED OPENING = 72 SF

CULVERT 1-508A IS A CLOSED BOTTOM BOX CULVERT. CLOSED CELL CULVERTS DO NOT REQUIRE A SCOUR ASSESSMENT WITH FLOW NOT CONTACTING NATIVE SOIL. A PRE-FORMED SCOUR POOL IS DESIGNED TO PROTECT THE OUTLET FROM POTENTIAL SCOUR AND SLOW OUTLET VELOCITY PRIOR TO DISCHARGE ENTERING THE NATURAL CHANNEL DOWNSTREAM OF THE CULVERT.

POST-TENSIONING NOTES:

1. SHOW ALL POST-TENSIONING DETAILS ON SHOP DRAWINGS.
2. SNUG FIT ALL JOINTS BEFORE POST-TENSIONING.
△2 ~~3. INSTALL STRANDS IN PRECAST SECTIONS. STRESS EACH STRAND TO AN EFFECTIVE FORCE OF 10 PSI OVER THE CROSS SECTION OF ANY SECTION. CHECK RAM AREA AND CALIBRATION CURVES OF EQUIPMENT FURNISHED FOR GAGE PRESSURES.~~
△2 ~~4. COMPLETE TENSIONING IN THREE PASSES: ONE THIRD, ONE HALF AND FULL POST TENSIONING FORCE. FIRST AND SECOND TENSIONINGS MAY BE ALTERED AS REQUIRED TO MAINTAIN PROPER ALIGNMENT OF THE CULVERT. WHERE MORE THAN EIGHT STRANDS ARE REQUIRED, TENSION ADDITIONAL STRANDS SIMILARLY AROUND THE CENTRAL AXIS.~~
△2 3. ~~5.~~ AFTER STRESSING, GROUT ALL STRAND DUCTS, RECESSES AND BLOCKOUTS.
△2 ~~6. SUBMIT POST TENSIONING COMPUTATIONS WITH SHOP DRAWINGS SHOWING THE STRAND PATTERN AND REQUIRED POST TENSIONING FORCE. BASE DESIGN UPON THE FOLLOWING CRITERIA:~~
~~a. THE TOTAL POST TENSION FORCE IS THE SUM OF THE FORCE REQUIRED TO OVERCOME SOIL FRICTION PLUS THE FORCE REQUIRED TO CREATE A PRESSURE OF 10 PSI OVER THE CROSS SECTION OF THE CULVERT.~~
~~b. MAXIMUM TOTAL POST TENSION FORCE SHOULD NOT CREATE A PRESSURE GREATER THAN 100 PSI OVER THE CROSS SECTION OF ANY SEGMENT.~~
~~c. MAXIMUM LOAD ON A ½" DIAMETER STRAND IS 31 KIPS.~~
~~d. USE A COEFFICIENT OF SOIL FRICTION OF 0.6.~~
△2 4. ~~c.~~ PLACE STRANDS SYMMETRICALLY ABOUT BOTH AXES OF THE CULVERT CROSS SECTION.
△2 5. ~~f.~~ LOCATE STRANDS SO AS TO NOT INTERFERE WITH REINFORCEMENT DETAILS.
△2 6. ~~7.~~ ALL POST-TENSIONING MUST BE WITNESSED AND APPROVED BY THE ENGINEER.
△2 7. ~~8.~~ AFTER POST-TENSIONING IS APPROVED, CUT STRANDS TO PROVIDE A MINIMUM OF 2½" CLEAR FROM OUTSIDE FACE OF CONCRETE AND COAT RECESS WITH EPOXY BONDING COMPOUND. FILL ALL RECESSES WITH NON-SHRINK GROUT.
△2 8. ~~9.~~ POST-TENSION AND GROUT BEFORE BACKFILLING AND PLACING TRAFFIC OVER THE BOX. AFTER GROUTING, WAIT AT LEAST TWO (2) DAYS BEFORE BACKFILLING.
~~10. ALL POST TENSIONING CHUCKS MUST BE OF THE REUSABLE TYPE. OPERATORS MUST EXERCISE PROPER PRECAUTIONS WHEN RE-ALIGNING WEDGES AFTER RELEASE OF TENDONS AND PRIOR TO RETENSIONING AND RE-SEATING.~~
△2 9. ~~11.~~ KEEP JOINT CLEAN AT POST-TENSIONING STAGE.
~~12. POST TENSIONING DUCTS MAY BE PLACED WITHIN THE WALLS OR SLAB ANYWHERE BETWEEN THE LAYERS OF REINFORCEMENT TO AVOID THE SLOPED PORTION OF THE JOINT SO AS TO PROMOTE SEALING OF THE DUCT.~~
~~13. REMOVE A MINIMAL AMOUNT OF POLYSTRAND TO ACCOMMODATE INTERMEDIATE SPLICES AT BOX ENDS.~~
△1 10. ~~14.~~ AS AN ALTERNATE TO A POST-TENSIONING STRAND SYSTEM, THE CONTRACTOR MAY USE AN EQUIVALENT POST-TENSIONING THREADED BAR SYSTEM WITH EACH UNIT TENSIONED AND COUPLE NUTS PROVIDED TO LINK THE ADJACENT UNITS TOGETHER.

