

GENERAL LOCATION OF CONTRACT

THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY
UNITS



CONSTRUCTION PLANS FOR:

REHABILITATION OF I-95, BEARING REPLACEMENTS

CONTRACT NUMBER: **T201907404**
FEDERAL AID PROJECT NUMBER: **NH-N059(46)**

COUNTY: **NEW CASTLE** M.R. #: **N059**



LOCATION MAP
NOT TO SCALE

BEGIN CONTRACT
STATION 1205+00

END CONTRACT
STATION 1319+82

DESIGN DESIGNATION			
FUNCTIONAL CLASS: INTERSTATE	D.H.V. PROJECTED: 7,900	YEAR: 2040	
TYPE OF CONSTRUCTION: BRIDGE REHABILITATION	DESIGN SPEED: 65 M.P.H.		
A.A.D.T. CURRENT: 111,000	YEAR: 2015	TRUCKS: 4.6 %	
A.A.D.T. PROJECTED: 142,000	YEAR: 2040	DIRECTION OF DISTRIBUTION: 54 %	
APPROVED DESIGN EXCEPTIONS			
DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
ADDENDA / REVISIONS			
DESCRIPTION	NAME & DATE		
ASSOCIATED CONTRACTS			
CONTRACT NO.	CONTRACT NAME		
I-2(12)	INTERSTATE HIGHWAY ROUTE I-95 GRADING, DRAINAGE, PAVING & APPURTENANCES		
64-03-004	INTERSTATE HIGHWAY ROUTE I-95 SOUTH WILMINGTON VIADUCT		
70-02-001	RESURFACING I-95 - BRIDGE OVER RTE. 7, BR9-1, 9-2, 9-3, AND SOUTH WILMINGTON VIADUCT		
75-06-001	I-95 WIDENING - CHRISTINA INTERCHANGE TO SOUTH WILMINGTON VIADUCT		
76-03-020	WILMINGTON BOULEVARD RAMP E AND F VIADUCTS		
78-091-01	INTERSTATE HIGHWAY ROUTE I-95 SOUTH WILMINGTON VIADUCT WIDENING AND RESURFACING		
96-074-07	WILMINGTON VIADUCT REHABILITATION AND PAINTING		

APPROVED FOR ADVERTISEMENT

Shrey 11/14/2019
DIRECTOR OF TRANSPORTATION SOLUTIONS DATE

PREPARED BY
WRA Whitman, Reardon and Associates, LLP
Engineers • Architects • Environmental Planners Est. 1915

William A. Gesquire 10/28/19
THIS SEAL APPLIES TO ALL SHEETS BEARING THE "WRA" SECTION DESIGNATION. DATE SEAL

WILLIAM A. GESQUIRE
No. 15578
DELAWARE
PROFESSIONAL ENGINEER
SEAL

PREPARED BY
Pennoni PENNONI ASSOCIATES INC.
121 CONTINENTAL DRIVE
SUITE 207
NEWARK, DE 19713

Clifford W. Pennoni 10/28/2019
THIS SEAL APPLIES TO ALL SHEETS BEARING THE "PAI" SECTION DESIGNATION. DATE SEAL

CLIFFORD W. PENNONI
No. 19646
DELAWARE
PROFESSIONAL ENGINEER
SEAL

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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
	USACE WETLAND BOUNDARY
	WOODS LINE BOUNDARY
	STATE MAPPED WETLAND

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING / RAILROAD 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 VENT OR CLEANOUT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES	
	ARTESIAN WATER COMPANY
	CITY OF WILMINGTON - SEWER
	CITY OF WILMINGTON - WATER
	COMCAST CABLE
	DELDOT MULTIDUCT CONDUIT - EXISTING
	DELDOT SIGNAL CONDUIT - EXISTING
	DELMARVA POWER - ELECTRIC
	DELMARVA POWER - GAS
	VERIZON

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CONSTRUCTION BASELINE
	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CLEAR ZONE
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	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

PROPOSED SYMBOLS

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	DO NOT DISTURB
	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
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN CONNECTION TO EXISTING PIPE
	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
	EXISTING CONDUIT

PAVEMENT SECTION(S)	
	OVERLAY PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	12" PORTLAND CEMENT CONCRETE PAVEMENT 12" GRADED AGGREGATE BASE COURSE, TYPE B
	FULL DEPTH ASPHALT PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	PAVEMENT REMOVAL OUTSIDE OF ROADWAY TEMPLATE

UTILITY COMPANY FACILITIES	
	CITY OF WILMINGTON - SEWER

MISCELLANEOUS SYMBOLS	
	SLOTTED DRAIN PIPE
	PIPE LINING
	MANHOLE - COMBINATION SEWER/SD
	RADAR TRAFFIC MANAGEMENT SENSOR

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ADDENDA / REVISIONS

NOT TO SCALE

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT T201907404	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE
	CHECKED BY: D. NIZAMOFF

LEGEND

LG-01

SECTION WRA
SHEET NO. 2

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 2016, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

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

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

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

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

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

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
2. 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

3. ALL OBJECTS WITHIN THE LOC NOT DESIGNATED AS "DND" (DO NOT DISTURB) OR DESIGNATED TO BE ADJUSTED, ABANDONED, CONVERTED (TO JUNCTION BOX/MANHOLE), OR RELOCATED, SHALL BE REMOVED BY THE CONTRACTOR. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - A. EXISTING ASPHALT PATH

SECTION 700

4. 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 SAWCUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR UNDER ITEM 762001 - SAWCUTTING, CONCRETE, FULL DEPTH.

SECTION 900

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

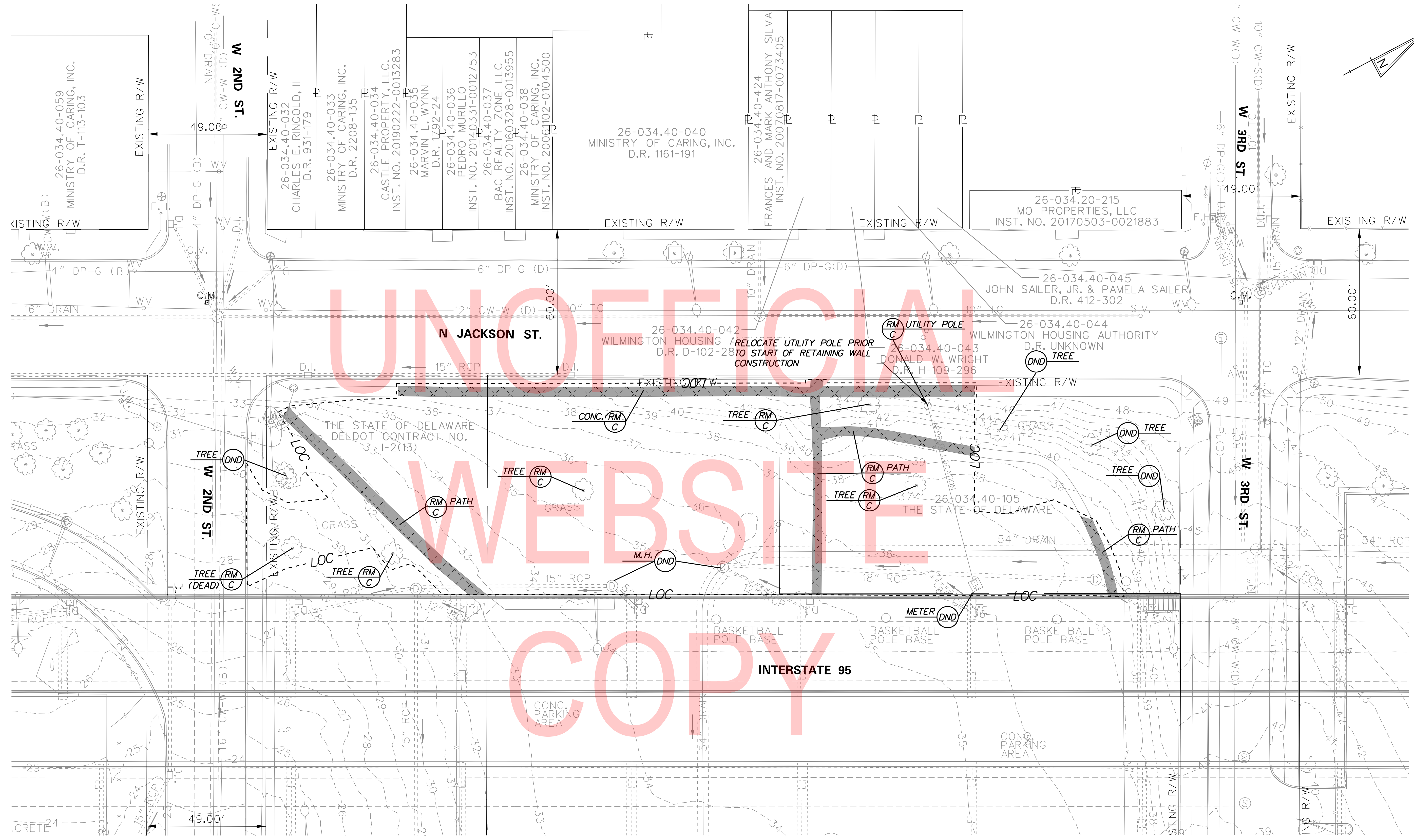
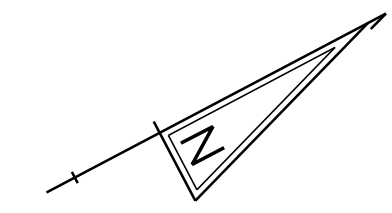
MISCELLANEOUS

6. 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_Defour@state.de.us.

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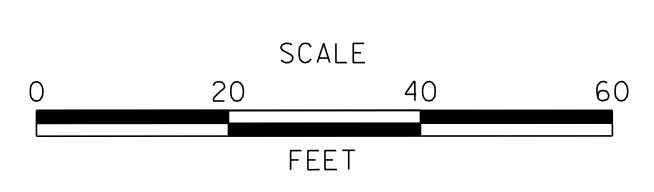
ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	NOTES	PN-01
				T201907404			SECTION
				COUNTY	DESIGNED BY: K. AMBROSE		WRA
				NEW CASTLE	CHECKED BY: D. NIZAMOFF		SHEET NO.
							3



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ADDENDA / REVISIONS

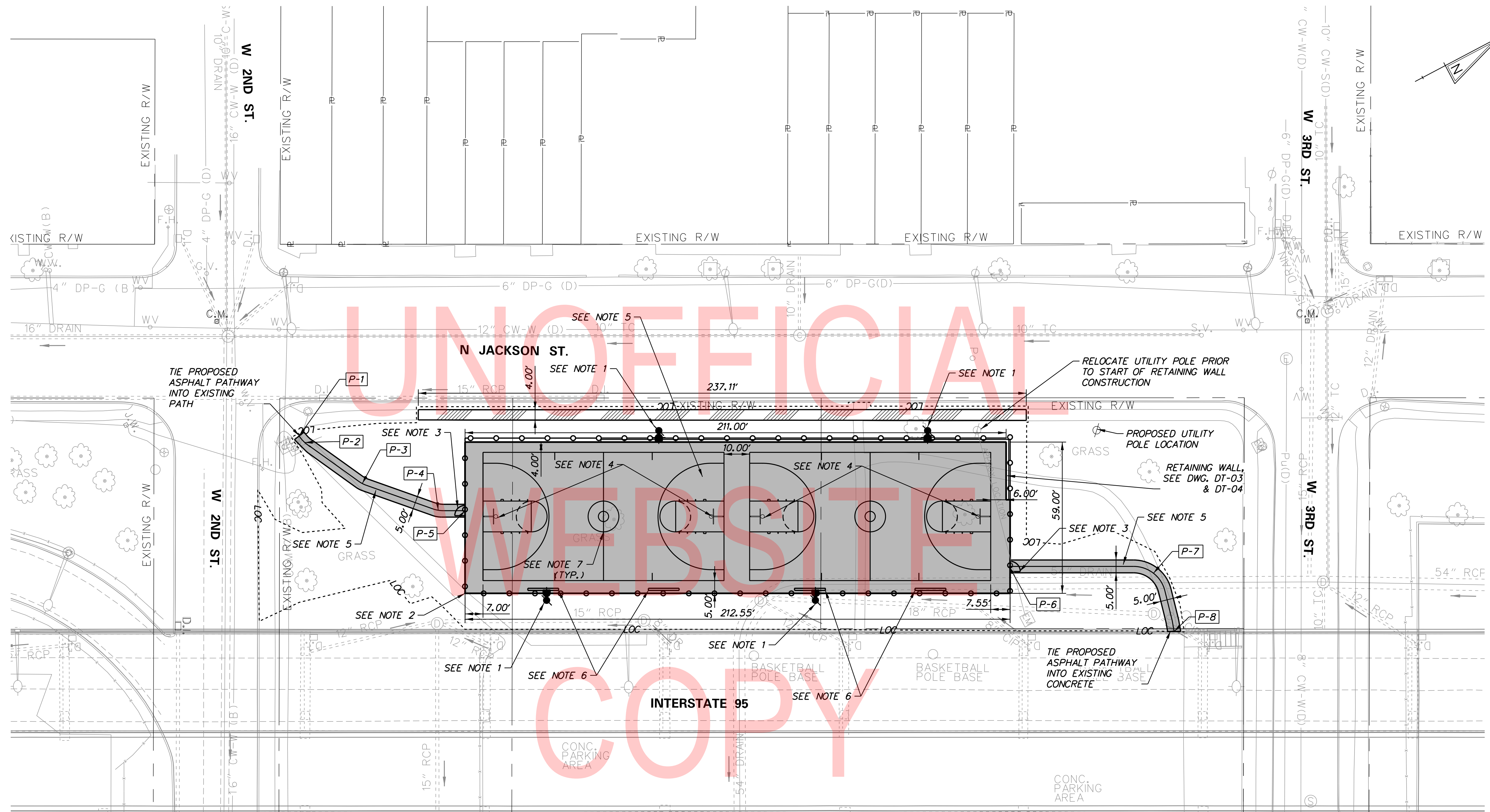
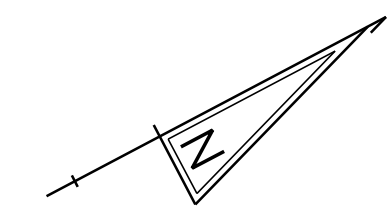


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907405	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: A. CONNELLY
	CHECKED BY: B. JONES

**EXISTING TOPOGRAPHY
AND DEMOLITION**

TO-01
SECTION WRA
SHEET NO. 4

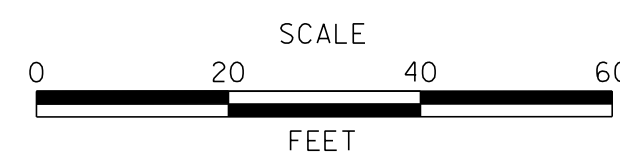


NOTES:

1. SUGGESTED LOCATION OF POLE WITH AN LED FLOODLIGHT LUMINAIRE HAVING A NEMA 6X6 DISTRIBUTION AND AN OUTPUT OF 37,908 LUMENS. REFER TO THE TEMPORARY LIGHTING SPECIAL PROVISION FOR DETAILED REQUIREMENTS OF THE TEMPORARY LIGHTING SYSTEM.
2. SEE DWG DT-01 FOR 10' HIGH CHAIN LINK FENCE DETAIL.
3. SEE DT-01 FOR FENCE GATE DETAIL.
4. SEE DWG DT-01 FOR BASKETBALL BACKSTOP ASSEMBLY DETAIL
5. SEE DWG DT-01 FOR BASKETBALL COURT AND PATHWAY PAVING DETAIL.
6. SEE DWG DT-01 FOR BENCH DETAIL.
7. FOR BASKETBALL COURT LINE LAYOUT, SEE DWG DT-02.

CONSTRUCTION ALIGNMENT CONTROL			
POINT NO.	NORTHING	EASTING	RADIUS
P-1	634732	615381	
P-2	634733	615385	25'
P-3	634745	615409	25'
P-4	634767	615432	25'
P-5	634775	615437	
P-6	634953	615555	
P-7	635002	615584	25'
P-8	634998	615608	

ADDENDA / REVISIONS

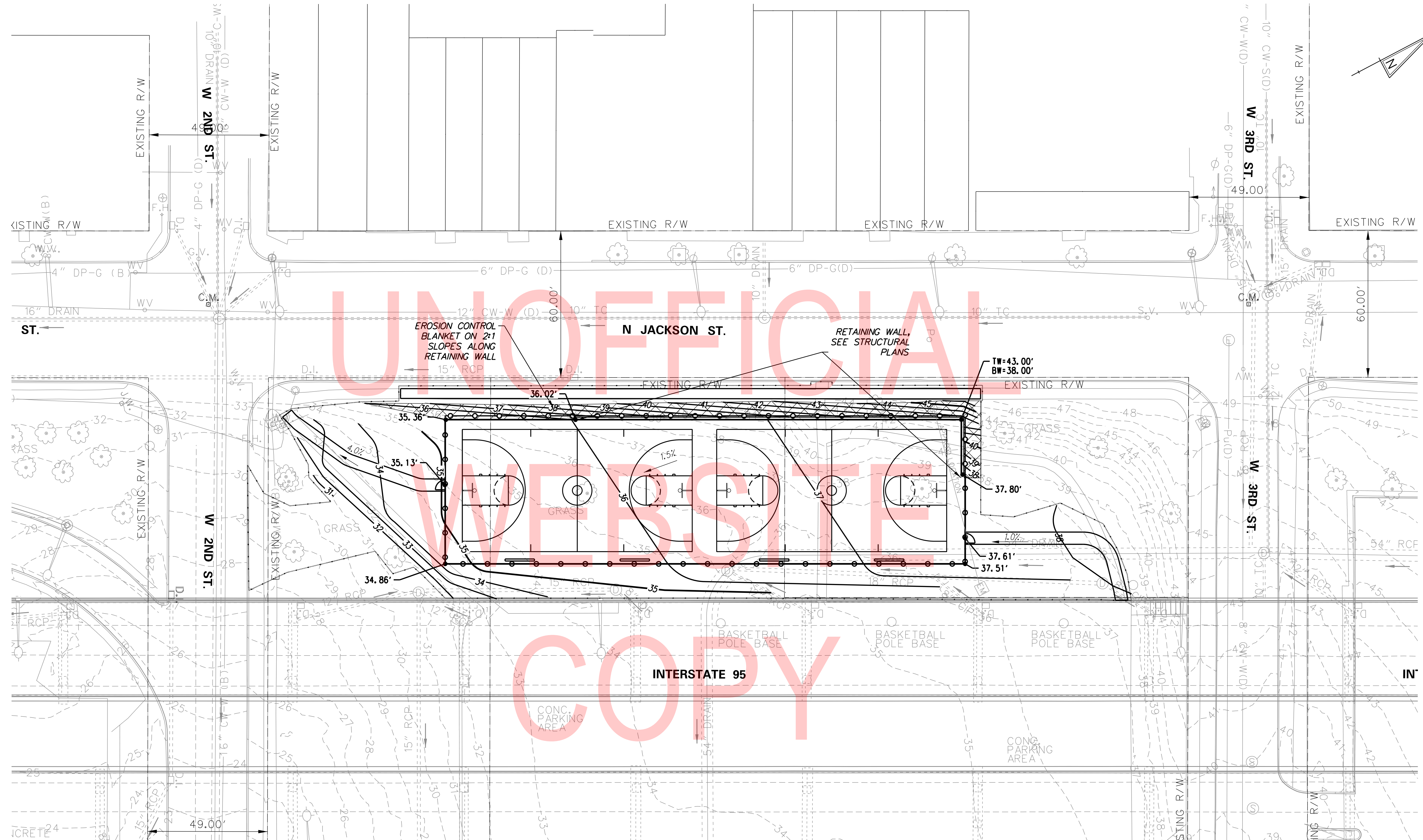
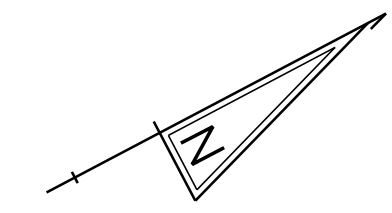


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907406	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: A. CONNELLY
	CHECKED BY: B. JONES

CONSTRUCTION PLAN

CP-01
SECTION WRA
SHEET NO. 5

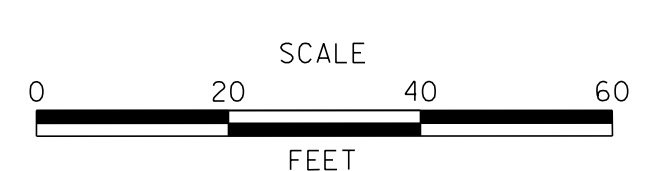


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- NOTES:
1. THE SLOPE ALONG THE BASKETBALL COURTS FROM THE NORTHEAST CORNER TO THE SOUTHEAST CORNER IS 1.50%.
 2. THE MAXIMUM LONGITUDINAL SLOPE FOR ALL PATHWAYS AND SIDEWALKS IS 4.80% AND THE MAXIMUM CROSS SLOPE IS 1.80%.
 3. TW=TOP OF WALL, BW=BOTTOM OF WALL
 4. ALL NON-IMPERVIOUS, DISTURBED AREA SHALL BE STABILIZED WITH TOPSOIL, PERMANENT GRASS SEEDING, SUBDIVISION AND, WHERE SPECIFIED, EROSION CONTROL BLANKET.

LEGEND

 EROSION CONTROL BLANKET AREA MULCH



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

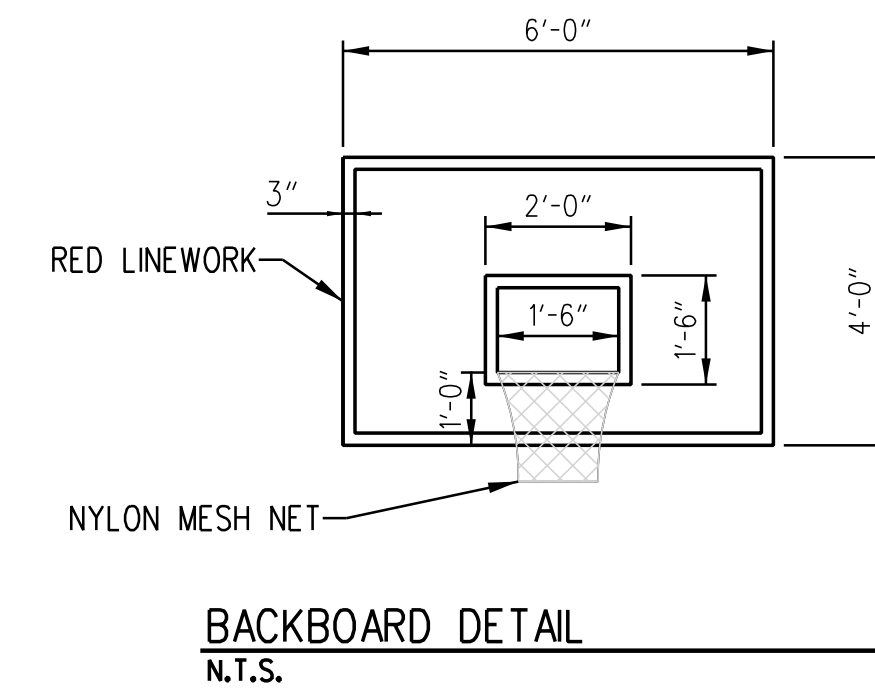
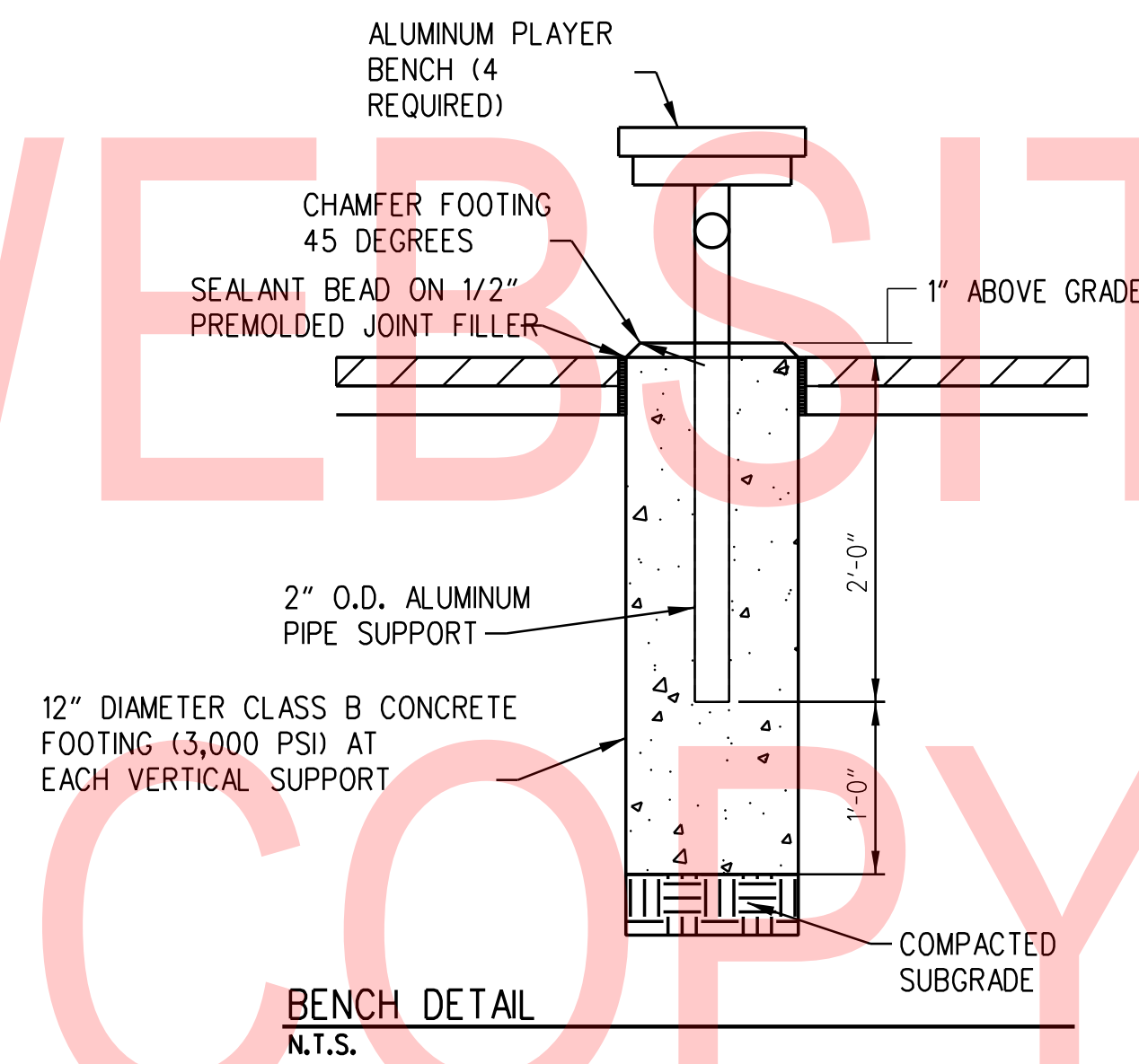
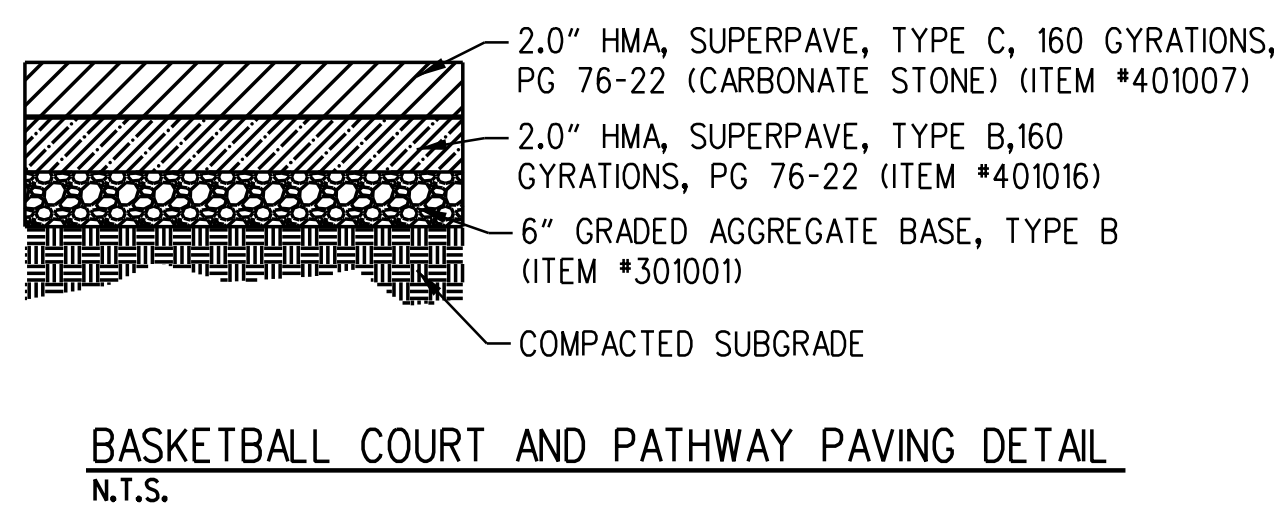
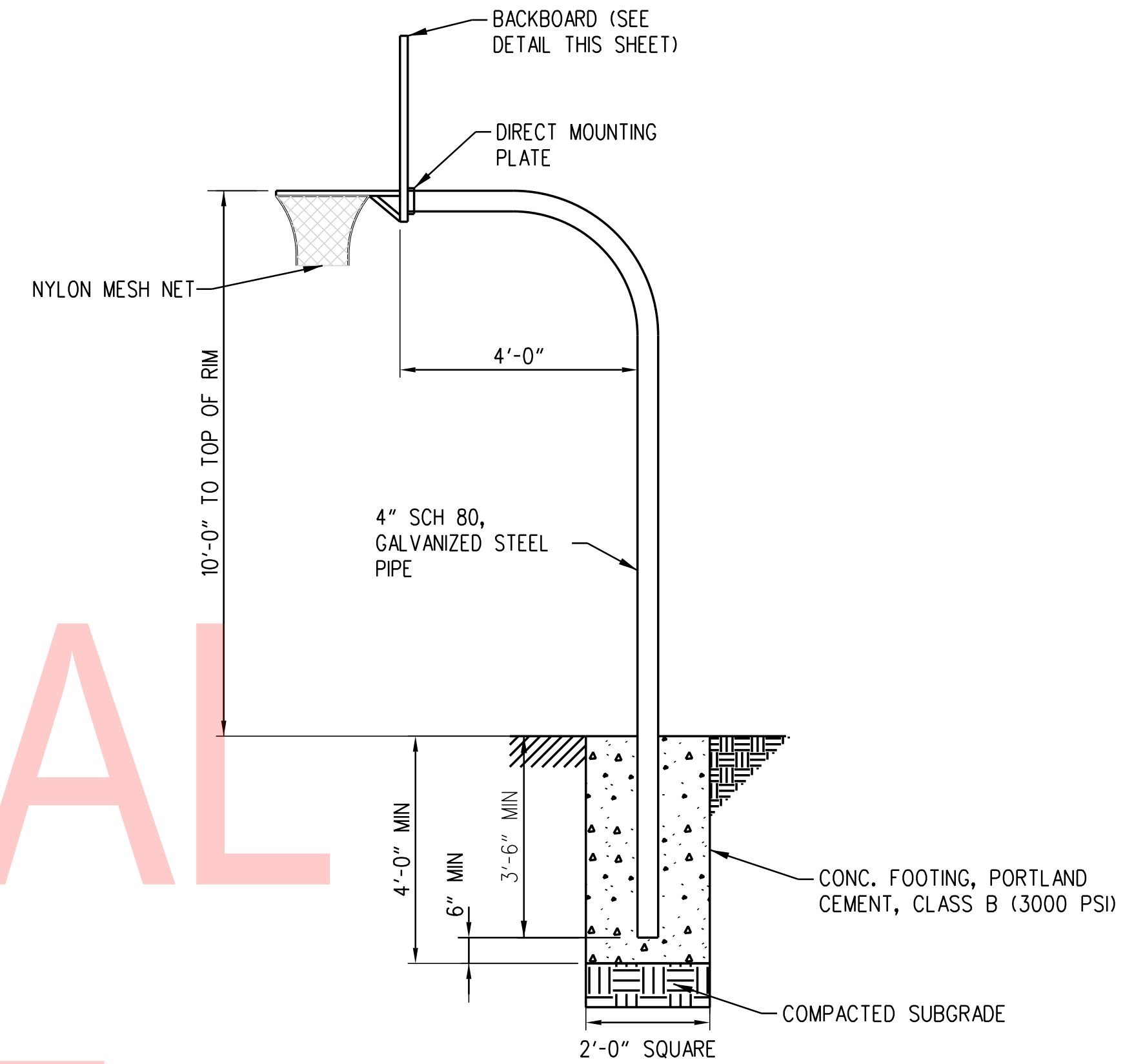
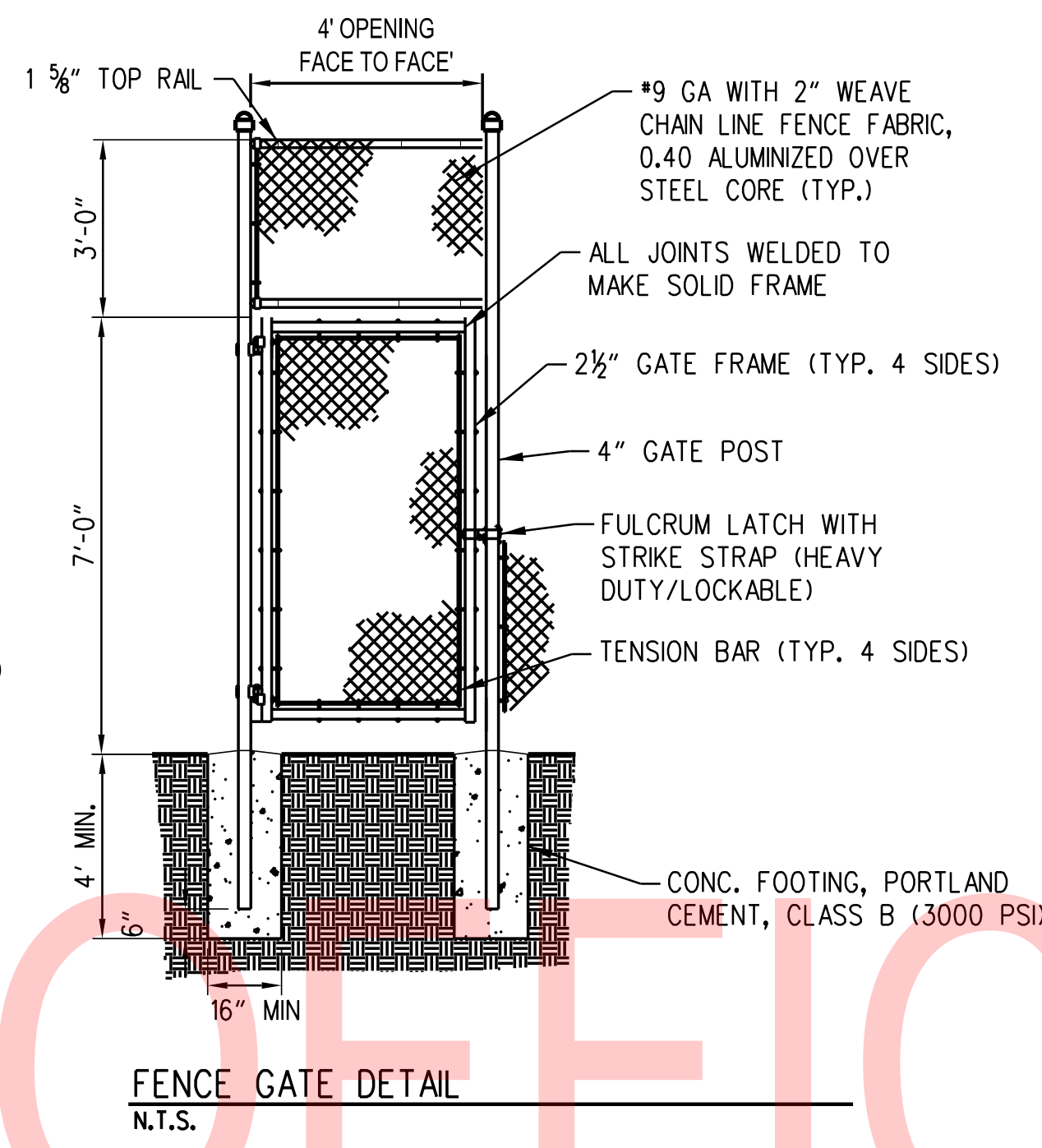
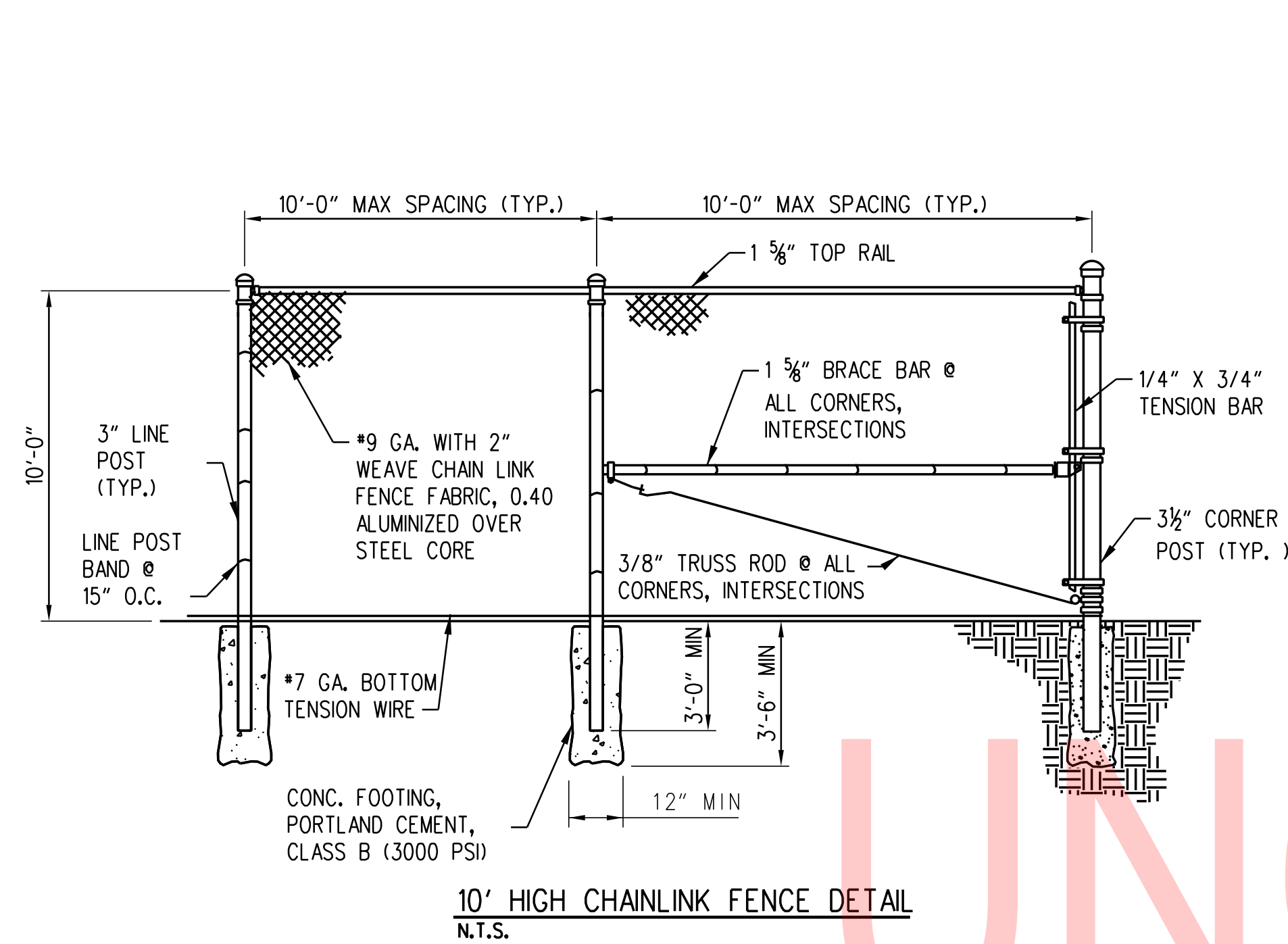
CONTRACT T201907409	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: A. CONNELLY
	CHECKED BY: B. JONES

GRADING PLAN

GR-01
SECTION WRA
SHEET NO. 6

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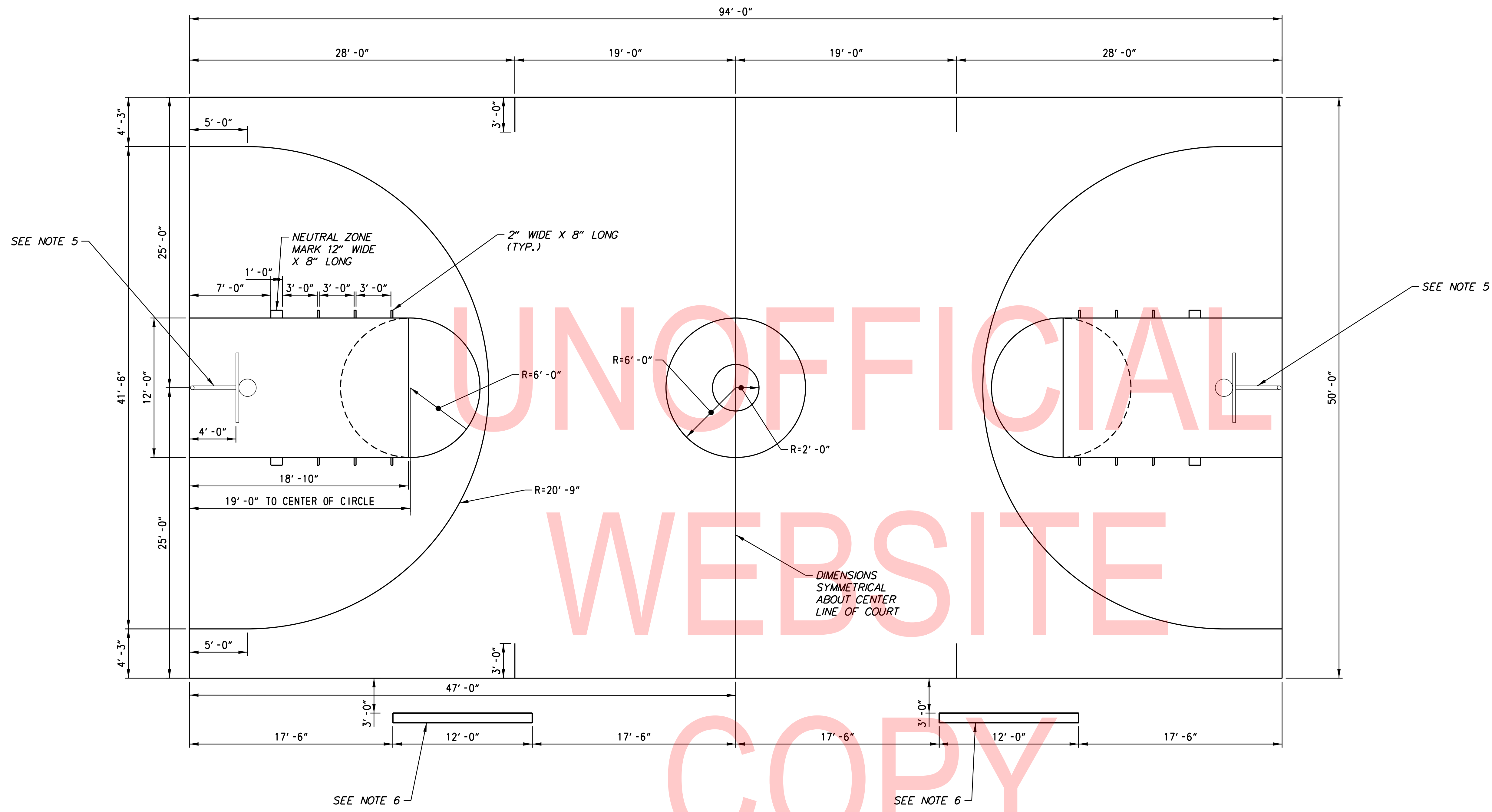
ADDENDA / REVISIONS



NOTES:
 1. FOR ADDITIONAL BASKETBALL BACKSTOP ASSEMBLY AND BENCH INFORMATION, SEE ITEM 763516-BASKETBALL COURT EQUIPMENT.

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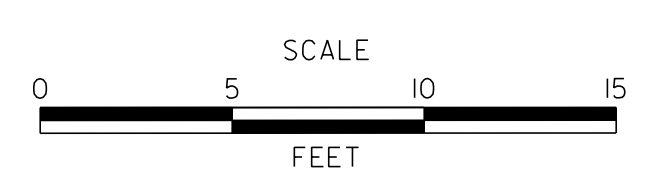
ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	CONSTRUCTION DETAILS	DT-01
				T201907407			DESIGNED BY: A. CONNELLY
		NEW CASTLE		CHECKED BY: B. JONES	SHEET NO.	7	



- NOTES:
1. ALL DIMENSIONS SHOWN APPLY TO BOTH BASKETBALL COURTS. COURT DIMENSIONS CONFORM TO CURRENT NCAA STANDARD.
 2. PAINT LINES PER DELDOT SPECIFICATIONS ITEM NUMBER 817001.
 3. ALL LINES SHALL BE 2" WIDE WHITE LINES UNLESS OTHERWISE NOTED.
 4. ALL DIMENSIONS ARE TO INSIDE EDGE OF LINES UNLESS OTHERWISE NOTED.
 5. SEE DWG DT-01 FOR BASKETBALL BACKSTOP ASSEMBLY DETAIL.
 6. SEE DWG DT-01 FOR BENCH DETAIL.

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ADDENDA / REVISIONS

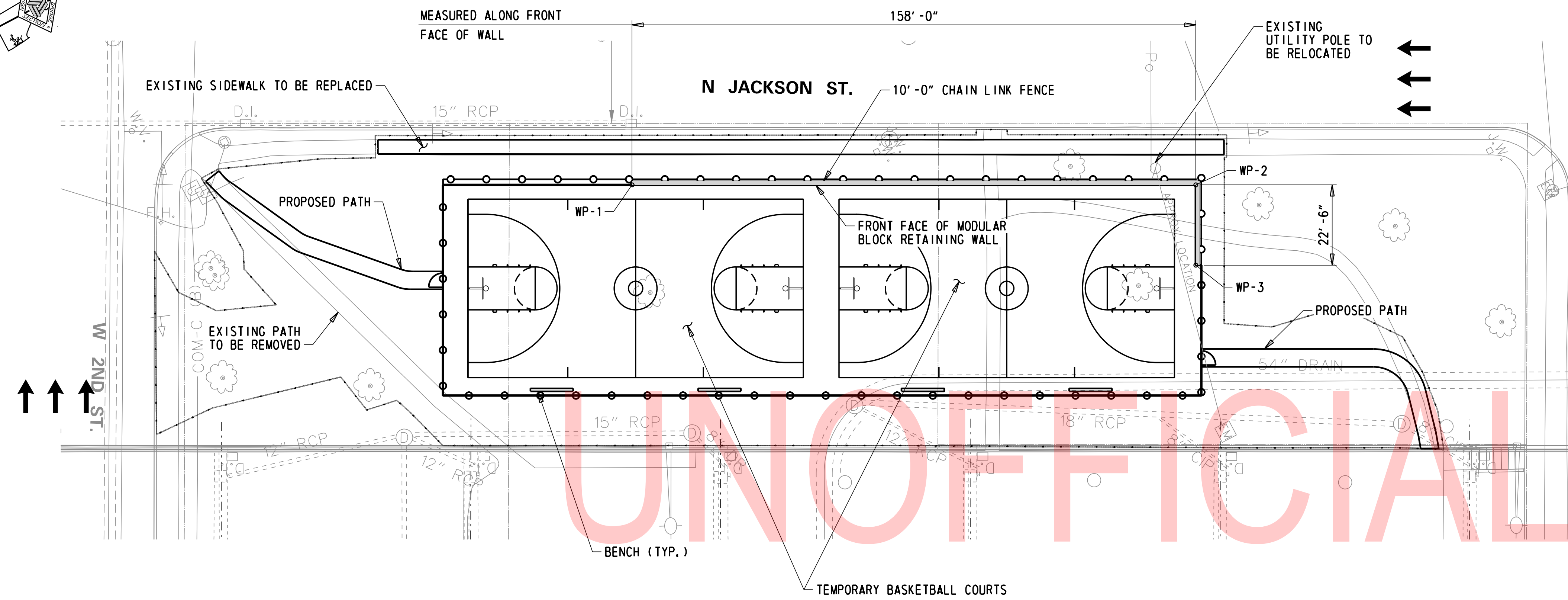
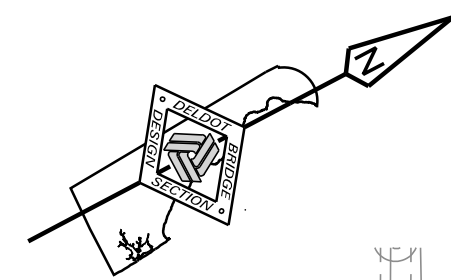


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907408	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: A. CONNELLY
	CHECKED BY: B. JONES

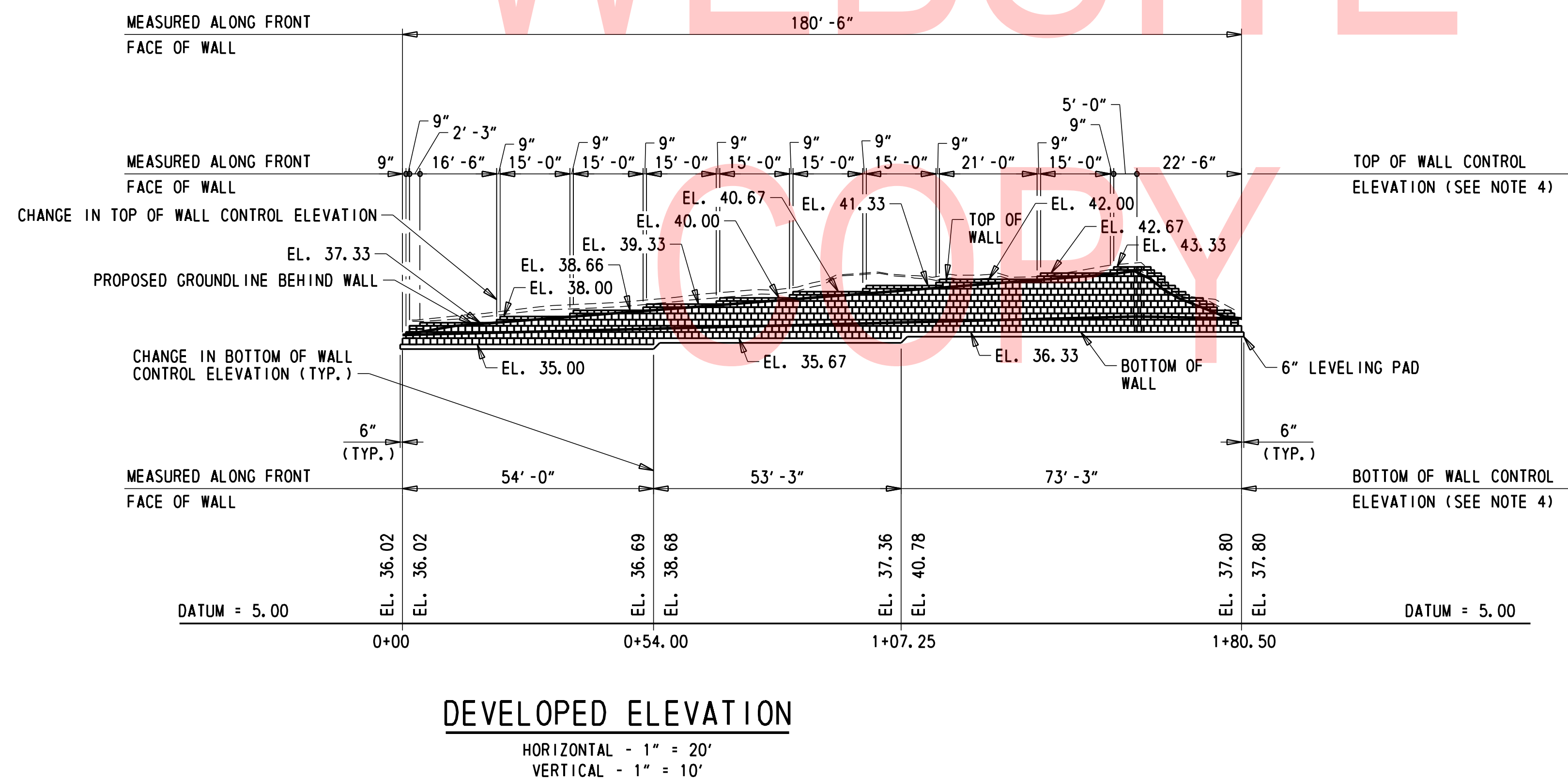
CONSTRUCTION DETAILS

DT-02
SECTION WRA
SHEET NO. 8



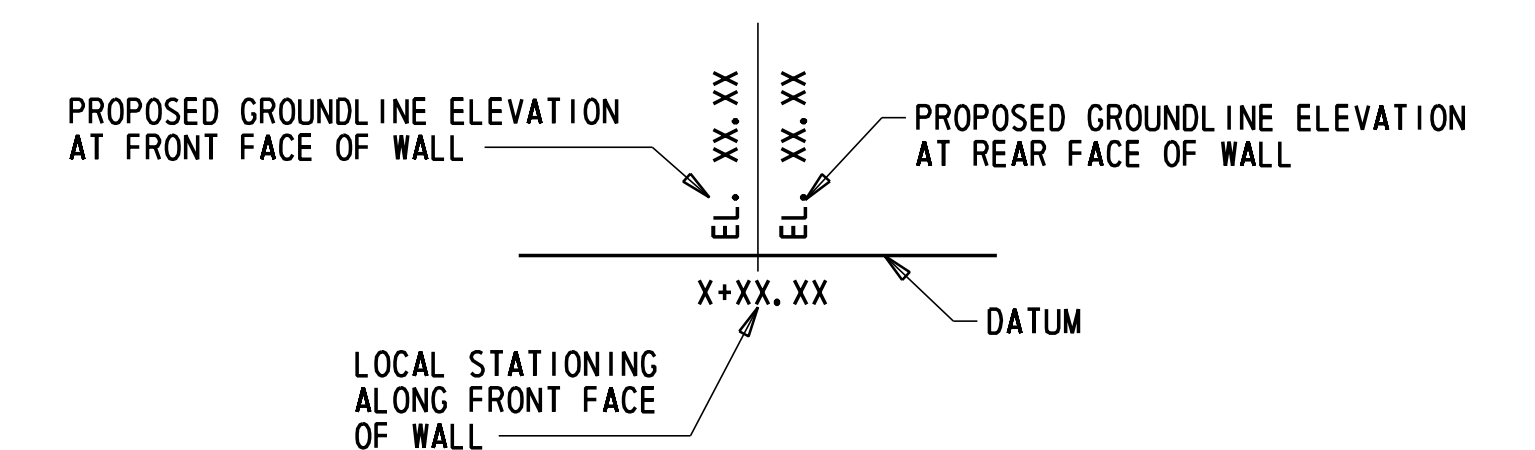
- NOTES:**
1. MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED ACCORDING TO 2016 DELDOT STANDARD SPECIFICATION, SECTION 607 - MECHANICALLY STABILIZED EARTH WALLS.
 2. WALL SHALL BE DESIGNED TO THE FOLLOWING PARAMETERS:
 RETAINED SOIL:
 SOIL FRICTION RESISTANCE, Φ_1 = 30 DEGREES
 SOIL UNIT WEIGHT, γ = 120 PCF
 ACTIVE EARTH PRESSURE COEFFICIENT, K_a = 0.33
 FOUNDATION:
 FACTORED BEARING RESISTANCE = 2900 PSF
 3. FOR WALL HEIGHTS GREATER THAN 3 FT THE MINIMUM REINFORCEMENT LENGTH IS $0.75 \cdot H$ WHERE H IS MEASURED FROM THE TOP OF THE LEVELING PAD TO TOP OF CAP UNIT.
 4. ELEVATIONS SHOWN FOR TOP AND BOTTOM OF THE WALL ARE CONTROL ELEVATIONS. THE TOP OF THE WALL SHALL BE NO LOWER THAN THE TOP OF WALL CONTROL ELEVATIONS SHOWN ON THIS SHEET. THE BOTTOM OF THE WALL SHALL BE NO HIGHER THAN THE BOTTOM OF WALL CONTROL ELEVATIONS SHOWN ON THIS SHEET.
 5. FOR LOCATION OF WORKING POINT APPLICATION, SEE TYPICAL SECTION.
 6. SEE DWG. DT-01 FOR CHAIN LINK FENCE DETAILS.
 7. CHAIN LINK FENCE NOT SHOWN IN ELEVATION FOR CLARITY.
 8. SEE DWG. DT-02 FOR TEMPORARY BASKETBALL COURTS DETAILS.
 9. FENCE POSTS SHALL BE INSTALLED PRIOR TO WALL CONSTRUCTION WITH POST FOUNDATIONS SET BELOW LEVELING PAD ELEVATION. FENCE MESH SHALL BE INSTALLED AFTER WALL CONSTRUCTION IS COMPLETE.

PLAN
 1" = 20'



WORKING POINTS		
POINT	NORTHING	EASTING
WP-1	634835.1154	615438.3394
WP-2	634974.8780	615512.0308
WP-3	634964.3840	615531.9337

LEGEND:



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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
 BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.
T201907404	
COUNTY	DESIGNED BY: K. AMBROSE
NEW CASTLE	CHECKED BY: D. NIZAMOFF

**RETAINING WALL
 PLAN AND ELEVATION**

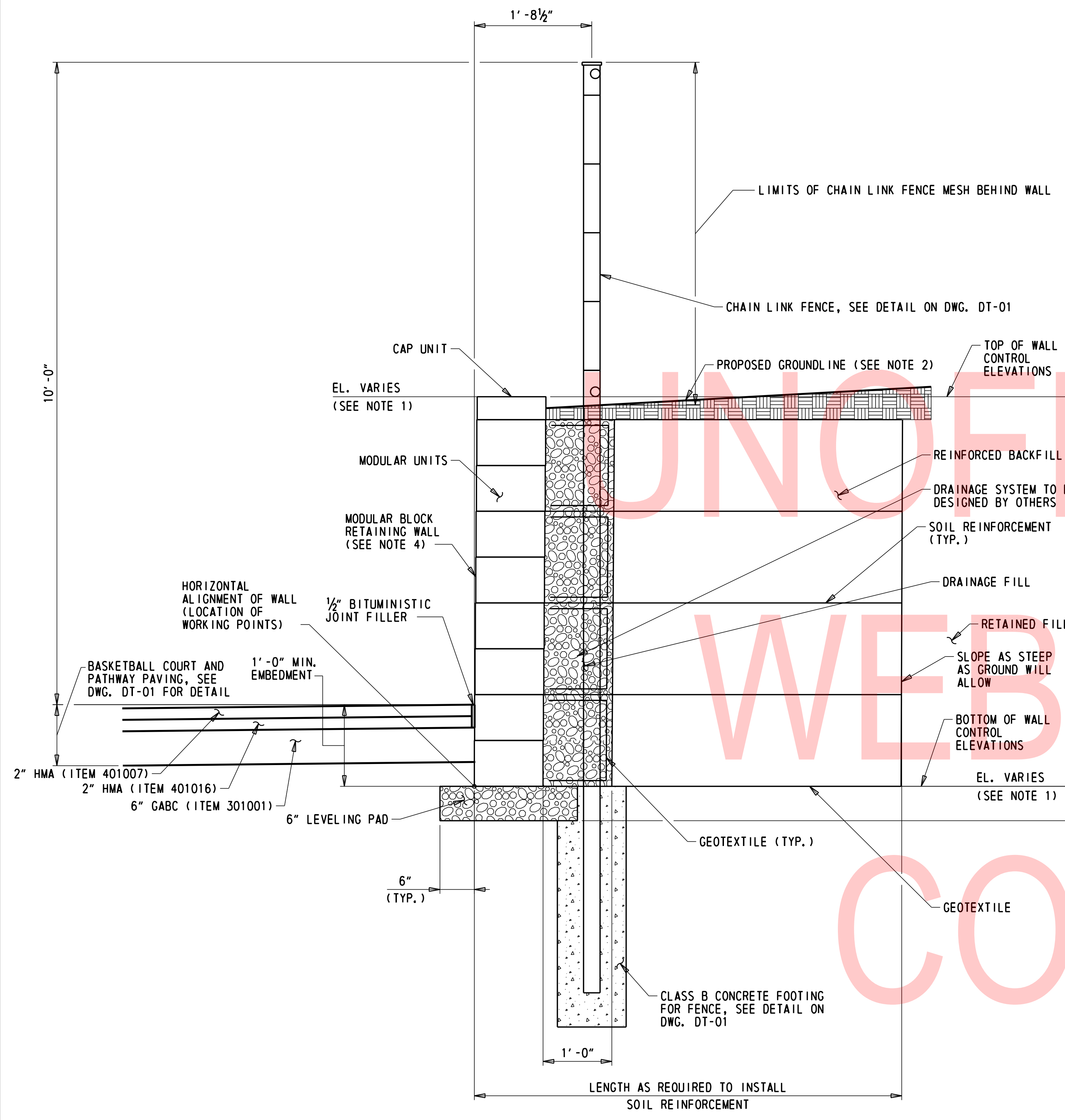
DT-03

SECTION

WRA

SHEET NO.

9



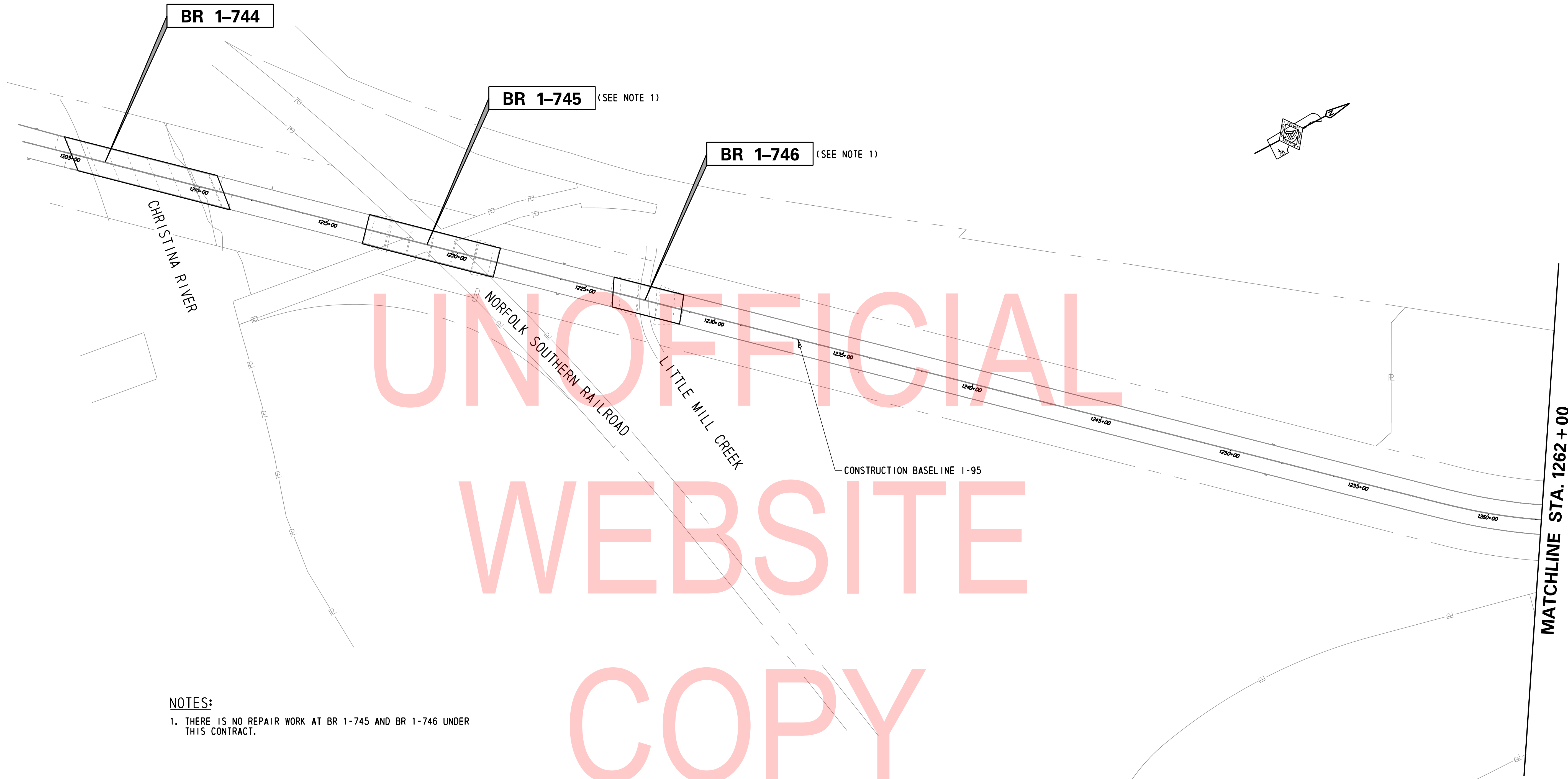
TYPICAL SECTION
1" = 1'-0"

NOTES:

1. FOR TOP AND BOTTOM ELEVATIONS OF MODULAR BLOCK RETAINING WALL, SEE DEVELOPED ELEVATION ON DWG. DT-03.
2. FOR PROPOSED AND EXISTING CONTOURS BEHIND THE RETAINING WALL, SEE DWG. GR-01.
3. MODULAR BLOCK RETAINING WALL SHOWN GRAPHICALLY FOR INFORMATIONAL PURPOSES ONLY.
4. THE MODULAR BLOCK RETAINING WALL SHALL BE CONSTRUCTED WITH A NEAR VERTICAL FACE.
5. EXISTING AND PROPOSED UTILITIES NOT SHOWN, SEE PLAN AND ELEVATION ON DWG. DT-03.
6. NUMBER AND LENGTH OF SOIL REINFORCEMENT SHOWN FOR GRAPHICAL PURPOSES ONLY.
7. CUT SLOPE BEHIND REINFORCED BACKFILL SHALL BE LAID BACK AS STEEP AS GROUND WILL ALLOW TO MINIMIZE IMPACT TO ADJACENT PROPERTY. TEMPORARY SHORING SHALL BE REQUIRED FOR EXCAVATIONS THAT EXCEED 5 FEET IN HEIGHT.
8. A DRAINAGE SYSTEM (NOT SHOWN) FOR THE MODULAR BLOCK RETAINING WALL SHALL BE INSTALLED IF REQUIRED BY DESIGN OF THE SELECTED MODULAR BLOCK RETAINING WALL. COST FOR THE DRAINAGE SYSTEM, IF REQUIRED, WILL BE INCIDENTAL TO ITEM 607010 - MODULAR BLOCK RETAINING WALLS.
9. THE PAY LIMITS FOR ITEM 607010 - MODULAR BLOCK RETAINING WALLS IS BASED ON THE TOP OF WALL AND BOTTOM OF WALL CONTROL ELEVATIONS AND THE LOCATION OF THE CHANGE IN CONTROL ELEVATIONS SHOWN ON THE DEVELOPED ELEVATION ON DWG. DT-03.
10. COST OF CLASS B CONCRETE FOR CHAIN LINK FENCE FOOTING SHALL BE INCIDENTAL TO ITEM 727000 CHAIN LINK FENCE.

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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> </tr> <tr> <td style="font-size: x-small;">T201907404</td> <td style="font-size: x-small;"></td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">DESIGNED BY: K. AMBROSE</td> </tr> <tr> <td style="font-size: x-small;">NEW CASTLE</td> <td style="font-size: x-small;">CHECKED BY: D. NIZAMOFF</td> </tr> </table>	CONTRACT	BRIDGE NO.	T201907404		COUNTY	DESIGNED BY: K. AMBROSE	NEW CASTLE	CHECKED BY: D. NIZAMOFF	RETAINING WALL TYPICAL SECTION	DT-04 SECTION WRA SHEET NO. 10
CONTRACT	BRIDGE NO.												
T201907404													
COUNTY	DESIGNED BY: K. AMBROSE												
NEW CASTLE	CHECKED BY: D. NIZAMOFF												



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COPY

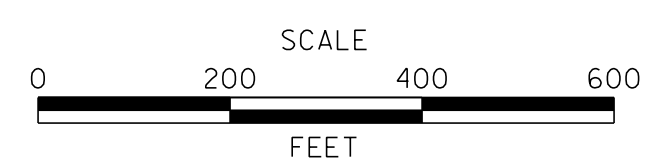
NOTES:

1. THERE IS NO REPAIR WORK AT BR 1-745 AND BR 1-746 UNDER THIS CONTRACT.

STRUCTURE LOCATION PLAN - CONTRACT T201907404

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ADDENDA / REVISIONS	

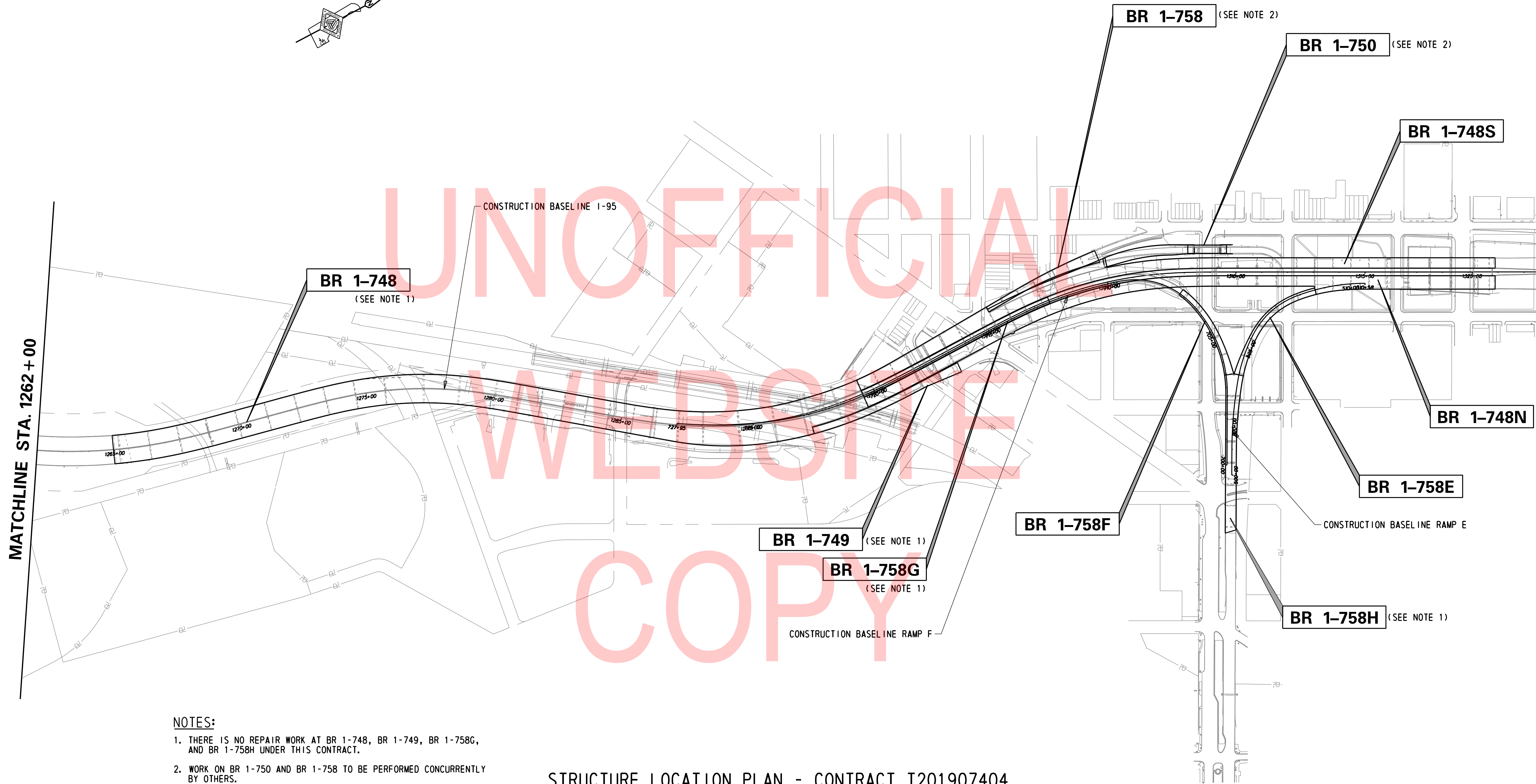
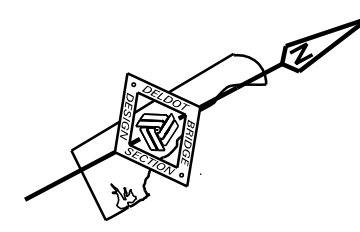


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO.	
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE	
	CHECKED BY: D. NIZAMOFF	

**STRUCTURE
LOCATION PLAN
1 OF 2**

IS-01
SECTION WRA
SHEET NO. 11

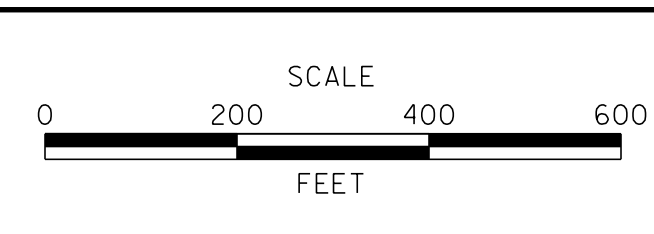


- NOTES:**
1. THERE IS NO REPAIR WORK AT BR 1-748, BR 1-749, BR 1-758G, AND BR 1-758H UNDER THIS CONTRACT.
 2. WORK ON BR 1-750 AND BR 1-758 TO BE PERFORMED CONCURRENTLY BY OTHERS.

