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BR 1-148A

BR 1-148B

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ADDENDA / REVISIONS

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**BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK**

CONTRACT	BRIDGE NO.	1-148A&B
T201507405	DESIGNED BY: GPH	
COUNTY	CHECKED BY: JAT	
NEW CASTLE		

INDEX OF SHEETS	SECTION
	BR
	SHEET NO.
	2

ADDENDUM PREPARED BY
DELDOT - TRANSPORTATION SOLUTIONS
XXXXXXXXXXXXXXXXXXXX

REVISION PREPARED BY
DELDOT - TRANSPORTATION SOLUTIONS
XXXXXXXXXXXXXXXXXXXX

THIS SEAL APPLIES TO THE FOLLOWING SHEETS
CHANGED UNDER ADDENDUM #X:
XX, XX-XX, XX

DATE

SEAL

THIS SEAL APPLIES TO THE FOLLOWING SHEETS
CHANGED UNDER REVISION #X:
XX, XX-XX, XX

DATE

SEAL

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ADDENDA / REVISIONS

BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK

CONTRACT
T201507405
COUNTY
NEW CASTLE

BRIDGE NO. 1-148A&B
DESIGNED BY: GPH
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ADDENDA AND
REVISIONS

SECTION
BR
SHEET NO.
3

EXISTING SYMBOLS

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

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

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

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

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

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

UTILITY COMPANY FACILITIES	
	ARTESIAN WATER
	COMCAST CABLE
	DELMARVA POWER - GAS
	NEW CASTLE COUNTY - SEWER
	VERIZON

(X) REPRESENTS ASCE DEFINED SUE QUALITY LEVEL

PROPOSED SYMBOLS

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CLEAR ZONE
	CONSTRUCTION BASELINE
	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CURB OPENING - SUMP / ON GRADE
	CURB OPENING WITH SIDEWALK
	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
	LATERAL OFFSET
	LIMIT OF CONSTRUCTION
	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
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

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

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

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

PAVEMENT SECTION(S)	
	2" PAVEMENT MILLING, HMA (ITEM 760010) 2" SUPERPAVE, TYPE C (ITEM 401005)
	2" SUPERPAVE, TYPE C HOT-MIX 3" SUPERPAVE, TYPE B HOT-MIX 4.5" SUPERPAVE, BCBC 8" GRADED AGGREGATE BASE COURSE, TYPE B
	2" SUPERPAVE, TYPE C HOT-MIX 8" GRADED AGGREGATE BASE COURSE, TYPE B

ADDENDA / REVISIONS

NOT TO SCALE

BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK

CONTRACT
T201507405
COUNTY
NEW CASTLE

BRIDGE NO.
1-148A&B
DESIGNED BY: GPH
CHECKED BY: JAT

LEGEND

SECTION
BR
SHEET NO.
4

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 2018, 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
(X)	RIGHT-OF-WAY PLANS (INCLUDED IN PLAN SET)

PROJECT NOTES

SECTION 100

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- 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

- ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
 - EXISTING CONCRETE DECK, PARAPETS, CURBS AND SIDEWALKS ON BRIDGE DECK, GUARDRAILS, ABUTMENT BACKWALLS, BEARINGS, CHAIN LINK FENCE, AND WOOD SPLIT RAIL FENCE.
- REMOVAL OF SIDEWALK AND CURB ON BRIDGE APPROACHES SHALL BE PAID UNDER ITEM 211001 - REMOVAL OF SIDEWALK, CURB, AND GUTTER (SY)

SECTION 600

- CLEANING AND PAINTING OF STRUCTURAL STEEL FULLY CLEAN AND PAINT FAYING SURFACES OF BOTTOM FLANGE AND COVER PLATES IN ACCORDANCE WITH ITEM 616000. WHILE THE CLEANING AND PAINTING OPERATIONS ARE IN PROGRESS, THE WORK AREA SHALL BE FULLY CONTAINED SUCH THAT NO DEBRIS, CHIPS, OR DUST ESCAPE THE WORK AREA. DURING THE CLEANING OPERATION, THE CONTRACTOR SHALL REPORT TO THE ENGINEER ANY DEFECTS IN THE STEEL. THESE DEFECTS INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF SECTION, CRACKING, BUCKLING, LOOSE BOLTS, AND CRACKED WELDS.

- PORTLAND CEMENT CONCRETE
CONTRACTOR SHALL SUPPLY CONCRETE FOR THE BRIDGE DECK, BARRIERS, ABUTMENT BACKWALLS, AND PARAPETS THAT INCLUDES A SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. 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:
 - DESIGNED TO PROVIDE BOTH OF THE FOLLOWING CHARACTERISTICS
 - EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR THE SHRINKAGE OF THE CONCRETE MIX.
 - REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER.
 - PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.
 - FORMULATED FOR USE IN FREEZING AND THAWING WEATHER.

ALL ADMIXTURES MUST BE COMPATIBLE WITH ALL OTHER CONCRETE MIX DESIGN CONSTITUENTS. CALCIUM CHLORIDE IS NOT PERMITTED. NO CHEMICAL ADMIXTURES WHICH CONTAIN MORE THAN 0.1% CHLORIDE BY WEIGHT, WILL BE PERMITTED FOR USE. DOSAGE RATE AND MIXING SEQUENCE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. PAYMENT INCIDENTAL TO CONCRETE ITEM.

- PORTLAND CEMENT CONCRETE
USE PORTLAND CEMENT CONCRETE (P.C.C.) FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS: (F'c = 28 DAY COMPRESSIVE STRENGTH)

- ITEM *610016 - P.C.C. MASONRY, CLASS D - F'c = 4.5 KSI (BR 1-148A DECK)
 - ITEM *610000 - P.C.C. MASONRY, CLASS A - F'c = 4.5 KSI (BR 1-148A ABUTMENT BACKWALL, SIDEWALK ON DECK, MOMENT SLAB, AND BARRIERS ON MOMENT SLAB.)
 - ITEM *610008 - P.C.C. MASONRY, PARAPET, CLASS A - F'c = 4.5 KSI (BR 1-148A BARRIER ON DECK)
- CHAMFER ALL EXPOSED EDGES 3/4" X 3/4" UNLESS OTHERWISE NOTED.

- APPLY ITEM 613001 SILICONE ACRYLIC CONCRETE SEALER AS NOTED ON SHEETS 11, 12, 13, AND 21. APPLY ITEM 613000 - EPOXY CONCRETE SEALER AS NOTED ON SHEETS 12 AND 13.

- BAR REINFORCEMENT
REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. ALL REINFORCING STEEL SHALL BE PROTECTED WITH EPOXY COATING CONFORMING TO ASTM A775. ALL REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER OF 2" UNLESS OTHERWISE SPECIFIED ON PLANS.

- THE CONTRACTOR WILL MARK OUT THE LIMITS FOR ITEMS 628001 REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION, 628040 SHALLOW SPALL REPAIR, AND 628041 DEEP SPALL REPAIR. THE DEPARTMENT AND CONTRACTOR WILL AGREE ON LIMITS PRIOR TO COMMENCEMENT OF WORK ON THESE ITEMS.

SECTION 700

- IN AREAS WHERE PROPOSED CURB MEETS EXISTING CURB AND THE TWO CURB TYPES ARE NOT SIMILAR, THE PROPOSED CURB SHALL BE TRANSITIONED IN 10 LINEAR FEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK, INCLUDING SAW CUTTING EXISTING CURB SHALL BE INCIDENTAL TO THE PROPOSED CURB ITEM.
- WHERE PROPOSED CONCRETE SIDEWALK IS CONSTRUCTED TO MEET EXISTING SIDEWALK, THE EXISTING SIDEWALK SHALL BE SAWCUT AT THE TIE-IN POINT OR MEET THE NEAREST EXISTING SIDEWALK JOINT. ALL SAW CUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR UNDER ITEM 762001 - SAW CUTTING, CONCRETE, FULL DEPTH.
- 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. SAWCUT SHALL BE FULL DEPTH. PAYMENT UNDER ITEM 762000 - SAW CUTTING, BITUMINOUS CONCRETE
- ALL GUARDRAIL ELEMENTS, SHAPES, AND HARDWARE FOR ITEMS *720021, 721002, AND 721011 SHALL BE GALVANIZED AND FUSION-BONDED POLYESTER COATED. FURNISHING AND APPLICATION OF ALL MATERIAL NECESSARY FOR THE FUSION-BONDED POLYESTER COATING SHALL BE UNDER ITEM *720500 - GALVANIZED FUSION-BONDED POLYESTER COATED GUARDRAIL. REFER TO THE SPECIAL PROVISIONS OF ITEM *720500 FOR FURTHER GUIDANCE.

SECTION 800

- MAINTENANCE OF TRAFFIC SHALL BE AS PER DETOUR PLAN. THE DETOUR SHALL REMAIN IN EFFECT UNTIL THE FINAL BITUMINOUS CONCRETE IS PLACED. ALL MOT ITEMS WITH THE EXCEPTION OF ITEM 803001 - PORTABLE CHANGEABLE MESSAGE SIGNS, ITEM 811007 - FLAGGER, NEW CASTLE COUNTY, FEDERAL AND 811016 - FLAGGER, NEW CASTLE COUNTY, FEDERAL, OVERTIME WILL BE INCLUDED IN ITEM 801500 - MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

SECTION 900

- 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 NOIS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOICAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

- THE CONTRACTOR SHALL CONTACT THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6191, OR BY EMAIL NOTIFICATION TO DOT_DETOUT@DELAWARE.GOV.
- REFER TO THE CONSTRUCTION PLAN SHEETS FOR THE LOCATION OF THE CLEAR ZONE AREA LIMITS.
- DESIGN SPECIFICATIONS:
 - 2016 DELDOT BRIDGE DESIGN MANUAL
 - 2014 AASHTO LRFD BRIDGE SPECIFICATIONS, 7TH EDITION.
- LOADING:
 - LIVE LOAD: AASHTO HL-93
 - DEAD LOAD: SELF WEIGHT PLUS 25 PSF FOR FUTURE WEARING SURFACE AND 15 PSF FOR SIP FORMS
 - LIVE LOAD DISTRIBUTION TO GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD. THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE FOR STEEL GIRDERS SPECIFIED AS 0°F TO 120°F. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68°F.
 - BARRIERS HAVE BEEN DESIGNED FOR MASH TL-4.
- 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 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.

Load Rating Summary

Vehicle Type	Rating Factor	Rating Weight (tons)	Controlling Member	Controlling Point	Load Effect
HL-93 Truck (Inventory)	1.35	N/A	Span 1	105	Strength I
HL-93 Tandem (Inventory)	1.55	N/A	Span 1	105	Strength I
HS20 (Inventory)	1.82	65.52	Span 1	105	Strength I
HL-93 Truck (Operating)	1.75	N/A	Span 1	105	Strength I
HL-93 Tandem (Operating)	2.01	N/A	Span 1	105	Strength I
HS20 (Operating)	2.36	84.96	Span 1	105	Strength I
DE S220	3.98	79.60	Span 1	105	Strength I
DE S335	2.22	77.70	Span 1	105	Strength I
DE S437	2.13	78.81	Span 1	105	Strength I
DE T330	3.14	94.20	Span 1	105	Strength I
DE T435	2.71	94.85	Span 1	105	Strength I
DE T540	2.44	97.60	Span 1	105	Strength I

ADDENDA / REVISIONS

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

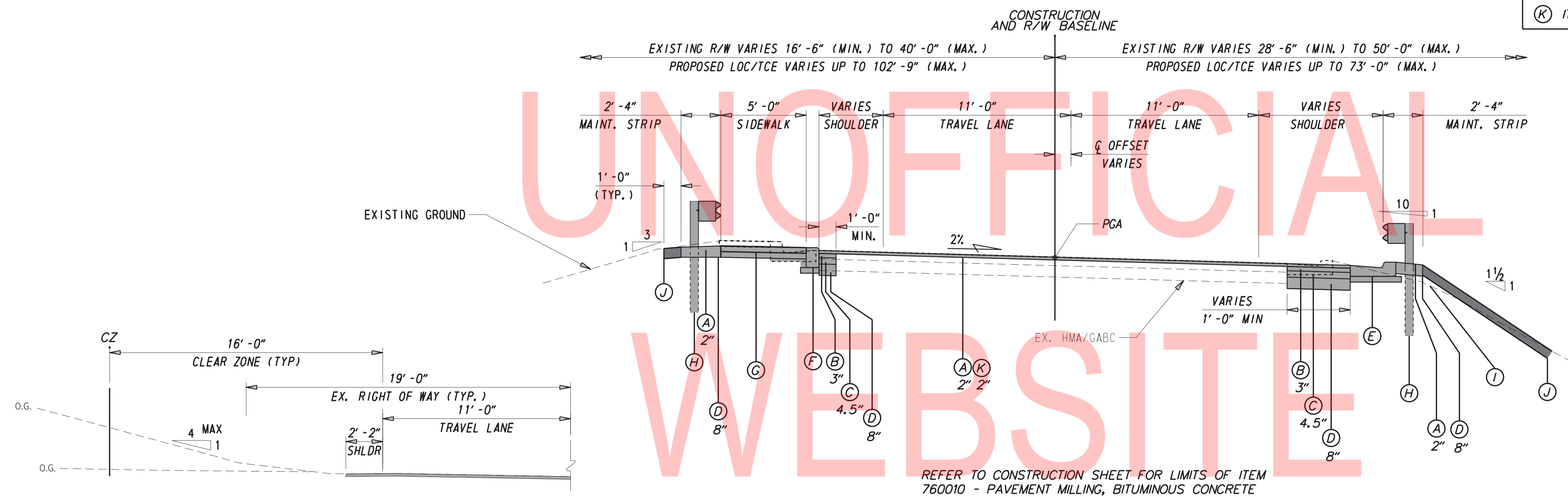
CONTRACT	BRIDGE NO.	1-148A&B
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NEW CASTLE		

NOTES

SECTION
BR
SHEET NO.
5

LEGEND

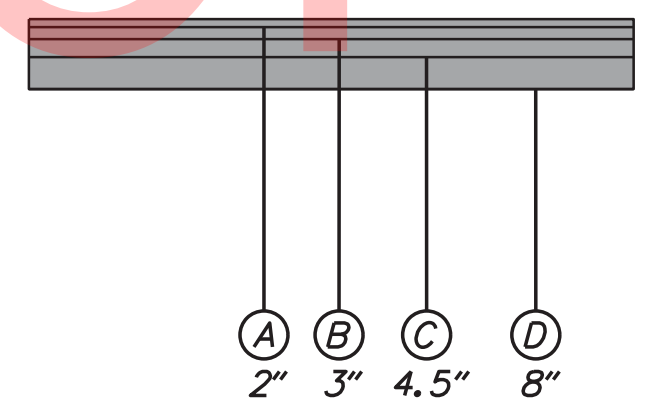
- (A) ITEM 401005 - SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)
- (B) ITEM 401030 - SUPERPAVE TYPE B, PG 64-22, PATCHING
- (C) ITEM 401031 - SUPERPAVE TYPE BCBC, PG 64-22, PATCHING
- (D) ITEM 301002 - GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING
- (E) ITEM 701016 - INTEGRAL PCC CURB AND GUTTER, TYPE 1-4
- (F) ITEM 701010 - PCC CURB, TYPE 1-2
- (G) ITEM 705001 - 4" PCC SIDEWALK
- (H) ITEM 720500 - GALVANIZED AND FUSION BONDED POLYESTER COATED GUARDRAIL
- ITEM 720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
- ITEM 721011 - GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-31
- (I) ITEM 209010 - BORROW, TYPE F (TON)
- (J) ITEM 908004 - TOPSOIL, 6" DEPTH
- ITEM 908019 - STREAM BANK SEED MIX, SEEDING
- ITEM 908020 - EROSION CONTROL BLANKET MULCH
- (K) ITEM 760010 - PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT



GREENBANK ROAD
STATION 4+90.00 TO STATION 6+37.10

GREENBANK ROAD
TYPICAL PAVEMENT SECTION

REFER TO CONSTRUCTION PLAN FOR STATION AND OFFSET OF GUARDRAIL AND CURB IMPROVEMENTS
 REFER TO RIGHT OF WAY SHEET FOR LIMITS OF TCE / LOC AND EXISTING RIGHT OF WAY
 REFER TO SIGNING AND STRIPING PLAN FOR CENTERLINE OFFSET

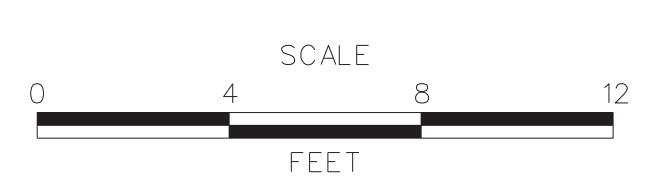


FULL DEPTH PAVEMENT SECTION
STATION 7+75.30 TO STATION 7+80.30
STATION 8+72.61 TO STATION 8+77.61

REFER TO CONSTRUCTION DETAILS SHEET 1 OF 2 FOR PAVEMENT SECTION OVER MOMENT SLABS

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

ADDENDA / REVISIONS



BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK

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TYPICAL SECTIONS

SECTION	BR
SHEET NO.	6

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CIRCULAR CURVE 1				
Element: Circular				
	STATION	NORTHING	EASTING	
PC (10002)	4+65.92	633641.1050	595140.4337	
PI (10100)	5+91.39	633702.2670	595249.9901	
CC (10101)		633140.8253	595419.7246	
PT (10003)	7+12.97	633712.0435	595375.0812	
Radius:	572.96			
Delta:	24°42'15.9788" Right			
Degree of Curvature(Arc):	9°59'59.8555"			
Length:	247.05			
Tangent:	125.47			
Chord:	245.14			
Middle Ordinate:	13.26			
External:	13.58			
Tangent Direction:	N 60°49'36.1610" E			
Radial Direction:	S 29°10'23.8390" E			
Chord Direction:	N 73°10'44.1397" E			
Radial Direction:	S 4°28'07.8602" E			
Tangent Direction:	N 85°31'52.1398" E			

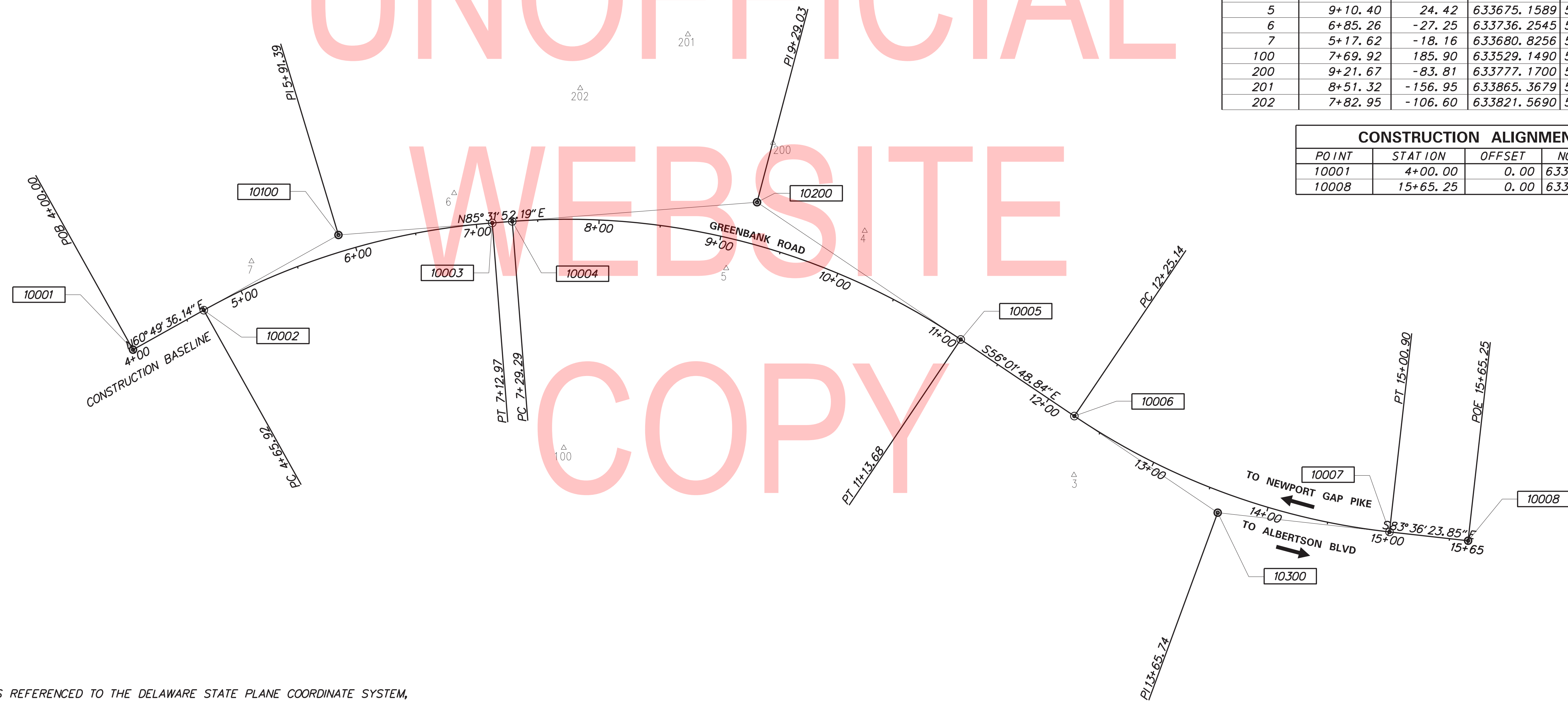
CIRCULAR CURVE 2				
Element: Circular				
	STATION	NORTHING	EASTING	
PC (10004)	7+29.29	633713.3151	595391.3516	
PI (10200)	9+29.03	633728.8795	595590.4881	
CC (10201)		633142.0972	595435.9977	
PT (10005)	11+13.68	633617.2716	595756.1422	
Radius:	572.96			
Delta:	38°26'20.0052" Right			
Degree of Curvature(Arc):	9°59'59.8652"			
Length:	384.39			
Tangent:	199.74			
Chord:	377.22			
Middle Ordinate:	31.93			
External:	33.82			
Tangent Direction:	N 85°31'51.1430" E			
Radial Direction:	S 4°28'08.8570" E			
Chord Direction:	S 75°14'58.8544" E			
Radial Direction:	S 33°58'11.1482" W			
Tangent Direction:	S 56°01'48.8518" E			

CIRCULAR CURVE 3				
Element: Circular				
	STATION	NORTHING	EASTING	
PC (10006)	12+25.14	633554.9927	595848.5796	
PI (10300)	13+65.74	633476.4276	595965.1898	
CC (10301)		634030.1669	596168.7239	
PT (10007)	15+00.90	633460.7705	596104.9226	
Radius:	572.96			
Delta:	27°34'35.0216" Left			
Degree of Curvature(Arc):	9°59'59.8713"			
Length:	275.76			
Tangent:	140.61			
Chord:	273.11			
Middle Ordinate:	16.51			
External:	17.00			
Tangent Direction:	S 56°01'48.8435" E			
Radial Direction:	S 33°58'11.1565" W			
Chord Direction:	S 69°49'06.3521" E			
Radial Direction:	S 6°23'36.1349" W			
Tangent Direction:	S 83°36'23.8651" E			

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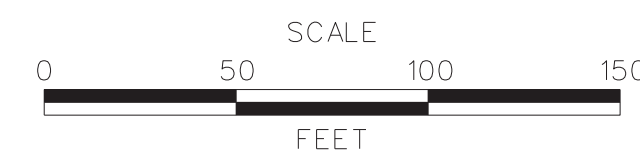
HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
3	12+49.94	40.52	633507.0321	595848.2742	73.24
4	10+06.47	-40.32	633705.5801	595678.0789	62.89
5	9+10.40	24.42	633675.1589	595565.3790	61.62
6	6+85.26	-27.25	633736.2545	595344.0903	61.65
7	5+17.62	-18.16	633680.8256	595179.2666	60.59
100	7+69.92	185.90	633529.1490	595433.2550	54.07
200	9+21.67	-83.81	633777.1700	595603.4300	59.74
201	8+51.32	-156.95	633865.3679	595534.2301	54.00
202	7+82.95	-106.60	633821.5690	595446.6390	58.49

CONSTRUCTION ALIGNMENT CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
10001	4+00.00	0.00	633608.9722	595082.8757	
10008	15+65.25	0.00	633453.6054	596168.8676	



DATUM REFERENCE:
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83).
 VERTICAL - THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ADDENDA / REVISIONS



**BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK**

CONTRACT	BRIDGE NO.	1-148A&B
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

**HORIZONTAL AND
VERTICAL CONTROL**

SECTION	BR
SHEET NO.	7

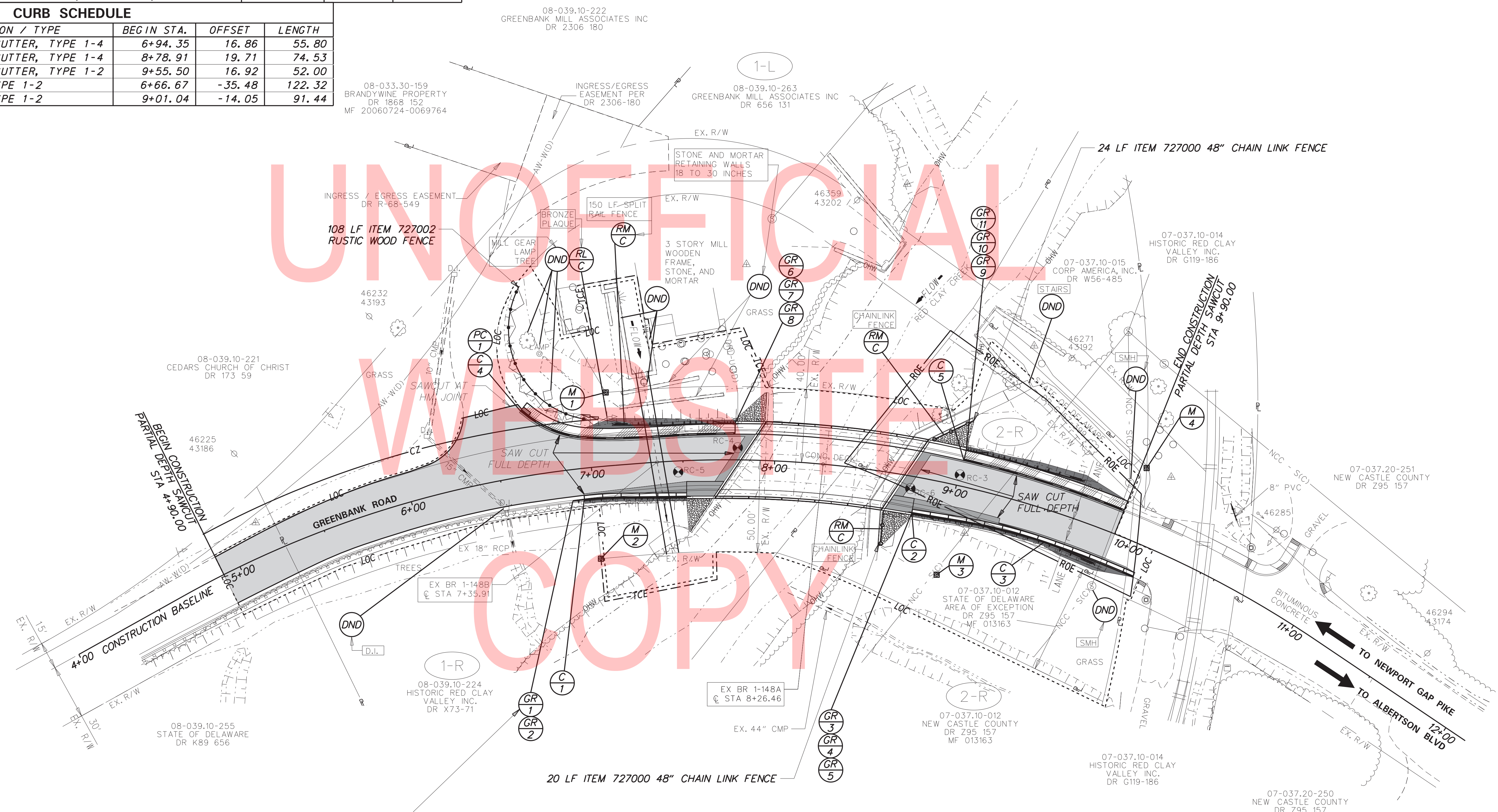
GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	6+87.74	MATCH EX	37.50
2	721011 - GR TO BARRIER CONNECTION, TYPE 2-31	7+25.99	18.20	26.94
3	721011 - GR TO BARRIER CONNECTION, TYPE 2-31	8+76.35	19.71	26.94
4	720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	9+04.19	18.49	50.00
5	721000 - GUARDRAIL END TREATMENT, TYPE 1-31, TL2	9+55.50	16.92	28.13
6	721000 - GUARDRAIL END TREATMENT, TYPE 1-31, TL2	7+14.91	-21.73	28.13
7	720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	7+42.47	-19.68	12.50
8	721011 - GR TO BARRIER CONNECTION, TYPE 2-31	7+54.55	-19.75	26.94
9	721011 - GR TO BARRIER CONNECTION, TYPE 2-31	8+98.70	-19.80	26.94
10	720021 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	9+24.74	-19.84	12.50
11	721000 - GUARDRAIL END TREATMENT, TYPE 1-31, TL2	9+36.62	-19.77	28.13

CURB SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	701016 - PCC CURB & GUTTER, TYPE 1-4	6+94.35	16.86	55.80
2	701016 - PCC CURB & GUTTER, TYPE 1-4	8+78.91	19.71	74.53
3	701015 - PCC CURB & GUTTER, TYPE 1-2	9+55.50	16.92	52.00
4	701010 - PCC CURB, TYPE 1-2	6+66.67	-35.48	122.32
5	701010 - PCC CURB, TYPE 1-2	9+01.04	-14.05	91.44

ROADWAY CORE SCHEDULE				
NO.	STATION	OFFSET	DESCRIPTION	
RC-3	9+00.70	-5.84	6" HMA / 5+" GABC	
RC-4	7+79.81	-6.60	6" HMA / 7+" GABC	
RC-5	7+47.14	5.96	6" HMA / 8+" GABC	
RC-6	8+75.65	6.79	4.5" HMA / 7+" GABC	

RIGHT-OF-WAY MONUMENT SCHEDULE					
NO.	TYPE	STATION	OFFSET	NORTHING	EASTING
M-1	CAPPED REBAR	7+11.07	-40.00	633751.7607	595369.9445
M-2	CAPPED REBAR	7+00.20	50.00	633661.1583	595367.3722
M-3	CAPPED REBAR	9+00.20	50.56	633652.4192	595550.2722
M-4	CAPPED REBAR	9+93.14	-39.80	633710.5728	595664.7117

NOTE: MONUMENT M-3 ESTABLISHED FOR FUTURE LAND TRANSFER ON PARCEL 2-R



NOTE: W-BEAM GUARDRAIL TRANSITION FROM 27" TO 31" HEIGHT INCIDENTAL TO ITEM 720021 WITHIN THE LIMITS OF GR-1. IDENTIFY EXISTING 27" GUARDRAIL W-BEAM JOINTS AND POSTS AND MODIFY EXISTING GUARDRAIL TO MATCH POST SPACING OF NEW GUARDRAIL.

NOTE: REFER TO UTILITY STATEMENT REGARDING DELMARVA POWER - GAS LINE FROM STATION 6+65 TO 7+90

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ADDENDA / REVISIONS



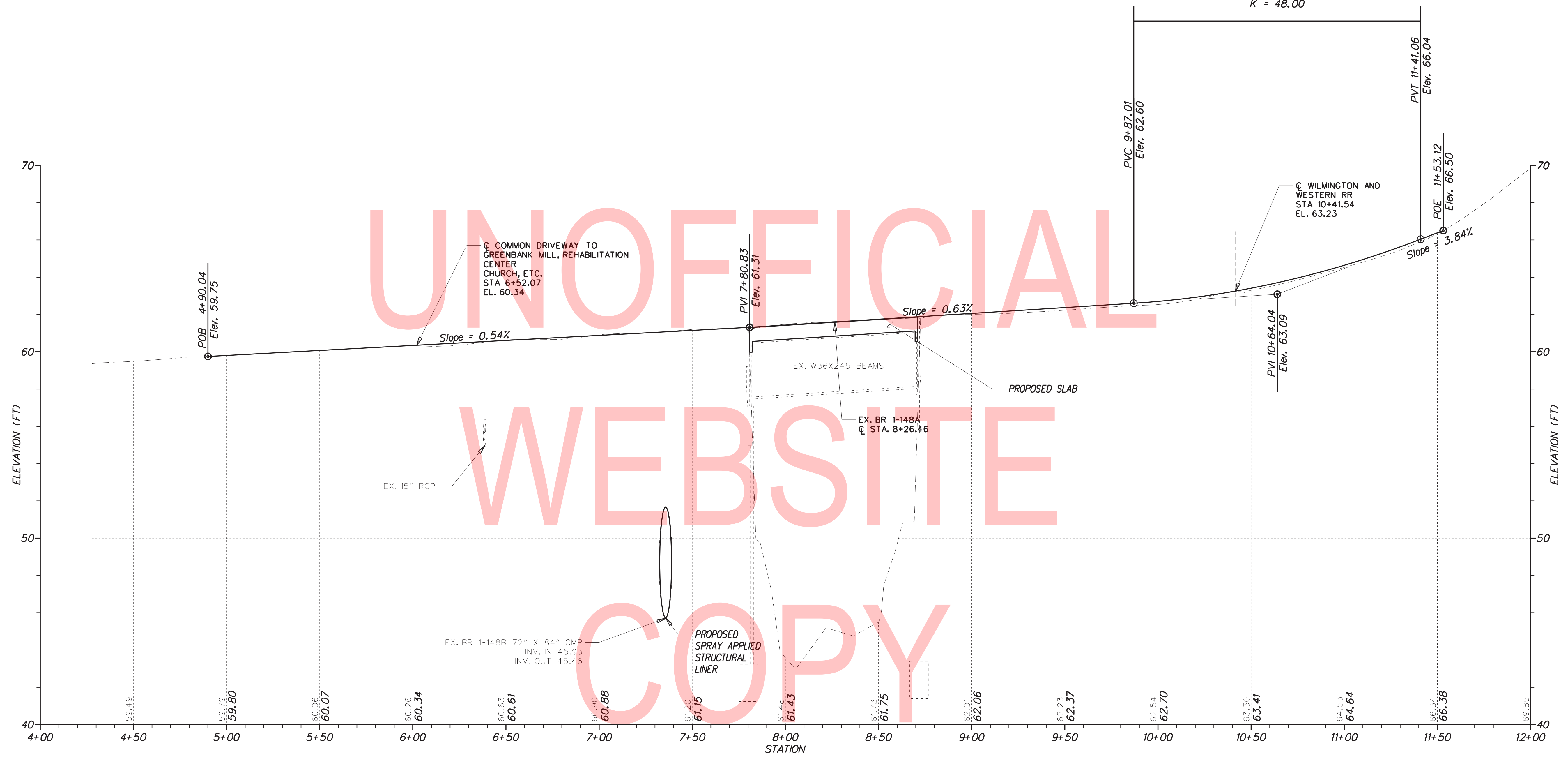
BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A&B
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

CONSTRUCTION PLAN

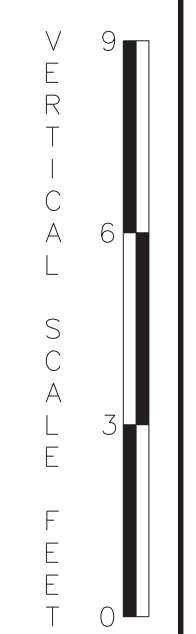
CP-01
SECTION
BR
SHEET NO.
8

Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 154.05'
 L1 = 77.03'
 L2 = 77.03'
 G1 = 0.63%
 G2 = 3.84%
 SSD = 306.43'
 K = 48.00

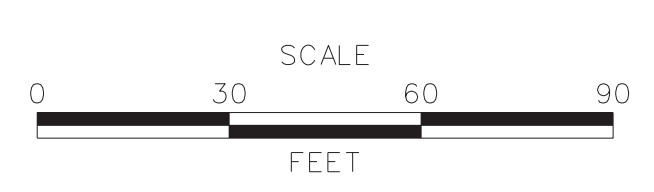


N330 GREENBANK ROAD

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ADDENDA / REVISIONS

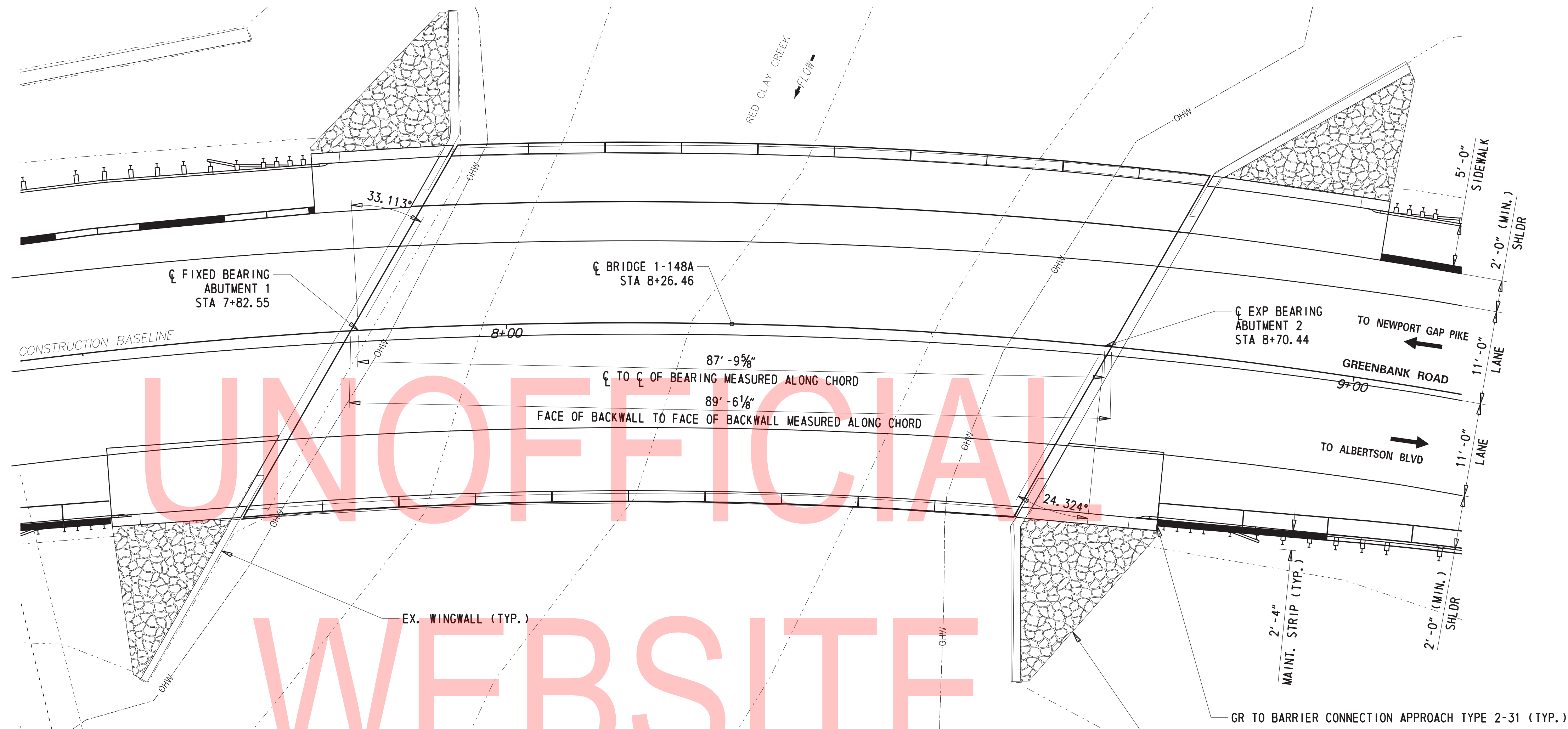


BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	T201507405	BRIDGE NO.	1-148A&B
COUNTY	NEW CASTLE	DESIGNED BY:	GPH
		CHECKED BY:	JAT

PROFILES

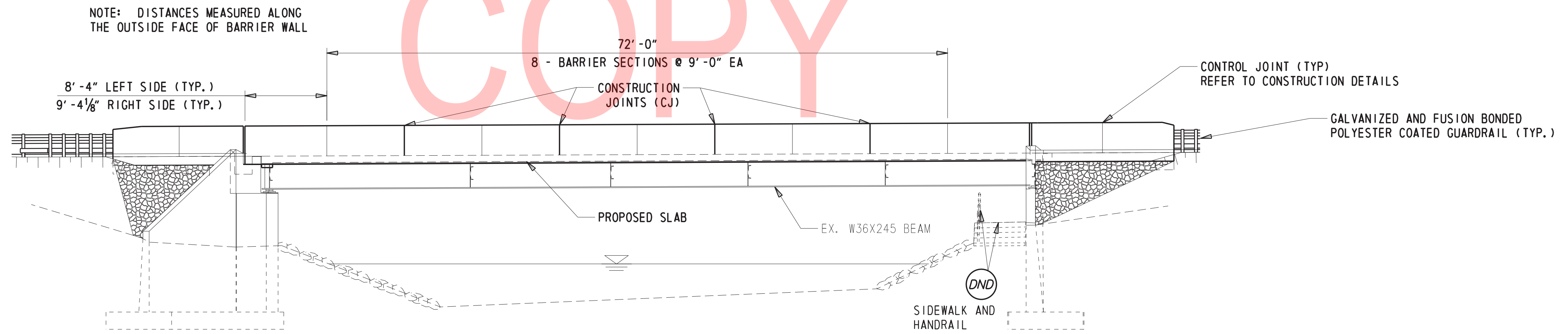
SECTION	BR
SHEET NO.	9



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PLAN
1/8" = 1' - 0"

- ITEM 707015 - 12" R-4 RIP RAP
- ITEM 302002 - 6" DELAWARE #3 STONE
- ITEM 708003 - GEOTEXTILE, RIP RAP (TYPICAL AT ALL CORNERS)



ELEVATION
1/8" = 1' - 0"

NOTE: DISTANCES MEASURED ALONG THE OUTSIDE FACE OF BARRIER WALL

NOTE: REFER TO ABUTMENT ELEVATION VIEWS ON AB-01 AND AB-02 FOR PROPOSED WORK REFER TO CONSTRUCTION DETAILS SHEETS FOR MOMENT SLAB AND BARRIER CONSTRUCTION.