PRECAST BOX CULVERT NOTES:

1. DESIGN PLANS / WORKING DRAWINGS

INFORMATION PERTAINING TO THE PRECAST REINFORCED CONCRETE BOX CULVERT IS INTENDED TO SERVE AS AN INDICATION OF THE TYPE OF CONSTRUCTION ACCEPTABLE FOR USE. THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT FOR APPROVAL A COMPLETE SET OF DETAILED SHOP DRAWINGS FOR THE PRECAST CONCRETE UNITS INCLUDING:

A. AN OVERALL PLAN SHOWING ALL UNITS TOGETHER AND DETAILS OF EACH TYPE OF UNIT .
B. A PLAN VIEW OF REINFORCEMENT FOR ANY IRREGULAR SHAPED SECTIONS.
C. REINFORCING BAR LIST.
D. BILL OF MATERIALS INCLUDING ALL ACCESSORIES.
E. METHOD AND SEQUENCE OF POST-TENSIONING.

2. PRECAST ELEMENTS, ACCESSORIES AND INSTALLATION

PAYMENT FOR ITEM 602506 - PRECAST CONCRETE CULVERT SHALL INCLUDE:

A. ALL PRECAST ELEMENTS.
B. ALL ASSOCIATED REINFORCEMENT.
C. ALL ACCESSORIES (INCLUDING, BUT NOT LIMITED TO, CONCRETE FINISH, POST-TENSIONING TENDONS, POST-TENSIONING PVC CONDUIT SLEEVES, CONNECTION PLATES, GROUT, JOINT WRAP, JOINT GASKETS, THREADED INSERTS) UNLESS NOTED OTHERWISE.
D. DELIVERY AND INSTALLATION OF ALL PRECAST ELEMENTS AND ALL ACCESSORIES.

3. JOINTS BETWEEN PRECAST SECTIONS

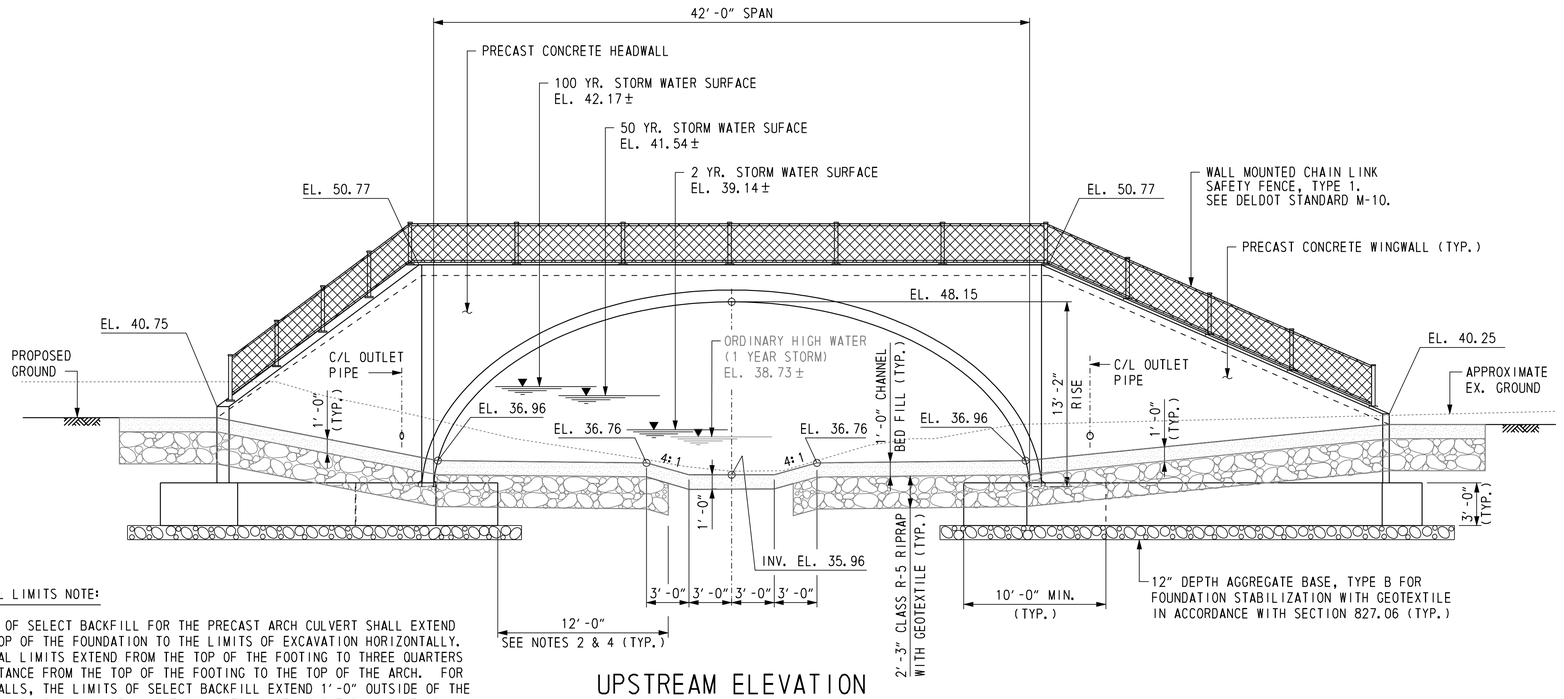
A. FLEXIBLE PREFORMED GASKET MATERIAL IN ACCORDANCE WITH ASTM C990 SHALL BE PROVIDED AT THE JOINTS BETWEEN ALL PRECAST UNITS IN ORDER TO MAKE THE JOINTS WATERTIGHT. AFTER INSTALLATION, THE GASKETS SHALL BE COMPRESSED SUCH THAT GAPS ARE NOT VISIBLE.
B. ALL JOINTS BETWEEN PRECAST BOX CULVERT SECTIONS SHALL BE TONGUE AND GROOVE.
C. THE LOCATIONS OF THE JOINTS IN THE BOX CULVERT SHALL BE DETERMINED BY THE PRECASTER AND SUBMITTED IN THE SHOP DRAWINGS FOR APPROVAL.
D. THE REINFORCEMENT SHALL HAVE 2 INCH COVER AT THE END OF EACH SECTION AND MEET OR EXCEED THE MINIMUM AREA OF STEEL PER FOOT DENOTED IN THE PLANS.
E. ALL JOINT EXTERIORS SHALL BE COVERED WITH A MINIMUM 9 INCH WIDE GEOTEXTILE OR WRAP CENTERED ON THE JOINT TO PREVENT LOSS OF FILL MATERIAL. THE GEOTEXTILE OR WRAP SHALL COMPLY WITH ASTM C877 OR PETROLAC, PHILLIPS FIBER CORPORATION.

