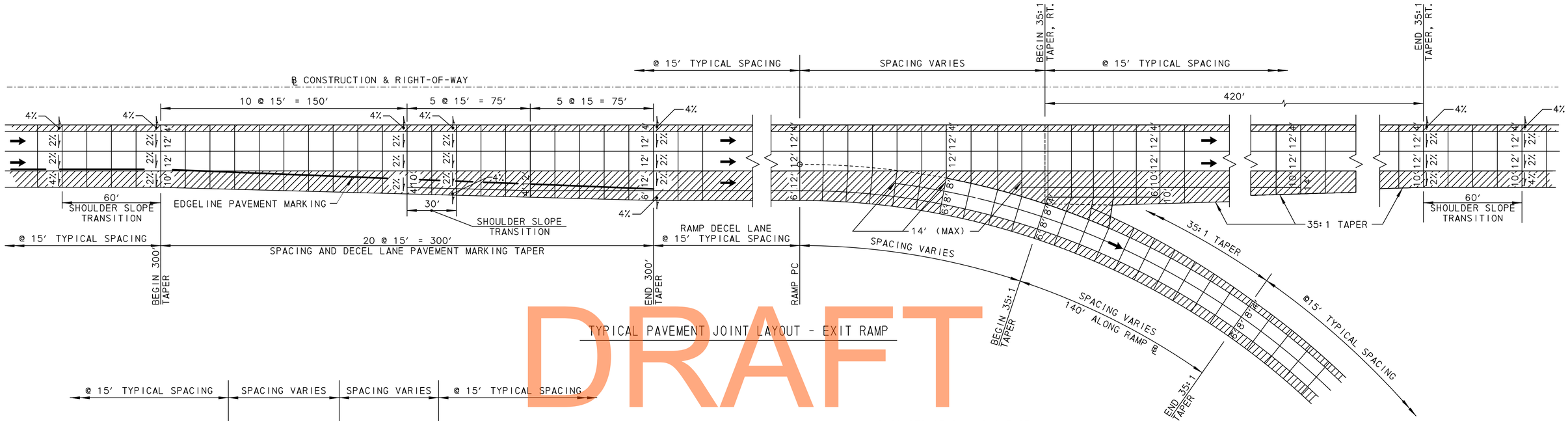
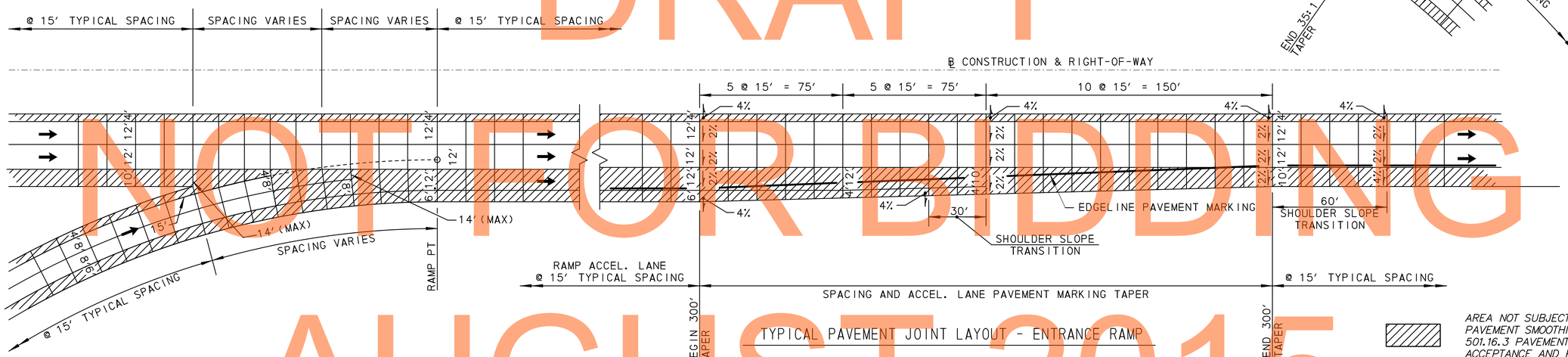
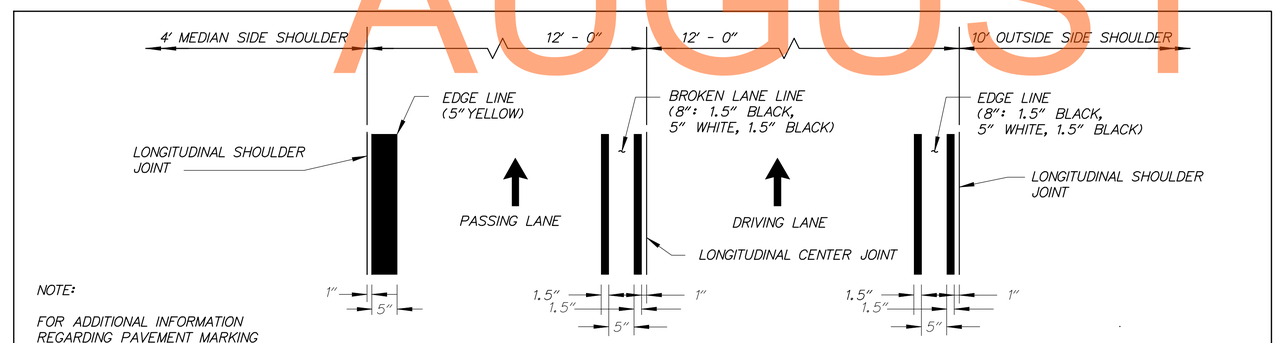


TYPICAL PAVEMENT JOINT LAYOUT - EXIT RAMP



TYPICAL PAVEMENT JOINT LAYOUT - ENTRANCE RAMP

AREA NOT SUBJECT TO SECTION 501.14 PAVEMENT SMOOTHNESS TESTING AND 501.16.3 PAVEMENT SMOOTHNESS ACCEPTANCE AND PAYMENT.



NOTE:

FOR ADDITIONAL INFORMATION REGARDING PAVEMENT MARKING AND RECESSED PAVEMENT MARKER LAYOUT SEE THE DELAWARE MUTCD.

TYPICAL MAINLINE PAVEMENT MARKING LAYOUT

NTS

GENERAL NOTES

1. JOINT LAYOUT AS SHOWN ON THE PLANS IS GRAPHICAL AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSTRUCT THE JOINTS ACCORDING TO THE STANDARD DETAILS AND THESE GENERAL NOTES.
2. TYPICAL TRANSVERSE JOINT SPACING IS 15′.
3. THE MAXIMUM SLAB WIDTH IS 14′ UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER.
4. THE MINIMUM SLAB WIDTH IS 4′.
5. THE MINIMUM TRANSVERSE JOINT SPACING IS 12′. THE MAXIMUM TRANSVERSE SPACING IS 17′. SPACING ON CURVES SHALL BE MEASURED ALONG THE LONGEST CHORD. THE MAXIMUM AND MINIMUM SPACING FOR CURVES ON THE US 301 MAINLINE SHOULD BE CALCULATED FOR FUTURE LANE EXPANSION INTO THE MEDIAN WHERE APPLICABLE.
6. PAVEMENT CROSS SLOPES AND TRANSITION LENGTHS SHALL BE ADJUSTED AS NEEDED PER LOCATION AND TO MEET DESIGN CRITERIA.

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AUGUST 2015

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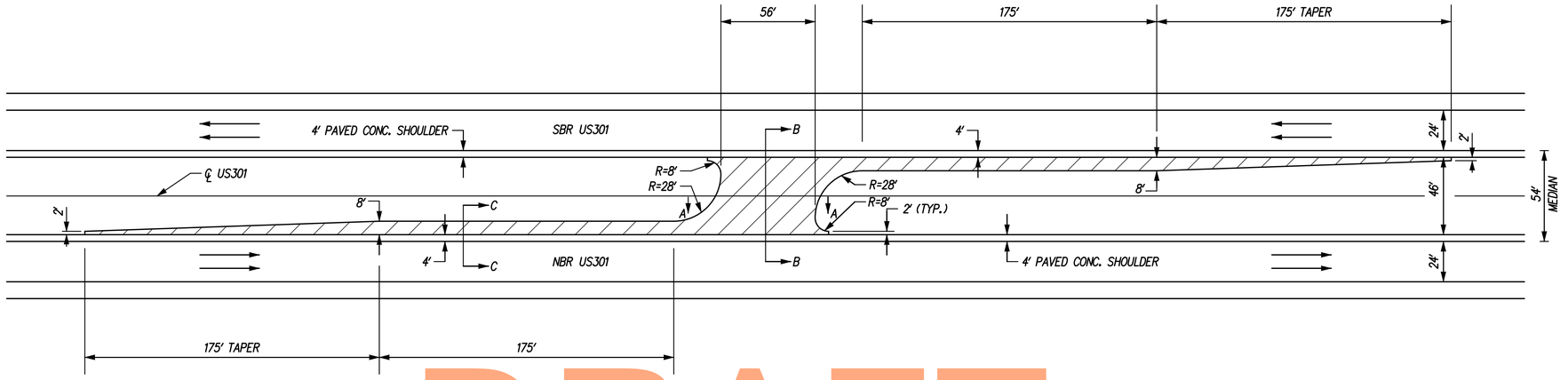
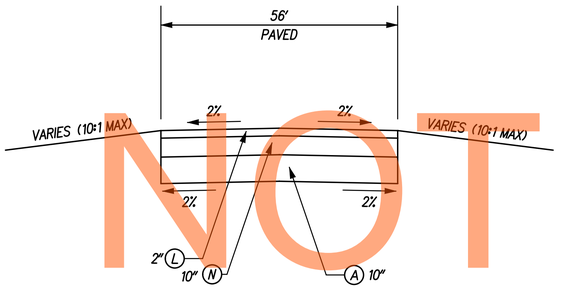
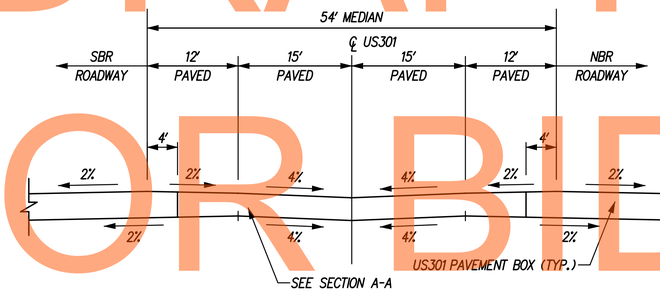
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: AM JW	DT-01
					CHECKED BY: JF SF	SHEET NO. 236
						TOTAL SHTS. 1256



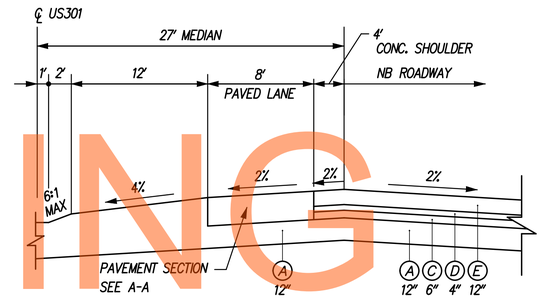
US301 MEDIAN CROSSOVER
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. TRANSVERSE SLOPES SHOULD BE A MINIMUM OF 10:1, LONGITUDINAL SLOPES SHOULD BE A MINIMUM OF 6:1 UNLESS OTHERWISE PROTECTED.
2. SEE PLAN SHEETS AND SUPERELEVATION AND ROADWAY TRANSITION CHARTS FOR VARIATIONS OF TYPICAL SECTIONS.

LEGEND

- (A) ITEM *209001, BORROW TYPE A
- (B) ITEM *209006, BORROW TYPE F
- (C) ITEM *304502, SOIL CEMENT BASE COURSE
- (D) ITEM *304501, PERMEABLE TREATED BASE, 4"
- (E) ITEM *501006, PORTLAND CEMENT CONCRETE PAVEMENT
- (F) ITEM *715001, PERFORATED PIPE UNDERDRAIN
- (G) ITEM *705002, P.C.C. SIDEWALK, 6"
- (H) ITEM *701016, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (I) ITEM *733002, TOPSOILING, 6" DEPTH
  ITEM *734013, PERMANENT GRASS SEEDING, DRY GROUND
- (J) ITEM *302007, GRADED AGGREGATE BASE COURSE, TYPE B
- (K) ITEM *735535 SOIL RETENTION BLANKET MULCH, TYPE 5 UNLESS OTHERWISE NOTED IN DT-16
- (L) ITEM *401801, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (M) ITEM *401810, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22
- (N) ITEM *401819, WMA SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (O) ITEM *705001, P.C.C. SIDEWALK, 4"
- (P) ITEM *701010, PORTLAND CEMENT CONCRETE CURB, TYPE 1-8
- (Q) ITEM *701013, PORTLAND CEMENT CONCRETE CURB, TYPE 1-2 (SEE CONSTRUCTION DETAILS)
- (R) ITEM *401504, HOT MIX, HOT-LAID BITUMINOUS CONCRETE PAVEMENT TYPE C, 2" THICK
- (S) ITEM *401827, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATED STONE)
- (T) ITEM *401833, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 76-22 (NON-CARBONATE STONE)
- (U) ITEM *401517, STONE MATRIX ASPHALT
- (V) ITEM *401663, SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (W) ITEM *401816, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 76-22
- (X) ITEM *743017, PORTABLE BARRIER
- (Y) ITEM *701022, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 3-8
- (Z) ITEM *701011, PORTLAND CEMENT CONCRETE CURB, TYPE 2
- (AA) ITEM *701021, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 2
- (BB) ITEM *760507, PROFILE MILLING, HOT MIX
- (CC) ITEM *760006, PAVEMENT MILLING, HOT MIX, 2" DEPTH
- (DD) ITEM *760016, RUMBLE STRIPS, HOT MIX
- (EE) ITEM *401813, WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22

DRAFT
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AUGUST 2015

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

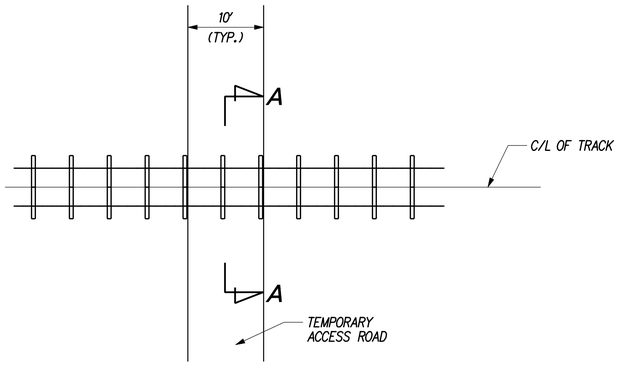
NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

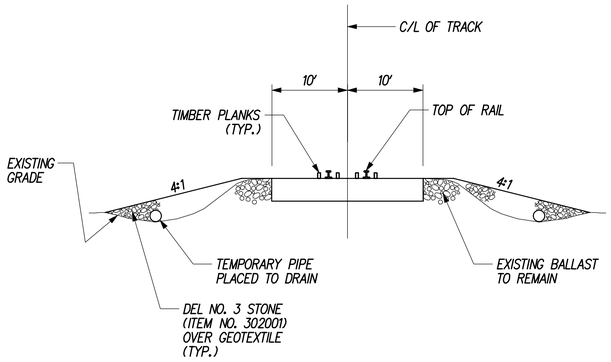
CONTRACT	BRIDGE NO.	
T200911303	DESIGNED BY: AM	
COUNTY	CHECKED BY: JF	
NEW CASTLE		

CONSTRUCTION DETAILS

DT-02
SHEET NO.
237
TOTAL SHTS.
1256



PLAN

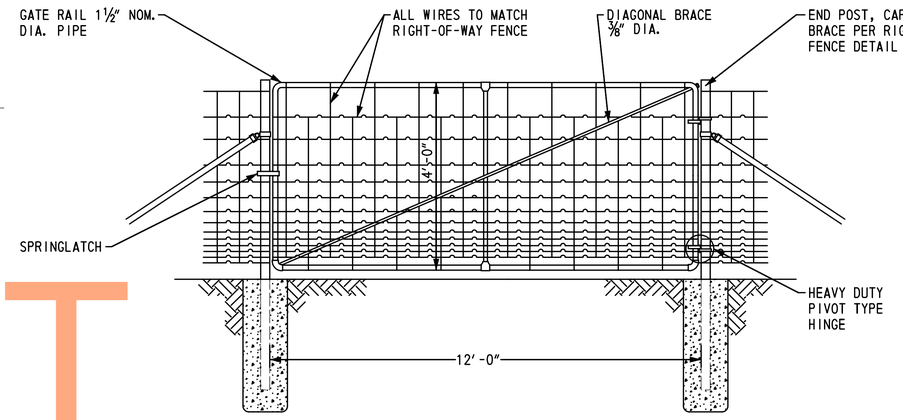


SECTION A-A

NOTES:

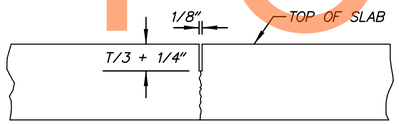
1. REFER TO SECTION 269-STABILIZED CONSTRUCTION ENTRANCE.
2. CONSTRUCT TEMPORARY ACCESS ROAD PERPENDICULAR TO C/L OF TRACK WITHIN TEMPORARY CONSTRUCTION EASEMENT.

TEMPORARY RAILROAD CROSSING
N.T.S



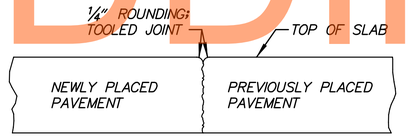
ITEM 727001 - RIGHT-OF-WAY FENCE GATE
N.T.S.

1) SEE CONSTRUCTION PLANS FOR LOCATIONS.



T = PAVEMENT THICKNESS IN INCHES

LONGITUDINAL AND TRANSVERSE SAW-CUT JOINT DETAIL
N.T.S



LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINT DETAIL
N.T.S

NOTES:

1. THESE JOINT DETAILS SHALL BE APPLIED IN LIEU OF THE SEALANT RESERVOIR AND SEALANT DETAILS IN THE STANDARD CONSTRUCTION DETAILS.
2. NO JOINT SEALANT IS REQUIRED TO BE PLACED IN THE PAVEMENT JOINTS, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS.
3. DOWEL AND TIE BARS NOT SHOWN. SEE STANDARD CONSTRUCTION DETAILS FOR DOWEL AND TIE BAR REQUIREMENTS.

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AUGUST 2015

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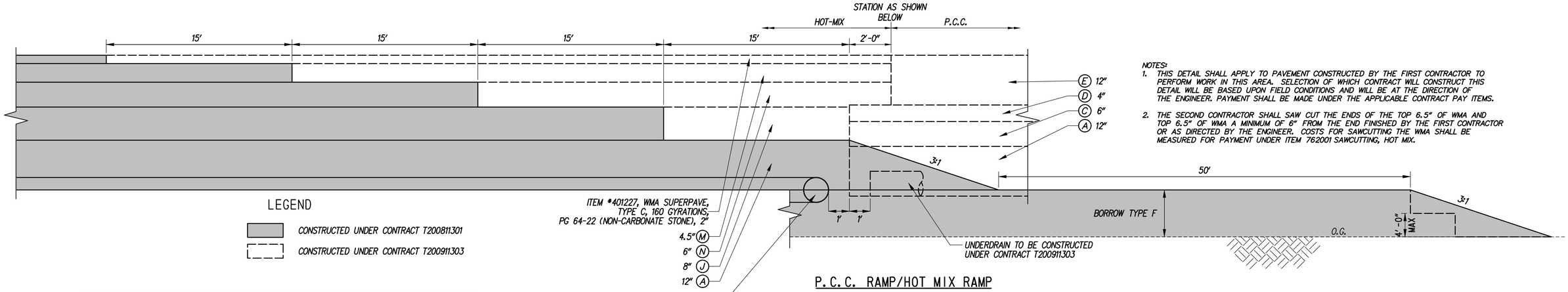
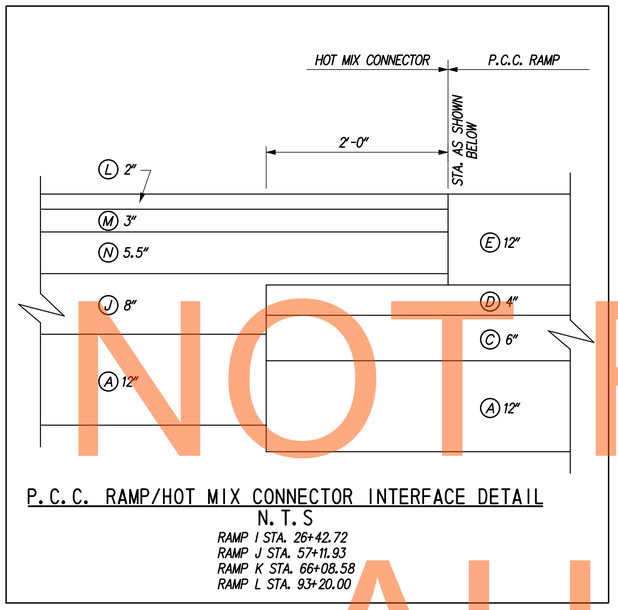
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS	DT-03
				COUNTY NEW CASTLE	DESIGNED BY: DB JW		SHEET NO. 238
					CHECKED BY: JZ SF		TOTAL SHTS. 1256



NOTES:
1. THIS DETAIL SHALL APPLY TO PAVEMENT CONSTRUCTED BY THE FIRST CONTRACTOR TO PERFORM WORK IN THIS AREA. SELECTION OF WHICH CONTRACT WILL CONSTRUCT THIS DETAIL WILL BE BASED UPON FIELD CONDITIONS AND WILL BE AT THE DIRECTION OF THE ENGINEER. PAYMENT SHALL BE MADE UNDER THE APPLICABLE CONTRACT PAY ITEMS.
2. THE SECOND CONTRACTOR SHALL SAW CUT THE ENDS OF THE TOP 6.5" OF WMA AND TOP 6.5" OF WMA A MINIMUM OF 6" FROM THE END FINISHED BY THE FIRST CONTRACTOR OR AS DIRECTED BY THE ENGINEER. COSTS FOR SAWCUTTING THE WMA SHALL BE MEASURED FOR PAYMENT UNDER ITEM 762001 SAWCUTTING, HOT MIX.

