

**GENERAL LOCATION OF CONTRACT**

# THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

**U.S. CUSTOMARY  
UNITS**



CONSTRUCTION PLANS FOR:

## US 301 & SR 1 INTERCHANGE

**CONTRACT NUMBER: T200911302**

**FEDERAL AID PROJECT NUMBER: NH-2015(22)**

**COUNTY: NEW CASTLE M.R. #: 84**

**LIMIT OF CONSTRUCTION  
RAMP Q  
STATION 1028 + 50**

**BEGIN  
CONTRACT T200911302  
STATION 848 + 00**

**LIMIT OF CONSTRUCTION  
SR 1  
STATION 1779 + 90**

**LIMIT OF CONSTRUCTION  
RAMP R  
STATION 316 + 00**

**END  
CONTRACT T200911302  
STATION 183 + 20**

**LIMIT OF CONSTRUCTION  
SR 1  
STATION 1827 + 07**

**LIMIT OF CONSTRUCTION  
US 13  
STATION 185 + 74**



**LOCATION MAP  
SCALE: 1" = 3000'**

**LIMIT OF CONSTRUCTION  
US 13  
STATION 144 + 67**

DESIGN DESIGNATION - US 301		
FUNCTIONAL CLASS: RURAL PRINCIPAL ARTERIAL	D.H.V. PROJECTED: 4,560	YEAR: 2030
TYPE OF CONSTRUCTION: NEW CONSTRUCTION	DESIGN SPEED: 70 M.P.H. (US 301 NB; 60 M.P.H.)	
A.A.D.T. CURRENT: N/A	YEAR: N/A	TRUCKS: 9 %
A.A.D.T. PROJECTED: 57,000	YEAR: 2030	DIRECTION OF DISTRIBUTION: 57 %
SEE SHEET PN-02 FOR ADDITIONAL ROADWAY DESIGN DESIGNATIONS		

INDEX OF SHEETS	
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433-449	LIGHTING PLANS
450-486	SIGNING, STRIPING AND CONDUIT PLANS
487	SIGNALIZATION PLAN
488-491	RIGHT-OF-WAY PLANS

TOTAL SHEETS: 491

**APPROVED DESIGN EXCEPTIONS**

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
HORIZONTAL SIGHT DISTANCE - US 301 NORTHBOUND	60 MPH	56 MPH	5/19/2010

**ADDENDA & REVISIONS**

DESCRIPTION	NAME & DATE

**ASSOCIATED CONTRACTS**

CONTRACT NO.	CONTRACT NAME
T200911308	US 301 SR 896 TO SR 1
T201011302	US 13 AND PORT PENN RD INTERSECTION

PREPARED BY  
THE CONSULTING FIRM OF  
**WRA**  
Whitman, Reardon & Associates, LLP  
801 South Caroline Street, Baltimore, Maryland 21231

PREPARED BY  
THE CONSULTING FIRM OF  
**McCormick  
Engineers & Planners  
Since 1946 Taylor**

PLAN SHEETS  
367-373, 479-486

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_

**RECOMMENDED**

SQUAD MANAGER, CONSTRUCTION \_\_\_\_\_ DATE \_\_\_\_\_

GROUP ENGINEER, CONSTRUCTION \_\_\_\_\_ DATE \_\_\_\_\_

ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) \_\_\_\_\_ DATE \_\_\_\_\_

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_

PREPARED BY  
THE CONSULTING FIRM OF  
**PRIME ENGINEERING**

PLAN SHEETS  
118-149, 293-359

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_

**RECOMMENDED**

STORMWATER ENGINEER \_\_\_\_\_

DATE \_\_\_\_\_ SEAL \_\_\_\_\_

**RECOMMENDED**

SQUAD MANAGER, TRANSPORTATION SOLUTIONS (PROJECT DEVELOPMENT OR BRIDGE DESIGN) \_\_\_\_\_

DATE \_\_\_\_\_ SEAL \_\_\_\_\_

**RECOMMENDED**

BRIDGE DESIGN ENGINEER \_\_\_\_\_

DATE \_\_\_\_\_ SEAL \_\_\_\_\_

**RECOMMENDED**

GROUP ENGINEER, PROJECT DEVELOPMENT \_\_\_\_\_

DATE \_\_\_\_\_ SEAL \_\_\_\_\_

**RECOMMENDED**

ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS \_\_\_\_\_

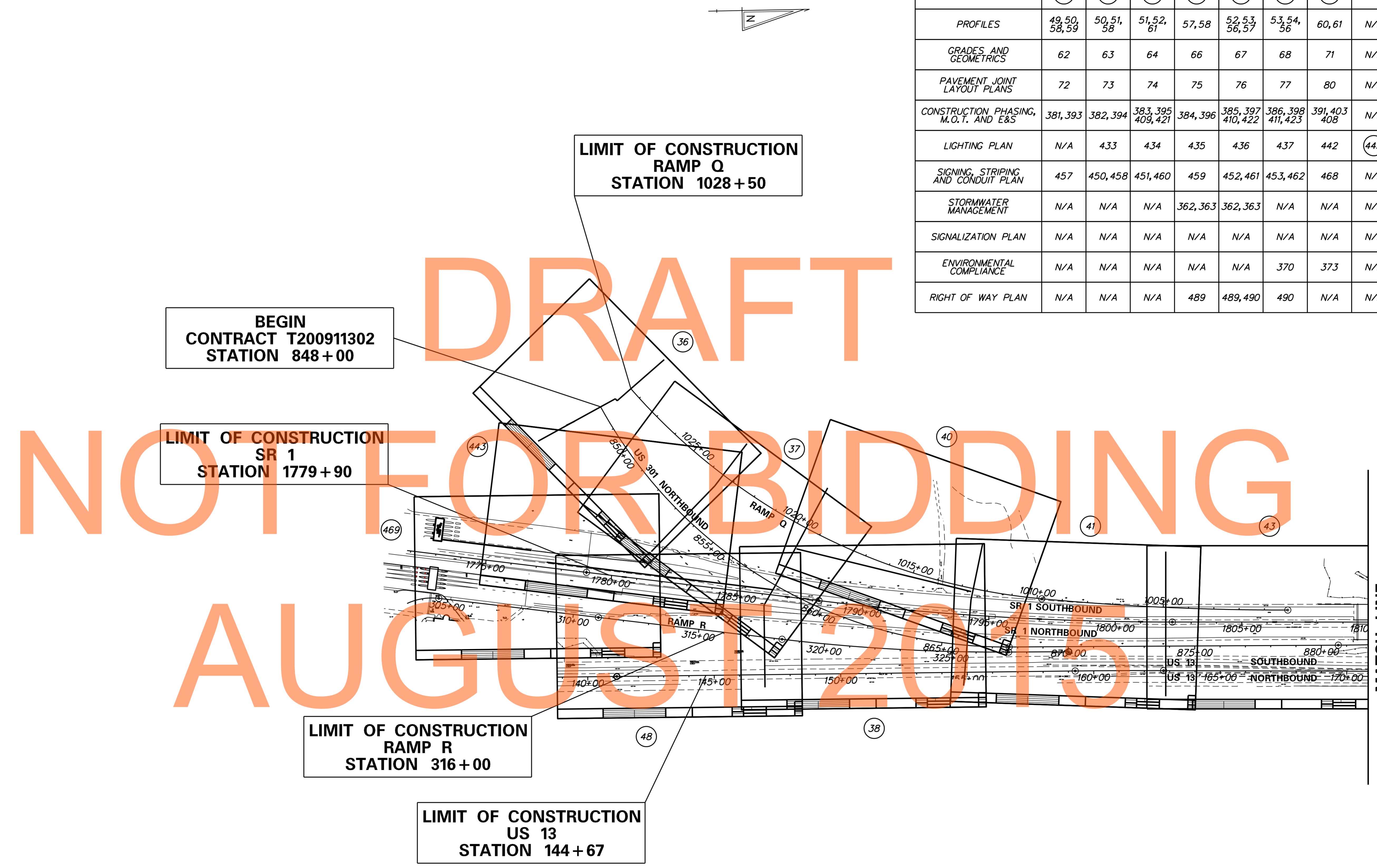
DATE \_\_\_\_\_ SEAL \_\_\_\_\_

**APPROVED**

CHIEF ENGINEER \_\_\_\_\_

DATE \_\_\_\_\_ SEAL \_\_\_\_\_

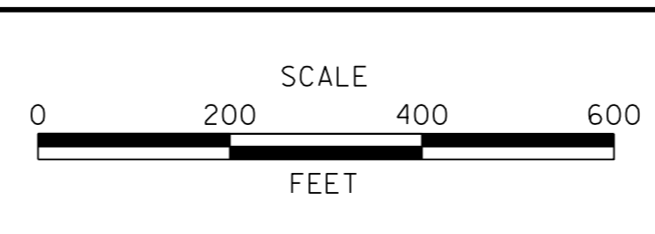
PLAN SHEET INDEX CROSS REFERENCE									
CONSTRUCTION PLAN	36	37	38	40	41	43	48	N/A	N/A
PROFILES	49, 50, 58, 59	50, 51, 58	51, 52, 61	57, 58	52, 53, 56, 57	53, 54, 56	60, 61	N/A	N/A
GRADES AND GEOMETRICS	62	63	64	66	67	68	71	N/A	N/A
PAVEMENT JOINT LAYOUT PLANS	72	73	74	75	76	77	80	N/A	N/A
CONSTRUCTION PHASING, M.O.T. AND E&S	381, 393	382, 394	383, 395, 409, 421	384, 396	385, 397, 410, 422	386, 398, 411, 423	391, 403, 408	N/A	392, 404
LIGHTING PLAN	N/A	433	434	435	436	437	442	(443)	N/A
SIGNING, STRIPING AND CONDUIT PLAN	457	450, 458	451, 460	459	452, 461	453, 462	468	N/A	(469)
STORMWATER MANAGEMENT	N/A	N/A	N/A	362, 363	362, 363	N/A	N/A	N/A	N/A
SIGNALIZATION PLAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENVIRONMENTAL COMPLIANCE	N/A	N/A	N/A	N/A	N/A	370	373	N/A	N/A
RIGHT OF WAY PLAN	N/A	N/A	N/A	489	489, 490	490	N/A	N/A	N/A



