THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY UNITS

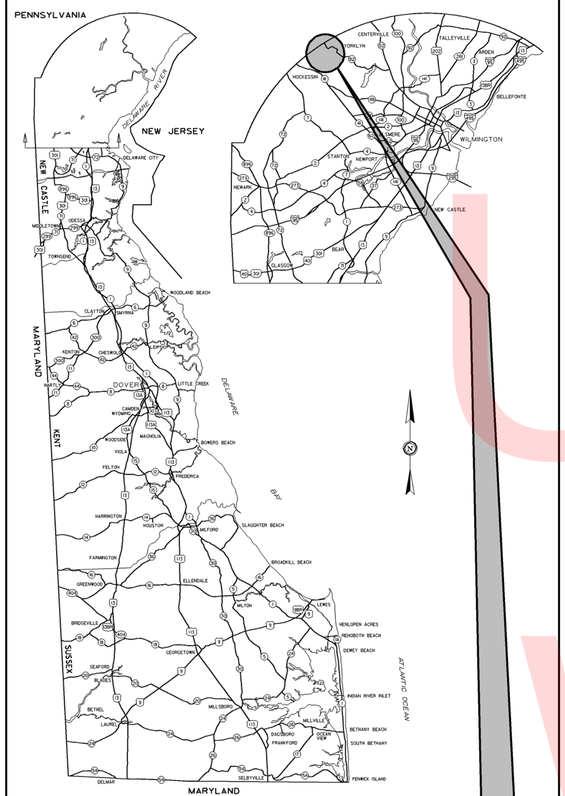
CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR:

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

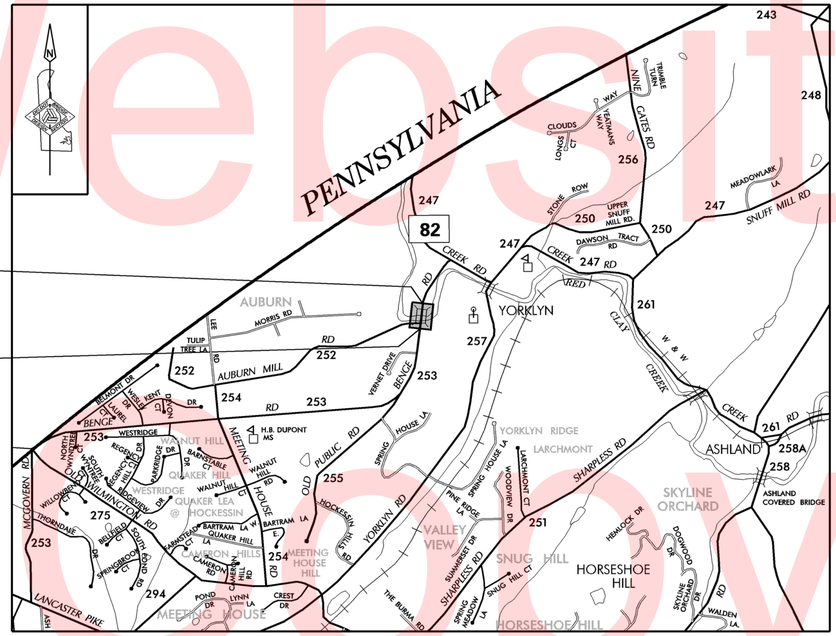
CONTRACT NUMBER: T201507404

FEDERAL AID PROJECT NUMBER: EBHOS-N253(04)

COUNTY: NEW CASTLE M.R. #: 253



GENERAL LOCATION OF CONTRACT



END CONTRACT STATION 18+10.00

BEGIN CONTRACT STATION 12+85.00

RECOMMENDED

Kevin Lindell — SQUAD MANAGER, CONSTRUCTION — 08/08/2017 DATE

Christopher Costello — GROUP ENGINEER, CONSTRUCTION — 08/08/2017 DATE

ASSISTANT DIRECTOR, CONSTRUCTION — 08/08/2017 DATE

FINAL PLANS

DESIGN DESIGNATION

FUNCTIONAL CLASS: URBAN COLLECTOR		D.H.V. PROJECTED: 129	YEAR: 2040
TYPE OF CONSTRUCTION: BRIDGE REHABILITATION		DESIGN SPEED: 30 M.P.H.	
A.A.D.T. CURRENT: 1702	YEAR: 2012	TRUCKS: 6 %	
A.A.D.T. PROJECTED: 2150	YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %	

INDEX OF SHEETS

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TOTAL SHEETS: 27

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
68-09-011	BRIDGE REPLACEMENT BRIDGE NO. 111 ON ROAD NO. 253
99-071-09	BRIDGE 599 ON BENGE ROAD OVER SMALL CREEK

RECOMMENDED

Vincent W. Davis — STORMWATER ENGINEER — DATE 08/01/2017

VINCENT W. DAVIS REGISTERED No. 12898 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

Jonathan Tice — SQUAD MANAGER, BRIDGE DESIGN — DATE 07/26/2017

JONATHAN A. TICE LICENSED No. 18208 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

BRIDGE DESIGN ENGINEER — DATE 08/09/2017

JASON N. HASTINGS REGISTERED No. 13545 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

ASSISTANT DIRECTOR, BRIDGE — DATE 08/09/2017

JASON N. HASTINGS REGISTERED No. 13545 DELAWARE PROFESSIONAL ENGINEER — SEAL

APPROVED

Robert Brian McCleary — CHIEF ENGINEER — DATE 08/09/2017

ROBERT BRIAN McCLEARY REGISTERED No. 8567 DELAWARE PROFESSIONAL ENGINEER — SEAL

LAST REVISED: 5/31/2017
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EXISTING SYMBOLS

DRAINAGE

—∞—	DITCH OR STREAM CENTERLINE
—→—	DIRECTIONAL STREAM FLOW ARROW
C.B. / D.I.	DRAINAGE INLET
J.B.	DRAINAGE JUNCTION BOX
Ⓓ	DRAINAGE MANHOLE
SIZE/TYPE LABEL	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES

	BOLLARD - STEEL POLE
⊠	BOLLARD - WOOD POST
(TYPE LABEL)	CURB
(TYPE LABEL)	CURB AND GUTTER
—x—	FENCE - CHAINLINK OR STRANDED
—○—	FENCE - STOCKADE OR SPLIT RAIL
FP	FLAG POLE
—n—	GUARDRAIL - STEEL BEAM
—o—	GUARDRAIL - WIRE ROPE
LAMP	LAMP AND POST - RESIDENTIAL
MB	MAILBOX
PM	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
—WL—	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
—WL—	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS

C.M.	PROPERTY MARKER - CONCRETE MON.
I.P.	PROPERTY MARKER - IRON PIPE
100+00	HISTORIC RIGHT-OF-WAY BASELINE
— —	EXISTING RIGHT-OF-WAY
— PL —	EXISTING PROPERTY LINE
—EASEMENT TYPE—	EXISTING EASEMENT
— DA —	EXISTING DENIAL OF ACCESS
— R/W-DA —	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION

B.M.	SURVEY BENCHMARK LOCATION
T.P.	SURVEY TIE POINT LOCATION
△	SURVEY TRAVERSE POINT
◎	POINT OF CURVATURE OR TANGENCY
◎	POINT OF INTERSECTING TANGENTS

UTILITY

	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
TV	CABLE TV DISTRIBUTION BOX
Ⓔ	ELECTRIC MANHOLE
EM	ELECTRIC METER
E	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
Ⓖ	GAS MANHOLE
G.M.	GAS METER
G.V.	GAS VALVE
G.P.	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
Ⓢ	SANITARY SEWER MANHOLE
S.V.	SANITARY SEWER VALVE
S.C.O.	SANITARY SEWER VENT OR CLEANOUT
S.D.F.	SEPTIC DRAIN FIELD
B	TELEPHONE BOOTH
Ⓣ	TELEPHONE MANHOLE
T	TELEPHONE TEST POINT
J.W.	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
⊗	TRAFFIC - SIGNAL POLE AND BASE
U	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
F.H.	WATER - FIRE HYDRANT
W.M.	WATER METER
W.V.	WATER VALVE
WELL	WELL HEAD
?	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES

—DP-E-OH—	DELMARVA POWER - ELECTRIC

PROPOSED SYMBOLS

CONSTRUCTION

	CONCRETE SAFETY BARRIER - PERMANENT
×—BFS—×	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
100+00	CONSTRUCTION BASELINE
—CSF—	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
—CZ—	CLEAR ZONE
■	DRAINAGE INLET
×—→×	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	IMPACT ATTENUATOR
■	JUNCTION BOX - DRAINAGE
—LO—	LATERAL OFFSET
LOC	LIMIT OF CONSTRUCTION
MB	MAILBOX
●	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS

	PROPOSED RIGHT-OF-WAY MONUMENT
—DA—	PROPOSED DENIAL OF ACCESS
— — PE — —	PROPOSED PERMANENT EASEMENT
—R/W—	PROPOSED RIGHT-OF-WAY
—R/W-DA—	PROPOSED R/W & DENIAL OF ACCESS
— — TCE — —	TEMPORARY CONSTRUCTION EASEMENT
100+00	PROPOSED RIGHT-OF-WAY BASELINE

IDENTIFIERS

(A/C)	ADJUST BY CONTRACTOR
(A/O)	ADJUST BY OTHERS
(B)	CONCRETE SAFETY BARRIER
(C)	CURB OR CURB & GUTTER
(CJB)	CONVERT TO JUNCTION BOX
(CMH)	CONVERT TO DRAINAGE MANHOLE
(C/O)	CURB OPENING
(CR)	CURB RAMP / TYPE
(CR-N)	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
(CSF)	CONSTRUCTION SAFETY FENCE
(DI)	DRAINAGE INLET
(DND)	DO NOT DISTURB
(ED)	ENERGY DISSIPATOR
(F)	FENCE
(FES)	FLARED END SECTION
(FF/C)	FILL WITH FLOWABLE FILL
(FS)	FILTRATION STRUCTURE
(GR)	GUARDRAIL
(JB)	JUNCTION BOX
(MH)	MANHOLE
(M)	MONUMENT - RIGHT-OF-WAY
(P)	PIPE
(RL/C)	RELOCATE BY CONTRACTOR
(RL/O)	RELOCATE BY OTHERS
(RM/C)	REMOVE BY CONTRACTOR
(RM/O)	REMOVE BY OTHERS
(UD)	UNDERDRAIN / LENGTH
(UDO)	UNDERDRAIN OUTLET PIPE

LANDSCAPING

(LS)	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC

—ITMS-CON—	ITMS CONDUIT
—SIG-CON—	SIGNAL CONDUIT
■	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

PAVEMENT SECTION(S)

	2" DEPTH MILLING 2" BITUMINOUS CONCRETE, SUPERPAVE, TYPE C
	2" BITUMINOUS CONCRETE, SUPERPAVE, TYPE C 3.5" BITUMINOUS CONC., SUPERPAVE, TYPE B 8" GRADED AGGREGATE BASE COURSE, TYPE B
	2" BITUMINOUS CONCRETE, SUPERPAVE, TYPE C 6" GRADED AGGREGATE BASE COURSE, TYPE B

EROSION & SEDIMENT CONTROL

DWBAG	DEWATERING BAG
DWB	DEWATERING BASIN
ED	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
PST	PORTABLE SEDIMENT TANK
SBD	SANDBAG DIKE
SB	SANDBAG DIVERSION
	STONE CHECK DAM
SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE / LENGTH
—SF—	SILT FENCE
—RSF—	SILT FENCE - REINFORCED
SP	SUMP PIT
ST	SEDIMENT TRAP / NUMBER
ST	SEDIMENT TRAP
ST	SEDIMENT TRAP WITH INLET AS OUTLET
ST	SEDIMENT TRAP PIPE OUTLET
SW	STILLING WELL
	TEMPORARY SWALE
TSD	TEMPORARY SLOPE DRAIN
T XXX	TURBIDITY CURTAIN / LENGTH
—T—	TURBIDITY CURTAIN
CFL	COMPOST FILTER LOG / LENGTH
—CFL—	COMPOST FILTER LOG

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT	T201507404
COUNTY	NEW CASTLE
BRIDGE NO.	1-111 & 1-599
DESIGNED BY:	CBB/SMW
CHECKED BY:	JAT

LEGEND

SHEET NO.	2
TOTAL SHTS.	27

GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2016 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

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

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

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

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

PROJECT NOTES

SECTION 100

1. 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.

2. ANY DAMAGE DONE BY THE CONTRACTORS OPERATIONS TO THE EXISTING FACILITIES NOT DESIGNATED FOR REPAIRS UNDER THIS CONTRACT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.

3. THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.

SECTION 200

4. ITEMS TO BE REMOVED UNDER ITEM *211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - EXISTING CONCRETE DECK (INCLUDING TWO JOINTS, CURB AND SIDEWALK) (BRIDGE 1-111)
   - EXISTING CONCRETE BRIDGE PARAPET AND METAL RAIL (BRIDGE 1-111)
   - EXISTING CONCRETE BACKWALL TO PLAN LIMITS ONLY (BRIDGE 1-111)
   - EXISTING EXPANSION BEARINGS (BRIDGE 1-111)
   - EXISTING GUARDRAIL
   - CHAIN LINK FENCE (NEAR BRIDGE 1-599)
   - METAL GATE (NEAR BRIDGE 1-599)
   - REMOVAL, STORAGE, REINSTALLATION, OR ADJUSTING SPLIT RAIL FENCE (NORTHWEST CORNER OF BRIDGE 1-599)

5. ALL DEBRIS ASSOCIATED WITH DEMOLITION OF THE STRUCTURE MUST BE PREVENTED FROM ENTERING THE RED CLAY CREEK. A DEMOLITION PLAN INCLUDING BUT NOT LIMITED TO THE DEMOLITION PROCEDURE, TOOLS, EQUIPMENT, AND SHIELDING SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER. REFER TO NORTH AND SOUTH ABUTMENT REHABILITATION DETAILS SHEET FOR FURTHER DEMOLITION GUIDANCE AND EQUIPMENT LIMITATIONS. THE CONTRACTORS DEMOLITION PLAN SHALL BE SEALED BY A DELAWARE PROFESSIONAL ENGINEER PRIOR TO SUBMISSION FOR APPROVAL. ALL WORK ASSOCIATED TO THE DEMOLITION PLAN AND DEMOLITION WORK SHALL BE PAID UNDER ITEM *211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

SECTION 300

6. A. THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
      a. CRUSHED STONE (PER STANDARD SPECIFICATION 1005)
      b. CRUSHED CONCRETE (PER STANDARD SPECIFICATION 1005)
      c. HOT-MIX MILLINGS (PER SPECIAL PROVISION 301500 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 301001 - 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.

   B. 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 301001 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   C. 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.

   D. HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
      a. MATERIAL MADE AVAILABLE WHEN MILLED ON THIS CONTRACT UNDER THE MILLING ITEM UTILIZED ON THE CONTRACT.
      b. MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER ITEM 202000.
      c. 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 301500 - MILLED HOT-MIX BASE COURSE.

   E. PAYMENT CLARIFICATION:
      a. 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.
      b. MILLINGS GENERATED UNDER THE MILLING ITEM UTILIZED FOR THE CONTRACT 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.
      c. 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.
      d. MILLINGS USED FOR BASE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 301500 - 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 301001 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.
      e. 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.
      f. SPECIAL PROVISION 301500 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 301500 MILLED HOT-MIX BASE COURSE ARE INCIDENTAL TO ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE 'B'. NO PAYMENT WILL BE MADE FOR ITEM 301500 - MILLED HOT-MIX BASE COURSE. THE QUANTITY OF MILLINGS USED FOR BASE COURSE WILL BE PAID FOR UNDER ITEM 301001 - GRADED AGGREGATE BASE COURSE.

SECTION 600

7. PORTLAND CEMENT CONCRETE
   USE PORTLAND CEMENT CONCRETE (P.C.C.) FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
   (f'c = 28 DAY COMPRESSIVE STRENGTH)
   ITEM *610000 - P.C.C. MASONRY, CLASS A - f'c = 4.5 ksi (BR 1-111 MOMENT SLAB)
   ITEM *610002 - P.C.C. MASONRY, ABUTMENT ABOVE FOOTING, CLASS A - f'c = 4.5 ksi (BR 1-111 ABUTMENT WALL BUILD OUT, PEDESTALS, AND CHEEKWALLS)
   ITEM *610008 - P.C.C. MASONRY, PARAPET, CLASS A - f'c = 4.5 ksi (BR 1-111 PARAPET)
   ITEM *610009 - P.C.C. MASONRY, CLASS B - f'c= 3.0 ksi (BR 1-599 CULVERT FLOOR)
   ITEM *610017 - P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D - f'c = 4.5 ksi (BR 1-111 DECK AND END POUROVERS)
   - A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO DELDOT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.
   - ALL EXPOSED EDGES SHALL BE CHAMFERED ¾" UNLESS OTHERWISE NOTED.
   - APPLY EPOXY CONCRETE SEALER (ITEM 613000) TO EXPOSED STREAMFACE OF BACKWALL POUROVER, HORIZONTAL ABUTMENT SEATS WHERE APPLICABLE, BEARING PEDESTAL SEATS (EXCEPT AT LOCATION OF BEARING PADS), AND 1 FOOT THICKNESS ALONG TOP OF ABUTMENT WALL ADJACENT TO ABUTMENT SEAT.
   - APPLY SILCONE-BASED ACRYLIC CONCRETE SEALER (ITEM 613001) TO ALL C.I.P. NON-RIDING EXPOSED CONCRETE SURFACES WITH THE EXCEPTION OF THOSE SURFACES COVERED WITH EPOXY CONCRETE SEALER (ITEM 613000).
   - HIGH MOLECULAR WEIGHT CONCRETE SEALER (ITEM 613003) IS A CONTINGENT ITEM AND WILL ONLY BE APPLIED IF SPECIFIED BY THE ENGINEER. IF SPECIFIED, APPLY HIGH MOLECULAR WEIGHT CONCRETE SEALER (ITEM 613003) TO THE RIDING SURFACE OF THE DECK.

8. CONTRACTOR WILL SUPPLY CONCRETE FOR THE PARAPETS AND BRIDGE DECK THAT INCLUDES A SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. PAYMENT FOR ADMIXTURE WILL BE INCIDENTAL TO ITS RESPECTIVE CONCRETE ITEM (ITEM 610008 AND ITEM 610017). THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT PROVIDES BOTH EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT DOSAGE RECOMMENDED BY MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:

   (A) DESIGNED TO PROVIDE BOTH THE FOLLOWING CHARACTERISTICS:
      I. EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR SHRINKAGE OF THE CONCRETE MIX.
      II. REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER.
   (B) PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.
   (C) FORMULATED FOR USE IN FREEZING AND THAWING WEATHER.

9. BAR REINFORCEMENT
   REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" MINIMUM UNLESS OTHERWISE SPECIFIED ON PLANS. ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY CONFORMING TO AASHTO M284 (ASTM D3963). ANY FIELD CUTTING OR FIELD BENDING OF REINFORCEMENT MUST BE APPROVED BY THE ENGINEER AND PAYMENT WILL BE INCIDENTAL TO THE BAR REINFORCEMENT ITEM NUMBER.

SECTION 700

10. ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT. ALL SAWCUTTING SHALL BE TO THE DEPTH NOTED ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

11. ALL GUARDRAIL ELEMENTS, SHAPES, AND HARDWARE FOR ITEMS *720021, 721000, AND 721011 SHALL BE GALVANIZED AND FUSION-BONDED POLYESTER COATED. THE COATING SHALL BE MEDIUM BROWN IN COLOR, WITH THE PROPOSED COLOR BEING SUBMITTED TO THE ENGINEER FOR APPROVAL. PAYMENT FOR FURNISHING AND THE APPLICATION OF ALL MATERIAL NECESSARY FOR THE GALVANIZED FUSION-BONDED POLYESTER COATING SHALL BE UNDER ITEM *720500 - GALVANIZED FUSION-BONDED POLYESTER COATED GUARDRAIL.

SECTION 800

12. MAINTENANCE OF TRAFFIC SHALL BE AS PER APPROVED DETOUR PLAN. THE DETOUR SHALL REMAIN IN EFFECT UNTIL ALL WORK IS COMPLETE. ALL MOT ITEMS WITH THE EXCEPTION OF CHANGEABLE MESSAGE BOARDS AND FLAGGERS WILL BE INCLUDED IN ITEM *801500 - MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

SECTION 900

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

MISCELLANEOUS

14. ACCESS TO PARK ENTRANCE ON FARM LANE MUST BE MAINTAINED THROUGHOUT THE DURATION OF THIS CONTRACT. IF A TEMPORARY CLOSURE IS NEEDED, IT MUST BE APPROVED AND COORDINATED WITH THE ENGINEER AND/OR PROPERTY OWNER IN ADVANCE OF THE CLOSURE.

15. DESIGN SPECIFICATIONS
    2016 DELDOT BRIDGE DESIGN MANUAL
    2014 AASHTO LRFD BRIDGE SPECIFICATIONS, 7TH EDITION INCLUDING ALL INTERIMS, CUSTOMARY U.S. UNITS

16. LOADING
    LIVE LOAD: AASHTO HL-93
    DEAD LOAD: INCLUDES 25 PSF FOR FUTURE WEARING SURFACE AND 15 PSF FOR STAY-IN-PLACE FORMS

17. ENVIRONMENTAL COMPLIANCE
    ALL STREAM RELATED WORK AT BRIDGE 1-599 MUST BE COMPLETED PRIOR TO APRIL 1, 2018 IN ORDER TO COMPLY WITH ENVIRONMENTAL PERMITTING. REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR FURTHER RESTRICTIONS/GUIDANCE ASSOCIATED WITH THIS PROJECT.

18. UTILITIES
    REFER TO THE UTILITY STATEMENT FOR FURTHER INFORMATION ON UTILITY COORDINATION.

19. PERMITTING FOR UTILITIES
    AS OUTLINED IN CHAPTER 3 OF THE DELDOT UTILITIES MANUAL, THE INDIVIDUAL UTILITY COMPANIES ARE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FROM MUNICIPAL, STATE AND FEDERAL GOVERNMENT AGENCIES AND RAILROADS. THIS INCLUDES BUT IS NOT LIMITED TO WATER QUALITY PERMIT/DNREC WATER QUALITY CERTIFICATION, DNREC SUBAQUEOUS LANDS/WETLANDS PERMITS, DNREC COASTAL ZONE CONSISTENCY CERTIFICATION, COUNTY FLOODPLAIN PERMITS (NEW CASTLE COUNTY ONLY), U.S. COAST GUARD PERMITS, U.S. ARMY CORPS 404 PERMITS, SEDIMENT AND EROSION PERMITS, AND RAILROAD CROSSING PERMITS. THE ENVIRONMENTAL PERMITS CITED ON THE ENVIRONMENTAL NOTES SHEET DO NOT AUTHORIZE ANY PART OF THE UTILITY WORK ASSOCIATED WITH THIS PROJECT.

20. AS-BUILT PLANS OF THE EXISTING STRUCTURES ARE AVAILABLE AND SHALL BE OBTAINED THROUGH THE DEPARTMENT.
    - ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM *763501 - CONSTRUCTION ENGINEERING.
    - THE CONTRACTOR SHALL NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS OR MADE AVAILABLE BY THE DEPARTMENT OR ITS AUTHORIZED AGENTS AS POSITIVE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.

