

GENERAL LOCATION OF CONTRACT

# THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY  
UNITS

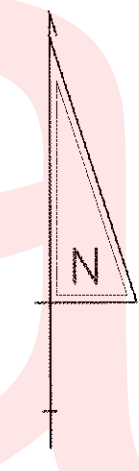


CONSTRUCTION PLANS FOR:

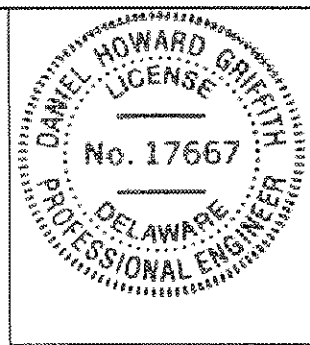
## U.S. 301, NORFOLK SOUTHERN RR TO SR 896

CONTRACT NUMBER: T200911301  
FEDERAL AID PROJECT NUMBER: NH-2015(21)

COUNTY: NEW CASTLE M.R. #: NA  
NA TO MILEPOST NA



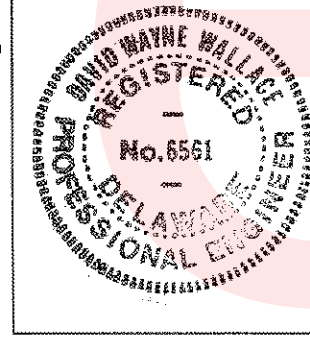
BRIDGE 1-468 PLANS  
PREPARED BY  
THE CONSULTING FIRM OF  
**AECOM**  
1700 MARKET STREET, SUITE 1600  
PHILADELPHIA, PA 19103  
(215) 735-0832



*T. J. Hill*  
RECOMMENDED DATE 01-05-2015

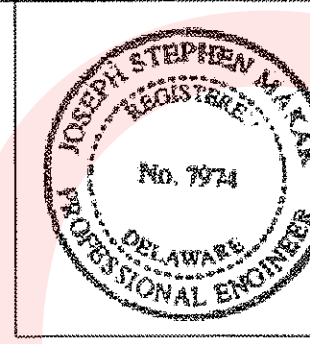
END CONTRACT  
NO. T200911301  
STATION 687 + 72.79

WETLAND MITIGATION PLANS  
PREPARED BY  
THE CONSULTING FIRM OF  
**RUMMEL, KLEPPER & KAHL, LLP**

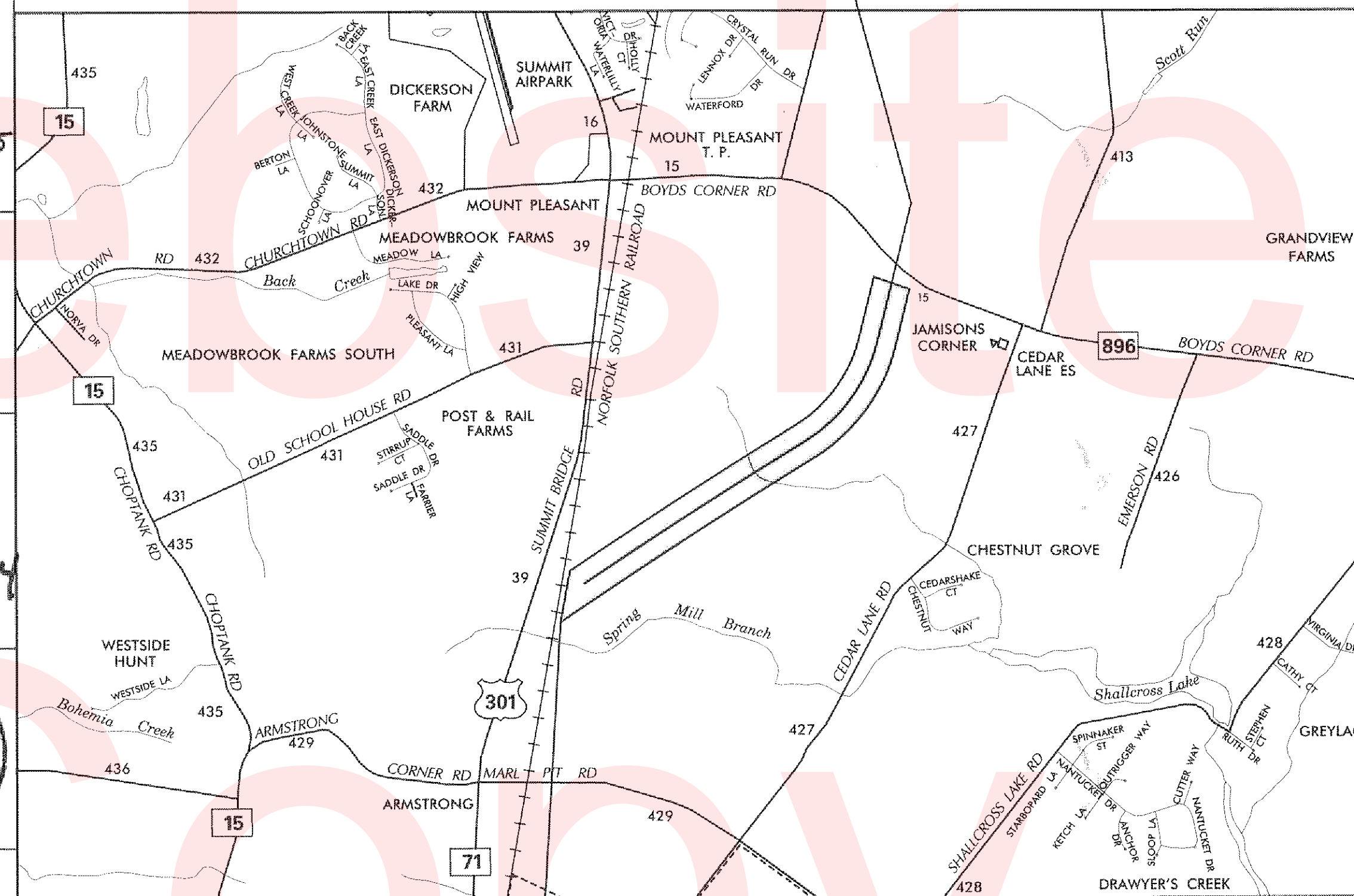


*D. W. Wallace*  
RECOMMENDED DATE 12-30-2014

SIGNING, STRIPING AND  
CONDUIT PLANS  
PREPARED BY  
THE CONSULTING FIRM OF  
**WRA**



*J. S. Stophen*  
RECOMMENDED DATE 12/29/14



BEGIN CONTRACT  
NO. T200911301  
STATION 493 + 00.00

LOCATION MAP  
N.T.S.

DESIGN DESIGNATION

FUNCTIONAL CLASS: RURAL PRINCIPAL ARTERIAL	D.H.V. PROJECTED: 4,560	YEAR: 2030
TYPE OF CONSTRUCTION: NEW CONSTRUCTION	DESIGN SPEED: 70 M.P.H.	
A.A.D.T. CURRENT: NA	YEAR: NA	TRUCKS: 9 %
A.A.D.T. PROJECTED: 57,000	YEAR: 2030	DIRECTION OF DISTRIBUTION: 57 %

INDEX OF SHEETS

SHEET NO	TITLE
1	TITLE
2	PLAN SHEET INDEX
3	LEGEND
4-9	NOTES
10-14	TYPICAL SECTIONS
15-18	HORIZONTAL AND VERTICAL CONTROL
19-33	CONSTRUCTION PLANS
34-42	PROFILES
43-57	GRADES AND GEOMETRICS
58-65	BORROW SITE GRADING PLANS
66-77	CONSTRUCTION DETAILS
78-84	BRIDGE 1-444A - CULVERT AT UNNAMED TRIBUTARY TO DRAWYER CREEK
85-124	BRIDGE 1-467 - BRIDGE OVER DRAWYER CREEK
125-133	BRIDGE 1-468 - BRIDGE OVER NORFOLK SOUTHERN RAILROAD
134-152	STREAM RESTORATION
153-166	STORMWATER MANAGEMENT PLANS
167-183	ENVIRONMENTAL COMPLIANCE PLANS
184-207	CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS
208-219	LANDSCAPING PLANS
220-225	WETLAND MITIGATION PLANS
226-240	SIGNING, STRIPING AND CONDUIT PLANS

TOTAL SHEETS: 240

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

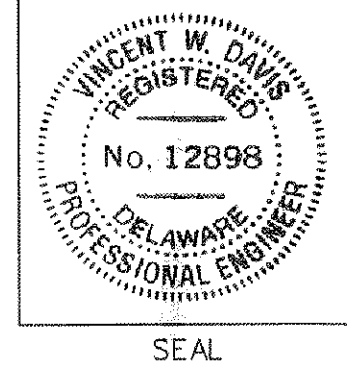
DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

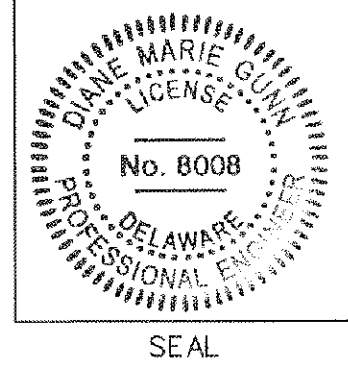
CONTRACT NO.	CONTRACT NAME
T200911308	US 301, SR 896 TO SR1
T200911303	US 301, LEVELS RD TO SUMMIT BRIDGE RD

LAST REVISED: 2/6/2008 P:\1445\_US\_301\_SECT\_1\DESIGN\FINAL\_SUBMISSION\CONTRACT\_10-PSE\CONSTRUCTION\TC\_301SECT1.DGN

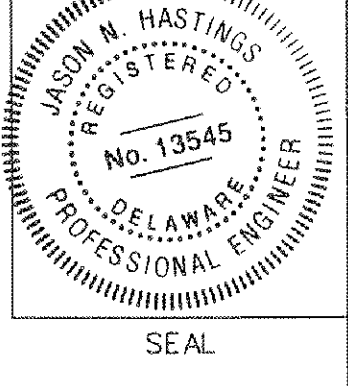
RECOMMENDED  
*Vincent W. Davis*  
STORMWATER ENGINEER  
DATE 1 JUNE 2015



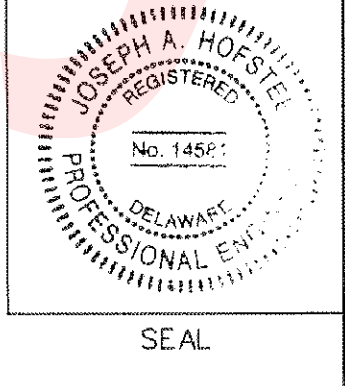
RECOMMENDED  
*Diane M. Hummer*  
SQUAD MANAGER, TRANSPORTATION SOLUTIONS  
(PROJECT DEVELOPMENT OR BRIDGE DESIGN)  
DATE 6-2-15



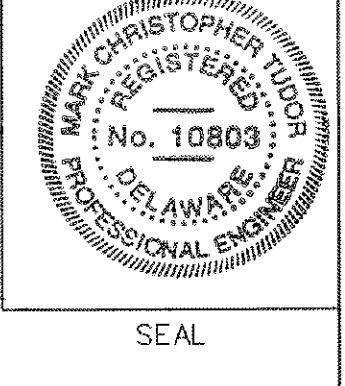
RECOMMENDED  
*[Signature]*  
BRIDGE DESIGN ENGINEER  
DATE 6/4/15



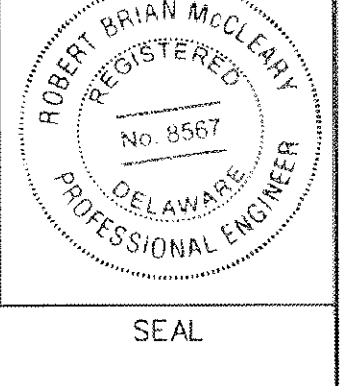
RECOMMENDED  
*Joseph A. Rodhe*  
GROUP ENGINEER, PROJECT DEVELOPMENT  
DATE 6/4/15



RECOMMENDED  
*Mark C. Juh*  
ASSISTANT DIRECTOR,  
TRANSPORTATION SOLUTIONS  
DATE 6/4/15



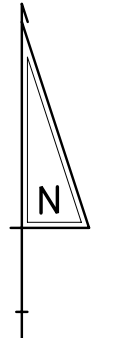
APPROVED  
*Robert Brian McCleary*  
CHIEF ENGINEER  
DATE 6/4/15



PLAN SHEET INDEX CROSS REFERENCE

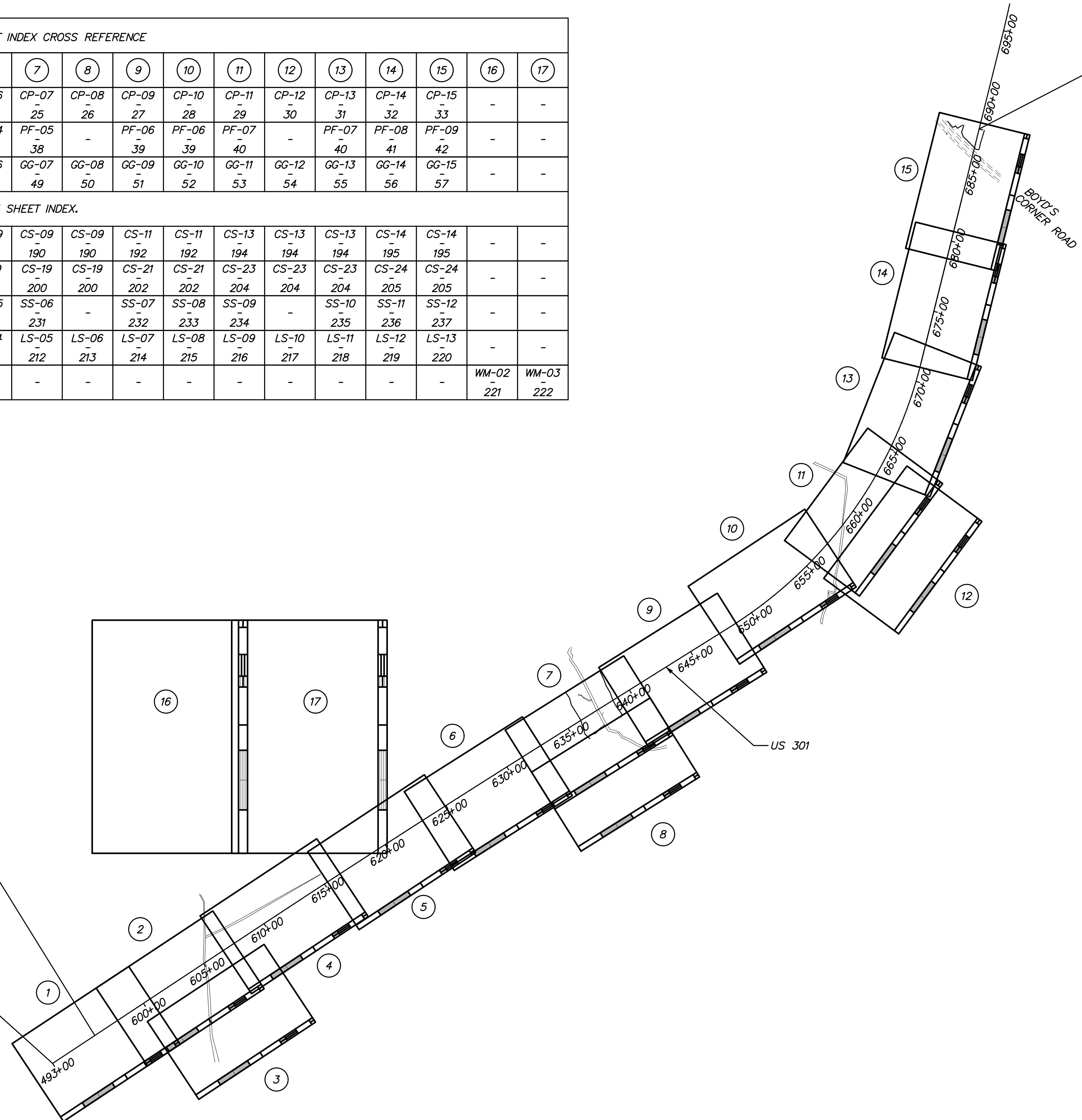
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CONSTRUCTION PLAN	CP-01 19	CP-02 20	CP-03 21	CP-04 22	CP-05 23	CP-06 24	CP-07 25	CP-08 26	CP-09 27	CP-10 28	CP-11 29	CP-12 30	CP-13 31	CP-14 32	CP-15 33	-	-
PROFILES	PF-01 34	PF-02 35	-	PF-03 36	PF-03 36	PF-04 37	PF-05 38	-	PF-06 39	PF-06 39	PF-07 40	-	PF-07 40	PF-08 41	PF-09 42	-	-
GRADES AND GEOMETRICS	GG-01 43	GG-02 44	GG-03 45	GG-04 46	GG-05 47	GG-06 48	GG-07 49	GG-08 50	GG-09 51	GG-10 52	GG-11 53	GG-12 54	GG-13 55	GG-14 56	GG-15 57	-	-
ENVIRONMENTAL COMPLIANCE	SEE SHEET EC-01 FOR ENVIRONMENTAL COMPLIANCE SHEET INDEX.																
CONSTRUCTION PHASING, M.O.T. AND E&S PHASE 1	CS-05 186	CS-05 186	CS-06 187	CS-07 188	CS-07 188	CS-09 190	CS-09 190	CS-09 190	CS-11 192	CS-11 192	CS-13 194	CS-13 194	CS-13 194	CS-14 195	CS-14 195	-	-
CONSTRUCTION PHASING, M.O.T. AND E&S PHASE 2	CS-15 196	CS-15 196	CS-16 197	CS-17 198	CS-17 198	CS-19 200	CS-19 200	CS-19 200	CS-21 202	CS-21 202	CS-23 204	CS-23 204	CS-23 204	CS-24 205	CS-24 205	-	-
SIGNING, STRIPING AND CONDUIT PLAN	SS-01 226	SS-02 227	-	SS-03 228	SS-04 229	SS-05 230	SS-06 231	-	SS-07 232	SS-08 233	SS-09 234	-	SS-10 235	SS-11 236	SS-12 237	-	-
LANDSCAPING PLAN	-	LS-01 208	-	LS-02 209	LS-03 210	LS-04 211	LS-05 212	LS-06 213	LS-07 214	LS-08 215	LS-09 216	LS-10 217	LS-11 218	LS-12 219	LS-13 220	-	-
WETLAND MITIGATION	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	WM-02 221	WM-03 222

**END  
CONTRACT T200911301  
STATION 687 + 72.79**



POE STA 496+50.00 US 301 (CONTRACT T200911303) BK =  
POB STA 595+96.65 US 301 (CONTRACT T200911303) AH

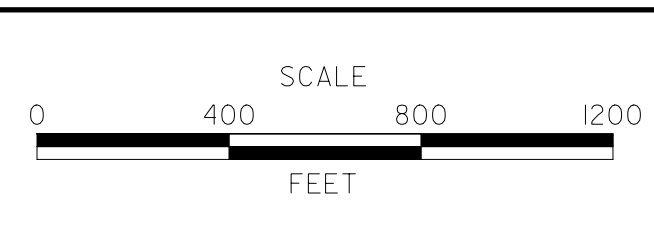
**BEGIN  
CONTRACT T200911301  
STATION 493 + 00.00**



\$FILES \$DATES



ADDENDUMS / REVISIONS



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**PLAN SHEET INDEX**

IS-01
SHEET NO. 2
TOTAL SHTS. 240

## 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

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
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER VENT OR CLEANOUT
	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

MANMADE ROADSIDE FEATURES	
	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

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE

UTILITY COMPANY FACILITIES	
	VERIZON COMMUNICATION
	UNKNOWN
	MCI COMMUNICATION

MISCELLANEOUS SYMBOLS	
	ORDINARY HIGH WATER
	ORDINARY HIGH WATER/WETLAND

## PROPOSED SYMBOLS

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BUTT JOINT
	CONSTRUCTION BASELINE
	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, TYPES 1 & 3
	GUARDRAIL, TYPE 2
	GUARDRAIL END TREATMENT - PARALLEL
	GUARDRAIL END TREATMENT - PARABOLIC
	HORIZONTAL CLEARANCE
	JUNCTION BOX - DRAINAGE
	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK @ 4"
	P.C.C. SIDEWALK @ 6"
	UNDERDRAIN
	UNDERDRAIN OUTLET

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

LANDSCAPING	
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

EROSION & SEDIMENT CONTROL	
	DEWATERING BASIN
	EROSION CONTROL BLANKET
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	REINFORCED SILT FENCE
	RESOURCE PROTECTION 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
	SKIMMER DEWATERING DEVICE
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN

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
	DRAINAGE INLET
	DO NOT DISTURB
	FLARED END SECTION
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	LANDSCAPE PLANTINGS
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	SEDIMENT TRAP
	SILT FENCE
	UNDERDRAIN

PAVEMENT SECTION(S)	
	P.C.C. PAVEMENT (SEE TYPICAL SECTIONS)
	HOT-MIX PAVEMENT (SEE TYPICAL SECTIONS)

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	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
	HISTORIC RIGHT-OF-WAY BASELINE

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

MISCELLANEOUS SYMBOLS	
	REMOVAL OF EXISTING PAVEMENT
	PROPOSED ORDINARY HIGH WATER
	UNDERDRAIN OUTLET
	INFILTRATION TRENCH
	VEHICULAR ACCESS AREAS
	CONSTRUCTION SAFETY FENCE
	INFILTRATION TRENCH
	STORMWATER POND ACCESS ROAD

UTILITY COMPANY FACILITIES	
	ARTESIAN WATER COMPANY

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

LEGEND

LG-01

SHEET NO.	3
TOTAL SHTS.	240

\$DATES

\$FILES

# GENERAL NOTES

- 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.

EROSION POTENTIAL FOR THIS PROJECT	CONTRACTOR ESC SUPERVISOR REQUIREMENT
( ) INSIGNIFICANT	NONE
( ) MINOR	CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
( ) MEDIUM	CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
( X ) MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.

- ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

( )	NONE
( X )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
( X )	ALL PLAN SHEETS, IN PDF FORMAT.
( X )	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( X )	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( X )	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

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.

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

( X )	CROSS SECTIONS
( X )	RIGHT-OF-WAY PLANS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)

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

( X )	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

- THE DISTURBED AREA FOR THIS PROJECT IS 205.57 ACRES.
- THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A THREE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE THREE YEARS, THE CONTRACTOR WILL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS. THE STORMWATER ENGINEER WILL REVIEW THE CURRENT SEDIMENT AND STORMWATER MANAGEMENT PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

# PROJECT NOTES

## SECTION 100

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- PRIOR TO PERFORMING ANY WORK ON THE PROJECT, THE CONTRACTOR AND THE ENGINEER'S REPRESENTATIVE SHALL JOINTLY PERFORM SUFFICIENT FIELD SURVEYS TO VERIFY THE ADVERTISED CROSS SECTIONS AND ELECTRONIC PROJECT FILES AND AGREE ON THE RESULTS TO ESTABLISH INITIAL GROUND ELEVATIONS THAT SHALL BE USED IN CALCULATING QUANTITIES. ANY DISCREPANCIES FOUND SHALL BE AGREED UPON PRIOR TO BEGINNING EARTHWORK OPERATIONS. ALL COSTS SHALL BE INCLUDED IN ITEM 763501 - CONSTRUCTION ENGINEERING.
- PRIOR TO PERFORMING ANY WORK IN AREAS WHERE ADVANCE GRADING HAS BEEN PERFORMED UNDER OTHER CONTRACTS, THE CONTRACTOR AND THE ENGINEER'S REPRESENTATIVE SHALL JOINTLY PERFORM FIELD SURVEYS AND AGREE ON THE RESULTS TO ESTABLISH INITIAL GROUND ELEVATIONS THAT SHALL BE USED IN CALCULATING QUANTITIES. ALL COSTS SHALL BE INCLUDED IN ITEM 763501 - CONSTRUCTION ENGINEERING.
- DELETE IN ITS ENTIRETY STANDARD SPECIFICATION SUBSECTION 104.10 "RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK" AND REPLACE WITH THE FOLLOWING: THE CONTRACTOR CAN EXPECT TO ENCOUNTER HORIZONTAL AND VERTICAL DEPOSITS OF MATERIAL IN THE ON-SITE BORROW SITES, ROADWAY EXCAVATIONS, OR EXCAVATION FROM OTHER WORK ITEMS THAT WILL MEET THE REQUIREMENTS FOR BORROW TYPES A, C, D, F AND/OR FURNISHING BORROW, TYPE C AS WELL AS UNSUITABLE MATERIALS. ALL REFERENCES TO THESE VARIOUS BORROW TYPES IN THE PLANS AND SPECIAL PROVISIONS SHALL BE INTERPRETED TO MEAN MATERIALS OBTAINED FROM ON-SITE EXCAVATIONS MEETING THE GRADATION REQUIREMENTS OF THE BORROW TYPE STATED IN THE PLANS OR SPECIAL PROVISIONS. THE CONTRACTOR SHALL PERFORM THE EXCAVATIONS IN A METHOD APPROVED BY THE ENGINEER SO THAT THESE DEPOSITS OF MATERIAL ARE MADE AVAILABLE TO MEET THE PROJECT NEEDS. EXCESSIVE OR INSUFFICIENT MOISTURE CONTENT SHALL NOT BE CRITERIA FOR CLASSIFYING MATERIAL AS UNSUITABLE FOR USE. PAYMENT FOR ALL OF THESE BORROW TYPES INCORPORATED INTO THE PROJECT WILL BE MADE USING THE BID ITEM UNDER WHICH THE MATERIAL WAS ORIGINALLY EXCAVATED ON SITE. UNLESS APPROVED OR SPECIFIED OTHERWISE, BORROW, TYPE B IS INTENDED TO BE FURNISHED FROM A SOURCE OUTSIDE OF THE PROJECT LIMITS AND PAID FOR UNDER ITEM 209002. PLACEMENT, HAULING, STORING, AND COMPACTING OF ALL BORROW MATERIAL EXCAVATED ON SITE TO BE USED AS THE STATED BORROW TYPES A, C, D, F, AND OR /FURNISHING BORROW, TYPE C AS NOTED IN THE PLANS OR SPECIAL PROVISIONS IS INCIDENTAL TO THE ITEM UNDER WHICH IT WAS EXCAVATED (FOR EXAMPLE, ITEMS 202000, 207000, 208000, OR OTHERS AS APPLICABLE). THE MATERIALS SHALL BE PLACED IN ACCORDANCE WITH THEIR INTENDED USE BUT NO PAYMENT WILL BE MADE UNDER THE ITEMS FOR WHICH THE EXCAVATED MATERIALS ARE USED. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING THE ON-SITE EXCAVATIONS TO INCLUDE LOCATING THE TYPES OF BORROW REQUIRED TO MEET THE PLAN NEEDS, STOCKPILING, HAULING, WETTING OR DRYING THE MATERIAL TO MEET STANDARD SPECIFICATION 202.05(F), AND MULTIPLE HANDLING IF NEEDED, WITH ALL COSTS INCIDENTAL TO THE ITEM UNDER WHICH THE MATERIAL WAS INITIALLY EXCAVATED. ALL REQUIRED EROSION AND SEDIMENT CONTROL WILL BE PAID SEPARATELY USING THE APPLICABLE BID ITEMS.

## SECTION 200

- UNLESS OTHERWISE INDICATED IN THE PLANS, UNDER ITEM 201000-CLEARING AND GRUBBING, ALL VEGETATION, TREES, STUMPS, ROOTMAT, ETC. SHALL BE REMOVED IN THEIR ENTIRETY WITHIN THE LIMITS OF CONSTRUCTION REGARDLESS OF THE EMBANKMENT HEIGHT EXCEPT SUCH OBJECTS AS ARE DESIGNATED TO REMAIN OR ARE TO BE REMOVED IN ACCORDANCE WITH OTHER SECTIONS OF THE CONTRACT DOCUMENTS. WORK UNDER ITEM 201000 IS TO BE PERFORMED IN ITS ENTIRETY EITHER BY THE PRIME CONTRACTOR OR AN APPROVED SUB CONTRACTOR. CUTTING OF FIREWOOD BY PRIVATE CITIZENS OR OTHER PARTIES SHALL NOT BE PERMITTED.
- RIGHT-OF-WAY FENCING IS TO BE INSTALLED ALONG THE DENIAL OF ACCESS THROUGH THE PROJECT LIMITS AS SHOWN ON THE PLANS. CLEARING OUTSIDE OF THE LIMITS OF CONSTRUCTION LINE FOR INSTALLATION OF THE RIGHT-OF-WAY FENCE, UTILITY RELOCATIONS DESCRIBED IN THE UTILITY STATEMENT, OR OTHER NECESSARY CONSTRUCTION SHALL BE KEPT TO A MINIMUM AND SHALL BE INCLUDED IN ITEM 201000 - CLEARING AND GRUBBING. THERE SHALL BE NO GRUBBING OUTSIDE THE LIMITS OF CONSTRUCTION.
- APPROVED COVERS SHALL BE INSTALLED OVER ALL LOADED TRUCKS OR TRAILERS HAULING BORROW, EXCAVATED MATERIALS, AGGREGATES, ETC. TO OR FROM THE PROJECT SITE OVER STATE MAINTAINED ROADS. THE COVERS SHALL BE INSTALLED TO PREVENT MATERIAL FROM LEAVING THE TRUCKS OR TRAILERS. THE MATERIAL SHALL BE FULLY COVERED AND THE COVERS TIED ON THE REAR AND BOTH SIDES. ANY MATERIALS DELIVERED, TRANSPORTED, OR REMOVED IN UNCOVERED TRUCKS OR TRAILERS WILL BE INCORPORATED INTO THE PROJECT, OR REMOVED FROM THE SITE, WITH NO PAYMENT TO THE CONTRACTOR FOR FURNISHING, REMOVING, OR PLACING THE MATERIALS.
- WHEN PERFORMING ANY EXCAVATION OR BACKFILLING OPERATION, THE CONTRACTOR SHALL PROVIDE DEWATERING MEASURES AT ALL TIMES TO KEEP THE GROUNDWATER LEVEL AT LEAST ONE FOOT BELOW THE EXCAVATION ELEVATION. THE CONTRACTOR SHALL ALSO PROVIDE NECESSARY DEWATERING TO STABILIZE EXCAVATED SLOPES DURING CONSTRUCTION AND UNTIL THE SLOPES ARE STABILIZED AS DETERMINED BY THE ENGINEER. ALL COSTS SHALL BE INCIDENTAL TO THE APPLICABLE EXCAVATION OR BACKFILLING ITEM. DEWATERING OPERATIONS SHALL BE IN CONFORMANCE WITH SECTION 111 DELDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- AS NOTED IN THE CONTRACT DOCUMENTS AND DIRECTED BY THE ENGINEER, MATERIALS ARE TO BE STOCKPILED FOR LATER USE IN THE PROJECT. THE TOPSOIL FROM THESE STOCKPILE AREAS SHALL BE REMOVED IN ITS ENTIRETY AND STOCKPILED FOR REPLACEMENT IN THE AREA WHERE IT WAS EXCAVATED. THE EXCAVATION AND STOCKPIILING OF THE TOPSOIL SHALL BE MEASURED FOR PAYMENT UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT. THE TOPSOIL SHALL BE REPLACED IN REASONABLY CLOSE CONFORMITY TO THE ORIGINAL LINES, GRADES AND ELEVATIONS AS DIRECTED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH REPLACING THE FULL DEPTH OF THE TOPSOIL REMOVED SHALL BE PAID UNDER ITEM 733002-TOPSOILING, 6". THE AREA OF TOPSOIL REPLACED SHALL ONLY BE MEASURED ONCE FOR PAYMENT UNDER ITEM 733002 TOPSOILING, 6" REGARDLESS OF THE FULL DEPTH OF TOPSOIL PLACED. SEEDING OF THE REPLACED TOPSOIL SHALL BE PERFORMED UNDER THE APPLICABLE BID ITEMS.
- DELETE THE FIRST SENTENCE OF STANDARD SPECIFICATION SUBSECTION 202.03 (C) AND REPLACE WITH THE FOLLOWING: "ALL TOPSOIL, IF PRESENT, SHALL BE REMOVED IN ITS ENTIRETY IN BOTH CUT AND FILL SECTIONS, REGARDLESS OF EMBANKMENT HEIGHT."
- FOR ESTIMATING PAYMENT FOR ALL EARTHWORK ITEMS, TWO-THIRDS OF THE FACTORY RATED CAPACITY OF THE EARTHWORK MOVING EQUIPMENT SHALL BE USED. FOR TEN-WHEEL DUMP TRUCKS, TEN (10) CUBIC YARDS SHALL BE USED.
- STORMWATER MANAGEMENT POND EXCAVATION:
  - CLEARING AND GRUBBING OF STORMWATER POND AREAS IS TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 201000.
  - ALL EXCAVATION AND EMBANKMENT REQUIRED FOR CONSTRUCTION OF STORMWATER PONDS WILL BE PERFORMED, MEASURED AND PAID FOR UNDER ITEM 202000, EXCAVATION AND EMBANKMENT. THE WORK WILL INCLUDE MEASUREMENT FOR:
    - GENERAL POND EXCAVATION TO THE LINES AND GRADES SHOWN ON THE PLANS, INCLUDING THE INITIAL OVEREXCAVATION FOR USE OF THE SWM FACILITY AS A SEDIMENT BASIN IF INDICATED ON THE PLANS.
    - EXCAVATION FOR FOREBAYS, CUT-OFF TRENCHES, AND / OR CORE TRENCHES AS SHOWN ON THE PLANS.
  - EXCAVATION BELOW THE DESIGNED POND FINISHED GRADE OR SUBGRADE ELEVATION FOR RIP-RAP PLACEMENT AND OUTLET STRUCTURE FOUNDATIONS WILL BE INCIDENTAL TO THOSE RESPECTIVE PAY ITEMS.

# PROJECT NOTES (CONT.)

## SECTION 200 (CONT.)

- INITIAL EXCAVATION OF SWM PONDS THAT FUNCTION AS INFILTRATION BASINS SHALL ONLY BE COMPLETED TO TWO (2) FEET ABOVE THE PERMANENT BOTTOM OF THE INFILTRATION BASIN. AFTER ALL AREAS CONTRIBUTING DRAINAGE TO THE INFILTRATION BASIN HAVE BEEN STABILIZED AS APPROVED BY THE ENGINEER, EXCAVATION TO THE PERMANENT BOTTOM ELEVATION OF THE INFILTRATION BASIN SHALL BE PERFORMED.
  - EXCEPT AS NEEDED FOR CONSTRUCTION OF DAM FOUNDATIONS, CUTOFF TRENCHES, AND OUTLET STRUCTURES, EXCAVATED SUBGRADES WITHIN THE SWM PONDS SHALL NOT BE TEST ROLLED PER SUBSECTION 202.02 OR COMPACTED PER SUBSECTION 202.06.A.
  - ALL REQUIREMENTS OF STANDARD SPECIFICATION SECTION 271 FOR CONSTRUCTION OF THE SWM FACILITY SHALL APPLY. IF THERE ARE CONFLICTS BETWEEN THE REQUIREMENTS IN STANDARD SPECIFICATION SECTION 271 AND STANDARD SPECIFICATION SECTION 202, THEN THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED.
- SEDIMENT BASIN CONSTRUCTION AND MAINTENANCE :
    - CLEARING AND GRUBBING OF SEDIMENT BASIN POND AREAS IS TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 201000.
    - ALL EXCAVATION AND EMBANKMENT REQUIRED FOR CONSTRUCTION OF SEDIMENT BASINS WILL BE PERFORMED, MEASURED AND PAID FOR UNDER ITEM 202000, EXCAVATION AND EMBANKMENT.
    - REMOVAL OF SEDIMENT FROM THE SEDIMENT BASIN SHALL BE PERFORMED WHEN THE CLEANOUT ELEVATION IS REACHED AS NOTED ON THE PLANS.
    - SEDIMENT REMOVAL FROM THE SEDIMENT BASIN SHALL BE MEASURED FOR PAYMENT UNDER ITEM 202000. ONLY REMOVAL OF SEDIMENT FROM A SEDIMENT BASIN SHALL BE MEASURED FOR PAYMENT UNDER ITEM 202000.
    - REMOVAL OF SEDIMENT FROM ALL OTHER EROSION AND SEDIMENT CONTROL DEVICES AND REMOVAL OF SEDIMENT THAT HAS BYPASSED OR OTHERWISE NOT BEEN TRAPPED BY ANY SEDIMENT CONTROL DEVICE SHALL BE INCLUDED IN THE PAYMENT FOR THE SEDIMENT CONTROL ITEM PER SECTION 900.

## SECTION 300

- THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
  - CRUSHED STONE (PER STANDARD SPECIFICATION 821)
  - CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)
  - 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'.

ALL OF THE ABOVE LISTED MATERIALS ARE PERMITTED FOR USE ON THE JOB, PROVIDED THEY ARE SEPARATED INTO APPROVED AREAS. EACH AREA OF BASE COURSE MUST BE CONSTRUCTED USING MATERIALS FROM A SINGULAR SOURCE, FULL DEPTH, IN ORDER THAT PROPER TESTING MAY BE ACCOMPLISHED. THE CONTRACTOR AND DELDOT'S PROJECT ENGINEER SHALL AGREE ON THE LIMITS OF EACH SOURCE OF MATERIAL PRIOR TO PLACEMENT.

- THE QUANTITY USED FOR BASE OF EACH OF THE ABOVE LISTED MATERIALS WILL BE THE CONTRACTOR'S CHOICE, WITH THE TOTAL MEETING THE ADVERTISED QUANTITY OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

- THE CONTRACTOR MAY ALSO ELECT TO RECYCLE MILLINGS FOR USE IN HOT-MIX AS PERMITTED BY THE STANDARD SPECIFICATIONS. THE CHOICE OF THE QUANTITY OF MILLINGS USED FOR THIS PURPOSE, OR FOR BASE COURSE, LIES WITH THE CONTRACTOR. ALL MILLING MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR.

- HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
  - MATERIAL MADE AVAILABLE WHEN MILLED ON THIS CONTRACT UNDER ITEM 760502.
  - MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER ITEM 202000.
  - MILLED MATERIAL FURNISHED ON THE JOB FROM THE CONTRACTOR'S YARD OR OTHER OUTSIDE SOURCE.
 ALL MILLED MATERIALS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 302514 - MILLED HOT-MIX BASE COURSE.

- PAYMENT CLARIFICATION:
  - SHOULD THE CONTRACTOR ELECT TO MILL PORTIONS OF HOT-MIX SHOWN ON THE PLANS TO BE REMOVED UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT THE COST OF MILLING THIS HOT-MIX WILL BE PAID AS ITEM 202000 - EXCAVATION AND EMBANKMENT. THE MILLINGS GENERATED MAY BE RECYCLED INTO HOT-MIX, UTILIZED FOR BASE COURSE, OR DISPOSED OF TO AN APPROVED SITE. HAULING COSTS FOR DISPOSAL AND/OR RECYCLING ARE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.
  - MILLINGS GENERATED UNDER ITEM 760502 - PAVEMENT MILLINGS, TAPERCUT MAY BE RECYCLED INTO HOT-MIX, UTILIZED FOR BASE COURSE OR DISPOSED OF BY THE CONTRACTOR TO AN APPROVED SITE. NO SEPARATE PAYMENT WILL BE MADE FOR TRANSPORTING MILLINGS ON SITE OR TO AN APPROVED DISPOSAL SITE.
  - SHOULD THE CONTRACTOR ELECT TO TEMPORARILY STOCKPILE MILLINGS ON THE JOB SITE FOR LATER USE, ALL COSTS FOR STOCKPILING AND SUBSEQUENT REHANDLING SHALL BE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.
  - MILLINGS USED FOR BASE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE. NO SEPARATE PAYMENT WILL BE MADE TO FURNISH MILLINGS FROM AN OUTSIDE SOURCE OR TRANSPORT MILLINGS WITHIN THE PROJECT LIMITS. MILLINGS USED FOR BASE COURSE WILL BE PAID IN PLACE AT THE UNIT BID PRICE FOR ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.
  - ALL COSTS TO UTILIZE MILLINGS IN RECYCLED HOT-MIX WILL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE HOT-MIX ITEM USING THE RECYCLED MATERIAL.
  - SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE IS PROVIDED TO SPECIFY THE MEANS OF LAY DOWN AND COMPACTION AS WELL AS THE MATERIAL REQUIREMENTS FOR MILLINGS USED AS BASE COURSE. ALL COSTS TO BRING THE MILLINGS INTO COMPLIANCE WITH THE REQUIREMENTS OF ITEM - 302514 MILLED HOT-MIX BASE COURSE ARE INCIDENTAL TO ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'. NO PAYMENT WILL BE MADE FOR ITEM 302514 - MILLED HOT-MIX BASE COURSE. THE QUANTITY OF MILLINGS USED FOR BASE COURSE WILL BE PAID FOR UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE.

\$DATES

\$FILES



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

NOTES

PN-01

SHEET NO.

4

TOTAL SHTS.

240

PROJECT NOTES (CONT.)

SECTION 400

- 15. 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.
- 16. 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.
- 17. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO THAT ALL PERMEABLE TREATED BASE (PTB) PLACED DURING ANY ONE CONSTRUCTION SEASON IS COVERED WITH PCC OR HOT 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.
- 18. 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 500

- 19. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSTRUCT THE JOINTS ACCORDING TO THE STANDARD DETAILS AND THESE GENERAL NOTES.
  - A. TYPICAL TRANSVERSE JOINT SPACING IS 15'.
  - B. THE MAXIMUM SLAB WIDTH IS 14' UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER.
  - C. THE MINIMUM SLAB WIDTH IS 4'.
  - D. THE MINIMUM TRANSVERSE JOINT SPACING IS 12". THE MAXIMUM TRANSVERSE JOINT SPACING IS 17". THE 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.
  - E. PAVEMENT CROSS SLOPES AND TRANSITION LENGTHS SHALL BE ADJUSTED AS NEEDED PER LOCATION AND TO MEET DESIGN CRITERIA.

SECTION 600

- 20. THE DEPARTMENT AND THE CONTRACTOR SHALL INSPECT 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 WILL VIDEO INSPECT NEW PIPE RUNS TO CONFIRM CONDITION PRIOR TO ACCEPTANCE. PIPE CLEANING PRIOR TO VIDEO INSPECTION AND MAINTENANCE OF TRAFFIC DURING THE VIDEO INSPECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE PIPE ITEM THAT IS BEING VIDEO INSPECTED.
- 21. 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, CLASS B ACTUALLY PLACED TO CONSTRUCT THE MISCELLANEOUS STRUCTURE WITHIN THE LIMITS APPROVED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH FURNISHING ALL LABOR, EQUIPMENT, TOLLS 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 - P.C.C. MASONRY, CLASS B.

SECTION 700

- 22. 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.
- 23. 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.
- 24. 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 DEMUTC.
- 25. 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 BOTTOM 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 THE 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.
- 26. NO LESPEDEZA, ERAGROSTIS CURVULA, OR CORONILLA VARIA SHALL BE SEEDED. SECTION 734 - SEEDING HAS BEEN MODIFIED TO REMOVE LESPEDEZA, ERAGROSTIS CURVULA, AND CORONILLA VARIA.

SECTION 700 (CONT.)

- 27. STAGING AREAS - PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE CONTRACT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS 732, 734 AND 735, FOR TOPSOIL, SEED AND MULCH RESPECTIVELY, TO THE SATISFACTION OF THE ENGINEER. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - DRY GROUND. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH REESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 28. STATION, OFFSET AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED ALONG THE FLOWLINE FOR INLETS, AND TO THE CENTER OF THE STRUCTURE FOR JUNCTION BOXES AND MANHOLES.
- 29. 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 (MUTC) 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.
- 30. INSTALLATION OF RIPRAP OUTLET PROTECTION (ITEMS 712005 AND 712006) SHALL BE IN ACCORDANCE WITH DIMENSION 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 RIPRAP. DUE TO THE IRREGULAR CONFIGURATION OF SOME RIPRAP 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 RIPRAP INSTALLATION.

SECTION 900

- 31. 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 GENERALPERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S TEAM SUPPORT 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

- 32. 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.
- 33. 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).
  - 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. RESTORATION OF THE DISTURBED AREA SHALL BE ACCOMPLISHED IN THE FOLLOWING MANNER:
    - I. TILL THE GROUND WITHIN THE DISTURBED AREA TO LOOSEN UP THE SOILS DUE TO COMPACTION DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATION OF ITEM 202555 - SUBSOIL TILLAGE. MINIMUM VERTICAL TILLAGE DEPTH SHALL BE 24 INCHES AS MEASURED BY FIELD PERFORMANCE.
    - II. PLACE TOPSOIL TO FILL DEPRESSIONS TO THE ORIGINAL GROUND ELEVATIONS. MAXIMUM DEPTH OF A SINGLE LIFT OF TOPSOIL PLACED SHALL BE 6 INCHES AND SHALL BE PLACED IN ACCORDANCE WITH SECTION 732.
    - III. DISK THE FINAL TOPSOIL SURFACE WITHIN THE DISTURBED AREA TO PREPARE THE AREA FOR SEED. USE A MAXIMUM OF 3 PASSES OF A DISK USING LOW GROUND PRESSURE EQUIPMENT TO A MINIMUM DEPTH OF 4 INCHES.
    - IV. 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, CONTRACTOR SHALL APPLY SEED TO THE DISTURBED WETLAND. SEEDING SHALL VARY BASED ON SLOPE TO BE SEEDED. 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.

MISCELLANEOUS (CONT.)

- 33. RESTORATION OF TEMPORARY IMPACTS (CONT.)
  - G. THE RESTORED AREAS WITHIN THE LIMITS OF THE DELINEATED WETLANDS SHALL BE PLANTED UNDER 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' 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.
- 33. RESTORATION OF TEMPORARY 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 SEEDED. 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 BE 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.
- 35. STREAM BOTTOM AND SLOPE RIPRAP TREATMENT
  - A. RIPRAP IN STREAMS IN THE FOLLOWING LOCATIONS SHALL BE TREATED AS SPECIFIED IN THE ENVIRONMENTAL COMPLIANCE NOTES:
    - I. RIPRAP AT STATION 604+60, 110' RT
    - II. RIPRAP AT STATION 605+70, 102' LT
    - III. RIPRAP AT STATION 656+80, 83' RT
    - IV. RIPRAP AT STATION 656+80, 108' RT
- 36. THE CONTRACTOR SHALL FOLLOW ALL STATE AND LOCAL ORDINANCES CONCERNING CONSTRUCTION NOISE DURING THE DURATION OF THE CONSTRUCTION ACTIVITIES.
- 37. REFER TO THE CONSTRUCTION PLAN SHEETS FOR THE LOCATION OF THE CLEAR ZONE AREA LIMITS.