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ADDENDA / REVISIONS

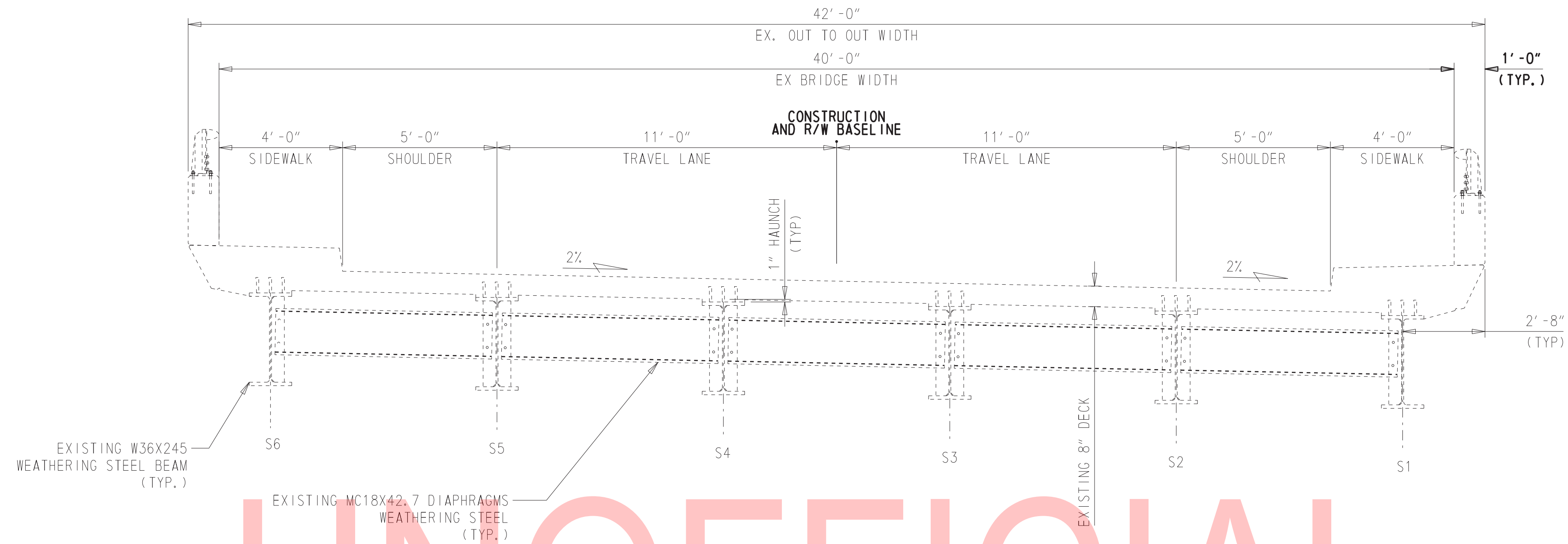
SCALE AS NOTED

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

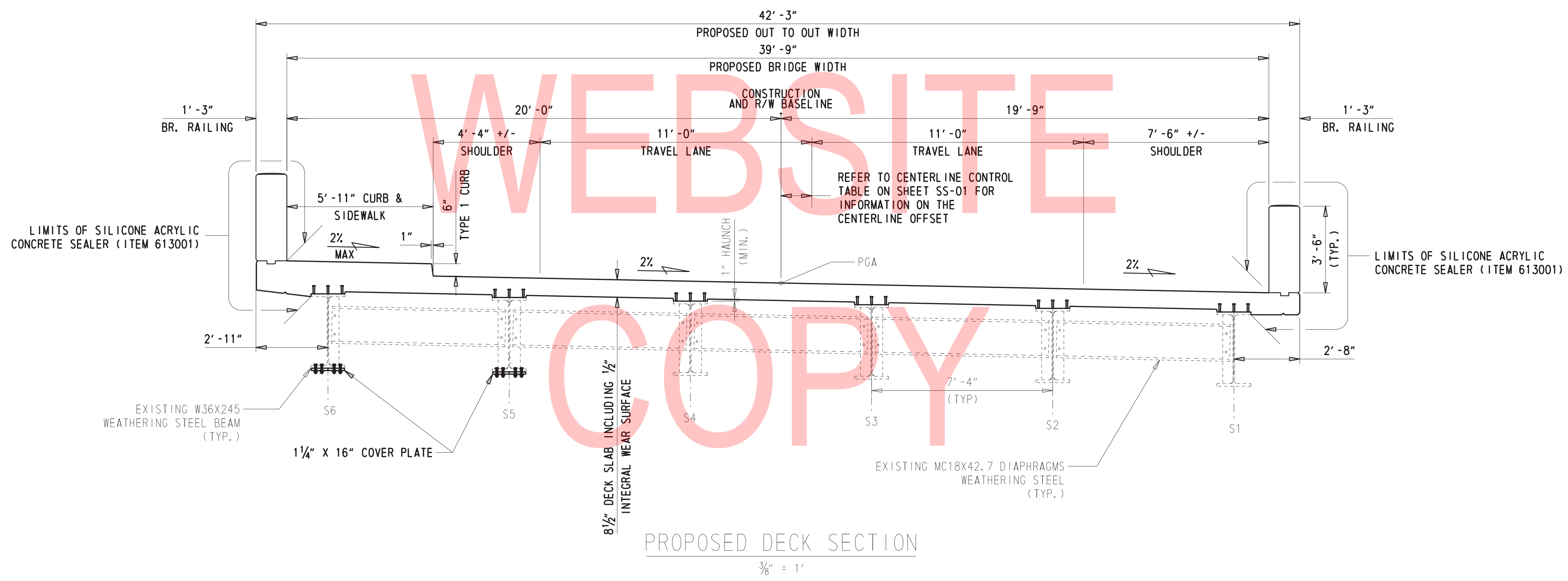
CONTRACT T201507405	BRIDGE NO. 1-148A
COUNTY NEW CASTLE	DESIGNED BY: GPH
	CHECKED BY: JAT

BRIDGE DETAILS

PE-01
SECTION BR
SHEET NO. 10



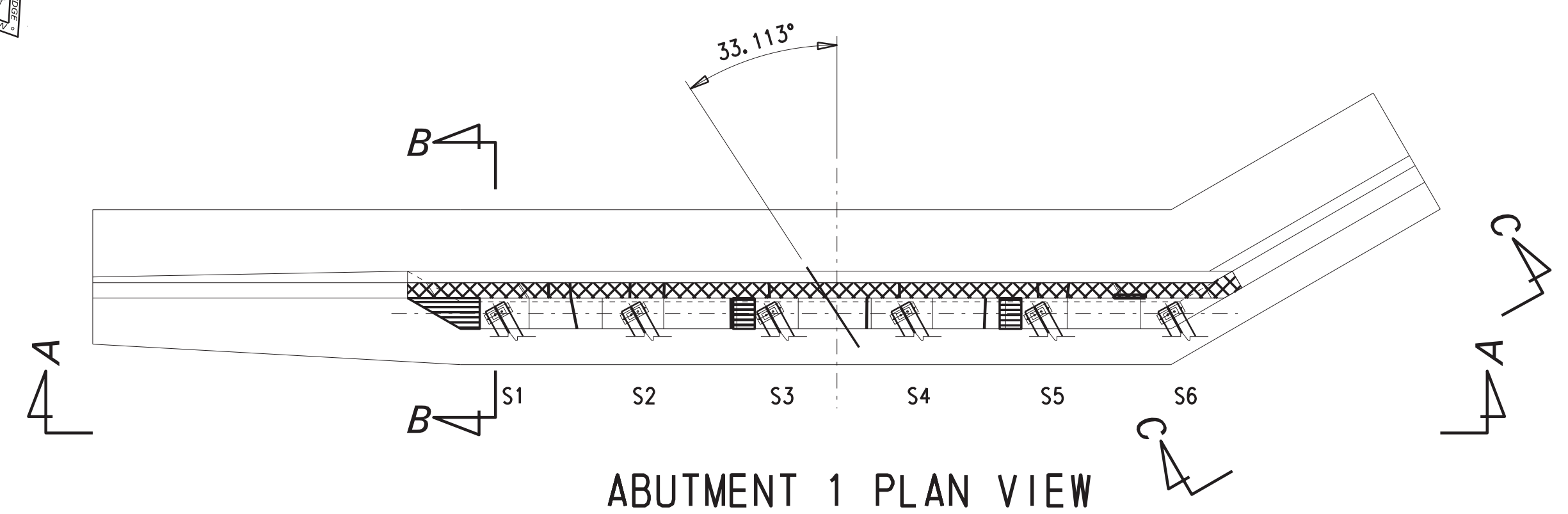
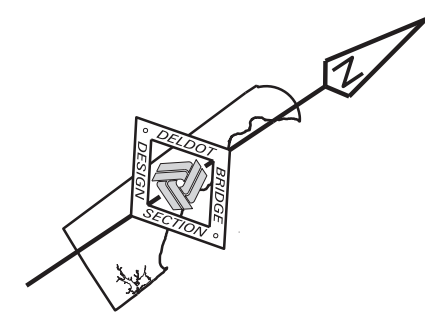
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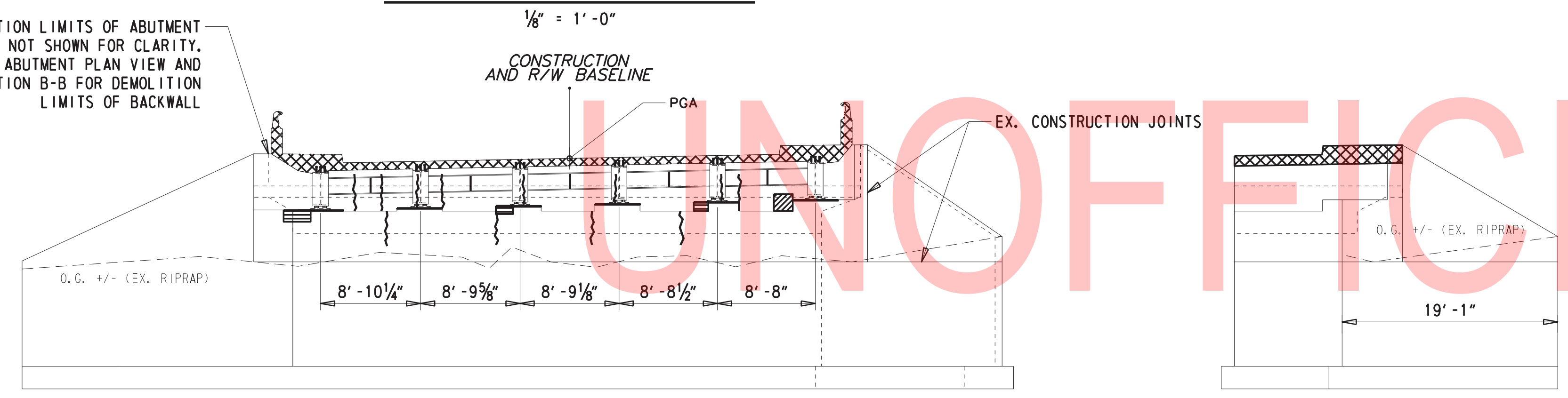
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ADDENDA / REVISIONS		SCALE AS NOTED	BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK	CONTRACT	BRIDGE NO.	1-148A	BRIDGE DETAILS	SECTION	PE-02
				T201507405	DESIGNED BY: GPH	BR			
				COUNTY	CHECKED BY: JAT			SHEET NO.	11
				NEW CASTLE					



ABUTMENT 1 PLAN VIEW
1/8" = 1'-0"

DEMOLITION LIMITS OF ABUTMENT BACKWALL NOT SHOWN FOR CLARITY. REFER TO ABUTMENT PLAN VIEW AND SECTION B-B FOR DEMOLITION LIMITS OF BACKWALL

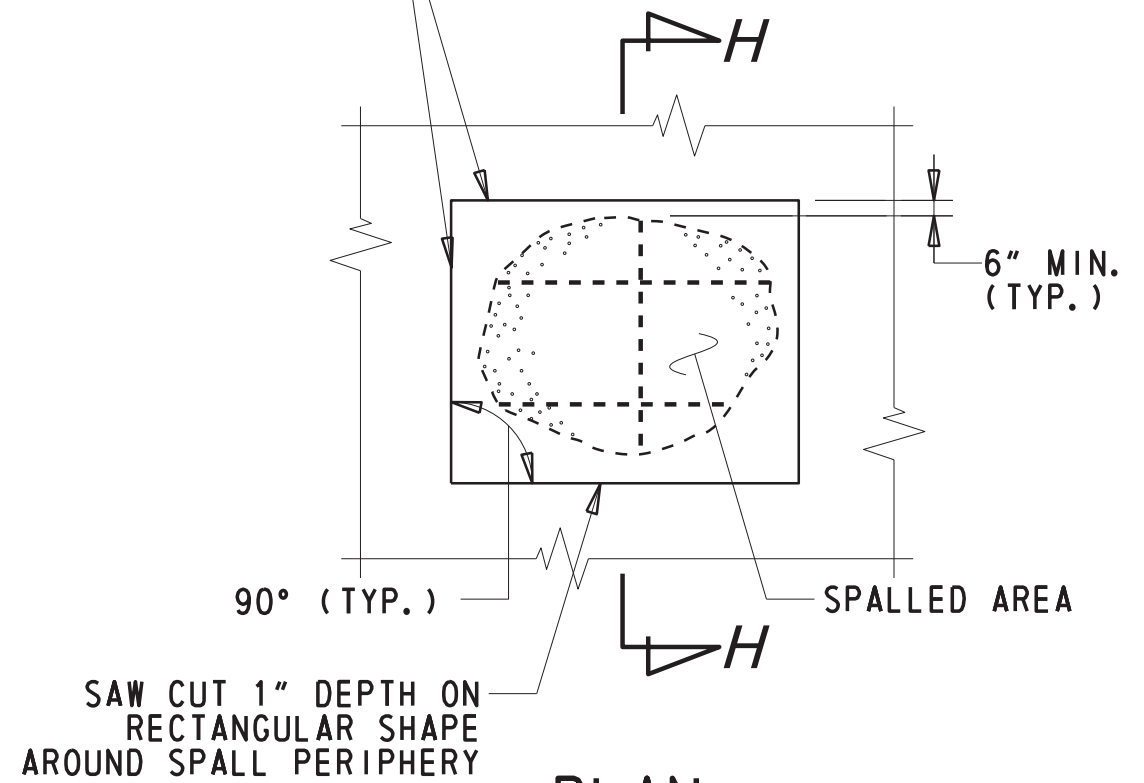


ABUTMENT 1 ELEVATION (A-A)
1/8" = 1'-0"

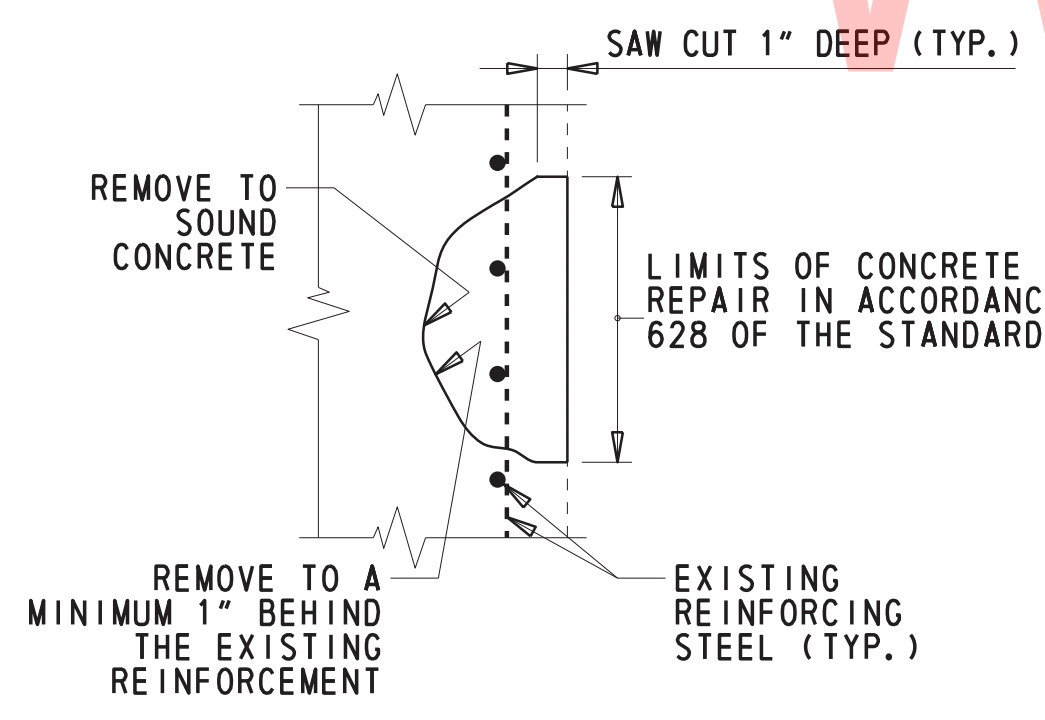
NORTH WEST WINGWALL ELEVATION (C-C)
1/8" = 1'-0"

ALL EXPOSED ABUTMENT SURFACES HORIZONTAL AND VERTICAL OUTSIDE OF THE LIMITS OF ITEM 613000 EPOXY CONCRETE SEALER TO BE CLEANED AND TREATED WITH ITEM 613001 SILICONE-BASED ACRYLIC CONCRETE SEALER

LIMITS OF CONCRETE REMOVAL AND REPAIR IN ACCORDANCE WITH SECTION 628 OF STANDARD SPECIFICATIONS



PLAN



SECTION H-H

DEEP SPALL REPAIR
N. T. S.

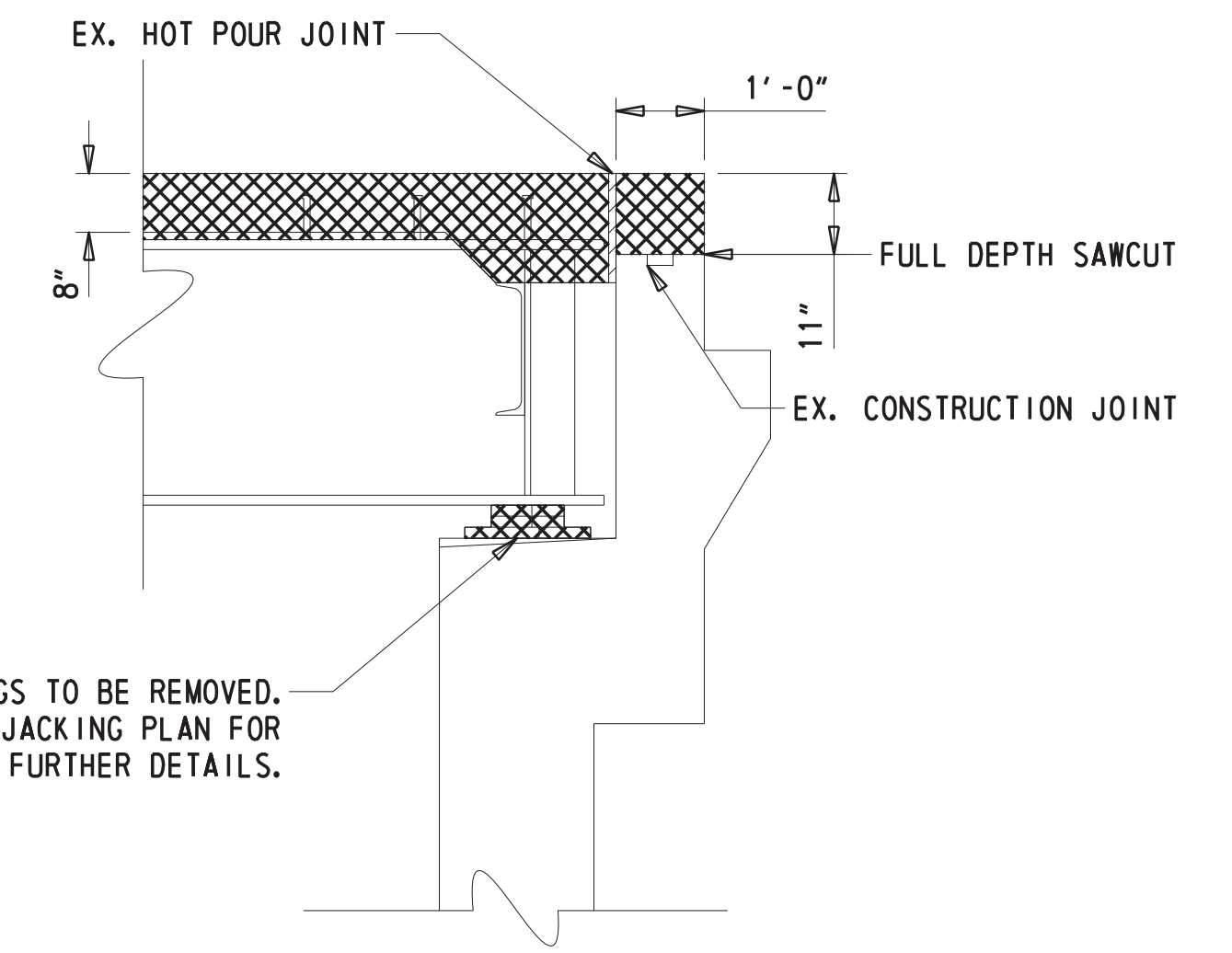
DEEP SPALL REPAIR NOTES

1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL, 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).

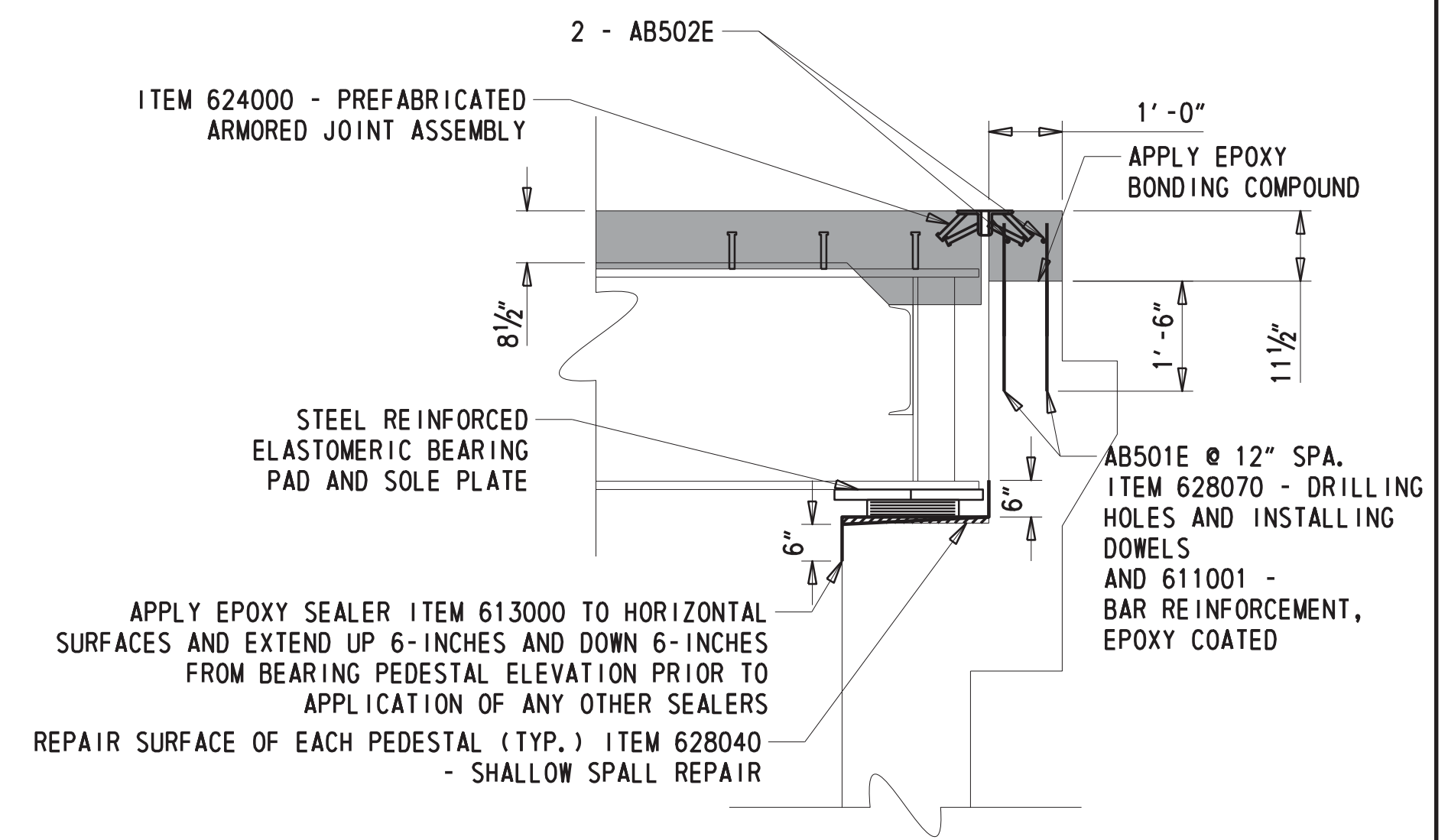
NOTE: REFER TO AB-02 FOR SHALLOW SPALL NOTES AND DETAILS.

ABUTMENT 1 ESTIMATED QUANTITIES		
NO.	ITEM DESCRIPTION / TYPE	QTY
628001	REPAIR OF CONCRETE STRUCTURE - EPOXY INJECTION	40 LF
628040	SHALLOW SPALL REPAIR	1.75 CF
628041	DEEP SPALL REPAIR	7.0 CF
613000	EPOXY CONCRETE SEALER	220 SF
613001	SILICONE BASED ACRYLIC CONCRETE SEALER	460 SF

THE QUANTITIES ABOVE REPRESENT WHAT WAS IDENTIFIED DURING BRIDGE CONDITION SURVEY. ADDITIONAL AREAS OR VOLUMES MAY BE FOUND DURING CONSTRUCTION AND SHOULD BE IDENTIFIED, MEASURED, AND AGREED UPON WITH THE ENGINEER.



ABUTMENT 1 DEMOLITION SECTION (B-B)
1/2" = 1'-0"



ABUTMENT 1 PROPOSED SECTION (B-B)
1/2" = 1'-0"

TOP PORTION OF BACK WALL SHALL NOT BE PLACED UNTIL ENTIRE BRIDGE DECK SLAB IS COMPLETE IN PLACE

LEGEND	
	DEMOLITION PAYMENT UNDER ITEM #211000
	ITEM #628041 - DEEP SPALL REPAIR
	ITEM #628040 - SHALLOW SPALL REPAIR
	PROPOSED CONCRETE PAYMENT UNDER ITEM #610000
	ITEM #628001 - REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION

ABUTMENT 1 MASONRY PADS	
BEAM #	ELEVATION
S1	56.75
S2	56.93
S3	57.10
S4	57.27
S5	57.45
S6	57.59

ADDENDA / REVISIONS

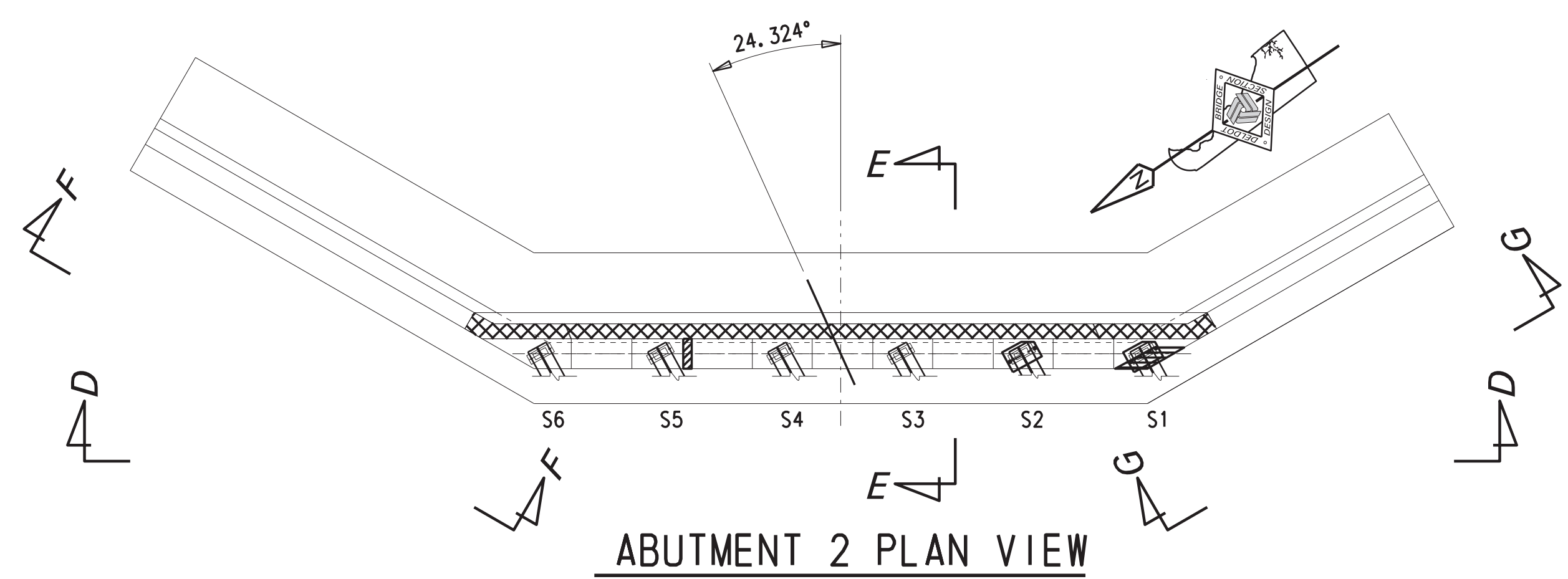
SCALE AS NOTED

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

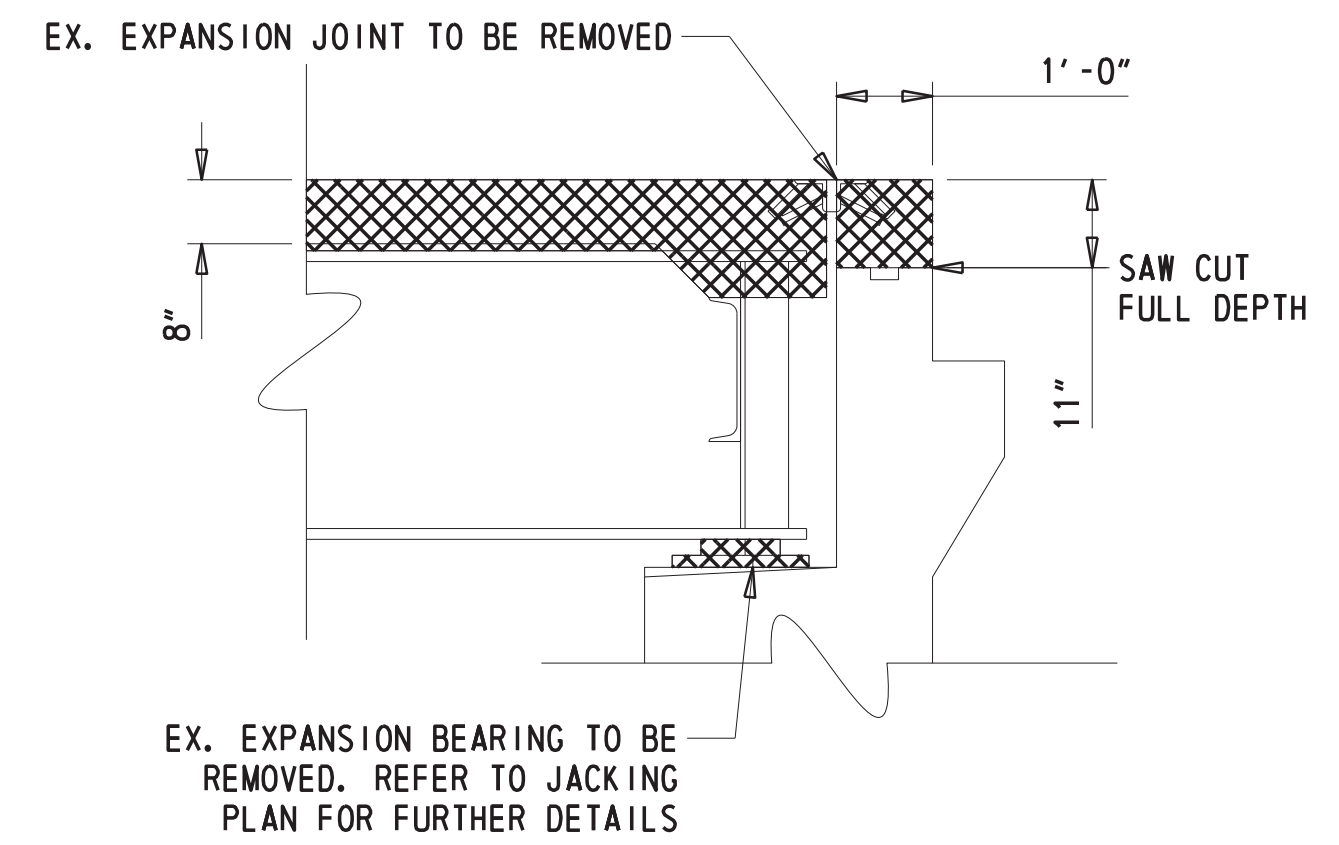
CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

ABUTMENT 1 REHABILITATION DETAILS

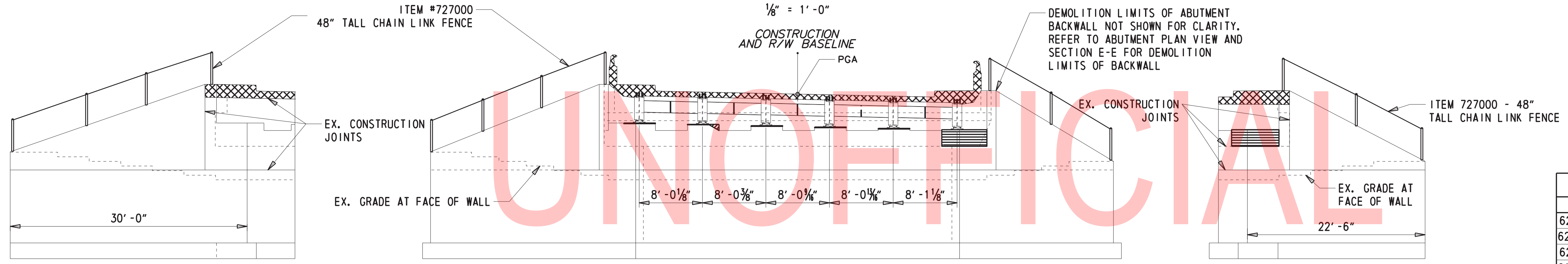
AB-01
SECTION
BR
SHEET NO.
12



ABUTMENT 2 PLAN VIEW
1/8" = 1'-0"



DEMOLITION ABUTMENT SECTION (E-E)
1/2" = 1'-0"