MATCH LINE -  
SEE DRAWING IS-02

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ADDENDUMS / REVISIONS



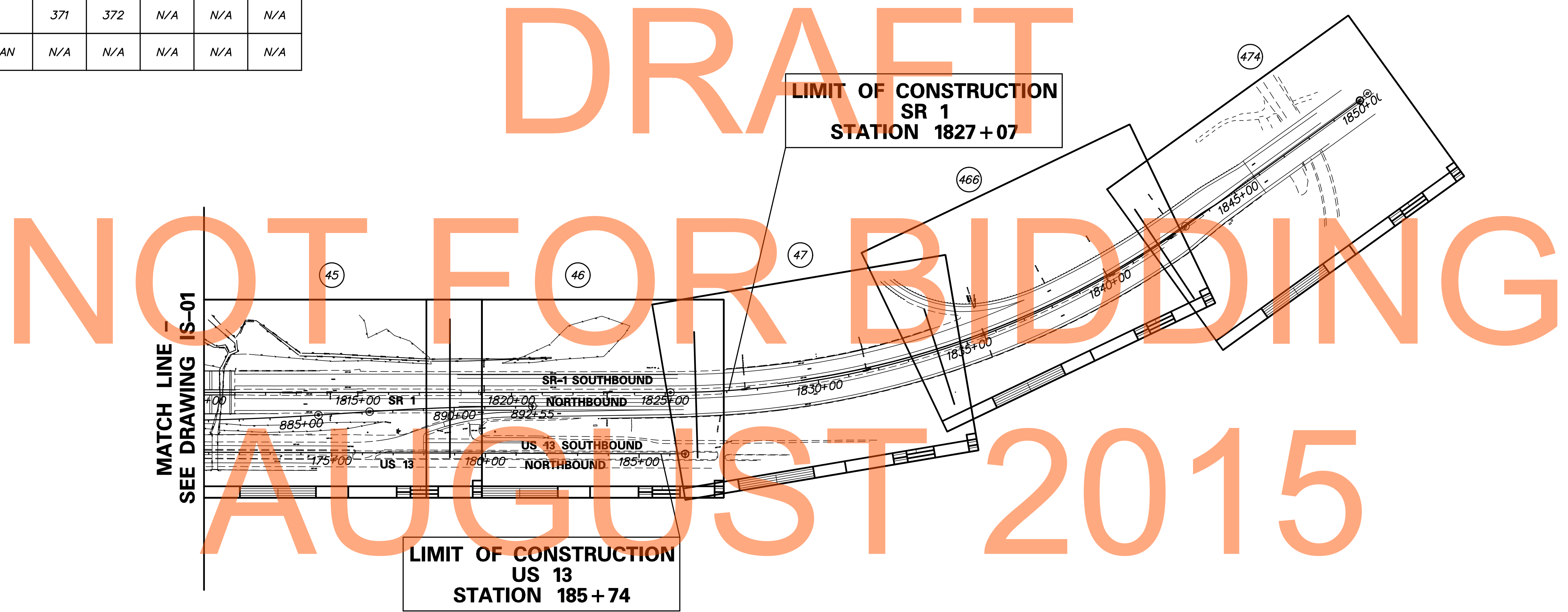
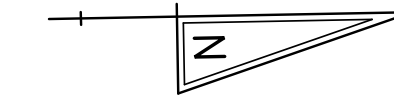
**US 301 &  
SR 1 INTERCHANGE**

CONTRACT T200911302	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: KAH
	CHECKED BY: BRT

**PLAN SHEET INDEX**

IS-01
SHEET NO. 2
TOTAL SHTS. 491

PLAN SHEET INDEX CROSS REFERENCE					
CONSTRUCTION PLAN	(45)	(46)	(47)	N/A	N/A
PROFILES	54,55	55	N/A	N/A	N/A
GRADES AND GEOMETRICS	69	70	N/A	N/A	N/A
PAVEMENT JOINT LAYOUT PLAN	78	79	N/A	N/A	N/A
CONSTRUCTION PHASING, M.O.T. AND E&S	387, 399 405, 412 424	388, 400 406, 413 416, 425	389, 401 407, 414 416, 426	390, 402 415, 416 427	416
LIGHTING PLAN	438	439	440	441	N/A
SIGNING, STRIPING AND CONDUIT PLAN	454, 463	455, 464	456, 465	(466)	(474)
STORMWATER MANAGEMENT	N/A	N/A	N/A	N/A	N/A
SIGNILIZATION PLAN	487	487	N/A	N/A	N/A
ENVIRONMENTAL COMPLIANCE	371	372	N/A	N/A	N/A
RIGHT OF WAY PLAN	N/A	N/A	N/A	N/A	N/A



MATCH LINE - SEE DRAWING IS-01

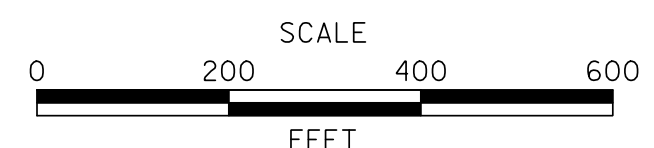
**LIMIT OF CONSTRUCTION  
US 13  
STATION 185+74**

**LIMIT OF CONSTRUCTION  
SR 1  
STATION 1827+07**

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ADDENDUMS / REVISIONS	



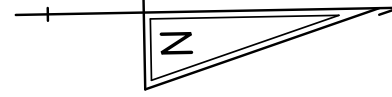
**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.
T200911302	
COUNTY	DESIGNED BY: KAH
NEW CASTLE	CHECKED BY: BRT

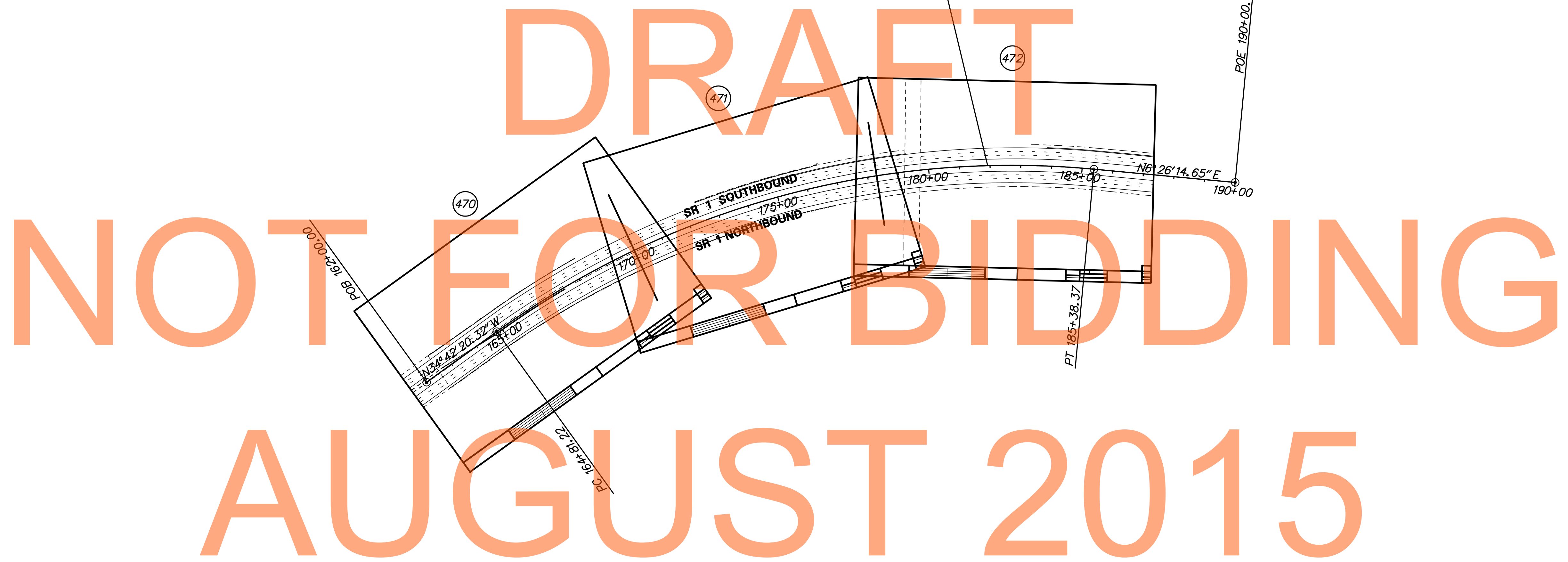
**PLAN SHEET INDEX**

<b>IS-02</b>
SHEET NO.
3
TOTAL SHTS.
491

PLAN SHEET INDEX CROSS REFERENCE			
SIGNING, STRIPING AND CONDUIT PLAN	(470)	(471)	(472)
CONSTRUCTION PHASING, M.O.T. AND E&S	417, 418 427	417, 418 427	417, 418



**END  
CONTRACT T200911302  
STATION 183+20**

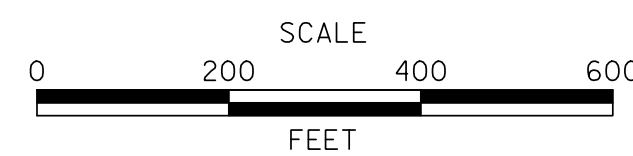


DRAFT  
NOT FOR BIDDING  
AUGUST 2015

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ADDENDUMS / REVISIONS



**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.
T200911302	DESIGNED BY: KAH
COUNTY	CHECKED BY: BRT
NEW CASTLE	

**PLAN SHEET INDEX**

IS-03
SHEET NO. 4
TOTAL SHTS. 491

## EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE CATCH BASIN
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES	
	EASTERN SHORE NATURAL GAS
	DELDOT LIGHTING/TRAFFIC SIGNAL CONDUIT - EXISTING
	DELDOT ITMS CONDUIT - EXISTING

MISCELLANEOUS SYMBOLS	
	EXISTING OVERHEAD SIGN STRUCTURE
	ORDINARY HIGH WATER
	ORDINARY HIGH WATER/ WETLAND
	STATE TIDAL WETLAND BOUNDARY LINE

## PROPOSED SYMBOLS

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CONSTRUCTION BASELINE
	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CLEAR ZONE
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	HORIZONTAL CLEARANCE
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK @ 4"
	P.C.C. SIDEWALK @ 6"
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	DO NOT DISTURB
	END WALL
	FENCE
	FLARED END SECTION
	FILL WITH FLOWABLE FILL
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC	
	ITMS CONDUIT
	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

PAVEMENT SECTION(S)	
	OVERLAY PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	FULL DEPTH PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	DRIVEWAY AND ENTRANCE PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS

CONSTRUCTION PHASING SYMBOLS	
	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION WARNING SIGN LOCATION
	CONSTRUCTION WARNING SIGN
	CRASH CUSHION ARRAY
	DRUM - TRAFFIC CONTROL
	PHASING TRAFFIC FLOW ARROW

EROSION & SEDIMENT CONTROL	
	DEWATERING BASIN
	EROSION CONTROL BLANKET
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	REINFORCED SILT FENCE
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE
	SUMP PIT, TYPE 1
	SUMP PIT, TYPE 2
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN

MISCELLANEOUS SYMBOLS	
	42" F-SHAPE CONCRETE SINGLE FACE BARRIER
	PROPOSED OVERHEAD SIGN STRUCTURE
	STORM WATER OUTLET STRUCTURE
	SEDIMENT TRAP
	SILT FENCE
	POND MAINTENANCE ACCESS ROAD

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GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

Table with 2 columns: EROSION POTENTIAL FOR THIS PROJECT and CONTRACTOR ESC SUPERVISOR REQUIREMENT. Rows include INSIGNIFICANT, MINOR, MEDIUM, and MAJOR.

3. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR INCLUDE:

Table with 2 columns: Selection indicator and Description of electronic files (e.g., NONE, ASCII DATA FILES, ALL PLAN SHEETS, etc.).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

4. PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

Table with 2 columns: Selection indicator and Description of project files (e.g., CROSS SECTIONS, RIGHT-OF-WAY PLANS).

5. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

Table with 2 columns: Selection indicator and Description of ATSSA supervisor requirements.

6. THE DISTURBED AREA FOR THIS PROJECT IS 53.96 ACRES.

7. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY...

PROJECT NOTES

SECTION 100

- 1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR...
2. PRIOR TO PERFORMING ANY WORK ON THE PROJECT, THE CONTRACTOR AND THE ENGINEER'S REPRESENTATIVE SHALL JOINTLY PERFORM SUFFICIENT FIELD SURVEYS...
3. PRIOR TO PERFORMING ANY WORK IN AREAS WHERE ADVANCE GRADING HAS BEEN PERFORMED UNDER OTHER CONTRACTS...
4. DELETE IN ITS ENTIRETY STANDARD SPECIFICATION SUBSECTION 104.10 "RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK"...