STRUCTURE LOCATION PLAN - CONTRACT T201907404

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ADDENDA / REVISIONS



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE
	CHECKED BY: D. NIZAMOFF

STRUCTURE LOCATION PLAN 2 OF 2	SECTION WRA
	SHEET NO. 12
	IS-02

SECTION 600

1. PORTLAND CEMENT CONCRETE:
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
(f'c = 28-DAY COMPRESSIVE STRENGTH)
CLASS A - PIERS (f'c = 4.5 ksi)
A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.
- CHAMFER ALL EXPOSED EDGES 3/4" X 3/4" UNLESS OTHERWISE NOTED.
2. BAR REINFORCEMENT:
- REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.
- ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY, EXCEPT AS NOTED ON THE PLANS. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A775.
- ANY FIELD CUTTING OR FIELD BENDING MUST BE APPROVED BY THE ENGINEER. PAYMENT SHALL BE INCIDENTAL TO THE BAR REINFORCEMENT ITEM.
- WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.
3. STRUCTURAL STEEL:
PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS 'CVN' ON PLANS) OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED. SUPPLEMENTAL NOTCH TOUGHNESS REQUIREMENTS ARE MANDATORY FOR:
- JACKING DIAPHRAGMS AND CONNECTION PLATES

ALL FASTENERS ARE 7/8" DIAMETER ASTM F3125 GR A325 HIGH STRENGTH BOLTS, TYPE 1, UNLESS OTHERWISE NOTED.

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/D1.5:2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED, EXCEPT AS NOTED ON THE PLANS.

DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.

SET ANCHOR BOLTS TO TEMPLATE IN CORED HOLES. FILL THE HOLES WITH NON-SHRINK GROUT TO BE FLUSH WITH THE TOP CONCRETE SURFACE.
4. STAINLESS STEEL:
PROVIDE STAINLESS STEEL CONFORMING TO ASTM A240, GRADE 30, TYPE 316 WITH AN ANISO.02 MIL SURFACE FINISH OR LESS.
PROVIDE WELDED STUD SHEAR CONNECTORS CONFORMING TO ASTM A493, TYPE 316.
5. BEARINGS:
ALL ELASTOMERIC BEARINGS SHALL BE LAMINATED ELASTOMERIC DESIGNED AS PER AASHTO 14.7.5, METHOD B, AND SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS. PAYMENT WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARINGS.

FOR REPAIR 27, USE ASTM F436 WASHER AND ASTM A563 HEAVY HEX NUTS FOR EXISTING 1 1/4" DIAMETER ANCHOR BOLTS AS IDENTIFIED ON PN-02.

MISCELLANEOUS

6. DESIGN SPECIFICATIONS:
(A) DELDOT BRIDGE DESIGN MANUAL, 2017 EDITION.
(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIMS.
(C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE 2016 DELDOT STANDARD SPECIFICATIONS INCLUDING 2018 SUPPLEMENTAL SPECIFICATIONS.
7. LOADING:
- DEAD LOADS INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB AND 15 PSF FOR STAY-IN-PLACE FORMS (INCLUDES CONCRETE IN FORM CORRUGATIONS). PARAPET LOADS ARE DISTRIBUTED 75% TO THE EXTERIOR AND 25% TO THE FIRST INTERIOR BEAM.
- DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
- FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 3,910 IN YEAR 2040.
- LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD.
- THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0° TO 120°F. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68°F.
- LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
8. EXISTING CONDITIONS:
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.

MISCELLANEOUS (CONTINUED)

9. CONTINGENT QUANTITIES:
THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS AND FIELD INSPECTION NOTES TAKEN FROM NOVEMBER 16, 2014 THROUGH FEBRUARY 5, 2015. ADDITIONAL REPAIRS HAVE BEEN ADDED BASED ON THE APRIL 2018 BIENNIAL BRIDGE INSPECTION REPORT. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION IN CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DETAILS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY MATERIALS. SEE DWG. PN-02 FOR PAY ITEM CONTINGENCY PERCENTAGES.
10. UTILITIES:
SEE UTILITY STATEMENT FOR FURTHER INFORMATION ON UTILITY COORDINATION.
11. ENVIRONMENTAL COMPLIANCE:
ENVIRONMENTAL COMPLIANCE PLANS ARE NOT REQUIRED FOR THIS PROJECT. NO ENVIRONMENTAL RESOURCES ARE IMPACTED BY THE PROPOSED WORK.
12. WATERWAYS:
PRIOR TO PERFORMING WORK IN THE CHRISTINA RIVER, THE CONTRACTOR SHALL NOTIFY THE U.S. COAST GUARD (USCG) 21 DAYS PRIOR TO THE START DATE. EMAIL MR. MICKEY SANDERS (MICKEY.D.SANDERS2@USCG.MIL) WITH THE FOLLOWING INFORMATION:

1. DATES AND WORK HOURS WORKERS WILL BE ON SITE.
2. EQUIPMENT THAT WILL BE IN, OR ABOVE, THE WATERWAY DURING CONSTRUCTION (E.G. WORK BARGE, VESSELS, ETC.)
3. BRIDGE OWNER P.O.C. (NAME, TITLE, ADDRESS)

USCG WILL THEN ISSUE THE CONTRACTOR AN APPROVAL LETTER AUTHORIZING THE WORK OVER THE NAVIGABLE WATERWAY. PERMITTING IS NOT REQUIRED BEYOND NOTIFICATION TO USCG. A BROADCAST NOTICE TO MARINERS AND A LOCAL NOTICE TO MARINERS IS REQUIRED PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL PREVENT DEBRIS, MATERIALS, ETC. FROM ENTERING THE WATERWAY AND PROTECTING BOATERS BELOW.
13. FISHERIES IN-STREAM RESTRICTIONS:
WORK PERFORMED IN THE CHRISTINA RIVER BY BARGE, USING SPUDS FOR ANCHORAGE, MUST BE IN PLACE AND STATIONARY PRIOR TO MARCH 15. THE BARGE MAY NOT BE MOVED, OR REMOVED, UNTIL AFTER JUNE 30. THE BARGE CAN BE USED DURING THE TIME-OF-YEAR (TOY) RESTRICTION (MARCH 15 TO JUNE 30) AS LONG AS THE SPUDS ARE ANCHORED PRIOR TO THE RESTRICTION AND REMAIN IN PLACE UNTIL THE END OF THE TOY RESTRICTION. NO WORK MAY OCCUR IN THE WATER COLUMN DURING THE TOY RESTRICTION.
14. CONTRACTOR SUBMISSIONS:
PRIOR TO OR WITH THE SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT THE FIELD VERIFICATION NOTES ON MEMBER SIZES AND DIMENSIONS NECESSARY TO REVIEW THE SHOP DRAWINGS.
15. LOAD RATING:
THIS PROJECT DOES NOT CHANGE THE LOAD RATING OF THE BRIDGE.
16. MIGRATORY BIRD EXCLUSION NETTING SHALL BE INSTALLED PRIOR TO APRIL 15. NETTING AND NETTING MATERIALS SHALL REMAIN IN PLACE AND IN GOOD WORKING ORDER UNTIL AUGUST 1 OR AFTER CONSTRUCTION IS COMPLETE FOR THE STRUCTURE. PAYMENT IS INCLUDED IN ITEM 763623 - NETTING, MIGRATORY BIRD EXCLUSION.

17. ABBREVIATIONS:
ABUT. = ABUTMENT
BOT. = BOTTOM
BRG. = BEARING
CL = CENTERLINE
DIA. = DIAMETER
DWG. = DRAWING
EL. = ELEVATION
EXP. = EXPANSION
E.F. = EACH FACE
FIX. = FIXED
GR. = GRADE

MAX. = MAXIMUM
MIN. = MINIMUM
NB = NORTHBOUND
NO. = NUMBER
P.C.C. = PORTLAND CEMENT CONCRETE
P/R = POINT OF ROTATION
SB = SOUTHBOUND
SHLD. = SHOULDER
STA. = STATION
TYP. = TYPICAL

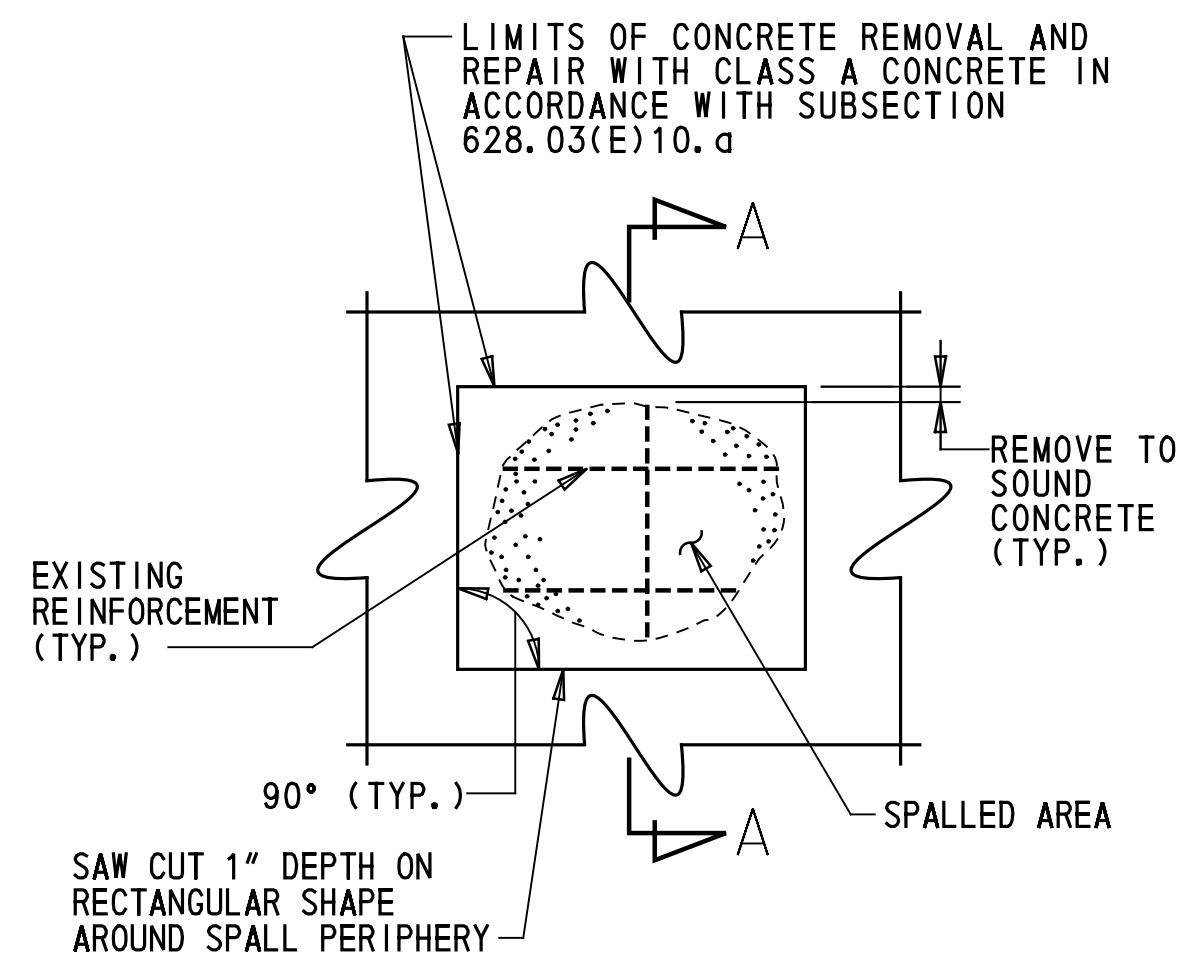
INDEX OF BRIDGE 1-744 SHEETS		
BR. SHEET NO	BR. DWG. NO	TABLE OF CONTENTS
13	PN-01	BRIDGE PROJECT NOTES AND QUANTITIES
14	PN-02	CONCRETE REPAIR DETAILS AND SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS
15	PE-01	GENERAL PLAN AND ELEVATION
16	TS-01	BRIDGE TYPICAL SECTION
17-24	PR-01 TO PR-08	PIER CONCRETE REPAIR DETAILS
25	PR-09	SHEAR BLOCK DETAILS
26	RH-01	JACKING NOTES AND LOADS
27	RH-02	JACKING DETAILS
28	BB-01	BEARING PLAN
29	BB-02	BEARING DETAILS
TOTAL BRIDGE SHEETS: 17		

QUANTITIES			
ITEM NO	ITEM TITLE	UNIT	QUANTITY
604000	JACKING BRIDGE	LS	1
610005	PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	CY	8
611001	BAR REINFORCEMENT, EPOXY COATED	LB	1300
615004	REPLACE STEEL RIVETS/BOLTS	EA	8
623000	ELASTOMERIC BEARINGS	EA	56
628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	174
628041	DEEP SPALL REPAIR	CF	163
628042	REHABILITATION OF PCC MASONRY	CY	1
628070	DRILLING HOLES AND INSTALLING DOWELS	EA	140
763623	NETTING, MIGRATORY BIRD EXCLUSION	LS	1

NOTE:
QUANTITIES INCLUDE CONTINGENT PERCENTAGES AS NOTED IN NOTE 9.

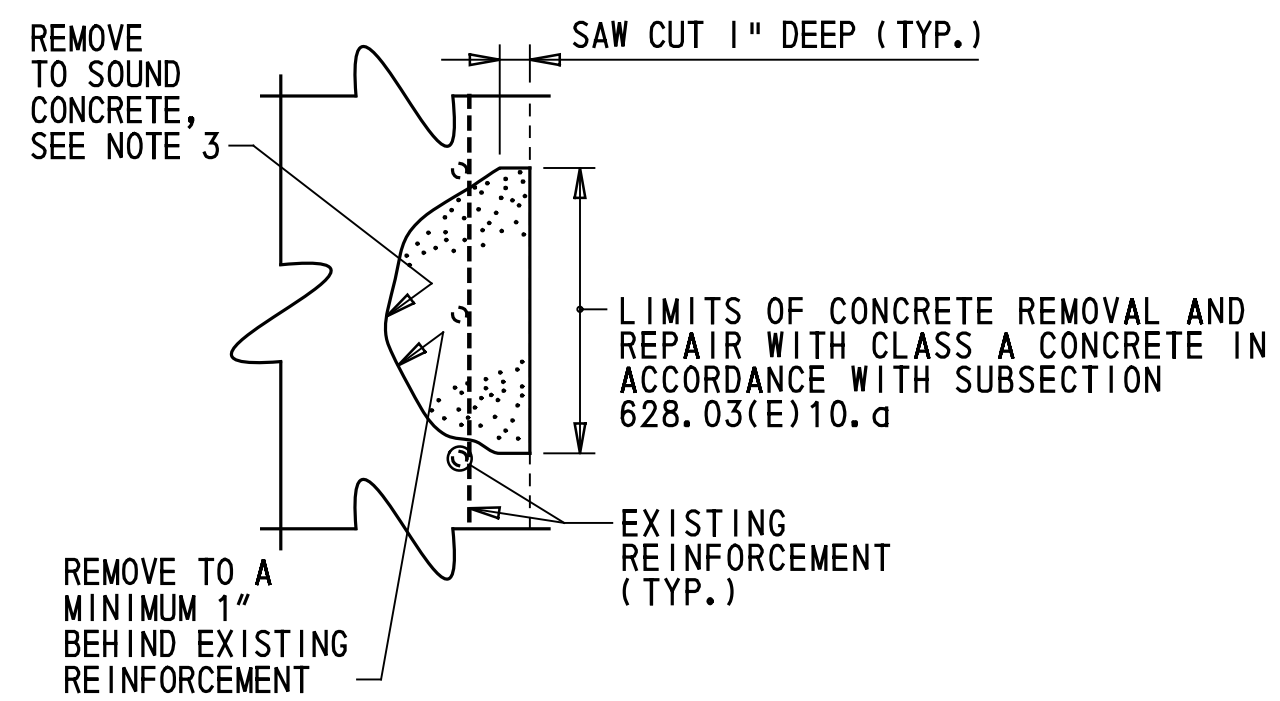
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ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	BRIDGE PROJECT NOTES AND QUANTITIES	PN-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		
				COUNTY	CHECKED BY: C. MALKIN	PAI		
				NEW CASTLE		SHEET NO.		
								13



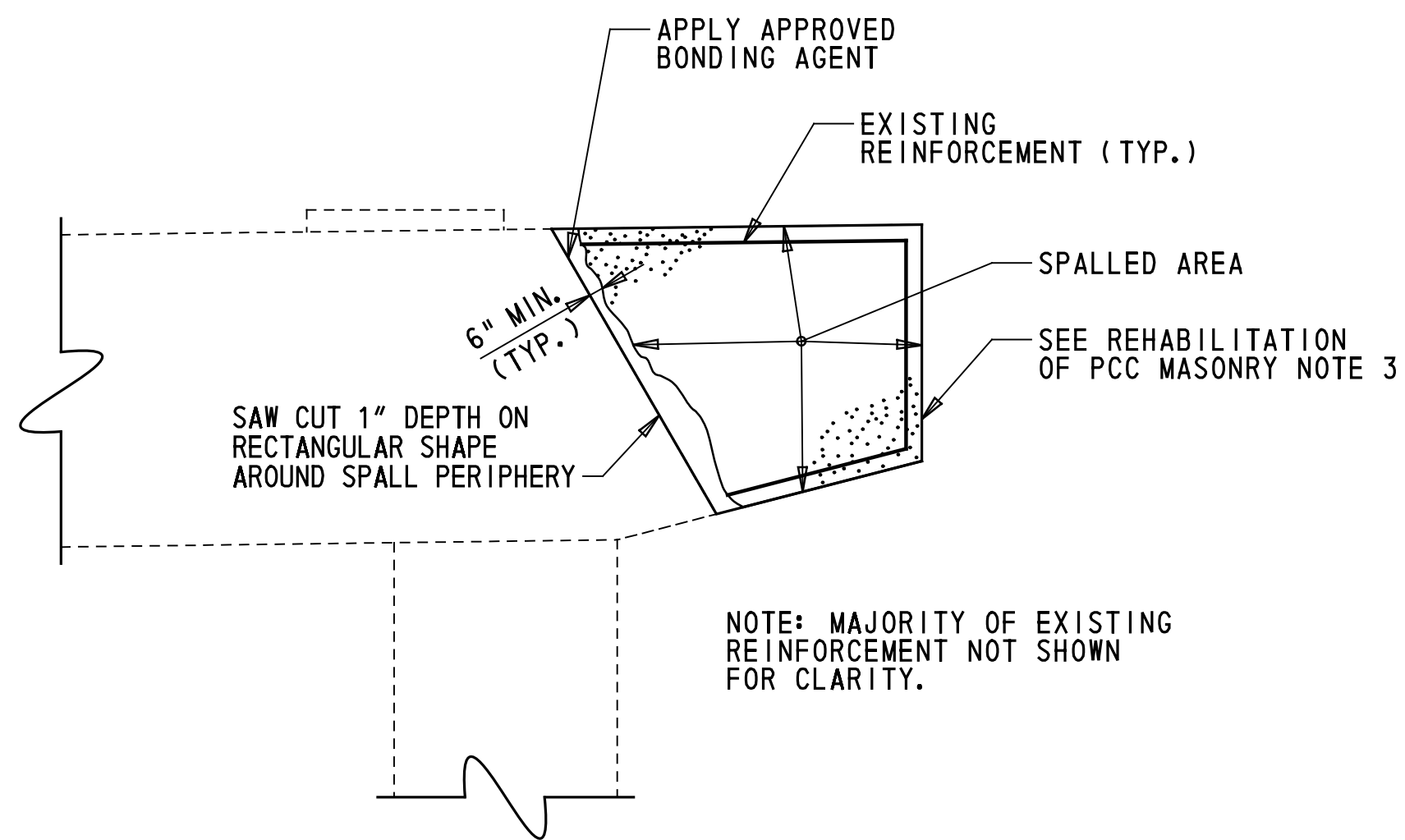
PLAN

DEEP SPALL REPAIR (ITEM 628041)



SECTION A-A

REHABILITATION OF PCC MASONRY (ITEM 628042)



NOTE: MAJORITY OF EXISTING REINFORCEMENT NOT SHOWN FOR CLARITY.

DEEP SPALL REPAIR NOTES

1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT. DELAMINATED CONCRETE HAS BEEN ASSUMED AS DEEP SPALL REPAIRS.
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. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.
4. 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).

REHABILITATION OF PCC MASONRY NOTES

1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXCEED THE 0.5 C.Y. THRESHOLD IN A SINGLE AREA.
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 628042 - REHABILITATION OF PCC MASONRY.
3. DETAIL SHOWN FOR "REHABILITATION OF EXISTING PCC MASONRY" UTILIZES A GENERIC EXAMPLE USING PARTIAL RECONSTRUCTION OF AN EXISTING PIER CAP. SEE PIER REHABILITATION SHEETS FOR SIZE AND LOCATION OF REPAIRS AT EACH SUBSTRUCTURE UNIT.
4. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.
5. FOR ANY WORK INCLUDED UNDER REHABILITATION OF PCC MASONRY TO TAKE PLACE WITHIN THE SPLASH ZONE OR UNDERWATER, THE CONTRACTOR SHALL SUBMIT A WORKING DRAWING IN ACCORDANCE WITH SUBSECTION 628.03(E)(2).

LEGEND:

SPALLED CONCRETE

UNOFFICIAL WEBSITE

REPAIR NO.	REPAIR DESCRIPTION	LOCATION	REMARKS	DWG. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	CONTINGENT %	TOTAL QTY.
24	JACK AND REPLACE EXISTING BRIDGE BEARINGS	SPAN 2, PIER 1; SPAN 4, PIER 3; SPAN 6, PIER 5; SPAN 7, PIER 6 NB, BEAMS 9-16	REPLACE ALL BEARINGS WITHIN THE SPECIFIED BEARING LINE	RH-01, RH-02, BB-01, BB-02	604000	JACKING BRIDGE	LS	1	0	1
27	REPLACE ANCHOR BOLT NUTS	SPAN 3, PIER 3, BEARING 7, WEST; SPAN 5, PIER 4, BEARING 9, WEST		BB-01	615004	REPLACING STEEL RIVETS/BOLTS	EA	4	100	8
34	SEAL CRACKS IN CONCRETE SUBSTRUCTURE	PIERS 1, 3, 5, 6		PR-01 TO PR-08	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	139	25	174
37	REPAIR DEEP SPALLS IN CONCRETE SUBSTRUCTURE	PIERS 1, 3, 5, 6		PR-01 TO PR-08	628041	DEEP SPALL REPAIR	CF	130	25	163
39	CONSTRUCTING SHEAR BLOCKS	PIERS 1, 3, 5, 6		PR-01 TO PR-09	610005	PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	CY	8	0	8
					611001	BAR REINFORCEMENT	LB	1300	0	1300
					628070	DRILLING HOLES AND INSTALLING DOWELS	EA	140	0	140

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ADDENDA / REVISIONS

NOT TO SCALE

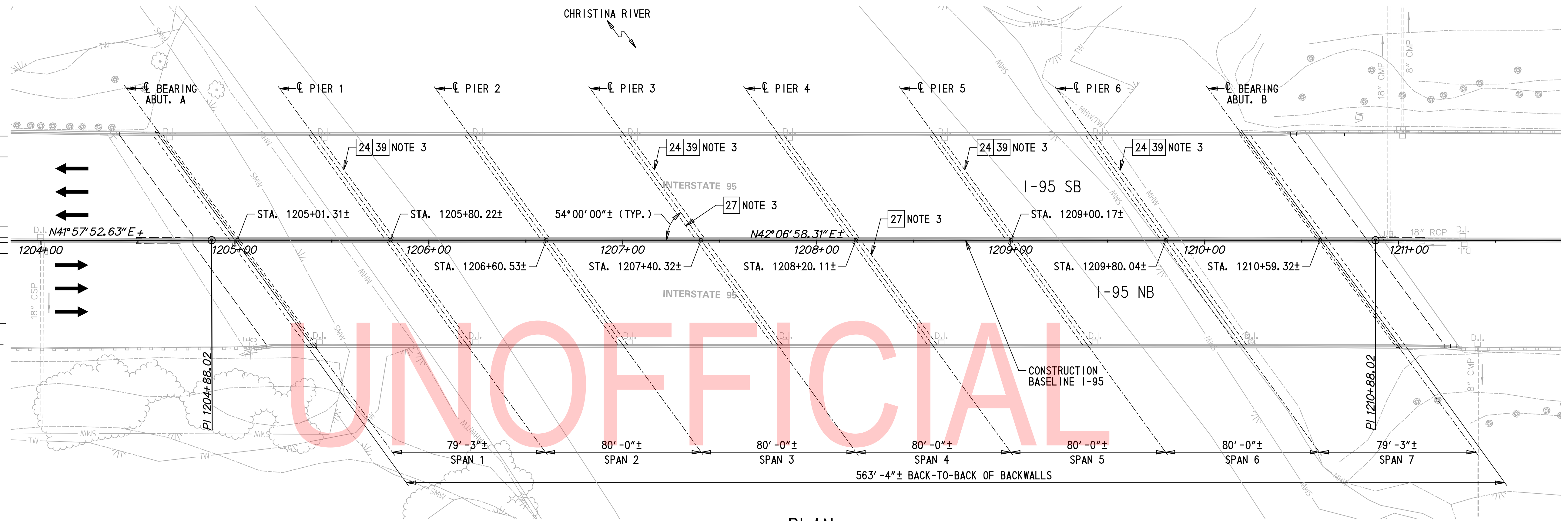
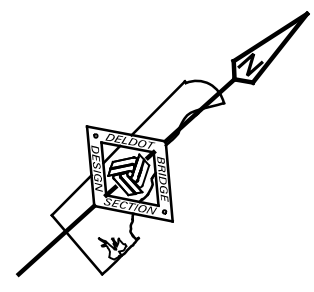
REHABILITATION OF I-95, BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 744 059
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

CONCRETE REPAIR DETAILS & SUMMARY OF PROPOSED REPAIR & RECONSTR. ITEMS

PN-02

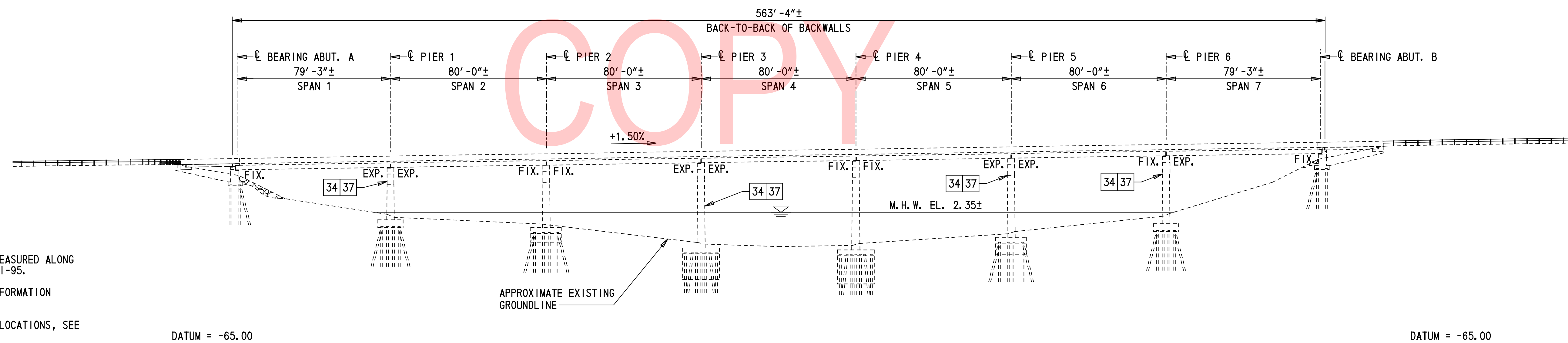
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SHEET NO.	14



UNOFFICIAL
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PLAN

KEY:
24 REPAIR NUMBER AS SHOWN ON DWG. PN-02



NOTES:

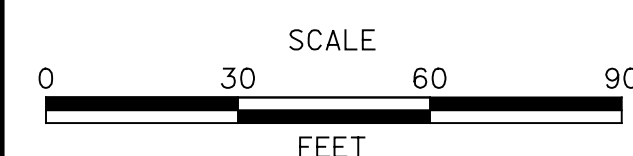
1. DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE I-95.
2. PILES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
3. FOR REPAIRS 24 AND 27 LOCATIONS, SEE DWG. BB-01.

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DATUM = -65.00

DEVELOPED SECTION ALONG CONSTRUCTION BASELINE I-95

ADDENDA / REVISIONS



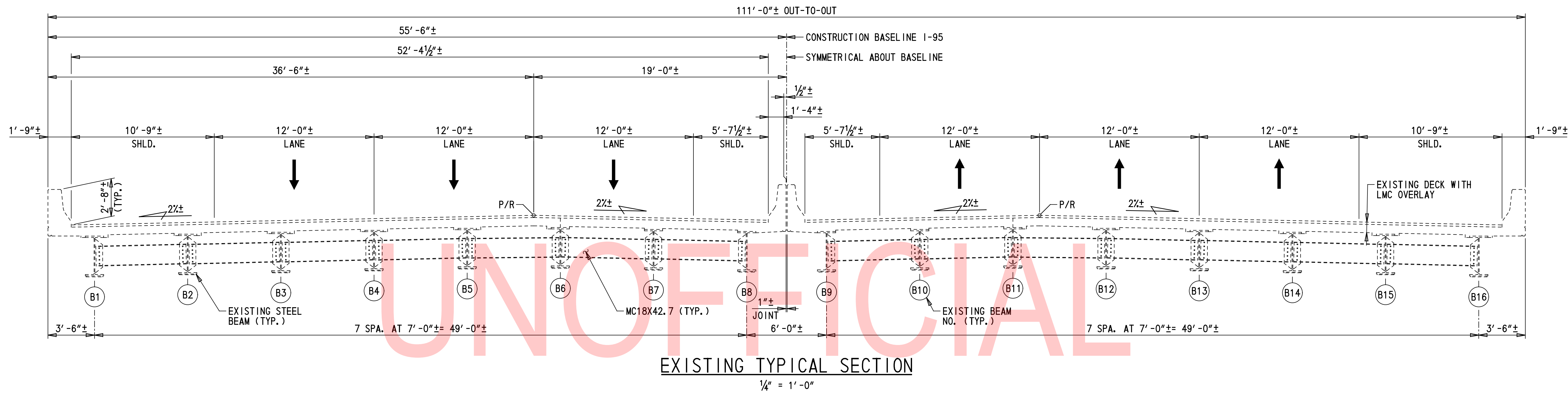
**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO. 1 744 059
COUNTY NEW CASTLE	DESIGNED BY: B. DEELY
	CHECKED BY: C. MALKIN

**GENERAL PLAN
AND ELEVATION**

PE-01
SECTION PAI
SHEET NO. 15

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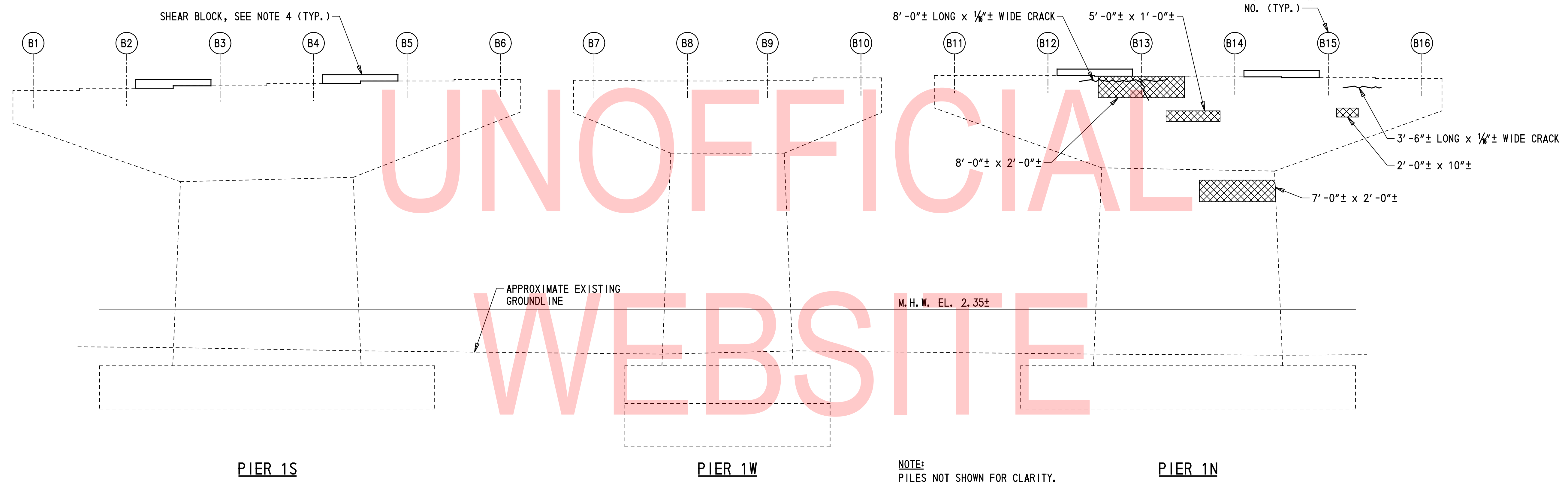
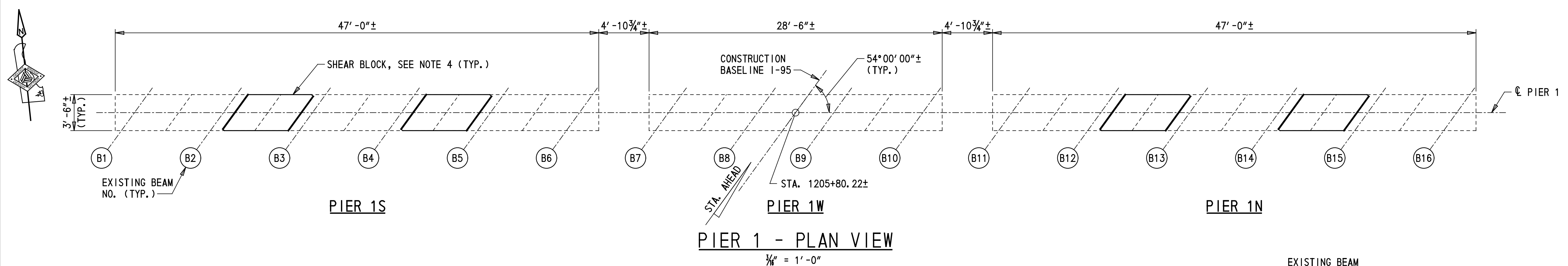
UNOFFICIAL

WEBSITE

COPY

2024.11.15 01:49:17 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	BRIDGE TYPICAL SECTION	TS-01
				T201907404	DESIGNED BY: B. DEELY	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	16
				NEW CASTLE				



NOTE:
PILES NOT SHOWN FOR CLARITY.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 2. WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:

REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

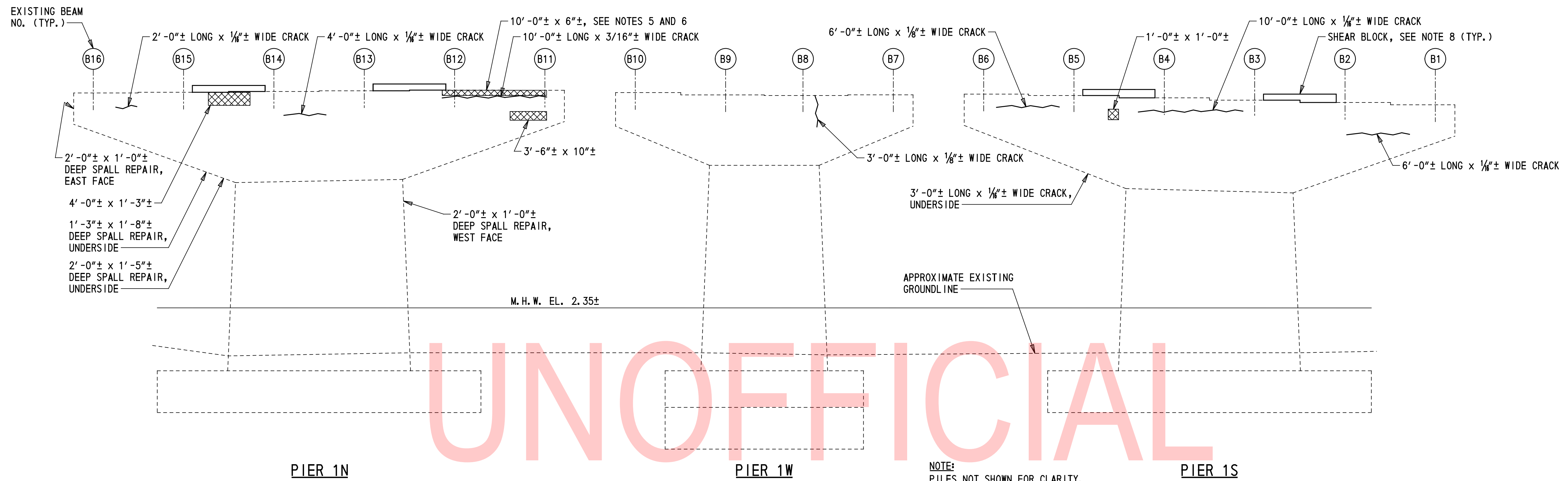
DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 1				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	40
37	628041	DEEP SPALL REPAIR	CF	18

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

2024 APR 01 09:25 AM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 1 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	17
				NEW CASTLE				



PIER 1N

PIER 1W

NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 1S

PIER 1 - NORTH ELEVATION

1/8" = 1'-0"

UNOFFICIAL

WEBSITE

COPY

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-01.
5. COMPLETE REPAIR PRIOR TO INSTALLING JACKING DIAPHRAGM FOR BEARING REPLACEMENT.
6. COMPLETE REPAIR AT BEARING REPLACEMENT LOCATION PRIOR TO INSTALLING PROPOSED BEARING.
7. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DIAPHRAGMS. SEE DWG. BB-02 FOR SUGGESTED SEQUENCE OF INSTALLATION OF BEARINGS.
8. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

ADDENDA / REVISIONS

SCALE AS NOTED

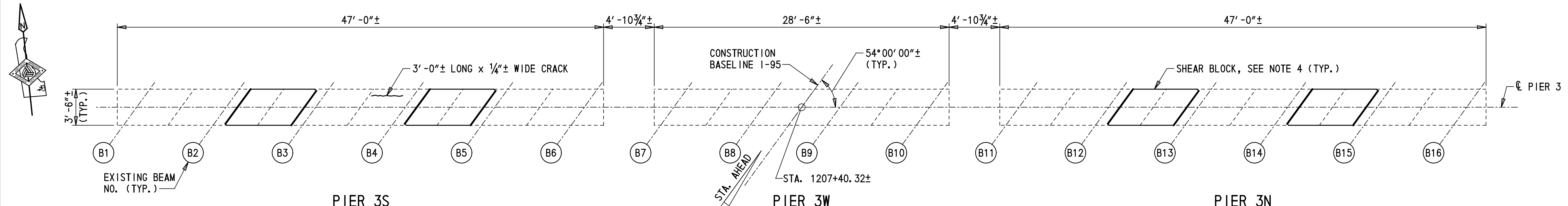
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 744 059
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

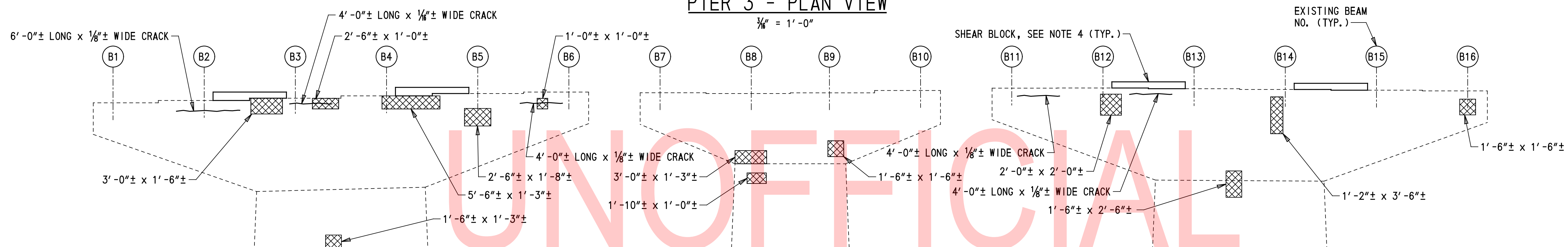
PIER 1 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

PR-02
SECTION
PAI
SHEET NO.
18

2020 APR 02 02:48 PM



PIER 3 - PLAN VIEW
3/8" = 1'-0"



PIER 3 - SOUTH ELEVATION
3/8" = 1'-0"

LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 3				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	42
37	628041	DEEP SPALL REPAIR	CF	18

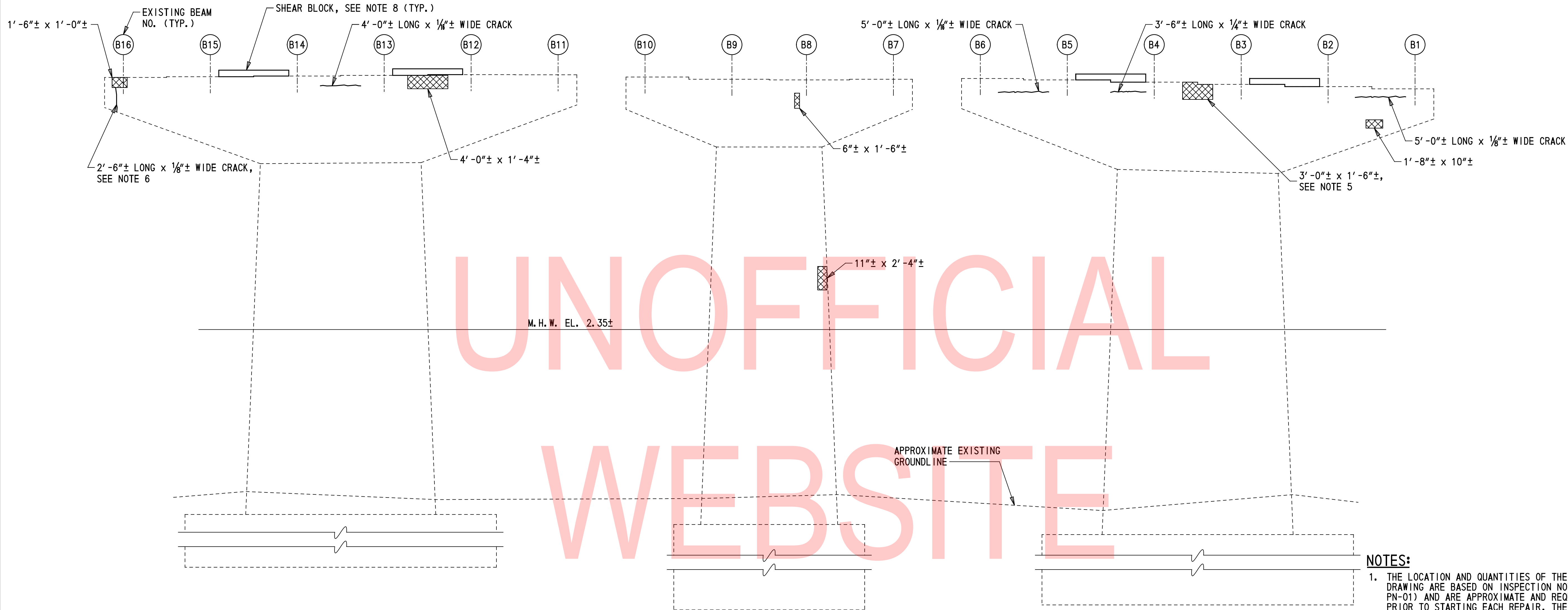
NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 2. WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

NOTE:
PILES NOT SHOWN FOR CLARITY.

2024 APR 03 09:20 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 3 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-03
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
		COUNTY	CHECKED BY: C. MALKIN	SHEET NO.	19			
		NEW CASTLE						



PIER 3N

PIER 3W

PIER 3S

PIER 3 - NORTH ELEVATION

3/8" = 1'-0"

NOTE: PILES NOT SHOWN FOR CLARITY.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION PRIOR TO STARTING EACH REPAIR. THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-03.
5. COMPLETE REPAIR PRIOR TO INSTALLING JACKING DIAPHRAGM FOR BEARING REPLACEMENT.
6. COMPLETE REPAIR AT BEARING REPLACEMENT LOCATION PRIOR TO INSTALLING PROPOSED BEARING.
7. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DIAPHRAGMS. SEE DWG. BB-02 FOR SUGGESTED SEQUENCE OF INSTALLATION OF BEARINGS.
8. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

ADDENDA / REVISIONS

SCALE AS NOTED

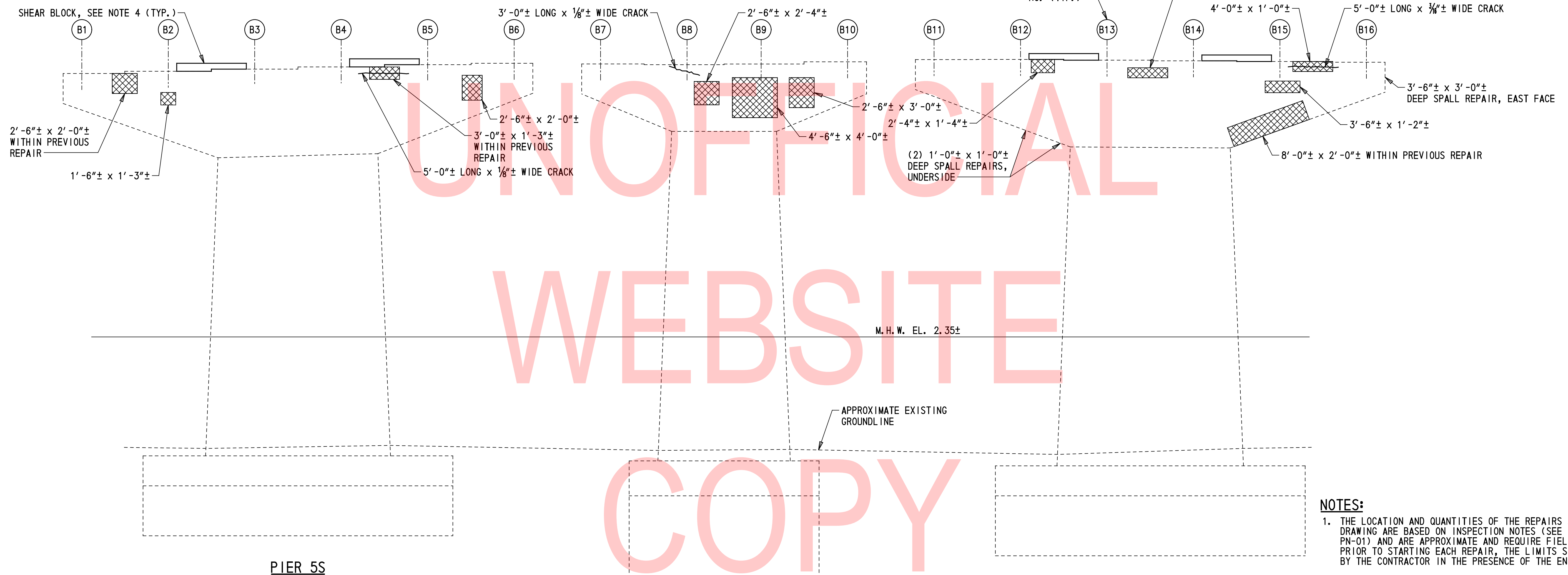
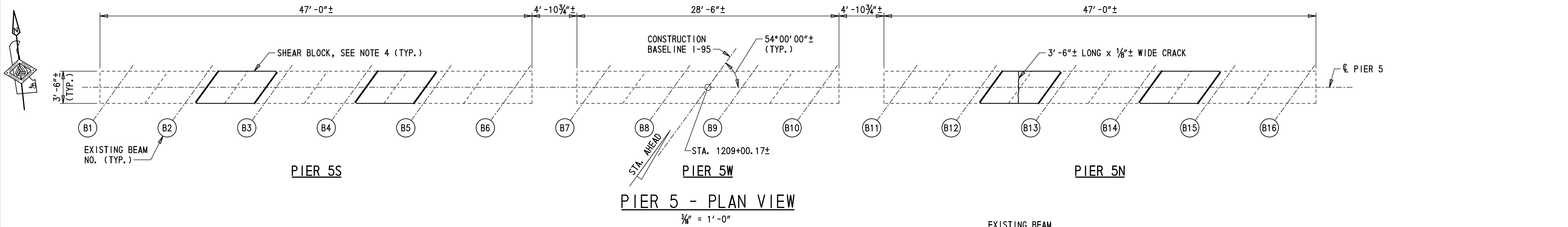
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 744 059
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

PIER 3 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

PR-04
SECTION
PAI
SHEET NO.
20

2024 APR 04 09:01 PM



LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

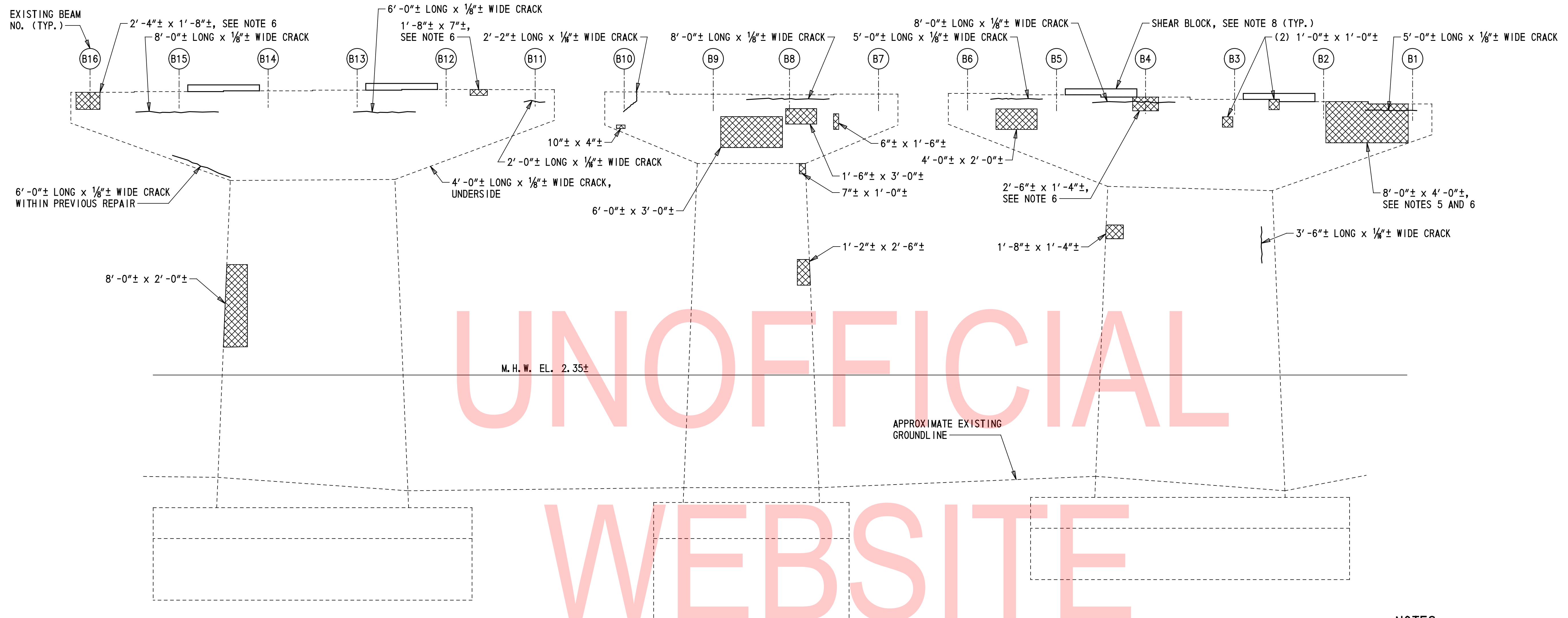
CONCRETE REPAIR QUANTITIES				
PIER 5				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	57
37	628041	DEEP SPALL REPAIR	CF	56

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- NOTES:**
- THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 - FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 - FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

2024 APR 05 09:22 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 5 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-05
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	21
				NEW CASTLE				



PIER 5N PIER 5W PIER 5S
PIER 5 - NORTH ELEVATION
 1/4" = 1'-0"

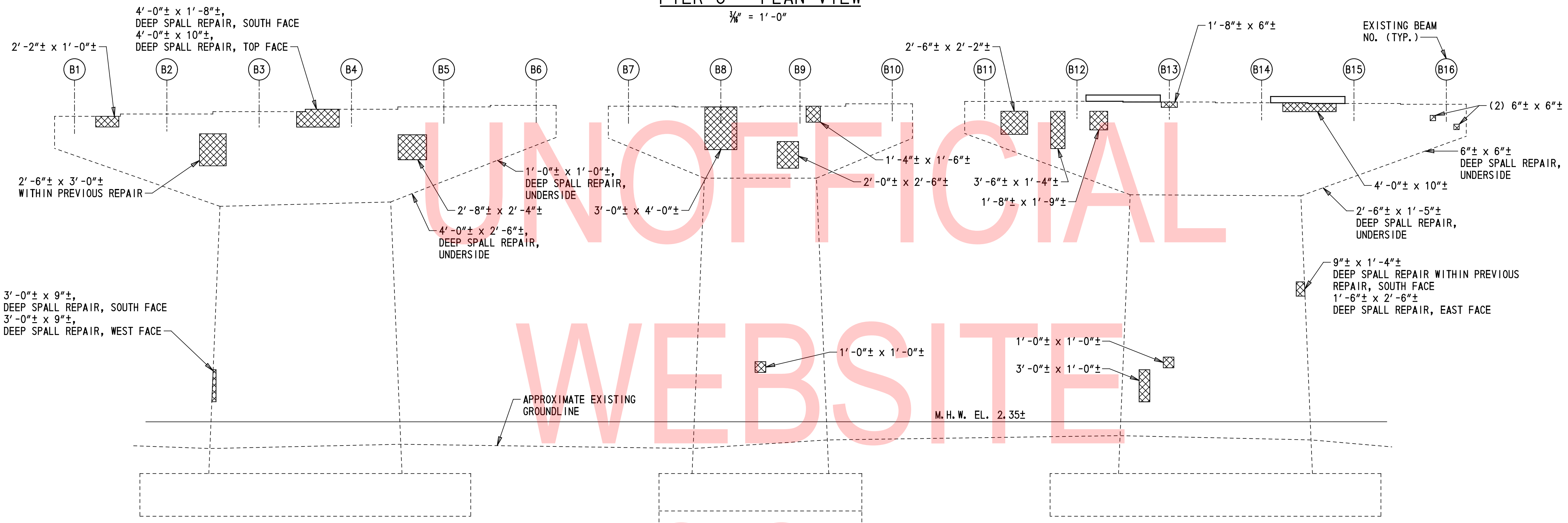
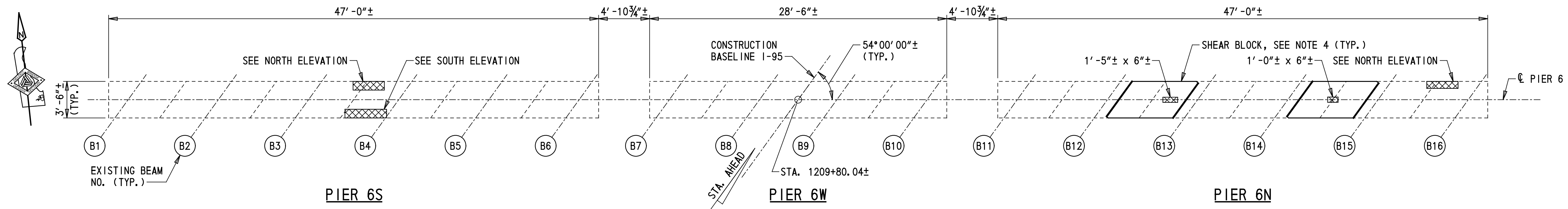
NOTE:
 PILES NOT SHOWN FOR CLARITY.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-05.
 5. COMPLETE REPAIR PRIOR TO INSTALLING JACKING DIAPHRAGM FOR BEARING REPLACEMENT.
 6. COMPLETE REPAIR AT BEARING REPLACEMENT LOCATION PRIOR TO INSTALLING PROPOSED BEARING.
 7. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DIAPHRAGMS. SEE DWG. BB-02 FOR SUGGESTED SEQUENCE OF INSTALLATION OF BEARINGS.
 8. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

17 APR 06 2:50:23 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 5 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	PR-06
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN	SHEET NO.		22
				NEW CASTLE				



NOTE: PILES NOT SHOWN FOR CLARITY.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:

REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

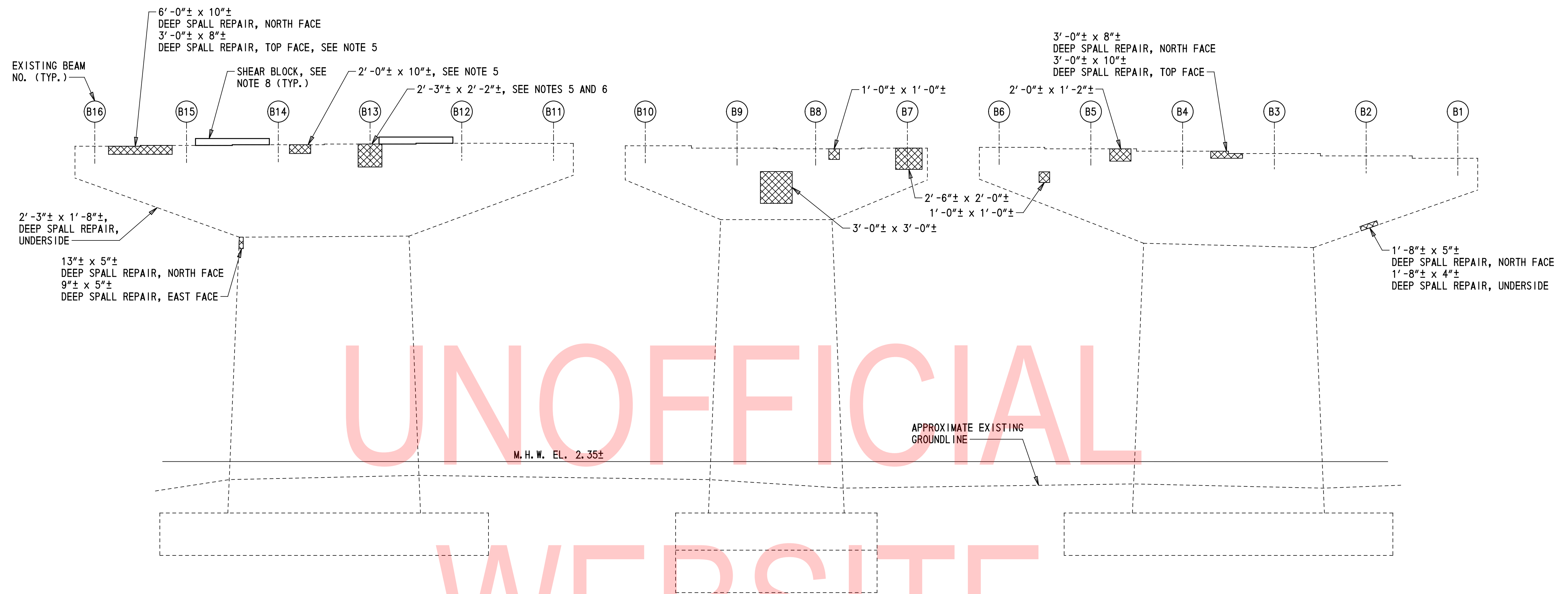
DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 6				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	38

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

2024 APR 07 2:50:24 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 6 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-07
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	23
				NEW CASTLE				



PIER 6N

PIER 6W

PIER 6S

PIER 6 - NORTH ELEVATION

3/8" = 1'-0"

NOTE:
PILES NOT SHOWN FOR CLARITY.

UNOFFICIAL

WEBSITE

COPY

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-07.
5. COMPLETE REPAIR PRIOR TO INSTALLING JACKING DIAPHRAGM FOR BEARING REPLACEMENT.
6. COMPLETE REPAIR AT BEARING REPLACEMENT LOCATION PRIOR TO INSTALLING PROPOSED BEARING.
7. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DIAPHRAGMS. SEE DWG. BB-02 FOR SUGGESTED SEQUENCE OF INSTALLATION OF BEARINGS.
8. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

ADDENDA / REVISIONS

SCALE AS NOTED

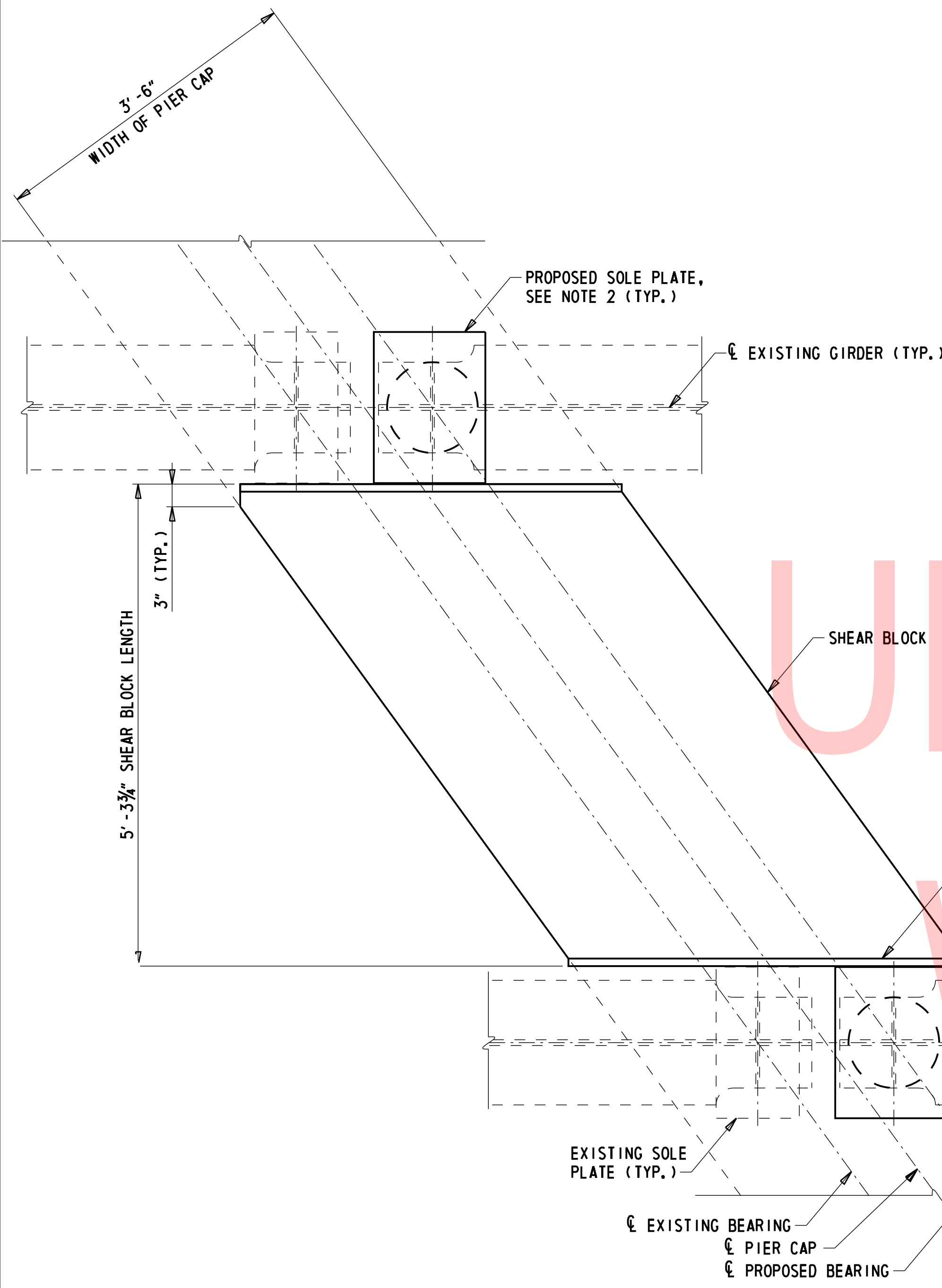
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 744 059
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

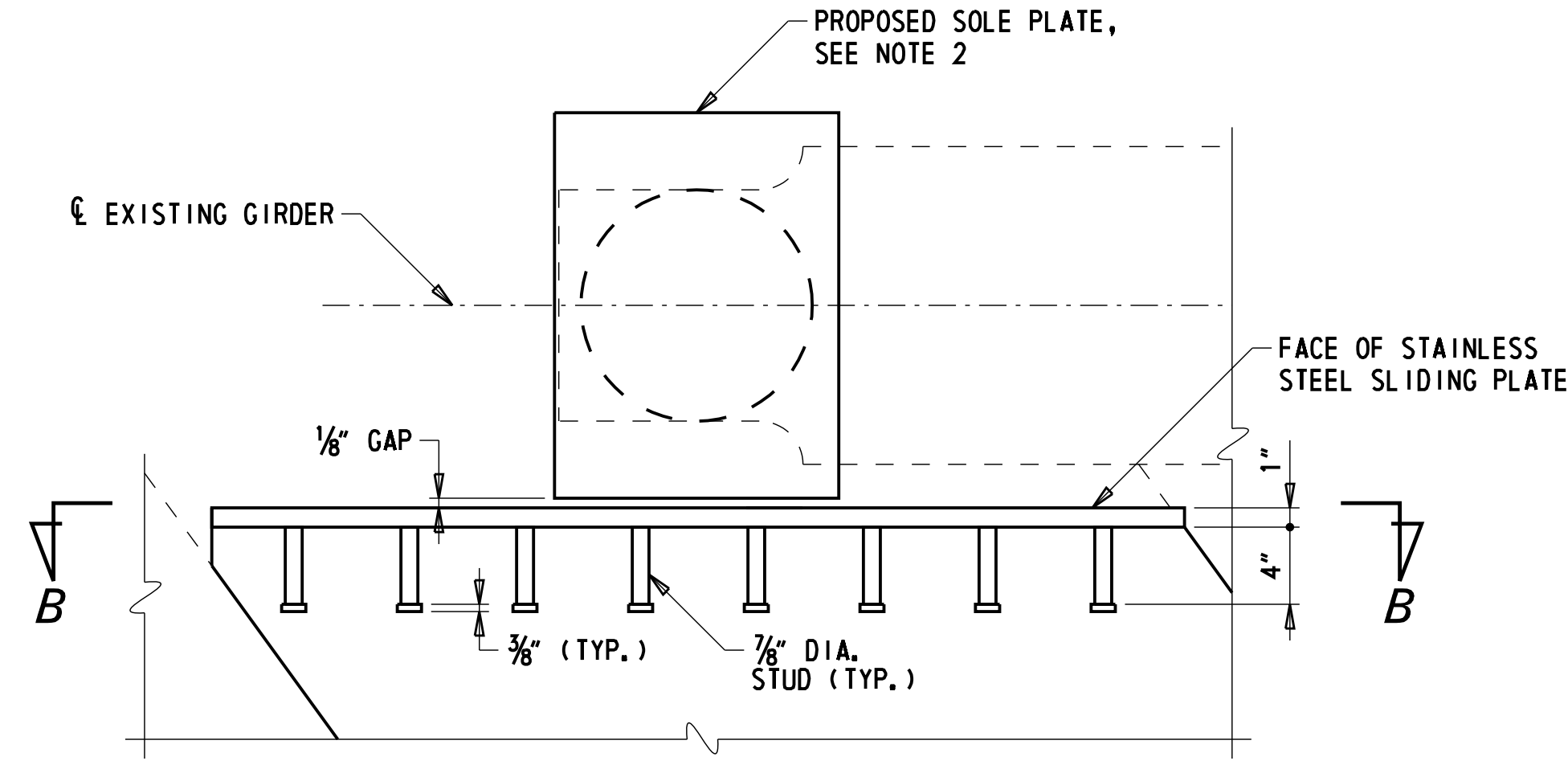
PIER 6 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

PR-08
SECTION
PAI
SHEET NO.
24

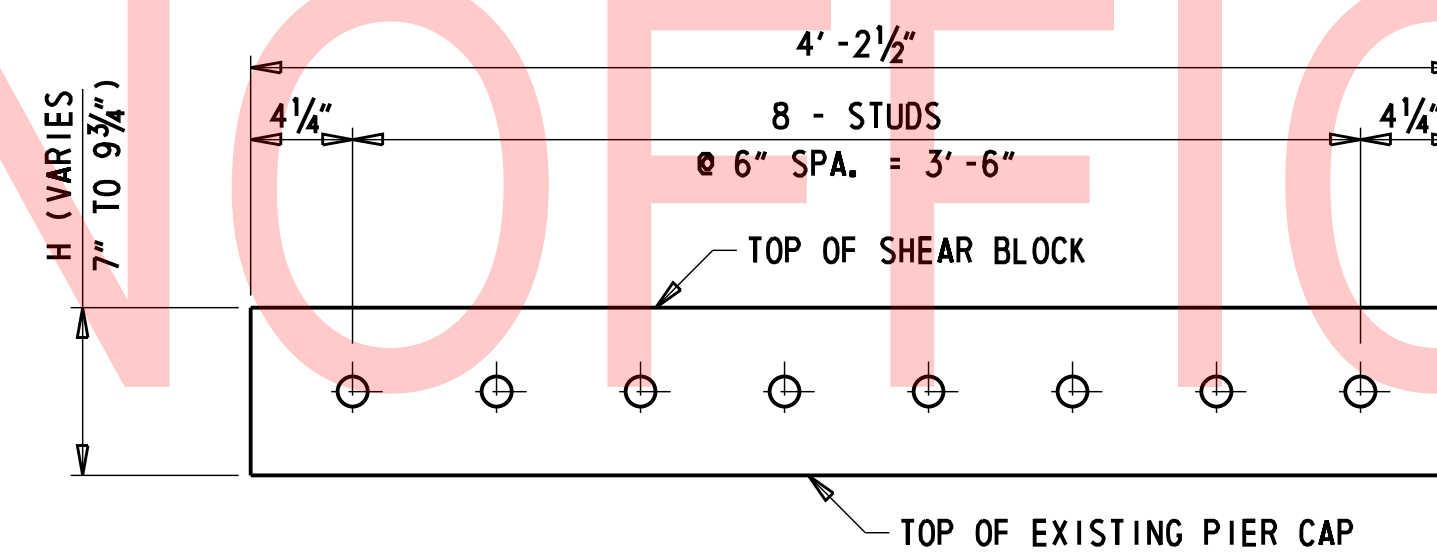
2024 APR 08 10:25 AM



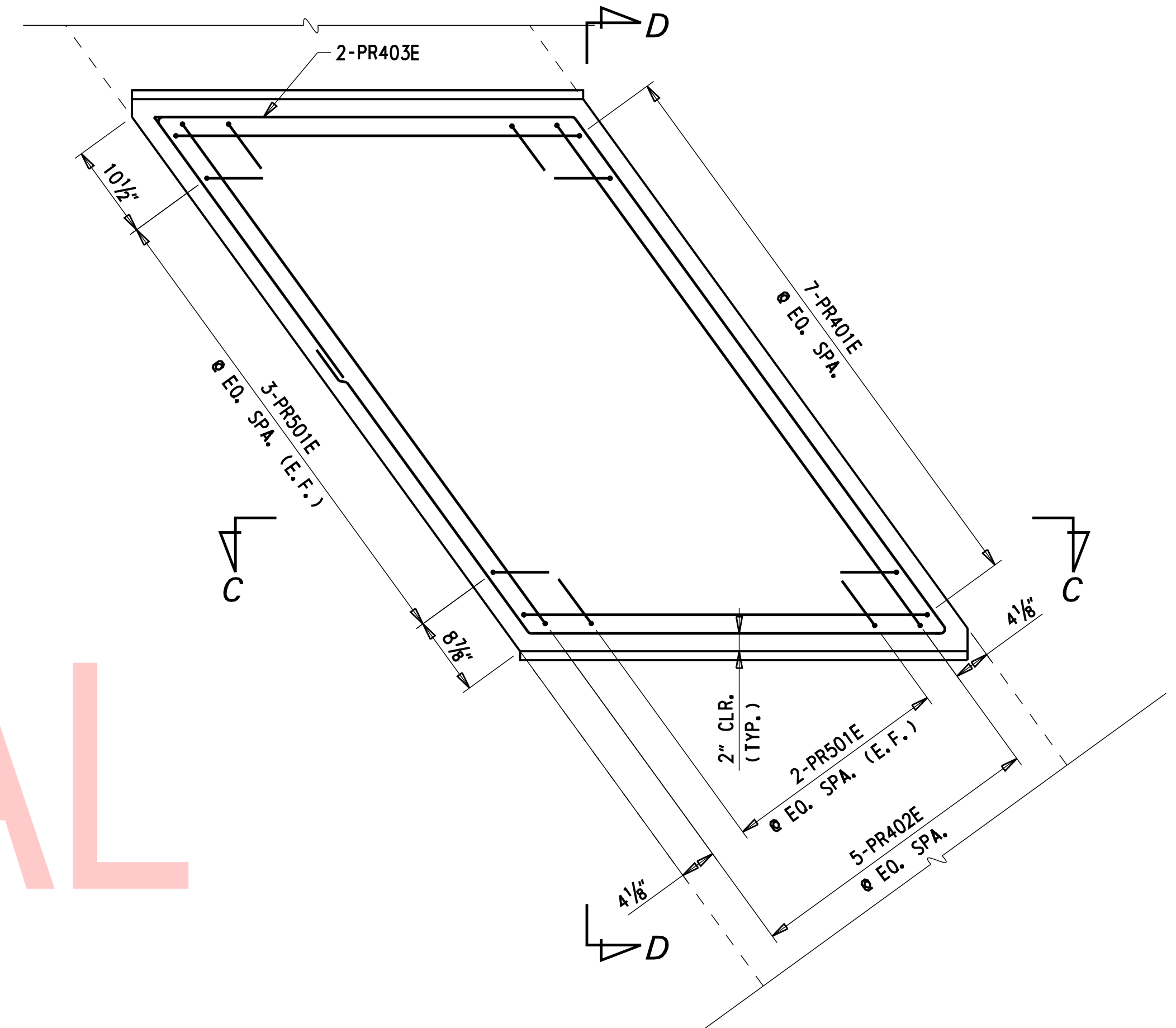
TYPICAL SHEAR BLOCK PLAN
1" = 1'-0"



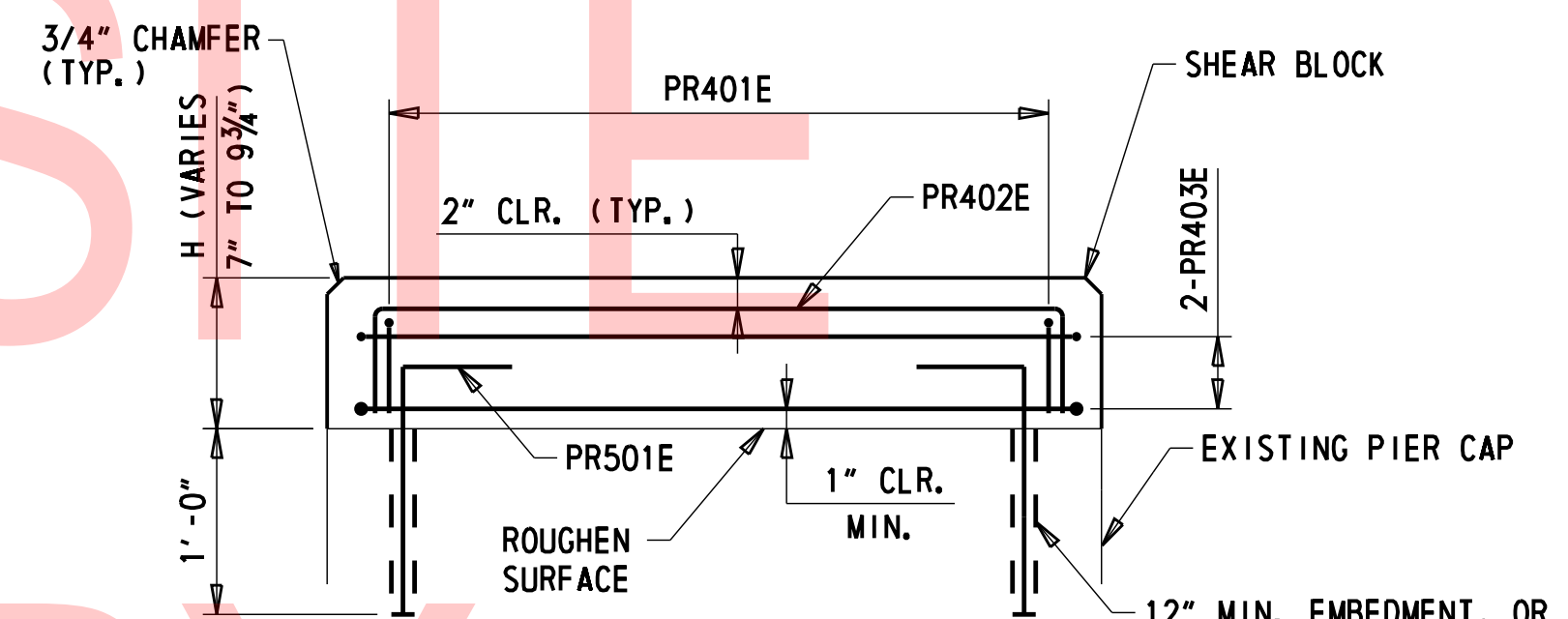
SLIDING PLATE DETAIL
1 1/2" = 1'-0"



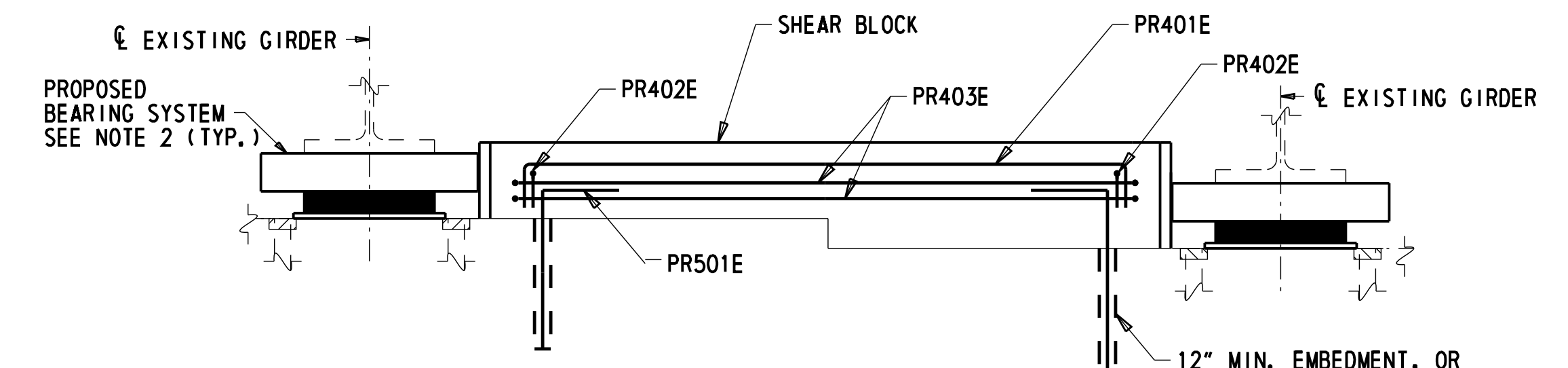
SECTION B-B
1 1/2" = 1'-0"



SHEAR BLOCK REINFORCING
1" = 1'-0"



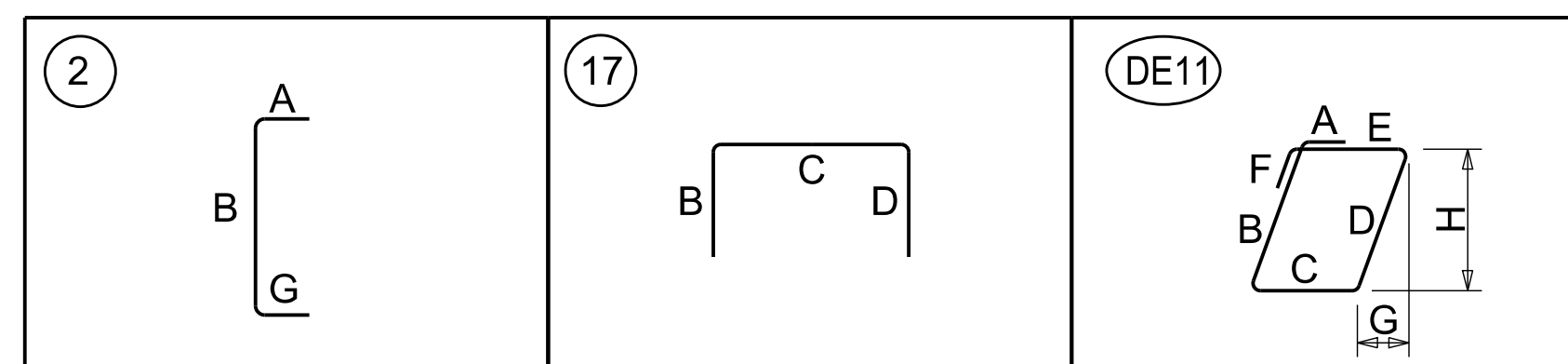
SECTION C-C
1" = 1'-0"



SECTION D-D
1" = 1'-0"

NOTES:

1. THE STAINLESS STEEL SLIDING PLATE IS INCIDENTAL TO ITEM 610005. SEE DWG. PN-01 FOR MATERIAL PROPERTIES.
2. FOR BEARING DETAILS, SEE DWG. BB-02.
3. CONTRACTOR TO LOCATE EXISTING PIER CAP REINFORCEMENT AND ADJUST DOWEL LOCATION TO AVOID CONFLICT.
4. CONTRACTOR TO FIELD VERIFY DIMENSIONS.
5. EPOXY GROUT IS INCIDENTAL TO ITEM 628070. EPOXY GROUT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
Hilti HIT-HY 200-R
Kellgrout by Kelken
Sika AnchorFix-3001



REINFORCING BAR LIST*

MARK	SIZE	QTY.	BAR TYPE	A OR F	B	C	D	E	G	H	LENGTH
PR401E	4	7	17	---	4"	3'-9 3/4"	4"	---	---	---	4'-5 3/4"
PR402E	4	5	17	---	4"	5'-10 1/8"	4"	---	---	---	6'-6 1/8"
PR403E	4	2	DE11	4 1/2"	5'-11"	3'-10 1/2"	5'-11"	3'-10 1/2"	3'-5 1/4"	4'-9 3/4"	20'-4"
PR501E	5	10	2	10"	1'-4"	---	---	---	0"	---	2'-2"

* QUANTITIES ARE REPRESENTATIVE OF REINFORCEMENT REQUIRED FOR SINGLE SHEAR BLOCK

17 APR 08 09:49 AM

ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT
T201907404
COUNTY
NEW CASTLE

BRIDGE NO. **1 744 059**
DESIGNED BY: P. SHAW
CHECKED BY: C. MALKIN

SHEAR BLOCK DETAILS

PR-09
SECTION
PAI
SHEET NO.
25

BRIDGE JACKING NOTES:

- CONTRACTOR SHALL VERIFY COMPATIBILITY OF THE JACKING ASSEMBLY WITH HYDRAULIC JACK (SEE NOTE 16) PRIOR TO FABRICATION. ALTERNATE JACKING SCHEMES OR ASSEMBLIES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. SUBMISSION SHALL INCLUDE DETAILED SHOP DRAWINGS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ANY ALTERNATIVE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND MAY BE REJECTED BY THE ENGINEER FOR ANY REASON INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY. NO ADDITIONAL PAYMENT WILL BE MADE FOR ALTERNATE JACKING SCHEMES OR ASSEMBLIES.