NORTHEAST WINGWALL ELEVATION (F-F)
1/8" = 1'-0"

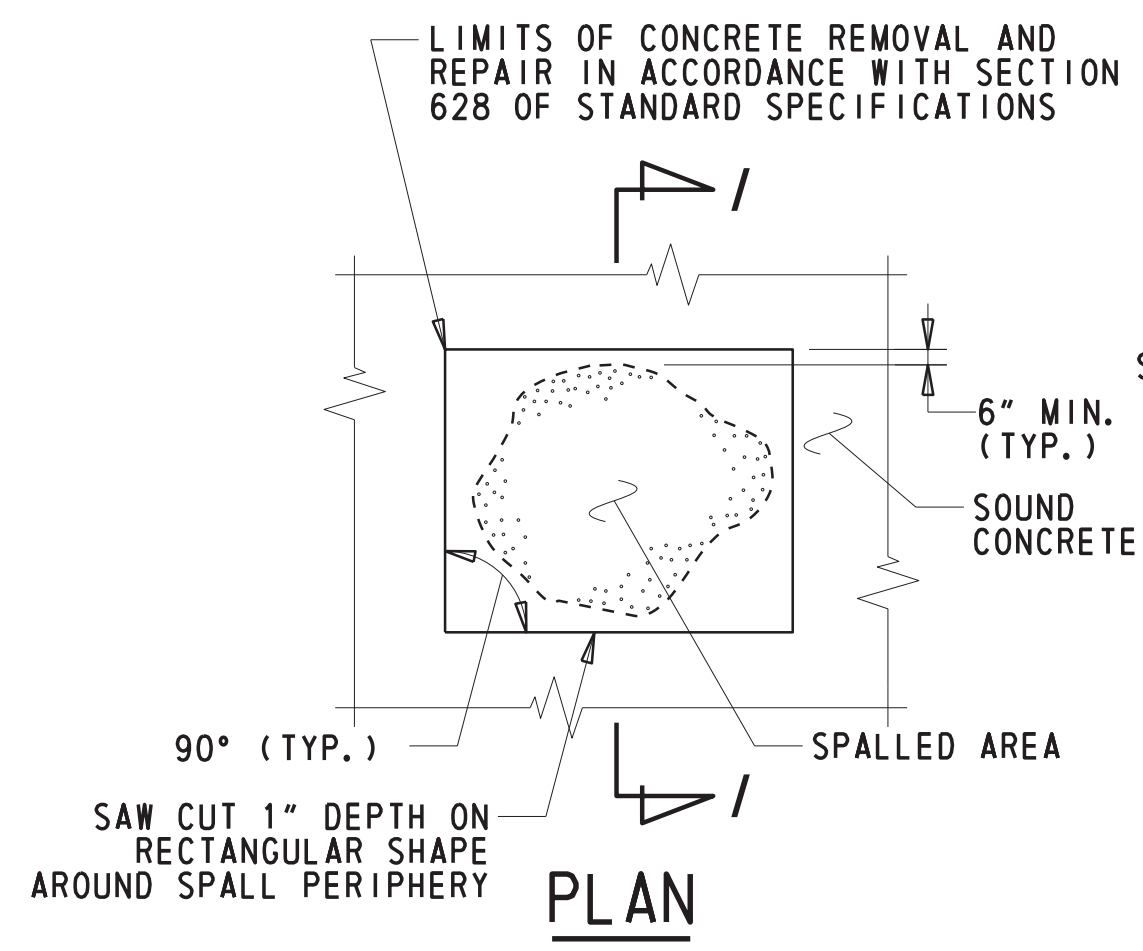
ABUTMENT 2 ELEVATION (D-D)
1/8" = 1'-0"

SOUTHEAST WINGWALL ELEVATION (G-G)
1/8" = 1'-0"

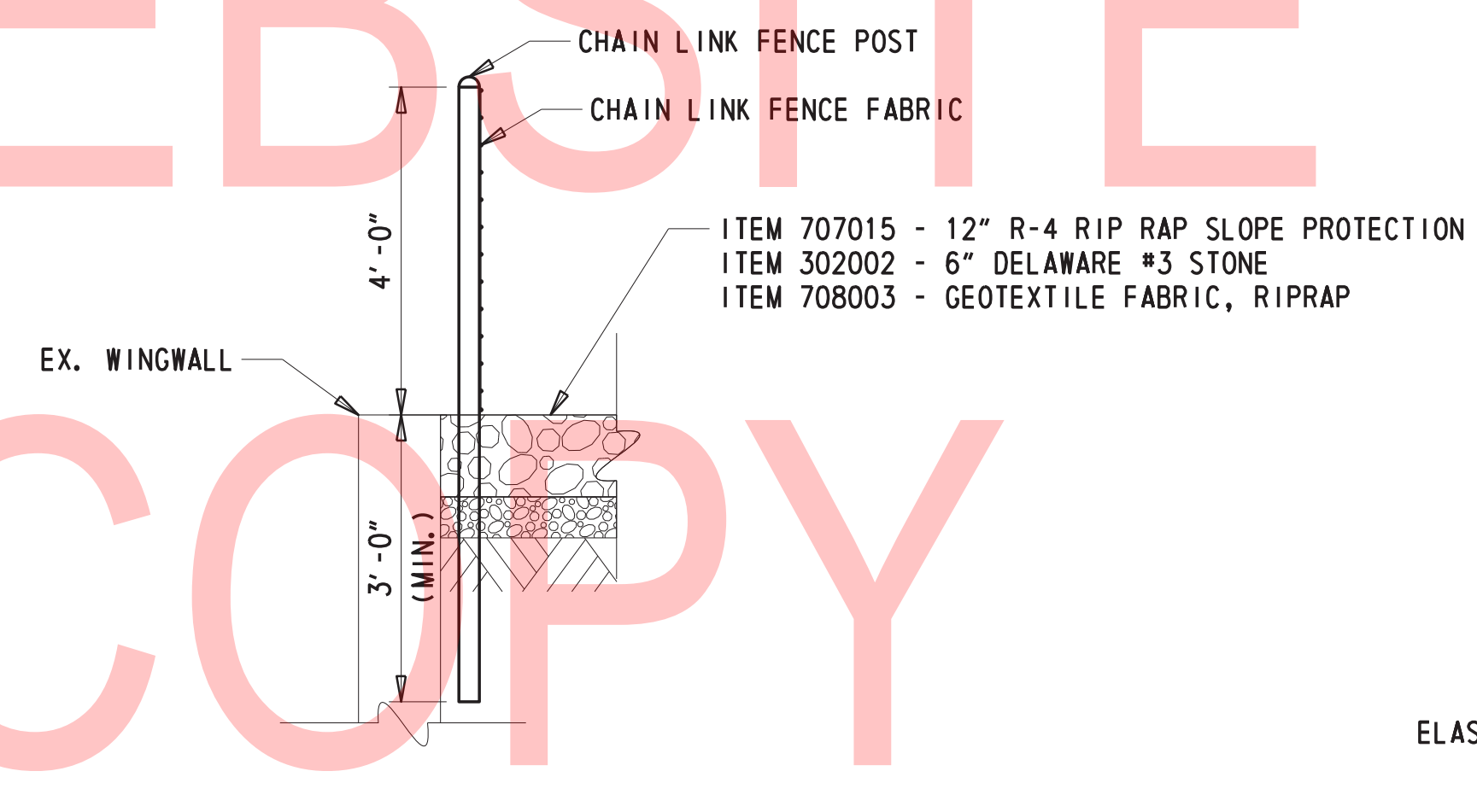
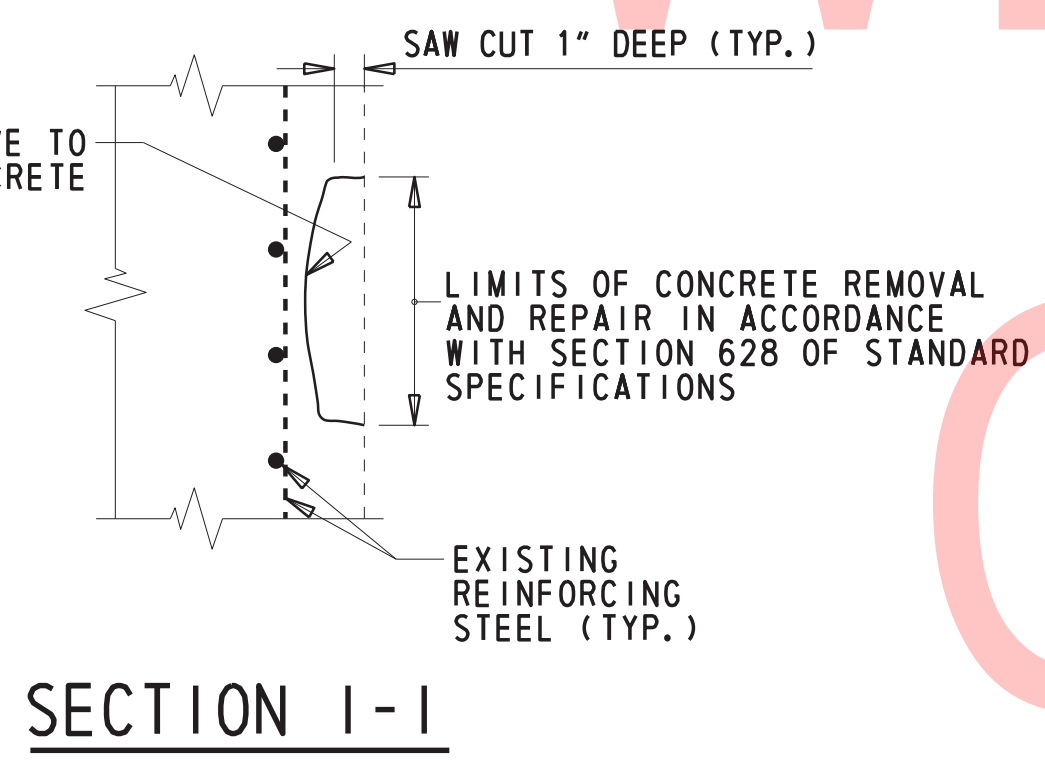
ABUTMENT 2 ESTIMATED QUANTITIES		
NO.	ITEM DESCRIPTION / TYPE	QTY
628001	REPAIR OF CONCRETE STRUCTURE - EPOXY INJECTION	25 LF
628040	SHALLOW SPALL REPAIR	1.50 CF
628041	DEEP SPALL REPAIR	8.5 CF
613000	EPOXY CONCRETE SEALER	220 SF
613001	SILICONE BASED ACRYLIC CONCRETE SEALER	640 SF

THE QUANTITIES ABOVE REPRESENT WHAT WAS IDENTIFIED DURING BRIDGE CONDITION SURVEY. ADDITIONAL AREAS OR VOLUMES MAY BE FOUND DURING CONSTRUCTION AND SHOULD BE IDENTIFIED, MEASURED, AND AGREED UPON WITH THE ENGINEER.

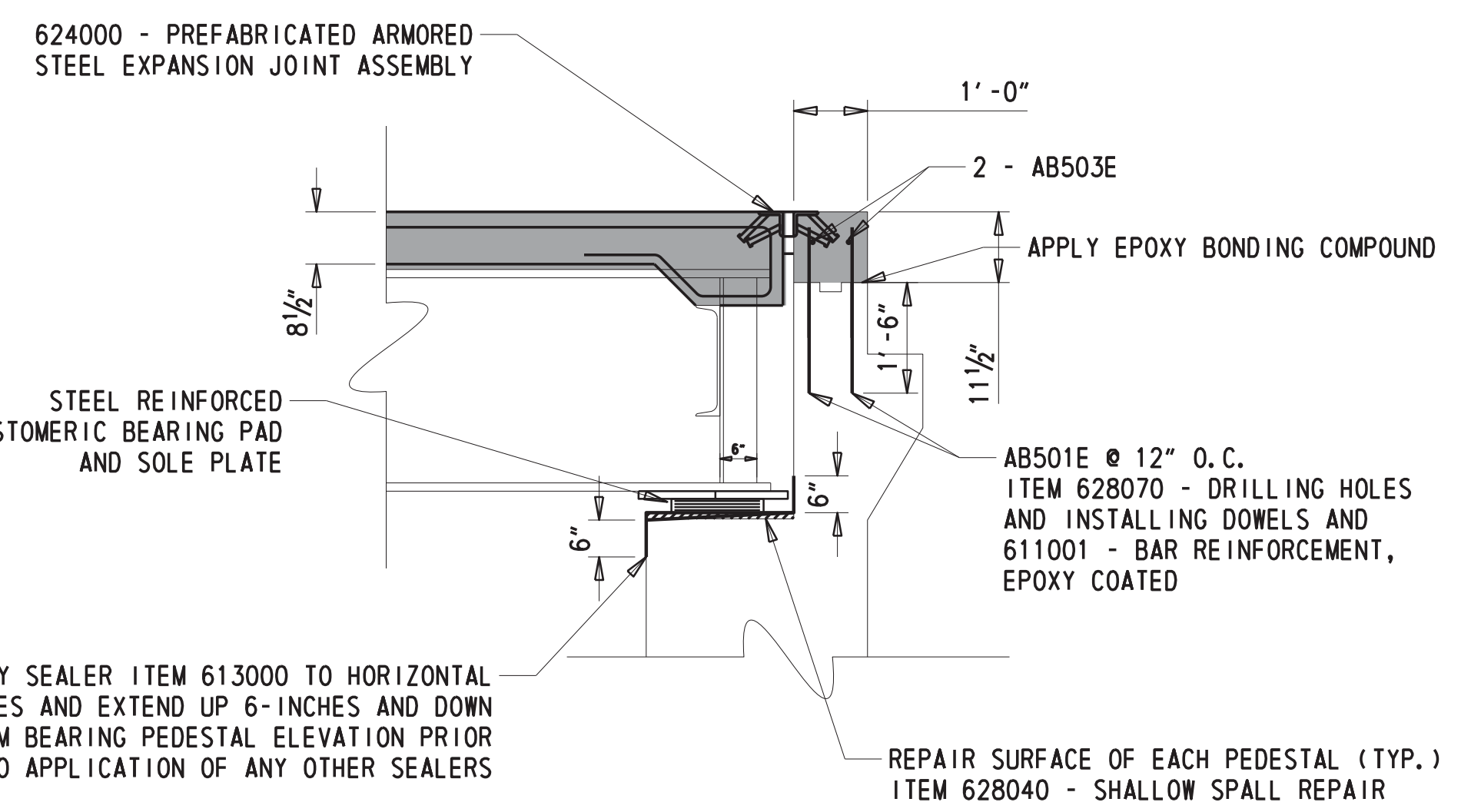
ALL EXPOSED ABUTMENT SURFACES HORIZONTAL AND VERTICAL OUTSIDE OF THE LIMITS OF ITEM 613000 EPOXY CONCRETE SEALER TO BE CLEANED AND TREATED WITH ITEM 613001 SILICONE-BASED ACRYLIC CONCRETE SEALER



SHALLOW SPALL REPAIR
N. T. S.



CHAIN LINK FENCE INSTALLATION DETAIL
N. T. S.



PROPOSED ABUTMENT SECTION (E-E)
1/2" = 1'-0"

TOP PORTION OF BACK WALL SHALL NOT BE PLACED UNTIL THE ENTIRE BRIDGE DECK SLAB IS COMPLETE IN PLACE

SHALLOW SPALL REPAIR NOTES

1. SHALLOW SPALLS ARE DEFINED AS PATCHES THAT DO NOT EXTEND BELOW THE TOP MAT OF REINFORCEMENT.
2. SHALLOW SPALL REPAIRS ON HORIZONTAL SURFACES WILL BE REPAIRED IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 628.03(E)
3. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL; 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.
4. 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).

NOTE: REFER TO AB-01 FOR DEEP SPALL NOTES AND DETAILS.

LEGEND	
	DEMOLITION PAYMENT UNDER ITEM #211000
	ITEM #628041 - DEEP SPALL REPAIR
	ITEM #628040 - SHALLOW SPALL REPAIR
	PROPOSED CONCRETE PAYMENT UNDER ITEM #610000
	ITEM #628001 - REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION

ABUTMENT 2 MASONRY PADS	
BEAM #	ELEVATION
S1	57.31
S2	57.47
S3	57.65
S4	57.82
S5	57.98
S6	58.13

ADDENDA / REVISIONS

SCALE AS NOTED

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

ABUTMENT 2 REHABILITATION DETAILS

AB-02
SECTION
SHEET
SHEET NO.
13

STEEL REINFORCED ELASTOMERIC BEARING NOTES:

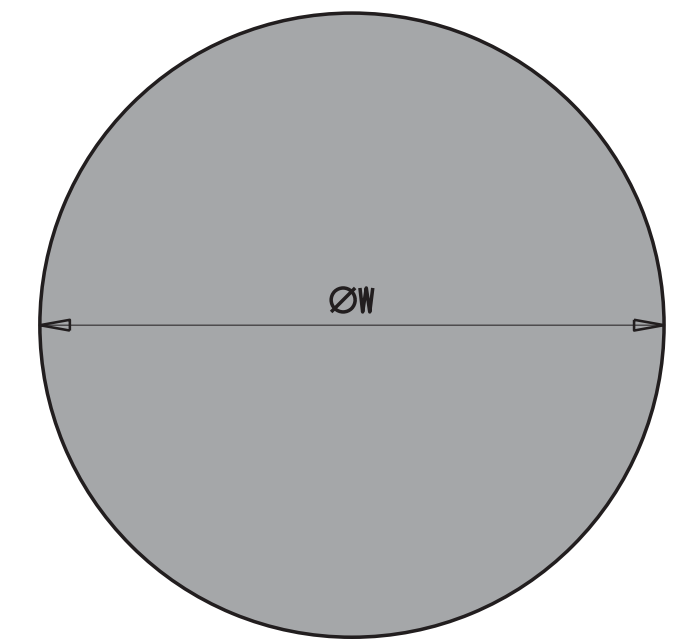
1. PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
2. ANCHOR BOLTS AND WASHERS SHALL BE UNPAINTED A709 GRADE 36 GALVANIZED STEEL. ALL NUTS SHALL BE UNPAINTED A307 GALVANIZED STEEL. SET NUTS 1/4" CLEAR OF SOLE PLATES AND BURR THREADS ABOVE AND BELOW NUTS.
3. GROUT SWEDGED ANCHOR BOLTS IN DRILLED HOLES USING CEMENTICIOUS NON-SHRINK GROUT MEETING THE REQUIREMENTS OF SECTION 1047 OF THE STANDARD SPECIFICATIONS. THE HOLES SHALL HAVE A DIAMETER SUFFICIENT THAT ANCHORS CAN BE PLACED VERTICAL AND COMPLETELY ENVELOPED IN THE GROUT MATERIAL.
4. SOLE PLATES SHALL BE AASHTO M270 GRADE 50W WEATHERING STEEL. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1. PAINT THE FAYING SURFACE WITH A ZINC RICH PRIMER FROM NEPCOAT PRODUCT LIST A.
5. SOLE PLATES SHALL MEET A FLATNESS REQUIREMENT OF 0.5 PERCENT IN THE DIRECTION BEING MEASURED (WIDTH, LENGTH, AND DIAGONALS) MAXIMUM, BUT NOT TO EXCEED 1/8 INCH.
6. PLACE SOLE PLATES NORMAL TO CENTERLINE OF BEAM.
7. FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH AN APPROVED NON-HARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
8. FOR EXPANSION BEARINGS:
-USE 1 7/8" X 3" SLOTS IN SOLE PLATE AND 3/8" X 3" WASHERS WITH 1 3/8" DIA. HOLE IN WASHERS.

FOR FIXED BEARINGS
-USE 1 7/8" DIA. HOLES IN SOLE PLATE AND 3/8" X 3" DIA. WASHERS WITH 1 3/8" DIA. HOLE IN WASHER.
9. 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.
10. PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, ANCHOR BOLTS, NUTS, WASHERS, AND SOLE PLATES SHALL BE INCIDENTAL TO ITEM #623000 ELASTOMERIC BEARINGS

LOCATION	BEARING DESIGNATION						LAMINATED ELASTOMERIC BEARING					
	MARK	TYPE	NEOPRENE HARDNESS (SHORE A)	TOTAL NO. REOD.	CAPACITY PER PAD		DIMENSION			INTERIOR LAYERS	TOTAL PAD THICKNESS 'T'	
					REACTION \odot	MOVEMENT \boxtimes	'L'	'W'	SHAPE FACTOR \blacktriangle			AREA (IN ²)
WEST ABUTMENT	FX #	FIXED	60± 5 DURO	6	209.41 KIP	N/A	N/A	15"	7.5	176.71	4	2.891
EAST ABUTMENT	EX #	EXP.	60± 5 DURO	6	209.41 KIP	0.843"	N/A	15"	7.5	176.71	4	2.891

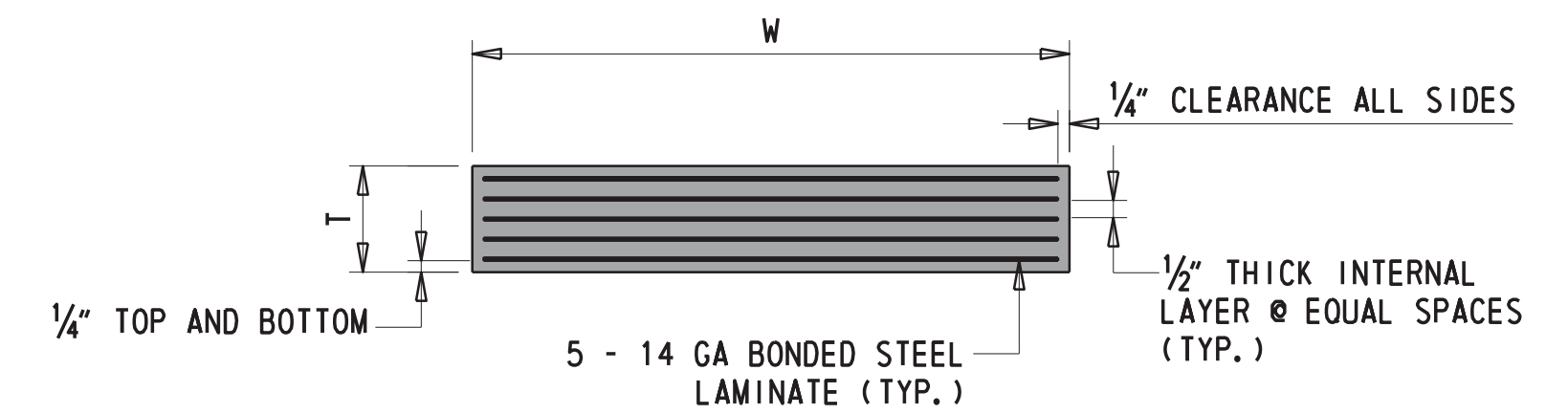
LEGEND:

- \odot MAX. UN-FACTURED SERVICE 1 REACTION (W/O DYNAMIC LOAD ALLOWANCE).
- \boxtimes TEMPERATURE MOVEMENT.
- \blacktriangle SHAPE FACTOR.



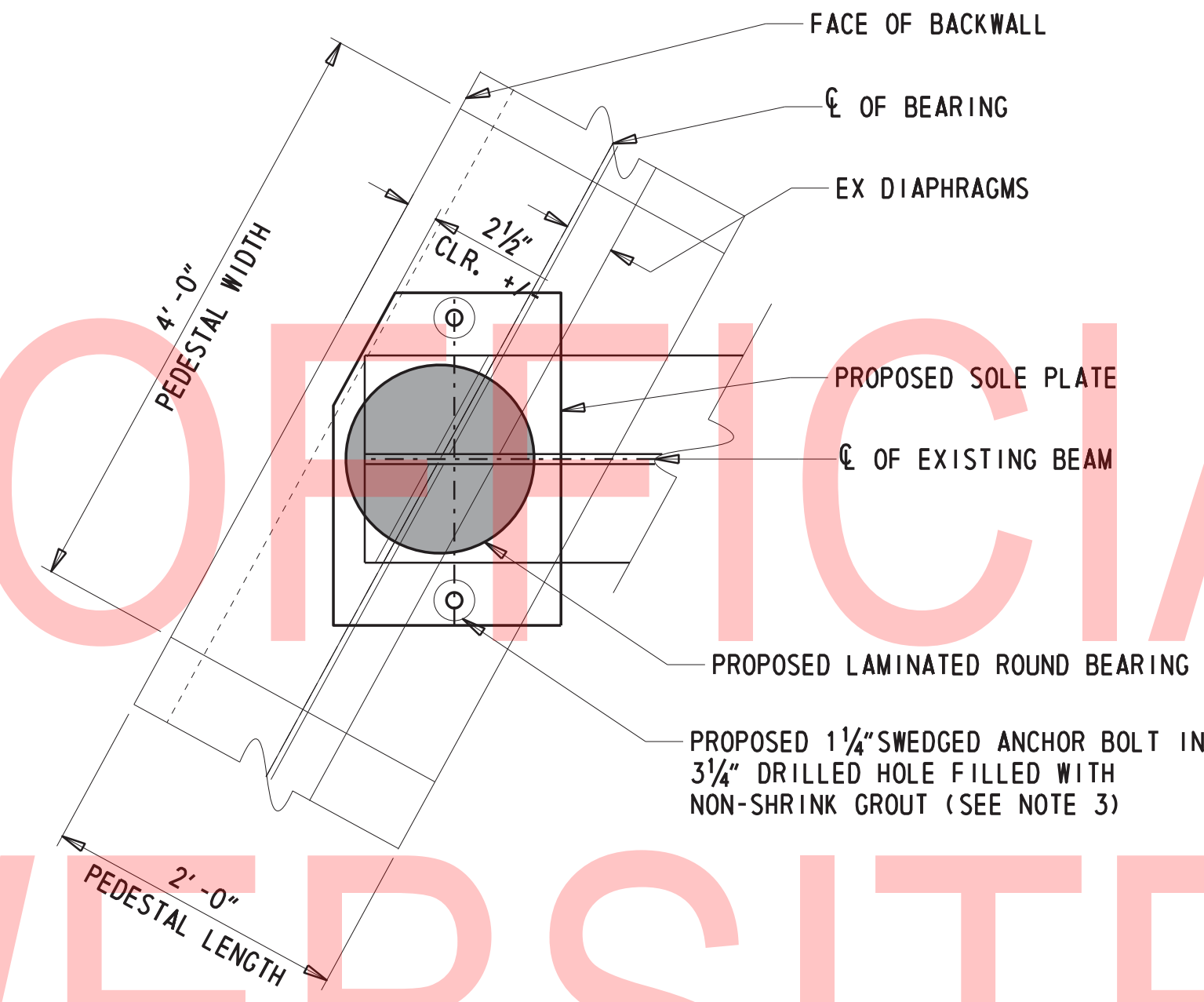
STEEL REINFORCED ELASTOMERIC BEARING PLAN

N. T. S.



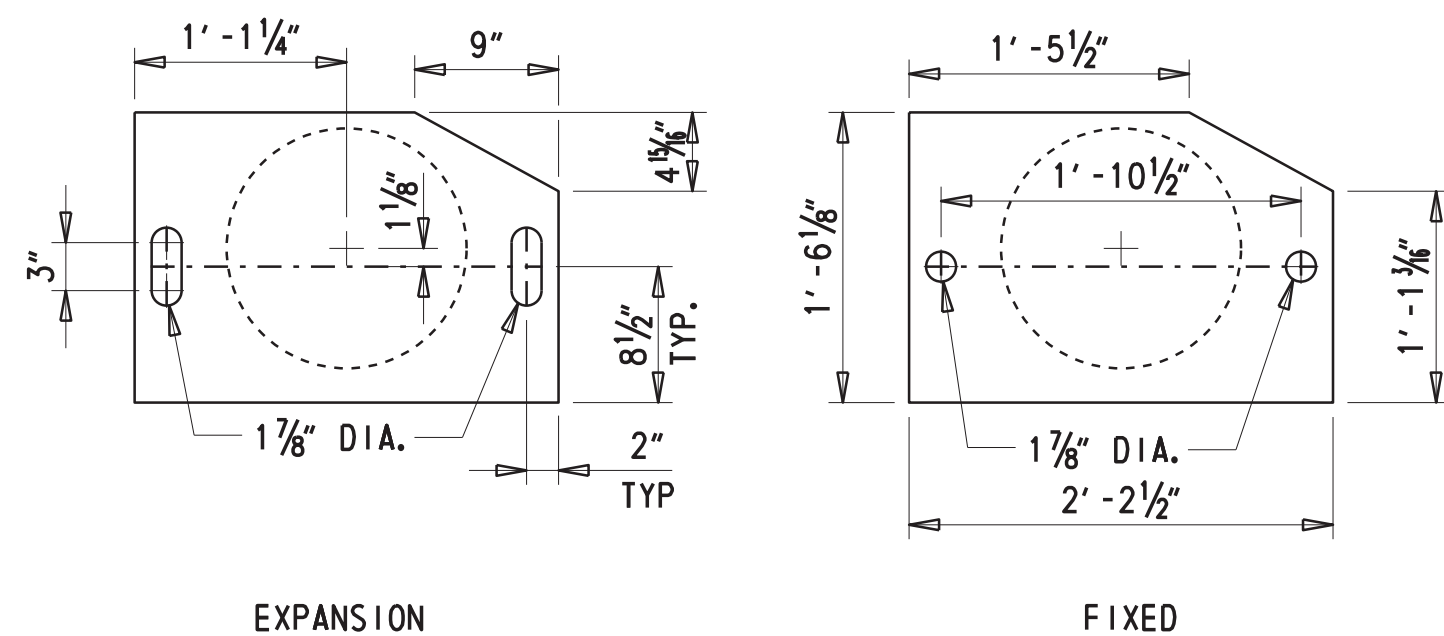
STEEL REINFORCED ELASTOMERIC BEARING ELEVATION

N. T. S.



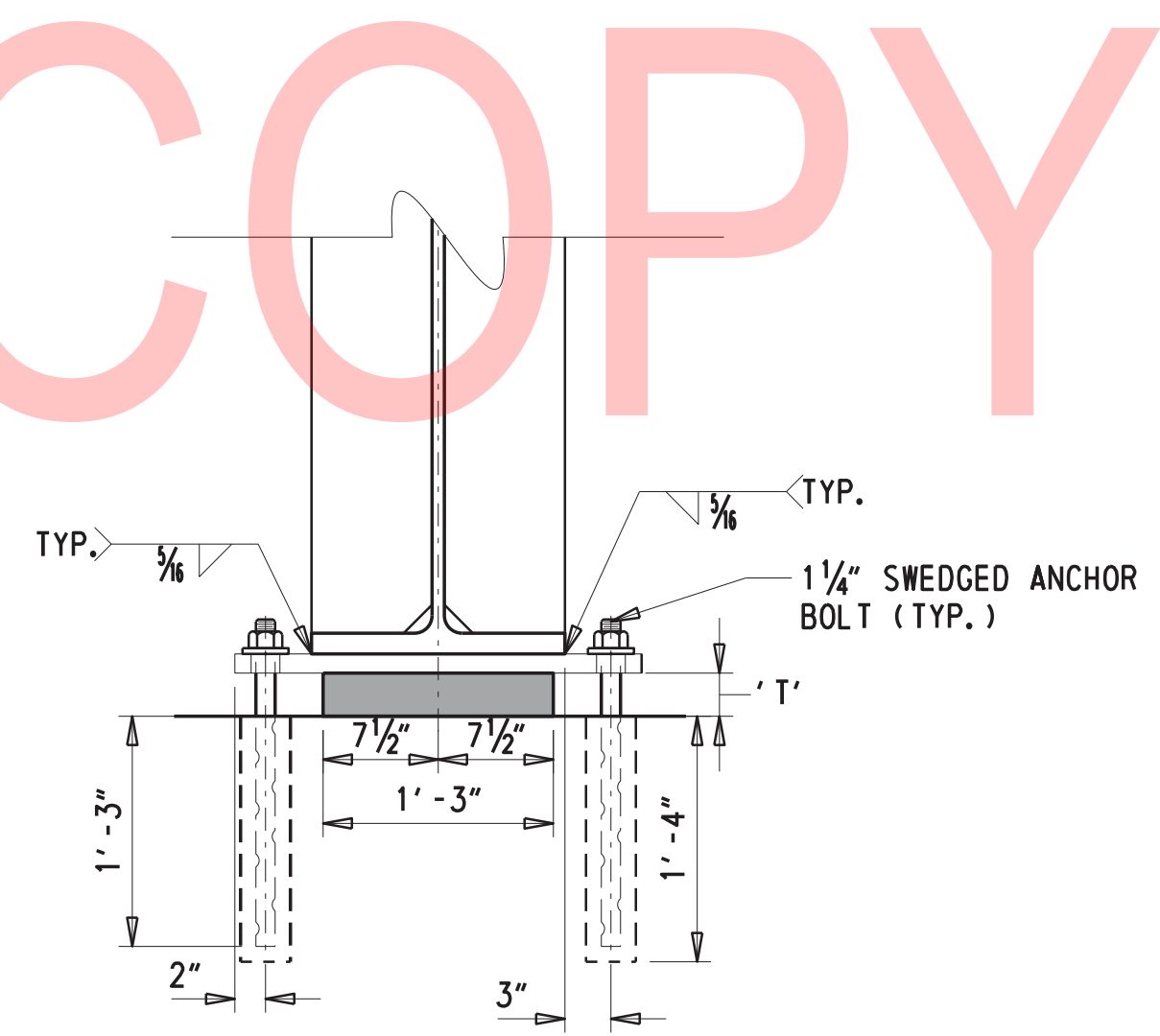
ABUTMENT BEARING PLAN DETAIL

1" = 1'



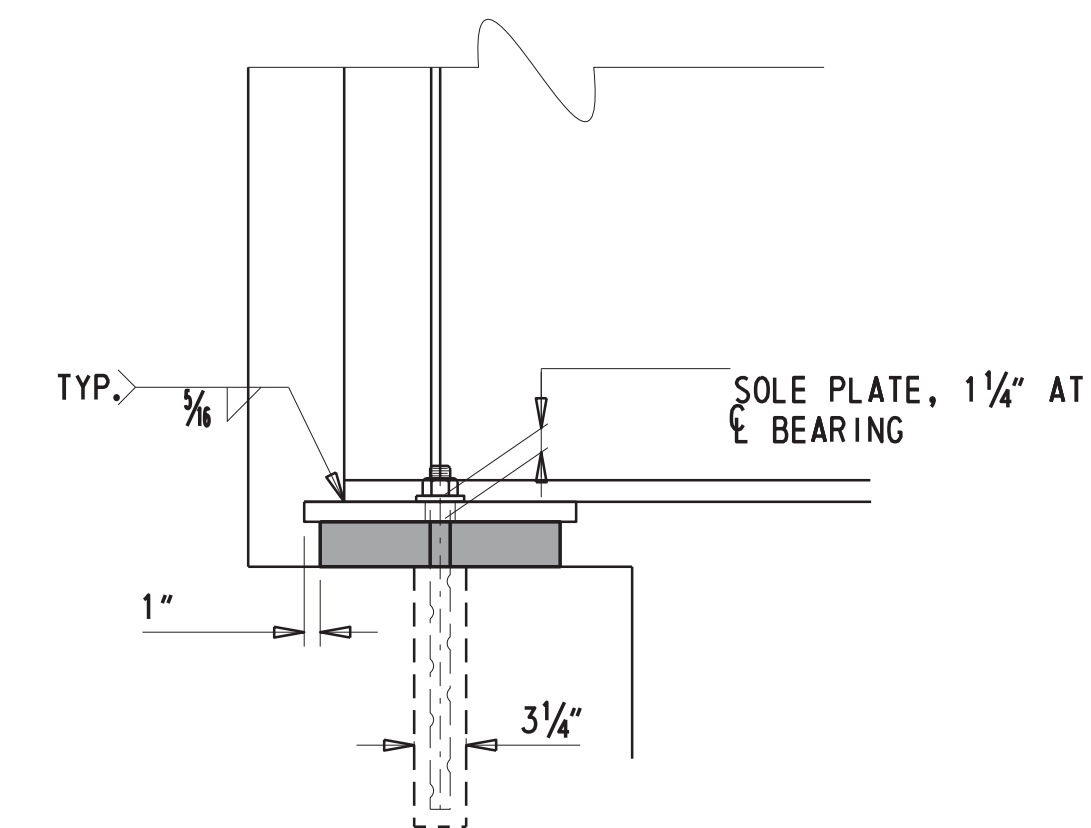
SOLE PLATE PLAN DETAIL

1" = 1'-0"



ABUTMENT BEARING ELEVATION

N. T. S.



ABUTMENT BEARING SIDE ELEVATION

N. T. S.

ADDENDA / REVISIONS

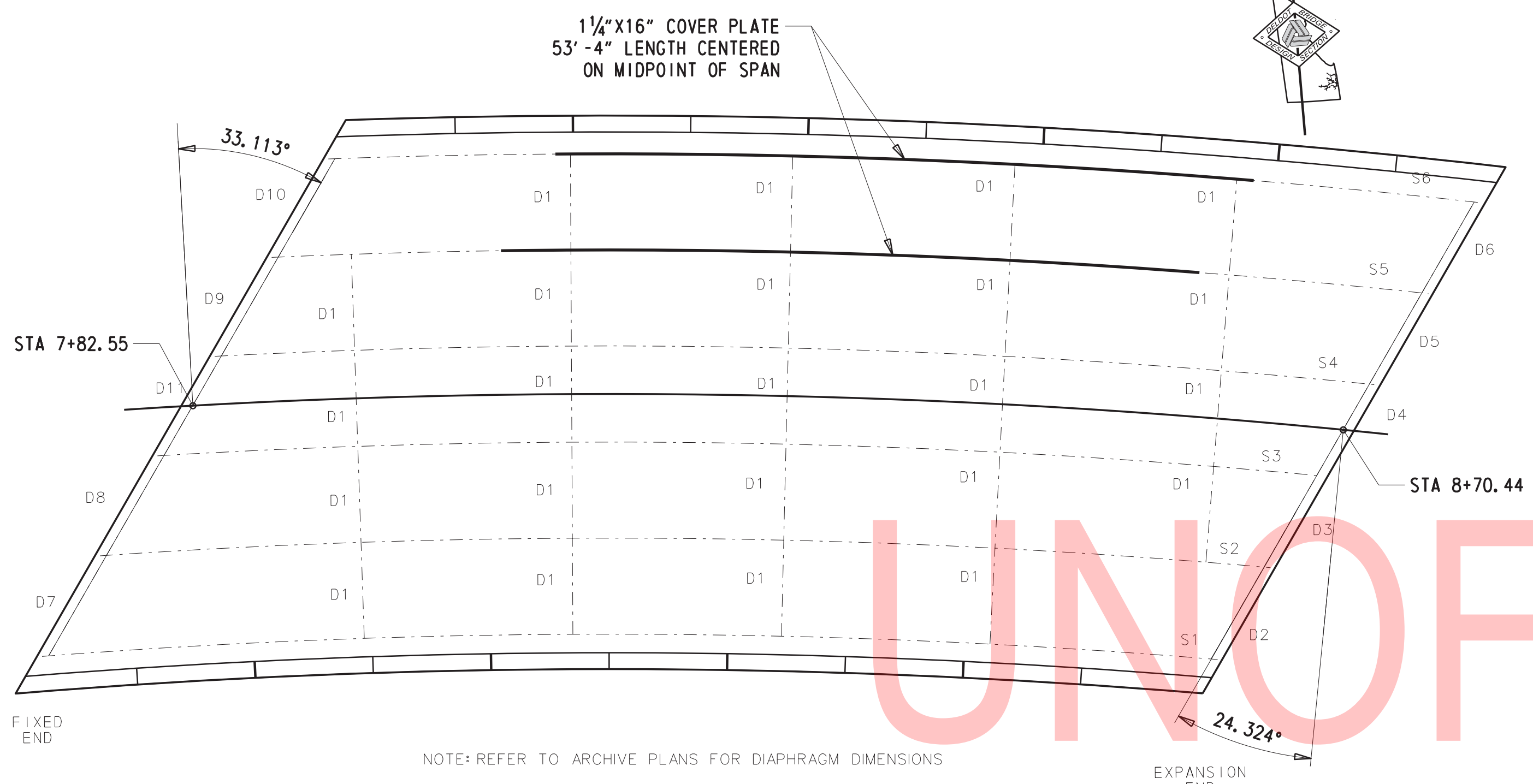
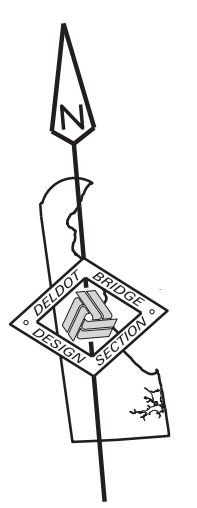
SCALE AS NOTED