SECTION 200

- 5. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO EXCAVATE TEST PITS ALONG PROPOSED DRAINAGE RUNS, AT POINTS OF POSSIBLE UTILITY CONFLICTS...
6. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
7. UNLESS OTHERWISE INDICATED IN THE PLANS, UNDER ITEM 201000-CLEARING AND GRUBBING, ALL VEGETATION, TREES, STUMPS, ROOTMATS, ETC. SHALL BE REMOVED...

PROJECT NOTES (CONT.)

SECTION 200 (CONT.)

- 15. STORMWATER MANAGEMENT POND EXCAVATION:
A. CLEARING AND GRUBBING OF STORMWATER POND AREAS IS TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 201000.
B. ALL EXCAVATION AND EMBANKMENT REQUIRED FOR CONSTRUCTION OF STORMWATER PONDS WILL BE PERFORMED, MEASURED AND PAID FOR UNDER ITEM 202000...
16. SEDIMENT BASIN CONSTRUCTION AND MAINTENANCE:
A. CLEARING AND GRUBBING OF SEDIMENT BASIN POND AREAS IS TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 201000.

SECTION 300

- 17. A. THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
a. CRUSHED STONE (PER STANDARD SPECIFICATION 821)
b. CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)
c. HOT-MIX MILLINGS (PER SPECIAL PROVISION 302514 MILLED HOT-MIX BASE COURSE)
THE CONTRACTOR WILL NOT BE ALLOWED TO MIX DIFFERENT MATERIALS (OR SIMILAR MATERIALS FROM DIFFERENT SOURCES) TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

17/12/2015 2:59:55 PM



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301 & SR 1 INTERCHANGE

Table with contract details: CONTRACT T200911302, COUNTY NEW CASTLE, BRIDGE NO., DESIGNED BY: J.A.D., CHECKED BY: B.R.T.

NOTES

PN-01

SHEET NO.

6

TOTAL SHTS.

491

## PROJECT NOTES (CONT.)

### SECTION 400

18. MEASURES FOR MAINTAINING PUBLIC TRAFFIC, SUCH AS TEMPORARY ROADS, DETOURS, RUN-AROUNDS, ETC., SHALL BE CONSTRUCTED UTILIZING THE APPLICABLE STANDARD BID ITEMS, NOT TEMPORARY ROADWAY MATERIAL (TRM). TRM IS INTENDED FOR MAINTAINING INGRESS AND EGRESS TO PROPERTIES OR BUSINESSES AS WELL AS MAINTENANCE OF EXISTING PUBLIC ROADWAYS. TRM SHALL ALSO BE USED TO MAINTAIN DETOUR ROADS, ETC. AFTER THEIR INITIAL CONSTRUCTION.
19. PRIOR TO PLACEMENT OF ANY SECTION OF PCC PAVEMENT, THE UNDERLYING BASE COURSES OF SOIL CEMENT AND PERMEABLE TREATED BASE SHALL BE COMPLETED TO THEIR FULL WIDTH (OUTSIDE OF SHOULDER TO OUTSIDE OF SHOULDER) AND THE UNDERDRAIN AND UNDERDRAIN OUTLETS INSTALLED FOR THE ENTIRE SECTION OF PAVING BEING CONSIDERED BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO THAT ALL PERMEABLE TREATED BASE (PTB) PLACED DURING ANY ONE CONSTRUCTION SEASON IS COVERED WITH PCC OR WARM MIX PAVEMENT, AS APPLICABLE, BY THE END OF THE CONSTRUCTION SEASON. ANY PTB WHICH HAS NOT BEEN PAVED OVER AT THE END OF THE SEASON MUST BE ENTIRELY COVERED WITH POLYETHYLENE SHEETING, PROPERLY ANCHORED AND OVERLAPPED AT LEAST EIGHTEEN INCHES FOR THE WINTER AND UNTIL PAVING OPERATIONS RESUME. NO CONSTRUCTION TRAFFIC OF ANY KIND WILL BE PERMITTED TO TRAVERSE OVER PTB AT ANY TIME, EITHER UNCOVERED OR COVERED WITH POLYETHYLENE, EXCEPT FOR NECESSARY EQUIPMENT UTILIZED DURING PAVING OPERATIONS. THE COST OF FURNISHING, INSTALLING AND MAINTAINING THE POLYETHYLENE SHEETING SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE PTB.
21. EXCEPT FOR NECESSARY EQUIPMENT UTILIZED DURING PAVING OPERATIONS, NO CONSTRUCTION TRAFFIC OF ANY KIND SHALL BE PERMITTED TO RUN ON THE SOIL CEMENT BASE COURSE.

### SECTION 600

22. THE DEPARTMENT AND THE CONTRACTOR SHALL REVIEW VIDEO INSPECTION OF ALL EXISTING PIPES AND DRAINAGE STRUCTURES TO BE USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION PRIOR TO THE START OF CONSTRUCTION. EXISTING PIPES AND DRAINAGE STRUCTURES DAMAGED DUE TO CONTRACTOR OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE. THE DEPARTMENT OR ITS REPRESENTATIVE WILL INSPECT NEW PIPE RUNS TO CONFIRM CONDITION PRIOR TO ACCEPTANCE.
23. ITEM 602002-P.C.C. MASONRY, CLASS B SHALL BE USED TO CONSTRUCT MISCELLANEOUS TYPES OF STRUCTURES SUCH AS PADS, BOLLARDS, ENCASEMENTS, ETC. AS DIRECTED BY THE ENGINEER UNLESS THE WORK IS TO BE PAID OTHERWISE AS INDICATED IN THE CONTRACT DOCUMENTS. THESE MISCELLANEOUS TYPES OF STRUCTURES ARE ANTICIPATED TO INVOLVE LESS THAN FIVE CUBIC YARDS PER SITE. THE VOLUME MEASURED FOR PAYMENT SHALL BE THE VOLUME OF P.C.C. MASONRY ACTUALLY PLACED TO CONSTRUCT THE MISCELLANEOUS STRUCTURE WITHIN THE LIMITS APPROVED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH FURNISHING ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION, BACKFILL, BACKFILLING, ETC. SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 602002.
24. DRAINAGE INLETS TO BE ATTACHED TO EXISTING PIPES SHALL BE CAST IN PLACE. CAST IN PLACE CONSTRUCTION SHALL BE INCIDENTAL TO THE APPLICABLE BID ITEM FOR THE SUBJECT INLET.

### SECTION 700

25. IN AREAS WHERE PROPOSED CURB MEETS EXISTING CURB AND THE TWO CURB TYPES ARE NOT SIMILAR, THE PROPOSED CURB SHALL BE TRANSLATED IN 10 LINEAR FEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK, INCLUDING SAW CUTTING EXISTING CURB SHALL BE INCIDENTAL TO THE PROPOSED CURB ITEM.
26. PORTLAND CEMENT CONCRETE CHANNELIZING ISLANDS THAT ARE LESS THAN 75 SQ FT MAY BE POURED MONOLITHICALLY, OR AS DIRECTED BY THE ENGINEER.
27. STATION, OFFSET AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED TO THE CENTER OF THE GRATE ALONG THE FLOWLINE FOR INLETS, AND TO THE CENTER OF THE STRUCTURE FOR JUNCTION BOXES AND MANHOLES.
28. WHERE SPECIFIED ON THE PLANS, DRAINAGE INLET GRATES ADJACENT TO THE ROAD WHICH ARE NOT TYPE 1 SHALL BE REPLACED. THE ACTUAL LOCATIONS, THE NEED FOR ANY GRATE MODIFICATIONS OR FOR NEW FRAMES SHALL BE DETERMINED BY THE ENGINEER. ALL REPLACED GRATES/FRAMES SHALL BE DELIVERED TO THE NEAREST DISTRICT MAINTENANCE YARD WITH THE COST OF DELIVERY INCIDENTAL TO ITEM 708500 - REPLACING CATCH BASIN GRATES. FINAL PAYMENT FOR REPLACED GRATES/FRAMES SHALL NOT BE MADE UNTIL RECEIPT OF DELIVERED MATERIALS IS PRODUCED, SIGNED BY A DELDOT MAINTENANCE YARD SUPERVISOR.
29. ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT.
30. RAISED/RECESSED PAVEMENT MARKERS (RPM) SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL TITLED "DELAWARE DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS" (PART 3) AND THE LATEST RPM GUIDELINES. PAYMENT FOR RPM INSTALLATION SHALL BE MADE UNDER ITEM 748502 - RAISED/RECESSED PAVEMENT MARKER.
31. ALL UNDERDRAIN OUTLETS, CATCH BASINS, PIPES, CONDUITS, JUNCTION WELLS, ETC. IN GUARDRAIL AREAS OR NEAR OTHER CONSTRUCTION YET TO BE PERFORMED SHALL BE VISIBLY MARKED BY THE CONTRACTOR AT THE TIME OF INSTALLATION IN ORDER TO AVOID FUTURE DAMAGE DURING DRIVING OF THE GUARDRAIL POSTS OR PERFORMANCE OF OTHER CONSTRUCTION. THE LOCATION OF GUARDRAIL POSTS AND OTHER CONSTRUCTION SHALL BE STAKED IN THE FIELD PRIOR TO PLACING THESE ITEMS. THE LOCATION OF THESE ITEMS SHALL BE ADJUSTED TO AVOID CONFLICTS WITH THE GUARDRAIL OR OTHER CONSTRUCTION. ALTERATIONS TO THE GUARDRAIL POST SPACING WILL NOT BE ALLOWED. ANY WORK REQUIRED TO RELOCATE THESE ITEMS DUE TO CONFLICTS WITH GUARDRAIL OR OTHER CONSTRUCTION SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER AND SHALL BE AT THE CONTRACTOR'S EXPENSE, INCLUDING ANY REMOVAL AND REPLACEMENT OF PAVEMENT.
32. DELDOT OR ITS REPRESENTATIVE SHALL FURNISH AND INSTALL RIGHT-OF-WAY MONUMENTS AFTER THE COMPLETION OF THE PROJECT. LOCATIONS OF RIGHT-OF-WAY MONUMENTS ARE PROVIDED ON THE PLANS FOR INFORMATION ONLY.
33. THE LOCATION FOR ITEM 759506 - FIELD OFFICE, TYPE II.22 SPECIAL COMPLEX SHALL BE ON THE DELDOT OWNED PARCEL EAST OF US 13 AT APPROXIMATE SR 1 STATION 1832+00. SEE DRAWING GR-02.
34. THE COST OF ANY FLOODLIGHTING NECESSARY DUE TO WORK BY THE CONTRACTOR ON ANY ITEM OCCURRING AFTER DARK SHALL BE INCIDENTAL TO THE BID PRICE OF THE ITEM BEING CONSTRUCTED AFTER DARK. DURING NIGHT WORK, ALL PERSONS WITHIN THE WORK ZONE SHALL HAVE SAFETY WEAR IN ACCORDANCE WITH THE DEMUTCD.
35. NO LESPEDeza, ERAGROSTIS CURVULA, OR CORONILLA VARIA SHALL BE SEEDDED. SECTION 734 - SEEDING HAS BEEN MODIFIED TO REMOVE LESPEDeza, ERAGROSTIS CURVULA, AND CORONILLA VARIA.
36. INSTALLATION OF RIRRAP OUTLET PROTECTION (ITEMS 712005 AND 712006) SHALL BE IN ACCORDANCE WITH DIMENSIONS AND QUANTITIES INDICATED ON THE CONSTRUCTION PLANS. THE SPECIFIED DIMENSIONS ARE MINIMUM DIMENSIONS NECESSARY TO PROVIDE SUFFICIENT EROSION CONTROL. THE QUANTITY LISTED REPRESENTS THE SQUARE YARDAGE BASED UPON THE PLAN DEPICTION OF THE RIRRAP. DUE TO THE IRREGULAR CONFIGURATION OF SOME RIRRAP PADS, THE NOTED QUANTITY MAY NOT BE ACHIEVED BY A NOMINAL AMOUNT NOT TO EXCEED 5% LESS THAN THE NOTED QUANTITY. THE ENGINEER SHALL APPROVE ALL RIRRAP INSTALLATION.