THE CONTRACTOR SHALL SUBMIT A JACKING PROCEDURE TO THE ENGINEER FOR APPROVAL. NO WORK ON THE INSTALLATION OF THE JACKING ASSEMBLY SHALL OCCUR UNTIL APPROVAL OF THE JACKING PROCEDURE IS OBTAINED. THE PROCEDURE SHALL CONTAIN, AT A MINIMUM, THE FOLLOWING INFORMATION:

A. CATALOG CUTS OF ALL OF THE JACKS TO BE USED.
B. CALIBRATION CERTIFICATES AND CALIBRATION CHARTS FOR EACH JACK TO BE USED.
C. A COMPLETE SCHEMATIC OF THE JACKING SYSTEM, INCLUDING THE JACKS, HOSES, GAUGES, VALVES, MANIFOLDS AND PUMPS.
D. A NARRATIVE ON THE METHOD TO BE USED TO DETERMINE THE VERTICAL DISPLACEMENTS AT EACH BEAM LOCATION DURING JACKING AND HOW THE DISPLACEMENT LIMITS WILL BE CHECKED AND MAINTAINED DURING THE JACKING.
E. A NARRATIVE ON THE METHOD TO BE USED TO KEEP THE LIFTING RATES OF THE JACK SIMILAR AND AT A RATE SLOW ENOUGH TO BE ABLE TO VERIFY THE VERTICAL DISPLACEMENTS BEFORE THE LIMITS ARE EXCEEDED.
F. A COMPLETE SEQUENCE OF CONSTRUCTION NARRATIVE.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO ORDERING OR FABRICATING THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.
- ALL STEEL PLATES AND STEEL ROLLED SHAPES SHALL BE AASHTO M270 GRADE 50 MATERIAL.
- UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 7/8" DIAMETER ASTM F3125 GR. A325. ALL BOLTS ARE DESIGNED WITH THE THREADS INCLUDED IN THE SHEAR PLANE. ALL HOLES FOR BOLTS SHALL BE 1/4" DIAMETER. INSTALL BOLTS BY TURN OF NUT METHOD IN ACCORDANCE WITH SUBSECTION 615.03.D.6.c.v11 OF THE STANDARD SPECIFICATIONS.
- ALL METAL WORK AND ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 615.
- JACKING ASSEMBLY AND JACKING STIFFENERS SHALL BE SET PLUMB.
- WORK SHALL CONSIST OF JACKING THE EXISTING BEAMS, REMOVING THE EXISTING BEARINGS, AND INSTALLING NEW ELASTOMERIC BEARINGS. FOR LOCATIONS OF BEARING REPLACEMENTS, SEE DWGS. BB-01 AND BB-02. ADDITIONAL CONCRETE REPAIR WORK THAT MAY BE REQUIRED PRIOR TO PERFORMING JACKING OPERATIONS IS DETAILED ON DWGS. PR-01 TO PR-08.
- THE ENGINEER SHALL BE PRESENT DURING ALL JACKING OPERATIONS TO ENSURE CONFORMANCE WITH ALL PERTINENT CONTRACT PROVISIONS.
- IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL INSPECT THE CONDITION OF THE EXISTING STEEL BEAMS FOR ANY DEFECTS WHICH MAY IMPACT THE LOAD CARRYING CAPACITY OF THE BEAM DURING JACKING. IF ANY DEFECTS ARE FOUND, THE CONTRACTOR SHALL STOP WORK AT THAT LOCATION AND DISCUSS WITH THE ENGINEER IMMEDIATELY.
- WHERE CONCRETE REPAIRS TO THE PIER CAPS AND PEDESTALS OVERLAP WITH THE JACKING OPERATIONS, THE CONCRETE SHALL BE REPAIRED PRIOR TO THE JACKING OPERATIONS. ALL CONCRETE REPAIRS SHALL BE PERFORMED AND WILL BE PAID FOR AS SHOWN ON DWG. PN-02. JACKING OPERATIONS SHALL NOT BE PERFORMED UNTIL THE REPAIRED AREAS HAVE REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.
- THE CONTRACTOR SHALL HAVE THE PROPOSED BEARING ASSEMBLIES FOR THE BEARING LINE BEING REPLACED ON SITE PRIOR TO COMMENCING WITH JACKING OPERATIONS. THE PROPOSED BEARING ASSEMBLIES MUST BE ACCEPTED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE HYDRAULIC JACKS FOR THE SAME BEARING LINE REQUIRED TO LIFT THE EXISTING BEAMS SHALL BE OPERATED CONCURRENTLY (MANIFOLDED) TO PROVIDE AN EQUAL AND BALANCED LIFTING FORCE SUCH THAT THE BRIDGE IS LIFTED EVENLY.

THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT BEAMS IS NOT TO EXCEED 1/8" AT ANY TIME.

THE MAXIMUM VERTICAL DISPLACEMENT OF ANY BEAM FROM THE EXISTING LOCATION SHALL NOT EXCEED 1/4" AT ANY TIME.
- THE CONTRACTOR SHALL USE ONLY JACKS WITH LOCK-NUTS CAPABLE OF SUPPORTING A LOAD EQUAL TO THE RATED CAPACITY OF THE JACK. IN THE EVENT THE JACK LOSES HYDRAULIC PRESSURE THE CONTRACTOR SHALL ADVANCE THE LOCK-NUTS ON ALL JACKS SUCH THAT THE MAXIMUM DISTANCE BETWEEN THE TOP OF A JACK AND THE LOCK-NUT DOES NOT EXCEED 1/8" AT ANY TIME DURING THE JACKING PROCEDURE.
- NO REPAIR WORK SHALL BE PERFORMED UNTIL THE JACKING OPERATION IS COMPLETE AND THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLY (JACKING DIAPHRAGM, LOCK-NUT JACK, SPACER COLUMN, ETC.)
- LIVE LOAD SHALL BE TEMPORARILY REMOVED FROM THE BRIDGE DURING JACKING UNTIL THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLIES.
- THE HYDRAULIC JACKS SHALL HAVE A MINIMUM CAPACITY OF 150 TONS. THE FACTORED LOADS FOR JACKING WERE USED TO SIZE THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK. THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK DOES NOT ACCOUNT FOR CONDITIONAL CONSTRUCTION LOADS. THEY WILL NEED TO BE REDESIGNED FOR FACTORED DEAD LOADS AND ANY APPLIED CONSTRUCTION LOADS. REDESIGN OF THESE ELEMENTS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE FACTORED LOADS FOR JACKING USE A DEAD LOAD FACTOR OF 1.30 AND A LIVE LOAD FACTOR OF 1.75. THE FACTORED LOADS SHOWN WERE USED FOR THE DESIGN OF THE JACKING ASSEMBLY AND THE HYDRAULIC JACK.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE BEARINGS. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- EXISTING STEEL CONNECTION PLATES THAT ARE TO BE CONNECTED TO NEW JACKING DIAPHRAGMS SHALL BE THOROUGHLY CLEANED AND PRIMED PRIOR TO PLACING NEW STEEL IN CONFORMANCE WITH SECTION 616. THE INSIDE SURFACE OF THE JACKING DIAPHRAGM THAT IS TO CONNECT TO THE CONNECTION PLATE SHALL RECEIVE A SHOP PRIME COAT. THE REMAINDER OF THE JACKING DIAPHRAGM SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION 616.
- THE INSIDE SURFACES OF THE TWO BENT PLATES SHALL BE SHOP PRIMED. THE OUTSIDE FACES OF THE BENT PLATES SHALL BE SHOP PRIMED AND PAINTED.

JACKING STIFFENERS SHALL BE SHOP WELDED TO THE JACKING DIAPHRAGMS. THE CONTRACTOR SHALL CLIP THE INSIDE CORNERS OF THE STIFFENER PLATES 3/4" x 3/4".
- AT PIER 6, SPAN 7, BEAMS 9-16 SHALL BE JACKED FOR REPLACEMENT OF BEARINGS. JACKING OF BEAMS 1-8 IS NOT REQUIRED.
- BRIDGE JACKING SHALL BE PAID FOR UNDER ITEM 604000 - JACKING BRIDGE. REMOVAL AND DISPOSAL OF EXISTING END DIAPHRAGMS TO BE REPLACED WITH JACKING DIAPHRAGMS IS INCLUDED IN ITEM 604000 - JACKING BRIDGE.

SUGGESTED SEQUENCE OF CONSTRUCTION:

THE FOLLOWING IS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE JACKING OPERATIONS.

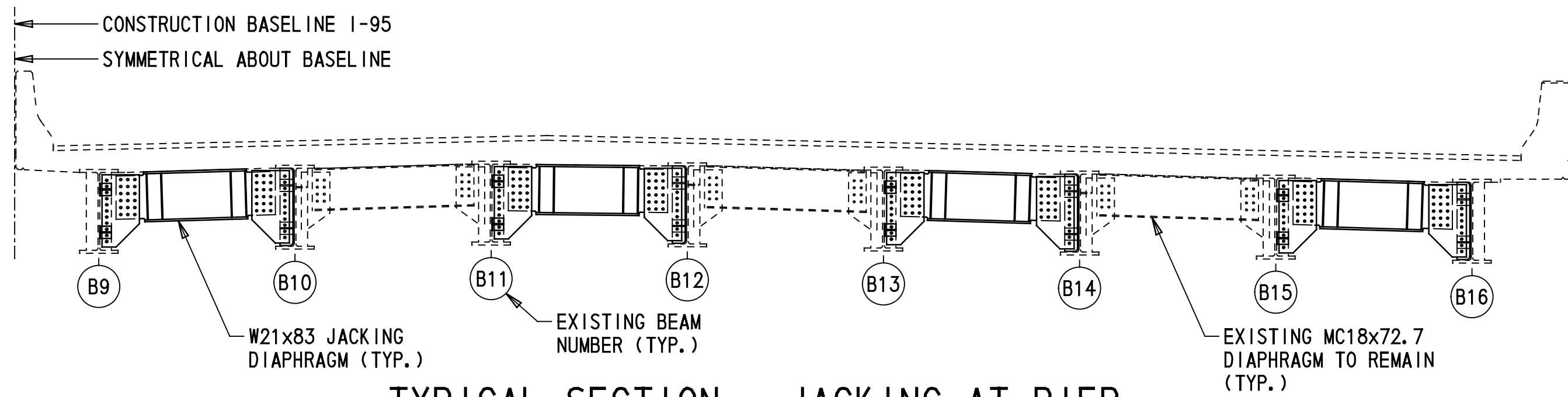
- INSTALL ALL NECESSARY TEMPORARY WORK PLATFORMS AND/OR RIGGING. CARE SHALL BE TAKEN NOT TO INTERFERE WITH PROPOSED LOCATIONS OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.
- REMOVE EXISTING DIAPHRAGMS AT LOCATIONS OF PROPOSED JACKING DIAPHRAGMS. REMOVE EXISTING CONNECTION PLATES AND GRIND SMOOTH ANY WELD WHERE PROPOSED JACKING CONNECTIONS ARE LOCATED.
- INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.
- PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING AND CURE TO SPECIFIED STRENGTH.
- INSTALL ALL JACKING ASSEMBLIES AS SHOWN ON DWG. RH-02.
- REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.
- PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE BEARINGS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
- SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUTS OF THE HYDRAULIC JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES ON DWG. RH-02. PROVIDE FOR SUPERSTRUCTURE EXPANSION.
- RELEASE LOAD IN JACK TO TRANSFER ALL LOAD TO THE JACKING ASSEMBLY AND LOCK-NUT.
- REMOVE EXISTING WELDS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE OF THE EXISTING BEAM. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING BEAM. ANY DAMAGE TO THE EXISTING BEAM CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER. SUBMIT THE WELD REMOVAL PROCEDURE TO THE ENGINEER FOR APPROVAL.
- REMOVE EXISTING ANCHOR BOLTS AS SHOWN ON DWGS. BB-01 AND BB-02.
- REMOVE EXISTING BEARING ASSEMBLY. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING STEEL BEAM DURING ANY CUTTING OF THE EXISTING BEARING.
- CLEAN THE BOTTOM SURFACE OF THE EXISTING BEAM AND APPLY PRIMER IN ACCORDANCE WITH SECTION 616. PAYMENT FOR CLEANING AND PAINTING WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
- THE TOP OF THE EXISTING BEARING LOCATION SHALL BE LEVEL AND FREE OF DEBRIS. IF REQUIRED, NON-SHRINK GROUT SHALL BE USED TO LEVEL AND PROVIDE A SMOOTH BEARING SURFACE FOR THE PROPOSED BEARING. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
- INSTALL PROPOSED BEARINGS. FOR THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARINGS, SEE DWG. BB-02.
- DO NOT LOWER BEAMS UNTIL ALL REPAIRS AND BEARING INSTALLATIONS ARE COMPLETE AND TO THE SATISFACTION OF THE ENGINEER.
- PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE JACKING ASSEMBLIES AND LOCK NUTS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
- REMOVE ALL JACKING ASSEMBLIES. NON-SHRINK GROUT LEVELING PADS USED UNDER JACKING ASSEMBLIES AND PROPOSED JACKING DIAPHRAGMS MAY BE LEFT IN PLACE WITH APPROVAL OF THE ENGINEER.

LOADS FOR JACKING						UNFACTORED		FACTORED	
SPAN NO.	SUBSTRUCTURE UNIT	BEAM NO.	BEAM SPACING ALONG C OF BEARING	BEAM MEMBER	ANGLE A*	DL+15%	DL+LL+IMP	DL+15%	DL+LL+IMP
SPAN 2 SPAN 4 SPAN 6 SPAN 7	PIER 1	B1/B8/B9/B16	7'-0"±	36WF230 (B1/B16) W36x230 (B8/B9)	54°-00'-00"±	71.9 KIP	153.7 KIP	118.6 KIP	224.4 KIP
	PIER 3								
	PIER 5	B2-B7/B10-B15	7'-0"±	36WF230 (B2-6/B22-15) W36x230 (B7/B10)	54°-00'-00"±	56.9 KIP	151.5 KIP	93.9 KIP	229.9 KIP
	PIER 6,NB**								

* FOR LOCATION OF ANGLE A, SEE DWG. RH-02.
** SEE NOTE 21.

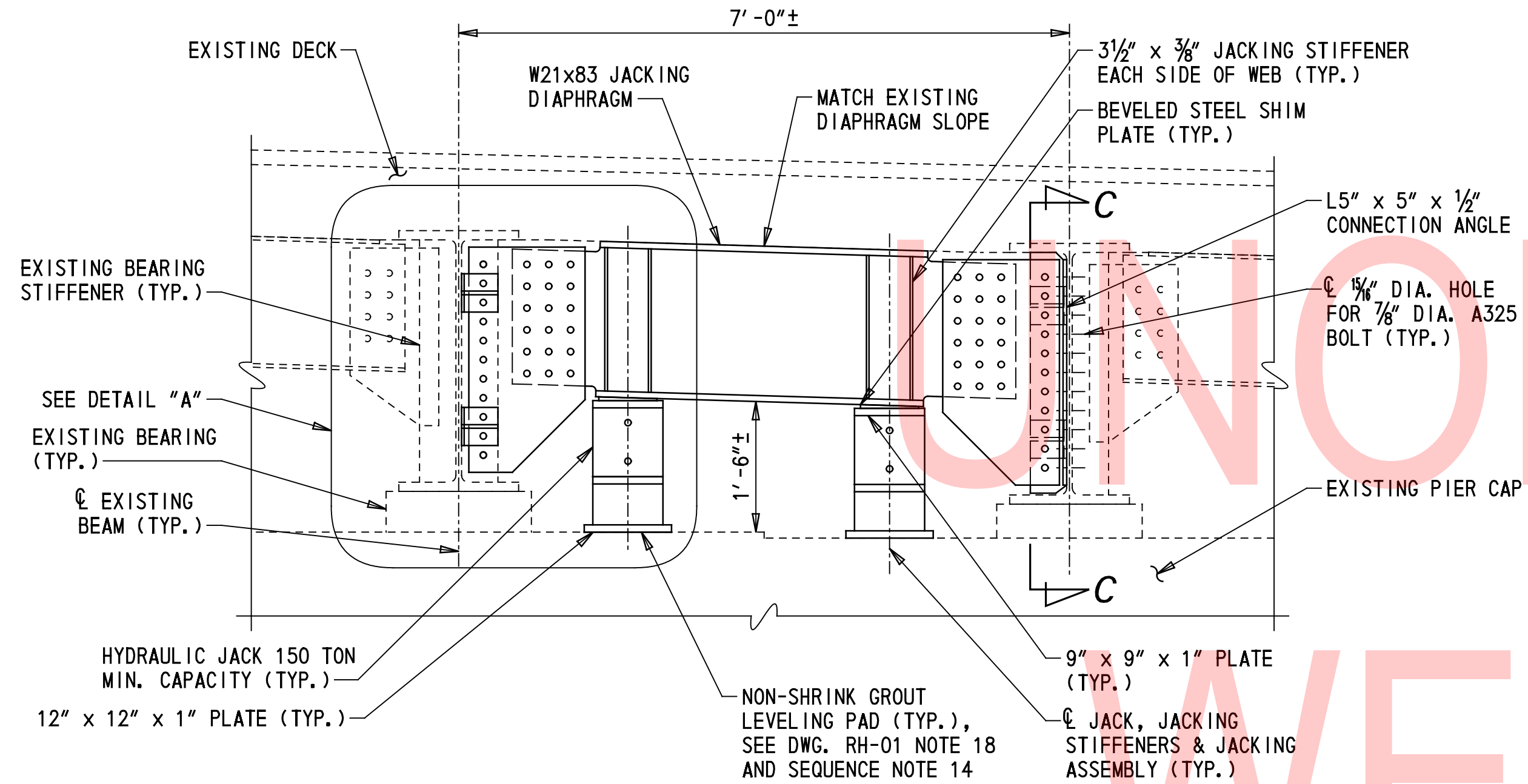
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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	JACKING NOTES AND LOADS	RH-01
				T201907404	DESIGNED BY: B. DEELY	SECTION		
				COUNTY	CHECKED BY: C. MALKIN	PAI		
				NEW CASTLE		SHEET NO.		
								26



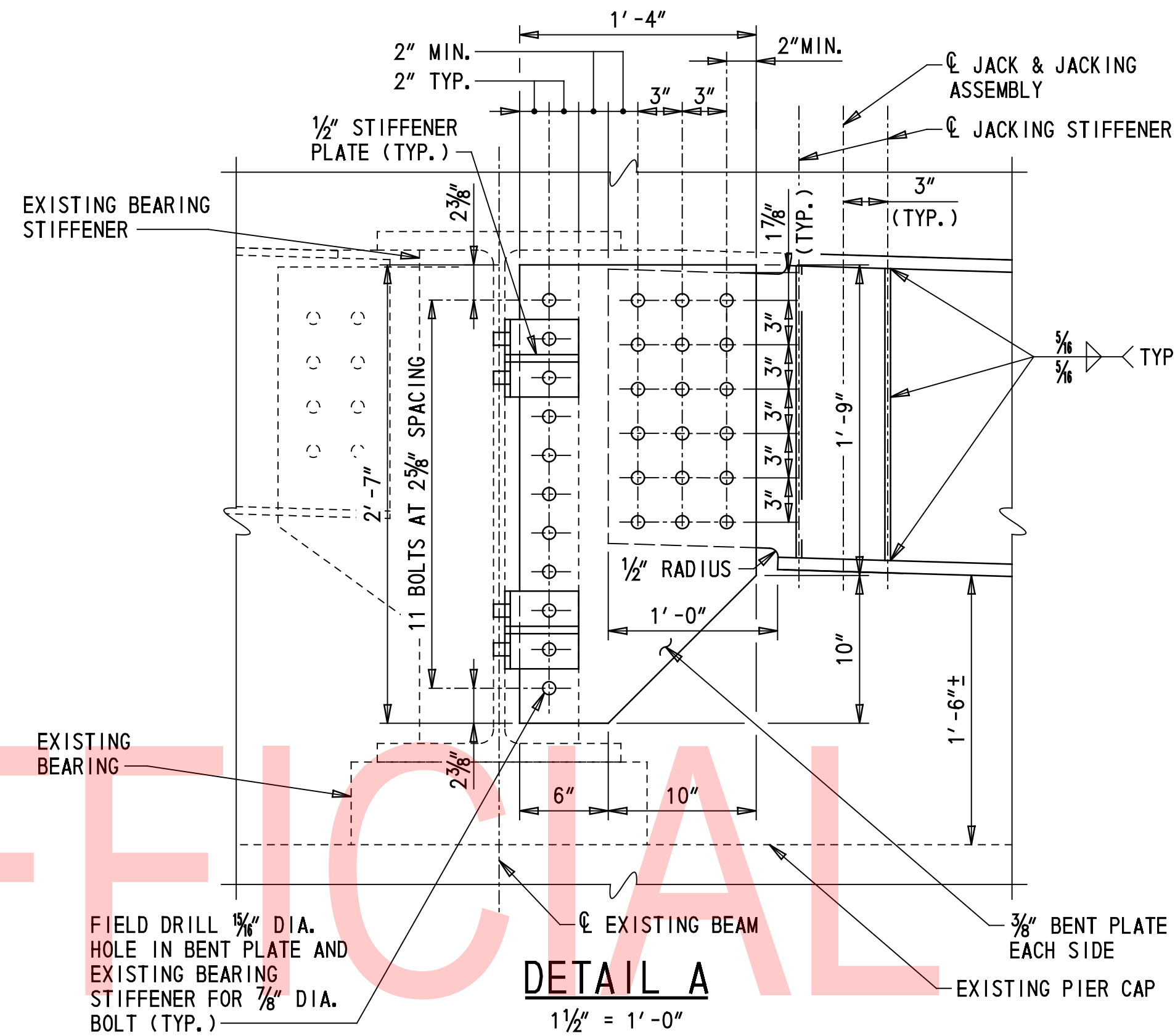
TYPICAL SECTION - JACKING AT PIER

1/4" = 1'-0"



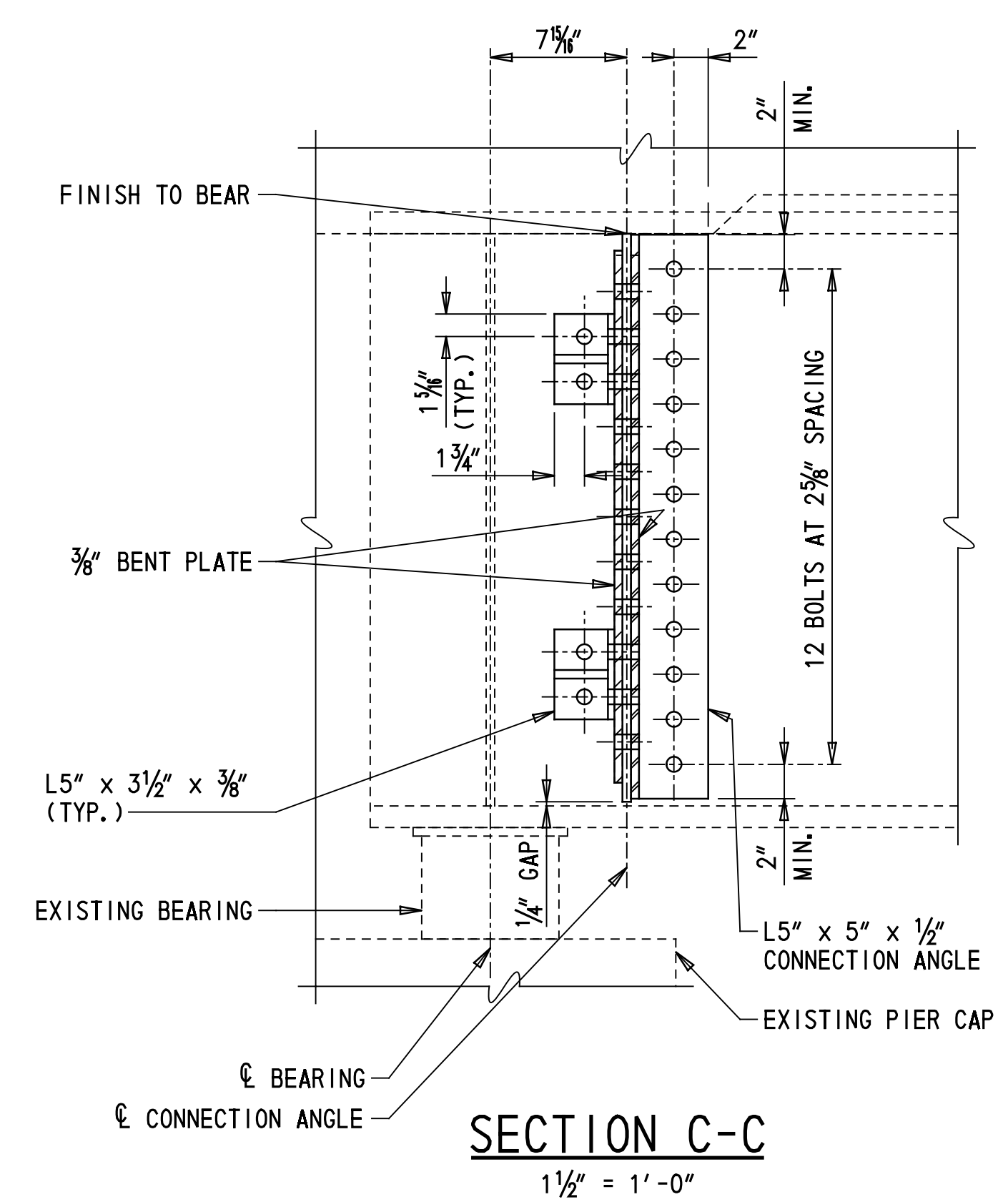
JACKING SCHEME - ELEVATION

3/4" = 1'-0"



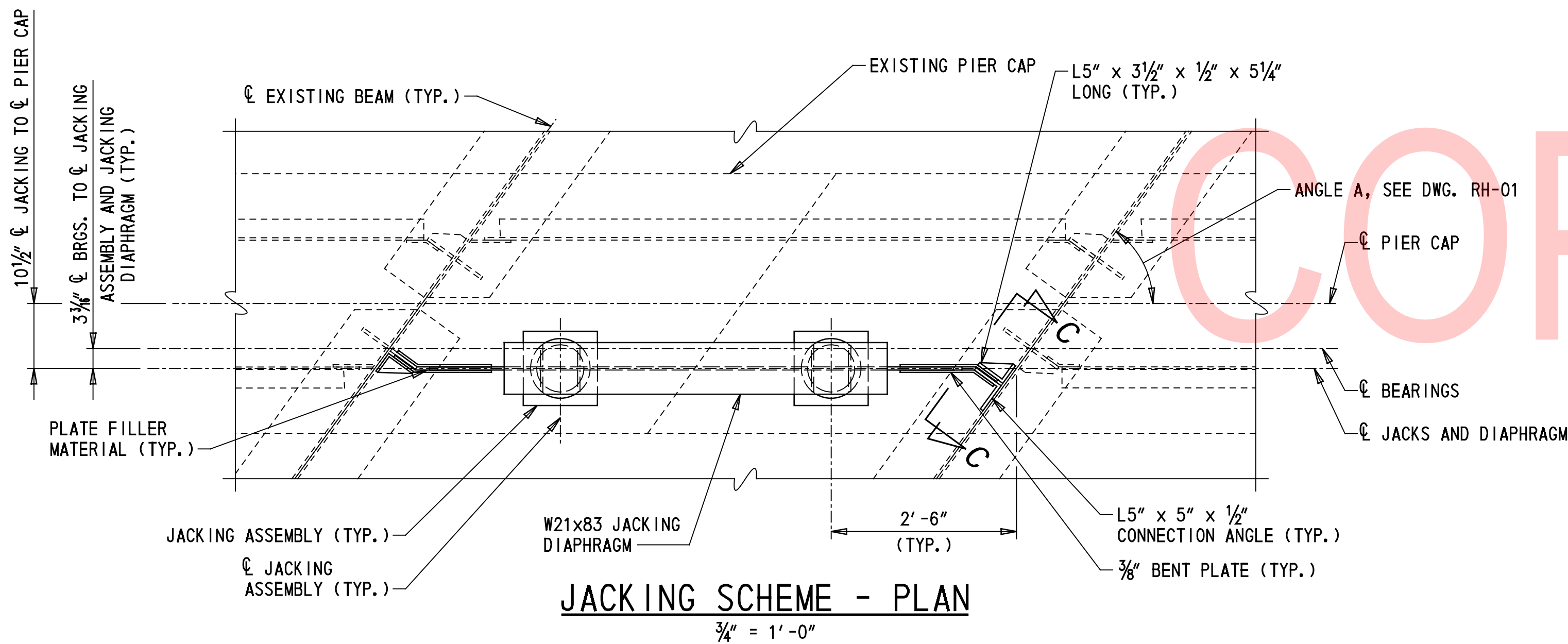
DETAIL A

1 1/2" = 1'-0"



SECTION C-C

1 1/2" = 1'-0"



JACKING SCHEME - PLAN

3/4" = 1'-0"

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ADDENDA / REVISIONS

SCALE AS NOTED

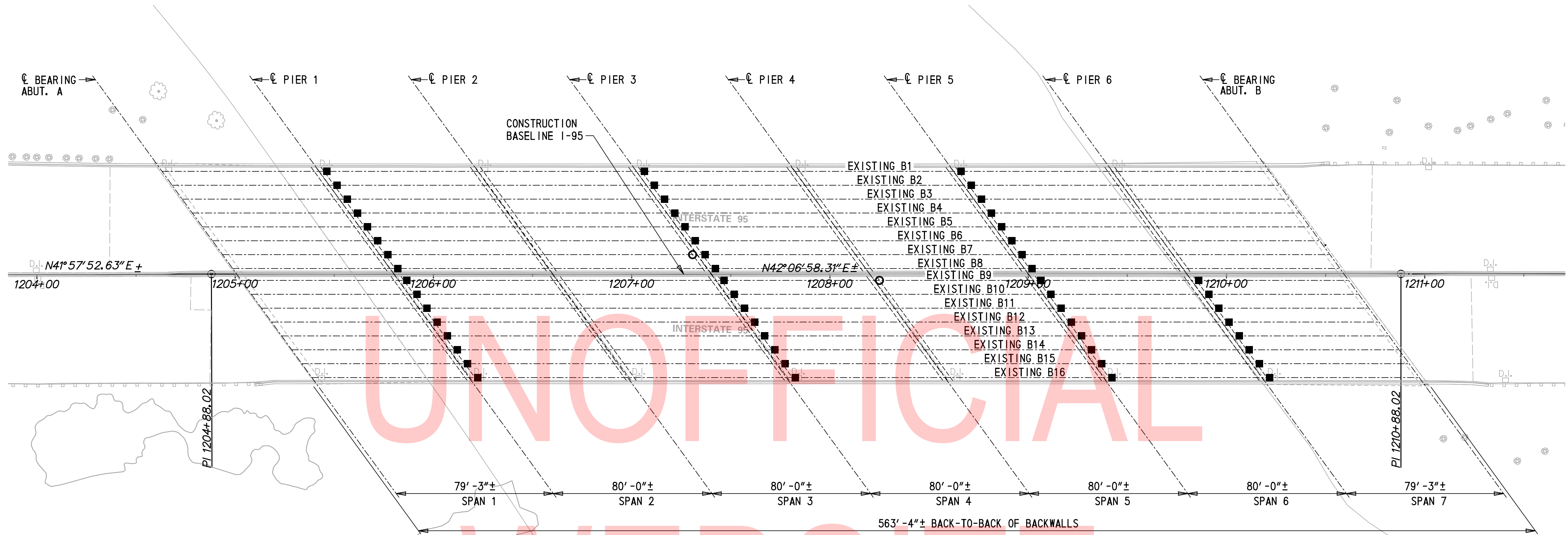
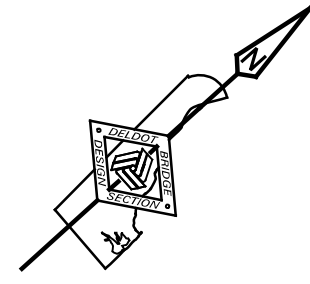
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT
T201907404
COUNTY
NEW CASTLE

BRIDGE NO. **1 744 059**
DESIGNED BY: B. DEELY
CHECKED BY: C. MALKIN

JACKING DETAILS

RH-02
SECTION
PAI
SHEET NO.
27



UNOFFICIAL
WEBSITE
COPY

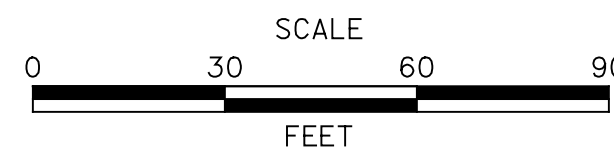
BEARING PLAN

BEARING SYMBOL LEGEND:

- - REPLACE WITH PROPOSED BEARING TYPE E1 (REFER TO DWG. BB-02)
- - REPLACE ANCHOR BOLT NUTS

1744BB-01.dwg 2:50:32 PM

ADDENDA / REVISIONS



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO.	1 744 059
COUNTY NEW CASTLE	DESIGNED BY:	B. MARSHALL
	CHECKED BY:	C. MALKIN

BEARING PLAN

BB-01
SECTION PAI
SHEET NO. 28

STEEL REINFORCED ELASTOMERIC BEARING NOTES:

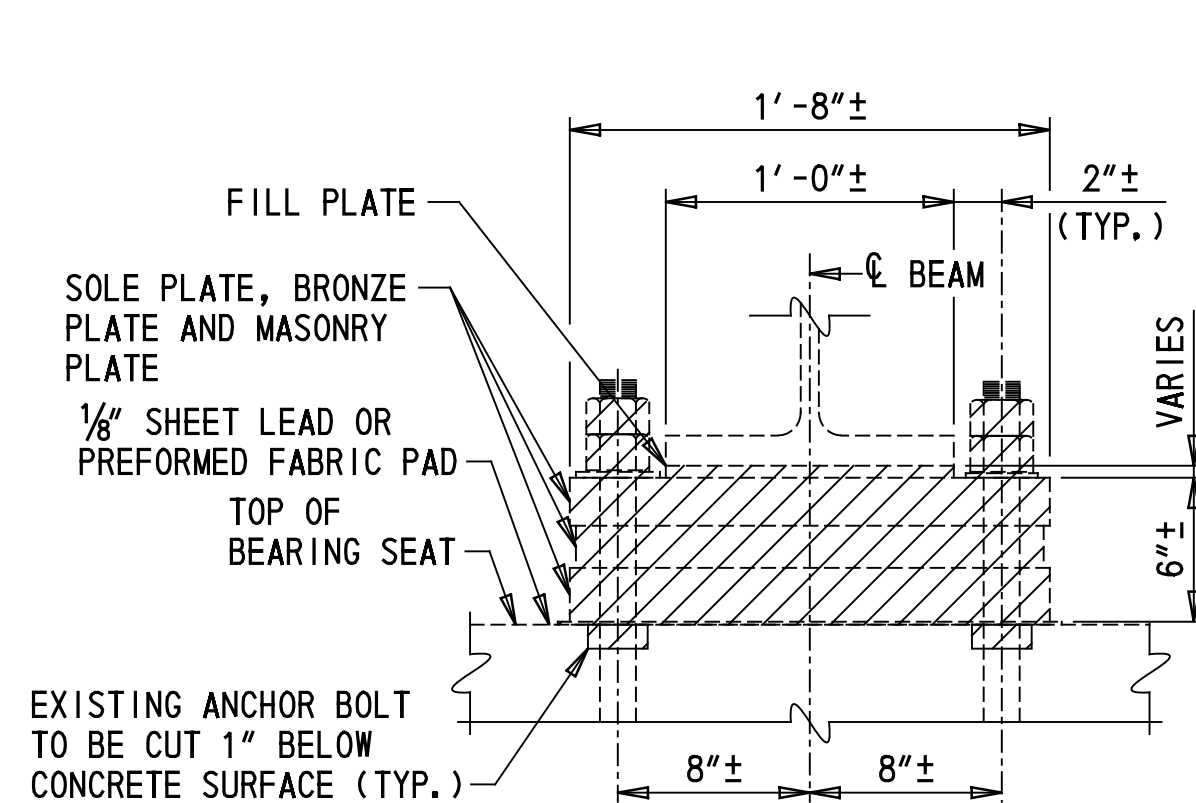
- PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
- SOLE PLATE SHALL BE AASHTO M270, GRADE 50. SOLE PLATES SHALL BE BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING THE GRADE OF THE BRIDGE IN THE FIELD TO DETERMINE THE PROPER BEVEL AT EACH BEARING LOCATION. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1.

FOR FIELD WELDING THE NEW BEARING SOLE PLATES TO THE EXISTING GIRDER BOTTOM FLANGES, ONLY USE THE SHIELD METAL ARC WELDING (SMAW) PROCESS WITH E7018 ELECTRODES WITH THE SUPPLEMENTAL DIFFUSIBLE HYDROGEN DESIGNATOR OF H4. PERFORM 100% NDT INSPECTION OF THESE WELDS USING VISUAL (VT) AND MAGNETIC PARTICLE (MT). THE MAXIMUM THICKNESS OF THE BEVELED SOLE PLATE SHALL BE USED WHEN DETERMINING THE MINIMUM PREHEAT VALUE PER AWS D1.5 BRIDGE WELDING CODE.
- 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". SOLE PLATE SHALL BE MARKED WITH CENTERLINES AND DIRECTION OF GRADE.
- BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF CONCRETE PIER CAP 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 THAT THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF LOAD TO THE GIRDERS.
- PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS AND SOLE PLATES WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARINGS. REMOVAL AND DISPOSAL OF EXISTING BEARING ASSEMBLIES AND ANCHOR BOLTS IS INCLUDED IN ITEM 624000 - JACKING BRIDGE.
- SOLE PLATE SHALL BE SHOP PAINTED IN ACCORDANCE WITH SECTION 616. CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AFTER WELDING THE SOLE PLATE TO THE BEAM. CONTRACTOR SHALL TOUCH UP THE PAINT SYSTEM FOR THE BEAMS AFFECTED BY BEARING INSTALLATION. ALL PAINT SHALL CONFORM TO SECTION 616 OF THE STANDARD SPECIFICATIONS AND MATCH THE COLOR OF THE EXISTING GIRDERS.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE BEARINGS. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- 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.

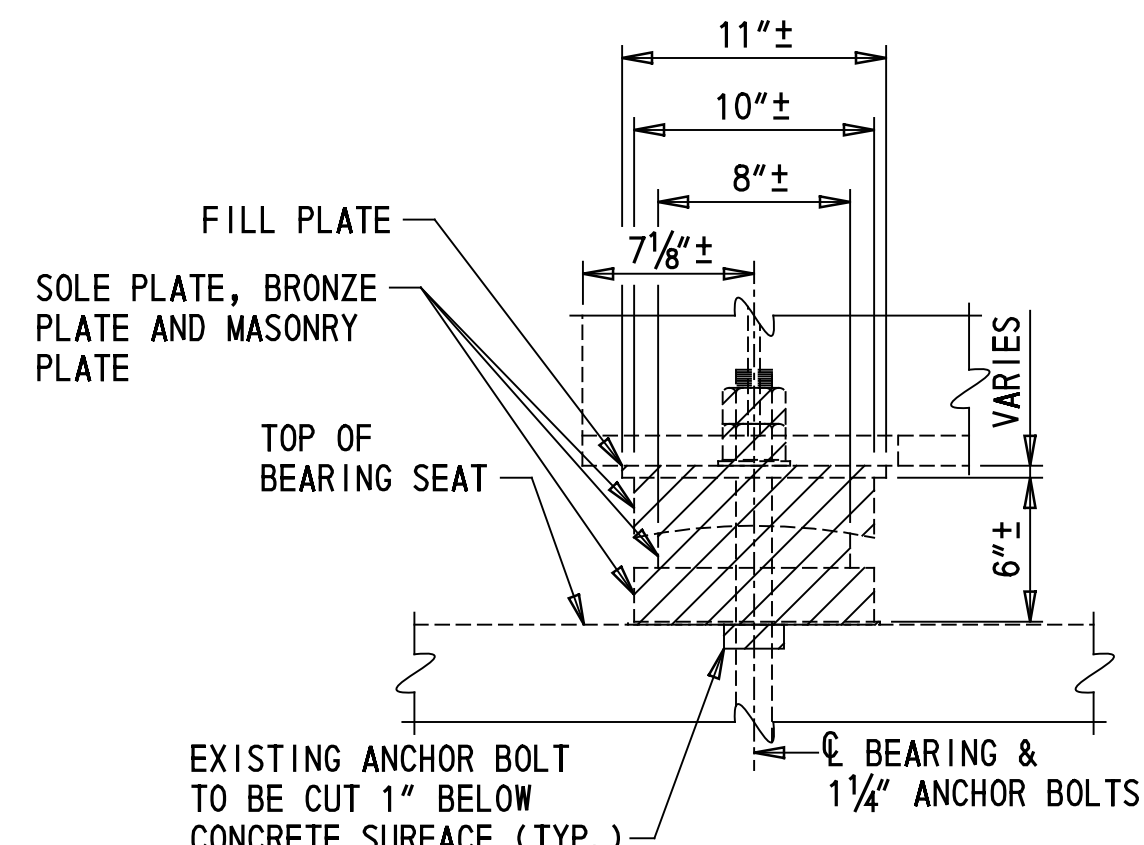
SUGGESTED SEQUENCE OF INSTALLATION:

FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE E1:

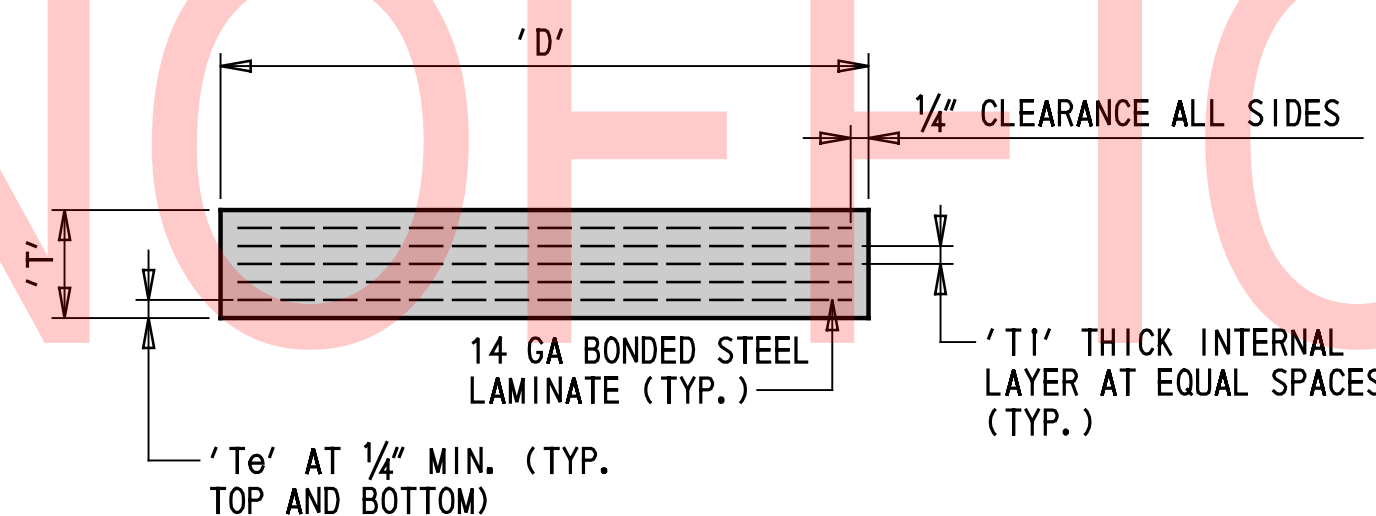
- INSTALL GROUT PAD AS NECESSARY. SEE NOTE 9 ABOVE.
- WELD SOLE PLATE TO BOTTOM FLANGE OF STEEL BEAM.
- CAULK TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND BOTTOM FLANGE.
- APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND UNPAINTED STEEL SURFACES OF THE BEARING. SEE NOTE 7 ABOVE.
- INSTALL ELASTOMERIC BEARING PAD.
- GREASE THE ENTIRE BEARING ASSEMBLY.



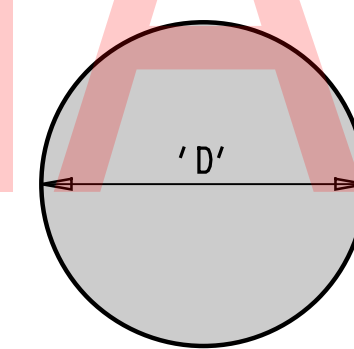
EXISTING BEARING ELEVATION
1 1/2" = 1'-0"



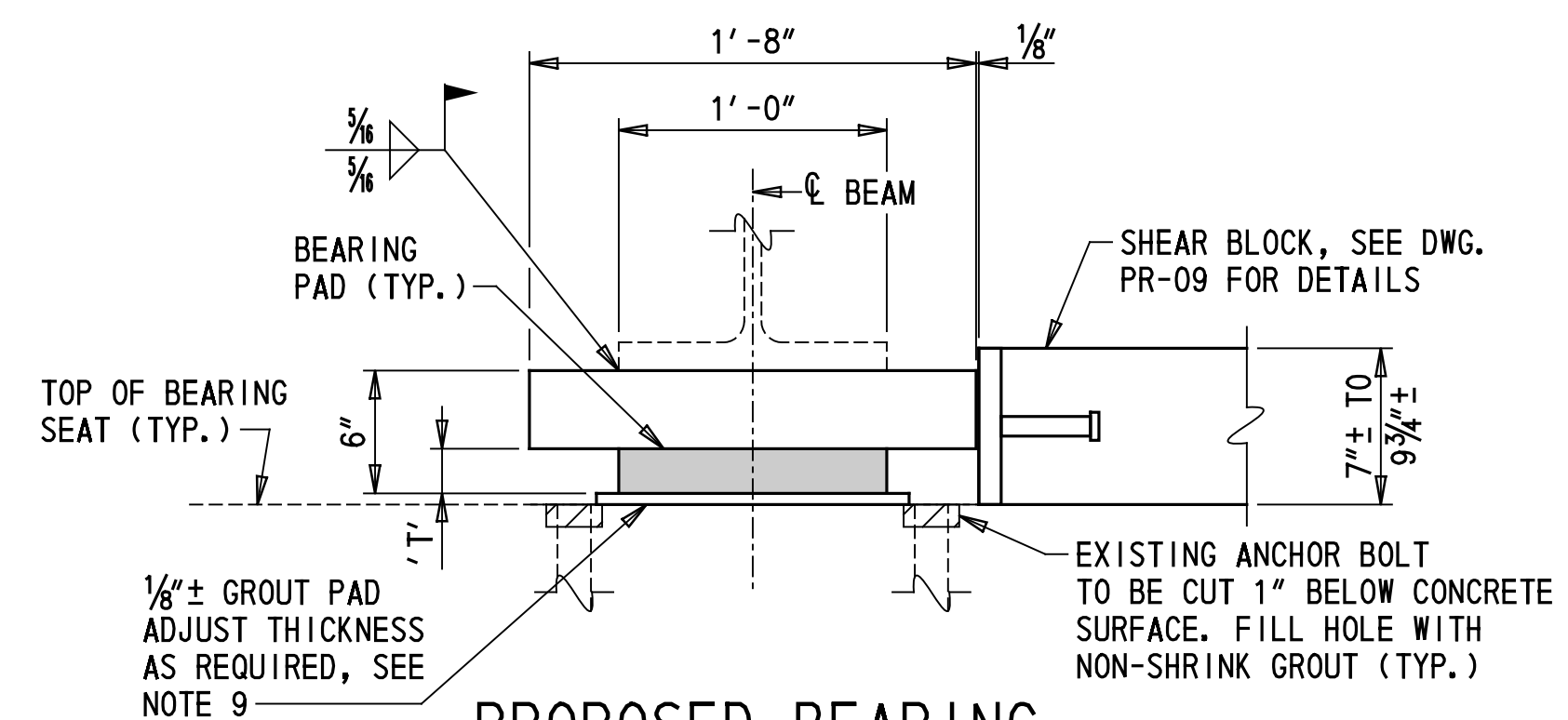
EXISTING BEARING SIDE ELEVATION
1 1/2" = 1'-0"



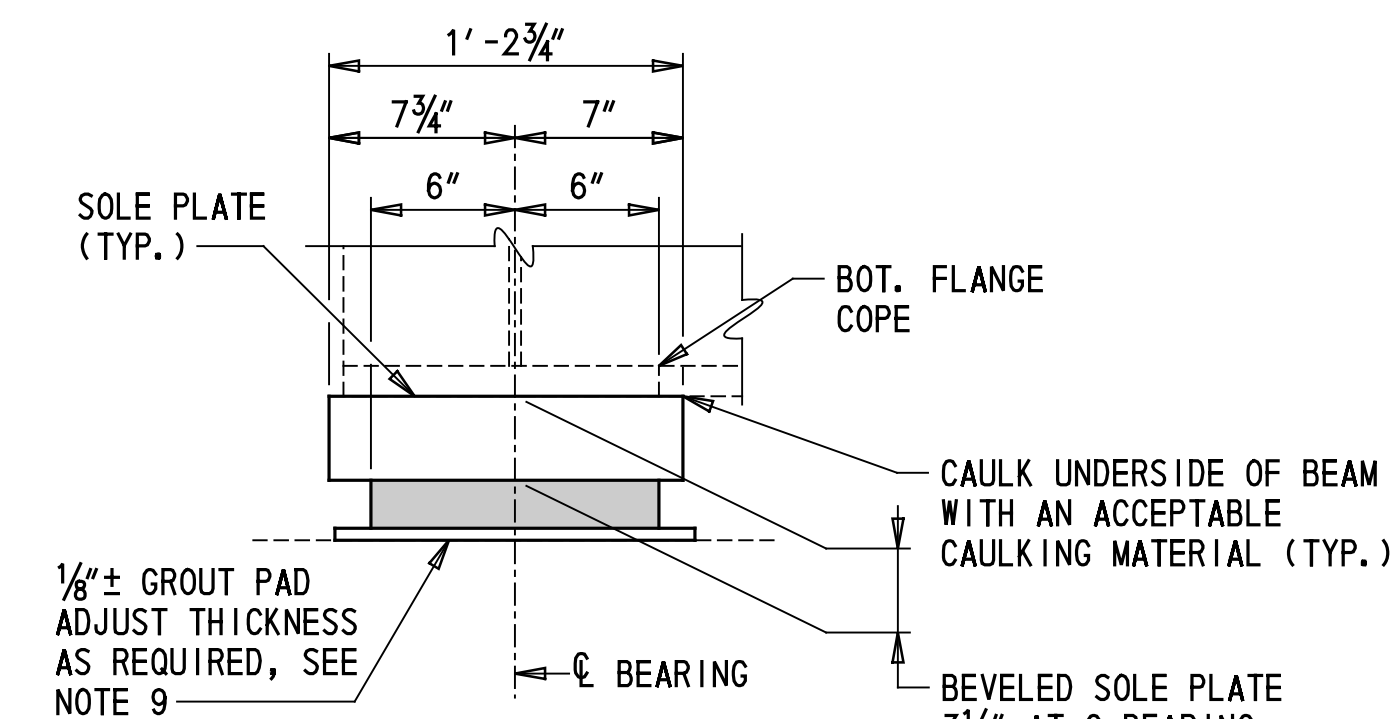
STEEL REINFORCED ELASTOMERIC BEARING ELEVATION
NOT TO SCALE



STEEL REINFORCED ELASTOMERIC BEARING PLAN
NOT TO SCALE



PROPOSED BEARING ELEVATION
1 1/2" = 1'-0"



PROPOSED BEARING SIDE ELEVATION
1 1/2" = 1'-0"

STEEL REINFORCED ELASTOMERIC BEARING TABLE

LOCATION	BEARING DESIGNATION				LAMINATED ELASTOMERIC BEARING						
	MARK	TYPE	NEOPRENE HARDNESS (SHORE A)	TOTAL NO. REQUIRED	CAPACITY PER PAD		DIMENSION		TOTAL PAD THICKNESS 'T'		
					REACTION ⊗	MOVEMENT ☒	'D'	INTERIOR LAYERS			
PIER 1, SPAN 2; PIER 3, SPAN 4; PIER 5, SPAN 6	E1	EXP.	60± 5 DURO	48	146.14 KIPS	0.735"	12"	0.400"	0.250"	4	2.4735"
PIER 6 NB, SPAN 7, BEAMS 9-16	E1	EXP.	60± 5 DURO	8	146.14 KIPS	0.735"	12"	0.400"	0.250"	4	2.4735"

LEGEND:

- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION (W/O DYNAMIC LOAD ALLOWANCE)
- ☒ TEMPERATURE MOVEMENT
- ▨ PORTION OF EXISTING STRUCTURE TO BE REMOVED
- PROPOSED STEEL REINFORCED ELASTOMERIC BEARING

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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO. 1 744 059
COUNTY NEW CASTLE	DESIGNED BY: B. DEELY
	CHECKED BY: C. MALKIN

BEARING DETAILS

BB-02

SECTION PAI
SHEET NO. 29

SECTION 200

- REMOVAL OF STRUCTURES AND OBSTRUCTIONS:
ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATED WITH BRIDGE 1-748 SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- EXISTING DIAPHRAGMS AT PIER E6, SPAN 5IN, BAYS 7 AND 9

SECTION 600

- PORTLAND CEMENT CONCRETE:
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
(f'c = 28-DAY COMPRESSIVE STRENGTH)
CLASS A - PIERS, SHEAR BLOCKS(f'c = 4.5 ksi)
A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.
- BAR REINFORCEMENT:
-REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.
-REINFORCING STEEL SHALL HAVE A 3" CLEAR COVER IF CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
-ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO AASHTO M284 (D3963).
-ANY FIELD CUTTING OR FIELD BENDING MUST BE APPROVED BY THE ENGINEER. PAYMENT SHALL BE INCIDENTAL TO THE BAR REINFORCEMENT ITEM.
-GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO ADDITIONAL COST TO DELDOT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.
-WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.
- STRUCTURAL STEEL:
PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M 270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS 'CVN' ON PLANS) OF AASHTO M 270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED.
SUPPLEMENTAL NOTCH TOUGHNESS REQUIREMENTS ARE MANDATORY FOR:
- ALL DIAPHRAGM MEMBERS AND DIAPHRAGM CONNECTION PLATES

ALL FASTENERS ARE 1" DIAMETER ASTM F3125 GR A325 HIGH STRENGTH BOLTS, TYPE 1 UNLESS OTHERWISE NOTED.

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/1.5:2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED.

SET ANCHOR BOLTS TO TEMPLATE OR IN PRE-FORMED HOLES. DO NOT DRILL UNLESS SPECIFICALLY INDICATED ON PLANS. FILL THE PRE-FORMED HOLES WITH NON-SHRINK GROUT. IN MASONRY PLATES, FILL THE CLEARANCE BETWEEN ANCHOR BOLTS AND HOLES WITH APPROVED NON-HARDENING CAULKING COMPOUND.

PAINTING OF EXISTING AND NEW STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 616. EXISTING STEEL SHALL BE PAINTED AS INDICATED IN PLANS.
- BEARINGS:
STEEL PLATE FIXED BEARINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 615 AND IN ACCORDANCE WITH CHAPTER 18 OF THE 2017 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4TH EDITION. PAYMENT FOR STEEL PLATE FIXED BEARINGS WILL BE MADE UNDER ITEM 615001 - STEEL STRUCTURES.

BRONZE SLIDING PLATE EXPANSION BEARINGS SHALL CONFORM TO ITEM 623500 - BRONZE BEARINGS. PAYMENT WILL BE MADE UNDER ITEM 623500.

MISCELLANEOUS

- DESIGN SPECIFICATIONS:
(A) DELDOT BRIDGE DESIGN MANUAL, 2017 EDITION.
(B) 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, U.S. CUSTOMARY UNITS INCLUDING 2015 AND 2016 INTERIM.
(C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE 2016 DELDOT STANDARD SPECIFICATIONS INCLUDING 2018 SUPPLEMENTAL SPECIFICATIONS.
- LOADING:
- DEAD LOADS INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB AND 15 PSF FOR STAY-IN-PLACE FORMS (INCLUDES CONCRETE IN FORM CORRUGATIONS). PARAPET LOADS ARE DISTRIBUTED 75% TO THE EXTERIOR AND 25% TO THE FIRST INTERIOR BEAM.
- DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
- FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 3,910 IN YEAR 2040.
- LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD.
- THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0° TO 120°F. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68° F.
- LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.

MISCELLANEOUS (CONTINUED)

- EXISTING CONDITIONS:
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 WILL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- ROADWAY CLEARANCES:
A MINIMUM OF 16' -6" SHALL BE MAINTAINED ABOVE ALL ROADWAYS.
- CONTINGENT QUANTITIES:
THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS, SHOP DRAWINGS, AND FIELD INSPECTION NOTES TAKEN FROM NOVEMBER 16, 2014 THROUGH FEBRUARY 5, 2015. ADDITIONAL REPAIRS HAVE BEEN ADDED BASED ON THE MARCH 2017 BIENNIAL BRIDGE INSPECTION REPORT. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION IN CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DETAILS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY MATERIALS. SEE DWG. PN-03 FOR PAY ITEM CONTINGENCY PERCENTAGES.
- UTILITIES:
SEE UTILITY STATEMENT FOR FURTHER INFORMATION ON UTILITY COORDINATION.

THE CONTRACTOR SHALL CALL MISS UTILITY AND LOCATE ALL UNDERGROUND UTILITIES BEFORE COMMENCING ANY EXCAVATION OR INSTALLING ANY FOUNDATIONS.
- ENVIRONMENTAL COMPLIANCE:
ENVIRONMENTAL COMPLIANCE PLANS ARE NOT REQUIRED FOR THIS PROJECT. NO ENVIRONMENTAL RESOURCES ARE IMPACTED BY THE PROPOSED WORK.
- COORDINATION WITH DART:
BRIDGE NOS. 1-748N AND 1-748S ARE LOCATED OVER PARKING LOTS OCCUPIED BY DART. THE CONTRACTOR SHALL NOTIFY VINCENT DAMIANI AT (302) 598-0570 AND DAVID REESE AT (302) 353-0897 AT LEAST 35 DAYS PRIOR TO THE START OF ANY WORK IN THE DART PARKING LOTS. AFTER THIS INITIAL CONTACT, THE CONTRACTOR SHALL NOTIFY DART 14 DAYS IN ADVANCE OF ANY ADDITIONAL COORDINATION REQUIREMENTS AND/OR CHANGES IN THE TRAFFIC PATTERNS. AT NO TIME SHALL THE CONTRACTOR OCCUPY AN AREA ON THE GROUND IN THE PARKING LOTS GREATER THAN THE AREA OF TWO SPANS. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR DART BUSES AND EMPLOYEES TO THE REMAINING PORTIONS OF THE PARKING LOT. ADDITIONALLY THE CONTRACTOR WILL NOT BE PERMITTED TO WORK IN MORE THAN ONE PARKING LOT AT A TIME.
- COORDINATION WITH THE CITY OF WILMINGTON:
THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CITY OF WILMINGTON, ESPECIALLY WORK WHICH IMPACTS CITY STREETS. THE CONTRACTOR SHALL NOTIFY BRIAN MITCHELL AT (302) 576-3089 AT LEAST 14 DAYS PRIOR TO ANY COORDINATION REQUIREMENTS AND/OR CHANGES IN TRAFFIC PATTERNS.
- CONTRACTOR SUBMISSIONS:
PRIOR TO OR WITH THE SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT THE FIELD VERIFICATION NOTES ON MEMBER SIZES AND DIMENSIONS NECESSARY TO REVIEW THE SHOP DRAWINGS.
- CONSTRUCTION SAFETY FENCE:
CONSTRUCTION SAFETY FENCE IS REQUIRED AROUND THE PERIMETER OF ALL BELOW-DECK WORK AREAS AND AT LOCATIONS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 727006 - TEMPORARY CONSTRUCTION FENCE. SEE DWG. CS-101.
- CONTRACT RESTRICTIONS:
THE DEPARTMENT HAS NOT OBTAINED A NOISE WAIVER UNDER THE PROVISIONS OF THE CITY OF WILMINGTON CODE FOR THE PURPOSE OF WORKING EXTENDED HOURS AT NIGHT. WORKING HOURS FOR THIS PROJECT SHALL BE LIMITED TO 8:00AM TO 7:00PM, MONDAY THROUGH FRIDAY; 9:00AM TO 7:00PM SATURDAY; 10:00AM TO 5:00PM SUNDAY AND HOLIDAYS. THE CONTRACTOR MAY COORDINATE AND SUBMIT TO OBTAIN A NOISE WAIVER FOR PURPOSES OF EXPEDITING HIS CONSTRUCTION EFFORTS AT NO ADDITIONAL COST TO THE DEPARTMENT. THE CONTRACTOR SHALL ADDRESS ANY CONCERNS ABOUT THE NOISE WAIVER TO THE DEPARTMENT OF LICENSES AND INSPECTIONS, CITY OF WILMINGTON, 800 FRENCH ST., 5TH FLOOR, WILMINGTON, DELAWARE 19801. THE DEPARTMENT WILL NOT BE HELD RESPONSIBLE FOR ANY ISSUES/DELAYS/OR REJECTIONS WITH THE COORDINATION, RECEIPT OR EXECUTION OF THE WORK IN CONJUNCTION WITH THE NOISE WAIVER AND CANNOT BE CAUSE FOR A DELAY CLAIM.

IN ADDITION, BRIDGE AND ROAD CLOSURES WILL NOT BE PERMITTED ON THE FOLLOWING WEEKENDS:
T.B.D.

NOTE: THESE ARE PROJECTED DATES AND SHALL BE CONFIRMED WITH THE CITY OF WILMINGTON'S EVENTS CALENDAR.

<http://sites.google.com/site/wilmingtoneventswep1/Home>

FOR ADDITIONAL WORK RESTRICTIONS, SEE THE CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLAN SHEETS ON DWGS. CS-01, CS-02, AND CS-101.