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

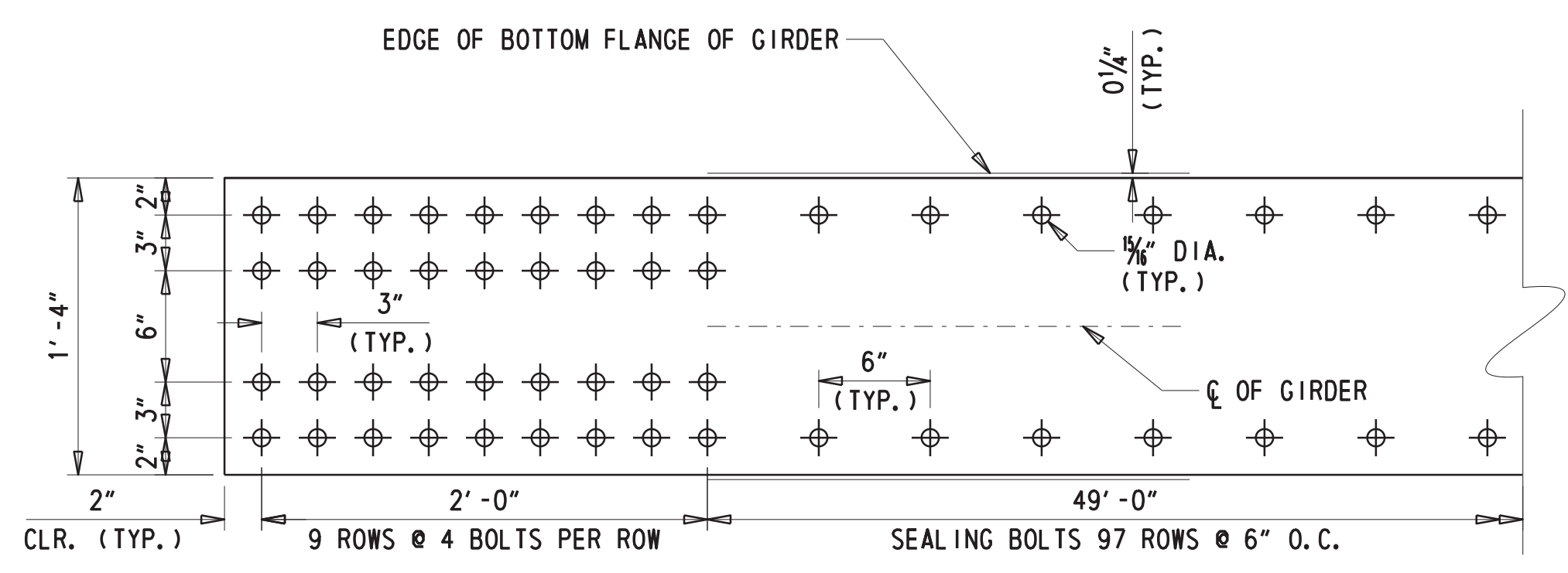
CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

BEARING DETAILS

SECTION
BR
SHEET NO.
14

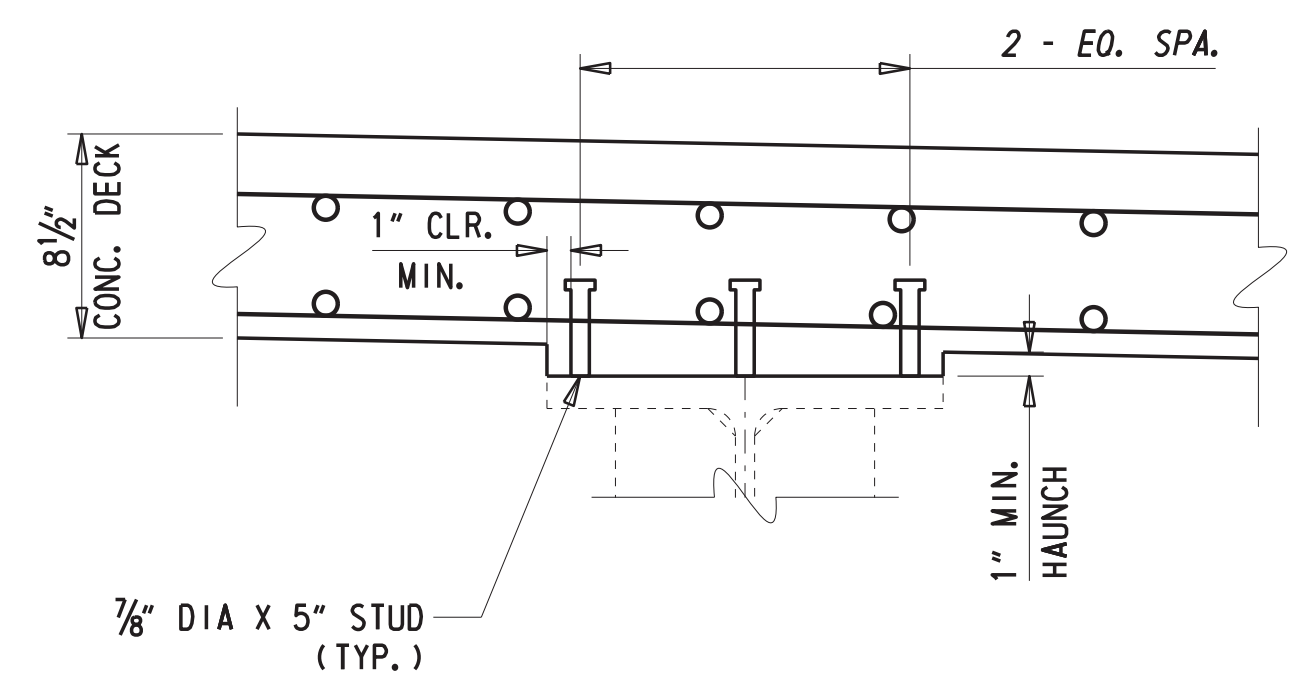


EXISTING FRAMING PLAN
1/8" = 1'-0"

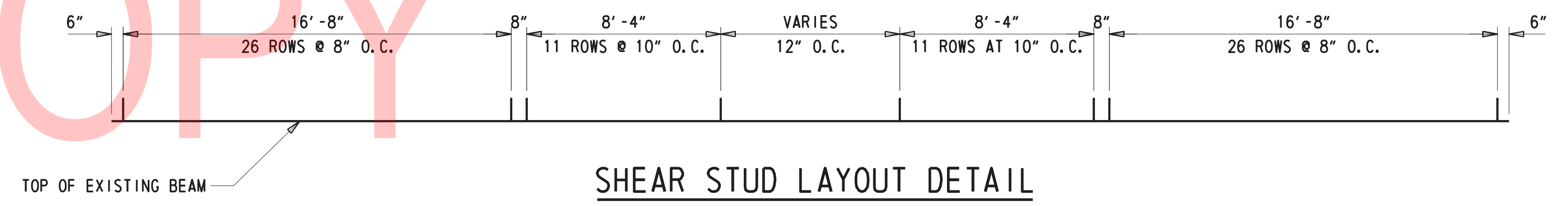


COVER PLATE BOLTING PATTERN
1 1/2" = 1'-0"

- NOTES:
- COVER PLATES INSTALLED ON GIRDERS 5 AND 6 ONLY.
 - RADIUS NOT DRAWN FOR CLARITY. ALL DISTANCES AND RADII MEASURED ALONG THE CENTERLINE OF PLATE.
 - FABRICATE COVER PLATE FROM SINGLE PIECE OF AASHTO M270 GR 50W STEEL WITH NO WELDS
 - RADIUS S5 = 583.960 FT
 - RADIUS S6 = 591.290 FT
 - COVER PLATE BOLTING PATTERN TO BE SYMMETRICAL ABOUT THE MIDPOINT AND CENTERLINE.
 - PREPARE BOTTOM FLANGE OF GIRDER TO SSPC-SP6 BEFORE INSTALLING COVER PLATE. PAYMENT UNDER ITEM 616000 CLEANING AND PAINTING OF EXISTING STEEL.
 - APPLY A ZINC RICH PRIMER MEETING THE REQUIREMENTS OF NEPCOAT PRODUCT LIST A TO THE FAYING SURFACE OF COVER PLATE BEFORE DELIVERY. PAYMENT UNDER ITEM 616000 CLEANING AND PAINTING OF EXISTING STEEL.
 - USE 7/8" DIAMETER ASTM A325 TYPE 3 BOLTS WITH A WASHER UNDER THE NUT. REFER TO STANDARD SPECIFICATION SECTION 1039 FOR NUT AND WASHER REQUIREMENTS.
 - SEAL ALL BOLTS AND PERIMETER OF FAYING SURFACE WITH NON HARDENING CAULK COMPOUND INCIDENTAL TO ITEM 615001
 - ALL WORK NOT COVERED UNDER NOTES 7 & 8 WILL BE INCIDENTAL TO ITEM 615001 - STEEL STRUCTURES, LS.



SHEAR STUD DETAIL
1 1/2" = 1'-0"



SHEAR STUD LAYOUT DETAIL
1/4" = 1'-0"

- NOTES:
- REMOVAL, REPLACEMENT, AND/OR REPAIR OF SHEAR STUDS TO BE IN ACCORDANCE WITH AWS D1.5 (2015) SECTION 7. ALL WORK INCIDENTAL TO ITEM 615001 - STEEL STRUCTURES, LS
 - THE AREAS TO WHICH THE STUDS ARE TO BE WELDED SHALL BE FREE OF SCALE, RUST, MOISTURE, AND OTHER INJURIOUS MATERIALS TO THE EXTENT NECESSARY TO OBTAIN SATISFACTORY WELDS. THESE AREAS MAY BE CLEANED BY WIRE BRUSHING, SCALING, PRICK PUNCHING OR GRINDING. CLEANING OF TOP FLANGE INCIDENTAL TO ITEM 615001 - STEEL STRUCTURES, LS
 - REFER TO EXPANSION JOINT DETAILS FOR SHEAR STUD PLACEMENT ON END DIAPHRAGMS

ADDENDA / REVISIONS

SCALE AS NOTED

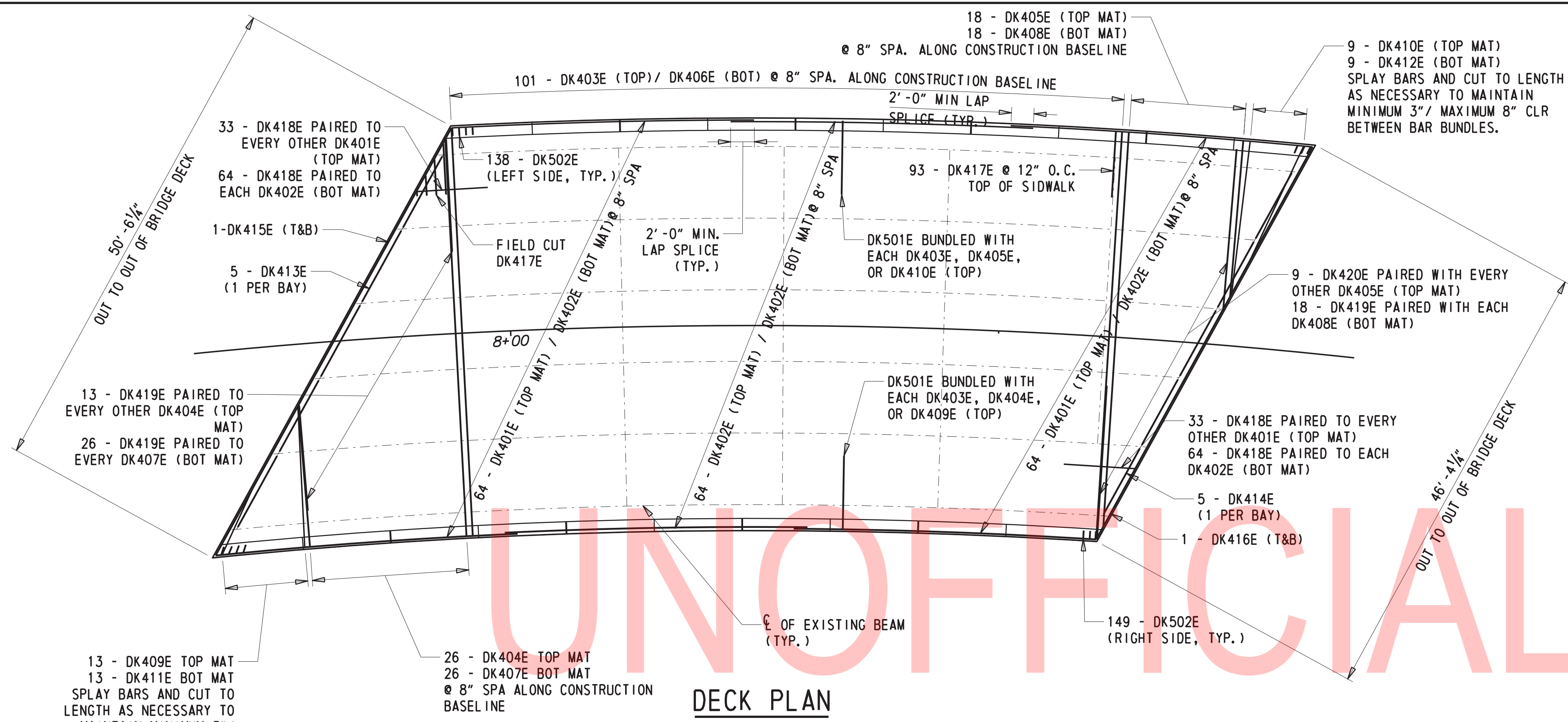
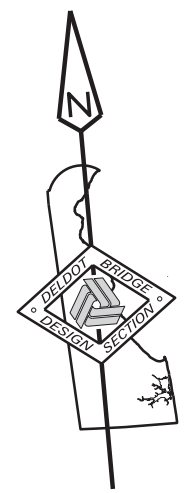
**BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK**

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

FRAMING PLAN

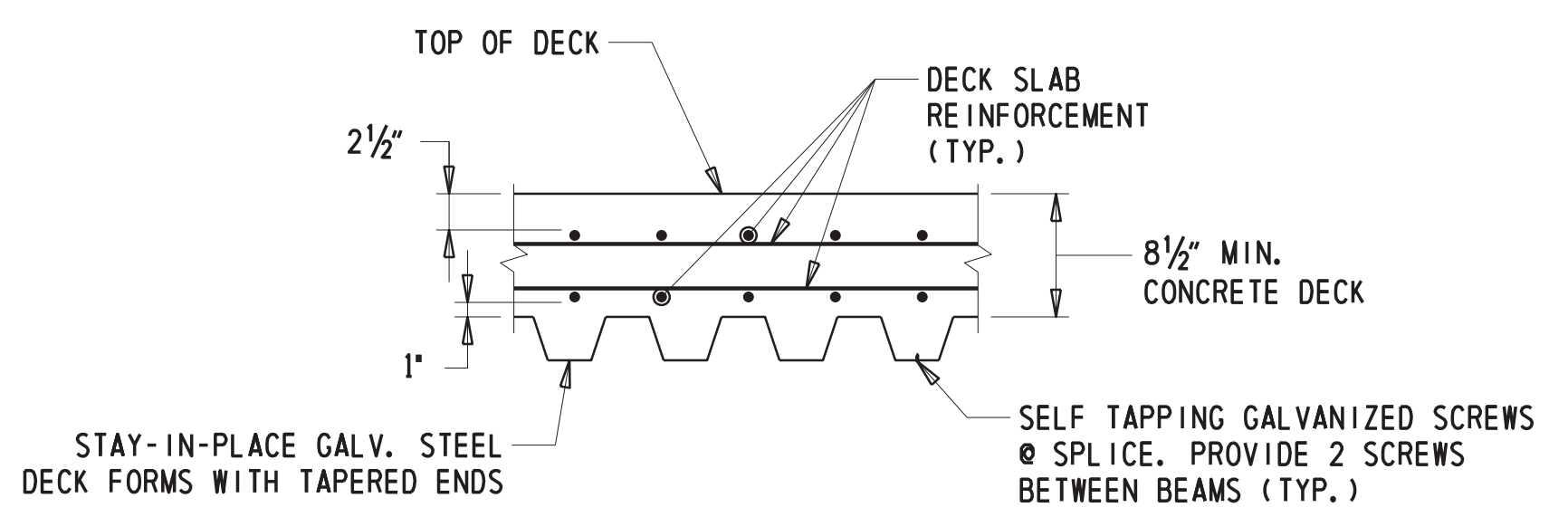
SECTION
BR
SHEET NO.
15

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DECK PLAN
1/8" = 1'

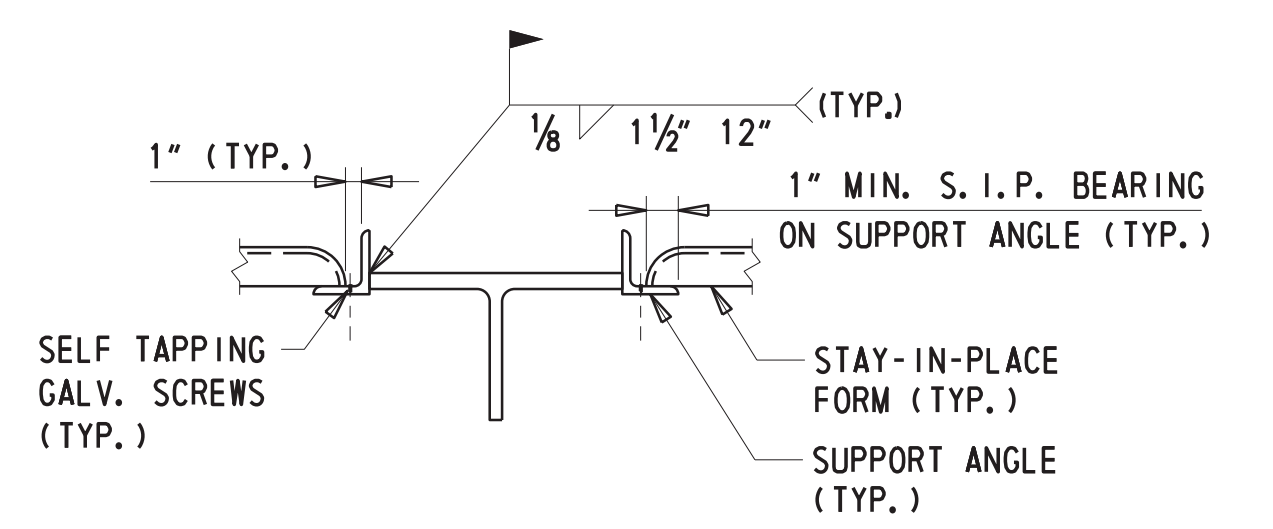
- NOTE:
- ADJUST DK403E, DK404E, DK405E, AND DK410E BAR SPACING AS NEEDED TO ENSURE AT LEAST ONE END OF EACH BARRIER SECTION HAS 2" CLEAR COVER. SPACING OF THESE BARS IS 12" MAXIMUM / 4" MINIMUM.
 - ALL EPOXY COATING ON FIELD CUT BARS TO BE REPAIRED IN ACCORDANCE WITH ASTM A775



STAY-IN-PLACE STEEL FORM DETAIL

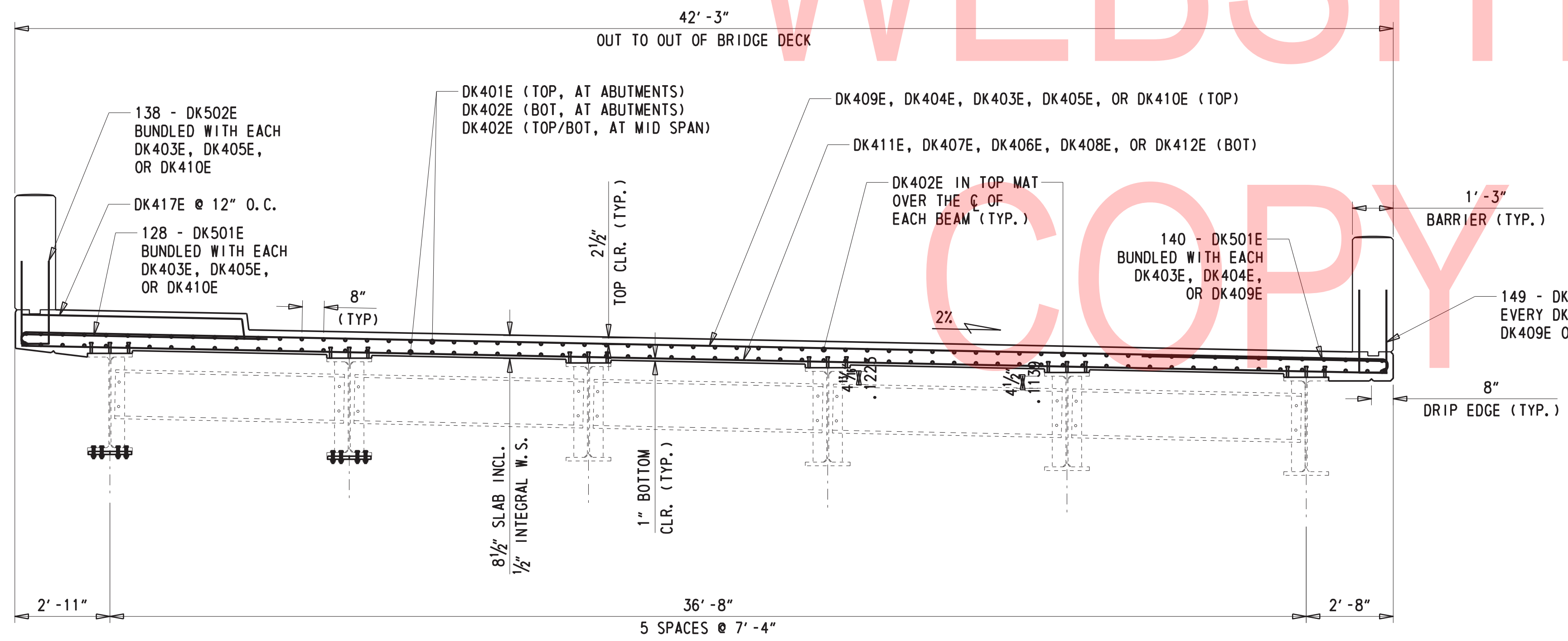
N. T. S.

NOTE: CONCRETE VOLUME TO FILL SIP FORMS INCIDENTAL TO ITEM 610016 PCC MASONRY, BRIDGE DECK, CLASS D

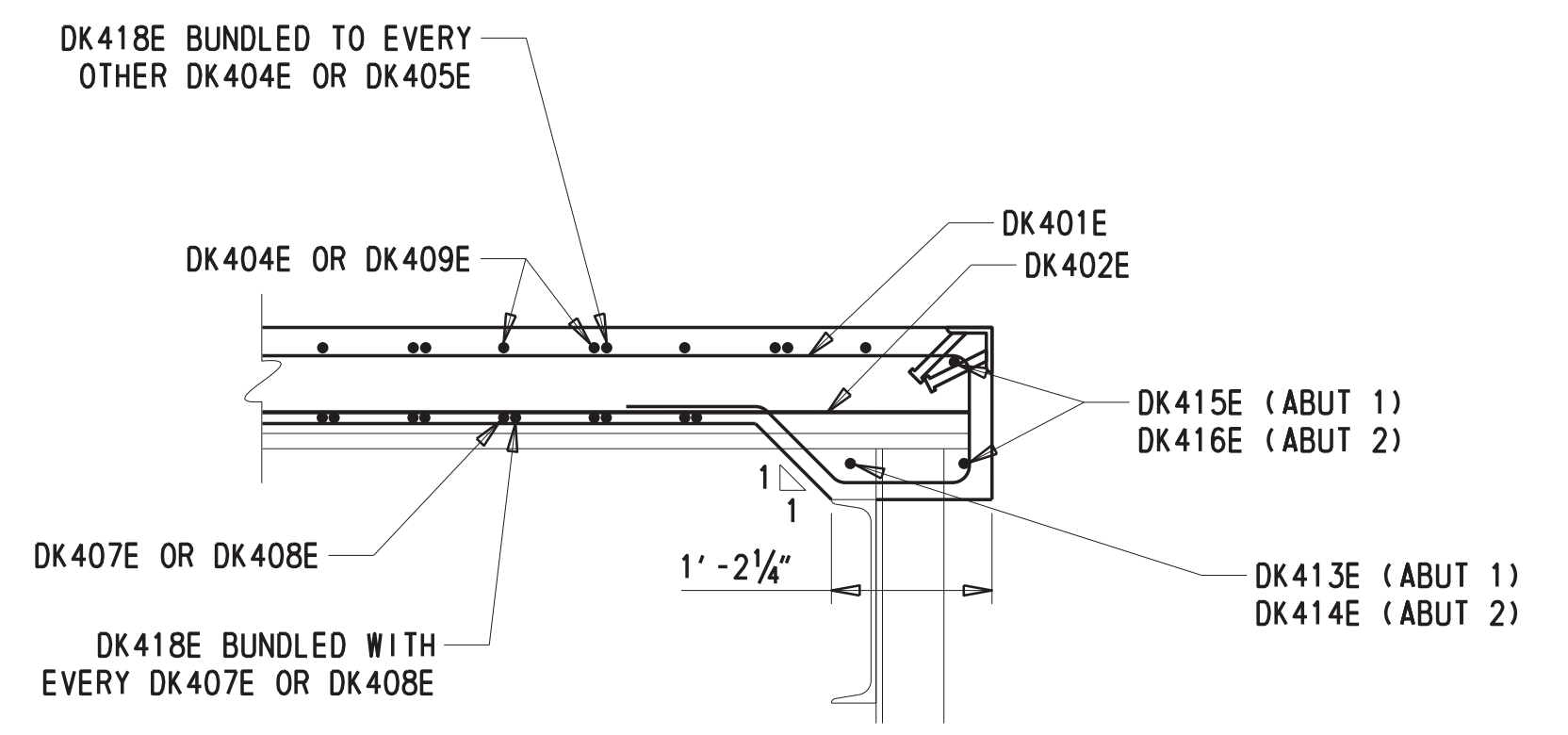


STAY-IN-PLACE FORM CONNECTION DETAIL

N. T. S.



DECK SECTION (FACING UPSTATION)
3/8" = 1'



END DIAPHRAGM DETAIL
3/4" = 1'

NOTE: SHEAR CONNECTORS NOT SHOWN FOR CLARITY SPACE DK401E ADJACENT TO TOP FLANGE OF BEAM TO ELIMINATE CONFLICT USE DK402E AT CENTERLINE OF EACH BEAM IN TOP MAT IN LIEU OF DK401E

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ADDENDA / REVISIONS

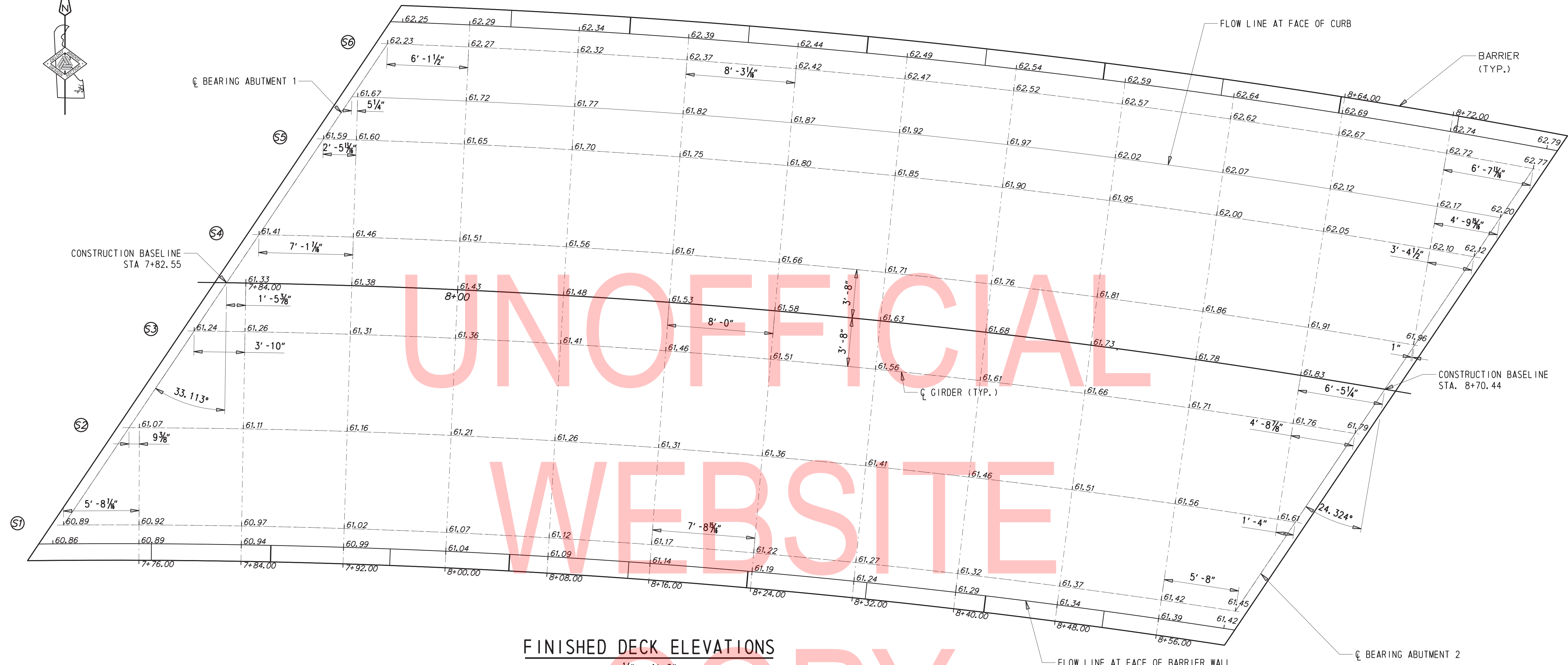
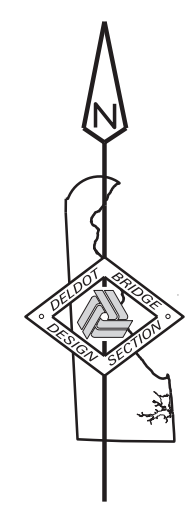
SCALE AS NOTED

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

DECK DETAILS

DK-01
SECTION
BR
SHEET NO.
16

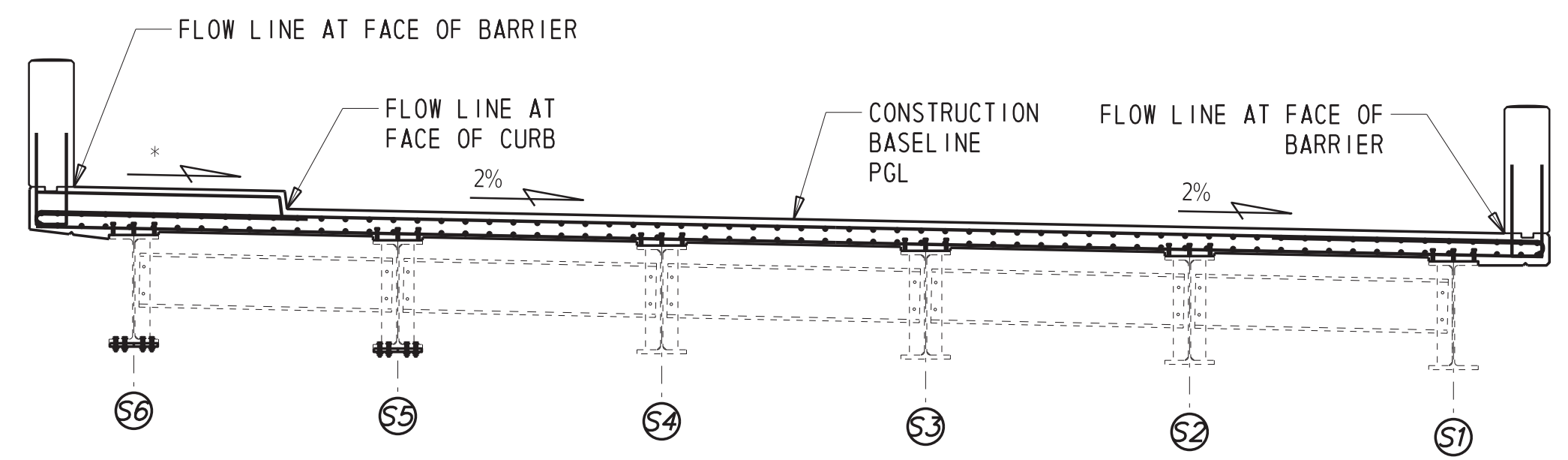


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WEBSITE
COPY

FINISHED DECK ELEVATIONS

1/4" = 1'-0"

* ELEVATIONS AT SIDEWALK ARE CALCULATED USING 1.5% SLOPE. THE MAXIMUM PERMISSIBLE SLOPE OF THE SIDEWALK IS 2.0% *



LOCATION OF FINISHED DECK ELEVATIONS

1/4" = 1'-0"

ADDENDA / REVISIONS

SCALE AS NOTED

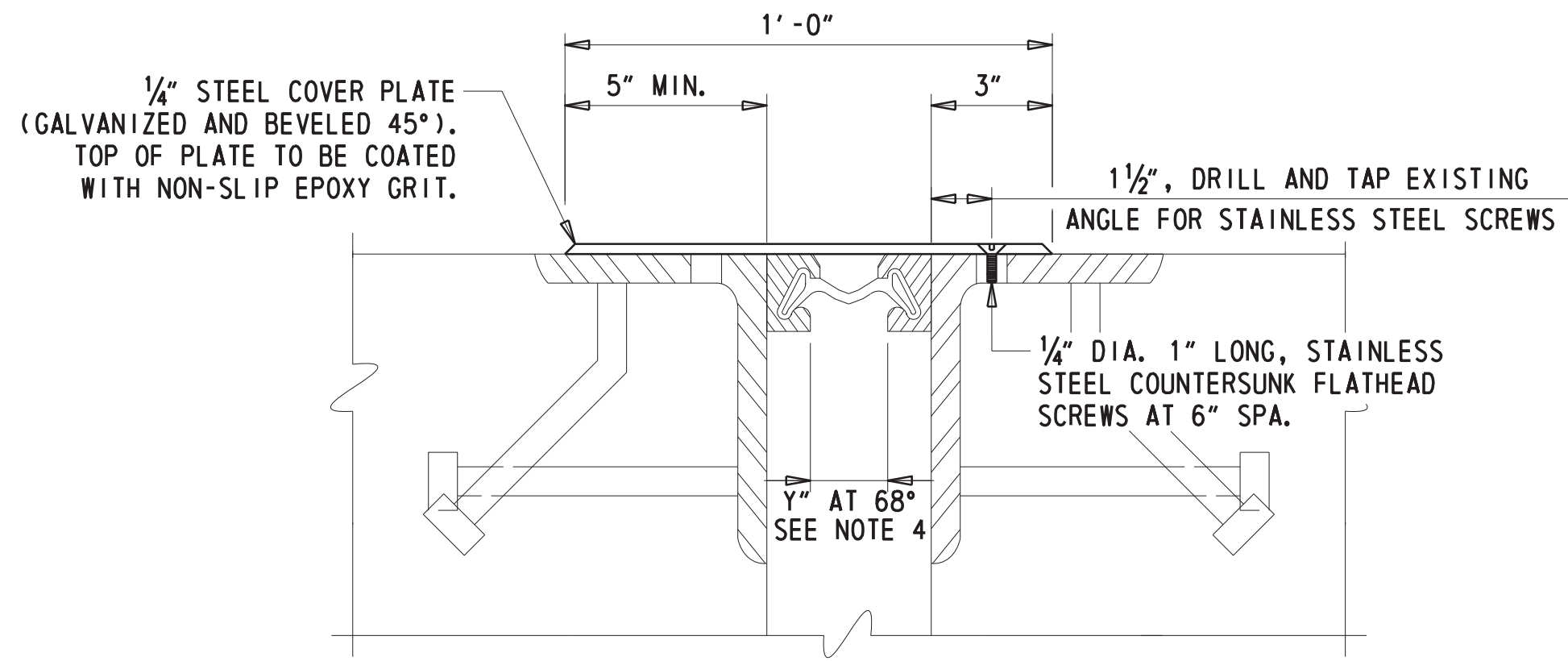
**BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK**

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

**FINISHED BRIDGE
DECK ELEVATIONS**

DK-02
SECTION
BR
SHEET NO.
17

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JOINT SECTION AT SIDEWALK

NOTE:
 -ALL STEEL MUST BE ASTM A709, GRADE 36 or 50 AND HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
 -APPLY EPOXY COATING ON BOTH SIDES OF THE STEEL COVER PLATE. THE TOP OF PLATE (WALKING SURFACE) MUST RECEIVE NON-SLIP EPOXY GRIT COATING IN ACCORDANCE WITH ADA A4.5.
 -SIDEWALK PLATE INCIDENTAL TO ITEM 624000