P.C.C. RAMP/HOT MIX RAMP
INTERFACE - RAMP C AND RAMP F AT LEVELS ROAD
RAMP C STA 11+36.00
RAMP F STA 53+86.02



P.C.C. RAMP/HOT MIX CONNECTOR INTERFACE DETAIL
N.T.S
RAMP I STA. 26+42.72
RAMP J STA. 57+11.93
RAMP K STA. 66+08.58
RAMP L STA. 93+20.00

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AUGUST 2015

LEGEND

- (A) ITEM *209001, BORROW TYPE A
- (B) ITEM *209006, BORROW TYPE F
- (C) ITEM *304502, SOIL CEMENT BASE COURSE
- (D) ITEM *304501, PERMEABLE TREATED BASE, 4"
- (E) ITEM *501006, PORTLAND CEMENT CONCRETE PAVEMENT
- (F) ITEM *715001, PERFORATED PIPE UNDERDRAIN
- (G) ITEM *705002, P.C.C. SIDEWALK, 6"
- (H) ITEM *701016, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (I) ITEM *733002, TOPSOILING, 6" DEPTH
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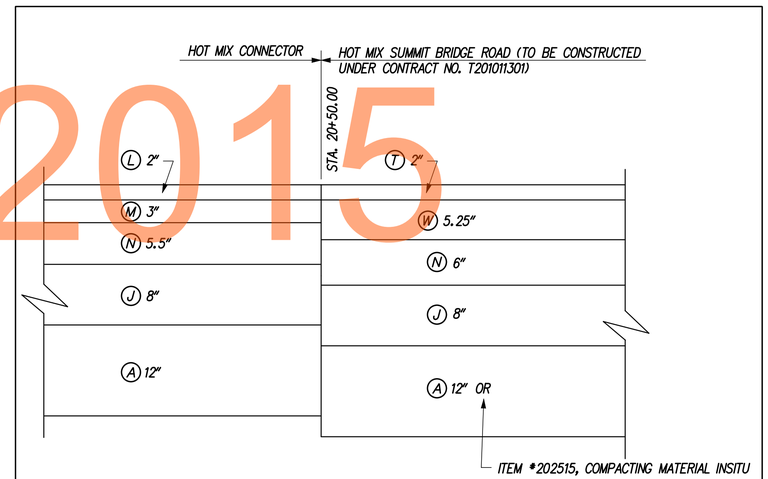
- (J) ITEM *302007, GRADED AGGREGATE BASE COURSE, TYPE B
- (K) ITEM *735535 SOIL RETENTION BLANKET MULCH, TYPE 5 UNLESS OTHERWISE NOTED IN DT-16
- (L) ITEM *401801, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (M) ITEM *401810, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22
- (N) ITEM *401819, WMA SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (O) ITEM *705001, P.C.C. SIDEWALK, 4"
- (P) ITEM *701010, PORTLAND CEMENT CONCRETE CURB, TYPE 1-8
- (Q) ITEM *701013, PORTLAND CEMENT CONCRETE CURB, TYPE 1-2 (SEE CONSTRUCTION DETAILS)
- (R) ITEM *401504, HOT MIX, HOT-LAID BITUMINOUS CONCRETE PAVEMENT TYPE C, 2" THICK
- (S) ITEM *401827, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATED STONE)
- (T) ITEM *401833, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 76-22 (NON-CARBONATE STONE)
- (U) ITEM *401517, STONE MATRIX ASPHALT
- (V) ITEM *401663, SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (W) ITEM *401816, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 76-22
- (X) ITEM *743017, PORTABLE BARRIER
- (Y) ITEM *701022, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 3-8
- (Z) ITEM *701011, PORTLAND CEMENT CONCRETE CURB, TYPE 2
- (AA) ITEM *701021, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 2
- (BB) ITEM *760507, PROFILE MILLING, HOT MIX
- (CC) ITEM *760006, PAVEMENT MILLING, HOT MIX, 2" DEPTH
- (DD) ITEM *760016, RUMBLE STRIPS, HOT MIX
- (EE) ITEM *401813, WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22



HOT MIX SUMMIT BRIDGE ROAD/HOT MIX CONNECTOR
INTERFACE DETAIL
N.T.S

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303 / COUNTY NEW CASTLE; BRIDGE NO.; DESIGNED BY: JF; CHECKED BY: DB	CONSTRUCTION DETAILS

DT-04
SHEET NO. 239
TOTAL SHTS. 1256

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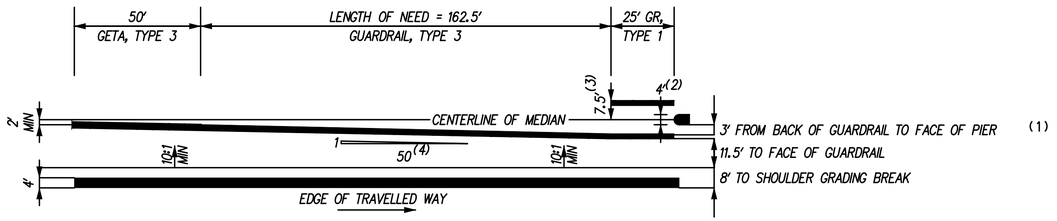

MEDIAN PIER PROTECTION DETAIL

(1) TYPE 1 GUARDRAIL FOR OFFSET FROM FACE OF PIER TO BACK OF GUARDRAIL POST GREATER THAN OR EQUAL TO 3'.

(2) IF PIER WIDTH GREATER THAN OR LESS THAN 4', ADJUST DIMENSIONS TO MAXIMIZE DISTANCE FROM EDGE OF TRAVEL LANE TO GUARDRAIL. IF GUARDRAIL POSTS EXTEND BELOW THE PIER FOUNDATION, IF PRESENT, THEN BACK OF POSTS SHOULD BE OFFSET A MINIMUM OF 1' FROM THE FOUNDATION. ADJUST TAPER RATE TO ACHIEVE 2' MINIMUM FROM END OF GETA TO MEDIAN DITCH.

(3) POINT OF HAZARD FOR LENGTH OF NEED AT FACE OF OPPOSING GUARDRAIL.

(4) INSTALL GETA ALONG THE LINE OF THE GUARDRAIL TAPER. MAXIMUM TAPER RATE IS 15:1.

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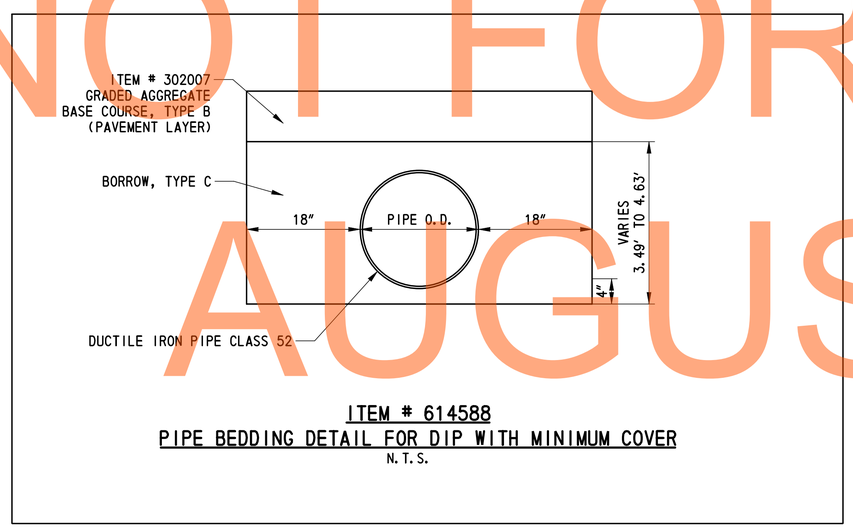
AUGUST 2015



ITEM # 614588
PIPE BEDDING DETAIL FOR DIP WITH MINIMUM COVER
N.T.S.

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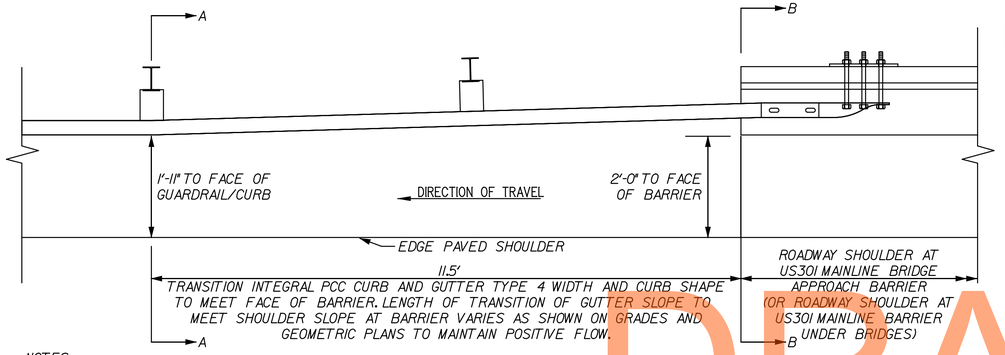
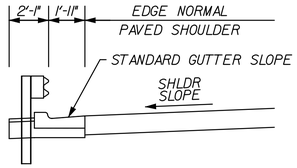
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: DWB	DT-05
					CHECKED BY: JF	SHEET NO. 240
						TOTAL SHTS. 1256



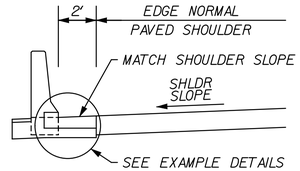
NOTES:

1. PLACE PREFORMED EXPANSION JOINT MATERIAL BETWEEN END OF CURB AND BARRIER PER SECTION 701.03.

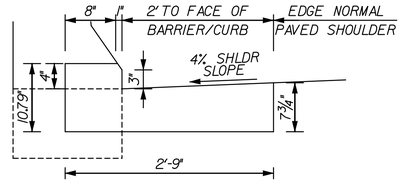
2. TRANSITION LIMITS TO BE MEASURED FOR PAYMENT UNDER ITEM 701023 WITH ALL COSTS FOR TRANSITION INCLUDED IN ITEM 701023.



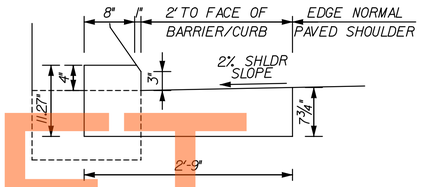
SECTION A-A



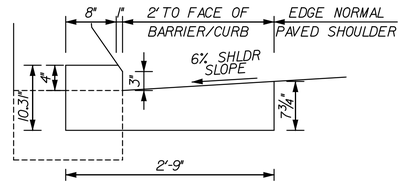
SECTION B-B



BARRIER/CURB DETAIL (4%)



BARRIER/CURB DETAIL (2%)



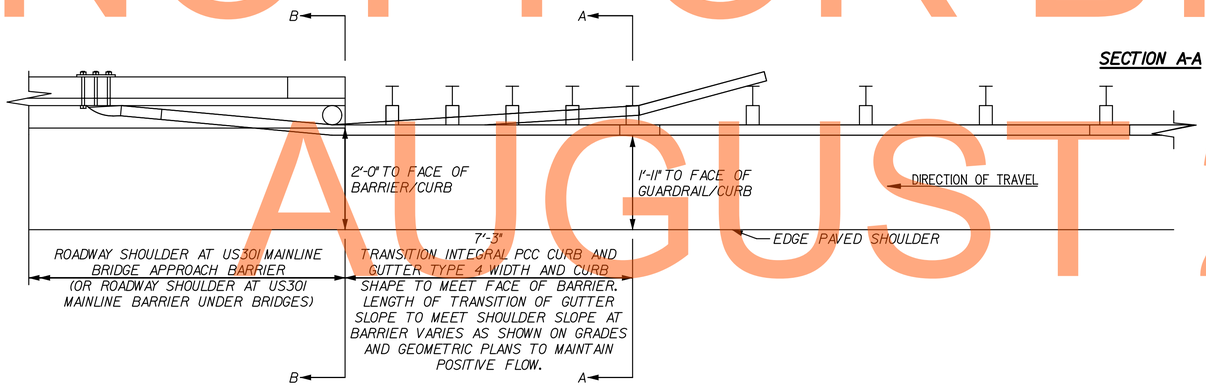
BARRIER/CURB DETAIL (6%)

DRAFT

CURB TRANSITION DETAILS AT GUARDRAIL TO BARRIER CONNECTION (EXIT TYPE)

N.T.S.

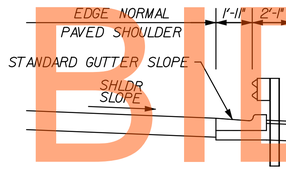
NOT FOR BIDDING



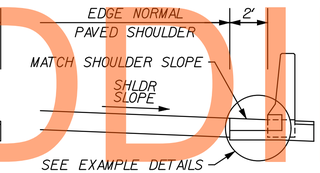
NOTES:

1. PLACE PREFORMED EXPANSION JOINT MATERIAL BETWEEN END OF CURB AND BARRIER PER SECTION 701.03.

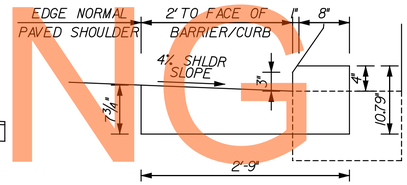
2. TRANSITION LIMITS TO BE MEASURED FOR PAYMENT UNDER ITEM 701023 WITH ALL COSTS FOR TRANSITION INCLUDED IN ITEM 701023.



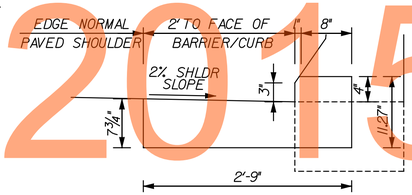
SECTION A-A



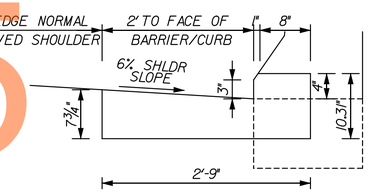
SECTION B-B



BARRIER/CURB DETAIL (4%)



BARRIER/CURB DETAIL (2%)



BARRIER/CURB DETAIL (6%)

AUGUST 2015

CURB TRANSITION DETAILS AT GUARDRAIL TO BARRIER CONNECTION (APPROACH TYPE I)

N.T.S.

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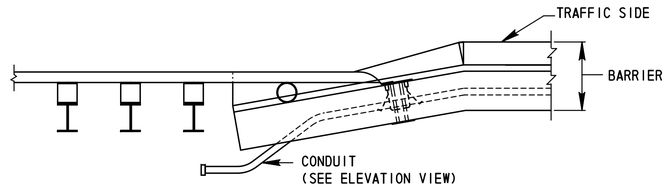
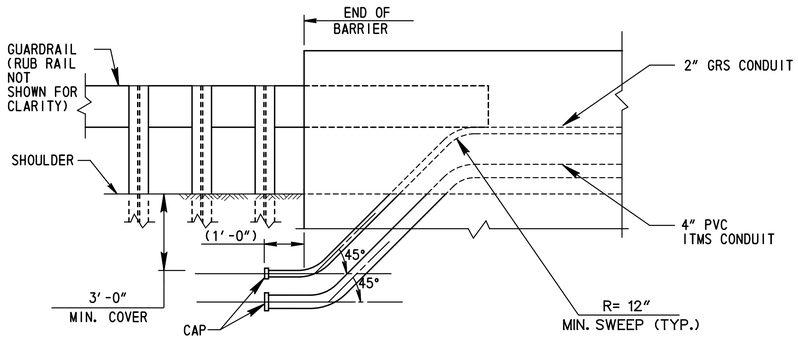
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: JF	
					CHECKED BY: DWB	

DT-06
SHEET NO. 241
TOTAL SHTS. 1256



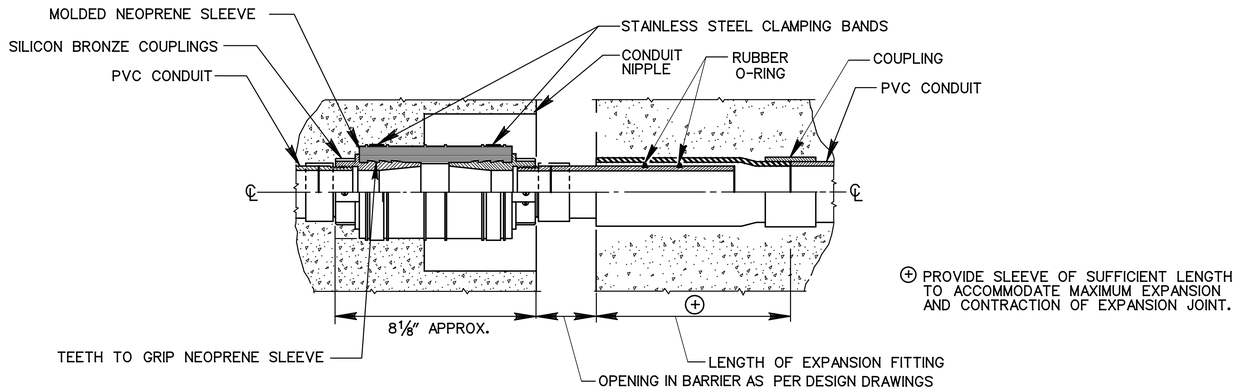
PLAN VIEW



ELEVATION

CONDUIT DETAILS AT ENDS OF BRIDGE

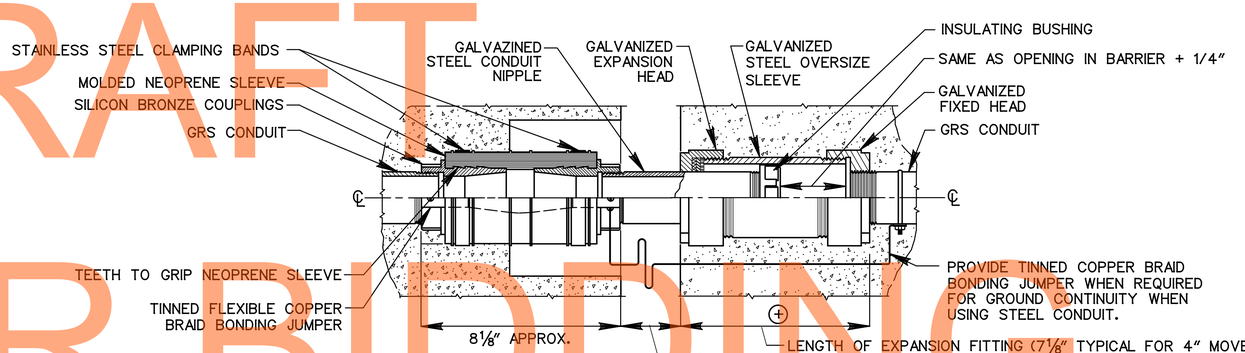
NOT TO SCALE



⊕ PROVIDE SLEEVE OF SUFFICIENT LENGTH TO ACCOMMODATE MAXIMUM EXPANSION AND CONTRACTION OF EXPANSION JOINT.

PVC CONDUIT EXPANSION AND DEFLECTION JOINT FITTINGS

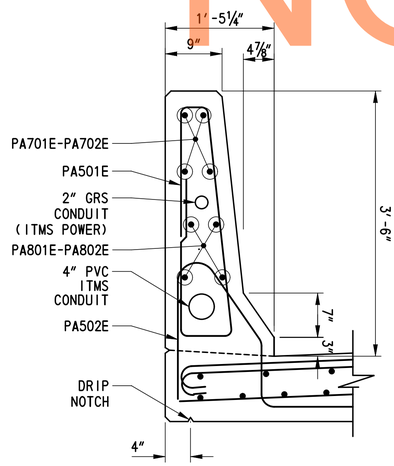
NOT TO SCALE



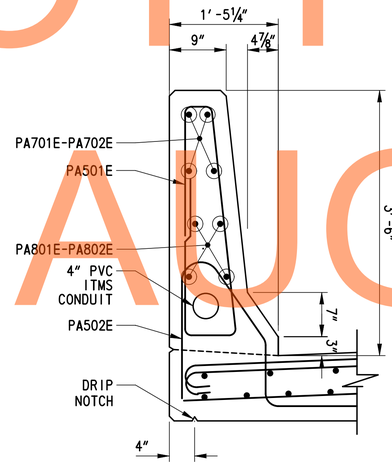
GRS CONDUIT EXPANSION AND DEFLECTION JOINT FITTINGS

NOT TO SCALE

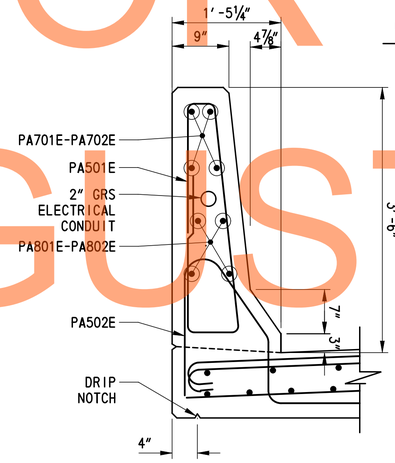
⊕ PROVIDE SLEEVE OF SUFFICIENT LENGTH TO ACCOMMODATE MAXIMUM EXPANSION AND CONTRACTION OF EXPANSION JOINT.



4" ITMS CONDUIT AND 2" ELECTRICAL CONDUIT IN BARRIER TYPICAL



4" ITMS CONDUIT IN BARRIER TYPICAL



2" ELECTRICAL CONDUIT IN BARRIER TYPICAL

TYPICAL BARRIER REINFORCEMENT SECTION

SCALE: 1" = 1'-0"

NOTES:

1. CONDUIT TO EXIT BARRIER ON OUTSIDE OF GUARDRAIL POST LINE TO AVOID DAMAGE TO CONDUIT.
2. CONDUITS MUST BE STAGGERED AND AS WIDELY SPACED AS PRACTICAL.

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NOT FOR BIDDING
AUGUST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS	DT-07
				COUNTY NEW CASTLE	DESIGNED BY: JE		SHEET NO. 242
					CHECKED BY: DB		TOTAL SHTS. 1256

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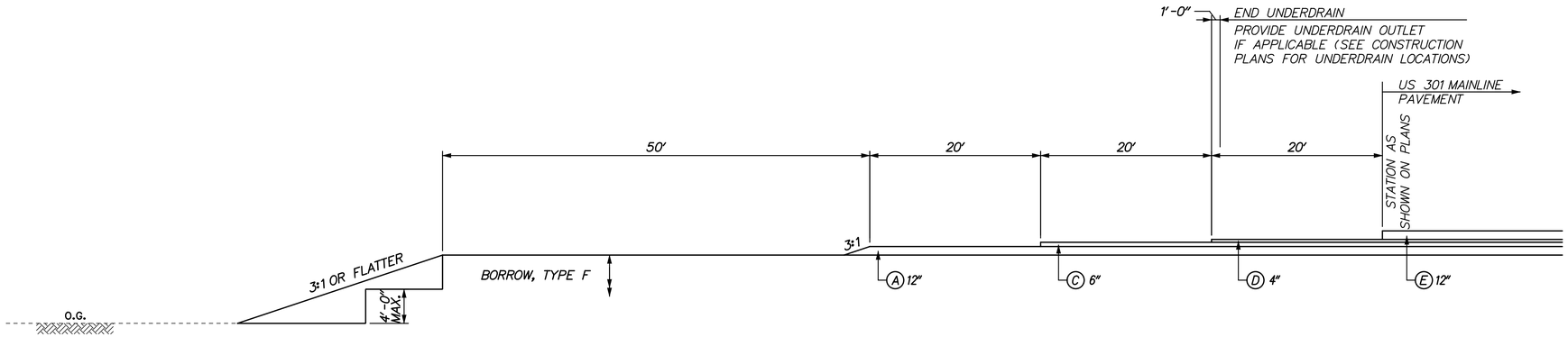


NOTES:

1. THIS DETAIL SHALL APPLY TO PAVEMENT CONSTRUCTED BY THE FIRST CONTRACTOR TO PERFORM WORK IN THIS AREA. SELECTION OF WHICH CONTRACT WILL CONSTRUCT THIS DETAIL WILL BE BASED UPON FIELD CONDITIONS AND WILL BE AT THE DIRECTION OF THE ENGINEER. PAYMENT SHALL BE MADE UNDER THE APPLICABLE CONTRACT PAY ITEMS.

2. THE FIRST CONTRACTOR SHALL COVER THE EXPOSED PERMEABLE TREATED BASE COURSE AND SOIL CEMENT BASE COURSE, INCLUDING SIDES AND ENDS, WITH POLYETHYLENE SHEETING, PROPERLY ANCHORED AND LAPPED AT LEAST 18". NO CONSTRUCTION TRAFFIC OF ANY KIND SHALL BE PERMITTED TO TRAVERSE OVER THE PTB OR SOIL CEMENT AT ANY TIME, EITHER COVERED OR UNCOVERED WITH POLYETHYLENE, EXCEPT FOR NECESSARY EQUIPMENT UTILIZED DURING PAVING OPERATIONS. ALL COSTS FOR FURNISHING, INSTALLING AND MAINTAINING THE POLYETHYLENE SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE PTB AND SOIL CEMENT BASE COURSE PAY ITEMS.

3. THE SECOND CONTRACTOR TO PERFORM OPERATIONS IN THIS AREA SHALL REMOVE AND PROPERLY DISPOSE OF THE POLYETHYLENE AND ANCHORING IMMEDIATELY PRIOR TO BEGINNING PAVEMENT OPERATIONS WITH ALL COSTS INCIDENTAL TO THE UNIT PRICE BID FOR THE PTB AND SOIL CEMENT BASE COURSE PAY ITEMS.

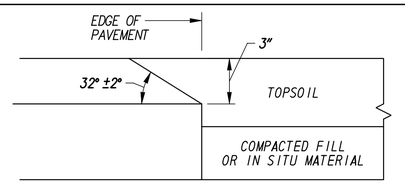
4. THE SECOND CONTRACTOR SHALL ALSO SAW CUT THE ENDS OF THE PTB AND SOIL CEMENT BASE COURSE A MINIMUM OF 6" FROM THE END FINISHED BY THE FIRST CONTRACTOR OR AS DIRECTED BY THE ENGINEER. COSTS FOR SAWCUTTING THE PTB SHALL BE MEASURED FOR PAYMENT UNDER ITEM 762001 SAWCUTTING, HOT MIX. COSTS FOR SAWCUTTING THE SOIL CEMENT BASE COURSE SHALL BE MEASURED FOR PAYMENT UNDER ITEM 762002 SAWCUTTING, CONCRETE, FULL DEPTH.