MISCELLANEOUS (CONTINUED)

- LOAD RATING
THIS PROJECT DOES NOT CHANGE THE LOAD RATING OF THE BRIDGE.
- ABBREVIATIONS:
ACCEL. = ACCELERATION
BR. = BRIDGE
C/C = CENTER-TO-CENTER
CL. = CENTERLINE
CLR. = CLEAR
DIA. = DIAMETER
DWG. = DRAWING
E.F. = EACH FACE
EO = ENTIRE QUANTITY
EXP. = EXPANSION
FIX. = FIXED

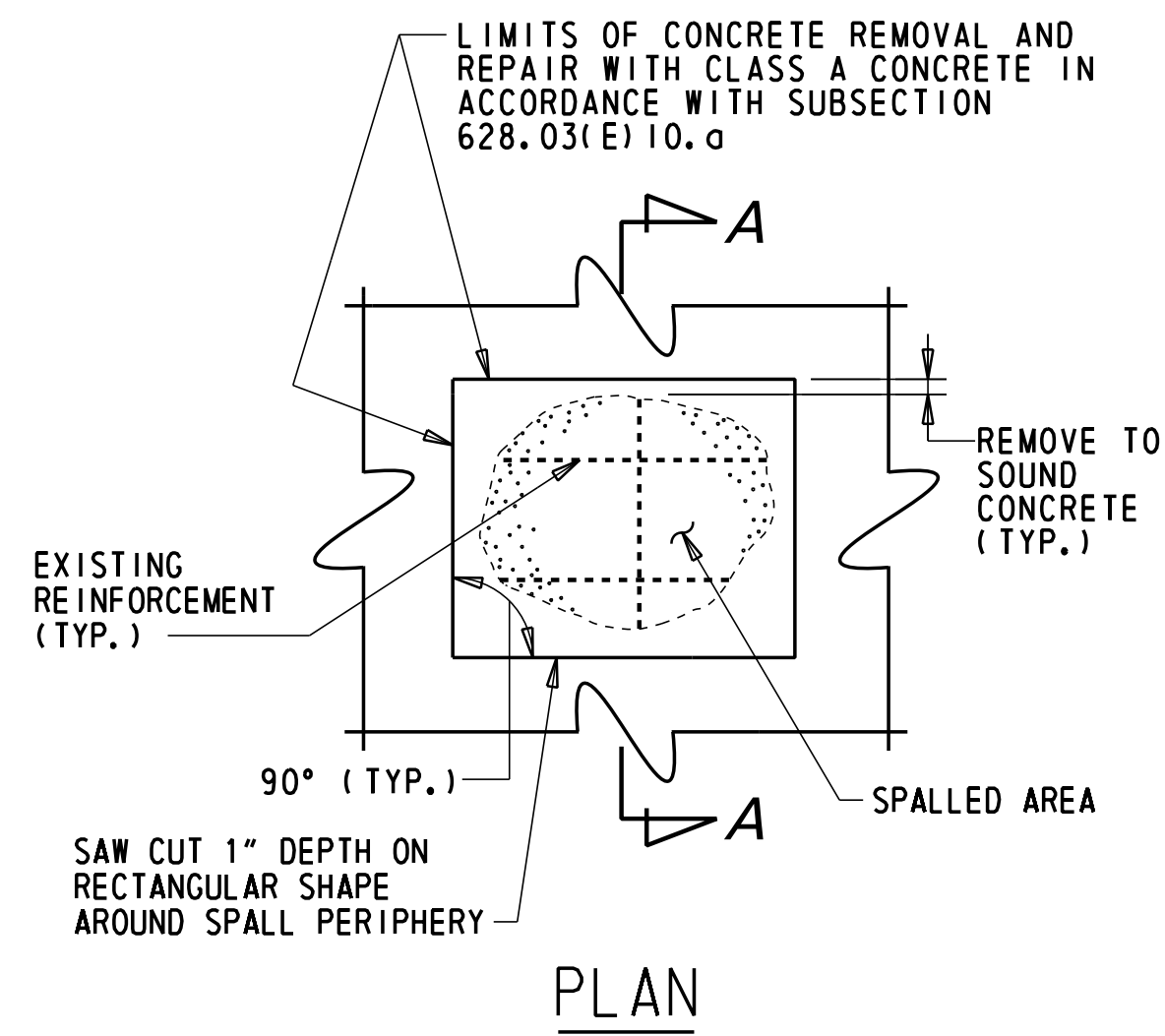
MIN. = MINIMUM
NB = NORTHBOUND
NO. = NUMBER
P.C.C. = PORTLAND CEMENT CONCRETE
R = RADIUS
SB = SOUTHBOUND
SHLD. = SHOULDER
STA. = STATION
TRK = TRACK
TYP. = TYPICAL
UG = UNDERGROUND

INDEX OF BRIDGE 1-748 SHEETS		
BR. SHEET NO	BR. DWG. NO	TABLE OF CONTENTS
30	PN-02	BRIDGE PROJECT NOTES
31	PN-03	CONCRETE REPAIR DETAILS
32 TO 35	PE-01 TO PE-04	GENERAL PLAN AND ELEVATION
36 TO 39	TS-01 TO TS-04	BRIDGE TYPICAL SECTIONS
40 TO 59	PR-01 TO PR-20	PIER CONCRETE REPAIR DETAILS
60 TO 61	PR-21 TO PR-22	SHEAR BLOCK DETAILS
62 TO 68	RH-01 TO RH-07	JACKING DETAILS
69 TO 81	BB-01 TO BB-13	BEARING DETAILS
82	BR-01	REINFORCEMENT SCHEDULE
TOTAL BRIDGE SHEETS: 53		

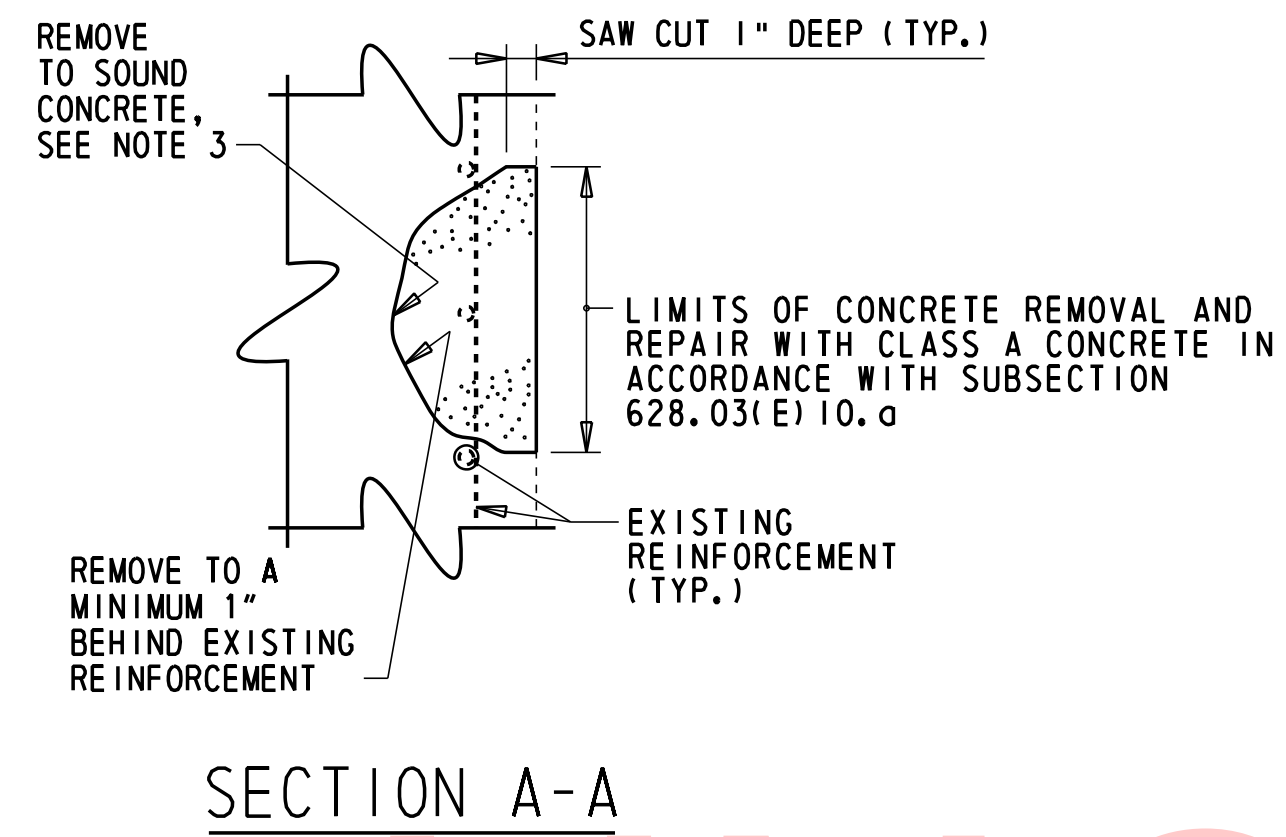
QUANTITIES			
ITEM NO	ITEM TITLE	UNIT	QUANTITY
211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
604000	JACKING BRIDGE	LS	1
604001	PROTECTIVE SHIELD	LS	1
610005	PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	CY	5
611001	BAR REINFORCEMENT, EPOXY COATED	LB	852
615001	STEEL STRUCTURES	LS	1
623003	REPLACE ANCHOR BOLTS	EACH	16
623500	BRONZE BEARINGS	EACH	95
628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	40
628041	DEEP SPALL REPAIR	CF	49
628042	REHABILITATION OF PCC MASONRY	CY	2
628070	DRILLING HOLES AND INSTALLING DOWELS	EACH	148

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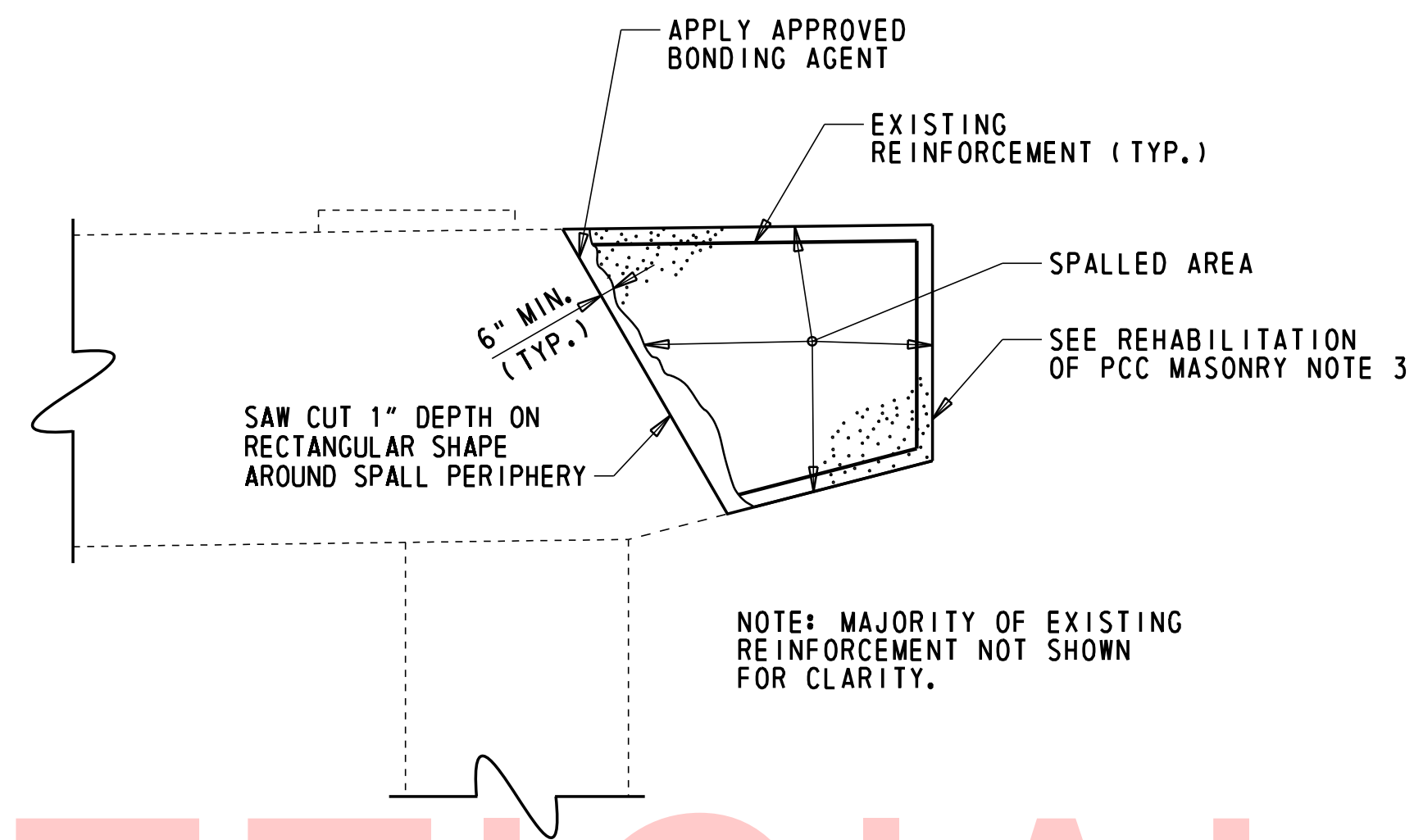
ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BRIDGE PROJECT NOTES	PN-02
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
				COUNTY	CHECKED BY: D. NIZAMOFF	SHEET NO.		30
				NEW CASTLE				



DEEP SPALL REPAIR (ITEM 628041)



REHABILITATION OF PCC MASONRY (ITEM 628042)



DEEP SPALL REPAIR NOTES

1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT. DELAMINATED CONCRETE HAS BEEN ASSUMED AS DEEP SPALL REPAIRS.
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 ITEM 628041 - DEEP SPALL REPAIR.
3. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

REHABILITATION OF PCC MASONRY NOTES

1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXCEED THE 0.5 C.Y. THRESHOLD IN A SINGLE AREA.
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 ITEM 628042 - REHABILITATION OF PCC MASONRY.
3. DETAIL SHOWN FOR "REHABILITATION OF EXISTING PCC MASONRY" UTILIZES A GENERIC EXAMPLE USING PARTIAL RECONSTRUCTION OF AN EXISTING PIER CAP. SEE ABUTMENT AND PIER REHABILITATION SHEETS FOR SIZE AND LOCATION OF REPAIRS AT EACH SUBSTRUCTURE UNIT.
4. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

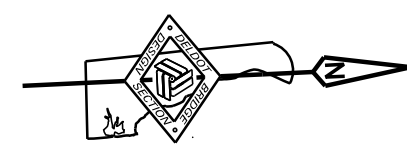
LEGEND:
 SPALLED CONCRETE

UNOFFICIAL
WEBSITE

REPAIR NO.	REPAIR DESCRIPTION	LOCATION	REMARKS	DWG. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	CONTINGENT %	TOTAL QTY.
24	JACK AND REPLACE EXISTING BRIDGE BEARINGS	SPAN 27S, PIER 27S; SPAN 33N, PIER 34N; SPAN 34N, PIER 35N; SPAN 35N, PIER 35N; SPAN 36N, PIER 37N; SPAN 37N, PIER 37N; SPAN 37N, PIER 38N; SPAN 38N, PIER 39N; SPAN 39N, PIER 39N; SPAN 39N, PIER 40N; SPAN 40S, PIER 41S; SPAN 40N, PIER 41N; SPAN 41N, PIER 41N; SPAN 42S, PIER 43S; SPAN 43S, PIER 43S; SPAN 48S, PIER 49S; SPAN 50S, PIER 51S; SPAN 50N, PIER 51N; SPAN 51S, PIER 51S; SPAN 51N, PIER 51N; SPAN 51N, PIER E6; SPAN 55S, PIER 56S; SPAN 57S, PIER 58S; SPAN 58N, PIER 58N; SPAN 59S, PIER 59S; SPAN 59N, PIER 59N	26 LOCATIONS (104 BEARINGS)	BB-01	211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1	0	1
				TO	604000	JACKING BRIDGE	LS	1	0	1
				BB-13:	604001	PROTECTIVE SHIELD	LS	1	0	1
				RH-01	615001	STEEL STRUCTURES	LS	1	0	1
				TO	623003	REPLACE ANCHOR BOLTS	EA	0	E0	16
				RH-07	623500	BRONZE BEARINGS	EA	95	0	95
				PR-01	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	32	25	40
34	SEAL CRACKS IN CONCRETE SUBSTRUCTURE	PIERS 35N, 37S, 41N, 43S, 49N, 49S, 56N, 59N, 59S		PR-01	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	32	25	40
				PR-20						
37	REPAIR DEEP SPALLS IN CONCRETE SUBSTRUCTURE	PIERS 34N, 34S, 35N, 37N, 37S, 38N, 38S, 39N, 39S, 41N, 41S, 43S, 49N, 49S, 51N, 51S, 56N, 58N, 59N, 59S		PR-01	628041	DEEP SPALL REPAIR	CF	39	25	49
				PR-20	628042	REHABILITATION OF PCC MASONRY	CY	1	100	2
39	CONSTRUCTING SHEAR BLOCKS	PIER 34N, SPAN 33N; PIER 35N, SPAN 34N; PIER 37N, SPAN 37N; PIER 41S, SPAN 40S; PIER 41N, SPAN 40N; PIER 43S, SPAN 42S AND SPAN 43S; PIER 49S, SPAN 48S; PIER 51S, SPAN 50S AND SPAN 51S; PIER 51N, SPAN 50N; PIER 59S, SPAN 59S	12 LOCATIONS	PR-21	610005	PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	CY	5	0	5
				TO	611001	BAR REINFORCEMENT, EPOXY COATED	LB	852	0	852
				PR-22	628070	DRILLING HOLES AND INSTALLING DOWELS	EACH	148	0	148

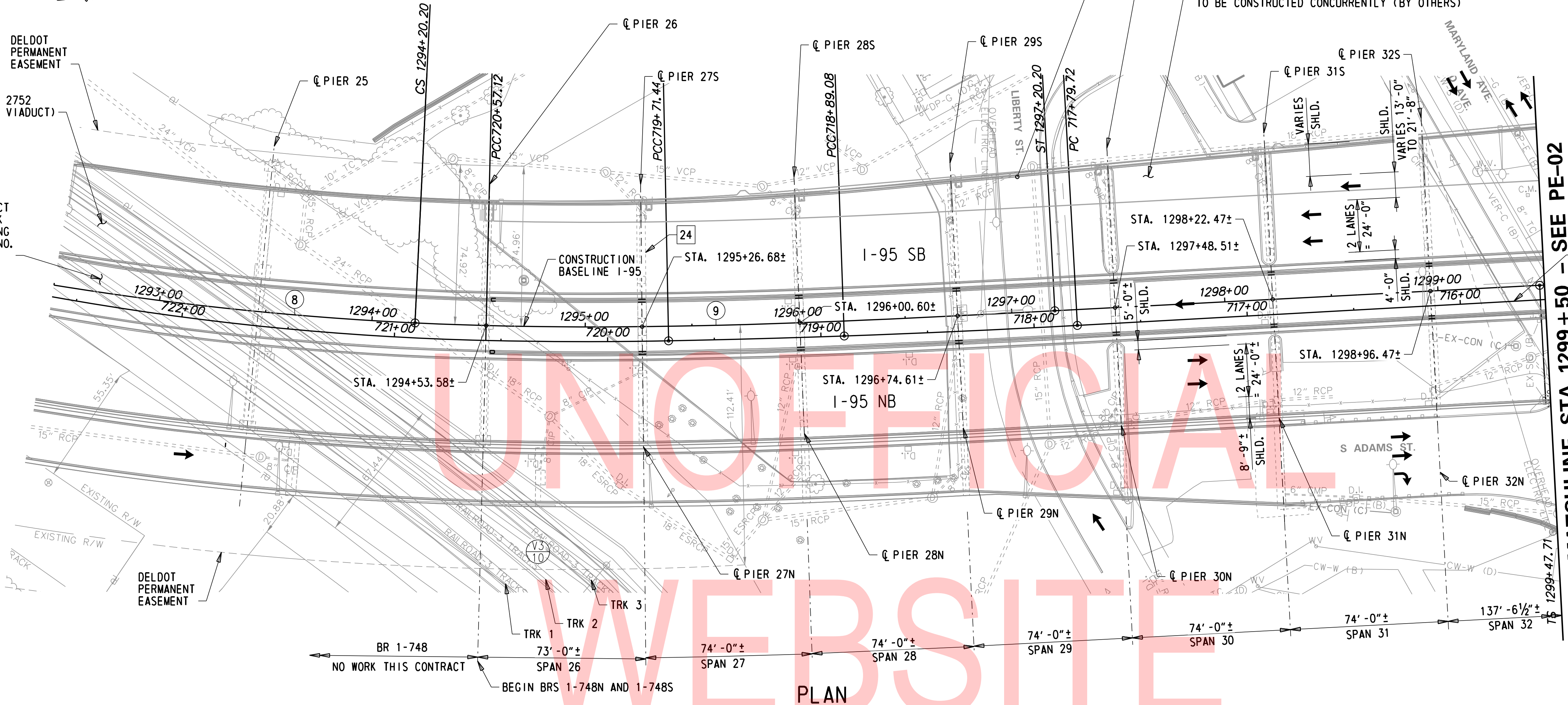
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ADDENDA / REVISIONS	NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="font-size: 8px;"> <tr><td>CONTRACT</td><td>BRIDGE NO.</td><td>1 748 N&S</td></tr> <tr><td>T201907404</td><td>DESIGNED BY:</td><td>K. AMBROSE</td></tr> <tr><td>COUNTY</td><td>CHECKED BY:</td><td>D. NIZAMOFF</td></tr> <tr><td>NEW CASTLE</td><td></td><td></td></tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			CONCRETE REPAIR DETAILS	PN-03 SECTION WRA SHEET NO. 31
CONTRACT	BRIDGE NO.	1 748 N&S															
T201907404	DESIGNED BY:	K. AMBROSE															
COUNTY	CHECKED BY:	D. NIZAMOFF															
NEW CASTLE																	



AMTRAK BR. NO. 2752
(BRICK & STONE VIADUCT)

I-95 VIADUCT
OVER AMTRAK
DOT CROSSING
INVENTORY NO.
530830R

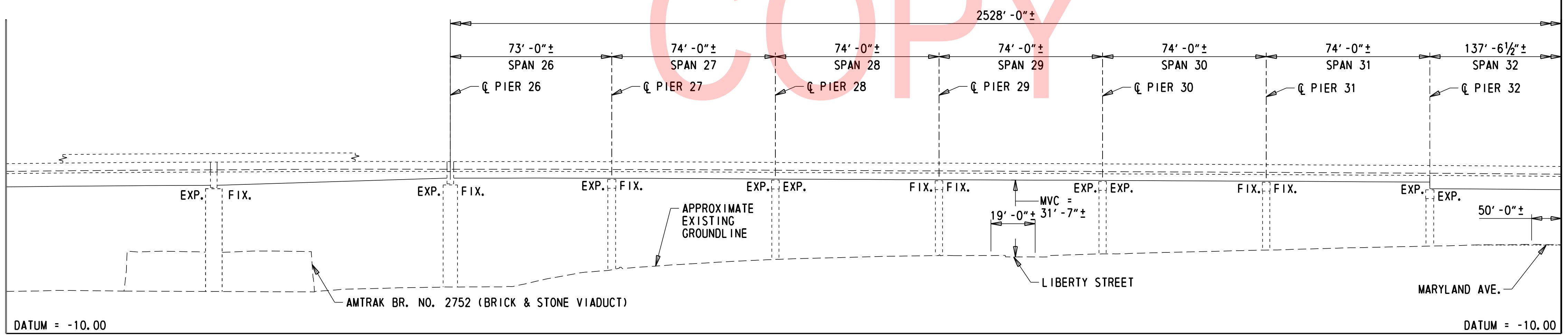


PLAN

MATCHLINE STA. 1299 + 50 - SEE PE-02

- NOTES:**
- DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE I-95.
 - MINIMUM VERTICAL CLEARANCE (MVC) IS BASED ON 2013 NBIS INSPECTION REPORT.

- KEY:**
- 24 REPAIR NUMBER AS SHOWN ON PN-03
 - 8 CURVE DATA
 - VS/10 AMTRAK VALUATION SECTION & SHEET NUMBER



DEVELOPED SECTION ALONG BASELINE I-95

MATCHLINE STA. 1299 + 50 - SEE PE-02

HORIZONTAL CURVE DATA

CURVE 8		CURVE 9	
P. I. STA. 1290+75.00	SCS P. I. STA. 1295+20.2966		
DELTA = 26°52'30.5407" L	Ls = 300'		
Dc = 3°49'10.9871"	P = 2.4991'		
R = 1500'	K = 149.95'		
T = 358.39'	Xc = 299.7001'		
L = 703.59'	Yc = 9.9929'		
E = 42.2	LT = 200.1049'		
P. C. STA. = 1287+16.61	ST = 100.0953'		
P. T. STA. = 1294+20.20	LC = 299.8667'		

NOTE: SEE DWG. PE-02 FOR CURVE 10

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ADDENDA / REVISIONS



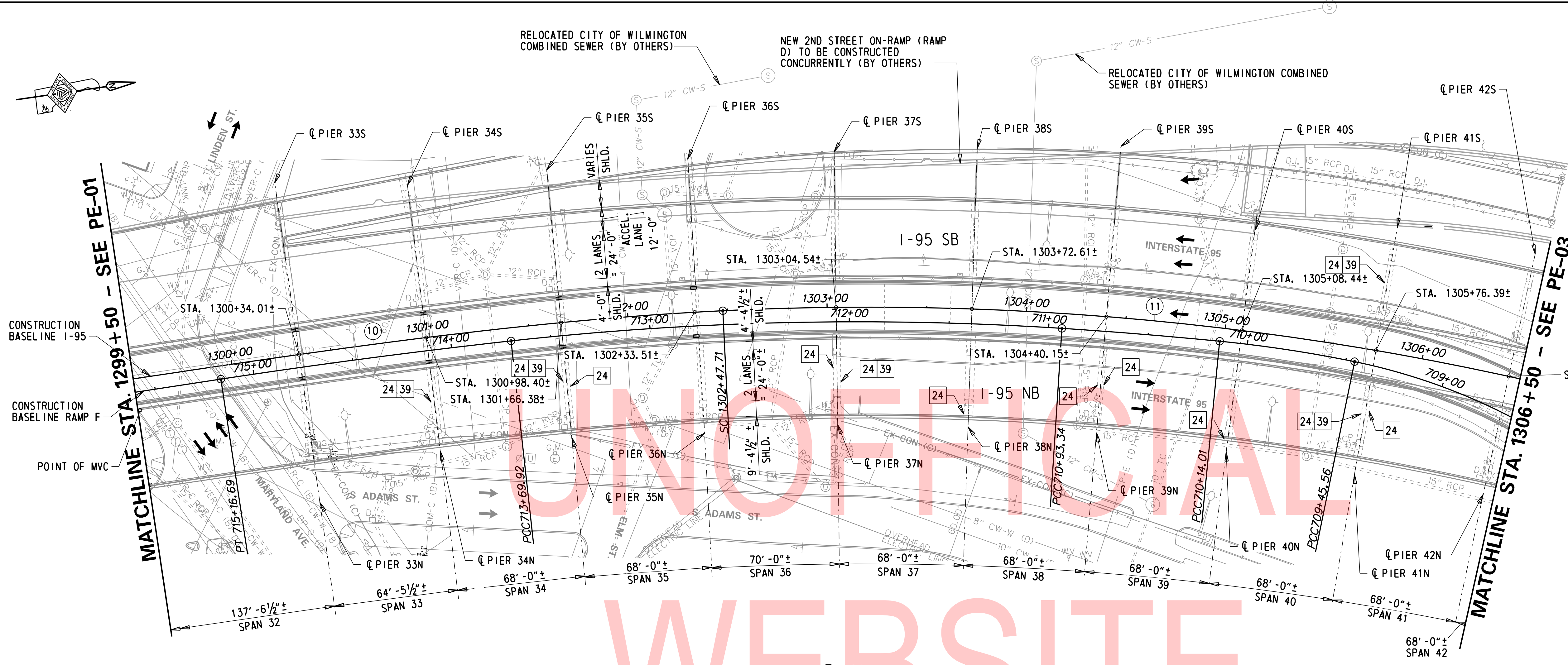
**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**GENERAL PLAN
AND ELEVATION
1 OF 4**

PE-01
SECTION
WRA
SHEET NO.
32

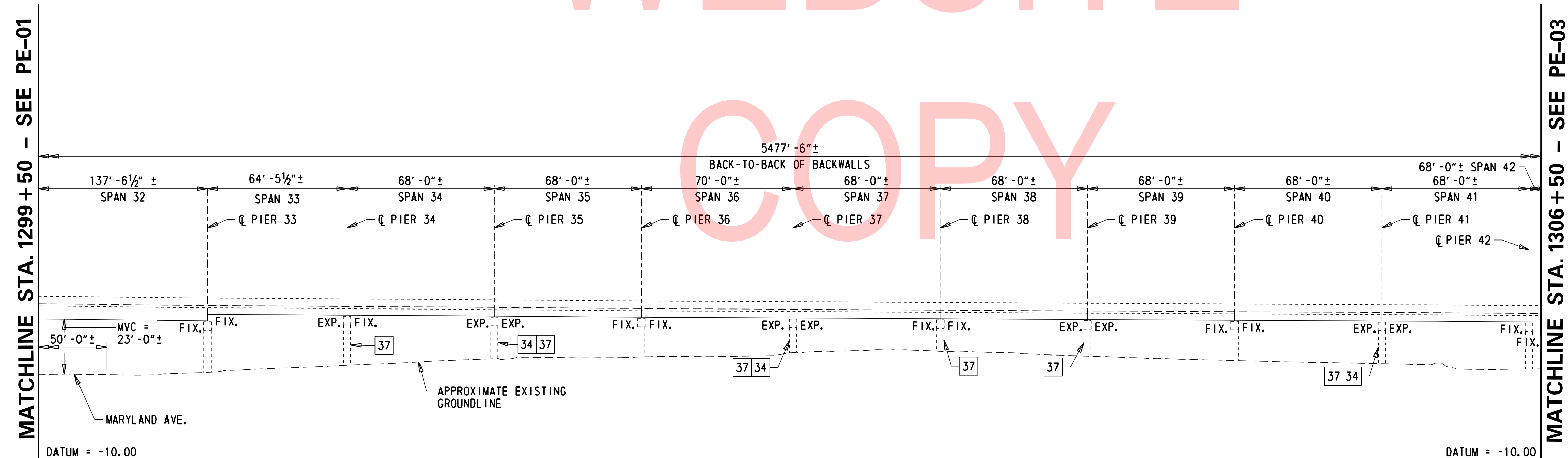
- NOTES:**
1. DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE I-95.
 2. MINIMUM VERTICAL CLEARANCE (MVC) IS BASED ON 2013 NBIS INSPECTION REPORT.



PLAN

WEBSITE COPY

- KEY:**
- 24 REPAIR NUMBER AS SHOWN ON PN-03
 - 8 CURVE DATA



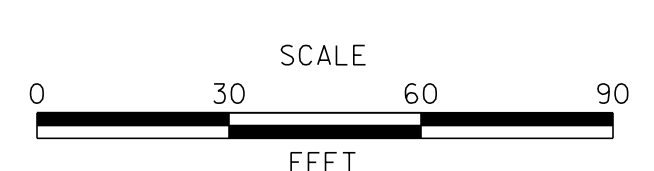
DEVELOPED SECTION ALONG BASELINE I-95

HORIZONTAL CURVE DATA

CURVE 10	CURVE 11
SCS P. I. STA. 1301+47.8159	P. I. STA. 1304+66.04
Ls = 300'	DELTA = 16° 33' 44.7653"
P = 2.4991'	Dc = 3° 49' 10.9871"
K = 149.95'	R = 1500'
Xc = 299.7001'	T = 218.32'
Yc = 9.9929'	L = 433.60'
LT = 200.1049'	E = 15.81'
ST = 100.0953'	P.C. STA. = 1302+47.71
LC = 299.8667'	P.T. STA. = 1306+81.31

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ADDENDA / REVISIONS

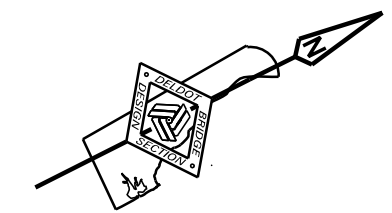


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

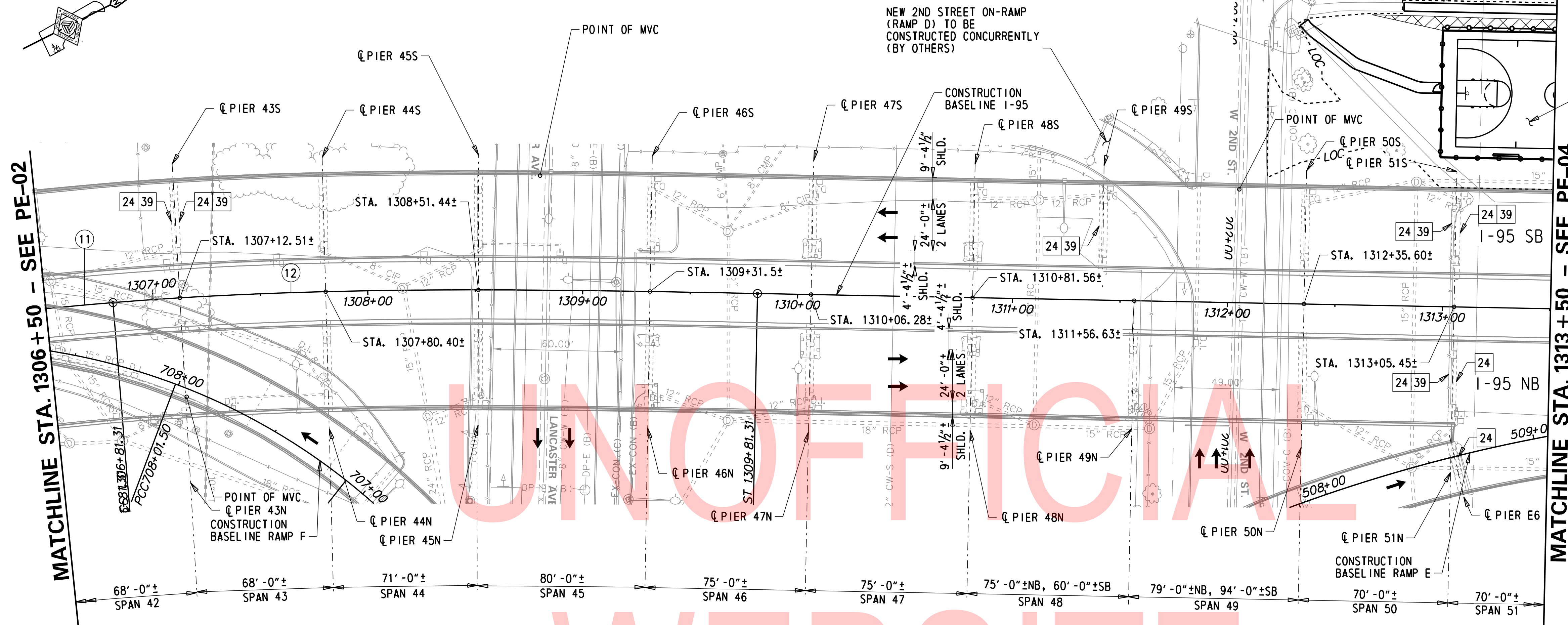
**GENERAL PLAN
AND ELEVATION
2 OF 4**

PE-02
SECTION
WRA
SHEET NO.
33



- NOTES:**
1. DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE I-95.
 2. MINIMUM VERTICAL CLEARANCE (MVC) IS BASED ON 2013 NBIS INSPECTION REPORT.

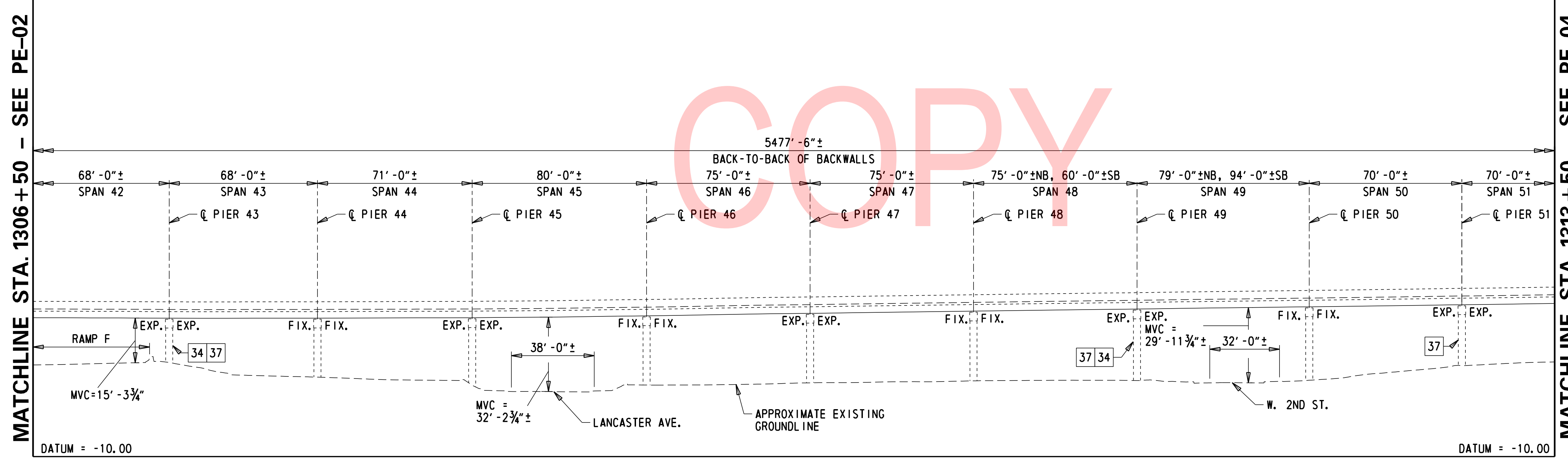
PROPOSED TEMPORARY BASKETBALL COURTS - SEE DWG. CP-01



UNOFFICIAL
WEBSITE

PLAN

- KEY:**
- 24 REPAIR NUMBER AS SHOWN ON PN-03
 - 8 CURVE DATA



DEVELOPED SECTION ALONG BASELINE I-95

HORIZONTAL CURVE DATA

CURVE (11)	CURVE (12)
P. I. STA. 1304+66.04	SCS P. I. STA. 1307+81.4099
DELTA = 16°33'44.7653" L	Ls = 300'
Dc = 3°49'10.9871"	P = 2.4991'
R = 1500'	K = 149.95'
T = 218.32'	Xc = 299.7001'
L = 433.60'	Yc = 9.9929'
E = 15.81	LT = 200.1049'
P.C. STA. = 1302+47.71	ST = 100.0953'
P.T. STA. = 1306+81.31	LC = 299.8667'

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ADDENDA / REVISIONS



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

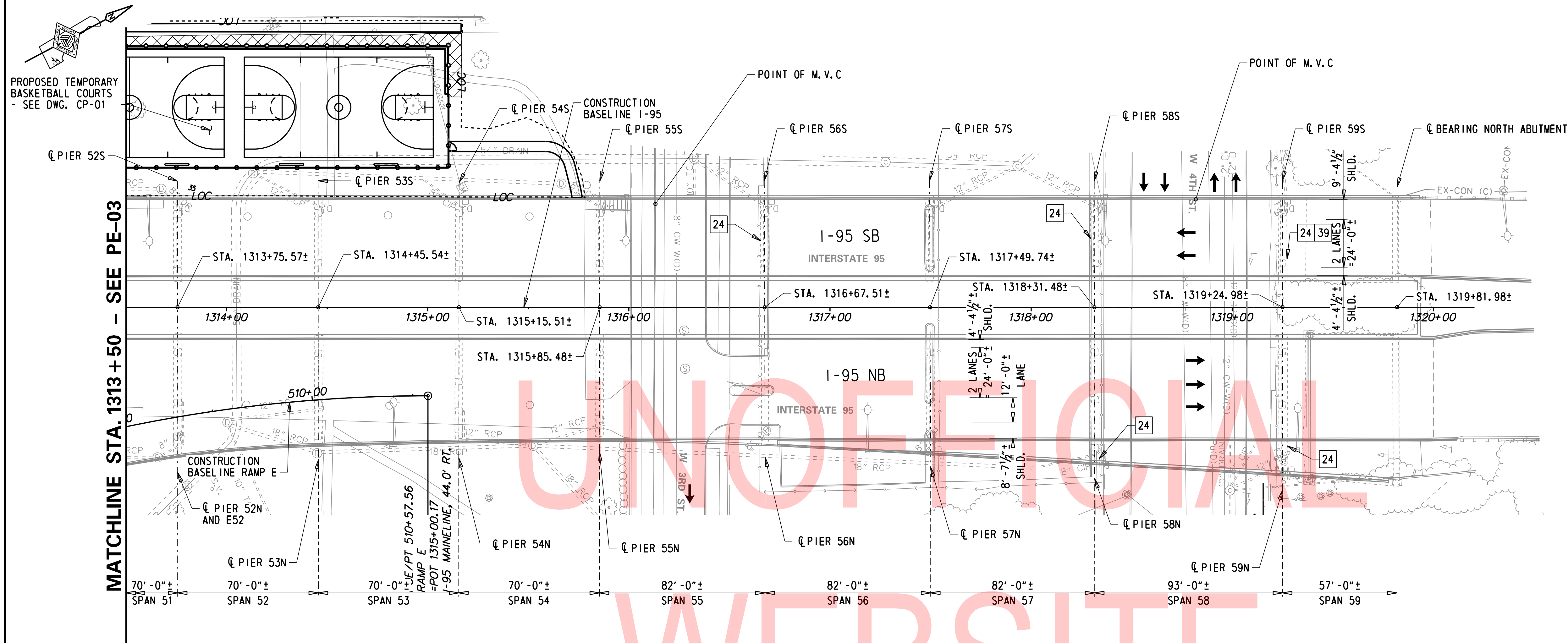
CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**GENERAL PLAN
AND ELEVATION
3 OF 4**

PE-03
SECTION
WRA
SHEET NO.
34

NOTES:

1. DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE I-95.
2. MINIMUM VERTICAL CLEARANCE (MVC) IS BASED ON 2013 NBIS INSPECTION REPORT.

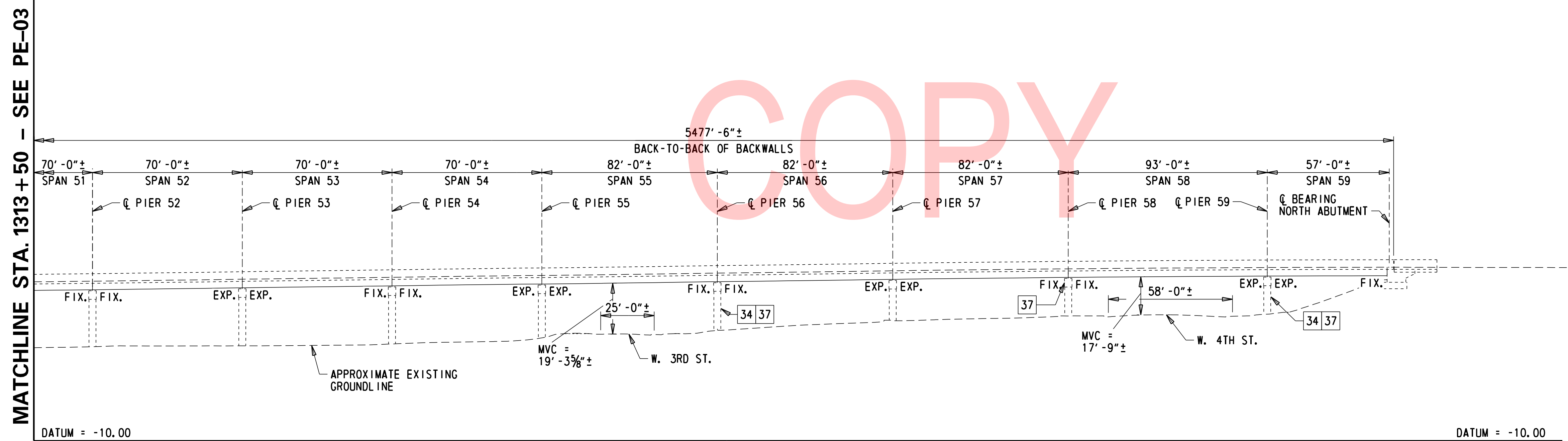


KEY:

- 24 REPAIR NUMBER AS SHOWN ON PN-03
- 8 CURVE DATA

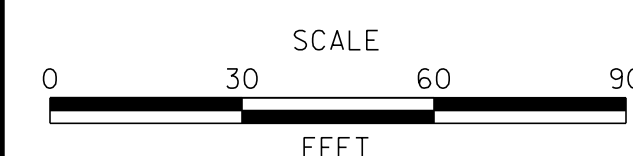
UNOFFICIAL WEBSITE

PLAN



DEVELOPED SECTION ALONG BASELINE I-95

ADDENDA / REVISIONS

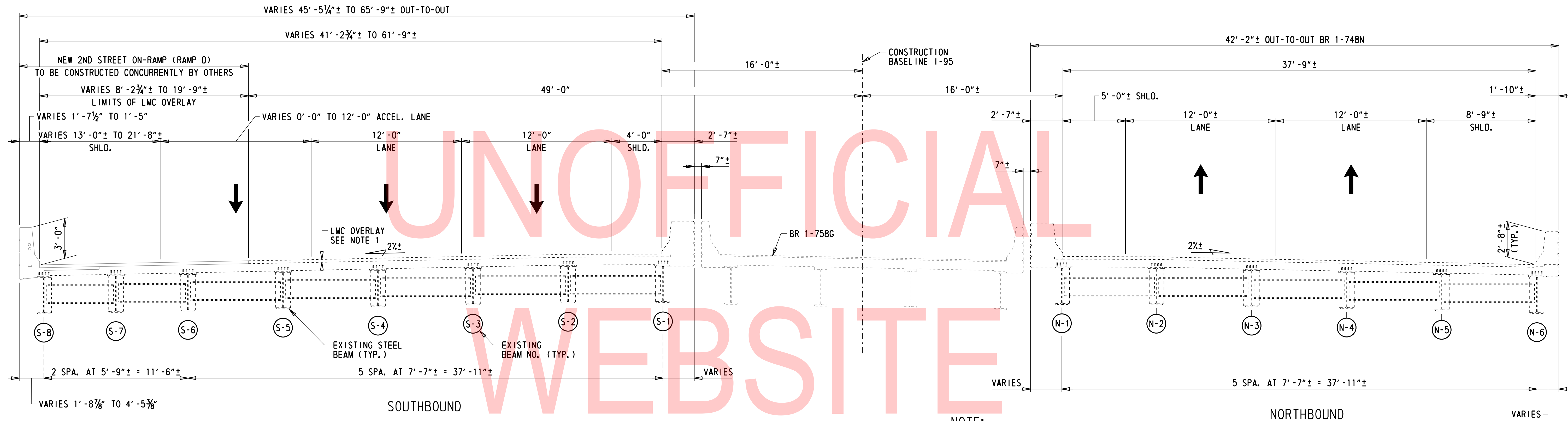


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO. 1 748 N&S
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE
	CHECKED BY: D. NIZAMOFF

**GENERAL PLAN
AND ELEVATION
4 OF 4**

PE-04
SECTION
WRA
SHEET NO. 35



EXISTING TYPICAL SECTION
 (STA. 1294+53.58 TO STA. 1300+34.01)
 1/4" = 1'-0"

NOTE:

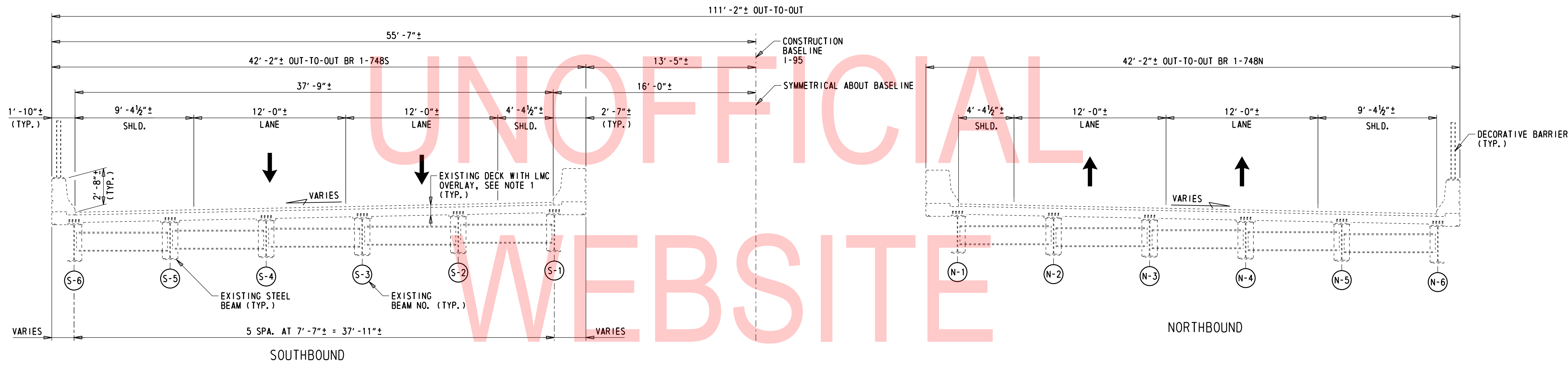
GIRDER SPACING FOR EXISTING IS TAKEN AT STA. 1297+48.
 SEE CONTRACT NO. 64-03-004 FOR ADDITIONAL GIRDER SPACING
 INFORMATION. SECTION TAKEN WITHIN TANGENT PORTION OF I-95.

NOTES:

1. THICKNESS OF EXISTING DECK OVERLAY VARIES.
2. NEW 2ND STREET ON-RAMP (RAMP D) TO BE CONSTRUCTED CONCURRENTLY (BY OTHERS).

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BRIDGE TYPICAL SECTIONS STA. 1294 + 53 TO 1300 + 34	TS-01
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
				COUNTY	CHECKED BY: D. NIZAMOFF		SHEET NO.	36
				NEW CASTLE				



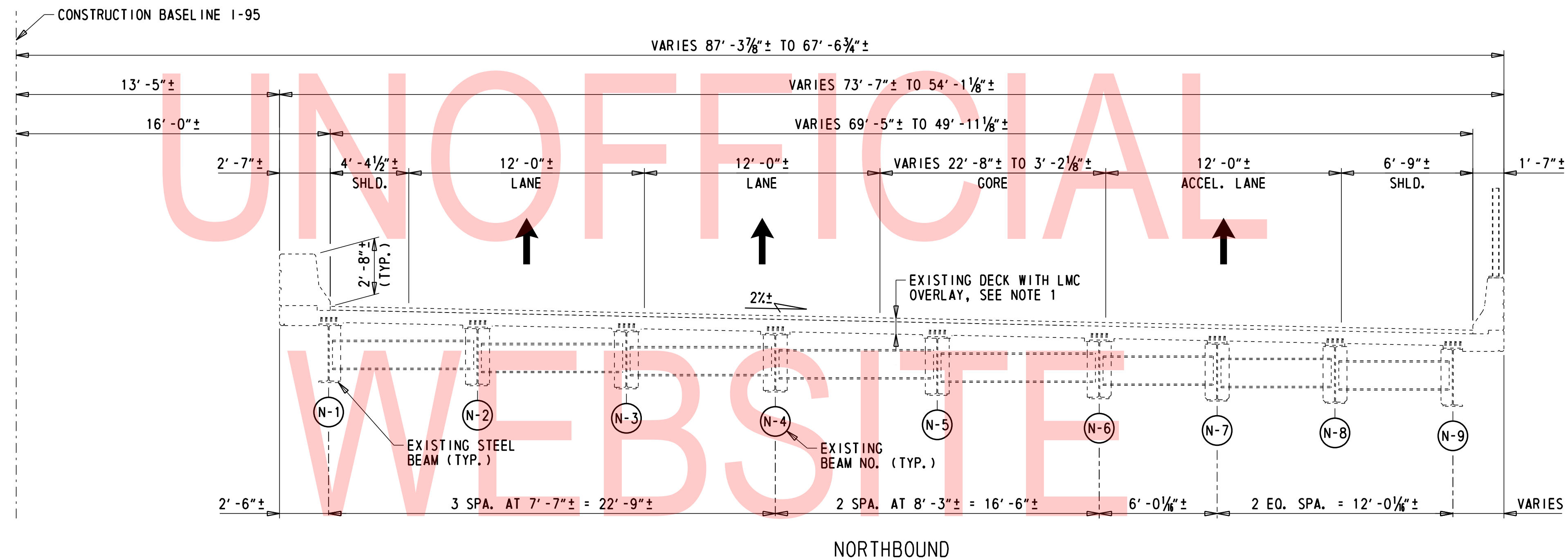
EXISTING TYPICAL SECTION
 (STA. 1305+08.44 TO 1319+81.98 I-95 SB, 1300+34.01 TO 1313+05.45 I-95 NB)
 1/4" = 1'-0"

NOTES:

1. THICKNESS OF EXISTING DECK OVERLAY VARIES.

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BRIDGE TYPICAL SECTIONS STA. 1300 + 34 TO 1319 + 82	TS-02
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		
				COUNTY	CHECKED BY: D. NIZAMOFF		WRA	
				NEW CASTLE			SHEET NO.	
							37	



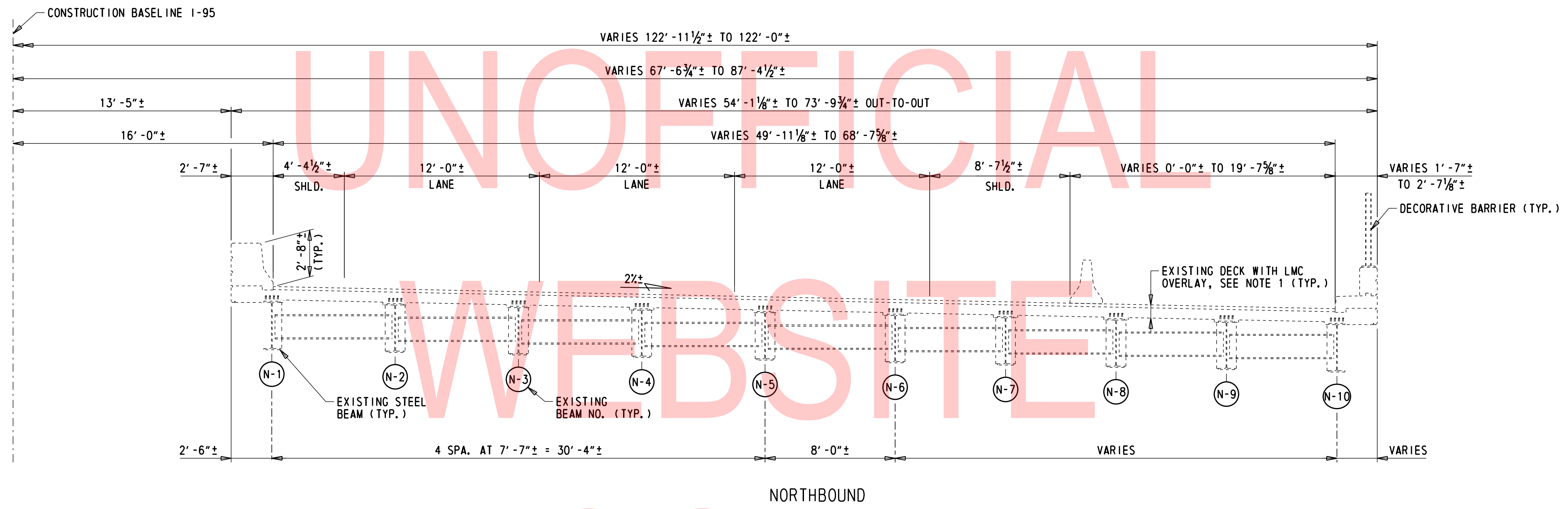
EXISTING TYPICAL SECTION
 (1313+05.45 TO 1316+67.51 I-95 NB)
 1/4" = 1'-0"

NOTE:
 TYPICAL SECTION TAKEN AT STA. 1313+75.

NOTES:
 1. THICKNESS OF EXISTING DECK OVERLAY VARIES.

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BRIDGE TYPICAL SECTIONS NORTHBOUND STA. 1313 + 05 TO 1316 + 67	TS-03
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
		NEW CASTLE	CHECKED BY: D. NIZAMOFF	SHEET NO.	38			



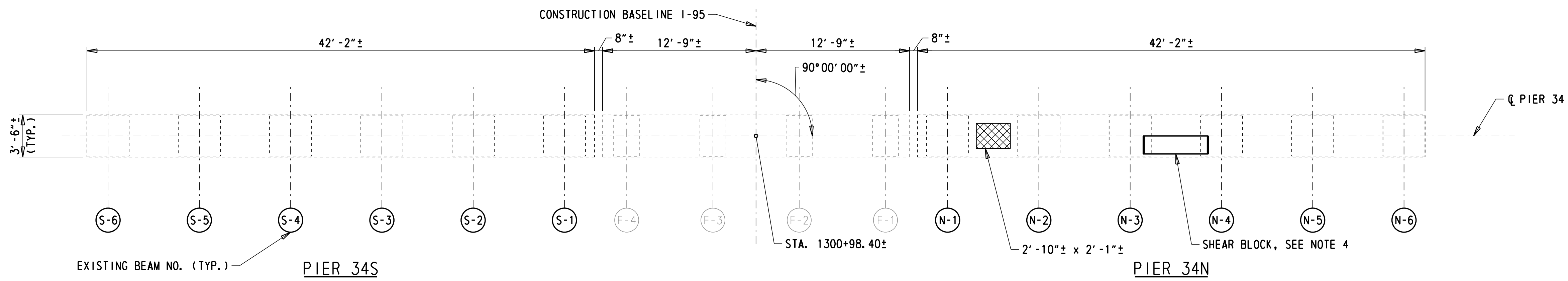
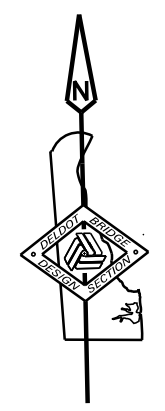
NORTHBOUND
EXISTING TYPICAL SECTION
 (STA. 1316+67.51 TO 1319+81.98 I-95 NB)
 1/4" = 1'-0"

NOTE:
 TYPICAL SECTION TAKEN AT 1319+09.

NOTES:
 1. THICKNESS OF EXISTING DECK OVERLAY VARIES.

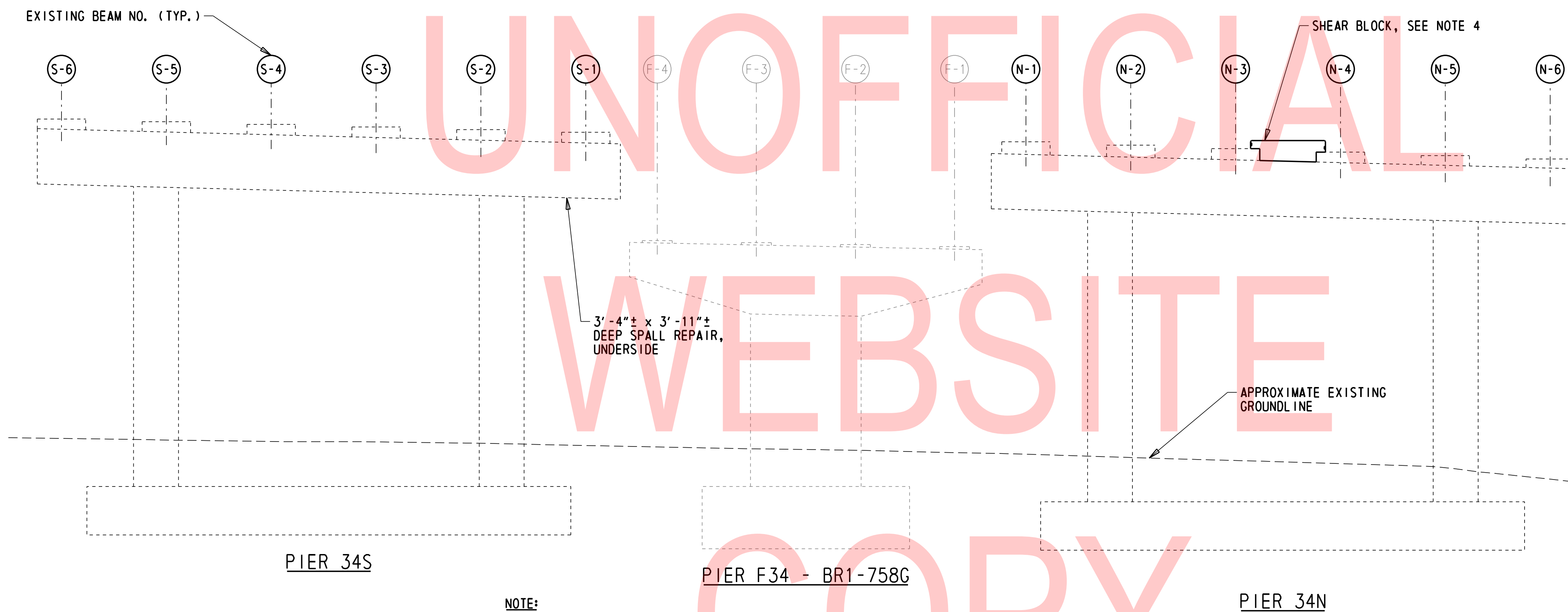
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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BRIDGE TYPICAL SECTIONS NORTHBOUND STA. 1316 + 67 TO 1319 + 82	TS-04
				T201907404	DESIGNED BY: K. AMBROSE			SECTION
		NEW CASTLE	CHECKED BY: D. NIZAMOFF		SHEET NO.	39		



PIER 34 - PLAN VIEW

1/8" = 1'-0"



PIER 34 - SOUTH ELEVATION

1/8" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 34				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	7

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS

SCALE AS NOTED

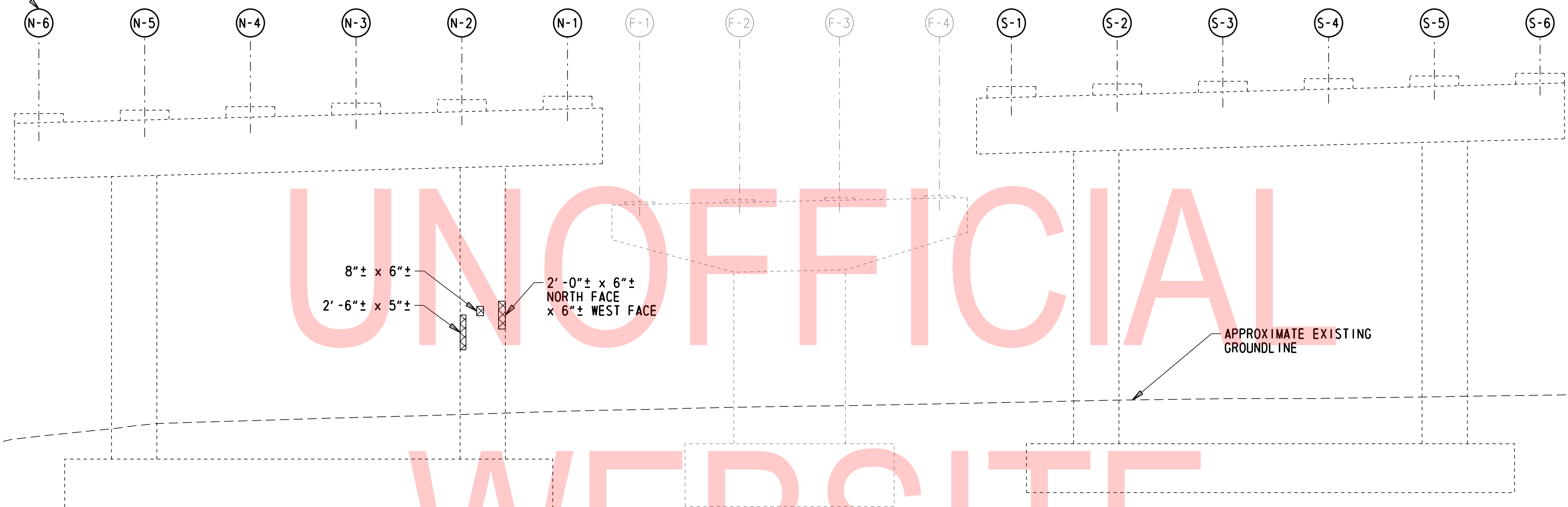
**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**PIER 34 - CONCRETE
REPAIR DETAILS
(SOUTH ELEVATION)**

PR-01
SECTION
WRA
SHEET NO.
40

EXISTING BEAM NO. (TYP.)



PIER 34N

PIER F34 - BR1-758G

PIER 34S

NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 34 - NORTH ELEVATION

1/8" = 1'-0"

UNOFFICIAL WEBSITE COPY

LEGEND:

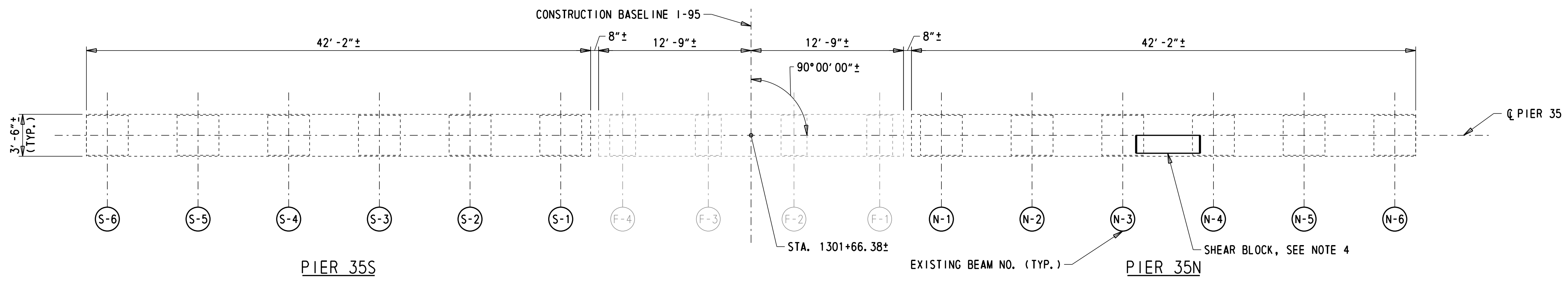
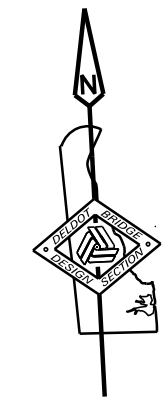
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-01.

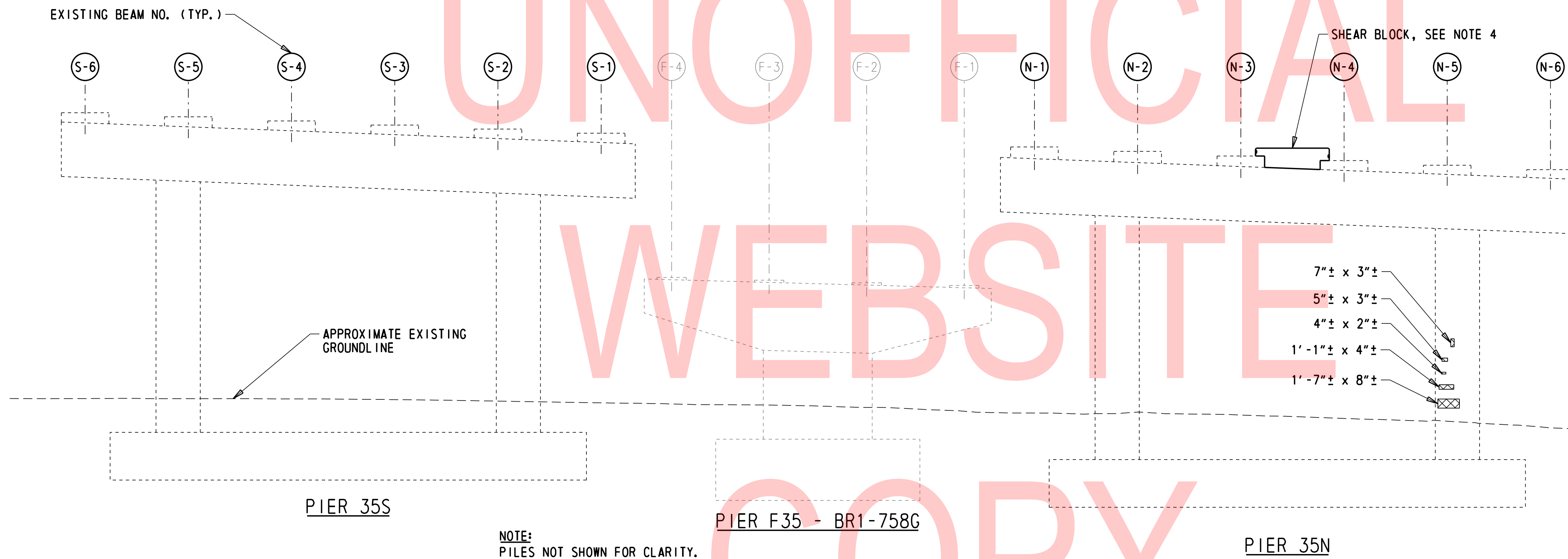
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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404	BRIDGE NO. 1 748 N&S	SECTION PR-02
			COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE	PIER 34 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)
				CHECKED BY: D. NIZAMOFF	SHEET NO. 41



PIER 35 - PLAN VIEW

1/8" = 1'-0"



PIER 35 - SOUTH ELEVATION

1/8" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 35				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	2
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS

SCALE AS NOTED

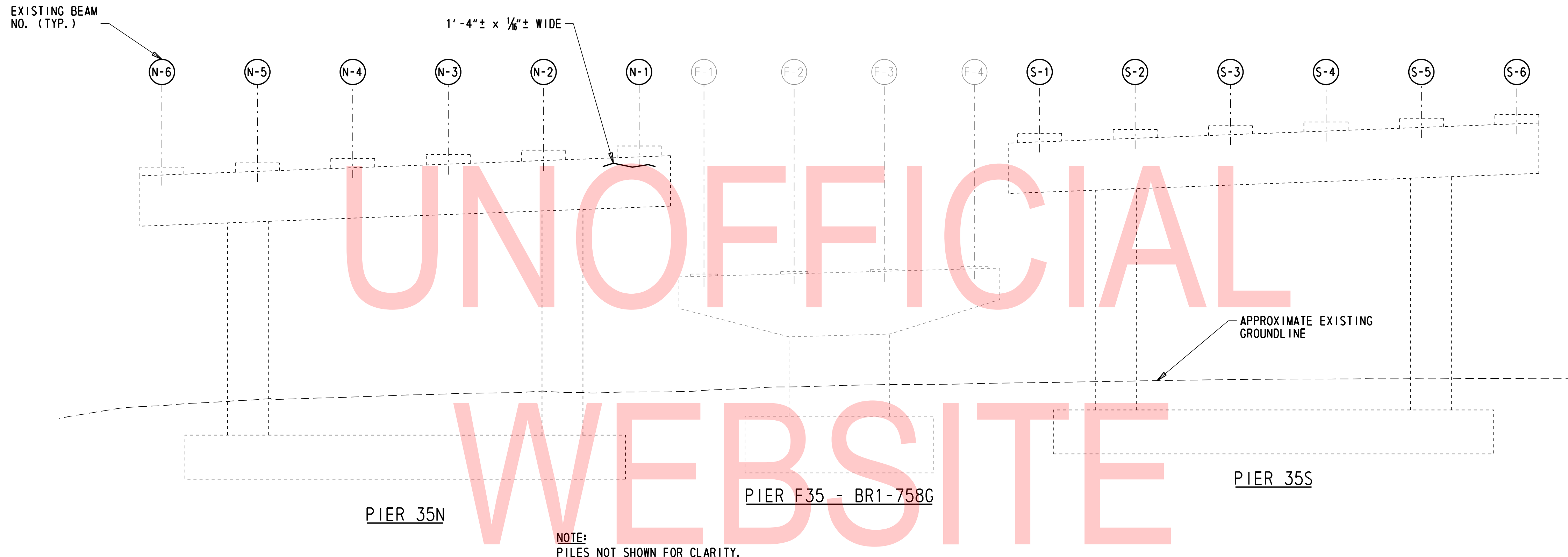
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

PIER 35 - CONCRETE
REPAIR DETAILS
(SOUTH ELEVATION)

PR-03

SECTION	WRA
SHEET NO.	42



PIER 35 - NORTH ELEVATION

1/8" = 1'-0"

LEGEND:

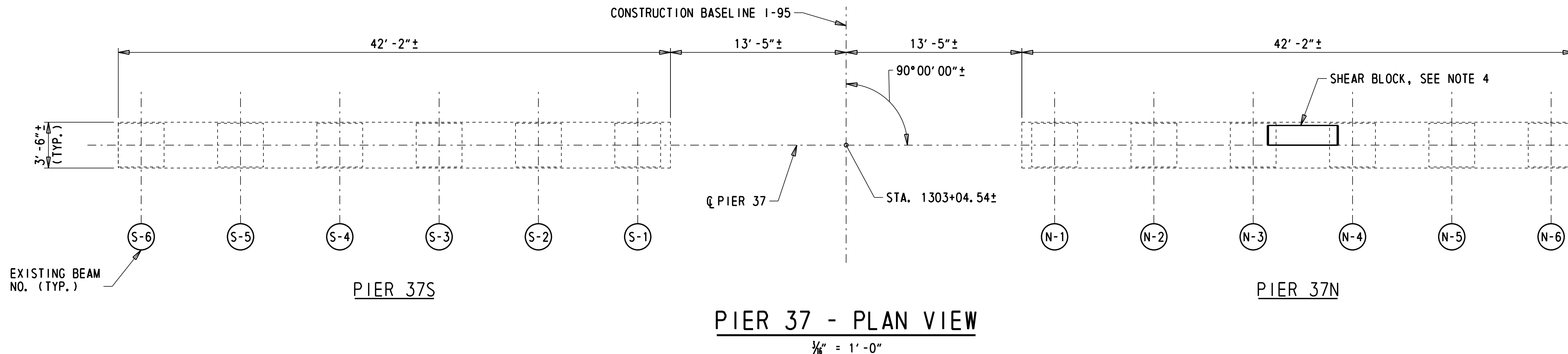
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-03.

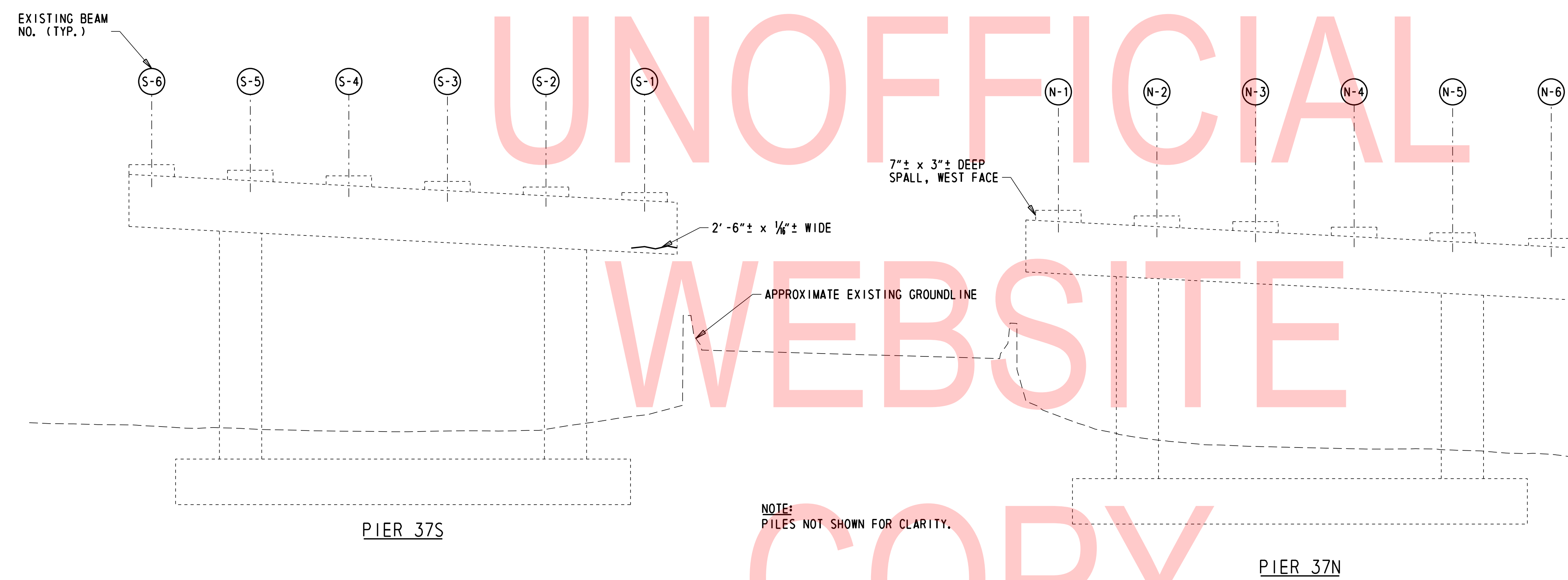
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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="text-align: center;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 35 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	PR-04 SECTION WRA SHEET NO. 43
CONTRACT	BRIDGE NO.	1 748 N&S															
T201907404	DESIGNED BY:	K. AMBROSE															
COUNTY	CHECKED BY:	D. NIZAMOFF															
NEW CASTLE																	



PIER 37 - PLAN VIEW

1/8" = 1'-0"



PIER 37 - SOUTH ELEVATION

1/8" = 1'-0"

- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 37				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	3
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

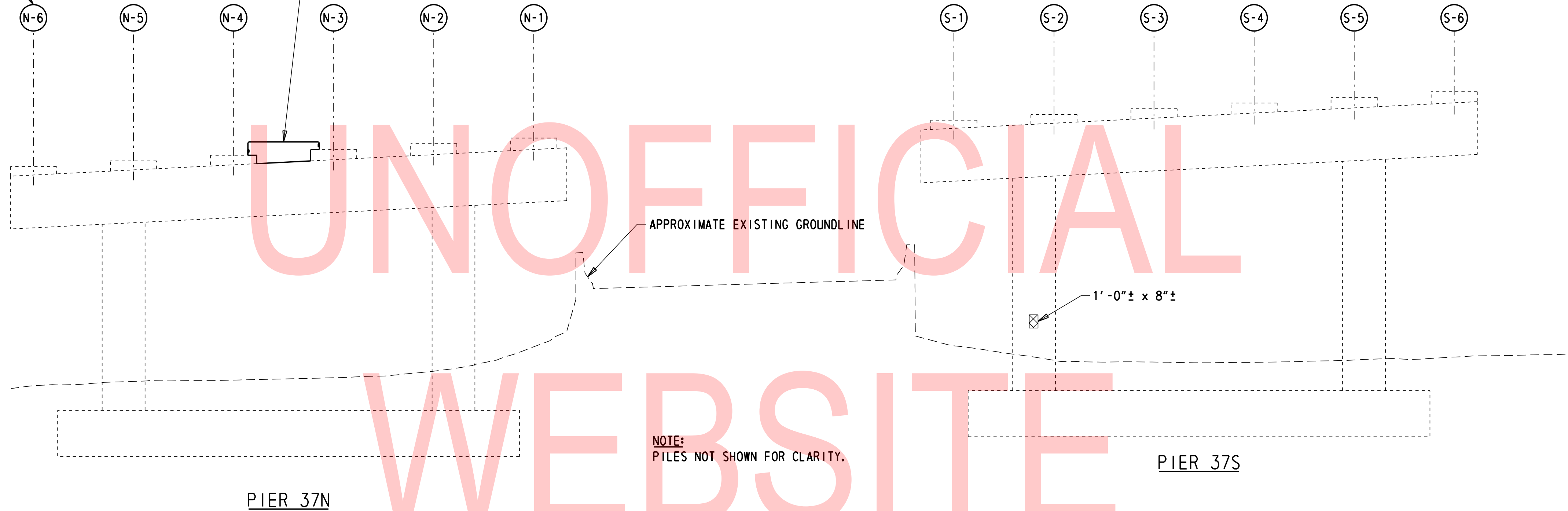
- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
 4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS 	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="font-size: small;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 37 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-05 SECTION WRA SHEET NO. 44
CONTRACT	BRIDGE NO.	1 748 N&S															
T201907404	DESIGNED BY:	K. AMBROSE															
COUNTY	CHECKED BY:	D. NIZAMOFF															
NEW CASTLE																	

EXISTING BEAM
NO. (TYP.)