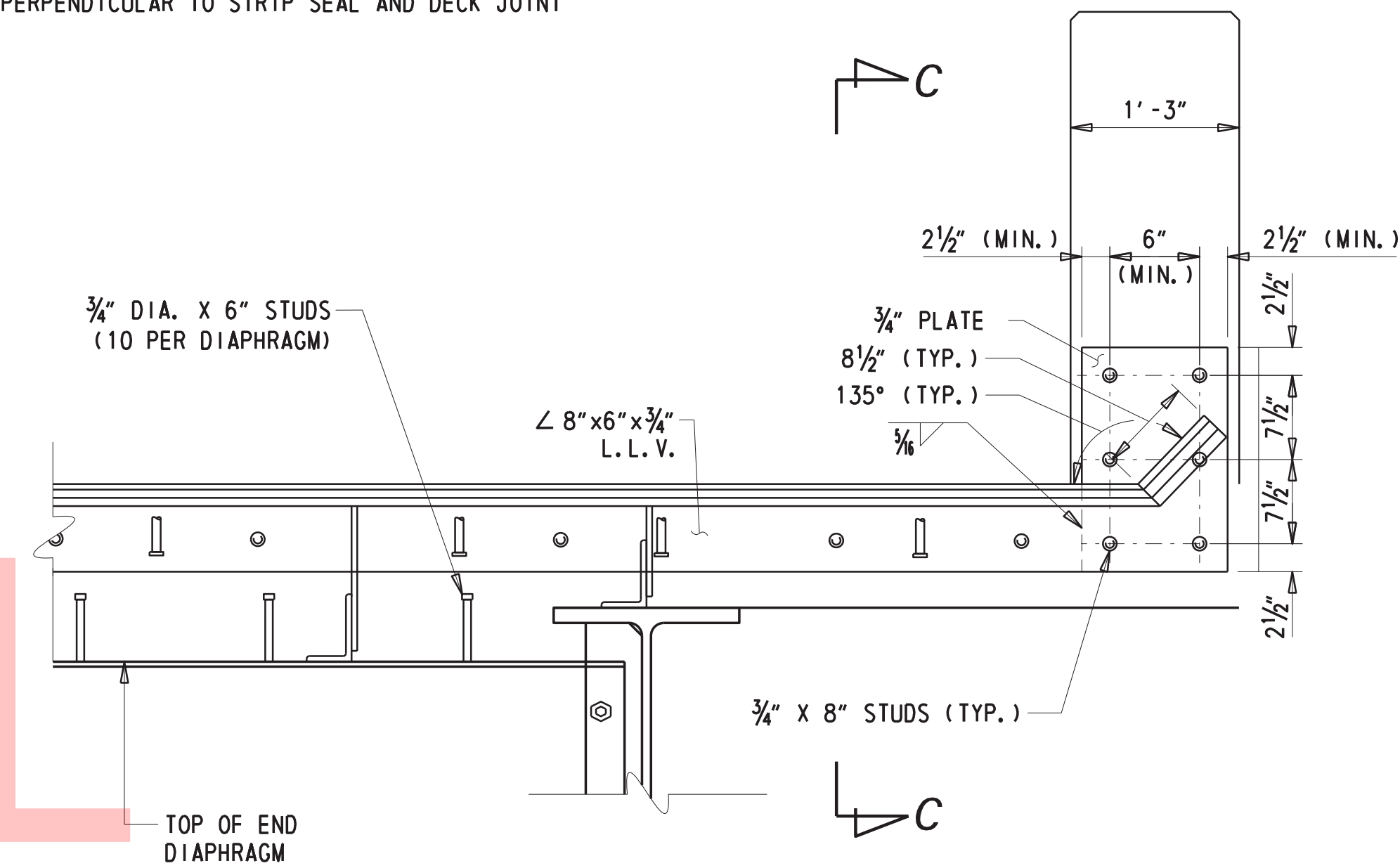
LOCATION	JOINT OPENING (INCH)													MOVEMENT CLASSIFICATION	
	TEMPERATURE (F °)														
	0	10	20	30	40	50	60	68	70	80	90	100	110	120	
ABUTMENT 1	1.750	---	---	---	---	---	---	1.750	---	---	---	---	---	1.750	3"
ABUTMENT 2	2.228	2.158	2.087	2.017	1.947	1.876	1.806	1.750	1.736	1.666	1.595	1.525	1.455	1.385	3"

NOTE: JOINT OPENING IS MEASURED PERPENDICULAR TO STRIP SEAL AND DECK JOINT

STRIP SEAL EXPANSION JOINT NOTES

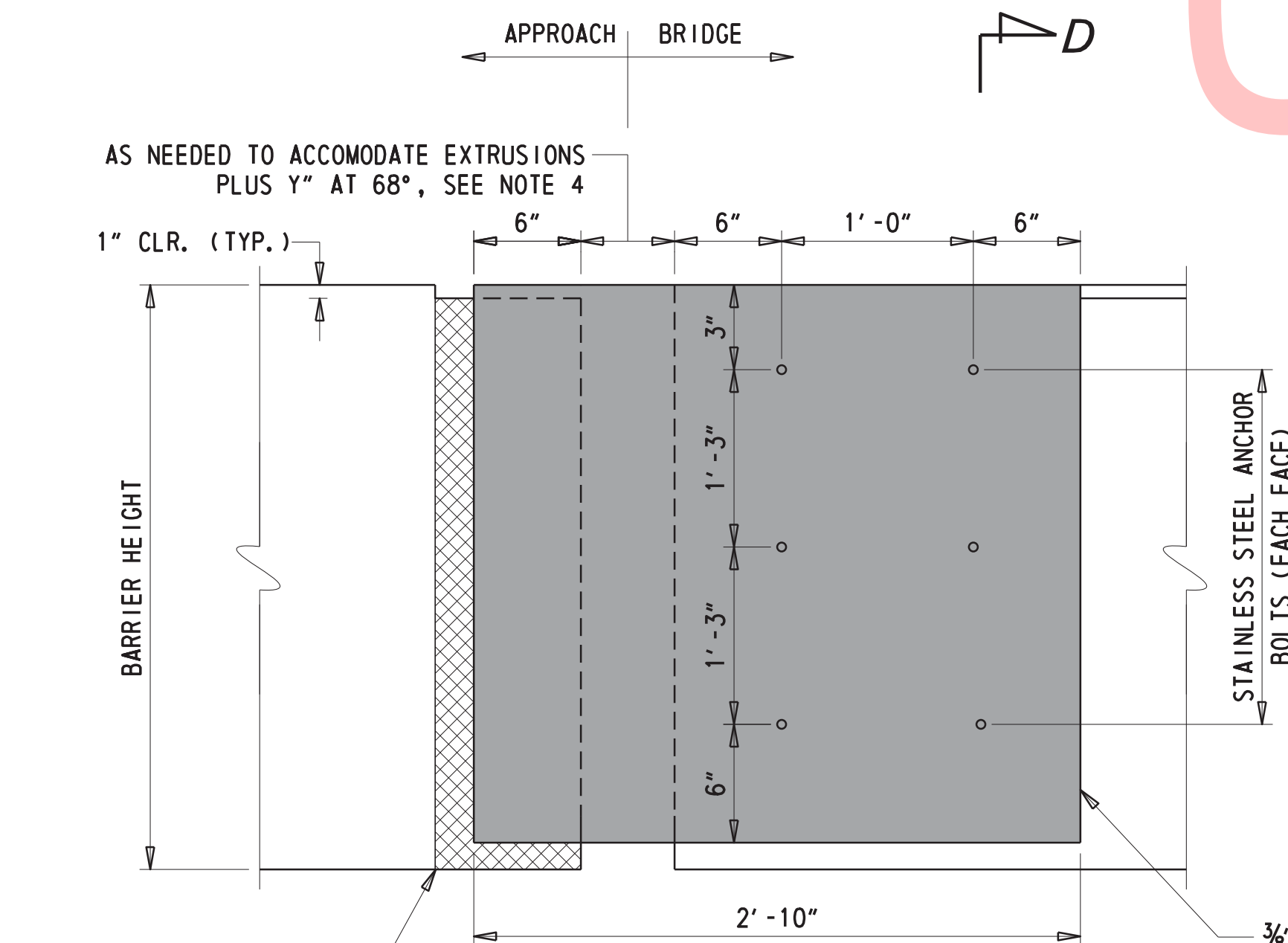
- STEEL FOR DECK JOINTS AND STEEL EXTRUSIONS SHALL BE AASHTO M270, GR. 36 (ASTM A36) AT MINIMUM.
- NEOPRENE EXTRUSION TO MEET ASTM D-2628-91 MODIFIED, (RECOVERY TESTS EXCLUDED).
- THE EXPANSION JOINT SHALL BE CAPABLE OF SEALING THE DECK TO PREVENT MOISTURE AND OTHER CONTAMINANTS FROM DESCENDING THROUGH THE JOINT.
- THE CONTRACTOR SHALL ADJUST THE OPEN JOINT (defined as 'Y') AS REQUIRED BY THE WIDTH OF THE STEEL EXTRUSION USED SO AS TO PROVIDE A 1 3/4" JOINT OPENING AT 68°F.
- THE STRIP SEAL SHALL BE INSTALLED IN ONE PIECE ACROSS THE BRIDGE WIDTH. SPLICING OF THE STRIP SEAL IS NOT PERMITTED.
- THE EXPANSION JOINT SYSTEM IS PAID FOR UNDER 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".
- ENTIRE EXPANSION DAM SHALL BE PAINTED AFTER FABRICATION USING AN APPROVED URETHANE SYSTEM IN ACCORDANCE WITH SECTION 624 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED.
- LUBRICANT-ADHESIVE FOR USE IN INSTALLING AND BONDING NEOPRENE SEAL ELEMENTS TO STEEL JOINT COMPONENTS SHALL BE A ONE QUART MOISTURE-CURING POLYURETHANE AND HYDROCARBON SOLVENT MIXTURE HAVING THE FOLLOWING PHYSICAL PROPERTIES:

AVERAGE WEIGHT, POUNDS PER GALLON	8 +/- 10%
SOLIDS CONTENT	65%
ADHESIVE SHALL REMAIN LIQUID FROM	5°F TO 120°F
FILM STRENGTH, AS PER ASTM D-412	2,000 PSI
ELONGATION	250%
- HOLES SHALL BE PLACED IN THE RIB PLATES AND STRAP ANCHOR PLATES FOR BAR REINFORCEMENT. IF THIS IS DONE IN THE FIELD AN APPROVED EPOXY-BONDED PAINT SHALL BE USED TO TOUCH-UP THE HOLES. PAYMENT INCIDENTAL TO 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".
- ANCHOR PLATE AND STEEL EXTRUSION SHALL BE WELDED TO BE WATERTIGHT AT CONSTRUCTION JOINTS. PAYMENT INCIDENTAL TO 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".
- TRAFFIC BARRIER PLATES:
 - USE 1/2" DIAMETER, 1 1/2" LENGTH TYPE 316 STAINLESS STEEL COUNTERSUNK FLATHEAD SCREWS WITH 3 1/2" LONG ASTM A108 CONCRETE THREADED INSERT.
 - THE HEAD OF SCREWS SHALL BE FLUSH WITH FACE OF STEEL PLATE.
 - THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS OF TRAFFIC BARRIER PLATES FOR APPROVAL.
 - TRAFFIC BARRIER PLATES INCIDENTAL TO ITEM 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3"
- AT AREAS WHERE STEEL MEMBERS ARE TO BE SPLICED, USE OF COMPLETE JOINT PENETRATION (CJP) AND PARTIAL JOINT PENETRATION (PJP) WELD ARE BOTH PERMITTED. THE THICKNESS OF PJP WELD MUST BE MINIMUM ONE HALF OF THE STEEL MEMBER THICKNESS.



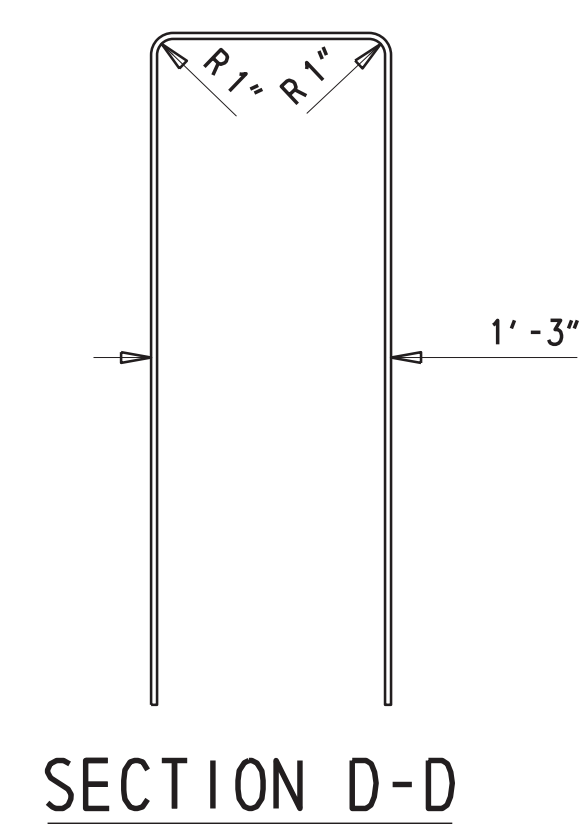
SECTION (B-B) (RIGHT SIDE)

NOTE: ZERO SLOPE SHOWN FOR CLARITY

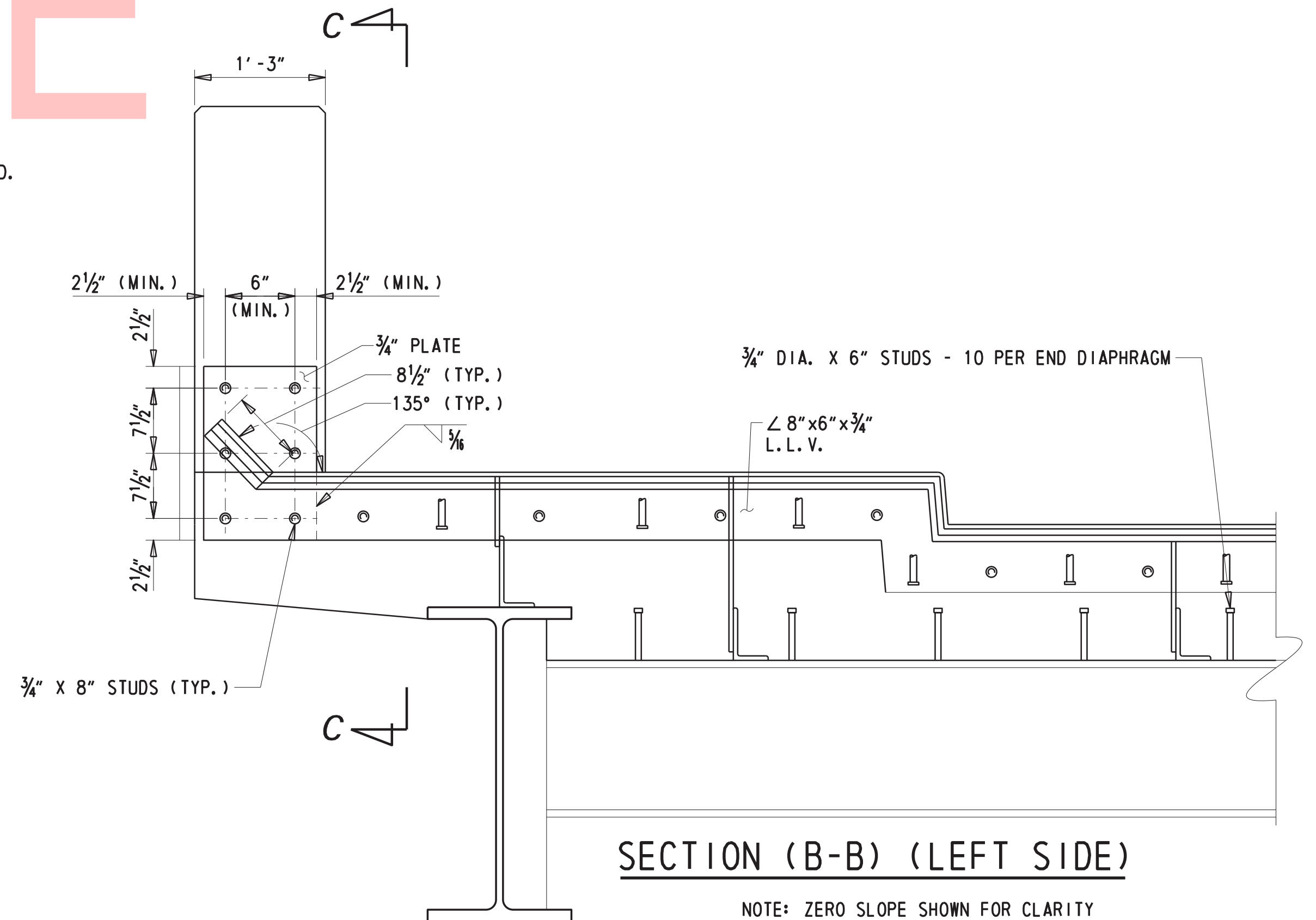


SECTION C-C

NOTE: STRUCTURAL COMPONENTS BELOW BARRIER NOT SHOWN FOR CLARITY.



SECTION D-D



SECTION (B-B) (LEFT SIDE)

NOTE: ZERO SLOPE SHOWN FOR CLARITY

ADDENDA / REVISIONS

NOT TO SCALE

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

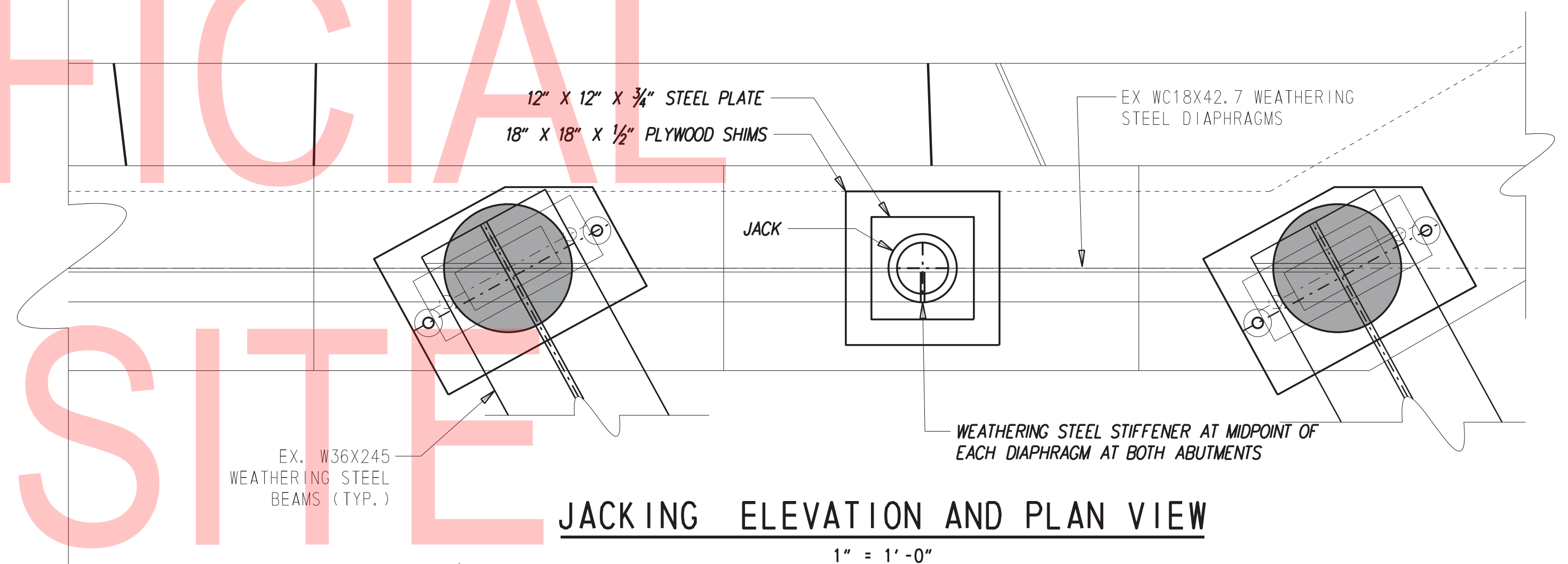
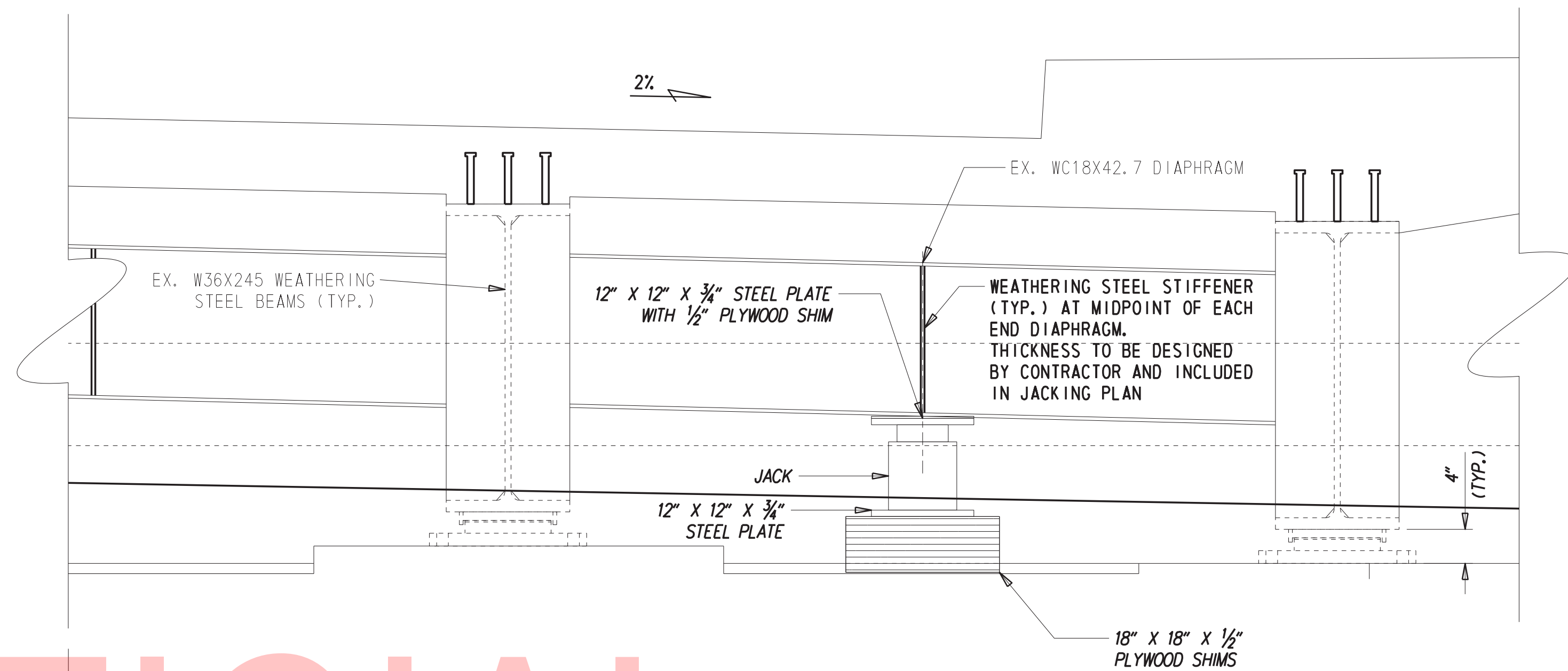
EXPANSION JOINT DETAILS

EX-02
SECTION
BR
SHEET NO.
19

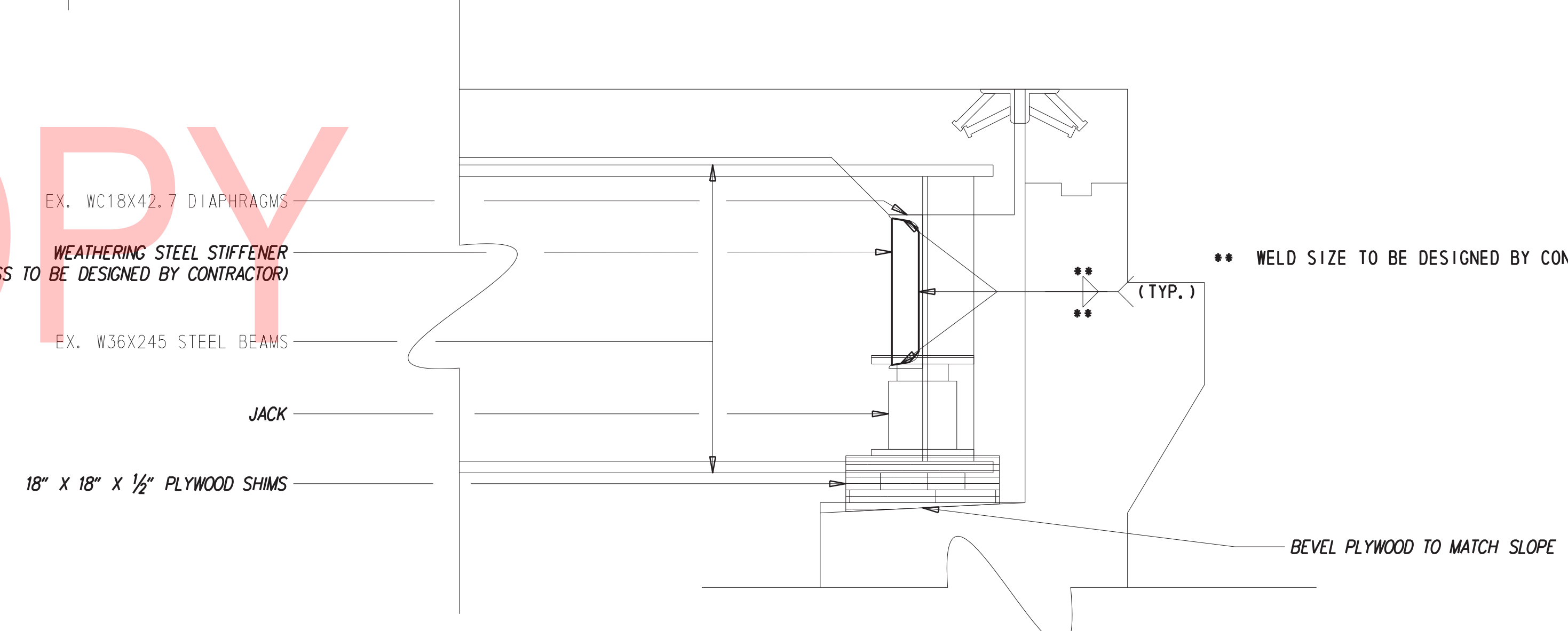
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JACKING NOTES

1. THE CONTRACTOR WILL SURVEY THE BOTTOM FLANGE OF EACH GIRDER AT THE ABUTMENT FACE PRIOR TO THE START OF JACKING. PAYMENT FOR THIS SHALL BE INCIDENTAL TO ITEM #604000 - JACKING BRIDGE
2. ALL LOADS SHOWN ON THIS SHEET ARE THE ANTICIPATED LOADS AT EACH ABUTMENT AFTER DEMOLITION OF THE BRIDGE RAILINGS, SIDEWALK, AND DECK AND DOES NOT INCLUDE ANY DEAD LOAD FOR ITEM 604001 - PROTECTIVE SHIELD
3. JACKS SHALL HAVE A MINIMUM CAPACITY RATING OF TWICE THE LOADS SHOWN ON THE PLANS. JACK CAPACITY SHALL BE SHOWN CLEARLY ON THE MANUFACTURER NAMEPLATE AFFIXED TO EACH JACK.
4. JACKS SHALL BE EQUIPPED WITH LOCKING DEVICES
5. BEAMS SHALL BE JACKED TO THE NECESSARY HEIGHT TO REMOVE AND REPLACE BEARINGS. THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT GIRDERS SHALL NOT EXCEED 1/8 INCH FROM EACH OTHER.
6. FURNISHING AND INSTALLING STIFFENERS IN THE END DIAPHRAGMS SHALL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE. STIFFENERS FOR JACKING TO REMAIN IN PLACE.
7. REMOVE JACKING SYSTEM PRIOR TO PLACEMENT OF CONCRETE DECK.



JACKING ELEVATION AND PLAN VIEW
1" = 1'-0"



JACKING PROFILE
1" = 1'-0"

EAST ABUTMENT JACKING LOADS			WEST ABUTMENT JACKING LOADS		
GIRDER	CALCULATED DL	1.65xDL	GIRDER	CALCULATED DL	1.65xDL
S1	11.368 KIP	18.76 KIP	S1	11.368 KIP	18.76 KIP
S2	12.021 KIP	19.83 KIP	S2	12.021 KIP	19.83 KIP
S3	12.052 KIP	19.89 KIP	S3	12.052 KIP	19.89 KIP
S4	11.940 KIP	19.70 KIP	S4	11.940 KIP	19.70 KIP
S5	11.832 KIP	19.52 KIP	S5	11.832 KIP	19.52 KIP
S6	11.131 KIP	18.36 KIP	S6	11.131 KIP	18.36 KIP

NOTE: JACKING LOADS BASED ON ASSUMPTION THAT BARRIER, SIDEWALK, CURB, AND DECK DEAD LOADS ARE REMOVED PRIOR TO JACKING OPERATION.

ADDENDA / REVISIONS

SCALE AS NOTED

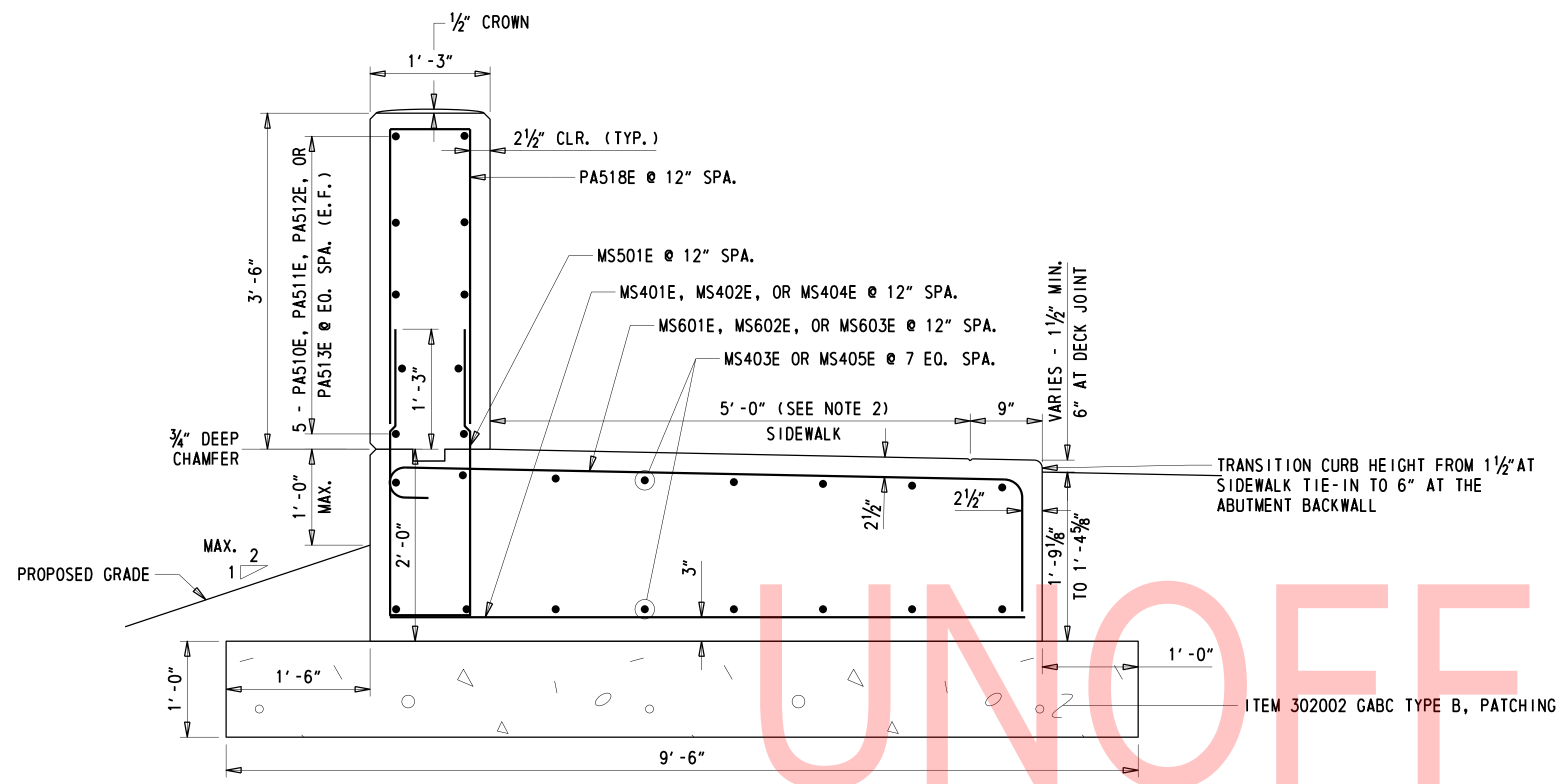
BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

JACKING DETAILS

SECTION	BR
SHEET NO.	20

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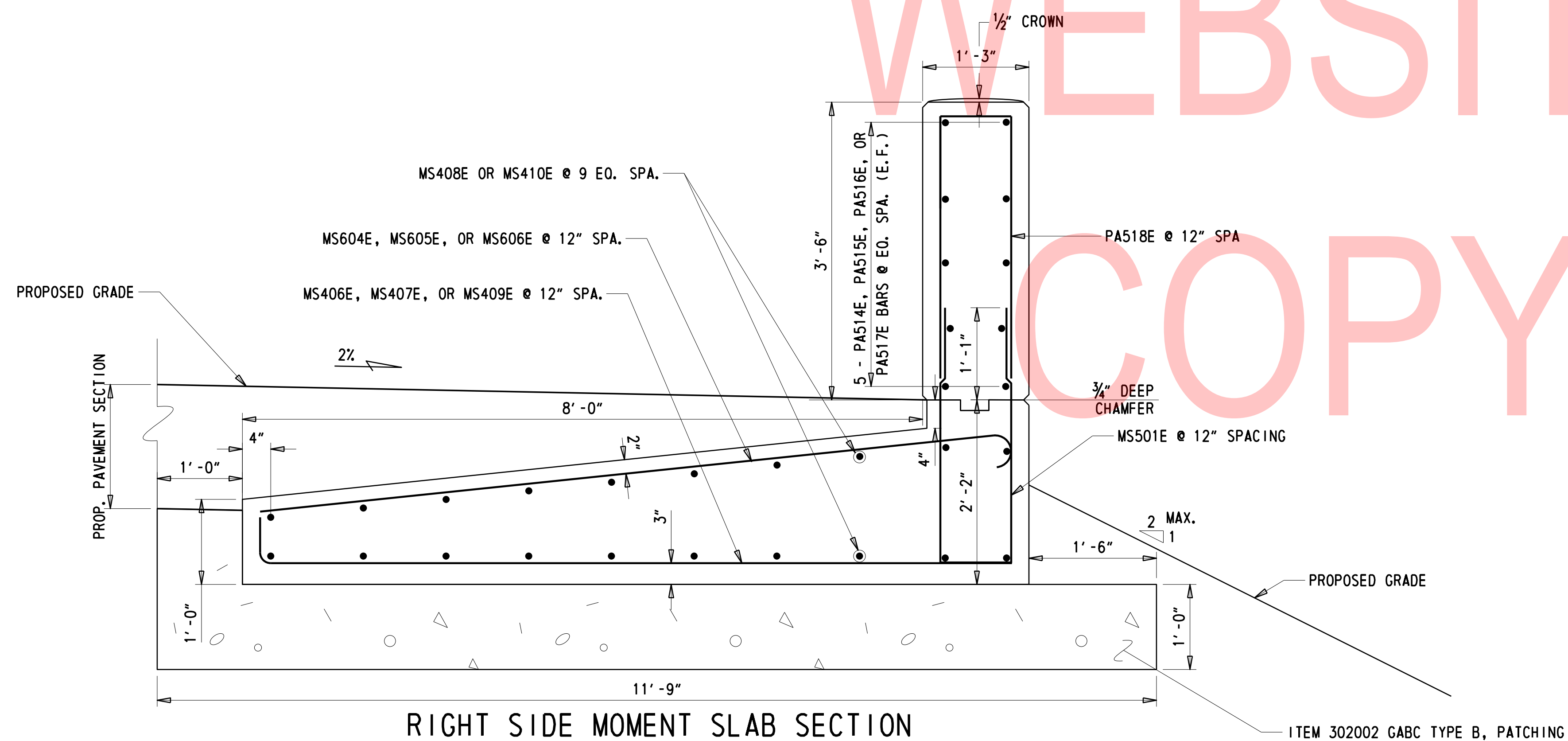


LEFT SIDE MOMENT SLAB SECTION

1" = 1'-0"

NOTE:

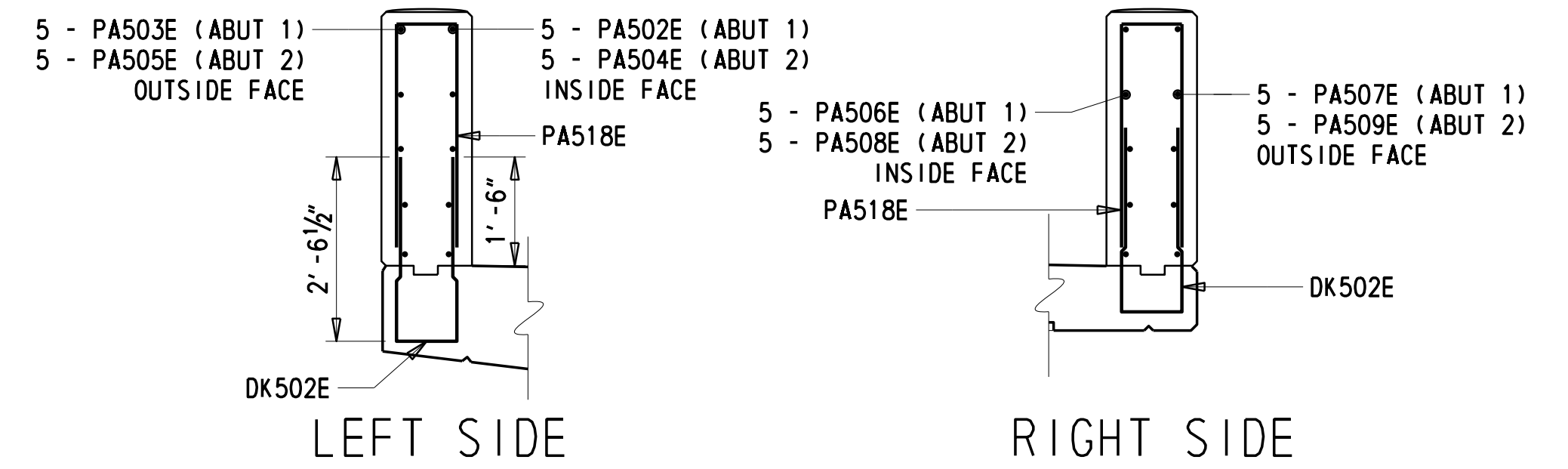
- REFER TO CONSTRUCTION DETAILS SHEET 2 OF 2 FOR BAR MARKS
- VARY THE WIDTH UNIFORMLY FROM 5'-0" AT THE SIDEWALK TIE IN TO 5'-2" AT THE BRIDGE JOINT