## PROJECT NOTES (CONT.)

### SECTION 700 (CONT.)

37. ITEM 727000 - RIGHT-OF-WAY FENCE SHALL BE INSTALLED BY HAND IN SENSITIVE AREAS. SENSITIVE AREAS INCLUDE WOODS, WETLANDS, STREAMS, CULTURAL RESOURCE AREAS AND OTHER AREAS AS SHOWN ON THE PLANS AND AS DETERMINED BY THE ENGINEER. THERE SHALL BE NO VEHICLE ACCESS AND GRUBBING FOR THE PURPOSES OF INSTALLING RIGHT-OF-WAY FENCE IN SENSITIVE AREAS. CLEARING OF VEGETATION FOR THE PURPOSE OF INSTALLING RIGHT-OF-WAY FENCE SHALL BE KEPT TO A MINIMUM IN SENSITIVE AREAS. IF REMOVAL OF VEGETATION CANNOT BE AVOIDED, THE VEGETATION SHALL BE CUT FLUSH WITH THE GROUND SURFACE (I.E., NO DISTURBANCE OF THE ROOT MAT). HAND-MIXED CONCRETE SHALL BE USED FOR CONCRETE FOOTINGS IN SENSITIVE AREAS. POST SPACING SHALL BE ADJUSTED AS APPROVED BY THE ENGINEER TO COMPLY WITH THE MINIMUM AND MAXIMUM CLEARANCE OF THE FABRIC. NO EXCAVATION OR BACKFILLING OF THE EXISTING GROUND SHALL BE CONDUCTED TO COMPLY WITH THE MINIMUM AND MAXIMUM CLEARANCE OF THE BOTTOM OF FABRIC OVER GROUND IN SENSITIVE AREAS. EXCAVATIONS FOR POSTS AND FOOTERS WITHIN SENSITIVE AREAS THAT WILL BE USED FOR BACKFILLING OF THE POSTS AND FOOTERS SHALL BE PLACED ON PLASTIC AND ANY EXCESS EXCAVATIONS SHALL BE REMOVED AND DISPOSED OF IN NON-SENSITIVE AREAS AS APPROVED BY THE ENGINEER.

### SECTION 900

38. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

### MISCELLANEOUS

39. THE CONTRACTOR SHALL CONTACT MICHAEL ELLER, THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6061.
40. ANY CHANGES TO OR DEVIATIONS FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND ENVIRONMENTAL MONITOR PRIOR TO CONDUCTING ANY WORK. APPROVAL MAY TAKE A SIGNIFICANT AMOUNT OF TIME TO COMPLETE AND ALL CHANGES MAY NOT BE APPROVED. THE CONTRACTOR SHALL HAVE NO CLAIM AGAINST THE DEPARTMENT FOR COSTS OR DELAYS ASSOCIATED WITH THE APPROVAL OR REJECTION OF REQUESTED CHANGES OR DEVIATIONS FROM THESE PLANS.
41. RESTORATION OF TEMPORARY IMPACTS
- A. PRIOR TO PERFORMING ANY WORK ASSOCIATED WITH TEMPORARY IMPACTS TO DELINEATED WETLANDS, THE CONTRACTOR SHALL STAKE THE LIMITS OF TEMPORARY DISTURBANCE WITHIN THE WETLANDS AND ALLOW 14 CALENDAR DAYS FOR DELDOT TO OBTAIN EXISTING TOPOGRAPHY SURVEY WITHIN THE TEMPORARY DISTURBANCE. THIS EXISTING SURFACE SHALL BE PROVIDED TO AND ACCEPTED BY THE CONTRACTOR BEFORE ANY WORK IS PERFORMED WITHIN THE WETLANDS. THE CONTRACTOR SHALL HAVE 5 CALENDAR DAYS TO RESPOND TO THE EXISTING SURFACE INFORMATION OR OTHERWISE IT SHALL BE CONSIDERED ACCEPTED. THE EXISTING SURFACE PLAN SHALL BE PROVIDED IN BOTH DIGITAL AND PAPER COPIES CONFORMING TO DELDOT CADD STANDARDS AT THE SAME SCALE AS THE CONTRACT PLANS.
- B. UPON MUTUAL ACCEPTANCE OF THE EXISTING SURFACE TOPOGRAPHY PLAN, THE CONTRACTOR SHALL FIRST INSTALL THE RESOURCE PROTECTION FENCE, AND THEN INSTALL THE NECESSARY EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS AND DIRECTED BY THE ENGINEER. THE AREA OF THE TEMPORARY DISTURBANCE MAY BE CLEARED OF VEGETATION AS NECESSARY. VEGETATION SHALL NOT BE GRUBBED, AND SHALL BE CUT FLUSH WITH THE GROUND (I.E., NO DISTURBANCE OF THE ROOT MAT).
- C. INSTALL THE TEMPORARY ACCESS ROAD OR OTHER NEEDED TEMPORARY DISTURBANCE AS SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER. GEOTEXTILE SHALL BE PLACED ON TOP OF THE EXISTING GROUND TO PROVIDE SEPARATION BETWEEN THE EXISTING GROUND AND ANY PLACED MATERIALS.
- D. WHEN THE CONTRACTOR HAS COMPLETED THE WORK REQUIRING THE TEMPORARY WETLAND DISTURBANCE, ALL MATERIALS THAT WERE PLACED BY THE CONTRACTOR SHALL BE REMOVED IN THEIR ENTIRETY. ONCE ALL MATERIALS HAVE BEEN REMOVED, THE CONTRACTOR SHALL ALLOW 14 CALENDAR DAYS FOR DELDOT TO OBTAIN EXISTING SURFACE ELEVATIONS OF THE DISTURBED AREA FOLLOWING THE SAME PROCEDURE DESCRIBED ABOVE FOR OBTAINING ORIGINAL ELEVATIONS. THESE EXISTING SURFACE ELEVATIONS SHALL BE PROVIDED TO THE CONTRACTOR AND INCLUDE A PLAN SHOWING THE ELEVATION DIFFERENCES BETWEEN THE ORIGINAL AND EXISTING SURFACES.
- E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE TEMPORARY DISTURBED AREA TO ORIGINAL ELEVATIONS WITH A GRADING TOLERANCE OF PLUS OR MINUS 0.1 FEET. RESTORATION OF THE DISTURBED AREA SHALL BE ACCOMPLISHED IN THE FOLLOWING MANNER:
- TILL THE GROUND WITHIN THE DISTURBED AREA TO LOOSEN UP THE SOILS DUE TO COMPACTION DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS OF ITEM 202555 - SUBSOIL TILLAGE. MINIMUM VERTICAL TILLAGE DEPTH SHALL BE 24 INCHES AS MEASURED BY FIELD PERFORMANCE.
  - PLACE TOPSOIL TO FILL DEPRESSIONS TO THE ORIGINAL GROUND ELEVATIONS. TOPSOIL SHALL BE THE TOP 9 INCHES OF SOIL OBTAINED FROM AN ACTIVE OR RECENTLY (LESS THAN TWO YEARS) FALLOW OR ABANDONED CROP PRODUCING FARM FIELD OR A SANDY LOAM WITH A MINIMUM OF 4% ORGANIC MATTER. MAXIMUM DEPTH OF A SINGLE LIFT OF TOPSOIL PLACED SHALL BE 6 INCHES AND SHALL BE PLACED IN ACCORDANCE WITH SECTION 732.
  - DISK THE FINAL TOPSOIL SURFACE WITHIN THE DISTURBED AREA TO PREPARE THE AREA FOR SEED. USE A MINIMUM OF 3 PASSES OF A DISK USING LOW GROUND PRESSURE EQUIPMENT TO A MINIMUM DEPTH OF 4 INCHES.
  - WHEN THE CONTRACTOR BELIEVES THAT RESTORATION OF THE ORIGINAL ELEVATIONS HAS BEEN ACHIEVED, 7 CALENDAR DAYS SHALL BE ALLOWED FOR THE AREA TO AGAIN BE SURVEYED BY DELDOT UNDER THE SAME CONDITIONS DESCRIBED ABOVE AND THE SURVEY PLAN OF THE RESTORED ELEVATIONS WILL BE PROVIDED TO THE CONTRACTOR. DELDOT SHALL ADVISE THE CONTRACTOR IF ADDITIONAL RESTORATION WORK IS REQUIRED AND THE CONTRACTOR SHALL ADDRESS THOSE AREAS AND ALLOW FOR 7 CALENDAR DAYS FOR NEW SURVEY INFORMATION TO BE OBTAINED UNTIL THE RESTORATION IS APPROVED BY DELDOT.
- F. UPON ACCEPTANCE OF THE RESTORED ELEVATIONS, THE CONTRACTOR SHALL APPLY SEED TO THE DISTURBED WETLAND. SEEDING SHALL VARY BASED ON THE SLOPE TO BE SEEDDED. ON SLOPES 5:1 OR FLATTER, SEEDING SHALL BE CONDUCTED UNDER ITEM 734552 - WET GROUND EROSION CONTROL GRASS SEEDING - FLATS. ON SLOPES GREATER THAN 5:1, SEEDING SHALL BE CONDUCTED UNDER ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND.
- G. THE RESTORED AREAS WITHIN THE LIMITS OF THE DELINEATED WETLANDS SHALL BE PLANTED IN ACCORDANCE WITH ITEM 737523 - PLANTING. SMOOTH ALDER SHALL BE PLANTED 10 FOOT ON CENTER ON SLOPES FLATTER THAN 5:1 AND SOUTHERN ARROWWOOD SHALL BE PLANTED 10 FOOT ON CENTER ON SLOPES STEEPER THAN 5:1. PLANTS SHALL BE INSTALLED DURING THE FIRST AVAILABLE PLANTING WINDOW PER THE STANDARD SPECIFICATIONS. SHRUBS SHALL NOT BE PLANTED UNDER BRIDGES. BEGIN SHRUB PLANTING 10 FEET OUTSIDE OF THE BRIDGE PARAPETS.
- H. UPON FINAL ACCEPTANCE OF THE PLANTING, THE CONTRACTOR SHALL REMOVE THE RESOURCE PROTECTION FENCING AND THE EROSION AND SEDIMENT CONTROL MEASURES.
- I. ALL COSTS FOR INSTALLING, REMOVING, AND RESTORING THE TEMPORARY WETLAND ACCESS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 202508 - WETLAND ACCESS ROAD, TYPE II, WITH THE EXCEPTION OF THE RESOURCE PROTECTION FENCE, WHICH SHALL BE PAID UNDER ITEM 727552, AND THE REINFORCED SILT FENCE, WHICH SHALL BE PAID UNDER ITEM 251001. MAINTENANCE OF STREAM FLOW ASSOCIATED WITH THE WETLAND ACCESS ROAD, BRIDGE CONSTRUCTION AND ASSOCIATED ACTIVITIES TO BE PERFORMED IN WHOLE OR IN PART FROM THE WETLAND ACCESS ROAD, AND STREAM AND WETLAND RESTORATION ACTIVITIES SHALL BE INCIDENTAL TO THE WETLAND ACCESS ROAD, TYPE II.