    THE EXISTING PLANS FOR BRIDGE 1-111 AND BRIDGE 1-599 RESPECTIVELY ARE AS FOLLOWS:

    CONTRACT NO.: 68-09-011
    CONTRACT NAME: BRIDGE REPLACEMENT BRIDGE NO. 111 ON ROAD NO. 253

    CONTRACT NO.: 99-071-09
    CONTRACT NAME: BRIDGE 599 ON BENGE ROAD OVER SMALL CREEK

LOAD RATING SUMMARY (BRIDGE 1-111)

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.06	N/A	SPAN 1: INTERIOR BEAM	105	SERVICE III
HL-93 TANDEM (INVENTORY)	1.23	N/A	SPAN 1: INTERIOR BEAM	105	SERVICE III
HS-20 (INVENTORY)	1.50	53.86	SPAN 1: INTERIOR BEAM	105	SERVICE III
HL-93 TRUCK (OPERATING)	2.30	N/A	SPAN 1: INTERIOR BEAM	106	STRENGTH I
HL-93 TANDEM (OPERATING)	2.64	N/A	SPAN 1: INTERIOR BEAM	106	STRENGTH I
HS-20 (OPERATING)	3.05	109.98	SPAN 1: INTERIOR BEAM	106	STRENGTH I
DE S220 & LEGAL-LANE (LEGAL)	2.06	41.12	SPAN 1: INTERIOR BEAM	105	SERVICE III
DE S335 & LEGAL-LANE (LEGAL)	1.15	40.16	SPAN 1: INTERIOR BEAM	105	SERVICE III
DE S437 & LEGAL-LANE (LEGAL)	1.09	40.04	SPAN 1: INTERIOR BEAM	105	SERVICE III
DE T330 & LEGAL-LANE (LEGAL)	1.57	47.15	SPAN 1: INTERIOR BEAM	105	SERVICE III
DE T435 & LEGAL-LANE (LEGAL)	1.38	48.17	SPAN 1: INTERIOR BEAM	105	SERVICE III
DE T540 & LEGAL-LANE (LEGAL)	1.22	48.65	SPAN 1: INTERIOR BEAM	105	SERVICE III

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

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

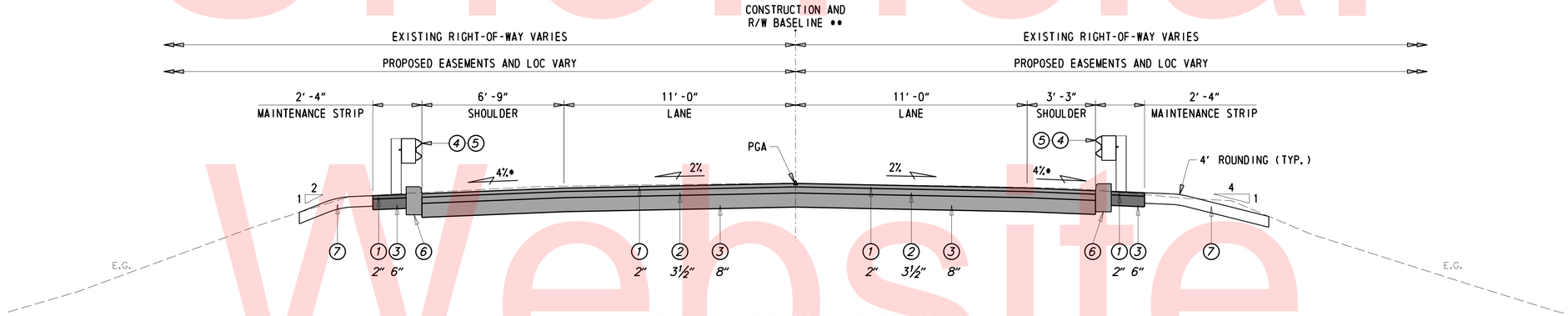
NOT TO SCALE

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT: T201507404
COUNTY: NEW CASTLE
BRIDGE NO.: 1-111 & 1-599
DESIGNED BY: CBB/SMW
CHECKED BY: JAT

NOTES

SHEET NO.: 3
TOTAL SHTS.: 27



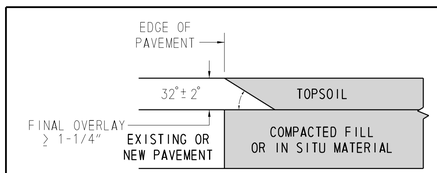
TYPICAL ROADWAY SECTION

NOTE: *TRANSITION ROADWAY SHOULDER CROSS SLOPE OF 4% TO BRIDGE SHOULDER CROSS SLOPE OF 2% OVER 75 FT.
**CONSTRUCTION AND R/W BASELINE VARY BEGINNING AT STATION 16+32.08.

LEGEND

1. ITEM 401002 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
2. ITEM 401011 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 64-22
3. ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE B
4. ITEM 720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
5. ITEM 720500 - GALVANIZED FUSION BONDED POLYESTER COATED GUARDRAIL
6. ITEM 701011 - P.C.C. CURB, TYPE 1-4
7. ITEM 908004 - TOPSOIL, 6" DEPTH
   ITEM 908019 - STREAMBANK SEED MIX, SEEDING

MATERIAL	LIFT THICKNESS	
	MINIMUM	MAXIMUM
HOT-MIX, TYPE 'C'	1.25"	2"
HOT-MIX, TYPE 'B'	2.25"	4"
BITUMINOUS CONCRETE BASE COURSE	3"	6"
GRADED AGGREGATE BASE COURSE	--	8"



SAFETY EDGE DETAIL

HOT-MIX PAVEMENTS AND OVERLAYS
NOT TO SCALE

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 3 6 9
FEET

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO. 1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW
COUNTY	CHECKED BY: JAT
NEW CASTLE	

TYPICAL ROADWAY SECTION

SHEET NO.	
4	
TOTAL SHTS.	
27	

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HORIZONTAL / VERTICAL CONTROL DATA

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP #3	15+04.05	-110.47	658041.20	581976.94	179.86
TP #4	13+68.02	-22.92	657894.13	582044.31	192.46
TP #5	11+69.61	12.54	657692.69	582051.27	211.33
TP #6	13+42.61	15.74	657863.49	582078.98	194.41
TP #7	15+65.03	-13.26	658087.77	582081.82	189.28
TP #8	16+98.75	-20.71	658222.00	582095.33	190.34
TP #9	17+80.29	-120.13	658330.43	582018.84	195.17
TP #100	15+07.42	168.73	658004.93	582253.80	176.77
TP #101	16+51.53	194.87	658140.87	582299.81	180.62

CONSTRUCTION ALIGNMENT CONTROL

POINT	STATION	OFFSET	NORTHING	EASTING
10000	10+00.00	0.00	657526.57	582014.80
10006	20+98.95	0.00	658573.59	582287.95

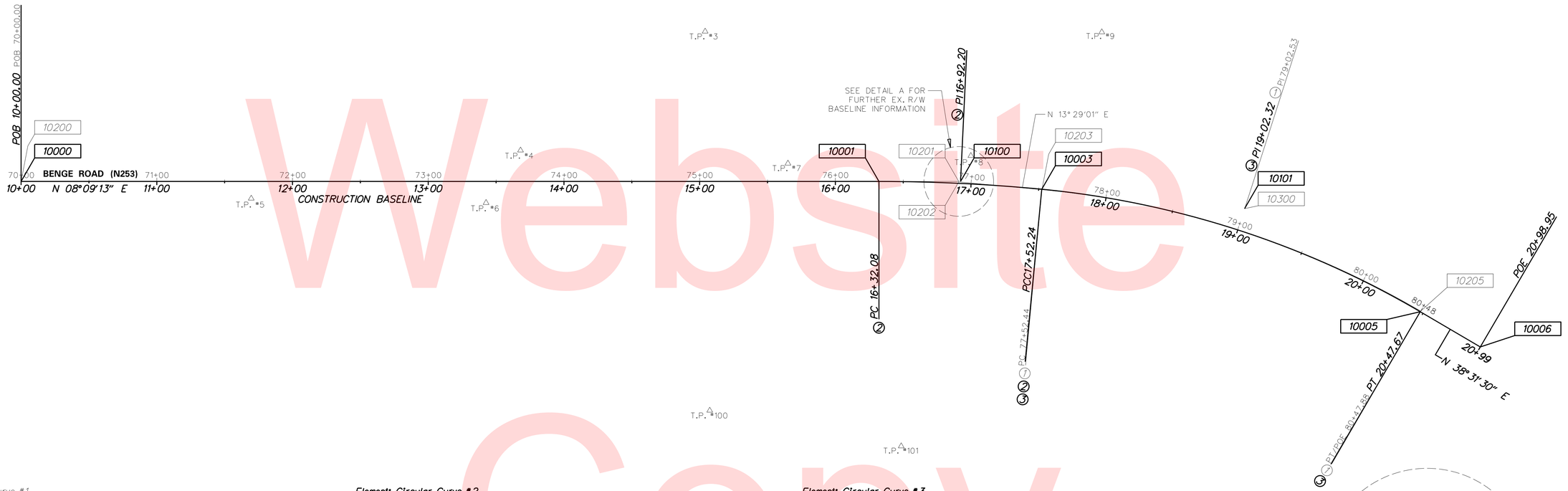
EX. RIGHT-OF-WAY ALIGNMENT CONTROL

POINT	STATION	OFFSET	NORTHING	EASTING
10200	70+00.00	0.00	657526.57	582014.80
10201	76+90.89 BK	0.00	658210.48	582112.79
10202	76+90.89 AHD	0.00	658210.44	582113.10

DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83/91).

VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88.



Element: Circular Curve #1

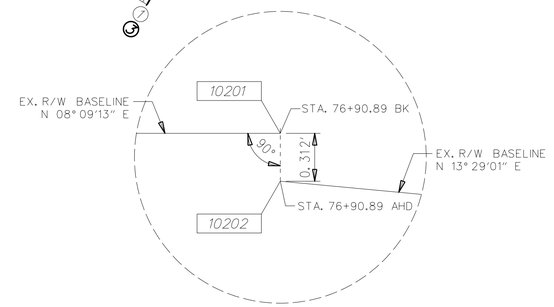
PC (10203)	77+52.44	658270.29	582127.45
PI (10300)	79+02.53	658416.24	582162.45
CC (10204)		658111.74	582788.71
PT (10205)	80+47.88	658533.90	582255.62
Radius:	680.00		
Delta:	24°53'34" Right		
Degree of Curvature (Arc):	8°25'33"		
Length:	295.43		
Tangent:	150.09		
Chord:	293.12		
Middle Ordinate:	15.98		
External:	16.37		
Tangent Direction:	N 13°29'01.20" E		
Radial Direction:	S 76°30'58.80" E		
Chord Direction:	N 25°55'48.38" E		
Radial Direction:	S 51°37'24.45" E		
Tangent Direction:	N 38°22'35.55" E		

Element: Circular Curve #2

PC (10001)	16+32.08	658152.26	582104.45
PI (10100)	16+92.20	658211.78	582112.98
CC (10002)		657974.04	583348.38
PCC (10003)	17+52.24	658270.21	582127.15
Radius:	1256.64		
Delta:	5°28'43" Right		
Degree of Curvature (Arc):	4°33'34"		
Length:	120.16		
Tangent:	60.12		
Chord:	120.11		
Middle Ordinate:	1.44		
External:	1.44		
Tangent Direction:	N 08°09'13.18" E		
Radial Direction:	S 81°50'46.82" E		
Chord Direction:	N 10°53'34.55" E		
Radial Direction:	S 76°22'04.07" E		
Tangent Direction:	N 13°37'55.93" E		

Element: Circular Curve #3

PCC (10003)	17+52.24	658270.21	582127.15
PI (10101)	19+02.32	658416.07	582162.52
CC (10004)		658109.94	582787.99
PT (10005)	20+47.67	658533.49	582256.00
Radius:	680.00		
Delta:	24°53'34" Right		
Degree of Curvature (Arc):	8°25'33"		
Length:	295.43		
Tangent:	150.08		
Chord:	293.12		
Middle Ordinate:	15.98		
External:	16.37		
Tangent Direction:	N 13°37'55.93" E		
Radial Direction:	S 76°22'04.07" E		
Chord Direction:	N 26°04'42.88" E		
Radial Direction:	S 51°28'30.18" E		
Tangent Direction:	N 38°31'29.83" E		



DETAIL A
N. T. S.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

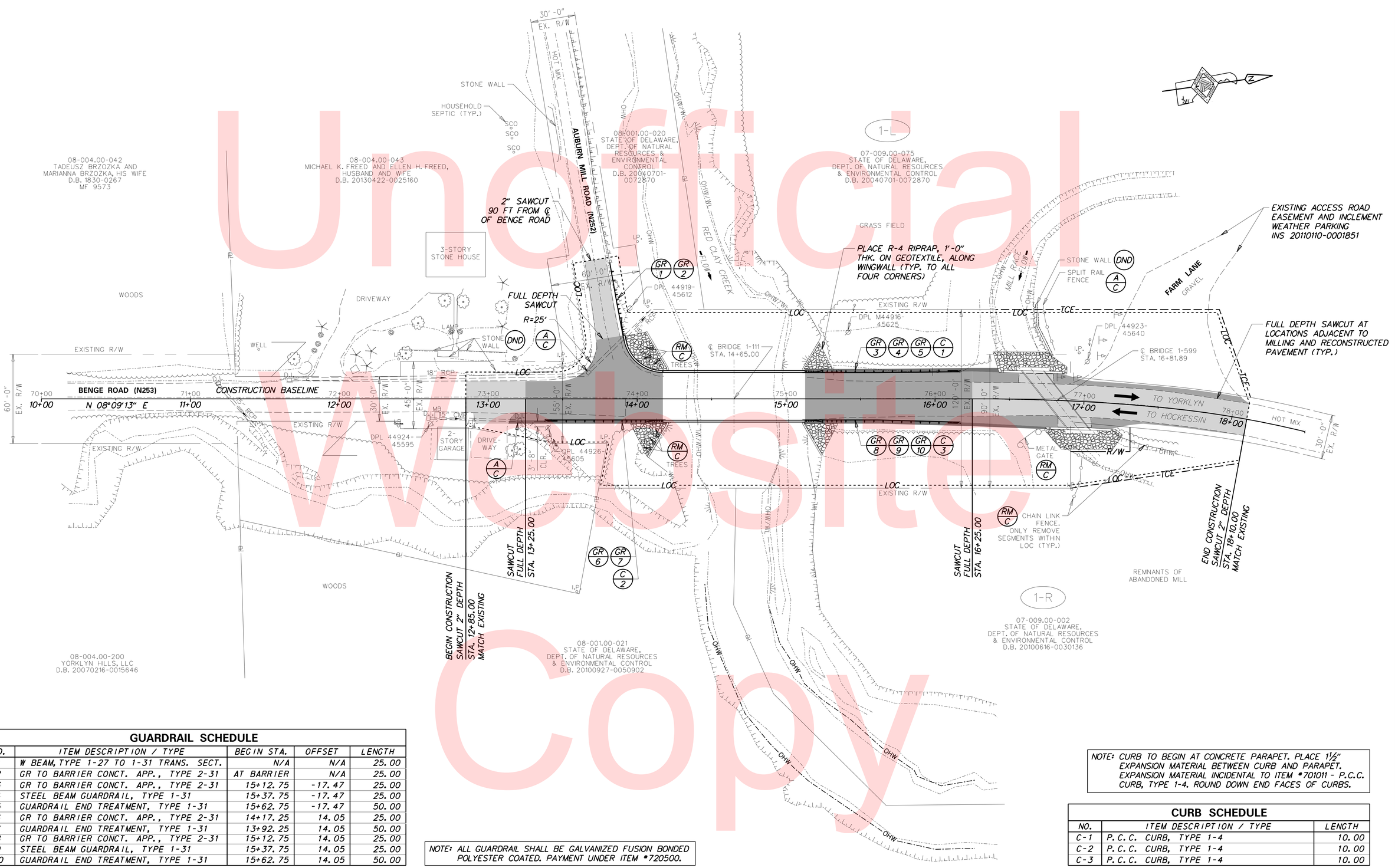
SCALE
0 40 80 120
FEET

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	T201507404
COUNTY	NEW CASTLE
BRIDGE NO.	1-111 & 1-599
DESIGNED BY:	CBB/SMW
CHECKED BY:	JAT

HORIZONTAL AND VERTICAL CONTROL

SHEET NO.	5
TOTAL SHTS.	27



GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	W BEAM, TYPE 1-27 TO 1-31 TRANS. SECT.	N/A	N/A	25.00
2	GR TO BARRIER CONCT. APP., TYPE 2-31	AT BARRIER	N/A	25.00
3	GR TO BARRIER CONCT. APP., TYPE 2-31	15+12.75	-17.47	25.00
4	STEEL BEAM GUARDRAIL, TYPE 1-31	15+37.75	-17.47	25.00
5	GUARDRAIL END TREATMENT, TYPE 1-31	15+62.75	-17.47	50.00
6	GR TO BARRIER CONCT. APP., TYPE 2-31	14+17.25	14.05	25.00
7	GUARDRAIL END TREATMENT, TYPE 1-31	13+92.25	14.05	50.00
8	GR TO BARRIER CONCT. APP., TYPE 2-31	15+12.75	14.05	25.00
9	STEEL BEAM GUARDRAIL, TYPE 1-31	15+37.75	14.05	25.00
10	GUARDRAIL END TREATMENT, TYPE 1-31	15+62.75	14.05	50.00

NOTE: ALL GUARDRAIL SHALL BE GALVANIZED FUSION BONDED POLYESTER COATED. PAYMENT UNDER ITEM #720500.

NOTE: CURB TO BEGIN AT CONCRETE PARAPET. PLACE 1½" EXPANSION MATERIAL BETWEEN CURB AND PARAPET. EXPANSION MATERIAL INCIDENTAL TO ITEM #701011 - P.C.C. CURB, TYPE 1-4. ROUND DOWN END FACES OF CURBS.

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
C-1	P.C.C. CURB, TYPE 1-4	10.00
C-2	P.C.C. CURB, TYPE 1-4	10.00
C-3	P.C.C. CURB, TYPE 1-4	10.00

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO.	1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW	
COUNTY	CHECKED BY: JAT	
NEW CASTLE		

CONSTRUCTION PLAN

SHEET NO.
6
TOTAL SHTS.
27

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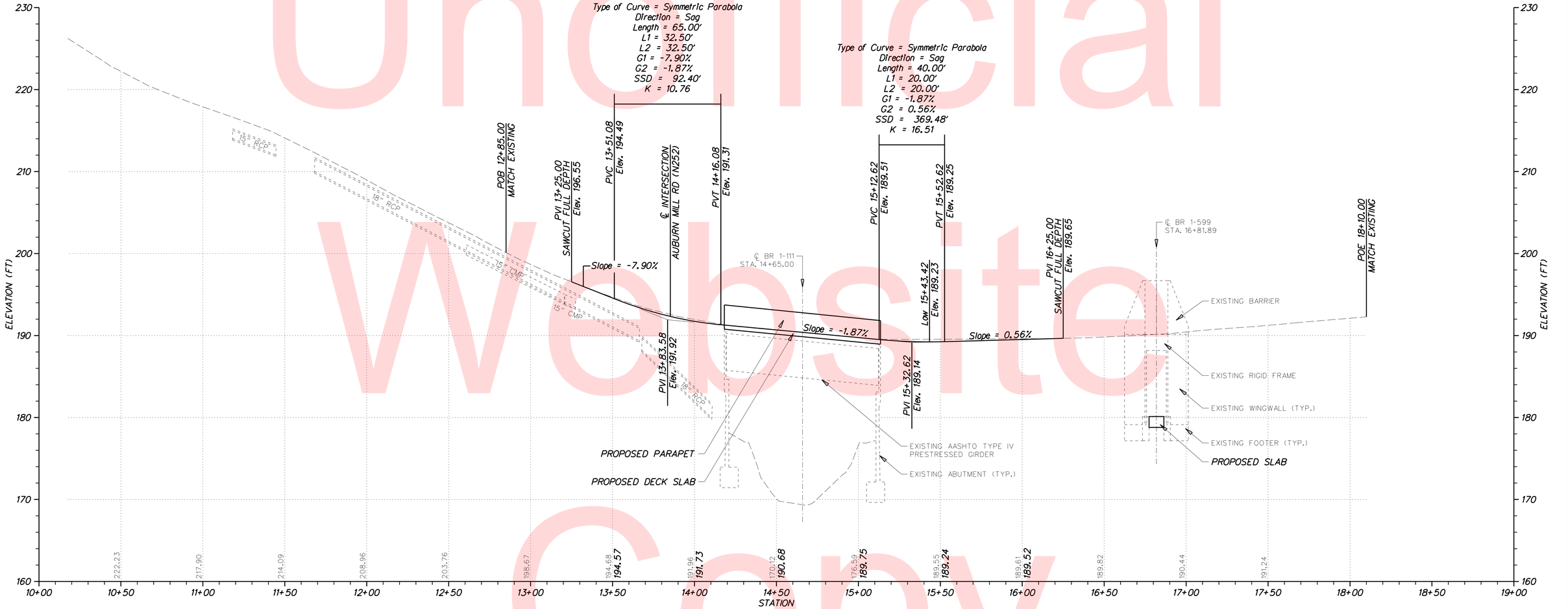

BENGE ROAD (N253)

VERTICAL SCALE FEET
18
12
6
0

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	**BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE**	CONTRACT T201507404 / COUNTY NEW CASTLE	BRIDGE NO. 1-111 & 1-599 / DESIGNED BY: CBB/SMW / CHECKED BY: JAT	**PROFILE**	SHEET NO. 7 / TOTAL SHTS. 27

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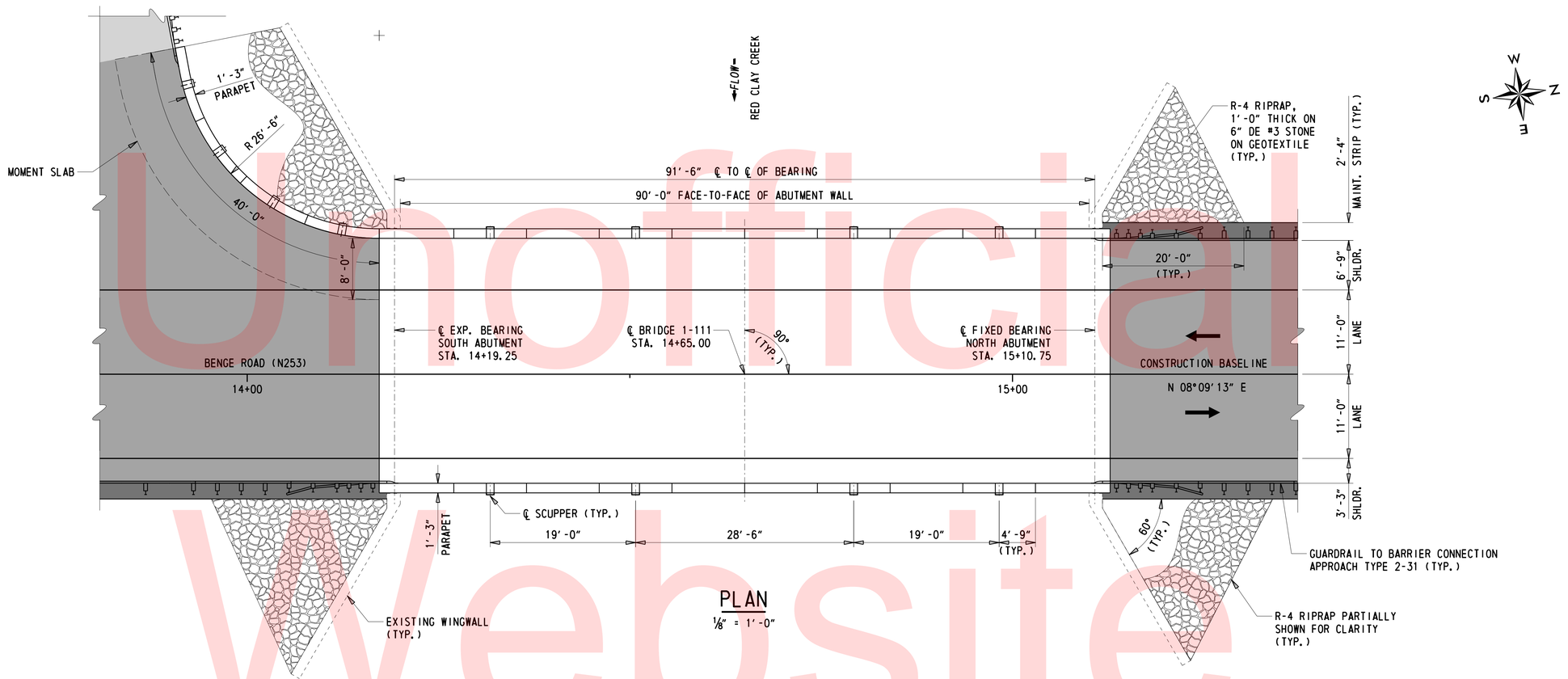
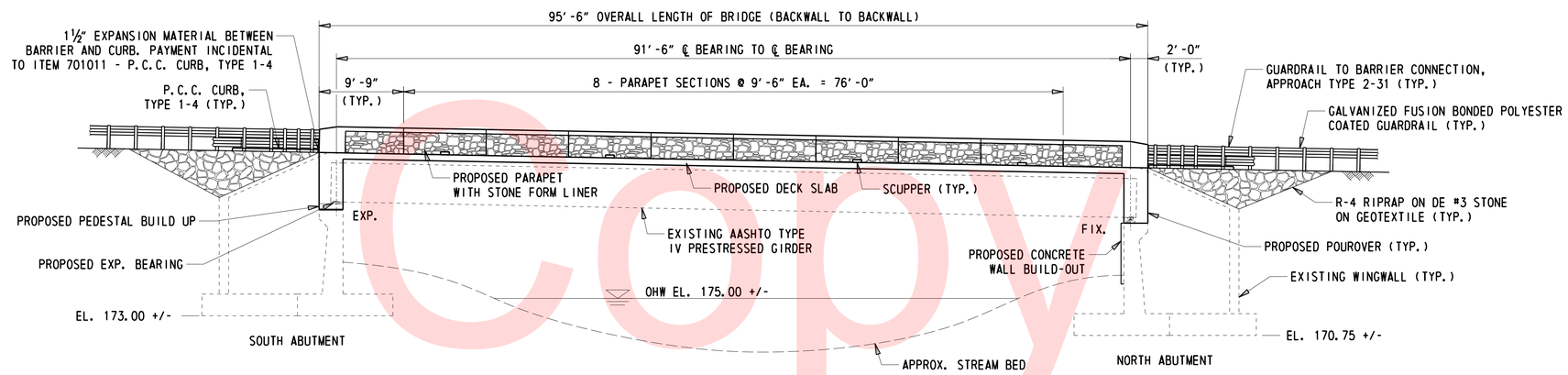