RIGHT SIDE MOMENT SLAB SECTION

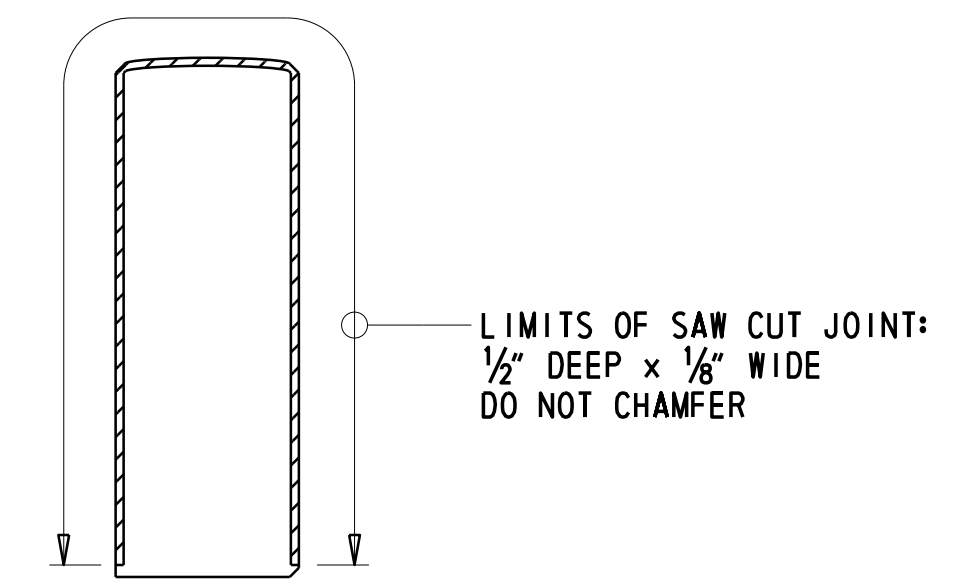
1" = 1'-0"

NOTE: REFER TO CONSTRUCTION DETAILS SHEET 2 OF 2 FOR BAR MARKS



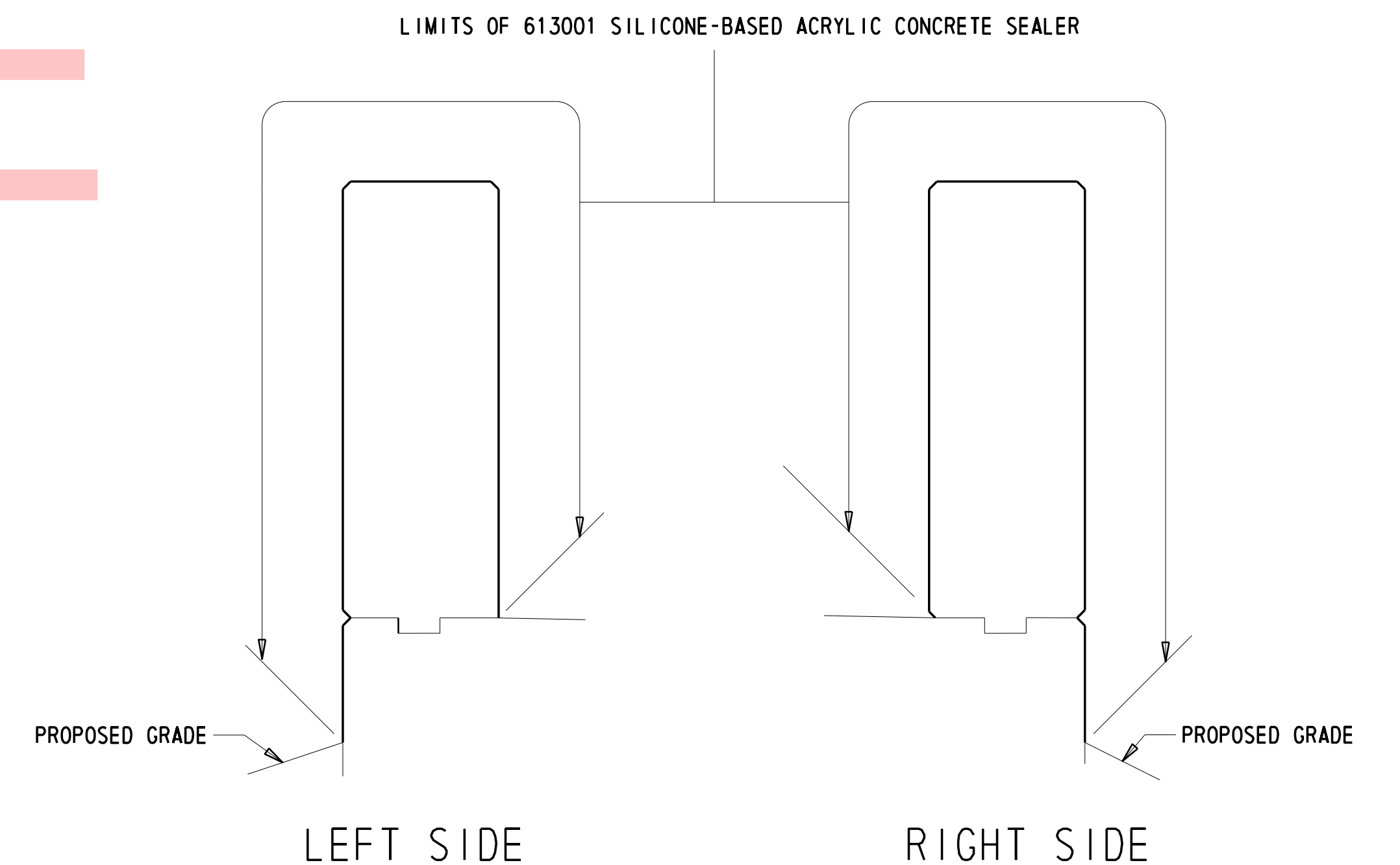
BRIDGE BARRIER CROSS SECTION DETAIL AT ABUTMENTS

1/2" = 1'-0"



CONTROL JOINT (TYP)

REINFORCEMENT NOT SHOWN FOR CLARITY.



BARRIER WALL SEALER LIMITS
N. T. S.

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ADDENDA / REVISIONS

SCALE AS NOTED

**BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK**

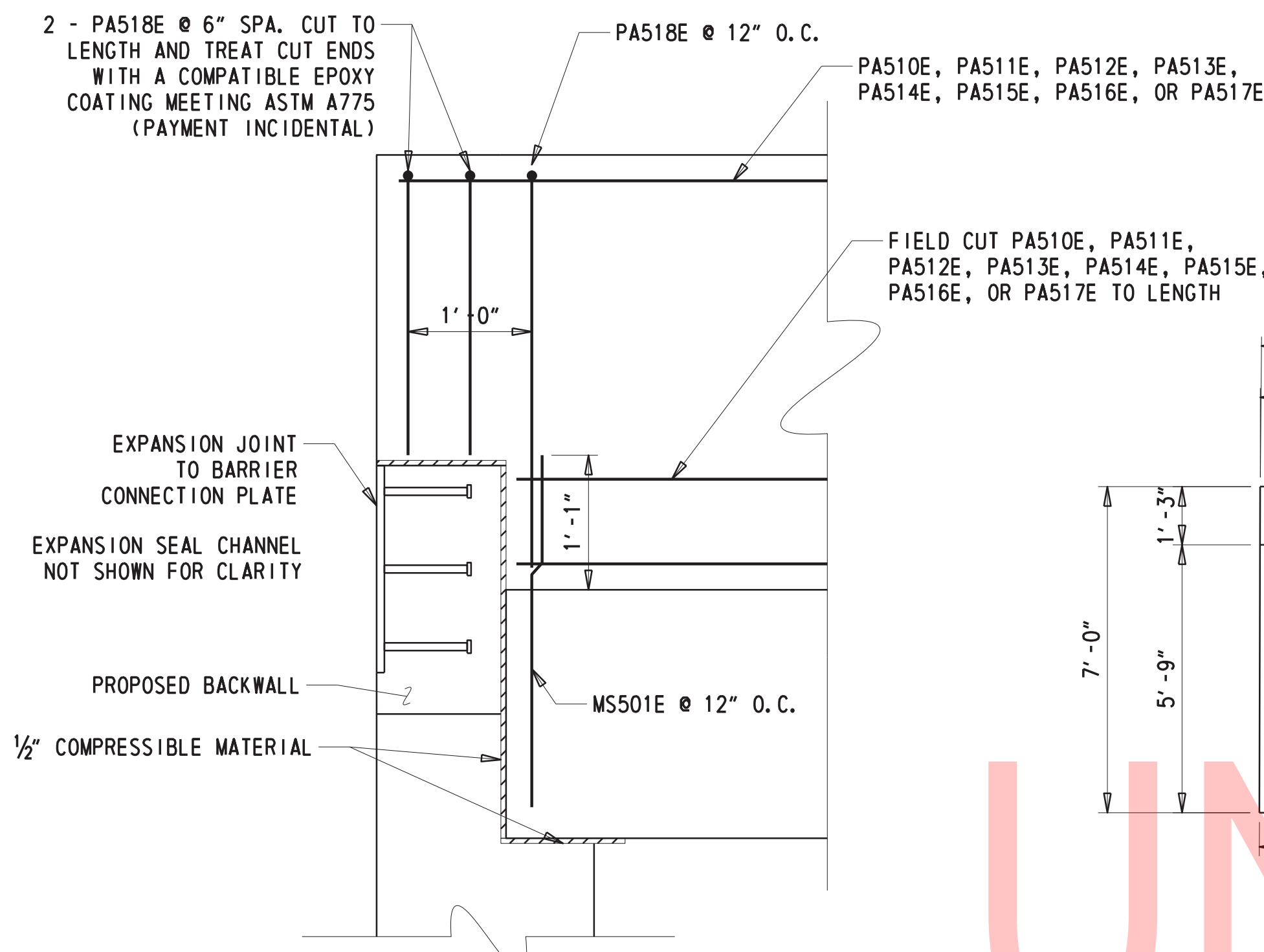
CONTRACT
T201507405
COUNTY
NEW CASTLE

BRIDGE NO. **1-148A**
DESIGNED BY: GPH
CHECKED BY: JAT

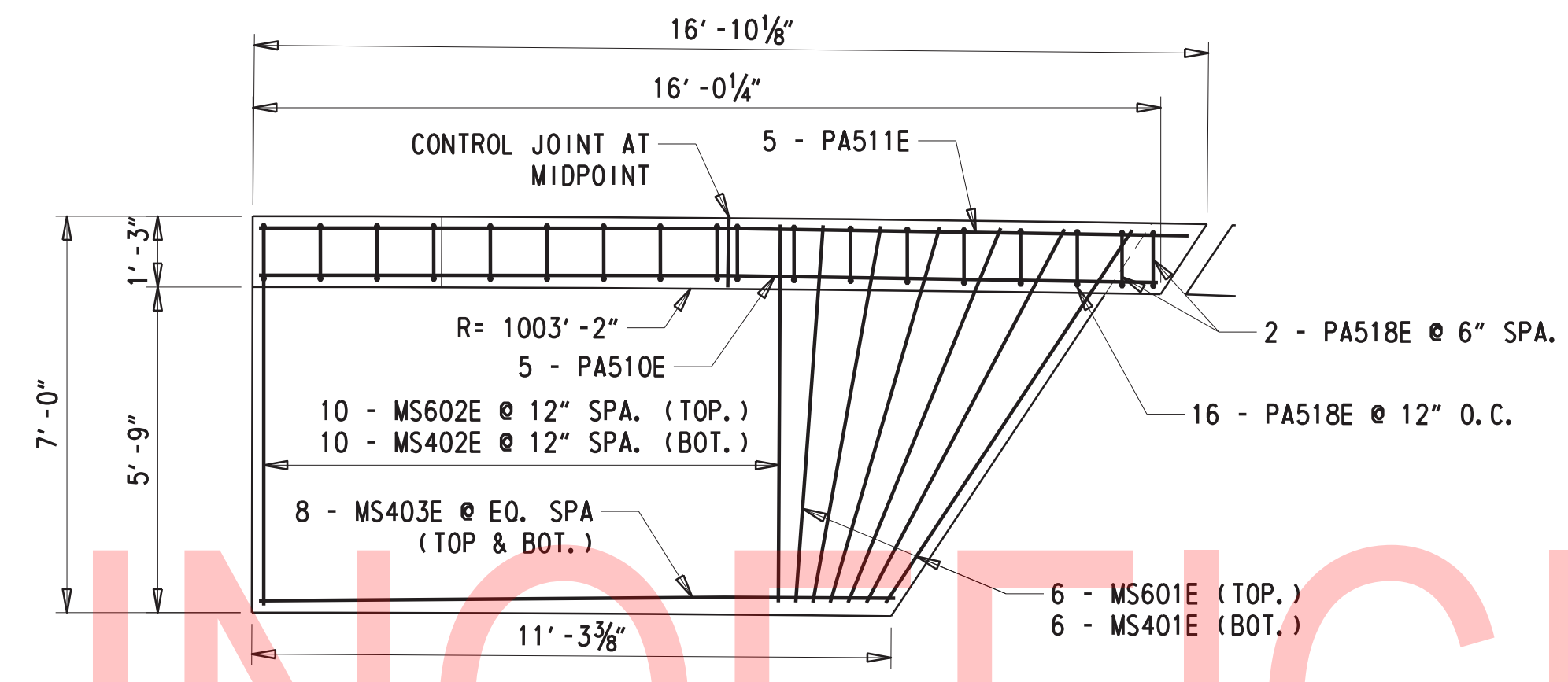
CONSTRUCTION DETAILS

SHEET 1 OF 2

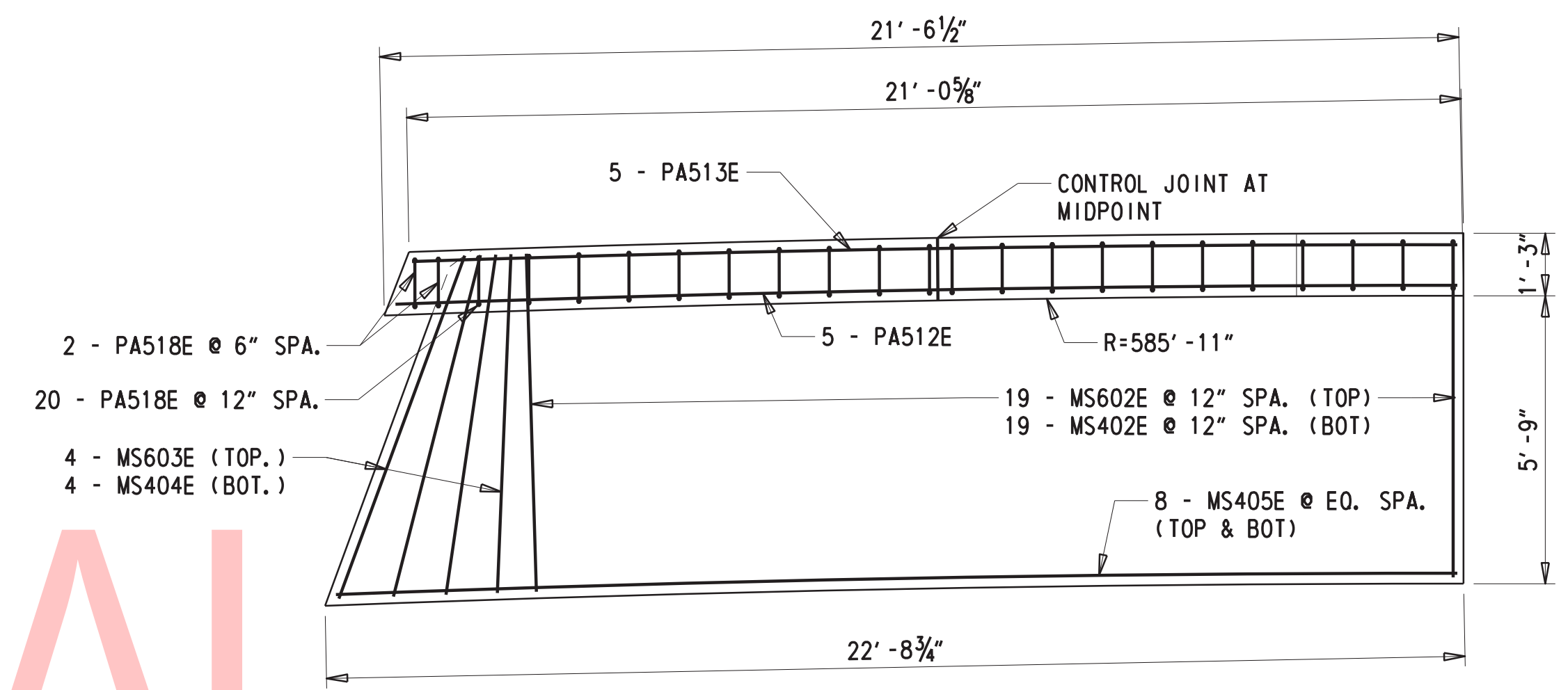
SECTION
BR
SHEET NO.
21



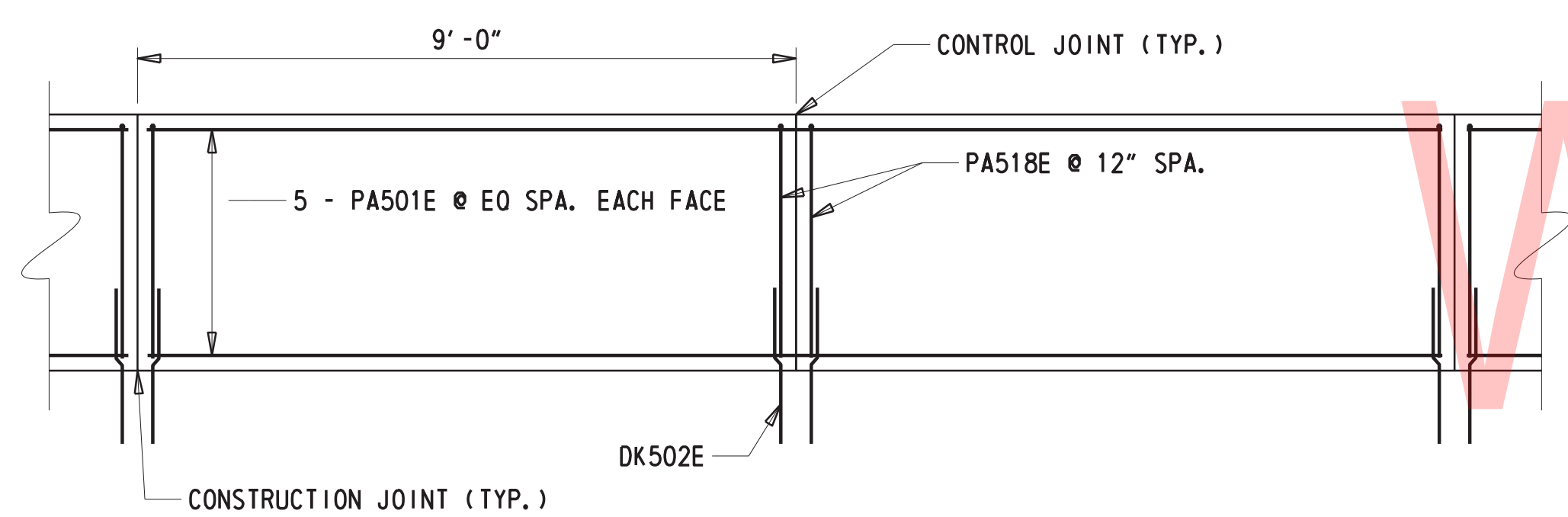
MOMENT SLAB OVER BACKWALL DETAIL
1/2" = 1'-0"



LEFT SIDE ABUTMENT 1 MOMENT SLAB
3/8" = 1'-0"

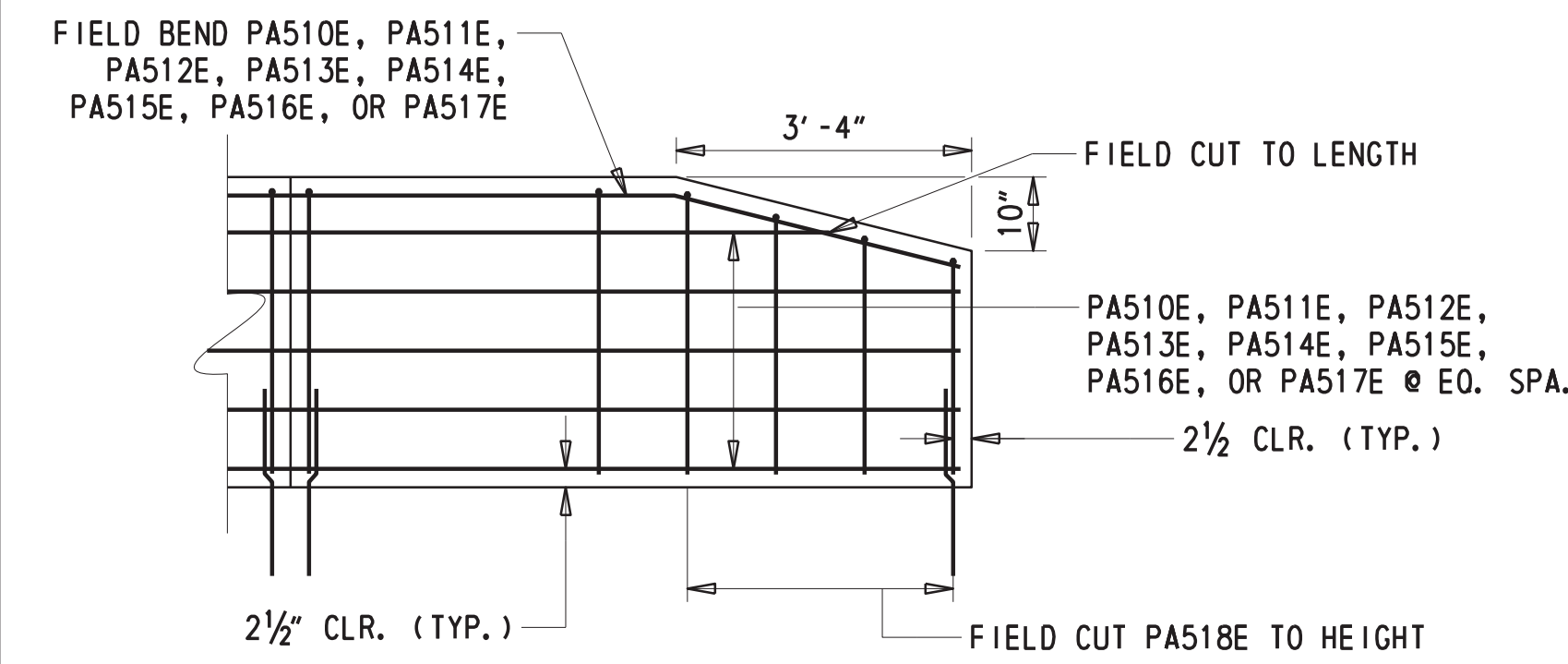


LEFT SIDE ABUTMENT 2 MOMENT SLAB
3/8" = 1'-0"

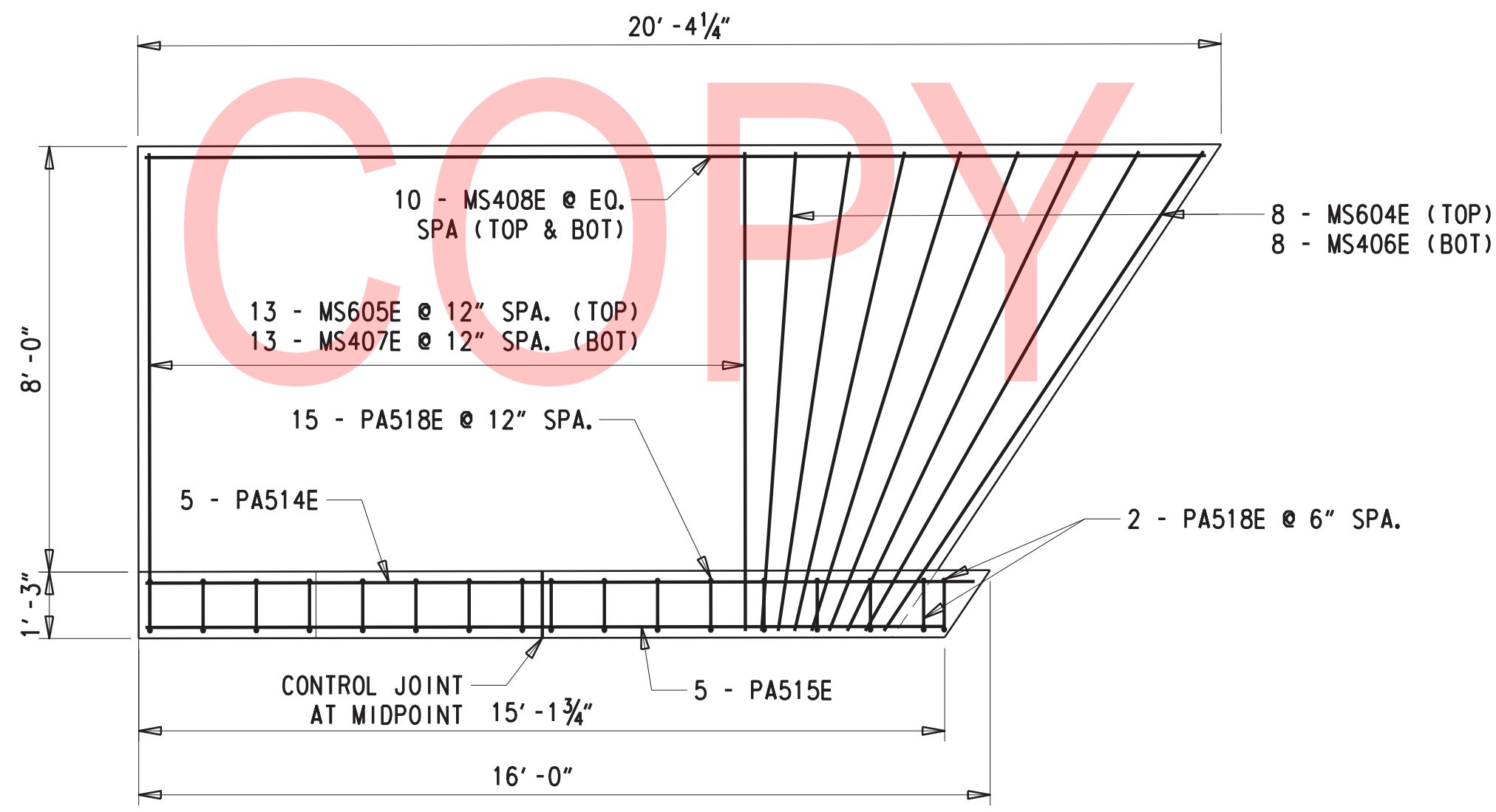


TYPICAL INTERIOR BARRIER
1/2" = 1'-0"

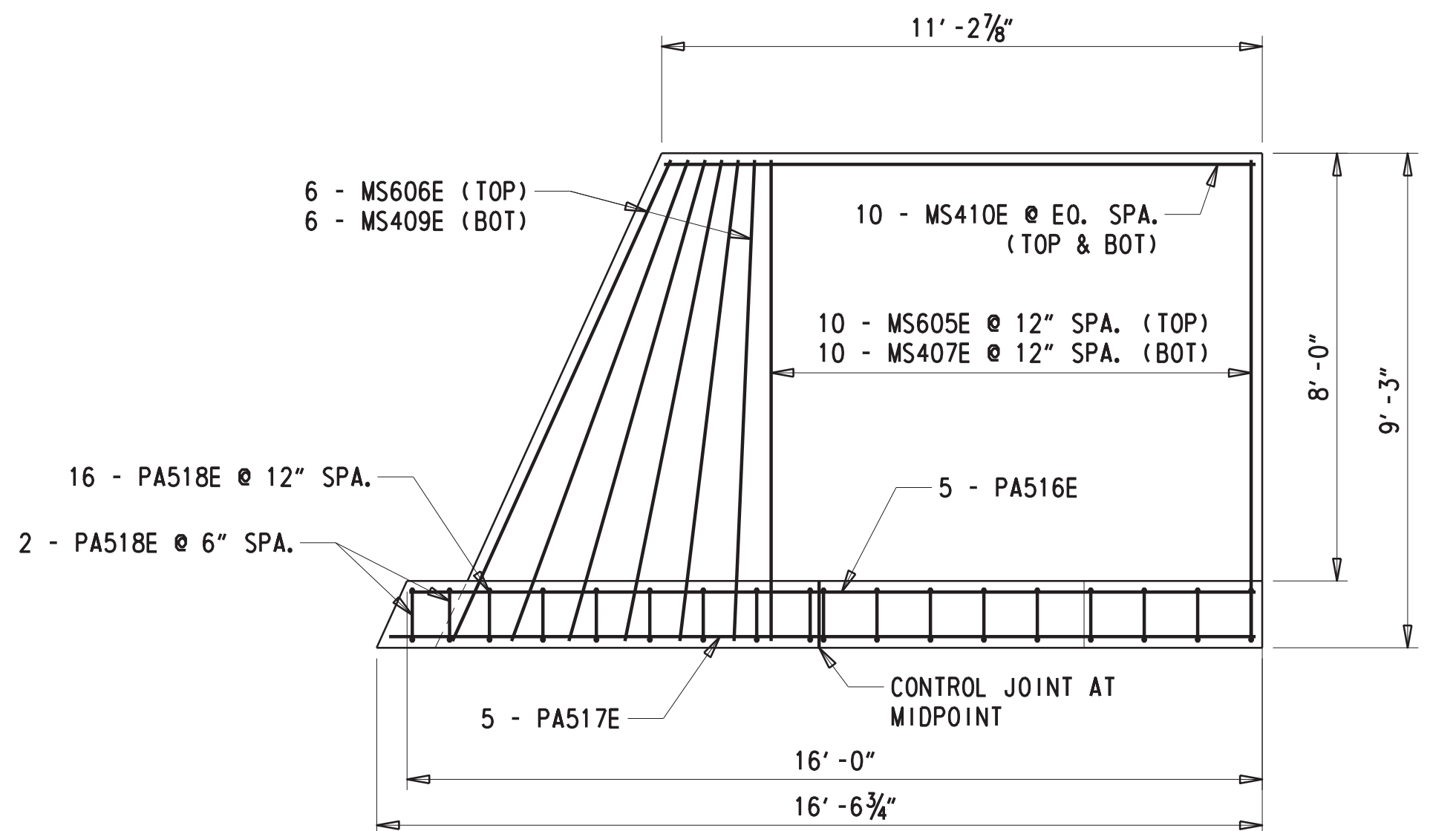
NOTE: WHERE TRANSVERSE REINFORCEMENT IS SPLAYED, PROVIDE A MINIMUM OF 3 INCHES OF CLEAR SPACE BETWEEN THE BARS.



TYPICAL END BARRIER OVER MOMENT SLAB
1/2" = 1'-0"



RIGHT SIDE ABUTMENT 1 MOMENT SLAB
3/8" = 1'-0"



RIGHT SIDE ABUTMENT 2 MOMENT SLAB
3/8" = 1'-0"

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ADDENDA / REVISIONS

SCALE AS NOTED

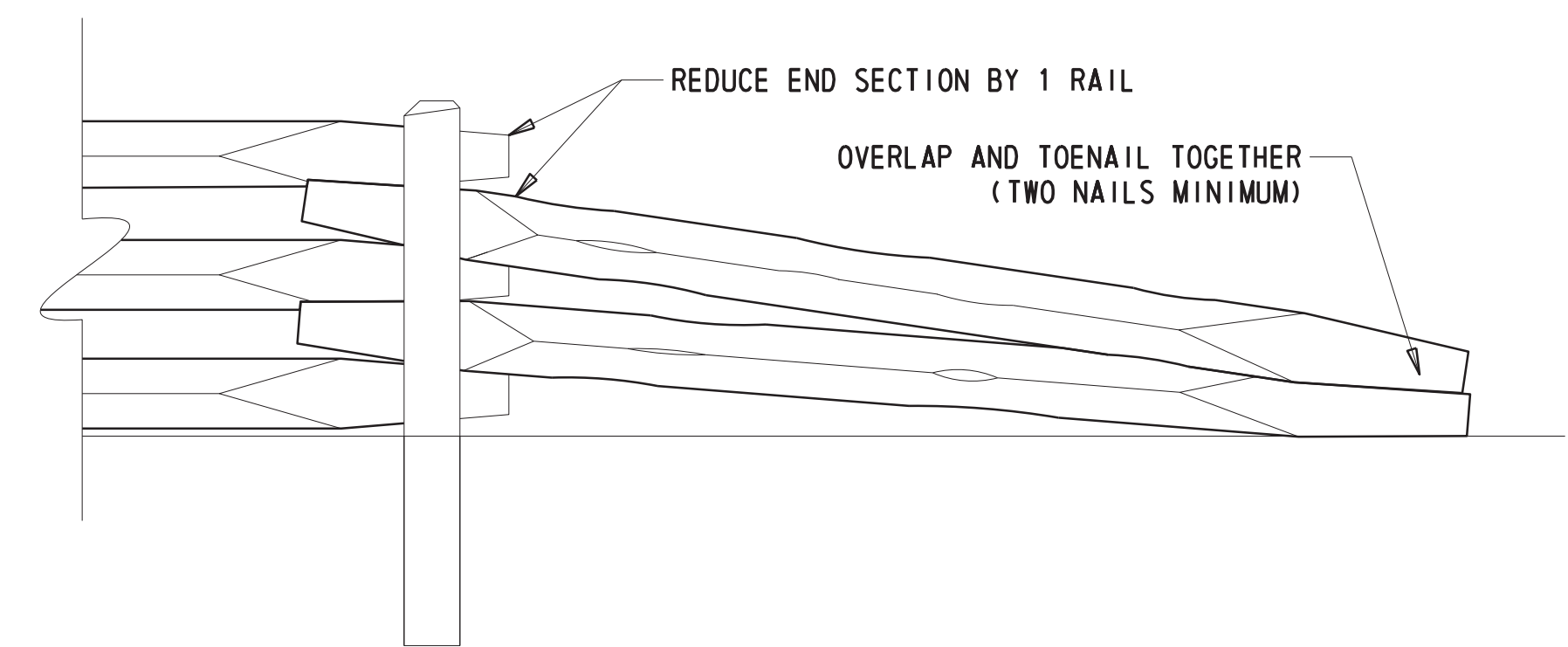
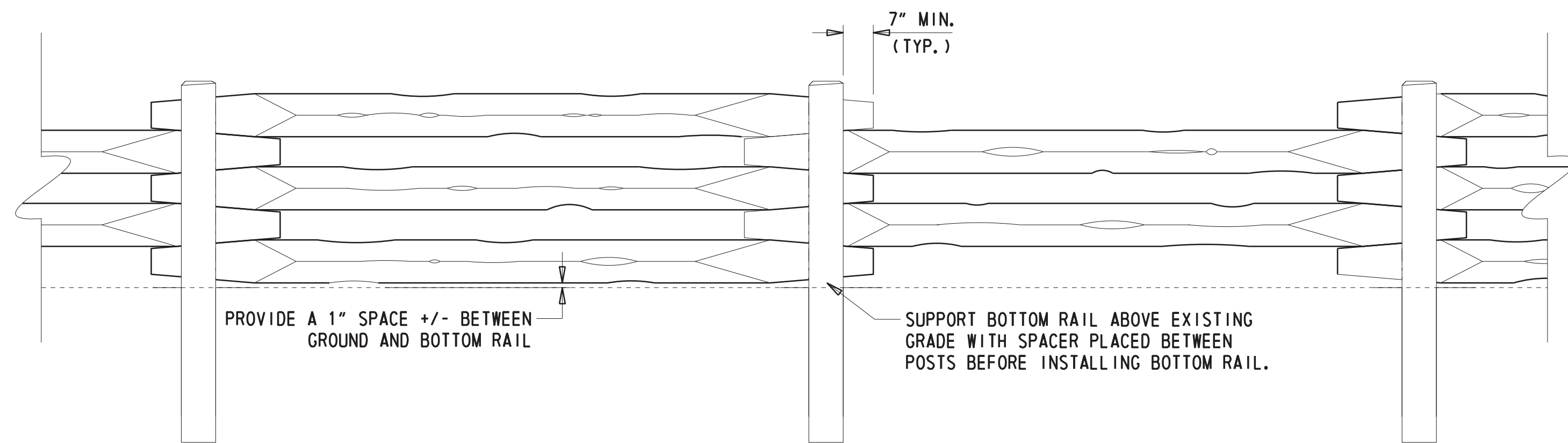
BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT T201507405 COUNTY NEW CASTLE
BRIDGE NO. 1-148A
DESIGNED BY: GPH
CHECKED BY: JAT

CONSTRUCTION DETAILS

SHEET 2 OF 2

SECTION BR SHEET NO. 22



FACE VIEW

FENCE TERMINATION DETAIL (TYP.)