5. THE FIRST CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EDGE BERMS AND TEMPORARY SLOPE DRAINS ALONG THE TOP OF ALL SIDE AND END SLOPES PER THE INCREMENTAL STABILIZATION DETAILS (STANDARD NO. E-1).

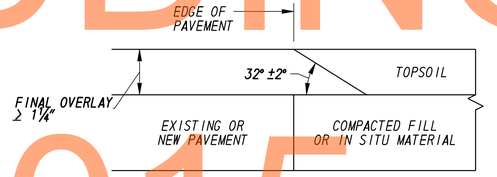
6. THE SECOND CONTRACTOR SHALL REMOVE THE EDGE BERMS AND TEMPORARY SLOPE DRAINS WITH ALL COSTS INCIDENTAL TO ITEM 202000.

7. THE SECOND CONTRACTOR SHALL BENCH INTO TEMPORARY SLOPE AT A HEIGHT NO GREATER THAN 4'-0". THE EXCAVATED, EXISTING BORROW - TYPE F EMBANKMENT MATERIAL SHALL BE BLENDED INTO NEW EMBANKMENT AND NOT WASTED.

PAVEMENT DETAIL AT LIMIT OF CONSTRUCTION



SAFETY EDGE - CONCRETE PAVEMENTS
N.T.S



SAFETY EDGE - BITUMINOUS CONCRETE PAVEMENTS AND OVERLAYS
N.T.S

1) INSTALL SAFETY EDGE WHERE THE ROAD SURAFCE IS NOT ADJACENT TO CURB OR GUARDRAIL.

2) PRIOR TO PLACING CONCRETE OR BITUMINOUS CONCRETE PAVEMENT, PREPARE THE SHOULDER MATERIAL WHERE THE SAFETY EDGE WILL BE PLACED TO PROVIDE A FOUNDATION THAT WILL SUPPORT ITS PLACEMENT.

3) FOR ADDITIONAL INFORMATION, SEE ITEM 401752 SAFETY EDGE FOR ROADWAY PAVEMENT.

LEGEND

- (A) ITEM *209001, BORROW TYPE A
- (B) ITEM *209006, BORROW TYPE F
- (C) ITEM *304502, SOIL CEMENT BASE COURSE
- (D) ITEM *304501, PERMEABLE TREATED BASE, 4"
- (E) ITEM *501006, PORTLAND CEMENT CONCRETE PAVEMENT
- (F) ITEM *715001, PERFORATED PIPE UNDERDRAIN
- (G) ITEM *705002, P.C.C. SIDEWALK, 6"
- (H) ITEM *701016, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (I) ITEM *733002, TOPSOILING, 6" DEPTH
  ITEM *734013, PERMANENT GRASS SEEDING, DRY GROUND
- (J) ITEM *302007, GRADED AGGREGATE BASE COURSE, TYPE B
- (K) ITEM *735535 SOIL RETENTION BLANKET MULCH, TYPE 5 UNLESS OTHERWISE NOTED IN DT-16
- (L) ITEM *401801, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (M) ITEM *401810, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22
- (N) ITEM *401819, WMA SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (O) ITEM *705001, P.C.C. SIDEWALK, 4"
- (P) ITEM *701010, PORTLAND CEMENT CONCRETE CURB, TYPE 1-8
- (Q) ITEM *701013, PORTLAND CEMENT CONCRETE CURB, TYPE 1-2 (SEE CONSTRUCTION DETAILS)
- (R) ITEM *401504, HOT MIX, HOT-LAID BITUMINOUS CONCRETE PAVEMENT TYPE C, 2" THICK
- (S) ITEM *401827, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATED STONE)
- (T) ITEM *401833, WMA SUPERPAVE, TYPE C, 160 GYRATIONS, PG 76-22 (NON-CARBONATE STONE)
- (U) ITEM *401517, STONE MATRIX ASPHALT
- (V) ITEM *401663, SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (W) ITEM *401816, WMA SUPERPAVE, TYPE B, 160 GYRATIONS, PG 76-22
- (X) ITEM *743017, PORTABLE BARRIER
- (Y) ITEM *701022, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 3-8
- (Z) ITEM *701011, PORTLAND CEMENT CONCRETE CURB, TYPE 2
- (AA) ITEM *701021, INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 2
- (BB) ITEM *760507, PROFILE MILLING, HOT MIX
- (CC) ITEM *760006, PAVEMENT MILLING, HOT MIX, 2" DEPTH
- (DD) ITEM *760016, RUMBLE STRIPS, HOT MIX
- (EE) ITEM *401813, WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

CONSTRUCTION DETAILS

DT-08
SHEET NO.
243
TOTAL SHTS.
1256

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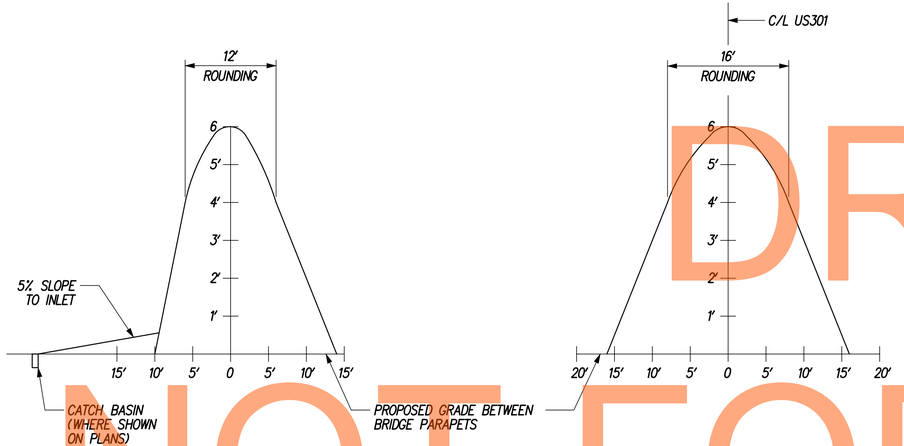
NOT FOR BIDDING
AUGUST 2015

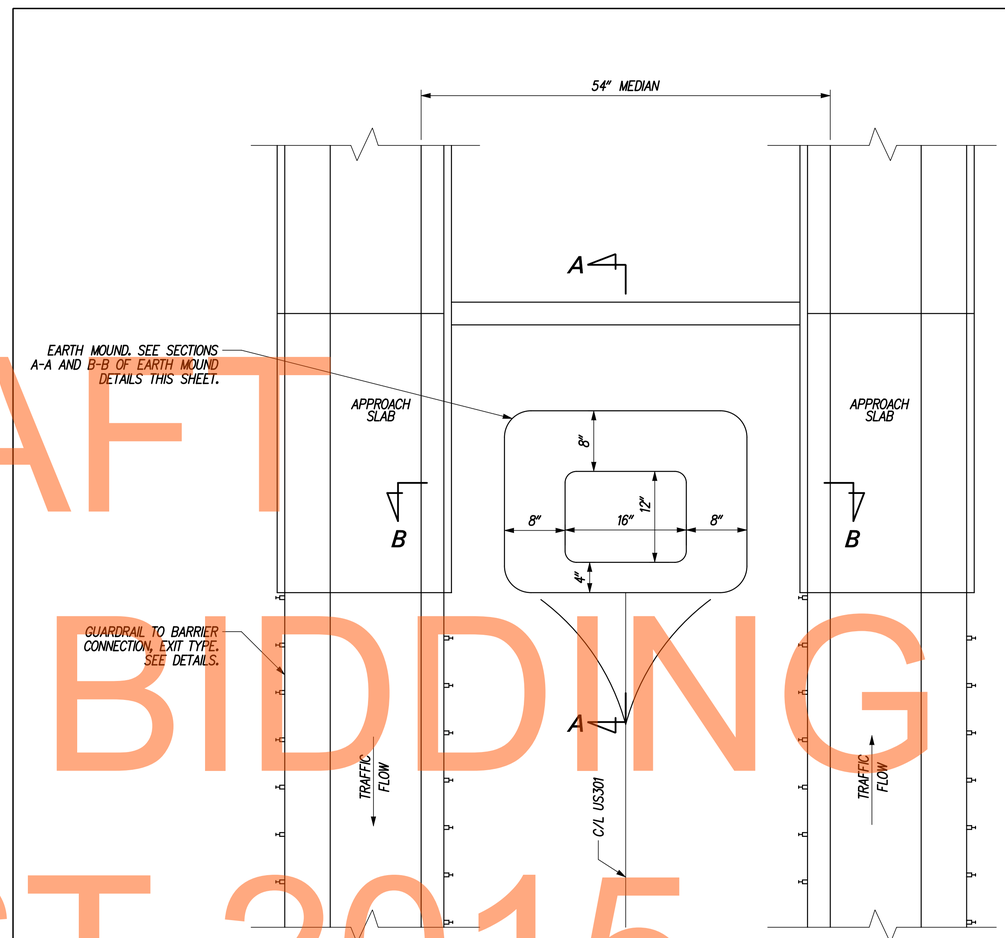


SECTION A-A
N. T. S

SECTION B-B
N. T. S

NOTES:
1. DISTANCE BETWEEN THE OUTSIDE FACE OF BRIDGE PARAPET AND THE TOE OF SLOPE FOR THE EARTH MOUND SHALL NOT EXCEED FOUR (4) FEET.
2. SEE BRIDGE PLANS FOR THE LOCATIONS OF EARTH MOUNDS AT BRIDGE APPROACHES.
3. EARTH MOUNDS SHALL BE CONSTRUCTED OF MATERIALS MEETING THE REQUIREMENTS OF BORROW, TYPE F AND COMPACTED IN ACCORDANCE WITH SECTION 202.
4. STABILIZE MOUND SURFACE WITH TOPSOIL, SEED AND MULCH PER ROADWAY TYPICAL SECTIONS.
5. EARTH MOUND AT NB AND SB BRIDGE APPROACHES PROVIDED WITHIN THE MEDIAN AT THE FOLLOWING BRIDGES:
   BRIDGE 1-480N & 1-480S
   BRIDGE 1-477N & 1-477S
   BRIDGE 1-472N & 1-472S
   BRIDGE 1-507N & 1-507S
   BRIDGE 1-470N & 1-470S # # BY OTHERS
6. SEE ROADWAY CROSS-SECTIONS FOR ADDITIONAL INFORMATION.

EARTH MOUND DETAILS
AT BRIDGE APPROACHES
N. T. S



NOTES:
1. SEE PLAN SHEETS FOR LENGTH AND APPLICATION OF GUARDRAIL.

BRIDGE PROTECTION SYSTEM
MAINLINE BRIDGE PARAPET AND
MEDIAN OPENING PROTECTION PLAN
N. T. S

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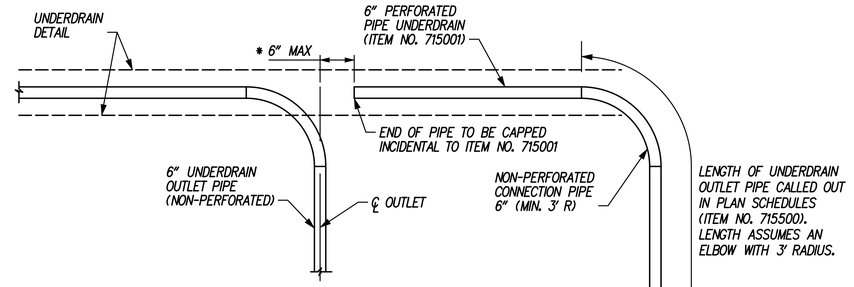
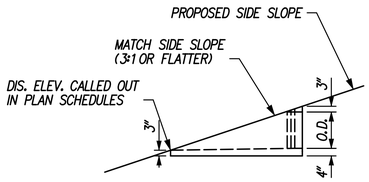
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: DB	DT-09 / SHEET NO. 244 / TOTAL SHTS. 1256
					CHECKED BY: JZ	



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

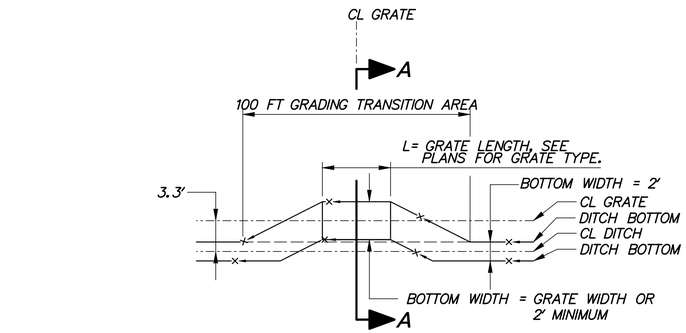


SECTION A-A

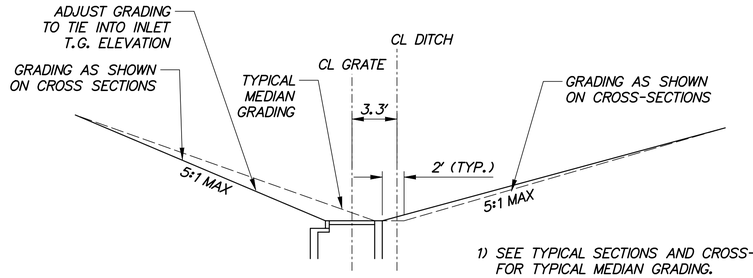
UNDERDRAIN CONNECTION TO UNDERDRAIN OUTLET
N. T. S.

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



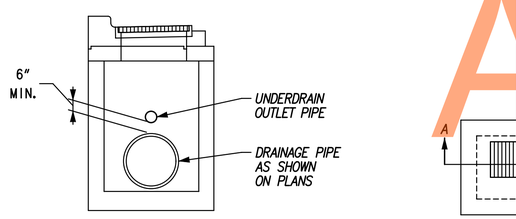
SECTION A-A
N. T. S

1) SEE TYPICAL SECTIONS AND CROSS-SECTIONS FOR TYPICAL MEDIAN GRADING.

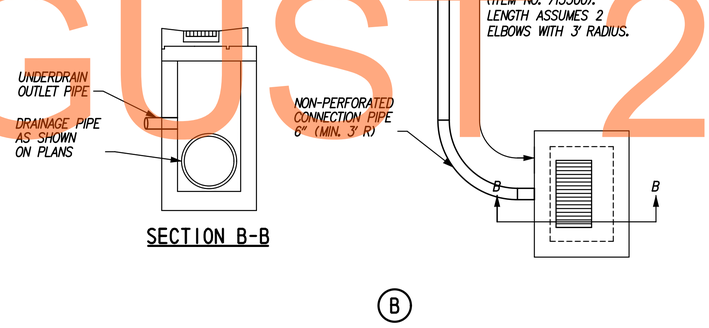
2) OFFSET MAY BE LT OR RT. SEE CONSTRUCTION PLANS.

3) IF INLET IS WITHIN 100 FT. OF ADJACENT INLET, MAINTAIN DITCH OFFSET BETWEEN INLETS.

MEDIAN INLET GRADING
N. T. S



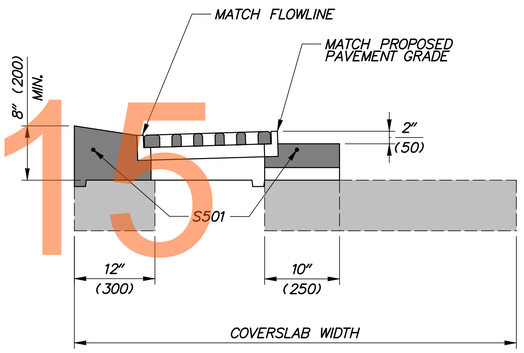
SECTION A-A



SECTION B-B

(A) (B)

UNDERDRAIN CONNECTION TO DRAINAGE INLET
N. T. S.



TYPE C MODIFIED DRAINAGE INLET TOP UNIT
N. T. S

1) SEE STANDARD DELDOT DETAIL D-5.

2) THIS MODIFIED INLET TOP APPLIES TO INLETS IN SHOULDERS WITHOUT CURB.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

NOT TO SCALE

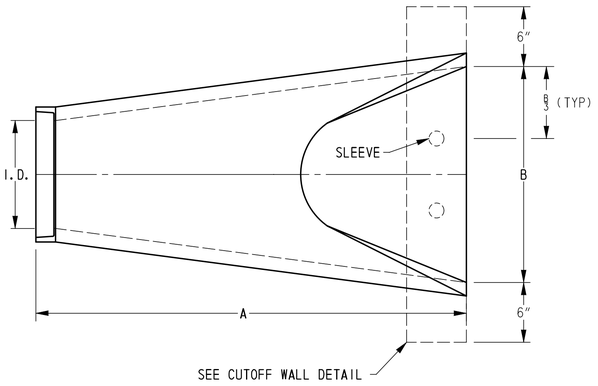
US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

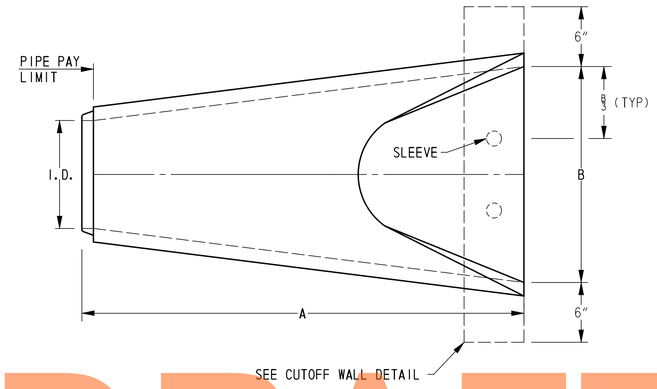
CONSTRUCTION DETAILS

DT-10
SHEET NO. 245
TOTAL SHTS. 1256

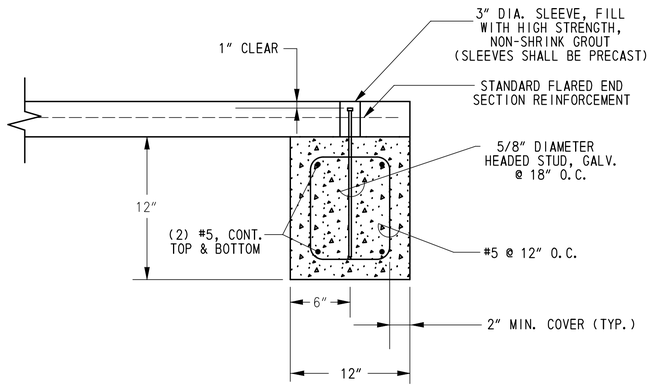
REINFORCED CONCRETE FLARED END SECTION
12" - 33" DIAMETER



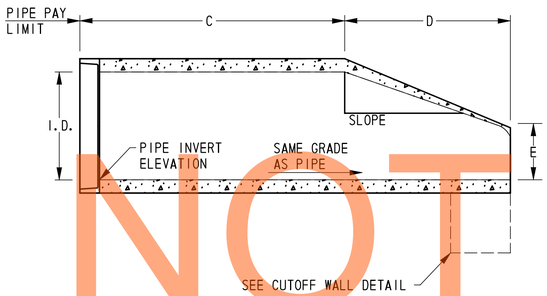
PLAN VIEW



PLAN VIEW

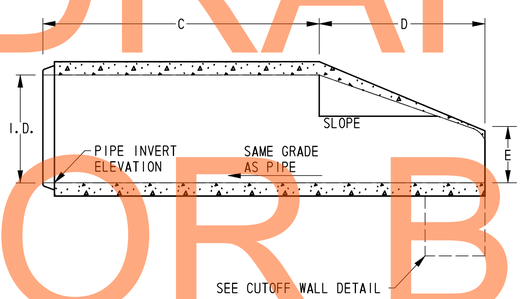


CUTOFF WALL DETAIL
N. T. S.



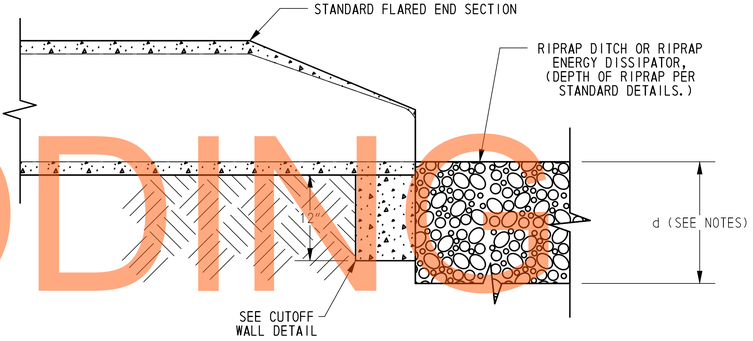
SIDE VIEW

FLARED END SECTION - OUTLET
N. T. S.



SIDE VIEW

FLARED END SECTION - INLET
N. T. S.



SIDE VIEW WITH OUTLET PROTECTION
N. T. S.

PIPE I.D.	SLOPE	WALL	A (INCHES)	B (INCHES)	C (INCHES)	D (INCHES)	E (INCHES)
12	3:1	2	69	24	48	21	5
15	3:1	2 1/4	73	30	46	27	6
18	3:1	2 1/2	73	36	46	27	9
21	3:1	2 3/4	74	42	38	36	9
24	3:1	3	72 1/2	48	29	43 1/2	9 1/2
27	3:1	3 1/4	75	54	25 1/2	49 1/2	10 1/2
30	3:1	3 1/2	73 3/4	60	19 3/4	54	12
33	3:1	3 3/4	81	66	26	55	14

NOTES:

1. FLARED END SECTIONS SHALL BE MANUFACTURED TO ASTM C-76 AND AASHTO M-170 WITH CLASS III REINFORCEMENT.
2. FLARED END SECTIONS SHALL BE BEDDED IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATION 612, REINFORCED CONCRETE PIPE.
3. FLARED END SECTIONS 27 INCHES AND LARGER SHALL INCLUDE A 12 INCH WIDE CUTOFF WALL CONSTRUCTED AS SHOWN. CUTOFF WALL MAY BE CAST-IN-PLACE OR PRECAST CLASS B CONCRETE. ALL COSTS FOR THE CUTOFF WALL SHALL BE INCIDENTAL TO THE FLARED END SECTION.
4. DEPTH OF RIPRAP (d) PER STANDARD DETAILS.
5. SEE PLAN SHEETS FOR FLARED END SECTION LOCATIONS.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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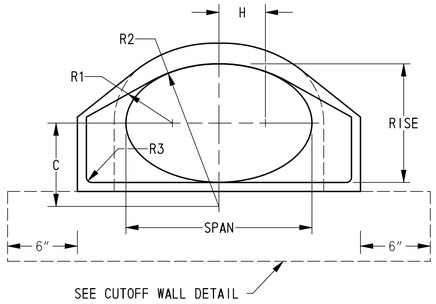
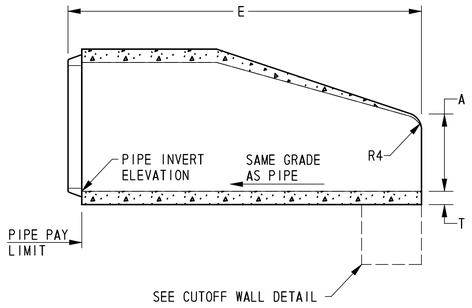
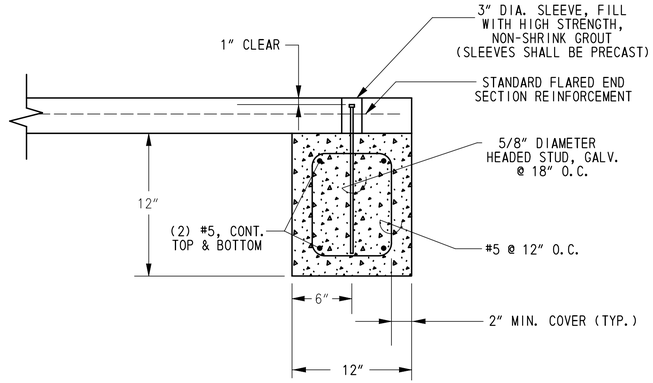
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS	DT-11
				COUNTY NEW CASTLE	DESIGNED BY: DB		SHEET NO. 246
					CHECKED BY: JZ		TOTAL SHTS. 1256



FRONT VIEW

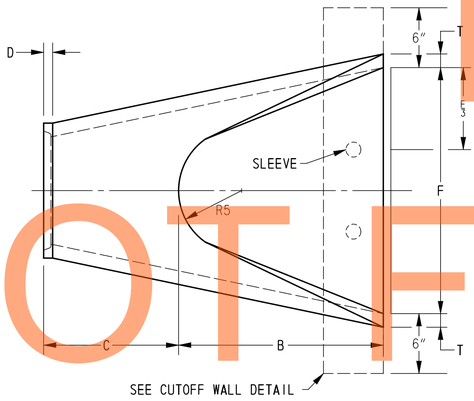


INLET SIDE VIEW

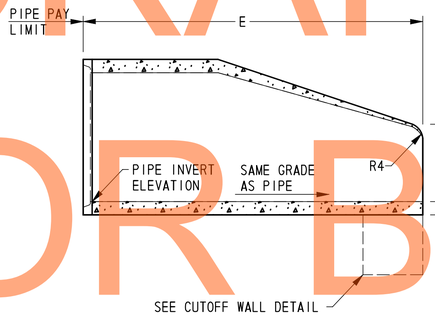


CUTOFF WALL DETAIL
N. T. S.