4. MISCELLANEOUS NOTES

A. ALL EXPOSED SURFACES SHALL BE PROTECTED WITH A WATER MISCIBLE, PENETRATING SILANE SEALER BEFORE BACKFILLING.
B. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾" UNLESS OTHERWISE NOTED.
C. SUGGESTED PLACEMENT OF PRECAST SEGMENTS: CONTRACTOR SHALL UTILIZE A CRANE TO LIFT EACH UNIT FROM TRAILER HOLDING IN PLACE WHILE INSTALLATION CREW PULLS THE UNITS TOGETHER WITH COME-ALONGS OR AN INTERNALLY ANCHORED SYSTEM.
D. FOR PRECAST UNITS ADJACENT TO THE CAST IN PLACE BOX SEGMENTS, #5 @12" EPOXY COATED CONNECTING DOWELS, WITH 1'-3" MINIMUM EMBEDMENT, SHALL BE PROVIDED AT THE CENTER OF THE TOP, BOTTOM AND SIDES OF THE BOX CULVERT SECTION.

CROSS REFERENCE NOTE:

1. FOR SEQUENCE OF CONSTRUCTION, SEE CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS FOR PHASE 1-1 AND PHASE 1-2, SEE DWGS. CS-95 THRU CS-97.
2. FOR PAYMENT OF CLASS R-5 RIPRAP AND GEOTEXTILE UNDER RIPRAP, SEE STREAM RESTORATION PLANS, DWGS. SR-01 THRU SR-03.