## PROJECT NOTES (CONT.)

### MISCELLANEOUS (CONT.)

42. RESTORATION OF PERMANENT IMPACTS
- A. PERMANENT IMPACTS TO CLEARED AND GRUBBED WETLANDS THAT HAVE NOT BEEN GRADED SHALL BE RESTORED WITH SEEDING AND SHRUB PLANTING AS INDICATED ON THE PLANS. SEEDING AND PLANTING SHALL BE CONDUCTED BETWEEN THE LIMITS OF GRADING AND THE LOC IN LOCATIONS DESIGNATED ON THE PLANS.
- B. SEEDING SHALL VARY BASED ON SLOPE TO BE SEEDDED. ON SLOPES 5:1 OR FLATTER, SEEDING SHALL BE PAID FOR AND CONDUCTED UNDER ITEM 734552 - WET GROUND EROSION CONTROL GRASS SEEDING - FLATS. ON SLOPES GREATER THAN 5:1 SEEDING SHALL PAID FOR AND CONDUCTED UNDER ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND.
- C. SHRUBS SHALL BE PLANTED IN THE PERMANENT IMPACT RESTORATION AREA. THE SHRUB PLANTING WILL VARY BASED ON SLOPE OF THE PLANTED AREA. ON SLOPES 5:1 OR FLATTER, SHRUB PLANTING SHALL CONSIST OF CONTAINERIZED 3 TO 5 FOOT TALL SMOOTH ALDER (ALNUS SERRULATA) LOCATED 10 FOOT ON CENTER. ON SLOPES GREATER THAN 5:1 SHRUB PLANTING SHALL CONSIST OF CONTAINERIZED 3 TO 5 FOOT TALL SOUTHERN ARROWWOOD (VIBURNUM DENTATUM) LOCATED 10 FOOT ON CENTER. PERMANENT IMPACT RESTORATION SHRUB PLANTING SHALL BE PAID FOR AND CONDUCTED UNDER ITEM 737523 - PLANTING.
43. IF GROWTH OF A NOXIOUS WEED AS DEFINED IN TITLE 3 OF THE DELAWARE CODE OR AS IDENTIFIED BY THE ENGINEER IS DETECTED WITHIN THE PROJECT LIMITS AS A RESULT OF USING ON-SITE MATERIALS, THE CONTRACTOR SHALL ERADICATE THE WEED USING ITEM 735501 HERBICIDE APPLICATION, NOXIOUS WEEDS. GROWTH OF NOXIOUS WEEDS RESULTING FROM THE CONTRACTOR BRINGING MATERIALS TO THE PROJECT FROM OFF-SITE SOURCES SHALL BE ERADICATED AT THE CONTRACTOR'S EXPENSE.
44. THE CONTRACTOR SHALL FOLLOW ALL STATE AND LOCAL ORDINANCES CONCERNING CONSTRUCTION NOISE DURING THE DURATION OF THE CONSTRUCTION ACTIVITIES.
45. EXCAVATION WITHIN WOODED AREAS SHALL BE INCIDENTAL TO ITEM 201000 - CLEARING AND GRUBBING. ALL OTHER EXCAVATION SHALL BE PAID FOR UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.

RIGHT-OF-WAY MONUMENT SCHEDULE					
NO.	STATION	OFFSET	NORTHING	EASTING	
1	1015+69.14		145.71	557558.9940	590088.9694
2	1015+20.00	385.00	557680.2870	589878.1085	
3	1011+50.00	385.00	557981.9571	589956.9405	
4	1009+81.26	175.00	558099.3107	590186.3460	
5	1007+00.00	175.00	558374.4565	590213.4396	
6	1006+00.00	87.37	558465.8978	590308.6433	
7	851+50.00	176.91	556403.7354	589971.5255	
8	851+50.00	148.00	556426.3170	589953.4759	
9	151+50.00	-72.00	557380.1943	590570.3602	
10	156+50.00	-47.00	557930.0071	590599.1854	
11	159+26.77	-47.00	558206.7668	590601.1106	
12	162+76.00	-47.00	558556.6712	590606.2107	
13	172+00.00	-47.00	559480.4485	590626.7158	
14	175+25.00	-70.78	559805.8924	590610.1513	

DESIGN DESIGNATION - RAMP R			
FUNCTIONAL CLASS: N/A	D.H.V. PROJECTED: 1,200	YEAR: 2030	
TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 50 M.P.H.	
A.A.D.T. CURRENT: N/A	YEAR: N/A	TRUCKS: 6%	
A.A.D.T. PROJECTED: 14,000	YEAR: 2030	DIRECTION OF DISTRIBUTION: N/A	
DESIGN DESIGNATION - US 13 (N22)			
FUNCTIONAL CLASS: MINOR ARTERIAL	D.H.V. PROJECTED: 4,275	YEAR: 2030	
TYPE OF CONSTRUCTION: REALIGNMENT		DESIGN SPEED: 65 M.P.H.	
A.A.D.T. CURRENT: 24,318	YEAR: 2008	TRUCKS: 7%	
A.A.D.T. PROJECTED: 43,600	YEAR: 2030	DIRECTION OF DISTRIBUTION: 50%	
DESIGN DESIGNATION - SR 1 (N83)			
FUNCTIONAL CLASS: OTHER PRINCIPAL ARTERIAL	D.H.V. PROJECTED: 8,950	YEAR: 2030	
TYPE OF CONSTRUCTION: WIDENING		DESIGN SPEED: 70 M.P.H.	
A.A.D.T. CURRENT: 71,024	YEAR: 2008	TRUCKS: 13%	
A.A.D.T. PROJECTED: 110,000	YEAR: 2030	DIRECTION OF DISTRIBUTION: 50%	

**FOR DESIGN DESIGNATION - RAMP Q AND  
DESIGN DESIGNATION - US 301 NB RAMP, SEE  
DESIGN DESIGNATION - US 301 ON THE TITLE SHEET**

M:\21653-000\CONTRACT 2129\2018\_251410 PM



**DELAWARE  
DEPARTMENT OF TRANSPORTATION**

ADDENDUMS / REVISIONS

**NOT TO SCALE**

**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.	
T200911302	DESIGNED BY: SJB	
COUNTY	CHECKED BY: TAO	
NEW CASTLE		

**NOTES**

**PN-02**

SHEET NO.

7

TOTAL SHTS.

491

**EARTHWORK SUMMARY - TOTALS**

**EXCAVATION - ALIGNMENT**

<b>FROM CROSS SECTIONS</b>	
PLUS EXCAVATION FROM US 301 NORTHBOUND WEST OF SR 1	3,072 C.Y.
PLUS EXCAVATION FROM US 301 NORTHBOUND EAST OF SR 1	5,721 C.Y.
PLUS EXCAVATION FROM RAMP Q	74,041 C.Y.
PLUS EXCAVATION FROM RAMP R	5,470 C.Y.
PLUS EXCAVATION FROM SR 1 NORTHBOUND	3,162 C.Y.
PLUS EXCAVATION FROM SR 1 SOUTHBOUND	4,499 C.Y.
PLUS EXCAVATION FROM US 13	5,892 C.Y.
PLUS EXCAVATION FROM SRI MEDIAN	1,429 C.Y.
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS</b>	<b>103,287 C.Y.</b>
<b>PLUS EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	
BORROW TYPE A EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE C EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE D EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE F EXCAVATED MATERIAL	8,854 C.Y.
TOPSOIL REMOVED (VILLAGE OF SCOTT RUN EAST SITE)	3,010 C.Y.
<b>SUBTOTAL EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	<b>11,864 C.Y.</b>
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS AND BORROW SITES</b>	<b>115,151 C.Y.</b>
PLUS TRANSITION SLAB EXCAVATION PAID UNDER ITEM NO. 202000	47 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	6,626 C.Y.
PLUS TOPSOIL PLACED IN CUT:	6,383 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	2,264 C.Y.
LESS ROOT MAT REMOVED IN CUT	1,189 C.Y.
LESS REMOVAL OF EXISTING PCC PAVEMENT	2,169 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
PLUS SWM EXCAVATION	99,665 C.Y.
<b>=TOTAL ITEM 202000-EXCAVATION AND EMBANKMENT</b>	<b>227,088 C.Y.</b>

**STORMWATER MANAGEMENT POND EXCAVATION**

<b>FROM GRID ANALYSIS*:</b>	
SWM POND NO. 1004TBD	107,300 C.Y.
<b>SUBTOTAL - EXCAVATION FROM GRID ANALYSIS</b>	<b>107,300 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT SECTIONS	3,641 C.Y.
LESS ROOT MAT REMOVED IN CUT	10,435 C.Y.
LESS BACKFILL REQUIRED FOR ROOT MAT REMOVAL	841 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>=TOTAL STORMWATER MANAGEMENT POND</b>	<b>99,665 C.Y.</b>

\*INCLUDES 2' OF OVEREXCAVATION OF SWM PONDS

**EXCAVATION AVAILABLE FOR EMBANKMENT**

<b>TOTAL EXCAVATION AND EMBANKMENT QUANTITY (ITEM 202000)</b>	<b>227,088 C.Y.</b>
LESS MATERIAL REQUIRED FOR SWM EMBANKMENT	0 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES	2,710 C.Y.
PLUS EXCAVATION INCIDENTAL TO STRUCTURAL ITEMS	4,186 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	3,698 C.Y.
PLUS CHANNEL EXCAVATION	0 C.Y.
PLUS EXCAVATION FROM LATERAL OR LONGITUDINAL DITCHES	0 C.Y.
PLUS EXCAVATION FROM INSTALLATION OF UNDERDRAINS	1,903 C.Y.
<b>LESS TOPSOIL REMOVED IN CUT AND FILL</b>	<b>16,256 C.Y.</b>
LESS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
LESS TOPSOIL REMOVED FROM STORM WATER MANAGEMENT PONDS	1,462 C.Y.
LESS TOPSOIL REMOVED FROM BORROW SITES	3,010 C.Y.
LESS UNSUITABLE EXCAVATION	232 C.Y.
LESS UNSUITABLE MATERIAL REMOVED FROM SWM FACILITY	6,334 C.Y.
LESS MATERIAL USED FOR BORROW TYPE A**	22,342 C.Y.
LESS MATERIAL USED FOR BORROW TYPE D**	6,766 C.Y.
LESS MATERIAL USED FOR BORROW TYPE B	0 C.Y.
LESS MATERIAL USED FOR BORROW TYPE C**	9,095 C.Y.
<b>=TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F</b>	<b>173,778 C.Y.</b>