\$FILES \$DATES

 <b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS		<b>NOT TO SCALE</b>	<b>US 301, NORFOLK SOUTHERN RR TO SR 896</b>	CONTRACT	BRIDGE NO.	<b>NOTES</b>	SHEET NO.
	T200911301				DESIGNED BY:	WJD		5
	COUNTY				CHECKED BY:	MAA		TOTAL SHTS.
	NEW CASTLE							240

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
M100	493+28.64	185.00	542562.7692	571973.6694
M101	596+41.27	-200.00	543085.7651	572066.5921
M102	597+50.00	185.00	542824.5926	572369.6375
M103	601+00.00	-200.00	543338.7800	572449.2386
M104	602+50.00	185.00	543100.3690	572786.7075
M105	602+98.49	450.00	542906.0693	572973.3203
M106	603+85.00	185.00	543174.8287	572899.3164
M107	604+00.00	298.77	543088.2052	572974.5763
M108	604+30.00	212.14	543177.0140	572951.8192
M109	605+50.00	-200.00	543586.9788	572824.6016
M110	606+41.38	450.00	543095.1881	573259.3338
M111	607+75.11	210.00	543369.1431	573238.5140
M112	608+83.31	-200.00	543770.8193	573102.6325
M113	609+29.78	-200.00	543796.4874	573141.4713
M114	611+00.00	168.11	543582.8776	573486.2382
M115	613+50.00	-167.28	544000.4490	573511.2110
M116	616+01.04	149.26	543872.6158	573894.4690
M117	615+81.79	-150.00	544112.8957	573715.0535
M118	617+85.20	141.69	543979.1411	574044.5592
M119	618+95.14	137.01	544042.7376	574134.1644
M120	619+17.26	-175.00	544316.7637	573983.3251
M121	621+50.00	-160.00	544430.4944	574187.3817
M122	621+50.48	135.97	544181.8212	574347.8853
M123	624+05.81	134.28	544320.9047	574561.6061
M124	624+39.07	-160.00	544586.7621	574431.1206
M125	625+61.76	133.58	544405.3020	574692.5029
M126	626+50.00	-160.00	544700.3445	574609.2596
M127	630+00.00	151.54	544624.5369	575071.6663
M128	631+50.00	-160.00	544968.0817	575032.4818
M129	633+62.29	-160.00	545081.1155	575212.5744
M130	635+96.89	-200.00	545239.5213	575390.1819
M131	637+91.16	-200.00	545342.6218	575554.8365
M132	632+50.00	160.92	544749.5686	575287.9067
M133	632+96.28	211.15	544731.5673	575353.7339
M134	633+29.97	245.00	544720.7428	575400.1910
M135	634+08.07	284.18	544728.9511	575487.1082
M136	635+51.82	288.79	544801.3233	575611.3887
M137	636+53.83	80.46	545032.0368	575587.2849
M138	637+50.14	175.00	545003.0200	575719.0866
M139	638+59.71	-340.00	545497.6605	575538.6388
M140	641+00.00	175.00	545188.6943	576015.6139
M141	642+50.00	-162.22	545554.1115	575963.7830
M142	642+50.00	-340.00	545704.7914	575869.4329
M143	642+67.22	-145.00	545548.6560	575987.5142
M144	645+00.00	175.00	545400.9773	576354.6359
M145	648+22.31	175.00	545572.0297	576627.8115
M146	648+22.31	-145.00	545843.2473	576457.9851
M147	651+33.16	175.00	545760.7456	576897.1087
M148	652+00.00	-145.00	546052.6499	576749.8300
M149	654+44.01	175.00	545976.3032	577145.4422
M150	654+62.91	160.00	546000.9600	577149.3280

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
M151	655+00.00	-145.00	546244.0929	576961.4710
M152	656+28.07	223.23	546083.0388	577317.0337
M153	657+35.00	250.00	546151.6363	577413.5585
M154	657+40.00	275.00	546139.5475	577436.1068
M155	657+77.50	335.00	546132.5494	577508.6160
M156	657+90.00	350.00	546133.7246	577529.0508
M157	658+40.00	395.00	546149.1027	577599.3905
M158	659+20.00	430.00	546199.6330	577682.7691
M159	659+97.50	430.00	546271.0957	577735.1530
M160	661+02.50	410.00	546381.0653	577786.4676
M161	661+22.50	395.00	546408.2595	577786.3870
M162	661+70.00	335.00	546485.4928	577764.6291
M163	661+80.00	310.00	546508.1629	577749.3412
M164	661+80.00	221.23	546555.2258	577674.0738
M165	658+98.50	-145.00	546529.2378	577211.0823
M166	662+92.69	-145.00	546841.3628	577418.6838
M167	665+90.91	190.00	546956.9434	577853.1885
M168	667+17.79	-145.00	547205.2732	577594.6455
M169	668+26.48	190.00	547189.2589	577946.6702
M170	670+50.00	-145.00	547504.8068	577695.2947
M171	671+25.46	190.00	547493.4624	578038.6006
M172	671+25.46	-150.90	547575.7008	577707.7695
M173	673+00.00	190.00	547662.8429	578080.7054
M174	674+00.00	-170.00	547846.7358	577755.4618
M175	675+55.09	-140.00	547990.0052	577821.9889
M176	678+20.00	190.00	548167.4850	578206.1501
M177	680+00.00	160.00	548349.4060	578220.4593
M178	680+09.09	-140.00	548430.5977	577931.5121
M179	681+50.00	-252.81	548594.5630	577856.0234
M180	684+32.76	275.00	548741.6426	578436.4619
M181	681+00.00	275.00	548418.7100	578356.1868
M182	690+00.00	140.00	549324.6963	578442.2897
M183	694+56.04	140.00	549767.2654	578552.3042
M184	696+23.10	140.00	549932.6501	578591.5868
M185	628+54.46	-1183.91	545675.1301	574234.3627
M186	631+27.54	-1049.64	545709.0085	574539.5380
M187	634+12.02	-886.12	545722.9362	574869.3740
M188	637+00.00	-719.52	545734.5702	575201.8612
M189	638+16.22	-652.29	545739.2652	575336.0403
M190	639+54.81	-651.38	545812.0445	575453.9943
M191	640+98.85	-1276.36	546418.1905	575244.3915
M192	641+00.08	-1276.43	546418.9026	575245.3944
M193	645+25.00	-1042.43	546446.0882	575729.7231
M194	648+22.31	-878.71	546465.1095	576068.5982
M195	654+92.32	-513.72	546500.3406	576696.2616
M196	655+92.16	160.00	546098.0906	577244.7045
M197	661+80.00	190.00	546571.7830	577647.5940
M198	687+46.90	-287.28	549182.1495	577966.5706
M199	685+88.60	140.00	548925.4480	578343.0440
M200	645+50.00	-145.00	545698.7304	576227.1874
M201	684+00.00	-276.25	548840.6618	577902.3239
M202	657+47.50	290.00	546136.0901	577452.8516

\$FILES \$DATES

 <b>DELAWARE</b> DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	<b>NOT TO SCALE</b>	<b>US 301, NORFOLK SOUTHERN RR TO SR 896</b>	CONTRACT	BRIDGE NO.	<b>NOTES</b>	SHEET NO.		
					T200911301			DESIGNED BY: WJD	6
					COUNTY			CHECKED BY: MAA	TOTAL SHTS.
					NEW CASTLE				240

PN-03

**TOTAL EARTHWORK SUMMARY**

ROADWAY EXCAVATION		
FROM CROSS SECTIONS (US 301 MAINLINE AND FARM ACCESS)	31558	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	43167	C.Y.
PLUS TOPSOIL PLACED IN CUT	7487	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	374	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>81838</b>	<b>C.Y.</b>
FROM CROSS SECTIONS (RELOCATED STREAM AT STA 656+75)	2410	C.Y.
FROM CROSS SECTIONS (EXISTING STREAM AT STA 656+75)	316	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	529	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>3255</b>	<b>C.Y.</b>
FROM CROSS SECTIONS (WETLAND MITIGATION SITE)	0	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	2866	C.Y.
PLUS TOPSOIL PLACED IN CUT	0	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>2866</b>	<b>C.Y.</b>
FROM DTM (PLEASANTON SOUTH BORROW SITE)	92420	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	22562	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>114982</b>	<b>C.Y.</b>
FROM DTM (PLEASANTON SOUTHEAST BORROW SITE)	207052	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	32025	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>239077</b>	<b>C.Y.</b>
FROM DTM (PLEASANTON EAST BORROW SITE)	84865	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	14373	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>99238</b>	<b>C.Y.</b>
FROM DTM (CHURCHTOWN MANOR NORTH BORROW SITE)	191779	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	30381	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>222160</b>	<b>C.Y.</b>
FROM DTM (CHURCHTOWN MANOR SOUTH BORROW SITE)	43251	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	12889	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>56140</b>	<b>C.Y.</b>
<b>TOTAL ROADWAY EXCAVATION (ITEM 202000)</b>	<b>819556</b>	<b>C.Y.</b>

STORMWATER MANAGEMENT POND EXCAVATION		
FROM DTM (SWM FACILITY 700)	14443	C.Y.
PLUS TOPSOIL REMOVED IN FILL	2348	C.Y.
LESS ROOTMAT REMOVED IN CUT	610	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>16181</b>	<b>C.Y.</b>
FROM DTM (SWM FACILITY 704)	1214	C.Y.
PLUS TOPSOIL REMOVED IN FILL	871	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>2085</b>	<b>C.Y.</b>
FROM DTM (SWM FACILITY 705)	5390	C.Y.
PLUS TOPSOIL REMOVED IN FILL	2111	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>7501</b>	<b>C.Y.</b>
FROM DTM (SWM FACILITY 711)	18016	C.Y.
PLUS TOPSOIL REMOVED IN FILL	2177	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>20193</b>	<b>C.Y.</b>
<b>TOTAL STORMWATER MANAGEMENT POND EXCAVATION (ITEM 202000)</b>	<b>45960</b>	<b>C.Y.</b>

SURCHARGE EXCAVATION		
BRIDGE 1-467 NORTH ABUTMENTS		
SURCHARGE VOLUME (BR 1-467 N. ABUT.)	5660	C.Y.
LESS EXCAVATION FOR ABUTMENT (ITEM 207000)	1054	C.Y.
<b>SUBTOTAL:</b>	<b>4606</b>	<b>C.Y.</b>
BRIDGE 1-467 SOUTH ABUTMENTS		
SURCHARGE VOLUME (BR 1-467 S. ABUT)	5912	C.Y.
LESS EXCAVATION FOR ABUTMENT (ITEM 207000)	1054	C.Y.
<b>SUBTOTAL:</b>	<b>4858</b>	<b>C.Y.</b>
BRIDGE 1-468 MSE WALL		
SURCHARGE VOLUME (BR 1-468 N. ABUT.)	0	C.Y.
LESS EXCAVATION FOR ABUTMENT (ITEM 207000)	0	C.Y.
<b>SUBTOTAL:</b>	<b>0</b>	<b>C.Y.</b>
<b>TOTAL SURCHARGE EXCAVATION (ITEM 202000)</b>	<b>9464</b>	<b>C.Y.</b>

TOTAL EXCAVATION AND EMBANKMENT (ITEM 202000)		
ROADWAY EXCAVATION	819556	C.Y.
PLUS STORMWATER MANAGEMENT EXCAVATION	45960	C.Y.
SURCHARGE EXCAVATION (NOT INCLUDED IN 207000)	9464	C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>874980</b>	<b>C.Y.</b>

EXCAVATION AVAILABLE FOR EMBANKMENT		
TOTAL EXCAVATION (ITEM 202000)	874981	C.Y.
LESS SURCHARGE EXCAVATION	9464	C.Y.
PLUS EXCAVATION FROM STRUCTURES (ITEM 207000)	3960	C.Y.
LESS EXCAVATION FOR ABUTMENT ABOVE EXISTING GROUND	2108	C.Y.
PLUS EXCAVATION FROM PIPE TRENCHES (ITEM 208000 AND VAR. PIPE ITEMS)	5240	C.Y.
PLUS EXCAVATION FROM CHANNELS (ITEM 203000)	0	C.Y.
PLUS EXCAVATION FROM UNDERDRAIN INSTALLATION	2167	C.Y.
LESS TOPSOIL REMOVED IN CUT AND FILL	178217	C.Y.
LESS TOPSOIL REMOVED IN STORMWATER MANAGEMENT PONDS	7507	C.Y.
LESS UNSUITABLE MATERIAL (5% OF TOTAL EXCAVATION)	43749	C.Y.
LESS MATERIAL USED FOR BORROW TYPES A, B, C AND D	70673	C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>574630</b>	<b>C.Y.</b>

BORROW TYPE A REQUIRED		
BORROW TYPE A FOR CAPPING	35948	C.Y.
PLUS ADJUSTMENT FACTOR (20%)	7190	C.Y.
<b>SUBTOTAL</b>	<b>43138</b>	<b>C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE A	43138	C.Y.
<b>TOTAL ADJUSTED BORROW TYPE A REQUIRED</b>	<b>0</b>	<b>C.Y.</b>

BORROW TYPE B REQUIRED		
BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOTMAT REMOVAL UNDER FILLS	7401	C.Y.
PLUS EXISTING STREAM BACKFILL	316	C.Y.
PLUS UNDER TEMPORARY PIPES	175	C.Y.
PLUS ADJUSTMENT FACTOR (20%)	1578	C.Y.
<b>SUBTOTAL</b>	<b>9471</b>	<b>C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE B	5192	C.Y.
<b>TOTAL ADJUSTED BORROW TYPE B REQUIRED</b>	<b>4279</b>	<b>C.Y.</b>

BORROW TYPE C REQUIRED		
BACKFILL FOR STRUCTURES	2335	C.Y.
PLUS BACKFILL FOR DRAINAGE PIPES	4354	C.Y.
PLUS BACKFILL FOR DRAINAGE STRUCTURES	248	C.Y.
PLUS ADJUSTMENT FACTOR (20%)	1387	C.Y.
<b>SUBTOTAL</b>	<b>8325</b>	<b>C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE C	8325	C.Y.
<b>TOTAL ADJUSTED BORROW TYPE C REQUIRED</b>	<b>0</b>	<b>C.Y.</b>

BORROW TYPE D REQUIRED		
BORROW TYPE D REQUIRED FOR 70087 SY OF SOIL CEMENT BASE COURSE	11682	C.Y.
PLUS ADJUSTMENT FACTOR (20%)	2336	C.Y.
<b>SUBTOTAL</b>	<b>14018</b>	<b>C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE D	14018	C.Y.
<b>TOTAL ADJUSTED BORROW TYPE D REQUIRED</b>	<b>0</b>	<b>C.Y.</b>

BORROW TYPE F REQUIRED		
EMBANKMENT REQUIRED BELOW CAPPING	463265	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	43167	C.Y.
PLUS ROOTMAT REMOVED UNDER FILL (NOT BACKFILLED WITH BORROW TYPE B)	9341	C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0	C.Y.
PLUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
PLUS RELOCATED STREAM BACKFILL	308	C.Y.
PLUS EMBANKMENT REQUIRED FOR WETLAND MITIGATION BERMS	3710	C.Y.
LESS TOPSOIL PLACED IN STREAM BACKFILL	76	C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	*	C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENTS	32533	C.Y.
LESS STRUCTURE AND PIPE BACKFILL	8324	C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0	C.Y.
<b>SUBTOTAL</b>	<b>478858</b>	<b>C.Y.</b>
PLUS ADJUSTMENT FACTOR (20%)	95772	C.Y.
<b>SUBTOTAL</b>	<b>574630</b>	<b>C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE F	574630	C.Y.
<b>TOTAL ADJUSTED BORROW TYPE F REQUIRED</b>	<b>** 0</b>	<b>C.Y.</b>

\*TOPSOIL PLACED ON FILL SLOPES NOT INCLUDED IN END-AREA CALCULATIONS  
 \*\* ADJUST BORROW SITE GRADING AS NECESSARY TO BALANCE.

TOPSOIL SUMMARY		
TOPSOIL SALVAGED FROM CUT AND FILL (US 301 MAIN LINE AND FARM ACCESS)	53425	C.Y.
PLUS TOPSOIL SALVAGED FROM RELOCATED STREAM AT 656+75	626	C.Y.
PLUS TOPSOIL SALVAGED FROM WETLAND MITIGATION SITE	2866	C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON SOUTH BORROW SITE	22561	C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON SOUTHEAST BORROW SITE	32025	C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON EAST BORROW SITE	14412	C.Y.
PLUS TOPSOIL SALVAGED FROM CHURCHTOWN NORTH BORROW SITE	30381	C.Y.
PLUS TOPSOIL SALVAGED FROM CHURCHTOWN SOUTH BORROW SITE	14414	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 700	2348	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 704	871	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 705	2111	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 711	2177	C.Y.
LESS TOPSOIL PLACED ON MEDIAN AND SIDESLOPES (US 301 MAIN LINE)	25969	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (RELOCATED STREAM AT 656+75)	605	C.Y.
LESS TOPSOIL PLACED ON BACKFILLED SLOPE (RELOCATED STREAM)	76	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (WETLAND MITIGATION SITE)	2485	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON SOUTH)	22562	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON SOUTHEAST)	32025	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON EAST)	14373	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (CHURCHTOWN NORTH)	30381	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (CHURCHTOWN SOUTH)	12889	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 700)	733	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 704)	894	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 705)	1677	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 711)	995	C.Y.
<b>SUBTOTAL:</b>	<b>32533</b>	<b>C.Y.</b>
LESS EXCESS TOPSOIL PLACED IN BERMS	0	C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENT	32533	C.Y.
<b>TOTAL EXCESS TOPSOIL</b>	<b>0</b>	<b>C.Y.</b>

NOTES:  
 1) THE VALUES LISTED IN THE EARTHWORK SUMMARY ARE APPROXIMATE AND ARE NOT TO BE USED AS A BASIS OF PAYMENT. THE EARTHWORK SUMMARY IS CONSIDERED FOR INFORMATIONAL PURPOSES ONLY.

\$FILES \$DATES



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
 NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

NOTES

PN-04

SHEET NO.

7

TOTAL SHTS.

240

**SECTOR A EARTHWORK**

STA 637+50 TO STA 688+00

ROADWAY EXCAVATION		
FROM CROSS SECTIONS (US 301 MAINLINE AND FARM ACCESS)	15813	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	18234	C.Y.
PLUS TOPSOIL PLACED IN CUT	3874	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	237	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>37685</b>	<b>C.Y.</b>
FROM CROSS SECTIONS (RELOCATED STREAM AT STA 656+75)	2410	C.Y.
PLUS FROM CROSS SECTIONS (EXISTING STREAM AT STA 658+75)	316	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	529	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>3255</b>	<b>C.Y.</b>
FROM DTM (CHURCHTOWN MANOR NORTH BORROW SITE)	191779	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	30381	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>222160</b>	<b>C.Y.</b>
FROM DTM (CHURCHTOWN MANOR SOUTH BORROW SITE)	43251	C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0	C.Y.
PLUS TOPSOIL PLACED IN CUT	12889	C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS REMOVAL OF EXISTING PCC	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>56140</b>	<b>C.Y.</b>
<b>TOTAL ROADWAY EXCAVATION (ITEM 202000)</b>	<b>319240</b>	<b>C.Y.</b>

EXCAVATION AVAILABLE FOR EMBANKMENT		
TOTAL EXCAVATION	351540	C.Y.
LESS SURCHARGE EXCAVATION	4606	C.Y.
PLUS EXCAVATION FROM STRUCTURES	2070	C.Y.
LESS EXCAVATION FROM ABUTMENT ABOVE EX. GROUND	1054	C.Y.
PLUS EXCAVATION FROM PIPE TRENCHES	2578	C.Y.
PLUS EXCAVATION FROM CHANNELS	0	C.Y.
PLUS EXCAVATION FROM UNDERDRAIN INSTALLATION	1313	C.Y.
LESS TOPSOIL REMOVED IN CUT AND FILL	72761	C.Y.
LESS TOPSOIL REMOVED IN STORMWATER MANAGEMENT PONDS	4288	C.Y.
LESS UNSUITABLE MATERIAL (5% OF TOTAL EXCAVATION)	17577	C.Y.
LESS MATERIAL USED FOR BORROW TYPES A, B, C AND D	39186	C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>218029</b>	<b>C.Y.</b>

BORROW TYPE A REQUIRED	
BORROW TYPE A FOR CAPPING	19079 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	3816 C.Y.
<b>SUBTOTAL</b>	<b>22894 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE A	22894 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE A REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE B REQUIRED	
BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOTMAT REMOVAL UNDER FILLS	3320 C.Y.
PLUS EXISTING STREAM BACKFILL	316 C.Y.
PLUS USED UNDER TEMPORARY PIPES	75 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	742 C.Y.
<b>SUBTOTAL</b>	<b>4454 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE B	4454 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE B REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE C REQUIRED	
BACKFILL FOR STRUCTURES	1457 C.Y.
PLUS BACKFILL FOR DRAINAGE PIPES	2288 C.Y.
PLUS BACKFILL FOR DRAINAGE STRUCTURES	139 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	777 C.Y.
<b>SUBTOTAL</b>	<b>4661 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE C	4661 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE C REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE D REQUIRED	
BORROW TYPE D REQUIRED FOR 35885 SY OF SOIL CEMENT BASE COURSE	5981 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	1196 C.Y.
<b>SUBTOTAL</b>	<b>7177 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE D	7177 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE D REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE F REQUIRED	
EMBANKMENT REQUIRED BELOW CAPPING	217190 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	18234 C.Y.
PLUS ROOTMAT REMOVED UNDER FILL (NOT BACKFILLED WITH BORROW TYPE B)	9341 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
PLUS RELOCATED STREAM BACKFILL	308 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	* C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENTS	12810 C.Y.
LESS TOPSOIL PLACED IN STREAM BACKFILL	76 C.Y.
LESS STRUCTURE BACKFILL	4661 C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>SUBTOTAL</b>	<b>227526 C.Y.</b>
PLUS ADJUSTMENT FACTOR (20%)	45505 C.Y.
<b>SUBTOTAL</b>	<b>273032 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE F	218029 C.Y.
<b>SUBTOTAL</b>	<b>55003 C.Y.</b>
LESS EXCESS BORROW TYPE F FROM SECTOR B	55003 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE F REQUIRED</b>	<b>0 C.Y.</b>

\*TOPSOIL PLACED ON FILL SLOPES NOT INCLUDED IN END-AREA CALCULATIONS.

NOTES:  
1) THE VALUES LISTED IN THE EARTHWORK SUMMARY ARE APPROXIMATE AND ARE NOT TO BE USED AS A BASIS OF PAYMENT. THE EARTHWORK SUMMARY IS CONSIDERED FOR INFORMATIONAL PURPOSES ONLY.

STORMWATER MANAGEMENT POND EXCAVATION		
FROM DTM (SWM FACILITY 705)	5390	C.Y.
PLUS TOPSOIL REMOVED IN FILL	2111	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>7501</b>	<b>C.Y.</b>
FROM DTM (SWM FACILITY 711)	18016	C.Y.
PLUS TOPSOIL REMOVED IN FILL	2177	C.Y.
LESS ROOTMAT REMOVED IN CUT	0	C.Y.
LESS ROCK EXCAVATION	0	C.Y.
<b>SUBTOTAL:</b>	<b>20193</b>	<b>C.Y.</b>
<b>TOTAL STORMWATER MANAGEMENT POND EXCAVATION (ITEM 202000)</b>	<b>27694</b>	<b>C.Y.</b>

TOPSOIL SUMMARY		
TOPSOIL SALVAGED FROM CUT AND FILL (US 301 MAIN LINE AND FARM ACCESS)	23052	C.Y.
PLUS TOPSOIL SALVAGED FROM RELOCATED STREAM AT 656+75	626	C.Y.
PLUS TOPSOIL SALVAGED FROM CHURCHTOWN NORTH BORROW SITE	30381	C.Y.
PLUS TOPSOIL SALVAGED FROM CHURCHTOWN SOUTH BORROW SITE	14414	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 705	2111	C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 711	2177	C.Y.
LESS TOPSOIL PLACED ON MEDIAN AND SIDESLOPES (US 301 MAIN LINE)	13328	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (RELOCATED STREAM AT 656+75)	605	C.Y.
LESS TOPSOIL PLACED ON BACKFILLED SLOPE (RELOCATED STREAM AT 656+75)	76	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (CHURCHTOWN NORTH)	30381	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (CHURCHTOWN SOUTH)	12889	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM 705)	1677	C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM 711)	995	C.Y.
<b>SUBTOTAL</b>	<b>12810</b>	<b>C.Y.</b>
LESS EXCESS TOPSOIL PLACED IN BERMS	0	C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENT	12810	C.Y.
<b>TOTAL EXCESS TOPSOIL</b>	<b>0</b>	<b>C.Y.</b>

SURCHARGE EXCAVATION		
BRIDGE 1-467 NORTH ABUTMENTS		
SURCHARGE VOLUME (BR 1-467 N. ABUT.)	5660	C.Y.
LESS EXCAVATION FOR ABUTMENT (ITEM 207000)	1054	C.Y.
<b>SUBTOTAL:</b>	<b>4606</b>	<b>C.Y.</b>
<b>TOTAL SURCHARGE EXCAVATION (ITEM 202000)</b>	<b>4606</b>	<b>C.Y.</b>

TOTAL EXCAVATION AND EMBANKMENT (ITEM 202000)		
ROADWAY EXCAVATION	319240	C.Y.
PLUS STORMWATER MANAGEMENT EXCAVATION	27694	C.Y.
SURCHARGE EXCAVATION (NOT INCLUDED IN 207000)	4606	C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>351540</b>	<b>C.Y.</b>

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

NOTES

PN-05

SHEET NO.

8

TOTAL SHTS.

240



\$FILES \$DATES



**SECTOR B EARTHWORK**

STA 594+37 TO STA 637+50

EXCAVATION	
FROM CROSS SECTIONS (US 301 MAINLINE)	15745 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	24933 C.Y.
PLUS TOPSOIL PLACED IN CUT	3613 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOTMAT REMOVED IN CUT	137 C.Y.
LESS REMOVAL OF EXISTING PCC	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL:</b>	<b>44154 C.Y.</b>
FROM CROSS SECTIONS (WETLAND MITIGATION SITE)	0 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	2866 C.Y.
PLUS TOPSOIL PLACED IN CUT	0 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOTMAT REMOVED IN CUT	0 C.Y.
LESS REMOVAL OF EXISTING PCC	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL:</b>	<b>2866 C.Y.</b>
FROM DTM (PLEASANTON SOUTH BORROW SITE)	92420 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT	22562 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOTMAT REMOVED IN CUT	0 C.Y.
LESS REMOVAL OF EXISTING PCC	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL:</b>	<b>114982 C.Y.</b>
FROM DTM (PLEASANTON SOUTHEAST BORROW SITE)	207052 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT	32025 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOTMAT REMOVED IN CUT	0 C.Y.
LESS REMOVAL OF EXISTING PCC	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL:</b>	<b>239077 C.Y.</b>
FROM DTM (PLEASANTON EAST BORROW SITE)	84865 C.Y.
PLUS TOPSOIL REMOVED IN FILL	0 C.Y.
PLUS TOPSOIL PLACED IN CUT	14373 C.Y.
PLUS BITUMINOUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
LESS ROOTMAT REMOVED IN CUT	0 C.Y.
LESS REMOVAL OF EXISTING PCC	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL:</b>	<b>99238 C.Y.</b>
<b>TOTAL ROADWAY EXCAVATION (ITEM 202000)</b>	<b>500317 C.Y.</b>

STORMWATER MANAGEMENT POND EXCAVATION	
FROM DTM (SWM FACILITY 700)	14443 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	2348 C.Y.
LESS ROOTMAT REMOVED IN CUT	610 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL</b>	<b>16181 C.Y.</b>
FROM DTM (SWM FACILITY 704)	1214 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	871 C.Y.
LESS ROOTMAT REMOVED IN CUT	0 C.Y.
LESS ROCK EXCAVATION	0 C.Y.
<b>SUBTOTAL</b>	<b>2085 C.Y.</b>
<b>TOTAL STORMWATER MANAGEMENT POND EXCAVATION (ITEM 202000)</b>	<b>18266 C.Y.</b>

SURCHARGE EXCAVATION	
BRIDGE 1-467 SOUTH ABUTMENTS	
SURCHARGE VOLUME (BR 1-467 S. ABUT.)	5912 C.Y.
LESS EXCAVATION FOR ABUTMENT (ITEM 207000)	1054 C.Y.
<b>SUBTOTAL:</b>	<b>4858 C.Y.</b>
<b>TOTAL SURCHARGE EXCAVATION (ITEM 202000)</b>	<b>4858 C.Y.</b>

TOTAL EXCAVATION AND EMBANKMENT (ITEM 202000)	
ROADWAY EXCAVATION	500317 C.Y.
PLUS STORMWATER MANAGEMENT EXCAVATION	18266 C.Y.
SURCHARGE EXCAVATION (NOT INCLUDED IN 207000)	4858 C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>523441 C.Y.</b>

EXCAVATION AVAILABLE FOR EMBANKMENT	
TOTAL EXCAVATION	523441 C.Y.
LESS SURCHARGE EXCAVATION	4858 C.Y.
PLUS EXCAVATION FROM STRUCTURES	1890 C.Y.
LESS EXCAVATION FOR ABUTMENT ABOVE EXISTING GROUND	1054 C.Y.
PLUS EXCAVATION FROM PIPE TRENCHES	2662 C.Y.
PLUS EXCAVATION FROM CHANNELS	0 C.Y.
PLUS EXCAVATION FROM UNDERDRAIN INSTALLATION	854 C.Y.
LESS TOPSOIL REMOVED IN CUT AND FILL	105456 C.Y.
LESS TOPSOIL REMOVED IN STORMWATER MANAGEMENT PONDS	3219 C.Y.
LESS UNSUITABLE MATERIAL (5% OF TOTAL EXCAVATION)	26172 C.Y.
LESS MATERIAL USED FOR BORROW TYPES A, B AND D	31487 C.Y.
<b>TOTAL EXCAVATION AVAILABLE FOR BORROW TYPE F</b>	<b>356601 C.Y.</b>

TOPSOIL SUMMARY	
TOPSOIL SALVAGED FROM CUT AND FILL (US 301 MAIN LINE)	30373 C.Y.
PLUS TOPSOIL SALVAGED FROM WETLAND MITIGATION SITE	2866 C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON SOUTH BORROW SITE	22561 C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON SOUTHEAST BORROW SITE	32025 C.Y.
PLUS TOPSOIL SALVAGED FROM PLEASANTON EAST BORROW SITE	14412 C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 700	2348 C.Y.
PLUS TOPSOIL SALVAGED FROM SWM FACILITY 704	871 C.Y.
LESS TOPSOIL PLACED ON MEDIAN AND SIDESLOPES (US 301 MAIN LINE)	12661 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (WETLAND MITIGATION SITE)	2485 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON SOUTH)	22562 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON SOUTHEAST)	32025 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (PLEASANTON EAST)	14373 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 700)	733 C.Y.
LESS TOPSOIL PLACED ON CUT SLOPES (SWM FACILITY 704)	894 C.Y.
<b>SUBTOTAL</b>	<b>19723 C.Y.</b>
LESS EXCESS TOPSOIL PLACED IN BERMS	0 C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENT	19723 C.Y.
<b>TOTAL EXCESS TOPSOIL</b>	<b>0 C.Y.</b>

NOTES:  
 1) THE VALUES LISTED IN THE EARTHWORK SUMMARY ARE APPROXIMATE AND ARE NOT TO BE USED AS A BASIS OF PAYMENT. THE EARTHWORK SUMMARY IS CONSIDERED FOR INFORMATIONAL PURPOSES ONLY.

BORROW TYPE A REQUIRED	
BORROW TYPE A FOR CAPPING	16870 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	3374 C.Y.
<b>SUBTOTAL</b>	<b>20244 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE A	20244 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE A REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE B REQUIRED	
BACKFILL FOR UNSTABLE SUBGRADES AFTER ROOTMAT REMOVAL UNDER FILLS	4081 C.Y.
PLUS USED UNDER TEMPORARY PIPES	100 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	836 C.Y.
<b>SUBTOTAL</b>	<b>5017 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE B	738 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE B REQUIRED</b>	<b>4279 C.Y.</b>

BORROW TYPE C REQUIRED	
BACKFILL FOR STRUCTURES	878 C.Y.
PLUS BACKFILL FOR DRAINAGE PIPES	2066 C.Y.
PLUS BACKFILL FOR DRAINAGE STRUCTURES	109 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	611 C.Y.
<b>SUBTOTAL</b>	<b>3664 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE C	3664 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE C REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE D REQUIRED	
BORROW TYPE D REQUIRED FOR 34202 SY OF SOIL CEMENT BASE COURSE	5701 C.Y.
PLUS ADJUSTMENT FACTOR (20%)	1140 C.Y.
<b>SUBTOTAL</b>	<b>6841 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE D	6841 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE D REQUIRED</b>	<b>0 C.Y.</b>

BORROW TYPE F REQUIRED	
EMBANKMENT REQUIRED BELOW CAPPING	246075 C.Y.
PLUS TOPSOIL REMOVED UNDER FILL	24933 C.Y.
PLUS ROOTMAT REMOVED UNDER FILL (NOT BACKFILLED WITH BORROW TYPE B)	0 C.Y.
PLUS UNDERCUT MATERIAL REMOVED UNDER FILL	0 C.Y.
PLUS PAVEMENT REMOVED UNDER FILL	0 C.Y.
PLUS EMBANKMENT REQUIRED FOR WETLAND MITIGATION BERMS	3710 C.Y.
LESS TOPSOIL PLACED ON FILL SLOPES	* C.Y.
LESS EXCESS TOPSOIL PLACED IN OUTER EMBANKMENTS	19723 C.Y.
LESS STRUCTURE BACKFILL	3664 C.Y.
LESS BORROW TYPE B PLACED ABOVE ORIGINAL GROUND	0 C.Y.
<b>SUBTOTAL</b>	<b>251331 C.Y.</b>
PLUS ADJUSTMENT FACTOR (20%)	50266 C.Y.
<b>SUBTOTAL</b>	<b>301598 C.Y.</b>
LESS EXCAVATED MATERIAL SUITABLE FOR BORROW TYPE F	356601 C.Y.
<b>TOTAL ADJUSTED BORROW TYPE F REQUIRED</b>	<b>-55003 C.Y.</b>

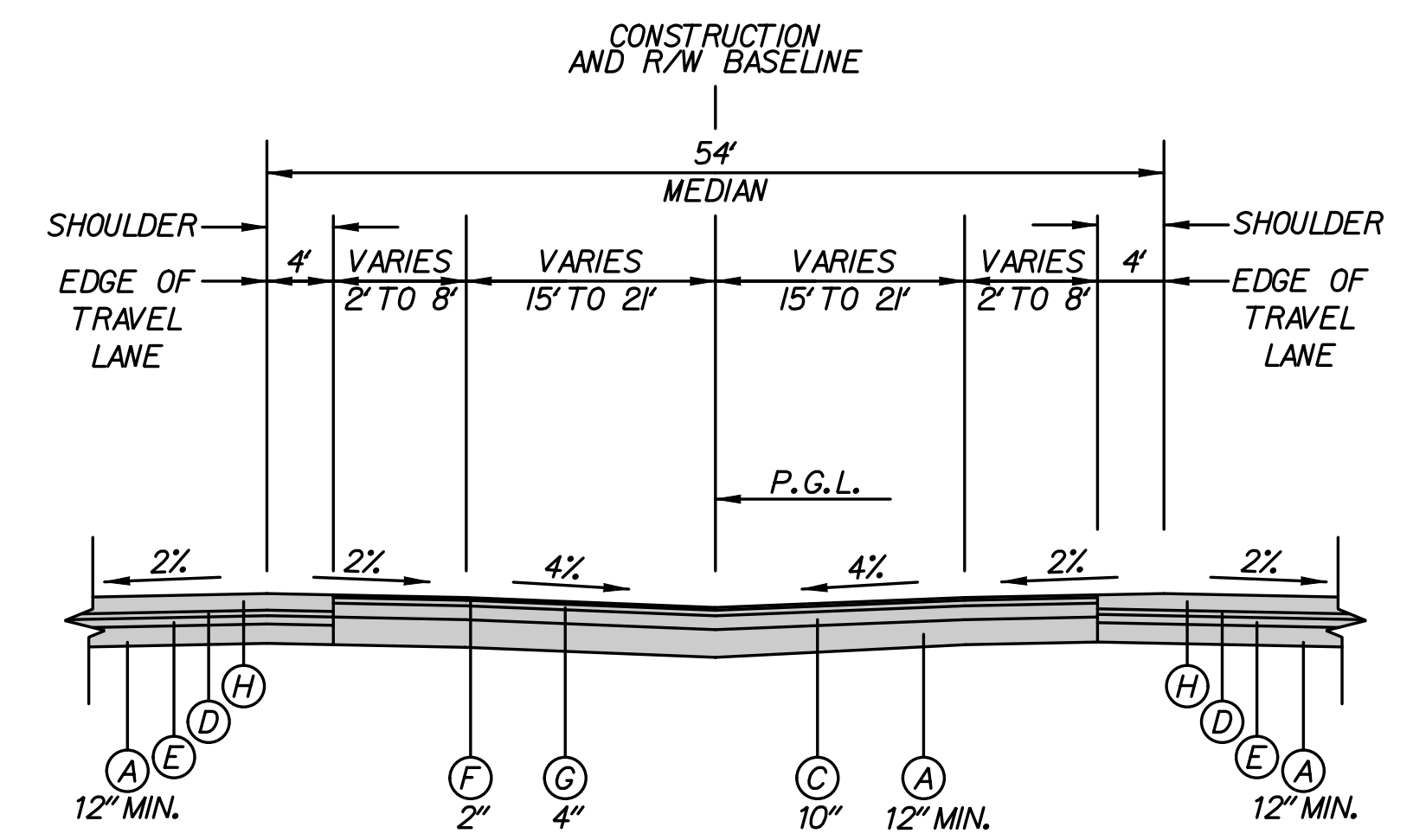
\*TOPSOIL PLACED ON FILL SLOPES NOT INCLUDED IN END-AREA CALCULATIONS.

\$DATES \$FILES

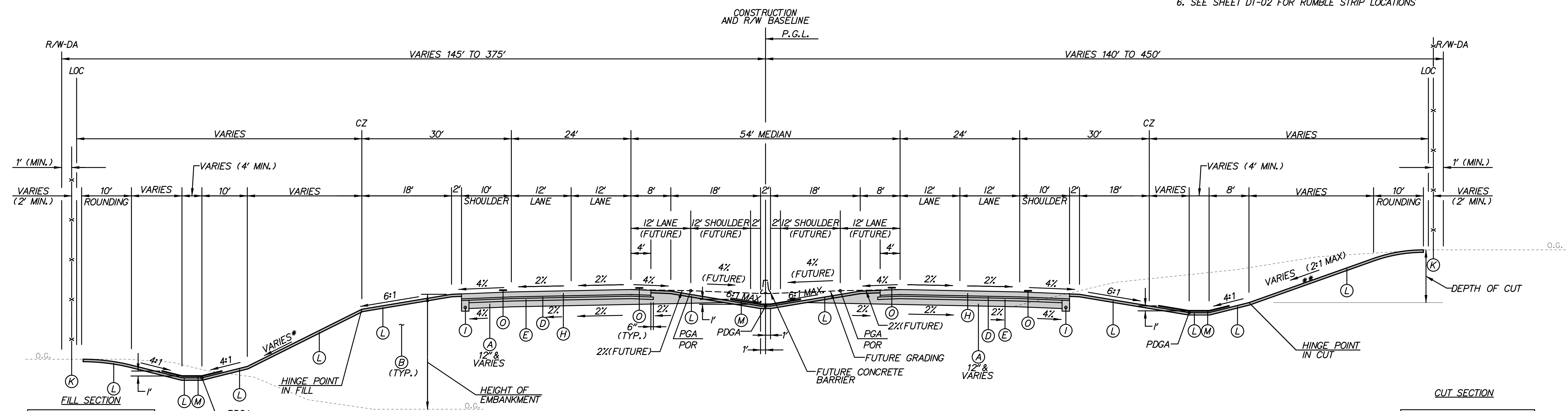
**LEGEND**

- (A) ITEM 209001 - BORROW, TYPE A
- (B) ITEM 209006 - BORROW, TYPE F
- (C) ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 304501 - PERMEABLE TREATED BASE, 4"
- (E) ITEM 304502 - SOIL CEMENT BASE COURSE, 6"
- (F) ITEM 401801 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (G) ITEM 401819 - WMA, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (H) ITEM 501006 - PORTLAND CEMENT CONCRETE PAVEMENT, 12"
- (I) ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
- (J) ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- (K) ITEM 727000 - RIGHT OF WAY FENCE
- (L) ITEM 733002 - TOPSOILING, 6"
- ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
- (M) ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
- (N) ITEM 701016 - INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (O) ITEM 760017 - RUMBLE STRIPS, CONCRETE

- NOTES:**
1. THE MAXIMUM ALGEBRAIC DIFFERENCE BETWEEN THE TRAVELED WAY SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 8%
  2. SHOULDER SLOPE ON THE LOW SIDE SHALL BE THE SAME AS THE TRAVELED WAY SLOPE WHEN SUPERELEVATION IS GREATER THAN 4%
  3. SEE GRADES AND GEOMETRICS SHEETS FOR CROSS SLOPE TRANSITION
  4. PGA - POINT OF GRADE APPLICATION  
PDGA - POINT OF DITCH GRADE APPLICATION  
POR - POINT OF ROTATION  
PGL - PROFILE GRADE LINE
  5. THE MAXIMUM LIFTS FOR THE INDIVIDUAL PAVING MATERIALS ARE AS FOLLOWS:  
SUPERPAVE, TYPE C HOT-MIX - 2"  
SUPERPAVE, TYPE B HOT-MIX - 3"  
SUPERPAVE BIT. CONC. BASE COURSE - 4"  
GRADED AGGREGATE BASE COURSE - 8"
  6. SEE SHEET DT-02 FOR RUMBLE STRIP LOCATIONS



**EMERGENCY CROSSOVER DETAIL  
STA. 622+50.00 TO STA. 630+62.00**



**US 301 NORMAL SECTION  
STATION 594+37.17 TO STATION 644+86.31  
STATION 674+61.46 TO STATION 682+00.00**

**\*FILL SLOPE RATIO CHART**

HEIGHT OF EMBANKMENT	SLOPE RATIO
0'-5'	6:1
>5'-10'	4:1
>10'-15'	3:1
>15'	2:1 WITH GUARDRAIL

**\*\*CUT SLOPE RATIO CHART**

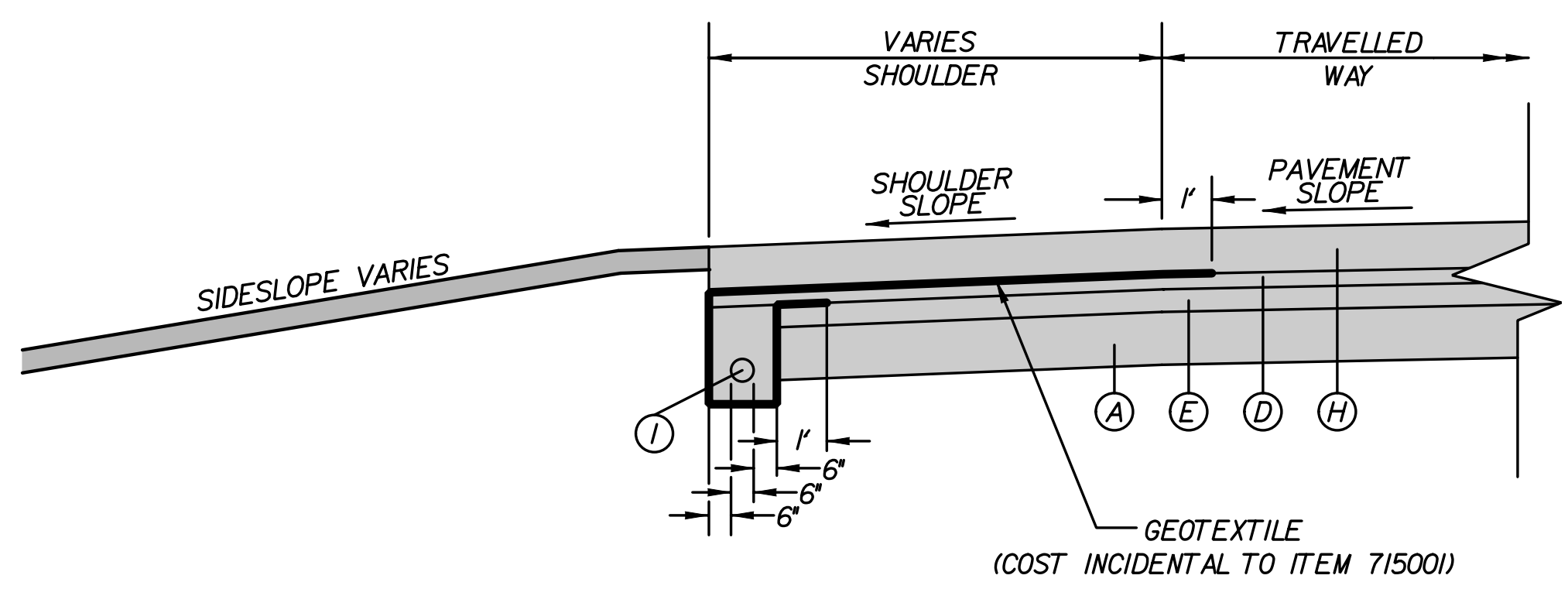
DEPTH OF CUT	SLOPE RATIO
0'-5'	4:1
>5'-10'	3:1
>10'	2:1

**LEGEND**

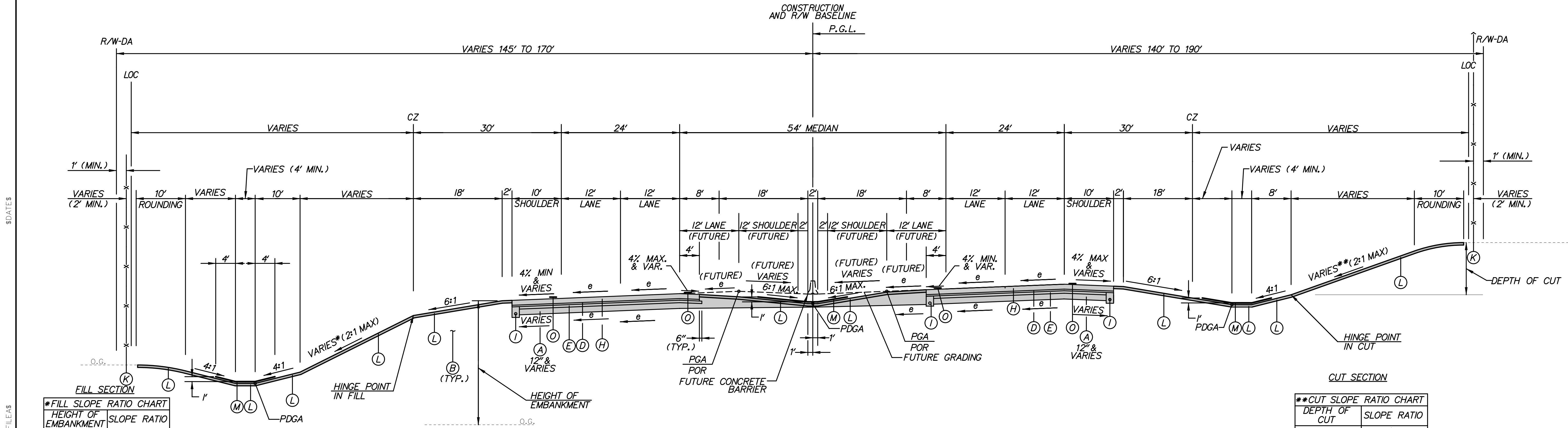
- (A) ITEM 209001 - BORROW, TYPE A
- (B) ITEM 209006 - BORROW, TYPE F
- (C) ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 304501 - PERMEABLE TREATED BASE, 4"
- (E) ITEM 304502 - SOIL CEMENT BASE COURSE, 6"
- (F) ITEM 401801 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (G) ITEM 401819 - WMA, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (H) ITEM 501006 - PORTLAND CEMENT CONCRETE PAVEMENT, 12"
- (I) ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
- (J) ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- (K) ITEM 727000 - RIGHT OF WAY FENCE
- (L) ITEM 733002 - TOPSOILING, 6"
- ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
- (M) ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
- (N) ITEM 701016 - INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (O) ITEM 760017 - RUMBLE STRIPS, CONCRETE

**NOTES:**

1. THE MAXIMUM ALGEBRAIC DIFFERENCE BETWEEN THE TRAVELLED WAY SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 8%
2. SHOULDER SLOPE ON THE LOW SIDE SHALL BE THE SAME AS THE TRAVELLED WAY SLOPE WHEN SUPERELEVATION IS GREATER THAN 4%
3. SEE GRADES AND GEOMETRICS SHEETS FOR CROSS SLOPE TRANSITION
4. PGA - POINT OF GRADE APPLICATION  
 PDGA - POINT OF DITCH GRADE APPLICATION  
 POR - POINT OF ROTATION  
 PGL - PROFILE GRADE LINE
5. THE MAXIMUM LIFTS FOR THE INDIVIDUAL PAVING MATERIALS ARE AS FOLLOWS:  
 SUPERPAVE, TYPE C HOT-MIX - 2"  
 SUPERPAVE, TYPE B HOT-MIX - 3"  
 SUPERPAVE BIT. CONC. BASE COURSE - 4"  
 GRADED AGGREGATE BASE COURSE - 8"
6. SEE SHEET DT-02 FOR RUMBLE STRIP LOCATIONS



**US 301 MAINLINE UNDERDRAIN DETAIL**  
(WHERE SHOWN ON PLANS)



**\*FILL SLOPE RATIO CHART**

HEIGHT OF EMBANKMENT	SLOPE RATIO
0'-5'	6:1
>5'-10'	4:1
>10'-15'	3:1
>15'	2:1 WITH GUARDRAIL

**\*\*CUT SLOPE RATIO CHART**

DEPTH OF CUT	SLOPE RATIO
0'-5'	4:1
>5'-10'	3:1
>10'	2:1

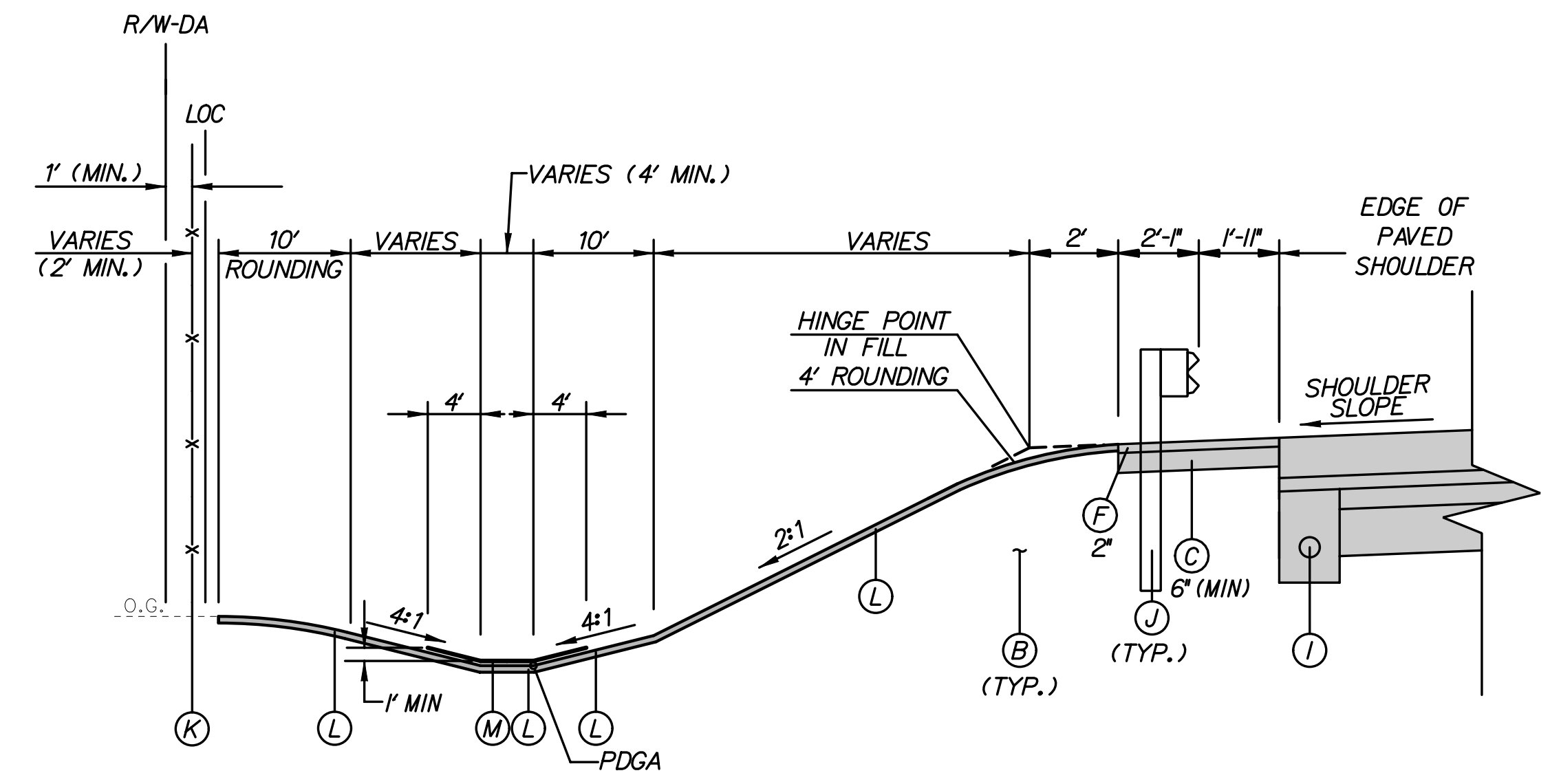
**US 301 SUPERELEVATED SECTION**  
**STATION 644+86.31 TO STATION 674+61.46 (e max.=5.4%)**

**LEGEND**

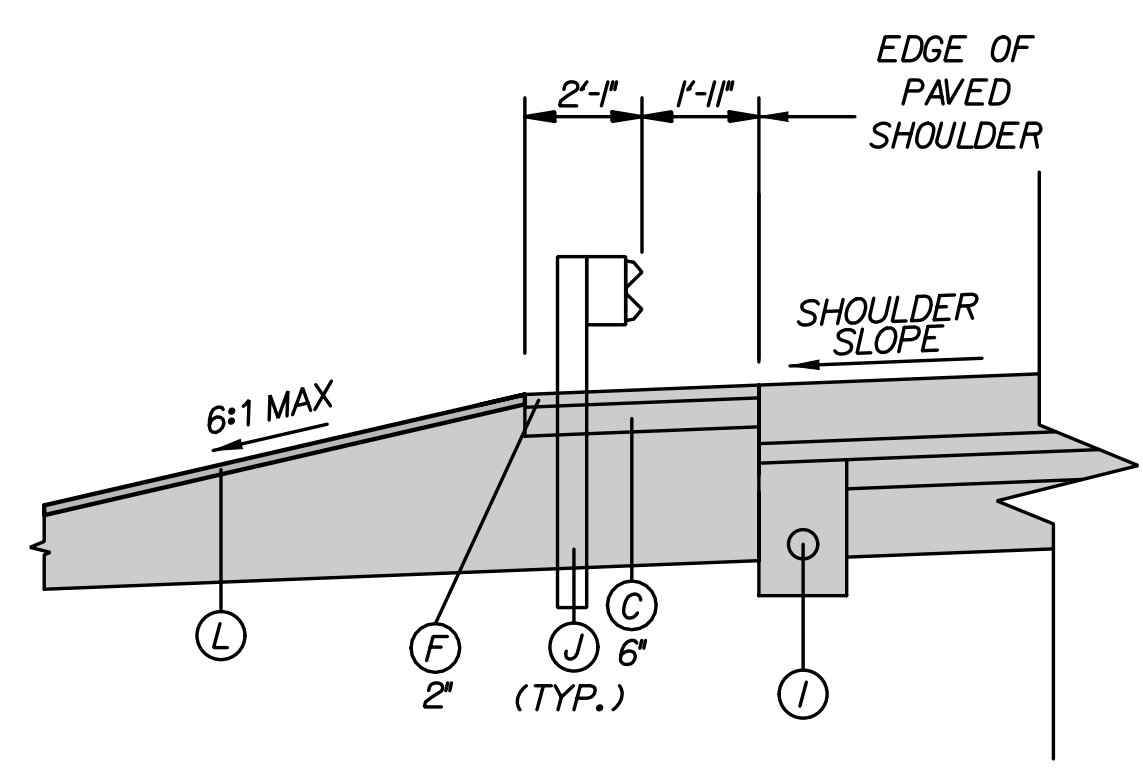
- (A) ITEM 209001 - BORROW, TYPE A
- (B) ITEM 209006 - BORROW, TYPE F
- (C) ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 304501 - PERMEABLE TREATED BASE, 4"
- (E) ITEM 304502 - SOIL CEMENT BASE COURSE, 6"
- (F) ITEM 401801 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (G) ITEM 401819 - WMA, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (H) ITEM 501006 - PORTLAND CEMENT CONCRETE PAVEMENT, 12"
- (I) ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
- (J) ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- (K) ITEM 727000 - RIGHT OF WAY FENCE
- (L) ITEM 733002 - TOPSOILING, 6"
- ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
- (M) ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
- (N) ITEM 701016 - INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (O) ITEM 760017 - RUMBLE STRIPS, CONCRETE

**NOTES:**

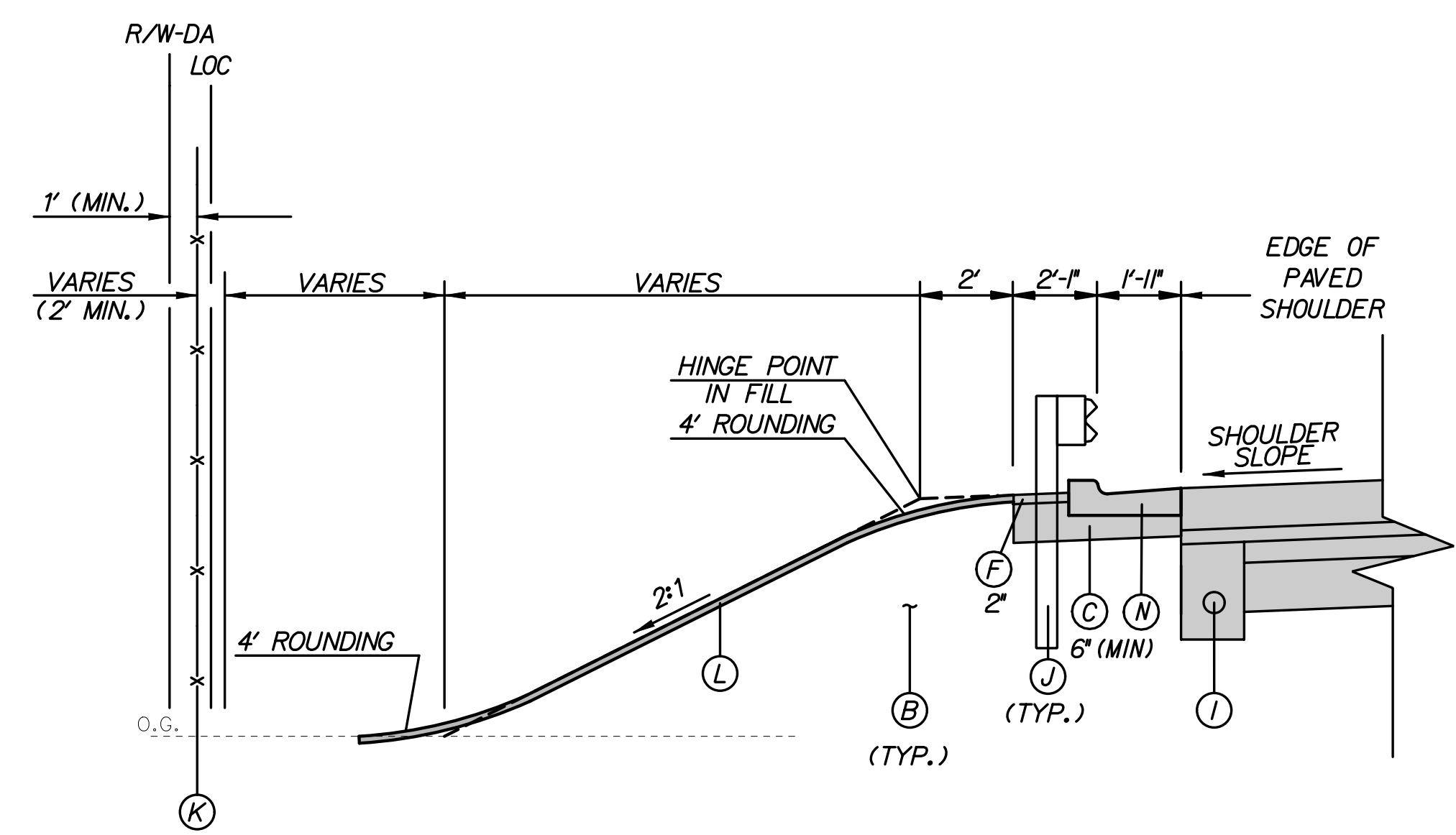
1. THE MAXIMUM ALGEBRAIC DIFFERENCE BETWEEN THE TRAVELED WAY SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 8%
2. SHOULDER SLOPE ON THE LOW SIDE SHALL BE THE SAME AS THE TRAVELED WAY SLOPE WHEN SUPERELEVATION IS GREATER THAN 4%
3. SEE GRADES AND GEOMETRICS SHEETS FOR CROSS SLOPE TRANSITION
4. PGA - POINT OF GRADE APPLICATION  
PDGA - POINT OF DITCH GRADE APPLICATION  
POR - POINT OF ROTATION  
PGL - PROFILE GRADE LINE
5. THE MAXIMUM LIFTS FOR THE INDIVIDUAL PAVING MATERIALS ARE AS FOLLOWS:  
SUPERPAVE, TYPE C HOT-MIX - 2"  
SUPERPAVE, TYPE B HOT-MIX - 3"  
SUPERPAVE BIT. CONC. BASE COURSE - 4"  
GRADED AGGREGATE BASE COURSE - 8"
6. SEE SHEET DT-02 FOR RUMBLE STRIP LOCATIONS