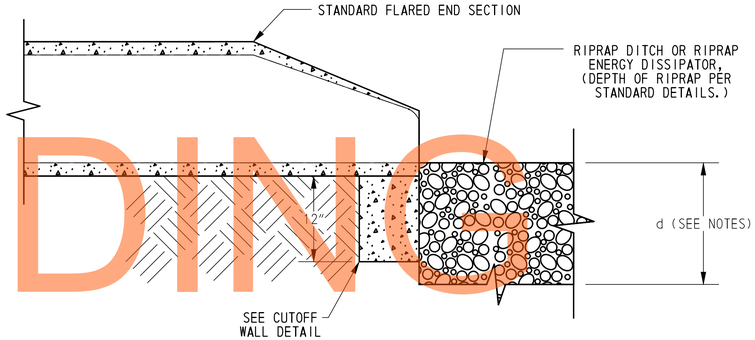
DRAFT



TOP VIEW



OUTLET SIDE VIEW



SIDE VIEW WITH OUTLET PROTECTION
N. T. S.

FLARED END SECTION - ELLIPTICAL
N. T. S.

NOT FOR BIDDING

AUGUST 2015

ELLIPTICAL FLARED END SECTIONS
TABLE OF DIMENSIONS

NOMINAL RISE	NOMINAL SPAN	EQUIVALENT DIA.	ACTUAL RISE	ACTUAL SPAN	T (INCHES)	A (INCHES)	B	C	D (INCHES)	E	F (INCHES)	G (INCHES)	H (INCHES)	R1 (INCHES)	R2 (INCHES)	R3 (INCHES)	R4 (INCHES)	R5 (INCHES)
14	23	18	14 5/8	22 7/8	2 3/4	6	2′-2″	3′-11″	2	6′-1″	36	12 25/32	5 11/32	8 27/32	20 11/16	1 1/2	3	12
19	30	24	19 1/8	30 1/8	3 1/4	9	2′-7″	3′-6″	2	6′-1″	48	16 11/16	6 27/32	11 15/32	29 1/2	1 1/2	3	14
22	34	27	21 9/16	34	3 1/2	10 1/2	2′-9″	3′-4″	2 1/4	6′-1″	54	18 3/4	7 3/4	12 3/4	33 1/32	1 1/2	3	14 1/2
24	38	30	24	37 7/8	3 3/4	12	4′-6″	1′-6″	2 1/2	6′-0″	60	20 13/16	8 11/16	14	36 9/16	1 1/2	3	15
27	42	33	26 23/32	41 15/16	4 1/2	11	5′-3″	2′-9″	3	8′-0″	72	24 31/32	10 5/16	16 13/16	43 7/8	1 1/2	4	18

NOTES:

1. FLARED END SECTIONS SHALL BE MANUFACTURED TO ASTM C-76 AND AASHTO M-170 WITH CLASS III REINFORCEMENT.
2. FLARED END SECTIONS SHALL BE BEDDED IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATION 612, REINFORCED CONCRETE PIPE.
3. FLARED END SECTIONS WITH A RISE OF 27 INCHES AND LARGER SHALL INCLUDE A 12 INCH WIDE CUTOFF WALL CONSTRUCTED AS SHOWN. CUTOFF WALL MAY BE CAST-IN-PLACE OR PRECAST CLASS B CONCRETE. ALL COSTS FOR THE CUTOFF WALL SHALL BE INCIDENTAL TO THE FLARED END SECTION.
4. DEPTH OF RIPRAP (d) PER STANDARD DETAILS.
5. SEE PLAN SHEETS FOR FLARED END SECTION LOCATIONS.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

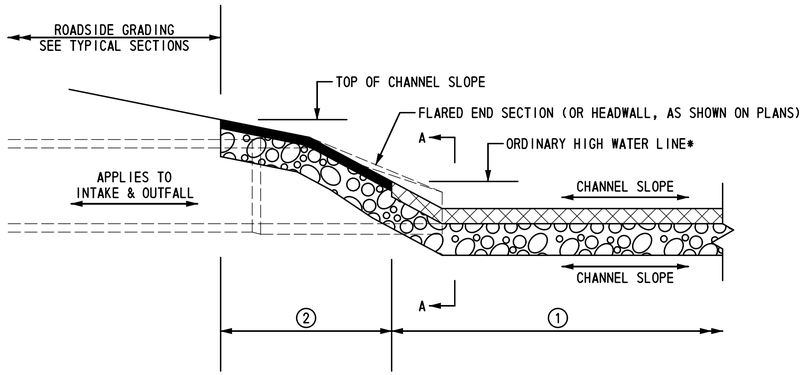
NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

CONSTRUCTION DETAILS

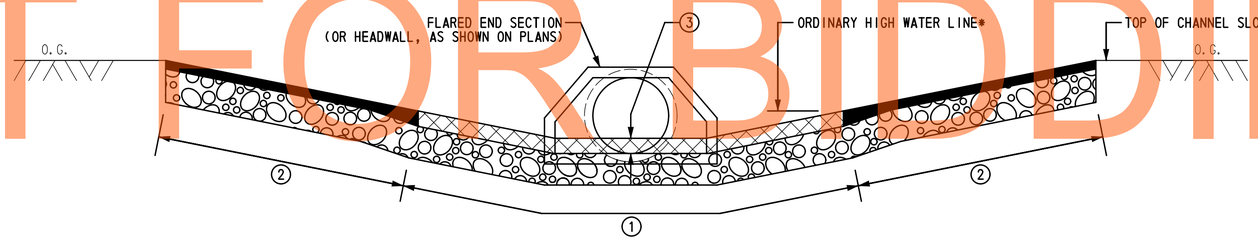
DT-12
SHEET NO. 247
TOTAL SHTS. 1256



TYPICAL CROSS SECTION AT PIPE
NOT TO SCALE

ORDINARY HIGH WATER ELEVATION*			
PIPE NO.	*LOCATION*	*INTAKE ELEV.*	*OUTFALL ELEV.*
CULVERT 822	STA 75+70, RAMP K	68.01′	67.86′
CULVERT 824	STA 462+16, ML	65.34′	65.20′

DRAFT
NOT FOR BIDDING
AUGUST 2015



SECTION A-A
NOT TO SCALE

* ORDINARY HIGH WATER LINE IS ASSUMED TO BE THE 1-YEAR STORM ELEVATION UNLESS OTHERWISE INDICATED BY SITE CONDITIONS OR PERMIT REQUIREMENTS.

(1) BELOW ORDINARY HIGH WATER LINE: RIPRAP PER PLANS. PLACE TOP OF RIPRAP TO MATCH INVERT OF PIPE. CHOKE RIPRAP VOIDS WITH BORROW, TYPE B. PLACE CHANNEL BED FILL TO MATCH CHANNEL BED ELEVATIONS.

(2) ABOVE ORDINARY HIGH WATER LINE: RIPRAP PER PLANS. CHOKE RIPRAP VOIDS WITH DELAWARE #57 STONE. FILL REMAINING VOIDS TO TOP OF RIPRAP WITH TOPSOIL. PLACE ADDITIONAL 4″ TOPSOIL, STREAM BANK SEED MIX AND SOIL RETENTION BLANKET MULCH, TYPE 3. TOPSOIL DEPTH TRANSITION TO BE INCIDENTAL TO TOPSOIL/TOPSOILING ITEM.

(3) RECESS PIPE INVERTS: PIPES ≥ 60″: 12″ MINIMUM
PIPES < 60″: 12″ OR 20% X PIPE DIAMETER, WHICHEVER IS GREATER.

PIPE AND RIPRAP RECESS DETAIL - SINGLE PIPE

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

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

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

CONSTRUCTION DETAILS

DT-13
SHEET NO. 248
TOTAL SHTS. 1256

DRAFT
NOT FOR BIDDING
AUGUST 2015

RR ID	R No.	L	D	W1	W2
1	R-4	10'	1.5'	4.5'	11.5'
2	R-4	10'	1.5'	4.5'	11.5'
6	R-4	10'	1.5'	4.5'	11.5'
258	R-4	6'	1.5'	12'	12'
259	R-4	6'	1.5'	13'	13'
501	R-4	15'	1'	2'	3.5'
505	R-4	9.4'	0.63'	1.3'	3.3'
506	R-4	9.4'	0.63'	1.3'	3.3'
800	R-4	16'	1.5'	9'	18.5'
802	R-4	23'	2.0'	12'	23'
804	R-4	25'	2.0'	17'	30'
807	R-4	20'	2.0'	30'	30'
809	R-4	16'	1.5'	16'	24'
811	R-4	17'	1.5'	16'	24'
813	R-4	16'	1.5'	16'	24'
814	R-4	21'	2.0'	20'	30'
815	R-4	10'	1.0'	13'	18'
816	R-4	10'	1.0'	10'	15'
817	R-4	26'	2.0'	13'	25'
818	R-4	26'	2.0'	13'	25'
819	R-4	26'	2.0'	13'	25'
820	R-4	10'	1.0'	14'	20'
821	R-4	10'	1.0'	10'	15'
823	R-4	10'	1.0'	12'	18'
826	R-5	16'	2.0'	15'	22'

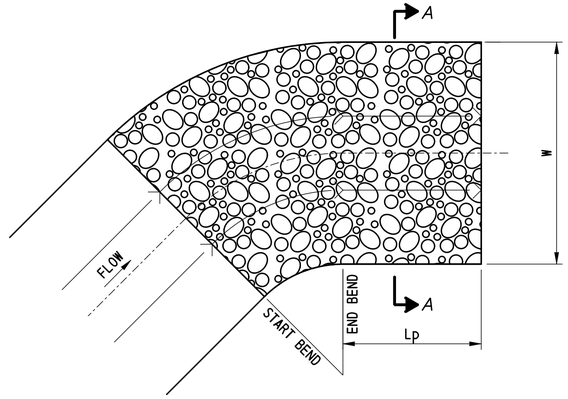
RIPRAP ENERGY DISSIPATOR

NOTES:
1. SEE STANDARD NO. E-26
2. FOR DEPTH OF RIPRAP, SEE STANDARD NO. E-10
3. RIPRAP ITEM# 712005 AND ITEM# 712006
4. GEOTEXTILES, RIPRAP ITEM# 713003
5. DELAWARE NO. 57 STONE ITEM# 302012

RR ID	R No.	L	W
14	R-4	17'	10.5'
107	R-4	14'	10'
262	R-4	14'	10'
263	R-4	14'	10'
264	R-4	18'	10'
265	R-4	14'	10'
266	R-4	14'	10'
267	R-4	18'	10'
822	R-4	16'	14'
825	R-4	10'	12'

RIPRAP DITCH

NOTES:
1. SEE STANDARD NO. E-10
2. RIPRAP ITEM# 712005
3. GEOTEXTILES, RIPRAP ITEM# 713003

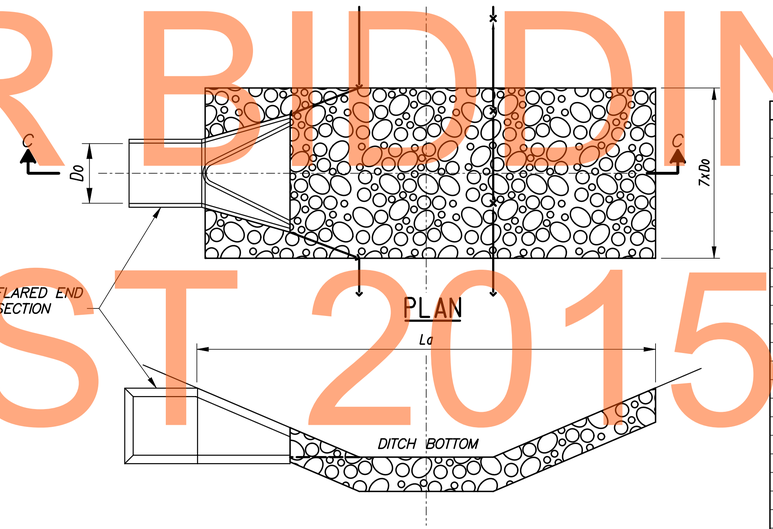


RR ID	R No.	Lp	W
51	R-4	8'	12'
52	R-4	9'	15'
53	R-4	9'	12'
54	R-4	9'	14'
106	R-4	12'	15'
108	R-4	12'	15'
109	R-4	12'	14'
500	R-6	26'	25'
502	R-6	26'	25'
828	R-4	21'	28'

PLAN
NOT TO SCALE

DITCH BEND RIRRAP OUTLET PROTECTION
NOT TO SCALE

NOTES:
1. SEE STANDARD NO. E-10
2. RIPRAP ITEM# 712005 AND ITEM# 712007
3. GEOTEXTILES, RIPRAP ITEM# 713003
4. DELAWARE NO. 57 STONE ITEM# 302012



RR ID	Do	La	R No.
7	1.5'	17'	R-4
15	1.5'	17'	R-4
40	1.5'	17'	R-4
42	1.5'	17'	R-4
43	1.5'	13'	R-4
50	1.5'	15'	R-4
56	1.5'	16'	R-4
70	1.5'	8'	R-4
252	1.5'	14'	R-4
253	1.5'	14'	R-4
254	1.5'	14'	R-4
255	1.5'	14'	R-4
503	1.5'	20'	R-5
504	1.5'	18.5'	R-4
801	2.5'	19'	R-4
803	4.5'	26'	R-4
805	5.0'	8'	R-4
806	5.0'	15'	R-4
808	3.8'	18'	R-4
810	3.8'	22'	R-4
812	3.8'	16'	R-4
824	2.5'	15'	R-4
827	3.5'	26'	R-5

SECTION C-C

PIPE RIPRAP OUTLET PROTECTION IN DITCHES
NOT TO SCALE

NOTES:
1. SEE STANDARD NO. E-10
2. Do=PIPE DIAMETER
3. RIPRAP ITEM# 712005 AND ITEM# 712006
4. GEOTEXTILES, RIPRAP ITEM# 713003
5. DELAWARE NO. 57 STONE ITEM# 302012

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

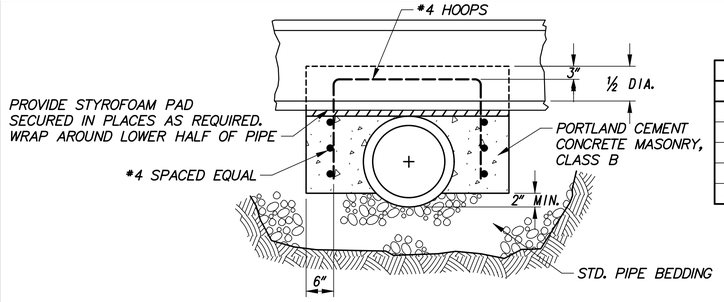
NOT TO SCALE

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

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

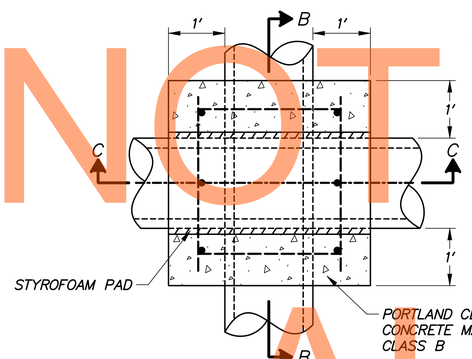
CONSTRUCTION DETAILS

DT-14
SHEET NO.
249
TOTAL SHTS.
1256

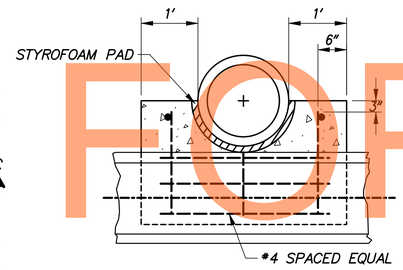


SECTION C-C

LOCATION	PIPE 1		PIPE 2		CLEARANCE
STA, OFFSET	NAME	SIZE/TYPE	NAME	SIZE/TYPE	BETWEEN PIPES
343+17, 3' LT	P-282	23"X14" HERCP	P-801	28"X24" HERCP	0.51
343+24, 80' RT	P-283	18" RCP	P-801	28"X24" HERCP	1.07
352+21, 3' LT	P-48	18" RCP	P-803	68"X43" HERCP	1.43
352+07, 82' RT	P-49	18" RCP	P-803	68"X43" HERCP	1.32
396+89, 107' RT	P-62	18" RCP	P-810	45"X29" HERCP	1.53



PLAN

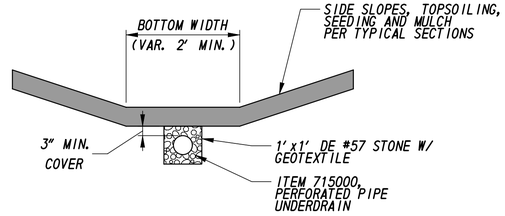


SECTION B-B

GENERAL NOTES FOR ALL DETAILS:
1. END ALL REINFORCING 3" CLEAR OF GROUND, FORMS OR TOP SURFACE.
2. TROWEL FINISH TO SURFACE.
3. REINFORCEMENT SHALL BE #4 VERTICAL AND HORIZONTAL BARS SHOWN.

ITEM 602507 CONCRETE ENCASEMENT

NOT TO SCALE



BIOFILTRATION SWALE WITH UNDERDRAIN TYPICAL SECTION

NOT TO SCALE

NOTES:
1. UPSTREAM ENDS OF UNDERDRAIN PIPES SHALL BE CAPPED WITH A CLEANOUT.
2. SEE TYPICAL SECTIONS FOR ADDITIONAL DITCH DETAILS.
3. SEE CONSTRUCTION PLANS FOR BIOFILTRATION SWALE LOCATIONS.
4. UNDERDRAIN PIPE INVERTS ARE AT MINIMUM 1.65' DEEP AT INLET CONNECTIONS.
5. SCHEDULE SHOWS MINIMUM INVERT DEPTH.

UNDERDRAIN PIPE DETAILS

BMP	PIPE SIZE	INV. DEPTH	INVERT OUT	PIPE LENGTH
654	4"	1.17'	39.91	250'
668	4"	1.17'	65.90	120'
681	4"	1.17'	70.21	135'
688	4"	1.17'	72.52	140'
689	4"	1.17'	68.32	125'

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AUGUST 2015

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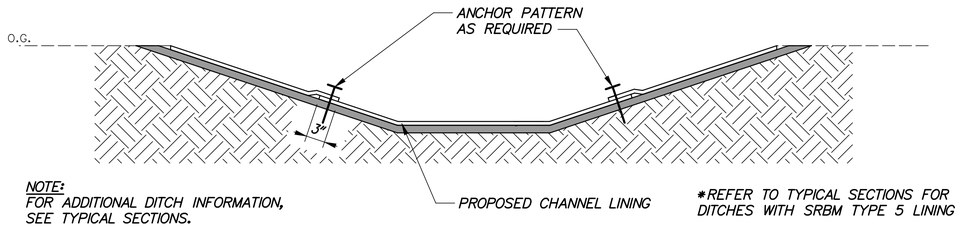
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS	DT-15 SHEET NO. 250
				COUNTY NEW CASTLE	DESIGNED BY: DB		TOTAL SHTS. 1256
					CHECKED BY: JZ		



NOTE:
FOR ADDITIONAL DITCH INFORMATION, SEE TYPICAL SECTIONS.

*REFER TO TYPICAL SECTIONS FOR DITCHES WITH SRBM TYPE 5 LINING

TOE OF SLOPE DITCH DETAIL

NTS

ALIGNMENT	STATION LIMITS		SIDE	BOTTOM WIDTH (W), FT	FLOW DEPTH, FT	LENGTH (L), FT	LINING	SEEDING
	BEGIN	END						
US 301	258+88.24	303+64.98	LT	2.00	1.00	4476.74	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
US 301	305+40.26	306+63.00	LT	2.00	1.00	122.74	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
US 301	352+46.07	359+15.79	LT	2.00	3.00	669.72	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
US 301	382+77.00	393+09.20	LT	2.00	1.50	1032.20	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
RAMP F	46+85.00	51+19.61	LT	2.00	1.00	434.61	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
US 301	472+10.00	477+00.00	RT	4.00	1.00	490.00	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
RAMP F	47+06.49	53+86.02	RT	2.00	1.00	679.53	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND
Connector	17+50.00	21+65.00	RT	4.00	1.50	415.00	SRBM TYPE 6	PERMANENT GRASS SEEDING, DRY GROUND

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AUGUST 2015

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

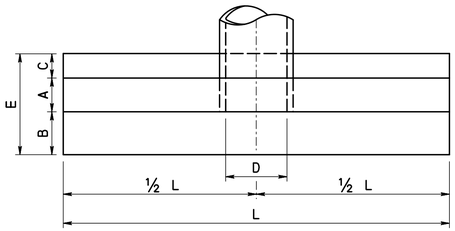
NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

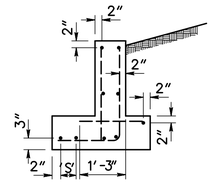
CONTRACT T200911303
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: AM
CHECKED BY: AM

CONSTRUCTION DETAILS

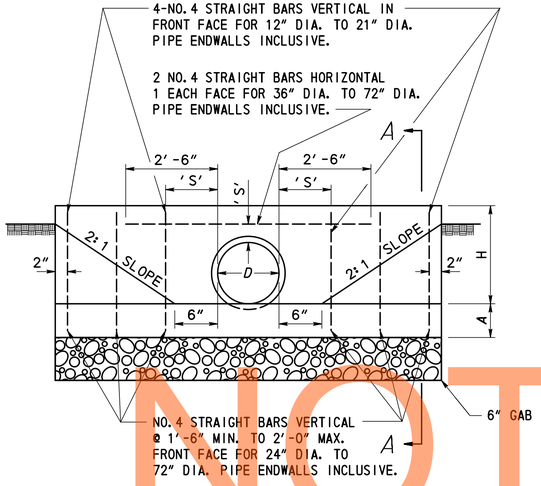
DT-16
SHEET NO. 251
TOTAL SHTS. 1256



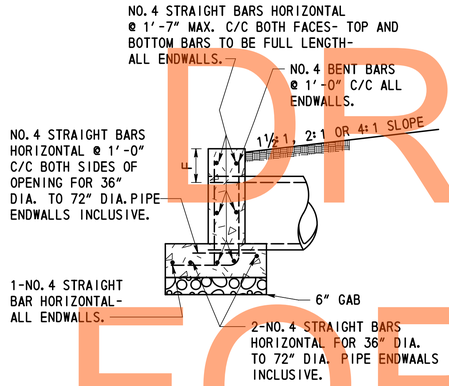
PLAN



DISPOSITION OF BARS DETAIL



ELEVATION



SECTION A-A

QUANTITIES FOR ESTIMATING PURPOSES ONLY

OPENING		DIMENSIONS							QUANTITIES	
D	AREA	A	B	C	E	F	H	L	CONC. C.Y.	STEEL LBS.
INCHES	*SQ. FT.*									
12	0.79	9″	6″	6″	1′-9″	9″	1′-9″	6′-6″	0.61	41
15	1.23	9″	6″	6″	1′-9″	9″	2′-0″	7′-9″	0.77	47
18	1.77	9″	6″	6″	1′-9″	9″	2′-3″	9′-0″	0.95	54
21	2.40	9″	6″	6″	1′-9″	9″	2′-6″	10′-3″	1.14	70
24	3.14	9″	14″	6″	2′-5″	9″	2′-9″	11′-6″	1.56	80
27	3.98	9″	14″	6″	2′-5″	9″	3′-0″	12′-10″	1.82	88
30	4.91	9″	14″	6″	2′-5″	12″	3′-6″	14′-2″	2.22	98
33	5.94	9″	14″	6″	2′-5″	12″	3′-9″	15′-5″	2.48	105
36	7.07	12″	16″	10″	3′-2″	12″	4′-0″	16′-8″	4.16	182
42	9.62	12″	16″	10″	3′-2″	12″	4′-6″	19′-2″	5.07	206
48	12.57	12″	16″	10″	3′-2″	12″	5′-0″	21′-8″	6.09	244
54	15.90	12″	20″	12″	3′-8″	12″	5′-6″	24′-2″	7.62	275
60	19.64	12″	20″	12″	3′-8″	12″	6′-0″	26′-8″	8.82	304
72	28.27	12″	20″	12″	3′-8″	12″	7′-0″	31′-8″	11.46	377

'S' DISTANCES

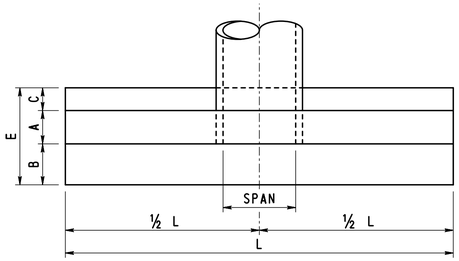
4″ FOR 12″ DIA. TO 21″ DIA. PIPES INCLUSIVE.
6″ FOR 24″ DIA. TO 36″ DIA. PIPES INCLUSIVE.
8″ FOR 42″ DIA. TO 72″ DIA. PIPES INCLUSIVE.