\*\*NOTE: SOIL TEST RESULTS IN THE VICINITY OF THE RAMP Q DIVERSION DITCH INDICATE THE PRESENCE OF MATERIALS SUITED FOR BORROW, TYPES A, C, AND D

**BORROW, TYPE A CAPPING REQUIRED**

<b>BORROW, TYPE A FOR CAPPING</b>	<b>19,871 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	1,252 C.Y.
<b>=SUBTOTAL BORROW, TYPE A CAPPING REQUIRED</b>	<b>18,618 C.Y.</b>
PLUS CAPPING REQUIRED X ADJUSTMENT FACTOR (0.20)	3,724 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>22,342 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE A	22,342 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE C REQUIRED**

TEST HOLE EXCAVATION BACKFILL REQUIRED	150 C.Y.
PIPE/UTILITY BACKFILL REQUIRED	4,551 C.Y.
TYPE C BACKFILL FOR STRUCTURES	2,878 C.Y.
<b>=SUBTOTAL BORROW, TYPE C REQUIRED</b>	<b>7,579 C.Y.</b>
PLUS ADJUSTMENT FACTOR	1,516 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>9,095 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE C	9,095 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE D REQUIRED**

<b>BORROW, TYPE D FOR SOIL CEMENT BASE COURSE</b>	<b>5,639 C.Y.</b>
PLUS BORROW, TYPE D REQUIRED X ADJUSTMENT FACTOR (0.20)	1,128 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>6,766 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE D	6,766 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE B REQUIRED**

BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOT MAT REMOVED UNDER FILL	0 C.Y.
PLUS BACKFILL X ADJUSTMENT FACTOR (0.20)	0 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE B	0 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>

**EMBANKMENT AND BORROW, TYPE F REQUIRED**

<b>EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>197,813 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	6,626 C.Y.
PLUS ROOT MAT REMOVED UNDER FILL NOT BACKFILLED WITH BORROW, TYPE B	1,448 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PCC AND BITUMINOUS PAVEMENT REMOVED UNDER FILL	3,432 C.Y.
PLUS EMBANKMENT FOR PIPE BACKFILL (TYPE F)	756 C.Y.
PLUS EMBANKMENT FOR STRUCTURES	55 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	4,035 C.Y.
LESS MSE WALL OR OTHER RETAINING WALL & BACKFILL	61,280 C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>=SUBTOTAL EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>144,815 C.Y.</b>
PLUS EMBANKMENT REQUIRED X ADJUSTMENT FACTOR (0.20)	28,963 C.Y.
<b>=SUBTOTAL ADJUSTED EMBANKMENT REQUIRED</b>	<b>173,778 C.Y.</b>
LESS TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F	173,778 C.Y.
<b>SURPLUS TYPE F BORROW</b>	<b>0 C.Y.</b>
<b>THEREFORE, TOTAL ADJUSTED BORROW, TYPE F REQUIRED</b>	<b>0 C.Y.</b>

**TOPSOIL SUMMARY**

TOPSOIL SALVAGED FROM CUT AND FILL	16,256 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
PLUS TOPSOIL FROM STORMWATER MANAGEMENT POND	1,462 C.Y.
PLUS TOPSOIL FROM BORROW SITES	3,010 C.Y.
<b>=SUBTOTAL TOPSOIL AVAILABLE</b>	<b>21,038 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	5,288 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES	6,383 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (BORROW SITE)	3,010 C.Y.
LESS TOPSOIL PLACED IN SWM FACILITIES	3,641 C.Y.
LESS TOPSOIL PLACED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
<b>=SUBTOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>2,405 C.Y.</b>
LESS CULTIVATED SOIL UNSUITABLE FOR EMBANKMENT	0 C.Y.
<b>=TOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>2,405 C.Y.</b>

**PROPOSAL QUANTITIES**

ITEM NO. 202000 EXCAVATION AND EMBANKMENT*	238,758 C.Y.
ITEM NO. 203000 CHANNEL EXCAVATION	0 C.Y.
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	2,710 C.Y.
ITEM NO. 208000 EXCAVATION AND BACKFILL FOR PIPE TRENCHES	3,698 C.Y.
ITEM NO. 209001 BORROW, TYPE A	0 C.Y.
ITEM NO. 209002 BORROW, TYPE B	0 C.Y.
ITEM NO. 209003 BORROW, TYPE C	0 C.Y.
ITEM NO. 209004 BORROW, TYPE D	0 C.Y.
ITEM NO. 209006 BORROW, TYPE F	0 C.Y.
ITEM NO. 212000 UNDERCUT EXCAVATION	0 C.Y.
ITEM NO. 732002 TOPSOIL, 6" DEPTH	0 S.Y.
ITEM NO. 733002 TOPSOILING (6" DEPTH)***	105,776 S.Y.

\*INCLUDES 5,835 CY OF SEDIMENT REMOVAL

\*\*\*NOTE: TOPSOILING BORROW SITES SHALL BE PAID UNDER ITEM 733002 REGARDLESS OF DEPTH.

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ADDENDUMS / REVISIONS

NOT TO SCALE

**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.
T200911302	
COUNTY	DESIGNED BY: SJB
NEW CASTLE	CHECKED BY: TAO

**EARTHWORK SUMMARY**

EW-01

SHEET NO.

8

TOTAL SHTS.

491



**EARTHWORK SUMMARY - WEST OF SR 1**

**EXCAVATION - ALIGNMENT**

<b>FROM CROSS SECTIONS</b>	
PLUS EXCAVATION FROM US 301 NORTHBOUND WEST OF SR 1	3,072 C.Y.
PLUS EXCAVATION FROM US 301 NORTHBOUND EAST OF SR 1	0 C.Y.
PLUS EXCAVATION FROM RAMP Q	74,041 C.Y.
PLUS EXCAVATION FROM RAMP R	0 C.Y.
PLUS EXCAVATION FROM SR 1 NORTHBOUND	0 C.Y.
PLUS EXCAVATION FROM SR 1 SOUTHBOUND	4,499 C.Y.
PLUS EXCAVATION FROM US 13	0 C.Y.
PLUS EXCAVATION FROM SR 1 MEDIAN	0 C.Y.
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS</b>	<b>81,612 C.Y.</b>
<b>PLUS EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	
BORROW TYPE A EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE C EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE D EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE F EXCAVATED MATERIAL	0 C.Y.
TOPSOIL REMOVED (VILLAGE OF SCOTT RUN EAST SITE)	3,010 C.Y.
<b>SUBTOTAL EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	<b>3,010 C.Y.</b>
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS AND BORROW SITES</b>	<b>84,622 C.Y.</b>
PLUS TRANSITION SLAB EXCAVATION PAID UNDER ITEM NO. 202000	47 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	3,330 C.Y.
PLUS TOPSOIL PLACED IN CUT:	5,293 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOT MAT REMOVED IN CUT	1,069 C.Y.
LESS REMOVAL OF EXISTING PCC PAVEMENT	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
PLUS STORMWATER MANAGEMENT EXCAVATION	99,665 C.Y.
<b>=TOTAL ITEM 202000-EXCAVATION AND EMBANKMENT</b>	<b>192,198 C.Y.</b>

**STORMWATER MANAGEMENT POND EXCAVATION**

<b>FROM GRID ANALYSIS*:</b>	
SWM POND NO. 1004TBD	107,300 C.Y.
<b>SUBTOTAL - EXCAVATION FROM GRID ANALYSIS</b>	<b>107,300 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT SECTIONS	3,641 C.Y.
LESS ROOT MAT REMOVED IN CUT	10,435 C.Y.
LESS BACKFILL REQUIRED FOR ROOT MAT REMOVAL	841 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>=TOTAL STORMWATER MANAGEMENT POND</b>	<b>99,665 C.Y.</b>

\*INCLUDES 2' OF OVEREXCAVATION OF SWM PONDS

**EXCAVATION AVAILABLE FOR EMBANKMENT**

<b>TOTAL EXCAVATION AND EMBANKMENT QUANTITY (ITEM 202000)</b>	<b>192,198 C.Y.</b>
LESS MATERIAL REQUIRED FOR SWM EMBANKMENT	0 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES	1,274 C.Y.
PLUS EXCAVATION INCIDENTAL TO STRUCTURAL ITEMS	597 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	2,060 C.Y.
PLUS CHANNEL EXCAVATION	0 C.Y.
PLUS EXCAVATION FROM LATERAL OR LONGITUDINAL DITCHES	0 C.Y.
PLUS EXCAVATION FROM INSTALLATION OF UNDERDRAINS	663 C.Y.
<b>LESS TOPSOIL REMOVED IN CUT AND FILL</b>	<b>10,863 C.Y.</b>
LESS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
LESS TOPSOIL REMOVED FROM STORM WATER MANAGEMENT PONDS	1,462 C.Y.
LESS TOPSOIL REMOVED FROM BORROW SITES	3,010 C.Y.
LESS UNSUITABLE EXCAVATION	113 C.Y.
LESS UNSUITABLE MATERIAL REMOVED FROM SWM FACILITY	6,334 C.Y.
LESS MATERIAL USED FOR BORROW TYPE A**	10,987 C.Y.
LESS MATERIAL USED FOR BORROW TYPE D**	3,459 C.Y.
<b>LESS MATERIAL USED FOR BORROW TYPE B</b>	<b>0 C.Y.</b>
<b>LESS MATERIAL USED FOR BORROW TYPE C**</b>	<b>3,610 C.Y.</b>
<b>=TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F</b>	<b>156,645 C.Y.</b>

\*\*NOTE: SOIL TEST RESULTS IN THE VICINITY OF THE RAMP Q DIVERSION DITCH INDICATE THE PRESENCE OF MATERIALS SUITED FOR BORROW, TYPES A, C, AND D

**BORROW, TYPE A CAPPING REQUIRED**

<b>BORROW, TYPE A FOR CAPPING</b>	<b>9,850 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	694 C.Y.
<b>=SUBTOTAL BORROW, TYPE A CAPPING REQUIRED</b>	<b>9,156 C.Y.</b>
<b>PLUS CAPPING REQUIRED X ADJUSTMENT FACTOR (0.20)</b>	<b>1,831 C.Y.</b>
<b>=SUBTOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>10,987 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE A	10,987 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE C REQUIRED**

TEST HOLE EXCAVATION BACKFILL REQUIRED	50 C.Y.
PIPE/UTILITY BACKFILL REQUIRED	1,277 C.Y.
TYPE C BACKFILL FOR STRUCTURES	1,681 C.Y.
<b>=SUBTOTAL BORROW, TYPE C REQUIRED</b>	<b>3,008 C.Y.</b>
<b>PLUS ADJUSTMENT FACTOR</b>	<b>602 C.Y.</b>
<b>=SUBTOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>3,610 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE C	3,610 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE D REQUIRED**

<b>BORROW, TYPE D FOR SOIL CEMENT BASE COURSE</b>	<b>2,882 C.Y.</b>
<b>PLUS BORROW, TYPE D REQUIRED X ADJUSTMENT FACTOR (0.20)</b>	<b>576 C.Y.</b>
<b>=SUBTOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>3,459 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE D	3,459 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>0 C.Y.</b>

**BORROW, TYPE B REQUIRED**

<b>BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOT MAT REMOVED UNDER FILL</b>	<b>0 C.Y.</b>
<b>PLUS BACKFILL X ADJUSTMENT FACTOR (0.20)</b>	<b>0 C.Y.</b>
<b>=SUBTOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE B	0 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>