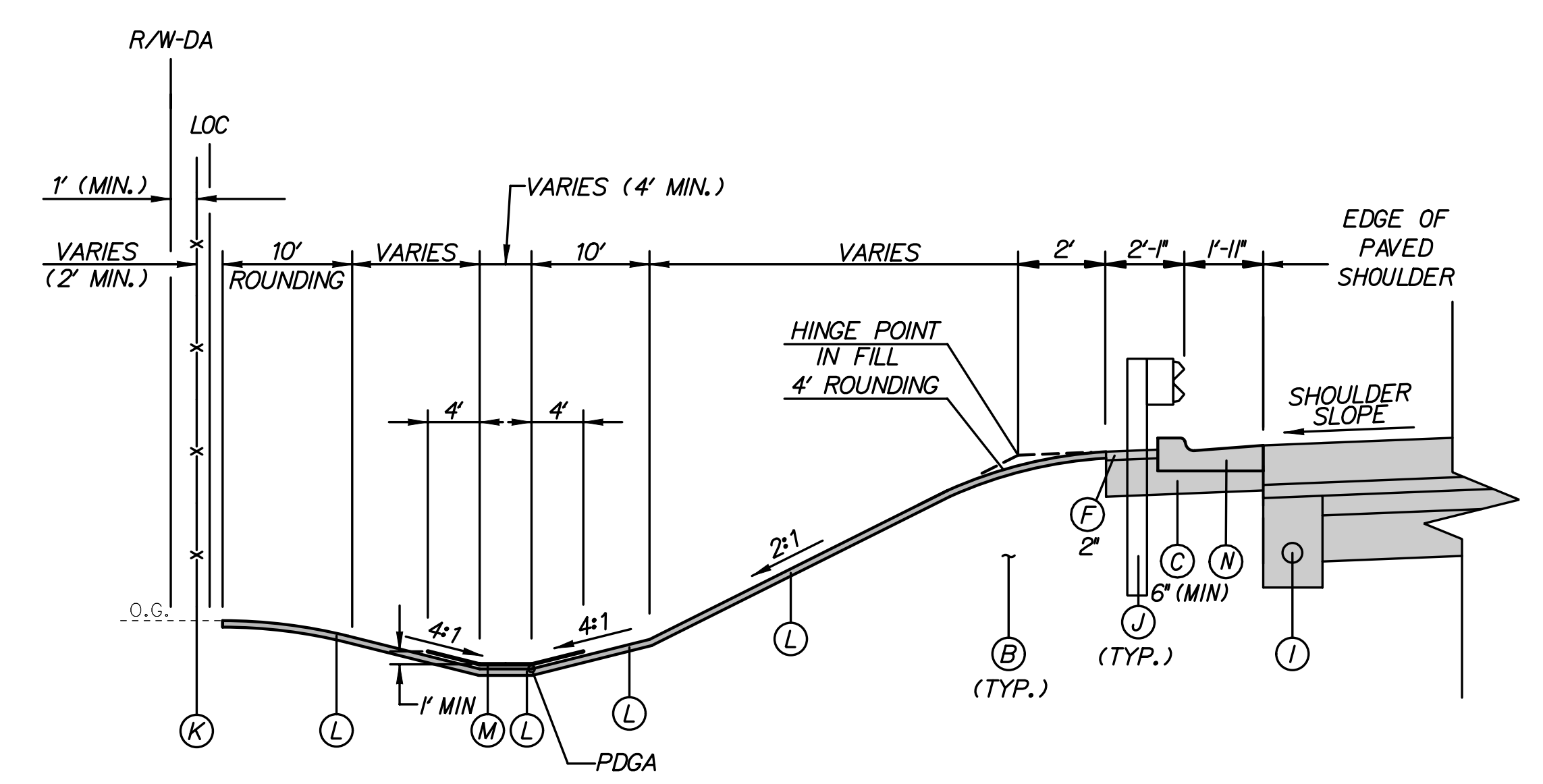
**GUARDRAIL DETAIL  
WITHOUT CURB &  
WITH DRAINAGE DITCH**  
(WHERE SHOWN ON PLANS)



**MEDIAN GUARDRAIL DETAIL**  
(WHERE SHOWN ON PLANS)



**GUARDRAIL DETAIL  
WITH CURB & WITHOUT DRAINAGE DITCH**  
(WHERE SHOWN ON PLANS)



**GUARDRAIL DETAIL  
WITH CURB & DRAINAGE DITCH**  
(WHERE SHOWN ON PLANS)

\$FILES \$DATES

ADDENDUMS / REVISIONS

**NOT TO SCALE**

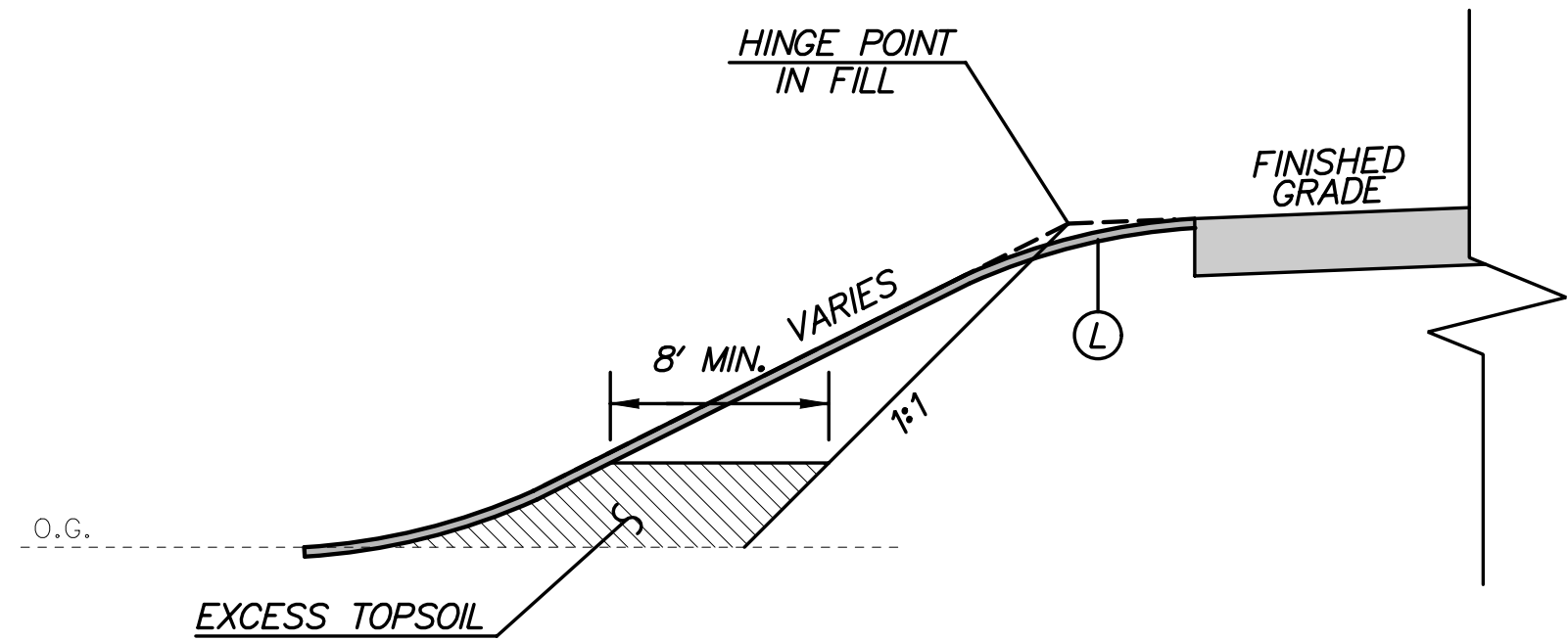
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

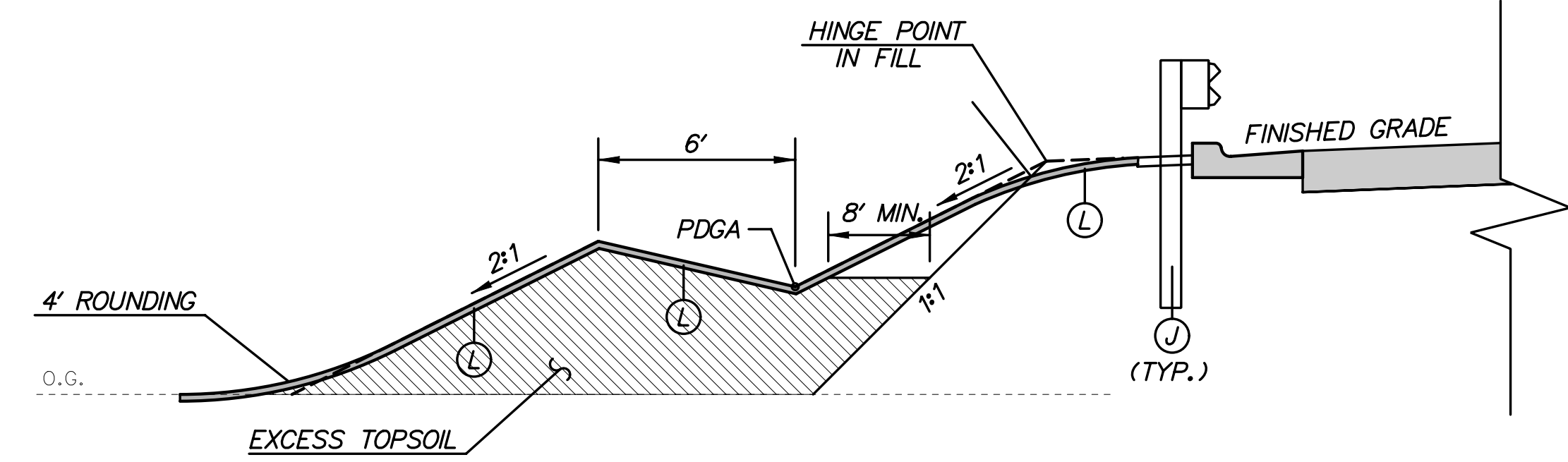
**TYPICAL SECTION**

**LEGEND**

- (A) ITEM 209001 - BORROW, TYPE A
- (B) ITEM 209006 - BORROW, TYPE F
- (C) ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 304501 - PERMEABLE TREATED BASE, 4"
- (E) ITEM 304502 - SOIL CEMENT BASE COURSE, 6"
- (F) ITEM 401801 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (G) ITEM 401819 - WMA, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (H) ITEM 501006 - PORTLAND CEMENT CONCRETE PAVEMENT, 12"
- (I) ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
- (J) ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- (K) ITEM 727000 - RIGHT OF WAY FENCE
- (L) ITEM 733002 - TOPSOILING, 6"
- ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
- (M) ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
- (N) ITEM 701016 - INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (O) ITEM 760017 - RUMBLE STRIPS, CONCRETE



**WITHOUT BENCH**

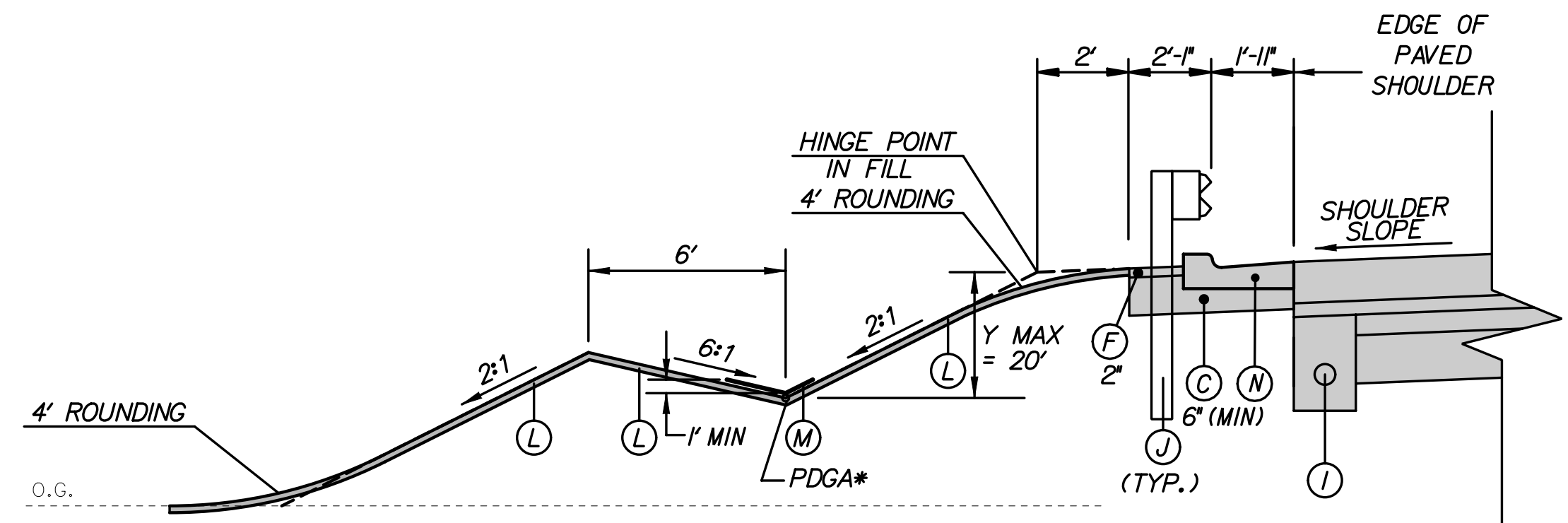


**WITH BENCH**

**NOTES:**

1. NOTE: EXCESS TOPSOIL SHALL BE PLACED IN LIFTS CONCURRENTLY WITH THE CONSTRUCTION OF THE REMAINDER OF THE EMBANKMENT AND SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH SECTIONS 202.04, 202.05, 202.06 AND 202.07.
2. PLACEMENT OF EXCESS TOPSOIL IN OUTER EMBANKMENT TO BE INCIDENTAL TO ITEM 202000-EXCAVATION AND EMBANKMENT.

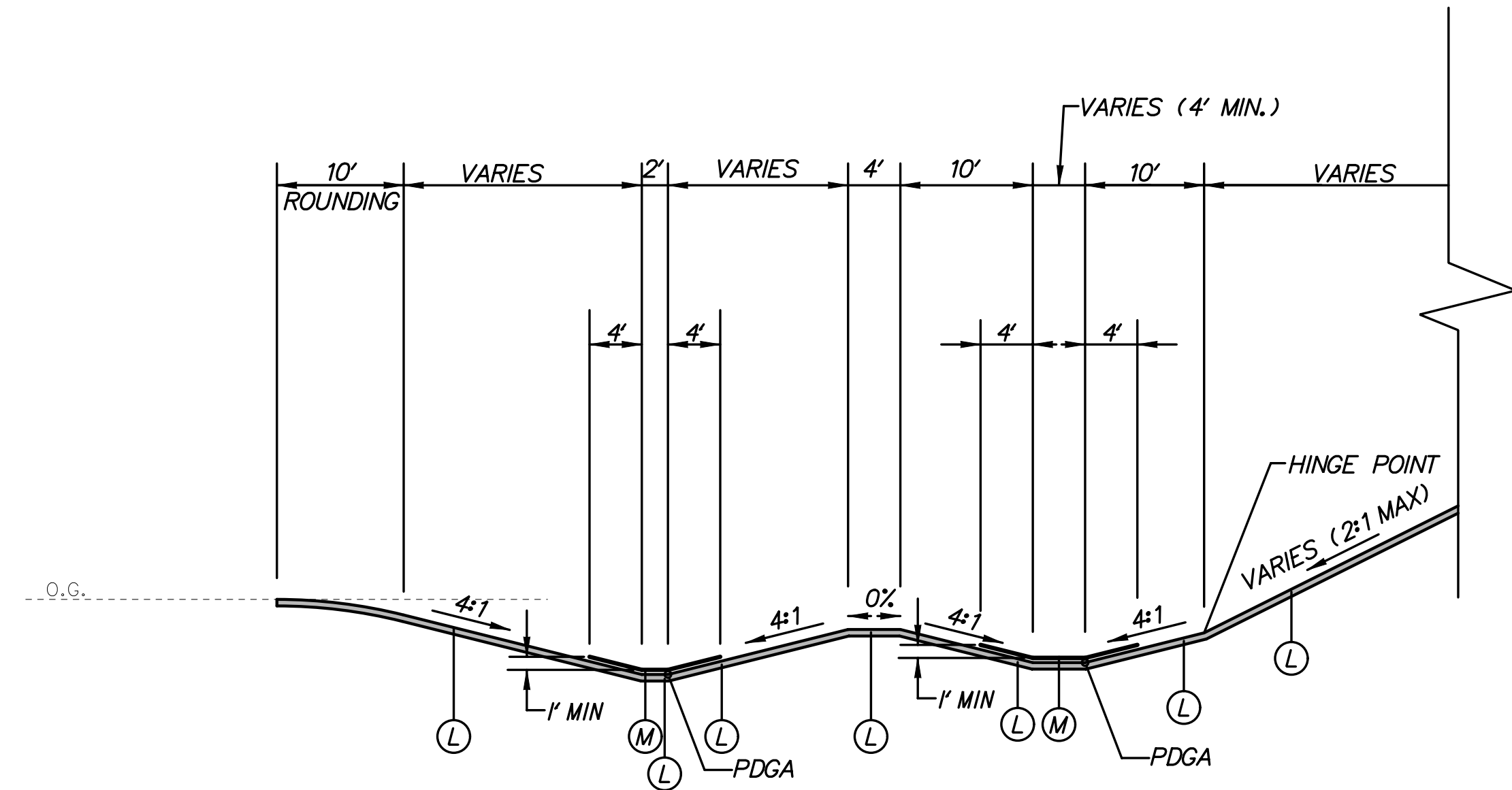
**USE OF EXCESS TOPSOIL IN OUTER PORTION OF EMBANKMENT**



\*NOTE: LONGITUDINAL SLOPE TO HAVE 2-3% GRADE AND DRAIN TO STABLE OUTLET

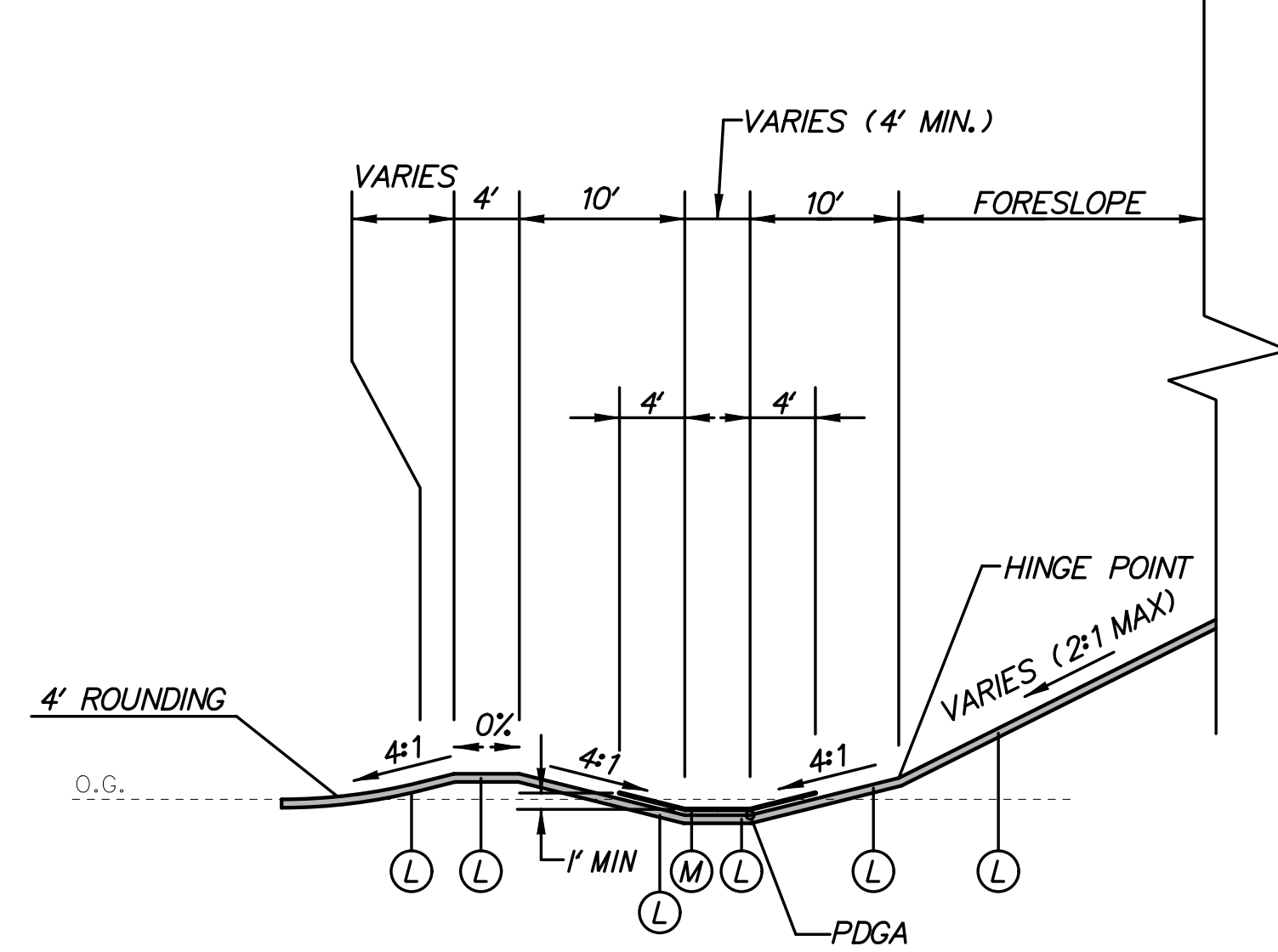
**BENCHING DETAIL**

(WHERE SHOWN ON PLANS)



**DIVERSION DITCH**

(WHERE SHOWN ON PLANS)



**MID-FILL DITCH  
PDGA DEPTH BELOW OG < 2.5'**

**NOTES:**

1. THE MAXIMUM ALGEBRAIC DIFFERENCE BETWEEN THE TRAVELED WAY SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 8%
2. SHOULDER SLOPE ON THE LOW SIDE SHALL BE THE SAME AS THE TRAVELED WAY SLOPE WHEN SUPERELEVATION IS GREATER THAN 4%
3. SEE GRADES AND GEOMETRICS SHEETS FOR CROSS SLOPE TRANSITION
4. PGA - POINT OF GRADE APPLICATION  
PDGA - POINT OF DITCH GRADE APPLICATION  
POR - POINT OF ROTATION  
PGL - PROFILE GRADE LINE
5. THE MAXIMUM LIFTS FOR THE INDIVIDUAL PAVING MATERIALS ARE AS FOLLOWS:  
SUPERPAVE, TYPE C HOT-MIX - 2"  
SUPERPAVE, TYPE B HOT-MIX - 3"  
SUPERPAVE BIT. CONC. BASE COURSE - 4"  
GRADED AGGREGATE BASE COURSE - 8"
6. SEE SHEET DT-02 FOR RUMBLE STRIP LOCATIONS

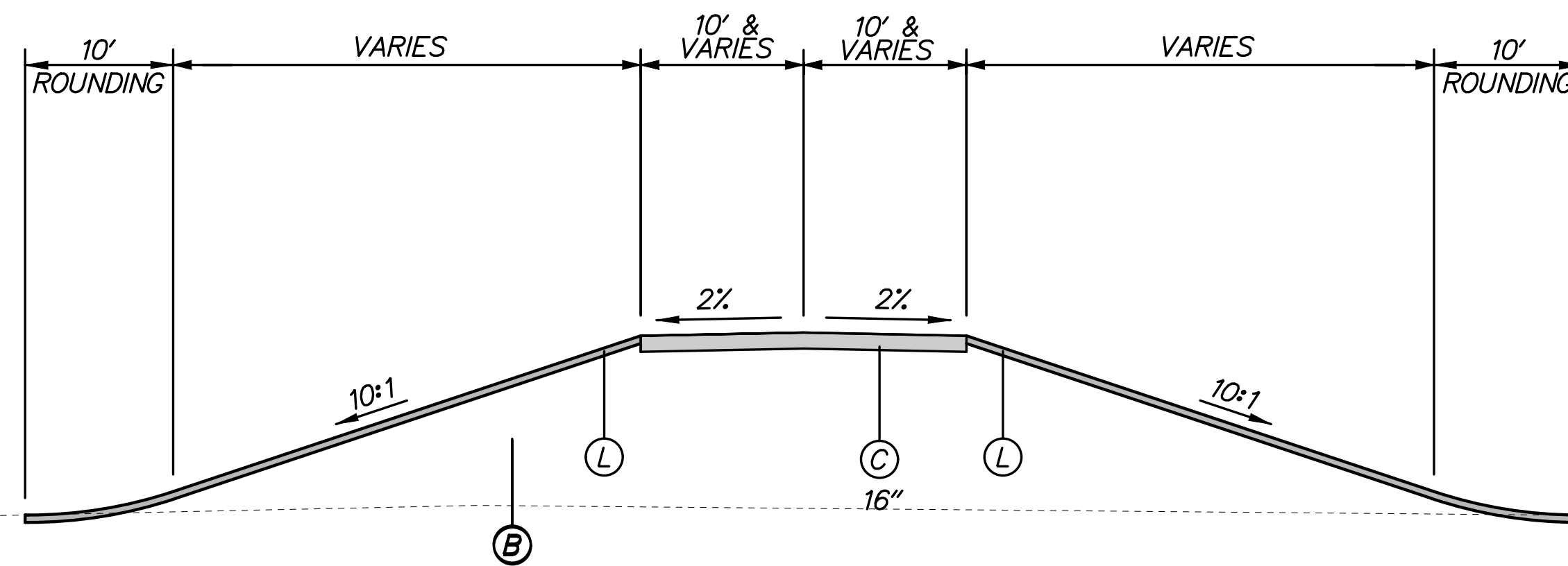
\$FILES \$DATES

**LEGEND**

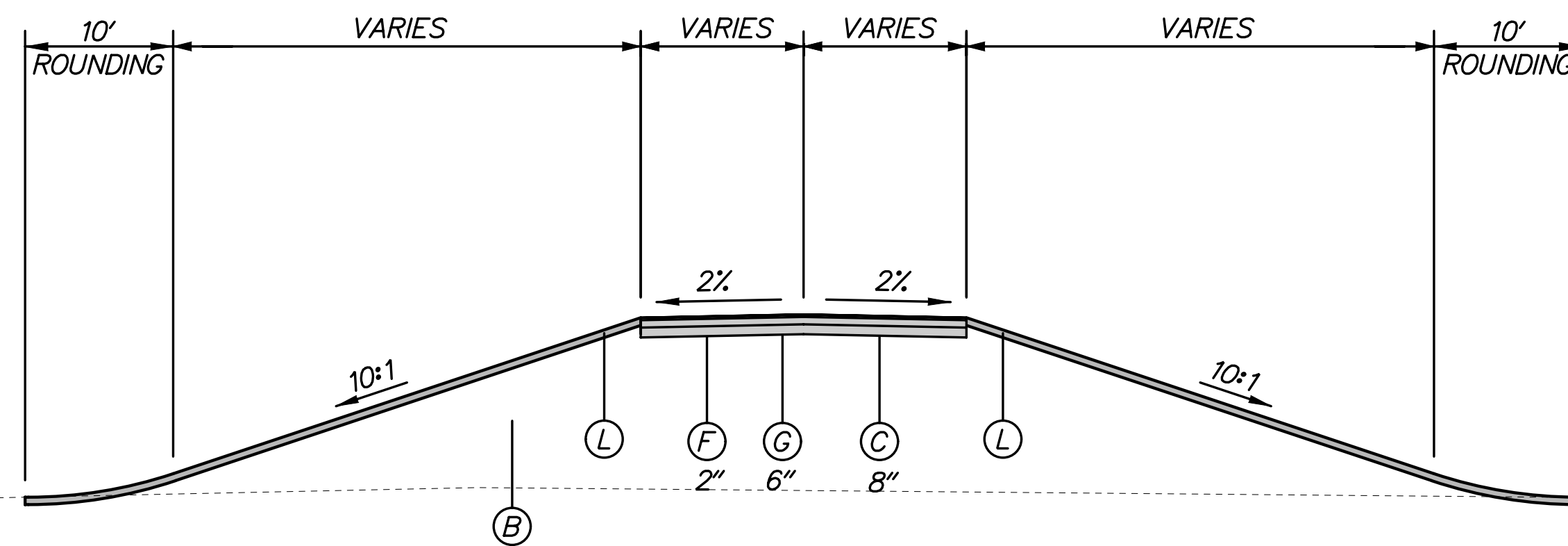
- (A) ITEM 209001 - BORROW, TYPE A
- (B) ITEM 209006 - BORROW, TYPE F
- (C) ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 304501 - PERMEABLE TREATED BASE, 4"
- (E) ITEM 304502 - SOIL CEMENT BASE COURSE, 6"
- (F) ITEM 401801 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
- (G) ITEM 401819 - WMA, SUPERPAVE, BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22
- (H) ITEM 501006 - PORTLAND CEMENT CONCRETE PAVEMENT, 12"
- (I) ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
- (J) ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- (K) ITEM 727000 - RIGHT OF WAY FENCE
- (L) ITEM 733002 - TOPSOILING, 6"
- ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
- (M) ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
- (N) ITEM 701016 - INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 1-4
- (O) ITEM 760017 - RUMBLE STRIPS, CONCRETE

**NOTES:**

1. THE MAXIMUM ALGEBRAIC DIFFERENCE BETWEEN THE TRAVELED WAY SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 8%
2. SHOULDER SLOPE ON THE LOW SIDE SHALL BE THE SAME AS THE TRAVELED WAY SLOPE WHEN SUPERELEVATION IS GREATER THAN 4%
3. SEE GRADES AND GEOMETRICS SHEETS FOR CROSS SLOPE TRANSITION
4. PGA - POINT OF GRADE APPLICATION  
 PDGA - POINT OF DITCH GRADE APPLICATION  
 POR - POINT OF ROTATION  
 PGL - PROFILE GRADE LINE
5. THE MAXIMUM LIFTS FOR THE INDIVIDUAL PAVING MATERIALS ARE AS FOLLOWS:  
 SUPERPAVE, TYPE C HOT-MIX - 2"  
 SUPERPAVE, TYPE B HOT-MIX - 3"  
 SUPERPAVE BIT. CONC. BASE COURSE - 4"  
 GRADED AGGREGATE BASE COURSE - 8"
6. SEE SHEET DT-02 FOR RUMBLE STRIP LOCATIONS



**SR 896/BOYD'S CORNER ROAD AGRICULTURAL ACCESS**  
UNPAVED SECTION



**SR 896/BOYD'S CORNER ROAD AGRICULTURAL ACCESS**  
PAVED SECTION

\$DATES  
\$FILES



ADDENDUMS / REVISIONS

NOT TO SCALE

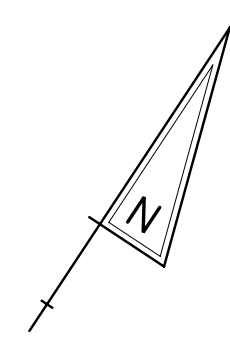
US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

TYPICAL SECTION

TS-05

SHEET NO.
14
TOTAL SHTS.
240

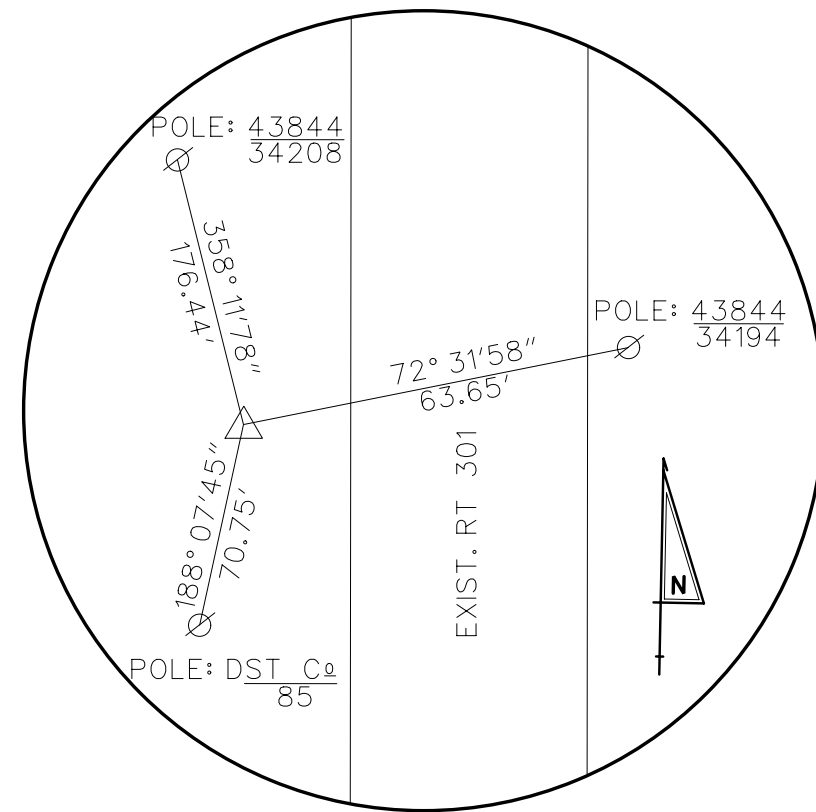


HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
31	NA*	NA*	543623.5425	571721.6281	69.62'
B45	NA*	NA*	542621.3018	571397.1794	63.60'
33	NA*	NA*	541184.1316	570995.4651	67.31'

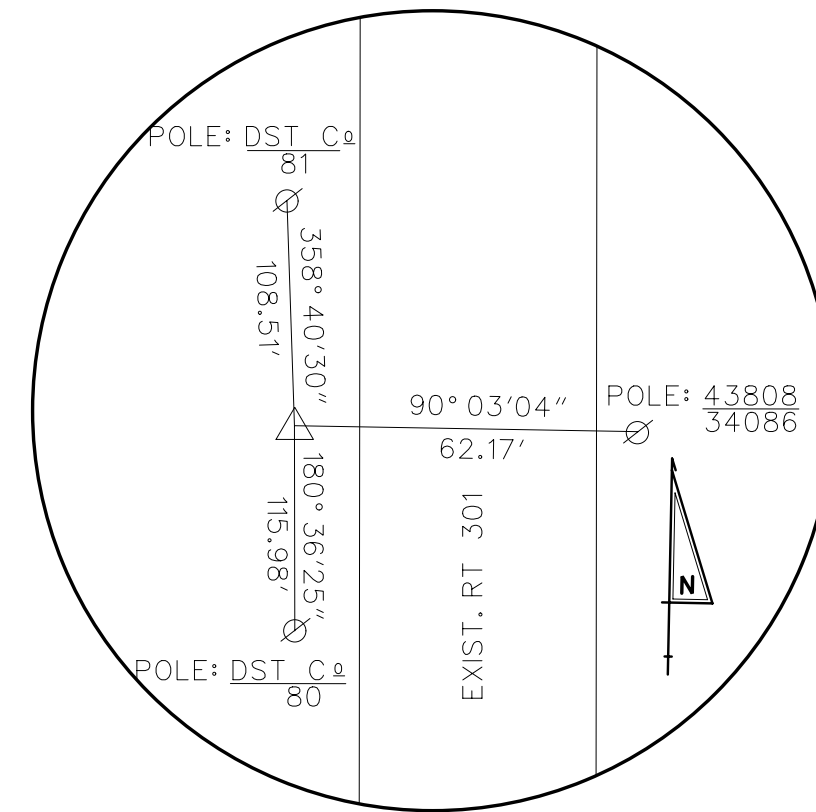
\* POINTS LOCATED BEYOND THE LIMITS OF CONTRACT 1C

CONSTRUCTION ALIGNMENT CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	
3000	493+00.0000	0.0000	542701.2868	571847.7395	
3001	608+83.3146	0.0000	543603.9914	573212.9431	
3003	633+62.2870	0.0000	544945.5067	575297.4876	
3050	600+00.0000	0.0000	543116.7967	572476.1351	
3051	605+00.0000	0.0000	543392.5731	572893.2051	

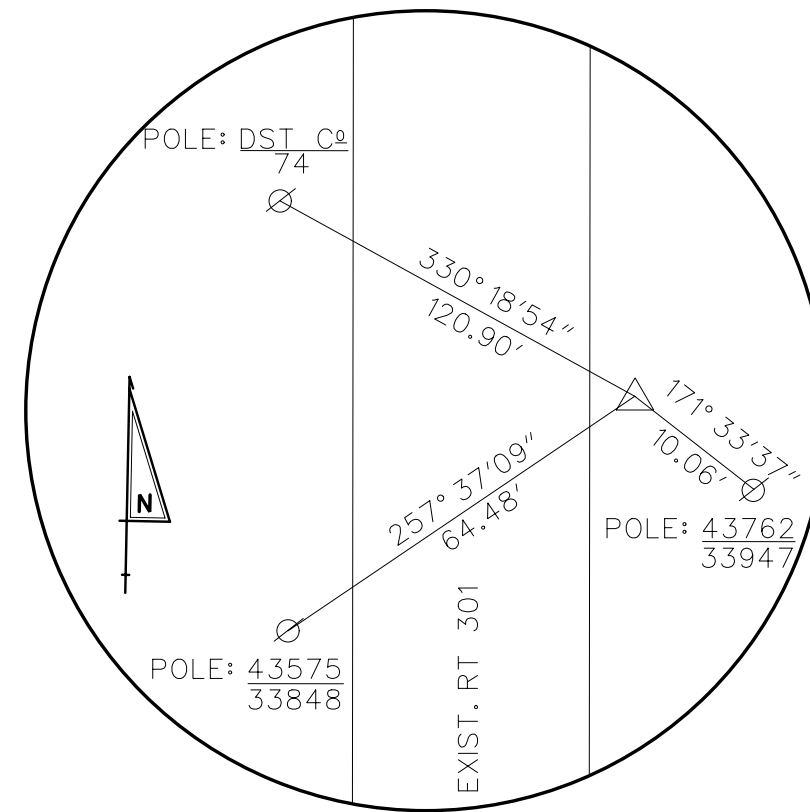
CIRCULAR CURVE NO. ①				
	STATION	NORTHING	EASTING	
PC (	3001)	608+83.3146	543603.9914	573212.9431
PI (	3002)	621+22.8643	544287.6685	574246.9010
CC (	)		460189.9973	628368.2293
PT (	3003)	633+62.2870	544945.5067	575297.4876
	Radius:		100000.0000	
	Delta:		1° 25' 13.2475" Right	
	Degree of Curvature (Arc):		0° 03' 26.2648"	
	Length:		2478.9724	
	Tangent:		1239.5497	
	Chord:		2478.9089	
	Middle Ordinate:		7.6815	
	External:		7.6821	
	Tangent Direction:		N 56° 31' 35.0000" E	
	Radial Direction:		S 33° 28' 25.0000" E	
	Chord Direction:		N 57° 14' 11.6238" E	
	Radial Direction:		S 32° 03' 11.7525" E	
	Tangent Direction:		N 57° 56' 48.2475" E	



TP - 31  
CAPPED REBAR

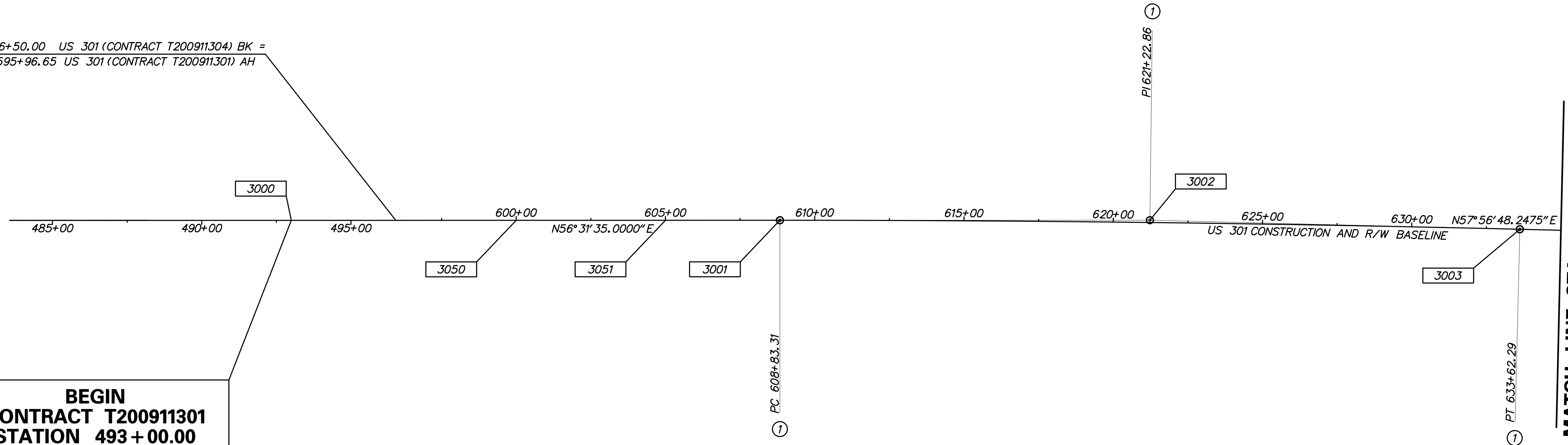


TP - B45  
NGS CONCRETE MONUMENT



TP - 33  
CONCRETE MONUMENT

POE STA 496+50.00 US 301 (CONTRACT T200911304) BK =  
POB STA 595+96.65 US 301 (CONTRACT T200911301) AH



**BEGIN  
CONTRACT T200911301  
STATION 493+00.00**

**MATCH LINE STA 635+00 HV-02**

- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

- DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)

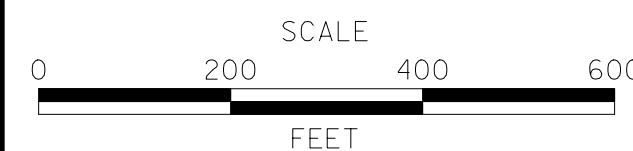
VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03

\$FILES \$DATES



ADDENDUMS / REVISIONS

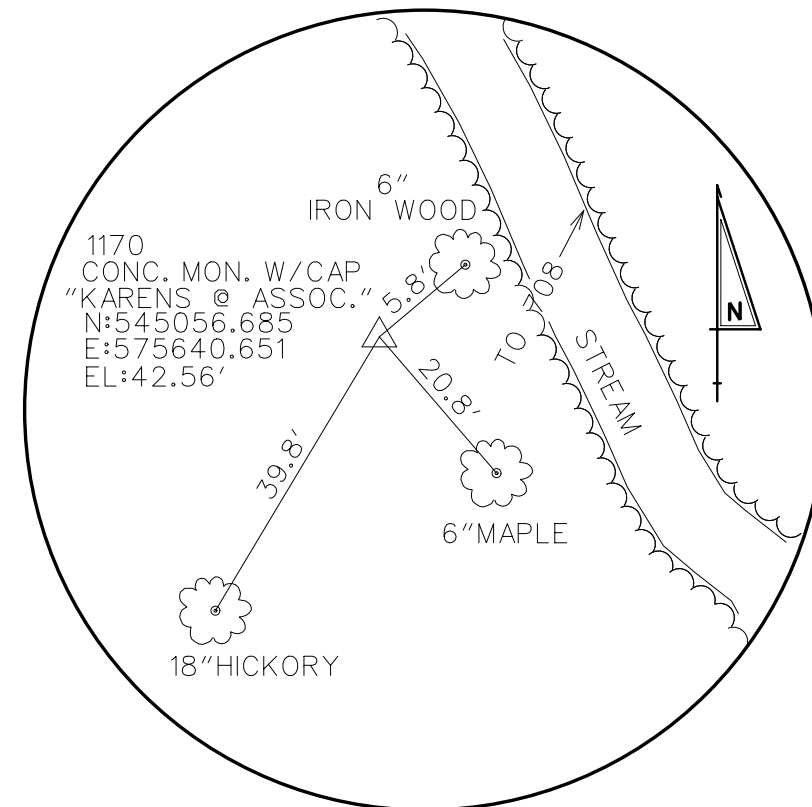


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

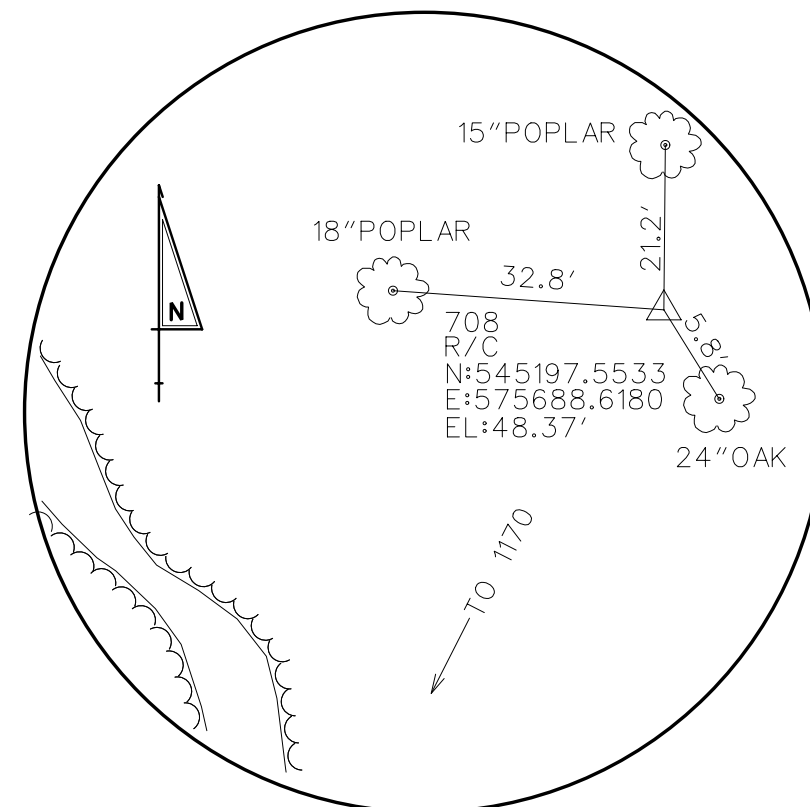
CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

**HORIZONTAL AND  
VERTICAL CONTROL**

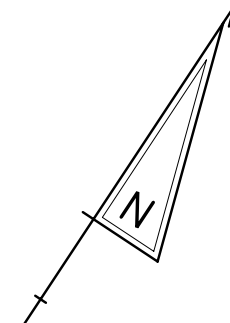
HV-01
SHEET NO.
15
TOTAL SHTS.
240



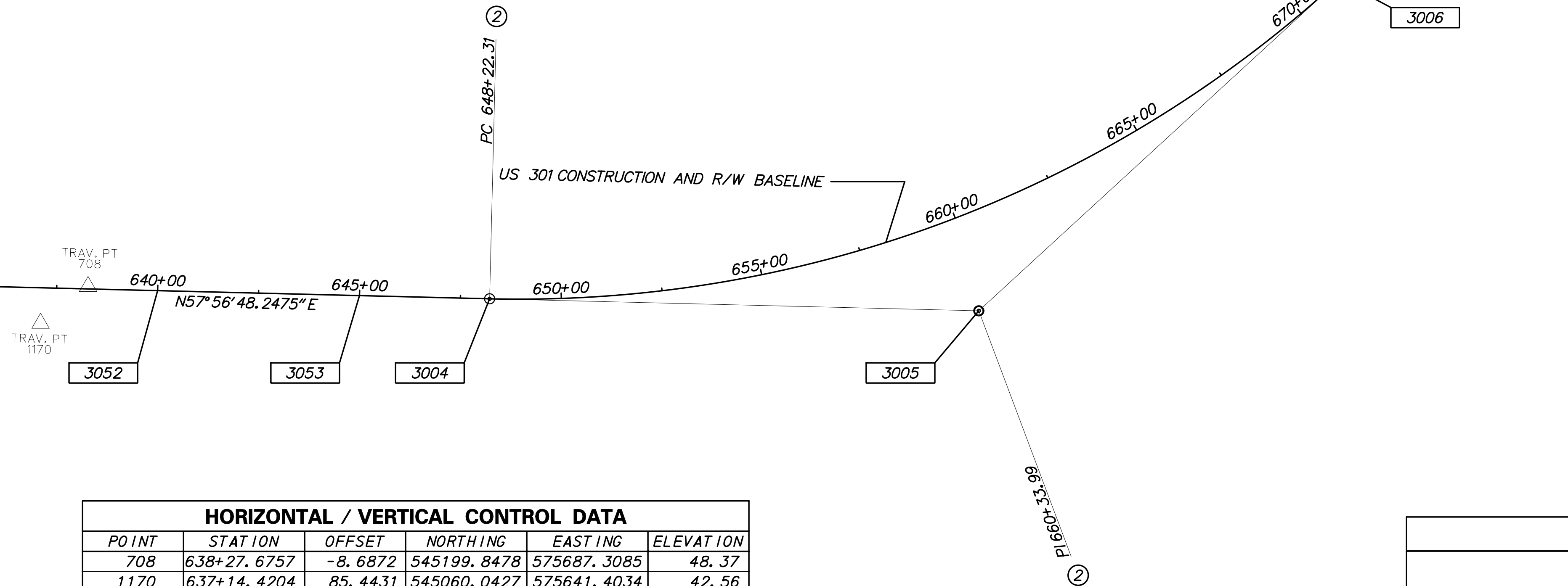
TP - 1170  
CONC. MONUMENT WITH CAP



TP - 708  
CAPPED REBAR



MATCH LINE STA 635+00 HV-01



HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
708	638+27.6757	-8.6872	545199.8478	575687.3085	48.37
1170	637+14.4204	85.4431	545060.0427	575641.4034	42.56

CONSTRUCTION ALIGNMENT CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	
3004	648+22.3102	0.0000	545720.3518	576534.9377	
3006	671+25.4648	0.0000	547539.2979	577854.2121	
3012	675+00.0000	0.0000	547902.7716	577944.5649	
3052	640+00.0000	0.0000	545283.9457	575837.9846	
3053	645+00.0000	0.0000	545549.2995	576261.7621	

- NEGATIVE OFFSET DENOTES LEFT OF BASELINE  
 - DATUM REFERENCE:  
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)  
 VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N.A.V.D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03

CIRCULAR CURVE NO. ②			
	STATION	NORTHING	EASTING
PC ( 3004)	648+22.3102	545720.3518	576534.9377
PI ( 3005)	660+33.9934	546363.4011	577561.9060
CC ( )		548263.0171	574942.8155
PT ( 3006)	671+25.4648	547539.2979	577854.2121
	Radius:	3000.0000	
	Delta:	43° 59' 13.2475" Left	
	Degree of Curvature (Arc):	1° 54' 35.4935"	
	Length:	2303.1546	
	Tangent:	1211.6832	
	Chord:	2247.0091	
	Middle Ordinate:	218.3211	
	External:	235.4561	
	Tangent Direction:	N 57° 56' 48.2475" E	
	Radial Direction:	S 32° 03' 11.7525" E	
	Chord Direction:	N 35° 57' 11.6238" E	
	Radial Direction:	S 76° 02' 25.0000" E	
	Tangent Direction:	N 13° 57' 35.0000" E	

\$FILES \$DATES



ADDENDUMS / REVISIONS



US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

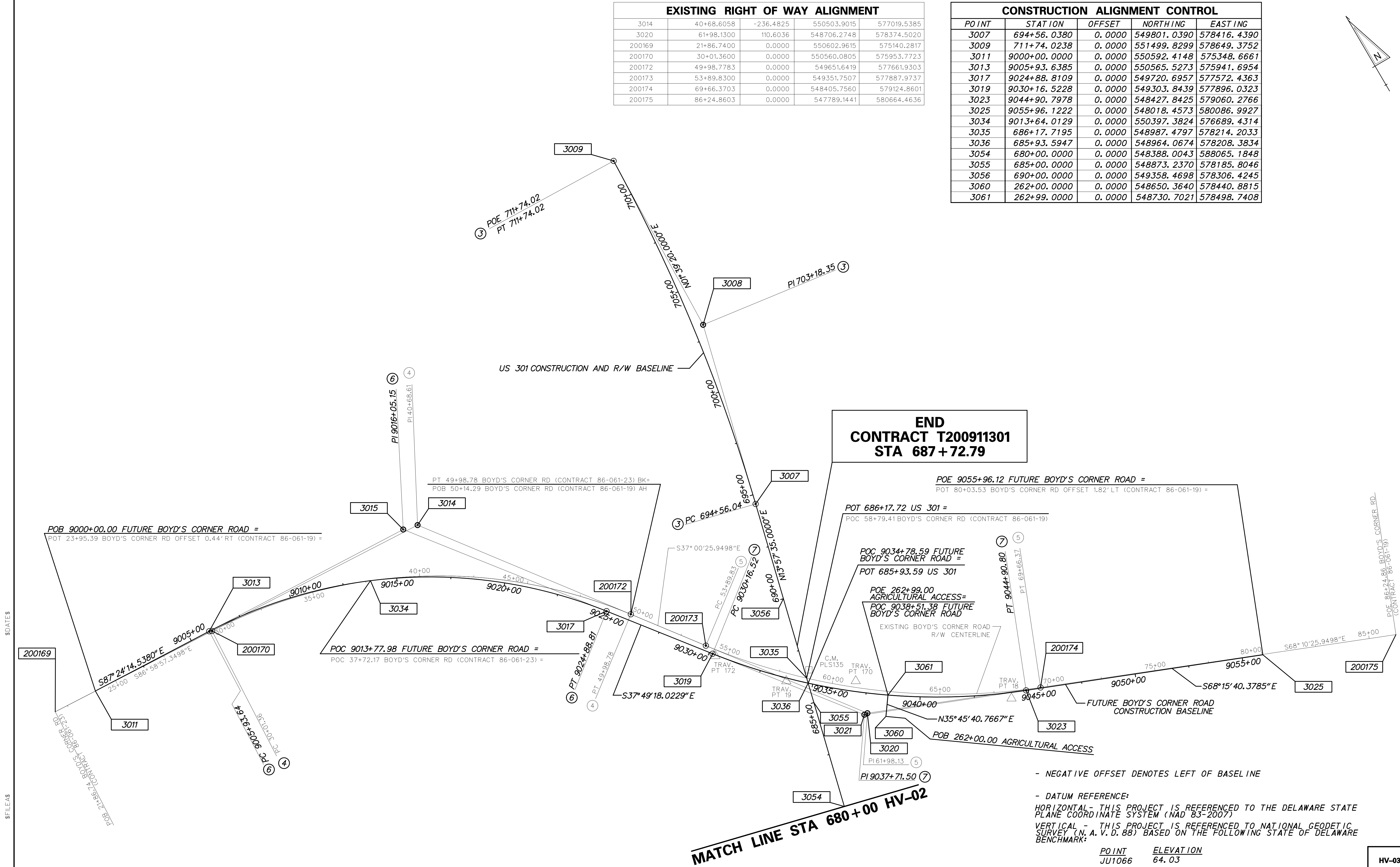
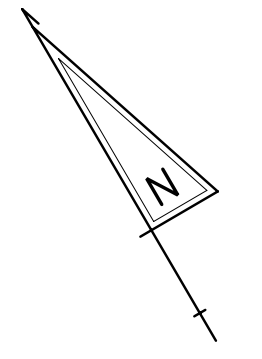
HORIZONTAL AND  
VERTICAL CONTROL