SHEAR BLOCK, SEE NOTE 5



NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 37S

PIER 37N

PIER 37 - NORTH ELEVATION

1/8" = 1'-0"

COPY

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-05.
5. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS

SCALE AS NOTED

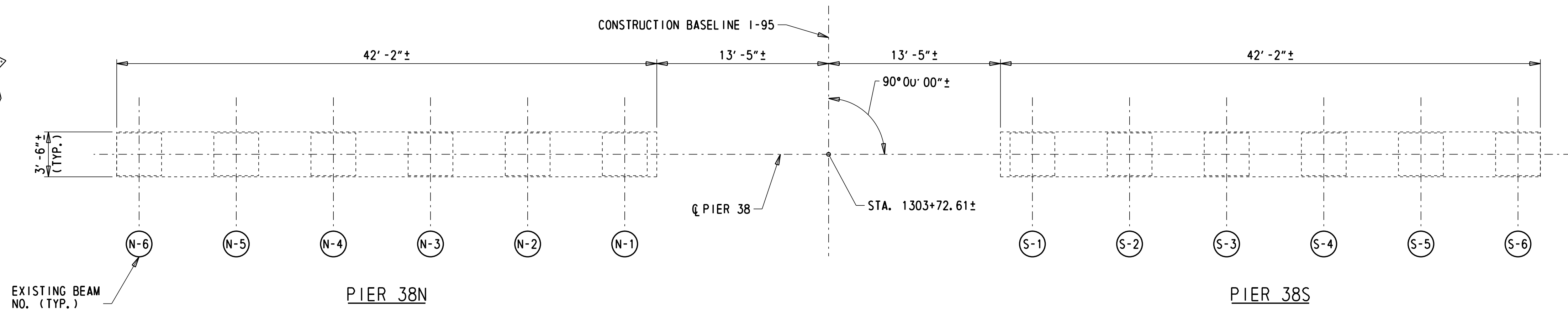
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

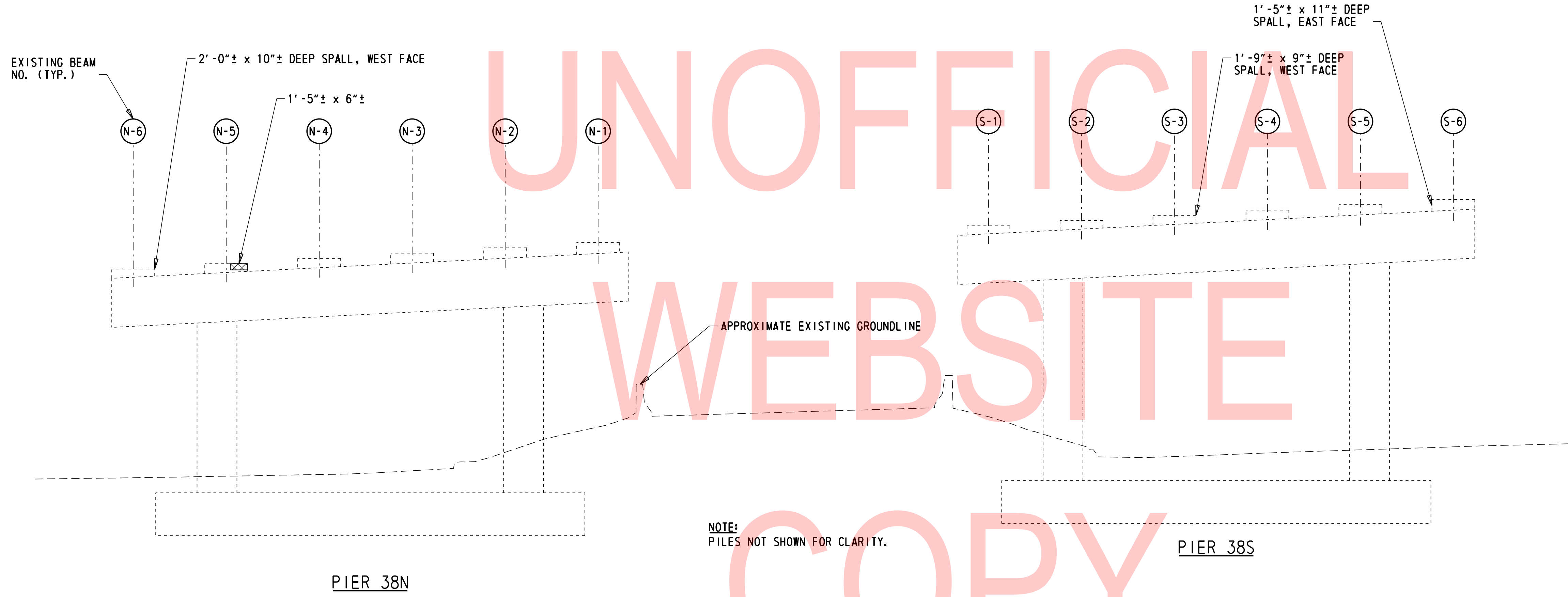
PIER 37 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

PR-06

SECTION
WRA
SHEET NO.
45



PIER 38 - PLAN VIEW
 $\frac{1}{8}'' = 1'-0''$



PIER 38 - NORTH ELEVATION
 $\frac{1}{8}'' = 1'-0''$

LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

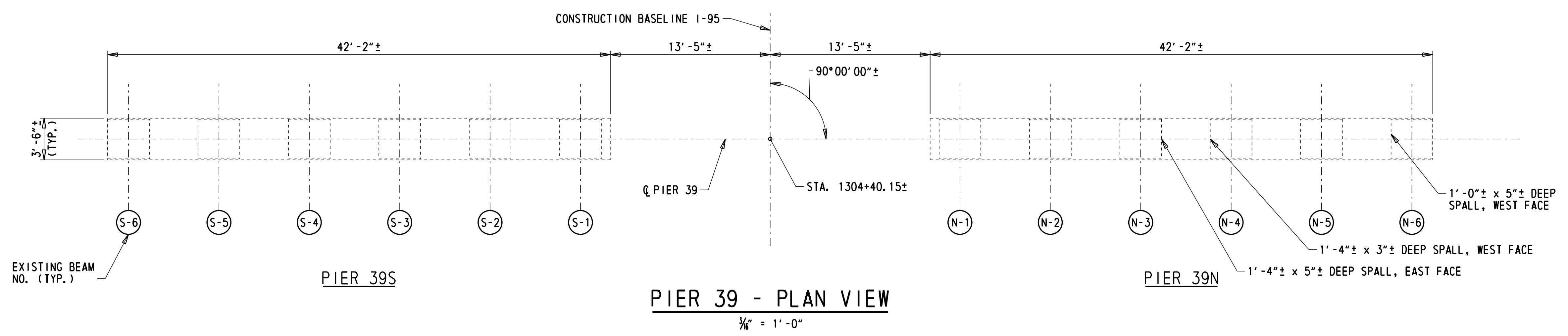
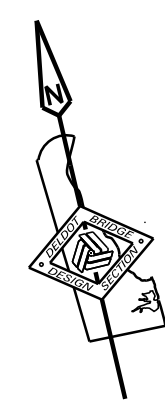
CONCRETE REPAIR QUANTITIES				
PIER 38				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	2

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

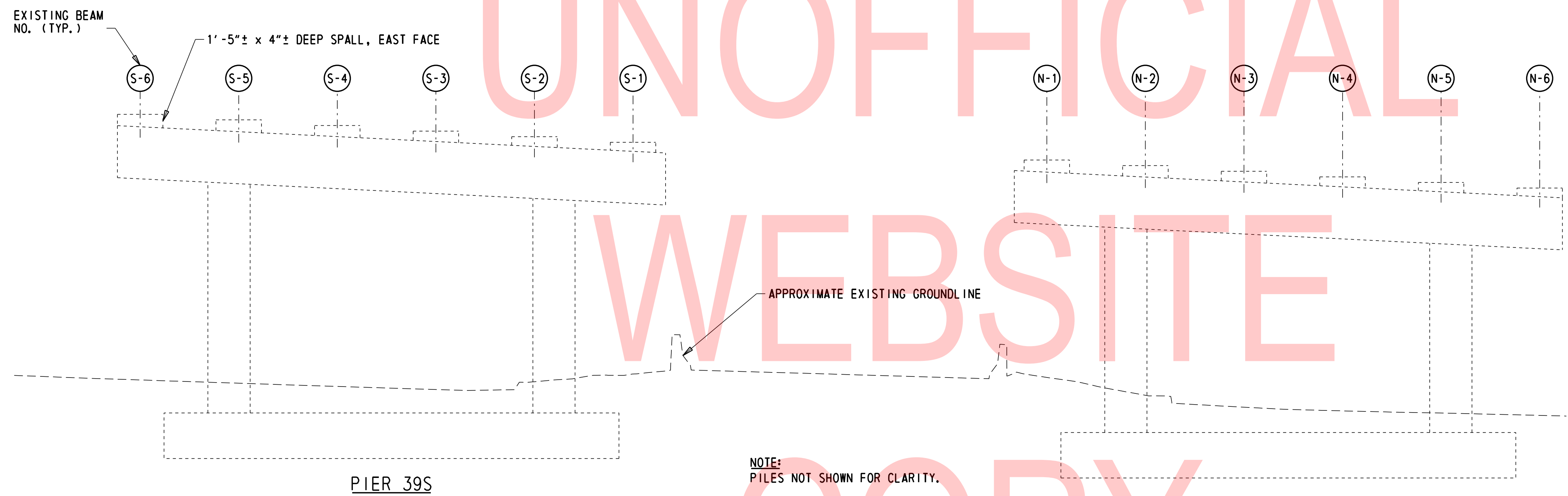
- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.

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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404 COUNTY NEW CASTLE	BRIDGE NO. 1 748 N&S DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF	PIER 38 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	PR-07 SECTION WRA SHEET NO. 46
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PIER 39 - PLAN VIEW
 $\frac{1}{8}'' = 1' - 0''$



PIER 39 - SOUTH ELEVATION
 $\frac{1}{8}'' = 1' - 0''$

UNOFFICIAL
WEBSITE
COPY

- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

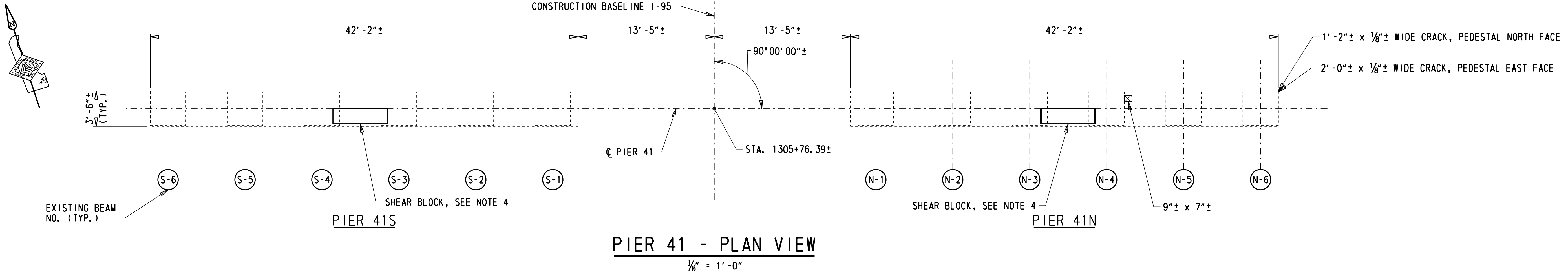
CONCRETE REPAIR QUANTITIES				
PIER 39				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.

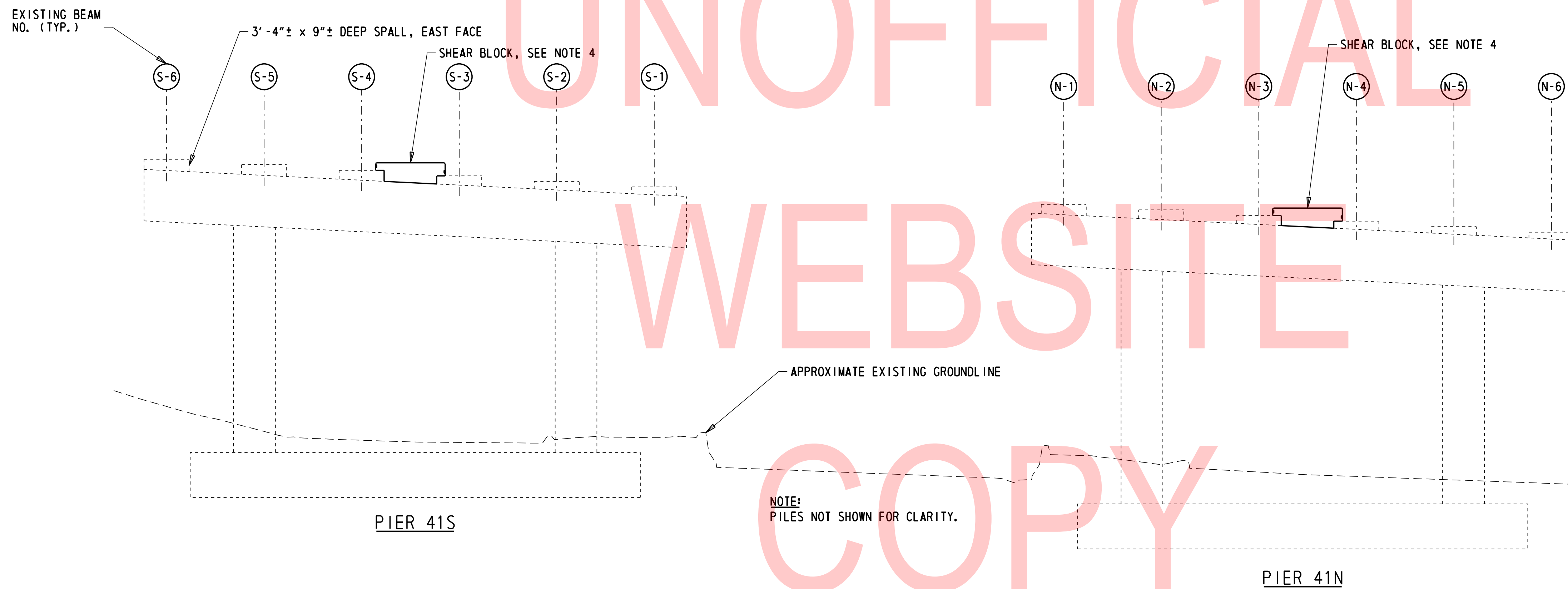
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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>CONTRACT</td> <td>BRIDGE NO.</td> <td>1 748 N&S</td> </tr> <tr> <td>T201907404</td> <td>DESIGNED BY:</td> <td>K. AMBROSE</td> </tr> <tr> <td>COUNTY</td> <td>CHECKED BY:</td> <td>D. NIZAMOFF</td> </tr> <tr> <td>NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 39 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">PR-08</td> </tr> <tr> <td style="text-align: center;">SECTION</td> </tr> <tr> <td style="text-align: center;">WRA</td> </tr> <tr> <td style="text-align: center;">SHEET NO.</td> </tr> <tr> <td style="text-align: center;">47</td> </tr> </table>	PR-08	SECTION	WRA	SHEET NO.	47
CONTRACT	BRIDGE NO.	1 748 N&S																				
T201907404	DESIGNED BY:	K. AMBROSE																				
COUNTY	CHECKED BY:	D. NIZAMOFF																				
NEW CASTLE																						
PR-08																						
SECTION																						
WRA																						
SHEET NO.																						
47																						



PIER 41 - PLAN VIEW

1/8" = 1'-0"



PIER 41 - SOUTH ELEVATION

1/8" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 41				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	4
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS

SCALE AS NOTED

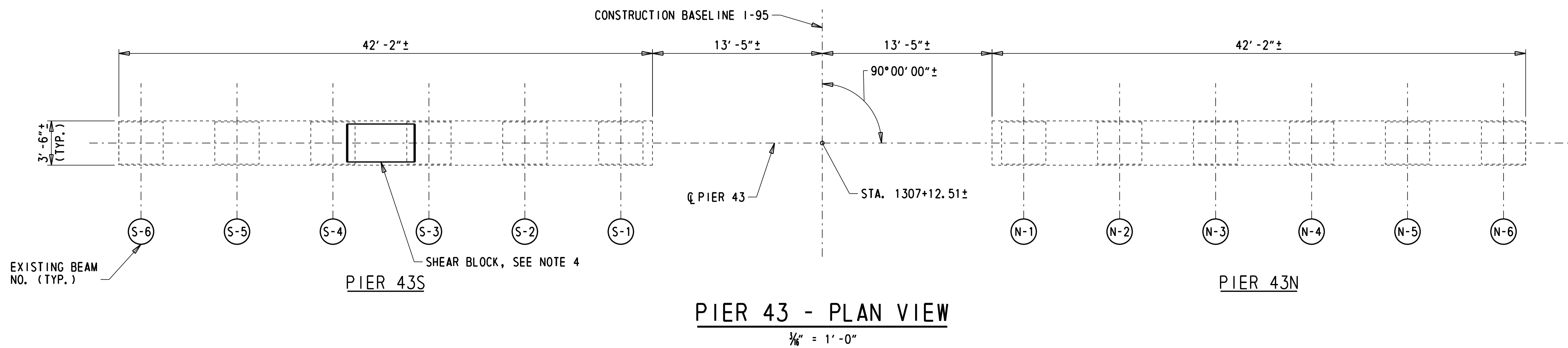
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

PIER 41 - CONCRETE
REPAIR DETAILS
(SOUTH ELEVATION)

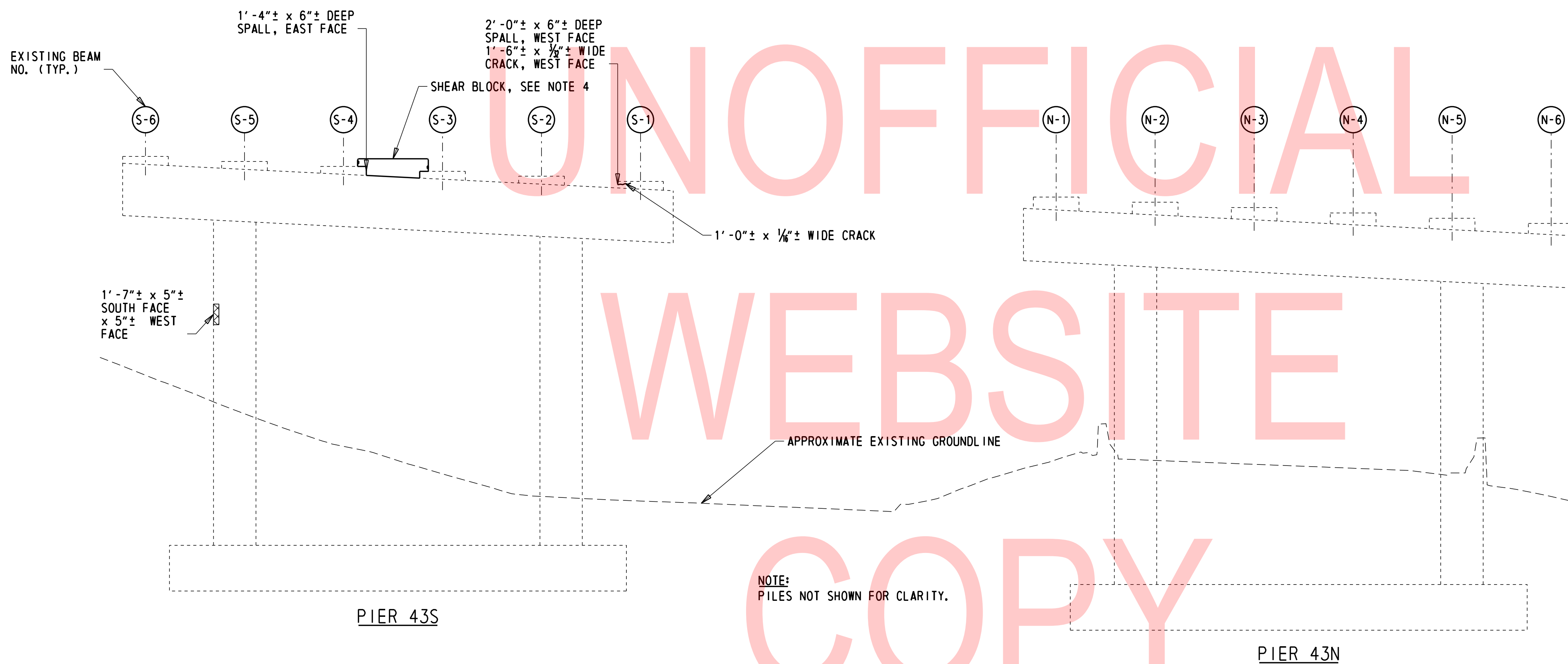
PR-09

SECTION	WRA
SHEET NO.	48



PIER 43 - PLAN VIEW

1/8" = 1'-0"



PIER 43 - SOUTH ELEVATION

1/8" = 1'-0"

NOTE:
PILES NOT SHOWN FOR CLARITY.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 43				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	3
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-22.

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ADDENDA / REVISIONS

SCALE AS NOTED

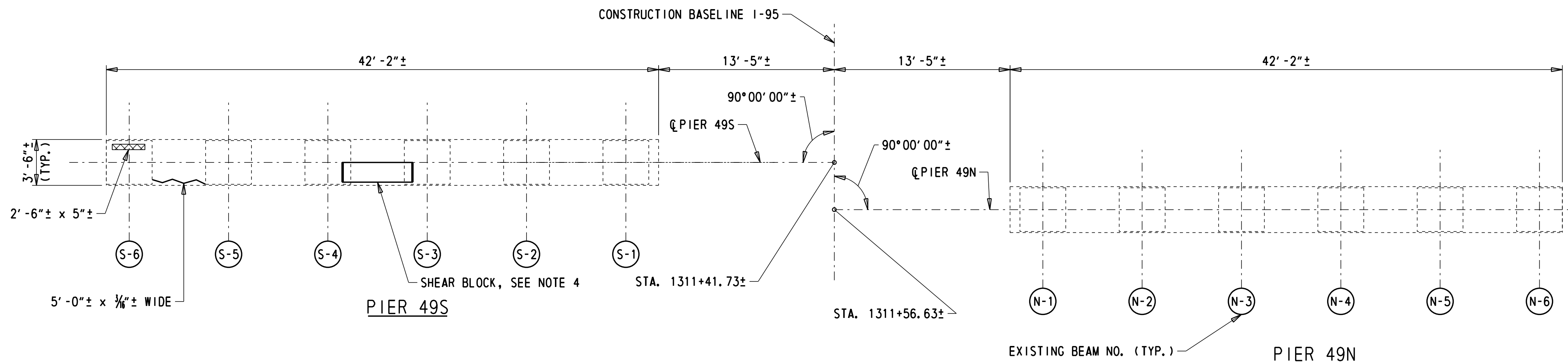
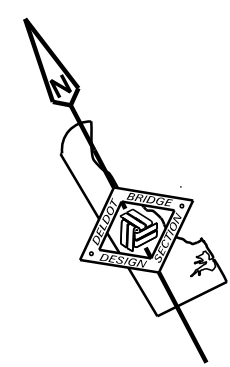
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**PIER 43 - CONCRETE
REPAIR DETAILS
(SOUTH ELEVATION)**

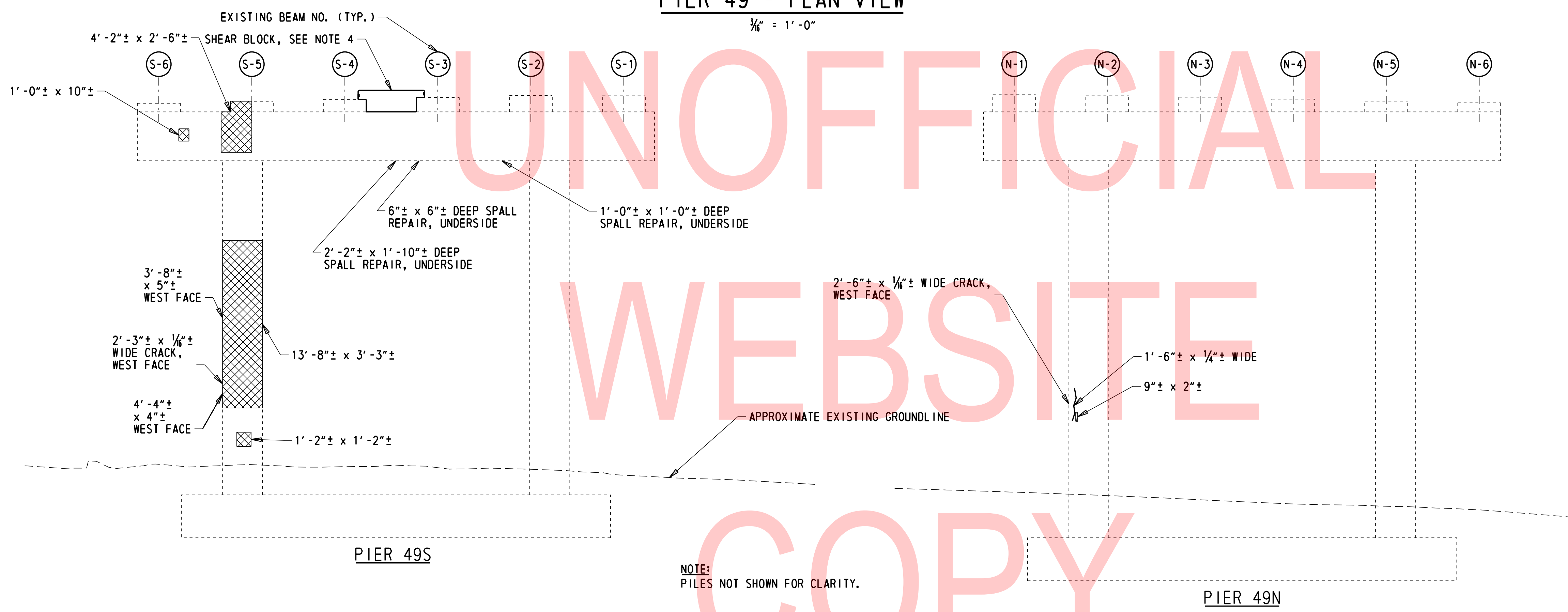
PR-10

SECTION	WRA
SHEET NO.	49



NOTE:
PIER 49S AND 49N ARE OFFSET.

PIER 49 - PLAN VIEW
1/4" = 1'-0"



NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 49 - SOUTH ELEVATION
1/4" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 49				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	12
37	628041	DEEP SPALL REPAIR	CF	10
37	628042	REHABILITATION OF PCC MASONRY	CY	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

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ADDENDA / REVISIONS

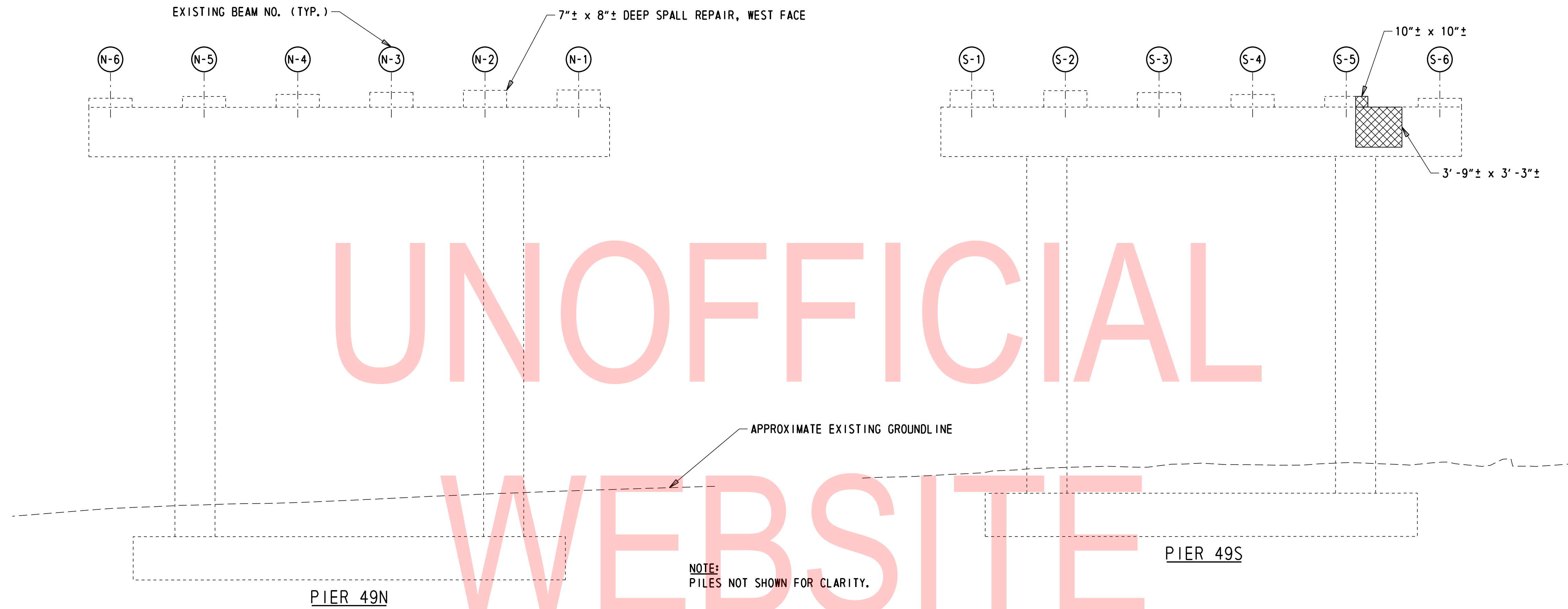
SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**PIER 49 - CONCRETE
REPAIR DETAILS
(SOUTH ELEVATION)**

PR-11
SECTION
WRA
SHEET NO.
50



UNOFFICIAL

WEBSITE

PIER 49 - NORTH ELEVATION

3/8" = 1'-0"

NOTE:
PIER 49S AND 49N ARE OFFSET.

LEGEND:

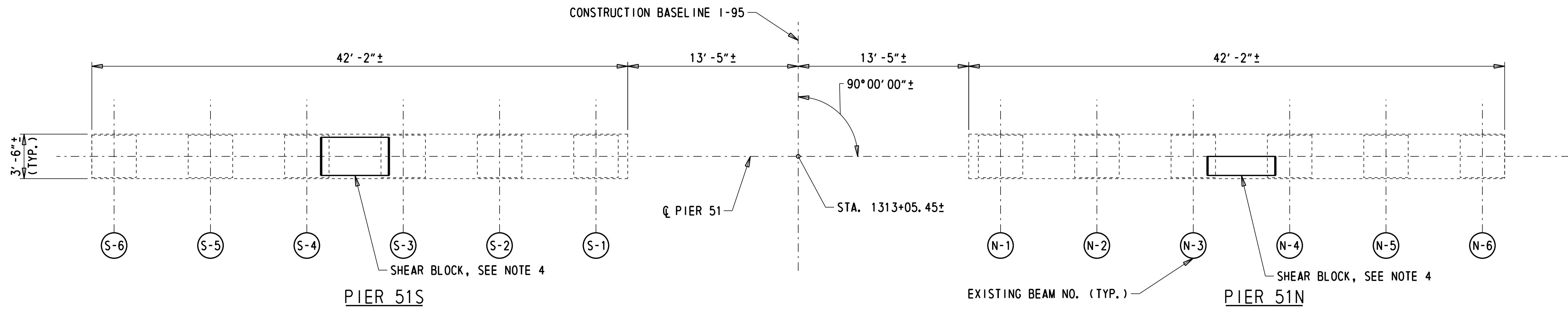
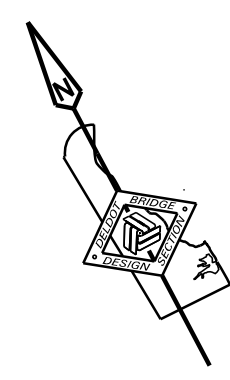
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

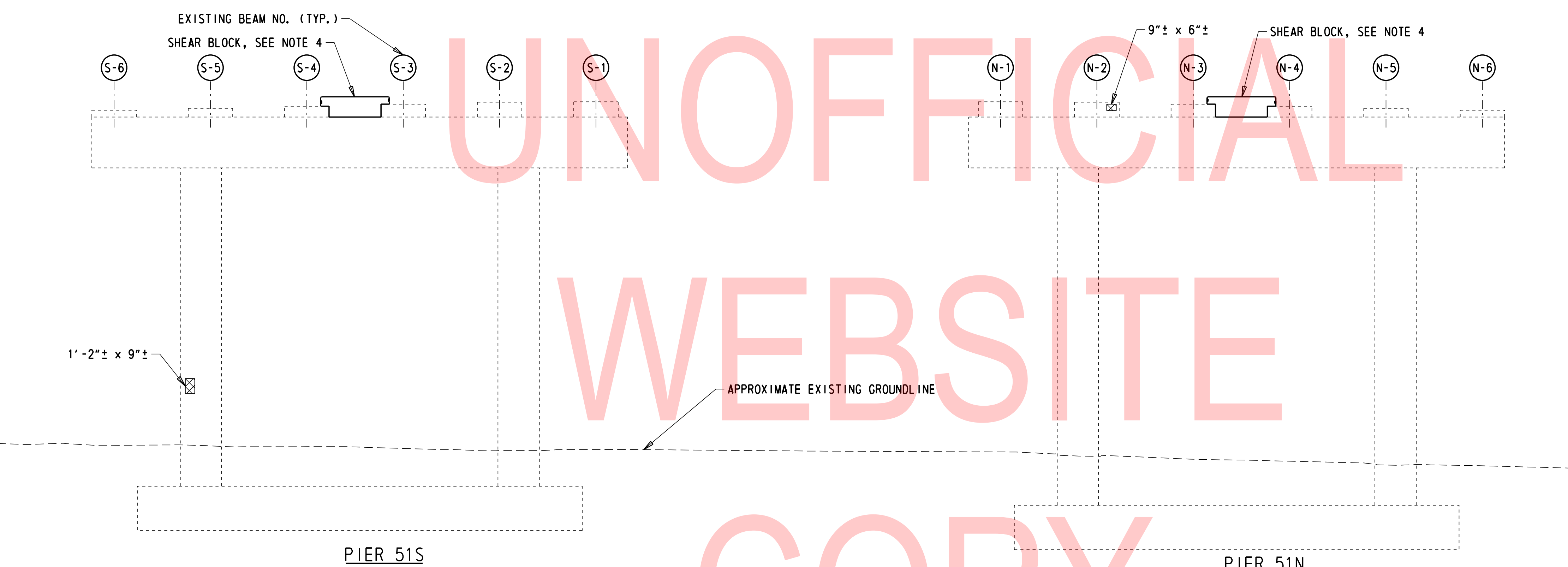
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-11.

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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="text-align: center;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			<p style="margin: 0;">PIER 49 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">PR-12</td> </tr> <tr> <td style="font-size: x-small;">SECTION</td> </tr> <tr> <td style="font-size: x-small;">WRA</td> </tr> <tr> <td style="font-size: x-small;">SHEET NO.</td> </tr> <tr> <td style="text-align: center;">51</td> </tr> </table>	PR-12	SECTION	WRA	SHEET NO.	51
CONTRACT	BRIDGE NO.	1 748 N&S																				
T201907404	DESIGNED BY:	K. AMBROSE																				
COUNTY	CHECKED BY:	D. NIZAMOFF																				
NEW CASTLE																						
PR-12																						
SECTION																						
WRA																						
SHEET NO.																						
51																						



PIER 51 - PLAN VIEW
 $\frac{3}{16}'' = 1' - 0''$



PIER 51 - SOUTH ELEVATION
 $\frac{3}{16}'' = 1' - 0''$

NOTE:
 PILES NOT SHOWN FOR CLARITY.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 51				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	1

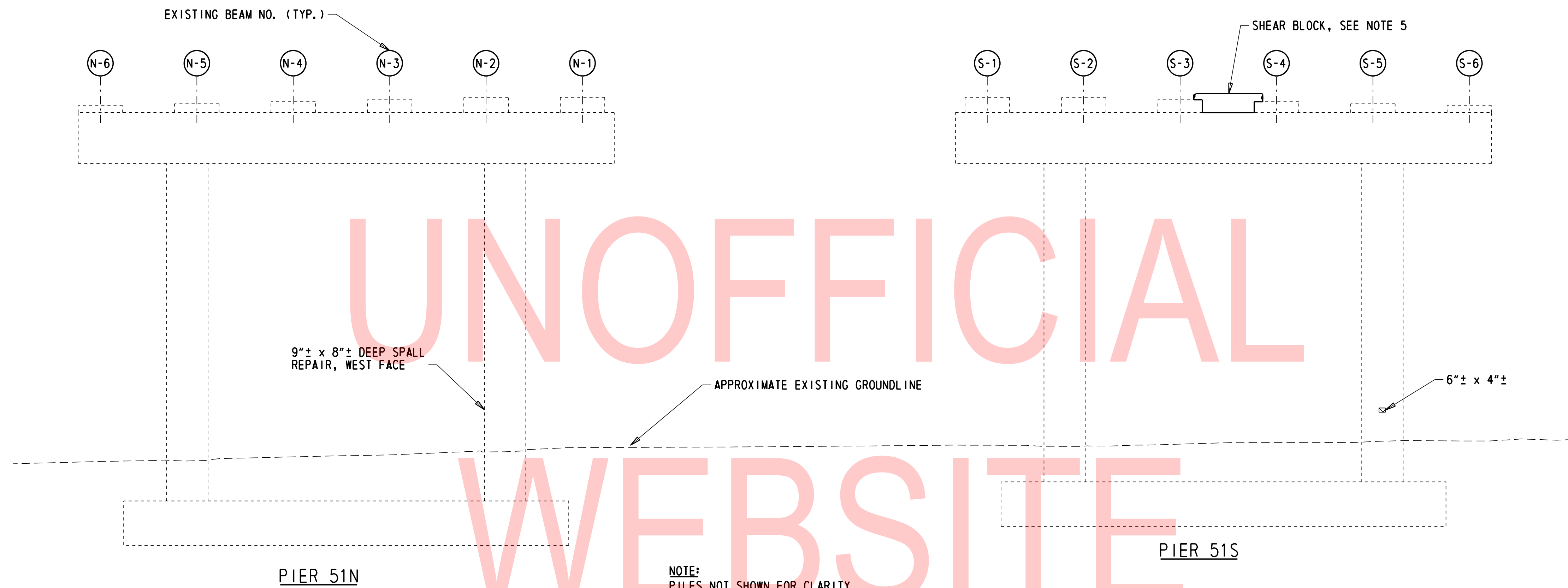
NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR SHEAR BLOCK DETAILS, SEE DWGS. PR-21 AND PR-22.

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ADDENDA / REVISIONS 	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404 COUNTY NEW CASTLE	BRIDGE NO. 1 748 N&S	DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF	PIER 51 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-13 SECTION WRA SHEET NO. 52
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UNOFFICIAL


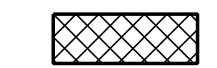
WEBSITE

PIER 51 - NORTH ELEVATION

1/8" = 1'-0"

COPY

LEGEND:

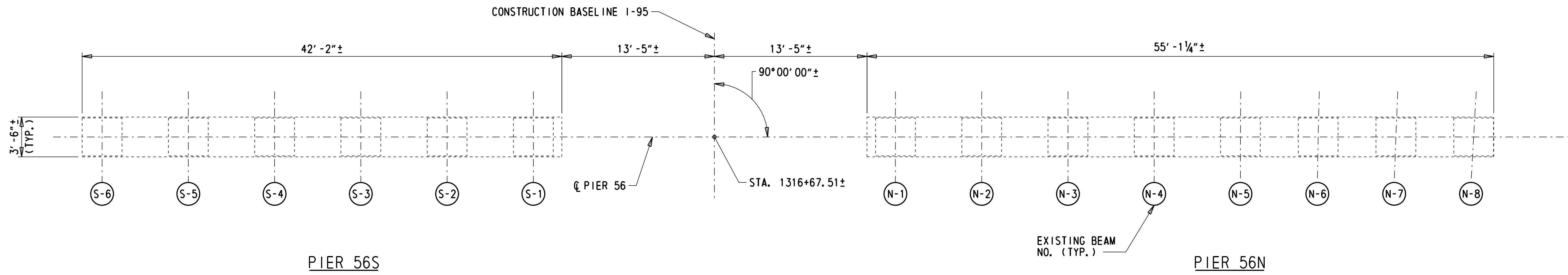
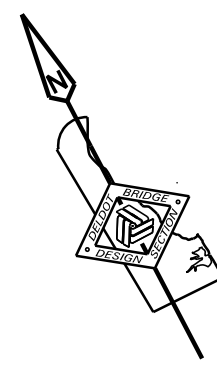
-  REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
-  DEEP SPALL REPAIR

NOTES:

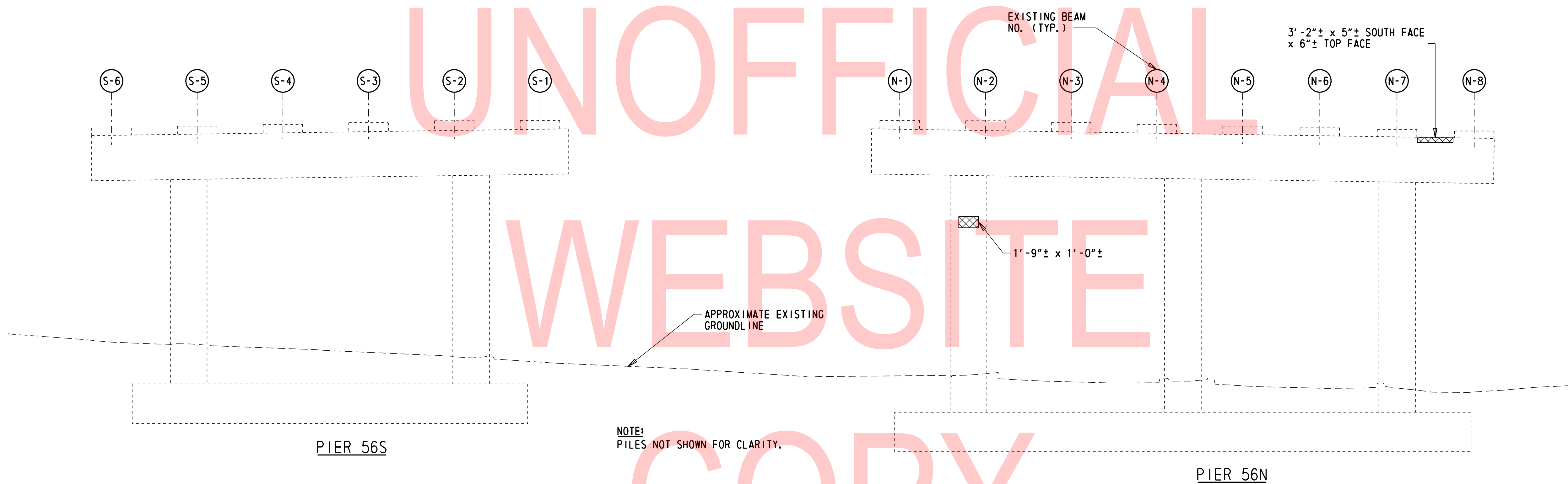
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-13.
4. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-22.

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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="text-align: center;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 51 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">PR-14</td> <td style="font-size: small;">SECTION</td> </tr> <tr> <td style="font-size: small;">WRA</td> <td style="font-size: small;">SHEET NO.</td> </tr> <tr> <td style="font-size: small;">53</td> <td></td> </tr> </table>	PR-14	SECTION	WRA	SHEET NO.	53	
CONTRACT	BRIDGE NO.	1 748 N&S																					
T201907404	DESIGNED BY:	K. AMBROSE																					
COUNTY	CHECKED BY:	D. NIZAMOFF																					
NEW CASTLE																							
PR-14	SECTION																						
WRA	SHEET NO.																						
53																							



PIER 56 - PLAN VIEW
 1/8" = 1'-0"



PIER 56 - SOUTH ELEVATION
 1/8" = 1'-0"

NOTE:
 PILES NOT SHOWN FOR CLARITY.

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 56				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	3
37	628041	DEEP SPALL REPAIR	CF	2

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.

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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
 BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO. 1 748 N&S
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE
	CHECKED BY: D. NIZAMOFF

**PIER 56 - CONCRETE
 REPAIR DETAILS
 (SOUTH ELEVATION)**

PR-15
SECTION
WRA
SHEET NO.
54

3'-0"± x 1/8"± WIDE CRACK,
EAST FACE

N-8 N-7 N-6 N-5 N-4 N-3 N-2 N-1

EXISTING BEAM NO. (TYP.)

S-1 S-2 S-3 S-4 S-5 S-6

UNOFFICIAL

APPROXIMATE EXISTING GROUNDLINE

WEBSITE

PIER 56N

PIER 56S

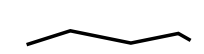

NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 56 - NORTH ELEVATION

3/8" = 1'-0"

COPY

LEGEND:

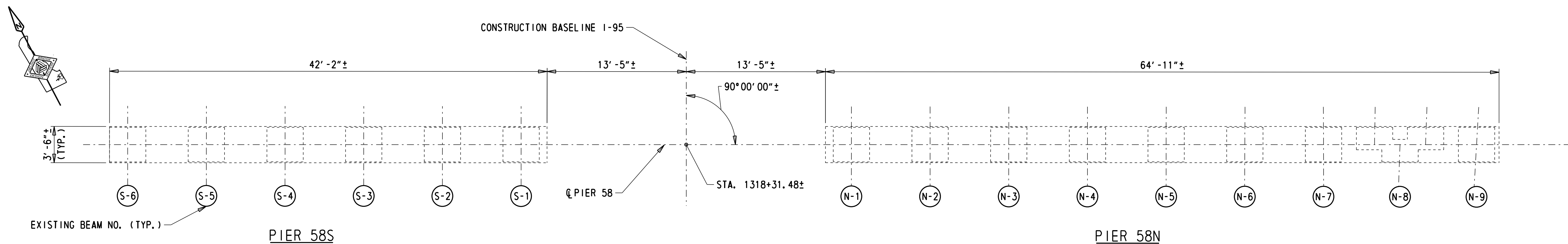
-  REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
-  DEEP SPALL REPAIR

NOTES:

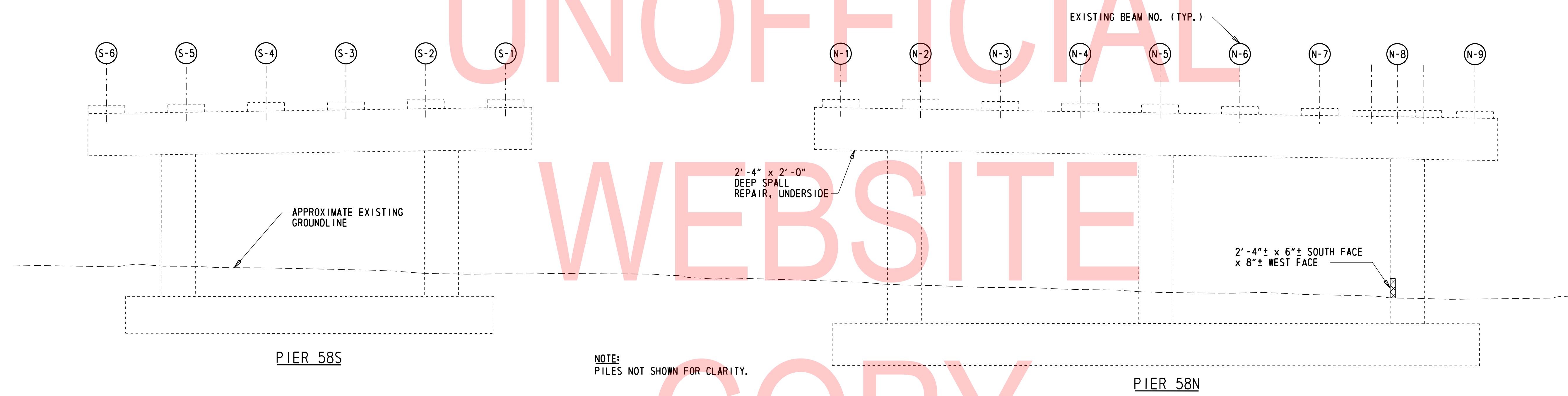
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-15.

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	PIER 56 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	SECTION	PR-16
				T201907404	DESIGNED BY: K. AMBROSE			WRA	
				COUNTY	CHECKED BY: D. NIZAMOFF			SHEET NO.	
				NEW CASTLE				55	



PIER 58 - PLAN VIEW
 1/4" = 1'-0"



PIER 58 - SOUTH ELEVATION
 1/4" = 1'-0"

- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 58				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	4

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.

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ADDENDA / REVISIONS 	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="text-align: center;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 58 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-weight: bold; font-size: small;">PR-17</td> </tr> <tr> <td style="font-size: x-small;">SECTION</td> </tr> <tr> <td style="font-size: x-small;">WRA</td> </tr> <tr> <td style="font-size: x-small;">SHEET NO.</td> </tr> <tr> <td style="text-align: center;">56</td> </tr> </table>	PR-17	SECTION	WRA	SHEET NO.	56
CONTRACT	BRIDGE NO.	1 748 N&S																				
T201907404	DESIGNED BY:	K. AMBROSE																				
COUNTY	CHECKED BY:	D. NIZAMOFF																				
NEW CASTLE																						
PR-17																						
SECTION																						
WRA																						
SHEET NO.																						
56																						

2'-3"± x 6"± EAST FACE
x 6"± TOP FACE, DEEP SPALL
REPAIR

N-10 N-9 N-8 N-7 N-6 N-5 N-4 N-3 N-2 N-1 S-1 S-2 S-3 S-4 S-5 S-6

1'-0"± x 8"±

1'-9"± x 9"±

APPROXIMATE EXISTING
GROUNDLINE

PIER 58N


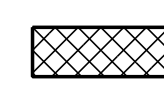
PIER 58S

NOTE:
PILES NOT SHOWN FOR CLARITY.

PIER 58 - NORTH ELEVATION

3/8" = 1'-0"

LEGEND:

-  REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
-  DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-17.

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ADDENDA / REVISIONS

SCALE AS NOTED

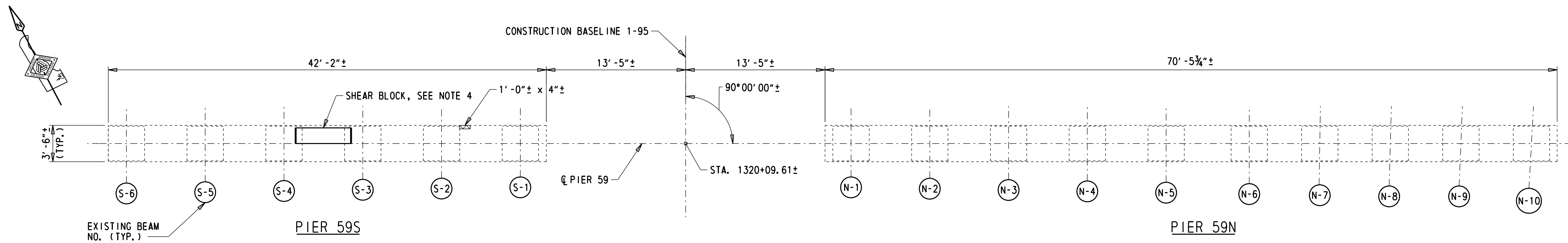
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

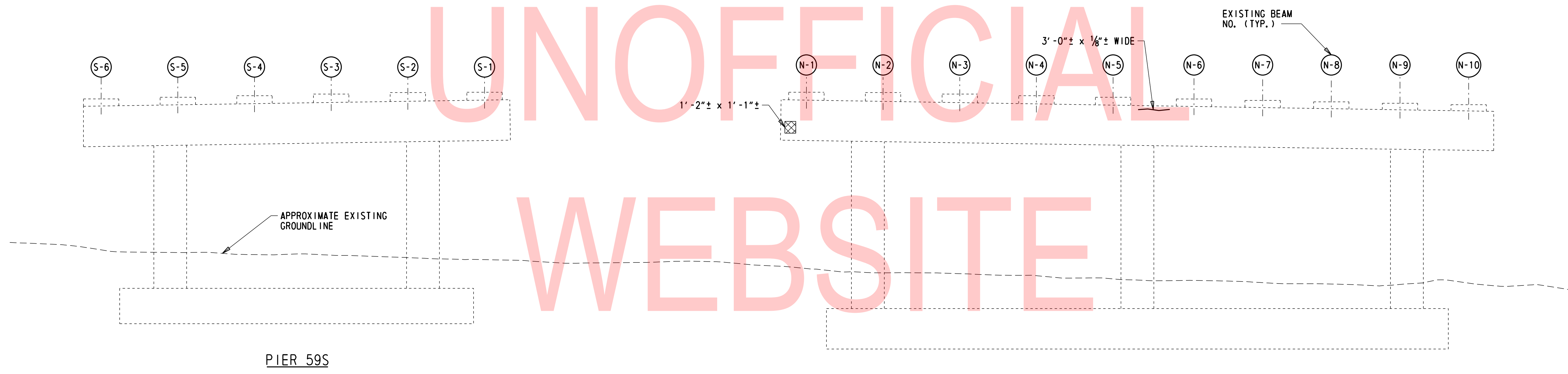
PIER 58 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

PR-18

SECTION
WRA
SHEET NO.
57



PIER 59 - PLAN VIEW
 $\frac{1}{8}'' = 1'-0''$



PIER 59 - SOUTH ELEVATION
 $\frac{1}{8}'' = 1'-0''$

NOTE:
 PILES NOT SHOWN FOR CLARITY.

- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 59				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	5
37	628041	DEEP SPALL REPAIR	CF	8

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- NOTES:**
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 - FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
 - FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

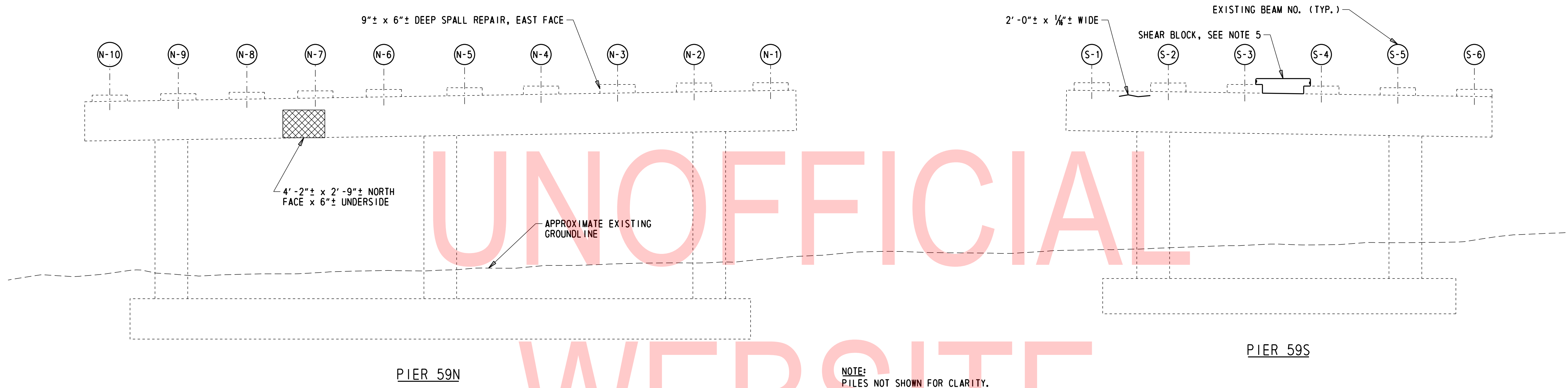
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ADDENDA / REVISIONS 	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="font-weight: bold;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 59 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-weight: bold;">PR-19</td> </tr> <tr> <td style="font-size: x-small;">SECTION</td> </tr> <tr> <td style="font-size: x-small;">WRA</td> </tr> <tr> <td style="font-size: x-small;">SHEET NO.</td> </tr> <tr> <td style="text-align: center;">58</td> </tr> </table>	PR-19	SECTION	WRA	SHEET NO.	58
CONTRACT	BRIDGE NO.	1 748 N&S																				
T201907404	DESIGNED BY:	K. AMBROSE																				
COUNTY	CHECKED BY:	D. NIZAMOFF																				
NEW CASTLE																						
PR-19																						
SECTION																						
WRA																						
SHEET NO.																						
58																						

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PIER 59N

PIER 59S

PIER 59 - NORTH ELEVATION

NOTE:
PILES NOT SHOWN FOR CLARITY.

1/4" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 10 ON DWG. PN-02). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.
4. FOR PLAN VIEW AND CONCRETE REPAIR QUANTITIES SEE DWG. PR-19.
5. FOR SHEAR BLOCK DETAILS, SEE DWG. PR-21.

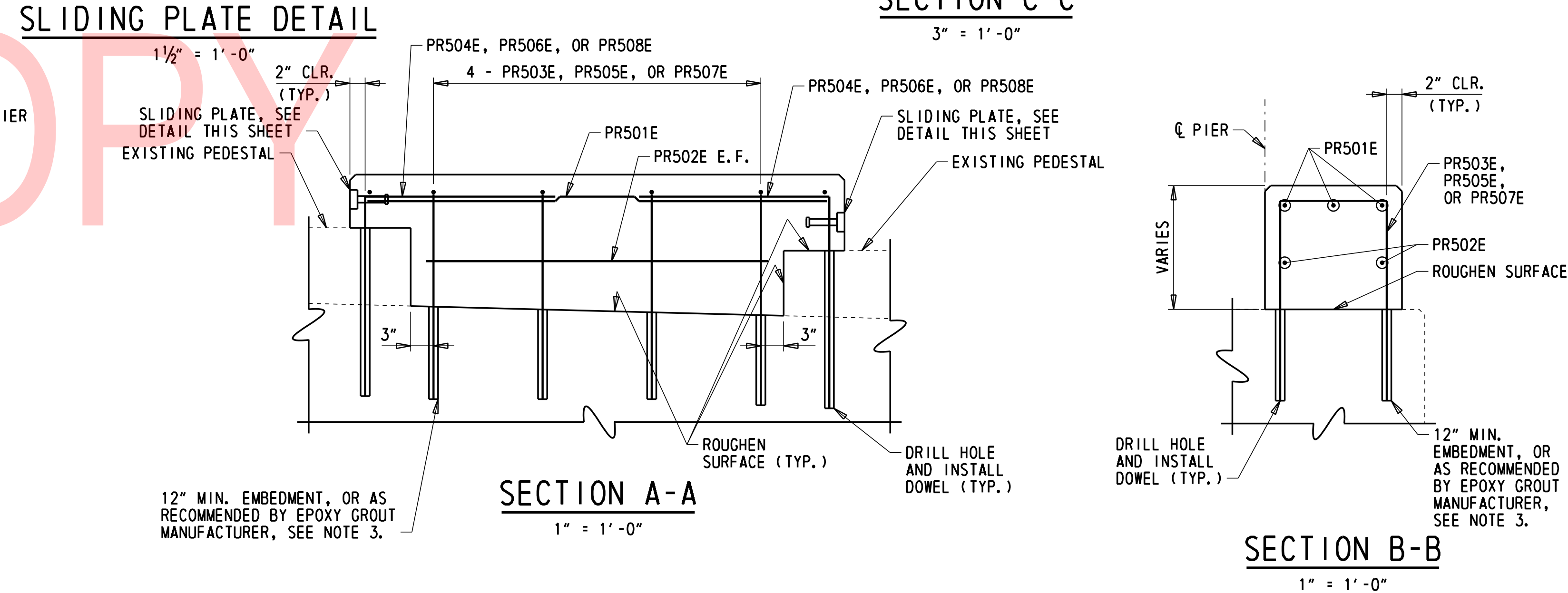
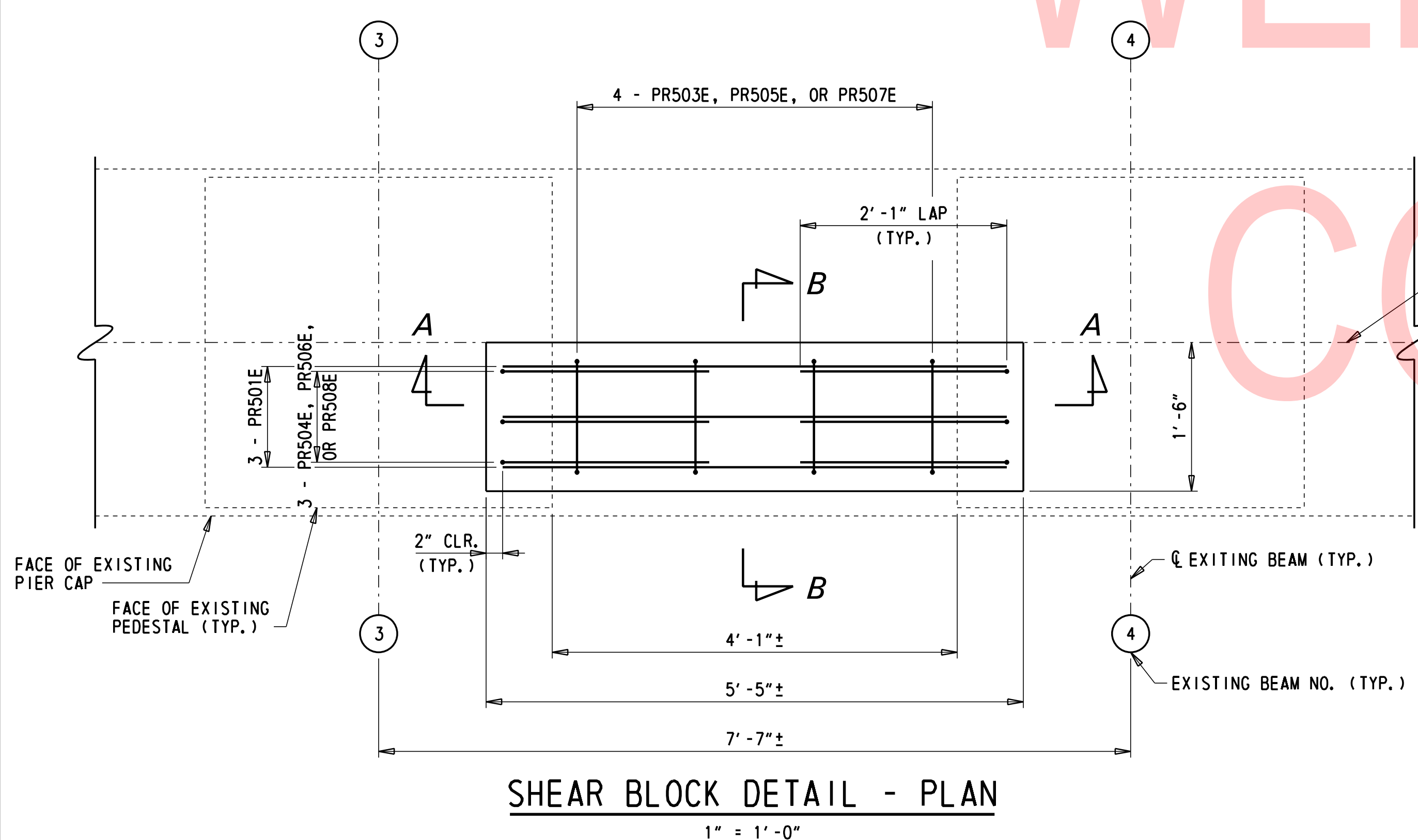
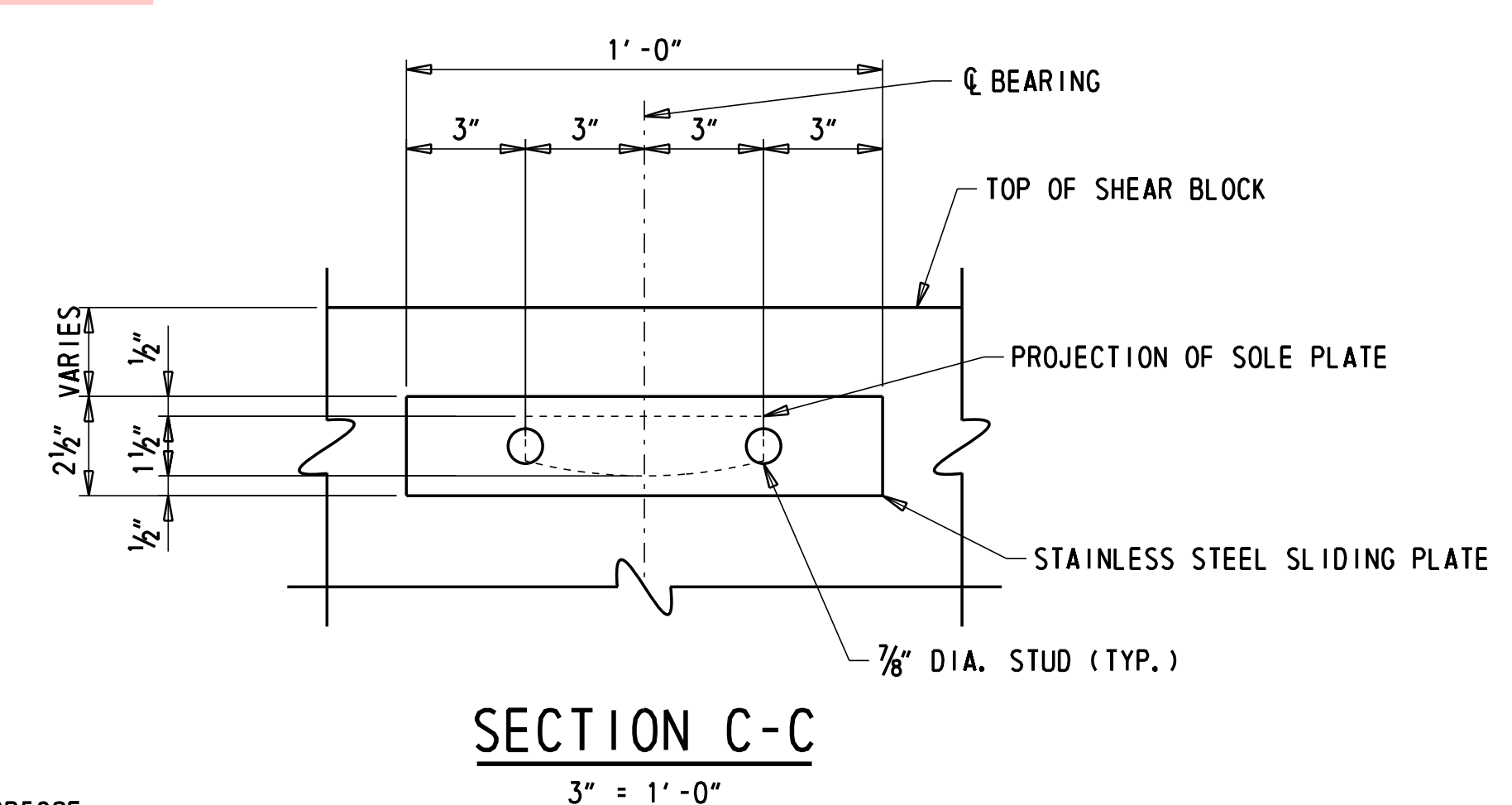
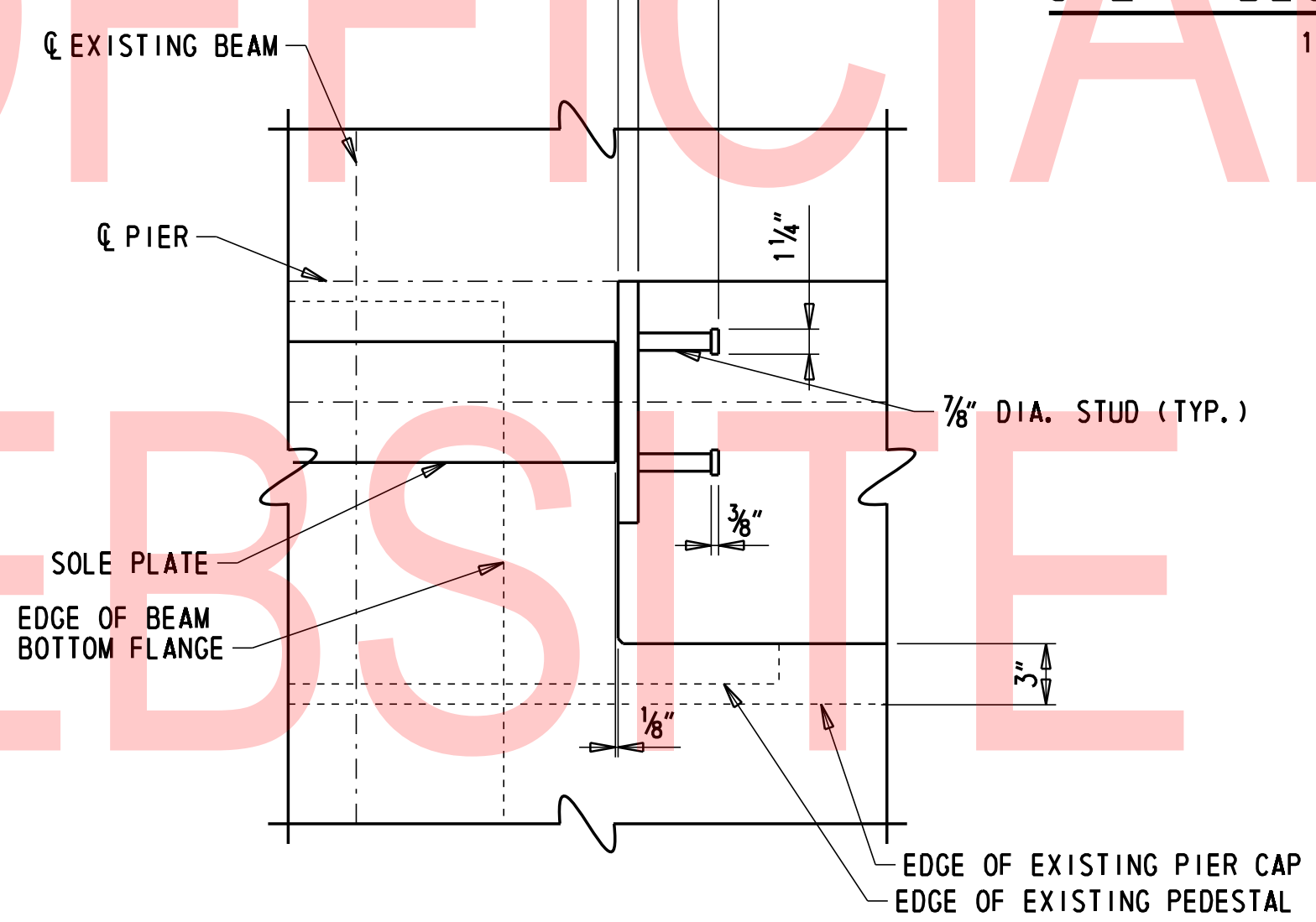
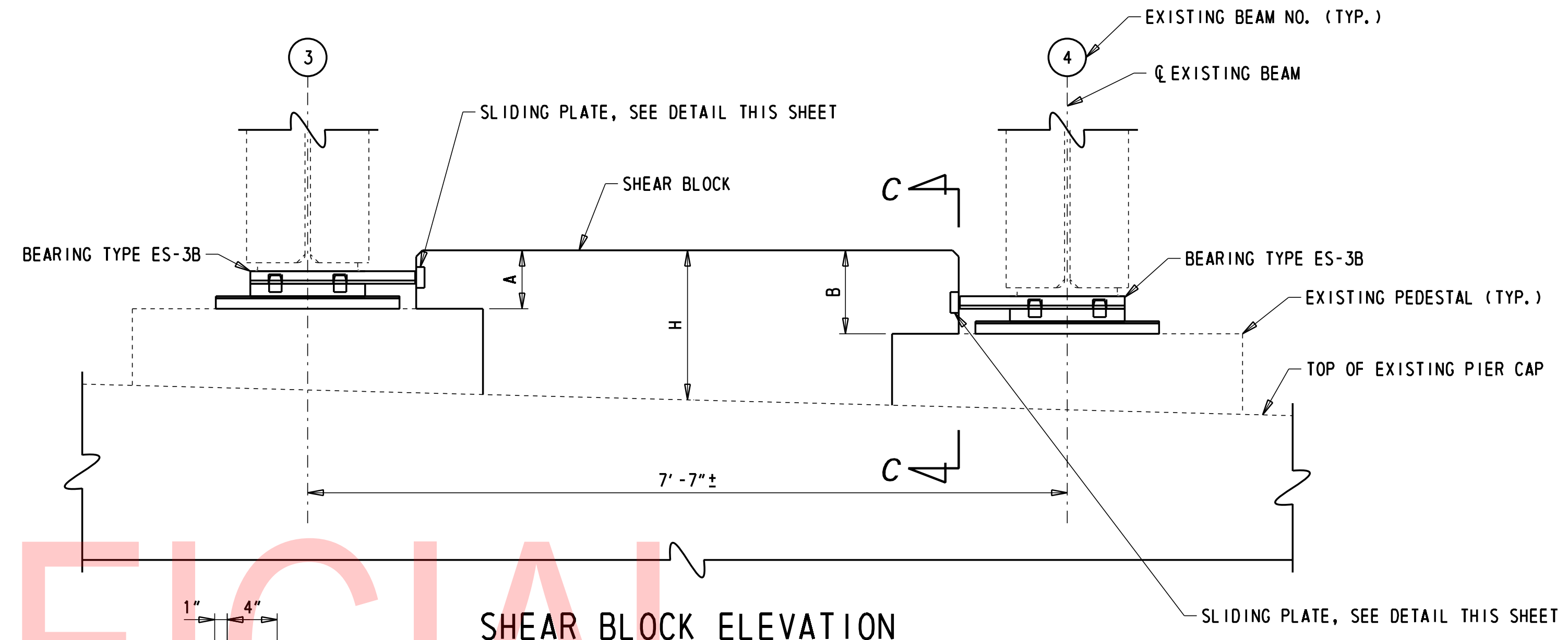
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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CONTRACT</td> <td style="font-size: small;">BRIDGE NO.</td> <td style="text-align: center;">1 748 N&S</td> </tr> <tr> <td style="font-size: small;">T201907404</td> <td style="font-size: small;">DESIGNED BY:</td> <td style="font-size: small;">K. AMBROSE</td> </tr> <tr> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">CHECKED BY:</td> <td style="font-size: small;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: small;">NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			PIER 59 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	PR-20 SECTION WRA SHEET NO. 59
CONTRACT	BRIDGE NO.	1 748 N&S															
T201907404	DESIGNED BY:	K. AMBROSE															
COUNTY	CHECKED BY:	D. NIZAMOFF															
NEW CASTLE																	