PLAN

1/8" = 1'-0"



EAST ELEVATION

1/8" = 1'-0"

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	BRIDGE PLAN AND ELEVATION
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW	SHEET NO. 8
					CHECKED BY: JAT	TOTAL SHTS. 27

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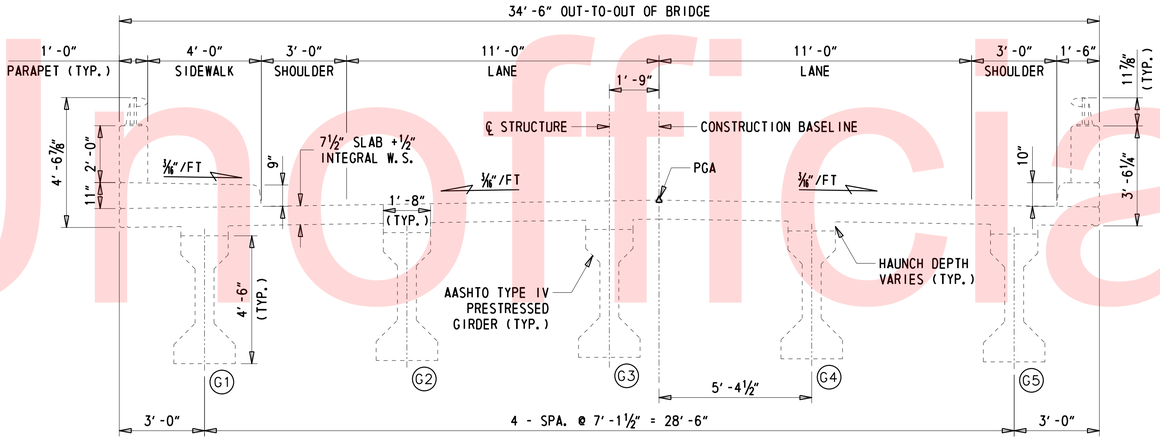
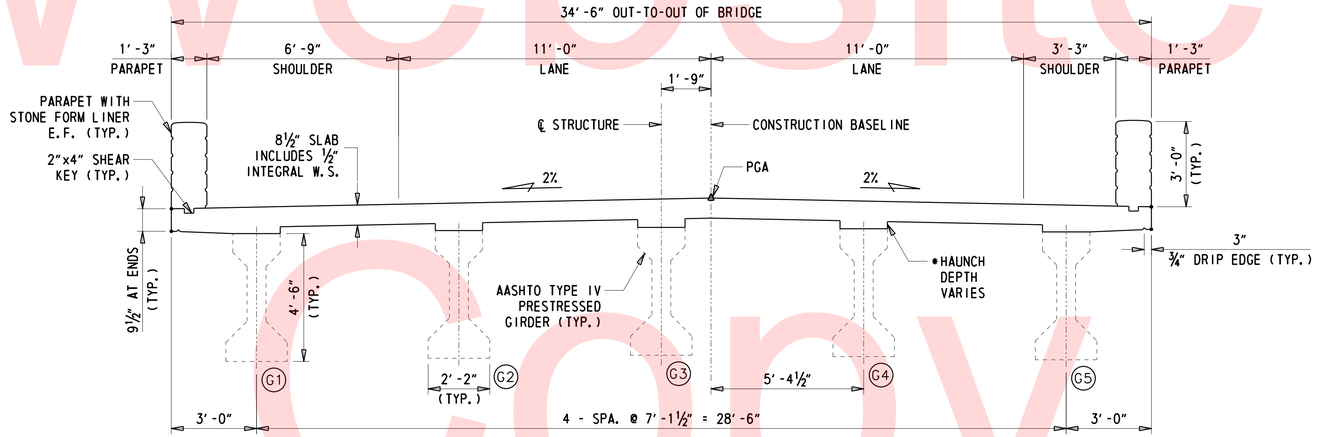


EXISTING SECTION

⅜" = 1'-0"



PROPOSED SECTION

⅜" = 1'-0"

•HAUNCH DEPTH VARIES TO MATCH PROPOSED DECK GRADES WITH EXISTING GIRDER CAMBER AND ELEVATION.

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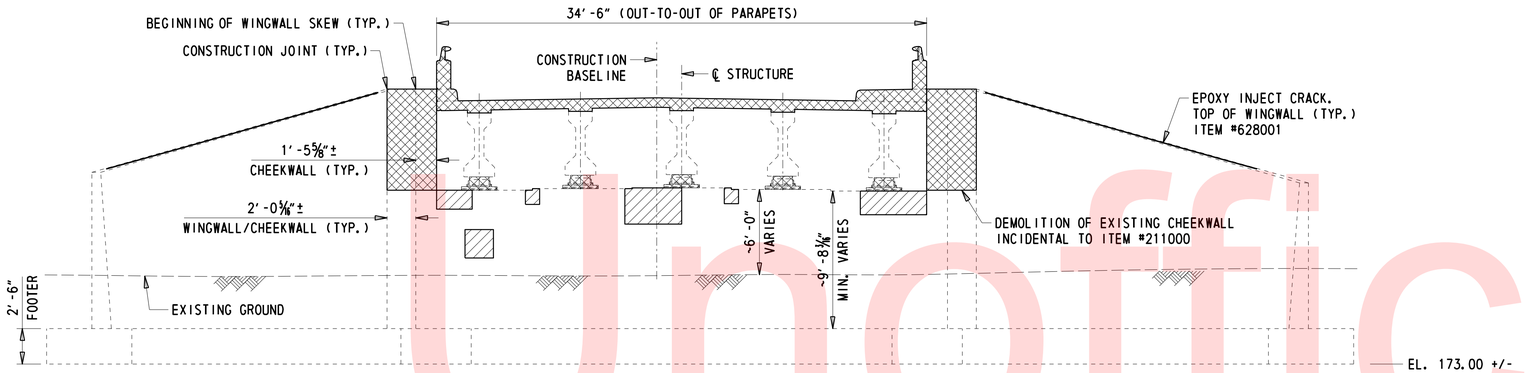
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	BRIDGE EXISTING AND PROPOSED SECTIONS	SHEET NO. 9
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		



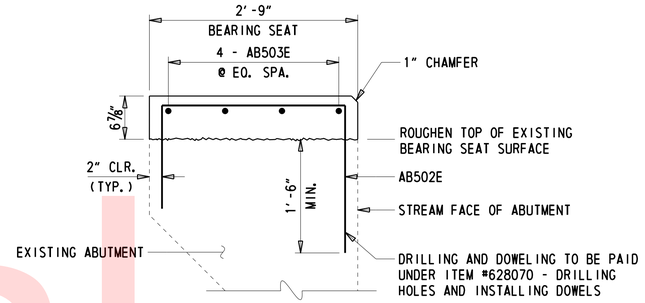
SOUTH ABUTMENT ELEVATION

⅛" = 1'-0"

NOTE:
1. CRACKS, SPALLS AND DELAMINATED AREAS WERE DELINEATED ON 10/17/14 BY DELDOT BRIDGE DESIGN. THEY ARE FOR APPROXIMATE LOCATIONS AND ESTIMATE PURPOSES ONLY. ALL AREAS ALONG EACH ABUTMENT AND WINGWALL SHALL BE SOUNDED AND DELINEATED AT THE TIME OF CONSTRUCTION WITH THE APPROVAL OF THE ENGINEER TO DETERMINE REPAIR LIMITS.
2. CHEEKWALL SHALL BE DEMOLISHED SUCH THAT A MINIMUM LENGTH OF 2'-7" OF VERTICAL AND HORIZONTAL REINFORCING BARS PROTRUDING FROM WINGWALLS AND ABUTMENT SHALL BE PRESERVED.

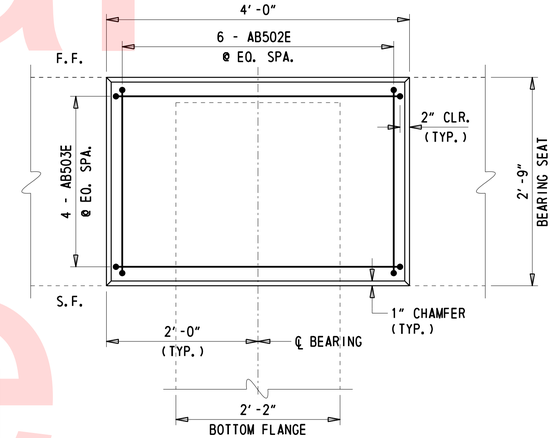
LEGEND

- DEMOLITION — PAYMENT UNDER ITEM #211000
- SPALL REPAIR — PAYMENT UNDER ITEM #628040 OR ITEM #628041
- PROPOSED CONCRETE — PAYMENT UNDER ITEM #610017



PEDESTAL BUILD-UP SECTION

1" = 1'-0"

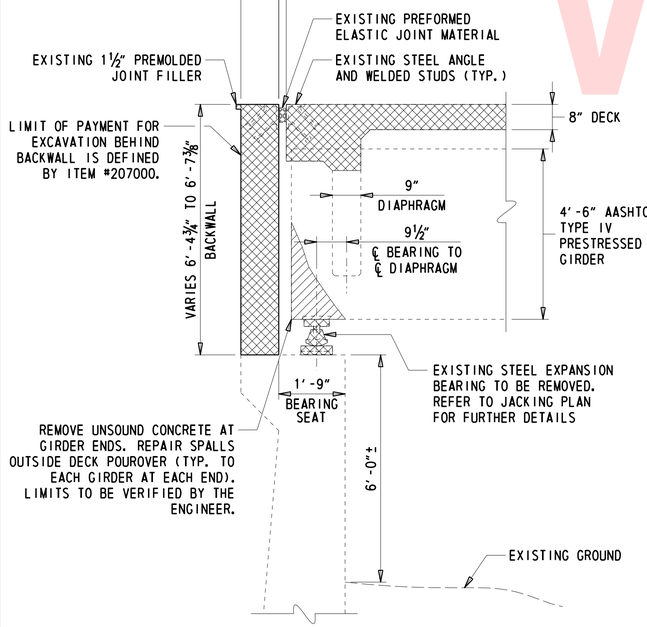


LEGEND

F.F. - FILL FACE
S.F. - STREAM FACE

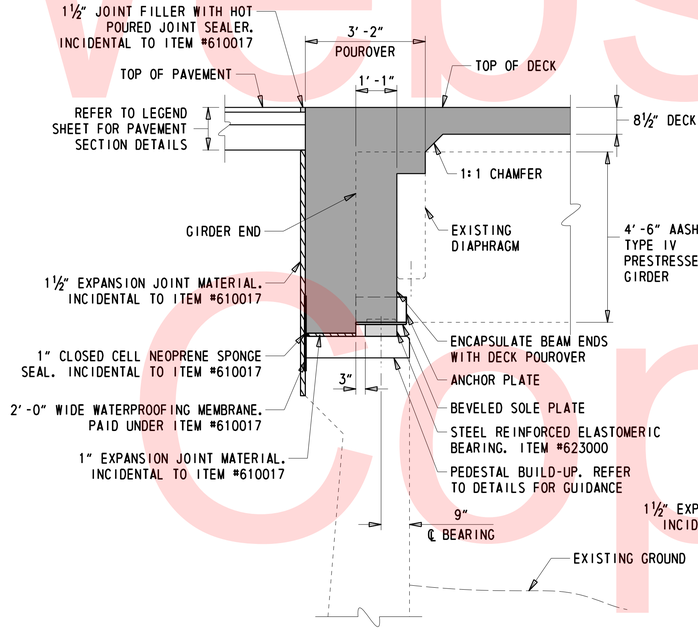
PEDESTAL BUILD-UP PLAN

1" = 1'-0"



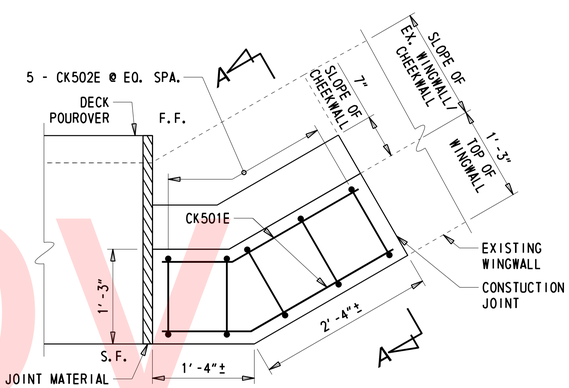
DEMOLITION SOUTH ABUTMENT SECTION

½" = 1'-0"



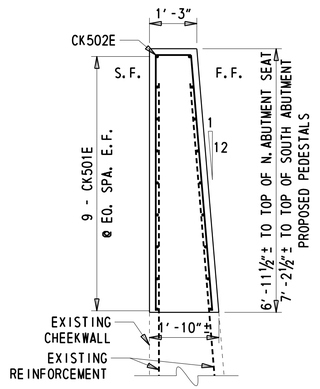
PROPOSED SOUTH ABUTMENT SECTION

½" = 1'-0"



PROPOSED CHEEKWALL PLAN

1" = 1'-0"



CHEEKWALL SECTION A-A

½" = 1'-0"

NOTE: DURING DEMOLITION OF THE DECK, CARE SHALL BE TAKEN TO AVOID DAMAGING THE TOP OF THE EXISTING CONCRETE GIRDERS, DIAPHRAGMS AND EXISTING REINFORCEMENT PROTRUDING FROM THE GIRDERS AND DIAPHRAGMS INTO THE DECK. DURING DEMOLITION OF THE CHEEKWALLS, CARE SHALL BE TAKEN TO AVOID DAMAGING REINFORCEMENT PROTRUDING FROM THE WINGWALLS AND ABUTMENTS. PNEUMATIC HAMMERS SHALL BE LIMITED TO 15 POUNDS FOR REMOVAL OF SUPERSTRUCTURE CONCRETE AND 30 POUNDS FOR REMOVAL OF SUBSTRUCTURE CONCRETE. ALTERNATIVE TOOLS MUST BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	SOUTH ABUTMENT REHABILITATION DETAILS	SHEET NO. 10
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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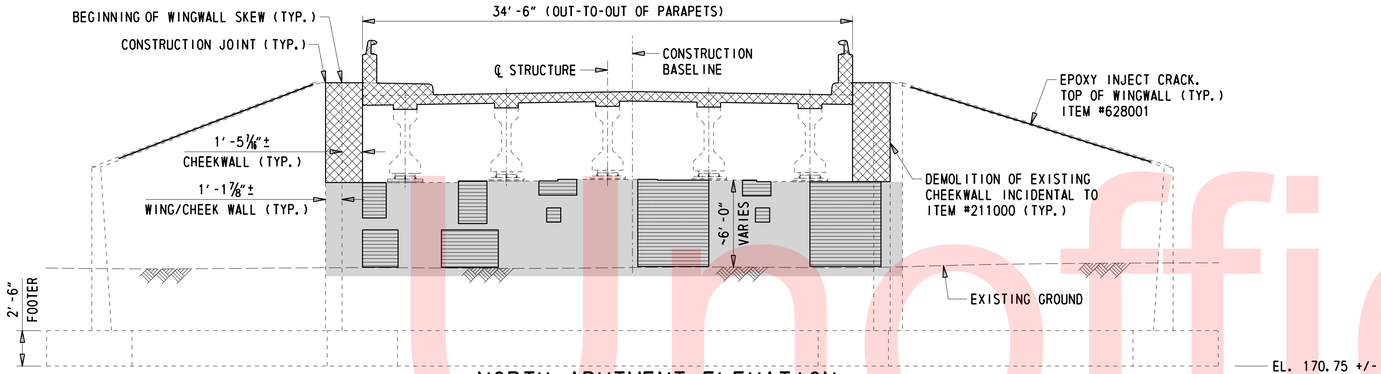


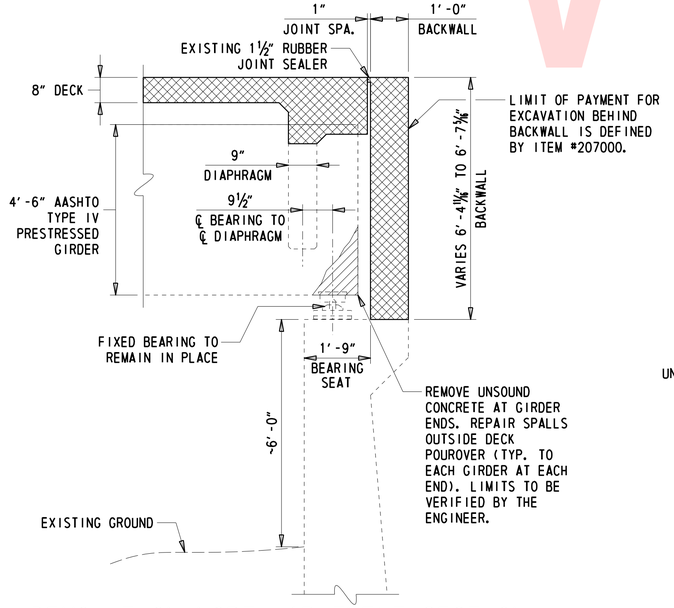
NORTH ABUTMENT ELEVATION

⅛" = 1'-0"

NOTE:
1. CRACKS, SPALLS AND DELAMINATED AREAS WERE DELINEATED ON 10/17/14 BY DELDOT BRIDGE DESIGN. THEY ARE FOR APPROXIMATE LOCATIONS AND ESTIMATE PURPOSES ONLY. ALL AREAS ALONG EACH ABUTMENT AND WINGWALL SHALL BE SOUNDED AND DELINEATED AT THE TIME OF CONSTRUCTION WITH THE APPROVAL OF THE ENGINEER TO DETERMINE REPAIR LIMITS.
2. CHEEKWALL SHALL BE DEMOLISHED SUCH THAT A MINIMUM LENGTH OF 2'-7" OF VERTICAL AND HORIZONTAL REINFORCING BARS PROTRUDING FROM WINGWALLS AND ABUTMENT SHALL BE PRESERVED.

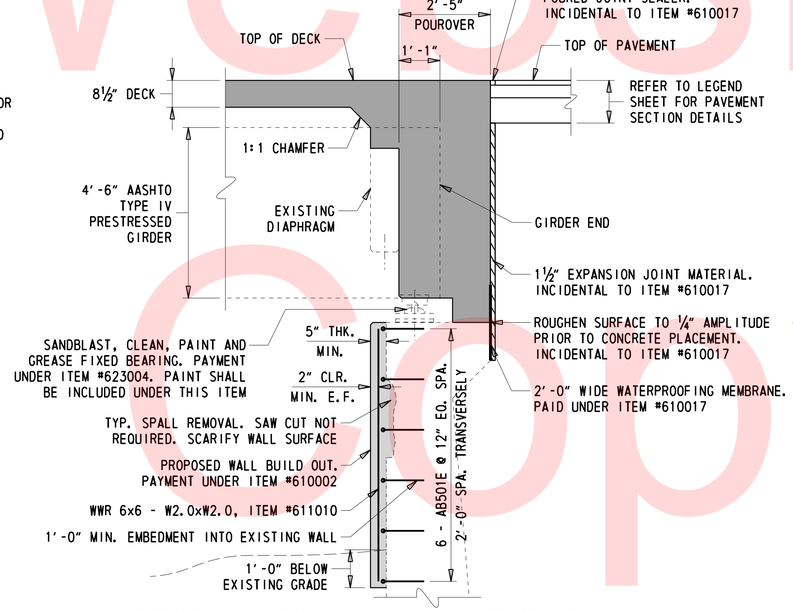
LEGEND

- DEMOLITION — PAYMENT UNDER ITEM #211000
- REMOVE UNSOUND CONCRETE ONLY — PAYMENT UNDER ITEM #211000
- PROPOSED ABUTMENT WALL BUILD-OUT — PAYMENT UNDER ITEM #610002
- PROPOSED CONCRETE — PAYMENT UNDER ITEM #610017
- SPALL REPAIR — PAYMENT UNDER ITEM #628040 OR ITEM #628041



DEMOLITION NORTH ABUTMENT SECTION

½" = 1'-0"



PROPOSED NORTH ABUTMENT SECTION

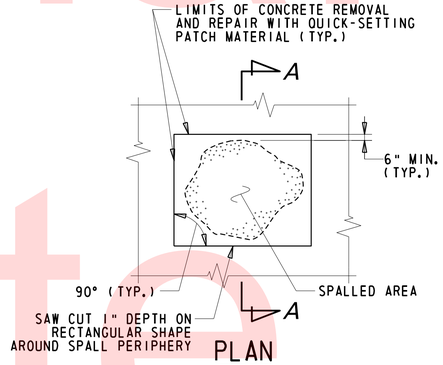
½" = 1'-0"

SHALLOW SPALL REPAIR NOTES

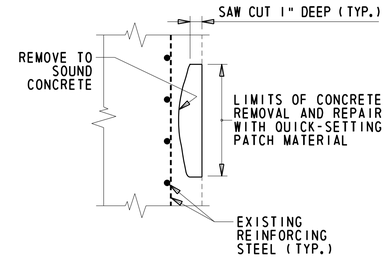
1. SHALLOW SPALLS ARE DEFINED AS PATCHES THAT DO NOT EXTEND BELOW THE TOP MAT OF REBAR.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL (i.e. CLEANING OF CONCRETE SURFACE, SURFACE PREPARATION, AND CONCRETE PLACEMENT) SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628040 - SHALLOW SPALL REPAIR.
3. FOR ANY SHALLOW SPALL REPAIR TO TAKE PLACE WITHIN THE SPLASH ZONE OR UNDERWATER, THE CONTRACTOR SHALL SUBMIT A WORKING DRAWING FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 628.03(E)(2).

DEEP SPALL REPAIR NOTES

1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL (i.e. CLEANING OF CONCRETE SURFACE AND EXISTING REINFORCEMENT, REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES OR SECTION LOSS, PRESENCE OF CONTRACTION OR EXPANSION JOINTS, SURFACE PREPARATION, AND CONCRETE PLACEMENT) SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
3. FOR ANY DEEP SPALL REPAIR TO TAKE PLACE WITHIN THE SPLASH ZONE OR UNDERWATER, THE CONTRACTOR SHALL SUBMIT A WORKING DRAWING IN ACCORDANCE WITH SUBSECTION 628.03(E)(2).



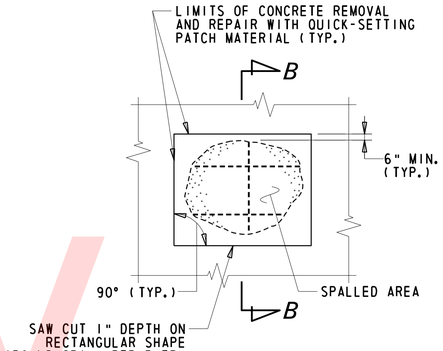
PLAN



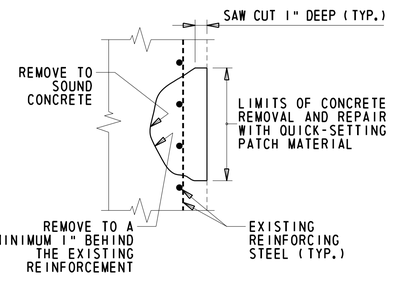
SECTION A-A

SHALLOW SPALL REPAIR

N.T.S.



PLAN



SECTION B-B

DEEP SPALL REPAIR

N.T.S.