GENERAL NOTES

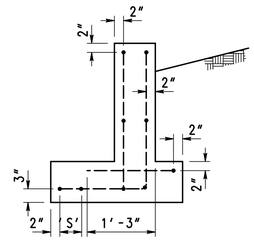
1. CONCRETE SHALL BE CLASS B WITH A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI, IN ACCORDANCE WITH SECTION 812 OF THE STANDARD SPECIFICATION.
2. BAR REINFORCEMENT SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 824 OF THE STANDARD SPECIFICATION.
3. CHAMFER ALL EXPOSED EDGES 1″X1″ OR AS DIRECTED.
4. GAB IS INCIDENTAL TO WALL CONSTRUCTION.

ITEM 617518 HEADWALL SPECIAL, TYPE 1
METAL OR CONCRETE ROUND PIPE

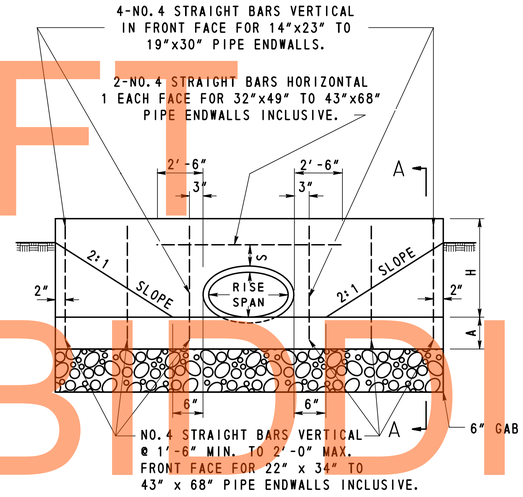
1) SEE PLAN SHEETS FOR LOCATIONS:
HW-802, HW-819, HW-804,
HW-820, HW-163



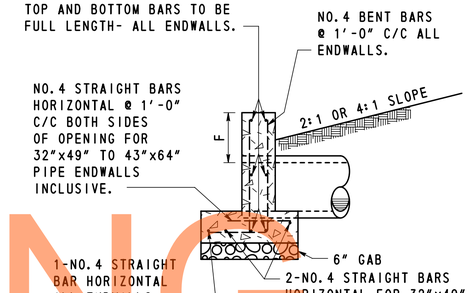
PLAN



DISPOSITION OF BARS DETAIL



ELEVATION



SECTION A-A

QUANTITIES FOR ESTIMATING PURPOSES ONLY

OPENING		DIMENSIONS							QUANTITIES	
D	AREA	A	B	C	E	F	H	L	CONC. C.Y.	STEEL LBS.
RISE x SPAN INCHES	SQ. FT.									
14X23	1.8	9″	8″	6″	1′-11″	12″	2′-2″	8′-7″	0.88	56
19X30	3.3	9″	8″	6″	1′-11″	12″	2′-6″	10′-6″	1.15	63
22X34	4.1	9″	14″	6″	2′-5″	13″	2′-11″	12′-6″	1.74	100
24X38	5.1	9″	14″	6″	2′-5″	13″	3′-1″	13′-6″	1.92	116
27X42	6.3	9″	14″	6″	2′-5″	13″	3′-4″	14′-10″	2.19	124
29X45	7.4	9″	14″	10″	2′-9″	14″	3′-7″	16′-0″	2.61	141
32X49	8.8	12″	16″	10″	3′-2″	14″	3′-10″	17′-0″	4.08	202
34X53	10.2	12″	16″	10″	3′-2″	14″	4′-0″	18′-0″	4.40	210
38X60	12.9	12″	16″	10″	3′-2″	15″	4′-5″	20′-4″	5.23	266
43X68	16.6	12″	20″	12″	3′-8″	15″	4′-10″	22′-8″	6.52	307

'S' DISTANCES

6″ FOR 14″ x 23″ TO 27″ x 42″ INCLUSIVE.
8″ FOR 29″ x 45″ TO 43″ x 68″ INCLUSIVE.

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B WITH A 28 DAY COMPRESSIVE STRENGTH OF 3,000 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 ALL EXPOSED EDGES 1″X1″ OR AS DIRECTED.
4. GAB IS INCIDENTAL TO WALL CONSTRUCTION.

ITEM 617518 HEADWALL SPECIAL, TYPE 2
HORIZONTAL ELLIPTICAL CONCRETE PIPE

1) SEE PLAN SHEETS FOR LOCATIONS:
HW-801, HW-803, HW-61,
HW-807, HW-808, HW-809, HW-810,
HW-821, HW-822, HW-811, HW-812

DRAFT
NOT FOR BIDDING
AUGUST 2019

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303 / COUNTY NEW CASTLE	BRIDGE NO. / DESIGNED BY: JF / CHECKED BY: DB

CONSTRUCTION DETAILS

DT-17 | SHEET NO. 252 | TOTAL SHTS. 1256

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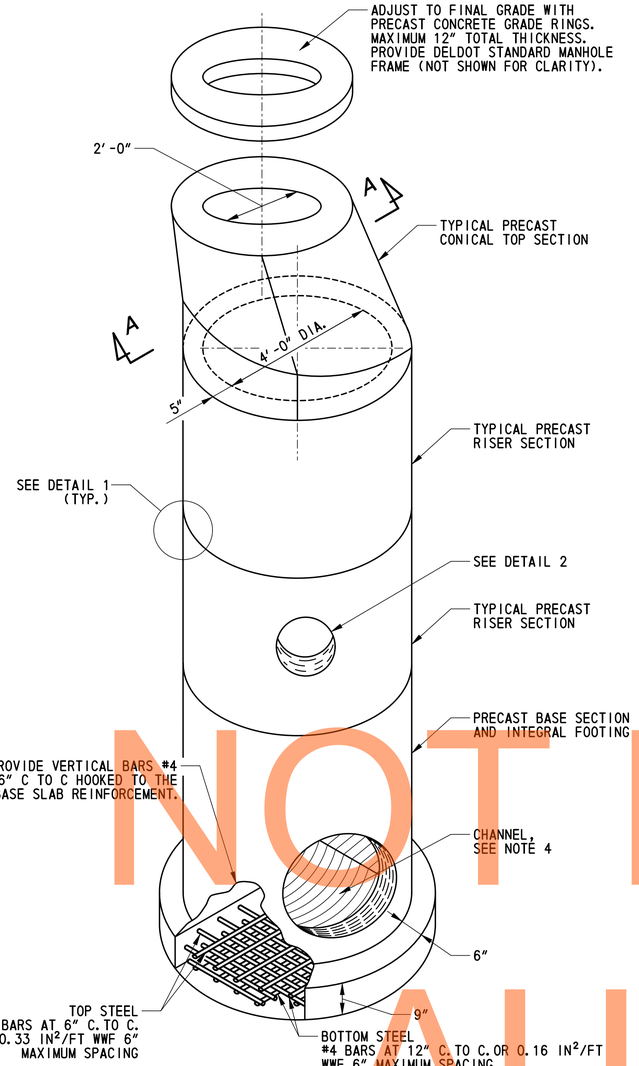
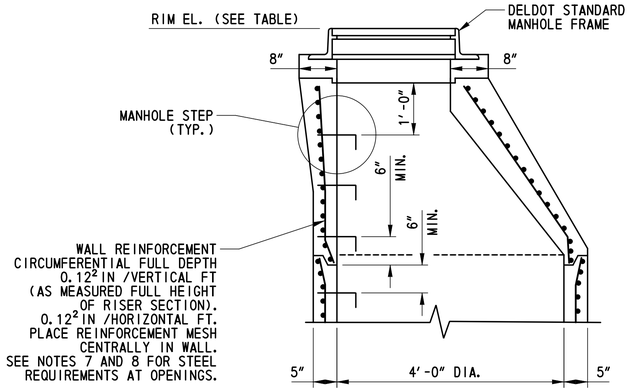


ITEM 708582 - MANHOLE, SPECIAL I

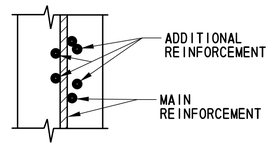
SCALE: N.T.S.

*SEE TABLE FOR PIPE SIZES, INVERT ELEVATIONS AND RIM ELEVATIONS



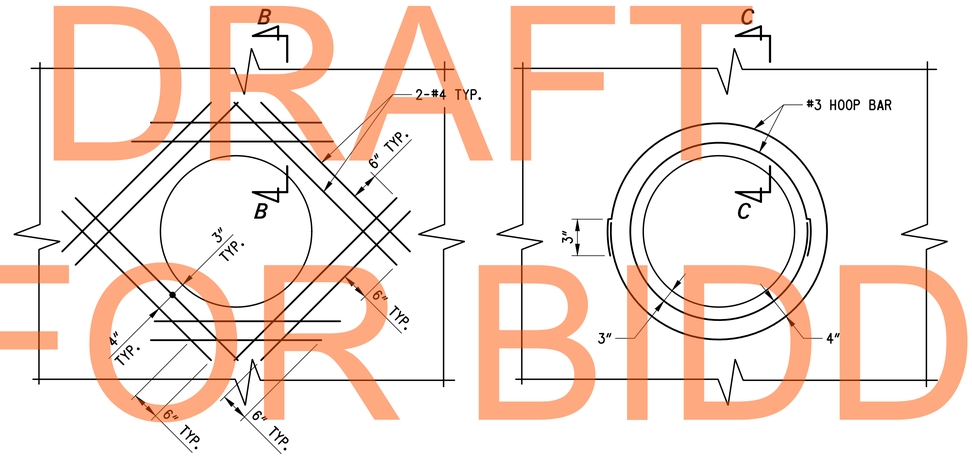
SECTION A-A

SCALE: N.T.S.



SECTION B-B OR C-C

SCALE: N.T.S.



REINFORCEMENT DETAILS AT OPENINGS

SCALE: N.T.S.

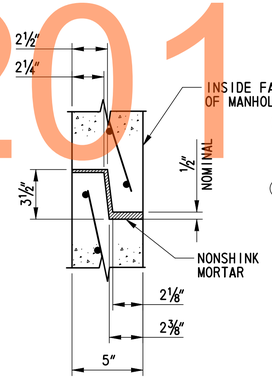
NOTES:

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. CLEAR COVER FOR STEEL:
   WALLS: 1½"
   FOOTINGS: 2" TOP BARS
   1½" BOTTOM BARS
   1½" SIDE COVER
4. FORM A CONCRETE CHANNEL AT THE BOTTOM OF THE MANHOLE CONFORMING TO THE SHAPE OF THE LOWER HALF OF THE INCOMING AND/OR OUTGOING PIPES. PROVIDE A FULL DEPTH U-SHAPED CHANNEL.
5. CLEAN CONSTRUCTION JOINTS THOROUGHLY BEFORE PLACING NEXT CONCRETE SEGMENT.
6. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION SO AS TO PROVIDE AN UNCUT WALL EQUAL TO 20% OF THE OPENING, BUT NO LESS THAN 8", BETWEEN THE OPENING AND THE CLOSEST JOINT BETWEEN RISERS - SEE DETAIL 2.
7. FOR PRECAST RISER OR BASE SECTIONS WITH ONE OPENING LOCATED AT DEPTHS TO 60 FT, PROVIDE CIRCUMFERENTIAL REINFORCEMENT IN ACCORDANCE WITH SECTION A-A. FOR SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH OF 10 FT AND LESS, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.16 In²/VERTICAL FT FOR THE HEIGHT OF RISER OR BASE SECTION.
8. FOR RISERS OR BASE SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH GREATER THAN 10 FT, BUT LESS THAN OR EQUAL TO 25 FT, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.44 In²/VERTICAL FT FOR THE HEIGHT OF THE RISER OR BASE SECTION.
9. MARK RISERS OR BASE SECTIONS WITH HOLES CLEARLY WITH MAXIMUM ALLOWABLE DEPTH.
10. PROVIDE ADDITIONAL REINFORCEMENT BARS AROUND OPENINGS AS SHOWN ON REINFORCEMENT DETAILS AT OPENINGS.

MANHOLE NO.	RIM EL.	INVERT IN EL.	PIPE SIZE IN	INVERT IN EL.	PIPE SIZE IN	INVERT OUT EL.	PIPE SIZE OUT
MH-4	76.69	72.93	24" RCP	N/A	N/A	64.52	24" RCP
MH-5	75.80	71.17	18" RCP	N/A	N/A	61.51	18" RCP
MH-6	87.50	83.73	18" RCP	75.15	18" RCP	74.95	18" RCP
MH-7	85.00	80.44	18" RCP	N/A	N/A	72.82	18" RCP
MH-8	87.00	83.50	18" RCP	N/A	N/A	70.77	18" RCP
MH-9	83.40	80.15	18" RCP	N/A	N/A	71.95	18" RCP
MH-22	79.50	74.92	18" RCP	N/A	N/A	68.50	18" RCP
MH-30	88.40	75.79	18" RCP	N/A	N/A	75.59	18" RCP
MH-193	83.29	79.29	18" RCP	64.38	24" RCP	64.29	24" RCP

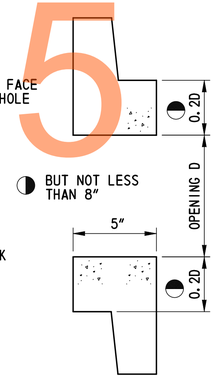
CROSS-REFERENCE NOTE:

1. FOR TYPICAL MANHOLE STEP DETAILS, SEE DWG. DT-20.



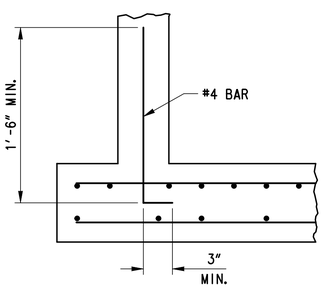
DETAIL 1

SCALE: N.T.S.



DETAIL 2

SCALE: N.T.S.



DETAIL 3

SCALE: N.T.S.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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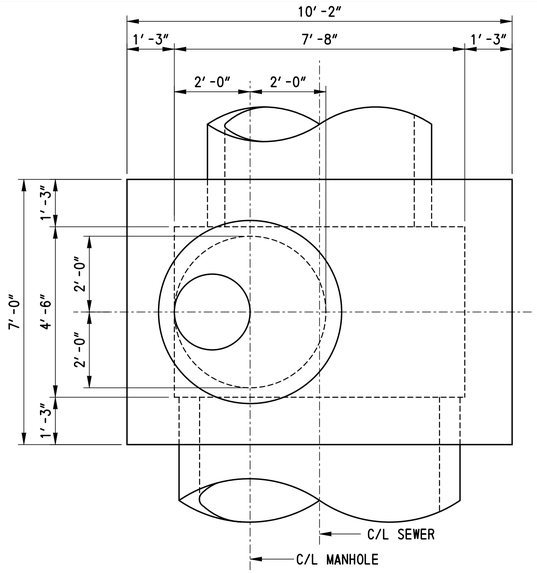
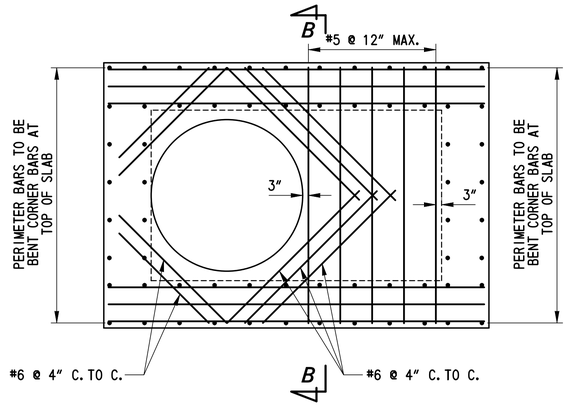
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD	CONTRACT T200911303	BRIDGE NO.	CONSTRUCTION DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: AY	DT-18
					CHECKED BY: AH	SHEET NO. 253
						TOTAL SHTS. 1262



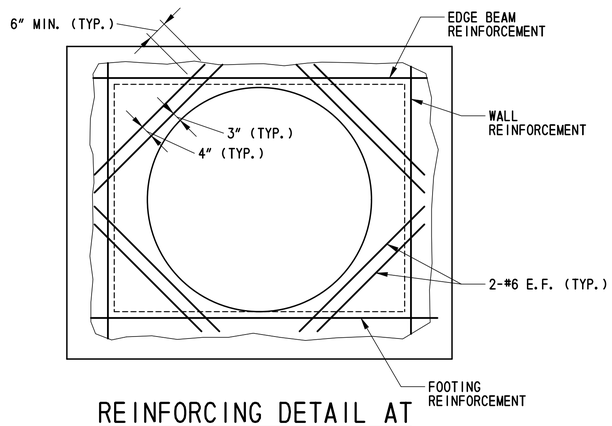
PLAN VIEW

SCALE: 1/2″= 1′-0″



SECTION A-A

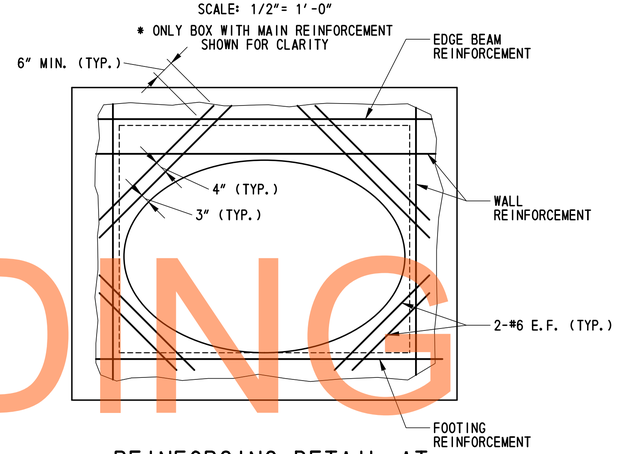
SCALE: 1/2″= 1′-0″



REINFORCING DETAIL AT VERTICAL OPENING (RCP)

SCALE: 1/2″= 1′-0″

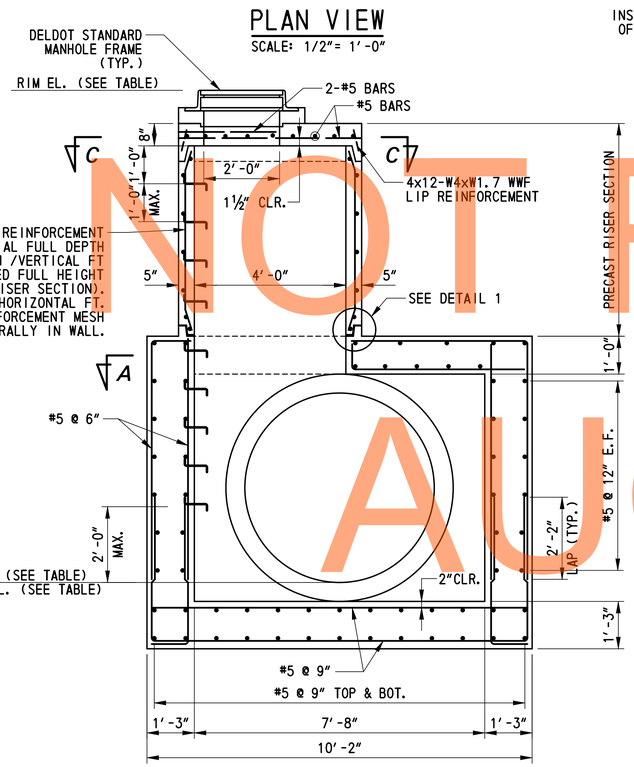
* ONLY BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY



REINFORCING DETAIL AT VERTICAL OPENING (HERCP)

SCALE: 1/2″= 1′-0″

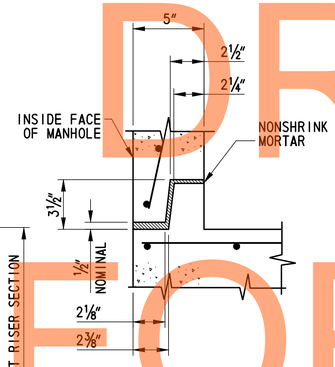
* ONLY BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY



SECTION VIEW
ITEM 708596 - MANHOLE, SPECIAL II

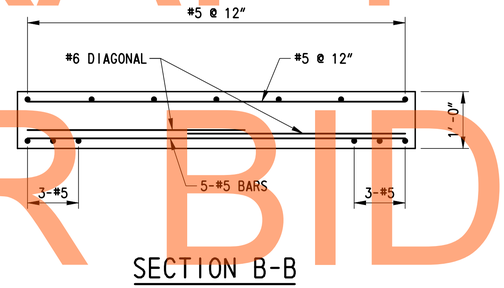
SCALE: 1/2″= 1′-0″

*SECTION SHOWN FOR MANHOLE 803 AT 60″ RCP. 76″ x 48″ HERCP NOT SHOWN FOR CLARITY. MANHOLE 802 SIMILAR.



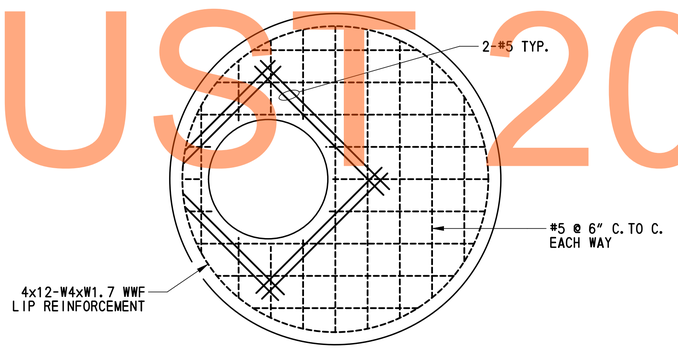
DETAIL 1

SCALE: N.T.S.



SECTION B-B

SCALE: 3/4″= 1′-0″



SECTION C-C

SCALE: N.T.S.