NOTES:

1. SLIDING PLATE SHALL BE TYPE 316 STAINLESS STEEL. WELDED STUD SHEAR CONNECTORS SHALL BE ASTM A493, TYPE 316.
2. STAINLESS STEEL SLIDING PLATES ARE INCIDENTAL TO ITEM 610005 - PCC MASONRY, SUBSTRUCTURE, CLASS A.
3. EPOXY GROUT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
Hilti HIT-HY 200-R
Kellgrout by Kelken
Sika AnchorFix-3001

SHEAR BLOCK HEIGHTS			
LOCATION	A	B	H
PIER 34N, SPAN 33N	7"	10"	1'-5 ⁷ / ₈ "
PIER 35N, SPAN 34N	7"	11"	1'-6"
PIER 37N, SPAN 37N	7"	1'-0 ¹ / ₈ "	1'-6 ⁵ / ₈ "
SPAN 41S, SPAN 40S	1'-0 ¹ / ₈ "	7"	1'-5 ¹ / ₂ "
SPAN 41N, SPAN 40N	7"	1'-0 ¹ / ₈ "	1'-5 ¹ / ₂ "
PIER 49S, SPAN 48S	7"	8 ⁷ / ₈ "	1'-9"
PIER 51N, SPAN 50N	7"	8 ⁷ / ₈ "	1'-7 ¹ / ₈ "
PIER 59S, SPAN 59S	7"	8 ⁷ / ₈ "	1'-5 ³ / ₄ "



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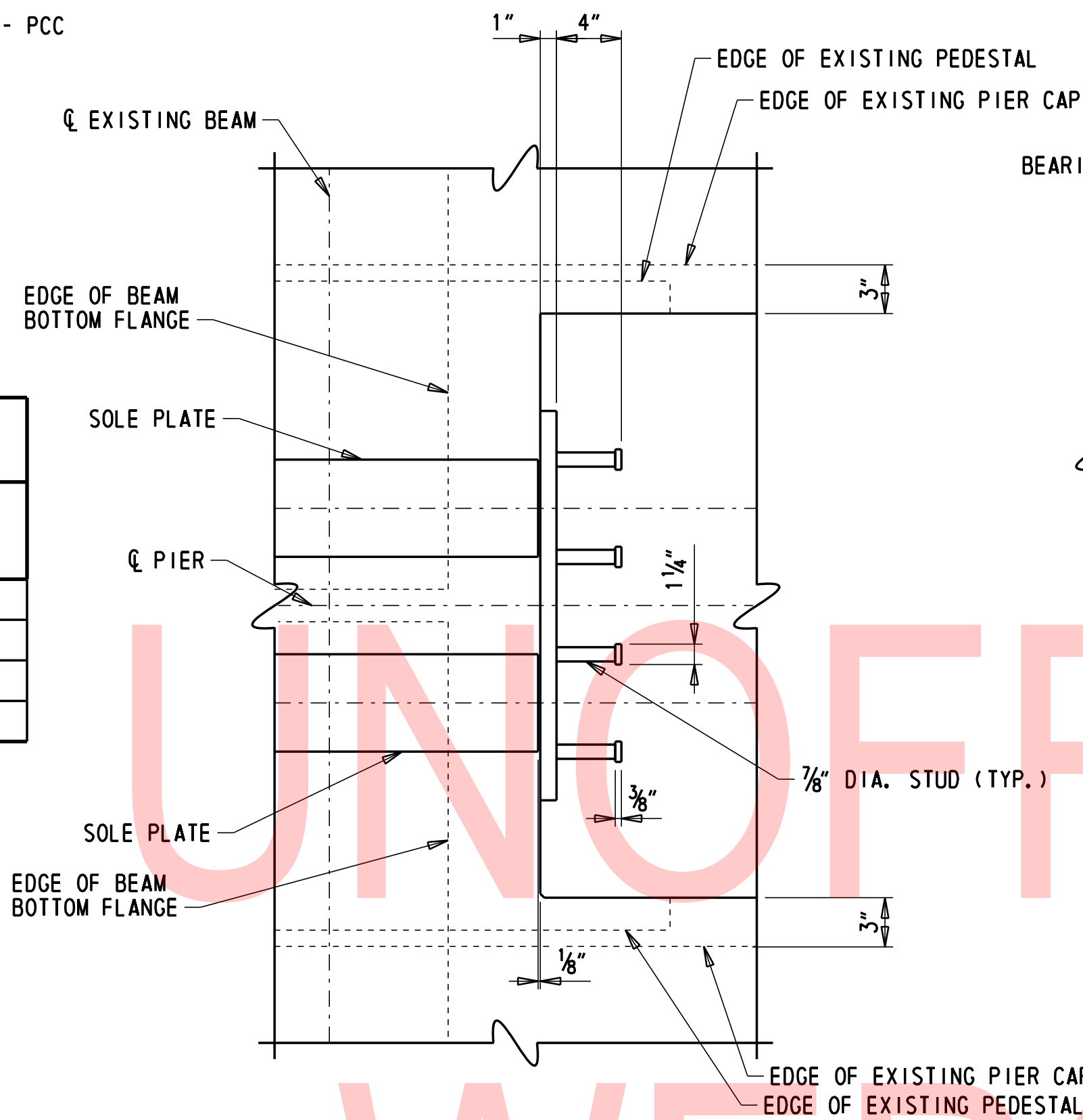
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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">CONTRACT</td> <td style="font-size: 8px;">BRIDGE NO.</td> <td style="font-size: 8px;">1 748 N&S</td> </tr> <tr> <td style="font-size: 8px;">T201907404</td> <td style="font-size: 8px;">DESIGNED BY:</td> <td style="font-size: 8px;">K. AMBROSE</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td style="font-size: 8px;">CHECKED BY:</td> <td style="font-size: 8px;">D. NIZAMOFF</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 748 N&S	T201907404	DESIGNED BY:	K. AMBROSE	COUNTY	CHECKED BY:	D. NIZAMOFF	NEW CASTLE			<p style="font-weight: bold; font-size: 12px;">SHEAR BLOCK DETAILS - 1</p>	<p style="font-weight: bold; font-size: 10px;">PR-21</p> <p style="font-size: 8px;">SECTION WRA SHEET NO. 60</p>
CONTRACT	BRIDGE NO.	1 748 N&S															
T201907404	DESIGNED BY:	K. AMBROSE															
COUNTY	CHECKED BY:	D. NIZAMOFF															
NEW CASTLE																	

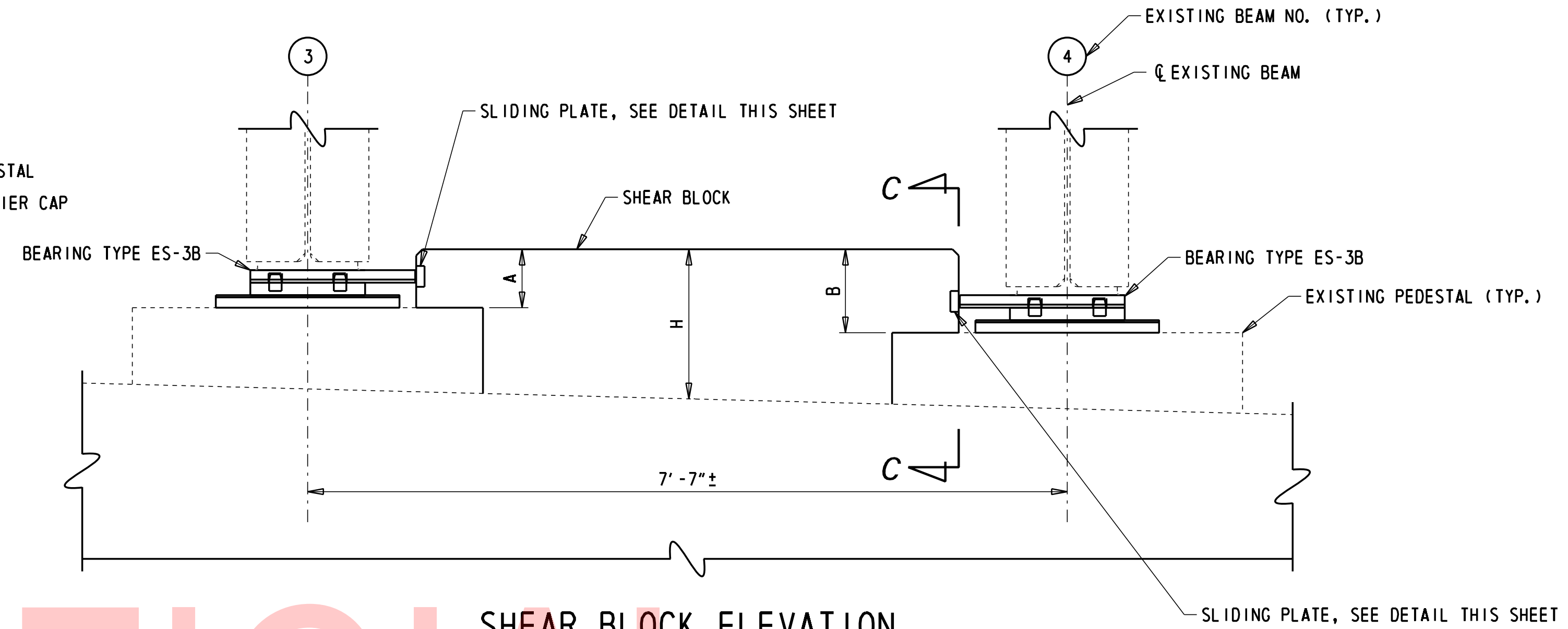
NOTES:

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2. STAINLESS STEEL SLIDING PLATES ARE INCIDENTAL TO ITEM 610005 - PCC MASONRY, SUBSTRUCTURE, CLASS A.
3. EPOXY GROUT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
HIT-11 HIT-HY 200-R
Kellgrout by Kelken
Sika AnchorFix-3001

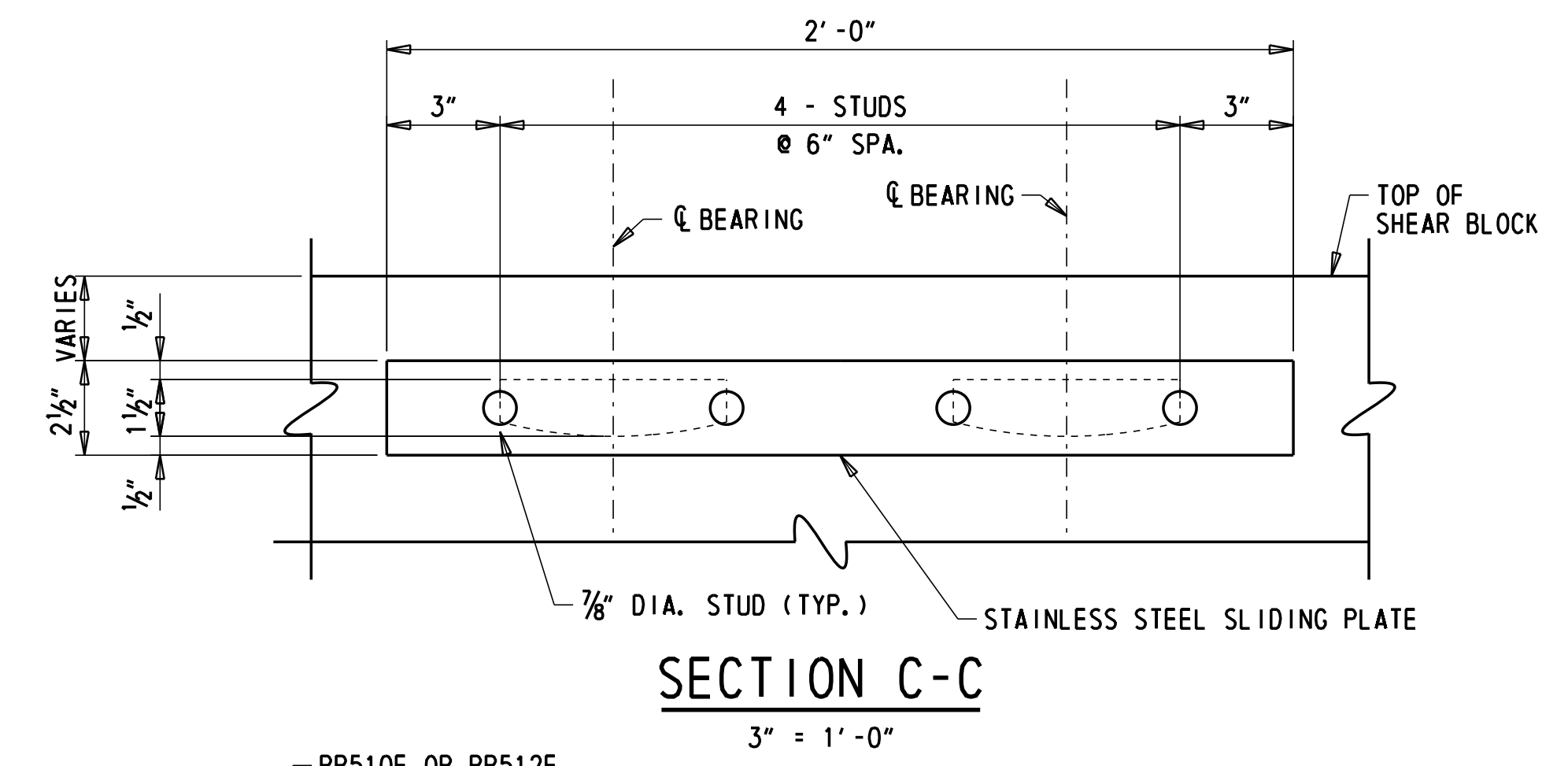
SHEAR BLOCK HEIGHTS			
LOCATION	A	B	H
PIER 43S, SPAN 42S	11 1/2"	7"	1' - 4 1/2"
PIER 43S, SPAN 43S	11 1/2"	7"	1' - 4 1/2"
PIER 51S, SPAN 50S	7"	8 7/8"	1' - 7 1/8"
PIER 51S, SPAN 51S	7"	8 7/8"	1' - 7 1/8"



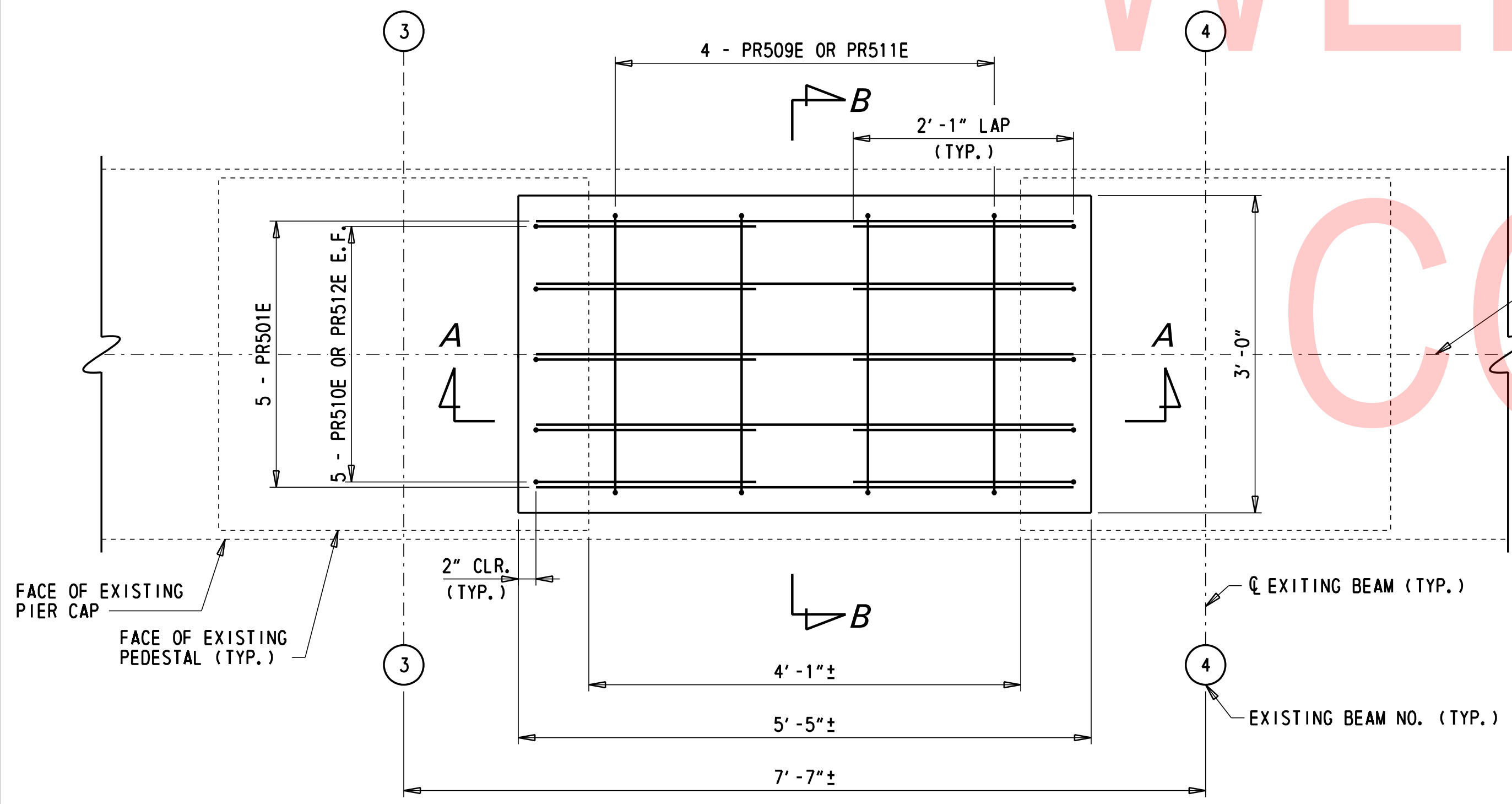
SLIDING PLATE DETAIL
1 1/2" = 1'-0"



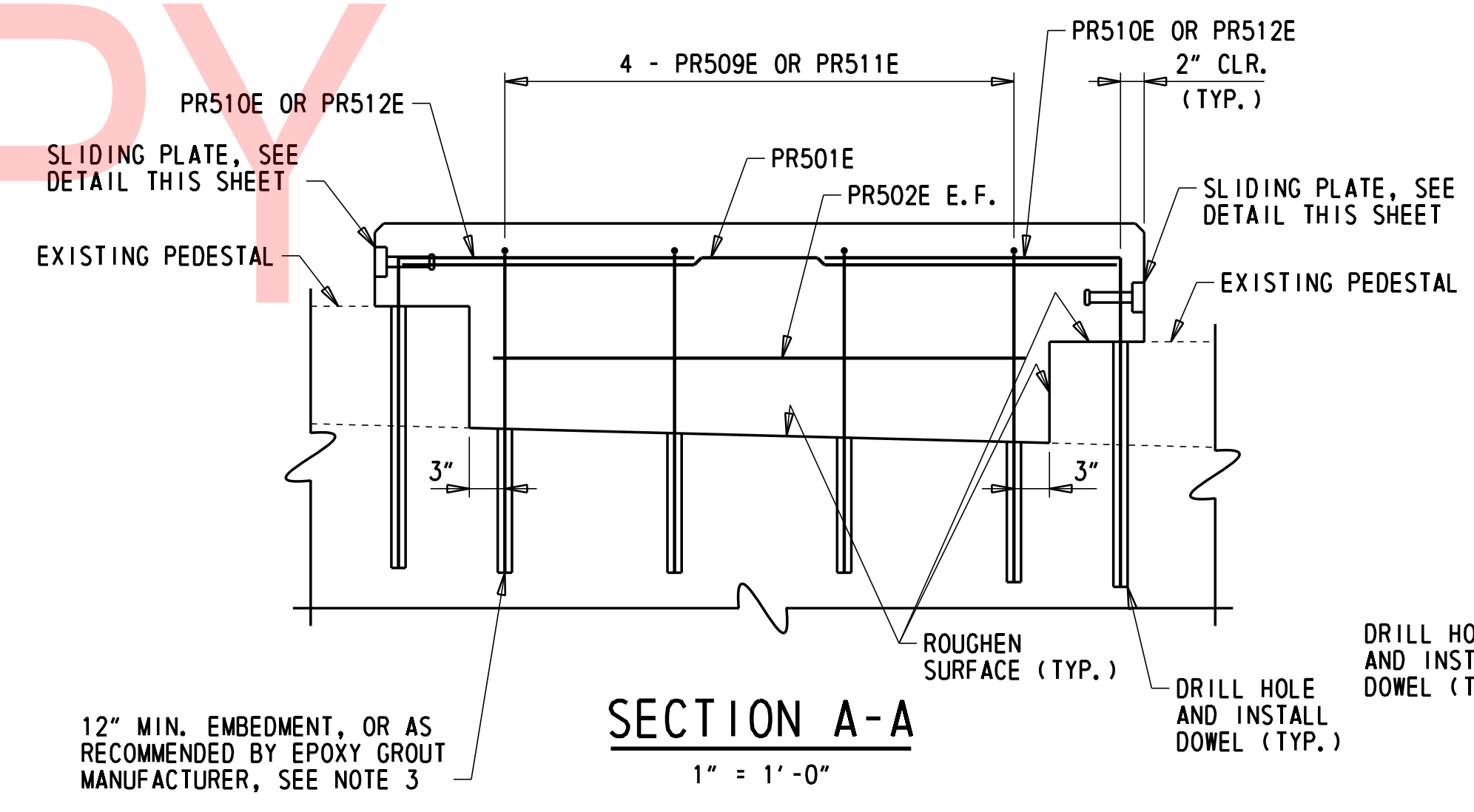
SHEAR BLOCK ELEVATION
1" = 1'-0"



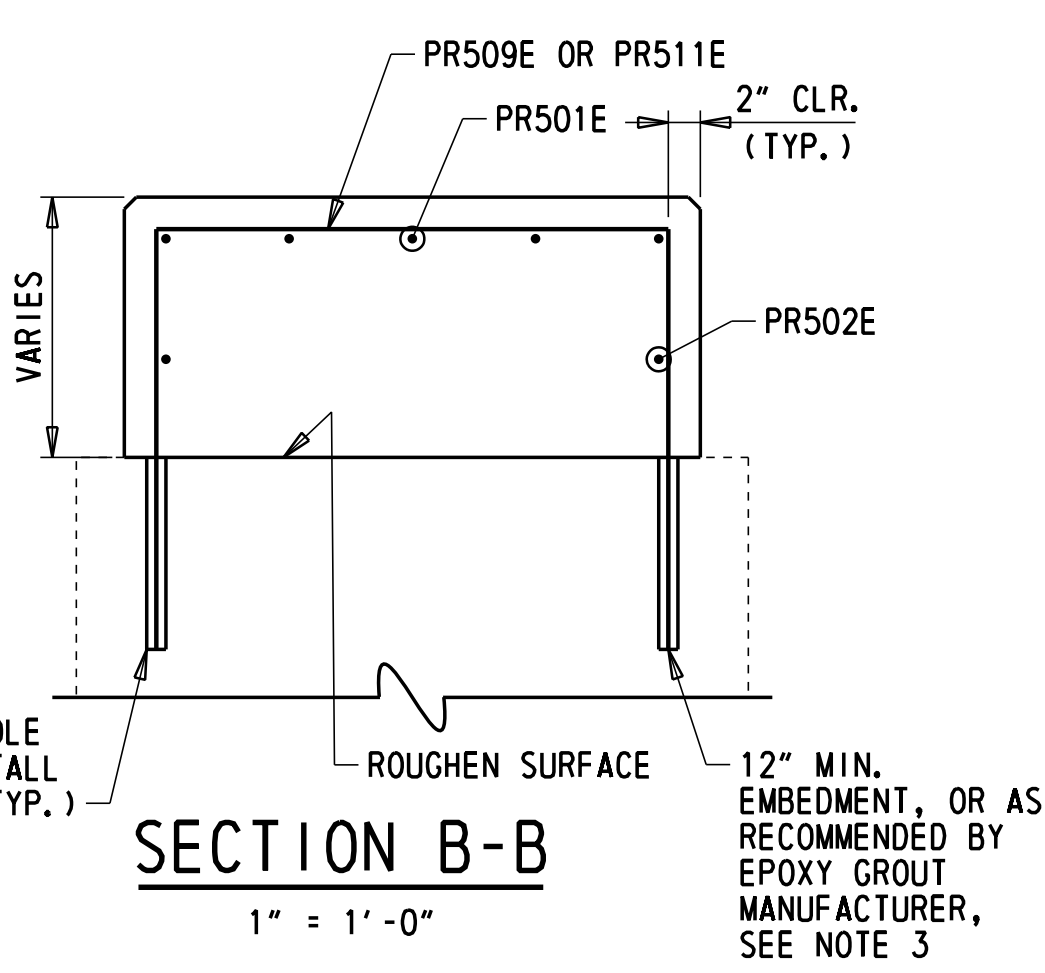
SECTION C-C
3" = 1'-0"



SHEAR BLOCK DETAIL - PLAN
1" = 1'-0"



SECTION A-A
1" = 1'-0"



SECTION B-B
1" = 1'-0"

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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**SHEAR BLOCK
DETAILS - 2**

PR-22
SECTION
WRA
SHEET NO.
61

LOADS FOR JACKING						UNFACTORED**		FACTORED**	
SPAN NO.	SUBSTRUCTURE UNIT	BEAM NO.	BEAM SPACING ALONG C OF BEARING	BEAM MEMBER	ANGLE A*	DL +15%	DL +LL +1MP	DL +15%	DL +LL +1MP
SPAN 33N	PIER 34N	33N-1	7'-7"±	36 WF 150	90°-32'-23"±	37 KIP	95 KIP	48 KIP	153 KIP
		33N-2 TO 33N-5	7'-7"±	36 WF 150	90°-32'-23"±	46 KIP	120 KIP	60 KIP	192 KIP
		33N-6	7'-7"±	36 WF 150	90°-32'-23"±	37 KIP	95 KIP	48 KIP	153 KIP
SPAN 34N	PIER 35N	34N-1	7'-7"±	36 WF 150	90°-51'-33"±	51 KIP	110 KIP	67 KIP	173 KIP
		34N-2 TO 34N-5	7'-7"±	36 WF 150	90°-51'-33"±	57 KIP	131 KIP	75 KIP	207 KIP
		34N-6	7'-7"±	36 WF 150	90°-51'-33"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 35N	PIER 35N	35N-1	7'-7"±	36 WF 150	91°-03'-13"±	51 KIP	110 KIP	67 KIP	173 KIP
		35N-5	7'-7"±	36 WF 150	91°-03'-13"±	57 KIP	131 KIP	75 KIP	207 KIP
		34N-6	7'-7"±	36 WF 150	91°-03'-13"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 36N	PIER 37N	36N-1	7'-7"±	36 WF 150	91°-20'-11"±	47 KIP	106 KIP	62 KIP	167 KIP
		36N-5	7'-7"±	36 WF 150	91°-20'-11"±	59 KIP	133 KIP	76 KIP	210 KIP
		36N-6	7'-7"±	36 WF 150	91°-20'-11"±	47 KIP	106 KIP	62 KIP	167 KIP
SPAN 37N	PIER 37N	37N-1	7'-7"±	36 WF 150	91°-17'-55"±	51 KIP	110 KIP	67 KIP	173 KIP
		37N-2 TO 37N-5	7'-7"±	36 WF 150	91°-17'-55"±	57 KIP	131 KIP	75 KIP	207 KIP
		37N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 37N	PIER 38N	37N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 38N	PIER 39N	38N-1	7'-7"±	36 WF 150	91°-17'-55"±	51 KIP	110 KIP	67 KIP	173 KIP
		38N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 39N	PIER 39N	39N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 39N	PIER 40N	39N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 40N	PIER 41N	40N-1	7'-7"±	36 WF 150	91°-17'-55"±	51 KIP	110 KIP	67 KIP	173 KIP
		40N-2 TO 40N-5	7'-7"±	36 WF 150	91°-17'-55"±	57 KIP	131 KIP	75 KIP	207 KIP
		40N-6	7'-7"±	36 WF 150	91°-17'-55"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 41N	PIER 41N	41N-1	7'-7"±	36 WF 150	91°-17'-55"±	51 KIP	110 KIP	67 KIP	173 KIP
		41N-5	7'-7"±	36 WF 150	91°-17'-55"±	57 KIP	131 KIP	75 KIP	207 KIP
		41N-6	7'-7"±	36 WF 150	91°-22'-18"±	46 KIP	106 KIP	60 KIP	167 KIP
SPAN 50N	PIER 51N	50N-1	7'-7"±	36 WF 150	90°-00'-00"±	49 KIP	108 KIP	63 KIP	170 KIP
		50N-2 TO 50N-5	7'-7"±	36 WF 150	90°-00'-00"±	60 KIP	134 KIP	78 KIP	210 KIP
		50N-6	7'-7"±	36 WF 150	90°-00'-00"±	49 KIP	108 KIP	63 KIP	170 KIP
SPAN 51N	PIER 51N	51N-1	7'-7"±	36 WF 150	90°-00'-00"±	46 KIP	102 KIP	60 KIP	160 KIP
		51N-2 TO 51N-5	7'-7"±	36 WF 150	90°-00'-00"±	56 KIP	131 KIP	73 KIP	207 KIP
		51N-6	7'-7 1/8"±	36 WF 150	90°-03'-35"±	62 KIP	144 KIP	80 KIP	229 KIP
SPAN 51N	PIER E6	51N-7	6'-10"±	W36 X 135	99°-30'-40"±	62 KIP	142 KIP	81 KIP	225 KIP
		51N-8	6'-10"±	W36 X 135	97°-36'-41"±	49 KIP	119 KIP	64 KIP	188 KIP
		51N-9	6'-10"±	W36 X 135	95°-38'-52"±	49 KIP	119 KIP	64 KIP	188 KIP
SPAN 51N	PIER E6	51N-10	6'-10"±	W36 X 135	93°-35'-11"±	46 KIP	102 KIP	60 KIP	160 KIP
SPAN 58N	PIER 58N	58N-10	4'-11"±	36 WF 300	93°-13'-52"±	66 KIP	118 KIP	86 KIP	181 KIP
SPAN 59N	PIER 59N	59N-10	6'-9 1/2"±	36 WF 150	93°-10'-46"±	44 KIP	95 KIP	58 KIP	149 KIP

*FOR LOCATION OF ANGLE A, SEE DWG. RH-03.
**EXISTING LOADS FOR JACKING ARE TAKEN FROM LOAD RATINGS PROVIDED BY DELDOT AND PERFORMED BY OTHERS.

NOTES:

- SEE DWG. RH-03 TO RH-05 FOR JACKING SCHEMES.
- SEE DWG. RH-06 AND RH-07 FOR JACKING DETAILS.
- SEE DWG. RH-02 FOR ADDITIONAL LOADS FOR JACKING SOUTHBOUND SPANS.

BRIDGE JACKING NOTES:

- CONTRACTOR SHALL VERIFY COMPATIBILITY OF THE JACKING ASSEMBLY WITH THE HYDRAULIC JACK (SEE NOTE 15) PRIOR TO FABRICATION. ALTERNATE JACKING SCHEMES OR ASSEMBLIES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. SUBMISSION SHALL INCLUDE DETAILED SHOP DRAWINGS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ANY ALTERNATE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND MAY BE REJECTED BY THE ENGINEER FOR ANY REASON INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY. NO ADDITIONAL PAYMENT WILL BE MADE FOR ALTERNATE JACKING SCHEMES OR ASSEMBLIES.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO ORDERING OR FABRICATING THE JACKING DIAPHRAGM, TEMPORARY BEARING STIFFENERS, AND JACKING ASSEMBLY, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.
- ALL STEEL PLATES AND STEEL ROLLED SHAPES SHALL BE AASHTO M 270, GRADE 50 MATERIAL.
- UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE ASTM F3125 GR. A325. ALL BOLTS ARE DESIGNED WITH THE THREADS INCLUDED IN THE SHEAR PLANE. ALL HOLES FOR BOLTS SHALL BE 1/4" DIAMETER LARGER THAN THE DIAMETER OF THE BOLT. REFER TO THE PERTINENT PLAN SHEETS FOR BOLT SIZES.
- ALL METAL WORK AND ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 615.
- JACKING ASSEMBLY, JACKING STIFFENERS, AND TEMPORARY BEARING STIFFENERS SHALL BE SET PLUMB TO VERTICAL.
- WORK SHALL CONSIST OF JACKING THE EXISTING BEAMS, REMOVING THE EXISTING BEARINGS, AND INSTALLING NEW STEEL PLATE FIXED BEARINGS AND BRONZE PLATE EXPANSION BEARINGS. FOR LOCATIONS OF BEARING REPLACEMENTS, SEE DWG. BB-01 TO BB-05. ADDITIONAL CONCRETE REPAIR WORK THAT MAY BE REQUIRED PRIOR TO PERFORMING JACKING OPERATIONS IS DETAILED ON DWGS. PR-01 TO PR-20.
- THE ENGINEER SHALL BE PRESENT DURING ALL JACKING OPERATIONS TO ENSURE CONFORMANCE WITH ALL PERTINENT CONTRACT PROVISIONS.
- IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL INSPECT THE CONDITION OF THE EXISTING STEEL BEAMS FOR ANY DEFECTS WHICH MAY IMPACT THE LOAD CARRYING CAPACITY OF THE BEAM DURING JACKING. IF ANY DEFECTS ARE FOUND THE CONTRACTOR SHALL STOP WORK AT THAT LOCATION AND NOTIFY THE ENGINEER IMMEDIATELY.

WHERE CONCRETE REPAIRS TO THE PIER CAPS AND PEDESTALS OVERLAP WITH THE JACKING OPERATIONS, THE CONCRETE SHALL BE REPAIRED PRIOR TO THE JACKING OPERATIONS. ALL CONCRETE REPAIRS SHALL BE PERFORMED AND WILL BE PAID FOR AS SHOWN ON DWG. PN-03. JACKING OPERATIONS SHALL NOT BE PERFORMED UNTIL THE REPAIRED AREAS HAVE REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.
- THE CONTRACTOR SHALL HAVE THE PROPOSED BEARING ASSEMBLIES FOR THE BEARING LINE BEING REPLACED ON SITE PRIOR TO COMMENCING WITH JACKING OPERATIONS. THE PROPOSED BEARING ASSEMBLIES MUST BE ACCEPTED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE ENTIRE LINE OF BEARINGS MAY BE JACKED AT THE SAME TIME AND IF SUCH THE JACKS SHALL BE MANIFOLDED.

WHEN MULTIPLE HYDRAULIC JACKS ARE USED FOR THE JACKING OPERATION, THEY SHALL BE OPERATED CONCURRENTLY (MANIFOLDED) TO PROVIDE AN EQUAL AND BALANCED LIFTING FORCE.

THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT BEAMS IS NOT TO EXCEED 1/8" AT ANY TIME.

THE MAXIMUM VERTICAL DISPLACEMENT OF ANY BEAM FROM THE EXISTING LOCATION IS NOT TO EXCEED 1/4" AT ANY TIME.
- THE CONTRACTOR SHALL USE ONLY JACKS WITH LOCK-NUTS CAPABLE OF SUPPORTING A LOAD EQUAL TO THE RATED CAPACITY OF THE JACK IN THE EVENT THE JACK LOSES HYDRAULIC PRESSURE. THE CONTRACTOR SHALL ADVANCE THE LOCK-NUTS ON ALL JACKS SUCH THAT THE MAXIMUM DISTANCE BETWEEN THE TOP OF A JACK AND THE LOCK-NUT DOES NOT EXCEED 1/8" AT ANY TIME DURING THE JACKING PROCEDURE.
- NO REPAIR WORK SHALL BE PERFORMED UNTIL THE JACKING OPERATION IS COMPLETE AND THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLY (JACKING DIAPHRAGM, LOCK-NUT JACK, SPACER COLUMN, ETC.).
- LIVE LOAD SHALL BE TEMPORARILY REMOVED FROM THE BRIDGE DURING JACKING UNTIL THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLIES.
- THE HYDRAULIC JACKS FOR THE TYPICAL JACKING SCHEME SHALL HAVE A MINIMUM CAPACITY OF 200 TONS. THE MAXIMUM FACTORED LOADS OF ALL SPANS WERE USED TO SIZE THE HYDRAULIC JACK.
- THE FACTORED LOADS FOR JACKING USE A DEAD LOAD FACTOR OF 1.30 AND A LIVE LOAD FACTOR OF 1.75. THE FACTORED LOADS SHOWN IN THE TABLE WERE USED FOR THE DESIGN OF THE JACKING DIAPHRAGMS AND JACKING ASSEMBLIES, EXCLUDING THE HYDRAULIC JACK.
- CONTRACTOR SHALL PROVIDE A DETAIL FOR APPROVAL BY THE ENGINEER THAT ALLOWS FOR MOVEMENT OF THE JACKING SYSTEM UNDER NORMAL THERMAL CONDITIONS AS NOTED IN THE DETAIL ON DWG. RH-06 PRIOR TO FABRICATION.

SUGGESTED SEQUENCE OF CONSTRUCTION:

- THE FOLLOWING IS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE JACKING OPERATIONS.
- INSTALL ALL NECESSARY TEMPORARY WORK PLATFORMS AND/OR RIGGING. CARE SHALL BE TAKEN NOT TO INTERFERE WITH PROPOSED LOCATIONS OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.
 - INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.
 - PLACE NON-SHRINK GROUT LEVELING PADS AS REQUIRED AND CURE TO SPECIFIED STRENGTH.
 - INSTALL ALL JACKING ASSEMBLIES AS NECESSARY.
 - REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.
 - PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE BEARINGS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H.
 - SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUT JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES ON DWG. RH-03 TO RH-05.
 - RELEASE LOAD IN JACK TO TRANSFER ALL LOAD TO THE JACKING ASSEMBLY AND LOCK-NUT JACK.
 - REMOVE EXISTING WELDS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE OF THE EXISTING BEAM. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING BEAM. ANY DAMAGE TO THE EXISTING BEAM CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.
 - EXISTING ANCHOR BOLTS ARE TO REMAIN IN PLACE FOR PROPOSED BEARINGS UNLESS OTHERWISE NOTED. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING ANCHOR BOLTS. ANY DAMAGE TO THE EXISTING ANCHOR BOLTS CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.
 - REMOVE EXISTING BEARING ASSEMBLY. TO REMOVE THE BEARING ASSEMBLY, IT MAY BE NECESSARY TO CUT OR REMOVE THE PINTLES BETWEEN THE MASONRY PLATE, SLIDING (BRONZE) PLATE, AND/OR THE SOLE PLATE. IT MAY ALSO BE NECESSARY TO CUT THE MASONRY PLATE TO REMOVE FROM THE ANCHOR BOLTS. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING STEEL BEAM OR ANCHOR BOLTS TO REMAIN DURING ANY CUTTING OF THE EXISTING BEARING.
 - CLEAN THE BOTTOM SURFACE OF THE EXISTING BEAM AND APPLY PRIMER IN ACCORDANCE WITH SECTION 616. PAYMENT FOR CLEANING AND PAINTING WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
 - THE TOP OF THE EXISTING BEARING PEDESTAL SHALL BE LEVEL AND FREE OF DEBRIS. IF REQUIRED, NON-SHRINK GROUT SHALL BE USED TO LEVEL AND PROVIDE A SMOOTH BEARING SURFACE FOR THE PROPOSED BEARING. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
 - INSTALL PROPOSED BEARINGS. FOR THE SUGGESTED SEQUENCE OF INSTALLATION SEE THE RESPECTIVE NOTES AND DETAILS.
 - PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAM(S) OFF OF THE JACKING ASSEMBLY AND LOCK-NUTS. LOWER JACKS TO TRANSFER BEAM LOADS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H.
 - REMOVE ALL TEMPORARY BEARING STIFFENERS, TEMPORARY JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES. FILL DRILLED HOLES IN EXISTING BEAMS WITH NEW HIGH-STRENGTH BOLTS CONFORMING TO ASTM F3125 GRADE A325. NON-SHRINK GROUT LEVELING PADS USED UNDER JACKING ASSEMBLIES MAY BE LEFT IN PLACE WITH APPROVAL OF THE ENGINEER.
 - CONSTRUCT SHEAR BLOCKS WHERE APPLICABLE, SEE DWGS. PR-21 AND PR-22 FOR DETAILS.

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NOT TO SCALE

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

JACKING NOTES AND
LOADS FOR JACKING
NORTHBOUND SPANS

RH-01
SECTION
WRA
SHEET NO.
62

LOADS FOR JACKING						UNFACTORED**		FACTORED**	
SPAN NO.	SUBSTRUCTURE UNIT	BEAM NO.	BEAM SPACING ALONG C OF BEARING	BEAM MEMBER	ANGLE A*	DL +15%	DL +LL +IMP	DL +15%	DL +LL +IMP
SPAN 27S	PIER 27S	27S-1	7' -7"±	36 WF 160	89° -11' -41"±	55 KIP	90 KIP	72 KIP	136 KIP
		27S-2	7' -7"±	36 WF 160	89° -11' -40"±	62 KIP	137 KIP	80 KIP	215 KIP
SPAN 40S	PIER 41S	40S-1	7' -7"±	36 WF 150	91° -17' -55"±	53 KIP	112 KIP	69 KIP	176 KIP
		40S-2 TO 40S-5	7' -7"±	36 WF 150	91° -17' -55"±	60 KIP	134 KIP	78 KIP	210 KIP
		40S-6	7' -7"±	36 WF 150	91° -17' -55"±	49 KIP	108 KIP	64 KIP	171 KIP
SPAN 42S	PIER 43S	42S-1	8' -0"±	36 WF 150	90° -53' -48"±	55 KIP	116 KIP	71 KIP	181 KIP
		42S-2	8' -0"± BAY 1	36 WF 150	91° -14' -41"±	61 KIP	137 KIP	79 KIP	216 KIP
			7' -7"± BAY 2						
		42S-3 TO 42S-5	7' -7"±	36 WF 150	91° -14' -41"±	60 KIP	135 KIP	78 KIP	212 KIP
		42S-6	7' -7"±	36 WF 150	91° -14' -41"±	49 KIP	109 KIP	63 KIP	171 KIP
SPAN 43S	PIER 43S	43S-1	8' -0"±	36 WF 150	91° -03' -42"±	55 KIP	116 KIP	71 KIP	181 KIP
		43S-2	8' -0"± BAY 1	36 WF 150	91° -03' -42"±	61 KIP	137 KIP	79 KIP	216 KIP
			7' -7"± BAY 2						
		43S-3 TO 43S-5	7' -7"±	36 WF 150	91° -03' -42"±	60 KIP	135 KIP	78 KIP	212 KIP
		43S-6	7' -7"±	36 WF 150	91° -03' -42"±	49 KIP	109 KIP	63 KIP	171 KIP
SPAN 48S	PIER 49S	48S-1	7' -7"±	36 WF 150	90° -00' -00"±	45 KIP	102 KIP	59 KIP	162 KIP
		48S-2 TO 48S-5	7' -7"±	36 WF 150	90° -00' -00"±	51 KIP	122 KIP	66 KIP	194 KIP
		48S-6	7' -7"±	36 WF 150	90° -00' -00"±	41 KIP	99 KIP	54 KIP	157 KIP
SPAN 50S	PIER 51S	50S-1	7' -7"±	36 WF 150	90° -00' -00"±	53 KIP	112 KIP	69 KIP	176 KIP
		50S-2 TO 50S-5	7' -7"±	36 WF 150	90° -00' -00"±	60 KIP	134 KIP	78 KIP	210 KIP
		50S-6	7' -7"±	36 WF 150	90° -00' -00"±	49 KIP	108 KIP	64 KIP	171 KIP
SPAN 51S	PIER 51S	51S-1	7' -7"±	36 WF 150	90° -00' -00"±	53 KIP	112 KIP	69 KIP	176 KIP
		51S-2 TO 51S-5	7' -7"±	36 WF 150	90° -00' -00"±	60 KIP	134 KIP	78 KIP	210 KIP
		51S-6	7' -7"±	36 WF 150	90° -00' -00"±	49 KIP	108 KIP	64 KIP	171 KIP
SPAN 55S	PIER 56S	55S-1	7' -7"±	36 WF 230	90° -00' -00"±	66 KIP	127 KIP	86 KIP	196 KIP
		55S-6	7' -7"±	36 WF 230	90° -00' -00"±	60 KIP	122 KIP	78 KIP	190 KIP
SPAN 57S	PIER 58S	57S-1	7' -7"±	36 WF 230	90° -00' -00"±	66 KIP	127 KIP	86 KIP	196 KIP
		57S-6	7' -7"±	36 WF 230	90° -00' -00"±	60 KIP	122 KIP	78 KIP	190 KIP
SPAN 59S	PIER 59S	59S-1	7' -7"±	36 WF 150	90° -00' -00"±	43 KIP	99 KIP	56 KIP	157 KIP
		59S-2 TO 59S-5	7' -7"±	36 WF 150	90° -00' -00"±	49 KIP	119 KIP	63 KIP	188 KIP
		59S-6	7' -7"±	36 WF 150	90° -00' -00"±	40 KIP	96 KIP	51 KIP	152 KIP

*FOR LOCATION OF ANGLE A, SEE DWG. RH-03.
**EXISTING LOADS FOR JACKING ARE TAKEN FROM LOAD RATINGS PROVIDED BY DELDOT AND PERFORMED BY OTHERS.

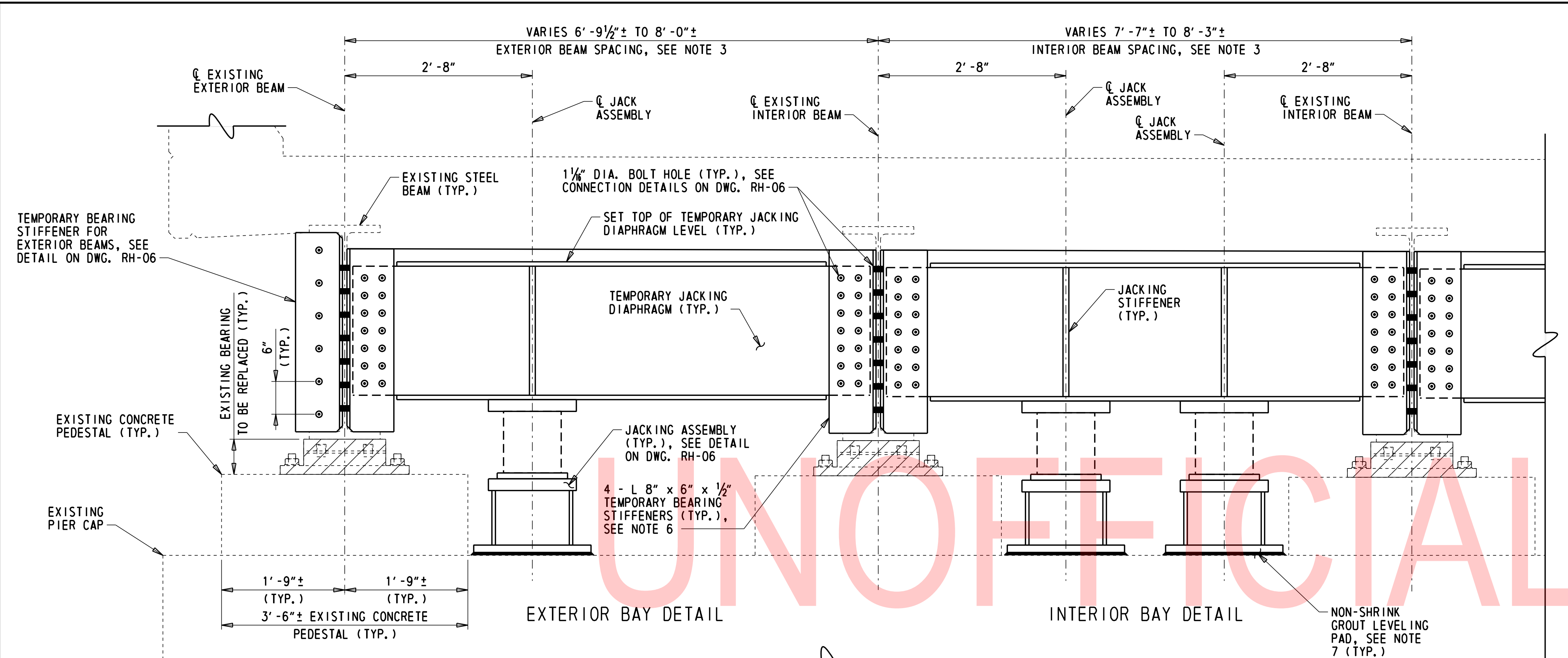
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NOTES:

1. SEE DWG. RH-01 FOR BRIDGE JACKING NOTES.
2. SEE DWG. RH-03 TO RH-05 FOR JACKING SCHEMES.
3. SEE DWG. RH-06 AND RH-07 FOR JACKING DETAILS.
4. SEE DWG. RH-01 FOR ADDITIONAL LOADS FOR JACKING NORTHBOUND SPANS.

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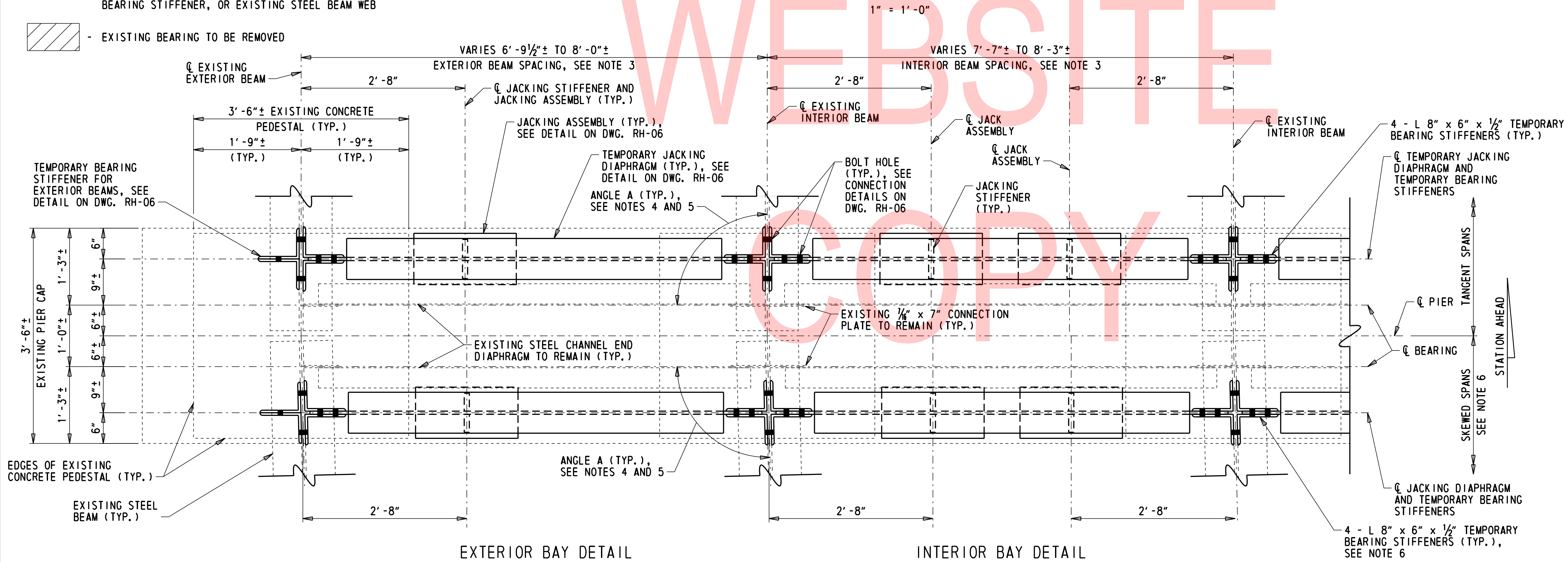
ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	LOADS FOR JACKING SOUTHBOUND SPANS	RH-02
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
				COUNTY	CHECKED BY: D. NIZAMOFF		SHEET NO.	63
				NEW CASTLE				



- NOTES:**
1. FOR JACKING NOTES, SEE DWG. RH-01.
 2. FOR JACKING DETAILS, SEE DWG. RH-06.
 3. BEAM SPACING RANGES SHOWN FOR THE EXTERIOR BAY DETAIL AND THE INTERIOR BAY DETAIL ARE TYPICAL THROUGHOUT THE BRIDGE. SEE DWG. RH-04 AND DWG. RH-05 FOR SPECIAL JACKING LOCATIONS.
 4. ANGLE A FOR ALL SPANS IS TAKEN ON THE LEFT SIDE OF THE BEAM WHEN LOOKING STATION AHEAD.
 5. FOR ANGLE A, EXISTING STEEL BEAM SIZES, AND LOADS FOR JACKING, SEE DWG. RH-01 AND DWG. RH-02.
 6. FOR TEMPORARY BEARING STIFFENERS ON SKEWED SPANS, CONTRACTOR SHALL FIELD ADJUST OR FABRICATE A NEW STEEL ANGLE TO ACCOUNT FOR THE SKEW. CONTRACTOR MAY PRESENT ALTERNATE STEEL MEMBERS FOR TEMPORARY BEARING STIFFENERS ON SKEWED SPANS. COST FOR FABRICATING A NEW STEEL ANGLE WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
 7. PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY BASE PLATE AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING. NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. PAYMENT FOR NON-SHRINK GROUT WILL BE UNDER ITEM 604000 - JACKING BRIDGE.
 8. ALL BOLTS SHOWN ON THIS SHEET SHALL BE 1" DIAMETER.

- LEGEND:**
- - PROPOSED 1" DIA. BOLT IN 1 1/4" DIA. HOLE IN TEMPORARY JACKING DIAPHRAGM, TEMPORARY BEARING STIFFENER, OR EXISTING STEEL BEAM WEB
 - ▨ - EXISTING BEARING TO BE REMOVED

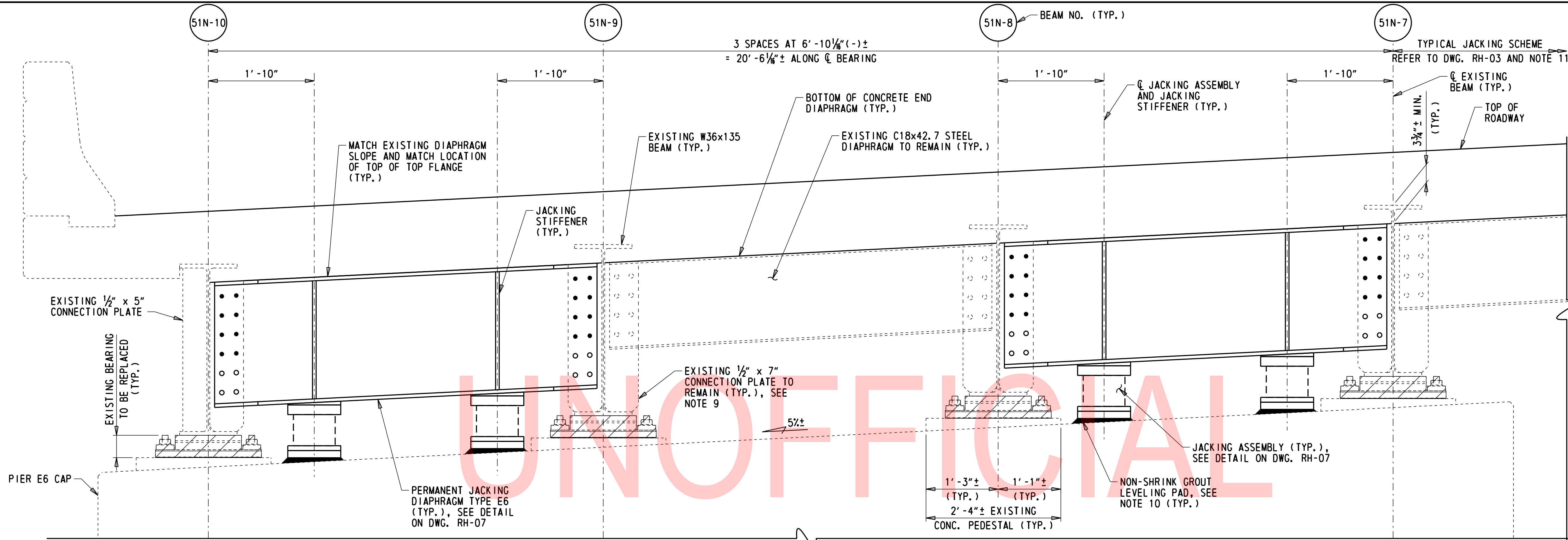
TYPICAL JACKING SCHEME - ELEVATION



TYPICAL JACKING SCHEME - PLAN

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	TYPICAL JACKING SCHEME PLAN AND ELEVATION	RH-03
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
				COUNTY	CHECKED BY: D. NIZAMOFF		SHEET NO.	64
				NEW CASTLE				



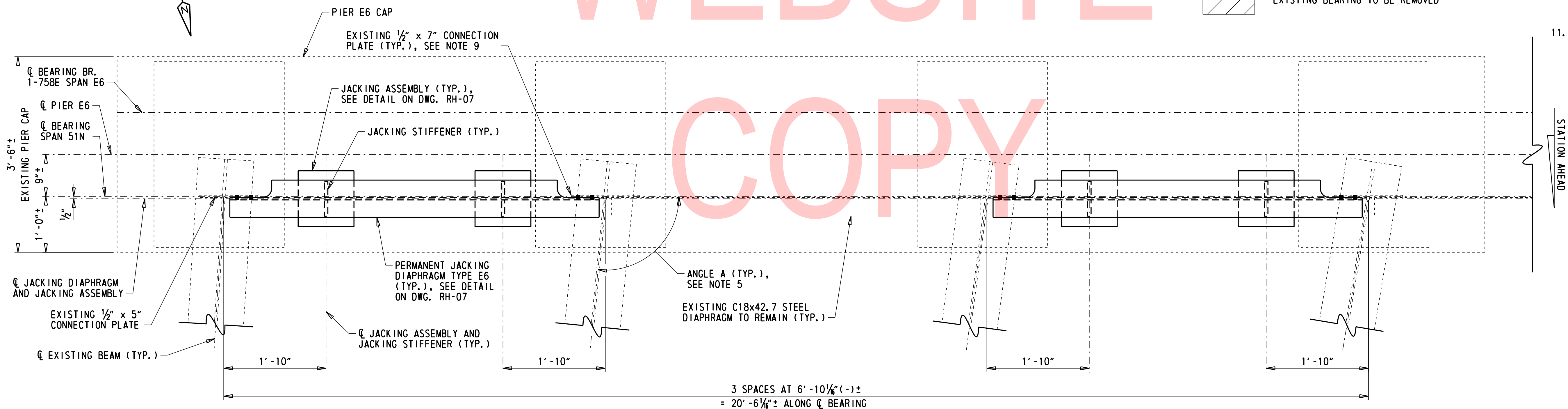
PIER E6 JACKING SCHEME - ELEVATION
(SPAN 51N SHOWN LOOKING SOUTH)
1" = 1'-0"

LEGEND:

- EXISTING 7/8" DIA. BOLT TO BE REMOVED AND NEW 7/8" DIA. BOLT AND 3/4" DIA. HOLE TO BE DRILLED IN EXISTING CONNECTION PLATE AND JACKING DIAPHRAGM
- NEW 7/8" DIA. BOLT AND 3/4" DIA. HOLE TO BE DRILLED IN EXISTING CONNECTION PLATE AND JACKING DIAPHRAGM
- ◊ EXISTING BOLT TO REMAIN
- ▨ - EXISTING BEARING TO BE REMOVED

NOTES:

1. FOR BRIDGE JACKING NOTES, SEE DWG. RH-01.
2. FOR JACKING LOADS FOR SPAN 51N AT PIER E6, SEE DWG. RH-01.
3. FOR JACKING DETAILS, SEE DWG. RH-07.
4. AFTER THE BRIDGE IS SET ON THE NEW BEARINGS, THE PERMANENT JACKING DIAPHRAGMS ARE TO REMAIN IN PLACE AS PART OF THE COMPLETED STRUCTURE.
5. ANGLE A IS TAKEN ON THE LEFT SIDE OF THE GIRDER WHEN LOOKING STATION AHEAD. FOR ANGLE A, SEE DWG. RH-01.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO ORDERING OR FABRICATING THE JACKING DIAPHRAGM.
7. REMOVE THE EXISTING C18x42.7 STEEL DIAPHRAGMS AT THE LOCATIONS OF THE NEW PERMANENT JACKING DIAPHRAGMS. PAYMENT FOR REMOVAL WILL BE UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
8. ALL BOLTS AT THIS LOCATION SHALL BE 7/8" DIA. ASTM F3125 GR. A325. ALL BOLTS ARE DESIGNED WITH THE THREADS EXCLUDED FROM THE SHEAR PLANE. ALL HOLES FOR BOLTS SHALL BE 3/4" DIAMETER.
9. EXISTING STEEL CONNECTION PLATES AT LOCATIONS TO BE IN CONTACT WITH PERMANENT JACKING DIAPHRAGMS SHALL BE CLEANED THOROUGHLY AND A PRIME COAT APPLIED IN CONFORMANCE WITH SECTION 616 PRIOR TO INSTALLING THE PERMANENT JACKING DIAPHRAGM. THE FULL AREA OF THE PERMANENT JACKING DIAPHRAGM TO BE IN CONTACT WITH THE EXISTING CONNECTION PLATES SHALL ALSO BE CLEANED THOROUGHLY AND A PRIME COAT APPLIED IN CONFORMANCE WITH SECTION 616. THE REMAINDER OF THE PERMANENT JACKING DIAPHRAGM SHALL BE FULLY PRIMED AND PAINTED IN CONFORMANCE WITH SECTION 616.
10. PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY BASE PLATE AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING. NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. PAYMENT FOR NON-SHRINK GROUT WILL BE UNDER ITEM 604000 - JACKING BRIDGE.
11. THE JACKING OF BEAMS 51N-7 TO 51N-10 SHALL NOT OCCUR SIMULTANEOUSLY WITH THE JACKING OF BEAMS 51N-1 TO 51N-6 AT PIER 51N.



PIER E6 JACKING SCHEME - PLAN
(SPAN 51N SHOWN)
1" = 1'-0"

NOTE:
BRIDGE 1-758E SPAN E6 BEAMS AND END DIAPHRAGMS NOT SHOWN FOR CLARITY. REFER TO BRIDGE 1-758E PLANS.