NOTE: DURING DEMOLITION OF THE DECK, CARE SHALL BE TAKEN TO AVOID DAMAGING THE TOP OF THE EXISTING CONCRETE GIRDERS, DIAPHRAGMS AND EXISTING REINFORCEMENT PROTRUDING FROM THE GIRDERS AND DIAPHRAGMS INTO THE DECK. DURING DEMOLITION OF THE CHEEKWALLS, CARE SHALL BE TAKEN TO AVOID DAMAGING REINFORCEMENT PROTRUDING FROM THE WINGWALLS AND ABUTMENTS. PNEUMATIC HAMMERS SHALL BE LIMITED TO 15 POUNDS FOR REMOVAL OF SUPERSTRUCTURE CONCRETE AND 30 POUNDS FOR REMOVAL OF SUBSTRUCTURE CONCRETE. ALTERNATIVE TOOLS MUST BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	NORTH ABUTMENT REHABILITATION DETAILS	SHEET NO. 11
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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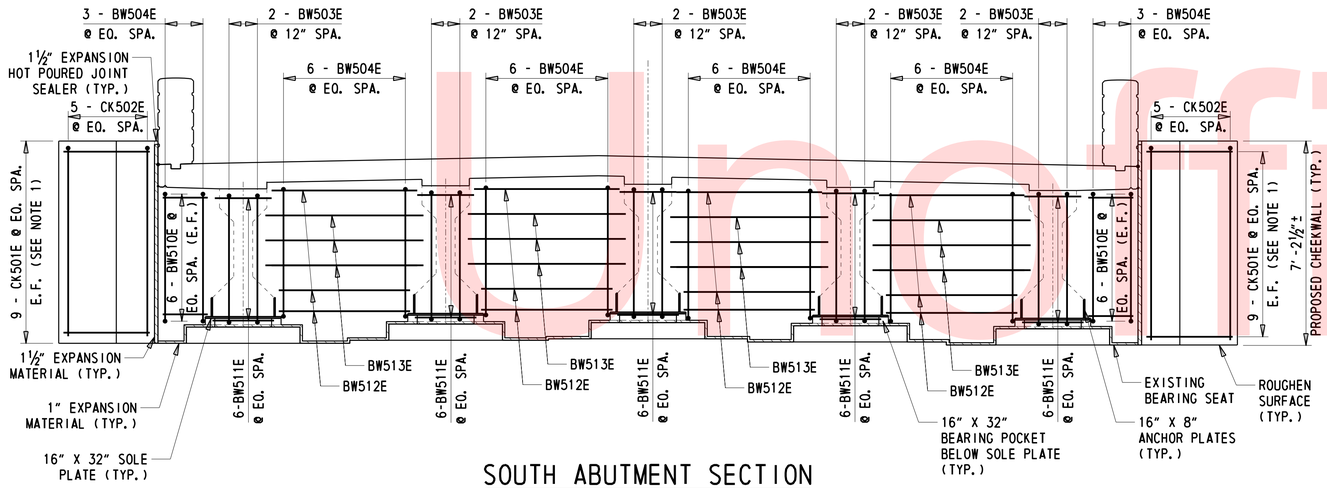
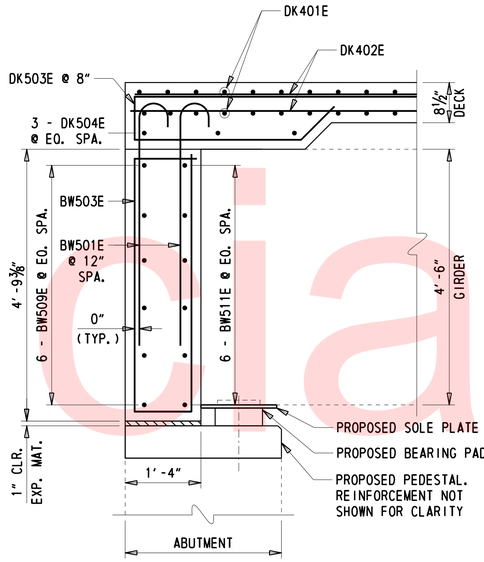


SOUTH ABUTMENT SECTION

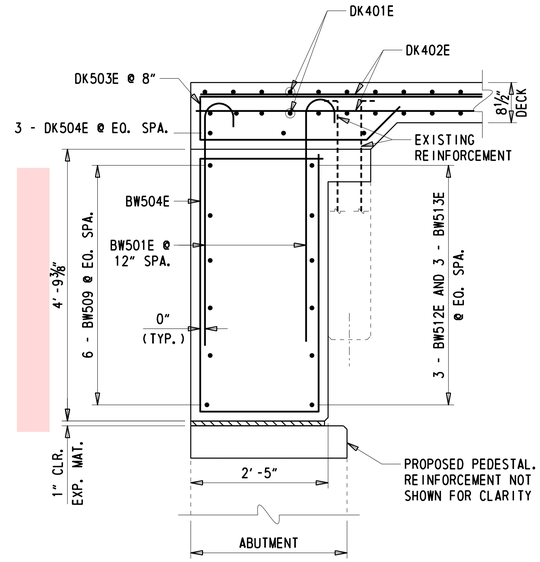
3/8" = 1'-0"



SOUTH ABUTMENT SECTION

(BEHIND GIRDER)

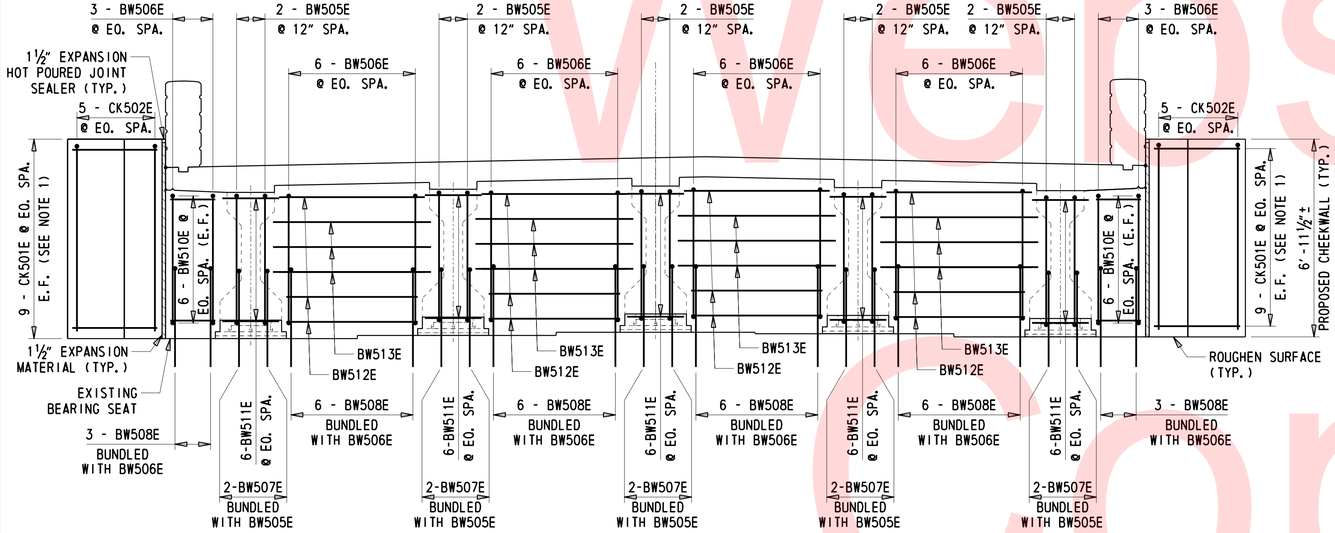
¾" = 1'-0"



SOUTH ABUTMENT SECTION

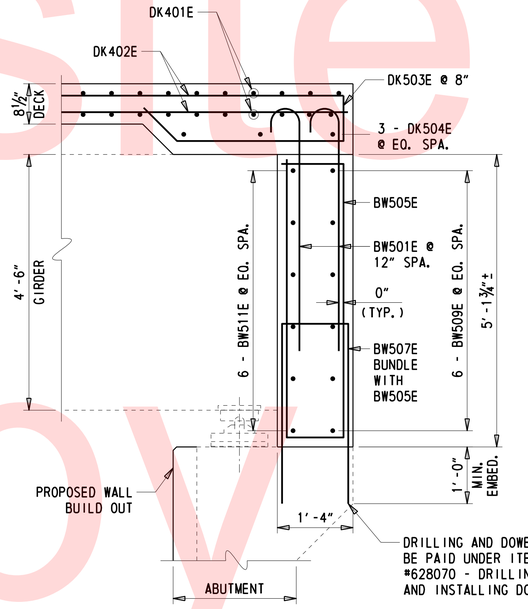
(BETWEEN GIRDER)

¾" = 1'-0"



NORTH ABUTMENT SECTION

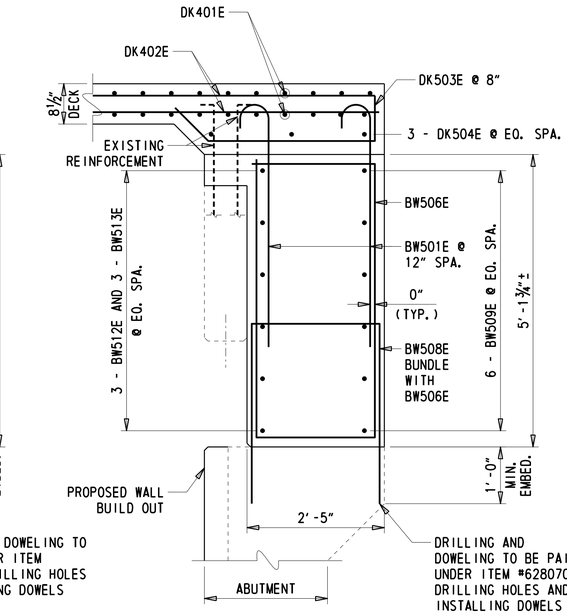
3/8" = 1'-0"



NORTH ABUTMENT SECTION

(BEHIND GIRDER)

¾" = 1'-0"



NORTH ABUTMENT SECTION

(BETWEEN GIRDER)

¾" = 1'-0"

NOTE:

1. SPACING OF CK501E AND CK502E SHALL BE ADJUSTED TO BE LAP SPLICED WITH EXISTING REINFORCING BARS PROTRUDING FROM THE WINGWALLS AND ABUTMENT WHERE POSSIBLE. FIELD CUT AND/OR FIELD BEND CK501E AND CK502E AS REQUIRED, PAYMENT INCIDENTAL TO ITEM #611001 - BAR REINFORCEMENT, EPOXY COATED.
2. BAR MARK AB501E AND BW509E ARE NOT SHOWN FOR CLARITY IN BOTH NORTH AND SOUTH ABUTMENT SECTION DETAILS.
3. SCARIFY AND APPLY APPROVED BONDING AGENT TO EXISTING CONCRETE SURFACES WHERE PROPOSED CONCRETE AND EXISTING CONCRETE INTERFACES WILL ADJOIN. PAYMENT INCIDENTAL TO ITEM #610017 - P.C.C. CONCRETE MASONRY, SUPERSTRUCTURE, CLASS D.
4. NOT ALL EXISTING REINFORCEMENT SHOWN FOR CLARITY.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	BACKWALL POUROVER REINFORCEMENT DETAILS	SHEET NO. 12
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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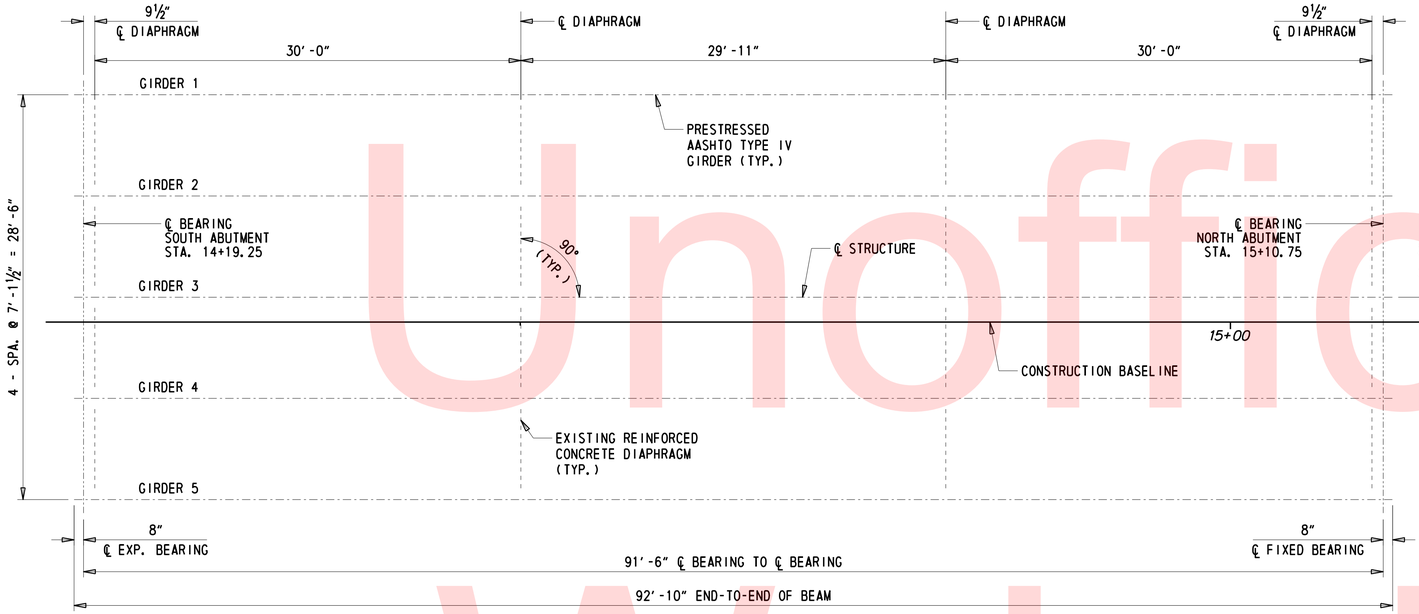


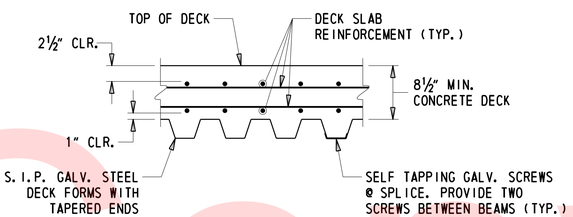
FRAMING PLAN

⅛" = 1'-0"

STAY-IN-PLACE FLANGE CONNECTION

N.T.S.

NOTE: ALL ANGLES, WELDS, FORMS, AND INSERTS MUST BE DESIGNED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL. S.I.P. FORMS ARE INCIDENTAL TO ITEM #610017.

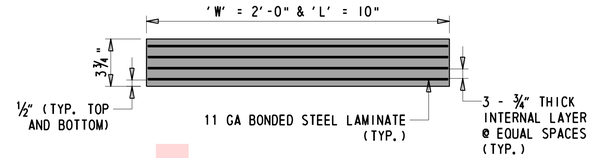


STAY-IN-PLACE STEEL FORM DETAIL

N.T.S.

STAY-IN-PLACE FORM NOTES

1. THESE FORMS SHALL BE VERTICALLY ADJUSTED TO ATTAIN LINE AND GRADE REQUIRED ON THE PLANS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL. METAL FORMS MUST BE GALVANIZED AND MORTAR TIGHT. STEEL METAL SCREWS MUST BE NON-CORROSIVE. SELF TAPPING SCREWS SHALL BE INSTALLED AT THE SIDE LAP OF THE SHEETS AT MID-SPAN SUPPORTS. ALL ANGLES, WELDS, AND INSERTS MUST BE DESIGNED BY THE CONTRACTOR.
3. ALL MATERIALS AND LABOR REQUIRED FOR STAY-IN-PLACE FORMS SHALL BE INCIDENTAL TO ITEM #610017 - P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D.
4. THE QUANTITY OF CONCRETE PLACED WITHIN THE CORRUGATIONS OF THE STAY-IN-PLACE FORMWORK WILL NOT BE MEASURED AND IS INCIDENTAL TO ITEM #610017 - P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D.

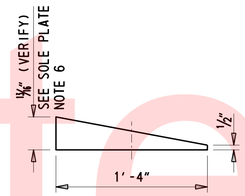


LAMINATED STEEL ELASTOMERIC BEARING PAD

2" = 1'-0"

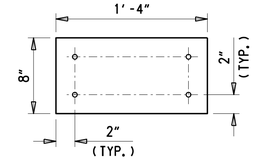
LAMINATED STEEL REINFORCED ELASTOMERIC BEARING NOTES:

1. FIVE (5) TOTAL STEEL REINFORCED ELASTOMERIC BEARINGS REQUIRED. TO BE USED AS EXPANSION BEARINGS AT SOUTH ABUTMENT.
2. PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
3. BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM.
4. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF CONCRETE PEDESTAL WITH AN APPROVED EPOXY ADHESIVE IN ACCORDANCE WITH SECTION 623.03 (C) OF THE STANDARD SPECIFICATIONS IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED. ENSURE THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF BEAMS.
5. PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, ANCHOR PLATES, ANCHOR BOLTS, NUTS AND WASHERS, AND SOLE PLATES SHALL BE UNDER ITEM #623000 - ELASTOMERIC BEARING.
6. BEARINGS DESIGNED FOR A CAPACITY OF 172.7 KIPS AND A MOVEMENT OF 0.79."



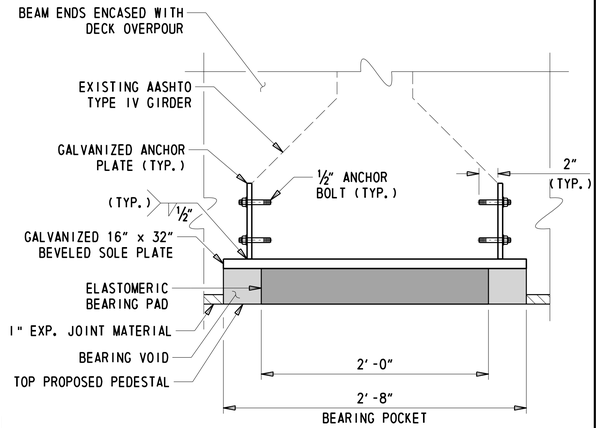
SOLE PLATE SECTION

N.T.S.



ANCHOR PLATE ELEVATION

1½" = 1'-0"



BEARING ELEVATION

1½" = 1'-0"

SOLE PLATE NOTES:

1. FIVE (5) TOTAL SOLE PLATES REQUIRED TO BE INSTALLED AT EXPANSION BEARINGS ON SOUTH ABUTMENT.
2. SOLE PLATES AND ANCHOR PLATES WILL BE GRADE 50 GALVANIZED STEEL AND CONFORM TO ASTM A709.
3. 1/2" DIAMETER ANCHORS AND WASHERS WILL BE UNPAINTED GRADE 50 GALVANIZED STEEL CONFORMING TO ASTM A709. ALL NUTS SHALL BE UNPAINTED A307 GALVANIZED STEEL. BURR BOLT THREADS BEYOND THE NUT.
4. GROUT THE ANCHOR BOLTS IN PLACE USING EPOXY GROUT IN A MANNER TO COMPLETE THE BONDING OF THE ANCHOR BOLT IN THE HOLE IN ACCORDANCE WITH MANUFACTURES RECOMMENDATION.
5. STEEL SURFACES OF THE SOLE PLATE TO BE MACHINE FINISHED, MEASURED IN ACCORDANCE WITH ANSI B46.1.
6. SET IN THIN LAYER OF MORTAR BETWEEN BOTTOM OF GIRDER AND SOLE PLATE TO ENSURE PROPER BEARING.
7. PAYMENT FOR ALL MATERIALS AND WORK ASSOCIATED WITH THE INSTALLATION OF THE SOLE PLATE, ANCHOR PLATES AND ANCHOR BOLTS SHALL BE INCLUDED UNDER ITEM #623000 - ELASTOMERIC BEARINGS.
8. PRIOR TO REMOVAL OF THE BRIDGE DECK, THE CONTRACTOR SHALL VERIFY THE SLOPE OF EACH OF THE GIRDERS MATCHES THE PROPOSED SLOPE OF THE CORRESPONDING SOLE PLATE SUCH AS TO PRODUCE A LEVEL-BEARING SURFACE AT THE TOP OF THE ELASTOMERIC BEARINGS. PAYMENT INCIDENTAL TO ITEM #763501 - CONSTRUCTION ENGINEERING.

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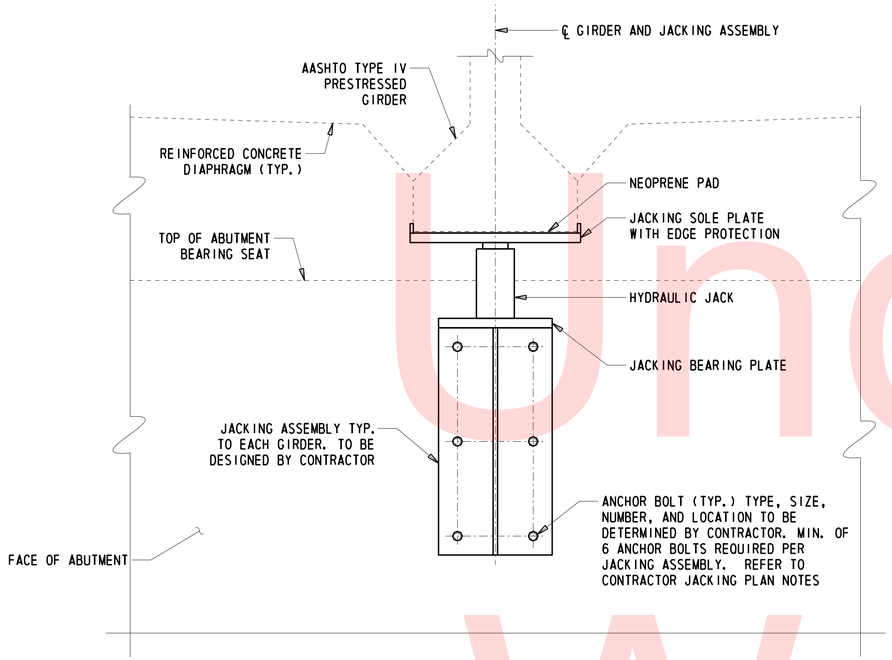
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	SHEET NO. 13
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW	TOTAL SHTS. 27
					CHECKED BY: JAT	FRAMING PLAN AND BEARING DETAILS

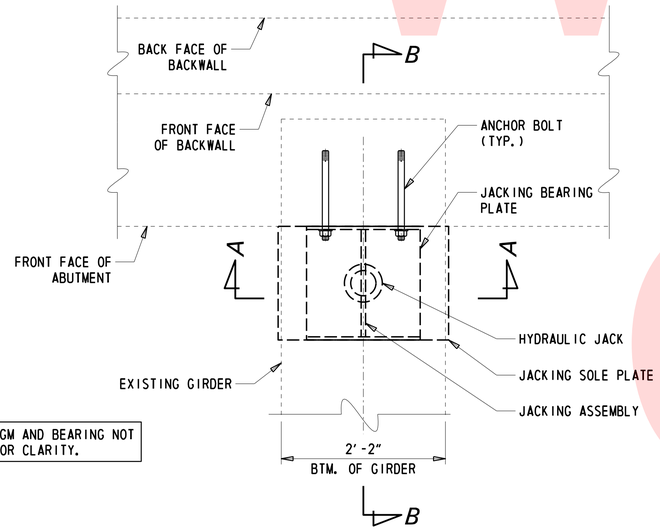


JACKING ASSEMBLY ELEVATION

(SECTION A-A)

1" = 1'-0"

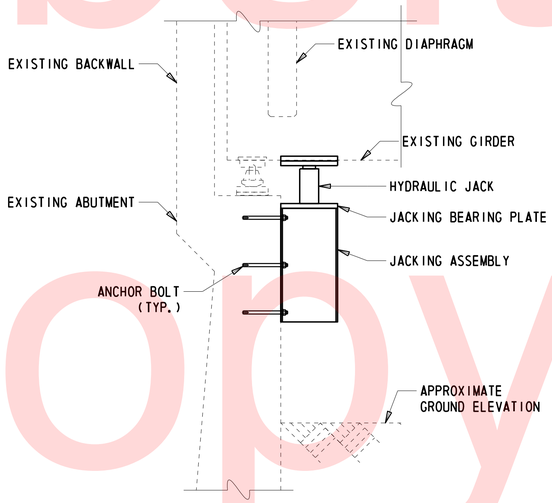
NOTE: JACKING SCHEME SHOWN FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO PROPOSE JACKING SCHEME PER JACKING NOTES.



NOTE: DIAPHRAGM AND BEARING NOT SHOWN FOR CLARITY.