HV-02
SHEET NO.
16
TOTAL SHTS.
240



EXISTING RIGHT OF WAY ALIGNMENT				
3014	40+68.6058	-236.4825	550503.9015	577019.5385
3020	61+98.1300	110.6036	548706.2748	578374.5020
200169	21+86.7400	0.0000	550602.9615	575140.2817
200170	30+01.3600	0.0000	550560.0805	575953.7723
200172	49+98.7783	0.0000	549651.6419	577661.9303
200173	53+89.8300	0.0000	549351.7507	577887.9737
200174	69+66.3703	0.0000	548405.7560	579124.8601
200175	86+24.8603	0.0000	547789.1441	580664.4636

CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
3007	694+56.0380	0.0000	549801.0390	578416.4390
3009	711+74.0238	0.0000	551499.8299	578649.3752
3011	9000+00.0000	0.0000	550592.4148	575348.6661
3013	9005+93.6385	0.0000	550565.5273	575941.6954
3017	9024+88.8109	0.0000	549720.6957	577572.4363
3019	9030+16.5228	0.0000	549303.8439	577896.0323
3023	9044+90.7978	0.0000	548427.8425	579060.2766
3025	9055+96.1222	0.0000	548018.4573	580086.9927
3034	9013+64.0129	0.0000	550397.3824	576689.4314
3035	686+17.7195	0.0000	548987.4797	578214.2033
3036	685+93.5947	0.0000	548964.0674	578208.3834
3054	680+00.0000	0.0000	548388.0043	588065.1848
3055	685+00.0000	0.0000	548873.2370	578185.8046
3056	690+00.0000	0.0000	549358.4698	578306.4245
3060	262+00.0000	0.0000	548650.3640	578440.8815
3061	262+99.0000	0.0000	548730.7021	578498.7408



- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

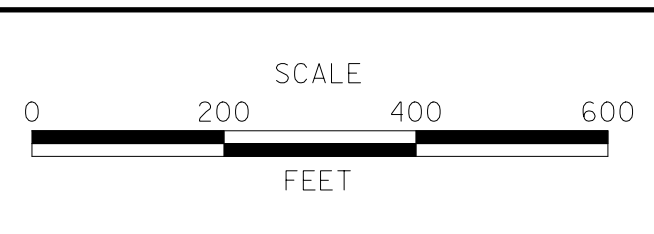
- DATUM REFERENCE:  
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)  
 VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03

\$DATES \$FILES



ADDENDUMS / REVISIONS	

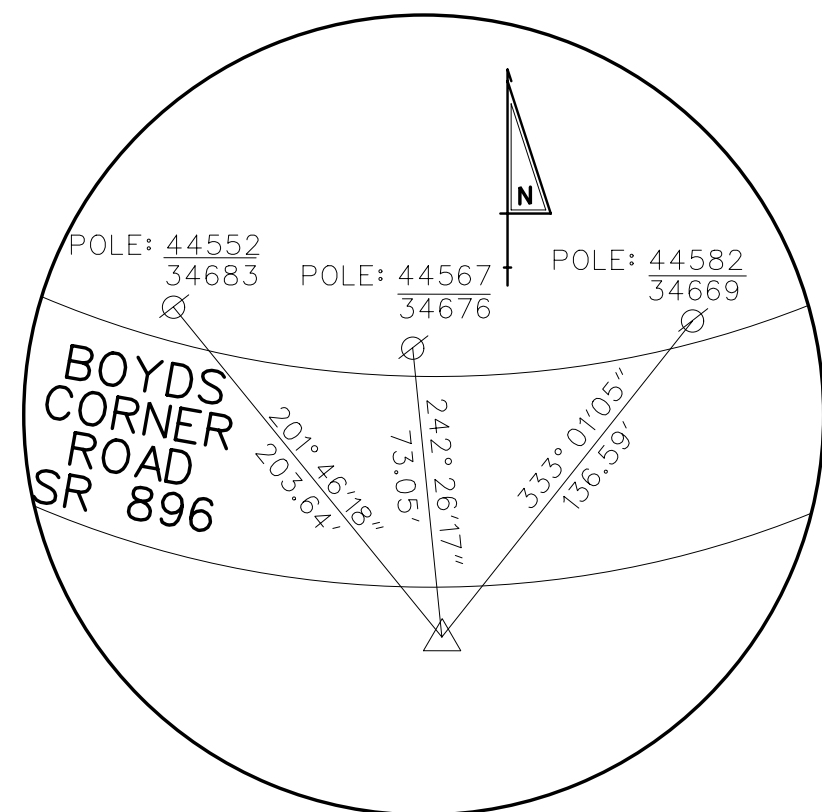


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

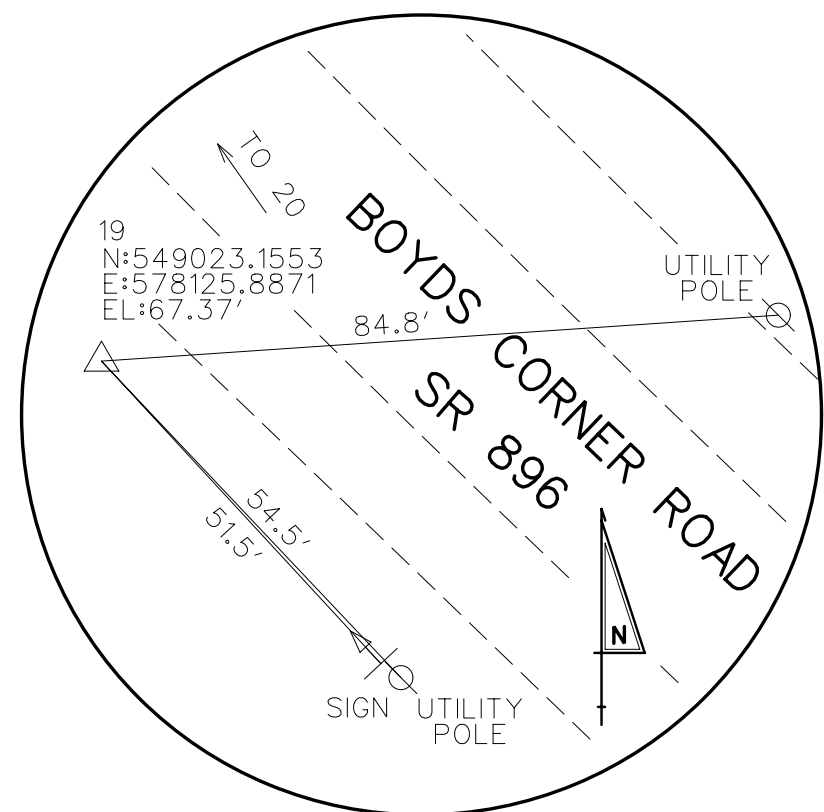
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**HORIZONTAL AND  
VERTICAL CONTROL**

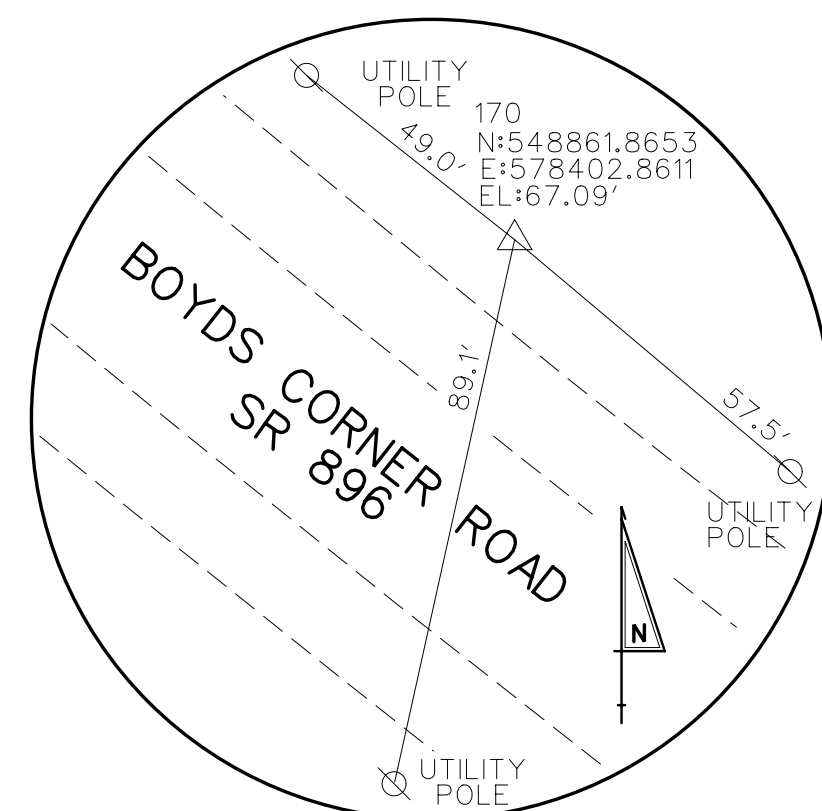
<b>HV-03</b>
SHEET NO. 17
TOTAL SHTS. 240



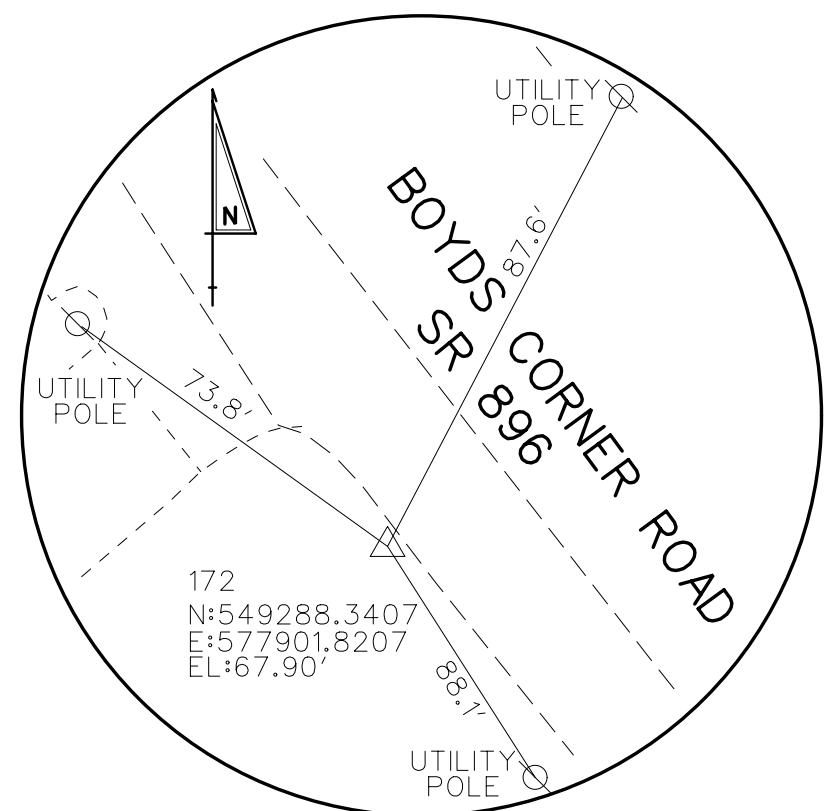
TP - 18  
CAPPED REBAR



TP - 19  
CAPPED REBAR



TP - 170  
NAIL SET



TP - 172  
NAIL SET

HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
18	682+62.1913	881.0251	548429.9136	578983.4403	67.23
19	686+31.0361	-94.3142	549023.1553	578125.8871	67.37
170	685+41.3268	213.3891	548861.8653	578402.8611	67.09
172	688+34.3356	-375.7361	549288.3407	577901.8207	67.90

- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

- DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)

VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03

CIRCULAR CURVE NO. ③

	STATION	NORTHING	EASTING
PC ( 3007)	694+56.0380	549801.0390	578416.4390
PI ( 3008)	703+18.3474	550637.8805	578624.4623
CC ( )		551730.9569	570652.7146
PT ( 3009)	711+74.0238	551499.8299	578649.3752
	Radius:	8000.0000	
	Delta:	12° 18' 15.0000" Left	
	Degree of Curvature (Arc):	0° 42' 58.3101" Right	
	Length:	1717.9858	
	Tangent:	862.3093	
	Chord:	1714.6865	
	Middle Ordinate:	46.0725	
	External:	46.3394	
	Tangent Direction:	N 13° 57' 35.0000" E	
	Radial Direction:	S 76° 02' 25.0000" E	
	Chord Direction:	N 7° 48' 27.5000" E	
	Radial Direction:	S 88° 20' 40.0000" E	
	Tangent Direction:	N 1° 39' 20.0000" E	

CIRCULAR CURVE NO. ④

	STATION	NORTHING	EASTING
PC (200170)	30+01.3600	550560.0805	575953.7723
PI (3014)	40+68.6058	550503.9015	577019.5385
CC (200171)		548273.2554	575833.2284
PT (200172)	49+98.7783	549651.6419	577661.9303
	Radius:	2290.0000	
	Delta:	49° 58' 31.4000" Right	
	Degree of Curvature (Arc):	2° 30' 07.1968" Right	
	Length:	1997.4183	
	Tangent:	1067.2458	
	Chord:	1934.7001	
	Middle Ordinate:	214.3474	
	External:	36.4825	
	Tangent Direction:	S 86° 58' 57.3498" E	
	Radial Direction:	S 3° 01' 02.6502" W	
	Chord Direction:	S 61° 59' 41.6498" E	
	Radial Direction:	S 52° 59' 34.0502" W	
	Tangent Direction:	S 37° 00' 25.9498" E	

CIRCULAR CURVE NO. ⑥

	STATION	NORTHING	EASTING
PC ( 3013)	9005+93.6385	550565.5273	575941.6954
PI ( 3015)	9016+05.1516	550519.7133	576952.1705
CC ( )		548377.7748	575842.5046
PT ( 3017)	9024+88.8109	549720.6957	577572.4363
	Radius:	2190.0000	
	Delta:	49° 34' 56.5151" Right	
	Degree of Curvature (Arc):	2° 36' 58.4843" Right	
	Length:	1895.1724	
	Tangent:	1011.5131	
	Chord:	1836.5882	
	Middle Ordinate:	201.8260	
	External:	222.3140	
	Tangent Direction:	S 87° 24' 14.5380" E	
	Radial Direction:	S 2° 35' 45.4620" W	
	Chord Direction:	S 62° 36' 46.2805" E	
	Radial Direction:	S 52° 10' 41.9771" W	
	Tangent Direction:	S 37° 49' 18.0229" E	

CIRCULAR CURVE NO. ⑤

	STATION	NORTHING	EASTING
PC (200173)	53+89.8300	549351.7507	577887.9737
PI (3020)	61+98.1300	548706.2748	578374.5020
CC (200167)		551096.2583	580202.4076
PT (200174)	69+66.3703	548405.7560	579124.8601
	Radius:	2898.2600	
	Delta:	31° 10' 00.0000" Left	
	Degree of Curvature (Arc):	1° 58' 36.8496" Left	
	Length:	1576.5403	
	Tangent:	808.3000	
	Chord:	1557.1750	
	Middle Ordinate:	106.5379	
	External:	110.6036	
	Tangent Direction:	S 37° 00' 25.9498" E	
	Radial Direction:	S 52° 59' 34.0502" W	
	Chord Direction:	S 52° 35' 25.9498" E	
	Radial Direction:	S 21° 49' 34.0502" W	
	Tangent Direction:	S 68° 10' 25.9498" E	

CIRCULAR CURVE NO. ⑦

	STATION	NORTHING	EASTING
PC ( 3019)	9030+16.5228	549303.8439	577896.0323
PI ( 3021)	9037+71.5020	548707.4684	578358.9900
CC ( )		551005.4903	580088.0690
PT ( 3023)	9044+90.7978	548427.8425	579060.2766
	Radius:	2775.0000	
	Delta:	30° 26' 22.3556" Left	
	Degree of Curvature (Arc):	2° 03' 52.9660" Left	
	Length:	1474.2750	
	Tangent:	754.9792	
	Chord:	1456.9980	
	Middle Ordinate:	97.3305	
	External:	100.8683	
	Tangent Direction:	S 37° 49' 18.0229" E	
	Radial Direction:	S 52° 10' 41.9771" W	
	Chord Direction:	S 53° 02' 29.2007" E	
	Radial Direction:	S 21° 44' 19.6215" W	
	Tangent Direction:	S 68° 15' 40.3785" E	

\$DATES

\$FILES



ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

HORIZONTAL AND  
VERTICAL CONTROL

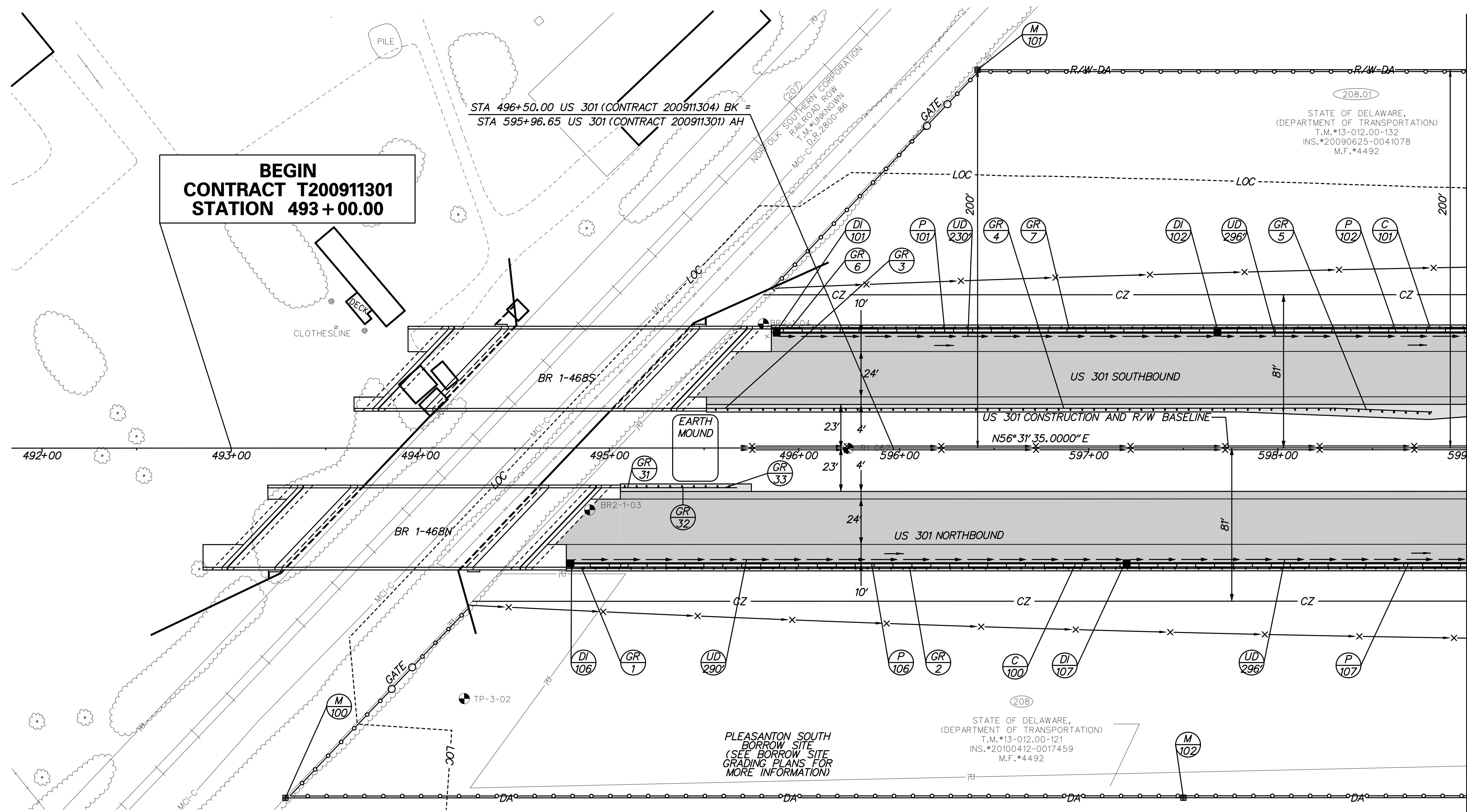
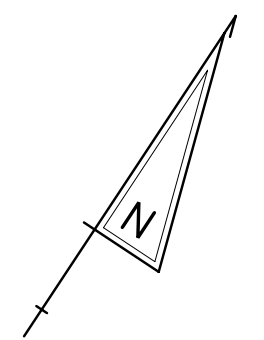
HV-04

SHEET NO.

18

TOTAL SHTS.

240



STA 496+50.00 US 301 (CONTRACT 200911304) BK =  
 STA 595+96.65 US 301 (CONTRACT 200911301) AH

**BEGIN  
 CONTRACT T200911301  
 STATION 493+00.00**

208.01  
 STATE OF DELAWARE,  
 (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-132  
 INS.#20090625-0041078  
 M.F.#4492

PLEASANTON SOUTH  
 BORROW SITE  
 (SEE BORROW SITE  
 GRADING PLANS FOR  
 MORE INFORMATION)

208  
 STATE OF DELAWARE,  
 (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-121  
 INS.#20100412-0017459  
 M.F.#4492

**DRAINAGE PIPE SCHEDULE**

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
101	15" RCP	IV	231.00	0.010	87.31	85.00
102	15" RCP	IV	298.00	0.010	84.66	81.68
106	15" RCP	IV	292.00	0.009	88.63	86.00
107	15" RCP	IV	298.00	0.010	85.70	82.72

**GUARDRAIL SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	494+88.66	62.92	*
2	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	494+88.66	62.92	1187.50
3	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31	495+71.03	-21.00	*
4	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	495+71.03	-21.00	312.50
5	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	498+83.53	-21.00	*
6	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31	496+05.30	-62.92	*
7	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	496+05.30	-62.92	1437.50
31	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	495+17.22	21.00	*
32	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	495+17.22	21.00	37.50
33	END ANCHORAGE 31	495+54.72	21.00	*

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS

**CURB SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	LENGTH
100	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	476'
101	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	368'

**DRAINAGE INLET SCHEDULE**

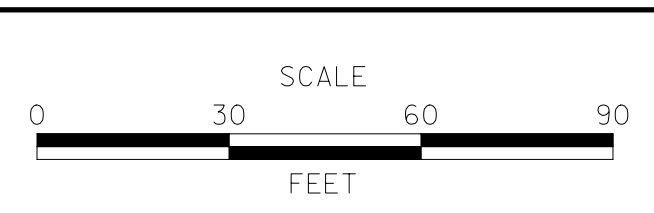
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
101	595+35.00	-62.92	48" x 30"	2	94.84	87.31
102	597+68.00	-62.92	48" x 30"	2	92.07	84.66
106	594+26.00	62.92	48" x 30"	2	95.48	88.63
107	597+20.00	62.92	48" x 30"	2	92.80	85.70

NOTE: OFFSET AND T.G. ELEVATION DATA APPLIED TO THE FLOW LINE

\$FILES



ADDENDUMS / REVISIONS	

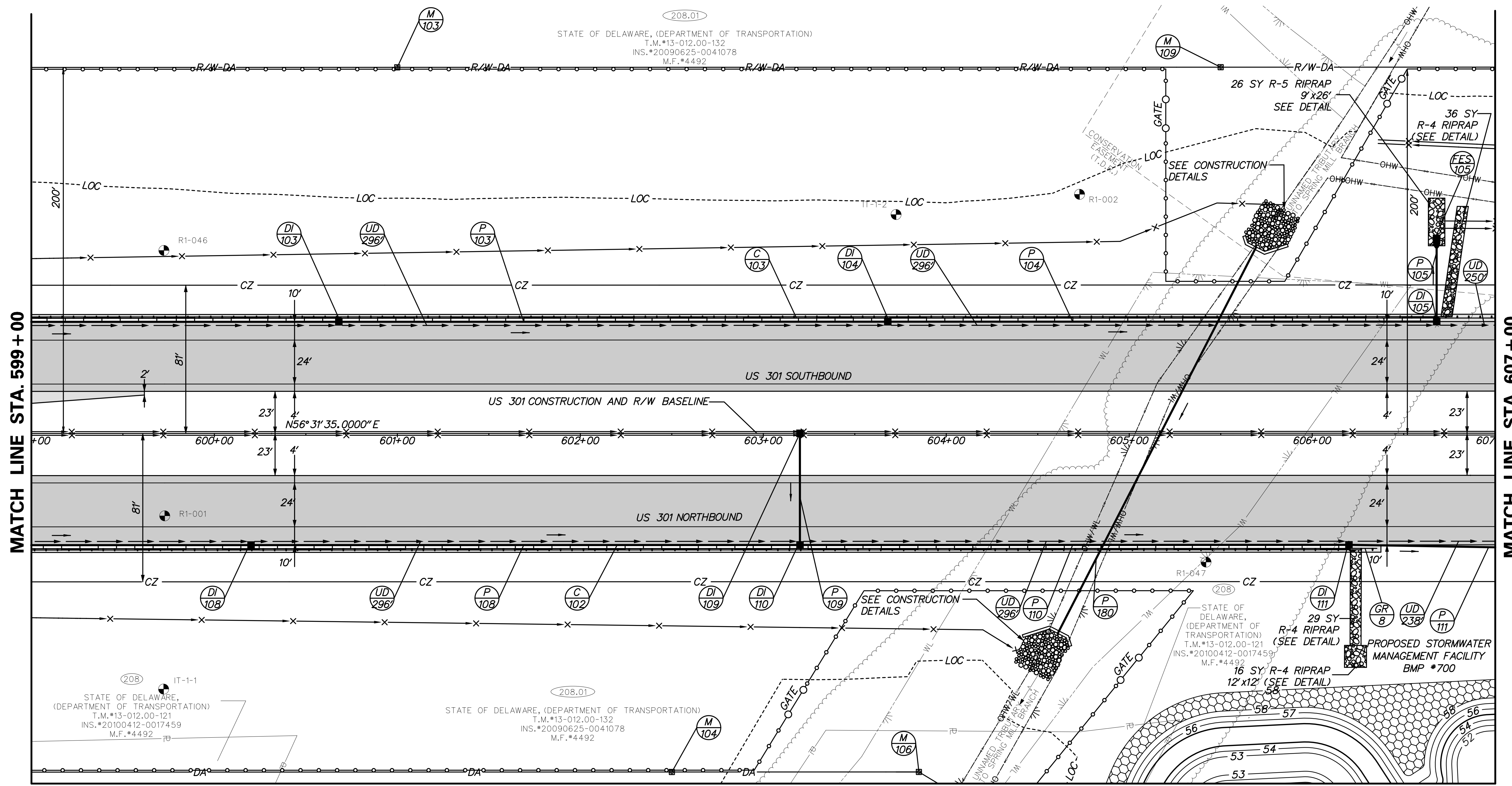


**US 301,  
 NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

CP-01
SHEET NO. 19
TOTAL SHTS. 240



**MATCH LINE SHEET CP-03**

**FLARED END SECTION SCHEDULE**

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
105	15" RCFE	0.015	NO

**DRAINAGE PIPE SCHEDULE**

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
103	15" RCP	IV	298.00	0.010	79.25	76.27
104	15" RCP	IV	298.00	0.010	71.90	68.92
105	15" RCP	IV	40.00	0.015	63.36	62.76
108	15" RCP	IV	298.00	0.010	79.24	76.27
109	18" RCP	IV	60.00	0.005	75.44	75.14
110	15" RCP	IV	298.00	0.010	72.79	69.82
111	18" RCP	IV	237.00	0.010	66.83	64.46
180*	48"x76" RCEP	IV	237.00	0.008	52.80	50.80

\* SEE CONSTRUCTION DETAILS FOR MORE INFORMATION

**DRAINAGE INLET SCHEDULE**

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
103	600+68.00	-62.92	48" x 30"	2	86.06	79.25
104	603+68.00	-62.92	48" x 30"	2	79.61	71.90
105	606+68.00	-62.92	48" x 30"	2	73.32	63.36
108	600+20.00	62.92	48" x 30"	2	87.09	79.24
109	603+20.00	0.00	34" x 24"	2	78.84	75.44
110	603+20.00	62.92	48" x 30"	2	80.64	72.79
111	606+20.00	62.92	48" x 30"	2	74.20	66.83

NOTE: OFFSET AND T.G. ELEVATION DATA APPLIED TO FLOW LINE

**GUARDRAIL SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	BEG IN STA.	OFFSET	LENGTH
8	END ANCHORAGE 31	606+22.82	62.92	*

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS

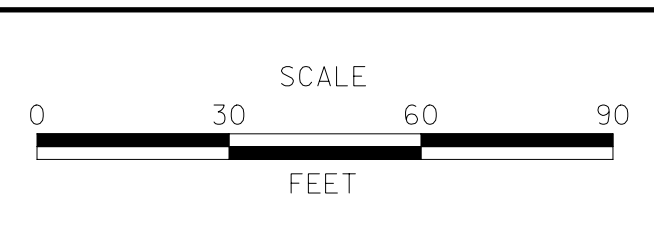
**CURB SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	LENGTH
102	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	721'
103	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	770'



ADDENDUMS / REVISIONS

NO.	DATE	DESCRIPTION



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

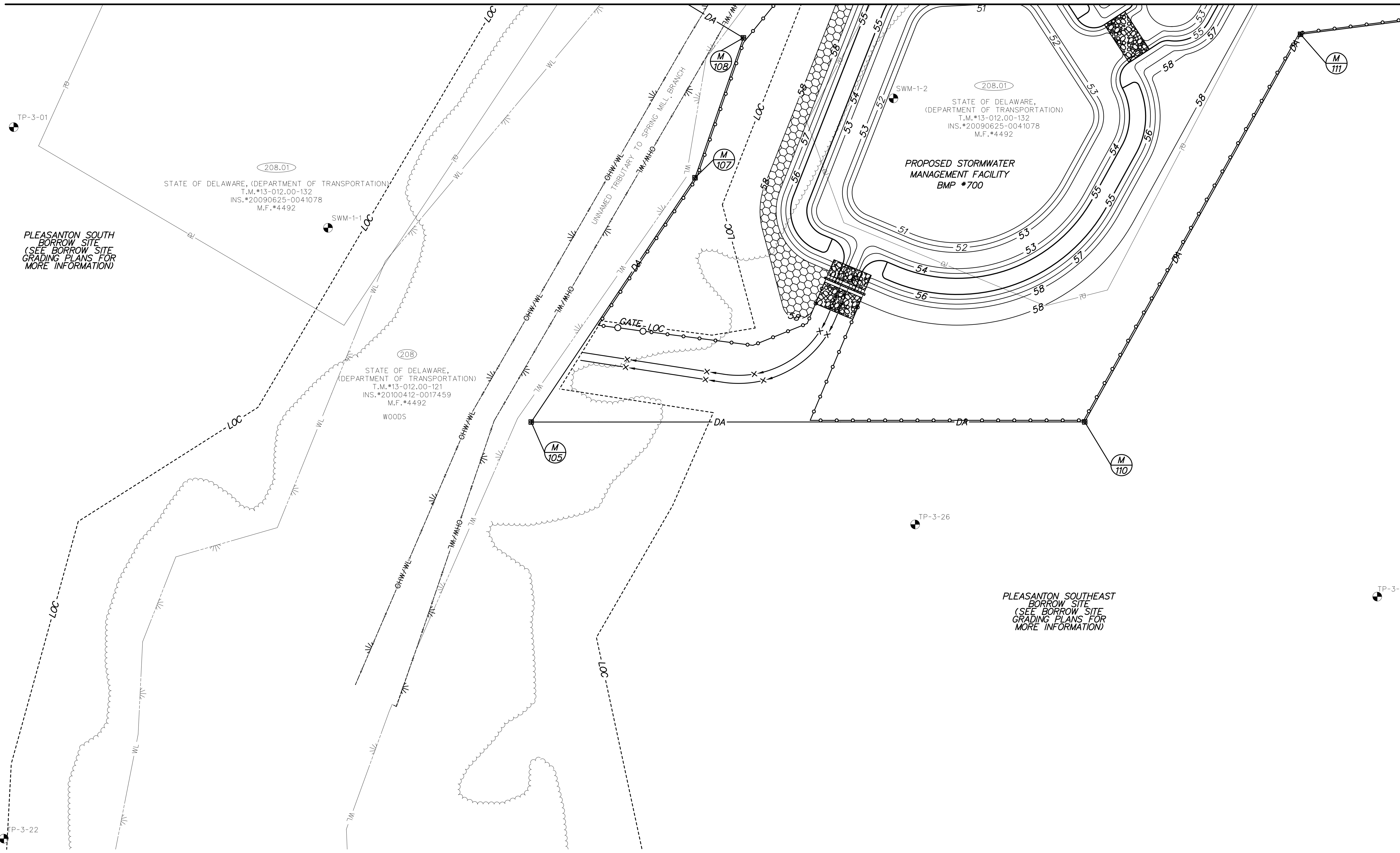
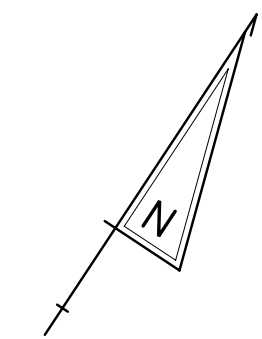
SHEET NO. 20
TOTAL SHTS. 240

\$FILES

MATCH LINE SHEET CP-02

MATCH LINE SHEET CP-04

MATCH LINE SHEET CP-04



208.01  
STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-132  
INS.#20090625-0041078  
M.F.#4492

208  
STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-121  
INS.#20100412-0017459  
M.F.#4492  
WOODS

208.01  
STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-132  
INS.#20090625-0041078  
M.F.#4492  
PROPOSED STORMWATER  
MANAGEMENT FACILITY  
BMP #700

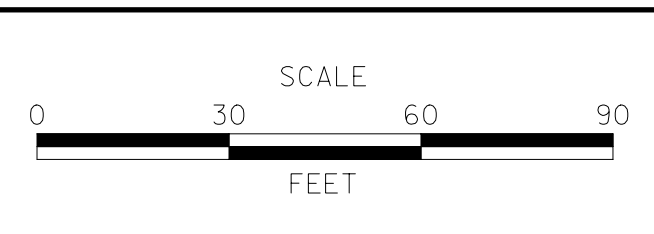
PLEASANTON SOUTHEAST  
BORROW SITE  
(SEE BORROW SITE  
GRADING PLANS FOR  
MORE INFORMATION)

PLEASANTON SOUTH  
BORROW SITE  
(SEE BORROW SITE  
GRADING PLANS FOR  
MORE INFORMATION)

\$FILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

<b>CP-03</b>
SHEET NO. 21
TOTAL SHTS. 240

STATE OF DELAWARE,  
(DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-132  
INS.#20090625-0041078  
M.F.#4492

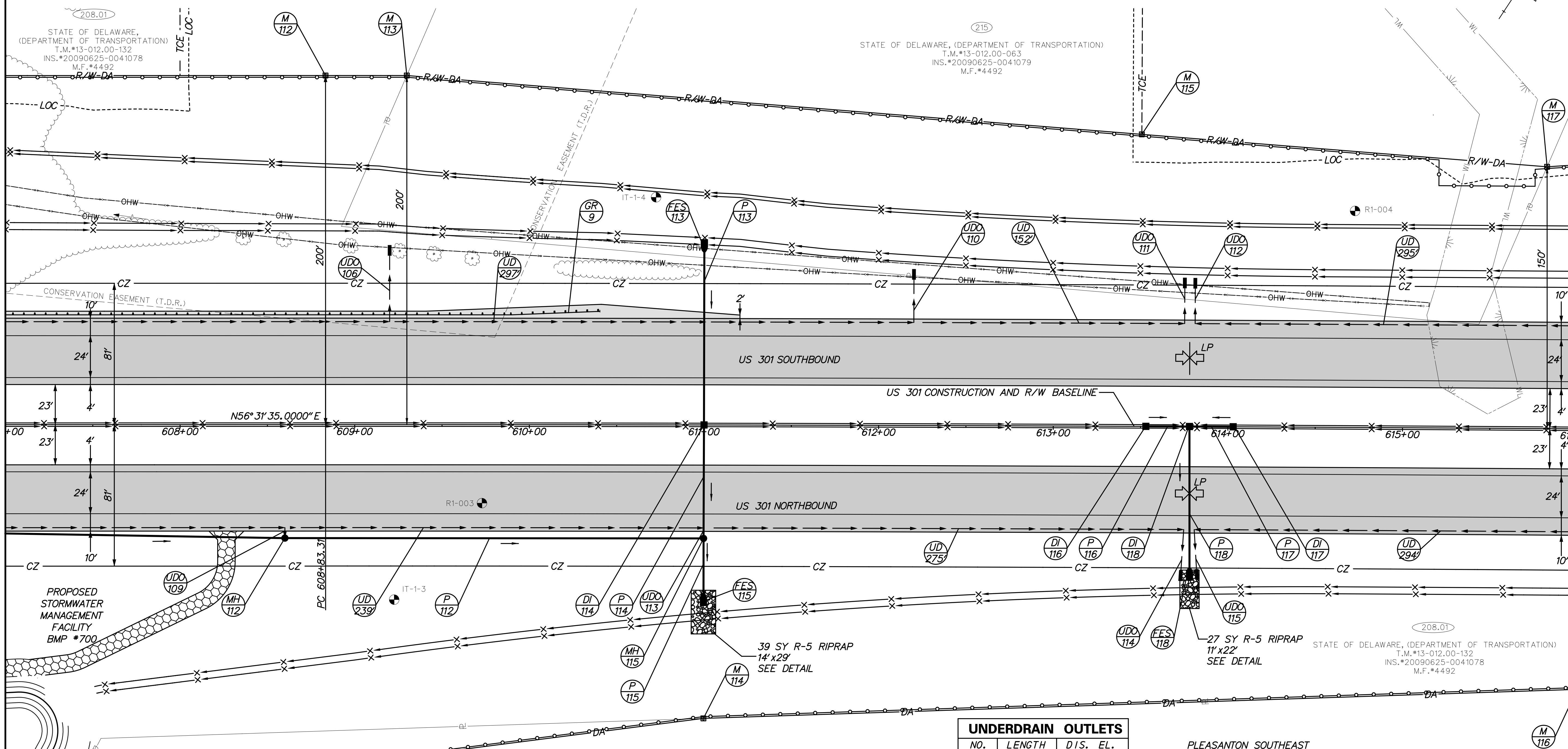
STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-063  
INS.#20090625-0041079  
M.F.#4492

STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-132  
INS.#20090625-0041078  
M.F.#4492

STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-121  
INS.#20100412-0017459  
M.F.#4492

MATCH LINE STA. 607+00

MATCH LINE STA. 616+00



**MATCH LINE SHEET CP-03**

**FLARED END SECTION SCHEDULE**

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
113	24" RCFE	0.006	YES
115	24" RCFE	0.006	NO
118	18" RCFE	0.004	NO

**GUARDRAIL SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
9	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	609+89.39	-62.92	*

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS

**UNDERDRAIN OUTLETS**

NO.	LENGTH	DIS. EL.
106	44.00	61.63
109	7.00	65.77
110	31.00	59.92
111	26.00	59.98
112	26.00	59.98
113	5.00	61.81
114	29.00	58.79
115	29.00	58.79

**DRAINAGE PIPE SCHEDULE**

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
112	18" RCP	IV	237.00	0.010	62.84	60.47
113	24" RCP	IV	100.00	0.006	58.46	57.86
114	24" RCP	IV	62.00	0.006	57.86	57.49
115	24" RCP	IV	32.00	0.008	57.49	57.23
116	15" RCP	IV	24.00	0.009	58.65	58.43
117	15" RCP	IV	24.00	0.009	58.65	58.43
118	18" RCP	IV	82.00	0.004	58.43	58.10

**DRAINAGE INLET SCHEDULE**

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
114	611+00.00	0.00	48" x 30"	2	63.24	57.86
116	613+53.00	0.00	34" x 24"	2	61.65	58.65
117	614+03.00	0.00	34" x 24"	2	61.65	58.65
118	613+78.00	0.00	34" x 24"	2	61.63	58.43

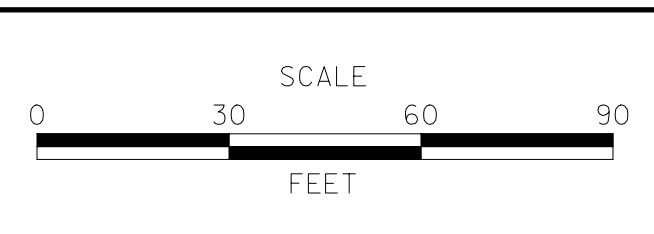
**MANHOLE SCHEDULE**

NO.	STATION	OFFSET	TYPE/SIZE	T.G. EL.	INV. EL.
112	608+60.00	67.00'	48" x 30"	68.75	62.84
115	611+00.00	67.00'	48" x 30"	64.77	57.49

PLEASANTON SOUTHEAST BORROW SITE  
(SEE BORROW SITE GRADING PLANS FOR MORE INFORMATION)



ADDENDUMS / REVISIONS

**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

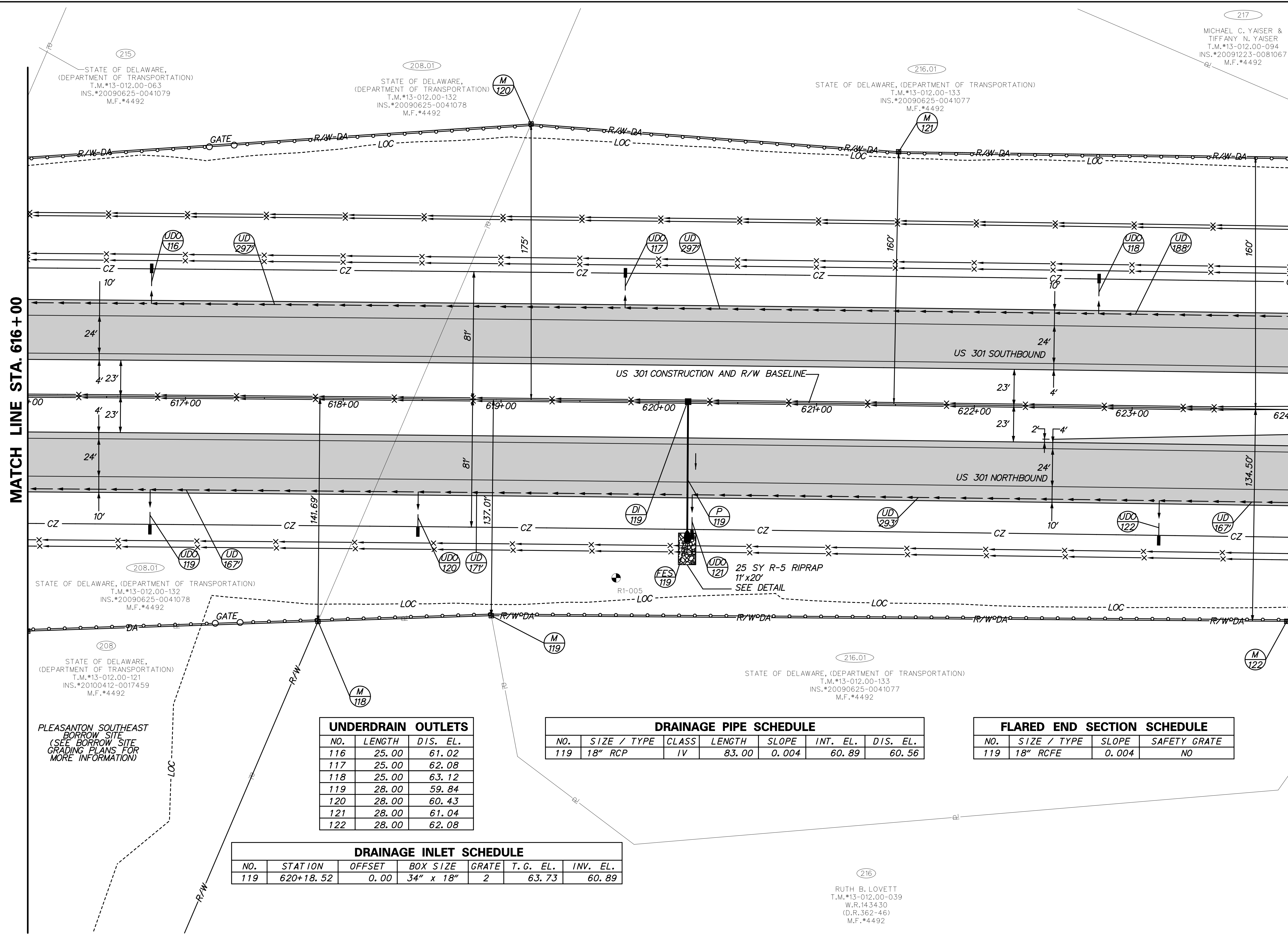
SHEET NO.	22
TOTAL SHTS.	240

217  
 MICHAEL C. YAISER &  
 TIFFANY N. YAISER  
 T.M.#13-012.00-094  
 INS.#20091223-0081067  
 M.F.#4492

215  
 STATE OF DELAWARE,  
 (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-063  
 INS.#20090625-0041079  
 M.F.#4492

208.01  
 STATE OF DELAWARE,  
 (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-132  
 INS.#20090625-0041078  
 M.F.#4492

216.01  
 STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-133  
 INS.#20090625-0041077  
 M.F.#4492



MATCH LINE STA. 616 + 00

MATCH LINE STA. 624 + 00

208.01  
 STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-132  
 INS.#20090625-0041078  
 M.F.#4492

208  
 STATE OF DELAWARE,  
 (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-121  
 INS.#20100412-0017459  
 M.F.#4492

PLEASANTON SOUTHEAST  
 BORROW SITE  
 (SEE BORROW SITE  
 GRADING PLANS FOR  
 MORE INFORMATION)

UNDERDRAIN OUTLETS			
NO.	LENGTH	DIS. EL.	
116	25.00	61.02	
117	25.00	62.08	
118	25.00	63.12	
119	28.00	59.84	
120	28.00	60.43	
121	28.00	61.04	
122	28.00	62.08	

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
119	18" RCP	IV	83.00	0.004	60.89	60.56

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
119	18" RCFE	0.004	NO

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
119	620+18.52	0.00	34" x 18"	2	63.73	60.89

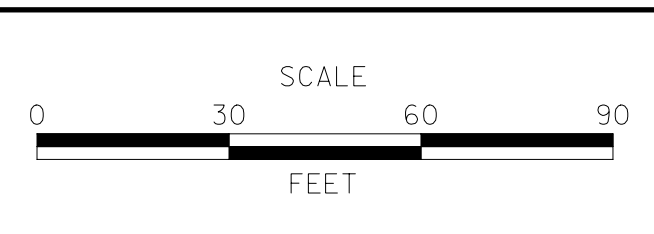
216.01  
 STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-133  
 INS.#20090625-0041077  
 M.F.#4492

216  
 RUTH B. LOVETT  
 T.M.#13-012.00-039  
 W.R.143430  
 (D.R.362-46)  
 M.F.#4492

\$FILES \$DATES



ADDENDUMS / REVISIONS	

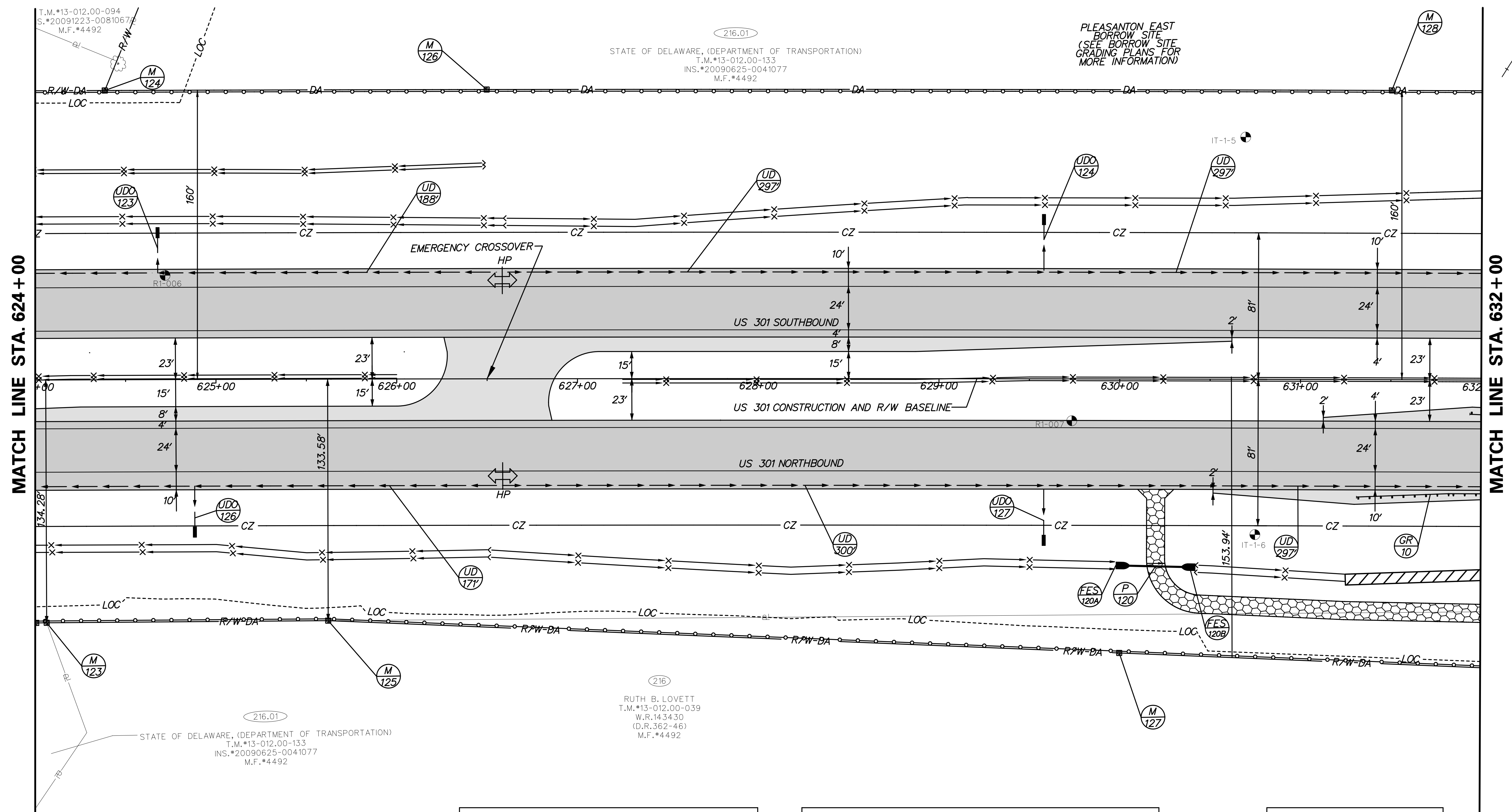


**US 301,  
 NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

CP-05
SHEET NO. 23
TOTAL SHTS. 240



MATCH LINE STA. 624 + 00

MATCH LINE STA. 632 + 00

STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-133  
 INS.#20090625-0041077  
 M.F.#4492

PLEASANTON EAST  
 BORROW SITE  
 (SEE BORROW SITE  
 GRADING PLANS FOR  
 MORE INFORMATION)

T.M.#13-012.00-094  
 S.#20091223-00810677  
 M.F.#4492

STATE OF DELAWARE, (DEPARTMENT OF TRANSPORTATION)  
 T.M.#13-012.00-133  
 INS.#20090625-0041077  
 M.F.#4492

RUTH B. LOVETT  
 T.M.#13-012.00-039  
 W.R.143430  
 (D.R.362-46)  
 M.F.#4492

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
120A	18" RCFE	0.011	NO
120B	18" RCFE	0.011	NO

BMP SCHEDULE			
NO.	TYPE	STATION FROM	STATION TO
703	INFILTRATION TRENCH	631+25 RT	632+25 RT

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
123	25.00	63.79
124	32.00	61.75
126	28.00	62.67
127	33.00	60.84

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
120	18" RCP	IV	32.00	0.011	58.33	57.98

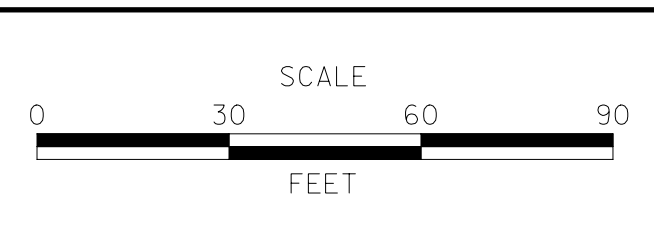
GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
10	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	631+66.49	64.96	*