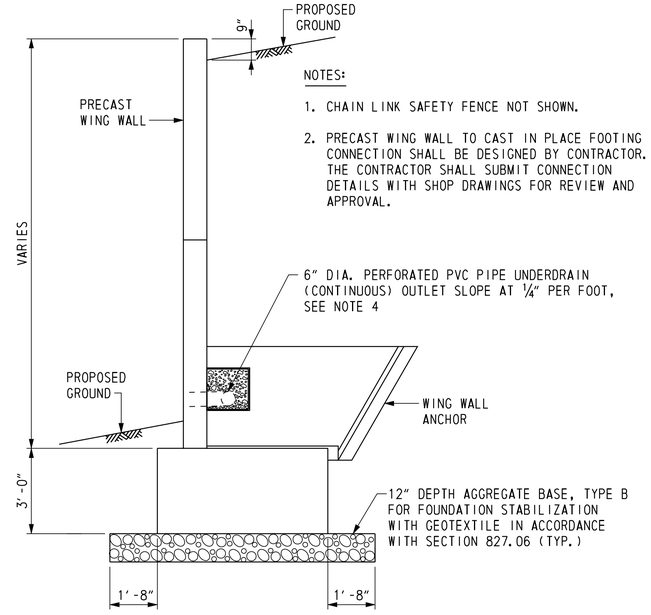


UPSTREAM ELEVATION

LOOKING DOWNSTREAM
SCALE: 3/16″ = 1′-0″

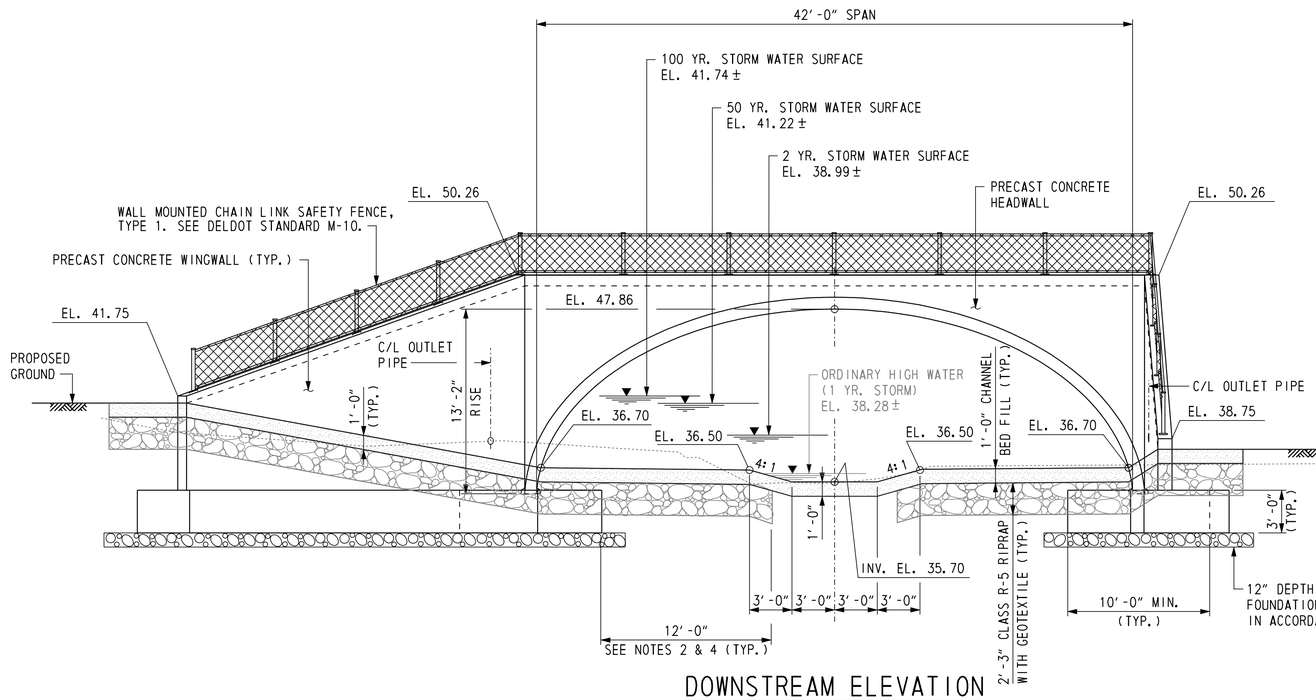
△2 SELECT FILL LIMITS NOTE:

THE LIMITS OF SELECT BACKFILL FOR THE PRECAST ARCH CULVERT SHALL EXTEND FROM THE TOP OF THE FOUNDATION TO THE LIMITS OF EXCAVATION HORIZONTALLY. THE VERTICAL LIMITS EXTEND FROM THE TOP OF THE FOOTING TO THREE QUARTERS OF THE DISTANCE FROM THE TOP OF THE FOOTING TO THE TOP OF THE ARCH. FOR THE WING WALLS, THE LIMITS OF SELECT BACKFILL EXTEND 1′-0″ OUTSIDE OF THE PRECAST ANCHORS TO 1′-0″ BELOW THE FINISHED GRADE AT THE BACK FACE OF THE WING WALL.



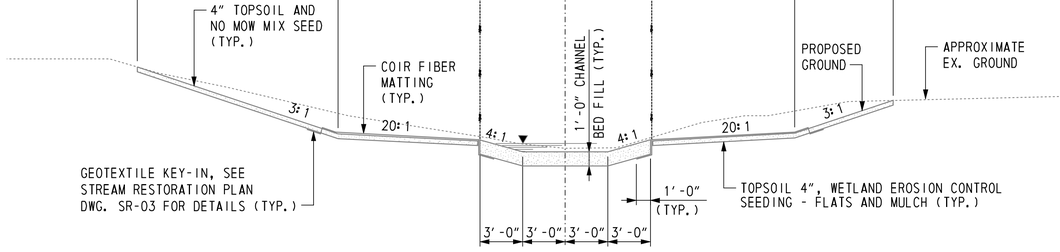
TYPICAL PRECAST WING WALL SECTION

SCALE: 3/8″ = 1′-0″



DOWNSTREAM ELEVATION

LOOKING UPSTREAM
SCALE: 3/16″ = 1′-0″



CHANNEL SECTION OUTSIDE OF CULVERT

SCALE: 3/16″ = 1′-0″

NOTES:

1. CONTRACTOR TO SURVEY THE EXISTING STREAM AT THE UPSTREAM AND DOWNSTREAM TIE-IN LOCATIONS TO ENSURE A SMOOTH TRANSITION FROM THE GRADED CHANNEL TO THE EXISTING STREAM.
2. INSIDE THE CULVERT, RECESS AND CHOKE RIPRAP WITH CHANNEL BED FILL (712531).
3. EXTEND RIPRAP TWELVE (12) FEET FROM EDGE OF FOOTING.
4. UNDERDRAIN DRAINAGE SYSTEM FOR WINGWALLS SHALL BE INCIDENTAL TO PRECAST CONCRETE ARCH ITEM.
5. UPSTREAM AND DOWNSTREAM OF THE CULVERT, RECESS AND CHOKE RIPRAP WITH CHANNEL BED FILL WITHIN THE POHW LINES. CHANNEL BED FILL SHALL EXTEND TO THE LIMITS OF CHANNEL GRADING WITHIN THE POHW LINES SHOWN ON THE PLANS. RIPRAP OUTSIDE THE POHW LINES SHALL BE RECESSED FOUR (4) INCHES, CHOKED WITH DE#57 STONE, BACKFILLED WITH FOUR (4) INCHES OF TOPSOIL, SEEDED WITH WETLAND EROSION CONTROL SEEDING - FLATS AND MULCHED IN ACCORDANCE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
6. STREAMBANK OUTSIDE OF THE CULVERT SHALL BE LIVE STAKED WITH DOGWOOD AND DISTURBED AREAS SHALL BE TOPSOILED, SEEDED WITH WETLAND EROSION CONTROL SEEDING - FLATS AND PLANTED WITH ALDER TEN (10) FEET ON CENTER IN ACCORDANCE WITH THE STREAM RELOCATION AND RESTORATION PLANS DWG. SR-03.