NOTES:

1. RISER SECTIONS SHALL BE PRECAST CONCRETE CLASS A WITH A 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI. CONTRACTOR MAY USE CAST-IN-PLACE CONCRETE CLASS B WITH A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI FOR BOX SECTIONS ONLY AT NO ADDITIONAL COST TO THE DEPARTMENT. ALL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE STANDARD SPECIFICATIONS.
2. BAR REINFORCEMENT SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 824 OF THE STANDARD SPECIFICATION.
3. PROVIDE 1 1/2″ CONCRETE COVER ON REINFORCING BARS, EXCEPT AS NOTED.
4. FORM A CONCRETE CHANNEL AT THE BOTTOM OF THE MANHOLE CONFORMING TO THE SHAPE OF THE LOWER HALF OF THE INCOMING AND/OR OUTGOING PIPES. PROVIDE A FULL DEPTH U-SHAPED CHANNEL.
5. CLEAN CONSTRUCTION JOINTS THOROUGHLY BEFORE PLACING NEXT CONCRETE SEGMENT.

MANHOLE NO.	RIM EL.	INVERT IN EL.	PIPE SIZE IN	INVERT OUT EL.	PIPE SIZE OUT
MH-802	69.00	58.60	54″ RCP	57.80	68″x43″ HERCP
MH-803	72.00	59.02	60″ RCP	59.01	76″x48″ HERCP

CROSS REFERENCE NOTE:

1. FOR TYPICAL MANHOLE STEP DETAILS, SEE DWG. DT-20.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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DELAWARE DEPARTMENT OF TRANSPORTATION

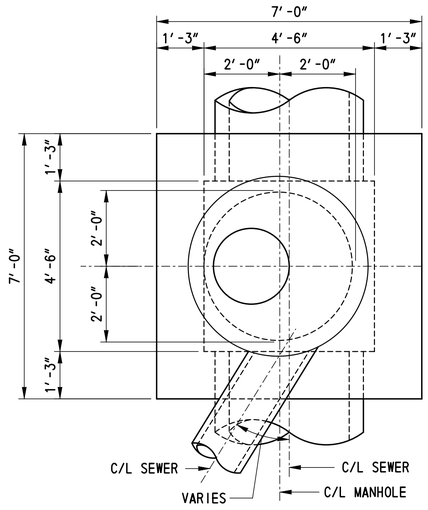
ADDENDUMS / REVISIONS

US 301 LEVELS ROAD TO SUMMIT BRIDGE ROAD

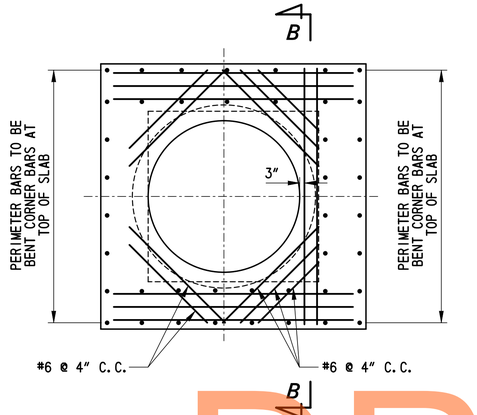
CONTRACT	BRIDGE NO.
T200911303	
COUNTY	DESIGNED BY: AY
NEW CASTLE	CHECKED BY: AH

CONSTRUCTION DETAILS

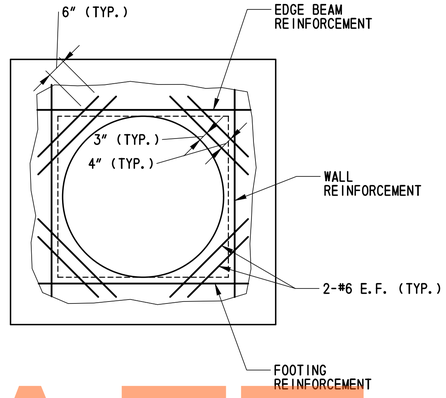
DT-19
SHEET NO. 254
TOTAL SHTS. 1262



PLAN VIEW
SCALE: 1/2″= 1′-0″

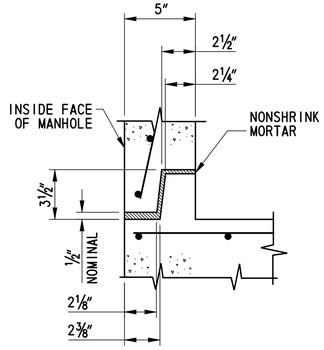


SECTION A-A
SCALE: 1/2″= 1′-0″

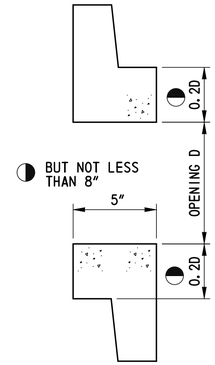


REINFORCING DETAIL AT VERTICAL OPENING
SCALE: 1/2″= 1′-0″

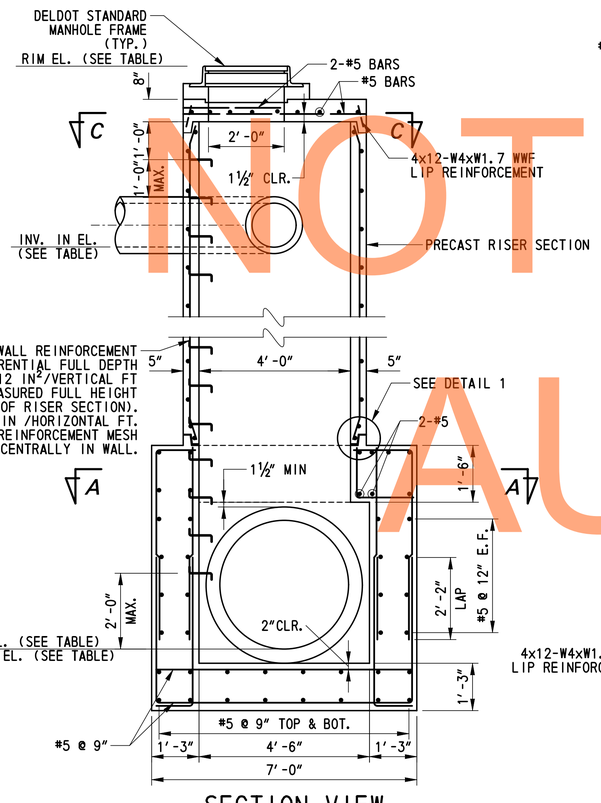
* ONLY BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY



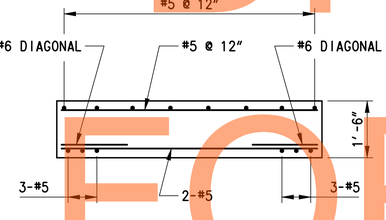
DETAIL 1
SCALE: N.T.S.



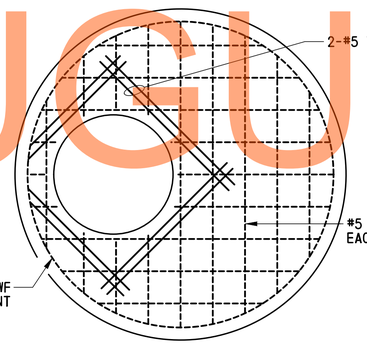
DETAIL 2
SCALE: N.T.S.



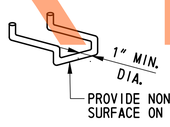
SECTION VIEW
ITEM 708597 - MANHOLE, SPECIAL III
SCALE: 1/2″= 1′-0″



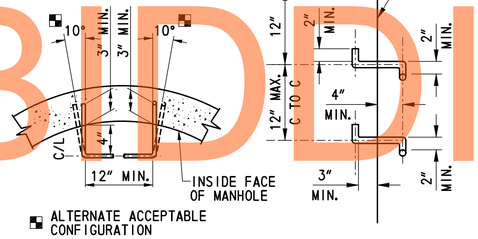
SECTION B-B
SCALE: 1/2″= 1′-0″



SECTION C-C
SCALE: N.T.S.



STEP WITH HOOKS



PLAN VIEW

SIDE VIEW

TYPICAL STEP CONFIGURATION
MANHOLE STEPS
SCALE: N.T.S.

MANHOLE NO.	RIM EL.	INVERT IN EL.	PIPE SIZE IN	INVERT IN EL.	PIPE SIZE IN	INVERT OUT EL.	PIPE SIZE OUT
MH-10	80.45	76.45	18″ RCP	66.87	18″ RCP	66.75	18″ RCP
MH-11	76.35	63.64	24″ RCP	N/A	N/A	63.55	24″ RCP
MH-13	84.00	79.40	18″ RCP	58.20	36″ DIP	58.20	36″ RCP
MH-19	85.06	79.66	18″ RCP	63.95	24″ RCP	63.85	24″ RCP
MH-806	95.00	59.33	42″ RCP	N/A	N/A	59.32	42″ RCP

NOTES:

1. RISER SECTIONS SHALL BE PRECAST CONCRETE CLASS A WITH A 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI. CONTRACTOR MAY USE CAST-IN-PLACE CONCRETE CLASS B WITH A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI FOR BOX SECTIONS ONLY AT NO ADDITIONAL COST TO THE DEPARTMENT. ALL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE STANDARD SPECIFICATIONS.
2. BAR REINFORCEMENT SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 824 OF THE STANDARD SPECIFICATION.
3. PROVIDE 1 1/2″ CONCRETE COVER ON REINFORCING BARS, EXCEPT AS NOTED.
4. FORM A CONCRETE CHANNEL AT THE BOTTOM OF THE MANHOLE CONFORMING TO THE SHAPE OF THE LOWER HALF OF THE INCOMING AND/OR OUTGOING PIPES. PROVIDE A FULL DEPTH U-SHAPED CHANNEL.
5. CLEAN CONSTRUCTION JOINTS THOROUGHLY BEFORE PLACING NEXT CONCRETE SEGMENT.
6. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION SO AS TO PROVIDE AN UNCUT WALL EQUAL TO 20% OF THE OPENING, BUT NO LESS THAN 8″, BETWEEN THE OPENING AND THE CLOSEST JOINT BETWEEN RISERS - SEE DETAIL 2.
7. MARK RISERS OR BASE SECTIONS WITH HOLES CLEARLY WITH MAXIMUM ALLOWABLE DEPTH.

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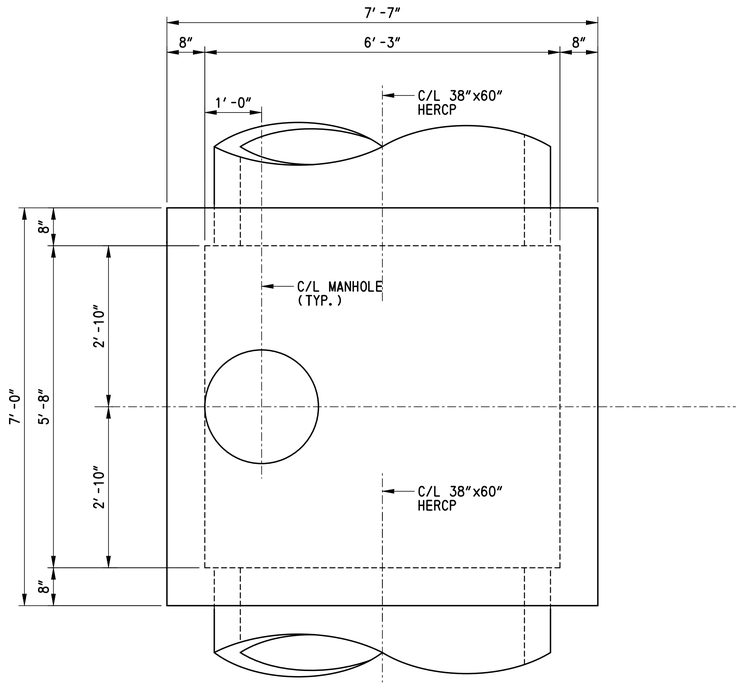
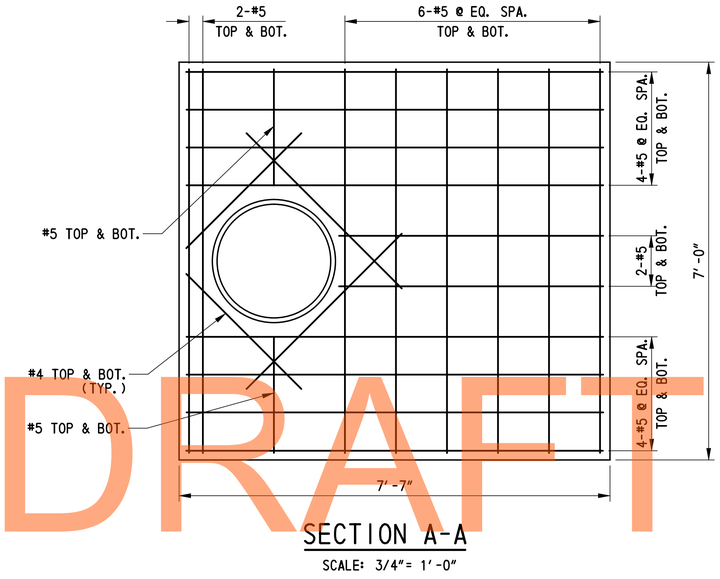


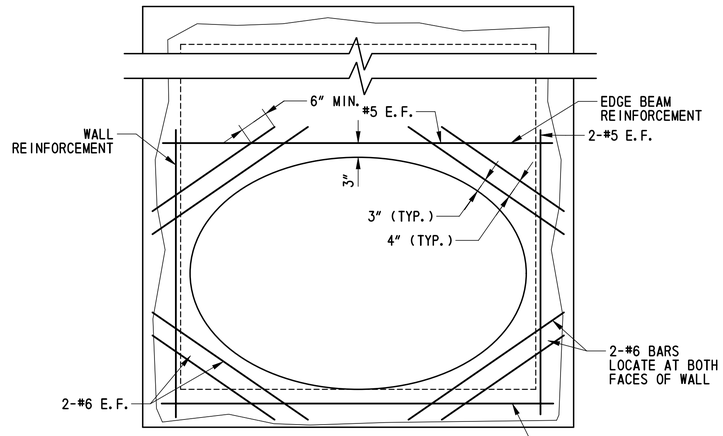
PLAN VIEW

SCALE: 3/4″= 1′-0″



SECTION A-A

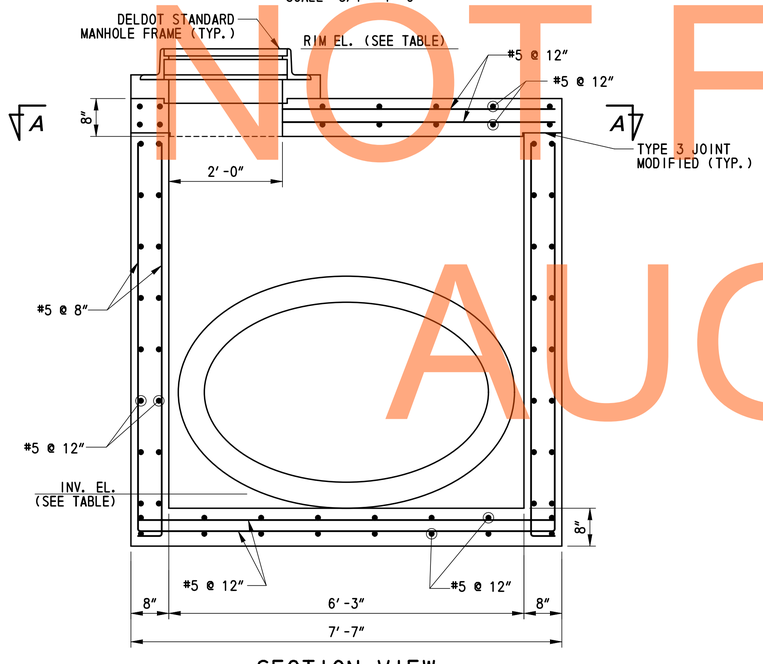
SCALE: 3/4″= 1′-0″



REINFORCING DETAIL AT VERTICAL OPENING

SCALE: 3/4″= 1′-0″

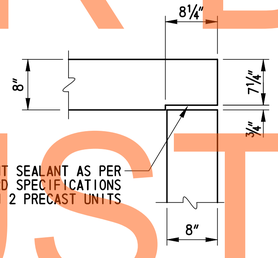
* ONLY BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY.



SECTION VIEW

ITEM 708598 - MANHOLE, SPECIAL IV

SCALE: 3/4″= 1′-0″



TYPE 3 JOINT MODIFIED

SCALE: 1″= 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. PROVIDE 1 1/2″ CONCRETE COVER ON REINFORCING BARS, EXCEPT AS NOTED.

MANHOLE NO.	RIM EL.	INVERT IN EL.	PIPE SIZE IN	INVERT IN EL.	PIPE SIZE IN	INVERT OUT EL.	PIPE SIZE OUT
MH-805	73.00	64.47	38″X60″ HERCP	N/A	N/A	64.46	38″x60″ HERCP

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

CONSTRUCTION DETAILS

DT-21
SHEET NO. 256
TOTAL SHTS. 1262

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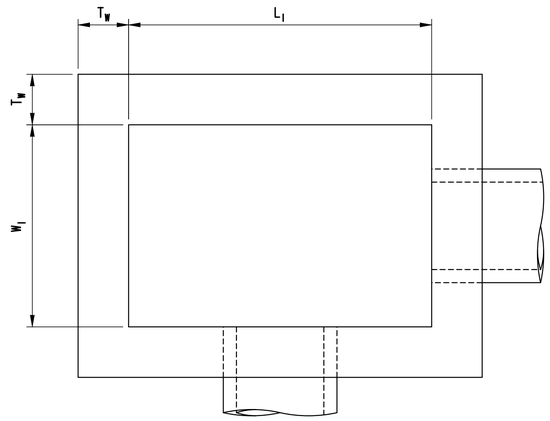
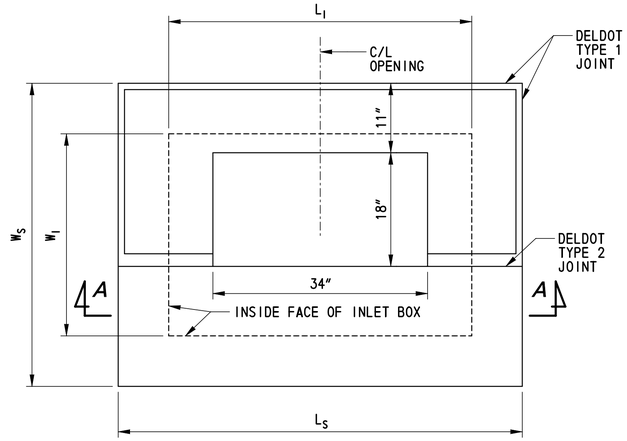
AUGUST 2015



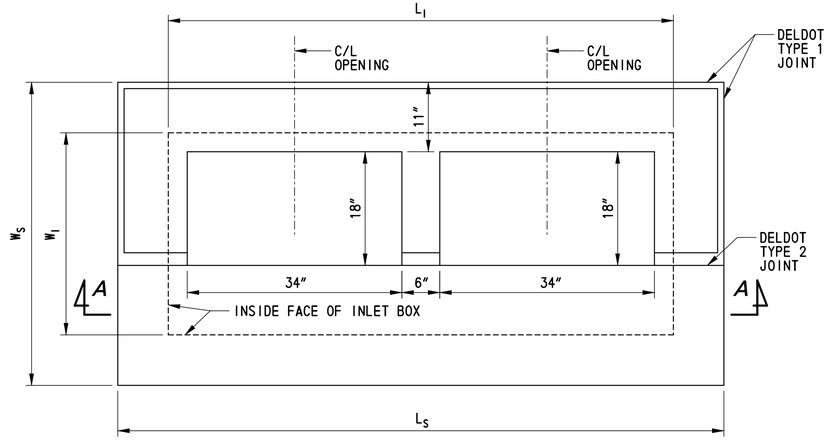
PLAN VIEW - INLET BOX

SCALE: N.T.S.



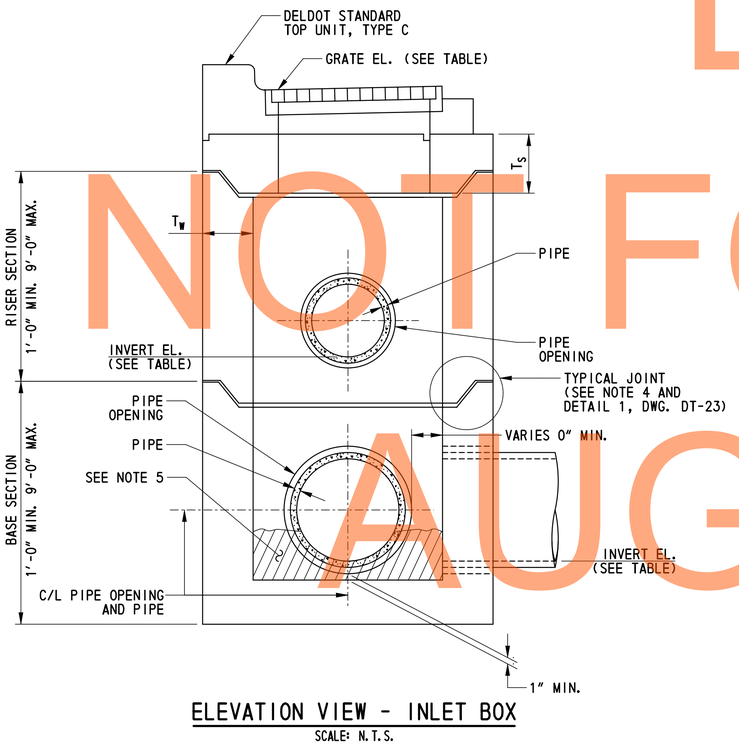
PLAN VIEW - COVER SLAB SINGLE GRATE

SCALE: N.T.S.



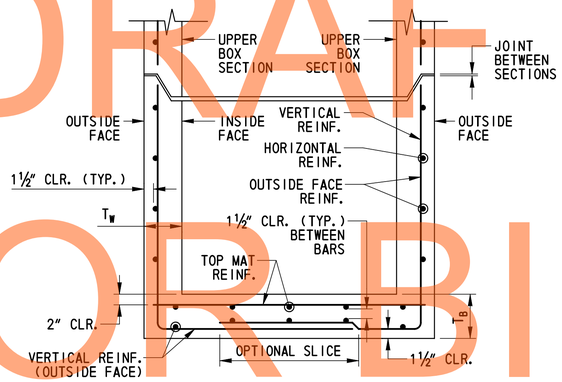
PLAN VIEW - COVER SLAB DOUBLE GRATE

SCALE: N.T.S.



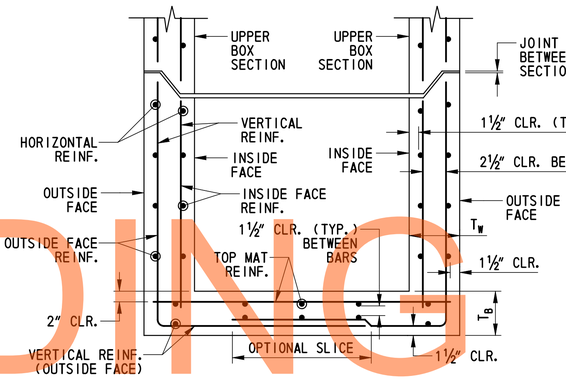
ELEVATION VIEW - INLET BOX

SCALE: N.T.S.



VERTICAL SECTION OF BASE SECTION
WITH OUTSIDE FACE REINFORCEMENT

SCALE: N.T.S.



VERTICAL SECTION OF BASE SECTION
WITH OUTSIDE FACE AND INSIDE FACE REINFORCEMENT

SCALE: N.T.S.