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS

\$FILES \$DATES



ADDENDUMS / REVISIONS	



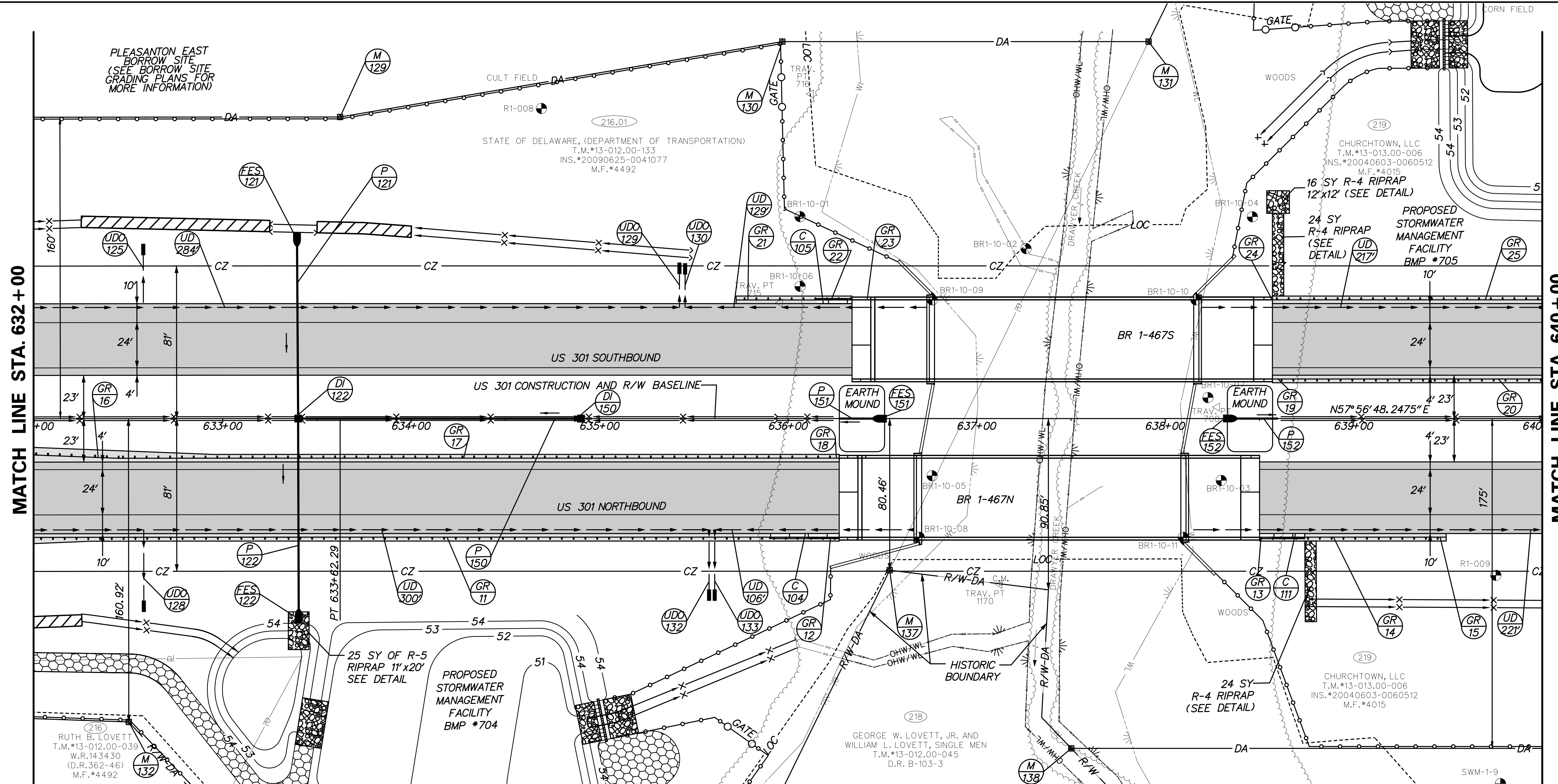
US 301,  
 NORFOLK SOUTHERN RR TO SR 896

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

CONSTRUCTION PLAN

CP-06
SHEET NO. 24
TOTAL SHTS. 240





MATCH LINE SHEET CP-08

**BMP SCHEDULE**

NO.	TYPE	STATION FROM	STATION TO
701	INFILTRATION TRENCH	632+25 LT	633+25 LT
702	INFILTRATION TRENCH	633+50 LT	634+00 LT
714	FILTER STRIP	632+25 RT	635+90 RT
715	FILTER STRIP	638+60 LT	643+50 LT

**FLARED END SECTION SCHEDULE**

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
121	18" RCFE	0.012	YES
122	18" RCFE	0.012	NO
151	18" RCFE	0.010	NO
152	18" RCFE	0.005	NO

**GUARDRAIL SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
11	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	631+82.15	62.92	425.00
12	GUARDRAIL TO BARRIER CONNECTION APPROACH, TYPE 1-31	636+07.27	62.92	*
13	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	638+61.51	62.92	*
14	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	638+61.51	62.92	75.00
15	END ANCHORAGE 31	639+36.51	62.92	*
16	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	632+44.74	21.00	*
17	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	632+44.74	21.00	362.50
18	GUARDRAIL TO BARRIER CONNECTION APPROACH, TYPE 1-31	636+07.27	21.00	*
19	GUARDRAIL TO BARRIER CONNECTION APPROACH, TYPE 1-31	638+76.59	-21.00	*
20	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	638+76.59	-21.00	350.00
21	END ANCHORAGE 31	635+84.84	-62.92	*
22	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	635+84.84	-62.92	37.50
23	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	636+22.34	-62.92	*
24	GUARDRAIL TO BARRIER CONNECTION APPROACH, TYPE 1-31	638+76.59	-62.92	*
25	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	638+76.59	-62.92	287.50

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS

**DRAINAGE PIPE SCHEDULE**

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
121	18" RCP	IV	93.00	0.012	56.46	55.31
122	18" RCP	IV	102.00	0.012	55.31	54.08
150	18" RCP	IV	147.00	0.005	58.42	57.69
151	18" RCP	IV	20.00	0.010	62.84	62.64
152	18" RCP	IV	20.00	0.005	61.60	61.50

**UNDERDRAIN OUTLETS**

NO.	LENGTH	DIS. EL.
125	34.00	59.00
128	44.00	58.00
129	24.00	58.91
130	24.00	58.91
132	38.00	54.00
133	38.00	54.00

**DRAINAGE INLET SCHEDULE**

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
122	633+40.00	0.00	48" x 30"	2	62.59	55.31
150	634+90.00	0.00	48" x 30"	2	61.72	58.42

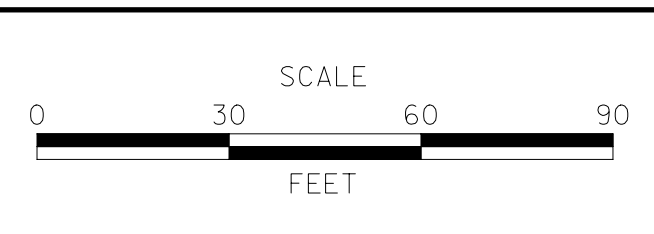
**CURB SCHEDULE**

NO.	ITEM DESCRIPTION / TYPE	LENGTH
104	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	37'
105	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	19'
111	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	24'



ADDENDUMS / REVISIONS

NO.	DESCRIPTION



US 301,  
NORFOLK SOUTHERN RR TO SR 896

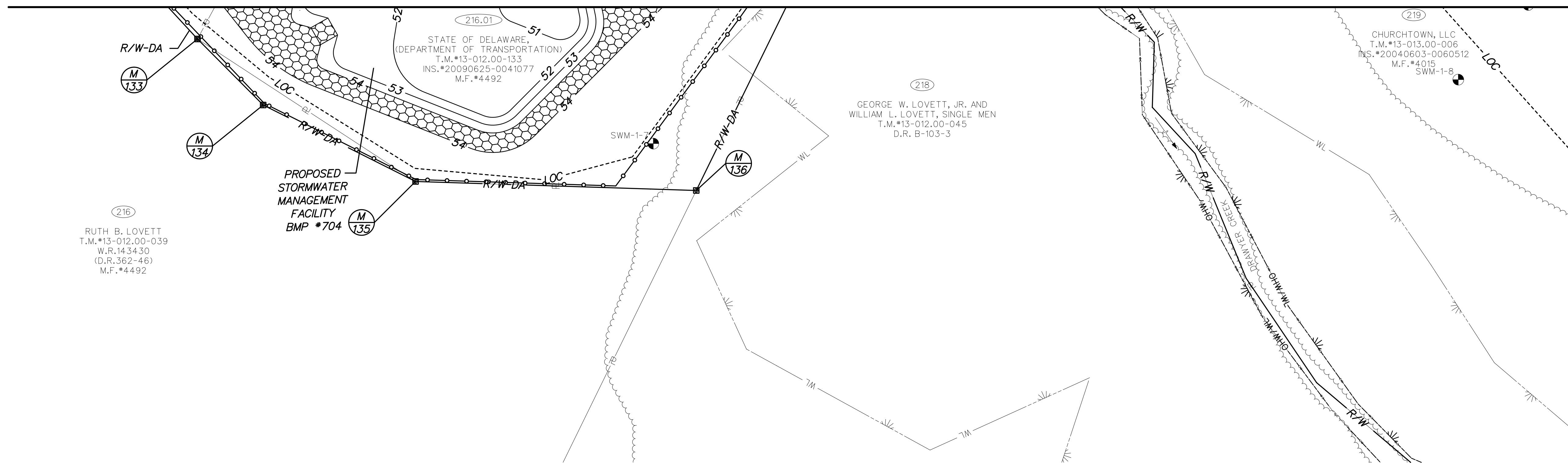
CONTRACT	T200911301	BRIDGE NO.	1-467 N&S
COUNTY	NEW CASTLE	DESIGNED BY:	WJD
		CHECKED BY:	MAA

CONSTRUCTION PLAN

CP-07

SHEET NO.	25
TOTAL SHTS.	240

MATCH LINE SHEET CP-07

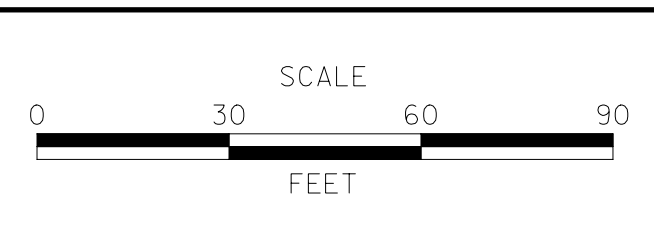


MATCH LINE SHEET CP-09

\$FILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

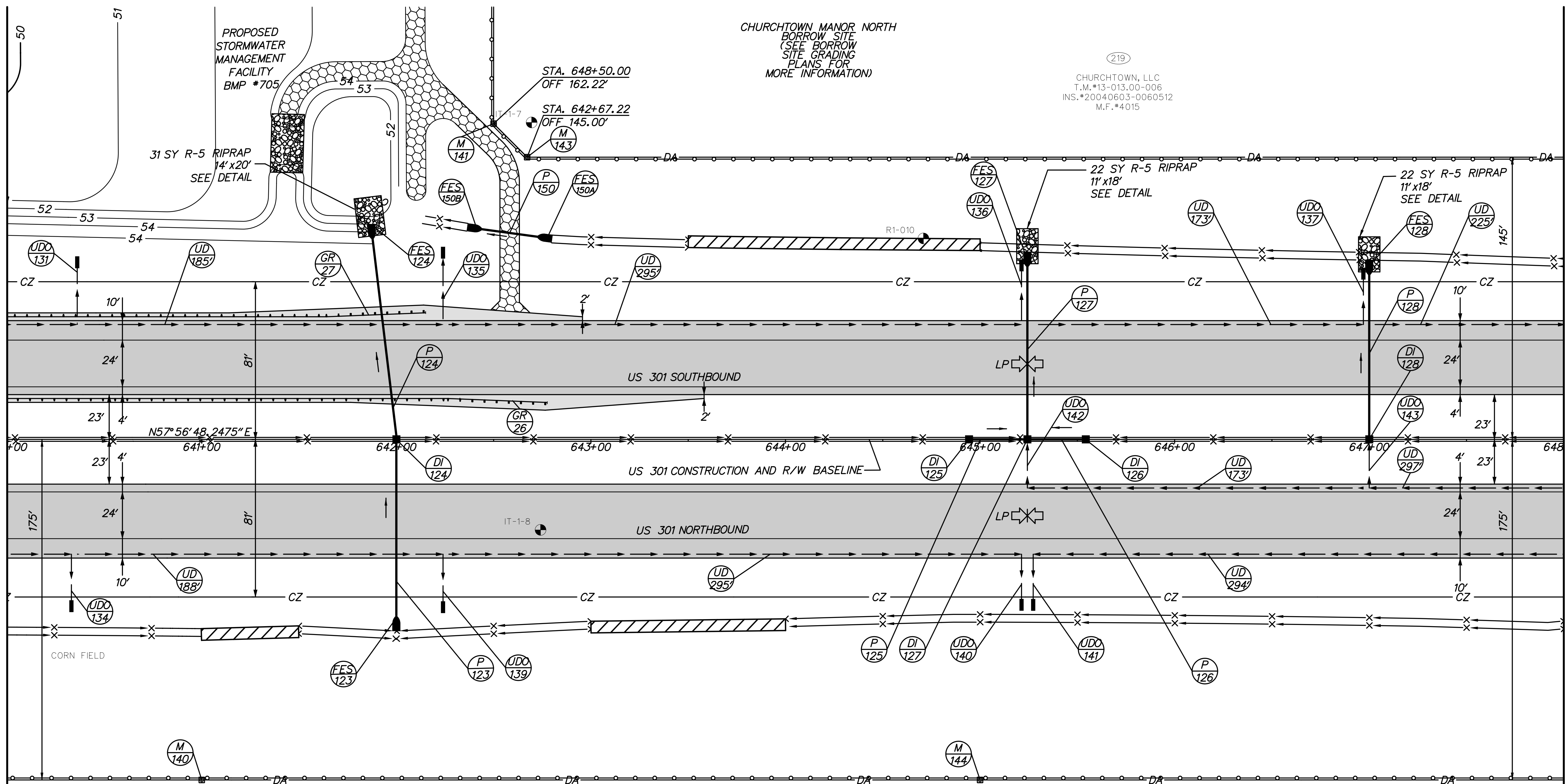
**CONSTRUCTION PLAN**

CP-08
SHEET NO.
26
TOTAL SHTS.
240

MATCH LINE STA. 640+00

MATCH LINE SHEET CP-08

MATCH LINE STA. 648+00



UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
131	35.00	55.00
134	30.00	56.81
135	34.00	54.25
136	33.00	54.39
137	29.00	54.92
139	30.00	55.84
140	29.00	55.17
141	29.00	55.17
142	24.00	55.87
143	24.00	56.05

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
123	24" RCP	IV	92.00	0.005	53.69	53.23
124	24" RCP	IV	105.00	0.005	53.23	52.70
125	15" RCP	IV	28.00	0.004	53.98	53.88
126	15" RCP	IV	28.00	0.004	53.98	53.88
127	18" RCP	IV	90.00	0.005	53.88	53.43
128	18" RCP	IV	86.00	0.005	54.38	53.95
150	21" RCP	IV	32.00	0.004	53.10	52.99

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
123	24" RCFE	0.005	YES
124	24" RCFE	0.005	NO
127	18" RCFE	0.005	NO
128	18" RCFE	0.005	NO
150A	21" RCFE	0.004	NO
150B	21" RCFE	0.004	NO

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
124	642+00.00	0.00	48" x 30"	2	57.77	53.23
125	644+94.31	0.00	34" x 24"	2	57.17	53.98
126	645+54.31	0.00	34" x 24"	2	57.17	53.98
127	645+24.31	0.00	34" x 24"	2	57.16	53.88
128	647+00.00	0.00	34" x 18"	2	57.34	54.38

BMP SCHEDULE			
NO.	TYPE	STATION FROM	STATION TO
706	INFILTRATION TRENCH	643+50 LT	645+00 LT
708	INFILTRATION TRENCH	641+00 RT	641+50 RT
709	INFILTRATION TRENCH	643+00 RT	644+00 RT
715	FILTER STRIP	638+60 LT	643+50 LT

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
26	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	642+26.59	-21.00	*
27	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	641+64.09	-63.00	*

\* LENGTH AS DETAILED IN STANDARD CONSTRUCTION DETAILS



ADDENDUMS / REVISIONS



US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
DESIGNED BY:	WJD
COUNTY	CHECKED BY:
NEW CASTLE	MAA

CONSTRUCTION PLAN

CP-09
SHEET NO.
27
TOTAL SHTS.
240

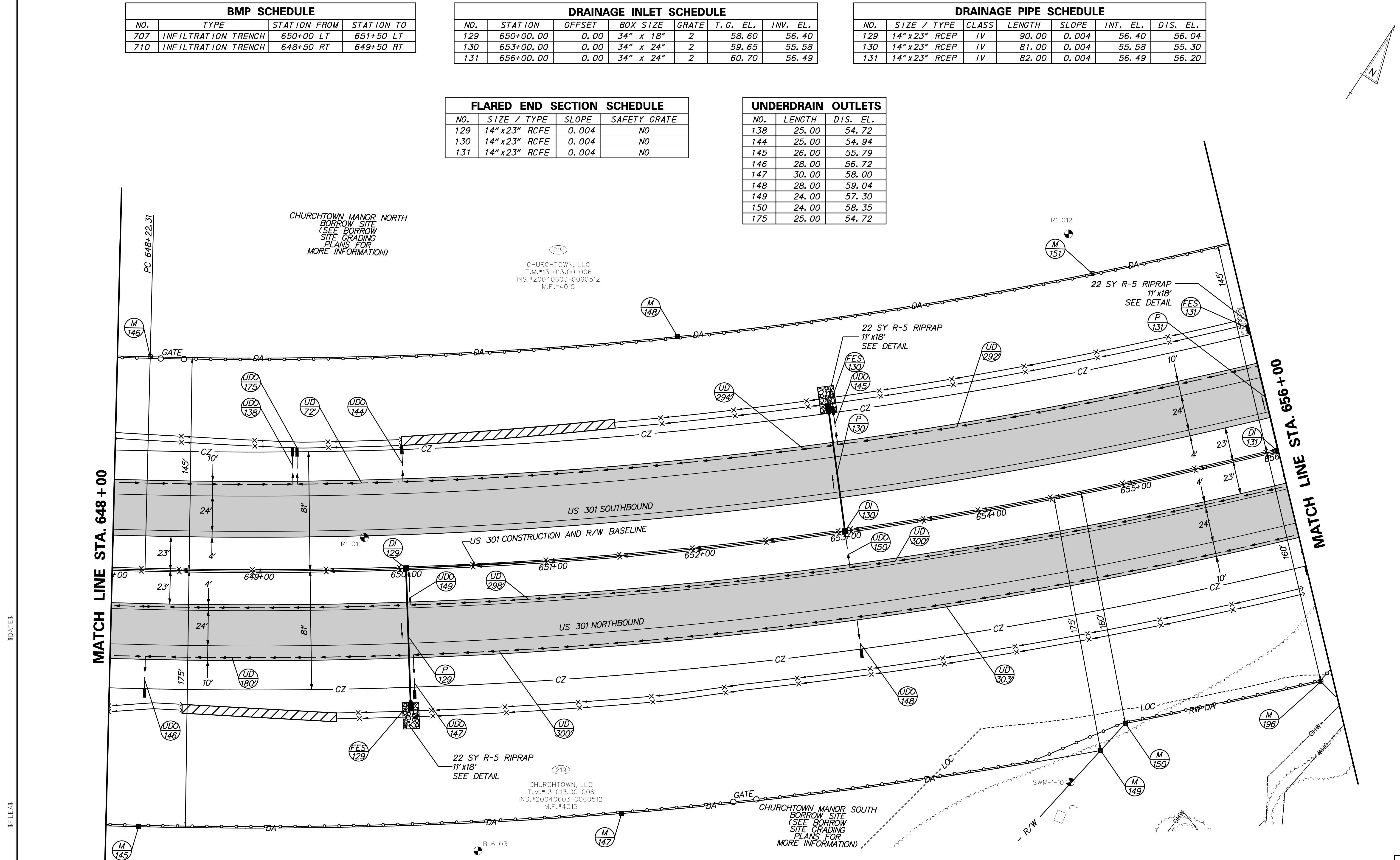
BMP SCHEDULE			
NO.	TYPE	STATION FROM	STATION TO
707	INFILTRATION TRENCH	650+00 LT	651+50 LT
710	INFILTRATION TRENCH	648+50 RT	649+50 RT

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
129	650+00.00	0.00	34" x 18"	2	58.60	56.40
130	653+00.00	0.00	34" x 24"	2	59.65	55.58
131	656+00.00	0.00	34" x 24"	2	60.70	56.49

DRAINAGE PIPE SCHEDULE							
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.	
129	14" x 23" RCEP	IV	90.00	0.004	56.40	56.04	
130	14" x 23" RCEP	IV	81.00	0.004	55.58	55.30	
131	14" x 23" RCEP	IV	82.00	0.004	56.49	56.20	

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
129	14" x 23" RCFE	0.004	NO
130	14" x 23" RCFE	0.004	NO
131	14" x 23" RCFE	0.004	NO

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
138	25.00	54.72
144	25.00	54.94
145	26.00	55.79
146	28.00	56.72
147	30.00	58.00
148	28.00	59.04
149	24.00	57.30
150	24.00	58.35
175	25.00	54.72

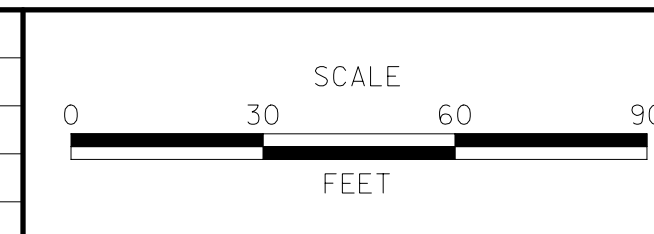


SFILES \$DATES

<p>CHURCHTOWN, LLC T.M.#13-013.00-006 INS.#20040603-0060512 M.F.#4015</p>		<p>CHURCHTOWN, LLC T.M.#13-013.00-006 INS.#20040603-0060512 M.F.#4015</p>	
---	--	---	--



ADDENDUMS / REVISIONS	

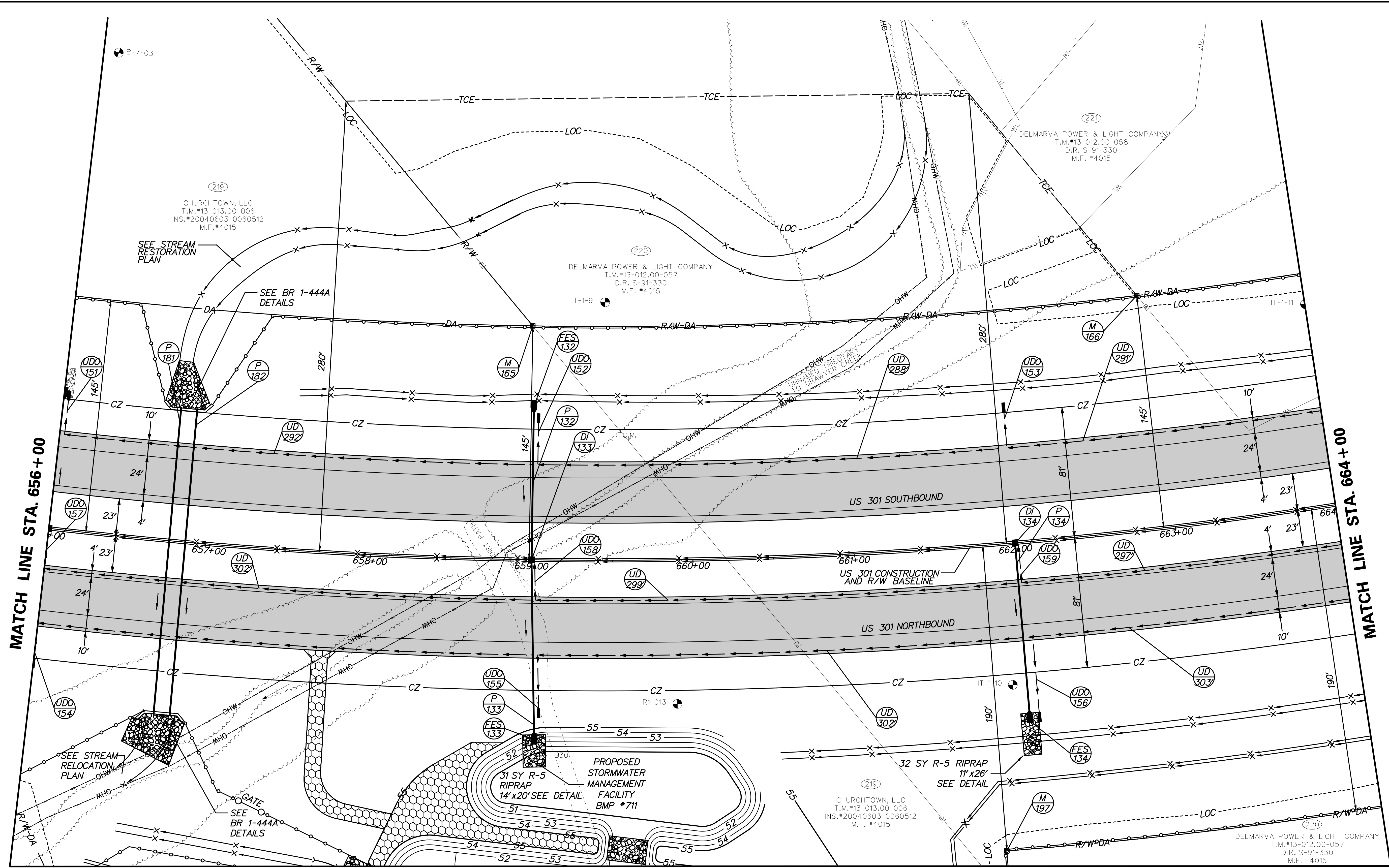


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

**CONSTRUCTION PLAN**

CP-10
SHEET NO. 28
TOTAL SHTS. 240

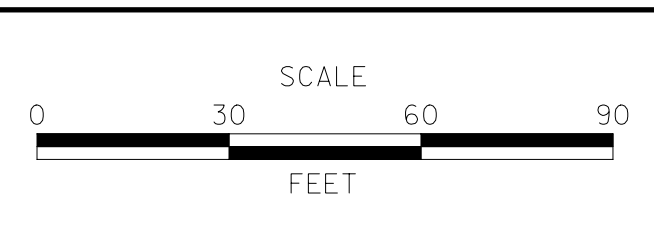


MATCH LINE SHEET CP-12

\$FILES \$DATES



ADDENDUMS / REVISIONS	



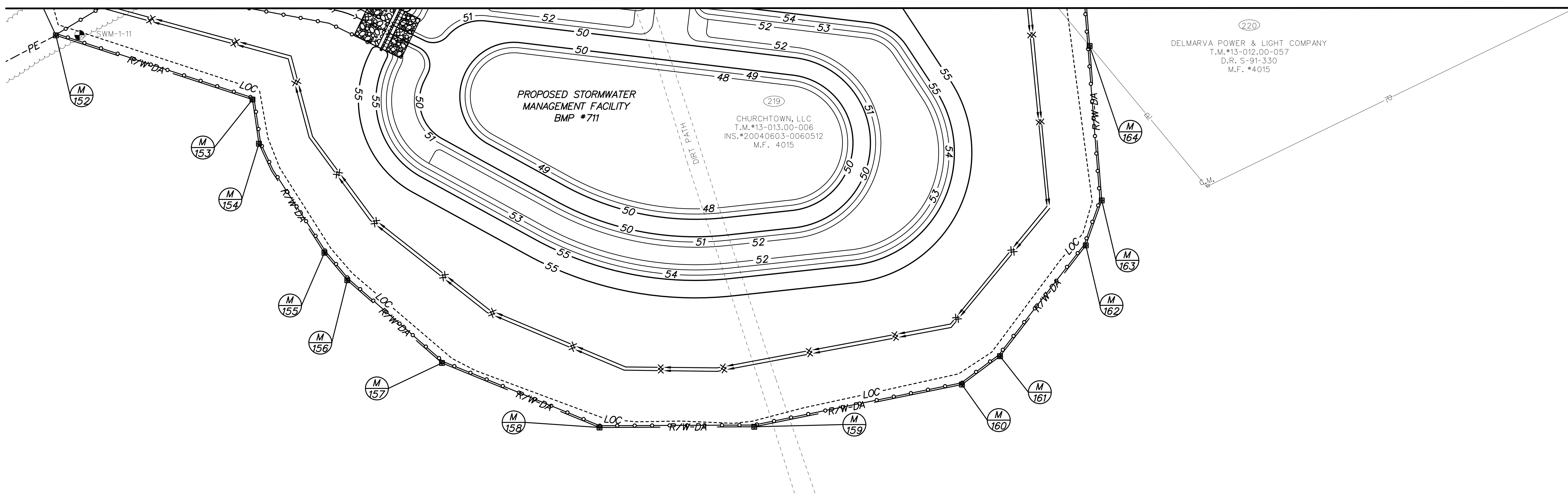
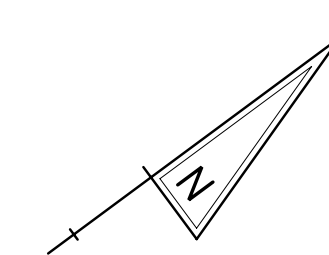
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO. <b>1-444A</b>
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

SEE NEXT SHEET FOR SCHEDULES	<b>CP-11</b>
	SHEET NO. 29
	TOTAL SHTS. 240

MATCH LINE SHEET CP-11



220  
 DELMARVA POWER & LIGHT COMPANY  
 T.M.#13-012.00-057  
 D.R. S-91-330  
 M.F. #4015

219  
 CHURCHTOWN, LLC  
 T.M.#13-013.00-006  
 INS.#20040603-0060512  
 M.F. 4015

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
151	27.00	56.66
152	32.00	56.02
153	28.00	57.94
154	28.00	60.07
155	40.00	57.00
156	53.00	55.98
157	24.00	59.40
158	24.00	60.45
159	24.00	61.50

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
132	24" RCFE	0.005	YES
133	24" RCFE	0.005	NO
134	18" RCFE	0.005	NO

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
132	24" RCP	IV	91.00	0.005	53.97	53.52
133	24" RCP	IV	107.00	0.005	53.52	52.98
134	18" RCP	IV	105.00	0.005	56.52	55.99
181*	53" x 83" RCEP	IV	190.50	0.019	51.05	47.45
182	38" x 60" RCEP	IV	190.50	0.019	52.45	48.85

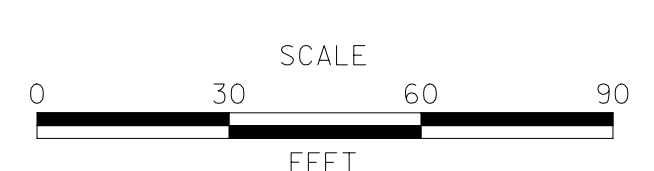
\* SEE CONSTRUCTION DETAILS FOR MORE INFORMATION

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T. G. EL.	INV. EL.
133	659+00.00	0.00	48" x 30"	2	61.75	53.52
134	662+00.00	0.00	34" x 24"	2	62.80	56.52

\$FILES \$DATES



ADDENDUMS / REVISIONS	

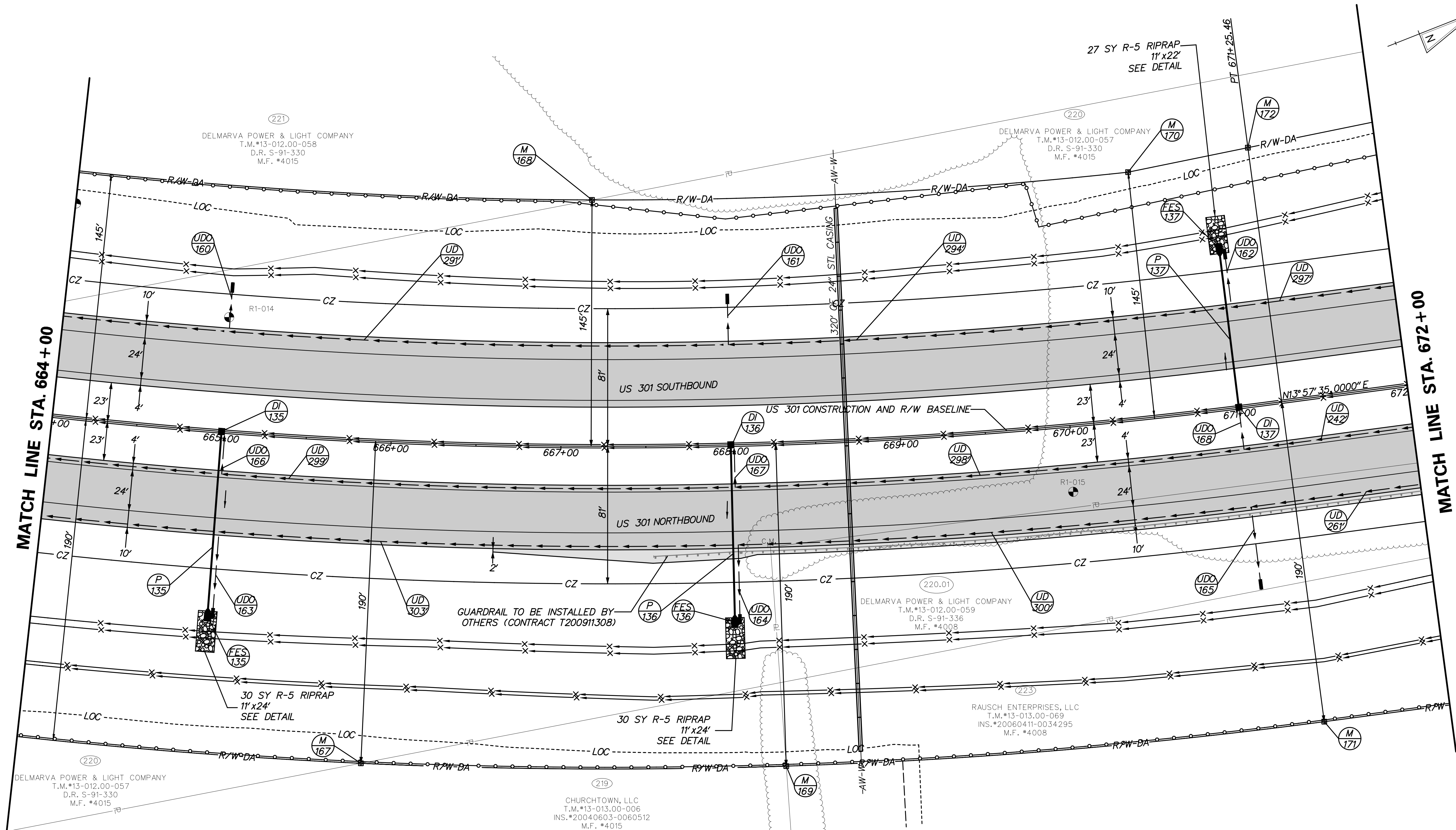


US 301,  
 NORFOLK SOUTHERN RR TO SR 896

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

CONSTRUCTION PLAN

CP-12
SHEET NO. 30
TOTAL SHTS. 240



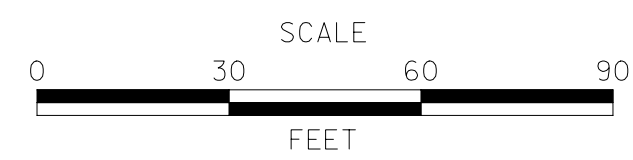
DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
135	18" RCP	IV	105.00	0.005	57.56	57.04
136	18" RCP	IV	101.00	0.005	59.86	59.34
137	18" RCP	IV	90.00	0.005	63.24	62.79

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
135	18" RCFE	0.005	NO
136	18" RCFE	0.005	NO
137	18" RCFE	0.005	NO

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
135	665+00.00	0.00	34" x 24"	2	63.85	57.56
136	668+00.00	0.00	34" x 24"	2	65.11	59.86
137	671+00.00	0.00	34" x 24"	2	69.33	63.24

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
160	29.00	58.88
161	30.00	60.82
162	35.00	63.78
163	51.00	57.52
164	47.00	59.85
165	50.00	62.95
166	24.00	62.55
167	24.00	63.81
168	24.00	68.03

ADDENDUMS / REVISIONS



US 301,  
NORFOLK SOUTHERN RR TO SR 896

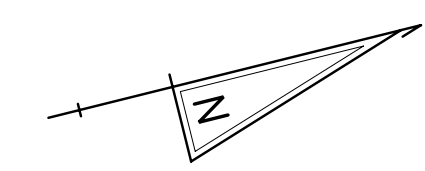
CONTRACT T200911301	BRIDGE NO.	DESIGNED BY: WJD
COUNTY NEW CASTLE	CHECKED BY: MAA	

CONSTRUCTION PLAN

CP-13
SHEET NO. 31
TOTAL SHTS. 240

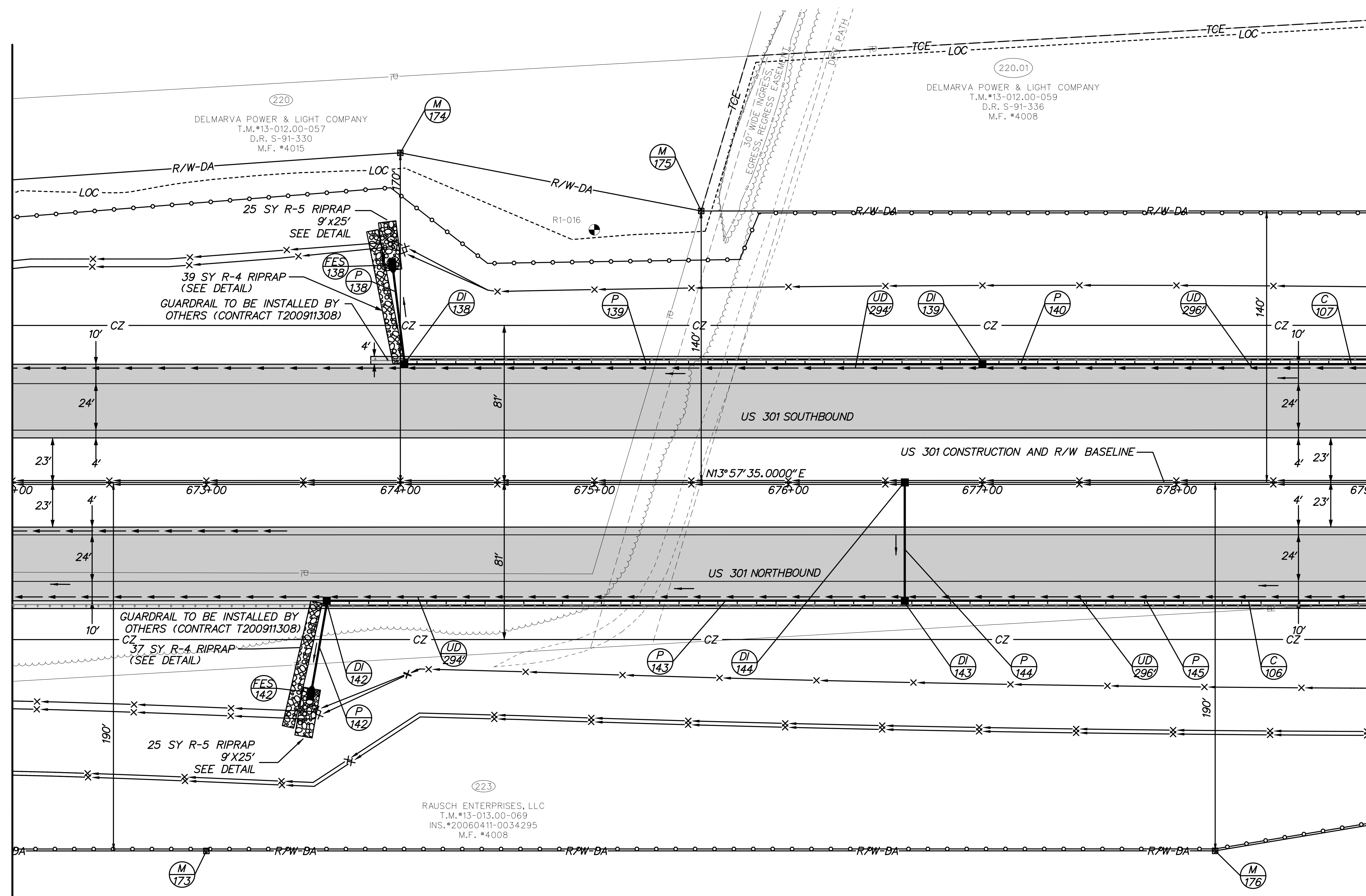


DELAWARE  
DEPARTMENT OF TRANSPORTATION



MATCH LINE STA. 672+00

MATCH LINE STA. 679+00



CURB SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
106	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	540'
107	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	498'

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
138	15" RCP	IV	48.00	0.062	69.07	66.09
139	15" RCP	IV	298.00	0.010	77.59	74.63
140	15" RCP	IV	298.00	0.010	85.70	82.72
142	15" RCP	IV	45.00	0.044	68.39	66.41
143	15" RCP	IV	296.00	0.010	76.91	73.95
144	18" RCP	IV	60.00	0.010	80.99	80.39
145	15" RCP	IV	298.00	0.010	84.65	81.67

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
138	674+02.00	-62.92	48" x 30"	2	79.01	69.07
139	677+00.00	-62.92	48" x 30"	2	87.10	77.59
142	673+62.00	62.92	48" x 30"	2	78.33	68.39
143	676+60.00	62.92	48" x 30"	2	86.20	76.91
144	676+60.00	0.00	34" x 24"	2	84.39	80.99

NOTE: OFFSET AND T.G. ELEVATION DATA APPLIED TO FLOW LINE

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
138	15" RCFE	0.062	NO
142	15" RCFE	0.044	NO

ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**



CP-14
SHEET NO. 32
TOTAL SHTS. 240



DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
140	680+00.00	-62.92	48" x 30"	2	92.05	85.70
141	682+00.00	-62.92	48" x 30"	2	93.60	87.47
145	679+60.00	62.92	48" x 30"	2	91.57	84.65
146	682+00.00	62.92	48" x 30"	2	93.60	87.03

NOTE: OFFSET AND T.G. ELEVATION DATA APPLIED TO FLOW LINE

222  
 RAUSCH ENTERPRISES, LLC  
 T.M.\*13-012.00-043  
 INS.\*20060411-0034295  
 M.F.\*6620

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	D/S. EL.
141	15" RCP	IV	198.00	0.005	87.47	86.48
146	15" RCP	IV	238.00	0.010	87.03	84.65
230	18" RCP	IV	100.00	0.005	66.10	65.65

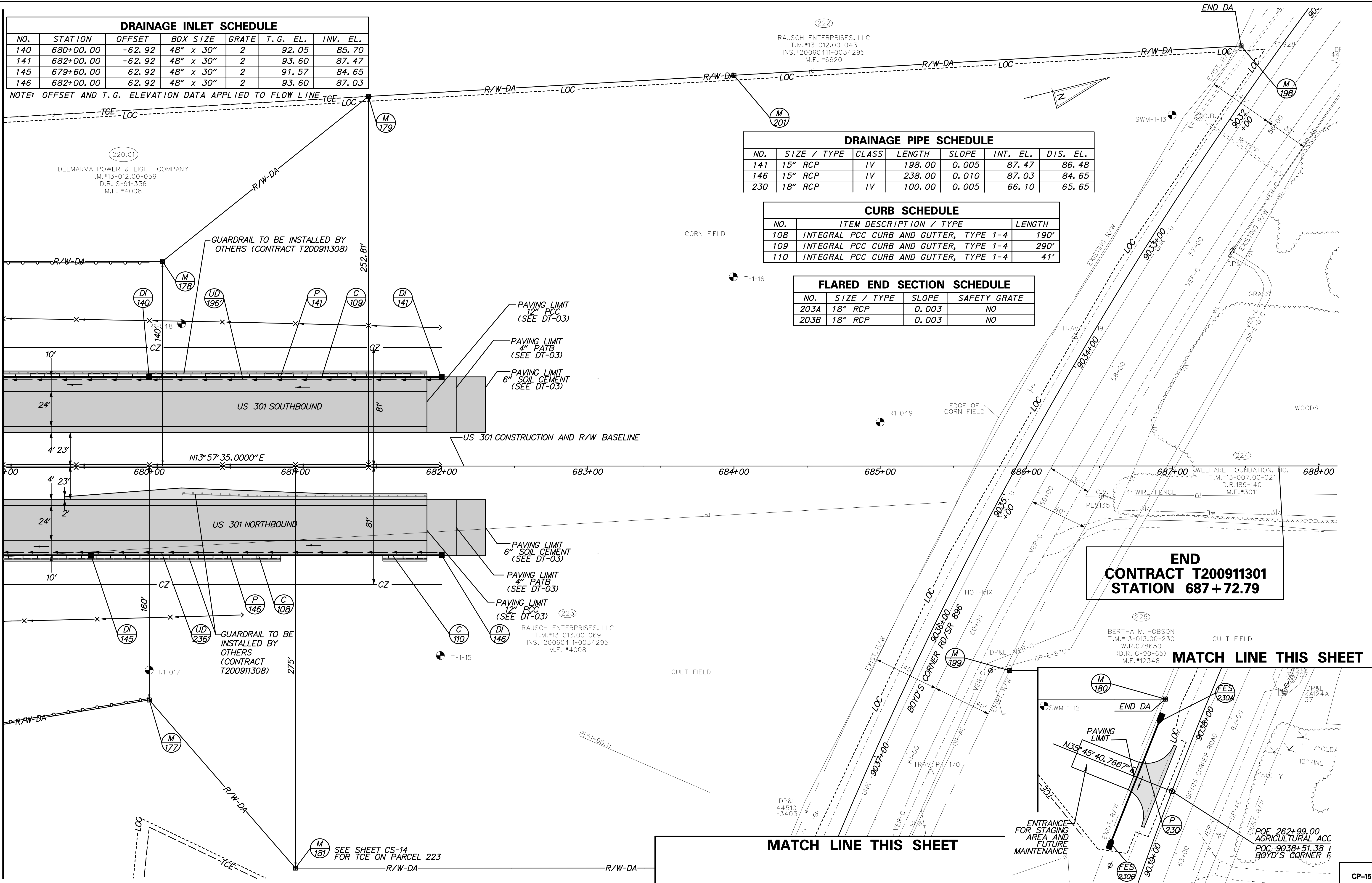
CURB SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
108	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	190'
109	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	290'
110	INTEGRAL PCC CURB AND GUTTER, TYPE 1-4	41'

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
203A	18" RCP	0.003	NO
203B	18" RCP	0.003	NO

MATCH LINE STA. 679+00

MATCH LINE THIS SHEET

MATCH LINE THIS SHEET

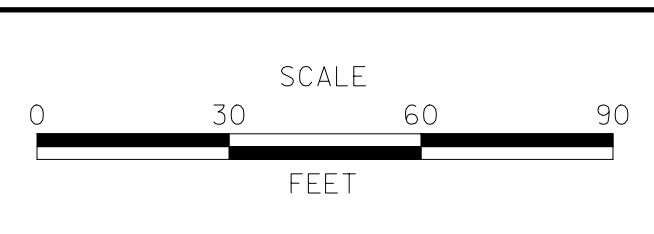


**END CONTRACT T200911301 STATION 687+72.79**

**MATCH LINE THIS SHEET**



ADDENDUMS / REVISIONS	



**US 301, NORFOLK SOUTHERN RR TO SR 896**

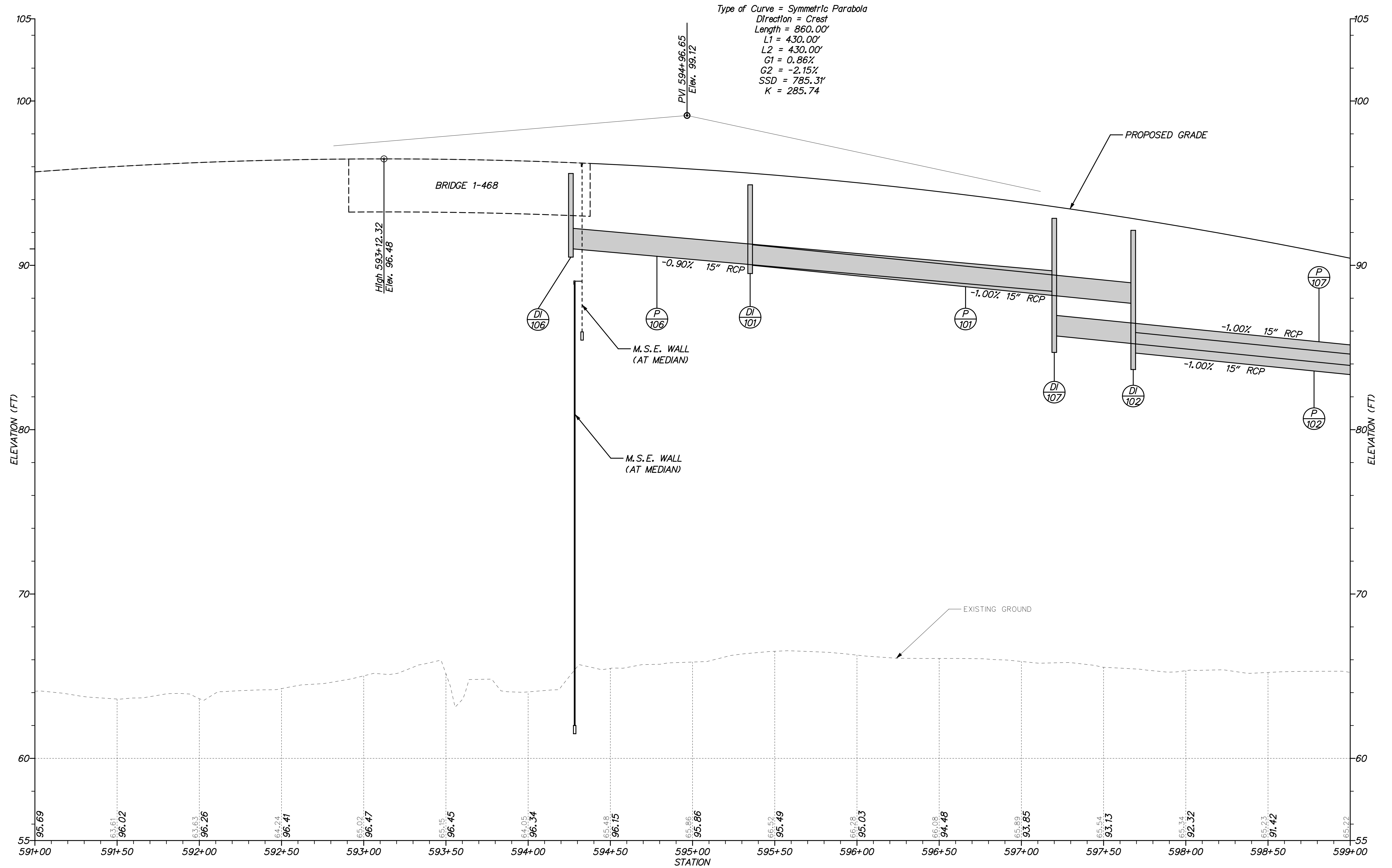
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**CONSTRUCTION PLAN**

SHEET NO. 33
TOTAL SHTS. 240

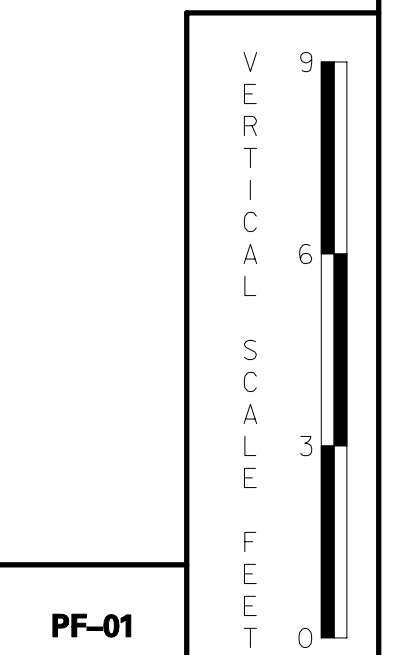
CP-15

\$FILES \$DATES

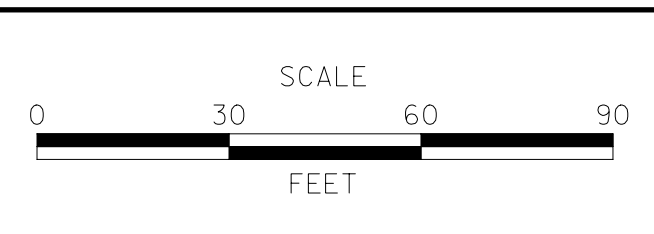


US 301 - MAINLINE

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY  
 ADDITIONAL STRUCTURE BORING INFORMATION CAN BE  
 FOUND ON THE BRIDGE PLANS