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10/9/2015
Steve_Lambert

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
△2 ADDED SELECT FILL LIMITS NOTE, RFK	

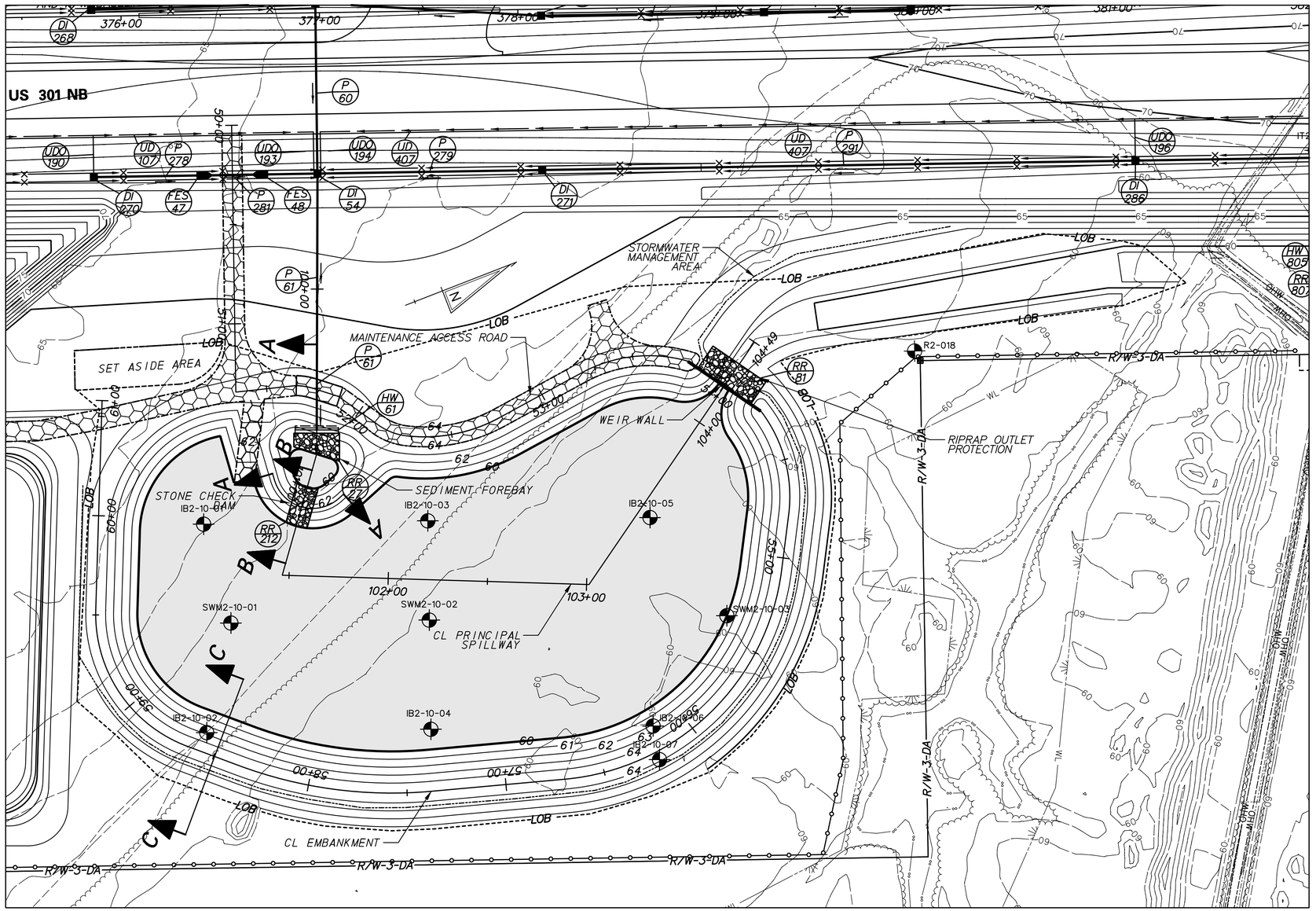
US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	1-508B
T200511301	DESIGNED BY: D.D. DIEHL	
COUNTY	CHECKED BY: T. W. FEROLI	
NEW CASTLE		

RAMP C OVER SANDY BRANCH

PRECAST ARCH CULVERT ELEVATIONS AND SECTIONS

1-508B CU-1	
SHEET NO.	684
TOTAL SHTS.	1256



PLAN - BMP 665 (BASIN 6)

POND DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION (FT)	STORAGE VOLUME (AC. FT)
QUALITY STORM (1-YR)	12.88	0.00	60.40	0.39
10 - YEAR	37.44	3.32	61.33	1.32
100 - YEAR	79.08	22.16	62.39	2.50

HAZARD CLASSIFICATION: CLASS A AS PER POND CODE 378
DRAINAGE AREA TO FACILITY: 11.54 AC
MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY BY INFILTRATION OF 1-YEAR STORM RUNOFF, WATER QUANTITY FOR 10 AND 100-YEAR STORMS.