JACKING ASSEMBLY PLAN

1" = 1'-0"



JACKING ASSEMBLY SECTION

(SECTION B-B)

½" = 1'-0"

JACKING NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT AND SUBMITTAL OF A JACKING PLAN FOR PERFORMING ALL WORK. JACKING PLAN SHALL INCLUDE ALL SHOP DRAWINGS, DETAILS, AND CALCULATIONS FOR THE PROPOSED JACKING OPERATION. PROVIDE TECHNICAL INFORMATION ON THE SELECTED ANCHORS, PATTERN, JACKS, JACK CONFIGURATION, JACK SUPPORT, AND JACKING SEQUENCE. PLAN WILL INCLUDE ALL ANTICIPATED LOADS IN SHEAR, TENSION, AND COMPRESSION ON THE JACKING ASSEMBLY. ALL CALCULATIONS WILL BE SEALED BY A DELAWARE LICENSED PROFESSIONAL ENGINEER AND MUST BE APPROVED BY DELDOT.
2. LIVE LOAD IS NOT PERMITTED DURING JACKING OPERATION.
3. ALL STRUCTURAL STEEL SHALL BE AASHTO M270, GRADE 50 AND WELDED IN ACCORDANCE WITH THE LATEST VERSION OF AWS BRIDGE WELDING CODE D1.5.
4. ACCORDING TO PREVIOUS DESIGN CONTRACT 68-09-011, ABUTMENT REINFORCEMENT IS #6 BARS VERTICALLY AT 12" O.C. AND #5 BARS HORIZONTAL AT 12" O.C. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING REINFORCEMENT BEFORE INSTALLING JACKING ASSEMBLY.
5. ADHESIVE ANCHORS UNDER SUSTAINED TENSION ARE NOT PERMITTED.
6. MINIMUM ANCHOR DIAMETER IS ⅝ INCH. MAXIMUM ANCHOR DIAMETER IS 1 INCH.
7. ANCHOR HOLES MUST BE LOCATED A MINIMUM OF 2 ANCHOR DIAMETERS FROM THE EDGE OF ANY PLATE AND 3 ANCHOR DIAMETERS AWAY FROM ANY ADJACENT ANCHOR.
8. THE NOMINAL MAXIMUM SHEAR ALLOWED IN ANCHORS IS 24 KSI.
9. THE MINIMUM DESIGN DEAD LOAD FOR SIZING JACKS IS 1.65 x CALCULATED DEAD LOAD. REFER TO SOUTH ABUTMENT JACKING LOADS SCHEDULE BELOW.
10. THE MAXIMUM TENSILE CAPACITY OF ANCHORS SHALL BE 80% OF MANUFACTURER RATING.
11. ANCHOR BOLT PATTERN IN JACKING ASSEMBLY WILL BE SYMMETRIC ABOUT THE VERTICAL AXIS.
12. ALL GIRDERS WILL BE JACKED SIMULTANEOUSLY IN A MANNER THAT LIMITS DIFFERENTIAL LIFTING BETWEEN ADJACENT GIRDERS TO LESS THAN OR EQUAL TO ⅛ INCH. JACKING PLAN WILL INCLUDE ESTABLISHMENT OF MONITORING WIRES TO MEASURE JACKING MOVEMENT RELATIVE TO ABUTMENT FOR EACH GIRDER.
13. PREPARE BOTTOM FLANGE OF GIRDERS BY LIGHTLY GRINDING SURFACE SMOOTH OF ANY VISIBLE DEVIATIONS THAT COULD CREATE A POINT LOAD CONDITION DURING JACKING. PROVIDE A MINIMUM ¼ INCH THICK NEOPRENE PAD BETWEEN BOTTOM FLANGE OF GIRDER AND JACKING SOLE PLATE TO PROVIDE UNIFORM CONTACT.
14. ONCE LIFTED, JACKED LOADS MUST BE SECURED BY EITHER TEMPORARY BLOCKING OR THE USE OF LOCKNUT JACKS. HYDRAULIC PRESSURE IS NOT TO BE USED TO SUPPORT LOADS, EVEN IF HYDRAULIC PRESSURE IS MAINTAINED.
15. REMOVE EXISTING BEARINGS ALONG SOUTH ABUTMENT, INSTALL PROPOSED PEDESTAL BUILD-UP PER PLAN AND INSTALL PROPOSED ELASTOMERIC BEARINGS ON SOUTH ABUTMENT.
16. AFTER PROPOSED SOUTH ABUTMENT BEARING PEDESTAL, SOLE PLATE AND ELASTOMERIC BEARING IS INSTALLED, AND MINIMUM STRENGTH REQUIRED TO SUPPORT LOADS AS CALCULATED IN CONTRACTOR JACKING PLAN IS ATTAINED, TRANSFER DEAD LOAD BACK TO THE SOUTH ABUTMENT.
17. REMOVE ALL TEMPORARY JACKING SUPPORTS, ANCHORS, APPURTENANCES, ETC. UPON COMPLETION OF JACKING OPERATIONS.
18. PAYMENT FOR ALL WORK ASSOCIATED WITH JACKING THE BRIDGE GIRDERS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: DEVELOPING AND SUBMITTING A JACKING PLAN, SUPPLYING MATERIALS, DRILLING FOR ANCHOR BOLTS, INSTALLING APPROVED JACKING SCHEME, REMOVAL OF JACKING SCHEME, AND REPAIRING ANCHOR BOLT HOLES, SHALL BE PAID FOR UNDER ITEM #604000 - JACKING BRIDGE.
19. ONLY JACKING OF GIRDERS ALONG SOUTH ABUTMENT IS REQUIRED.

JACKING LOADS

	GIRDER	UNFACTORED DL DL+15%	FACTORED DL 1.65*(DL+15%)
SOUTH ABUTMENT	G1	51.17 KIP	84.42 KIP
	G2-G4	54.01 KIP	89.12 KIP
	G5	51.17 KIP	84.42 KIP

NOTE: JACKING LOADS ARE BASED UPON EXISTING GIRDERS AND DIAPHRAGMS ONLY. IT IS ASSUMED THAT THE REMOVAL OF PARAPET, SIDEWALK, CURBS, AND DECK WILL OCCUR PRIOR TO JACKING. FACTORED LOADS INCLUDE SAFETY FACTOR OF 1.65 (=1.5*1.10 FOR "STICKY FORCE") PER 2016 BRIDGE DESIGN MANUAL.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	JACKING PLAN	SHEET NO. 14
				COUNTY NEW CASTLE	DESIGNED BY: GH/CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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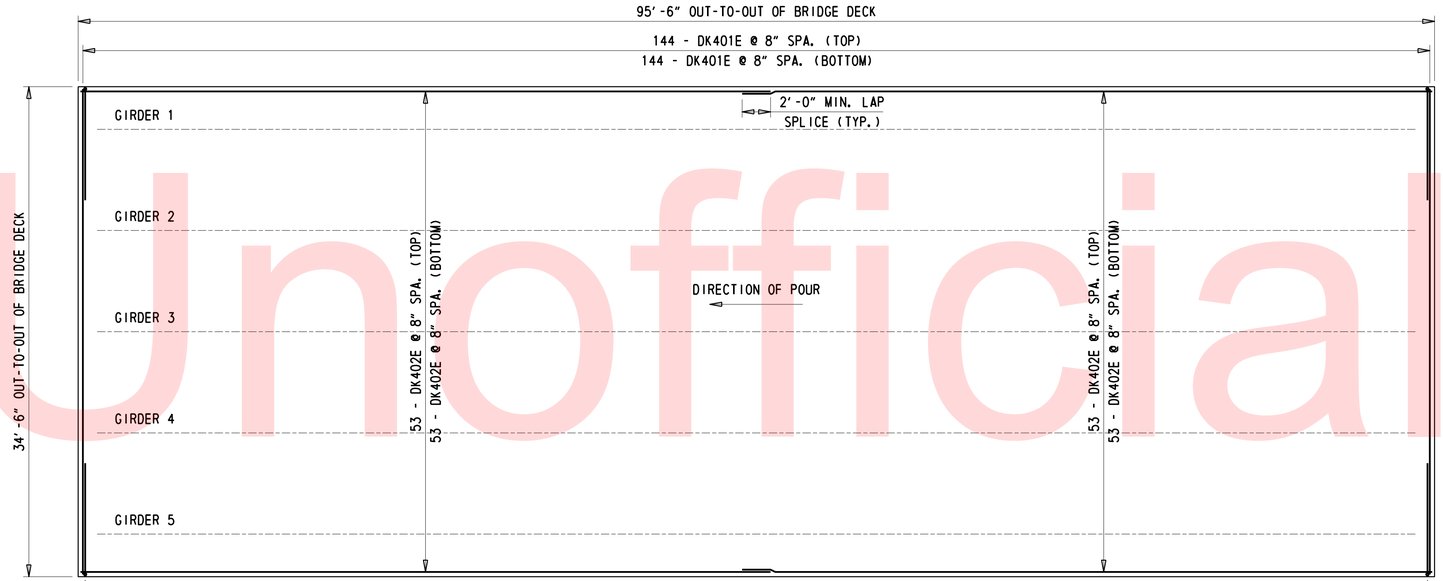
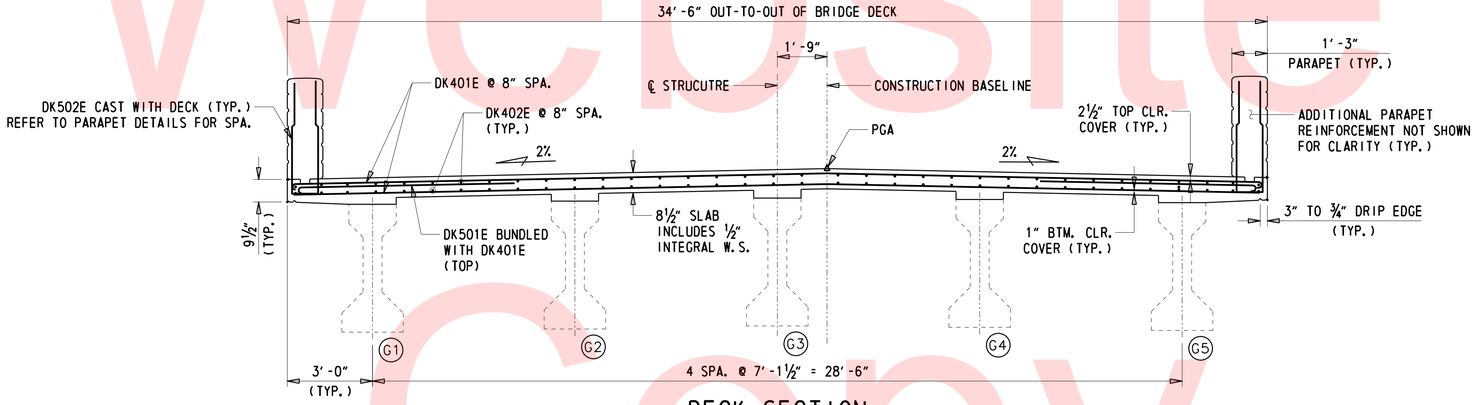


DECK PLAN

3/16" = 1'-0"



DECK SECTION

⅜" = 1'-0"

FINISHED DECK ELEVATIONS

	SOUTH ℄ BEARING		0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		NORTH ℄ BEARING	
LOCATION	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
WEST EDGE	14+19.25	190.87	14+28.40	190.70	14+37.55	190.53	14+46.70	190.36	14+55.85	190.19	14+65.00	190.02	14+74.15	189.84	14+83.30	189.67	14+92.45	189.50	15+01.60	189.33	15+10.75	189.16
WEST PARAPET	14+19.25	190.90	14+28.40	190.72	14+37.55	190.55	14+46.70	190.38	14+55.85	190.21	14+65.00	190.04	14+74.15	189.87	14+83.30	189.70	14+92.45	189.53	15+01.60	189.36	15+10.75	189.18
GIRDER 1	14+19.25	190.93	14+28.40	190.76	14+37.55	190.59	14+46.70	190.42	14+55.85	190.25	14+65.00	190.08	14+74.15	189.90	14+83.30	189.73	14+92.45	189.56	15+01.60	189.39	15+10.75	189.22
GIRDER 2	14+19.25	191.07	14+28.40	190.90	14+37.55	190.73	14+46.70	190.56	14+55.85	190.39	14+65.00	190.22	14+74.15	190.05	14+83.30	189.88	14+92.45	189.70	15+01.60	189.53	15+10.75	189.36
GIRDER 3	14+19.25	191.22	14+28.40	191.04	14+37.55	190.87	14+46.70	190.70	14+55.85	190.53	14+65.00	190.36	14+74.15	190.19	14+83.30	190.02	14+92.45	189.85	15+01.60	189.68	15+10.75	189.50
GIRDER 4	14+19.25	191.14	14+28.40	190.97	14+37.55	190.80	14+46.70	190.63	14+55.85	190.46	14+65.00	190.29	14+74.15	190.12	14+83.30	189.95	14+92.45	189.77	15+01.60	189.60	15+10.75	189.43
GIRDER 5	14+19.25	191.00	14+28.40	190.83	14+37.55	190.66	14+46.70	190.49	14+55.85	190.32	14+65.00	190.15	14+74.15	189.97	14+83.30	189.80	14+92.45	189.63	15+01.60	189.46	15+10.75	189.29
EAST PARAPET	14+19.25	190.97	14+28.40	190.79	14+37.55	190.62	14+46.70	190.45	14+55.85	190.28	14+65.00	190.11	14+74.15	189.94	14+83.30	189.77	14+92.45	189.60	15+01.60	189.43	15+10.75	189.25
EAST EDGE	14+19.25	190.94	14+28.40	190.77	14+37.55	190.60	14+46.70	190.43	14+55.85	190.26	14+65.00	190.09	14+74.15	189.91	14+83.30	189.74	14+92.45	189.57	15+01.60	189.40	15+10.75	189.23

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE AS NOTED

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT T201507404
COUNTY NEW CASTLE
BRIDGE NO. 1-111
DESIGNED BY: CBB/SMW
CHECKED BY: JAT

DECK REINFORCEMENT AND DECK ELEVATIONS

SHEET NO. 15
TOTAL SHTS. 27

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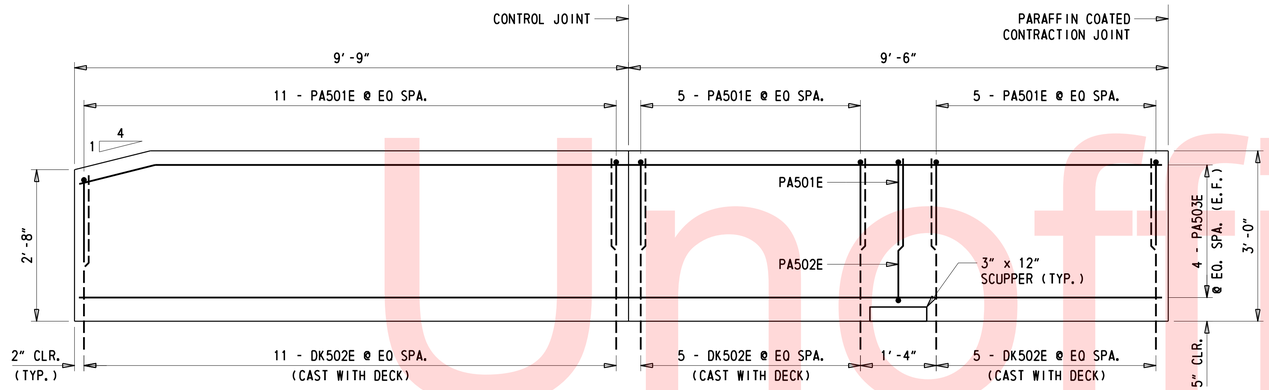
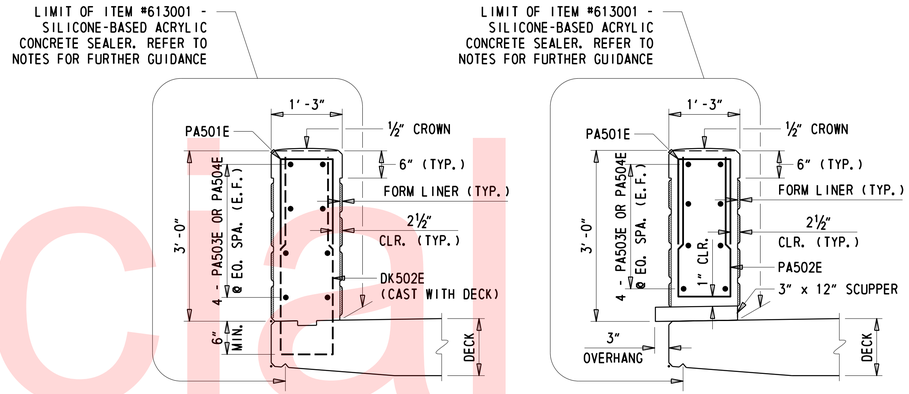


END PARAPET ELEVATION

¾″ = 1′-0″

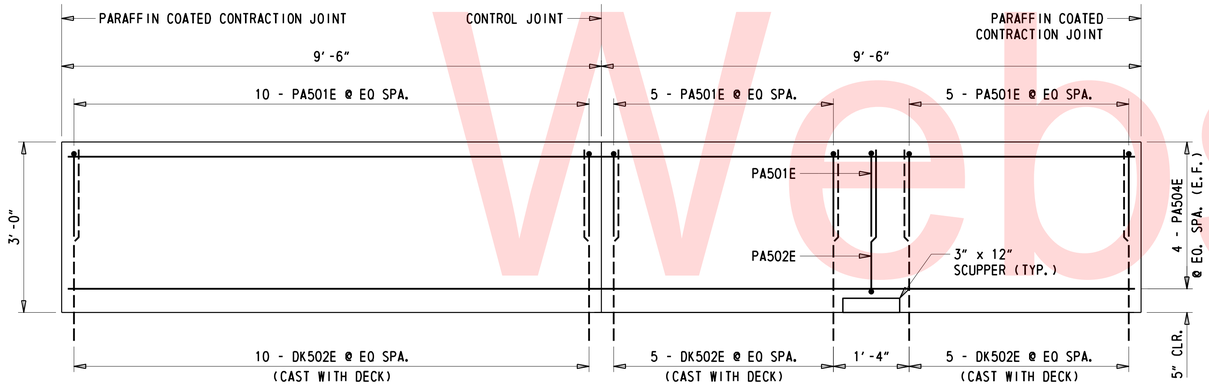


SECTION WITHOUT SCUPPER

SECTION WITH SCUPPER

PARAPET SECTION

¾″ = 1′-0″

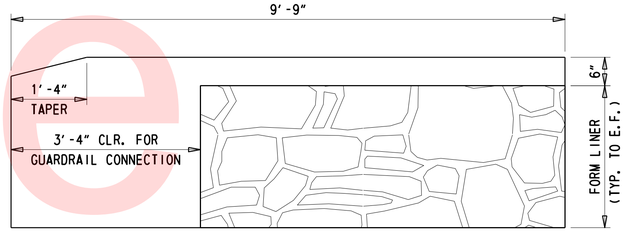


INTERIOR SECTION WITHOUT SCUPPER

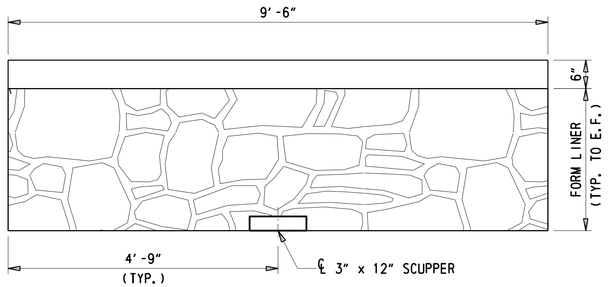
INTERIOR SECTION WITH SCUPPER

INTERIOR PARAPET ELEVATION

¾″ = 1′-0″



END SEGMENT



INTERIOR SEGMENT

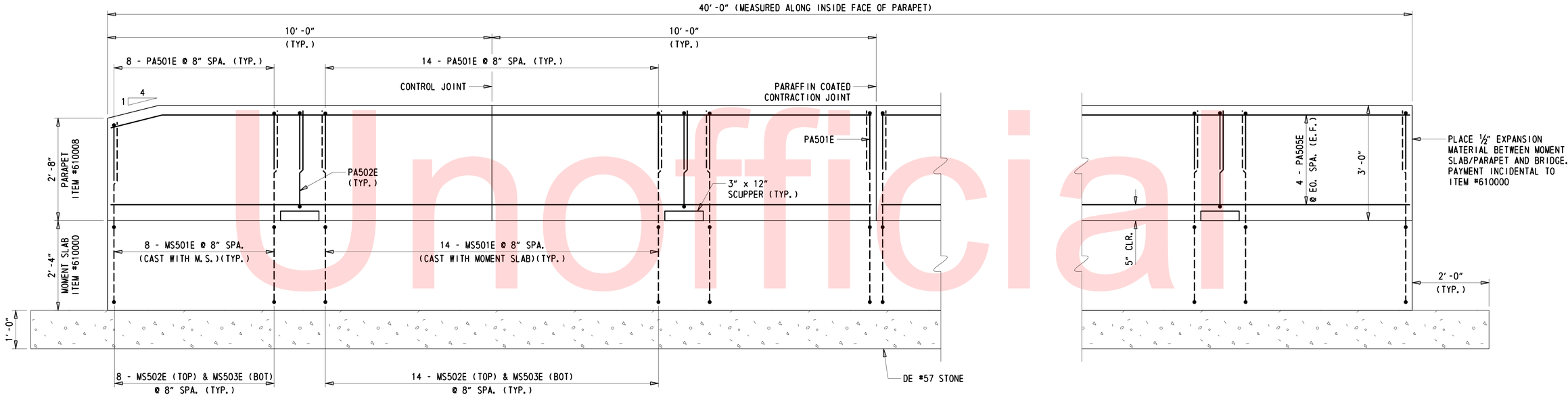
PARAPET ELEVATION

¾″ = 1′-0″

NOTES:

1. CONTROL AND CONTRACTION JOINTS SHALL ALTERNATE ALONG THE LENGTH OF THE PARAPET. PARAPET REINFORCEMENT SHALL BE CONTINUOUS THROUGH ALL CONTROL JOINTS. SAW CUT SHALL PENETRATE ½″ BEYOND THE DEPTH OF THE FORM LINER FOR ALL CONTROL JOINTS.
2. FIELD BEND BARS AT PARAPET ENDS WHERE TAPER OCCURS. FIELD BEND INCIDENTAL TO ITEM #611001 BAR REINFORCEMENT, EPOXY COATED.
3. DO NOT TAPER PARAPET END ON THE SOUTHWEST CORNER OF THE STRUCTURE. PARAPET MUST REMAIN FLUSH WITH PARAPET ATTACHED TO MOMENT SLAB AROUND THE CURVE ADJACENT TO AUBURN MILL ROAD.
4. PARAPET FORM LINER PATTERN SHALL BE FLAGSTONE OR SIMILAR AND THE FINISH SHALL BE MULTI-COLORED TO RESEMBLE THE PARAPET ON ADJACENT STRUCTURE, BR 1-599. A SAMPLE OF THE FORM LINER PATTERN AND PAINT COLOR SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. PAINTING OF THE FORM LINERS WILL BE PAID UNDER ITEM #613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
5. SILICONE-BASED ACRYLIC CONCRETE SEALER, ITEM #613001, WITHIN THE PAYMENT LIMITS DEFINED ON THIS SHEET AND THE MOMENT SLAB DETAIL SHEET, BUT OUTSIDE OF THE FORM LINER AREA, SHALL BE OF A COLOR THAT CLOSELY RESEMBLES COLORS USED IN NOTE 4 ABOVE. COLOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. PARAPET FORM LINER IS INCIDENTAL TO ITEM #610008 - P.C.C. MASONRY, PARAPET, CLASS A.
7. SCUPPERS ARE INCIDENTAL TO ITEM #610008 - P.C.C. MASONRY, PARAPET, CLASS A

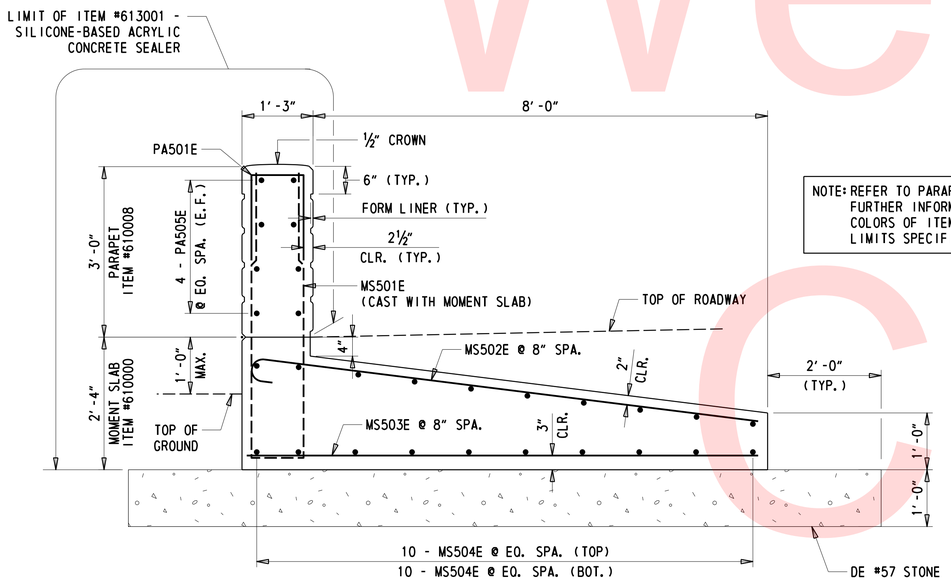
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	PARAPET DETAILS	SHEET NO. 16
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		



NOTES:
1. FORM LINER NOT SHOWN FOR CLARITY. REFER TO PARAPET DETAILS SHEET FOR FURTHER INFORMATION.
2. MS502E AND MS503E SHALL BE SPACED TO TIE TO MS501E ALONG PARAPET AND PLACED PERPENDICULAR TO THE CURVE OF THE PARAPET/MOMENT SLAB.
3. MS504E NOT SHOWN IN ELEVATION VIEW FOR CLARITY.