ADDENDUMS / REVISIONS



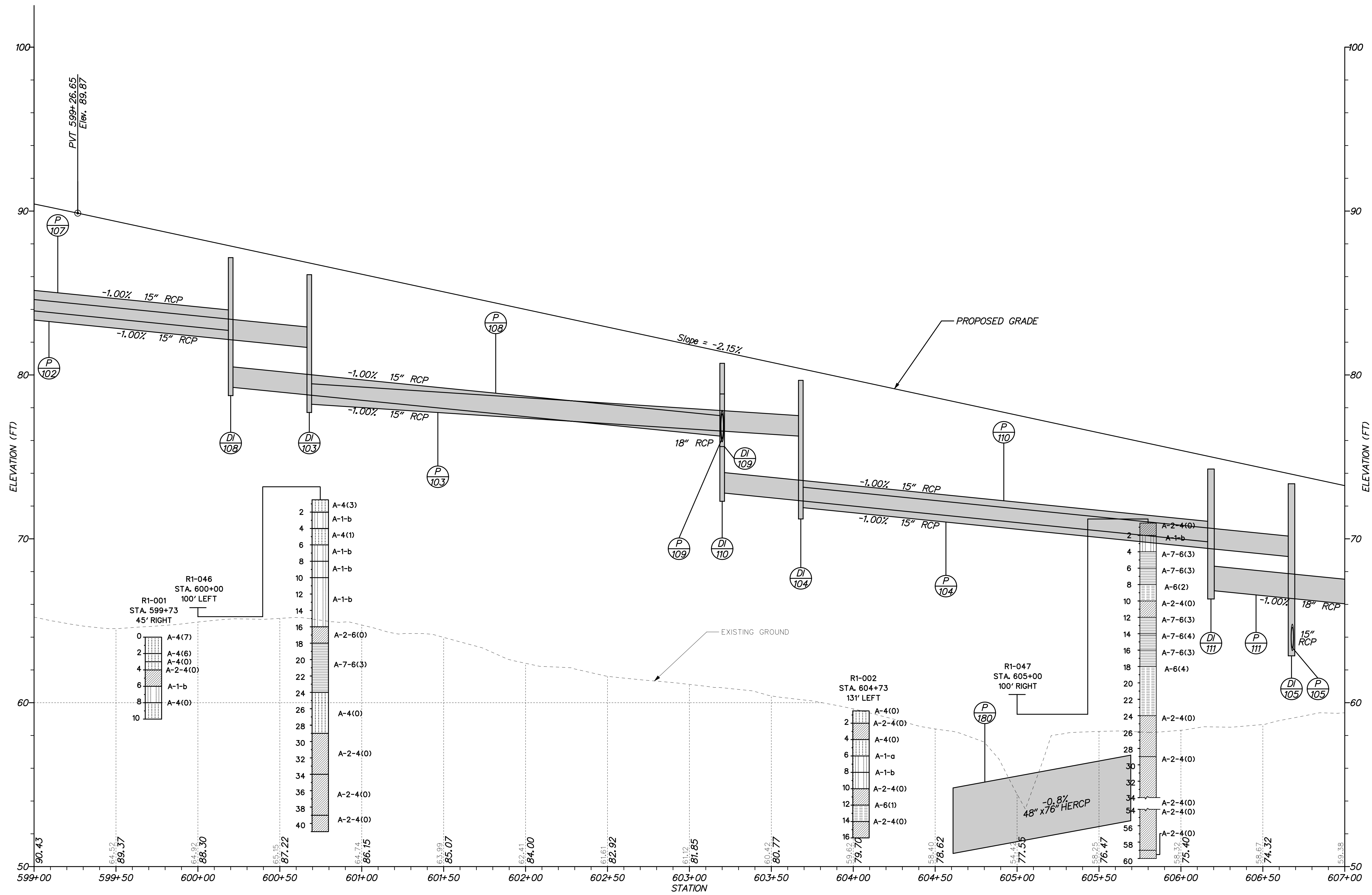
US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT T200911301	BRIDGE NO.	DESIGNED BY: WJD
COUNTY NEW CASTLE	CHECKED BY: MAA	

PROFILES

PF-01

SHEET NO. 34	TOTAL SHTS. 240
-----------------	--------------------



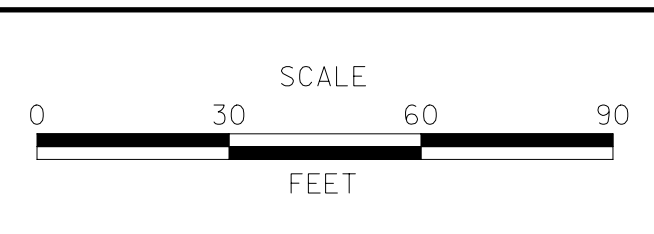
**US 301 - MAINLINE**

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

**PF-02**



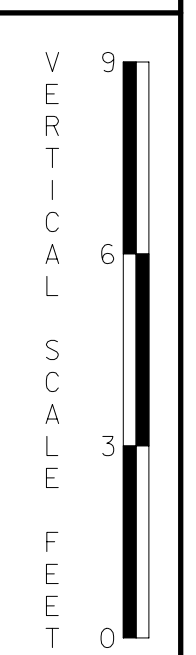
ADDENDUMS / REVISIONS

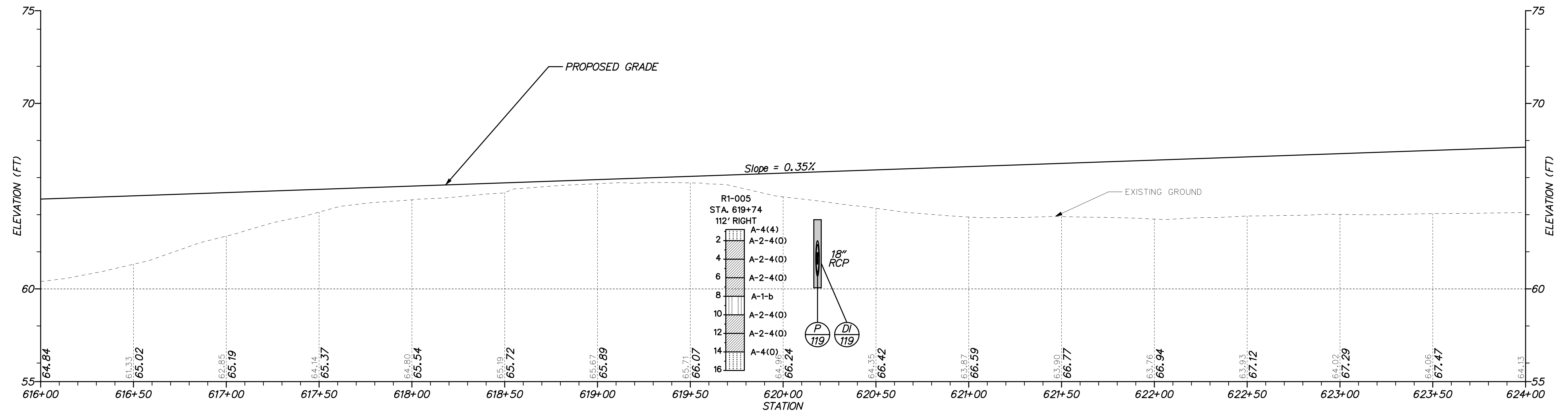


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

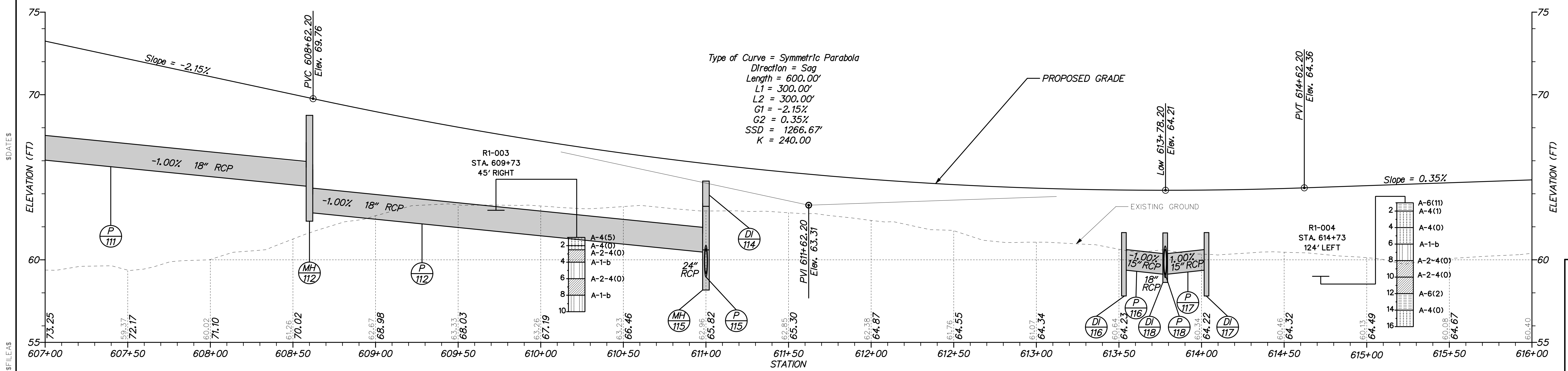
CONTRACT T200911301	BRIDGE NO. 
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

<b>PROFILES</b>
SHEET NO. 35
TOTAL SHTS. 240





**US 301 - MAINLINE**



**US 301 - MAINLINE**

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

PF-03



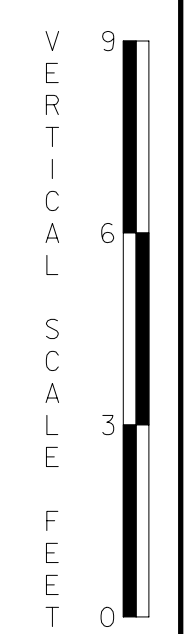
ADDENDUMS / REVISIONS	



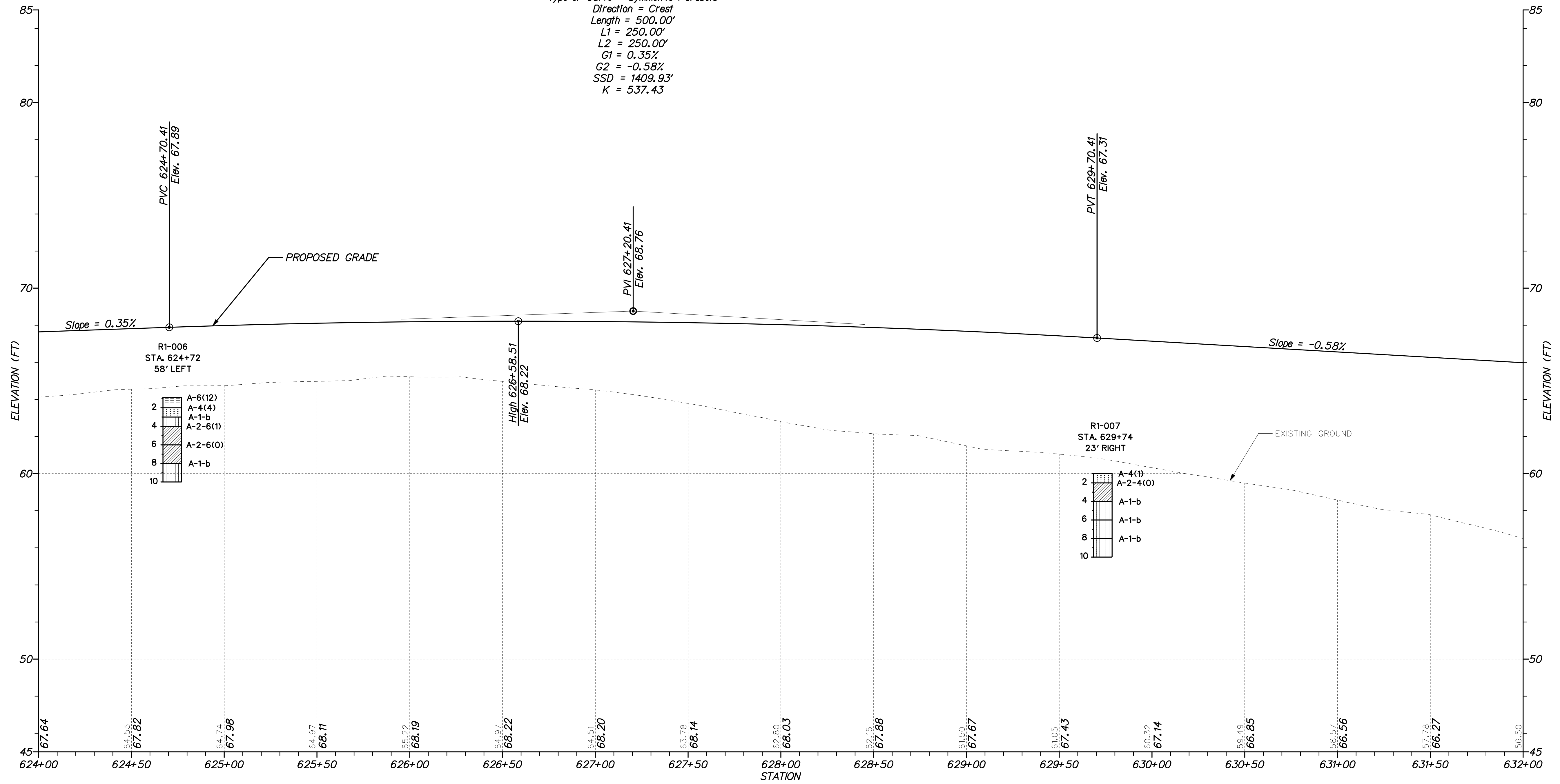
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

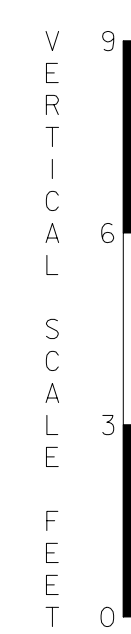
<b>PROFILES</b>	SHEET NO. 36
	TOTAL SHTS. 240



Type of Curve = Symmetric Parabola  
 Direction = Crest  
 Length = 500.00'  
 L1 = 250.00'  
 L2 = 250.00'  
 G1 = 0.35%  
 G2 = -0.58%  
 SSD = 1409.93'  
 K = 537.43



\$FILES \$DATES



NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

PF-04



ADDENDUMS / REVISIONS	

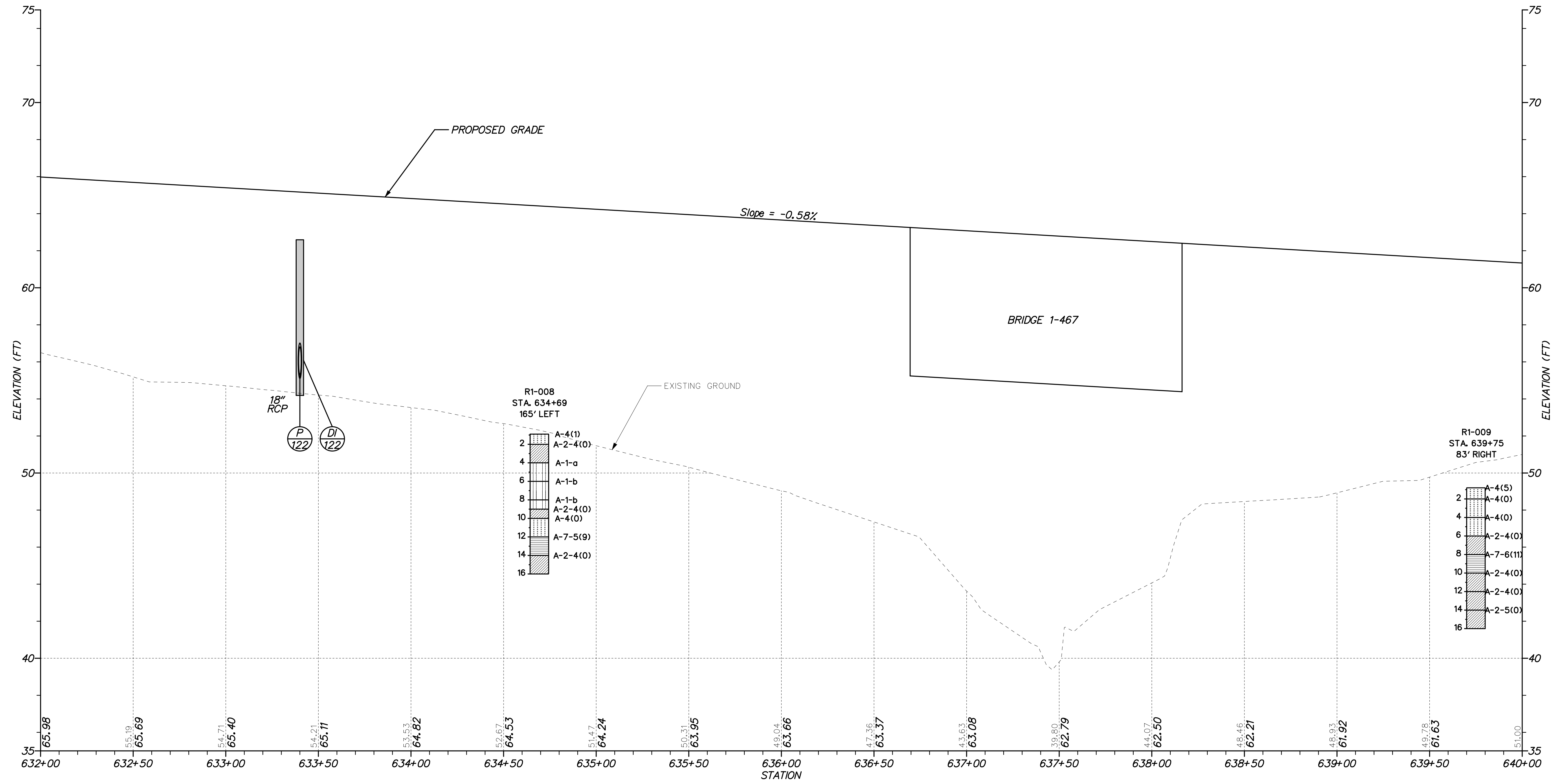


**US 301,**  
**NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

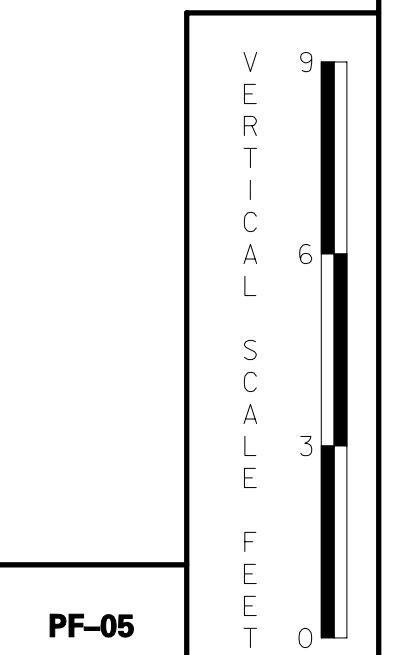
<b>PROFILES</b>	SHEET NO.
	37
	TOTAL SHTS.
	240

\$FILES \$DATES



**US 301 - MAINLINE**

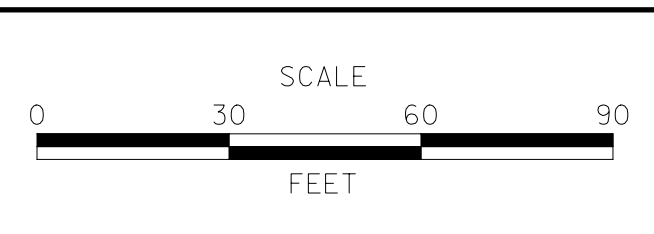
NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY  
ADDITIONAL STRUCTURE BORING INFORMATION CAN BE  
FOUND ON THE BRIDGE PLANS



PF-05



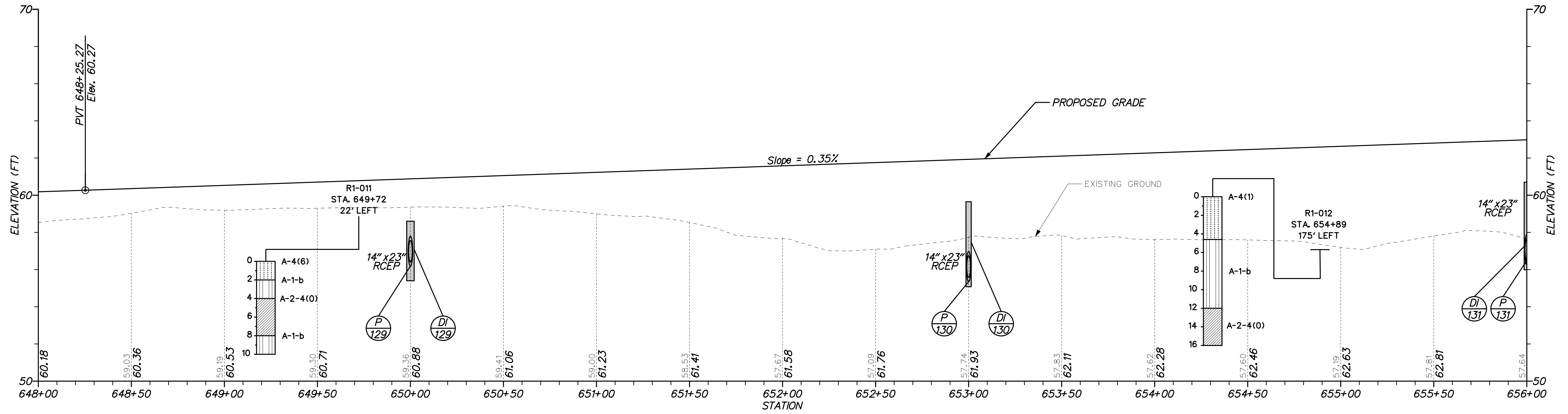
ADDENDUMS / REVISIONS	



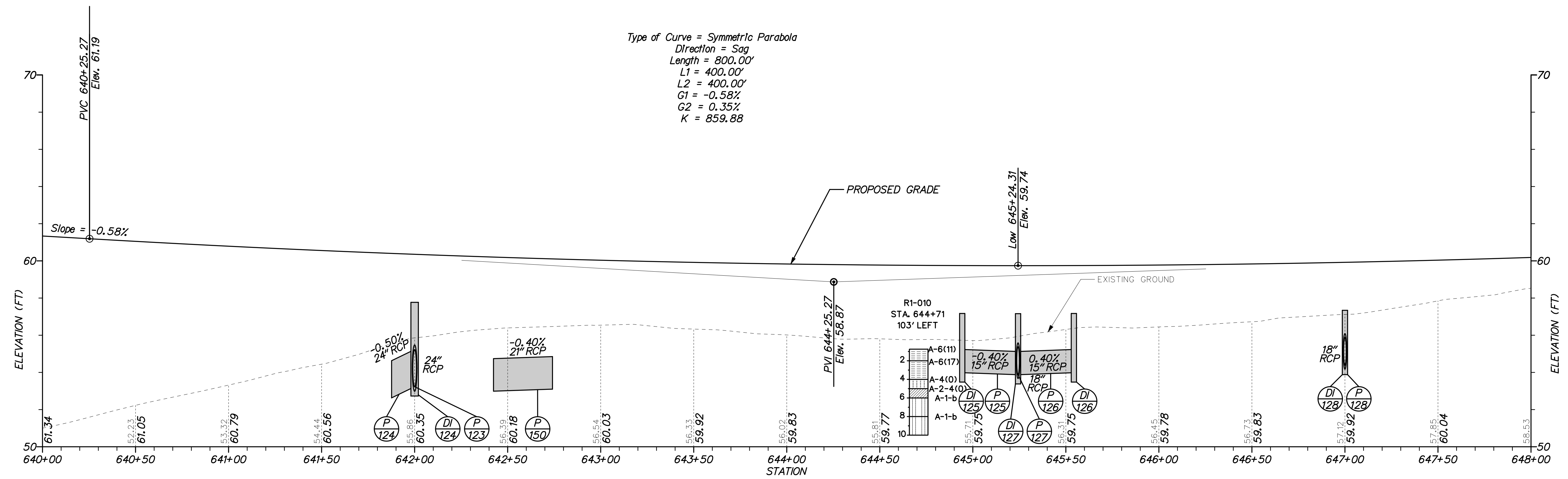
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.	1-10
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

<b>PROFILES</b>	SHEET NO.	38
	TOTAL SHTS.	240



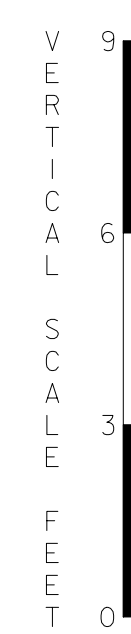
**US 301 - MAINLINE**



Type of Curve = Symmetric Parabola  
 Direction = Sag  
 Length = 800.00'  
 L1 = 400.00'  
 L2 = 400.00'  
 G1 = -0.58%  
 G2 = 0.35%  
 K = 859.88

**US 301 - MAINLINE**

\$FILES \$DATES

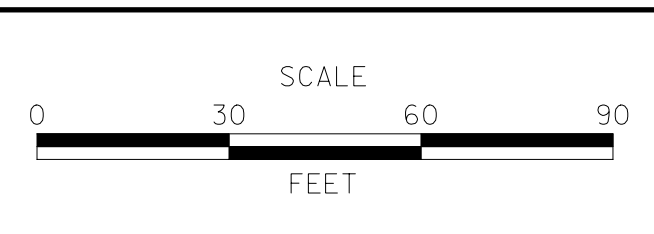


NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

PF-06



ADDENDUMS / REVISIONS	

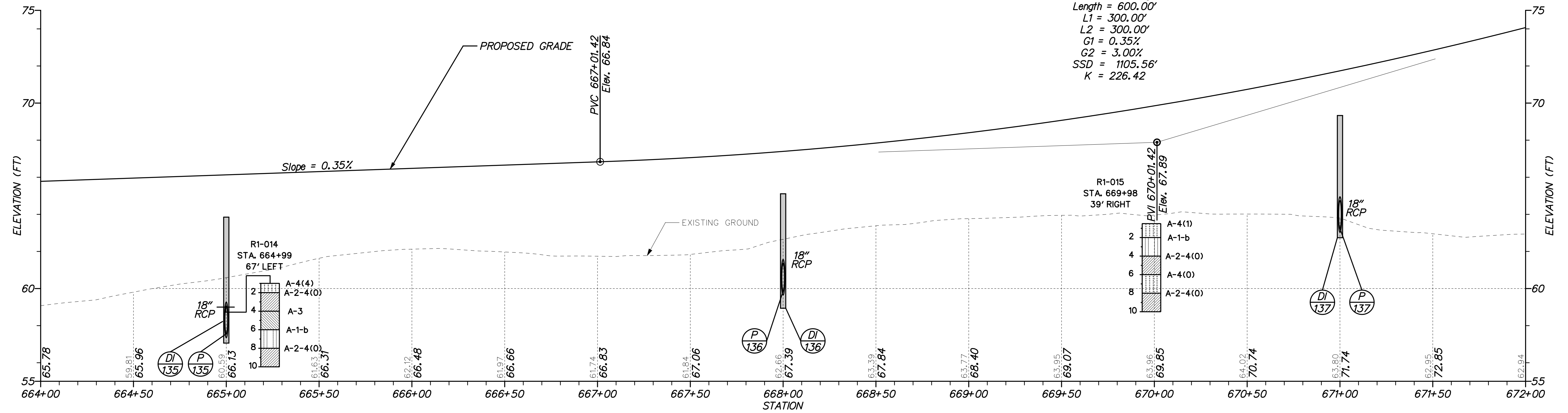


**US 301,  
 NORFOLK SOUTHERN RR TO SR 896**

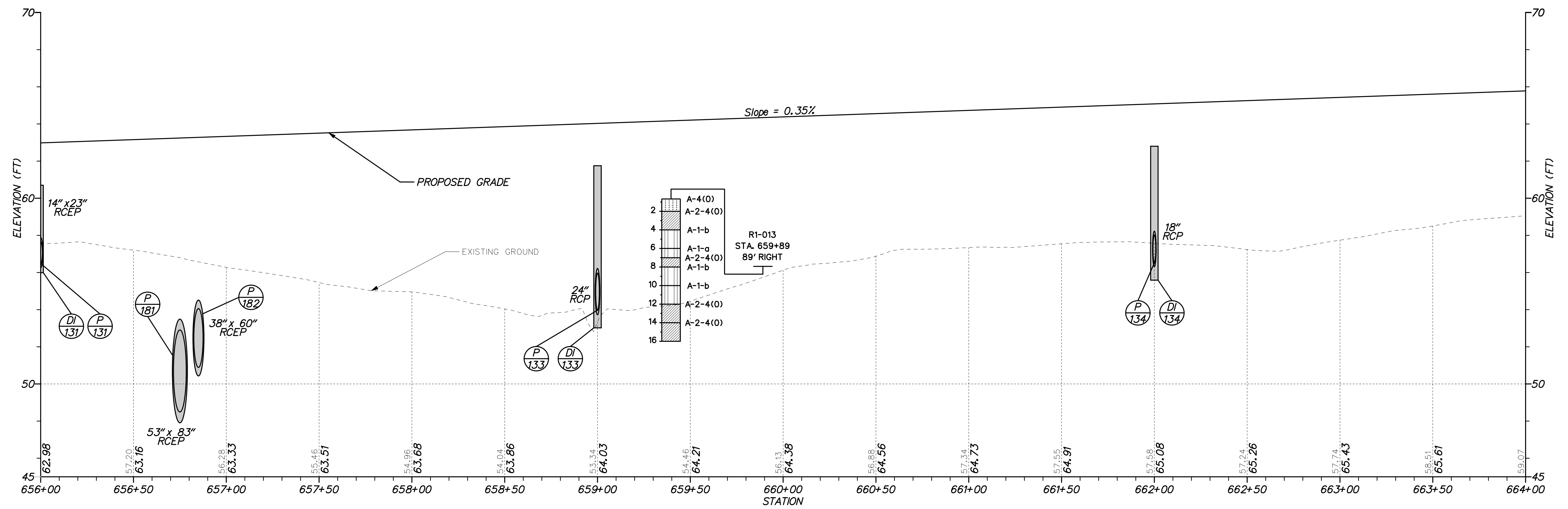
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

<b>PROFILES</b>	SHEET NO. 39
	TOTAL SHTS. 240

Type of Curve = Symmetric Parabola  
 Direction = Sag  
 Length = 600.00'  
 L1 = 300.00'  
 L2 = 300.00'  
 G1 = 0.35%  
 G2 = 3.00%  
 SSD = 1105.56'  
 K = 226.42



**US 301 - MAINLINE**



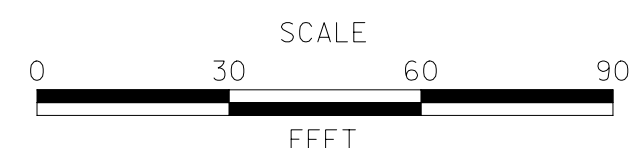
**US 301 - MAINLINE**

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

PF-07



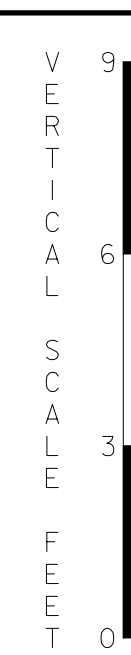
ADDENDUMS / REVISIONS



**US 301,  
 NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

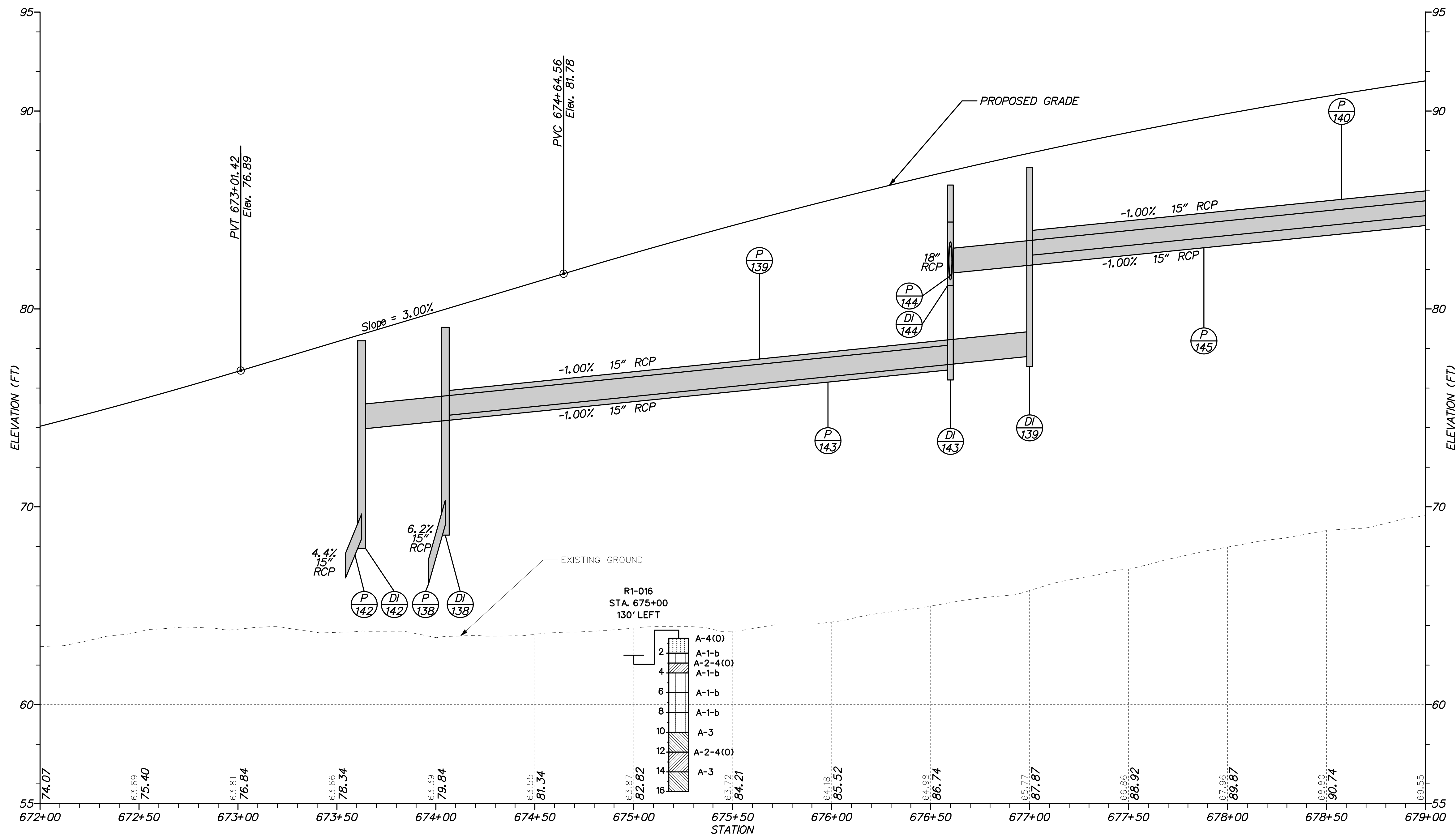
**PROFILES**



SHEET NO. 40
TOTAL SHTS. 240



\$FILES \$DATES



**US 301 - MAINLINE**

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY

PF-08



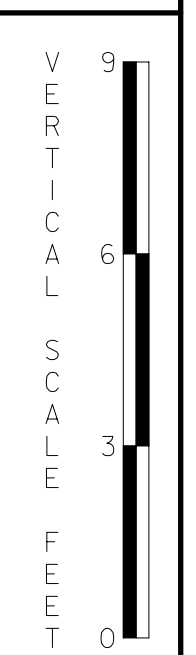
ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

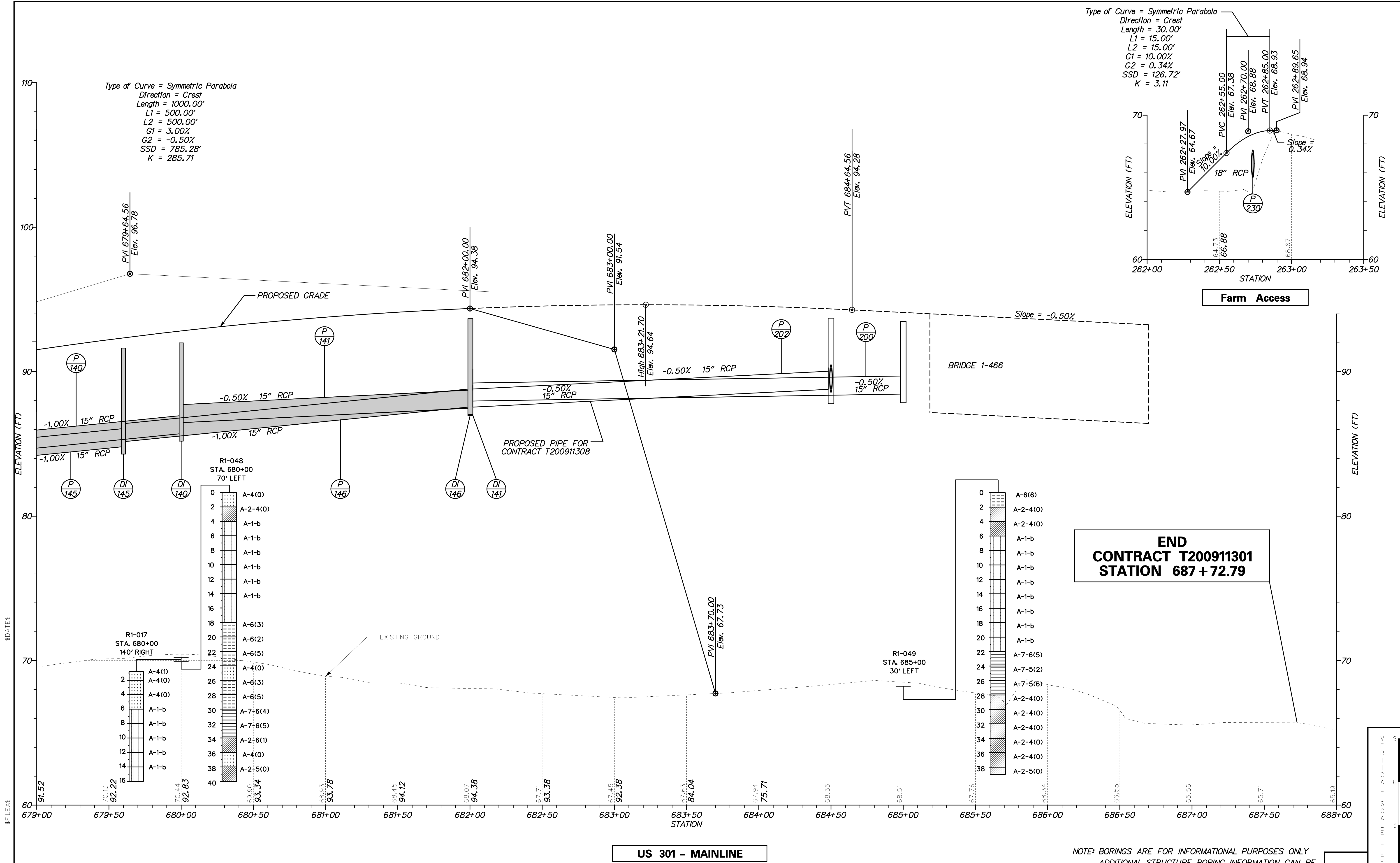
CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

<b>PROFILES</b>	SHEET NO.
	41
	TOTAL SHTS.
240	



Type of Curve = Symmetric Parabola  
 Direction = Crest  
 Length = 1000.00'  
 L1 = 500.00'  
 L2 = 500.00'  
 G1 = 3.00%  
 G2 = -0.50%  
 SSD = 785.28'  
 K = 285.71

Type of Curve = Symmetric Parabola  
 Direction = Crest  
 Length = 30.00'  
 L1 = 15.00'  
 L2 = 15.00'  
 G1 = 10.00%  
 G2 = 0.34%  
 SSD = 126.72'  
 K = 3.11



R1-048  
 STA. 680+00  
 70' LEFT

R1-017  
 STA. 680+00  
 140' RIGHT

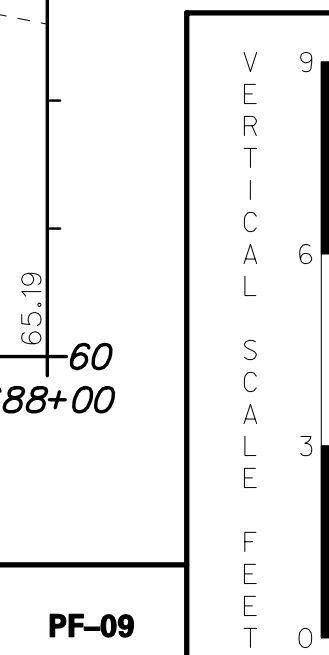
R1-049  
 STA. 685+00  
 30' LEFT

- 0 A-4(0)
- 2 A-2-4(0)
- 4 A-1-b
- 6 A-1-b
- 8 A-1-b
- 10 A-1-b
- 12 A-1-b
- 14 A-1-b
- 16 A-1-b
- 18 A-6(3)
- 20 A-6(2)
- 22 A-6(5)
- 24 A-4(0)
- 26 A-6(3)
- 28 A-6(5)
- 30 A-7-6(4)
- 32 A-7-6(5)
- 34 A-2-6(1)
- 36 A-4(0)
- 38 A-2-5(0)
- 40

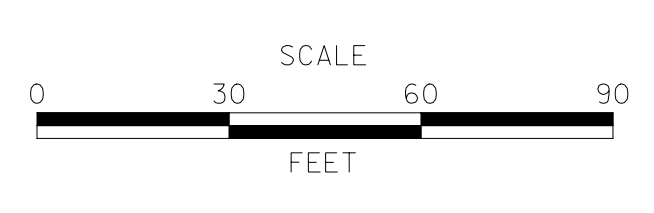
- 0 A-6(6)
- 2 A-2-4(0)
- 4 A-2-4(0)
- 6 A-1-b
- 8 A-1-b
- 10 A-1-b
- 12 A-1-b
- 14 A-1-b
- 16 A-1-b
- 18 A-1-b
- 20 A-1-b
- 22 A-7-6(5)
- 24 A-7-5(2)
- 26 A-7-5(6)
- 28 A-2-4(0)
- 30 A-2-4(0)
- 32 A-2-4(0)
- 34 A-2-4(0)
- 36 A-2-4(0)
- 38 A-2-5(0)

**US 301 - MAINLINE**

NOTE: BORINGS ARE FOR INFORMATIONAL PURPOSES ONLY  
 ADDITIONAL STRUCTURE BORING INFORMATION CAN BE  
 FOUND ON THE BRIDGE PLANS



ADDENDUMS / REVISIONS

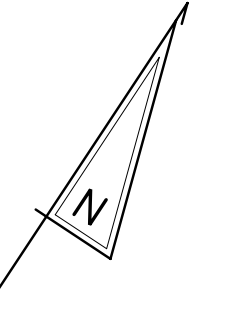


**US 301, NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.	
COUNTY NEW CASTLE	DESIGNED BY: WJD	
	CHECKED BY: MAA	

<b>PROFILES</b>	SHEET NO. 42
	TOTAL SHTS. 240

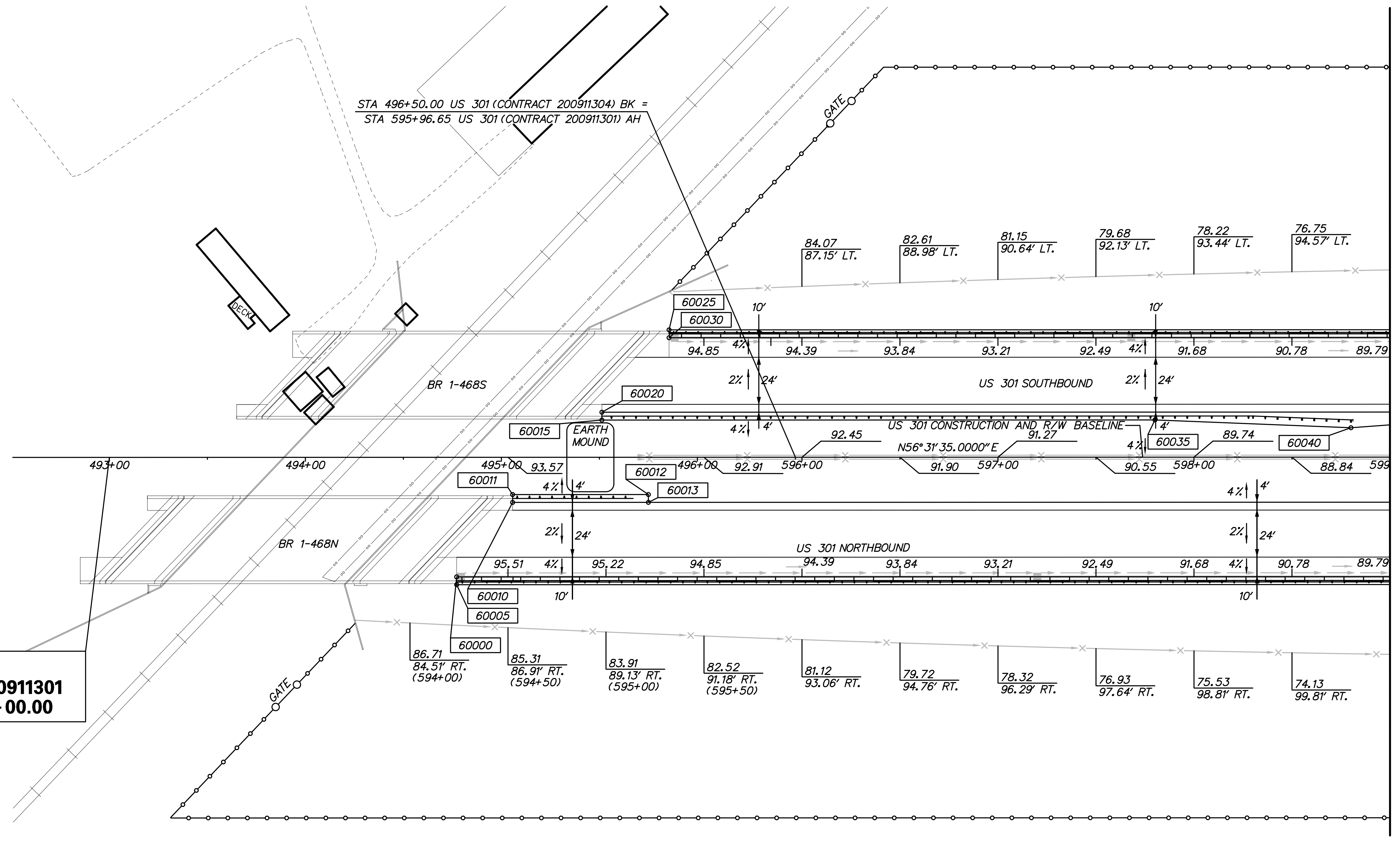
PF-09



STA 496+50.00 US 301 (CONTRACT 200911304) BK =  
 STA 595+96.65 US 301 (CONTRACT 200911301) AH

**BEGIN  
 CONTRACT T200911301  
 STATION 493 + 00.00**

**MATCH LINE STA. 599 + 00**

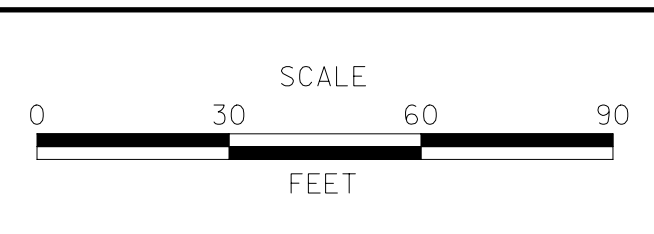


COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60000	494+77.16	61.0000	542748.1177	572029.1610
60005	494+77.16	65.0000	542744.7811	572031.3673
60010	495+05.72	23.0000	542795.5679	572032.0258
60011	495+05.72	19.0000	542798.9044	572029.8196
60012	495+75.00	19.0000	542837.1151	572087.6075
60013	495+75.00	23.0000	542833.7786	572089.8137
60015	495+51.28	-19.0000	542855.7303	572046.8638
60020	495+51.28	-23.0000	542859.0669	572044.6576
60025	495+85.55	-65.0000	542913.0045	572050.0814
60030	495+85.55	-61.0000	542909.6679	572052.2876
60035	597+80.10	-19.0000	543011.3596	572282.2295
60040	598+80.11	-15.0000	543063.1832	572367.8569

\$FILES \$DATES



ADDENDUMS / REVISIONS	

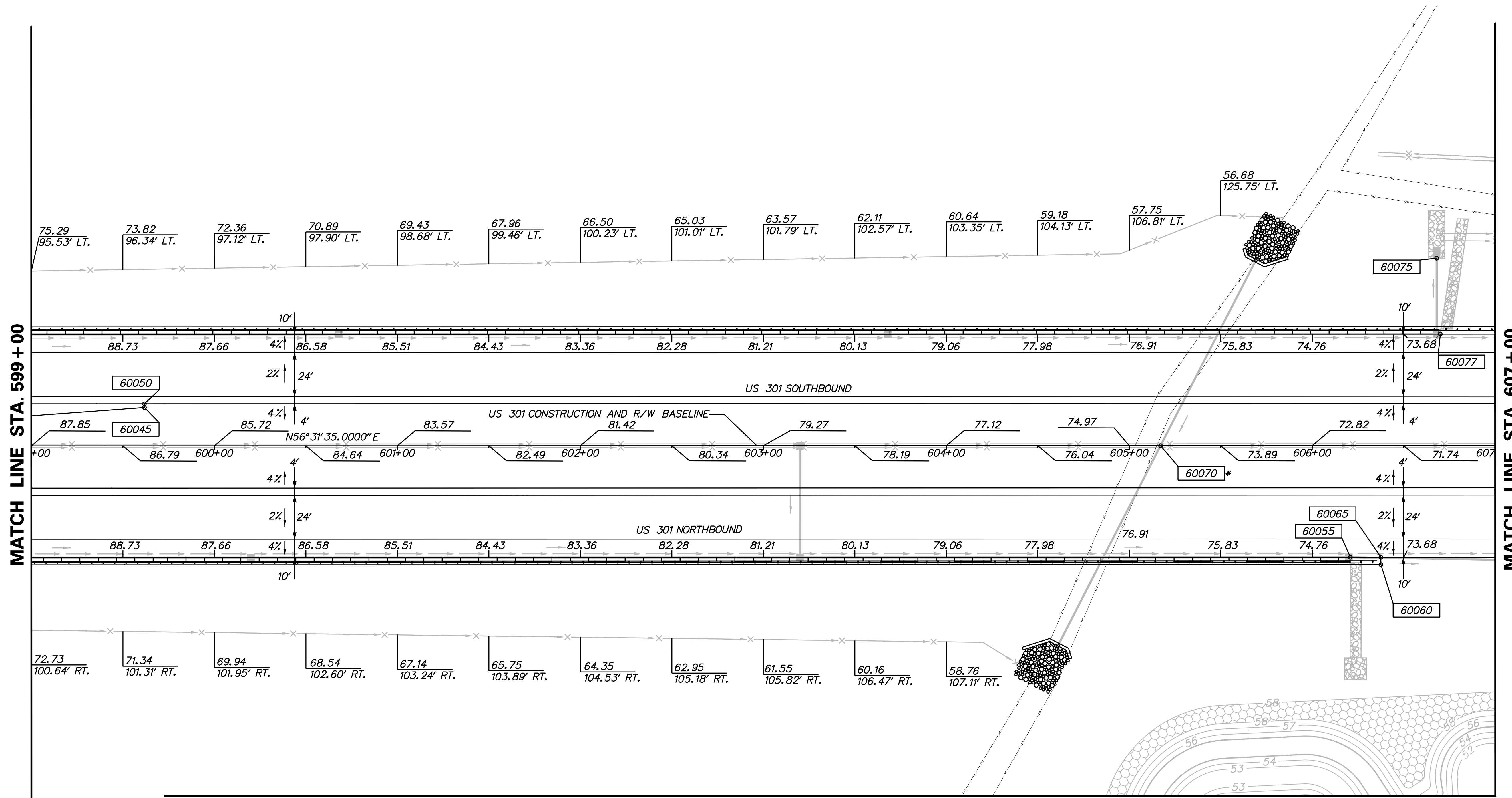


**US 301,  
 NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**GRADES & GEOMETRICS**

GG-01
SHEET NO. 43
TOTAL SHTS. 240



MATCH LINE SHEET GG-03

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60045	599+61.76	-21.0000	543113.2232	572432.6565
60050	599+61.76	-23.0000	543114.8915	572431.5534
60055	606+20.83	61.0000	543408.3347	573027.6390
60060	606+37.53	65.0000	543414.2104	573043.7773
60065	606+37.53	61.0000	543417.5470	573041.5711
* 60070	605+17.10	0.0000	543402.0021	572907.4651
60075	606+68.00	-102.4220	543570.6683	572976.8495
60077	606+70.00	-61.0000	543537.2197	573001.3643

\*NOTE: SEE CONSTRUCTION DETAILS FOR HEADWALL LAYOUT COORDINATES.