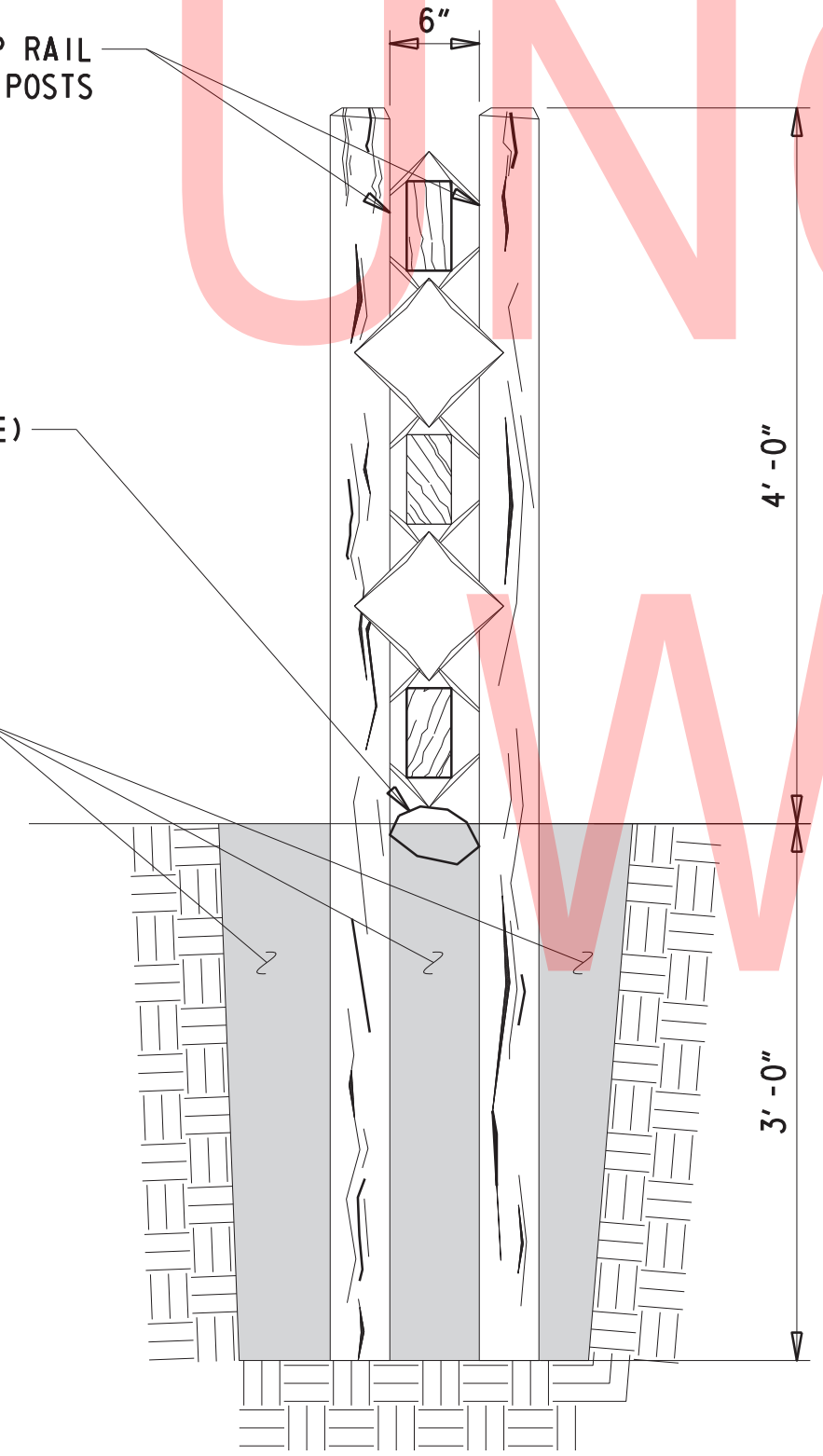
1/2" = 1'-0"

1/2" = 1'-0"

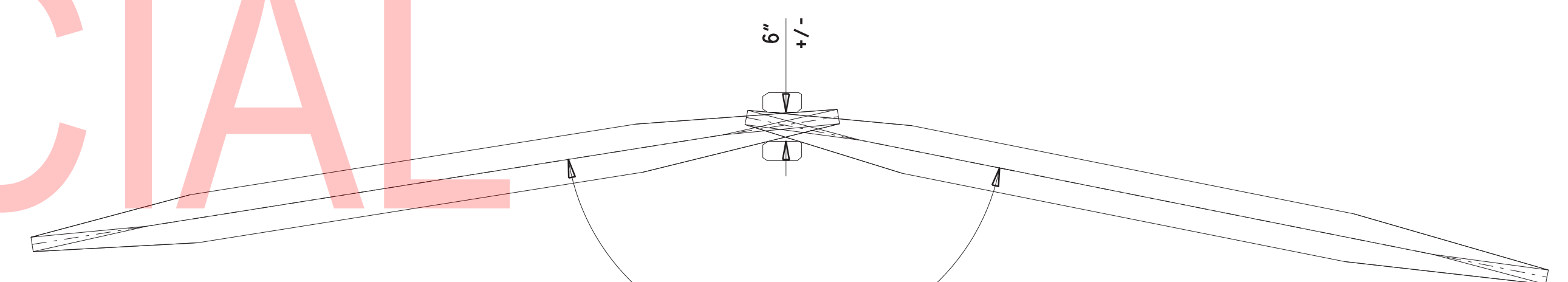
TOENAIL EACH SIDE TOP RAIL TO POSTS

SPACER (STONE SHOWN FOR EXAMPLE)

BACKFILL WITH NATIVE EXCAVATED SOIL AND COMPACT IN LIFTS



SIDE VIEW RAIL TO POST DETAIL (TYP.)



PLAN VIEW LINE POST DETAIL (TYP.)

1/2" = 1'-0"



LINE POST EXAMPLE

N. T. S.

NOTES

- ALL LUMBER TO BE #2 GRADE PRESSURE TREATED IN ACCORDANCE WITH SECTION 1061.05.A.2 OF STANDARD SPECIFICATIONS.
- NAILS TO BE HOT DIP GALVANIZED FOR EXTERIOR EXPOSURE AND CONTACT WITH PRESSURE TREATED LUMBER
- POSTS TO BE COMMON ROUGH CUT SPLIT RAIL POSTS WITHOUT ANY HOLES DRILLED FOR INSERTING SPLIT RAILS. SPACE POST LOCATIONS SUCH THAT THERE IS OVERLAP PAST THE POST.
- LINE POSTS MUST BE SEPARATED SUCH THAT THE SUBSEQUENT DIRECTION OF RAILS CAN BE ORIENTED TO FOLLOW THE CURVATURE OF THE ROAD. IT IS ESTIMATED THAT THIS SEPARATION WILL NEED TO BE APPROXIMATELY 6 INCHES. AS SPLIT RAILS ARE RANDOM IN SHAPE, EVALUATE THE RAIL ENDS TO DETERMINE THE APPROPRIATE SPACE BETWEEN THE POSTS TO ALLOW SUFFICIENT ROOM FOR DEFLECTION AT EACH POST WHILE MAINTAINING A SNUG FIT. COMPACT BACKFILL AROUND POSTS FIRMLY ENOUGH THAT POSTS DO NOT SPLAY DURING INSTALLATION OF RAILS.
- PLACE A SPACER BLOCK UNDER THE BOTTOM RAIL TO ELEVATE ABOVE THE GROUND. SPACER MAY BE PLACED BETWEEN THE POSTS. SPACER MAY CONSIST OF WOOD OR NATURAL STONE.
- USE COMMON SPLIT RAIL LUMBER BETWEEN POSTS. STACK RAILS BETWEEN LINE POSTS UNTIL A HEIGHT AT THE POSTS WOULD EXCEED 48 INCHES WITH THE ADDITION OF ANOTHER RAIL.
- OVERLAP AND TOENAIL TERMINAL END OF RAILS AS SHOWN IN DETAIL THIS SHEET.

ADDENDA / REVISIONS

SCALE AS NOTED

BR 1-148A&B ON N330
GREENBANK ROAD OVER
RED CLAY CREEK

CONTRACT	BRIDGE NO.
T201507405	DESIGNED BY: GPH
COUNTY	CHECKED BY: JAT
NEW CASTLE	

WOOD FENCE DETAILS

SECTION
BR
SHEET NO.
23

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, 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

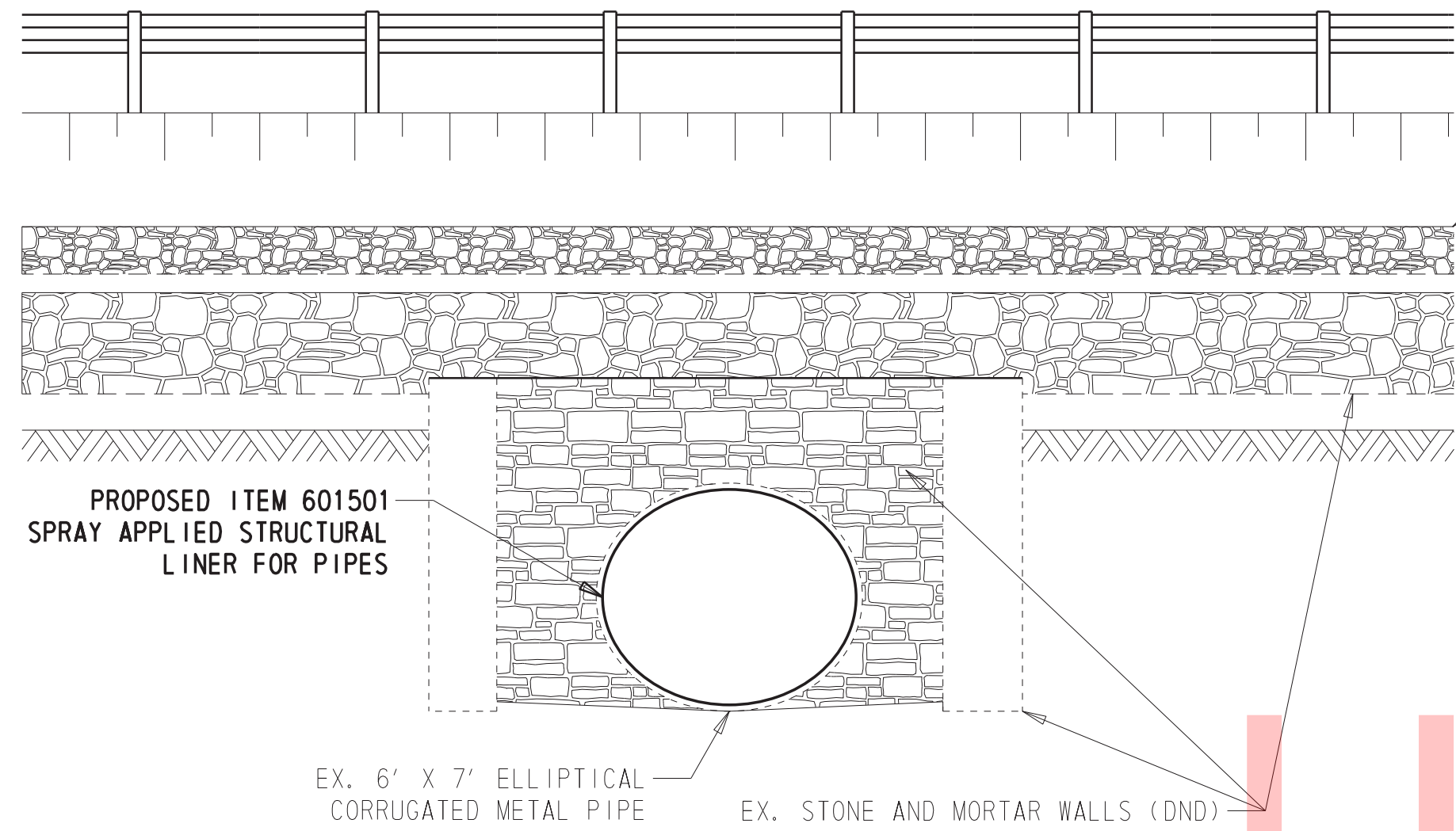
SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)											
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	
116	4	34-60	DK401E	DE16		31-00		0-111	0-113	0-70	1-00				0-50	
268	4	31-00	DK402E	STR		31-00										
101	4	42-100	DK403E	1	0-60	41-100					0-60		0-40			
1x26	4	41-23	DK404E	1	0-60	40-83					0-00		0-40			
		TO			TO	TO							TO			
		15-01			0-60	14-61					0-00		0-40			
1x18	4	40-112	DK405E	1	0-60	40-52					0-00		0-40			
		TO			TO	TO							TO			
		16-61			0-60	16-01					0-00		0-40			
101	4	41-100	DK406E	STR		41-100										
1x26	4	40-83	DK407E	STR		40-83										
		TO			TO	TO							TO			
		14-61			0-60	14-61					0-00		0-40			
1x18	4	40-52	DK408E	STR		40-52							TO			
		TO			TO	TO							TO			
		16-01			0-60	16-01					0-00		0-40			
13	4	14-110	DK409E	1	0-60	14-50					0-00		0-40			
9	4	16-23	DK410E	1	0-60	15-83					0-00		0-40			
13	4	14-50	DK411E	STR		14-50										
9	4	15-83	DK412E	STR		15-83										
5	4	8-30	DK413E	STR		8-30										
5	4	7-62	DK414E	STR		7-62										
2	4	50-00	DK415E	STR		50-00										
2	4	45-103	DK416E	STR		45-103										
93	4	8-20	DK417E	17		0-80	6-100	0-80								
194	4	7-40	DK418E	STR		7-40										
39	4	11-61	DK419E	STR		11-61										
27	4	16-63	DK420E	STR		16-63										
268	5	8-10	DK501E	1	0-70	7-60					0-00		0-50			
287	5	5-10	DK502E	17		2-62	0-100	2-62								
60	5	17-80	PA501E	STR		17-80										
5	5	17-71	PA502E	STR		17-71										
5	5	17-10	PA503E	STR		17-10										
5	5	16-50	PA504E	STR		16-50										
5	5	16-100	PA505E	STR		16-100										
5	5	17-30	PA506E	STR		17-30										
5	5	17-100	PA507E	STR		17-100										
5	5	18-60	PA508E	STR		18-60										
5	5	18-10	PA509E	STR		18-10										
5	5	15-81	PA510E	STR		15-81										

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
5	5	16-33	PA511E	STR		16-33									
5	5	21-01	PA512E	STR		21-01									
5	5	20-81	PA513E	STR		20-81									
5	5	15-50	PA514E	STR		15-50									
5	5	14-100	PA515E	STR		14-100									
5	5	15-80	PA516E	STR		15-80									
5	5	16-02	PA517E	STR		16-02									
293	5	7-20	PA518E	17		3-20	0-100	3-20							
1x6	4	6-70	MS401E	STR		6-70									
		TO			TO	TO									
		7-100			TO	TO									
29	4	6-70	MS402E	STR		6-70									
2x8	4	11-03	MS403E	STR		11-03									
		TO			TO	TO									
		15-22			TO	TO									
1x4	4	6-70	MS404E	STR		6-70									
		TO			TO	TO									
		7-12			TO	TO									
2x8	4	19-90	MS405E	STR		19-90									
		TO			TO	TO									
		22-22			TO	TO									
1x8	4	9-50	MS406E	17		0-70	8-100	0-00							
		TO			TO	TO	TO	TO							
		11-22			TO	TO	0-70	10-72	0-00						
23	4	9-50	MS407E	17		0-70	8-100	0-00							
2x10	4	13-101	MS408E	STR		13-101									
		TO			TO	TO									
		19-90			TO	TO									
1x6	4	9-50	MS409E	17		0-70	8-100	0-00							
		TO			TO	TO	TO	TO							
		10-32			TO	TO	0-70	9-82	0-00						
2x10	4	10-103	MS410E	STR		10-103									
		TO			TO	TO									
		14-103			TO	TO	14-103								
68	5	6-100	MS501E	17		3-00	0-100	3-00							
1x6	6	8-80	MS601E	30		1-50	6-70		0-80	1-50	0-60	0-00			
		TO			TO	TO	TO	TO	TO	TO	TO	TO			
		9-110			TO	TO	1-50	7-100	0-80	1-50	0-60	0-00			
29	6	8-80	MS602E	30		1-50	6-70		0-80	1-50	0-60	0-00			
1x4	6	8-80	MS603E	30		1-50	6-70		0-80	1-50	0-60	0-00			

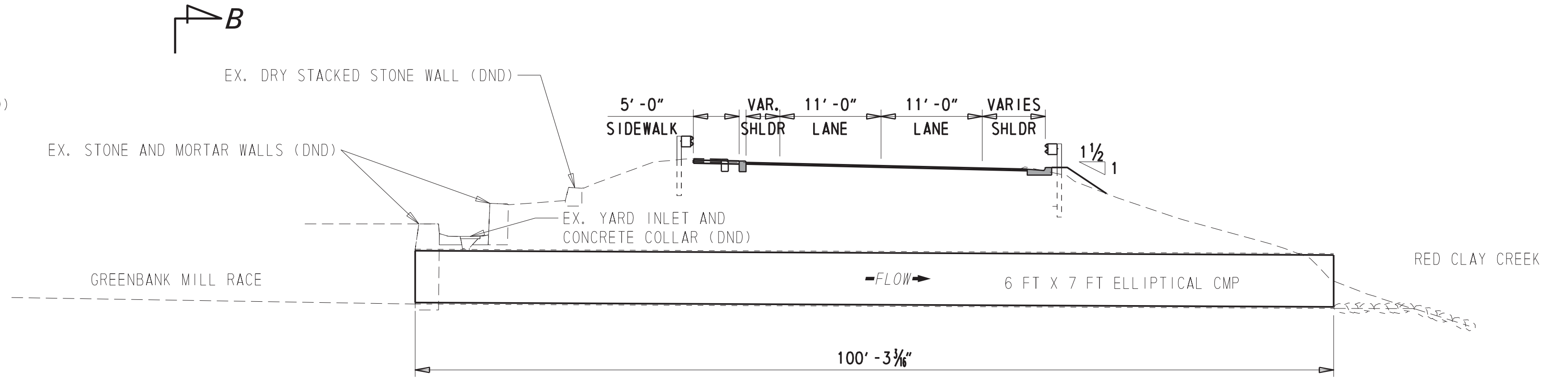
SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
		TO			TO	TO							TO	TO	TO
		9-22			TO	TO	1-50	7-12					0-80	1-50	0-60
1x8	6	9-60	MS604E	1	0-80	8-100							0-00	0-60	0-00
		TO			TO	TO							TO	TO	TO
		11-32			TO	TO	0-80	10-72					0-00	0-60	0-00
23	6	9-60	MS605E	1	0-80	8-100							0-00	0-60	0-00
1x6	6	9-60	MS606E	1	0-80	8-100							0-00	0-60	0-00
		TO			TO	TO							TO	TO	TO
		10-42			TO	TO	0-80	9-82					0-00	0-60	0-00
198	5	2-32	AB501E	STR		2-302									
2	5	50-00	AB502E	STR		50-00									
2	5	45-103	AB503E	STR		45-103									

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BAR SIZE	NOMINAL DIMENSIONS			180° HOOKS		90° HOOKS		90° HOOK		135° HOOK
	DIAMETER (INCHES)	AREA (INCHES ²)	WEIGHT (LBS./FT.)	D	A OR G	J	A OR G	D	A OR G	A OR G
3	0.375	0.110	0.376	2 1/4"	5"	3"	6"	1 1/2"	4"	2 1/2"
4	0.500	0.200	0.668	3"	6"	4"	8"	2"	4 1/2"	3"
5	0.625	0.310	1.043	3 3/4"	7"	5"	10"	2 1/2"	6"	3 3/4"
6	0.750	0.440	1.502	4 1/2"	8"	6"	1-0"	4 1/2"	8"	4 1/2"
7	0.875	0.600	2.044	5 1/4"	10"	7"	1-2"	5 1/4"	1-2"	9"
8	1.000	0.790	2.670	6"	11"	8"	1-4"	6"	1-4"	10 1/2"
9	1.128									



BRIDGE ELEVATION SECTION B-B
1/4" = 1'



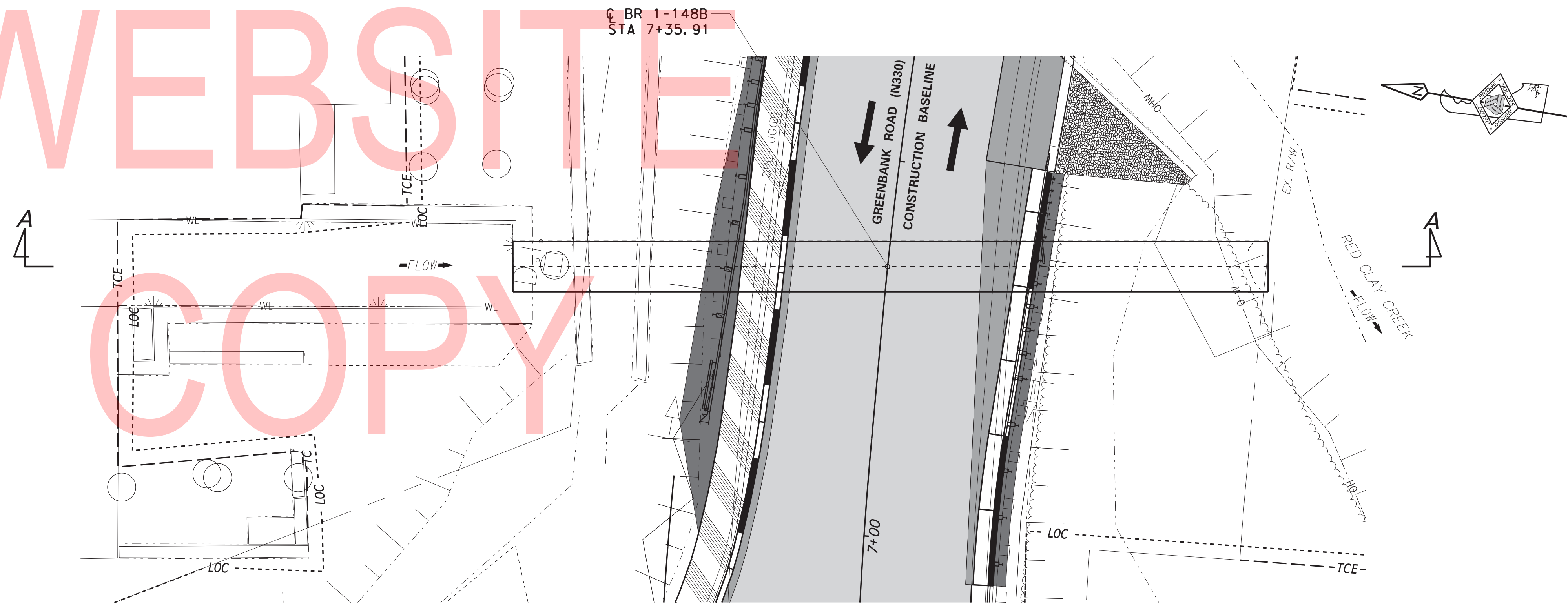
BRIDGE PROFILE SECTION A-A
1" = 10'

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- NOTES:
- REHABILITATE EXISTING 6'-0" BY 7'-0" CORRUGATED ELLIPTICAL METAL PIPE WITH ITEM 601501 - SPRAY APPLIED STRUCTURAL LINER FOR PIPES. THE SPRAY APPLIED LINER THICKNESS TO BE DESIGNED BY THE CONTRACTOR.
 - PROTECT ALL EXISTING STONE MASONRY FROM SPILLS, OVERSPRAY, WASHOUT RESIDUE, ETC. ANY DAMAGE TO THE EXISTING STONE MASONRY MUST BE REPAIRED BY THE CONTRACTOR AT CONTRACTOR EXPENSE TO THE SATISFACTION OF THE ENGINEER.
 - CLEANING AND DISPOSAL OF DEBRIS AND SOIL FROM THE EXISTING PIPE MUST BE DONE IN ACCORDANCE WITH SPECIAL PROVISION 202560 - CONTAMINATED MATERIAL



PLAN VIEW BRIDGE 1-148B
1" = 10'

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ADDENDA / REVISIONS		SCALE AS NOTED	BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK	CONTRACT	BRIDGE NO.	1-148B	SECTION
				T201507405	DESIGNED BY: GPH		
				COUNTY	CHECKED BY: JAT		SHEET NO.
				NEW CASTLE			25
							BRIDGE PLAN, SECTION, AND ELEVATION

ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

- A. THE PURPOSE OF THIS SHEET 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 THIS SHEET 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): NATIONWIDE PERMIT #14 WITH PCN**
 DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): PROJECT CONSISTENT WITH DEL. CODE CH 72 SECTION 7217, SPECIAL EXEMPTION (B)
 DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED (PROJECT IS NOT LOCATED IN CRW)

* 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 - NONE
 MIGRATORY BIRDS - BRIDGE 1-148A (ONLY) - APRIL 15 TO AUGUST 1 (INCLUSIVE). MIGRATORY BIRD EXCLUSION NETTING WILL BE ERECTED BY OTHERS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF NETTING AND DELIVERY TO A DELDOT MAINTENANCE YARD WITHIN NEW CASTLE COUNTY TO BE SPECIFIED. NETTING SHOULD BE REMOVED AND HANDLED IN A MANNER THAT DOES NOT CAUSE DAMAGE TO NETTING OR RENDER IT UNUSABLE AGAIN. REMOVAL OF BIRD NETTING AND DELIVERY TO MAINTENANCE YARD TO BE PAID UNDER ITEM 763623 - NETTING MIGRATORY BIRD EXCLUSION.

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 90 DAYS. IF AN ARCHAEOLOGICAL SURVEY IS NECESSARY, DELDOT OR A CONSULTANT ON ITS BEHALF WILL UNDERTAKE THE SURVEY.

4. PROTECTION OF RESOURCES:

- A. KEEP CLEARING IN WETLAND AREAS TO A MINIMUM ABSOLUTELY NECESSARY FOR CONSTRUCTION ACCESS. CUT VEGETATION FLUSH WITH THE GROUND (I.E. NO DISTURBANCE OF THE ROOT MAT). NO STAGING OF VEHICLES, EQUIPMENT, OR MATERIALS OFF OF THE ROADWAY PAVEMENT IS PERMITTED ON THE NORTH SIDE OF GREENBANK ROAD WITHIN THE GREENBANK HISTORIC AREA (STA 6+50 TO 8+00). RESTORE TEMPORARILY DISTURBED WETLAND AREAS TO GRADE AND SEED WITH ITEM 908017 - TEMPORARY GRASS SEEDING (ANNUAL RYE GRASS).
- B. USE SILT FENCE, REINFORCED SILT FENCE, OR CONSTRUCTION SAFETY FENCE ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER/WETLANDS ARE BEING IMPACTED (AS SHOWN ON ENVIRONMENTAL COMPLIANCE SHEETS), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LIMIT OF CONSTRUCTION (AS SHOWN ON CONSTRUCTION PLAN SHEETS). ANY CONTRACTOR ACCESS BEYOND THE LIMIT OF CONSTRUCTION IS STRICTLY PROHIBITED.

5. THIS PROJECT HAS BEEN COORDINATED WITH THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) AND THE DELAWARE STATE HISTORIC PRESERVATION OFFICE (SHPO) FOR SECTION 106 COMPLIANCE NEEDS. GIVEN THE PRESENCE OF A NATIONAL REGISTER OF HISTORIC PLACES LISTED HISTORIC DISTRICT, A FINDING OF NO ADVERSE EFFECT WAS SUBMITTED AND CONCURRED BY SHPO ON 11/27/2017.

6. THE CONTRACTOR SHALL BE AWARE THAT THIS PROJECT TAKES PLACE WITHIN THE GREENBANK HISTORIC AREA WHICH IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES. AS SUCH, NO FURTHER WORK SHOULD BE UNDERTAKEN OTHER THAN THE NECESSARY SCOPE AS ILLUSTRATED ON THE PROJECT PLANS. ANY PLAN MODIFICATION OR PROPOSED CHANGES TO THE PROJECT METHODS, FOOTPRINT, OR DESIGNS MUST BE REVIEWED BY ALEX TARANTINO IN THE ENVIRONMENTAL STUDIES OFFICE (302-760-4887; ALEXANDRA.TARANTINO@DELAWARE.GOV). IF NECESSARY DELDOT WILL COORDINATE WITH DELAWARE SHPO, FHWA, AND/OR ANY INTERESTED PARTY BEFORE ANY ACTION IS IMPLEMENTED TO ENSURE PROPER TREATMENT AND CONSIDERATIONS OF HISTORIC PROPERTIES.

7. BEFORE CONSTRUCTION ACTIVITIES, THE CONTRACTOR WILL RECORD THE SITE CONDITIONS. COPIES WILL BE PROVIDED TO THE APPROPRIATE PERSONNEL AT DELDOT PRIOR TO CONSTRUCTION.

8. IF UNFORESEEN DAMAGE OCCURS TO PROPERTIES WITHIN THE HISTORIC DISTRICT AS A DIRECT RESULT OF THE CONTRACTOR'S ACTIVITIES, DELDOT'S ENVIRONMENTAL STUDIES PERSONNEL MUST BE CONTACTED IMMEDIATELY TO ENSURE THAT THE DE SHPO, FHWA, AND OR OTHERS ARE CONSULTED ON THE WAYS TO REPAIR THE DAMAGE CONSISTENT WITH THE SECRETARY OF THE INTERIOR'S STANDARDS.

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ORIGINAL SHEET PREPARED BY G. HAINSWORTH ON 7-21-2016. SHEET LAST UPDATED ON 3/26/2019.

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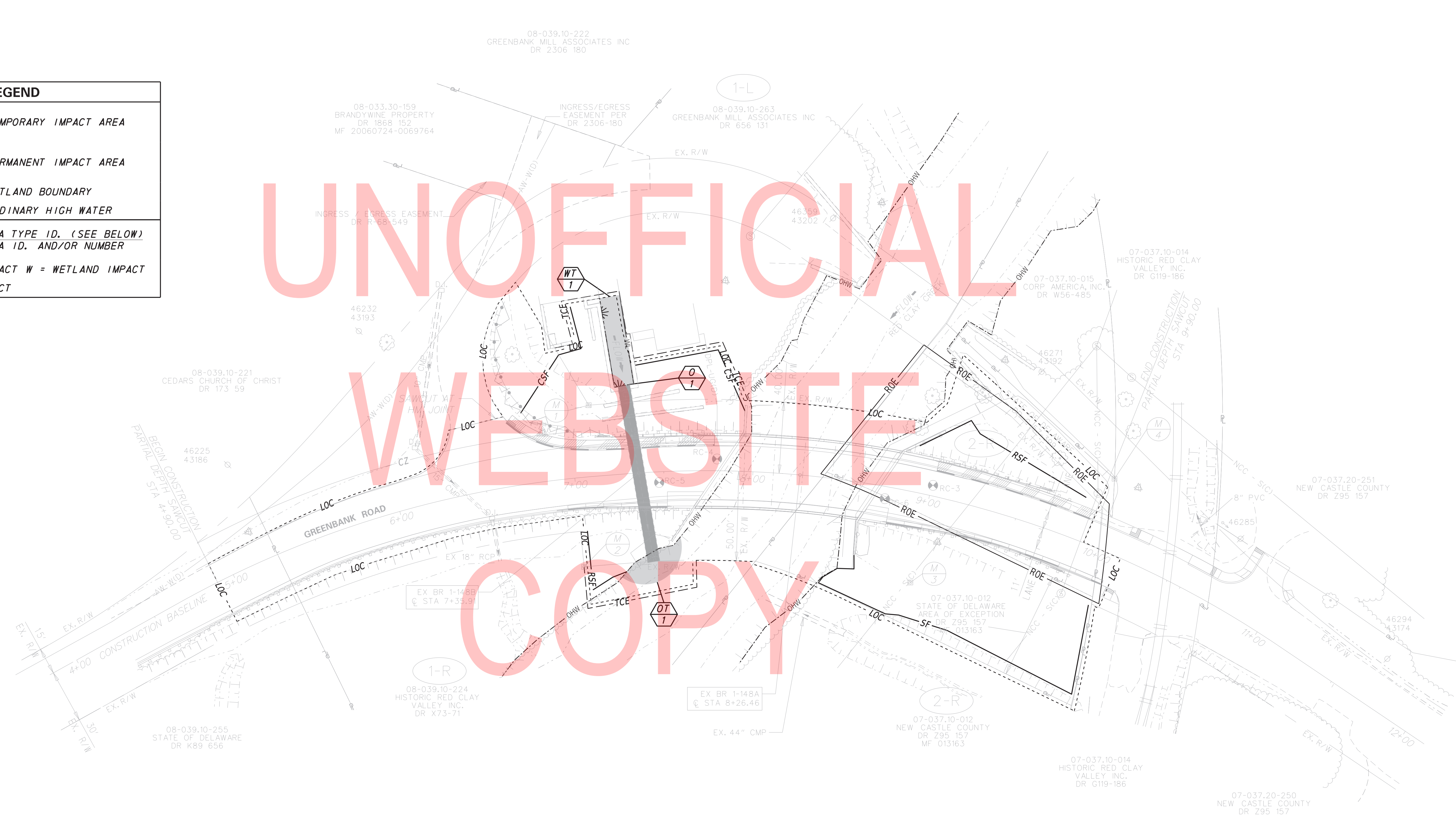
ADDENDA / REVISIONS		BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">CONTRACT</td> <td style="font-size: 8px;">BRIDGE NO.</td> <td style="font-size: 8px;">1-148A&B</td> </tr> <tr> <td style="font-size: 8px;">T201507405</td> <td colspan="2" style="font-size: 8px;">DESIGNED BY: GPH</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td colspan="2" style="font-size: 8px;">CHECKED BY: JAT</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1-148A&B	T201507405	DESIGNED BY: GPH		COUNTY	CHECKED BY: JAT		NEW CASTLE			ENVIRONMENTAL COMPLIANCE PLAN	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">EC-01</td> </tr> <tr> <td style="font-size: 8px;">SECTION</td> </tr> <tr> <td style="font-size: 8px;">BR</td> </tr> <tr> <td style="font-size: 8px;">SHEET NO.</td> </tr> <tr> <td style="font-size: 8px;">26</td> </tr> </table>	EC-01	SECTION	BR	SHEET NO.	26
CONTRACT	BRIDGE NO.	1-148A&B																				
T201507405	DESIGNED BY: GPH																					
COUNTY	CHECKED BY: JAT																					
NEW CASTLE																						
EC-01																						
SECTION																						
BR																						
SHEET NO.																						
26																						

PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	STRUCTURAL PIPE LINER	668.59	0.0153	6.19	COE/DNREC

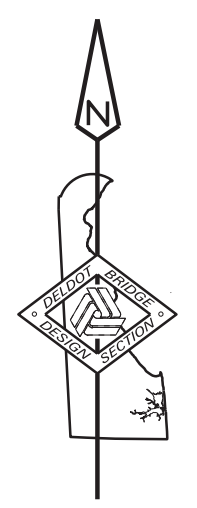
TEMPORARY WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	SANDBAG DIVERSION/ACCESS	563.68	0.0129	4.00	COE

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	SAND BAG DIVERSION	452.17	0.0104	13.00	COE/DNREC

LEGEND	
	TEMPORARY IMPACT AREA
	PERMANENT IMPACT AREA
	WL - WETLAND BOUNDARY
	OHW - ORDINARY HIGH WATER
	IMPACT AREA TYPE ID. (SEE BELOW)
	IMPACT AREA ID. AND/OR NUMBER
O	= OPEN WATER IMPACT
W	= WETLAND IMPACT
T	= TEMPORARY IMPACT



UNOFFICIAL
WEBSITE
COPY



ORIGINAL SHEET PREPARED BY G. HAINSWORTH ON 7-21-2016. SHEET LAST UPDATED ON 3/26/2018.

WETLANDS DELINEATED BY CHRISTIE BONNIBELL (DELDOT) ON JULY 7, 2015 IN ACCORDANCE WITH THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND REGIONAL SUPPLEMENT.

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ADDENDA / REVISIONS



BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT T201507405	BRIDGE NO. 1-148A&B
COUNTY NEW CASTLE	DESIGNED BY: GPH CHECKED BY: JAT

ENVIRONMENTAL COMPLIANCE PLAN

EC-02
SECTION BR
SHEET NO. 27

GENERAL CONSTRUCTION SEQUENCE NOTES:

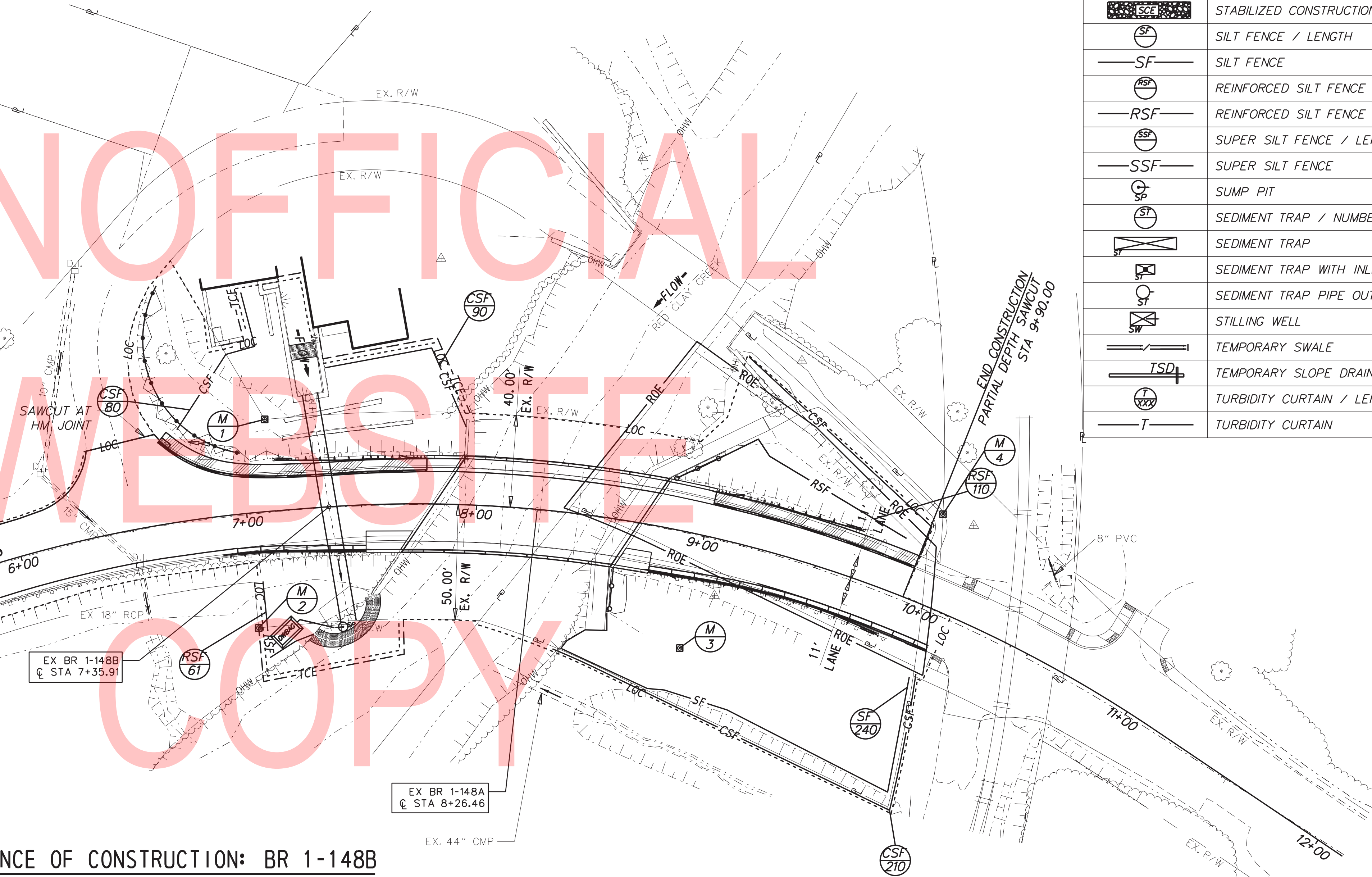
1	EROSION POTENTIAL FOR THIS PROJECT	CONTRACTOR ESC SUPERVISOR REQUIREMENT
()	INSIGNIFICANT	NONE
()	MINOR	CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X)	MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE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

2	(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.