**EMBANKMENT AND BORROW, TYPE F REQUIRED**

<b>EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>39,930 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	3,330 C.Y.
PLUS ROOT MAT REMOVED UNDER FILL NOT BACKFILLED WITH BORROW, TYPE B	143 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PCC AND BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
PLUS EMBANKMENT FOR PIPE BACKFILL (TYPE F)	186 C.Y.
PLUS EMBANKMENT FOR STRUCTURES	0 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	1,767 C.Y.
LESS MSE WALL OR OTHER RETAINING WALL & BACKFILL	6 C.Y.
LESS BORROW, TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>=SUBTOTAL EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>41,816 C.Y.</b>
<b>PLUS EMBANKMENT REQUIRED X ADJUSTMENT FACTOR (0.20)</b>	<b>8,363 C.Y.</b>
<b>=SUBTOTAL ADJUSTED EMBANKMENT REQUIRED</b>	<b>50,179 C.Y.</b>
LESS TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F	156,645 C.Y.
<b>SURPLUS TYPE F BORROW</b>	<b>106,466 C.Y.</b>
<b>THEREFORE, TOTAL ADJUSTED BORROW, TYPE F REQUIRED</b>	<b>0 C.Y.</b>

**TOPSOIL SUMMARY**

<b>TOPSOIL SALVAGED FROM CUT AND FILL</b>	<b>10,863 C.Y.</b>
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
PLUS TOPSOIL FROM STORMWATER MANAGEMENT POND	1,462 C.Y.
PLUS TOPSOIL FROM BORROW SITES	3,010 C.Y.
PLUS TOPSOIL HAULED FROM EAST OF SR 1 AND THE SR 1 MEDIAN	1,476 C.Y.
<b>=SUBTOTAL TOPSOIL AVAILABLE</b>	<b>17,121 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	2,461 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES	5,293 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (BORROW SITE)	3,010 C.Y.
LESS TOPSOIL PLACED IN SWM FACILITIES	3,641 C.Y.
LESS TOPSOIL PLACED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	310 C.Y.
<b>=SUBTOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>2,405 C.Y.</b>
LESS CULTIVATED SOIL UNSUITABLE FOR EMBANKMENT	0 C.Y.
<b>=TOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>2,405 C.Y.</b>

**PROPOSAL QUANTITIES**

ITEM NO. 202000 EXCAVATION AND EMBANKMENT	SEE EW-01
ITEM NO. 203000 CHANNEL EXCAVATION	SEE EW-01
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	SEE EW-01
ITEM NO. 208000 EXCAVATION AND BACKFILL FOR PIPE TRENCHES	SEE EW-01
ITEM NO. 209001 BORROW, TYPE A	SEE EW-01
ITEM NO. 209002 BORROW, TYPE B	SEE EW-01
ITEM NO. 209003 BORROW, TYPE C	SEE EW-01
ITEM NO. 209004 BORROW, TYPE D	SEE EW-01
ITEM NO. 209006 BORROW, TYPE F	SEE EW-01
ITEM NO. 212000 UNDERCUT EXCAVATION	SEE EW-01
ITEM NO. 732002 TOPSOIL, 6" DEPTH	SEE EW-01
ITEM NO. 733002 TOPSOILING (6" DEPTH)***	SEE EW-01

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ADDENDUMS / REVISIONS

NOT TO SCALE

**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.
T200911302	
COUNTY	DESIGNED BY: SJB
NEW CASTLE	CHECKED BY: TAO

**EARTHWORK SUMMARY**

EW-02

SHEET NO.

9

TOTAL SHTS.

491

**EARTHWORK SUMMARY - EAST OF SR 1**

**EXCAVATION - ALIGNMENT**

<b>FROM CROSS SECTIONS</b>	
PLUS EXCAVATION FROM US 301 NORTHBOUND WEST OF SR 1	0 C.Y.
PLUS EXCAVATION FROM US 301 NORTHBOUND EAST OF SR 1	5,721 C.Y.
PLUS EXCAVATION FROM RAMP Q	0 C.Y.
PLUS EXCAVATION FROM RAMP R	5,470 C.Y.
PLUS EXCAVATION FROM SR 1 NORTHBOUND	3,162 C.Y.
PLUS EXCAVATION FROM SR 1 SOUTHBOUND	0 C.Y.
PLUS EXCAVATION FROM US 13	5,892 C.Y.
PLUS EXCAVATION FROM SRI MEDIAN	0 C.Y.
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS</b>	<b>20,246 C.Y.</b>
<b>PLUS EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	
BORROW TYPE A EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE C EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE D EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE F EXCAVATED MATERIAL	5,829 C.Y.
TOPSOIL REMOVED (VILLAGE OF SCOTT RUN EAST SITE)	0 C.Y.
<b>SUBTOTAL EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	<b>5,829 C.Y.</b>
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS AND BORROW SITES</b>	<b>26,075 C.Y.</b>
PLUS TRANSITION SLAB EXCAVATION PAID UNDER ITEM NO. 202000	0 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	3,238 C.Y.
PLUS TOPSOIL PLACED IN CUT:	1,007 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	2,191 C.Y.
LESS ROOT MAT REMOVED IN CUT	119 C.Y.
LESS REMOVAL OF EXISTING PCC PAVEMENT	2,169 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
PLUS SWM EXCAVATION	0 C.Y.
<b>=TOTAL ITEM 202000-EXCAVATION AND EMBANKMENT</b>	<b>30,222 C.Y.</b>

**STORMWATER MANAGEMENT POND EXCAVATION**

<b>FROM GRID ANALYSIS*:</b>	
SWM POND NO. 1004TBD	0 C.Y.
<b>SUBTOTAL - EXCAVATION FROM GRID ANALYSIS</b>	<b>0 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT SECTIONS	0 C.Y.
LESS ROOT MAT REMOVED IN CUT	0 C.Y.
LESS BACKFILL REQUIRED FOR ROOT MAT REMOVAL	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>=TOTAL STORMWATER MANAGEMENT POND</b>	<b>0 C.Y.</b>

\*INCLUDES 2' OF OVEREXCAVATION OF SWM PONDS

**EXCAVATION AVAILABLE FOR EMBANKMENT**

<b>TOTAL EXCAVATION AND EMBANKMENT QUANTITY (ITEM 202000)</b>	<b>30,222 C.Y.</b>
LESS MATERIAL REQUIRED FOR SWM EMBANKMENT	0 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES	480 C.Y.
PLUS EXCAVATION INCIDENTAL TO STRUCTURAL ITEMS	3,589 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	1,638 C.Y.
PLUS CHANNEL EXCAVATION	0 C.Y.
PLUS EXCAVATION FROM LATERAL OR LONGITUDINAL DITCHES	0 C.Y.
PLUS EXCAVATION FROM INSTALLATION OF UNDERDRAINS	1,162 C.Y.
PLUS MATERIAL HAULED FROM WEST OF SR 1 AND SRI MEDIAN	111,221 C.Y.
LESS TOPSOIL REMOVED IN CUT AND FILL	5,001 C.Y.
LESS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
LESS TOPSOIL REMOVED FROM STORM WATER MANAGEMENT PONDS	0 C.Y.
LESS TOPSOIL REMOVED FROM BORROW SITES	0 C.Y.
LESS UNSUITABLE EXCAVATION	119 C.Y.
LESS UNSUITABLE MATERIAL REMOVED FROM SWM FACILITY	0 C.Y.
LESS MATERIAL USED FOR BORROW TYPE A**	11,100 C.Y.
LESS MATERIAL USED FOR BORROW TYPE D**	3,180 C.Y.
<b>LESS MATERIAL USED FOR BORROW TYPE B</b>	<b>0 C.Y.</b>
<b>LESS MATERIAL USED FOR BORROW TYPE C**</b>	<b>5,485 C.Y.</b>
<b>=TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F</b>	<b>123,428 C.Y.</b>

\*\*NOTE: SOIL TEST RESULTS IN THE VICINITY OF THE RAMP Q DIVERSION DITCH INDICATE THE PRESENCE OF MATERIALS SUITED FOR BORROW, TYPES A, C, AND D

<b>BORROW, TYPE A CAPPING REQUIRED</b>	
BORROW, TYPE A FOR CAPPING	9,808 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	559 C.Y.
<b>=SUBTOTAL BORROW, TYPE A CAPPING REQUIRED</b>	<b>9,250 C.Y.</b>
PLUS CAPPING REQUIRED X ADJUSTMENT FACTOR (0.20)	1,850 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>11,100 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE A	11,100 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE C REQUIRED</b>	
TEST HOLE EXCAVATION BACKFILL REQUIRED	100 C.Y.
PIPE/UTILITY BACKFILL REQUIRED	3,274 C.Y.
TYPE C BACKFILL FOR STRUCTURES	1,197 C.Y.
<b>=SUBTOTAL BORROW, TYPE C REQUIRED</b>	<b>4,571 C.Y.</b>
PLUS ADJUSTMENT FACTOR	914 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>5,485 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE C	5,485 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE D REQUIRED</b>	
BORROW, TYPE D FOR SOIL CEMENT BASE COURSE	2,650 C.Y.
PLUS BORROW, TYPE D REQUIRED X ADJUSTMENT FACTOR (0.20)	530 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>3,180 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE D	3,180 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE B REQUIRED</b>	
BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOT MAT REMOVED UNDER FILL	0 C.Y.
PLUS BACKFILL X ADJUSTMENT FACTOR (0.20)	0 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE B	0 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>

**EMBANKMENT AND BORROW, TYPE F REQUIRED**

<b>EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>157,828 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	3,238 C.Y.
PLUS ROOT MAT REMOVED UNDER FILL NOT BACKFILLED WITH BORROW, TYPE B	1,305 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PCC AND BITUMINOUS PAVEMENT REMOVED UNDER FILL	3,359 C.Y.
PLUS EMBANKMENT FOR PIPE BACKFILL (TYPE F)	571 C.Y.
PLUS EMBANKMENT FOR STRUCTURES	55 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	2,225 C.Y.
LESS MSE WALL OR OTHER RETAINING WALL & BACKFILL	61,274 C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>=SUBTOTAL EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>102,856 C.Y.</b>
PLUS EMBANKMENT REQUIRED X ADJUSTMENT FACTOR (0.20)	20,571 C.Y.
<b>=SUBTOTAL ADJUSTED EMBANKMENT REQUIRED</b>	<b>123,428 C.Y.</b>
LESS TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F	123,428 C.Y.
<b>SURPLUS TYPE F BORROW</b>	<b>0 C.Y.</b>
<b>THEREFORE, TOTAL ADJUSTED BORROW, TYPE F REQUIRED</b>	<b>0 C.Y.</b>

**TOPSOIL SUMMARY**

TOPSOIL SALVAGED FROM CUT AND FILL	5,001 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
PLUS TOPSOIL FROM STORMWATER MANAGEMENT POND	0 C.Y.
PLUS TOPSOIL FROM BORROW SITES	0 C.Y.
<b>=SUBTOTAL TOPSOIL AVAILABLE</b>	<b>5,001 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	2,784 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES	1,007 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (BORROW SITE)	0 C.Y.
LESS TOPSOIL PLACED IN SWM FACILITIES	0 C.Y.
LESS TOPSOIL PLACED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
<b>=SUBTOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>1,211 C.Y.</b>
LESS CULTIVATED SOIL UNSUITABLE FOR EMBANKMENT	0 C.Y.
<b>=TOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>1,211 C.Y.</b>