DRAINAGE INLET, SPECIAL IV, V, VI, VII AND VIII

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. PROVIDE 1½" CONCRETE COVER ON REINFORCING BARS, EXCEPT AS NOTED.
4. CLEAN CONSTRUCTION JOINTS THOROUGHLY BEFORE PLACING NEXT CONCRETE SEGMENT.
5. FORM BOTTOM OF INLET USING CLASS B CONCRETE IN ACCORDANCE WITH SECTION 812 OF THE DELDOT STANDARD SPECIFICATION TO CHANNEL THE FLOW TOWARD THE OUTLET PIPE. PROVIDE #4 REINFORCEMENT BARS SPACED AT 12" C-C MAXIMUM WHEN THICKNESS EXCEEDS 3".
6. MINIMUM LAP LENGTHS:
   1'-4" #3 BARS
   1'-9" #4 BARS
   2'-2" #5 BARS

CROSS REFERENCE NOTE:

1. FOR TABLE WITH BAR SIZES AND BOX DIMENSIONS, SEE DWG. DT-23.
2. FOR SECTION A-A, SEE DWG. DT-23.
2. FOR ADDITIONAL DETAILS, SEE DWG. DT-23.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

CONSTRUCTION DETAILS

DT-22
SHEET NO. 257
TOTAL SHTS. 1262

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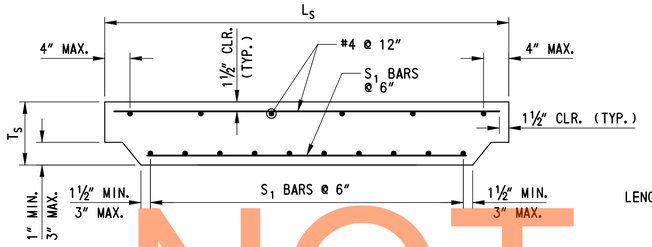
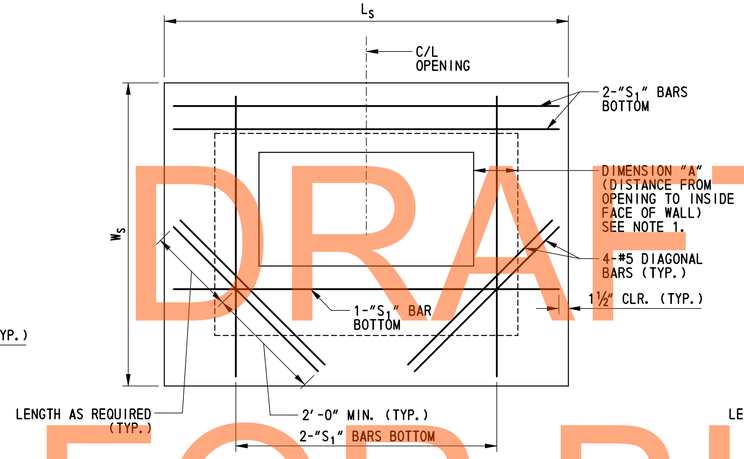
AUGUST 2015

SPECIAL INLET SUMMARY TABLE

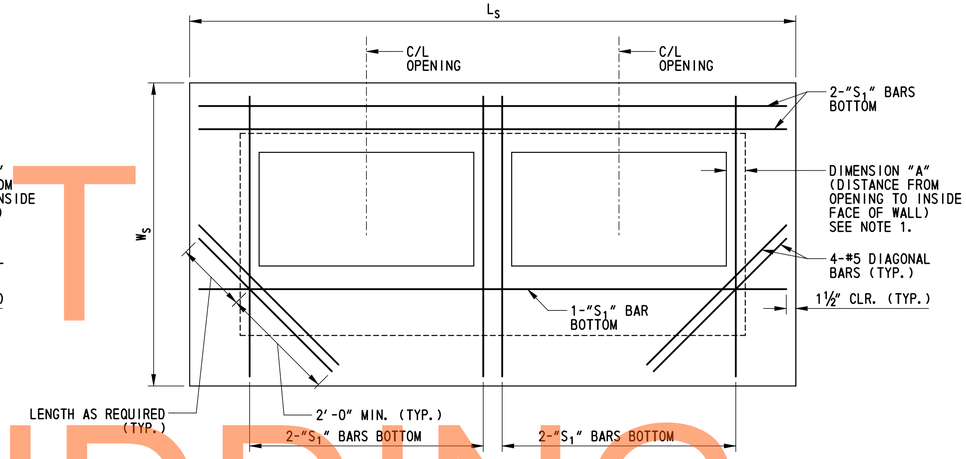
ITEM NO.	INLET TYPE	INLET NO.	L_I (IN.)	W_I (IN.)	L_S (IN.)	W_S (IN.)	T_W (IN.)	T_B (IN.)	OUTSIDE FACE REINFORCEMENT				INSIDE FACE REINFORCEMENT				TOP MAT REINFORCEMENT		COVER SLAB REINFORCEMENT		TOP OF GRATE (FT.)	INVERT IN (FT.)	PIPE SIZE IN	INVERT IN (FT.)	PIPE SIZE IN	INVERT OUT (FT.)	PIPE SIZE OUT
									HORIZONTAL		VERTICAL		HORIZONTAL		VERTICAL												
									BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	S_1 (BAR SIZE)	T_S (IN.)							
708653	SPECIAL VIII	DI-119	72	48	88	64	8	9	#3	4	#4	4	#3	4	#3	9	#3	6	#9	12	92.87	79.13	24" RCP	N/A	N/A	78.63	24" RCP
708515	SPECIAL IV	DI-121	34	24	46	36	6	7	#4	6	#3	6	-	-	-	-	#3	6	#8	10	96.77	89.57	18" RCP	N/A	N/A	84.70	18" RCP
708515	SPECIAL IV	DI-124	34	24	46	36	6	7	#5	9	#3	6	-	-	-	-	#3	6	#8	10	96.77	92.02	18" RCP	N/A	N/A	81.84	18" RCP
708515	SPECIAL IV	DI-132	34	24	50	40	8	7	#4	12	#3	6	#4	12	#3	9	#3	6	#8	10	95.78	91.13	18" RCP	N/A	N/A	78.58	18" RCP
708515	SPECIAL IV	DI-135	34	24	46	36	6	7	#4	9	#3	6	-	-	-	-	#3	6	#8	10	95.77	91.02	18" RCP	N/A	N/A	81.65	18" RCP
708517	SPECIAL VI	DI-138	48	48	64	64	8	7	#3	4	#3	6	#4	12	#3	9	#3	6	#8	10	85.07	63.78	24" RCP	75.43	18" RCP	63.68	24" RCP
708516	SPECIAL V	DI-142	48	30	60	42	6	7	#4	6	#3	6	-	-	-	-	#3	6	#8	10	86.44	76.18	24" RCP	79.93	18" RCP	73.45	24" RCP
708653	SPECIAL VIII	DI-157	72	48	88	64	8	9	#3	4	#4	4	#3	4	#3	9	#3	6	#9	12	92.97	84.77	18" RCP	86.16	18" RCP	80.90	18" RCP
708518	SPECIAL VII	DI-186	72	24	88	40	8	10	#4	4	#4	4	#4	4	#3	9	#3	6	#9	12	91.93	N/A	N/A	N/A	N/A	73.00	18" RCP



SECTION A-A
SCALE: N.T.S.

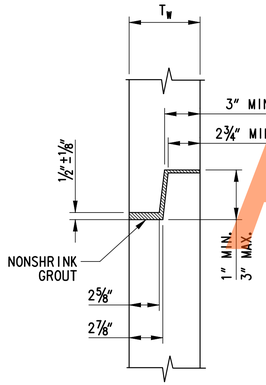


SINGLE GRATE

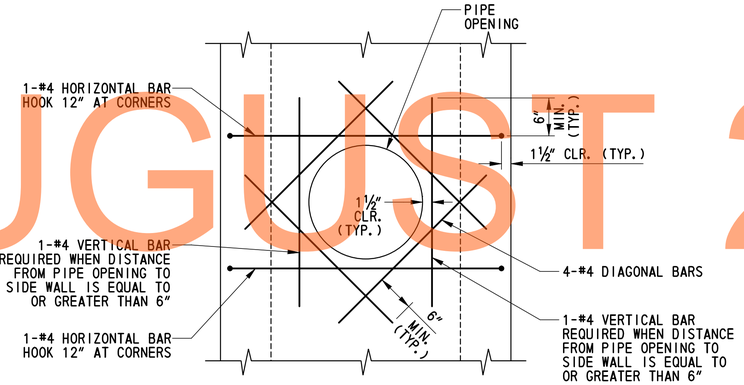


DOUBLE GRATE

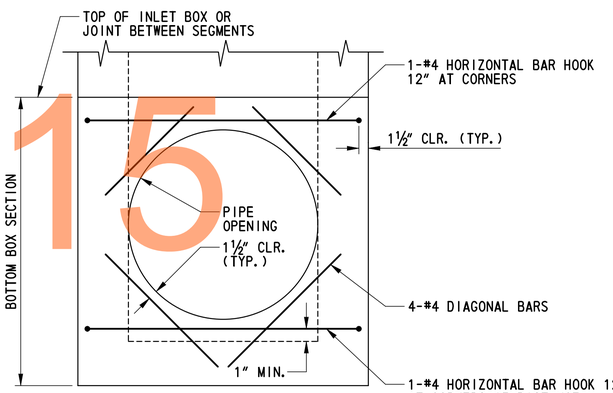
ADDITIONAL REINFORCEMENT AT COVER SLAB OPENINGS
SCALE: N.T.S.



DETAIL 1
SCALE: N.T.S.



WITHIN BOX SECTION



AT BASE SECTION

ADDITIONAL REINFORCEMENT AT PIPE OPENINGS
SCALE: N.T.S.

NOTE:

1. IF DIMENSION "A" IS LESS THAN 6", DIAGONAL BARS ARE NOT NEEDED.
2. BAR REINFORCEMENT SHALL BE EPOXY COATED.

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DELAWARE DEPARTMENT OF TRANSPORTATION

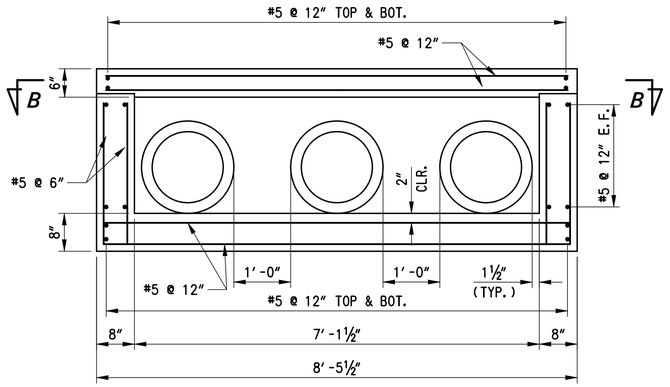
ADDENDUMS / REVISIONS

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

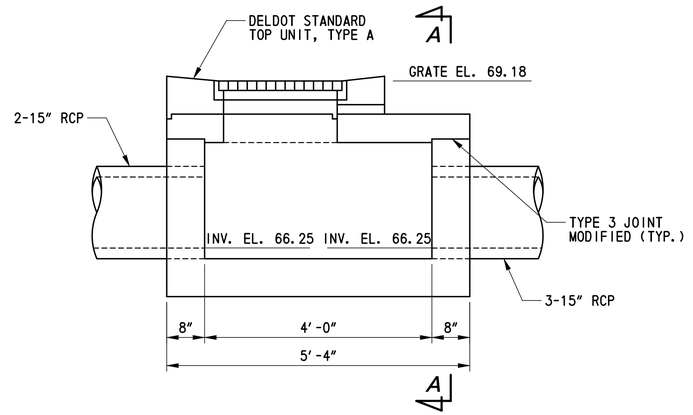
CONSTRUCTION DETAILS

DT-23
SHEET NO. 258
TOTAL SHTS. 1262



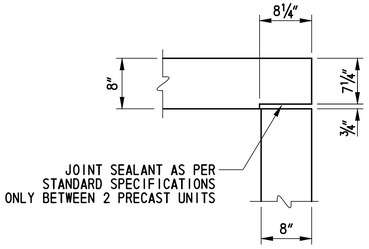
DRAINAGE INLET, SPECIAL XI
SECTION A-A

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



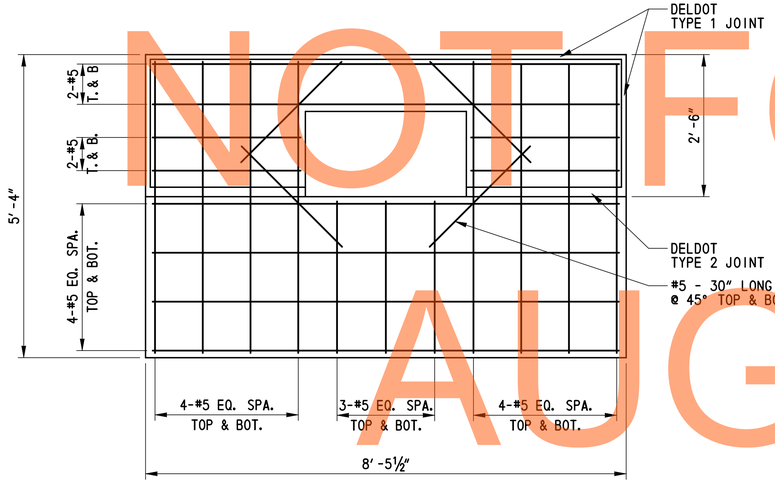
DRAINAGE INLET, SPECIAL XI

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



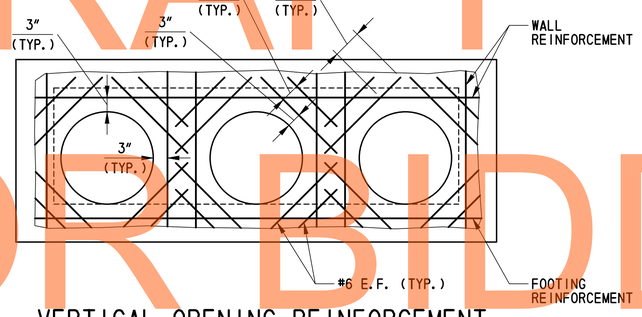
TYPE 3 JOINT MODIFIED

SCALE: 1"= 1'-0"



DRAINAGE INLET, SPECIAL XI
SECTION B-B

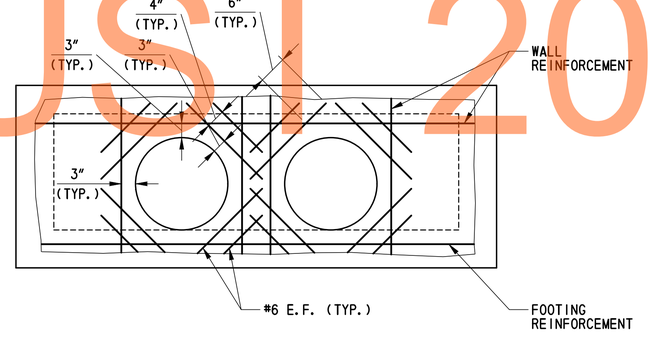
SCALE: 3/4"= 1'-0"



VERTICAL OPENING REINFORCEMENT
AT TRIPLE 15" RCP

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

* ONLY THE FRONT FACE OF BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY



VERTICAL OPENING REINFORCEMENT
AT DOUBLE 15" RCP

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

* ONLY THE FRONT FACE OF BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY

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. PROVIDE 1 1/2" CONCRETE COVER ON REINFORCING BARS, EXCEPT AS NOTED.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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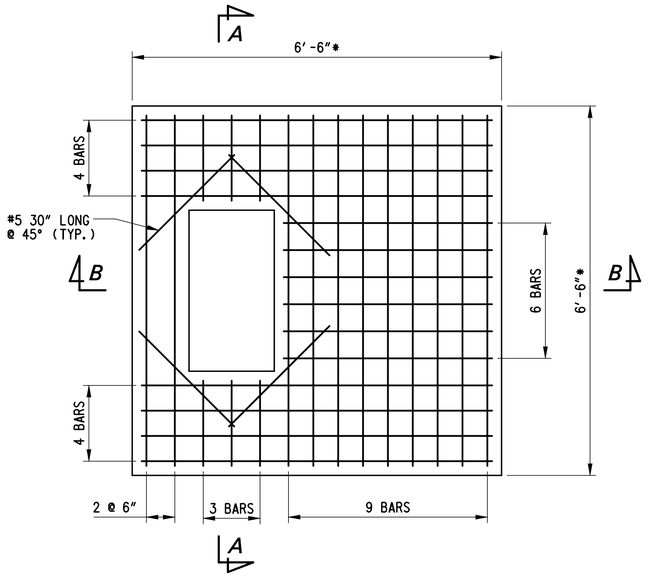
DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

DT-24
SHEET NO. 259
TOTAL SHTS. 1262

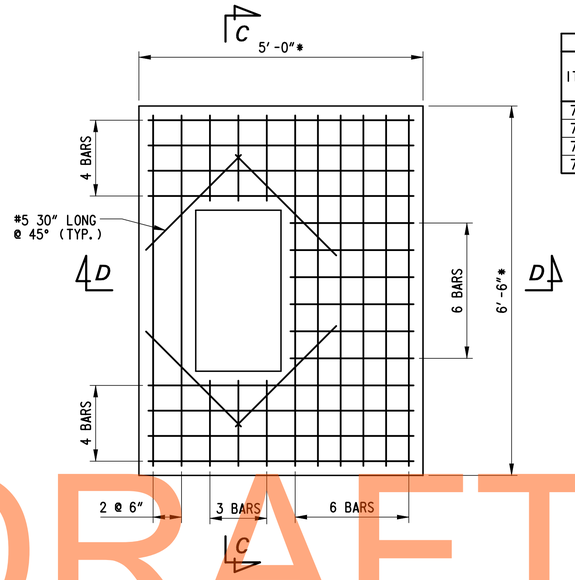


ITEM 708655 - DRAINAGE INLET, SPECIAL X
66″ x 66″ INLET COVER SLAB - MODIFIED

SCALE: 3/4″= 1′-0″

* DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

** ITEM NO. INCLUDES STANDARD DELDOT BOX



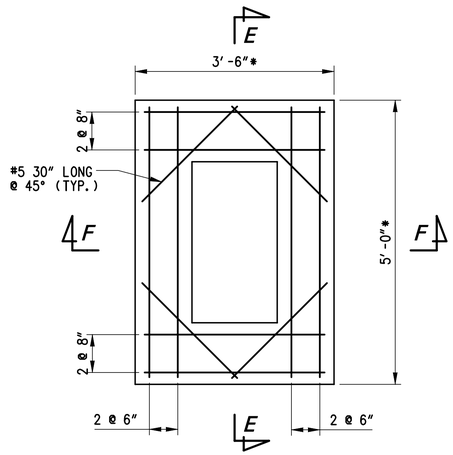
ITEM 708657 - DRAINAGE INLET, SPECIAL XII
66″ x 48″ INLET COVER SLAB - MODIFIED

SCALE: 3/4″= 1′-0″

* DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

** ITEM NO. INCLUDES STANDARD DELDOT BOX

SPECIAL INLET SUMMARY TABLE				
ITEM NO.	INLET TYPE	INLET NO.	BOX SIZE (IN.)	TOP OF GRATE (FT.)
708654	SPECIAL IX	DI-4	48 X 30	48.02
708657	SPECIAL XII	DI-51	66 X 48	65.57
708655	SPECIAL X	DI-52	66 X 66	65.42
708655	SPECIAL X	DI-54	66 X 66	65.43



ITEM 708654 - DRAINAGE INLET, SPECIAL IX
48″ x 30″ INLET COVER SLAB - MODIFIED

SCALE: 3/4″= 1′-0″

* DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

** ITEM NO. INCLUDES STANDARD DELDOT BOX

SECTION A-A

SCALE: 1″= 1′-0″

SECTION B-B

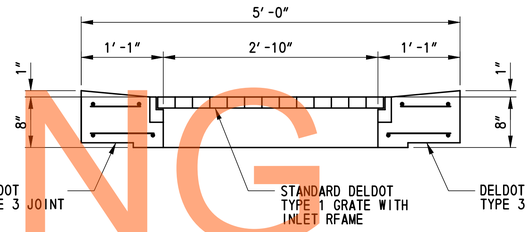
SCALE: 1″= 1′-0″

SECTION C-C

SCALE: 1″= 1′-0″

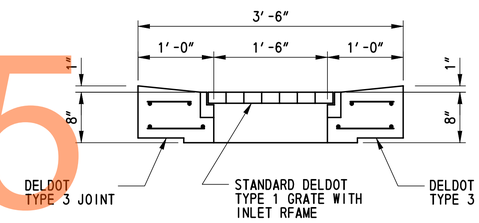
SECTION D-D

SCALE: 1″= 1′-0″



SECTION E-E

SCALE: 1″= 1′-0″



SECTION F-F

SCALE: 1″= 1′-0″

NOTES:

1. COVER SLABS SHALL BE PRECAST AND MUST BE SIZED TO FIT INLET BOX DIMENSIONS.
2. ALL BARS ARE TO BE #5 SPACED @ 6″ UNLESS NOTED OTHERWISE. TOP REINFORCEMENT SHALL BE 0.11 IN^2 HORIZONTAL REINFORCEMENT PER FOOT IN BOTH DIRECTIONS.
3. MINIMUM BAR COVER = 1½″.
4. BAR REINFORCEMENT SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 824 OF THE STANDARD SPECIFICATIONS.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

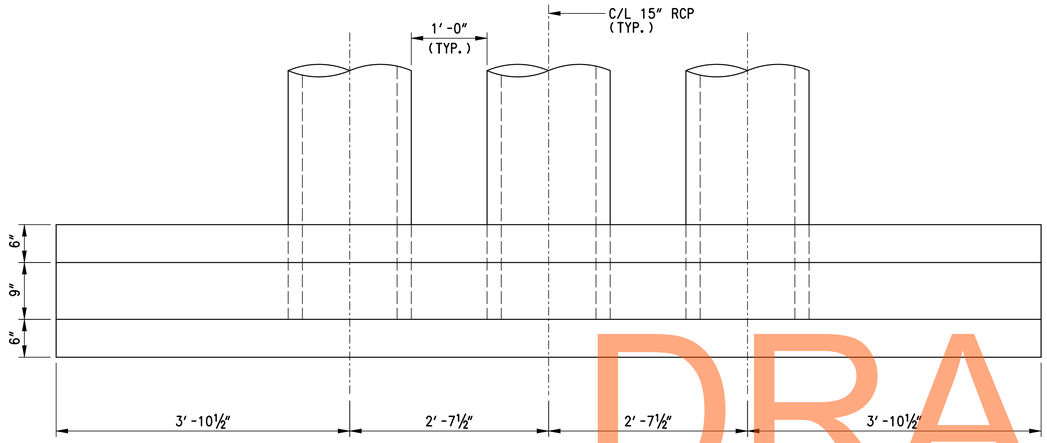
US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

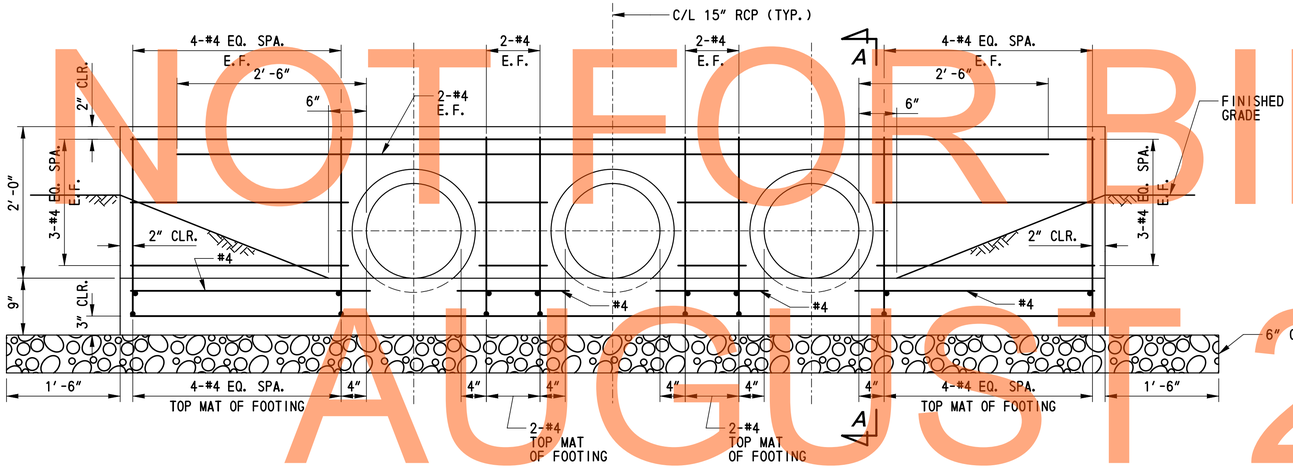
CONSTRUCTION DETAILS

DT-25

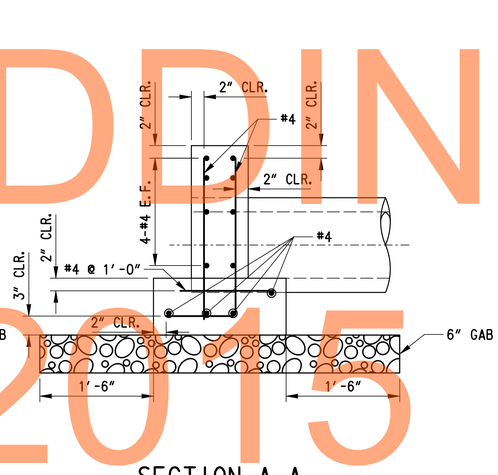
SHEET NO.	TOTAL SHTS.
260	1262



PLAN VIEW



ELEVATION



SECTION A-A

SCALE: 1"= 1'-0"

ITEM 617518 - HEAD WALL SPECIAL, TYPE 4
HEADWALL HW82

SCALE: 1"= 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.