3. THE DISTURBED AREA FOR THIS PROJECT IS 0.3306 ACRES.
4. THE ADDITIONAL IMPERVIOUS AREA FOR THIS PROJECT IS 900 SQUARE FEET.
5. MAINTAIN ACCESS TO GREENBANK MILL AND ADJACENT PROPERTIES SERVED BY COMMON DRIVEWAY AT STATION 6+50 DURING CONSTRUCTION
6. USE FLAGGING AND SINGLE LANE CLOSURE FOR CONSTRUCTION OF CURB AND SIDEWALK FROM STATION 6+50 TO 6+75 LEFT AND FOR MILLING AND OVERLAY OPERATIONS FROM 4+90 TO 6+75
7. ALL STAGING OF EQUIPMENT AND MATERIALS MUST BE CONTAINED BETWEEN STA 6+75 AND 10+00
8. THE SEQUENCING OF BR 1-148A AND 1-148B IS INDEPENDANT OF EACH OTHER BUT ALL PERIMETER CONTROLS AND MOT MUST BE INSTALLED PRIOR TO CONSTRUCTION OF EITHER BRIDGE AND MAINTAINED UNTIL COMPLETION OF BOTH BRIDGES.
9. 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.

SEQUENCE OF CONSTRUCTION: BR 1-148A

1. INSTALL MOT DEVICES AND CLOSE GREENBANK ROAD (N330) IN ACCORDANCE WITH THE APPROVED DETOUR PLAN.
2. INSTALL SILT FENCE (ITEM 905001), CONSTRUCTION SAFETY FENCE (ITEM 727006) AND REINFORCED SILT FENCE (ITEM 905002).
3. INSTALL APPROVED SHIELDING TO RETAIN FALLING DEBRIS FROM ENTERING THE RED CLAY CREEK, PAYMENT INCLUDED UNDER ITEM 604001 - PROTECTIVE SHIELD
4. REMOVE EXISTING GUARDRAIL, SIDEWALK, PARAPET, CURBS, DECK, AND ABUTMENT BACKWALLS ON BOTH ENDS.
5. JACK THE BRIDGE SUPERSTRUCTURE IN ACCORDANCE WITH APPROVED JACKING PLAN. PAYMENT UNDER ITEM 604000 - JACKING BRIDGE.
6. PERFORM ALL SUBSTRUCTURE, BEARINGS, AND STEEL SUPERSTRUCTURE REPAIRS IN ACCORDANCE WITH THE PLANS.
7. CONSTRUCT NEW DECK, SIDEWALK, AND BARRIER ON BRIDGE.
8. CONSTRUCT NEW CURB, SIDEWALK, MOMENT SLAB, BARRIER, AND BASE PAVEMENT ON BOTH APPROACHES.
9. INSTALL NEW FUSION BONDED POLYESTER COATED GUARDRAIL, BARRIER CONNECTIONS, END TREATMENTS, AND FINAL STABILIZATION.
10. MILL AND OVERLAY TO LIMITS CONSTRUCTION PLAN. INSTALL PERMANENT PAVEMENT MARKINGS.
11. UPON COMPLETION OF ALL CONSTRUCTION ACTIVITIES ON BRIDGE 148A & B, REMOVE DETOUR AND RETURN TRAFFIC TO NORMAL ROUTE. REMOVE E&S DEVICES AFTER FINAL VEGETATIVE STABILIZATION OF ALL DISTURBED AREAS WITH CONCURRENCE OF DELDOT'S STORMWATER ENGINEER.



EROSION & SEDIMENT CONTROL	
— CFL —	COMPOST FILTER LOG
⊙ CFL	COMPOST FILTER LOG / LENGTH
⊠ DWB	DEWATERING BAG
⊠ DWB	DEWATERING BASIN
ED	EARTH DIKE
⊠	INLET SEDIMENT CONTROL
⊠	PERIMETER DIKE/SWALE
⊠	PORTABLE SEDIMENT TANK
⊠	SANDBAG DIKE
⊠	SANDBAG DIVERSION
⊠	STONE CHECK DAM
⊠	STABILIZED CONSTRUCTION ENTRANCE
⊠	SILT FENCE / LENGTH
— SF —	SILT FENCE
⊠ RSF	REINFORCED SILT FENCE / LENGTH
— RSF —	REINFORCED SILT FENCE
⊠ SSF	SUPER SILT FENCE / LENGTH
— SSF —	SUPER SILT FENCE
⊠ SP	SUMP PIT
⊠ ST	SEDIMENT TRAP / NUMBER
⊠	SEDIMENT TRAP
⊠	SEDIMENT TRAP WITH INLET AS OUTLET
⊠	SEDIMENT TRAP PIPE OUTLET
⊠	STILLING WELL
⊠	TEMPORARY SWALE
⊠ TSD	TEMPORARY SLOPE DRAIN
⊠ T	TURBIDITY CURTAIN / LENGTH
— T —	TURBIDITY CURTAIN

SEQUENCE OF CONSTRUCTION: BR 1-148B

1. INSTALL MOT DEVICES AND CLOSE GREENBANK ROAD (N330) IN ACCORDANCE WITH THE APPROVED DETOUR PLAN.
2. INSTALL SILT FENCE (ITEM 905001), CONSTRUCTION SAFETY FENCE (ITEM 727006) AND REINFORCED SILT FENCE (ITEM 905002).
3. INSTALL SANDBAGS (ITEM 909001) IN RED CLAY CREEK AND MILL RACE AT LOCATIONS SHOWN TO ELEVATION 49.5 TO KEEP WATER OUT OF WORK ZONE.
4. INSTALL SUMP PIT (ITEM 906003) AND DEWATERING BAG (ITEM 906002) AS 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 AS APPROVED BY THE ENGINEER.
5. CLEAN OUT EXISTING CMP OF ANY SEDIMENT AND DEBRIS AND DISPOSE OFF SITE, INCIDENTAL TO ITEM 601501.
6. CLEAN CMP AND REPAIR ANY AREAS WITH COMPLETE SECTION LOSS IN ACCORDANCE WITH THE APPROVED WORK PLAN.
7. INSTALL SPRAY APPLIED LINER IN ACCORDANCE WITH THE APPROVED WORK PLAN.
8. REMOVE SUMP PIT, DEWATERING BAG, AND SANDBAGS AND RESTORE RED CLAY CREEK AND MILL RACE FLOWS. PERMANENTLY STABILIZE ANY DISTURBED AREAS ON SLOPE FROM INSTALLATION AND REMOVAL OF SANDBAGS.
9. UPON COMPLETION OF ALL CONSTRUCTION ACTIVITIES ON BRIDGE 148A&B, REMOVE DETOUR AND RETURN TRAFFIC TO NORMAL ROUTE. REMOVE E&S DEVICES AFTER FINAL VEGETATIVE STABILIZATION OF ALL DISTURBED AREAS WITH CONCURRENCE OF DELDOT'S STORMWATER ENGINEER.

Vincent W. Davis 04/04/2019
 DELDOT STORMWATER ENGINEER DATE

"I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THESE PLANS MEET THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS AND THAT ALL CLEARING, GRADING, AND CONSTRUCTION WILL BE ACCOMPLISHED PURSUANT TO THE PLAN."

ADDENDA / REVISIONS



**BR 1-148A&B ON N330
 GREENBANK ROAD OVER
 RED CLAY CREEK**

CONTRACT	T201507405	BRIDGE NO.	1-148A&B
COUNTY	NEW CASTLE	DESIGNED BY:	GPH
		CHECKED BY:	JAT

**CONSTRUCTION PHASING,
 M.O.T., AND EROSION
 CONTROL PLAN**

SECTION	BR
SHEET NO.	28

PORTABLE CHANGEABLE MESSAGE SIGNS

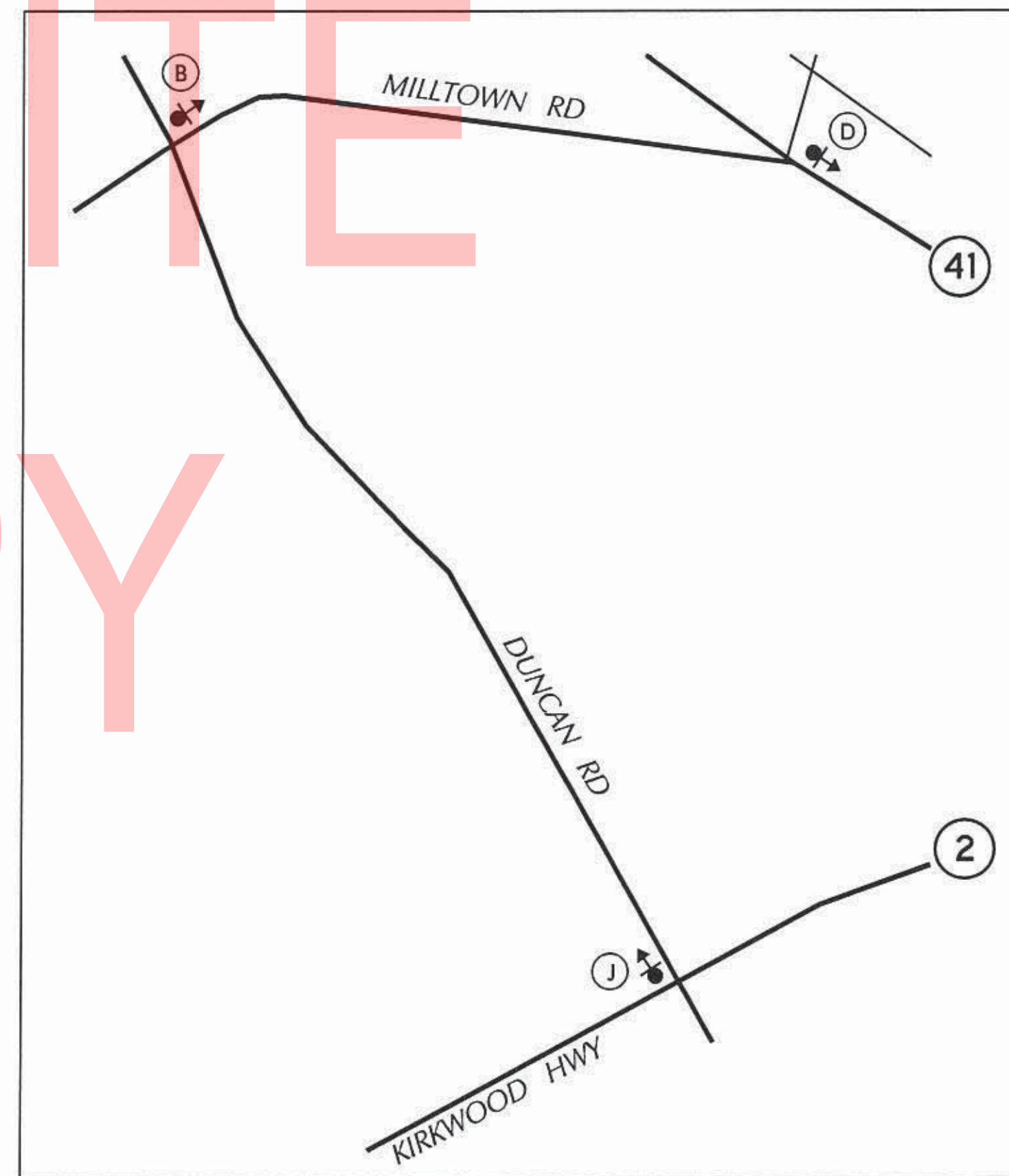
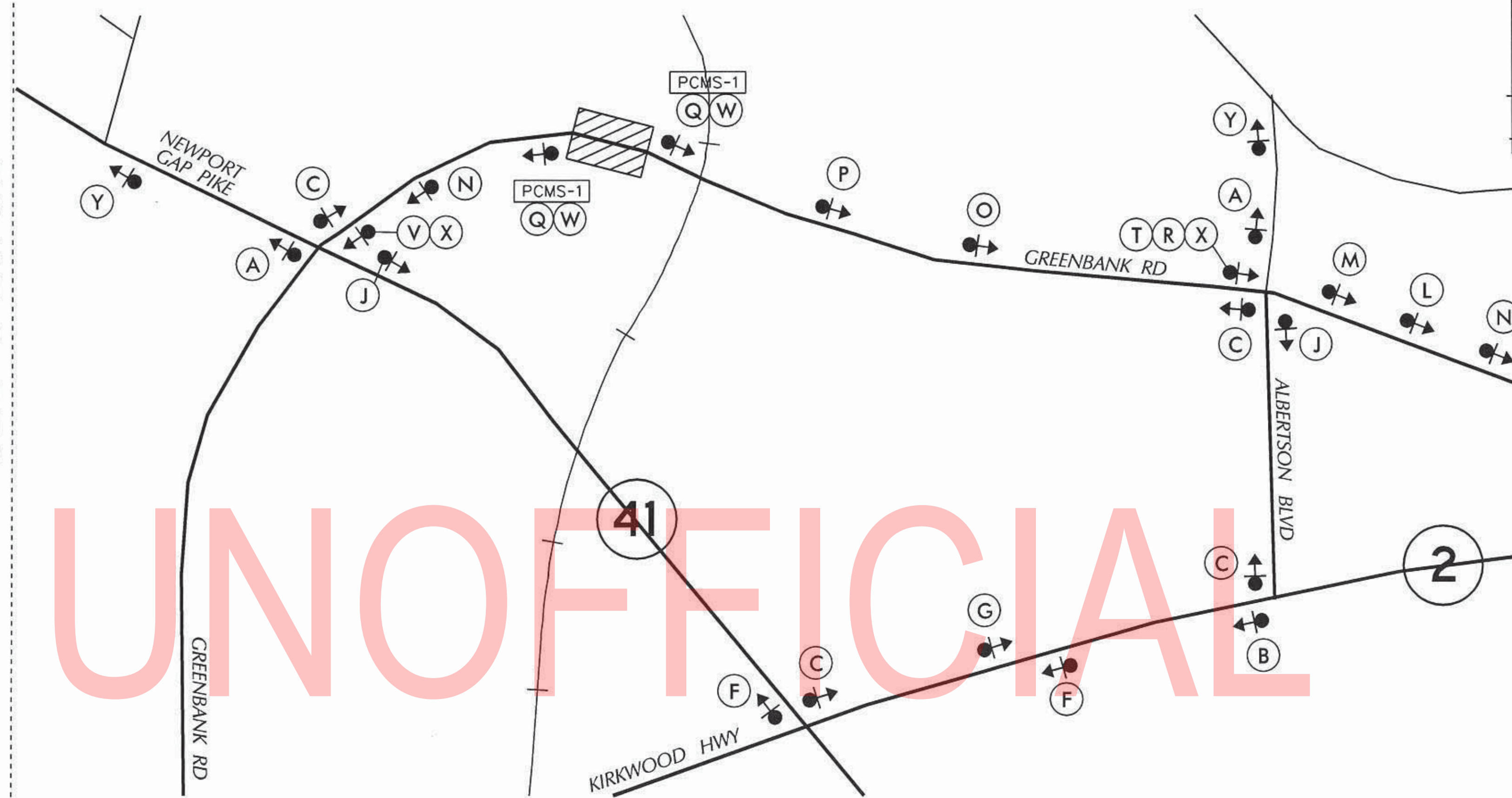
PRIOR TO DETOUR
(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

GREEN-BANK RD CLOSING

AT RR CROSSING XXXXXX

SEE DETAIL



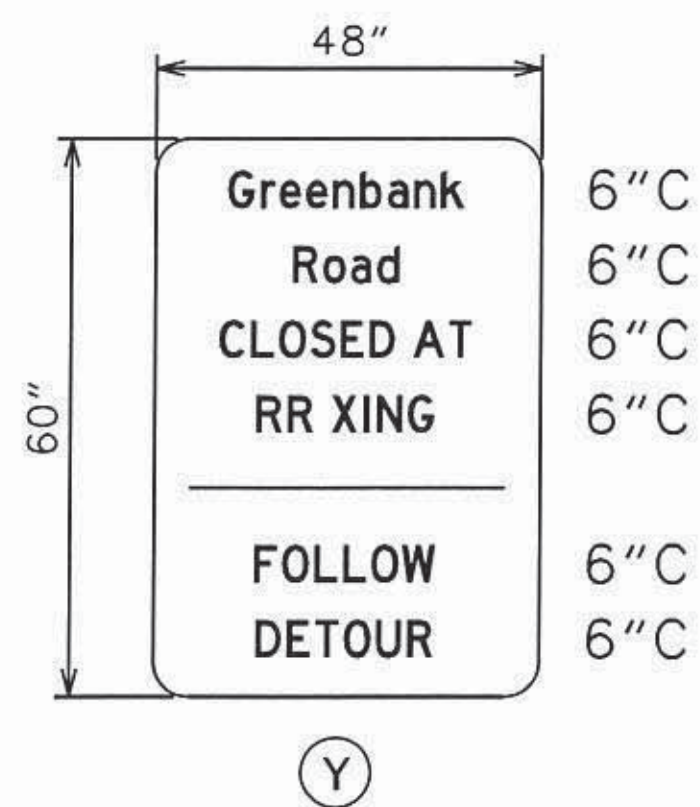
LEGEND

(A) DETOUR M4-9-DE	(B) DETOUR M4-9	(C) DETOUR M4-9	(D) DETOUR M4-9	(E) DETOUR M4-9
(F) DETOUR M4-9	(G) DETOUR M4-9	(H) DETOUR M4-9	(I) DETOUR M4-9	(J) END DETOUR M4-8a
(K) DETOUR AHEAD W20-2	(L) DETOUR 1000 FT W20-2	(M) DETOUR 500 FT W20-2		
(N) ROAD CLOSED AHEAD W20-3	(O) ROAD CLOSED 1000 FT W20-3	(P) ROAD CLOSED 500 FT W20-3		
(Q) ROAD CLOSED R11-2	(R) DETOUR M4-10(L)	(S) DETOUR M4-10(R)		
(T) ROAD CLOSED 1/4 MILES AHEAD LOCAL TRAFFIC ONLY R11-3a	(U) BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY R11-3b	(V) ROAD CLOSED TO THRU TRAFFIC R11-4		
(W) BARRICADE	(X) BARRICADE			

GENERAL NOTES

- 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.)
- 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.)
- DESIGN OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FHWA STANDARD HIGHWAY SIGNS BOOK.
- 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.
- SIGNS NO LONGER IN USE SHALL BE COMPLETELY COVERED WITH NO RETROREFLECTIVE MATERIAL SHOWING, OR SHALL BE REMOVED, AS DIRECTED BY THE ENGINEER.
- 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.
- SIGNS "N" THROUGH "O" AND "T" AND "V", THE WORD "ROAD" SHOULD BE CHANGED TO "RAMP", "RR XING", OR "BRIDGE" WHERE APPLICABLE.
- WARNING SIGNS AND DETOUR TRAILBLAZERS SHALL BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT ORANGE SHEETING.
- "W" BARRICADES SHALL COMPLETELY RUN THE FULL WIDTH OF THE ROADWAY.
- BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

SPECIAL SIGNS



BLACK LEGEND ON D/G RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND

SPECIAL NOTES

- THE CONTRACTOR SHALL NOT BLOCK THE RAILROAD CROSSING OR THE ACCESS TO THE WILMINGTON & WESTERN RAILROAD FACILITY AT ANY TIME WITHOUT PROPER COORDINATION WITH THE RAILROAD.

RECOMMENDED _____ DATE: _____	RECOMMENDED _____ DATE: _____	RECOMMENDED _____ DATE: _____	APPROVED CHIEF SAFETY OFFICER <i>[Signature]</i> DATE: 5-16-16	APPROVED TRAFFIC ENGINEER <i>[Signature]</i> DATE: 5/16/16
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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUM / REVISIONS	<p>NOT TO SCALE</p> <p>BR 1-148 A&B ON GREENBANK ROAD OVER RED CLAY CREEK</p>	CONTRACT NO. T201507405	ROAD NO. N330	<p>DETOUR PLAN</p> <p>SHEET NO. 29</p> <p>TOTAL SHTS. 32</p>	
			COUNTY NEW CASTLE	DESIGNED BY: SWN		CHECKED BY: ASW

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SIGN SCHEDULE

#	SHT. NO.	PLAN ID.	CODE	QTY.	DESCRIPTION	ASSEMBLY NO.	WIDTH (IN)	HEIGHT (IN)	AREA (SF)	ITEM 819018 - SINGLE POST (EA)			ITEM 819019 - MULTI POST (SF)			POST INSTALLATION TYPE	Code X11-12' Post (w/ Basepost)	ITEM 819016 (EA) 4" HOLE, 0-6"	ITEM 819017 (EA) 4" HOLE, > 6"	REMARKS
										DISPOSITION	REMOVE	INSTALL	DISPOSITION	REMOVE	INSTALL					
	30	1		1	GREENBANK MILL HISTORICAL MARKER										0	0	0	See plan note.		
1169	30	2A	W11-2(30)	1	PEDESTRIAN (Symbol) - 30x30		30"	30"	6.25	REPOSITION	1	1			0	0	0			
1369	30	2B	W16-9P(24)	1	AHEAD (plaque) - 24x12		24"	12"	2	REPOSITION	1	1			0	0	0			
1124	30	3	W10-1(36)	1	HIGHWAY-RAIL GRADE CROSSING ADVANCE WARNING 36 Inch		36"	1"	7	REPOSITION	1	1			0	0	0			
1169	30	4A	W11-2(30)	1	PEDESTRIAN (Symbol) - 30x30		30"	30"	6.25	REPOSITION	1	1			0	0	0			
1359	30	4B	W16-7P_L(24)	1	LEFT DOWNWARD DIAGONAL ARROW (plaque) - 24x12		24"	18"	3	REPOSITION	1	1			0	0	0			
JOB TOTALS									24.5					0	0	0				

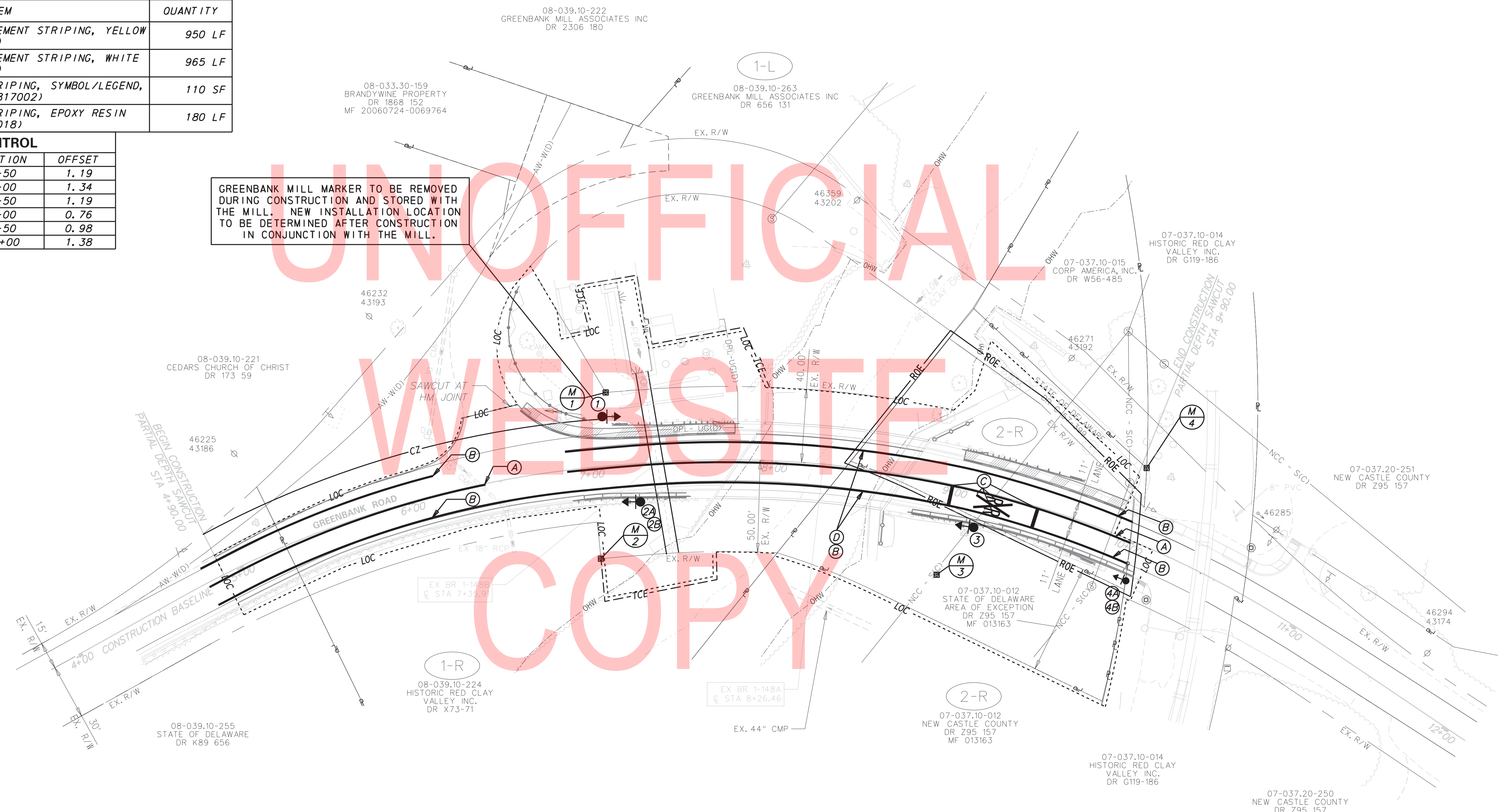
PAVEMENT MARKINGS LEGEND

SYMBOL	ITEM	QUANTITY
(A)	EPOXY RESIN PAINT PAVEMENT STRIPING, YELLOW 5" SOLID (ITEM 817013)	950 LF
(B)	EPOXY RESIN PAINT PAVEMENT STRIPING, WHITE 5" SOLID (ITEM 817013)	965 LF
(C)	PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC (817002)	110 SF
(D)	PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 3" (817018)	180 LF

CENTERLINE CONTROL

STATION	OFFSET	STATION	OFFSET
4+80.23	2.51	7+50	1.19
5+00	2.10	8+00	1.34
5+50	1.06	8+50	1.19
6+00	0.55	9+00	0.76
6+50	0.58	9+50	0.98
7+00	1.14	10+00	1.38

GREENBANK MILL MARKER TO BE REMOVED DURING CONSTRUCTION AND STORED WITH THE MILL. NEW INSTALLATION LOCATION TO BE DETERMINED AFTER CONSTRUCTION IN CONJUNCTION WITH THE MILL.



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ADDENDA / REVISIONS



BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT	BRIDGE NO.	1-148A&B
T201507405	DESIGNED BY:	GPH
COUNTY	CHECKED BY:	JAT
NEW CASTLE		

SIGNING, STRIPING AND CONDUIT PLAN

SS-01
SECTION
BR
SHEET NO.
30

RIGHT-OF-WAY MONUMENT SCHEDULE					
NO.	TYPE	STATION	OFFSET	NORTHING	EASTING
M-1	CAPPED REBAR	7+11.07	-40.00	633751.7607	595369.9445
M-2	CAPPED REBAR	7+00.20	50.00	633661.1583	595367.3722
M-3	CAPPED REBAR	9+00.20	50.56	633652.4192	595550.2722
M-4	CAPPED REBAR	9+93.14	-39.80	633710.5728	595664.7117

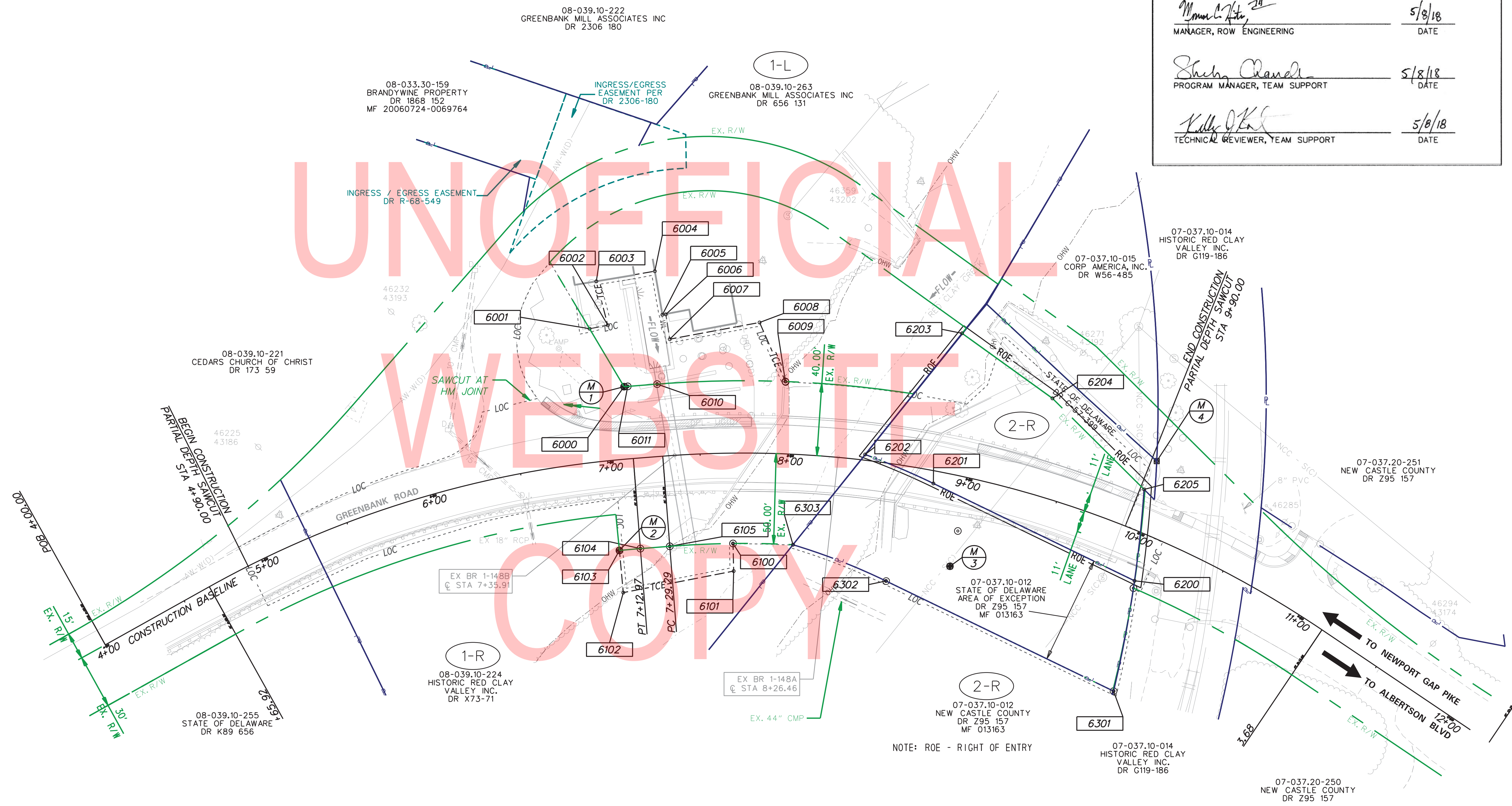
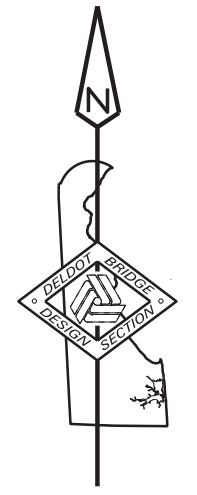
NOTE: MONUMENT M-3 ESTABLISHED FOR FUTURE LAND TRANSFER ON PARCEL 2-R

RECOMMENDED AS TO ENGINEERING NEED

Monica C. Fite, III 5/8/18
 MANAGER, ROW ENGINEERING DATE

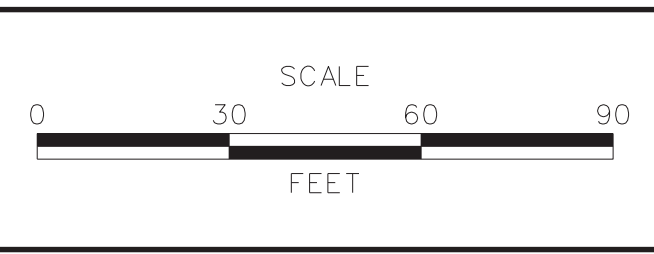
Shah Chandel 5/8/18
 PROGRAM MANAGER, TEAM SUPPORT DATE

Kelly J. K... 5/8/18
 TECHNICAL REVIEWER, TEAM SUPPORT DATE



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ADDENDA / REVISIONS



BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT T201507405	BRIDGE NO. 1-148A&B
COUNTY NEW CASTLE	DESIGNED BY: GPH
	CHECKED BY: JAT

RIGHT-OF-WAY PLAN

SECTION RW
SHEET NO. 31

COUNTY ASSESSMENT PARCEL NUMBER	PLAN SHEET NUMBER	OWNERSHIP OF RECORD	TITLE SOURCE	PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESSMENT	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)	TEMPORARY (SQ. FEET /ACRES)			
08-039.10-224	28	(1-R) HISTORIC RED CLAY VALLY INC	X73-71	D - 1.69	TCE				1231.9707 / 0.03	73616.40 / 1.69		
07-037.10-012	28	(2-R) NEW CASTLE COUNTY	Z95 157 MF 1013163	D - 22.14	ROE				6387.1587 / 0.15	964461.96 / 22.14		
08-039.10-263	28	(1-L) GREENBANK MILL ASSOCIATES, INC	DR 656 131	D - 7.60	TCE				3674.6191 / 0.08	330968.88 / 7.60		

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
08-039.10-224	(1-R) HISTORIC RED CLAY VALLY INC	TCE	X73-71	1.690

ALIGNMENT NUMBER & DESCRIPTION: 1003 - CONSTRUCTION BASELINE											
PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6100	1003	7+67.66	50.00	633665.0254	595430.2312	S 1°22'12.19" E	15.27				
6101	1003	7+67.88	65.27	633649.7585	595430.5964	S 78°58'11.42" W	62.24				
6102	1003	6+99.96	73.40	633637.8511	595369.5096	N 5°14'28.57" W	23.41				
6103	1003	7+00.20	50.00	633661.1583	595367.3716			N 84°53'34.27" E	11.65	11.65	522.96
6104	1003	7+12.97	50.00	633662.1955	595378.9771	N 85°31'52.10" E	16.32				
6105	1003	7+29.29	50.00	633663.4671	595395.2475			N 87°26'58.29" E	35.02	35.03	522.96
6100	1003	7+67.66	50.00	633665.0254	595430.2312						

FIGURE 6100 AREA = 1231.9707 SQ. FT. (0.0283 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
07-037.10-012	(2-R) NEW CASTLE COUNTY	ROE	Z95 157	3.417

ALIGNMENT NUMBER & DESCRIPTION: 1003 - CONSTRUCTION BASELINE											
PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6200	1003	10+07.06	26.02	633644.3976	595652.4053	N 64°10'58.05" W	123.64				
6201	1003	8+81.00	6.97	633698.2420	595541.1080	N 67°02'15.24" W	41.03		41.05		-404.26
6202	1003	8+41.09	-3.14	633714.2508	595503.3247	N 38°40'07.51" E	85.86				
6203	1003	8+81.15	-77.58	633781.2899	595556.9731	S 54°16'20.49" E	61.62				
6204	1003	9+32.25	-54.02	633745.3079	595606.9964	S 45°11'20.49" E	71.46				
6205	1003	9+92.49	-22.68	633694.9433	595657.6944			S 5°58'25.03" W	50.82	50.83	676.20
6200	1003	10+07.06	26.02	633644.3976	595652.4053						

FIGURE 6200 AREA = 9867.9092 SQ. FT. (0.2265 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
08-039.10-263	(1-L) GREENBANK MILL ASSOCIATES, INC	TCE	DR 656 131	7.598

ALIGNMENT NUMBER & DESCRIPTION: 1003 - CONSTRUCTION BASELINE											
PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
6000	1003	7+11.07	-40.00	633751.7607	595369.9445	N 30°45'36.49" W	37.33				
6001	1003	6+96.52	-73.73	633783.8412	595350.8509	N 79°12'10.72" E	10.28				
6002	1003	7+05.58	-74.65	633785.7672	595360.9505	N 14°40'20.83" W	25.10				
6003	1003	7+02.07	-99.43	633810.0502	595354.5924	N 80°09'49.83" E	32.85				
6004	1003	7+32.34	-102.39	633815.6623	595386.9614	S 10°03'59.60" E	24.37				
6005	1003	7+34.54	-78.15	633791.6690	595391.2208	N 86°31'21.01" E	1.84				
6006	1003	7+36.16	-78.14	633791.7805	595393.0557	S 9°00'28.63" E	13.90				
6007	1003	7+37.30	-64.30	633778.0534	595395.2318	N 79°29'23.27" E	50.56				
6008	1003	7+81.92	-72.28	633787.2753	595444.9389	S 23°37'27.88" E	35.65				
6009	1003	7+95.69	-40.00	633754.6137	595459.2250			S 88°51'05.57" W	70.99	71.03	-612.96
6010	1003	7+29.30	-40.00	633753.1908	595388.2459	S 85°31'54.51" W	16.33				
6011	1003	7+12.97	-40.00	633751.9188	595371.9683			S 85°31'52.33" W	2.03	2.03	-612.96
6000	1003	7+11.07	-40.00	633751.7607	595369.9445						

FIGURE 6000 AREA = 3674.6191 SQ. FT. (0.0844 ACRES)

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LEGEND	
FEE	AREA OF ACQUISITION
RW	AREA OCCUPIED BY EXISTING RW
PE	PERMANENT EASEMENT
TCE	TEMPORARY CONSTRUCTION EASEMENT
ROE	RIGHT OF ENTRY
*	"-" OFFSET IS LEFT OF BASELINE
**	"-" CURVE TURNS TO THE LEFT

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

ADDENDA / REVISIONS

BR 1-148A&B ON N330 GREENBANK ROAD OVER RED CLAY CREEK

CONTRACT T201507405	BRIDGE NO. 1-148A&B
COUNTY NEW CASTLE	DESIGNED BY: GPH CHECKED BY: JAT

RIGHT-OF-WAY PLAN	SECTION RW
	SHEET NO. 32