**PROPOSAL QUANTITIES**

ITEM NO. 202000 EXCAVATION AND EMBANKMENT	SEE EW-01
ITEM NO. 203000 CHANNEL EXCAVATION	SEE EW-01
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	SEE EW-01
ITEM NO. 208000 EXCAVATION AND BACKFILL FOR PIPE TRENCHES	SEE EW-01
ITEM NO. 209001 BORROW, TYPE A	SEE EW-01
ITEM NO. 209002 BORROW, TYPE B	SEE EW-01
ITEM NO. 209003 BORROW, TYPE C	SEE EW-01
ITEM NO. 209004 BORROW, TYPE D	SEE EW-01
ITEM NO. 209006 BORROW, TYPE F	SEE EW-01
ITEM NO. 212000 UNDERCUT EXCAVATION	SEE EW-01
ITEM NO. 732002 TOPSOIL, 6" DEPTH	SEE EW-01
ITEM NO. 733002 TOPSOILING (6" DEPTH)***	SEE EW-01

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ADDENDUMS / REVISIONS

NOT TO SCALE

**US 301 &  
SR 1 INTERCHANGE**

CONTRACT	BRIDGE NO.
T200911302	
COUNTY	DESIGNED BY: SJB
NEW CASTLE	CHECKED BY: TAO

**EARTHWORK SUMMARY**

EW-03

SHEET NO.
10
TOTAL SHTS.
491

**EARTHWORK SUMMARY - MEDIAN**

**EXCAVATION - ALIGNMENT**

<b>FROM CROSS SECTIONS</b>	
PLUS EXCAVATION FROM US 301 NORTHBOUND WEST OF SR 1	0 C.Y.
PLUS EXCAVATION FROM US 301 NORTHBOUND EAST OF SR 1	0 C.Y.
PLUS EXCAVATION FROM RAMP Q	0 C.Y.
PLUS EXCAVATION FROM RAMP R	0 C.Y.
PLUS EXCAVATION FROM SR 1 NORTHBOUND	0 C.Y.
PLUS EXCAVATION FROM SR 1 SOUTHBOUND	0 C.Y.
PLUS EXCAVATION FROM US 13	0 C.Y.
PLUS EXCAVATION FROM SR 1 MEDIAN	1,429 C.Y.
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS</b>	<b>1,429 C.Y.</b>
<b>PLUS EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	
BORROW TYPE A EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE C EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE D EXCAVATED MATERIAL	0 C.Y.
BORROW TYPE F EXCAVATED MATERIAL	3,025 C.Y.
TOPSOIL REMOVED (VILLAGE OF SCOTT RUN EAST SITE)	0 C.Y.
<b>SUBTOTAL EXCAVATION FROM VILLAGE OF SCOTT RUN EAST BORROW SITE</b>	<b>3,025 C.Y.</b>
<b>SUBTOTAL - EXCAVATION FROM CROSS SECTIONS AND BORROW SITES</b>	<b>4,454 C.Y.</b>
PLUS TRANSITION SLAB EXCAVATION PAID UNDER ITEM NO. 202000	0 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	58 C.Y.
PLUS TOPSOIL PLACED IN CUT:	83 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	73 C.Y.
LESS ROOT MAT REMOVED IN CUT	0 C.Y.
LESS REMOVAL OF EXISTING PCC PAVEMENT	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
PLUS SWM EXCAVATION	0 C.Y.
<b>=TOTAL ITEM 202000-EXCAVATION AND EMBANKMENT</b>	<b>4,668 C.Y.</b>

**STORMWATER MANAGEMENT POND EXCAVATION**

<b>FROM GRID ANALYSIS*:</b>	
SWM POND NO. 1004TBD	0 C.Y.
<b>SUBTOTAL - EXCAVATION FROM GRID ANALYSIS</b>	<b>0 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT SECTIONS	0 C.Y.
LESS ROOT MAT REMOVED IN CUT	0 C.Y.
LESS BACKFILL REQUIRED FOR ROOT MAT REMOVAL	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>=TOTAL STORMWATER MANAGEMENT POND</b>	<b>0 C.Y.</b>

\*INCLUDES 2' OF OVEREXCAVATION OF SWM PONDS

**EXCAVATION AVAILABLE FOR EMBANKMENT**

<b>TOTAL EXCAVATION AND EMBANKMENT QUANTITY (ITEM 202000)</b>	<b>4,668 C.Y.</b>
LESS MATERIAL REQUIRED FOR SWM EMBANKMENT	0 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR STRUCTURES	956 C.Y.
PLUS EXCAVATION INCIDENTAL TO STRUCTURAL ITEMS	0 C.Y.
PLUS EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	0 C.Y.
PLUS CHANNEL EXCAVATION	0 C.Y.
PLUS EXCAVATION FROM LATERAL OR LONGITUDINAL DITCHES	0 C.Y.
PLUS EXCAVATION FROM INSTALLATION OF UNDERDRAINS	78 C.Y.
PLUS MATERIAL HAULED FROM WEST OF SR 1	0 C.Y.
LESS TOPSOIL REMOVED IN CUT AND FILL	391 C.Y.
LESS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
LESS TOPSOIL REMOVED FROM STORM WATER MANAGEMENT PONDS	0 C.Y.
LESS TOPSOIL REMOVED FROM BORROW SITES	0 C.Y.
LESS UNSUITABLE EXCAVATION	0 C.Y.
LESS UNSUITABLE MATERIAL REMOVED FROM SWM FACILITY	0 C.Y.
LESS MATERIAL USED FOR BORROW TYPE A**	256 C.Y.
LESS MATERIAL USED FOR BORROW TYPE D**	128 C.Y.
LESS MATERIAL USED FOR BORROW TYPE B	0 C.Y.
LESS MATERIAL USED FOR BORROW TYPE C**	0 C.Y.
<b>=TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F</b>	<b>4,927 C.Y.</b>

\*\*NOTE: SOIL TEST RESULTS IN THE VICINITY OF THE RAMP Q DIVERSION DITCH INDICATE THE PRESENCE OF MATERIALS SUITED FOR BORROW, TYPES A, C, AND D

<b>BORROW, TYPE A CAPPING REQUIRED</b>	
BORROW, TYPE A FOR CAPPING	213 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	0 C.Y.
<b>=SUBTOTAL BORROW, TYPE A CAPPING REQUIRED</b>	<b>213 C.Y.</b>
PLUS CAPPING REQUIRED X ADJUSTMENT FACTOR (0.20)	43 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>256 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE A	256 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE A REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE C REQUIRED</b>	
TEST HOLE EXCAVATION BACKFILL REQUIRED	0 C.Y.
PIPE/UTILITY BACKFILL REQUIRED	0 C.Y.
TYPE C BACKFILL FOR STRUCTURES	0 C.Y.
<b>=SUBTOTAL BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>
PLUS ADJUSTMENT FACTOR	0 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE C	0 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE C REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE D REQUIRED</b>	
BORROW, TYPE D FOR SOIL CEMENT BASE COURSE	107 C.Y.
PLUS BORROW, TYPE D REQUIRED X ADJUSTMENT FACTOR (0.20)	21 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>128 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE D	128 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE D REQUIRED</b>	<b>0 C.Y.</b>

<b>BORROW, TYPE B REQUIRED</b>	
BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOT MAT REMOVED UNDER FILL	0 C.Y.
PLUS BACKFILL X ADJUSTMENT FACTOR (0.20)	0 C.Y.
<b>=SUBTOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>
LESS EXCAVATION AVAILABLE FOR BORROW, TYPE B	0 C.Y.
<b>=TOTAL ADJUSTED BORROW, TYPE B REQUIRED</b>	<b>0 C.Y.</b>

**EMBANKMENT AND BORROW, TYPE F REQUIRED**

<b>EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>55 C.Y.</b>
PLUS TOPSOIL REMOVED UNDER FILL	58 C.Y.
PLUS ROOT MAT REMOVED UNDER FILL NOT BACKFILLED WITH BORROW, TYPE B	0 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PCC AND BITUMINOUS PAVEMENT REMOVED UNDER FILL	73 C.Y.
PLUS EMBANKMENT FOR PIPE BACKFILL (TYPE F)	0 C.Y.
PLUS EMBANKMENT FOR STRUCTURES	0 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	43 C.Y.
LESS MSE WALL OR OTHER RETAINING WALL & BACKFILL	0 C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>=SUBTOTAL EMBANKMENT REQUIRED BELOW CAPPING</b>	<b>143 C.Y.</b>
PLUS EMBANKMENT REQUIRED X ADJUSTMENT FACTOR (0.20)	29 C.Y.
<b>=SUBTOTAL ADJUSTED EMBANKMENT REQUIRED</b>	<b>172 C.Y.</b>
LESS TOTAL EXCAVATION AVAILABLE FOR BORROW, TYPE F	4,927 C.Y.
<b>SURPLUS TYPE F BORROW</b>	<b>4,755 C.Y.</b>
<b>THEREFORE, TOTAL ADJUSTED BORROW, TYPE F REQUIRED</b>	<b>0 C.Y.</b>

**TOPSOIL SUMMARY**

TOPSOIL SALVAGED FROM CUT AND FILL	391 C.Y.
PLUS TOPSOIL REMOVED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
PLUS TOPSOIL FROM STORMWATER MANAGEMENT POND	0 C.Y.
PLUS TOPSOIL FROM BORROW SITES	0 C.Y.
<b>=SUBTOTAL TOPSOIL AVAILABLE</b>	<b>391 C.Y.</b>
LESS TOPSOIL PLACED ON FILL SLOPES	43 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES	83 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (BORROW SITE)	0 C.Y.
LESS TOPSOIL PLACED IN SWM FACILITIES	0 C.Y.
LESS TOPSOIL PLACED OUTSIDE OF CROSS SECTION TEMPLATE FOR HAUL ROAD	0 C.Y.
<b>=SUBTOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>265 C.Y.</b>
LESS CULTIVATED SOIL UNSUITABLE FOR EMBANKMENT	0 C.Y.
<b>=TOTAL EXCESS (+) TOPSOIL OR TOPSOIL NEED (-)</b>	<b>265 C.Y.</b>

**PROPOSAL QUANTITIES**

ITEM NO. 202000 EXCAVATION AND EMBANKMENT	SEE EW-01
ITEM NO. 203000 CHANNEL EXCAVATION	SEE EW-01
ITEM NO. 207000 EXCAVATION AND BACKFILL FOR STRUCTURES	SEE EW-01
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ITEM NO. 209002 BORROW, TYPE B	SEE EW-01
ITEM NO. 209003 BORROW, TYPE C	SEE EW-01
ITEM NO. 209004 BORROW, TYPE D	SEE EW-01
ITEM NO. 209006 BORROW, TYPE F	SEE EW-01
ITEM NO. 212000 UNDERCUT EXCAVATION	SEE EW-01
ITEM NO. 732002 TOPSOIL, 6" DEPTH	SEE EW-01
ITEM NO. 733002 TOPSOILING (6" DEPTH)***	SEE EW-01

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<b>ADDENDUMS / REVISIONS</b>	

**NOT TO SCALE**

**US 301 & SR 1 INTERCHANGE**

CONTRACT T200911302	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: SJJB
	CHECKED BY: TAO

**EARTHWORK SUMMARY**

<b>EW-04</b>
SHEET NO. 11
TOTAL SHTS. 491