MOMENT SLAB ELEVATION

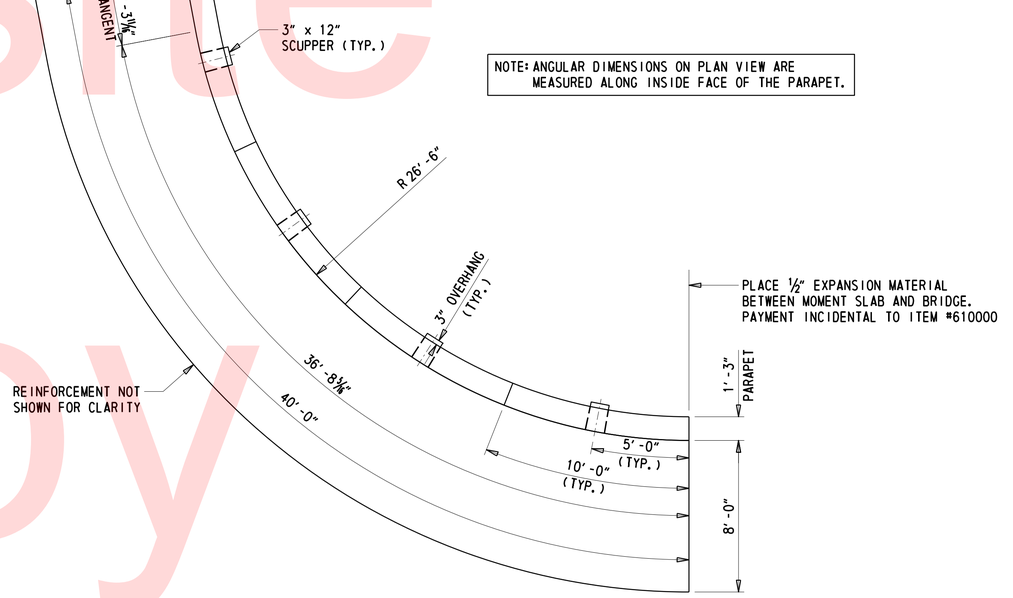
¾" = 1'-0"



NOTE: REFER TO PARAPET DETAILS SHEET FOR FURTHER INFORMATION REGARDING THE COLORS OF ITEM #613001 WITHIN THE LIMITS SPECIFIED ON THIS SHEET.

MOMENT SLAB SECTION

¾" = 1'-0"



NOTE: ANGULAR DIMENSIONS ON PLAN VIEW ARE MEASURED ALONG INSIDE FACE OF THE PARAPET.

MOMENT SLAB PLAN

¼" = 1'-0"

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-111	MOMENT SLAB DETAILS	SHEET NO. 17
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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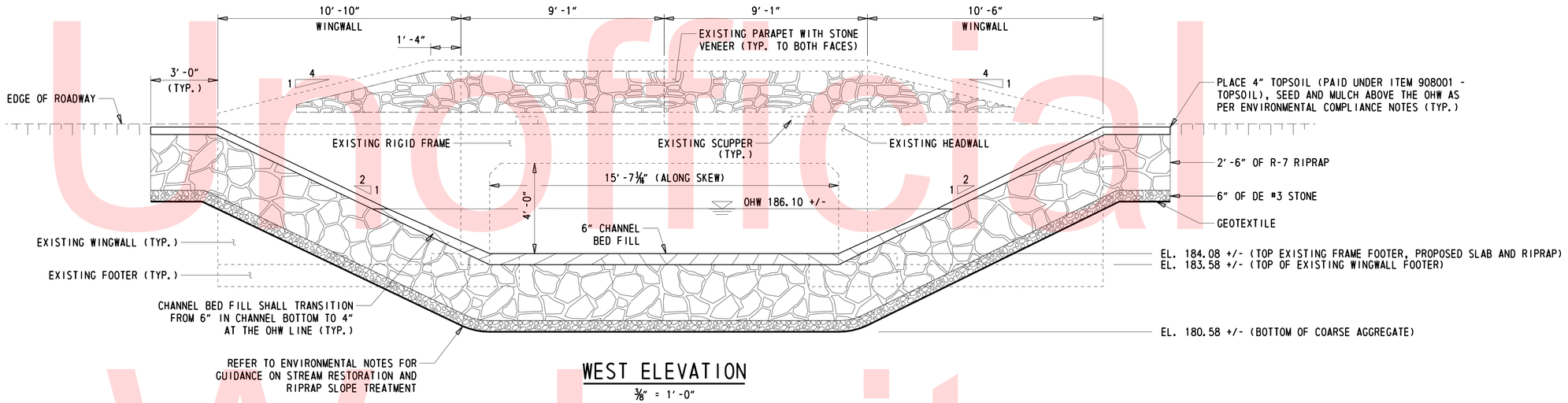
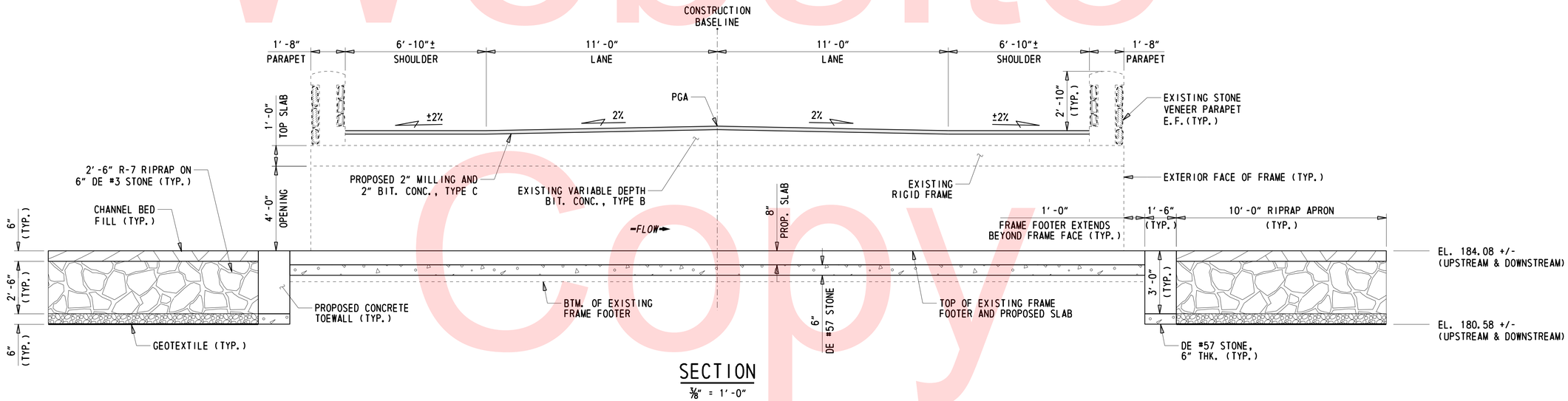


WEST ELEVATION

⅜″ = 1′-0″

NOTE:
1. ALL DIMENSIONS INCLUDE TOLERANCE OF +/- 1″ DUE TO METRIC CONVERSION FROM EXISTING PLANS.
2. SHOULDER SLOPES SHALL BE ADJUSTED TO ACHIEVE POSITIVE DRAINAGE TO THE EXISTING SCUPPERS. SHOULDER WIDTHS SHALL BE ADJUSTED TO MATCH THE EXISTING PARAPETS.



SECTION

⅜″ = 1′-0″

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-599	BRIDGE ELEVATION AND SECTION	SHEET NO. 18
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW		TOTAL SHTS. 27
					CHECKED BY: JAT		

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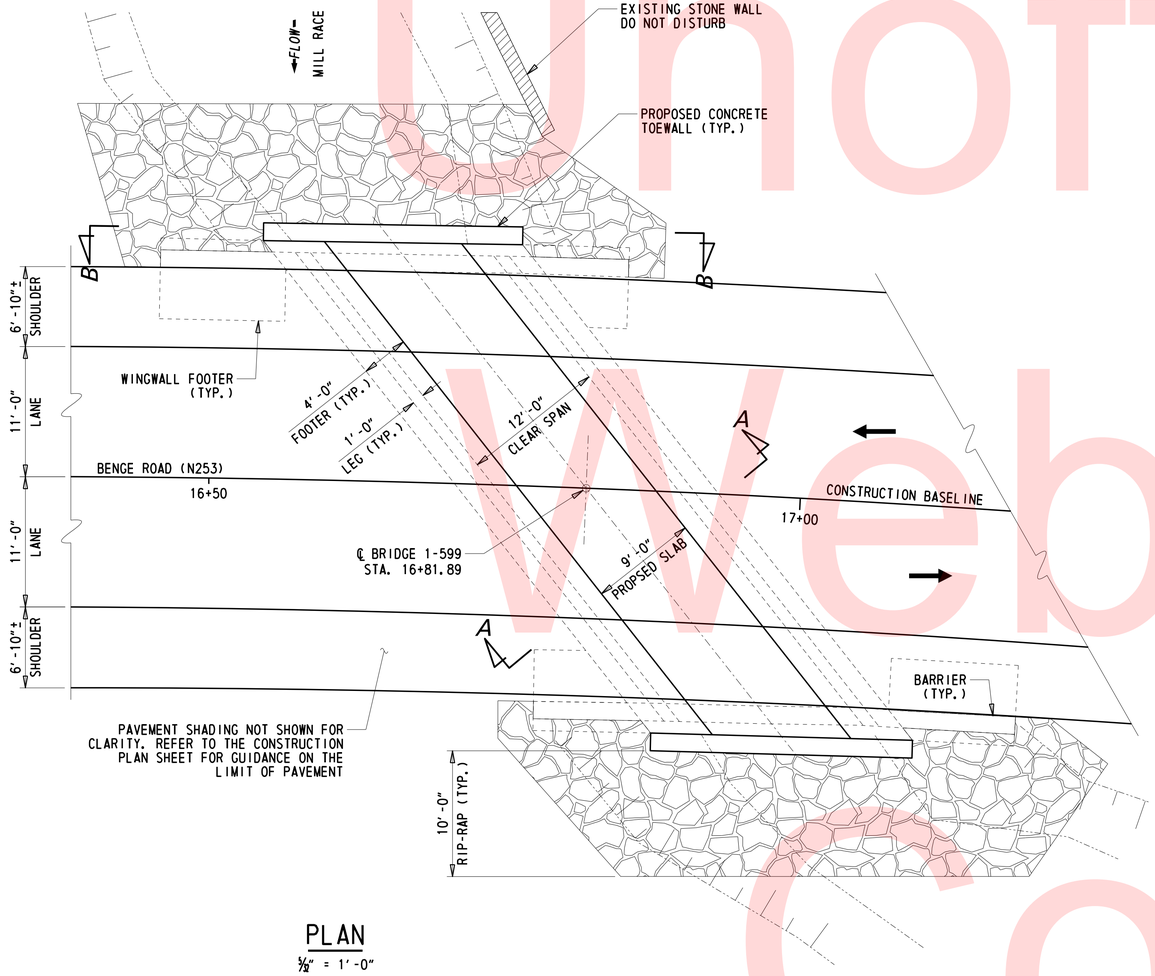
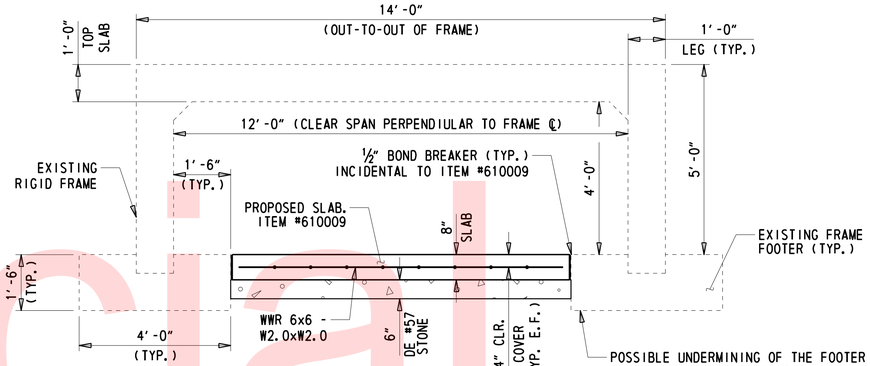
NOTE: ALL DIMENSIONS INCLUDE TOLERANCE OF +/- 1" DUE TO METRIC CONVERSION FROM EXISTING PLANS.



PLAN

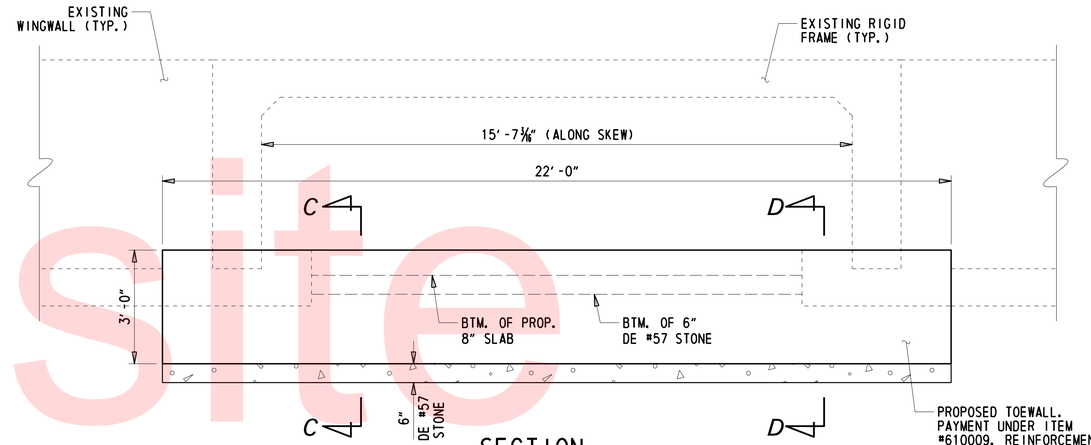
½" = 1'-0"



SECTION

SECTION A-A

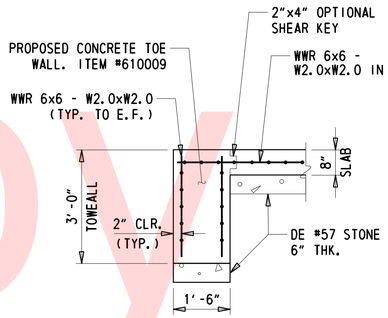
½" = 1'-0"



SECTION

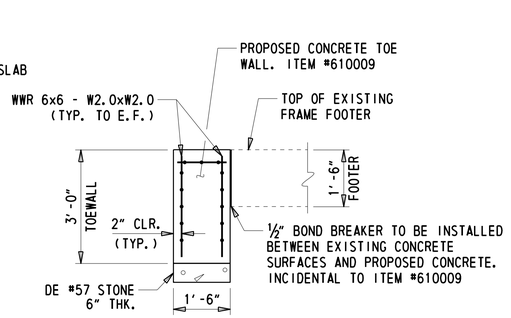
SECTION B-B

½" = 1'-0"



TOEWALL ALONG SLAB

SECTION C-C



TOEWALL ALONG EX. FOOTER

SECTION D-D

TOE WALL SECTIONS

½" = 1'-0"

NOTE: WELDED WIRE REINFORCEMENT (WWR) PAID UNDER ITEM 611010. WWR MAY BE REPLACED WITH #4 EPOXY REINFORCING BARS AT 6" SPACING IN EACH DIRECTION WITH APPROVAL FROM THE ENGINEER AT NO ADDITONAL COST TO THE DEPARTMENT.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE	CONTRACT T201507404	BRIDGE NO. 1-599	BRIDGE PLAN AND SLAB DETAILS
				COUNTY NEW CASTLE	DESIGNED BY: CBB/SMW	SHEET NO. 19
					CHECKED BY: JAT	TOTAL SHTS. 27

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

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

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
132	5	1-10 0	AB501E	2	0-7 0	1-3 0									
30	5	5-7 0	AB502E	17		1-2 2	2-5 0	1-11 2							
20	5	7-7 0	AB503E	17		1-11 2	3-8 0	1-11 2							
144	5	4-7 0	BW501E	18	0-7 0	4-0 0							0-5 0		
10	5	12-0 0	BW503E	T1	0-7 0	1-0 0	4-5 0	1-0 0	4-5 0				0-7 0		
30	5	14-2 0	BW504E	T1	0-7 0	2-1 0	4-5 0	2-1 0	4-5 0				0-7 0		
10	5	12-10 0	BW505E	T1	0-7 0	1-0 0	4-10 0	1-0 0	4-10 0				0-7 0		
30	5	15-0 0	BW506E	T1	0-7 0	2-1 0	4-10 0	2-1 0	4-10 0				0-7 0		
10	5	7-0 0	BW507E	17		3-0 0	1-0 0	3-0 0							
30	5	8-1 0	BW508E	17		3-0 0	2-1 0	3-0 0							
12	5	34-2 0	BW509E	STR		34-2 0									
48	5	1-7 0	BW510E	STR		1-7 0									
60	5	1-10 0	BW511E	STR		1-10 0									
24	5	4-7 2	BW512E	STR		4-7 2									
24	5	5-10 0	BW513E	STR		5-10 0									
72	5	3-8 0	CK501E	31		1-4 0	2-4 0					1-11		1-11 0	
20	5	14-10 0	CK502E	17		6-11 2	0-11 0	6-11 2							
288	4	35-2 0	DK401E	1	0-6 0	34-2 0					0-6 0		0-4 0		
212	4	48-9 0	DK402E	STR		48-9 0									
288	5	8-7 0	DK501E	18	0-7 0	8-0 0							0-5 0		
204	5	7-6 0	DK502E	17		3-4 0	0-10 0	3-4 0							
106	5	9-11 2	DK503E	T11			0-5 2	2-10 0	0-8 0	6-0 0		0-4 0		0-4 0	
6	5	34-2 0	DK504E	STR		34-2 0									
274	5	2-10 0	PA501E	17		1-0 0	0-10 0	1-0 0							
12	5	5-10 0	PA502E	17		2-6 0	0-10 0	2-6 0							
32	5	18-11 0	PA503E	STR		18-11 0									
48	5	18-8 0	PA504E	STR		18-8 0									
16	5	19-8 0	PA505E	STR		19-8 0									
58	5	10-8 0	MS501E	17		4-11 0	0-10 0	4-11 0							
58	5	9-7 0	MS502E	18	0-7 0	9-0 0							0-5 0		
58	5	8-11 0	MS503E	STR		8-11 0									
2X10	5	38-2 0	MS504E	9		38-2 0				25-5 0		6-10 0			34-8 1
		TO				TO				TO		TO			TO
		50-6 1				50-6 1				34-4 0		8-10 2			46-10

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

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

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIMENSIONS: DIAMETER (INCHES)	AREA ($INCHES^2$)	WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

	180° HOOKS		90° HOOKS
	D	A OR G	J	A OR G
3	2 1/4"	5"	3"	6"
4	3"	6"	4"	8"
5	3 3/4"	7"	5"	10"
6	4 1/2"	8"	6"	1-0"
7	5 1/4"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9 1/2"	1-3"	11 3/4"	1-7"
10	10 3/4"	1-5"	1-1 1/4"	1-10"
11	1-0"	1-7"	1-2 3/4"	2-0"
14	1-6 1/4"	2-3"	1-9 3/4"	2-7"
18	2-0"	3-0"	2-4 1/2"	3-5"

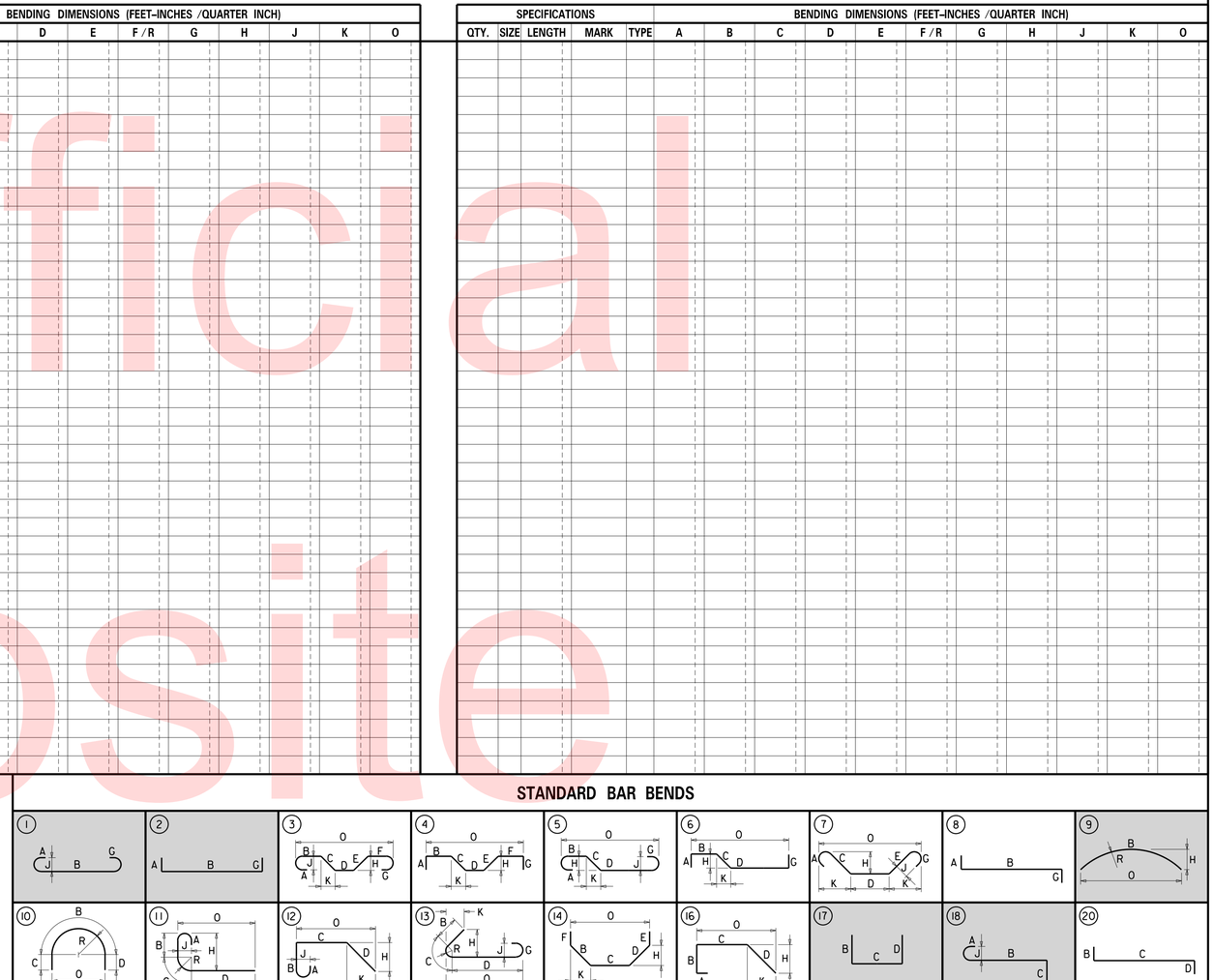
STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

	90° HOOK	135° HOOK	
	D	A OR G	A OR G	A OR G
3	1 1/2"	4"	4"	2 1/2"
4	2"	4 1/2"	4 1/2"	3"
5	2 1/2"	6"	5 1/2"	3 3/4"
6	4 1/2"	1-0"	8"	4 1/2"
7	5 1/4"	1-2"	9"	5 1/4"
8	6"	1-4"	10 1/2"	6"

NOTES:

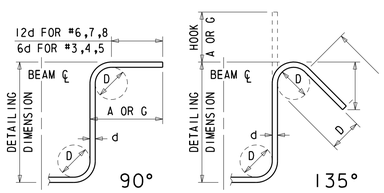
1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE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

STANDARD BAR BENDS

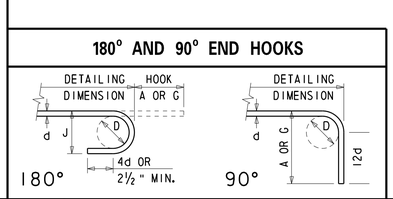


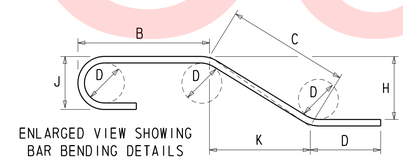
SUPPLEMENTAL BAR BENDS

STIRRUP AND TIE HOOKS



180° AND 90° END HOOKS





ENLARGED VIEW SHOWING BAR BENDING DETAILS

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO. 1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW
COUNTY	CHECKED BY: JAT
NEW CASTLE	

REINFORCING BAR SUMMARY

SHEET NO.	TOTAL SHTS.
20	27

Y:\NEWCASTL\253\BRIDGE\T201507404\PLANS\BR.DGN

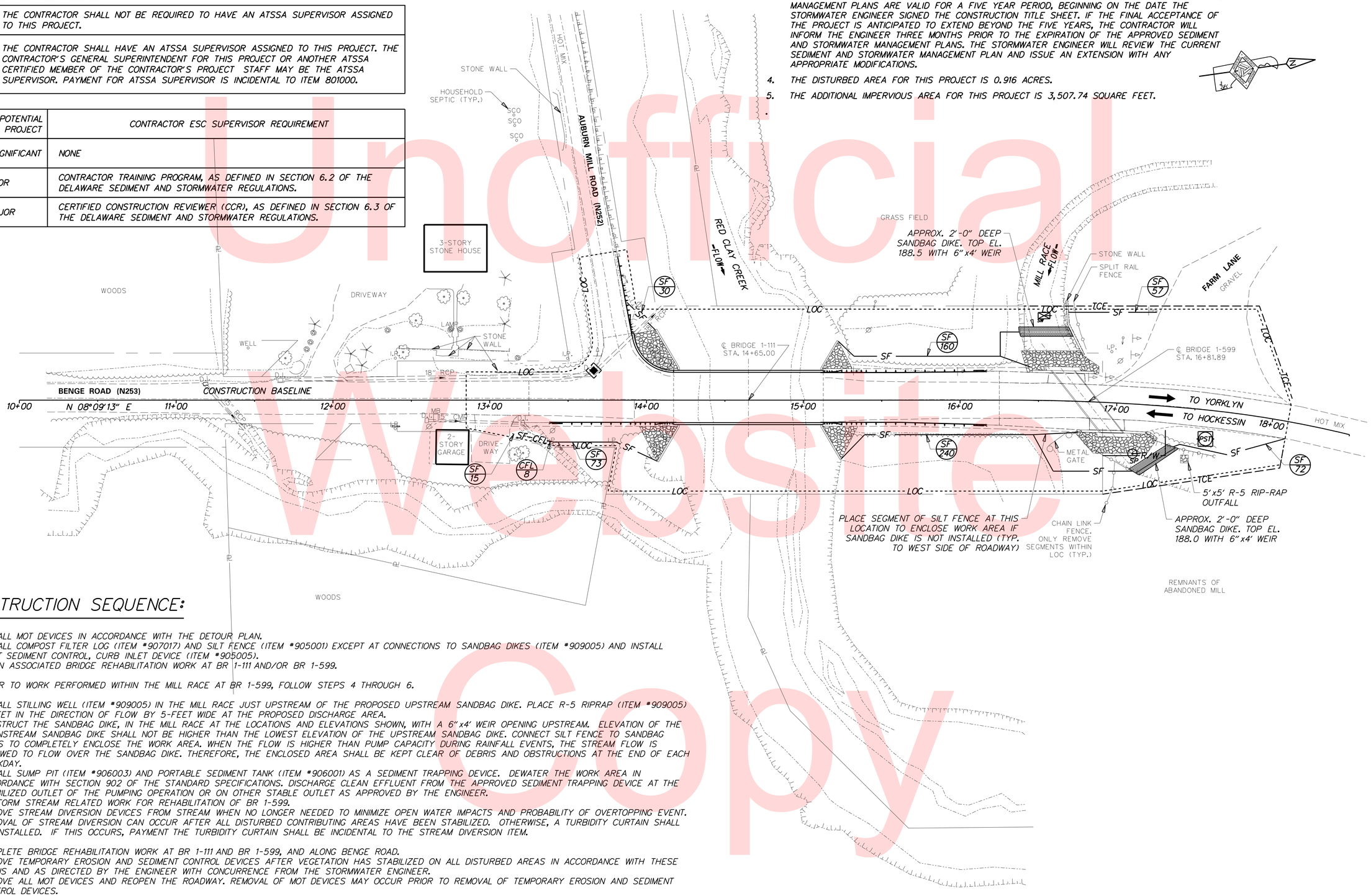
1. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

(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 801000.