DRAFT
NOT FOR BIDDING
AUGUST 2015

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

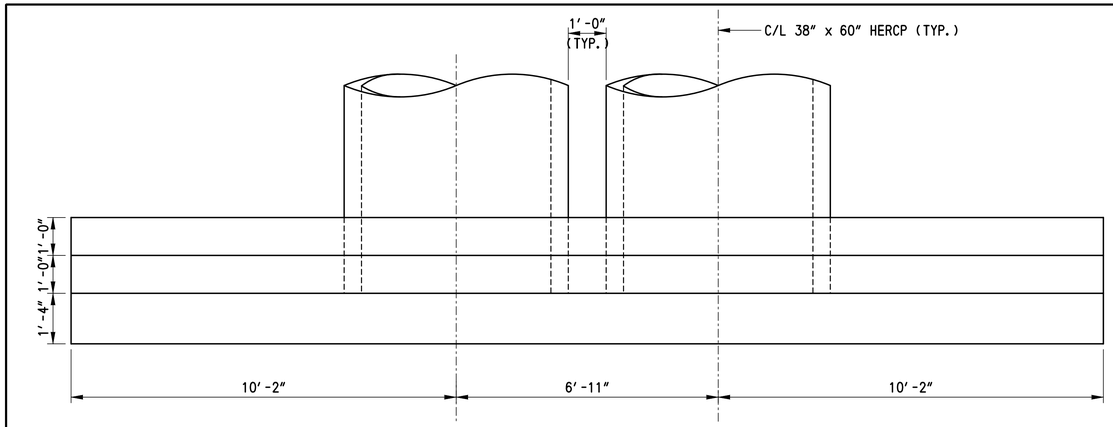
SCALE
1 0 1 2
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

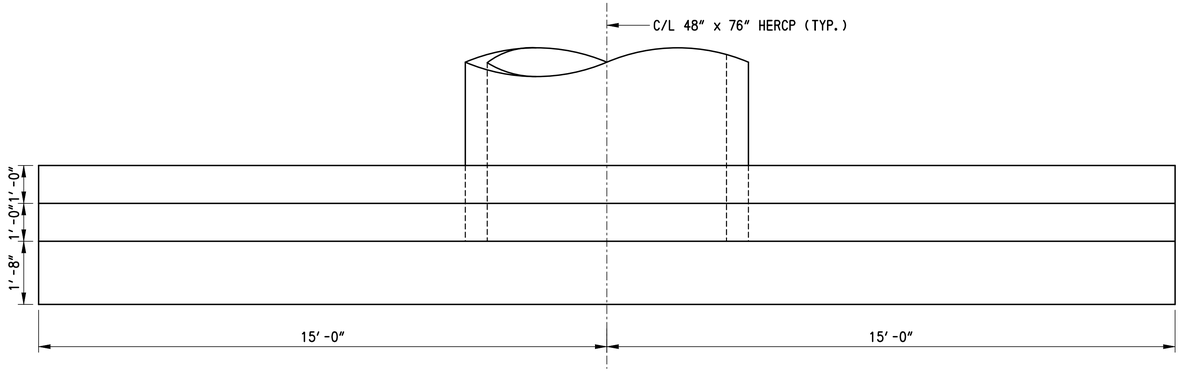
CONTRACT	BRIDGE NO.
T200911303	
COUNTY	DESIGNED BY: AY
NEW CASTLE	CHECKED BY: AH

CONSTRUCTION DETAILS

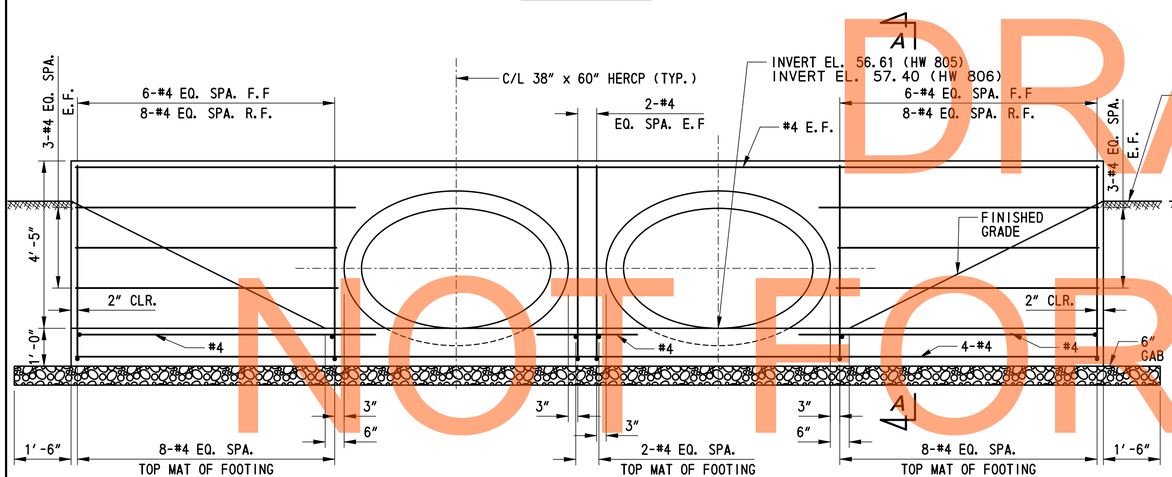
DT-26
SHEET NO. 261
TOTAL SHTS. 1262



PLAN VIEW



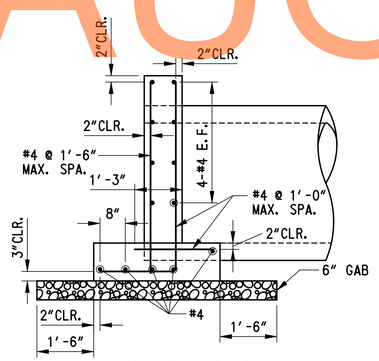
PLAN VIEW



ELEVATION

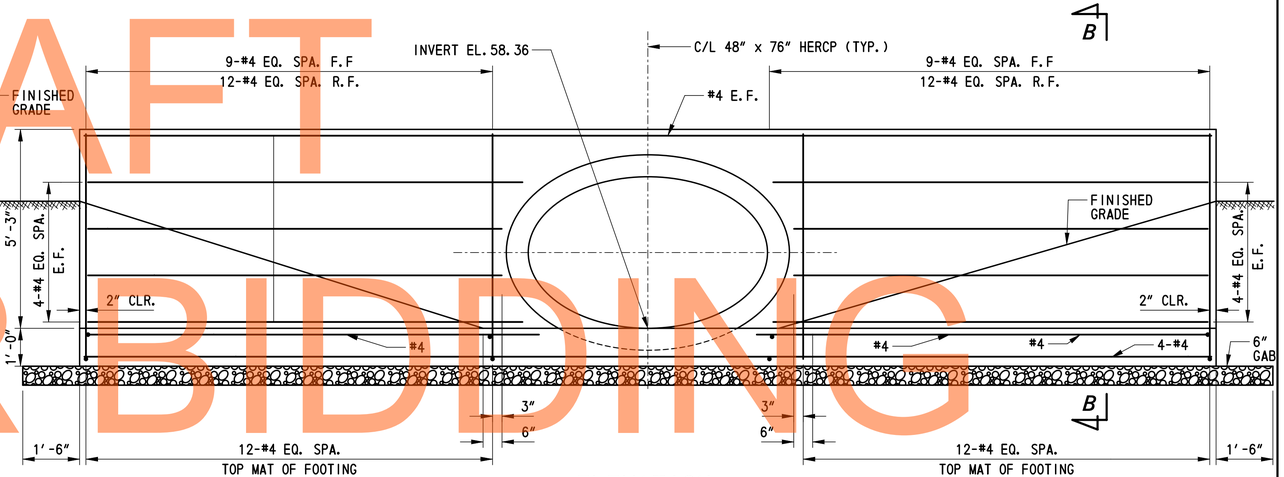
ITEM 617518 - HEAD WALL SPECIAL, TYPE 5
HEADWALLS HW805 & HW806

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



SECTION A-A

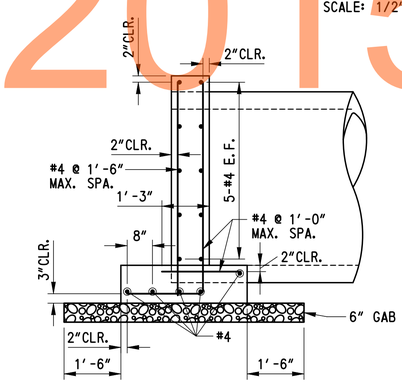
SCALE: 1/2"= 1'-0"



ELEVATION

ITEM 617518 - HEAD WALL SPECIAL, TYPE 6
HEADWALL HW803

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



SECTION B-B

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.

DRAFT
NOT FOR BIDDING
AUGUST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	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-27 | SHEET NO. 262 | TOTAL SHTS. 1262

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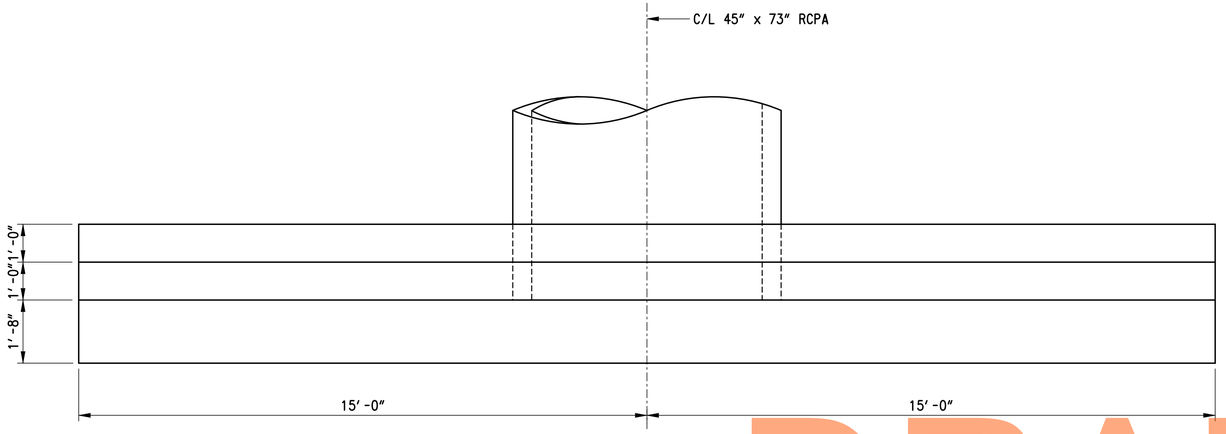
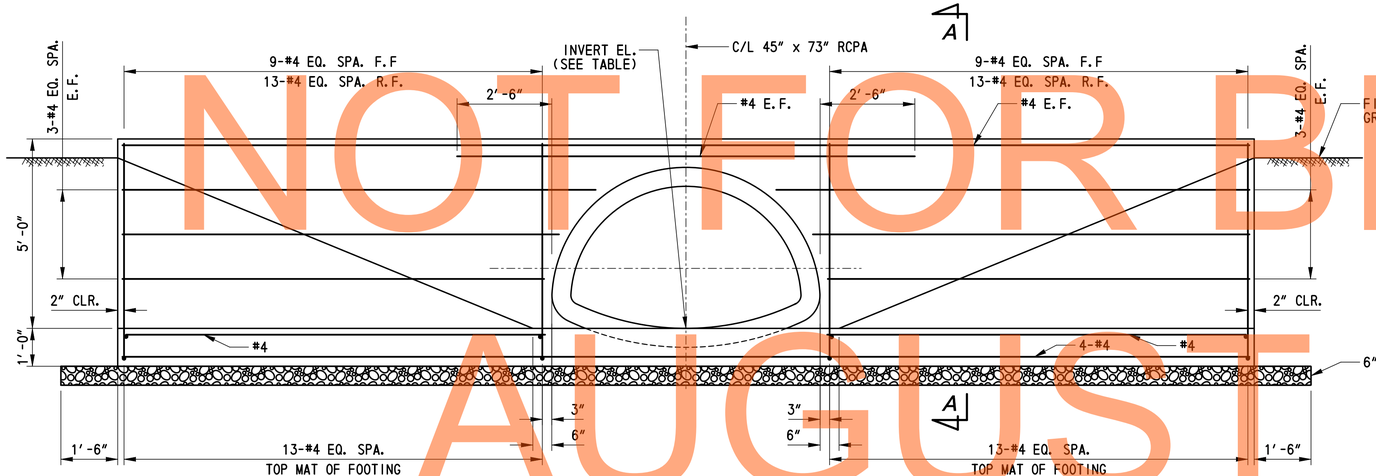


PLAN VIEW

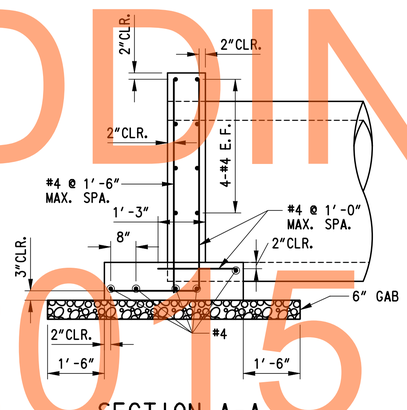
DRAFT



ELEVATION

ITEM 617518 - HEAD WALL SPECIAL, TYPE 3

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



SECTION A-A

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

HEADWALL NO.	INVERT EL.
HW 813	63.24
HW 814	63.79
HW 815	63.20
HW 816	63.75
HW 817	63.24
HW 818	63.79

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.

NOT FOR BIDDING
AUGUST 2015

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

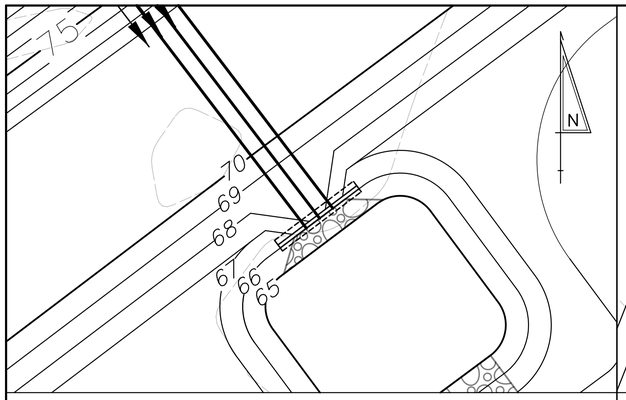
SCALE
0 2 4 6
FEET

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

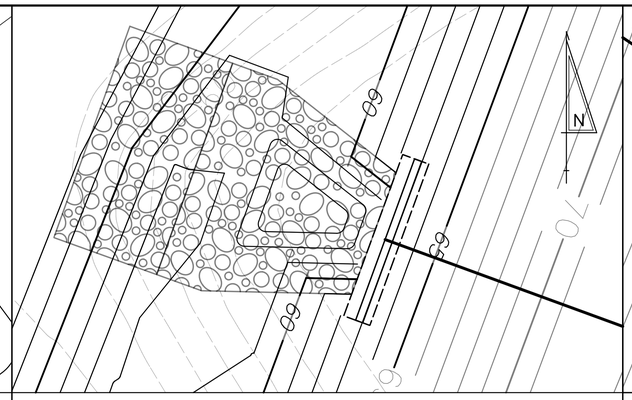
CONTRACT	T200911303
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	AY
CHECKED BY:	AH

CONSTRUCTION DETAILS

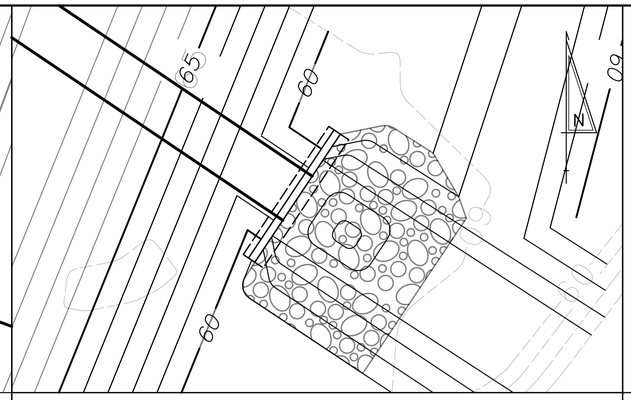
DT-28	
SHEET NO.	263
TOTAL SHTS.	1262



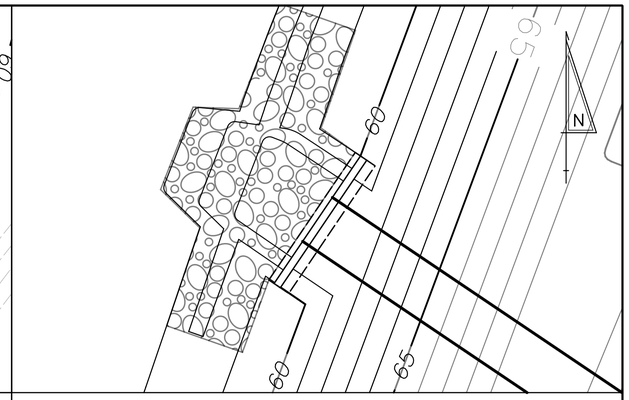
HEADWALL HW82 GRADING DETAIL
SCALE: 1"=10'



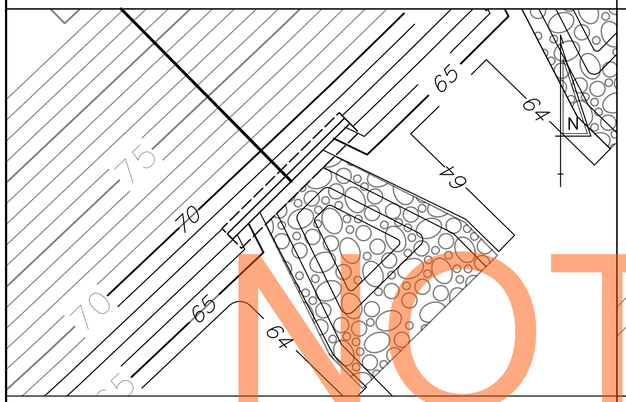
HEADWALL HW803 GRADING DETAIL
SCALE: 1"=10'



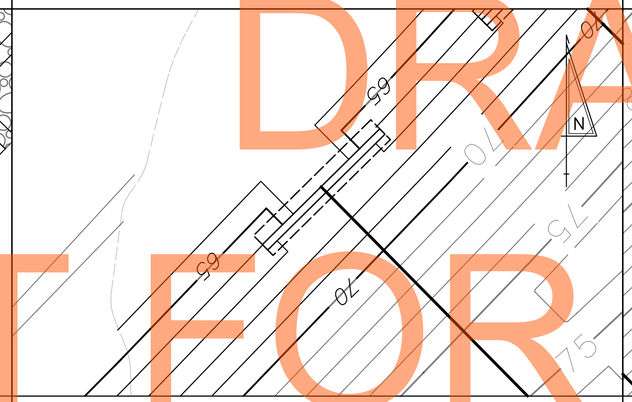
HEADWALL HW805 GRADING DETAIL
SCALE: 1"=10'



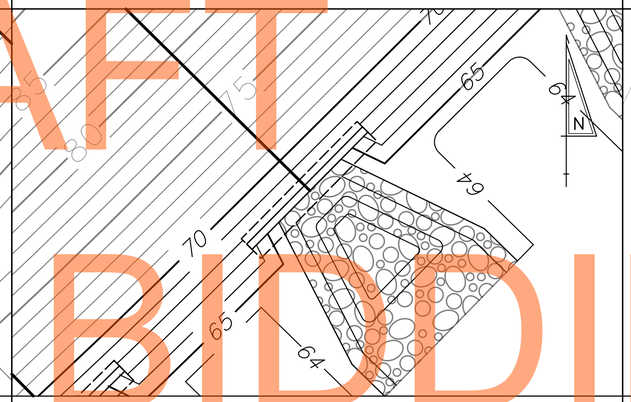
HEADWALL HW806 GRADING DETAIL
SCALE: 1"=10'



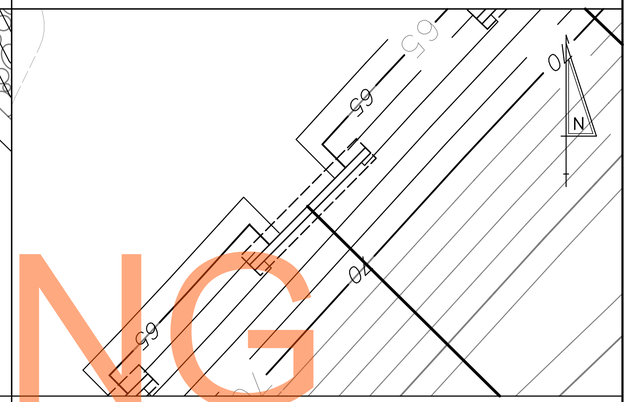
HEADWALL HW813 GRADING DETAIL
SCALE: 1"=10'



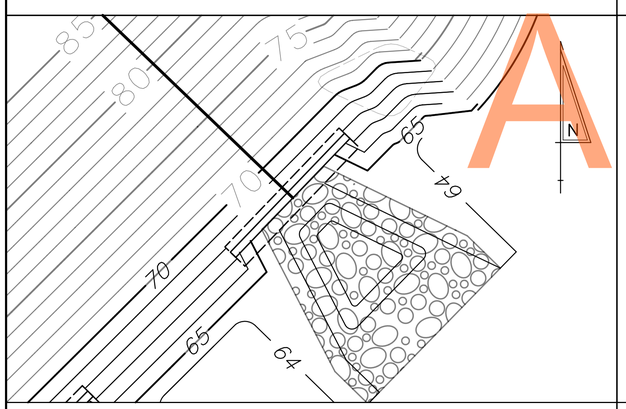
HEADWALL HW814 GRADING DETAIL
SCALE: 1"=10'



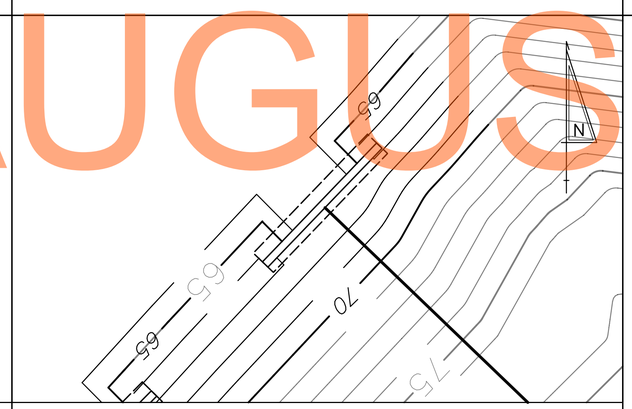
HEADWALL HW815 GRADING DETAIL
SCALE: 1"=10'



HEADWALL HW816 GRADING DETAIL
SCALE: 1"=10'



HEADWALL HW817 GRADING DETAIL
SCALE: 1"=10'



HEADWALL HW818 GRADING DETAIL
SCALE: 1"=10'

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AUGUST 2015

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301
LEVELS ROAD
TO SUMMIT BRIDGE ROAD

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

CONSTRUCTION DETAILS

DT-29
SHEET NO. 264
TOTAL SHTS. 1256