\$FILES \$DATES



ADDENDUMS / REVISIONS



US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

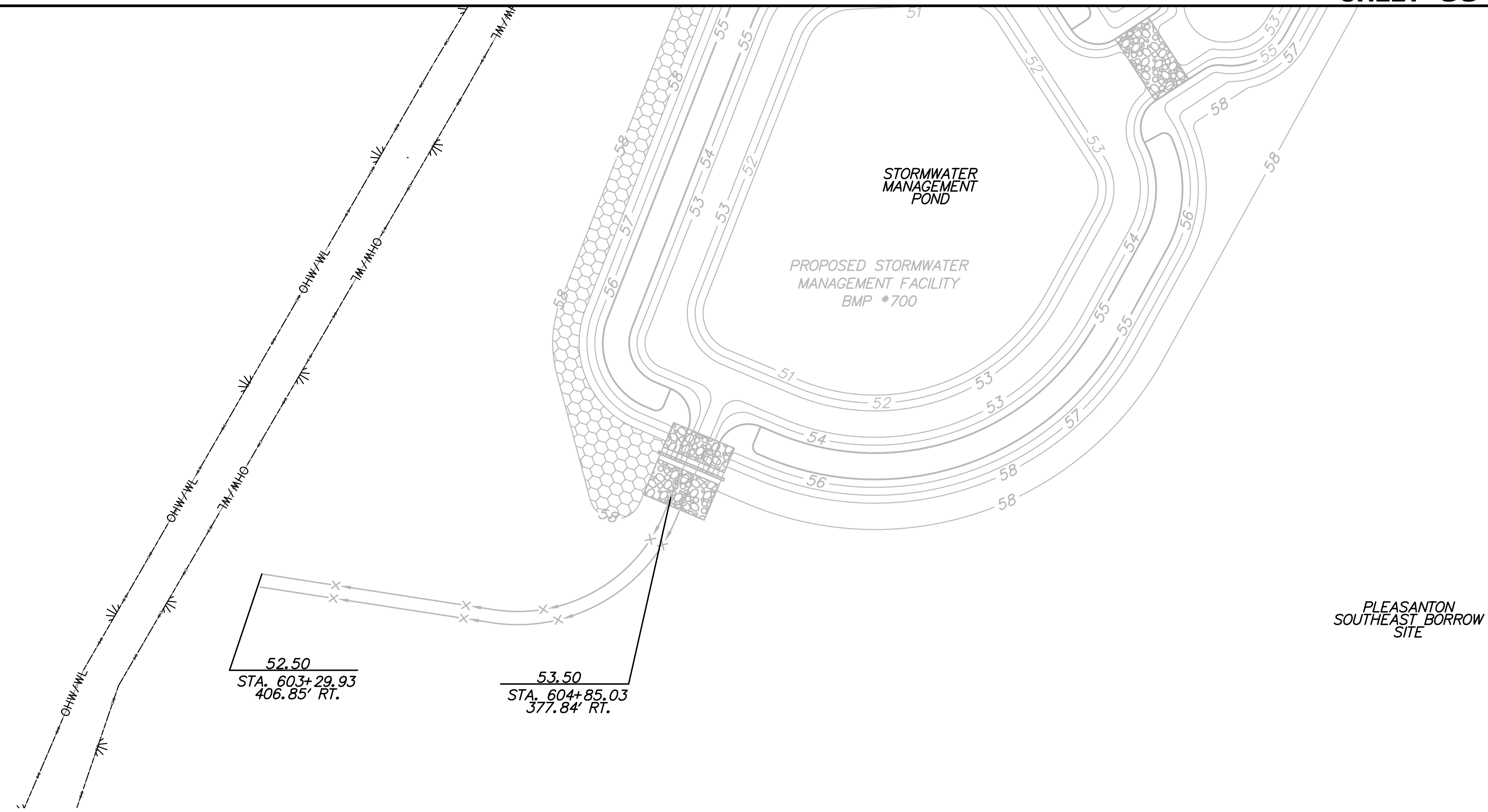
GRADES & GEOMETRICS

GG-02
SHEET NO.
44
TOTAL SHTS.
240

MATCH LINE SHEET GG-02

MATCH LINE SHEET GG-04

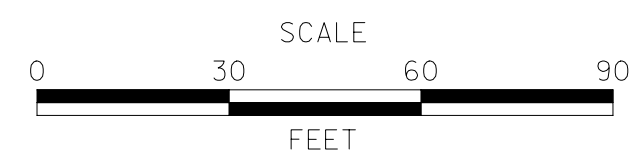
MATCH LINE SHEET GG-04



\$DATES  
\$FILES



ADDENDUMS / REVISIONS

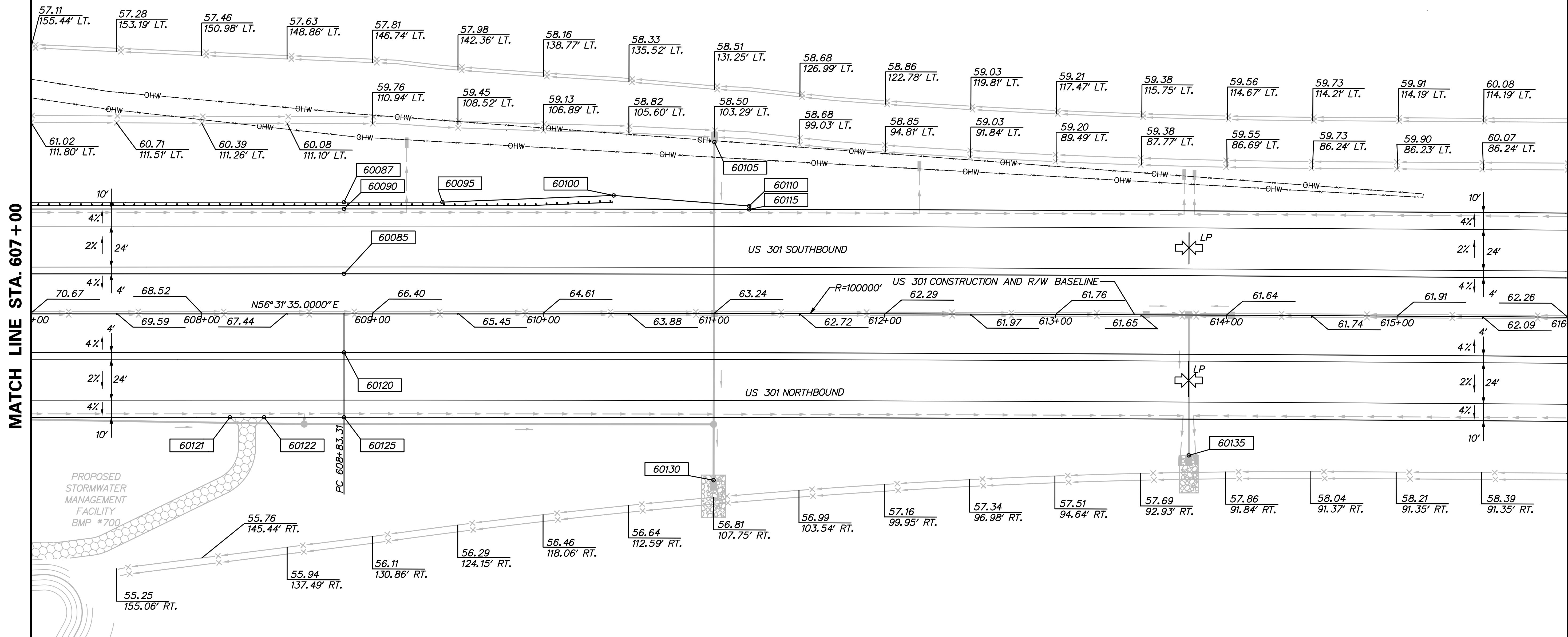
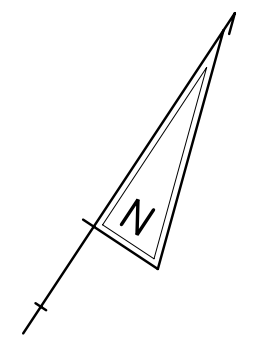


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

**GRADES & GEOMETRICS**

<b>GG-03</b>
SHEET NO. 45
TOTAL SHTS. 240



MATCH LINE STA. 607 + 00

MATCH LINE STA. 616 + 00

**MATCH LINE SHEET GG-03**

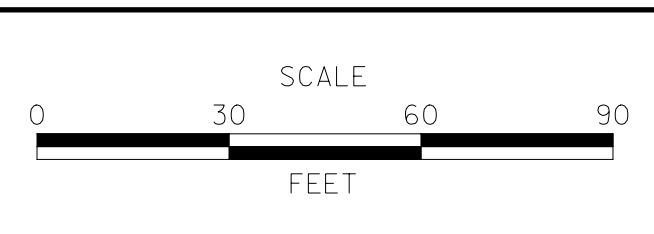
**MATCH LINE SHEET GG-03**

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60085	608+83.31	-23.0000	543623.1766	573200.2574
60087	608+83.31	-65.0000	543658.2104	573177.0922
60090	608+83.31	-61.0000	543654.8739	573179.2984
60095	609+40.88	-65.0000	543689.9700	573225.1537
60100	610+41.12	-69.0000	543748.5400	573306.6755
60105	611+00.02	-100.3576	543807.1512	573338.6630
60110	611+20.47	-63.0000	543787.1934	573376.2956
60115	611+20.47	-61.0000	543785.5225	573377.3948
60120	608+83.31	23.0000	543584.8061	573225.6288
60121	608+16.51	61.0000	543516.2638	573190.8653
60122	608+36.51	61.0000	543527.2948	573207.5481
60125	608+83.31	61.0000	543553.1088	573246.5878
60130	610+99.91	97.7244	543641.6288	573447.4694
60135	613+78.41	82.2308	543807.2221	573671.6085

\$FILES \$DATES



ADDENDUMS / REVISIONS	

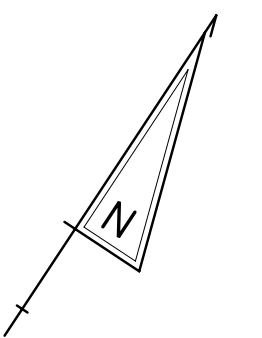


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

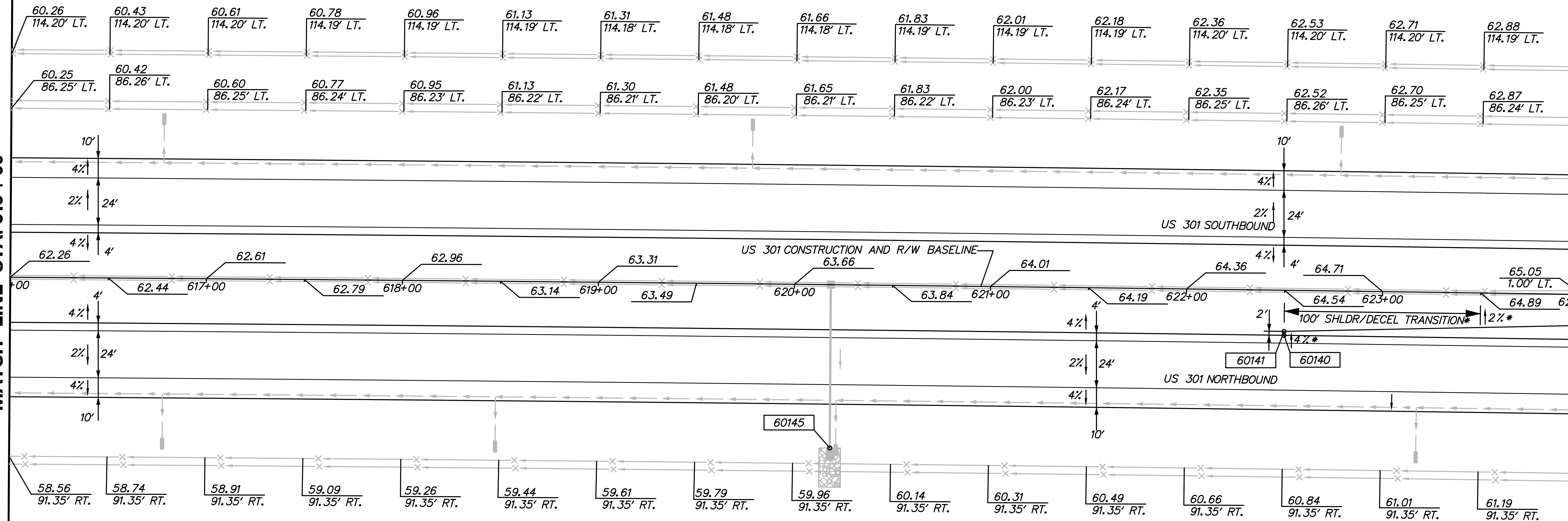
**GRADES & GEOMETRICS**

<b>GG-04</b>
SHEET NO. 46
TOTAL SHTS. 240



MATCH LINE STA. 616 + 00

MATCH LINE STA. 624 + 00



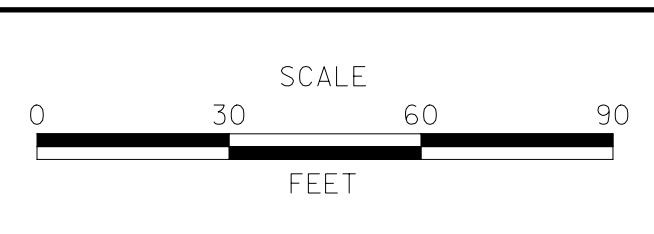
\*NOTE: TRANSITION INCLUDES SHOULDER AND DECEL LANE. SEE TYPICAL SECTIONS FOR MORE DETAILS.

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60140	622+50.00	23.0000	544330.6204	574370.4879
60141	622+50.00	21.0000	544332.3036	574369.4077
60145	620+18.91	83.3546	544154.8952	574208.9093

\$FILES \$DATES



ADDENDUMS / REVISIONS	

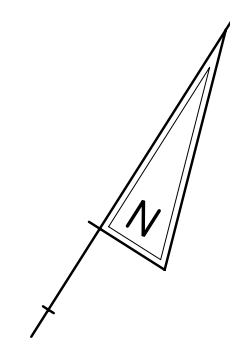


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

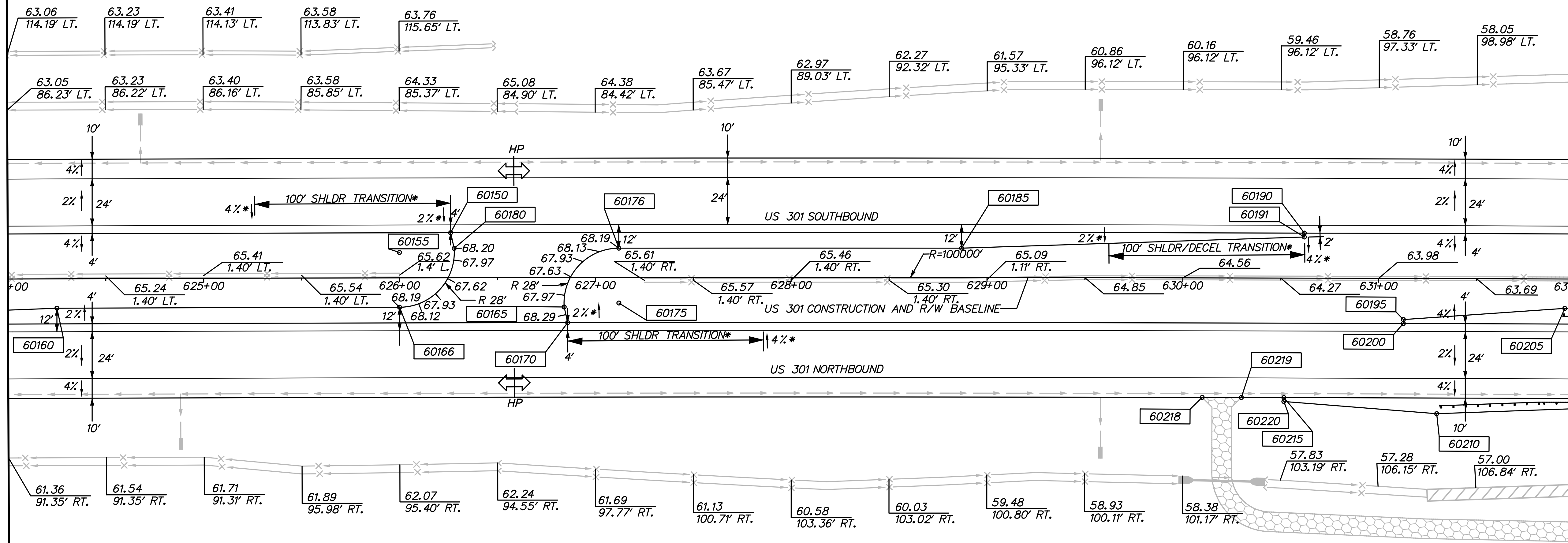
**GRADES & GEOMETRICS**

GG-05
SHEET NO. 47
TOTAL SHTS. 240



MATCH LINE STA. 624 + 00

MATCH LINE STA. 632 + 00



**COORDINATE LIST**

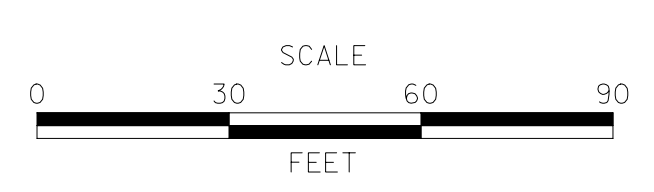
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60150	626+26.15	-23.0000	544571.9432	574662.6641
60155	626+00.00	-13.0000	544549.4622	574645.9727
60160	624+25.00	15.0000	544431.7279	574513.5076
60165	626+84.07	15.0000	544570.9652	574731.9311
60166	626+00.00	15.0000	544525.8446	574661.0130
60170	626+85.84	23.0000	544565.1652	574737.7197
60175	627+12.00	13.0000	544587.6319	574754.4304
60176	627+12.00	-15.0000	544611.2663	574739.4166
60180	626+27.92	-15.0000	544566.1479	574668.4580
60185	628+87.00	-15.0000	544704.9874	574887.2358
60190	630+62.00	-23.0000	544805.2174	575030.9529
60191	630+62.00	-21.0000	544803.5255	575032.0194
60195	631+12.68	21.0000	544795.0017	575097.2835
60200	631+12.68	23.0000	544793.3090	575098.3488
60205	631+95.12	15.0000	544843.9722	575163.8615
60210	631+29.85	69.0000	544763.5282	575137.3865
60215	630+51.74	61.0000	544728.6880	575067.0708
60218	630+10.01	61.0000	544706.4372	575031.7961
60219	630+30.02	61.0000	544717.1089	575048.7102
60220	630+51.74	63.0000	544726.9953	575068.1362

\*NOTE: TRANSITION INCLUDES SHOULDER AND DECEL LANE. SEE TYPICAL SECTIONS FOR MORE DETAILS.

\$FILES \$DATES



ADDENDUMS / REVISIONS



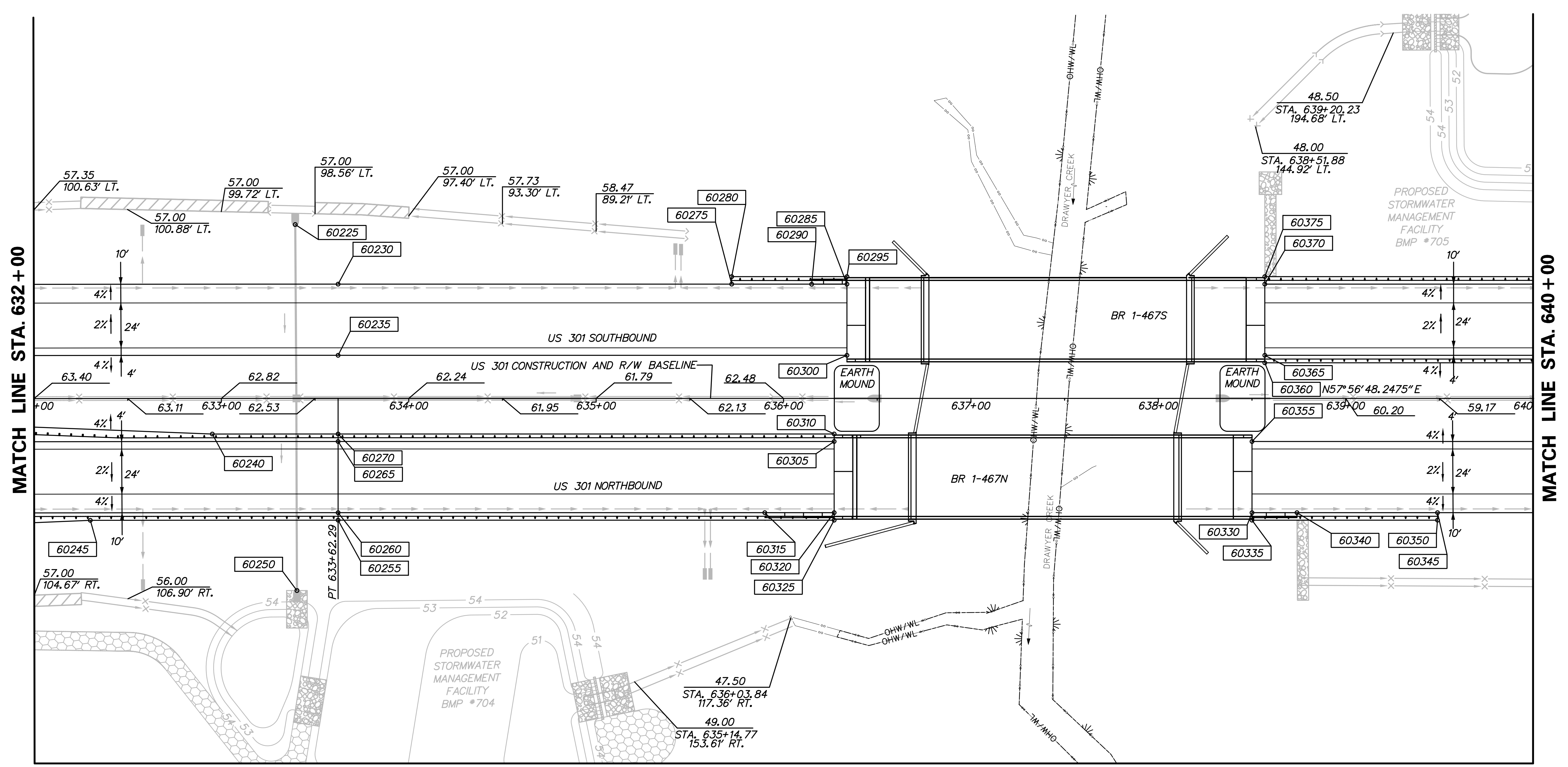
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**GRADES & GEOMETRICS**

GG-06
SHEET NO. 48
TOTAL SHTS. 240



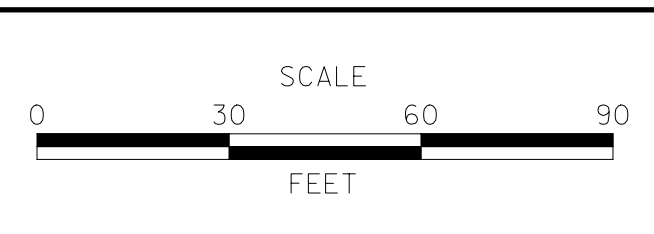


MATCH LINE SHEET GG-08

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60225	633+39.45	-92.8025	545012.0265	575228.8609
60230	633+62.29	-61.0000	544997.2076	575265.1145
60235	633+62.29	-23.0000	544965.0005	575285.2814
60240	632+95.15	19.0000	544893.7597	575250.6899
60245	632+29.98	65.0000	544820.1696	575219.9635
60250	633+40.30	102.5701	544846.9132	575333.3061
60255	633+62.29	65.0000	544890.4156	575331.9836
60260	633+62.29	61.0000	544893.8058	575329.8608
60265	633+62.29	23.0000	544926.0129	575309.6939
60270	633+62.29	19.0000	544929.4032	575307.5711
60275	635+72.34	-61.0000	545108.6843	575443.1460
60280	635+72.34	-65.0000	545112.0745	575441.0232
60285	636+33.84	-61.0000	545141.3228	575495.2706

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60290	636+15.00	-61.0000	545131.3242	575479.3027
60295	636+33.84	-65.0000	545144.7130	575493.1478
60300	636+33.84	-23.0000	545109.1157	575515.4375
60305	636+27.02	23.0000	545066.5064	575534.0660
60310	636+27.01	19.0000	545069.8956	575531.9415
60315	635+90.00	61.0000	545014.6548	575522.8601
60320	636+27.02	61.0000	545034.2993	575554.2329
60325	636+27.02	65.0000	545030.9091	575556.3557
60330	638+50.01	61.0000	545152.6441	575743.2329
60335	638+50.01	65.0000	545149.2539	575745.3558
60340	638+74.01	61.0000	545165.3811	575763.5743
60345	639+49.01	61.0000	545205.1841	575827.1409
60350	639+49.01	65.0000	545201.7939	575829.2637
60355	638+50.01	23.0000	545184.8512	575723.0660
60360	638+56.84	-19.0000	545224.0741	575706.5665
60365	638+56.84	-23.0000	545227.4643	575704.4437
60370	638+56.84	-61.0000	545259.6714	575684.2768
60375	638+56.84	-65.0000	545263.0616	575682.1539

ADDENDUMS / REVISIONS



US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	1-10
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

GRADES & GEOMETRICS

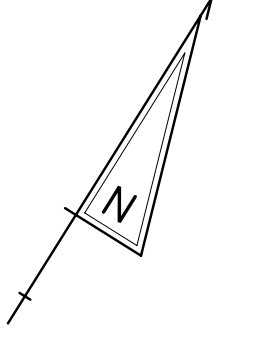
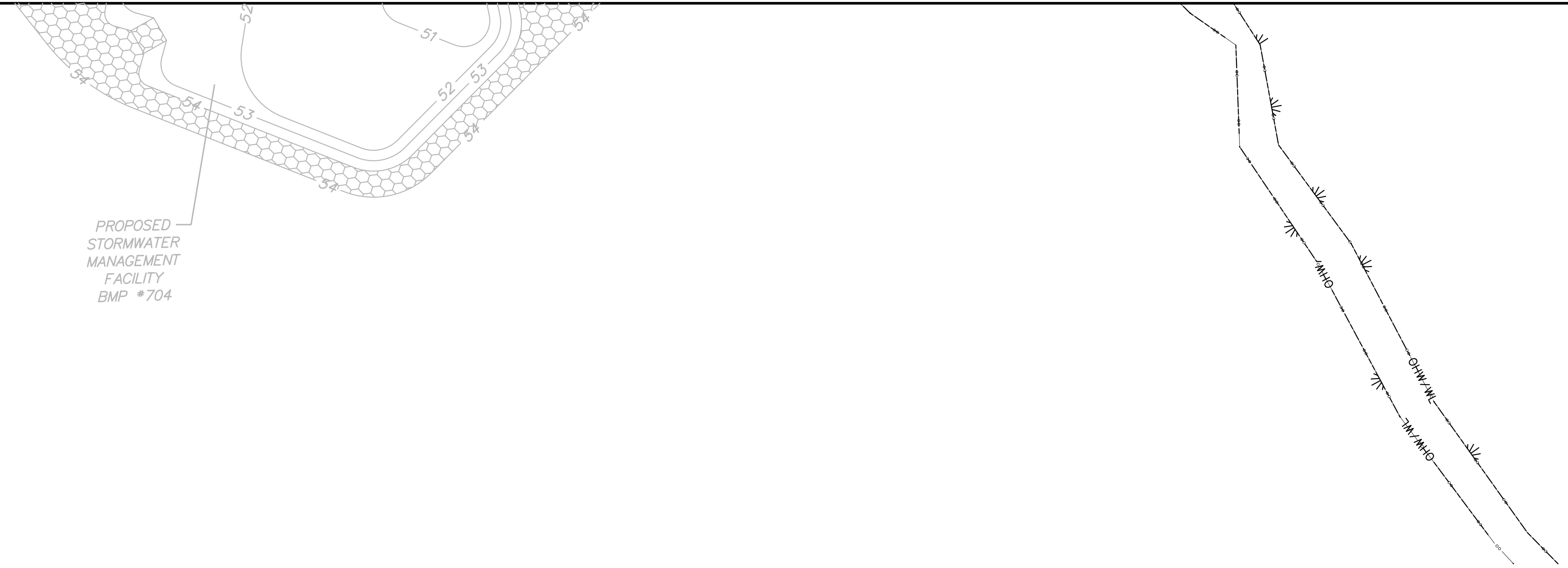
GG-07
SHEET NO.
49
TOTAL SHTS.
240

\$FILES \$DATES



MATCH LINE SHEET GG-07

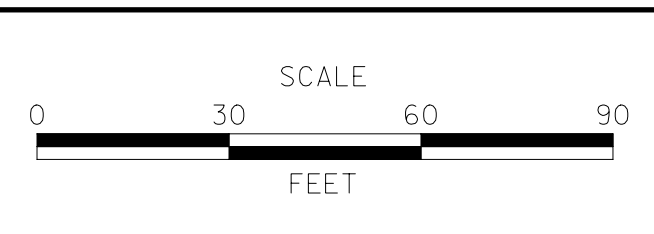
MATCH LINE SHEET GG-09



\$FILES \$DATES



ADDENDUMS / REVISIONS	

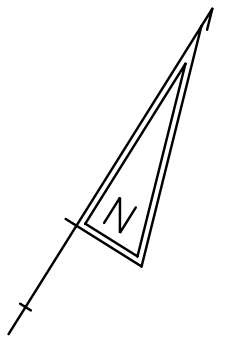


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

**GRADES & GEOMETRICS**

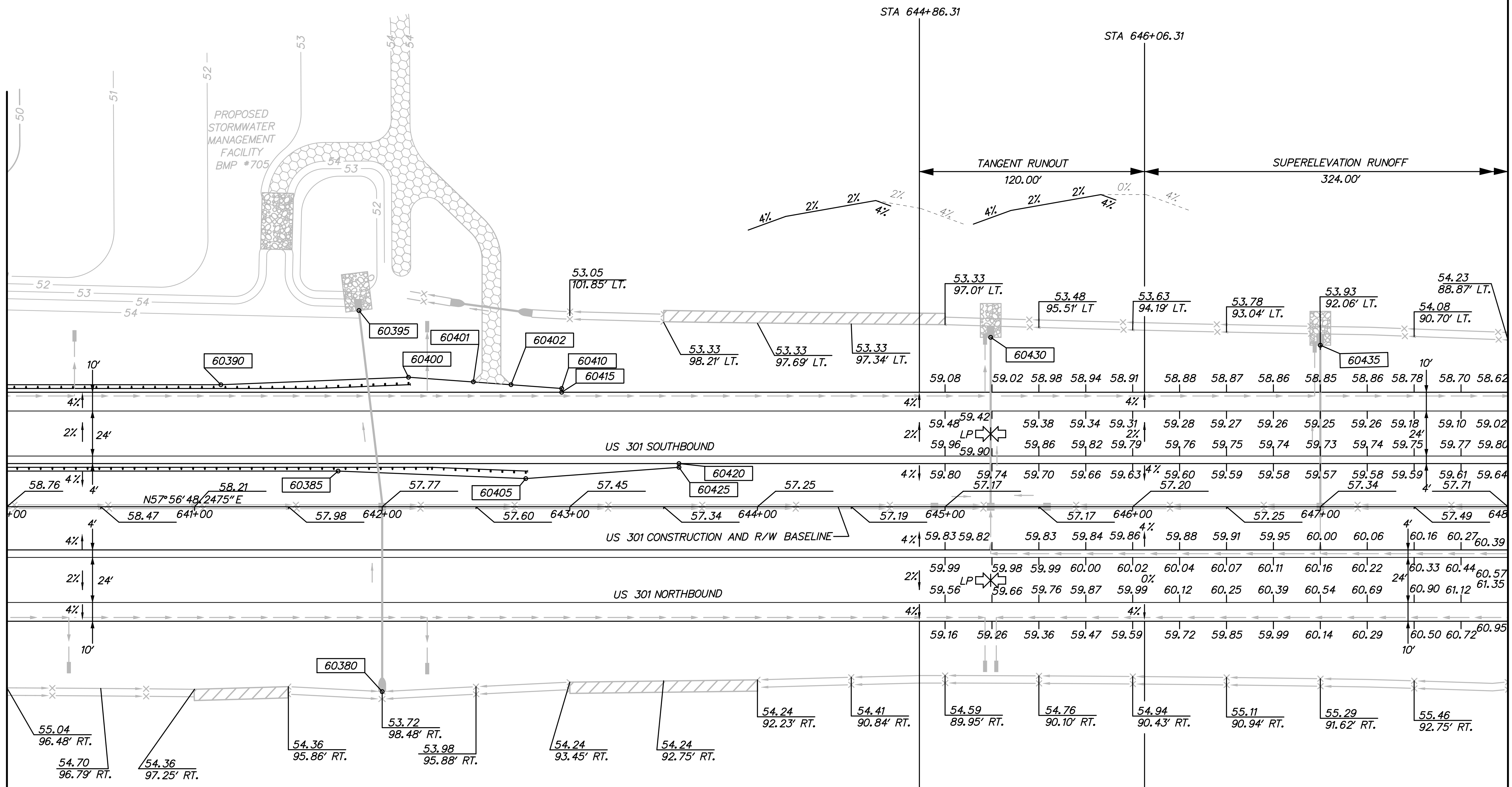
<b>GG-08</b>
SHEET NO.
50
TOTAL SHTS.
240



MATCH LINE STA. 640+00

MATCH LINE SHEET GG-08

MATCH LINE STA. 648+00

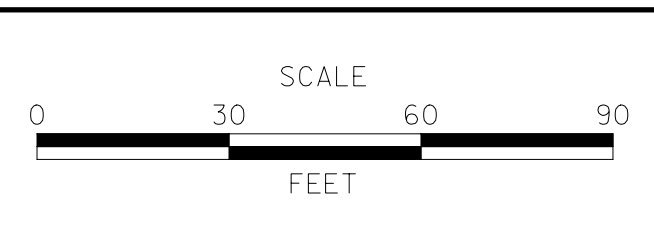


COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60380	642+00.00	98.4797	545306.6203	576059.7596
60385	641+76.51	-19.0000	545393.7253	575977.5045
60390	641+14.01	-65.0000	545399.5436	575900.1197
60395	641+87.61	-104.5498	545472.1257	575941.5126
60400	642+14.01	-69.0000	545456.0046	575982.7524
60401	642+48.58	-66.5385	545472.2650	576013.3589
60402	642+68.67	-65.0291	545481.6451	576031.1832
60405	642+76.51	-15.0000	545443.4059	576064.3828
60410	642+95.67	-63.0000	545494.2556	576055.1461
60415	642+95.67	-61.0000	545492.5605	576056.2075
60420	643+58.17	-23.0000	545493.5227	576129.3466
60425	643+58.17	-21.0000	545491.8275	576130.4080
60430	645+24.31	-90.2586	545638.7001	576234.4653
60435	647+00.00	-86.0649	545728.3857	576385.5980

\$FILES \$DATES



ADDENDUMS / REVISIONS	

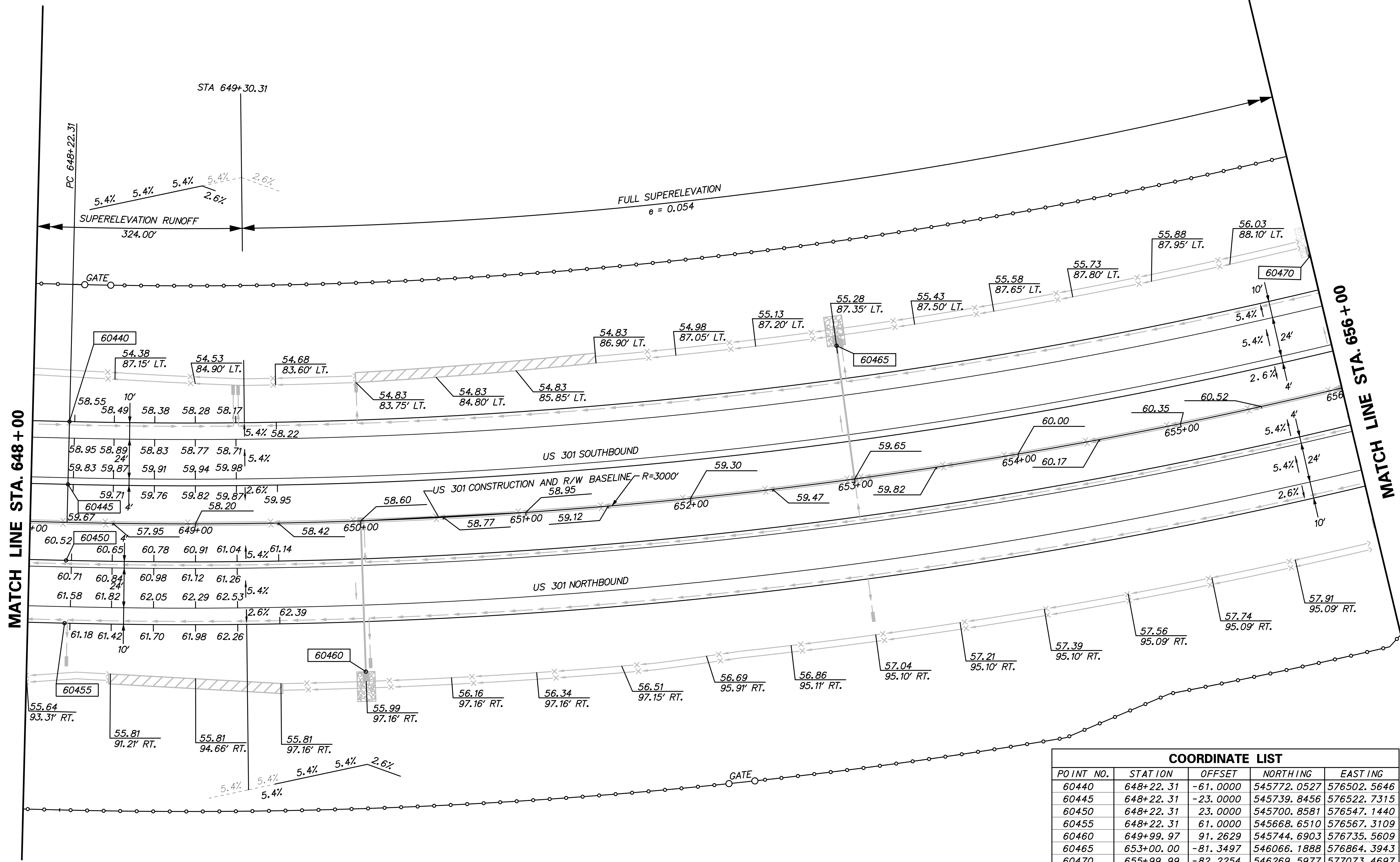
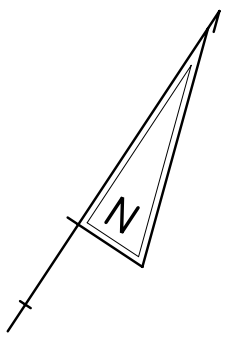


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**GRADES & GEOMETRICS**

<b>GG-09</b>
SHEET NO. 51
TOTAL SHTS. 240

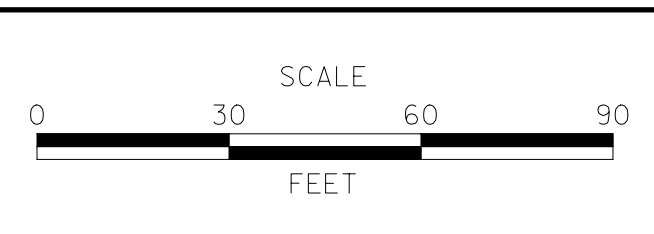


COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60440	648+22.31	-61.0000	545772.0527	576502.5646
60445	648+22.31	-23.0000	545739.8456	576522.7315
60450	648+22.31	23.0000	545700.8581	576547.1440
60455	648+22.31	61.0000	545668.6510	576567.3109
60460	649+99.97	91.2629	545744.6903	576735.5609
60465	653+00.00	-81.3497	546066.1888	576864.3943
60470	655+99.99	-82.2254	546269.5977	577073.4697

SFILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,**  
**NORFOLK SOUTHERN RR TO SR 896**

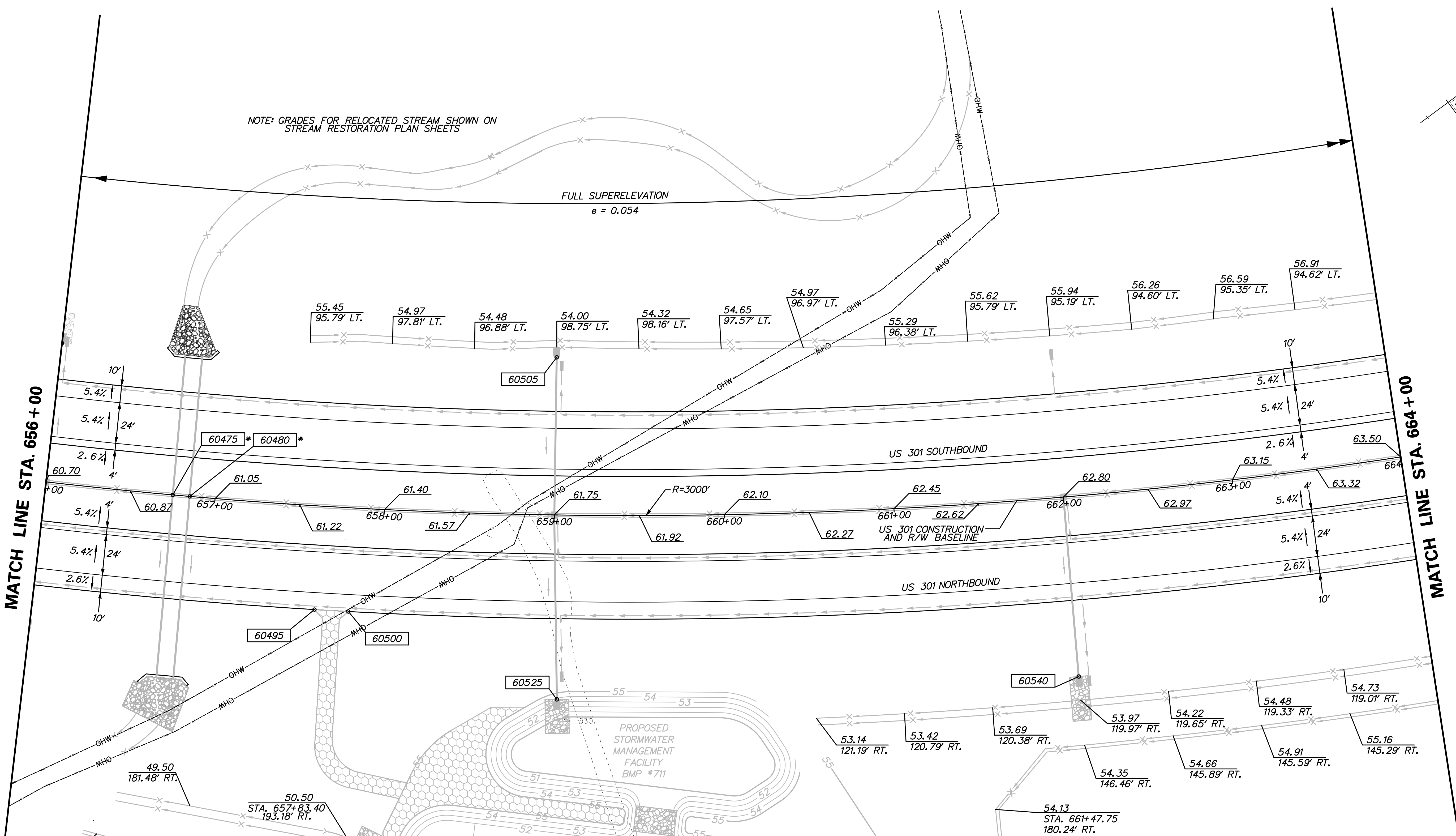
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**GRADES & GEOMETRICS**

<b>GG-10</b>
SHEET NO. 52
TOTAL SHTS. 240

NOTE: GRADES FOR RELOCATED STREAM SHOWN ON STREAM RESTORATION PLAN SHEETS

FULL SUPERELEVATION  
e = 0.054



MATCH LINE SHEET GG-12

COORDINATE LIST

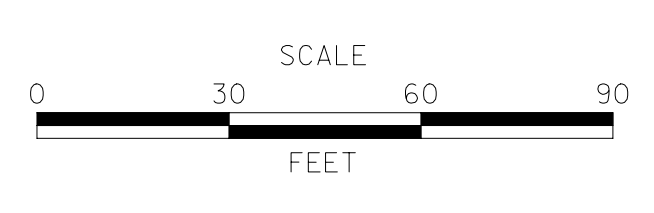
POINT NO.	STATION	OFFSET	NORTHING	EASTING
* 60475	656+75.00	0.0000	546268.8295	577184.0686
* 60480	656+85.00	0.0000	546276.3114	577190.7035
60495	657+62.38	61.0000	546295.7420	577287.9273
60500	567+81.98	61.0000	546311.1065	577300.7311
60505	659+00.00	-92.7532	546498.6621	577253.4724
60525	659+03.00	108+5024	546378.9944	577415.3133
60540	662+00.00	105.9690	546633.9268	577587.2640

\*NOTE: SEE BR 1-444A DETAILS FOR HEADWALL LAYOUT COORDINATES.

\$FILES \$DATES



ADDENDUMS / REVISIONS



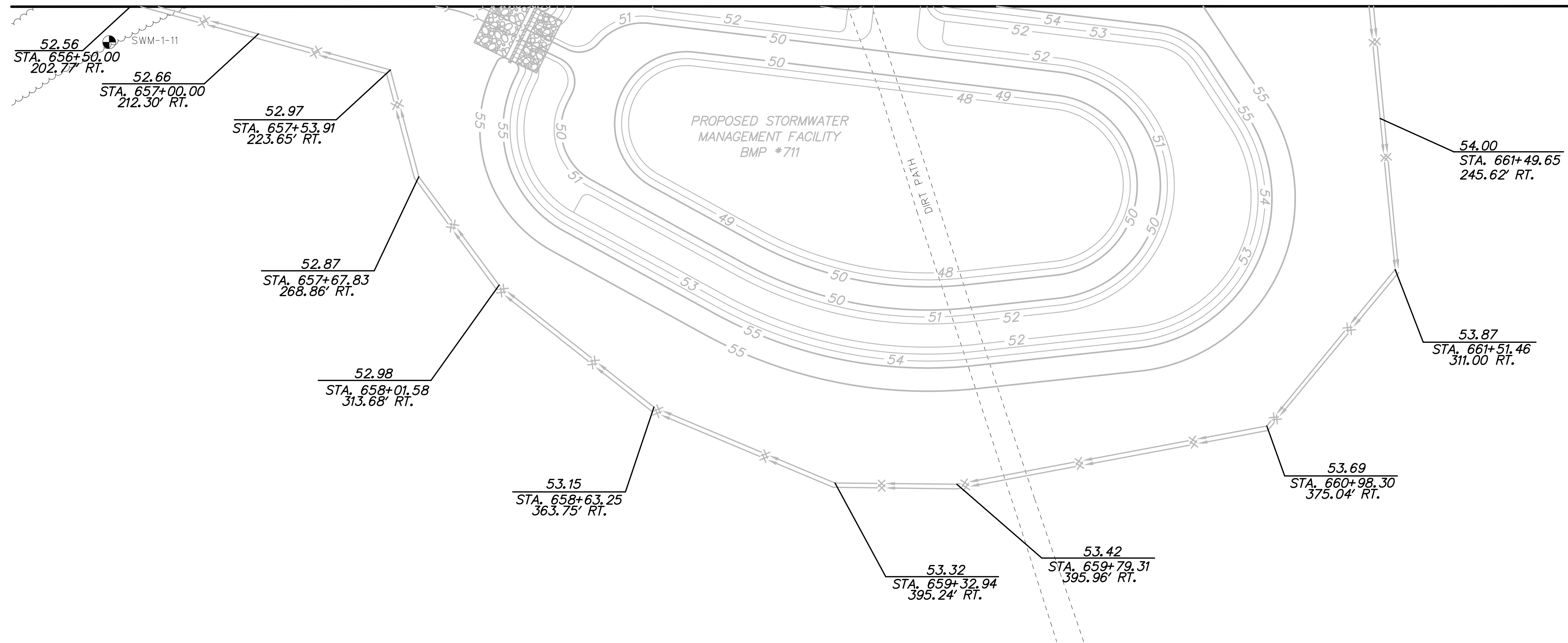
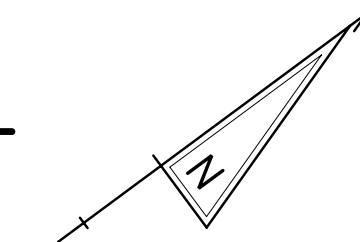
US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

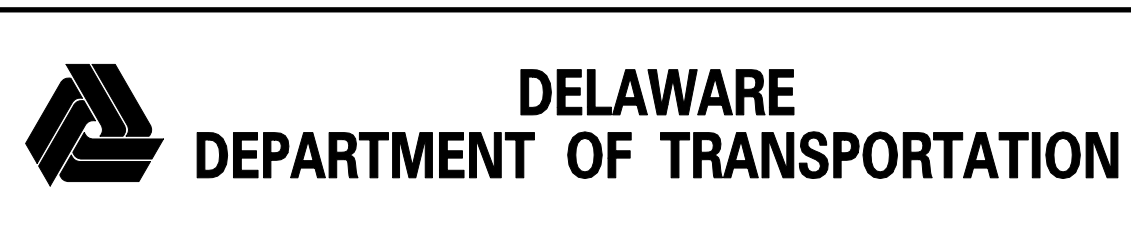
GRADES & GEOMETRICS

GG-11
SHEET NO. 53
TOTAL SHTS. 240

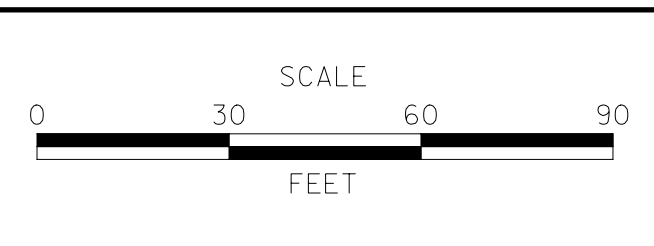
MATCH LINE SHEET GG-11



\$FILES \$DATES



ADDENDUMS / REVISIONS	



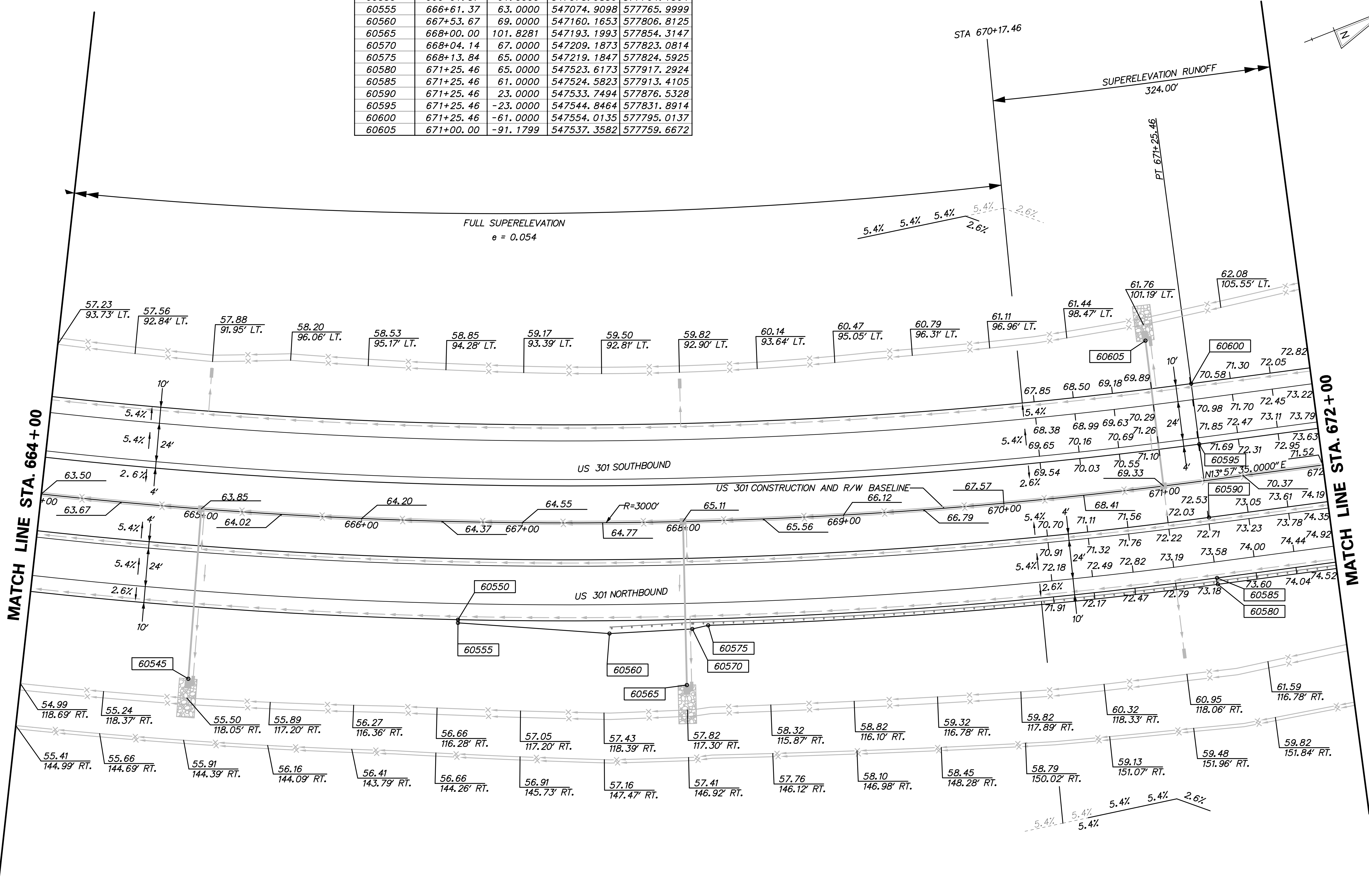
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

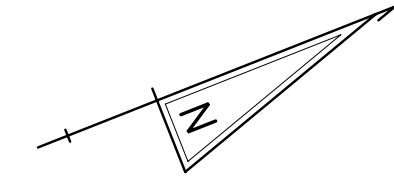
**GRADES & GEOMETRICS**

<b>GG-12</b>
SHEET NO. 54
TOTAL SHTS. 240

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60545	665+00.00	106.0508	546906.0341	577736.7641
60550	666+61.37	61.0000	547075.6856	577764.1564
60555	666+61.37	63.0000	547074.9098	577765.9999
60560	667+53.67	69.0000	547160.1653	577806.8125
60565	668+00.00	101.8281	547193.1993	577854.3147
60570	668+04.14	67.0000	547209.1873	577823.0814
60575	668+13.84	65.0000	547219.1847	577824.5925
60580	671+25.46	65.0000	547523.6173	577917.2924
60585	671+25.46	61.0000	547524.5823	577913.4105
60590	671+25.46	23.0000	547533.7494	577876.5328
60595	671+25.46	-23.0000	547544.8464	577831.8914
60600	671+25.46	-61.0000	547554.0135	577795.0137
60605	671+00.00	-91.1799	547537.3582	577759.6672