2.

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.
(X) MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.

3. 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 FIVE 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 FIVE 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.
4. THE DISTURBED AREA FOR THIS PROJECT IS 0.916 ACRES.
5. THE ADDITIONAL IMPERVIOUS AREA FOR THIS PROJECT IS 3,507.74 SQUARE FEET.



CONSTRUCTION SEQUENCE:

1. INSTALL MOT DEVICES IN ACCORDANCE WITH THE DETOUR PLAN.
2. INSTALL COMPOST FILTER LOG (ITEM *907017) AND SILT FENCE (ITEM *905001) EXCEPT AT CONNECTIONS TO SANDBAG DIKES (ITEM *909005) AND INSTALL INLET SEDIMENT CONTROL, CURB INLET DEVICE (ITEM *905005).
3. BEGIN ASSOCIATED BRIDGE REHABILITATION WORK AT BR 1-111 AND/OR BR 1-599.

   PRIOR TO WORK PERFORMED WITHIN THE MILL RACE AT BR 1-599, FOLLOW STEPS 4 THROUGH 6.

4. INSTALL STILLING WELL (ITEM *909005) IN THE MILL RACE JUST UPSTREAM OF THE PROPOSED UPSTREAM SANDBAG DIKE. PLACE R-5 RIPRAP (ITEM *909005) 5-FEET IN THE DIRECTION OF FLOW BY 5-FEET WIDE AT THE PROPOSED DISCHARGE AREA.
5. CONSTRUCT THE SANDBAG DIKE, IN THE MILL RACE AT THE LOCATIONS AND ELEVATIONS SHOWN, WITH A 6"x4' WEIR OPENING UPSTREAM. ELEVATION OF THE DOWNSTREAM SANDBAG DIKE SHALL NOT BE HIGHER THAN THE LOWEST ELEVATION OF THE UPSTREAM SANDBAG DIKE. CONNECT SILT FENCE TO SANDBAG DIKES TO COMPLETELY ENCLOSE THE WORK AREA. WHEN THE FLOW IS HIGHER THAN PUMP CAPACITY DURING RAINFALL EVENTS, THE STREAM FLOW IS ALLOWED TO FLOW OVER THE SANDBAG DIKE. THEREFORE, THE ENCLOSED AREA SHALL BE KEPT CLEAR OF DEBRIS AND OBSTRUCTIONS AT THE END OF EACH WORKDAY.
6. INSTALL SUMP PIT (ITEM *906003) AND PORTABLE SEDIMENT TANK (ITEM *906001) AS A SEDIMENT TRAPPING DEVICE. DEWATER THE WORK AREA IN ACCORDANCE WITH SECTION 902 OF THE STANDARD SPECIFICATIONS. DISCHARGE CLEAN EFFLUENT FROM THE APPROVED SEDIMENT TRAPPING DEVICE AT THE STABILIZED OUTLET OF THE PUMPING OPERATION OR ON OTHER STABLE OUTLET AS APPROVED BY THE ENGINEER.
7. PERFORM STREAM RELATED WORK FOR REHABILITATION OF BR 1-599.
8. REMOVE STREAM DIVERSION DEVICES FROM STREAM WHEN NO LONGER NEEDED TO MINIMIZE OPEN WATER IMPACTS AND PROBABILITY OF OVERTOPPING EVENT. REMOVAL OF STREAM DIVERSION CAN OCCUR AFTER ALL DISTURBED CONTRIBUTING AREAS HAVE BEEN STABILIZED. OTHERWISE, A TURBIDITY CURTAIN SHALL BE INSTALLED. IF THIS OCCURS, PAYMENT THE TURBIDITY CURTAIN SHALL BE INCIDENTAL TO THE STREAM DIVERSION ITEM.
9. COMPLETE BRIDGE REHABILITATION WORK AT BR 1-111 AND BR 1-599, AND ALONG BENGE ROAD.
10. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER VEGETATION HAS STABILIZED ON ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER WITH CONCURRENCE FROM THE STORMWATER ENGINEER.
11. REMOVE ALL MOT DEVICES AND REOPEN THE ROADWAY. REMOVAL OF MOT DEVICES MAY OCCUR PRIOR TO REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO. 1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW
COUNTY	CHECKED BY: JAT
NEW CASTLE	

CONSTRUCTION SEQUENCE AND EROSION AND SEDIMENT CONTROL PLAN

SHEET NO.	TOTAL SHTS.
21	27

ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

A. THE PURPOSE OF THESE SHEETS IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.

B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHALL BE CONTACTED AT 302-760-2264 TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.

C. USE OF THESE SHEETS DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

2. NATURAL RESOURCE ISSUES:

A. PERMIT REQUIREMENTS/APPROVALS*:
U.S. ARMY CORPS OF ENGINEERS (COE) - NWP #3 (a) AND (c) - NO PCN
DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): PROJECT IS CONSISTENT WITH DEL. CODE CH. 72, SECTION 7271, SPECIAL EXEMPTION (b)
DNREC - WATER QUALITY (WQC) & COSTAL ZONE CONSISTENCY (CSM): ISSUED (PROJECT IS NOT LOCATED IN CRW)
NEW CASTLE COUNTY DEPARTMENT OF LANE USE: NONE

* THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THIS APPROVAL.
** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE IT IS DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.

B. CONSTRUCTION RESTRICTIONS:
FISHERIES - NONE
ENDANGERED SPECIES - BOG TURTLES: DUE TO POSSIBLE PRESENCE OF BOG TURTLES, A TIME OF YEAR RESTRICTION (TOYR) FOR STREAM WORK FOR THE MILL RACE AND FOR THE RED CLAY CREEK IS IN EFFECT FROM APRIL 1 TO JUNE 30, INCLUSIVE TO ANY CALENDAR YEAR.
MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES:

A. ANY STAGING AND STOCKPILE AREA(S) OUTSIDE OF THE PROJECT'S LOC THAT INDIVIDUALLY OR CUMULATIVELY ARE LARGER THAN 10,000 SQUARE FEET MUST BE APPROVED BY DELDOT'S ARCHAEOLOGIST. CONTACT THE AREA ENGINEER WHO WILL COORDINATE WITH DELDOT'S ARCHAEOLOGIST. WITHIN 30 DAYS, DELDOT WILL (1) APPROVE THE USE OF THE PROPOSED STAGING AND STOCKPILE AREA(S), (2) REJECT THE REQUEST, OR (3) PERFORM AN ARCHAEOLOGICAL SURVEY TO DETERMINE WHETHER TO APPROVE OR REJECT THE REQUEST, WHICH MAY TAKE UP TO 3 MONTHS. IF AN ARCHAEOLOGICAL SURVEY IS NECESSARY, DELDOT OR A CONSULTANT ON ITS BEHALF WILL UNDERTAKE THE SURVEY.

B. THE CONTRACTOR SHALL BE AWARE THAT THE PROJECT AND ANTICIPATED ACCESS AREAS WILL TAKE PLACE WITHIN THE AUBURN MILLS HISTORIC DISTRICT WHICH IS LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES. THE BRIDGES ARE NOT ELIGIBLE OR CONTRIBUTING TO THE DISTRICT, BUT ARE LOCATED WITHIN THE DISTRICT BOUNDARY, AND BRIDGE 1-599 IS PART OF THE MILL RACE WHICH IS IMPORTANT TO THE HISTORIC CONTEXT OF THE DISTRICT. AS SUCH, NO FURTHER WORK OR ALTERATION ON DESIGN PLANS SHALL BE PERFORMED BEYOND CONTRACT PLANS AND SPECIFICATIONS. IF CHANGES OR ADDITIONAL MEASURES ARE DEEMED ABSOLUTELY NECESSARY, AND MAY IMPACT THE APPEARANCE, STRUCTURAL INTEGRITY, FUNCTION, AESTHETICS, OR OPERATIONS OF THE BRIDGE, ROADWAYS, OR ADJACENT PROPERTIES, DELDOT'S ENVIRONMENTAL STUDIES SECTION SHALL BE NOTIFIED (LAURA KEELEY AT 302-760-2282). NO ALTERATIONS SHALL BE GRANTED UNLESS THEY ARE COORDINATED AND APPROVED BY DELDOT QUALIFIED STAFF.

C. IF UNFORESEEN DAMAGE OCCURS TO ANY OF THE HISTORIC RESOURCES (AS A DIRECT RESULT OF THE UNDERTAKING) DELDOT'S ENVIRONMENTAL PERSONNEL MUST BE CONTACTED TO ENSURE THAT THE SHPO, FHWA, OR OTHERS ARE CONSULTED ON WAYS TO REPAIR THE DAMAGE CONSISTENT WITH THE SECRETARY OF THE INTERIOR'S STANDARDS.

4. STREAM RESTORATION AND SLOPE RIPRAP TREATMENT:

A. BR 1-599 - THE CONTRACTOR SHALL FOLLOW THE SPECIAL PROVISIONS OF ITEM #707500 - CHANNEL BED FILL IN REGARDS TO THE SALVAGING OF ON-SITE NATURAL STREAM BOTTOM MATERIAL OR THE FURNISHING OF OFF-SITE MATERIAL. IF SUFFICIENT SOURCES FOR CHANNEL BED FILL DO NOT EXIST ON-SITE, ANY NEW MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ITEM #707500 - CHANNEL BED FILL. ALL RIPRAP IN THE CHANNEL BOTTOM (I.E. BELOW THE WATER LINE) SHALL BE RECESSED SIX INCHES BELOW STREAM BED ELEVATION AND CHOKED WITH BORROW TYPE 'B' SO THAT ALL OF THE VOIDS IN THE RIPRAP ARE FILLED WITH MATERIAL. PAYMENT UNDER ITEM #209002 - BORROW TYPE 'B'. THE RIPRAP SHALL THEN BE COVERED WITH A MINIMUM OF 6" CHANNEL BED FILL. FINAL CHANNEL ELEVATIONS SHALL SHALL MATCH EXISTING ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM PROJECT LIMITS. THROUGH THE STRUCTURE, ELEVATIONS SHALL BE AS NOTED ON THE PLANS. PAYMENT UNDER ITEM #707500 - CHANNEL BED FILL.

B. BR 1-599 - OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, SANDBAG DIKES AND DIVERSIONS) SHALL BE RESTORED TO EXISTING CONDITIONS. ANY CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE FILLED WITH CHANNEL BED FILL. PAYMENT UNDER ITEM #707500 - CHANNEL BED FILL.

C. BR 1-599 - WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND AND ABOVE THE RIPRAP (I.E. THE FLOW CANNOT BE "LOST" IN THE RIPRAP OR BENEATH THE STRUCTURE). IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.

D. ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, SHALL BE CHOKED WITH DELAWARE #57 STONE. PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF TOPSOIL THROUGH THE RIPRAP.
* ALONG THE WINGWALL AT BR 1-111: DO NOT CHOKE RIPRAP WITH CHANNEL BED FILL OR DE #57 STONES. LEAVE RIPRAP EXPOSED.
* ALL OTHER LOCATIONS: FINISH FILLING THE VOIDS WITH TOPSOIL (ITEM 908001) SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. AN ADDITIONAL 4-INCH TOPSOIL LAYER (ITEM 908001) SHALL BE PLACED ON TOP OF THE RIPRAP. SLOPE SEEDING SHALL BE WITH ITEM #908019 - STREAMBANK SEED MIX, SEEDING. FOLLOWING THE SEEDING OPERATION, ITEM #908020 - EROSION CONTROL BLANKET MULCH, OR OTHER BLANKET AS SHOWN ON THE PLANS SHALL BE INSTALLED WITH STAPLING AT 6" SPACING AT BOTTOM. ALL WORK, STARTING WITH THE INITIAL CHOKING WITH TOPSOIL, THROUGH THE SEEDING, SHALL BE COMPLETED PRIOR TO ANY RAIN EVENT. DELAWARE #57 STONE SHALL BE INCIDENTAL TO THE RIPRAP ITEM. ALL OTHER ITEMS SHALL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

E. THE TOPSOIL/SEED MULCH CAN BE PLACED BEFORE OR AFTER THE REMOVAL OF THE STREAM DIVERSION. IF IT OCCURS AFTER STREAM DIVERSION REMOVAL, A TURBIDITY SHALL BE USED TO MINIMIZE IN-STREAM SEDIMENTATION. PAYMENT SHALL BE INCIDENTAL TO ITEM #909005 - STREAM DIVERSION.

F. THE PROJECT TAKES PLACE WITHIN AND ADJACENT TO LAND OWNED BY DNREC AND OPERATED AS A PARK OR RECREATIONAL FACILITY. USE OF THE LAND FOR THE PURPOSES OF THIS PROJECT MUST BE IN COMPLIANCE WITH SECTION 4(F) OF THE USDOT ACT OF 1966. THIS REQUIRES DNREC AND FHWA APPROVAL FOR ANY PHYSICAL PROPERTY IMPACTS. IF THERE ARE ANY ALTERATIONS TO THE CURRENT RIGHT-OF-WAY IMPACTS TO DNREC'S PROPERTY THEY MUST BE COORDINATED WITH DELDOT ENVIRONMENTAL STUDIES OFFICE (LAURA KEELEY 302-760-2282) SO THE PROPER COORDINATION CAN TAKE PLACE.

5. PROTECTION OF RESOURCES:

A. CLEARING IN WETLAND AREAS SHALL BE KEPT TO A MINIMUM ABSOLUTELY NECESSARY FOR CONSTRUCTION ACCESS. IN WETLAND AREAS THAT ARE CLEARED, THERE SHALL BE NO GRUBBING EXCEPT WHERE NECESSARY TO CONSTRUCT PROJECT COMPONENTS SUCH AS FOUNDATIONS AND RIPRAP PROTECTION. VEGETATION SHALL BE CUT FLUSH WITH THE GROUND (I.E. NO DISTURBANCE OF THE ROOT MAT TEMPORARILY DISTURBED WETLAND AREAS SHALL BE RESTORED TO GRADE AND SEEDED WITH STREAMBANK SEED MIX, PAYMENT UNDER ITEM #908019.

B. SILT FENCE OR CONSTRUCTION SAFETY FENCE SHALL BE USED ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER/WETLANDS ARE BEING IMPACTED (AS SHOWN ON THE EC SHEET), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LOC (AS SHOWN ON THE CONSTRUCTION PLANS). CONTRACTOR ACCESS BEYOND THE LOC IS STRICTLY PROHIBITED.

C. SILT FENCE INSTALLATION ADJACENT TO WOODED UPLANDS/WETLANDS: SANDBAGS SHALL BE USED TO SECURE SILT FENCE IN LIEU OF TRENCHING PROVIDED PROPER EROSION & SEDIMENT CONTROL CAN BE MAINTAINED. SANDBAGS USED TO SECURE SILT FENCE SHALL BE INCIDENTAL TO ITEM #905001 - SILT FENCE. THE ENVIRONMENTAL STUDIES SECTION (CAROL SULLIVAN, 302-760-2129) CAN PROVIDE FURTHER GUIDANCE REGARDING THIS METHOD OF INSTALLATION.

D. ALL TREES TO BE REMOVED SHALL BE CLEARLY MARKED WITH PAINT PRIOR TO THE EROSION & SEDIMENT CONTROL MEETING.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

NOT TO SCALE

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT	T201507404
COUNTY	NEW CASTLE
BRIDGE NO.	1-111 & 1-599
DESIGNED BY: CBB/SMW	
CHECKED BY: JAT	

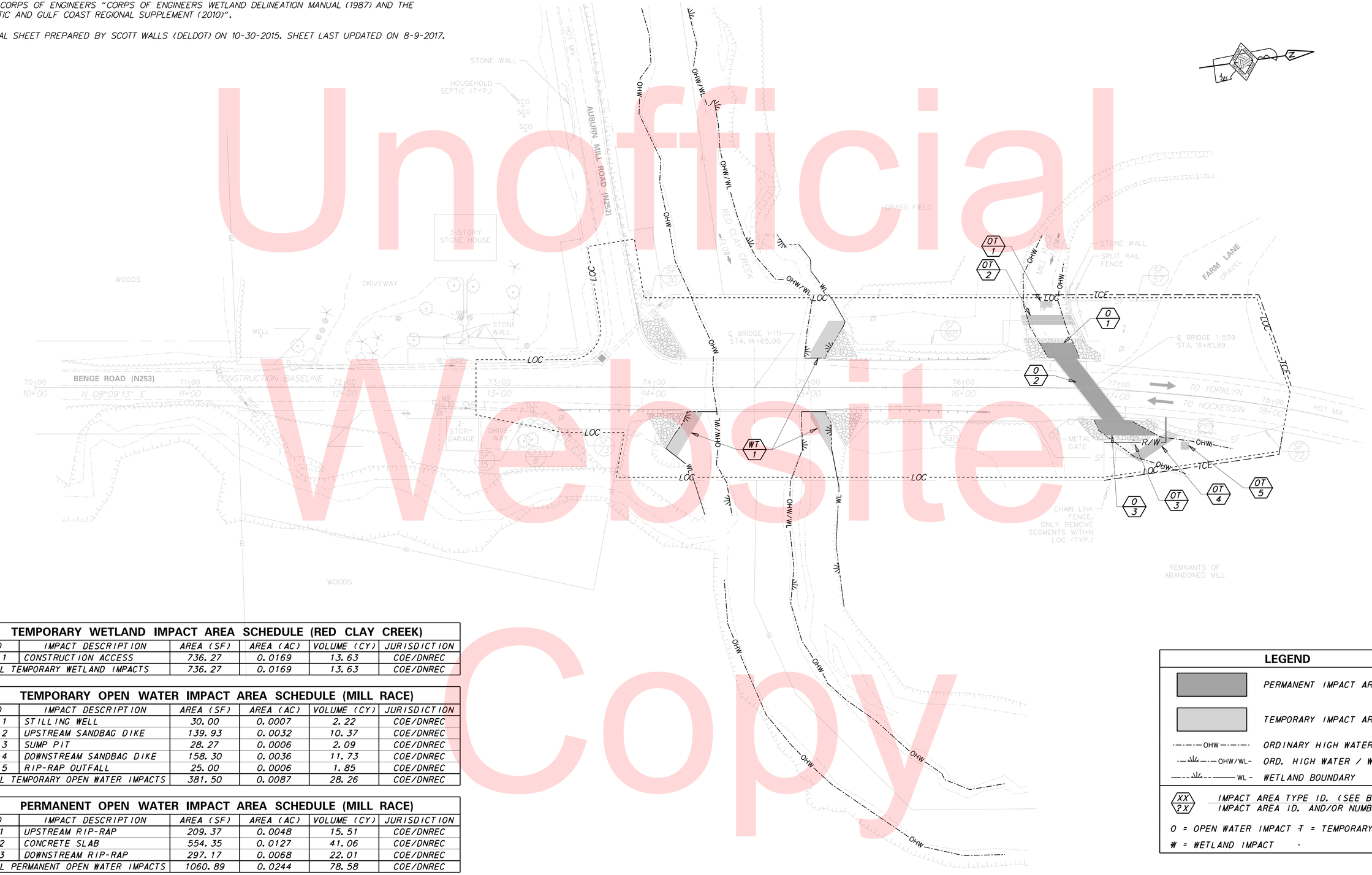
ENVIRONMENTAL SHEET 1 OF 2

ENVIRONMENTAL
COMPLIANCE NOTES

SHEET NO.	22
TOTAL SHTS.	27

WETLANDS DELINEATED BY CHRISTIE BONNIWELL (DELDOT) ON 07-07-2015 IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS "CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE ATLANTIC AND GULF COAST REGIONAL SUPPLEMENT (2010)".

ORIGINAL SHEET PREPARED BY SCOTT WALLS (DELDOT) ON 10-30-2015. SHEET LAST UPDATED ON 8-9-2017.