RIPRAP SCHEDULE		
NO.	TYPE	AREA (SY)
81	R-5	50
27	R-4	29
212	R-4	25

CHECK CONSTRUCTION PLANS FOR SCHEDULE OF RIPRAP OUTSIDE OF THE BASIN AREA.

INFILTRATION BASIN CONSTRUCTION SEQUENCE

THE STORMWATER MANAGEMENT BASIN SHALL FUNCTION AS AN INFILTRATION FACILITY AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. PRIOR TO DISTURBANCE OF THE SITE UPSTREAM OF THE BASIN, INSTALL FENCE AROUND THE BASIN AREA TO PREVENT CONSTRUCTION EQUIPMENT AND STOCKPILED MATERIALS FROM ENTERING THE BASIN AREA AND COMPACTING THE SUBGRADE SOILS.
2. CONSTRUCT INFILTRATION BASIN AFTER ALL AREAS DRAINING TO THE BASIN HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONSTRUCTION. IF BASIN CONSTRUCTION CANNOT BE DELAYED UNTIL ITS DRAINAGE AREA IS STABILIZED, DIVERSION BERMS OR OTHER SUITABLE MEASURES SHOULD BE PLACED AROUND THE BASIN'S PERIMETER DURING ALL PHASES OF CONSTRUCTION TO DIVERT ALL RUNOFF AND SEDIMENT AWAY FROM THE BASIN. THESE DIVERSION MEASURES SHOULD NOT BE REMOVED UNTIL ALL CONSTRUCTION WITHIN THE BASIN'S DRAINAGE AREA IS COMPLETED AND THE DRAINAGE AREA STABILIZED.
3. SEE CONSTRUCTION PLANS FOR EROSION AND SEDIMENT CONTROL MEASURES.
4. CONSTRUCT THE INFILTRATION BASIN WITHOUT COMPACTING THE BASINS SUBGRADE SOILS. EXCAVATION SHALL BE PERFORMED BY CONSTRUCTION EQUIPMENT PLACED OUTSIDE THE BASIN, WHERE POSSIBLE. ALL EXCAVATION SHALL BE PERFORMED WITH THE LIGHTEST PRACTICAL EXCAVATION EQUIPMENT.
5. CONSTRUCT WEIR WALL, RIPRAP ENERGY DISSIPATER AT THE END OF PRINCIPAL SPILLWAY AND PARTIAL EMBANKMENT AS NEEDED TO INSTALL WEIR WALL. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR DUMPING.
6. EXCAVATE THE POND AND COMPLETE THE EMBANKMENT, GRADES AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE SOILS CLASSIFIED AS CH, CL, SC AND GG PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS, IF NECESSARY.
7. STABILIZE BASIN EMBANKMENT AND BOTTOM WITH PERMANENT SEEDING.
8. REMOVE EROSION AND SEDIMENT CONTROLS, WATER DIVERSION PRACTICES AND FENCE UPON FINAL STABILIZATION AND APPROVAL FROM INSPECTOR.
9. THE CONTRACTOR SHALL PROVIDE 'AS-BUILT' DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES SUCH AS PONDS, INFILTRATION BASINS, BIOFILTRATION SWALES, ETC. 'AS-BUILT'DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC. AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR.

PLANTING SCHEDULE

PERMANENT GRASS SEEDING - WET GROUND UP TO ELEVATION 61.00
PERMANENT GRASS SEEDING - DRY GROUND ABOVE ELEVATION 61.00
PLACE TOPSOIL ABOVE BASIN BOTTOM ELEVATION 60.0

POND QUANTITIES			
ITEM NO.	ITEM	QTY.	UNITS.
202000	EXCAVATION AND EMBANKMENT	1531	CY
2 272501	POND OUTLET STRUCTURE, 9 , SPECIAL	1	EACH
302011	DELAWARE NO. 3 STONE	547	TON
302012	DELAWARE NO. 57 STONE	12	TON
712005	R-4 RIPRAP	29	SY
712006	R-5 RIPRAP	50	SY
712020	R-4 RIPRAP	15	TON
713001	GEOTEXTILES, STABILIZATION	3688	SY
713003	GEOTEXTILES, RIPRAP	139	SY
733002	TOPSOILING, 6" DEPTH	7207	SY
734013	PERMANENT GRASS SEEDING, DRY GROUND	6727	SY
734015	PERMANENT GRASS SEEDING, WET GROUND	4966	SY

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
2 REVISED ITEM DESCRIPTION DRB

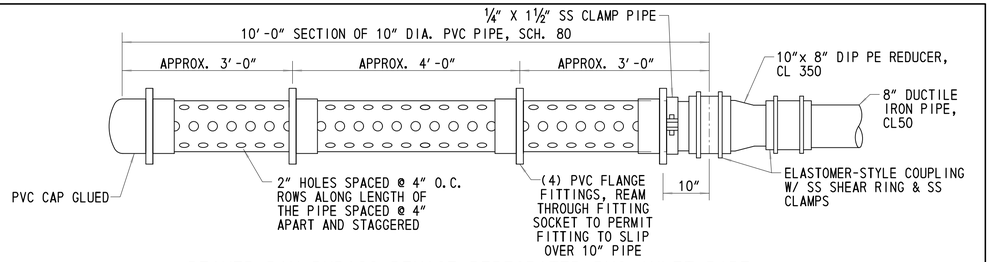
SCALE 0 30 60 90 FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