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ADDENDA / REVISIONS

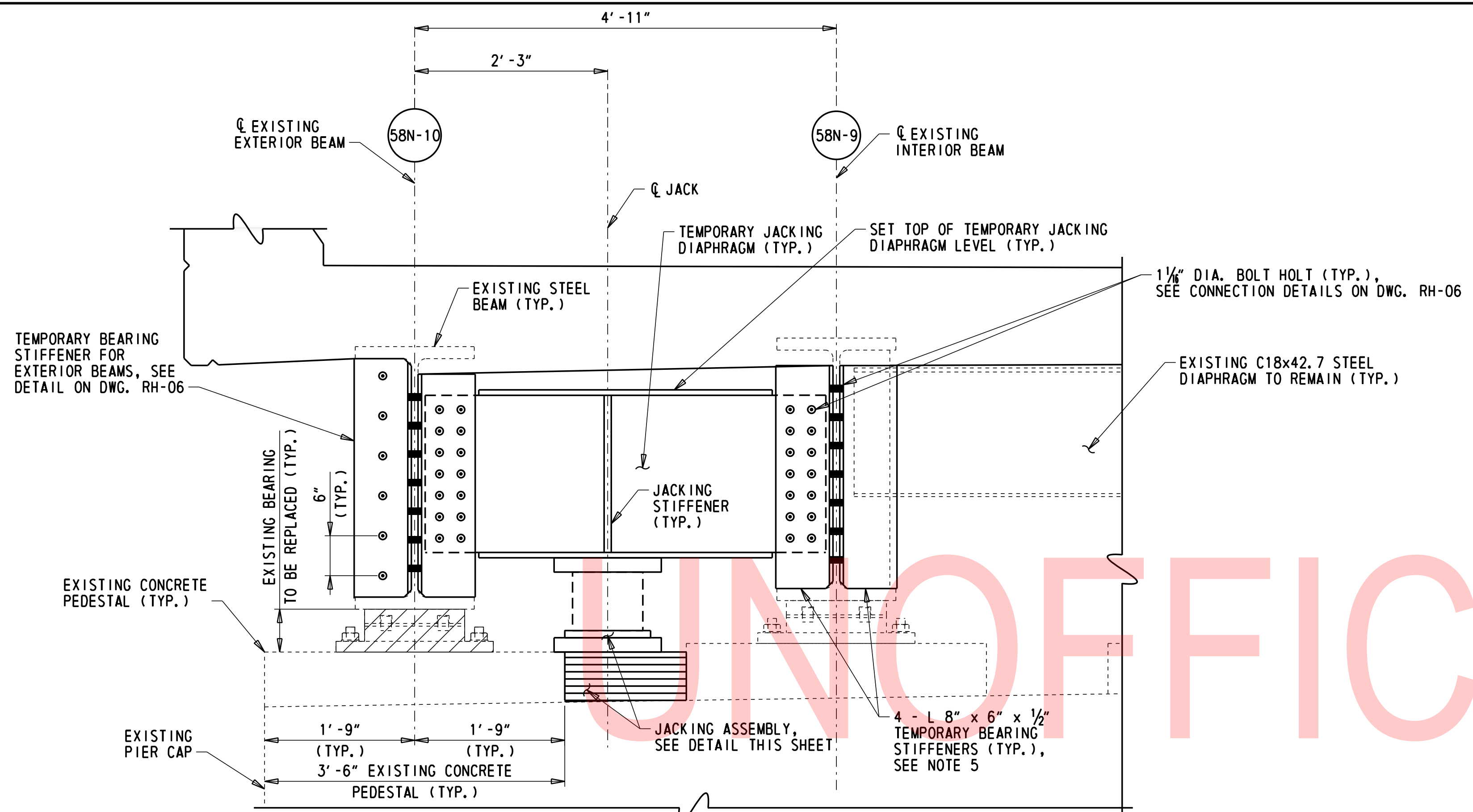
SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

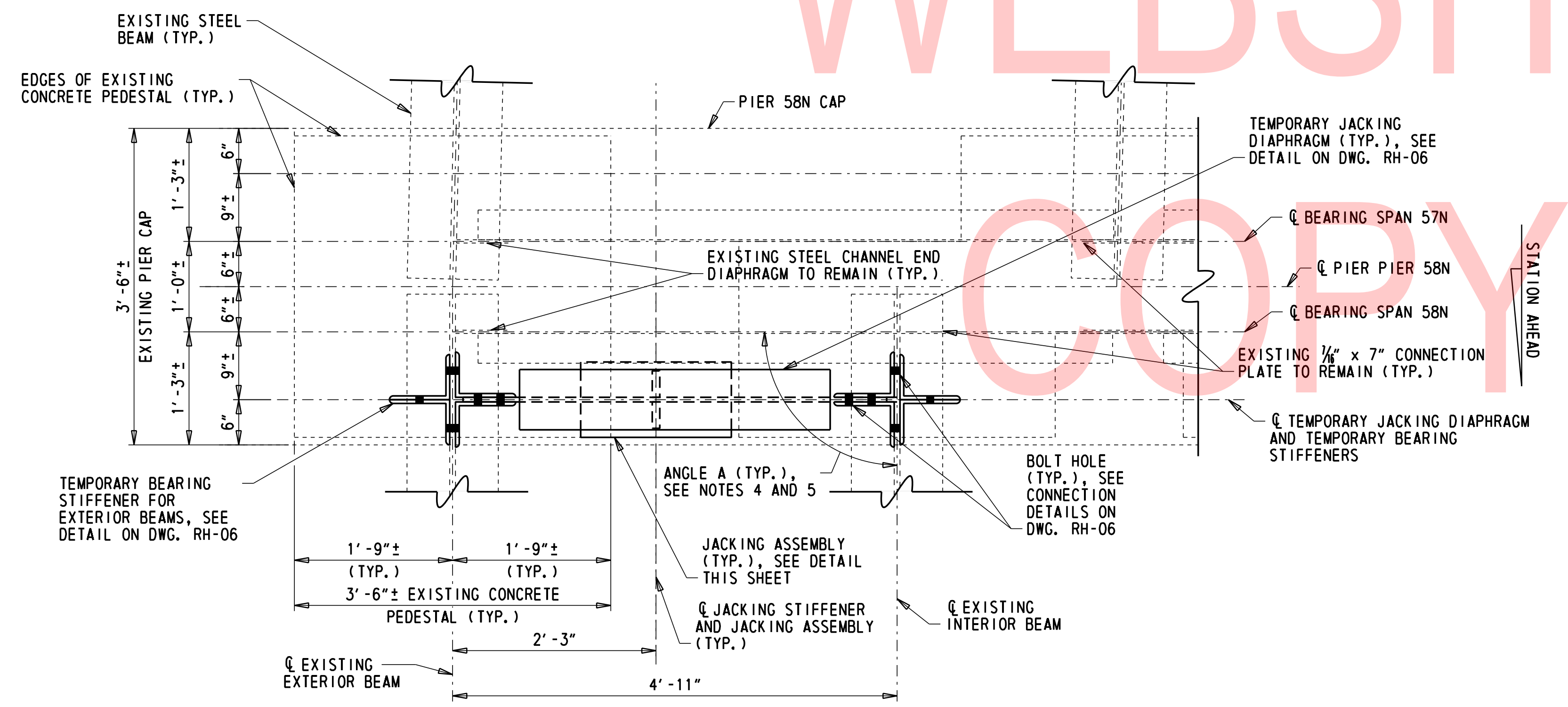
JACKING SCHEME -
SPAN 51N AT PIER E6

RH-04
SECTION
WRA
SHEET NO.
65

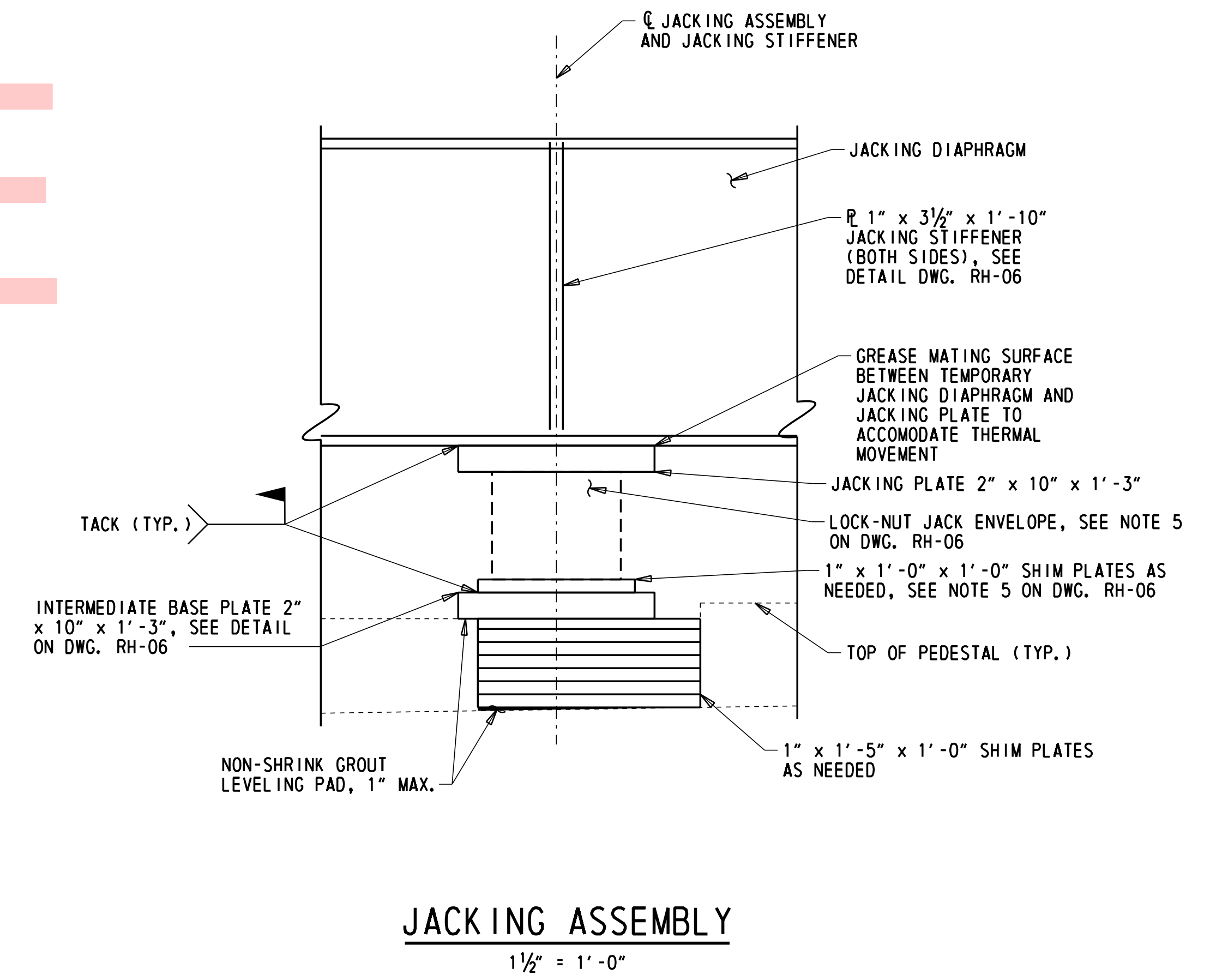


PIER 58N JACKING SCHEME - ELEVATION
 (SPAN 58N SHOWN LOOKING SOUTH)
 1" = 1'-0"

LEGEND:
 ○ - PROPOSED 1" DIA. BOLT IN 1 1/4" DIA. HOLE IN TEMPORARY JACKING DIAPHRAGM, TEMPORARY BEARING STIFFENER, OR EXISTING STEEL BEAM WEB
 ▨ - EXISTING BEARING TO BE REMOVED



PIER 58N JACKING SCHEME - PLAN
 (SPAN 58N SHOWN)
 1" = 1'-0"

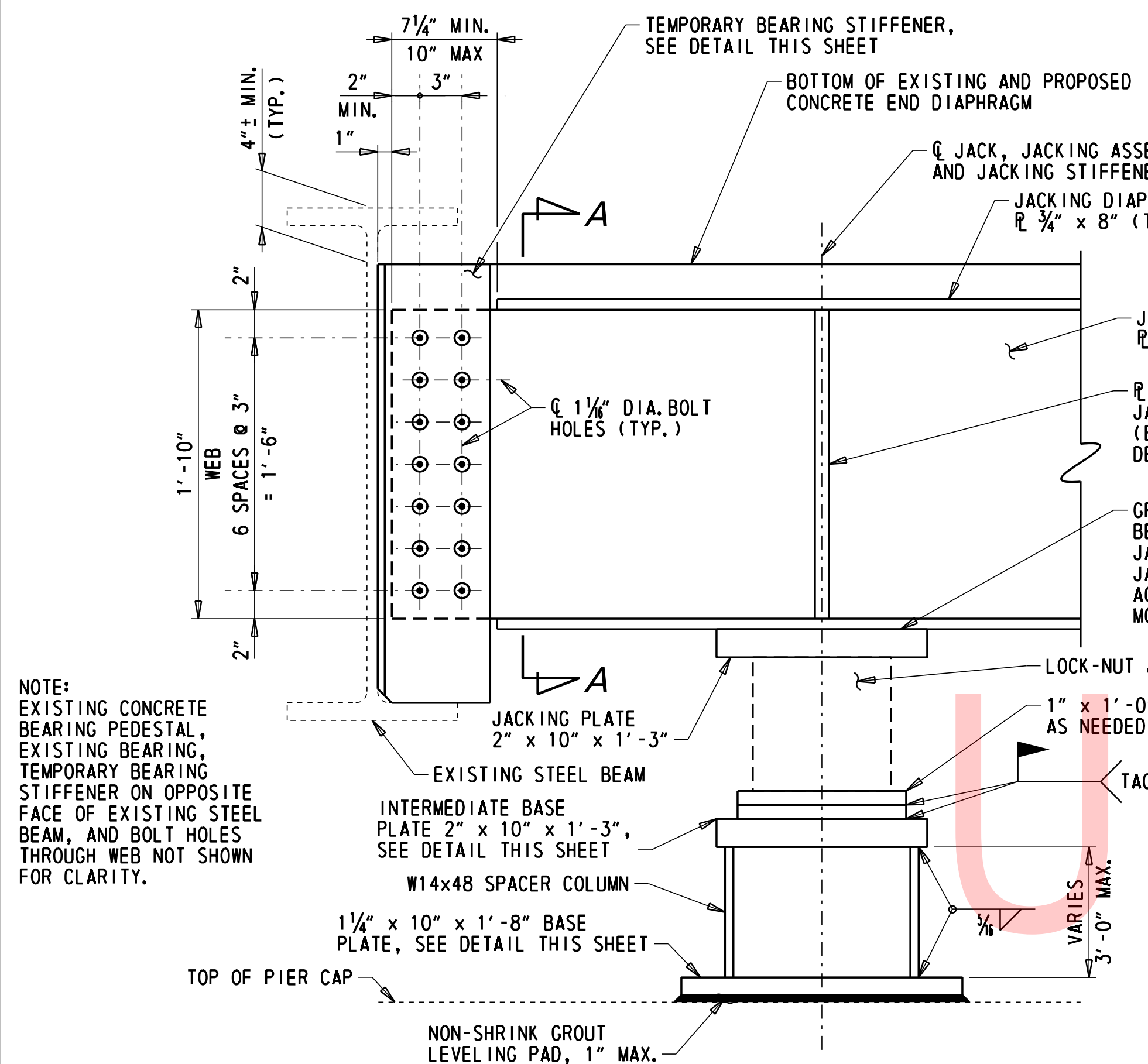


JACKING ASSEMBLY
 1 1/2" = 1'-0"

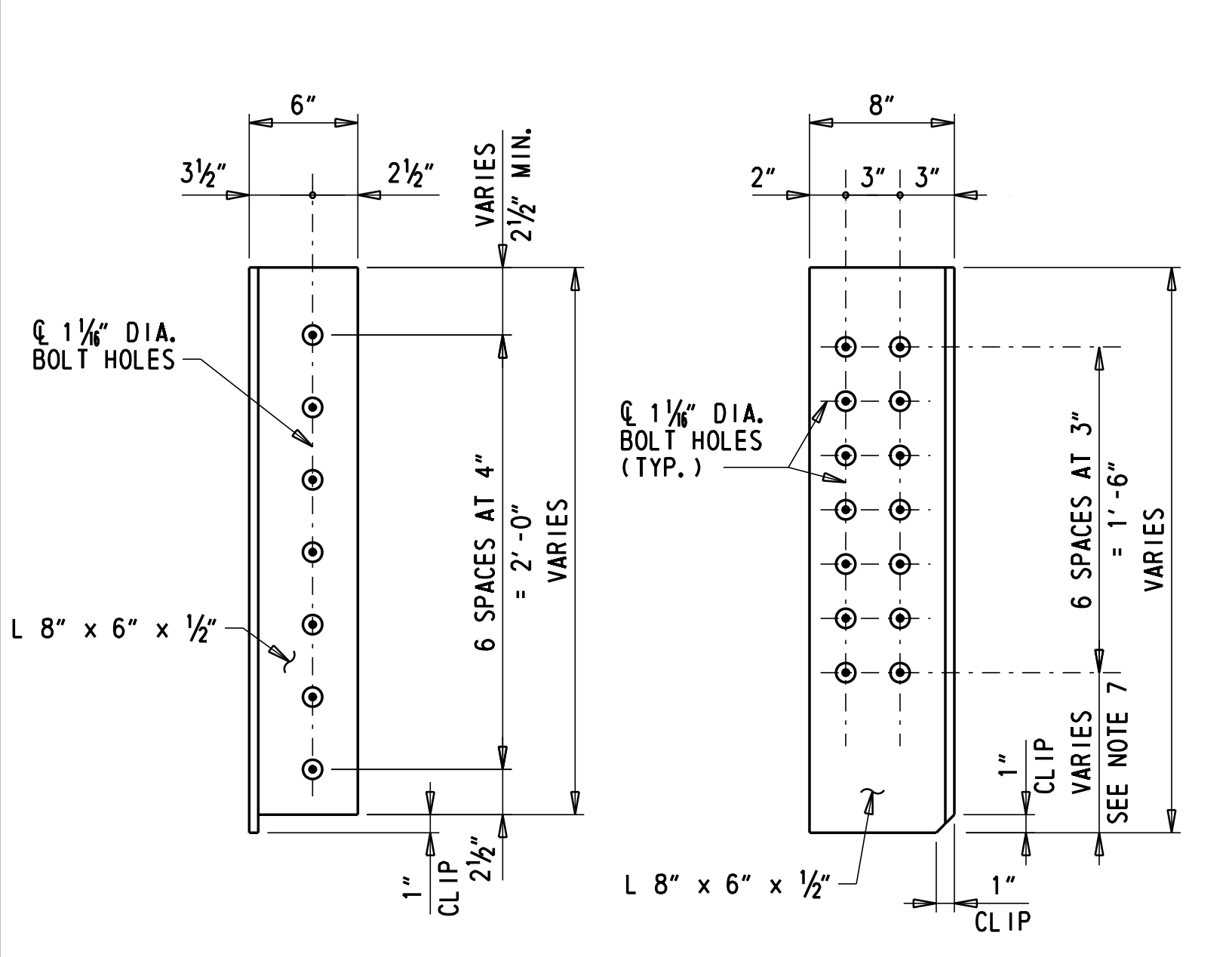
- NOTES:**
1. FOR JACKING NOTES, SEE DWG. RH-01.
 2. FOR LOADS FOR JACKING FOR SPAN 58N AT PIER 58N, SEE DWG. RH-01.
 3. FOR JACKING DETAILS, SEE DWG. RH-06.
 4. ANGLE A IS TAKEN ON THE LEFT SIDE OF THE GIRDER WHEN LOOKING STATION AHEAD. FOR ANGLE A, SEE DWG. RH-01.
 5. FOR TEMPORARY BEARING STIFFENERS ON SKEWED SPANS, CONTRACTOR SHALL FIELD ADJUST OR FABRICATE A NEW STEEL ANGLE TO ACCOUNT FOR THE SKEW. CONTRACTOR MAY PRESENT ALTERNATE STEEL MEMBERS FOR TEMPORARY BEARING STIFFENERS ON SKEWED SPANS. COST FOR FABRICATING A NEW STEEL ANGLE WILL BE INCIDENTAL TO ITEM 604000- JACKING BRIDGE.
 6. PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY SHIM PLATES AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING. NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. PAYMENT FOR NON-SHRINK GROUT WILL BE UNDER ITEM 604000 - JACKING BRIDGE.
 7. ALL BOLTS SHOWN ON THIS SHEET SHALL BE 1" DIAMETER.

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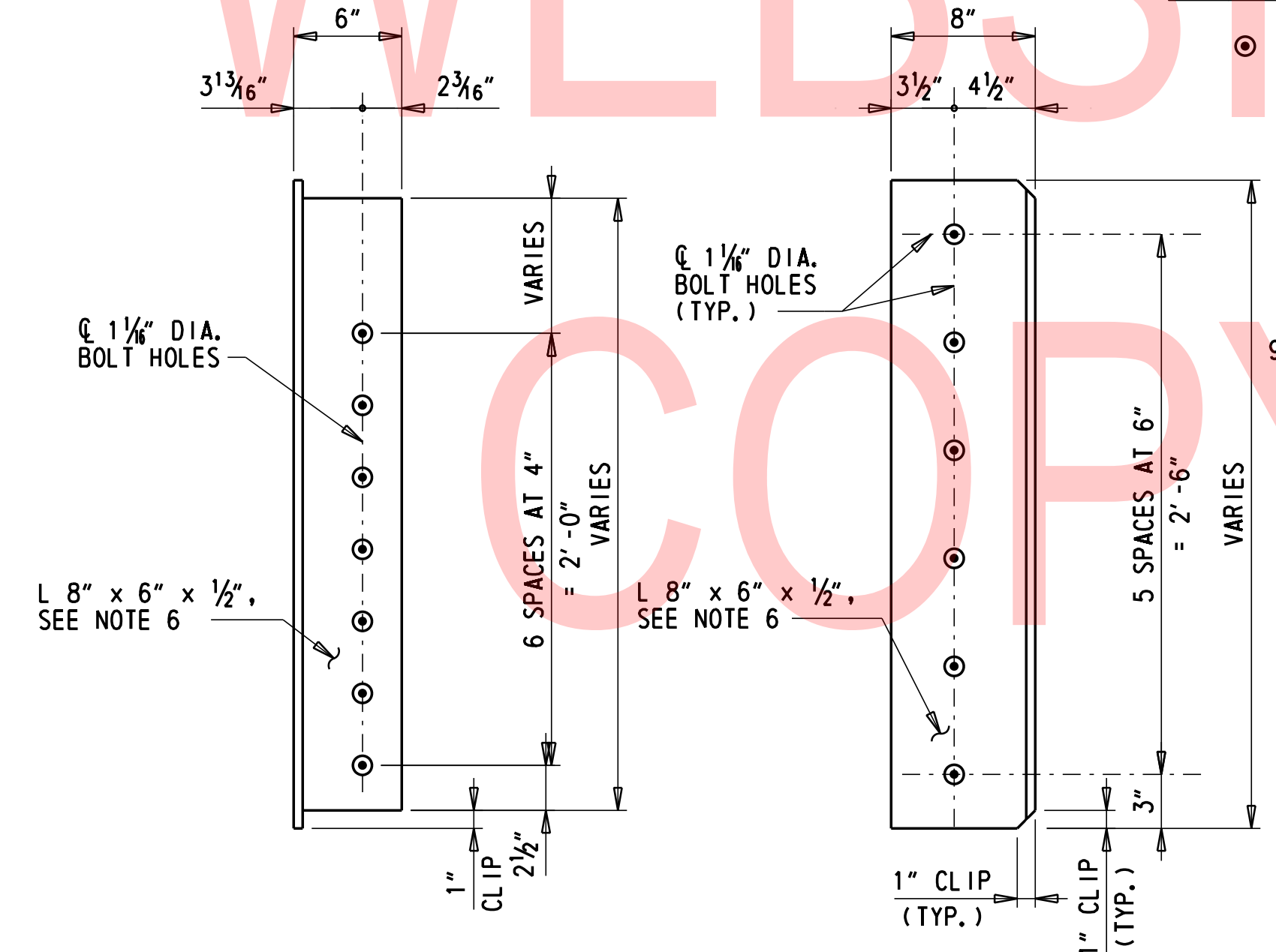
ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	SECTION
				T201907404	DESIGNED BY: K. AMBROSE	JACKING SCHEME - SPAN 58N AT PIER 58N	
			COUNTY	NEW CASTLE	CHECKED BY: D. NIZAMOFF		SHEET NO.
							RH-05



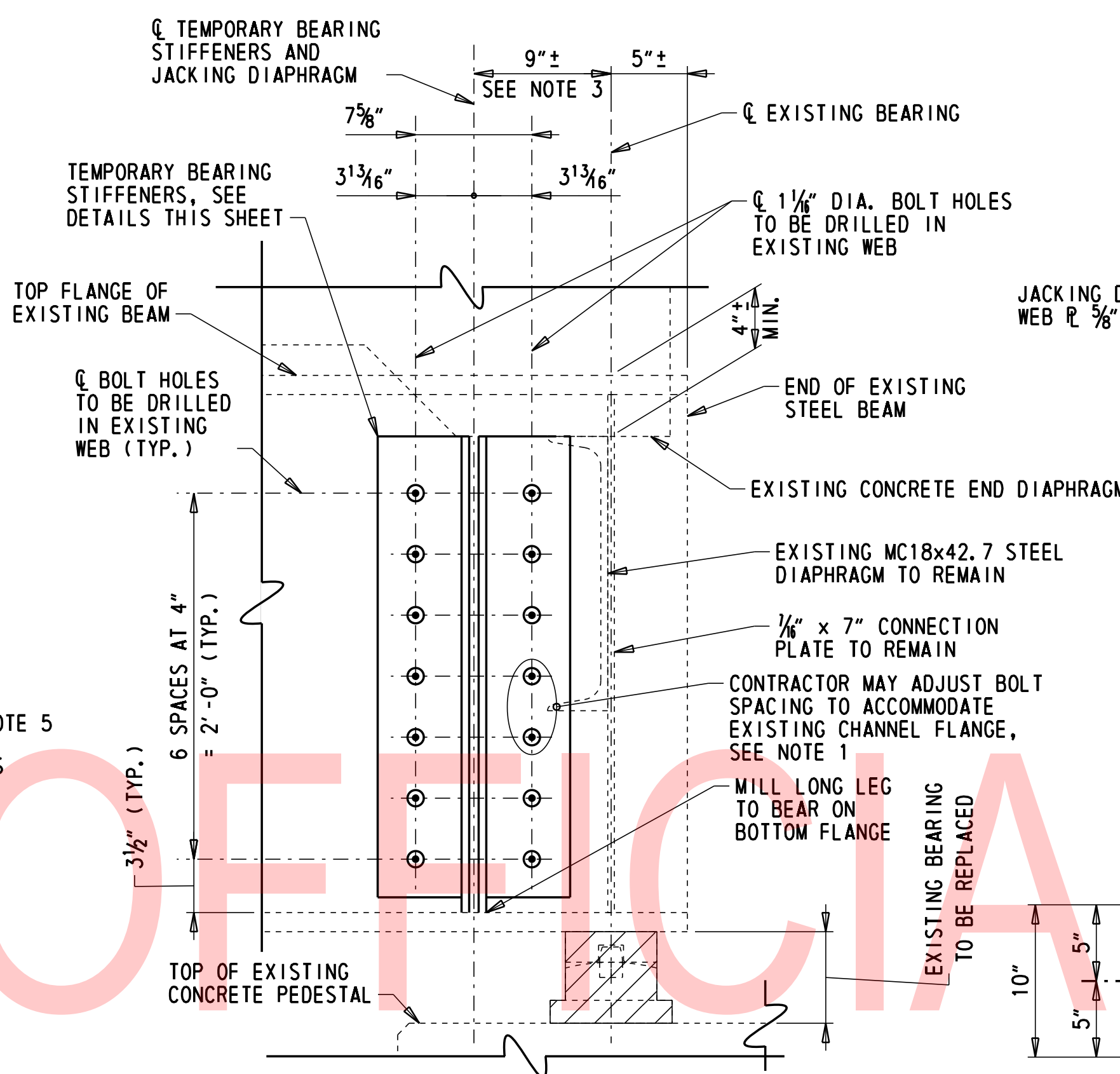
JACKING DIAPHRAGM AND JACKING ASSEMBLY
1 1/2" = 1'-0"



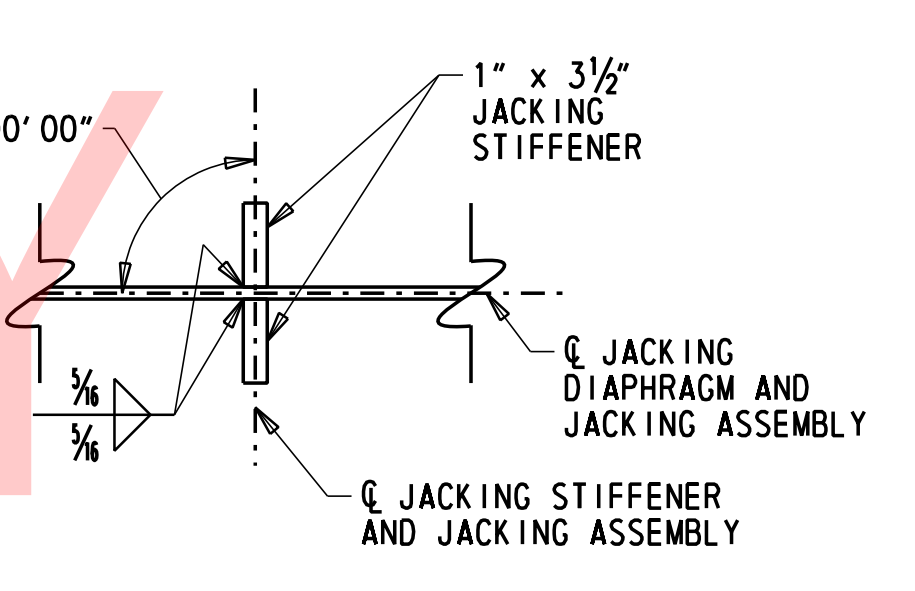
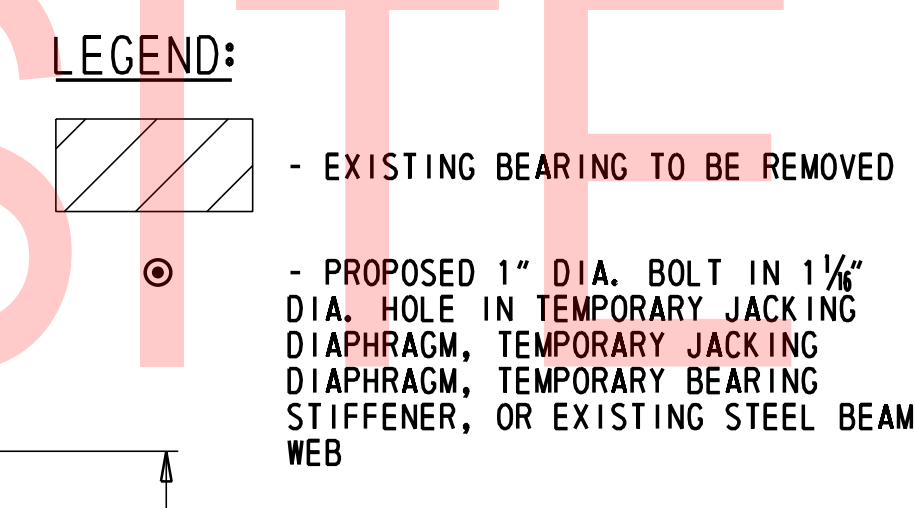
TEMPORARY BEARING STIFFENER DETAIL
1 1/2" = 1'-0"



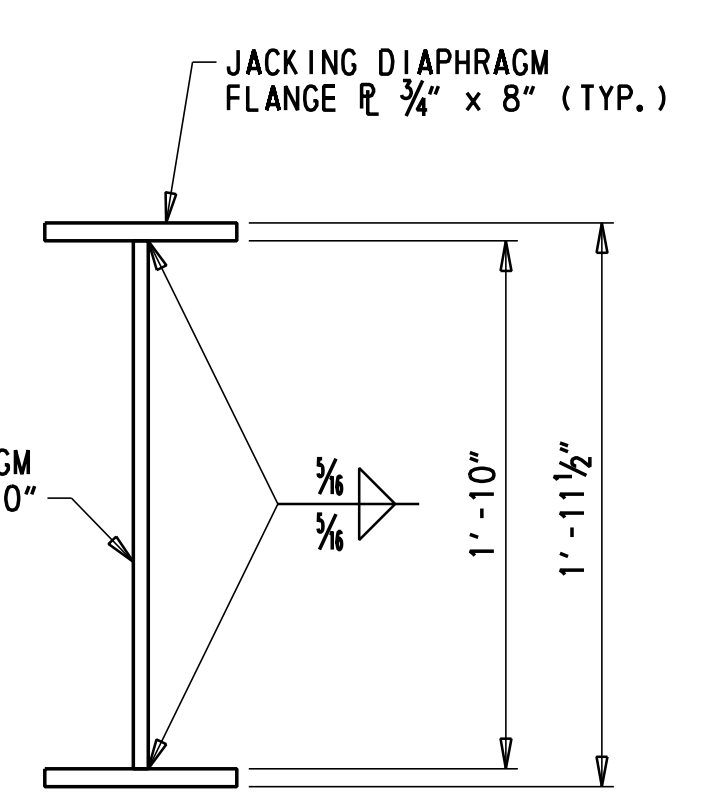
TEMPORARY BEARING STIFFENER DETAIL FOR EXTERIOR BEAMS
1 1/2" = 1'-0"



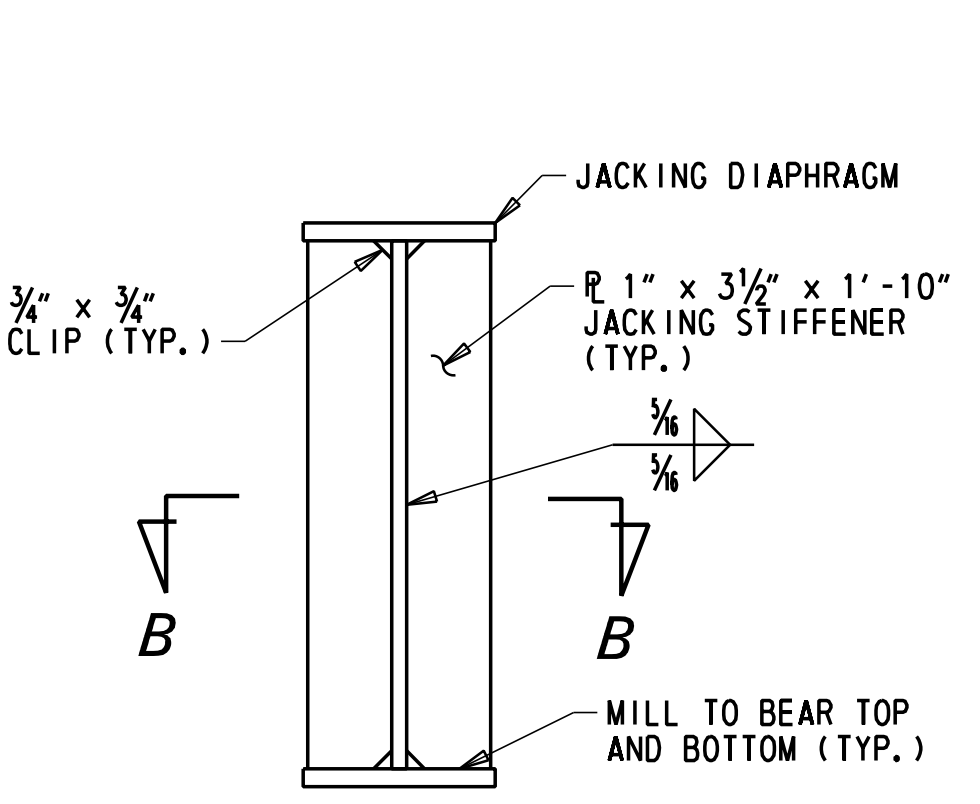
TEMPORARY BEARING STIFFENER - ELEVATION
1 1/2" = 1'-0"



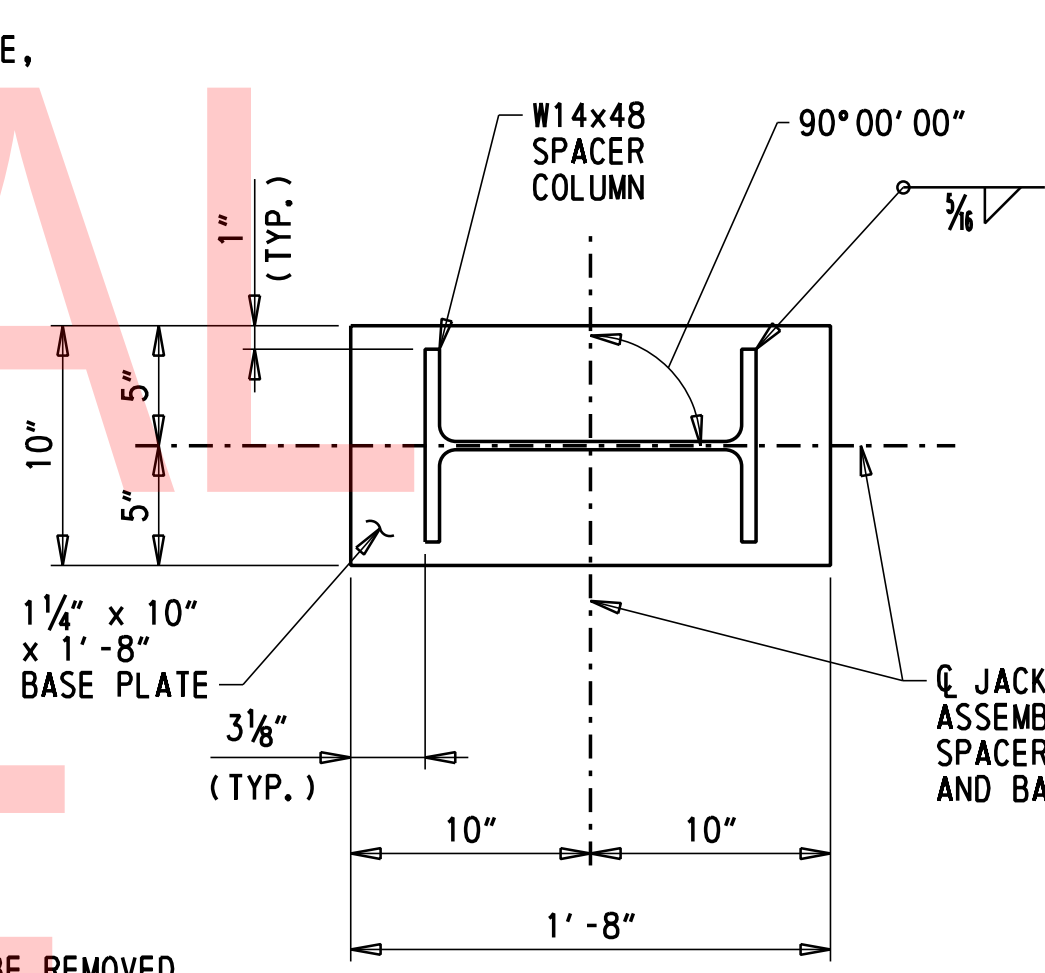
SECTION B-B
1 1/2" = 1'-0"



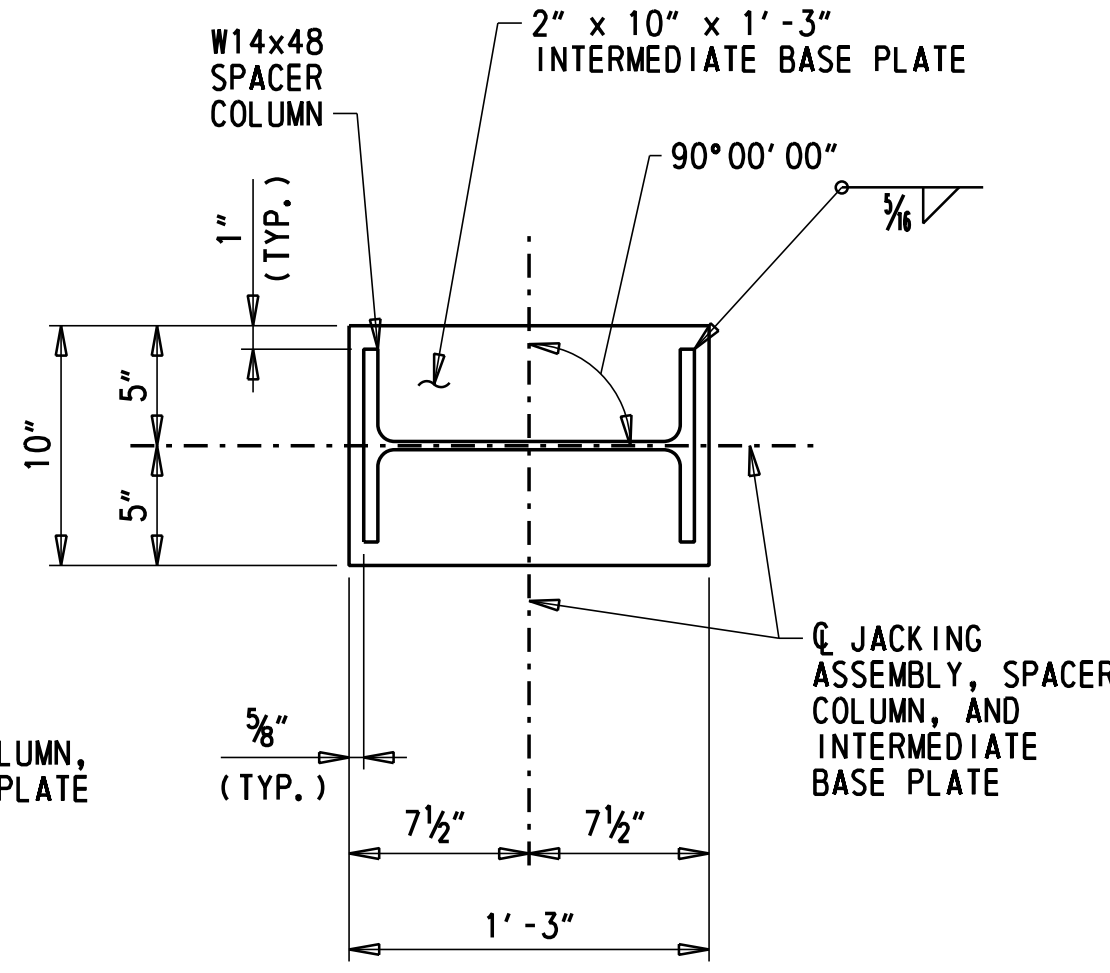
SECTION A-A
1 1/2" = 1'-0"



JACKING STIFFENER DETAIL
1 1/2" = 1'-0"



BASE PLATE DETAIL
1 1/2" = 1'-0"



INTERMEDIATE BASE PLATE DETAIL
1 1/2" = 1'-0"

- NOTES:**
- MINIMUM BOLT SPACING FOR 1" DIAMETER BOLTS IS 3".
MAXIMUM BOLT SPACING FOR 1" DIAMETER BOLTS IS 6".
MINIMUM EDGE DISTANCE IS 1 3/4".
MAXIMUM EDGE DISTANCE IS 4".
 - REFER TO DWG. RH-01 FOR BRIDGE JACKING NOTES.
 - DIMENSION SHOWN IS MEASURED PERPENDICULAR TO THE CENTERLINE OF BEARING FOR BOTH TANGENT AND SKEWED SPANS. ON SKEWED SPANS, THE LOCATION OF THE DRILLED HOLES ALONG THE STRINGER WEB WILL VARY BASED ON SKEW ANGLE.
 - CONTRACTOR MAY PROPOSE ALTERNATE TEMPORARY BEARING STIFFENER MEMBERS FOR SKEWED SPANS. ANY ALTERNATE SECTION SHALL HAVE SIMILAR OR BETTER STRUCTURAL PROPERTIES THAN THE DETAIL SHOWN. ALTERNATE DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. THERE IS NO GUARANTEE THAT ALTERNATE DETAILS WILL BE APPROVED AND THE ENGINEER RESERVES THE RIGHT TO REJECT ANY ALTERNATE SECTION FOR ANY REASON.
 - JACK ENVELOPE WILL VARY BASED ON CONTRACTOR'S SELECTED HYDRAULIC LOCK-NUT JACK. CONTRACTOR SHALL VERIFY PRIOR TO ORDERING JACKS THAT THE JACKING ASSEMBLY HAS SUFFICIENT AREA TO SUPPORT THE SELECTED JACK. ADJUST SHIM PLATE PLAN AREA AS NEEDED TO SUPPORT SELECTED JACK. SHIM PLATES WILL BE LIMITED TO A MAXIMUM HEIGHT OF 1'-0", ADJUST SPACER COLUMN AS NECESSARY.
 - TEMPORARY BEARING STIFFENER DETAIL FOR EXTERIOR BEAMS SHALL BE USED ONLY ON THE EXTERIOR FACE OF EXTERIOR BEAMS OR IN BAYS WHICH WILL NOT HAVE JACKING DIAPHRAGMS AS INDICATED ON DWG. RH-01 AND RH-02. ALL BAYS TO RECEIVE JACKING DIAPHRAGMS SHALL UTILIZE THE TEMPORARY BEARING STIFFENER DETAIL AS SHOWN ON THIS SHEET.
 - BOLT HOLES IN THE LONG LEG OF THE TEMPORARY BEARING STIFFENER SHALL BE POSITIONED VERTICALLY AS NEEDED TO ALLOW JACKING DIAPHRAGM TO BE INSTALLED LEVEL BETWEEN EXISTING BEAMS.
 - NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH SUBSECTION 1047.02. PAYMENT FOR NON-SHRINK GROUT WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.

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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

**TYPICAL
JACKING DETAILS**

RH-06
SECTION
WRA
SHEET NO.
67

NOTES:

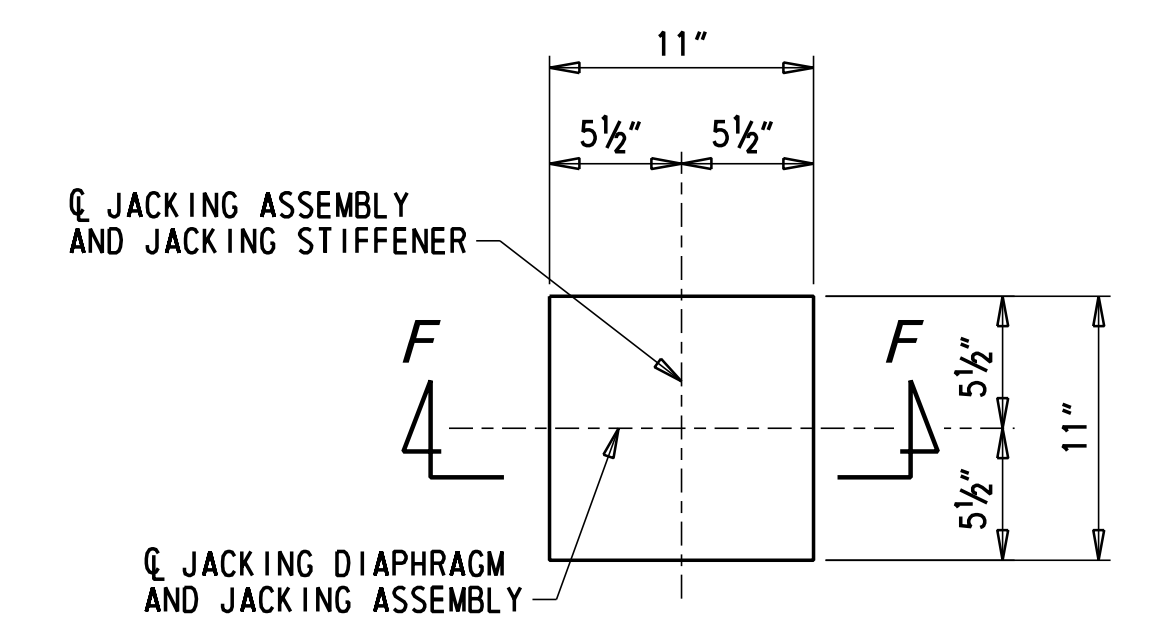
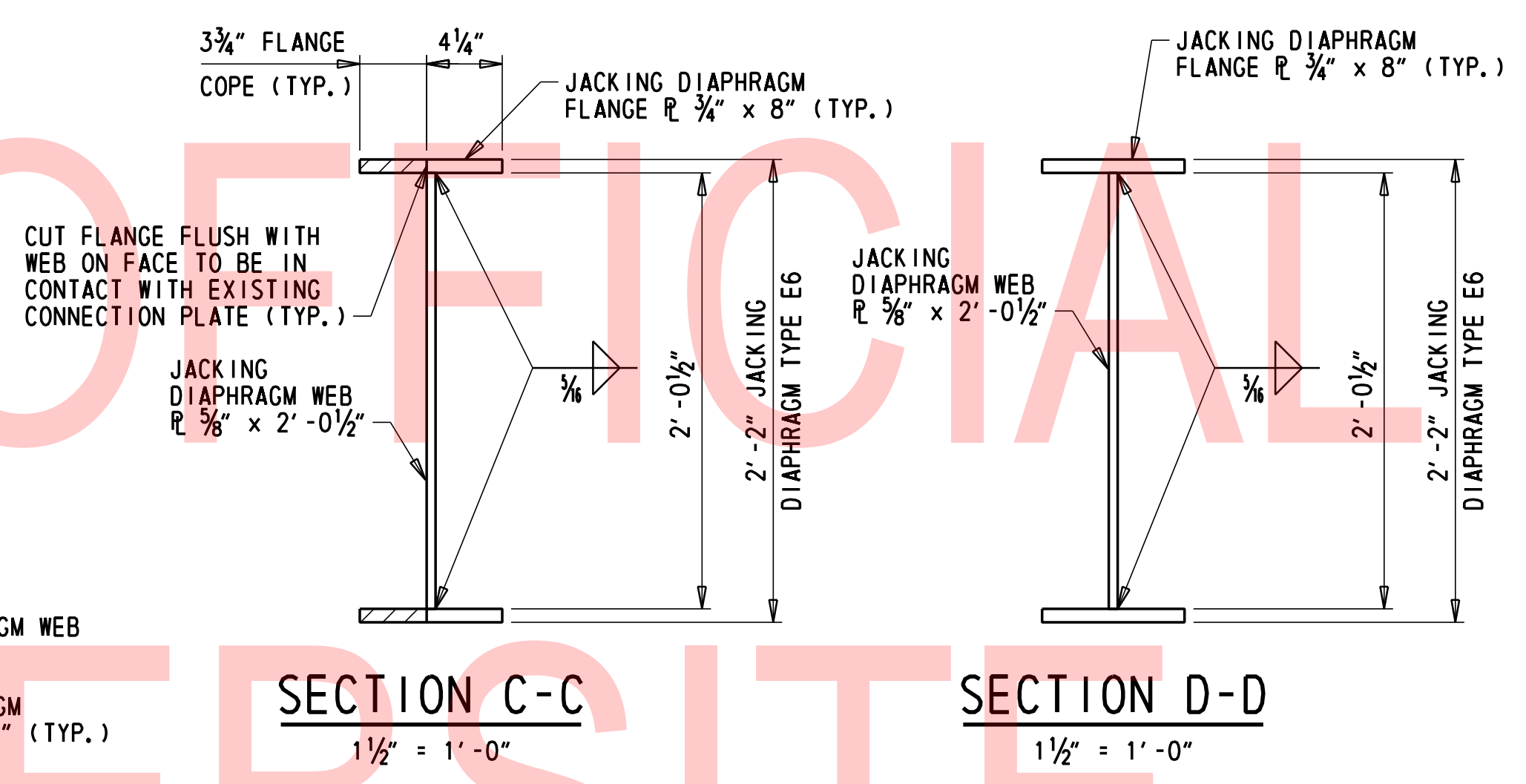
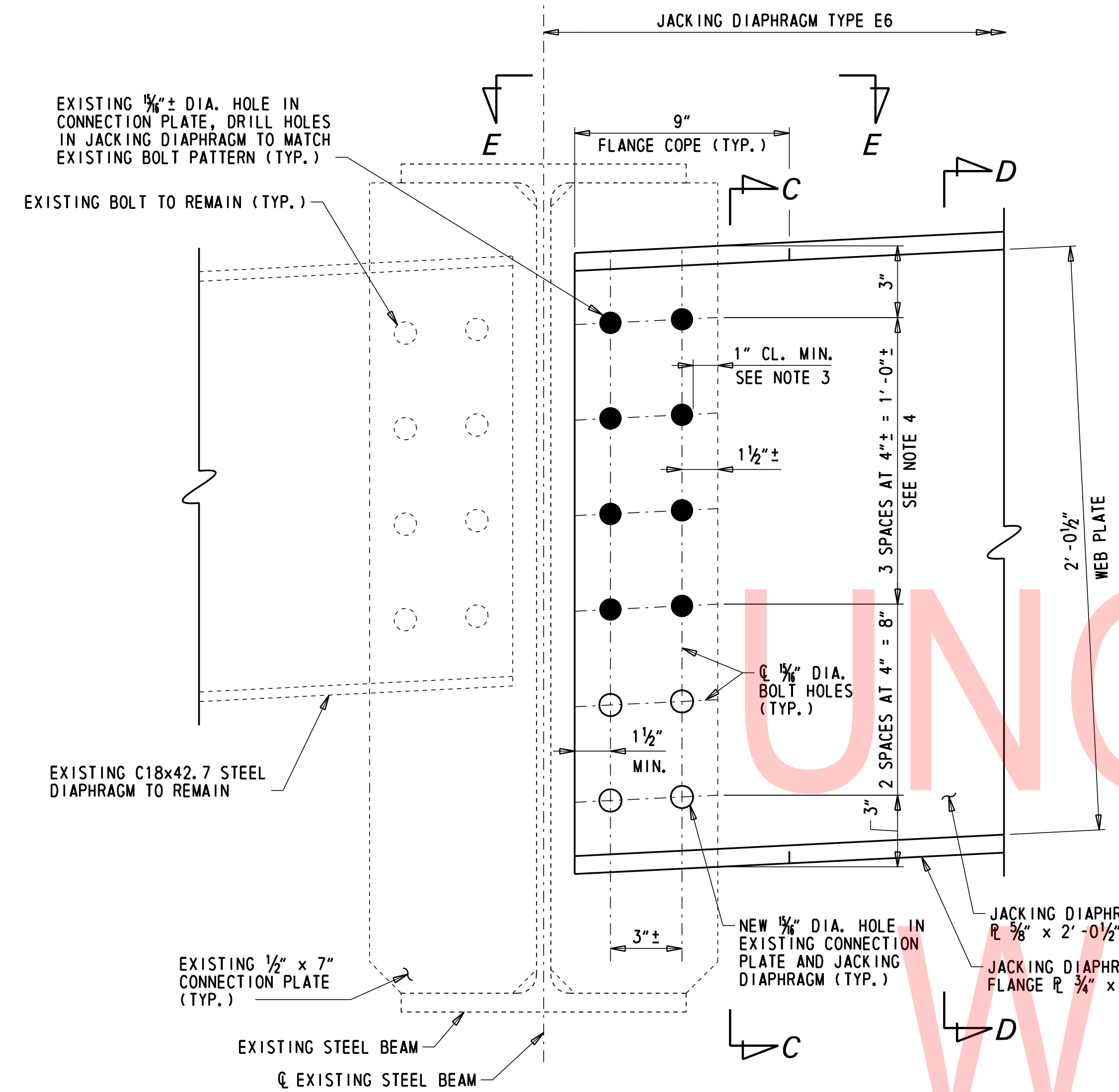
- JACKING DETAILS SHOWN ON THIS SHEET ARE TO ONLY BE USED FOR PIER E6 JACKING SCHEME SHOWN ON DWG. RH-04. FOR JACKING DETAILS FOR THE TYPICAL JACKING SCHEME AS SHOWN ON DWG. RH-03, SEE DWG. RH-06.
- SEE DWG. RH-01 FOR BRIDGE JACKING NOTES.
- CONTRACTOR SHALL VERIFY THE EXISTING BOLT CLEARANCE PRIOR TO ORDERING OR FABRICATING MATERIAL. THE MINIMUM CLEARANCE BETWEEN THE EDGE OF THE BOLT HOLE AND THE EDGE OF THE EXISTING CONNECTION PLATE IS 1". IF THE EXISTING CLEARANCE OR THE CLEARANCE AFTER DRILLING THE HOLE TO SIZE WILL RESULT IN LESS THAN 1" CLEARANCE, NOTIFY THE ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL VERIFY THE EXISTING BOLT SPACING PRIOR TO ORDERING OR FABRICATING MATERIAL. IF VERTICAL OR HORIZONTAL SPACING VARIES FROM THOSE SHOWN ON THESE PLANS, NOTIFY THE ENGINEER IMMEDIATELY.
- JACK ENVELOPE WILL BE BASED ON CONTRACTOR'S SELECTED JACK. CONTRACTOR SHALL VERIFY PRIOR TO ORDERING JACKS THAT THE JACKING ASSEMBLY HAS SUFFICIENT AREA TO SUPPORT THE SELECTED JACK. ADJUST SHIM PLATE PLAN AREA AS NEEDED TO SUPPORT SELECTED JACK. SHIM PLATES WILL BE LIMITED TO A MAXIMUM HEIGHT OF 1'-0".
- AFTER THE BRIDGE IS SET ON THE NEW BEARINGS, THE JACKING DIAPHRAGMS ARE TO REMAIN IN PLACE AS PART OF THE COMPLETED STRUCTURE.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. PAYMENT FOR NON-SHRINK GROUT WILL BE UNDER ITEM 604000 - JACKING BRIDGE.
- A BEVELED JACKING PLATE MAY BE SUBSTITUTED AT NO ADDITIONAL COST TO THE DEPARTMENT. IF SINGLE PLATE IS USED, FIELD WELDING TO DIAPHRAGM IS OMITTED.

LEGEND:

- EXISTING 7/8" DIA. BOLT TO BE REMOVED AND NEW 7/8" DIA. BOLT AND 1/4" DIA. HOLE TO BE DRILLED IN EXISTING CONNECTION PLATE AND JACKING DIAPHRAGM
- NEW 7/8" DIA. BOLT AND 1/4" DIA. HOLE TO BE DRILLED IN EXISTING CONNECTION PLATE AND JACKING DIAPHRAGM
- EXISTING BOLT TO REMAIN

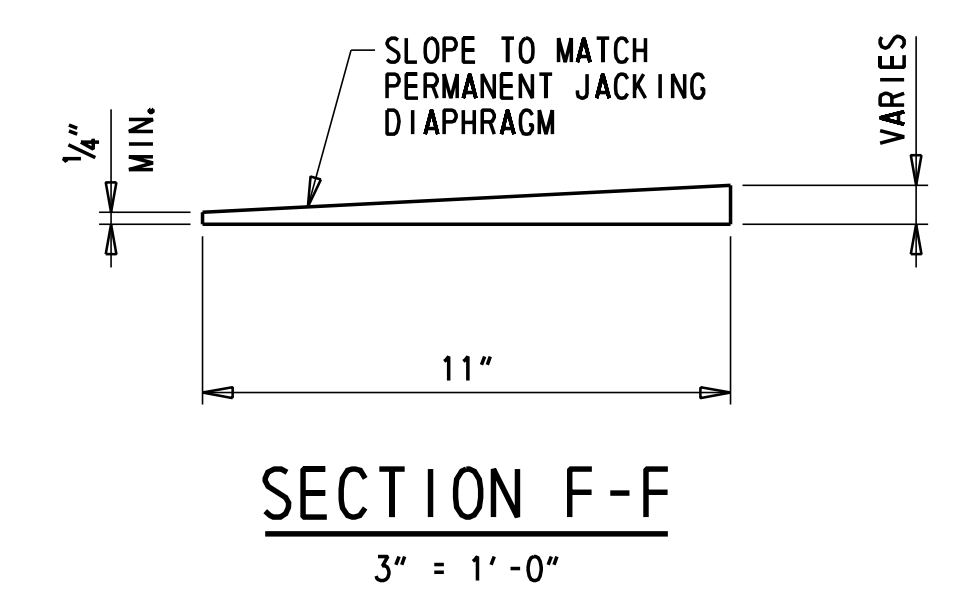
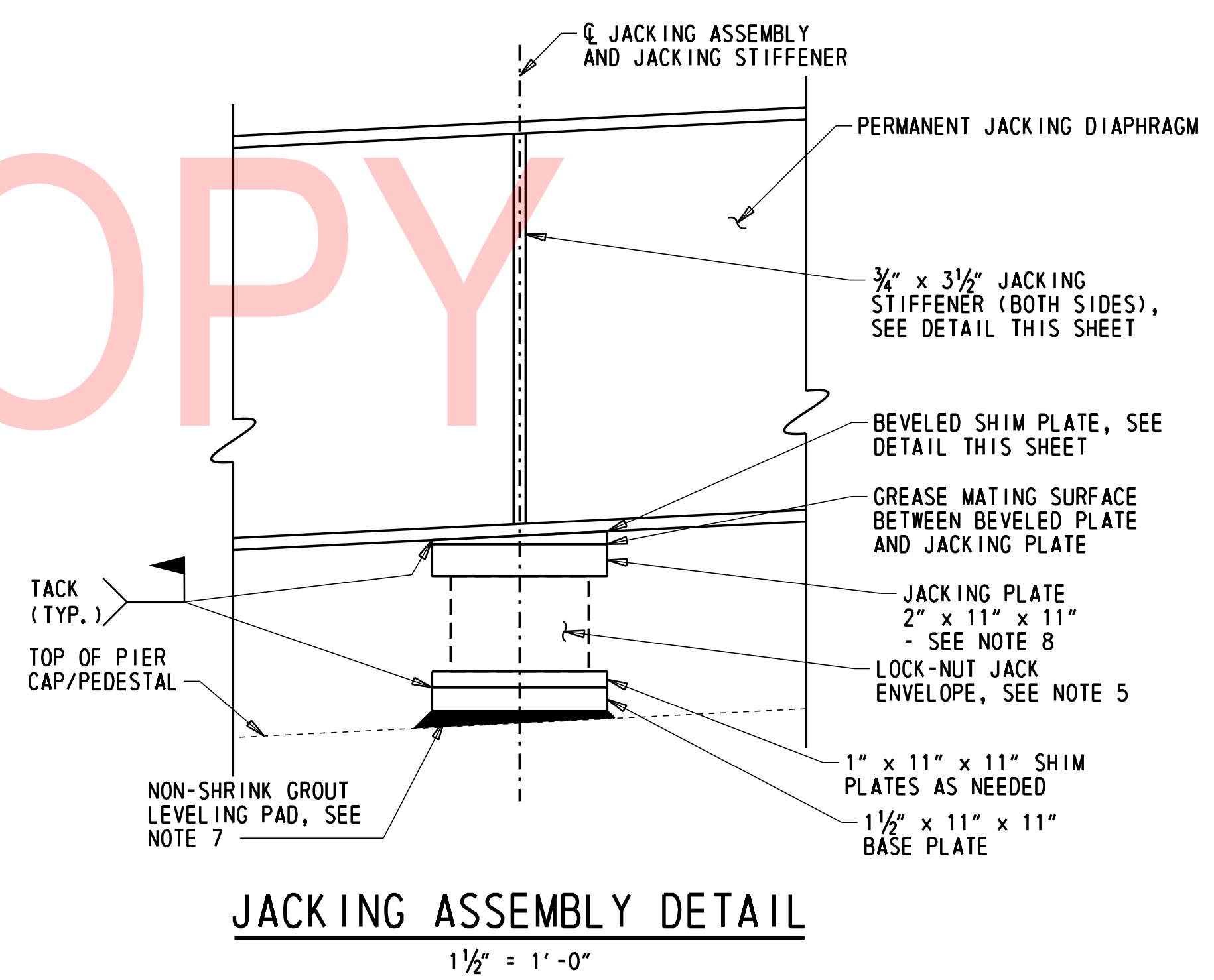
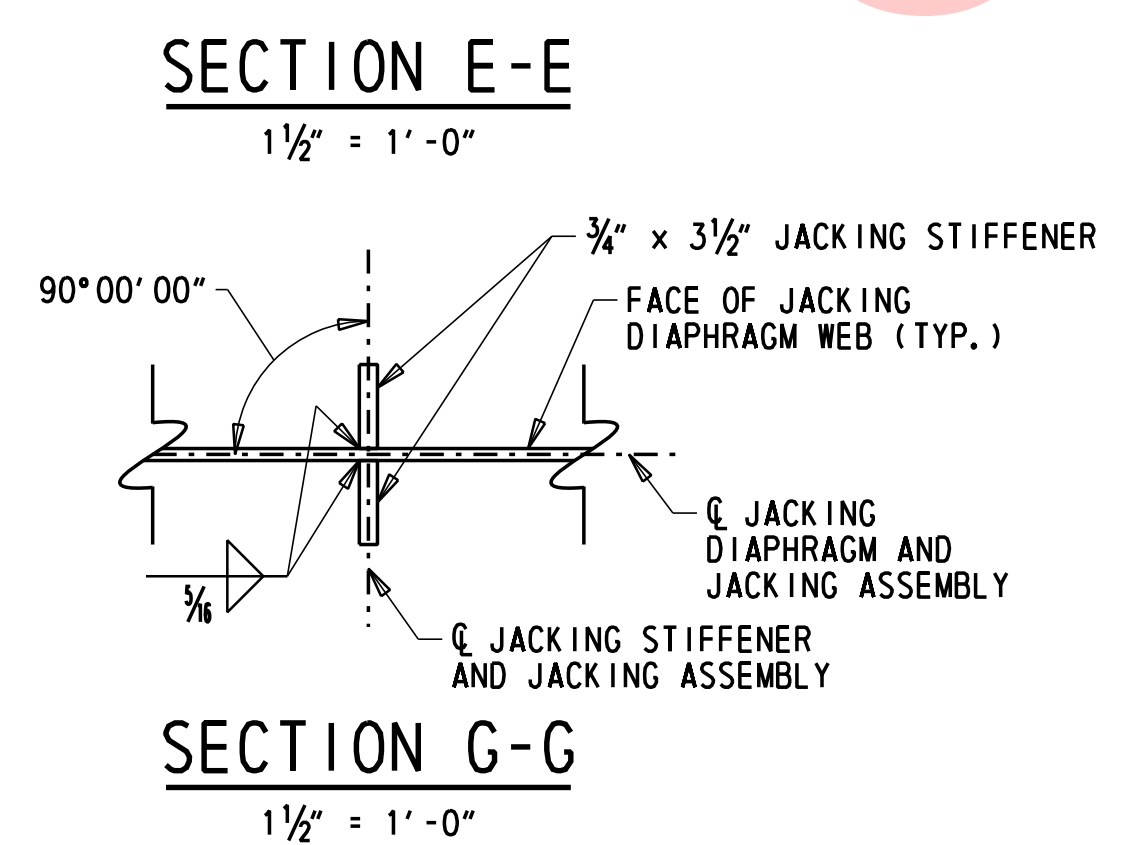
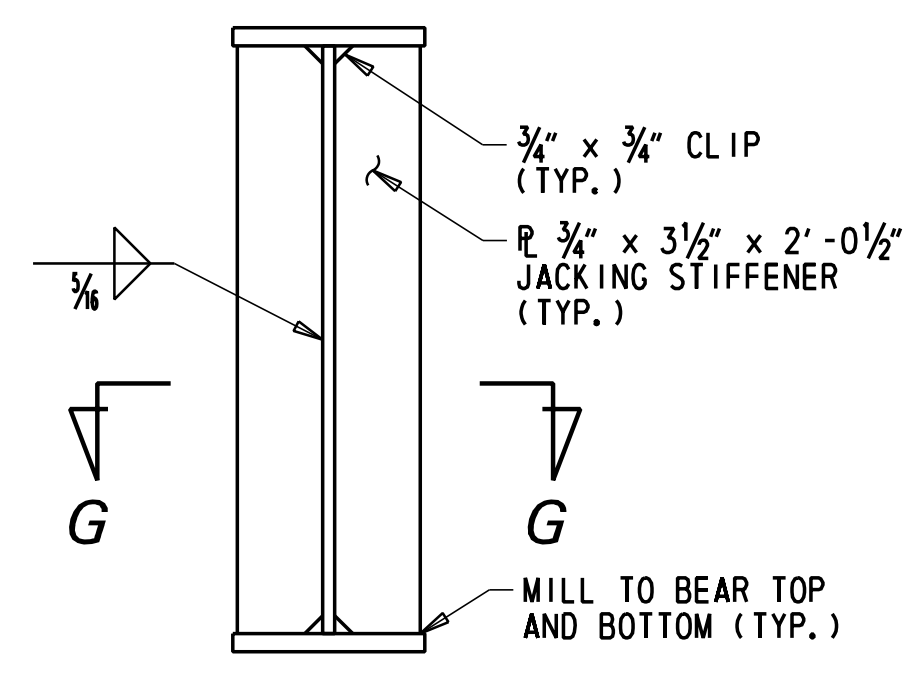
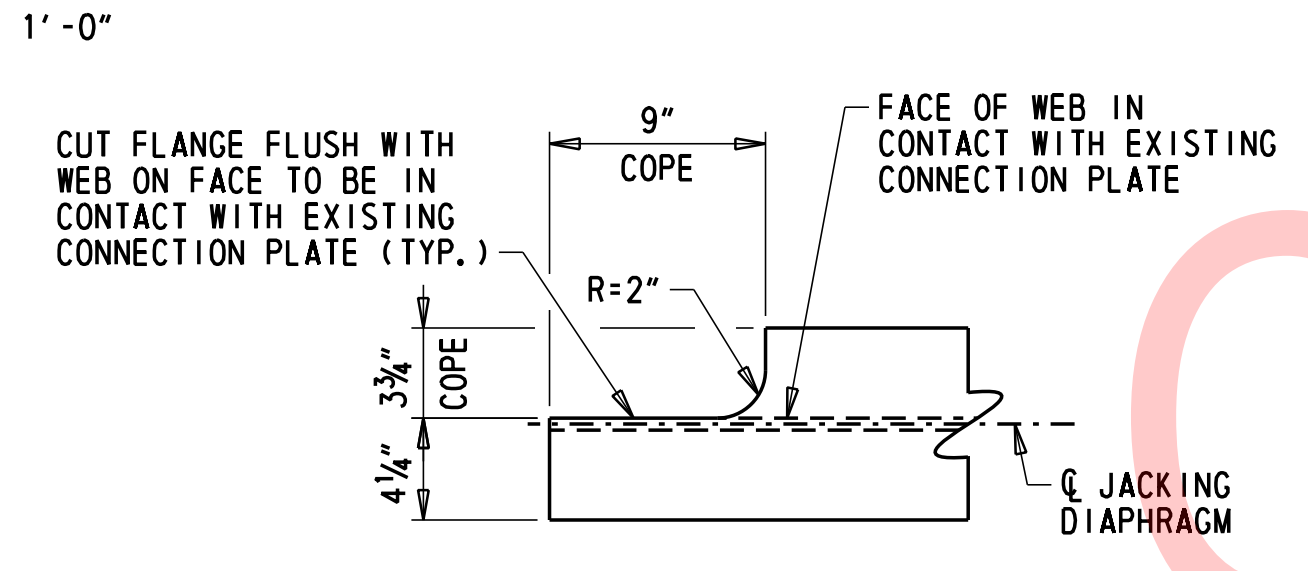
LEGEND:

- ▨ - PORTION OF FLANGE TO BE COPED



PERMANENT JACKING DIAPHRAGM TYPE E6 DETAILS

NOTE:
EXISTING BEAM 51N-8
SHOWN, OTHERS SIMILAR



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ADDENDA / REVISIONS

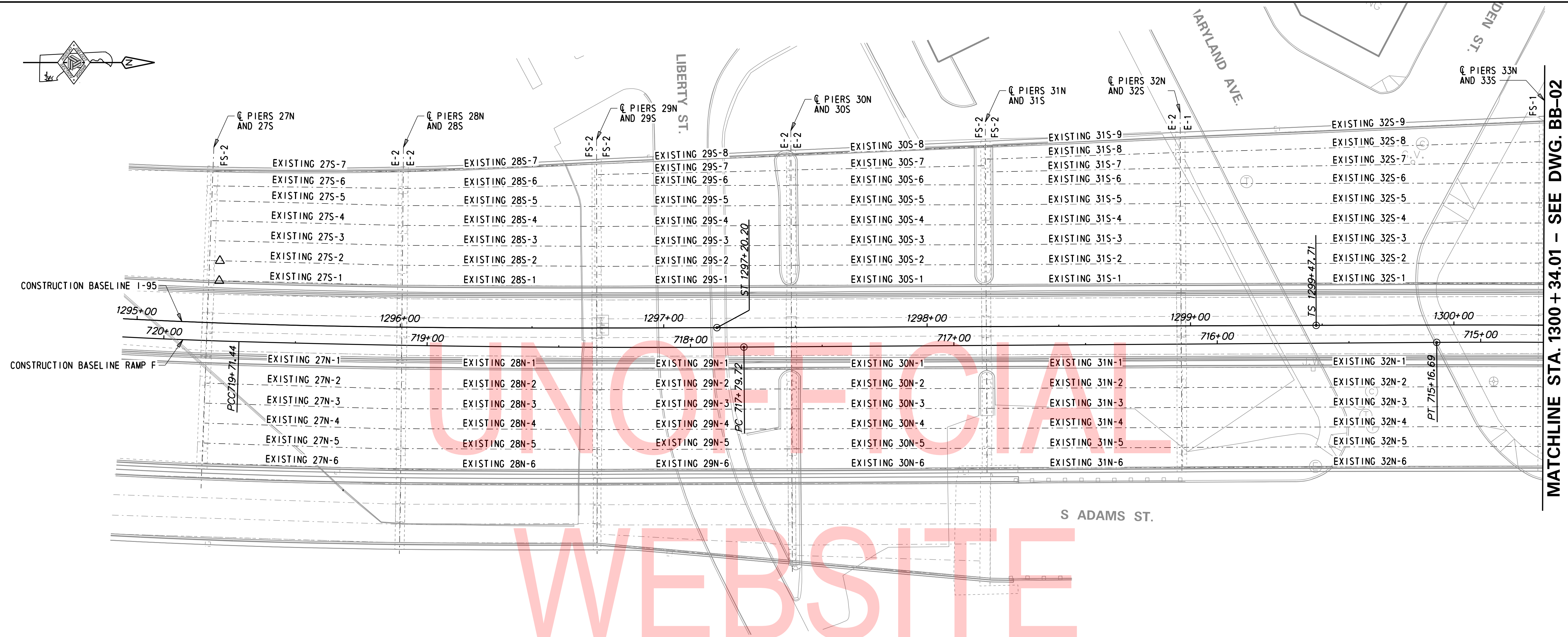
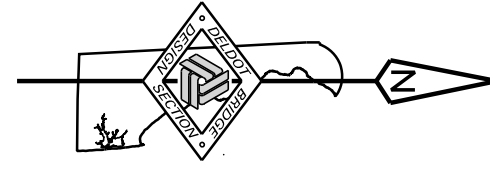
SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS
----------------	---

CONTRACT T201907404	BRIDGE NO. 1 748 N&S
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF

SECTION WRA
SHEET NO. 68

RH-07

**PIER E6
JACKING DETAILS**



MATCHLINE STA. 1300 + 34.01 - SEE DWG. BB-02

UNOFFICIAL
WEBSITE
COPY

BEARING PLAN - SPANS 27 TO 32

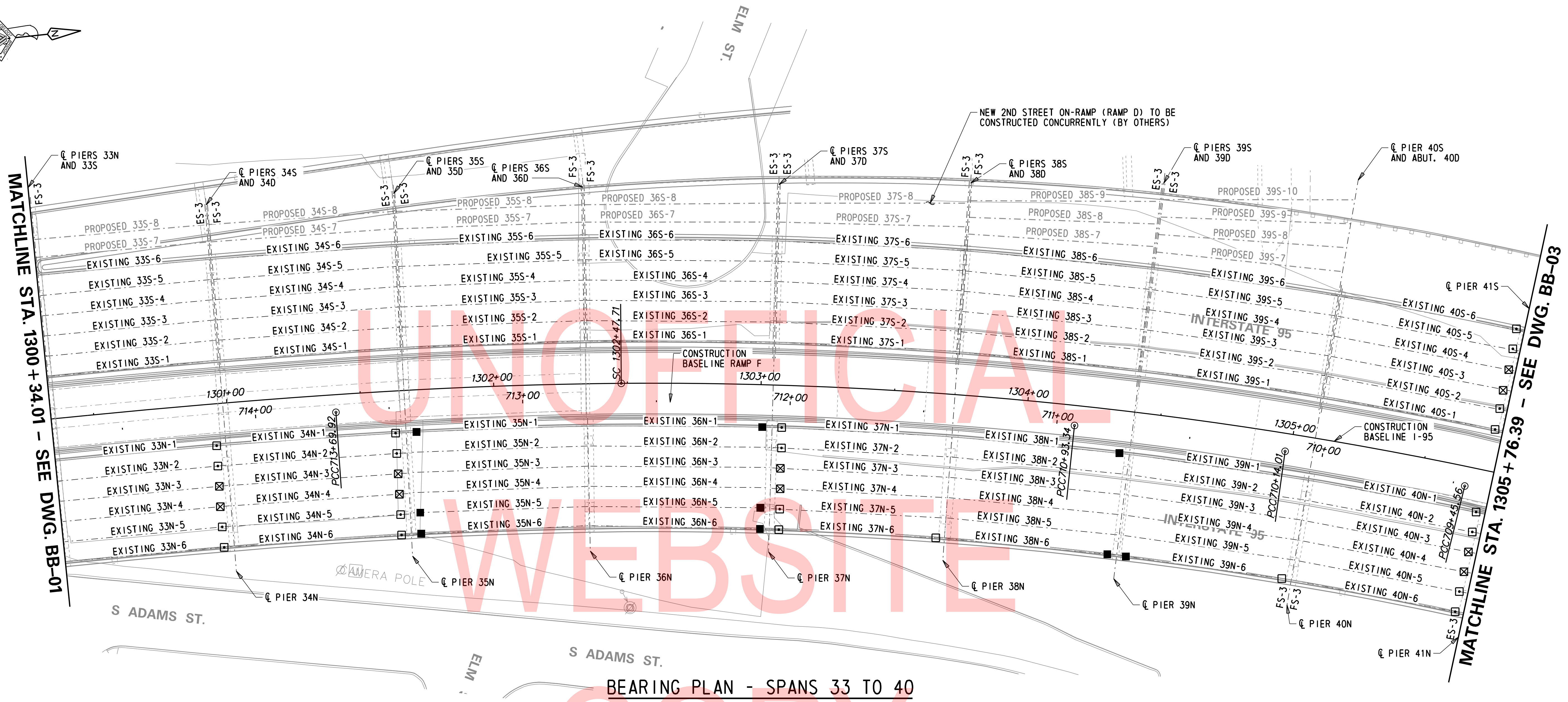
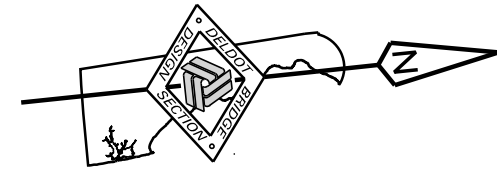
BEARING SYMBOL LEGEND:

△ - REPLACE WITH PROPOSED BEARING TYPE FS-2 (SEE DWG. BB-06)

NOTES:
1. BEAMS FOR BRIDGE NOS. 1-749 (RAMP A) AND 1-758G (RAMP F) ARE SHOWN SCREENED FOR INFORMATIONAL PURPOSES.

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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ADDENDA / REVISIONS</th> </tr> </thead> <tbody> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </tbody> </table>	ADDENDA / REVISIONS					<p>SCALE</p> <p>FEET</p>	<p>REHABILITATION OF I-95, BEARING REPLACEMENTS</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>CONTRACT T201907404</td> <td>BRIDGE NO. 1 748 N&S</td> </tr> <tr> <td>COUNTY NEW CASTLE</td> <td>DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF</td> </tr> </table>	CONTRACT T201907404	BRIDGE NO. 1 748 N&S	COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF	<p>BEARING PLAN - 1</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">BB-01</td> </tr> <tr> <td style="text-align: center;">SECTION WRA</td> </tr> <tr> <td style="text-align: center;">SHEET NO. 69</td> </tr> </table>	BB-01	SECTION WRA	SHEET NO. 69
ADDENDA / REVISIONS																	
CONTRACT T201907404	BRIDGE NO. 1 748 N&S																
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF																
BB-01																	
SECTION WRA																	
SHEET NO. 69																	



BEARING PLAN - SPANS 33 TO 40

BEARING SYMBOL LEGEND:

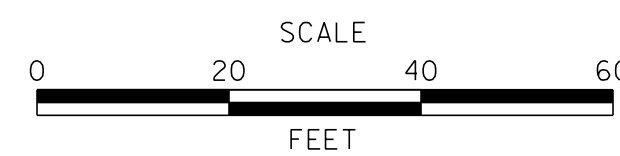
- - REPLACE WITH PROPOSED BEARING TYPE FS-3 (SEE DWG. BB-07)
- - REPLACE WITH PROPOSED BEARING TYPE ES-3 (SEE DWGS. BB-08 AND BB-09)
- ⊠ - REPLACE WITH PROPOSED BEARING TYPE ES-3A (SEE DWG. BB-10 AND BB-11)
- ⊞ - REPLACE WITH PROPOSED BEARING TYPE ES-3B (SEE DWG. BB-12)

NOTES:

1. BEAMS FOR BRIDGE NO. 1-758G (RAMP F) ARE SHOWN SCREENED FOR INFORMATIONAL PURPOSES.
2. PROPOSED BEAMS THAT ARE PART OF 2ND STREET ON-RAMP (BY OTHERS) SHOWN SCREENED FOR INFORMATIONAL PURPOSES.