TEMPORARY WETLAND IMPACT AREA SCHEDULE (RED CLAY CREEK)

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	CONSTRUCTION ACCESS	736.27	0.0169	13.63	COE/DNREC
TOTAL TEMPORARY WETLAND IMPACTS		736.27	0.0169	13.63	COE/DNREC

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE (MILL RACE)

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	STILLING WELL	30.00	0.0007	2.22	COE/DNREC
OT-2	UPSTREAM SANDBAG DIKE	139.93	0.0032	10.37	COE/DNREC
OT-3	SUMP PIT	28.27	0.0006	2.09	COE/DNREC
OT-4	DOWNSTREAM SANDBAG DIKE	158.30	0.0036	11.73	COE/DNREC
OT-5	RIP-RAP OUTFALL	25.00	0.0006	1.85	COE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		381.50	0.0087	28.26	COE/DNREC

PERMANENT OPEN WATER IMPACT AREA SCHEDULE (MILL RACE)

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	UPSTREAM RIP-RAP	209.37	0.0048	15.51	COE/DNREC
O-2	CONCRETE SLAB	554.35	0.0127	41.06	COE/DNREC
O-3	DOWNSTREAM RIP-RAP	297.17	0.0068	22.01	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		1060.89	0.0244	78.58	COE/DNREC

LEGEND

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- OHW — ORDINARY HIGH WATER
- OHW/WL — ORD. HIGH WATER / WETLAND
- WL — WETLAND BOUNDARY
- XX / ?X — IMPACT AREA TYPE ID. (SEE BELOW) / IMPACT AREA ID. AND/OR NUMBER

O = OPEN WATER IMPACT T = TEMPORARY IMPACT
W = WETLAND IMPACT

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO.	1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW	
COUNTY		
NEW CASTLE	CHECKED BY: JAT	

ENVIRONMENTAL SHEET 2 OF 2

ENVIRONMENTAL COMPLIANCE PLAN

SHEET NO. 23

TOTAL SHTS. 27

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PORTABLE CHANGEABLE MESSAGE SIGNS

PRIOR TO DETOUR
(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

BENGE ROAD TO CLOSE

STARTING XX/XX/XX

SPECIAL SIGNS

Y1

Benge Rd	6"C
CLOSED	6"C
WEST OF	6"C
82	24"
FOLLOW	6"C
DETOUR	6"C

72" × 48"

Y2

NO ACCESS	6"C
TO	6"C
82	24"

48" × 48"

Z1

Benge Rd	6"C
CLOSED	6"C
SOUTH OF	6"C
Auburn Mill	6"C
FOLLOW	6"C
DETOUR	6"C

68" × 48"

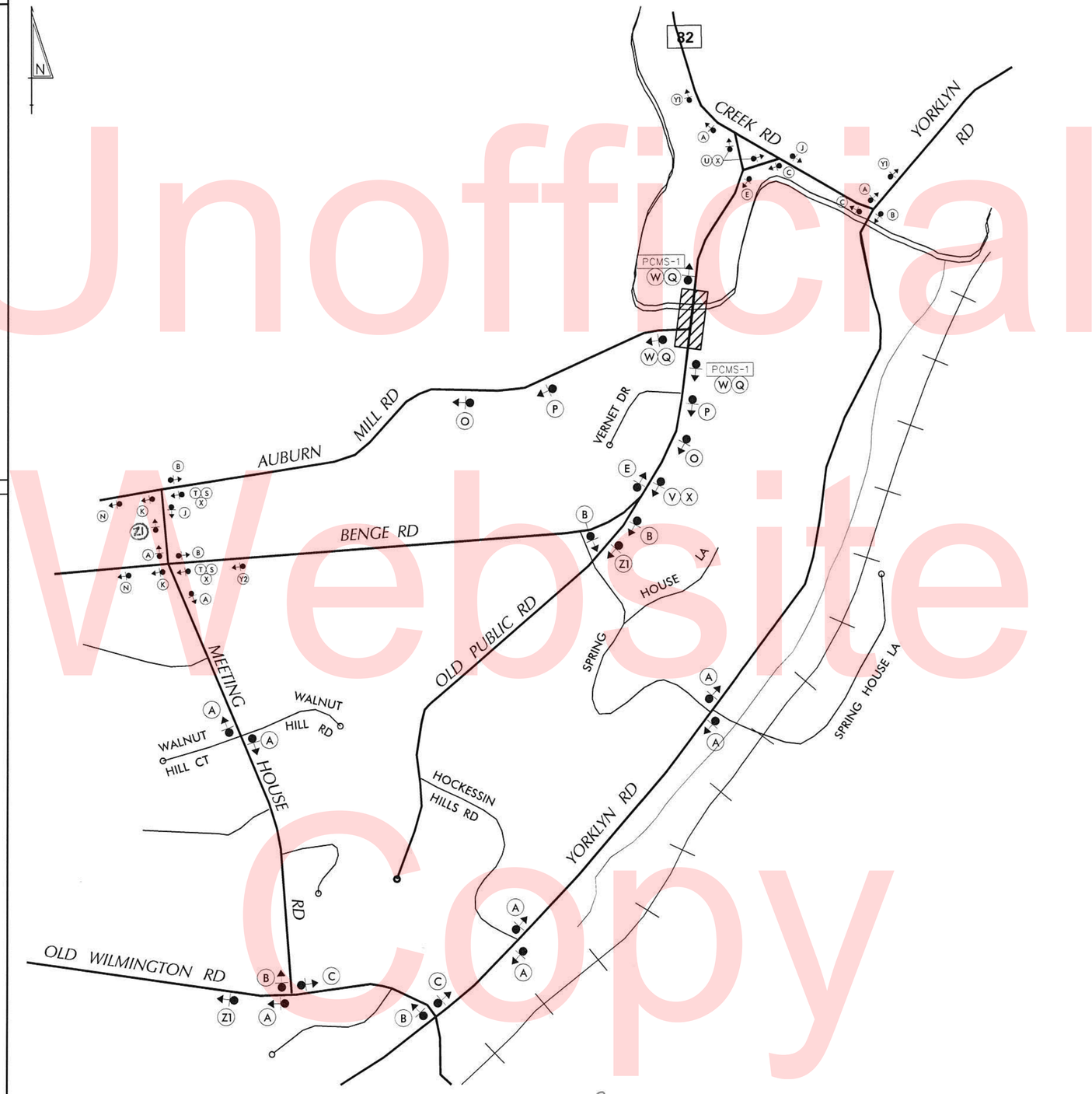
Z2

Auburn Mill	6"C
CLOSED AT	6"C
Benge Rd	6"C
FOLLOW	6"C
DETOUR	6"C

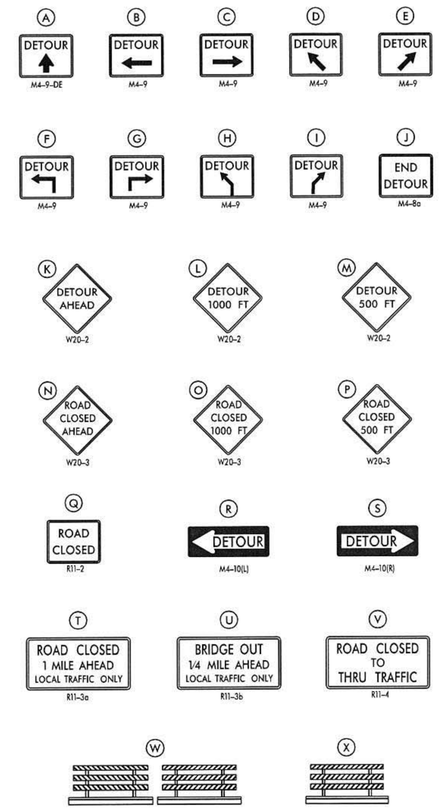
60" × 48"

*D/G RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND; BLACK LEGEND

82 WHITE BACKGROUND; BLACK LEGEND



LEGEND



GENERAL NOTES

1. ALL DETOUR SIGNING, INCLUDING TRAILBLAZERS, ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR IN COMPLIANCE WITH "THE DELAWARE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD.)
2. THE CONTRACTOR SHALL COMPLY WITH GUIDELINES IN "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD PART 6) FOR BARRICADES AND SIGNS (AS PER LATEST REVISION.)
3. DESIGN OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FHWA STANDARD HIGHWAY SIGNS BOOK.
4. SIZES OF ALL SIGNS SHALL BE IN ACCORDANCE WITH "THE DELAWARE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD.) SIZE OF SIGN SHALL BE BASED ON TYPE OF ROADWAY ON WHICH THE SIGN IS INSTALLED.
5. SIGNS NO LONGER IN USE SHALL BE COMPLETELY COVERED WITH NO RETROREFLECTIVE MATERIAL SHOWING, OR SHALL BE REMOVED, AS DIRECTED BY THE ENGINEER.
6. FIELD CONDITIONS MAY DICTATE CHANGES AT SOME TIME DURING THE LIFE OF THE CONTRACT. IN THE EVENT OF OMISSIONS OR CORRECTIONS, THE SIGNING PROVISIONS OF "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD) WILL PREVAIL.
7. SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHOULD BE CHANGED TO "RAMP", "RR XING", OR "BRIDGE" WHERE APPLICABLE.
8. WARNING SIGNS AND DETOUR TRAILBLAZERS SHALL BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT ORANGE SHEETING.
9. "W" BARRICADES SHALL COMPLETELY RUN THE FULL WIDTH OF THE ROADWAY.
10. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

RECOMMENDED _____ DATE: _____

RECOMMENDED _____ DATE: _____

RECOMMENDED _____ DATE: 1/11/16

APPROVED CHIEF SAFETY OFFICER _____ DATE: 1-11-16

APPROVED TRAFFIC ENGINEER _____ DATE: 1/11/2016

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUM / REVISIONS

NOT TO SCALE

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	T201507404	ROAD NO.	N253
COUNTY	New Castle	DESIGNED BY: JM	CHECKED BY: PH

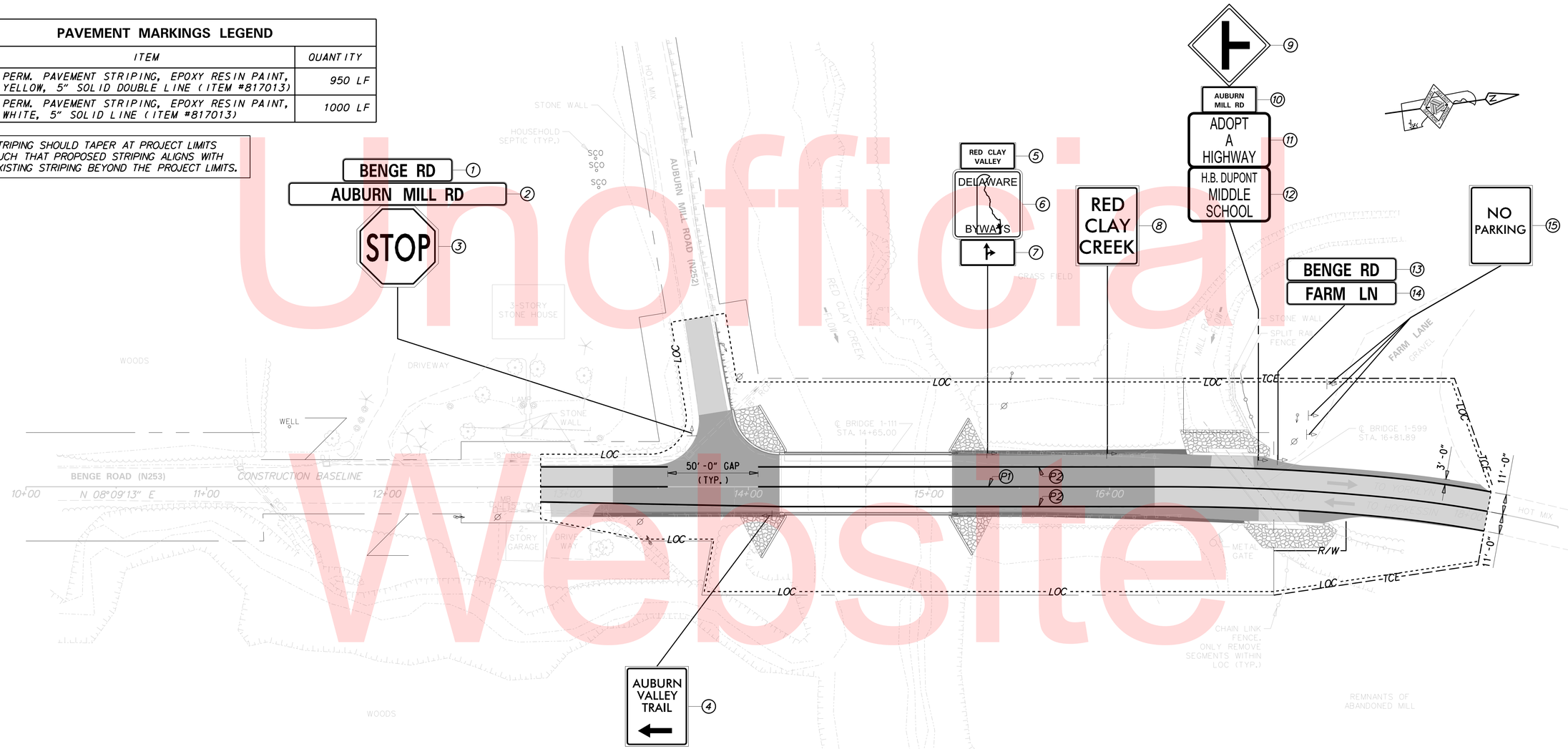
DETOUR PLAN

SHEET NO. 24
TOTAL SHTS. 27

W:\MSV8\CELLS\PROJDEV\SB.CEL

PAVEMENT MARKINGS LEGEND		
SYMBOL	ITEM	QUANTITY
P1	PERM. PAVEMENT STRIPING, EPOXY RESIN PAINT, YELLOW, 5" SOLID DOUBLE LINE (ITEM #817013)	950 LF
P2	PERM. PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE, 5" SOLID LINE (ITEM #817013)	1000 LF

NOTE: STRIPING SHOULD TAPER AT PROJECT LIMITS SUCH THAT PROPOSED STRIPING ALIGNS WITH EXISTING STRIPING BEYOND THE PROJECT LIMITS.



NOTE: PAYMENT TO REPOSITION SIGNS SHALL BE PAID FOR UNDER ITEM #819018 - INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON SINGLE SIGN POST.

SIGN SCHEDULE													
NO.	SHEET NO.	PLAN ID.	CODE	QTY.	DESCRIPTION	ASSEMBLY NO.	WIDTH (IN.)	HEIGHT (IN.)	AREA (SF)	SIGN DISPOSITION	REMOVE	INSTALL	POST INSTALL TYPE	REMARKS
1674	25	1	D3-1(12)	1	STREET NAME (1 LINE)	1	12	6	0.5	REPOSITION	1	1	SOIL	-
1675	25	2	D3-1(16)	1	STREET NAME (1 LINE)	1	16	6	0.67	REPOSITION	1	1	SOIL	-
4	25	3	R1-1	1	STOP	1	36	36	9.0	REPOSITION	1	1	SOIL	-
1687	25	4	D3-2-DE3	1	DEVELOPMENT NAME	-	-	-	-	REPOSITION	1	1	SOIL	-
88	25	5	R2-5cP	1	RESIDENTIAL PLAQUE	2	-	-	-	REPOSITION	1	1	SOIL	-
1873	25	6	D14-4-DE	1	DELAWARE BYWAYS	2	24	24	2	REPOSITION	1	1	SOIL	-
1634	25	7	M6-6_R(30)	1	DIRECTIONAL ARROW AUXILIARY	2	12	6	0.5	REPOSITION	1	1	SOIL	-
1687	25	8	D3-2-DE3	1	DEVELOPMENT NAME	-	12	6	0.5	REPOSITION	1	1	SOIL	-
821	25	9	W2-2 R(24)	1	ONE-LEG INTERSECTION	3	24	6	4	REPOSITION	1	1	SOIL	-
88	25	10	R2-5cP	1	RESIDENTIAL PLAQUE	3	12	6	0.5	REPOSITION	1	1	SOIL	-
1872	25	11	D14-3-DE	1	ADOPT A HIGHWAY	3	12	6	3	REPOSITION	1	1	SOIL	-
1687	25	12	D3-2-DE3	1	RESIDENTIAL PLAQUE	3	12	6	0.5	REPOSITION	1	1	SOIL	-
1674	25	13	D3-1(12)	1	STREET NAME (1 LINE)	4	12	6	0.5	REPOSITION	1	1	SOIL	-
1674	25	14	D3-1(12)	1	STREET NAME (1 LINE)	4	12	6	0.5	REPOSITION	1	1	SOIL	-
464	25	15	R8-3a	3	NO PARKING	-	6	12	0.5	REPOSITION	3	3	SOIL	-

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

BR 1-111 & BR 1-599 ON N253 BENGE ROAD OVER RED CLAY CREEK & MILL RACE

CONTRACT	BRIDGE NO. 1-111 & 1-599
T201507404	DESIGNED BY: CBB/SMW
COUNTY	CHECKED BY: JAT
NEW CASTLE	

SIGNING AND STRIPING PLAN

SHEET NO.	25
TOTAL SHTS.	27

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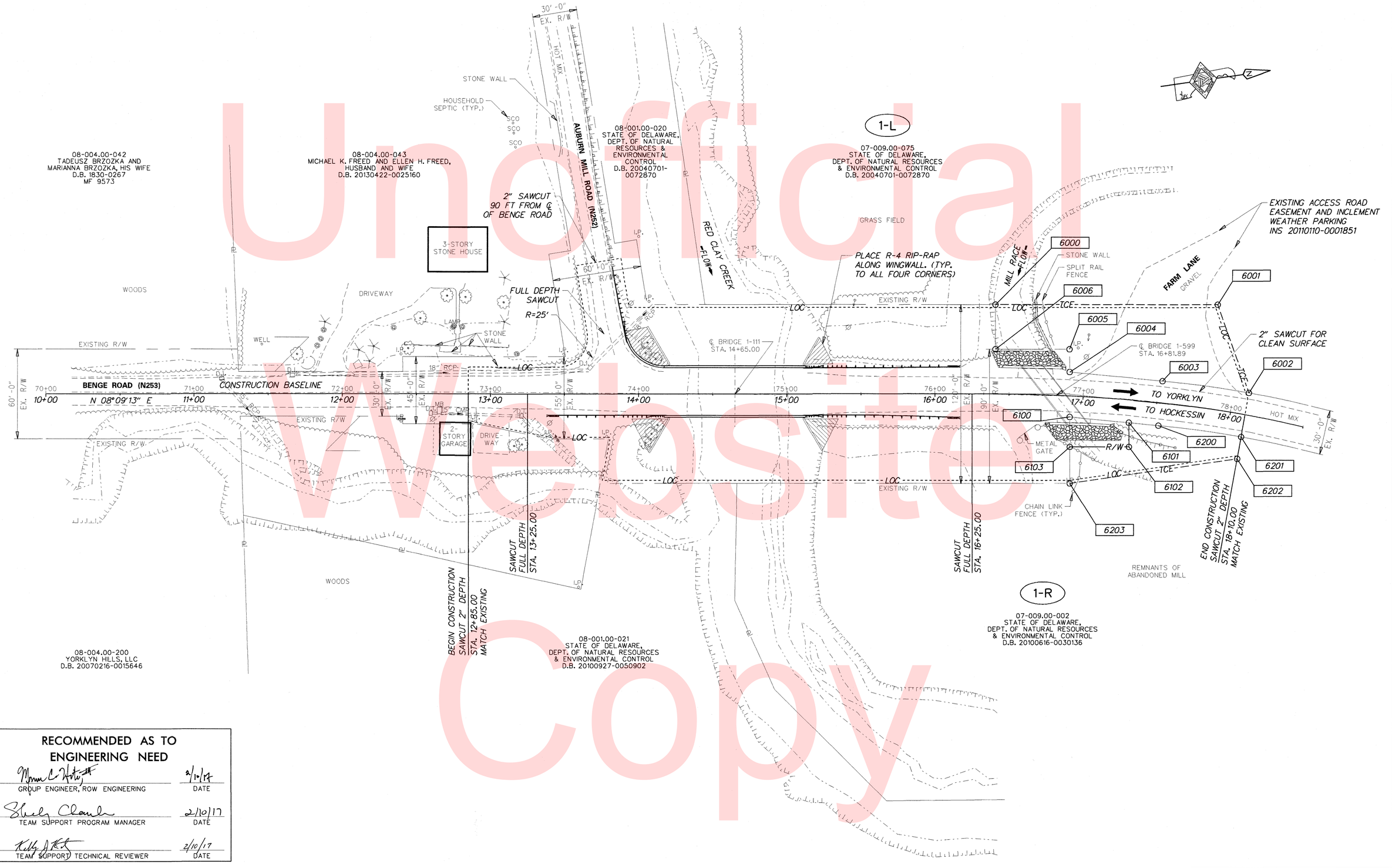

RECOMMENDED AS TO ENGINEERING NEED

GROUP ENGINEER, ROW ENGINEERING	DATE 2/10/17
TEAM SUPPORT PROGRAM MANAGER	DATE 2/10/17
TEAM SUPPORT TECHNICAL REVIEWER	DATE 2/10/17

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT	T201507404
COUNTY	NEW CASTLE
BRIDGE NO.	1-111 & 1-599
DESIGNED BY:	CBB/SMW
CHECKED BY:	JAT

RIGHT-OF-WAY SHEET 1 OF 2

RIGHT-OF-WAY PLAN

SHEET NO.	26
TOTAL SHTS.	27

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ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
07-009.00-075	(1-L) STATE OF DELAWARE, DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL	TCE	D.B. 20040701-0072870	8.080

ALIGNMENT NUMBER & DESCRIPTION: 10100_P_BL - PROPOSED BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6000	10100_P_BL	16+40.50	-60.03	658169.5079	582046.3078	N 8°09'13.18" E	150.00				
6001	10100_P_BL	17+81.62	-69.85	658317.9916	582067.5821	N 78°37'27.55" E	62.63				
6002	10100_P_BL	18+09.92	-14.89	658330.3456	582128.9855			S 15°54'30.85" W	58.81	58.83	-695.00
6003	10100_P_BL	17+52.34	-14.72	658273.7873	582112.8653	S 13°29'01.20" W	62.95				
6004	10100_P_BL	16+90.17	-16.11	658212.5740	582098.1877	N 81°50'46.82" W	15.25				
6005	10100_P_BL	16+89.48	-31.34	658214.7365	582083.0944	S 8°09'13.18" W	49.99				
6006	10100_P_BL	16+40.70	-30.03	658165.2530	582076.0045	N 81°50'46.82" W	30.00				
6000	10100_P_BL	16+40.50	-60.03	658169.5079	582046.3078						

FIGURE 6000 AREA = 7085.1219 SQ. FT. (0.1627 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
07-009.00-002	(1-R) STATE OF DELAWARE, DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL	FEE	D.B. 20100616-0030136	3.690

ALIGNMENT NUMBER & DESCRIPTION: 10100_P_BL - PROPOSED BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6100	10100_P_BL	16+91.58	13.99	658208.3007	582128.0134	N 13°29'01.20" E	40.17				
6101	10100_P_BL	17+32.21	15.17	658247.3671	582137.3806	S 81°50'46.82" E	16.27				
6102	10100_P_BL	17+33.53	31.39	658245.0598	582153.4844	S 8°09'13.18" W	40.00				
6103	10100_P_BL	16+92.55	33.96	658205.4641	582147.8112	N 81°50'46.82" W	20.00				
6100	10100_P_BL	16+91.58	13.99	658208.3007	582128.0134						

FIGURE 6100 AREA = 725.3637 SQ. FT. (0.0167 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
07-009.00-002	(1-R) STATE OF DELAWARE, DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL	TCE	D.B. 20100616-0030136	3.690

ALIGNMENT NUMBER & DESCRIPTION: 10100_P_BL - PROPOSED BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6200	10100_P_BL	17+52.43	15.28	658266.7922	582142.0384			N 15°54'30.92" E	56.27	56.29	665.00
6201	10100_P_BL	18+10.00	15.11	658320.9096	582157.4629	S 71°39'59.36" E	15.00				
6202	10100_P_BL	18+10.05	30.12	658316.1911	582171.7023	S 0°14'30.90" E	114.22				
6203	10100_P_BL	16+93.79	58.56	658201.9720	582172.1846	N 81°50'46.82" W	24.62				
6103	10100_P_BL	16+92.55	33.96	658205.4641	582147.8112	N 8°09'13.18" E	40.00				
6102	10100_P_BL	17+33.53	31.39	658245.0598	582153.4844	N 81°50'46.82" W	16.27				
6101	10100_P_BL	17+32.21	15.17	658247.3671	582137.3806	N 13°29'01.20" E	19.98				
6200	10100_P_BL	17+52.43	15.28	658266.7922	582142.0384						

FIGURE 6200 AREA = 2760.8773 SQ. FT. (0.0634 ACRES)

LEGEND

FEE	AREA OF ACQUISITION
R/W	AREA OCCUPIED BY EXISTING R/W
P/E	PERMANENT EASEMENT
TCE	TEMPORARY CONSTRUCTION EASEMENT
*	"-" OFFSET IS LEFT OF BASELINE
**	"-" CURVE TURNS TO THE LEFT

ACQUISITION CODES

FEE – ACQUISITION
R/W – AREA OCCUPIED BY EXISTING R/W
P/E – PERMANENT EASEMENT
TCE – TEMPORARY EASEMENT

COUNTY ASSESSMENT PARCEL NUMBER	PLAN SHEET NUMBER	OWNERSHIP OF RECORD	TITLE SOURCE	PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESMENT	ACQUISITION CODE FEE, R/W, P/E, TCE	AREA TO BE ACQUIRED				PROPERTY AREA REMAINING (SQ. FEET /ACRES)	DEED RECORD OF ACQUISITION	REMARKS
						ACQUISITION (SQ. FEET /ACRES)	AREA OCCUPIED BY EXISTING RIGHT OF WAY (SQ. FEET /ACRES)	EASEMENT PERMANENT (SQ. FEET /ACRES)	EASEMENT TEMPORARY (SQ. FEET /ACRES)			
07-009.00-075	26	(1-L) STATE OF DELAWARE, DEPT. OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL	D.B. 20040701-0072870	D - 8.08	TCE				7085.1219 / 0.16	351964.80 / 8.08		
07-009.00-002	26	(1-R) STATE OF DELAWARE, DEPT. OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL	D.B. 20100616-0030136	D - 3.69	FEE	725.3637 / 0.02						
					TCE				2760.8773 / 0.06	160011.0363 / 3.67		

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-111 & BR 1-599 ON
N253 BENGE ROAD OVER
RED CLAY CREEK & MILL RACE

CONTRACT T201507404
COUNTY NEW CASTLE
BRIDGE NO. 1-111 & 1-599
DESIGNED BY: CBB/SMW
CHECKED BY: JAT

RIGHT-OF-WAY SHEET 2 OF 2

RIGHT-OF-WAY
DATA AND
TABULATION SHEET

SHEET NO. 27
TOTAL SHTS. 27