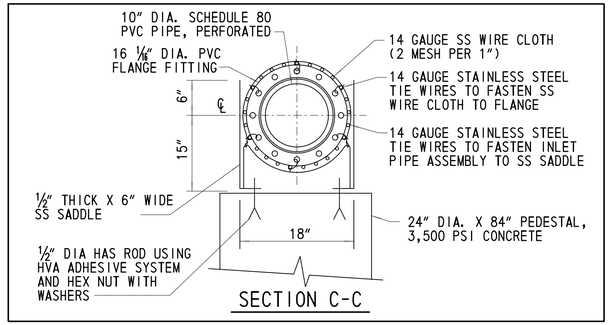
CONTRACT T200911303
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: BAS
CHECKED BY: JJW

STORMWATER MANAGEMENT DETAILS BMP 665 (BASIN 6)

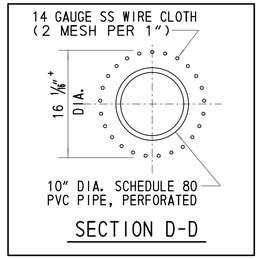
SW46
SHEET NO. 731
TOTAL SHTS. 1256



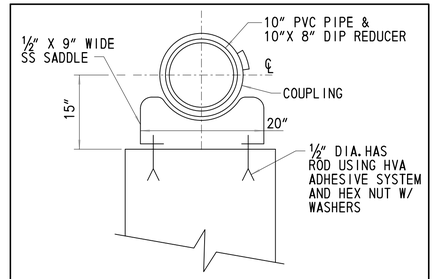
BEAVER DAM BYPASS DEVICE PERFORATED PVC INLET PIPE



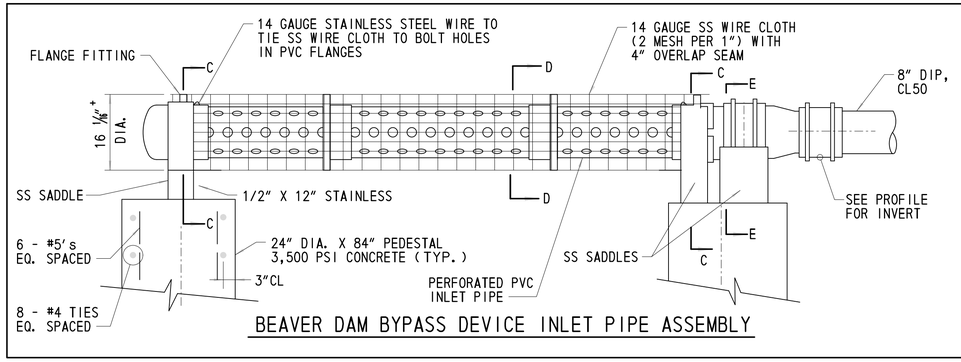
SECTION C-C



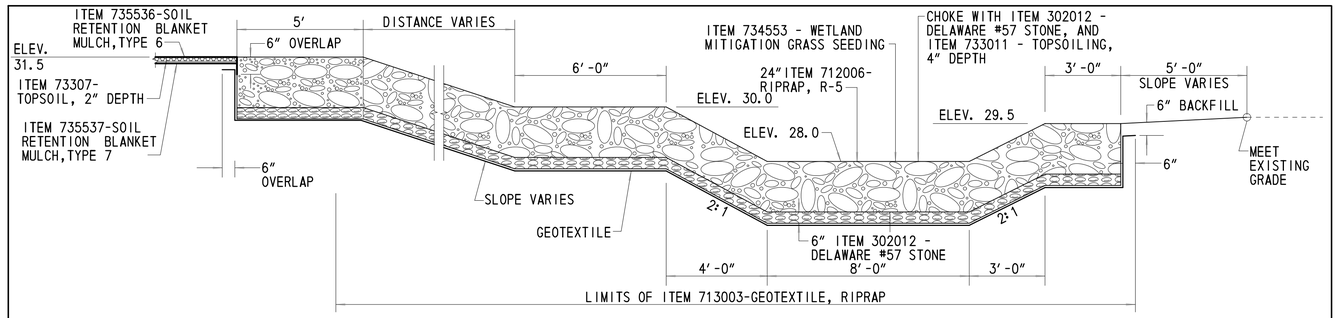
SECTION D-D



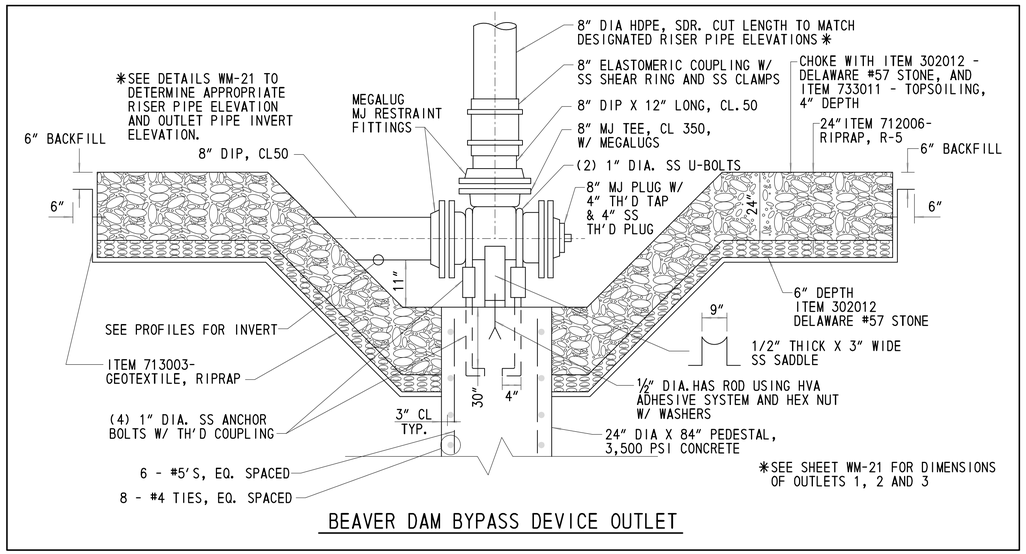
SECTION E-E



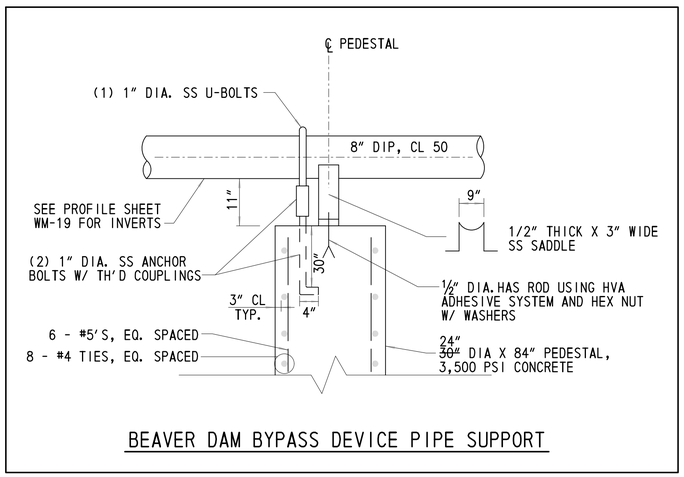
BEAVER DAM BYPASS DEVICE INLET PIPE ASSEMBLY



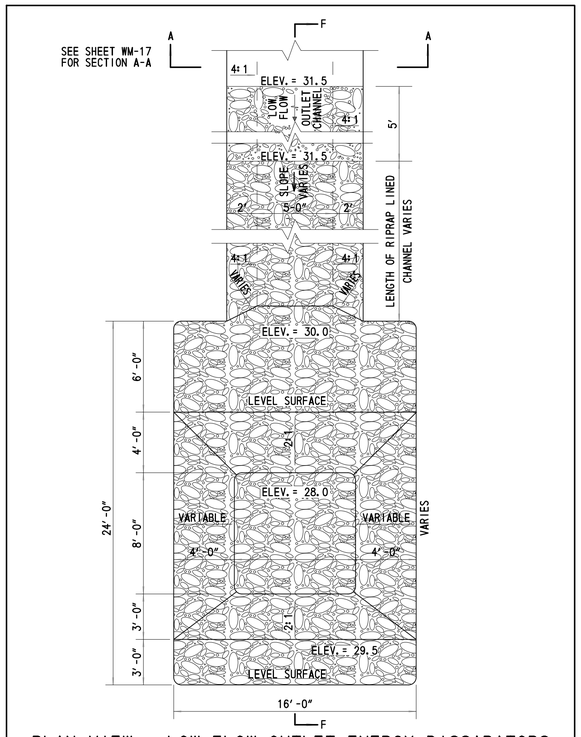
SECTION F-F - LOW FLOW OUTLET CHANNEL ENERGY DISSAPATORS



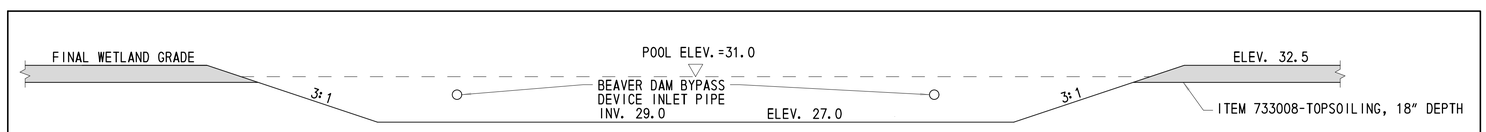
BEAVER DAM BYPASS DEVICE OUTLET



BEAVER DAM BYPASS DEVICE PIPE SUPPORT



PLAN VIEW - LOW FLOW OUTLET ENERGY DISSAPATORS



SECTION B-B - BEAVER DAM BYPASS DEVICE INLET POND #1 CROSS-SECTION

NOTE: ON THIS SHEET ALL STRUCTURES SHOWN WITHOUT A DESIGNATED ITEM NUMBER ARE PART OF ITEM 763654-BEAVER DAM BYPASS DEVICE.

SUBMIT SHOP DRAWINGS FOR ALL SADDLE FABRICATION

OUTLET DETAILS WM-20

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
2 CHANGED BYPASS DEVICE PEDESTAL	
PIPE SUPPORT BASE DIA. TO 24",	
JTR,10/06/15	

NOT TO SCALE

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

CONTRACT	BRIDGE NO.	
T200911303	DESIGNED BY: MRS	
COUNTY	CHECKED BY: JTR	
NEW CASTLE		

BORROW SITE / WETLAND MITIGATION PLAN

SHEET NO.	TOTAL SHTS.
821	1256

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