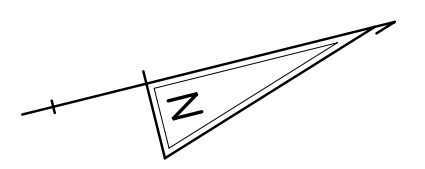


\$FILES \$DATES

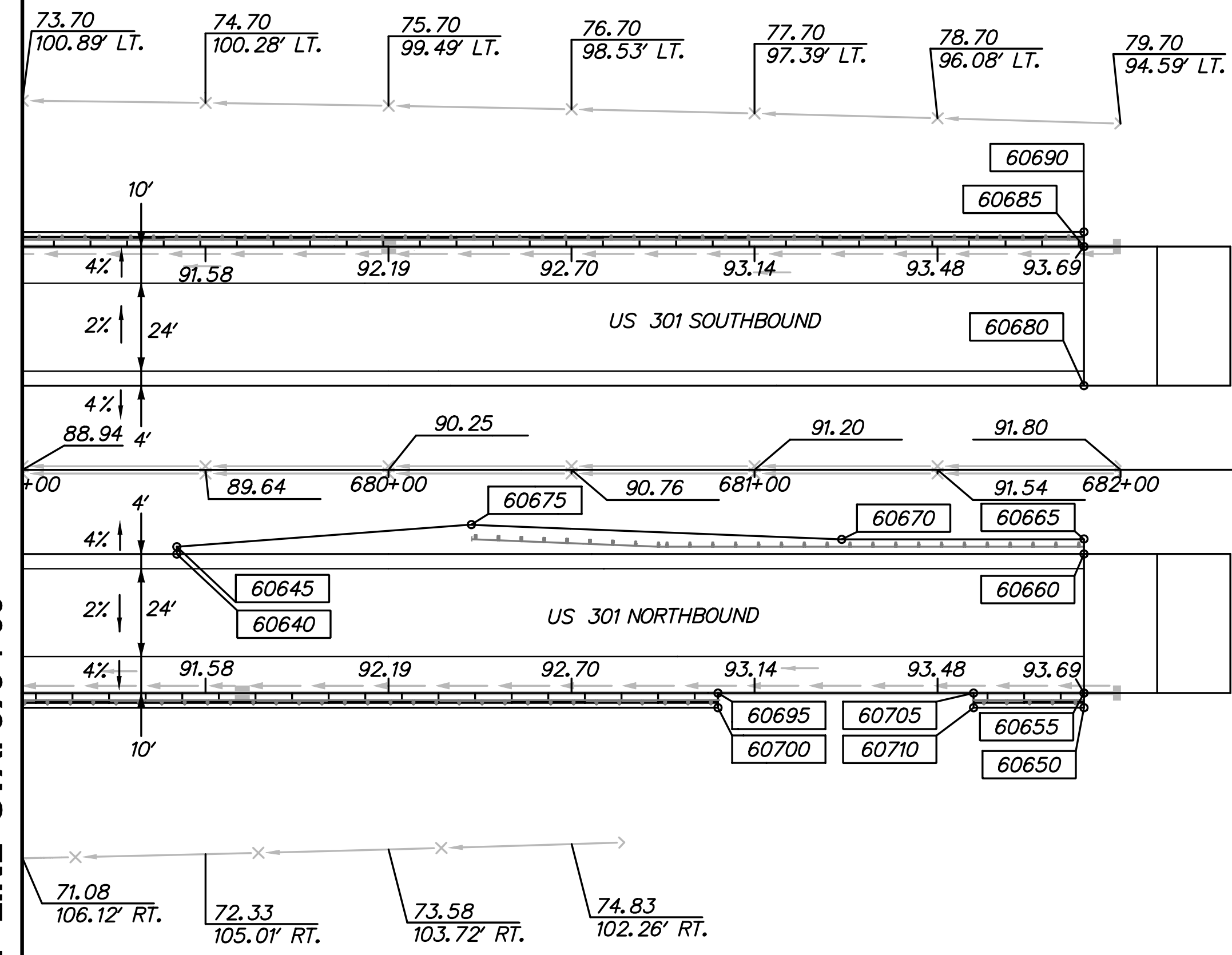




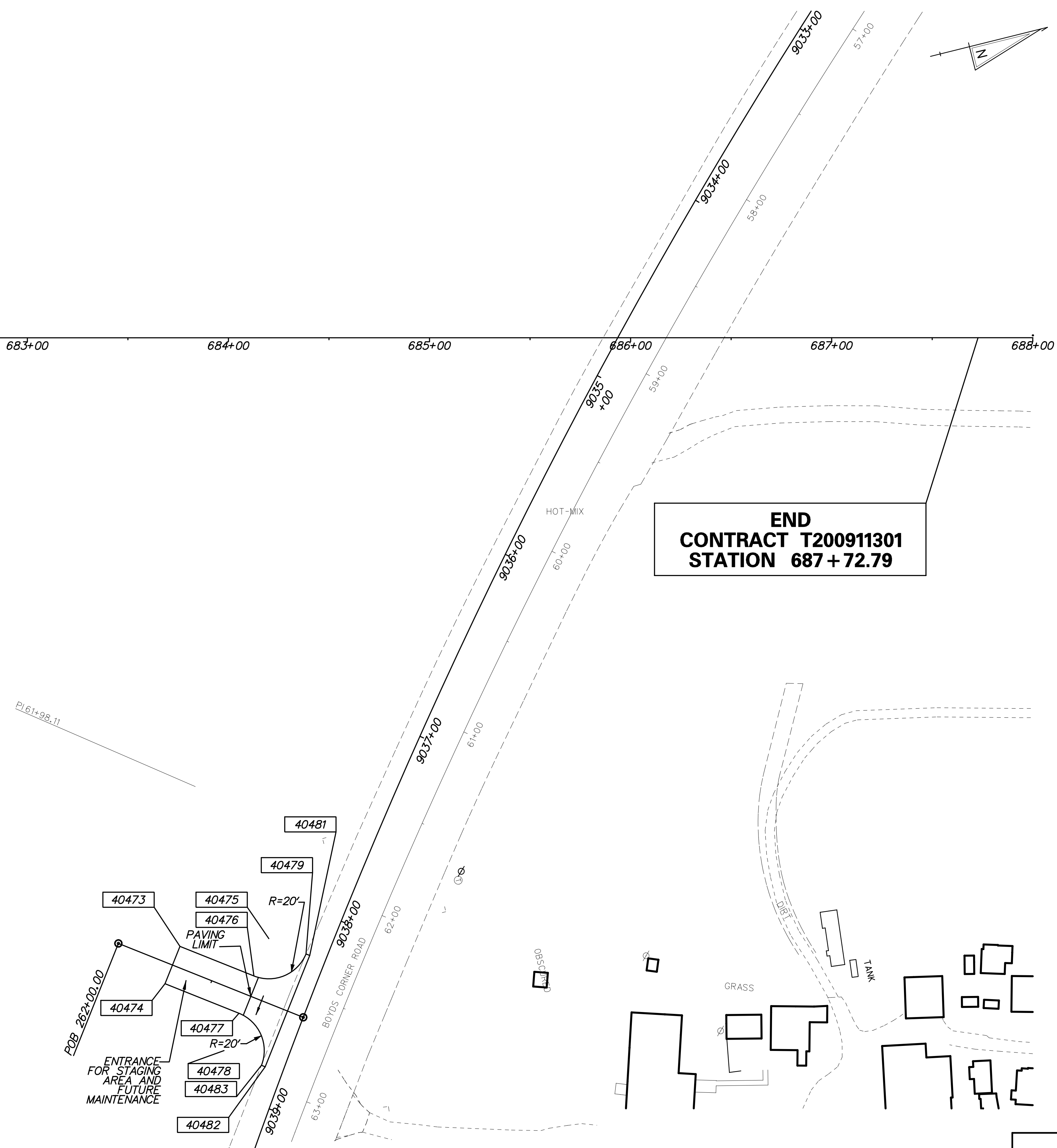




MATCH LINE STA. 679+00



COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
60640	679+42.16	23.0000	548326.3246	578073.5523
60645	679+42.16	21.0000	548326.8071	578071.6114
60650	681+90.00	65.0000	548556.7122	578174.1006
60655	681+90.00	61.0000	548557.6772	578170.2188
60660	681+90.00	23.0000	548566.8443	578133.3411
60665	681+90.00	19.0000	548567.8092	578129.4592
60670	681+23.82	19.0000	548503.5821	578113.4935
60675	680+22.00	15.0000	548405.7398	578085.0500
60680	681+90.00	-23.0000	548577.9413	578088.6996
60685	681+90.00	-61.0000	548587.1084	578051.8220
60690	681+90.00	-65.0000	548588.0734	578047.9401
60695	680+90.00	61.0000	548460.6310	578146.0949
60700	680+90.00	65.0000	548459.6661	578149.9767
60705	681+59.83	61.0000	548528.4028	578162.9417
60710	681+59.83	65.0000	548527.4378	578166.8237
40473	262+28.97	-10.0000	548679.7160	578449.6973
40474	262+28.97	10.0000	548668.0278	578465.9265
40475	262+68.58	-30.0000	548723.5446	578456.6155
40476	262+68.58	-10.0000	548711.8564	578472.8447
40477	262+68.58	10.0000	548700.1692	578489.0746
40478	262+68.58	30.0000	548688.4810	578505.3038
40479	262+88.58	-29.7732	548739.6402	578468.4870
40481	262+90.58	-29.7733	548741.2632	578469.6558
40482	262+90.58	29.8847	548706.4002	578518.0670
40483	262+88.58	29.8847	548704.7773	578516.8982

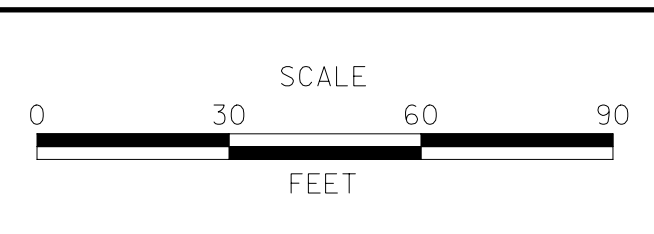


**END  
CONTRACT T200911301  
STATION 687+72.79**

\$FILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

**GRADES & GEOMETRICS**


GG-15
SHEET NO.
57
TOTAL SHTS.
240

BORROW SITE NOTES

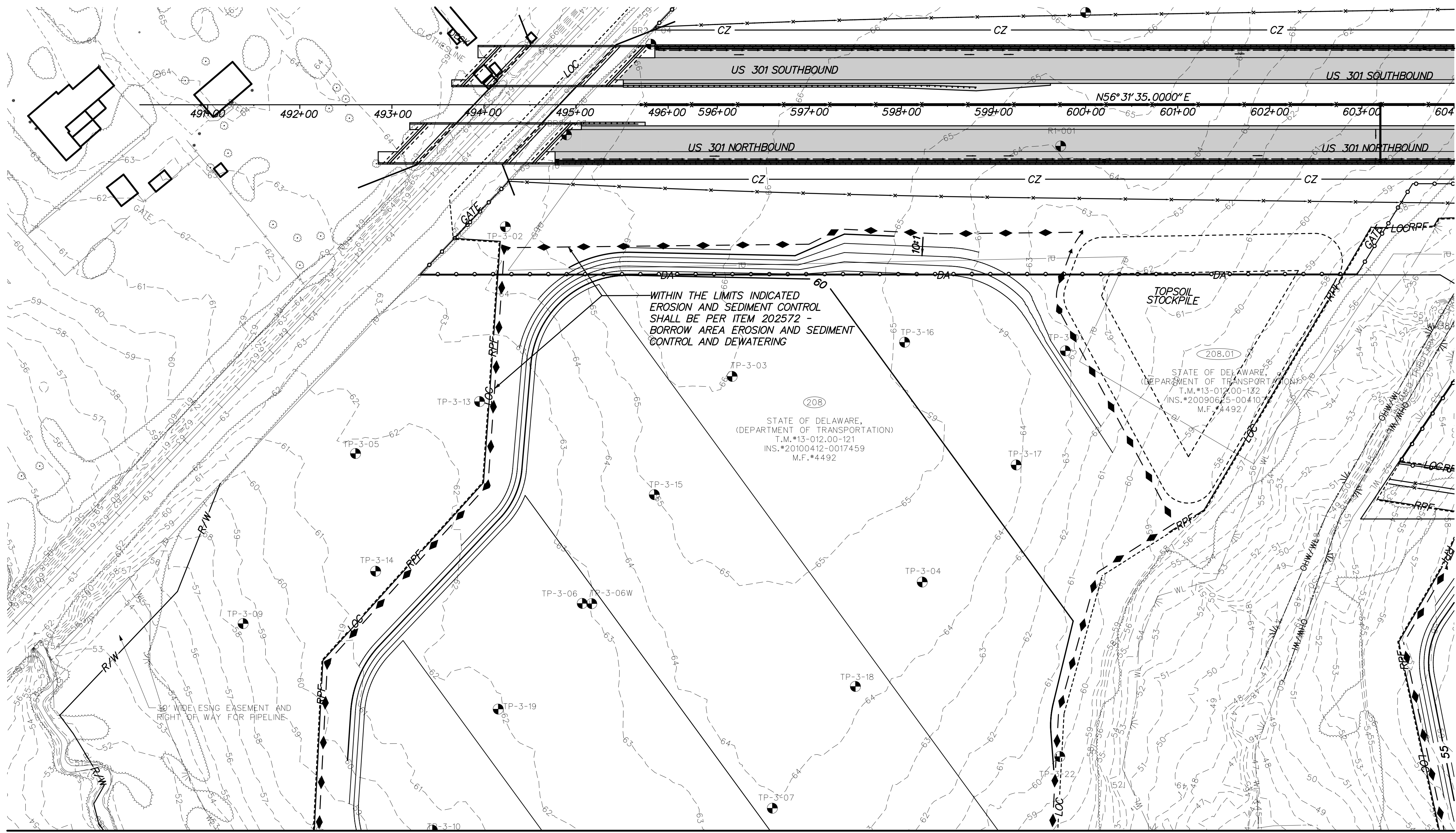
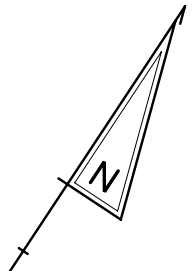
1. THE LIMITS OF GRADING FOR THE BORROW SITES AS SHOWN ON BS-02, BS-03, BS-04, BS-05, BS-06, BS-07 AND BS-08 SHALL BE CONSIDERED THE MAXIMUM LIMITS OF FINAL GRADING FOR THE BORROW SITES. SHOULD LESS BORROW MATERIAL BE REQUIRED, THE SITES SHALL BE EXCAVATED TO A SHALLOWER ELEVATION OR THE LIMITS OF GRADING SHALL BE REDUCED. SHOULD ADDITIONAL BORROW MATERIAL BE REQUIRED, OVEREXCAVATION IS PERMITTED UNDER THE FOLLOWING RESTRICTIONS. OVEREXCAVATION SHALL BE BACKFILLED TO THE FINAL GRADING DESIGN ELEVATIONS SHOWN ON THE PLANS WITH TOPSOIL, AGRICULTURAL SOIL, ROOTMAT, OR UNSUITABLE SOILS. OVEREXCAVATION BELOW THE FINAL GRADES TO OBTAIN ADDITIONAL MATERIALS REQUIRED FOR THE PROJECT AT A BORROW SITE SHALL NOT BE PERMITTED UNTIL MATERIALS FROM ALL OF THE BORROW SITES HAVE BEEN EXCAVATED TO THE FINAL GRADING DESIGN ELEVATIONS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE ENGINEER. UNSUITABLE SOIL IS DEFINED AS A-4, A-5, A-6, OR A-7 SOILS, AASHTO CLASSIFICATION. AGRICULTURAL SOIL, ROOTMAT AND UNSUITABLE SOILS MAY BE IMPORTED TO THE BORROW SITE FROM WITHIN THE CONTRACT LIMITS. UNSUITABLE SOILS AND ROOTMAT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW FINAL GRADE WITH THE 18 INCHES CONSISTING OF TOPSOIL OR AGRICULTURAL SOILS. TOPOGRAPHIC SURVEY ON THE FINAL OVEREXCAVATED SITE FOR MEASUREMENT OF FINAL EXCAVATED QUANTITIES SHALL BE PERFORMED BEFORE PLACING ANY UNSUITABLE MATERIALS OR ROOTMAT. TOPOGRAPHIC SURVEY ON THE FINAL SLOPES OF THE UNSUITABLE MATERIALS OR ROOTMAT PLACED SHALL BE PERFORMED PRIOR TO PLACING ANY TOPSOIL OR AGRICULTURAL SOIL TO ENSURE THAT THESE MATERIALS ARE BURIED A MINIMUM OF 18\* BELOW FINAL GRADES. THE CONTRACTOR SHALL SUBMIT A REVISED FINAL GRADING PLAN TO THE ENGINEER FOR APPROVAL
2. EXISTING BORROW SITE TOPSOIL AND AGRICULTURAL SOIL SHALL BE STRIPPED, STOCKPILED, AND QUARANTINED FOR RE-USE ON THE BORROW SITE. AGRICULTURAL SOIL IS DEFINED AS THE TOP 9-INCHES OF SOIL OBTAINED FROM AN ACTIVE FARM FIELD OR RECENTLY ABANDONED FARM FIELD (LESS THAN 2 YEARS FALLOW OR ABANDONED). AGRICULTURAL SOILS SHALL BE TREATED AS TOPSOIL AS DESCRIBED IN SECTION 202. THE SOURCE OF THE AGRICULTURAL SOIL MUST HAVE BEEN IN CROP. NO TOPSOIL OR AGRICULTURAL SOIL REMOVED FROM THE BORROW SITE SHALL BE PLACED IN ANOTHER LOCATION. ALL OF THE TOPSOIL AND AGRICULTURAL SOIL SHALL BE RE-USED ON THE SITE.
3. FINAL INTERNAL BORROW SITE SIDE SLOPE GRADES SHALL BE A MAXIMUM OF 5:1. WITH THE APPROVAL OF THE ENGINEER, SLOPES MAY BE OVEREXCAVATED TO 3:1 AND BACKFILLED WITH TOPSOIL, AGRICULTURAL SOIL, ROOTMAT, OR UNSUITABLE SOILS TO CREATE A FINAL SLOPE OF 5:1. OVEREXCAVATED SLOPES SHALL ALSO INCLUDE A BENCH AS APPROVED BY THE ENGINEER TO PREVENT SLIPPAGE OF MATERIALS SUBSEQUENTLY PLACED. UNSUITABLE SOIL IS DEFINED AS A-4, A-5, A-6, OR A-7 SOILS, AASHTO CLASSIFICATION. AGRICULTURAL SOIL, ROOTMAT AND UNSUITABLE SOILS MAY BE IMPORTED TO THE BORROW SITE FROM WITHIN THE CONTRACT LIMITS AND PLACED IN THE OVEREXCAVATED AREAS. UNSUITABLE SOILS AND ROOTMAT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW FINAL GRADE WITH THE 18 INCHES CONSISTING OF TOPSOIL OR AGRICULTURAL SOILS. UNSUITABLE SOILS AND ROOTMAT SHALL BE PLACED SUCH THAT INTERNAL SLOPES AND GRADING WITHIN THE BORROW SITES SHALL BE CONTINUOUS SMOOTH LINES AND GRADES REPRESENTING A NATURALIZED CONDITION AND SHALL NOT APPEAR DISTURBED, MOUNDED, OR PILED, AS SOLELY DETERMINED BY THE ENGINEER. MATERIALS PLACED IN THESE OVER-EXCAVATED AREAS SHALL BE APPROVED BY THE ENGINEER AND COMPACTED AS DIRECTED BY THE ENGINEER. TOPOGRAPHIC SURVEY ON THE FINAL OVEREXCAVATED SLOPES FOR MEASUREMENT OF FINAL EXCAVATED QUANTITIES SHALL BE PERFORMED BEFORE PLACING ANY UNSUITABLE MATERIALS OR ROOTMAT. TOPOGRAPHIC SURVEY ON THE FINAL SLOPES OF THE UNSUITABLE MATERIALS OR ROOTMAT PLACED SHALL BE PERFORMED PRIOR TO PLACING ANY TOPSOIL OR AGRICULTURAL SOIL TO ENSURE THAT THESE MATERIALS ARE BURIED A MINIMUM OF 18\* BELOW FINAL GRADES. THE CONTRACTOR SHALL SUBMIT A REVISED GRADING PLAN TO THE ENGINEER FOR APPROVAL.
4. TRASH, CONSTRUCTION DEBRIS, PILE CUTOFFS, ASPHALT MILLINGS, ROCKS AND STONES AND OTHER CONSTRUCTION WASTE GENERATED ON THE CONTRACT SHALL NOT BE BURIED IN THE BORROW SITE OR THE SIDE SLOPES OF THE BORROW SITE. WITH PERMISSION AND UNDER THE DIRECTION OF THE ENGINEER, TREE STUMPS AND LARGE SECTIONS OF TREE TRUNKS CAN BE PLACED ON THE FINAL SOIL SURFACE. THE MINIMUM DISTANCE BETWEEN THE PLACED STUMPS/TRUNKS SHALL BE 35 FEET. STUMPS AND TRUNKS SHALL NOT BE PLACED IN PILES. TREE STUMP PLACEMENT IS OPTIONAL AND NOT MANDATORY.
5. UNDER FINAL CONDITIONS THE BORROW SITES SHALL BE GRADED TO DRAIN. WATER SHOULD NOT STAND ON THE SITES FOLLOWING RAIN EVENTS BUT SHALL BE CONVEYED VIA STABLE CHANNELS, SWALES, OR STABLE OVERLAND FLOW TO ADJACENT WETLANDS AND FORESTED AREAS. THE CONTRACTOR SHALL NOT CHANGE THE BORROW SITE OUTFALL LOCATIONS AS SHOWN ON BS-02 THROUGH BS-08.
6. FOLLOWING EXTRACTION OF BORROW, AND PRIOR TO SECTION 733 - TOPSOILING, SUBSOILS SHALL BE TILLED AS SPECIFIED IN SPECIAL PROVISION 202555 - SUBSOIL TILLAGE. SUBSOILS SHALL BE TILLED THROUGH THE EXTENT OF THE BORROW SITES, EXCEPT THAT NO SUBSOIL TILLAGE SHOULD BE PERFORMED:
  - A. WITHIN STORMWATER MANAGEMENT PONDS,
  - B. WITHIN 15\* OF THE TOE OF SLOPE OF STORMWATER MANAGEMENT POND EMBANKMENTS, OR
  - C. WITHIN 10\* OF UNDERGROUND UTILITIES.

TOPOGRAPHIC SURVEY ON THE FINAL EXCAVATED SLOPES FOR MEASUREMENT OF FINAL EXCAVATED QUANTITIES SHALL BE PERFORMED BEFORE THE SUBSOILS ARE TILLED.
7. A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE PLACED OVER ALL EXCAVATED AND DISTURBED AREAS IN CONFORMANCE WITH SECTION 733 - TOPSOILING. LOCAL AGRICULTURAL SOILS GENERATED WITHIN THE CONTRACT LIMITS SHALL BE CONSIDERED ACCEPTABLE TOPSOIL MATERIAL. WITH THE PERMISSION OF THE ENGINEER, THE TOPSOILING DEPTH MAY EXCEED THE MINIMUM 6-INCH DEPTH, BUT THE FINAL ELEVATION AT ANY LOCATION SHALL NOT EXCEED THE ORIGINAL GROUND ELEVATION AT THE START OF THE PROJECT. FOLLOWING THE FINAL TOPSOILING, INTERNAL SLOPES AND GRADING WITHIN THE BORROW SITE SHALL BE CONTINUOUS SMOOTH LINES AND GRADES REPRESENTING A NATURALIZED CONDITION AND SHALL NOT APPEAR DISTURBED, MOUNDED, OR PILED, AS SOLELY DETERMINED BY THE ENGINEER. NO INTERNAL GRADE SHALL EXCEED 5:1.
8. AT THE CONCLUSION OF ALL GRADING AND TOPSOIL PLACEMENT OPERATIONS, ALL DISTURBED AREAS SHALL BE SEEDED WITH ITEM 734551 - NATIVE GRASS SEEDING - NO MOW MIX. TIMING FOR THE SEEDING OPERATIONS SHALL BE PER THE SPECIFICATION, SEPTEMBER 1ST TO NOVEMBER 15TH. SEED SHALL BE DISCED INTO THE SOIL A MINIMUM OF 6 INCHES DEEP IN THREE PASSES WITH EACH PASS 90 DEGREES TO THE PREVIOUS PASS. THE COST OF DISCING SHALL BE INCIDENTAL TO ITEM 734551 NATIVE GRASS SEEDING; NO MOW MIX.
9. AT THE CONCLUSION OF ALL GRADING AND TOPSOIL PLACEMENT OPERATIONS, ALL DISTURBED AREAS SHALL BE SEEDED WITH ITEM 734551 - NATIVE GRASS SEEDING - NO MOW MIX. TIMING FOR THE SEEDING OPERATIONS SHALL BE PER THE SPECIFICATION, SEPTEMBER 1ST TO NOVEMBER 15TH. SEED SHALL BE DISCED INTO THE SOIL A MINIMUM OF 6 INCHES DEEP IN THREE PASSES WITH EACH PASS 90 DEGREES TO THE PREVIOUS PASS. THE COST OF DISCING SHALL BE INCIDENTAL TO ITEM 734551 NATIVE GRASS SEEDING; NO MOW MIX.
10. SOILS MEETING GRADATION REQUIREMENTS FOR BORROW TYPES A, C, D, AND F ARE AVAILABLE IN THE BORROW SOURCES FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE LOCATION OF QUALIFYING MATERIALS AND SORTING AND STOCKPILING THESE MATERIALS AS NEEDED TO COMPLETE THE WORK. NO COMPENSATION WILL BE PROVIDED FOR ACTIVITIES ASSOCIATED WITH ACQUISITION OF THESE MATERIALS FROM OFF-SITE DUE TO A FAILURE TO USE MATERIAL AVAILABLE ON-SITE. GEOTECHNICAL DATA WILL BE PROVIDED BY THE DEPARTMENT TO ASSIST IN THE LOCATION OF BORROW TYPES, BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE GRADATION OF THE MATERIALS.
11. MEASUREMENT AND PAYMENT:
  - A. ALL EXCAVATION INCLUDING STRIPPING AND STOCKPILING OF TOPSOIL AND AGRICULTURAL SOILS SHALL BE CALCULATED AND PAID FOR UNDER ITEM 202000, EXCAVATION AND EMBANKMENT. DOUBLE HANDLING FOR STOCKPILING AND SORTING OF MATERIAL TYPES FOR USE ON THE PROJECT SHALL NOT BE MEASURED BUT SHALL BE INCIDENTAL TO ITEM 202000. MATERIALS OTHER THAN TOPSOIL, AGRICULTURAL SOILS OR UNSUITABLE MATERIALS EXCAVATED FROM THE BORROW SITES AND NOT USED ELSEWHERE FOR THE CONSTRUCTION OF THE PROJECT SHALL BE INCORPORATED BACK INTO THE BORROW SITE. STOCKPILES OF THE UNUSED MATERIALS SHALL BE MEASURED BY THE ENGINEER BEFORE THE CONTRACTOR MOVES THE MATERIAL BACK INTO THE BORROW SITE AND THE ENGINEER SHALL MEASURE THE FINAL GROUND AT THE STOCKPILE AFTER THE MATERIALS HAVE BEEN REMOVED. THE MEASURED QUANTITY OF THE STOCKPILES SHALL BE DEDUCTED FROM THE FINAL QUANTITY PAID UNDER ITEM 202000. THE UNUSED MATERIALS SHALL BE INCORPORATED INTO THE BORROW SITE IN ACCORDANCE WITH THESE PROJECT NOTES AND AS DIRECTED BY THE ENGINEER.
  - B. CLEARING AND GRUBBING OF THE BORROW SITE SHALL BE INCIDENTAL TO ITEM 201000. PLACEMENT OF STUMPS AND TREE TRUNKS, IF ELECTED AND APPROVED, SHALL BE INCIDENTAL TO ITEM 201000.
  - C. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PAID FOR UNDER ITEM 202572 - BORROW AREA EROSION AND SEDIMENT CONTROL AND DEWATERING.
  - D. PLACEMENT OF UNSUITABLE SOILS OR ROOTMAT SHALL BE INCIDENTAL TO THE ITEMS FOR THEIR REMOVAL.
  - E. SUBSOIL TILLAGE SHALL BE MEASURED AND PAID UNDER ITEM 202555.
  - F. TOPSOILING SHALL BE PAID UNDER ITEM 733002 UNDER SPECIFICATION SECTION 733. THE SURFACE OF THE FINAL TOPSOIL AREA SHALL BE MEASURED ONCE FOR PAYMENT AND PAID UNDER THE SPECIFIED ITEM REGARDLESS OF THE ACTUAL DEPTH PLACED. THE CONTRACTOR SHALL MEET ALL TOPSOILING REQUIREMENTS WITH TOPSOIL OR AGRICULTURAL SOILS REMOVED FROM THE BORROW SITE. TOPSOIL REMOVED FROM ELSEWHERE WITHIN THE CONTRACT LIMITS THAT IS IN EXCESS OF THE TOPSOILING NEEDED FOR THE PROJECT MAY BE DISPOSED OF AT THE BORROW SITE WITH THE PERMISSION OF THE ENGINEER. ANY OTHER TOPSOIL NEEDED AT THE BORROW SITE DUE TO THE CONTRACTOR'S OPERATIONS, SUCH AS BURYING UNSUITABLE MATERIALS, SHALL BE PROVIDED BY THE CONTRACTOR AT NO EXPENSE TO THE DEPARTMENT.
  - G. NATIVE GRASS SEEDING SHALL BE MEASURED AND PAID UNDER ITEM 734551.
12. MONITORING WELLS SHALL BE ABANDONED BY A WELL DRILLER LICENSED IN DELAWARE IN ACCORDANCE WITH THE PROVISIONS IN ITEM 211521 - ABANDONMENT OF WELLS. PHYSICAL REMOVAL AND DISPOSAL OF THE ABANDONED WELLS ENCOUNTERED DURING EXCAVATION SHALL BE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.
13. SEDIMENT REMOVED FROM SEDIMENT CONTROL DEVICES SHALL BE TREATED PER NOTE 3 ABOVE.

\$FILES \$DATES

 <b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS		<b>NOT TO SCALE</b>	<b>US 301, NORFOLK SOUTHERN RR TO SR 896</b>	CONTRACT	BRIDGE NO.	<b>BORROW SITE GENERAL NOTES</b>	SHEET NO.
	T200911301	DESIGNED BY:			WJD	58		
	COUNTY	CHECKED BY:			MAA	TOTAL SHTS.		
	NEW CASTLE					240		

**BS-01**

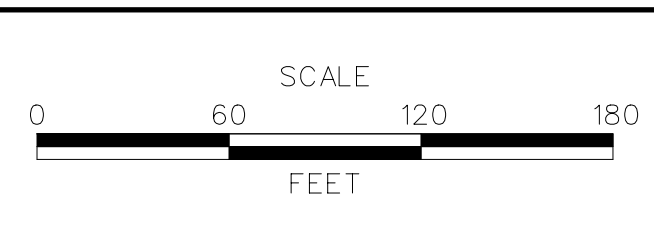


MATCH LINE SHEET BS-03

\$DATES  
\$FILES



ADDENDUMS / REVISIONS	

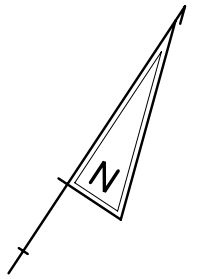


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

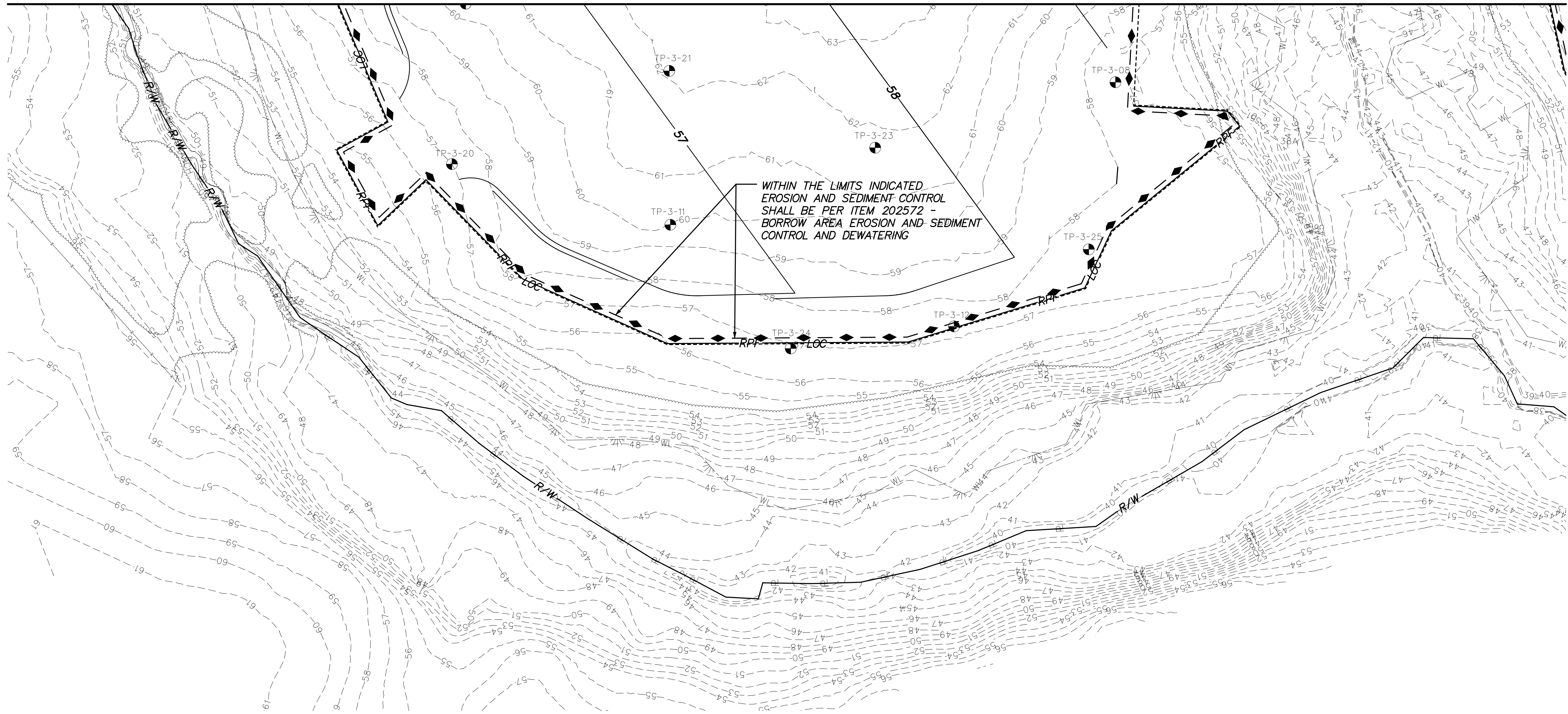
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**BORROW SITE GRADING  
PLEASANTON SOUTH**

<b>BS-02</b>
SHEET NO. 59
TOTAL SHTS. 240



MATCH LINE SHEET BS-02



\$DATES

\$FILES



ADDENDUMS / REVISIONS	

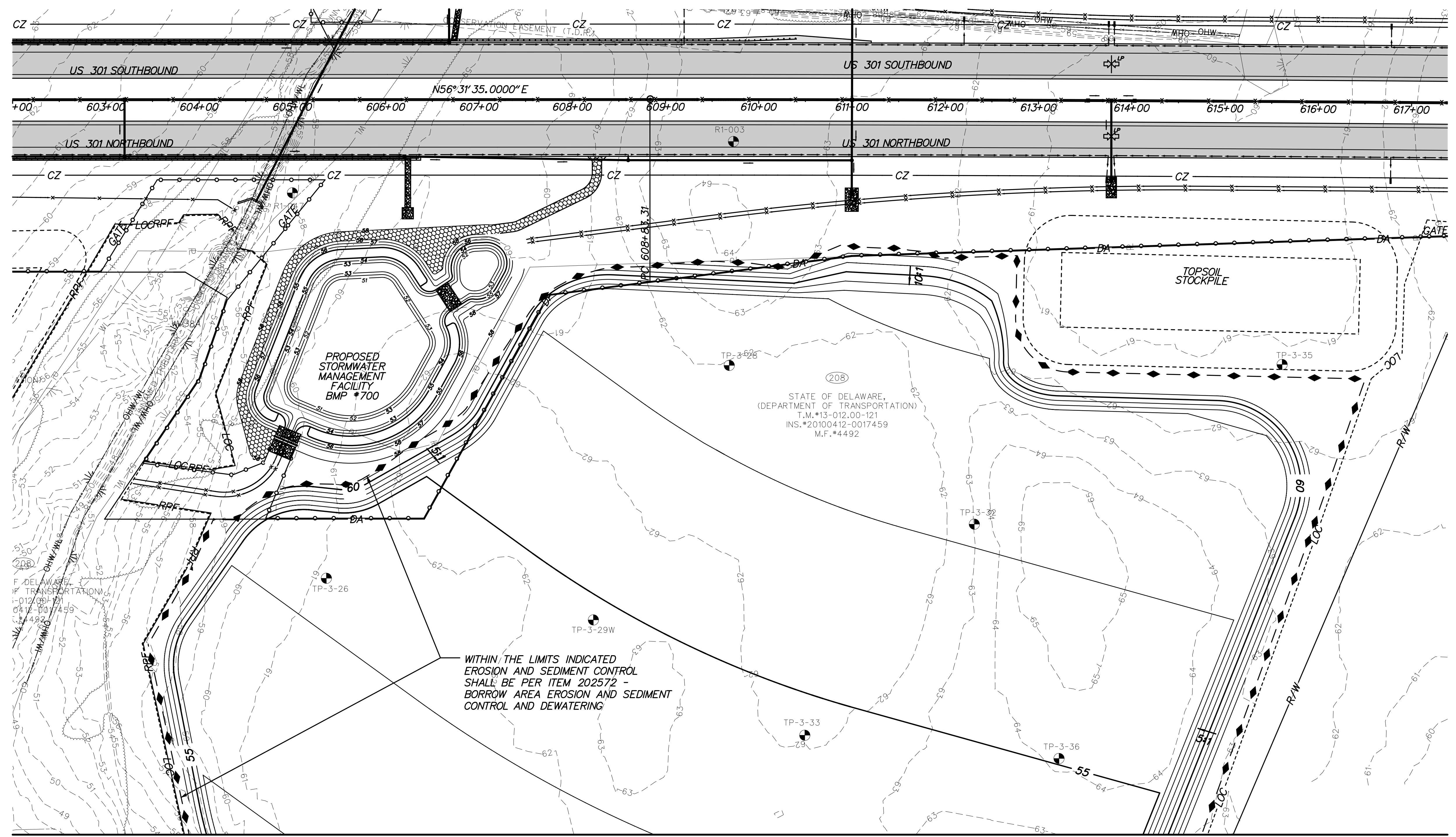
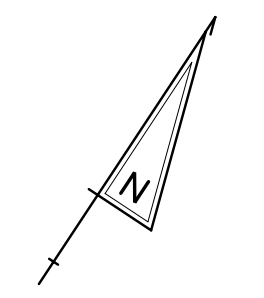


US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

**BORROW SITE GRADING  
PLEASANTON SOUTH**

<b>BS-03</b>
SHEET NO.
60
TOTAL SHTS.
240



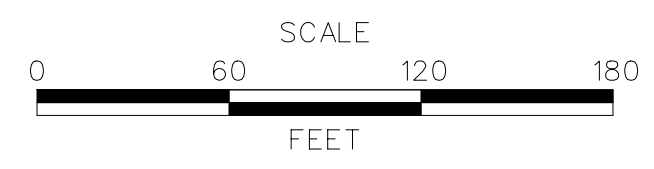
MATCH LINE SHEET BS-05

\$DATES \$FILES

WITHIN THE LIMITS INDICATED  
EROSION AND SEDIMENT CONTROL  
SHALL BE PER ITEM 202572 -  
BORROW AREA EROSION AND SEDIMENT  
CONTROL AND DEWATERING



ADDENDUMS / REVISIONS	



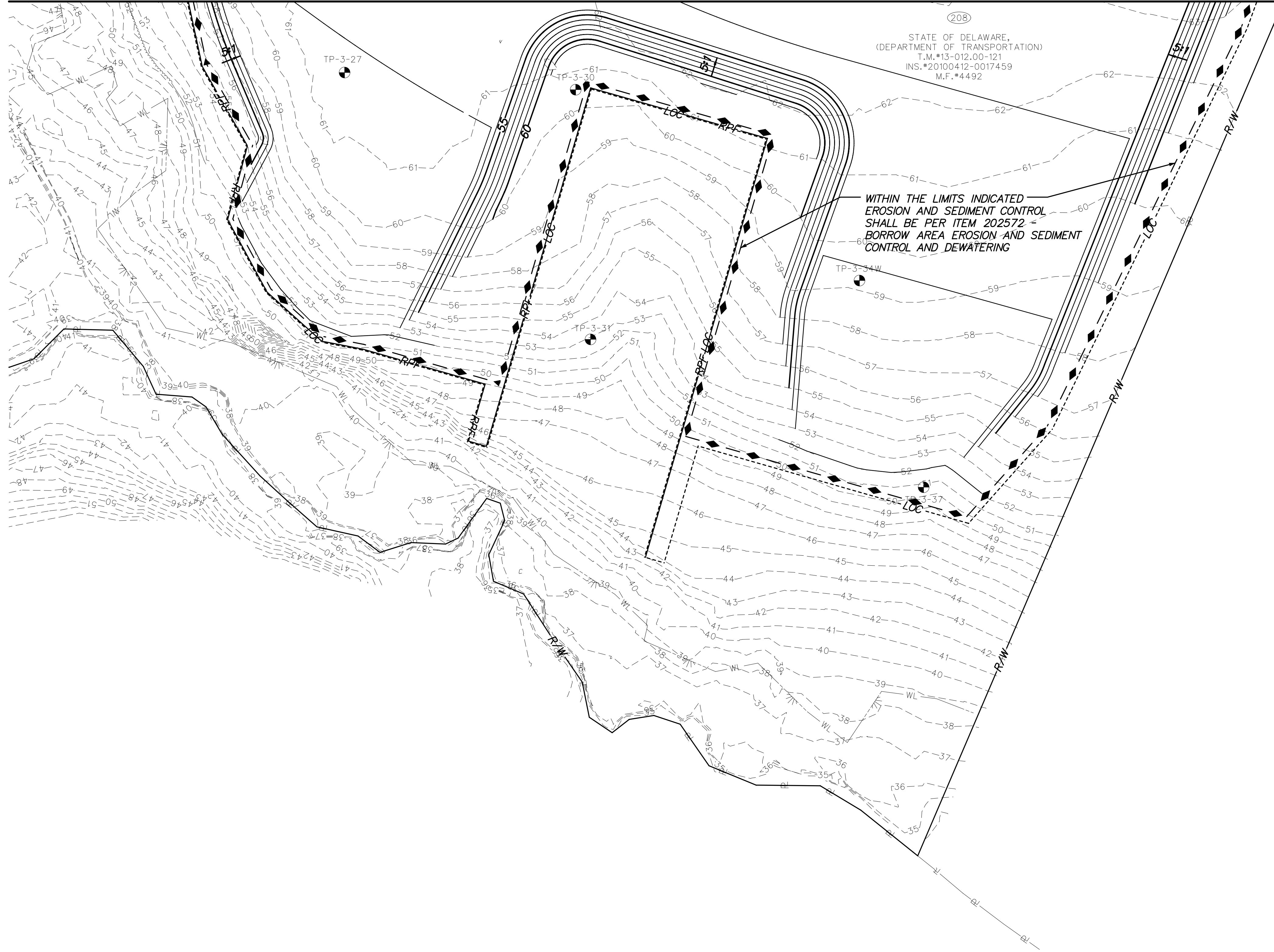
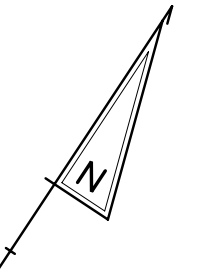
**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

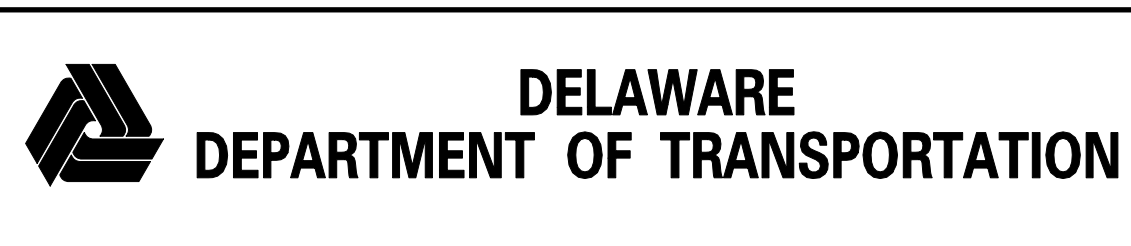
**BORROW SITE GRADING  
PLEASANTON SOUTHEAST**

<b>BS-04</b>
SHEET NO. 61
TOTAL SHTS. 240

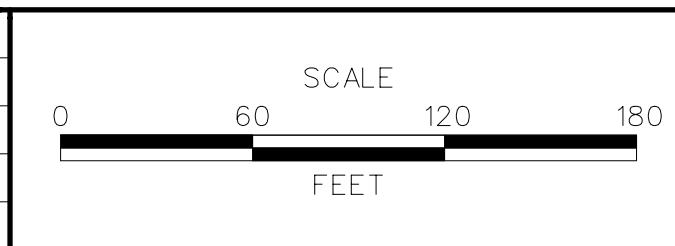
MATCH LINE SHEET BS-04



\$DATES \$FILES



ADDENDUMS / REVISIONS	

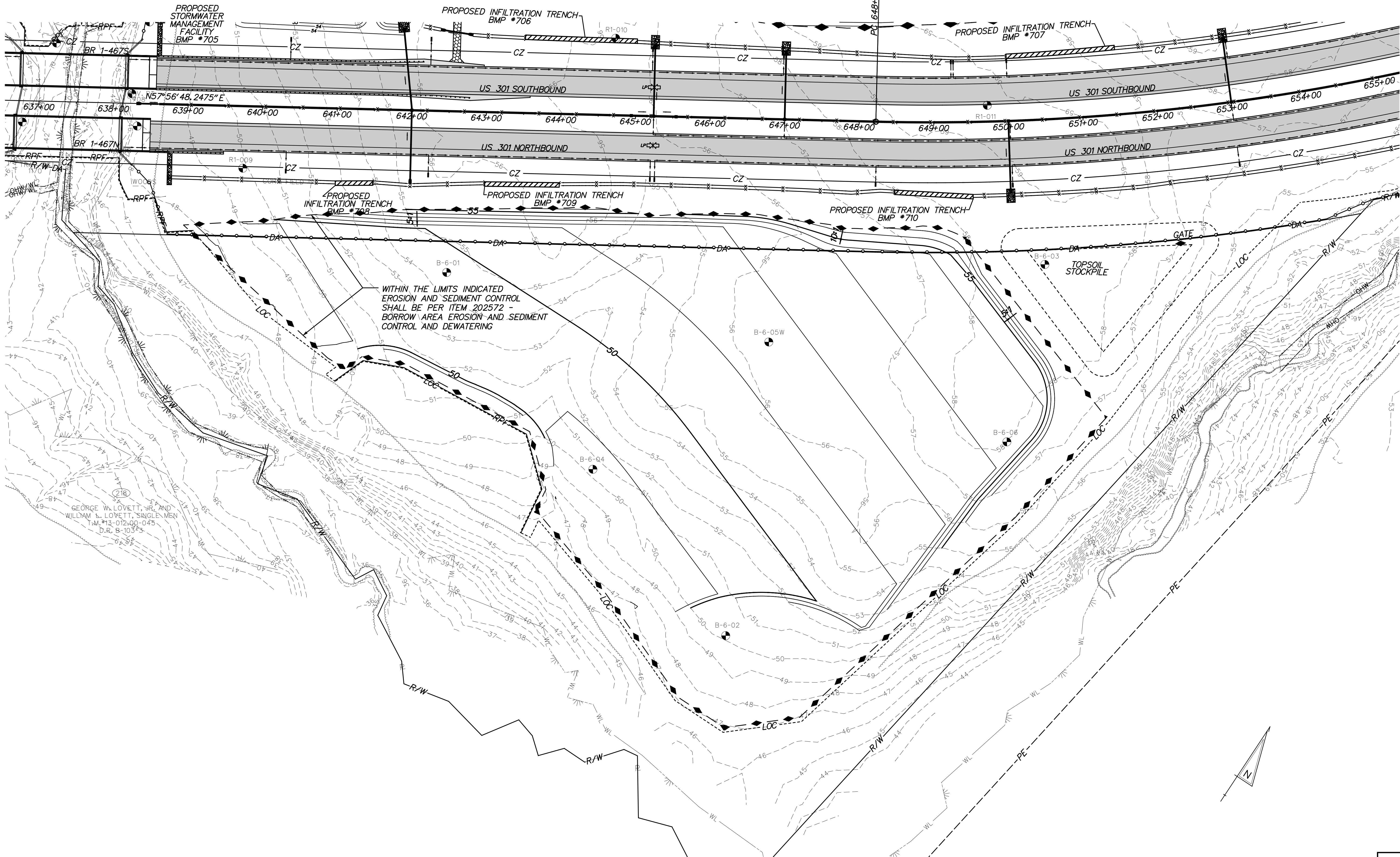


**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**BORROW SITE GRADING  
PLEASANTON SOUTHEAST**

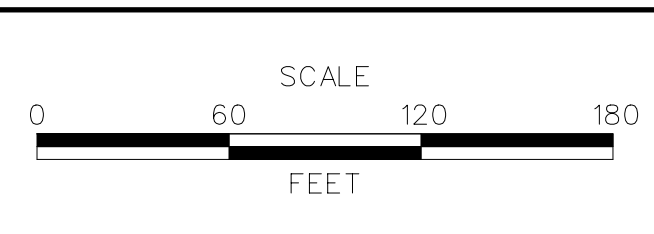
<b>BS-05</b>
SHEET NO. 62
TOTAL SHTS. 240



\$FILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

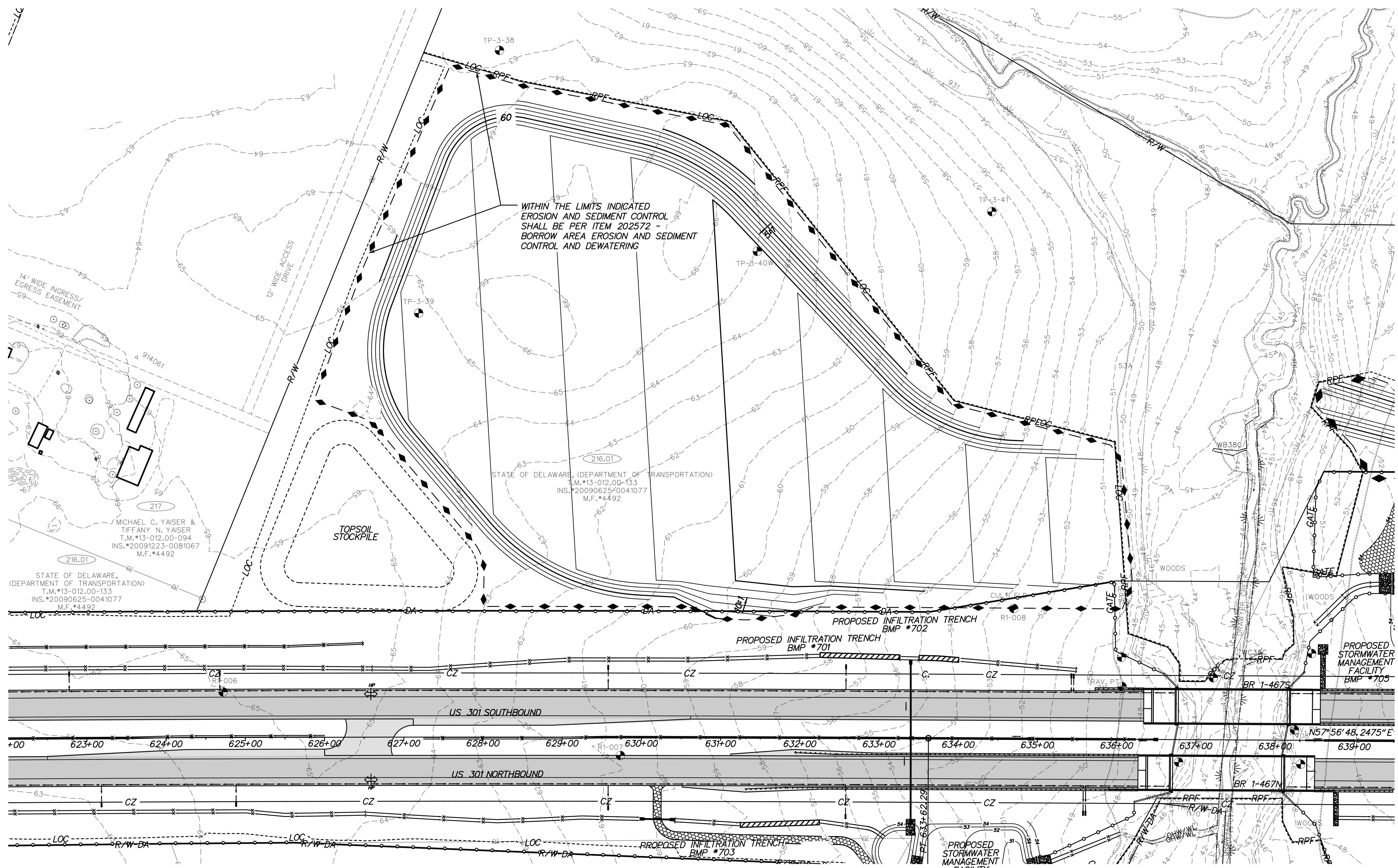
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**BORROW SITE GRADING  
CHURCHTOWN MANOR  
SOUTH**

BS-06
SHEET NO. 63
TOTAL SHTS. 240







WITHIN THE LIMITS INDICATED  
EROSION AND SEDIMENT CONTROL  
SHALL BE PER ITEM 202572 -  
BORROW AREA EROSION AND SEDIMENT  
CONTROL AND DEWATERING

STATE OF DELAWARE (DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-133  
INS.#20090625-0041077  
M.F.#4492

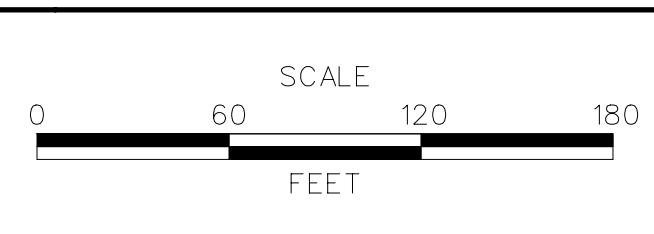
MICHAEL C. YAISER &  
TIFFANY N. YAISER  
T.M.#13-012.00-094  
INS.#20091223-0081067  
M.F.#4492

STATE OF DELAWARE,  
(DEPARTMENT OF TRANSPORTATION)  
T.M.#13-012.00-133  
INS.#20090625-0041077  
M.F.#4492

\$FILES \$DATES



ADDENDUMS / REVISIONS	



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**BORROW SITE GRADING  
PLEASANTON EAST**

BS-08
SHEET NO. 65
TOTAL SHTS. 240