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ADDENDA / REVISIONS



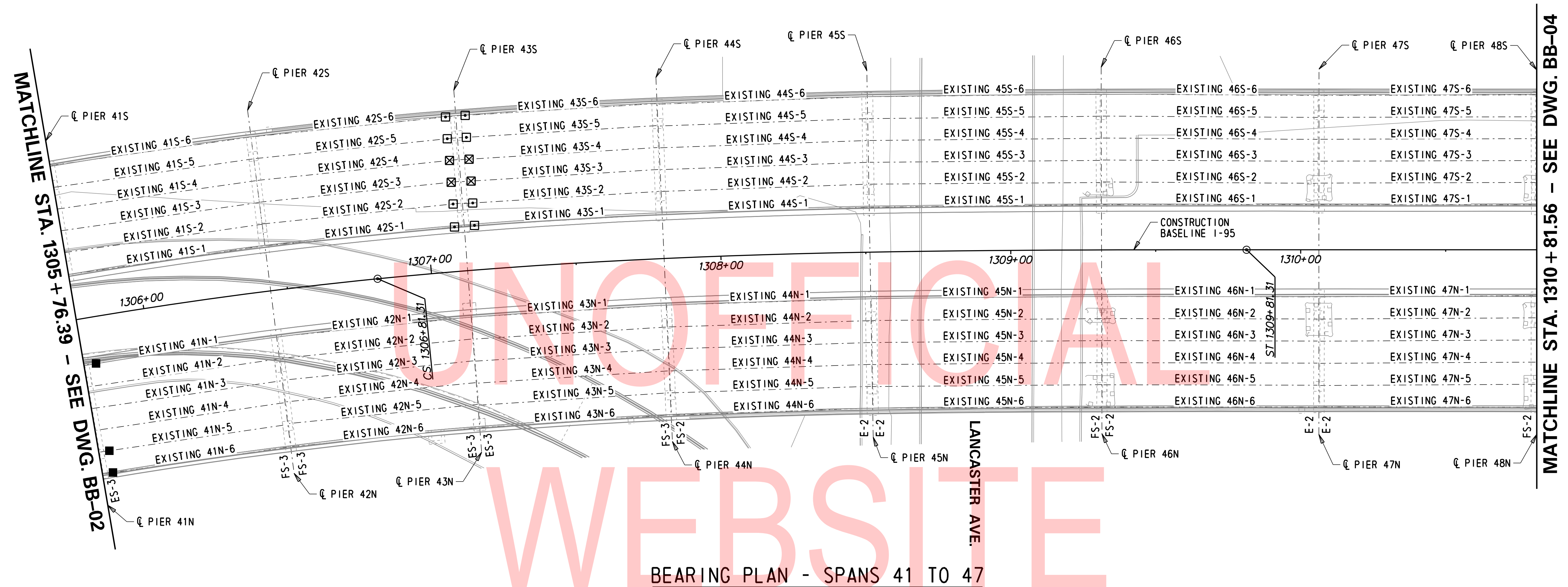
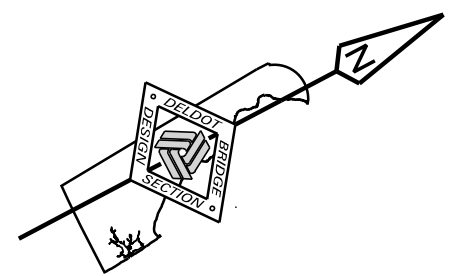
**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

BEARING PLAN - 2

BB-02

SECTION
WRA
SHEET NO.
70

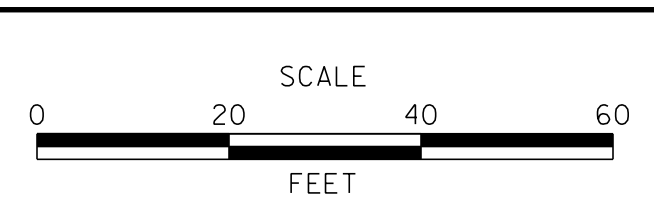


BEARING SYMBOL LEGEND:

- - REPLACE WITH PROPOSED BEARING TYPE ES-3 (SEE DWGS. BB-08 AND BB-09)
- - REPLACE WITH PROPOSED BEARING TYPE ES-3A (SEE DWG. BB-10 AND BB-11)
- ⊠ - REPLACE WITH PROPOSED BEARING TYPE ES-3B (SEE DWG. BB-12)

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ADDENDA / REVISIONS

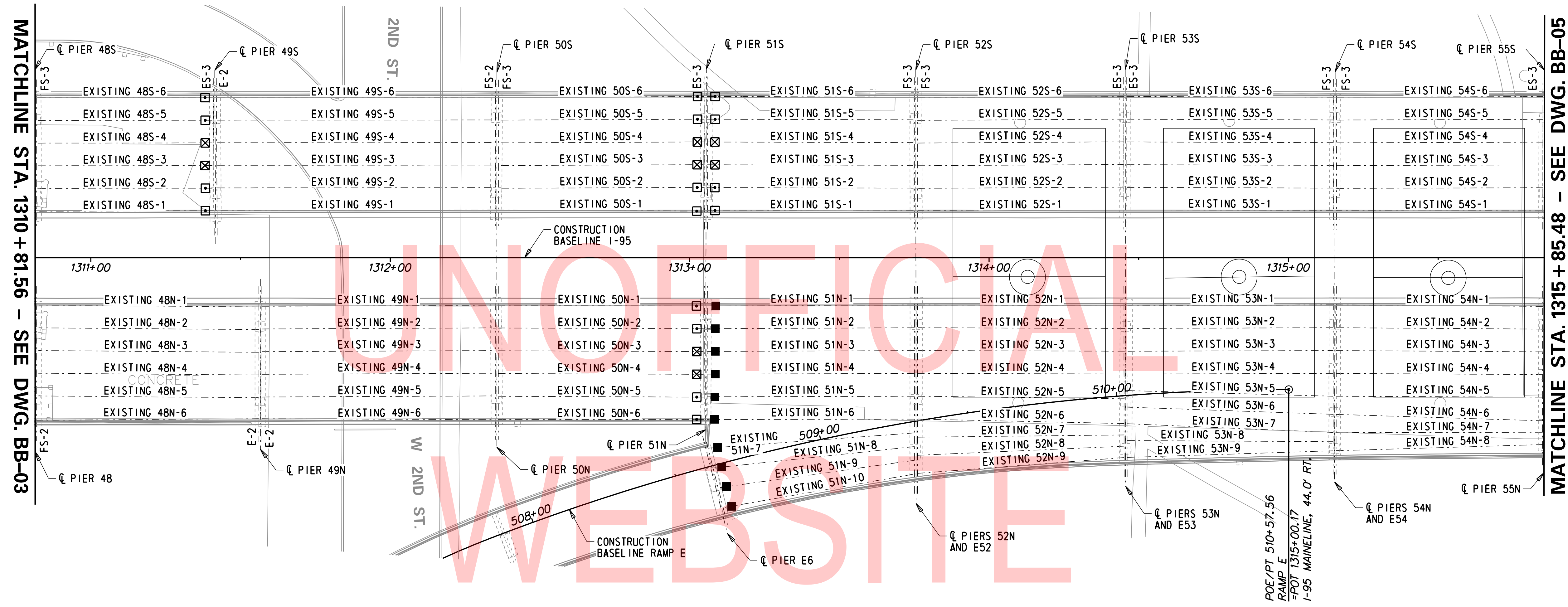
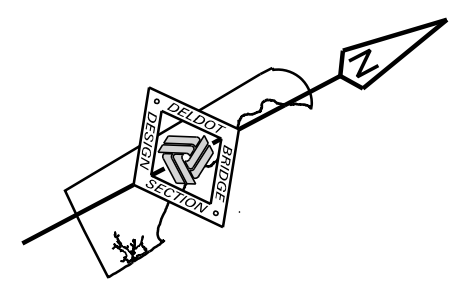


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

BEARING PLAN - 3

BB-03
SECTION
WRA
SHEET NO.
71



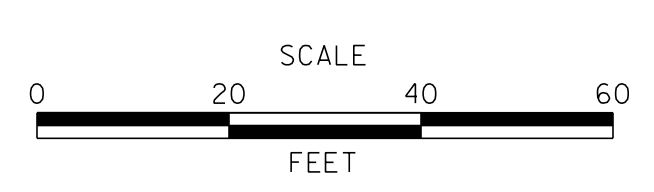
BEARING PLAN - SPANS 48 TO 54

BEARING SYMBOL LEGEND:

- - REPLACE WITH PROPOSED BEARING TYPE ES-3 (SEE DWGS. BB-08 AND BB-09)
- - REPLACE WITH PROPOSED BEARING TYPE ES-3A (SEE DWG. BB-10 AND BB-11)
- ⊗ - REPLACE WITH PROPOSED BEARING TYPE ES-3B (SEE DWG. BB-12)

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ADDENDA / REVISIONS

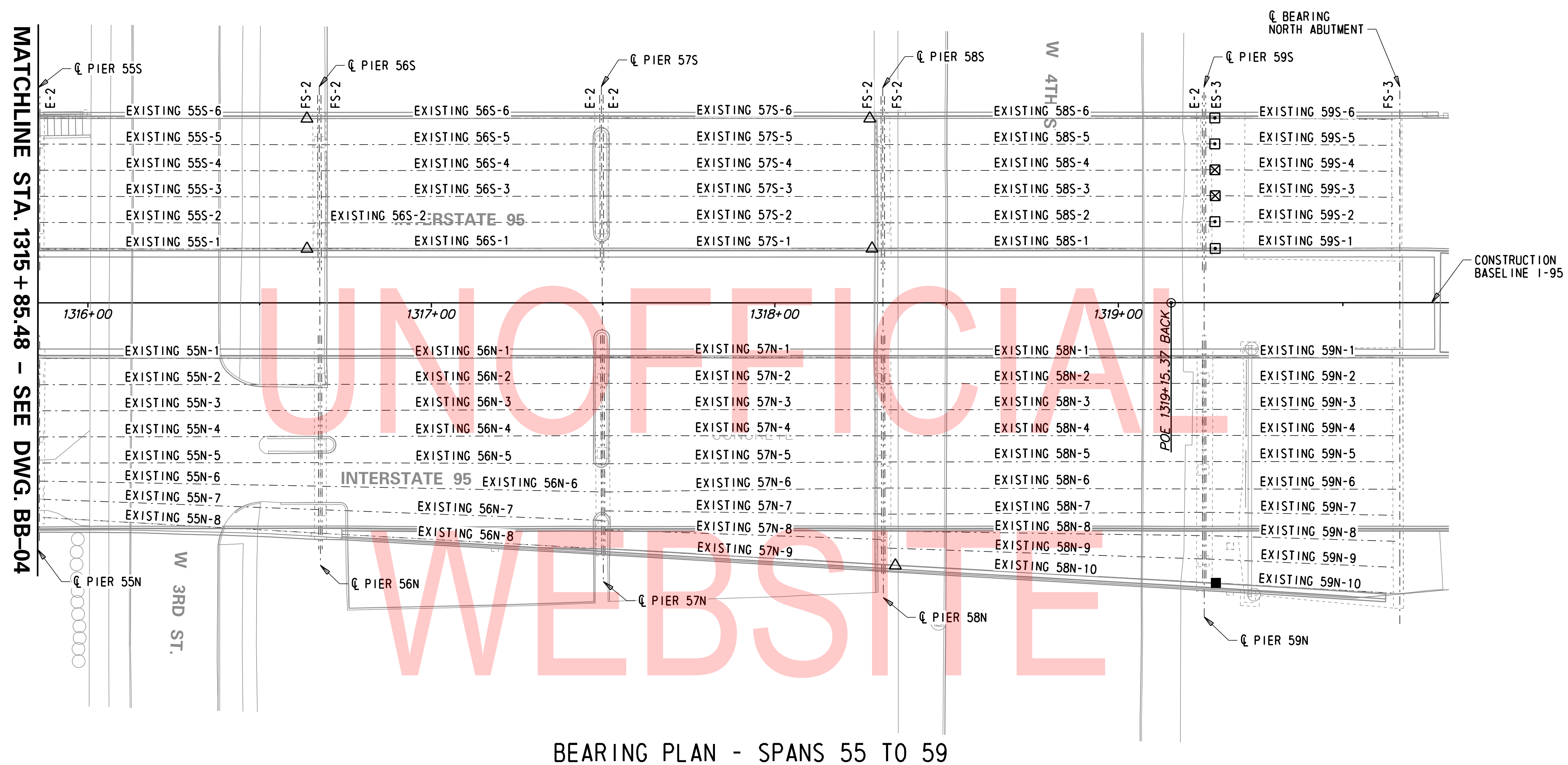
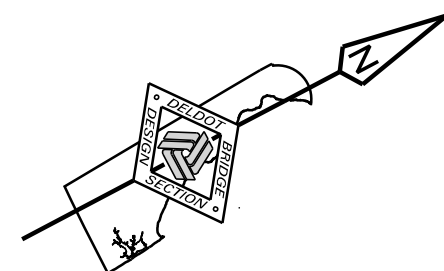


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

BEARING PLAN - 4

BB-04
SECTION
WRA
SHEET NO.
72



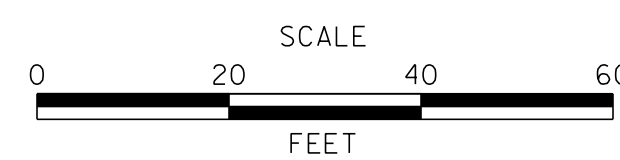
BEARING PLAN - SPANS 55 TO 59

BEARING SYMBOL LEGEND:

- △ - REPLACE WITH PROPOSED BEARING TYPE FS-2 (SEE DWG. BB-06)
- - REPLACE WITH PROPOSED BEARING TYPE ES-3 (SEE DWGS. BB-08 AND BB-09)
- - REPLACE WITH PROPOSED BEARING TYPE ES-3A (SEE DWG. BB-10 AND BB-11)
- ⊗ - REPLACE WITH PROPOSED BEARING TYPE ES-3B (SEE DWG. BB-12)

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ADDENDA / REVISIONS

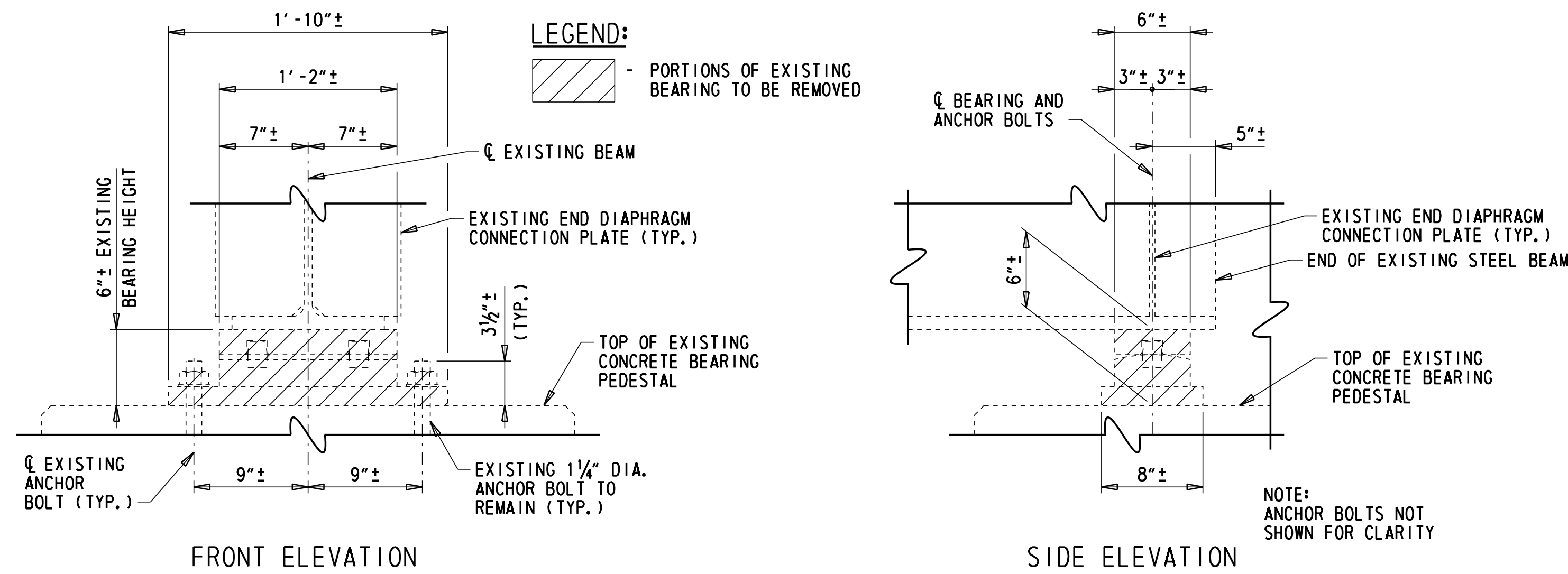


REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

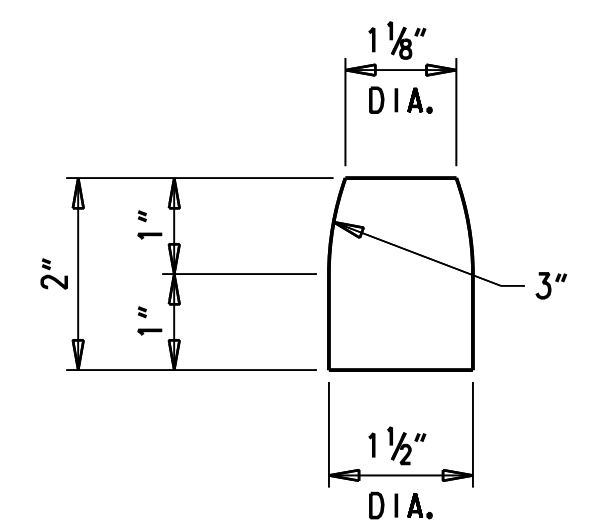
BEARING PLAN - 5

BB-05
SECTION
WRA
SHEET NO.
73



EXISTING BEARING TYPE FS-2

1/2" = 1'-0"



PINTLE DETAIL

6" = 1'-0"

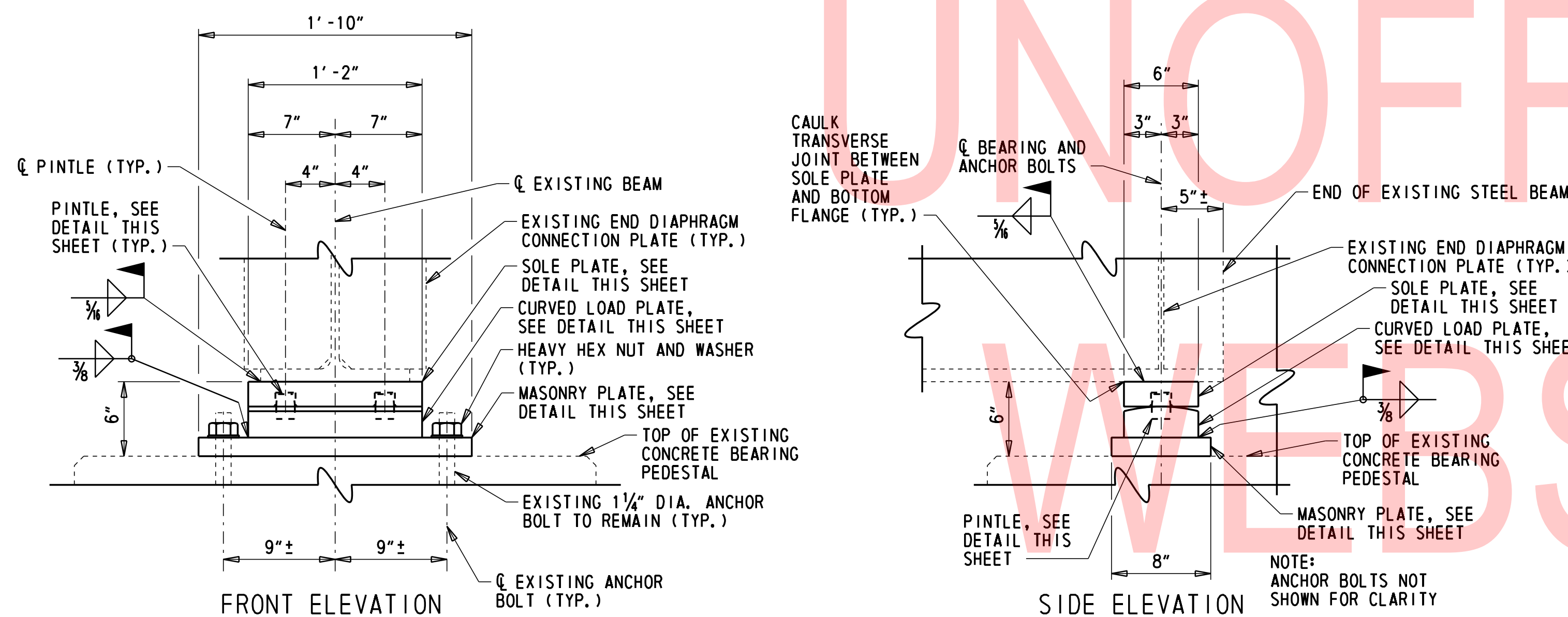
BEARING TABLE						
LOCATION	BEARING DESIGNATION					
	EXISTING MARK	TYPE	TOTAL NO. REQUIRED	CAPACITY PER BEARING		
				SERVICE REACTION	STRENGTH REACTION	MOVEMENT 0° TO 110°F
NORTHBOUND SPANS						
SPAN 58N, PIER 58N	FS-2	FIX.	1	125 KIP	188 KIP	N/A
SOUTHBOUND SPANS						
SPAN 27S, PIER 27S	FS-2	FIX.	2	144 KIP	223 KIP	N/A
SPAN 55S, PIER 56S	FS-2	FIX.	2	135 KIP	207 KIP	N/A
SPAN 57S, PIER 58S	FS-2	FIX.	2	135 KIP	207 KIP	N/A
TOTAL - TYPE FS2			7			

KEY:

- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- ⊙ MAX. FACTORED STRENGTH 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- ⊠ TEMPERATURE MOVEMENT.

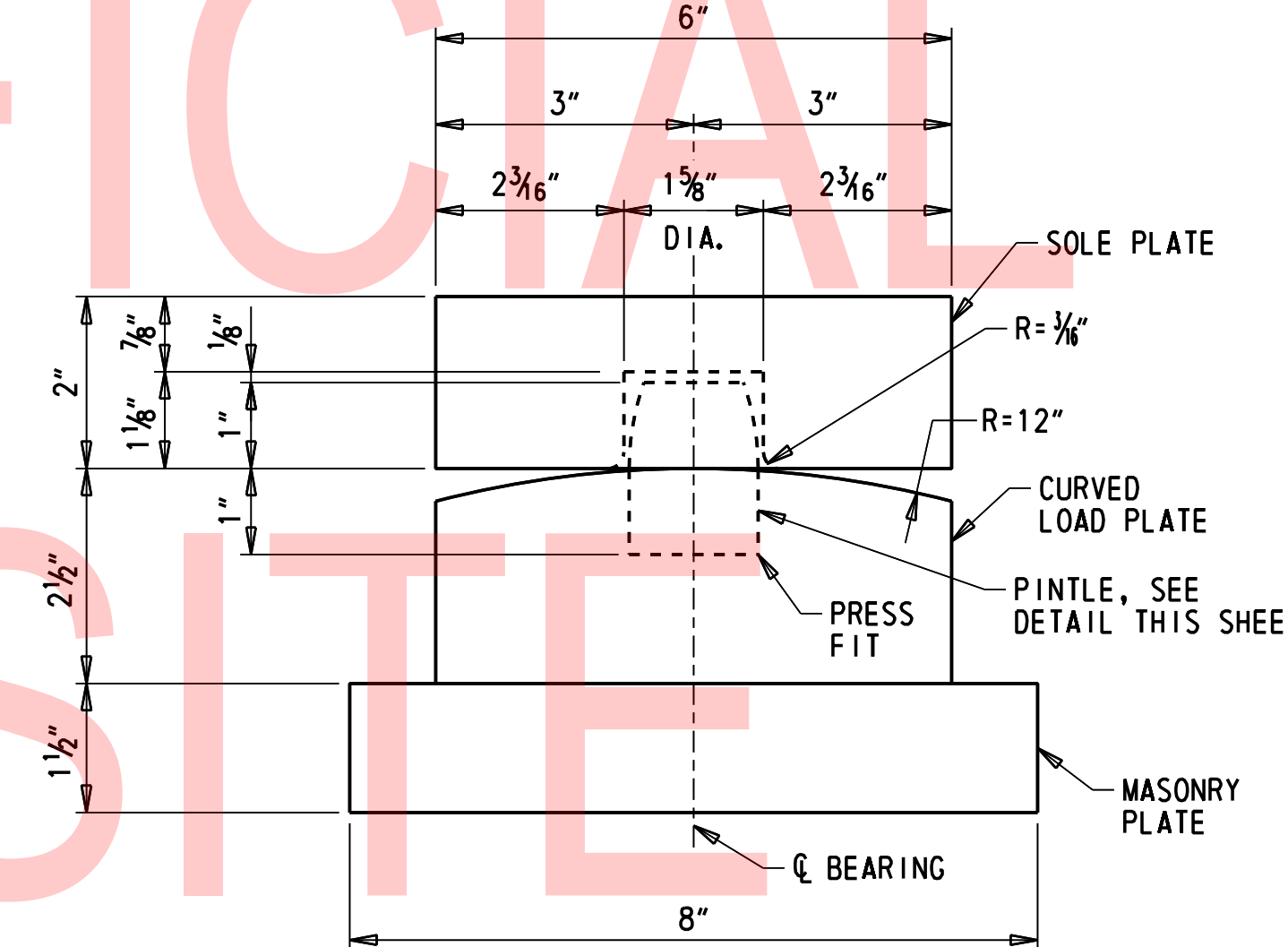
FIXED STEEL PLATE BEARING NOTES:

- PROVIDE STEEL PLATE FIXED BEARINGS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 615 AND IN ACCORDANCE WITH CHAPTER 18 OF THE 2017 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4TH EDITION.
- CONTRACTOR TO VERIFY ALL EXISTING DIMENSIONS PRIOR TO ORDERING OR FABRICATING PROPOSED BEARINGS.
- THE EXISTING ANCHOR BOLTS ARE TO REMAIN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE THE ANCHOR BOLTS DURING THE REMOVAL OF THE EXISTING BEARING. ANY ANCHOR BOLTS DAMAGED BY THE CONTRACTOR DURING REMOVAL OF THE EXISTING BEARINGS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- AFTER REMOVAL OF THE EXISTING BEARINGS, THE CONTRACTOR SHALL INSPECT THE EXISTING ANCHOR BOLTS TO REMAIN FOR ANY DEFECTS WHICH MAY ADVERSELY AFFECT THEIR PERFORMANCE. IF THE ENTIRE LINE OF ANCHOR BOLTS EXHIBITS DETERIORATION GREATER THAN 25% OF THE TOTAL CROSS-SECTIONAL AREA, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY. DETERIORATION LESS THAN 25% OF THE TOTAL CROSS-SECTIONAL AREA OF THE ANCHOR BOLTS IS ACCEPTABLE, IN WHICH CASE THE ANCHOR BOLTS SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 616 PRIOR TO INSTALLING NEW BRONZE BEARINGS. IF UNACCEPTABLE, THE ANCHOR BOLT SHALL BE REPAIRED AS SHOWN ON THE DETAILS ON DWG. BB-10.
- STEEL SOLE AND MASONRY PLATES SHALL BE AASHTO M 270 GRADE 50. STEEL PLATES SHALL MEET A FLATNESS REQUIREMENT OF 0.5 PERCENT IN THE DIRECTION BEING MEASURED (WIDTH, LENGTH, AND DIAGONAL) MAXIMUM, BUT NOT TO EXCEED 1/8 INCH. STEEL SURFACES OF THE SOLE AND MASONRY PLATES IN CONTACT WITH OTHER SURFACES SHALL BE MACHINE FINISHED TO AT LEAST 250 MICROINCHES ROOT-MEAN-SQUARE.
- THE BEARING SHALL BE SHOP ASSEMBLED AND MATCH-MARKED TO ENSURE PROPER FIT.
- SOLE PLATES SHALL BE BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. THE CONTRACTOR IS RESPONSIBLE FOR MEASURING THE EXISTING GRADE OF THE BEAMS IN THE FIELD TO DETERMINE THE PROPER BEVEL AT EACH BEARING LOCATION.
- BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM. THE SKEW ANGLE BETWEEN THE CENTERLINE OF THE EXISTING BEAMS AND THE CENTERLINE OF BEARING AT THE PIERS VARY BY LOCATION. SEE DWG. RH-01 AND RH-02 FOR SKEW ANGLES, IDENTIFIED AS ANGLE A.
- THE CONTRACTOR SHALL PREPARE THE EXISTING CONCRETE BEARING AREA TO ENSURE FULL CONTACT OF THE BEARINGS ON THE CONCRETE PEDESTAL. THE CONTRACTOR MAY USE A NON-SHRINK GROUT LEVELING PAD OR OTHER APPROVED METHOD TO PROVIDE A SMOOTH SURFACE FOR PLACING THE BEARING.
- PORTIONS OF THE BOTTOM FLANGES OF THE EXISTING STEEL BEAMS TO RECEIVE NEW BEARINGS SHALL BE CLEANED PRIOR TO WELDING. CONTRACTOR SHALL REMOVE THE EXISTING PAINT IN THESE AREAS IN ACCORDANCE WITH SECTION 616 PRIOR TO PERFORMING ANY GRINDING, CUTTING, OR WELDING OF THE EXISTING STRUCTURAL STEEL AS PART OF THIS WORK.
- ALL FIELD WELDING SHALL BE PERFORMED USING THE SHIELDED METAL-ARC PROCESS. CONTRACTOR SHALL NOT PAINT WELDS PRIOR TO INSPECTION BY THE ENGINEER.
- ALL PAINT TO BE USED TO TOUCH UP THE EXISTING COATINGS DURING BEARING REPLACEMENT AND FOR PAINTING NEW STEEL PLATE FIXED BEARINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 616. THE COLOR OF THE FINISH COAT SHALL MATCH EXISTING.
- FILL SLOTS AND HOLES IN STEEL PLATES AROUND ANCHOR BOLTS WITH AN APPROVED NON-HARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
- PAYMENT FOR STEEL PLATE FIXED BEARINGS WILL BE MADE UNDER ITEM 615001 - STEEL STRUCTURES. PAYMENT WILL INCLUDE REMOVAL OF EXISTING BEARINGS, PREPARATION OF THE CONCRETE BEARING AREA, FABRICATING AND INSTALLING NEW BEARINGS, WELDING, PAINTING, AND ANY OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK.



PROPOSED BEARING TYPE FS-2

1/2" = 1'-0"

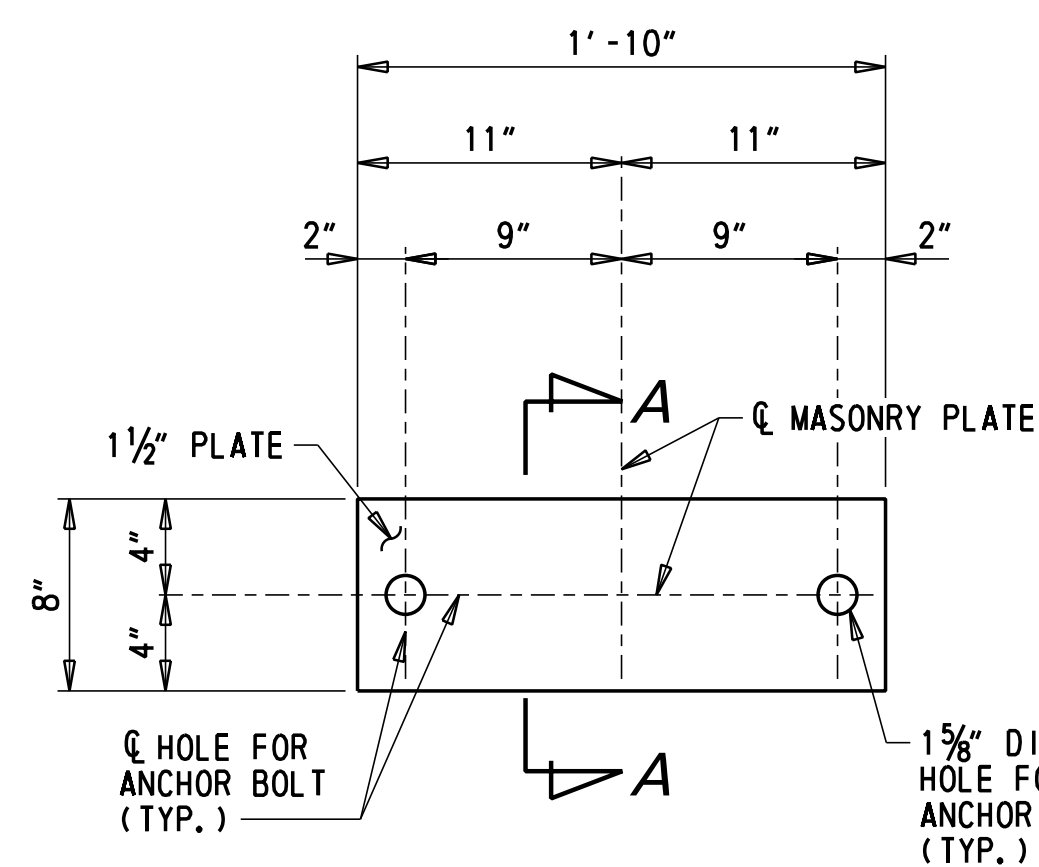


SECTION A-A

6" = 1'-0"

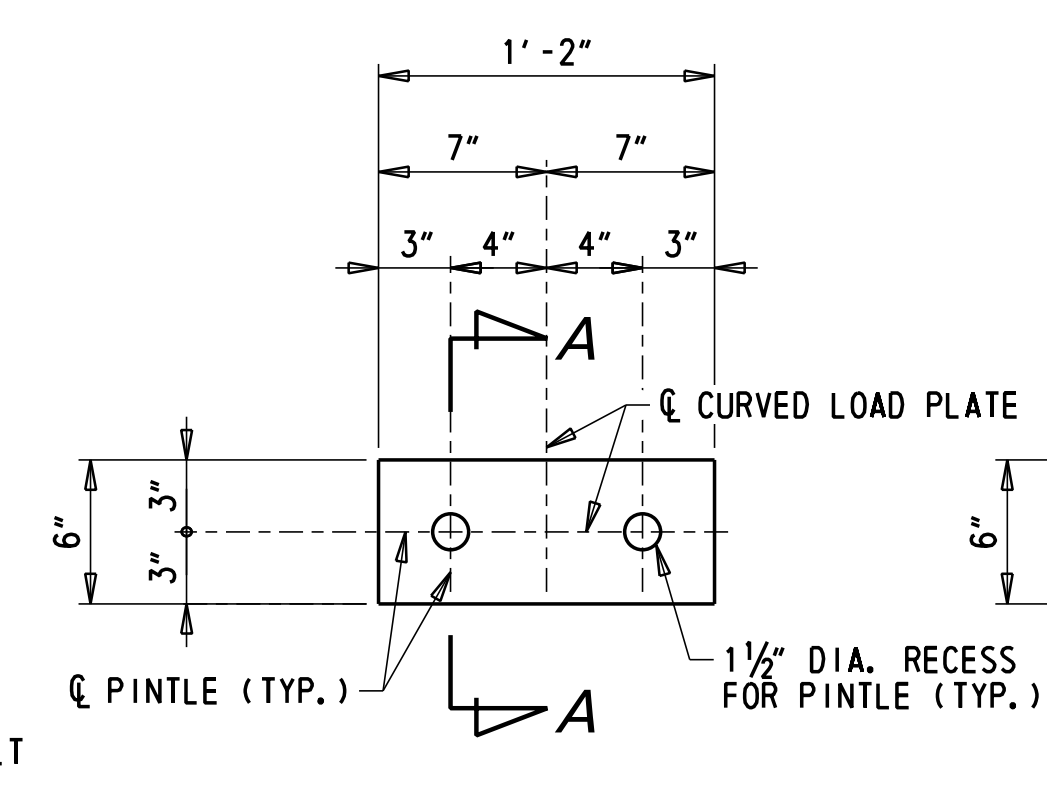
SUGGESTED SEQUENCE OF INSTALLATION:

- FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE FS-2:
 - CLEAN THE EXISTING ANCHOR BOLTS AND MAKE ANY NECESSARY REPAIRS.
 - INSTALL THE NEW MASONRY PLATE BY PLACING OVER THE ANCHOR BOLTS AND LOWERING IT ONTO THE CONCRETE BEARING PEDESTAL.
 - INSTALL THE NEW ANCHOR BOLT HEAVY HEX NUT AND WASHER TO SECURE THE MASONRY PLATE TO THE CONCRETE BEARING PEDESTAL.
 - SET THE SOLE PLATE AND CURVED LOAD PLATE INTO THE PROPER POSITION.
 - WELD THE SOLE PLATE TO THE BOTTOM FLANGE OF THE STEEL BEAM.
 - WELD THE CURVED LOAD PLATE TO THE MASONRY PLATE.
 - CAULK THE TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE.
 - APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT ALL STEEL SURFACES OF THE BEARING IN ACCORDANCE WITH SECTION 616.
 - GREASE THE ENTIRE BEARING ASSEMBLY.



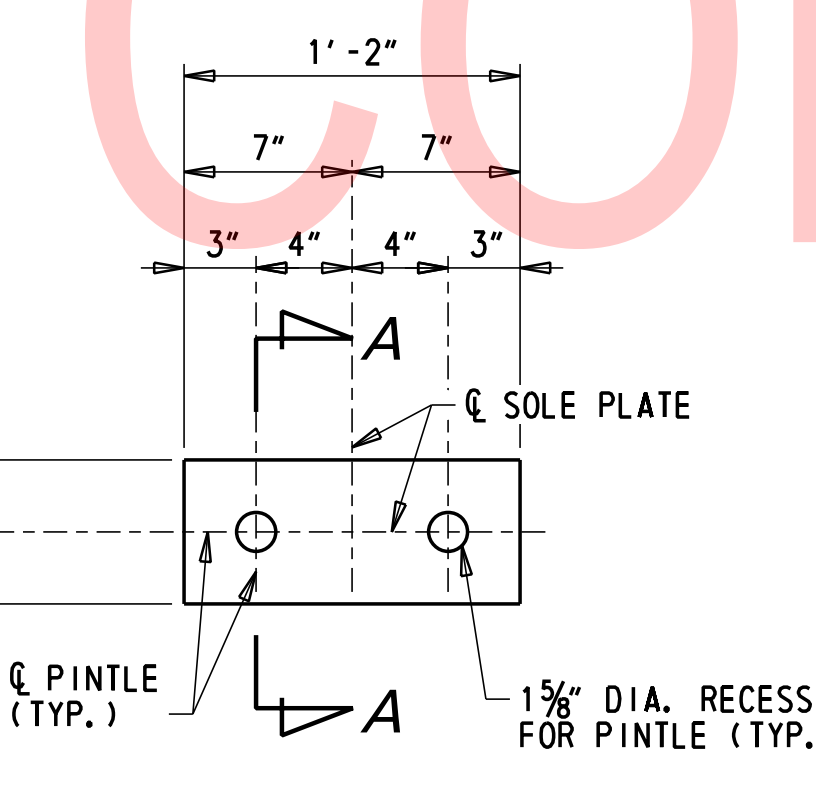
MASONRY PLATE DETAIL

1/2" = 1'-0"



CURVED LOAD PLATE DETAIL

1/2" = 1'-0"



SOLE PLATE DETAIL

1/2" = 1'-0"

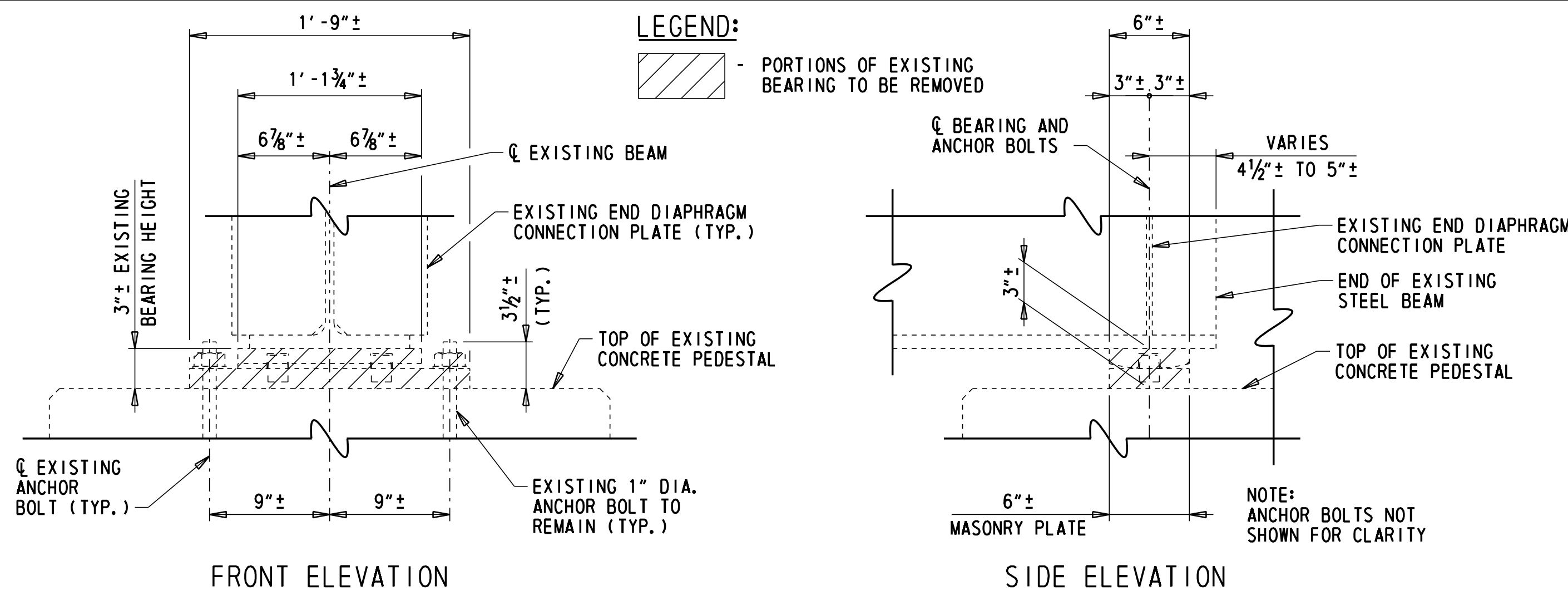
ADDENDA / REVISIONS

SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS
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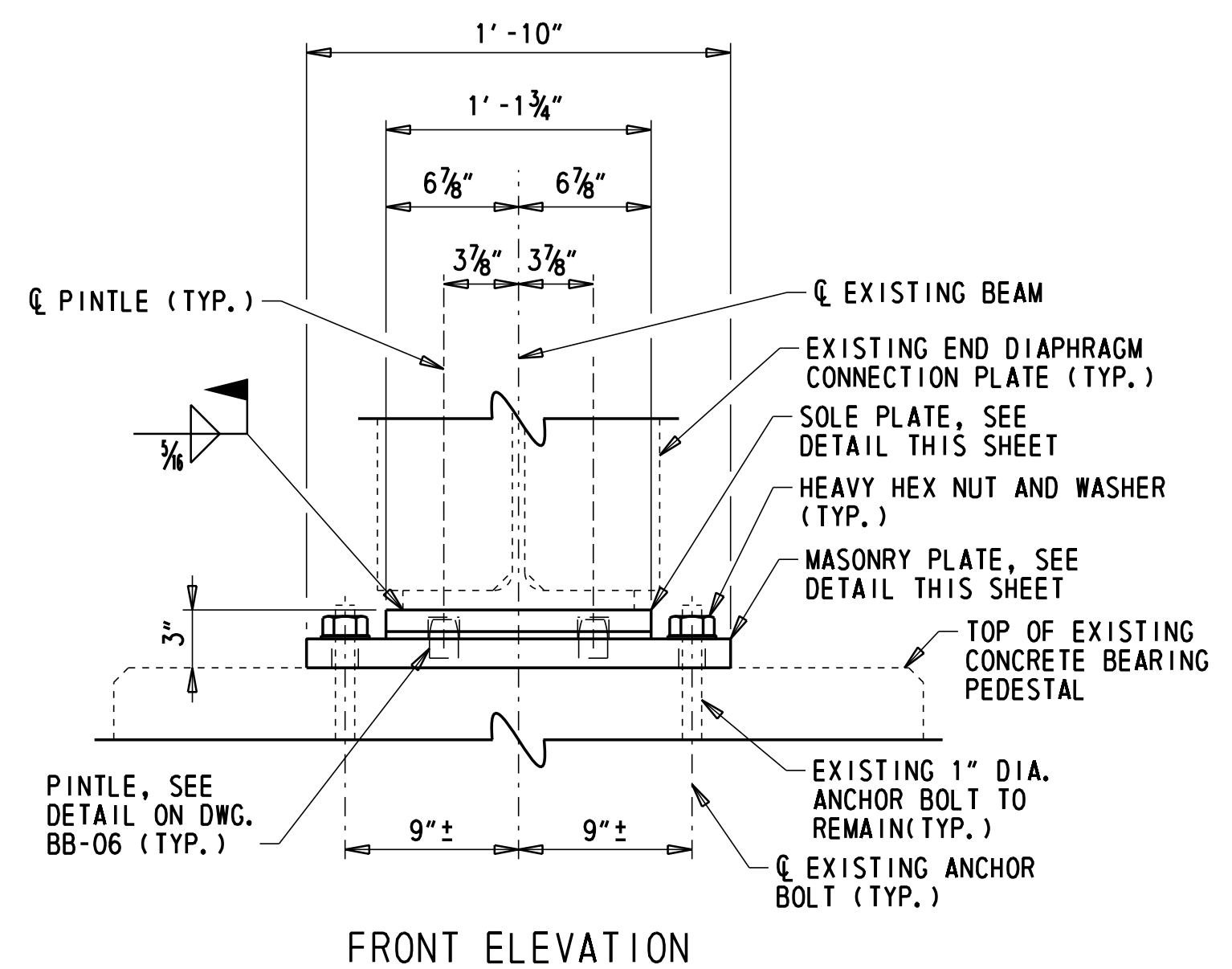
CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

BEARING DETAILS - FIXED TYPE FS-2	
SECTION	BB-06
WRA	
SHEET NO.	74

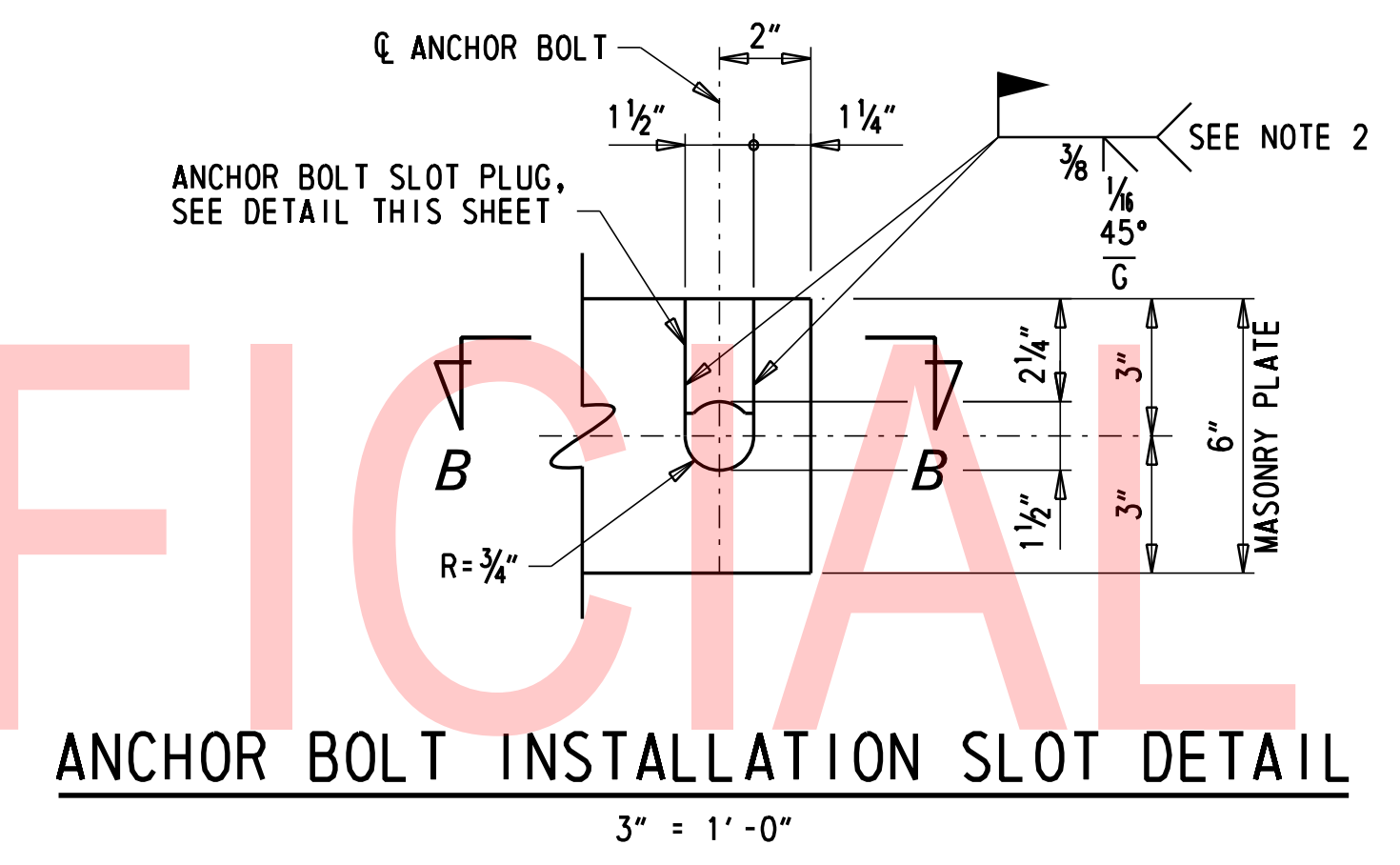
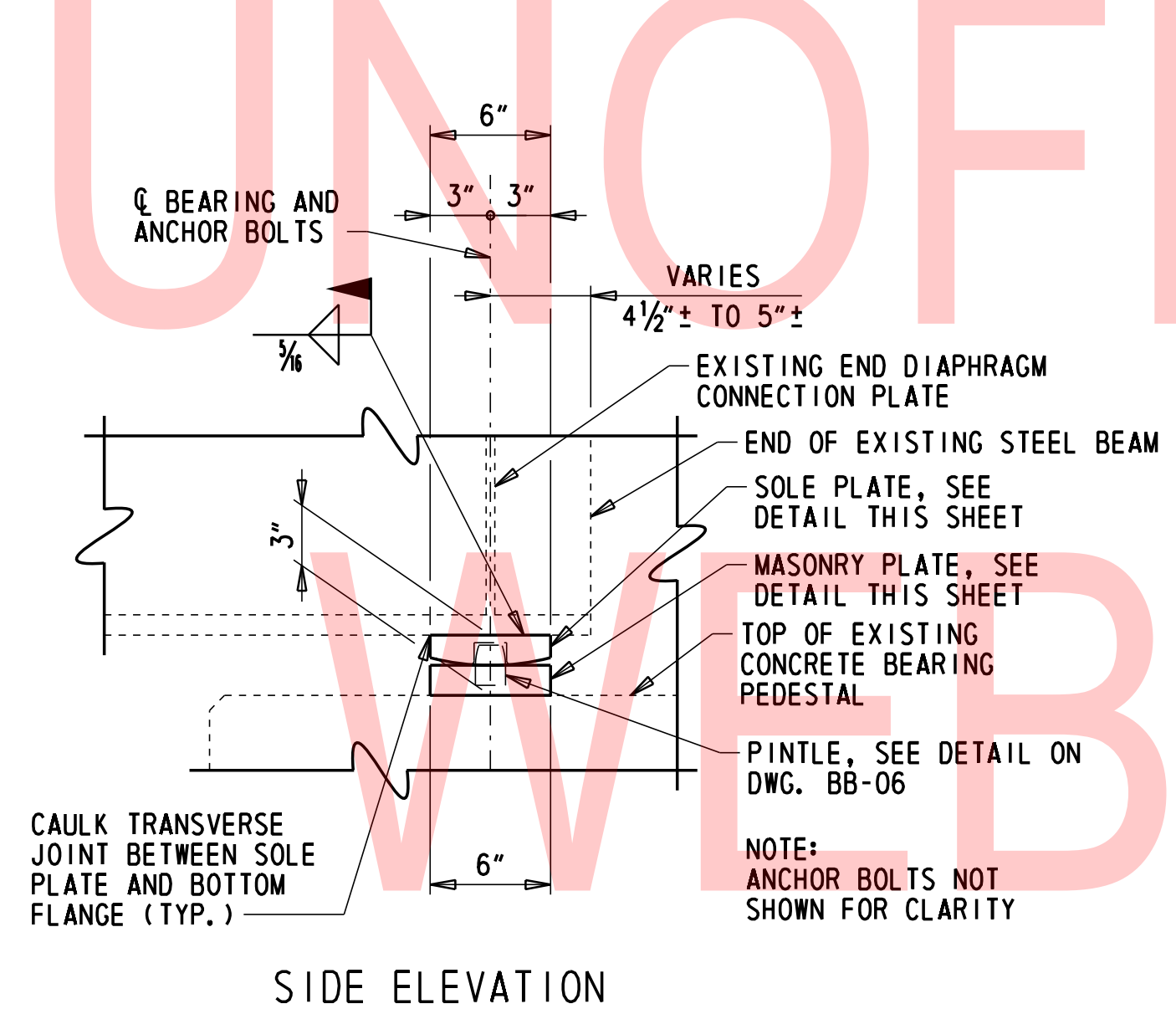
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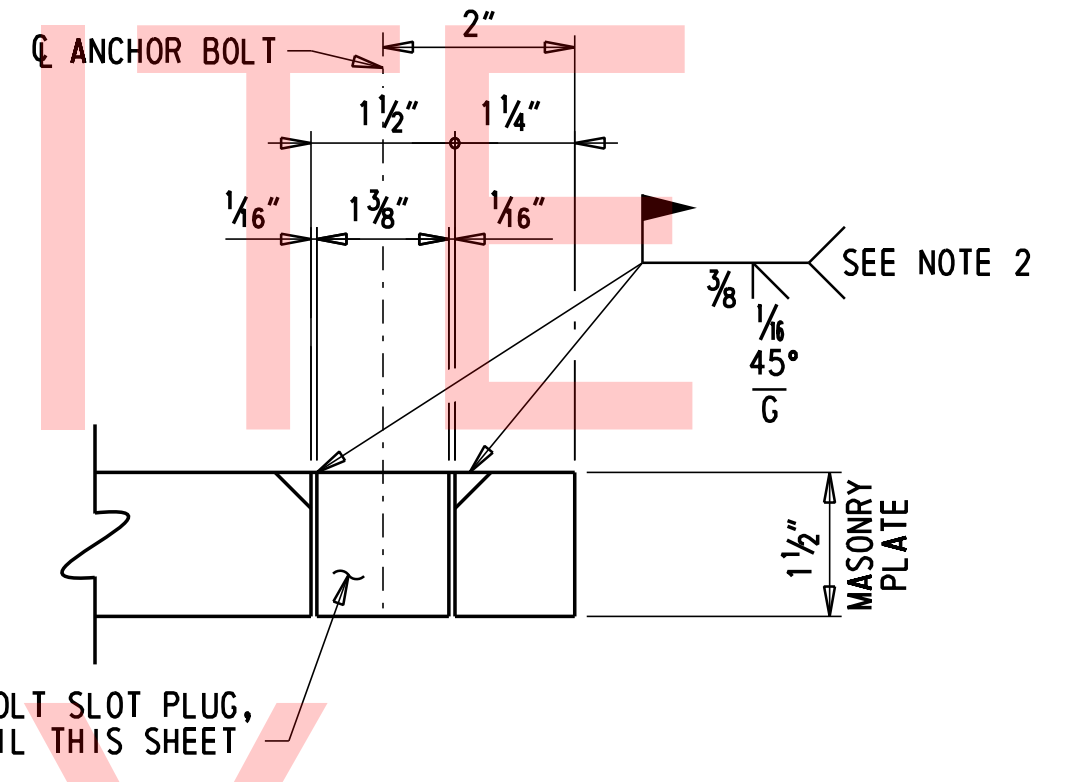
EXISTING BEARING TYPE FS-3
1 1/2" = 1'-0"



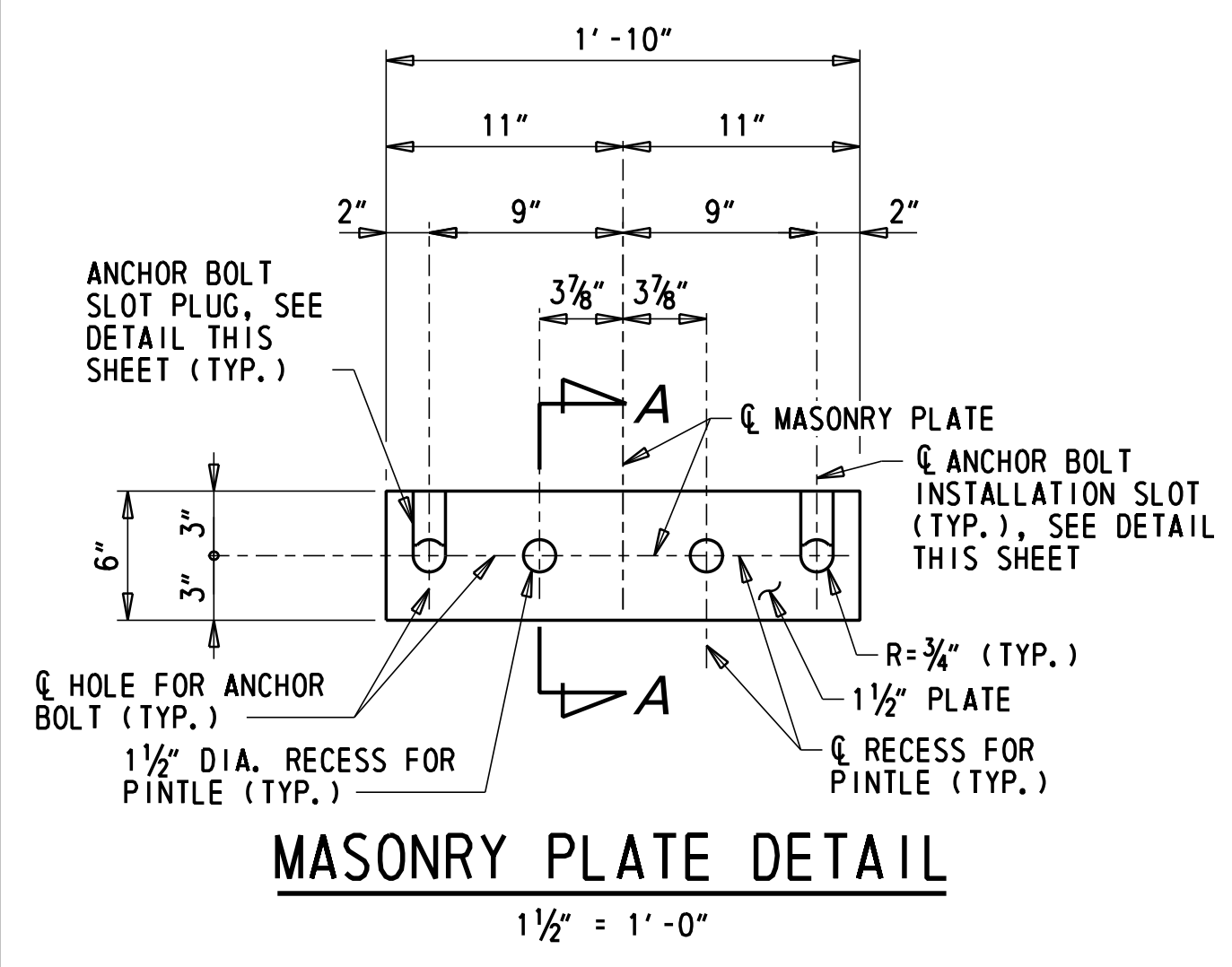
PROPOSED BEARING TYPE FS-3
1 1/2" = 1'-0"



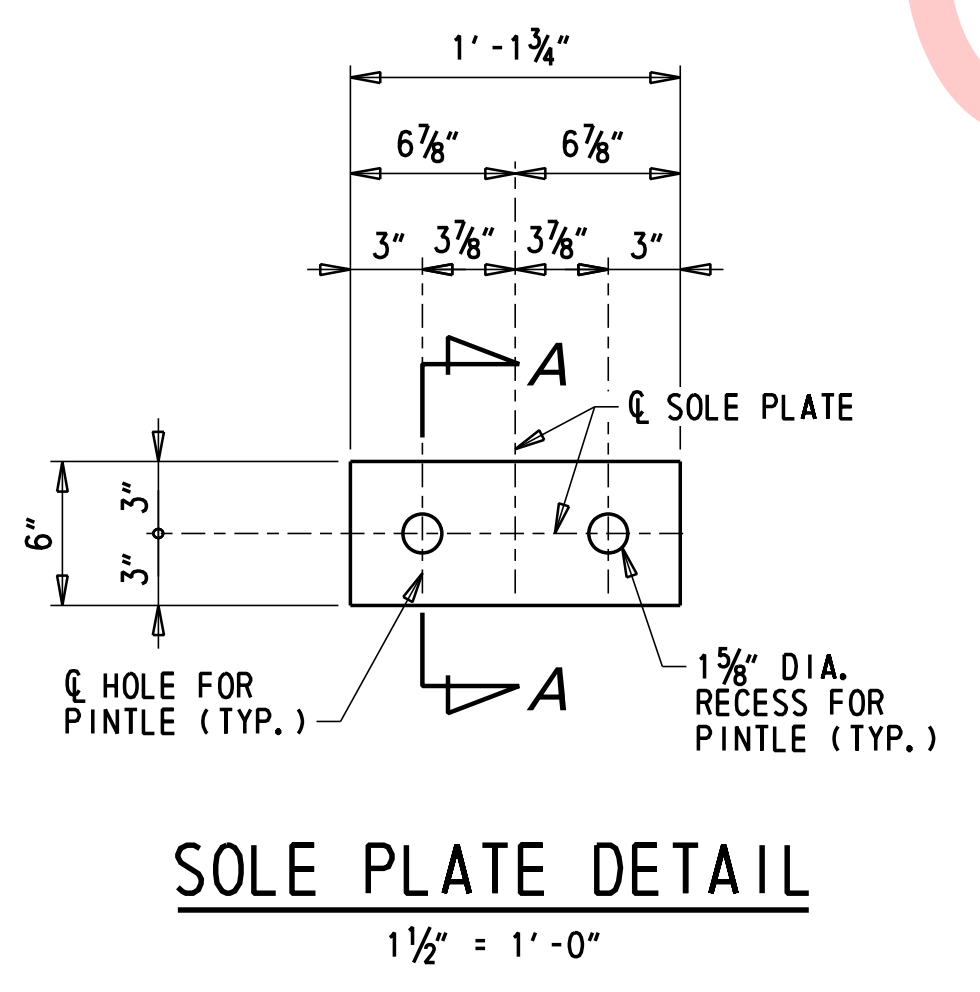
ANCHOR BOLT INSTALLATION SLOT DETAIL
3" = 1'-0"



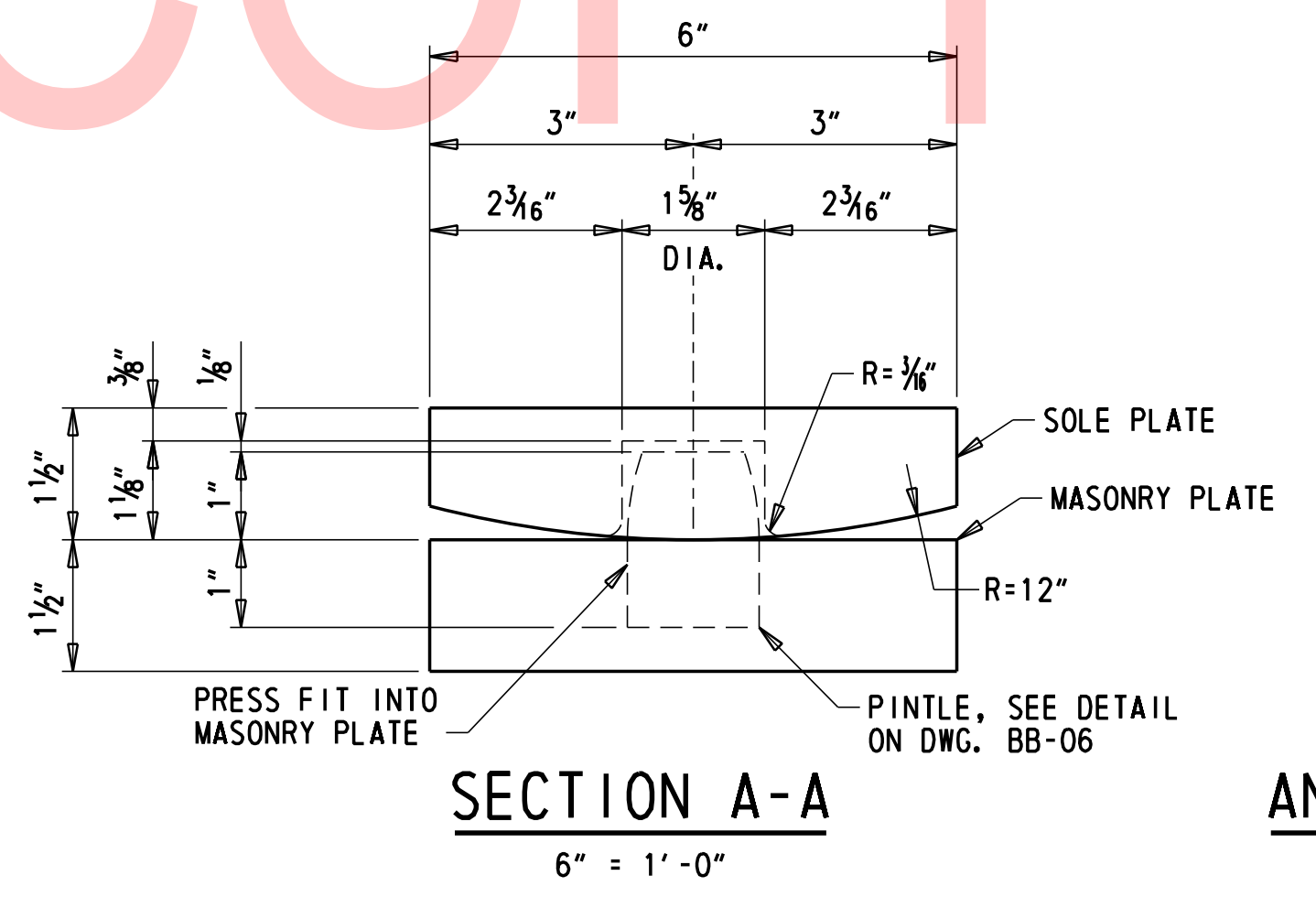
SECTION B-B
6" = 1'-0"



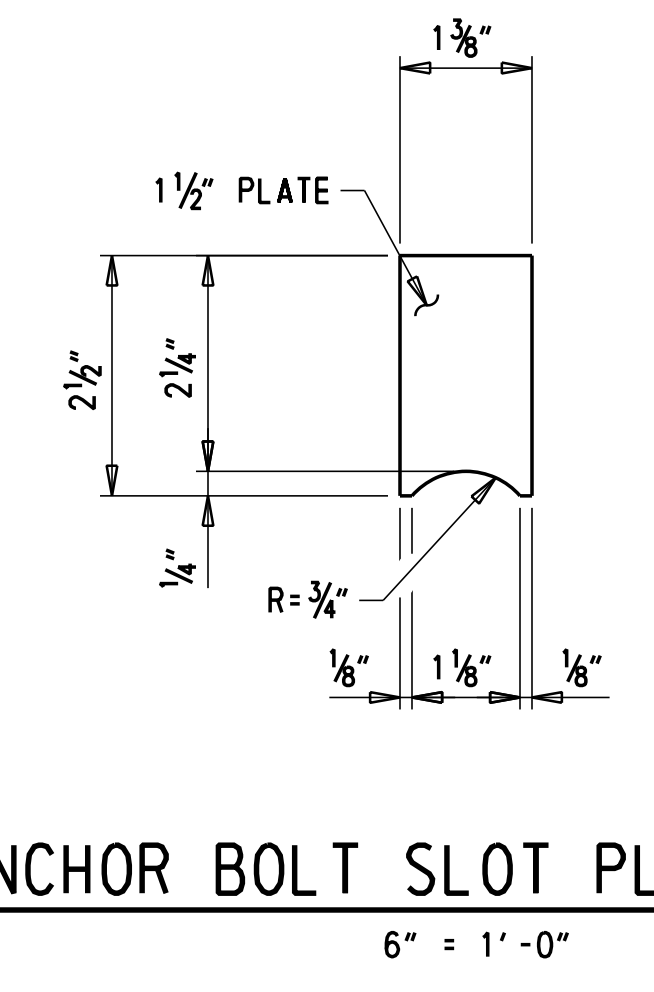
MASONRY PLATE DETAIL
1 1/2" = 1'-0"



SOLE PLATE DETAIL
1 1/2" = 1'-0"



SECTION A-A
6" = 1'-0"



ANCHOR BOLT SLOT PLUG DETAIL
6" = 1'-0"

LEGEND:
[Hatched Area] - PORTIONS OF EXISTING BEARING TO BE REMOVED

BEARING TABLE						
LOCATION	BEARING DESIGNATION					
	EXISTING MARK	TYPE	TOTAL NO. REQUIRED	CAPACITY PER BEARING		
				SERVICE REACTION ⊗	STRENGTH REACTION ⊙	MOVEMENT 0° TO 110°F ⊠
NORTHBOUND SPANS						
SPAN 37N, PIER 38N	FS-3	FIX.	1	109 KIP	170 KIP	N/A
SPAN 39N, PIER 40N	FS-3	FIX.	1	109 KIP	170 KIP	N/A
TOTAL - TYPE FS-3			2			

- KEY:**
- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
 - ⊙ MAX. FACTORED STRENGTH 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
 - ⊠ TEMPERATURE MOVEMENT.

- NOTES:**
- FOR ADDITIONAL STEEL PLATE FIXED BEARING NOTES, SEE DWG. BB-06.
 - THE MASONRY PLATE AS SHOWN SHALL BE INSTALLED BY PROVIDING SLOTS IN THE PLATE TO ALLOW IT TO SLIDE INTO POSITION AROUND THE EXISTING ANCHOR BOLTS. THIS IS DUE TO THE EXISTING ANCHOR BOLTS EXTENDING ABOVE THE BOTTOM FLANGE OF THE EXISTING BEAMS. AFTER THE MASONRY PLATE HAS BEEN SET, INSTALL THE ANCHOR BOLT SLOT PLUG, WELD IN PLACE, THEN GRIND THE WELDS SMOOTH WITH THE TOP OF THE MASONRY PLATE.

- SUGGESTED SEQUENCE OF INSTALLATION:**
- FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE FS-3:
 - CLEAN THE EXISTING ANCHOR BOLTS AND MAKE ANY NECESSARY REPAIRS.
 - INSTALL THE NEW BEARING BY SLIDING THE MASONRY PLATE AROUND THE EXISTING ANCHOR BOLTS AND ONTO THE CONCRETE BEARING PEDESTAL.
 - WELD THE ANCHOR BOLT SLOT PLUG AT BOTH ANCHOR BOLTS. GRIND THE WELD FLUSH WITH THE TOP OF THE MASONRY PLATE.
 - INSTALL THE NEW ANCHOR BOLT HEAVY HEX NUT AND WASHER TO SECURE THE MASONRY PLATE TO THE CONCRETE BEARING PEDESTAL.
 - WELD THE SOLE PLATE TO THE BOTTOM FLANGE OF THE STEEL BEAM.
 - CAULK THE TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE.
 - APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT ALL STEEL SURFACES OF THE BEARING IN ACCORDANCE WITH SECTION 616.
 - GREASE THE ENTIRE BEARING ASSEMBLY.

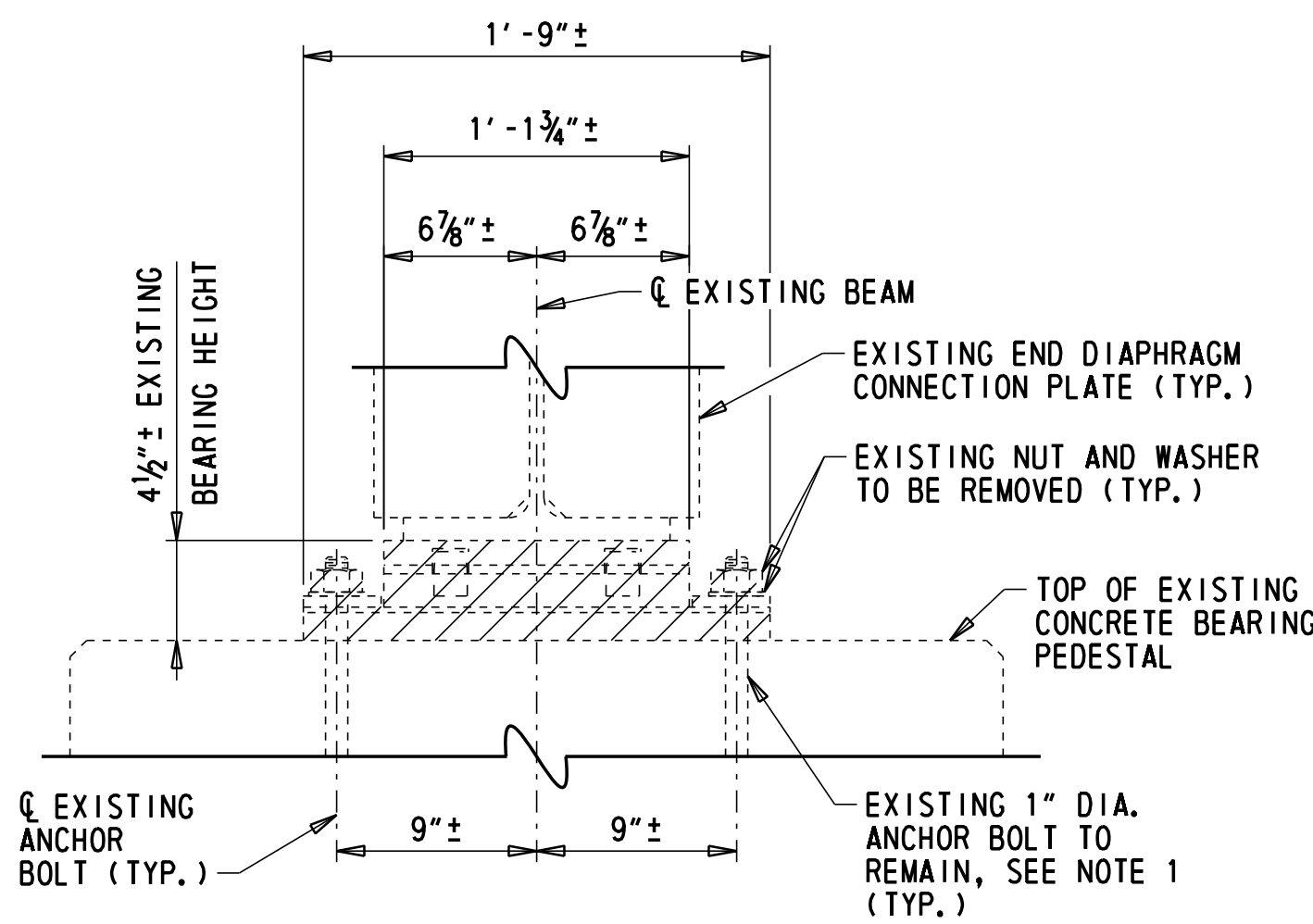
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ADDENDA / REVISIONS

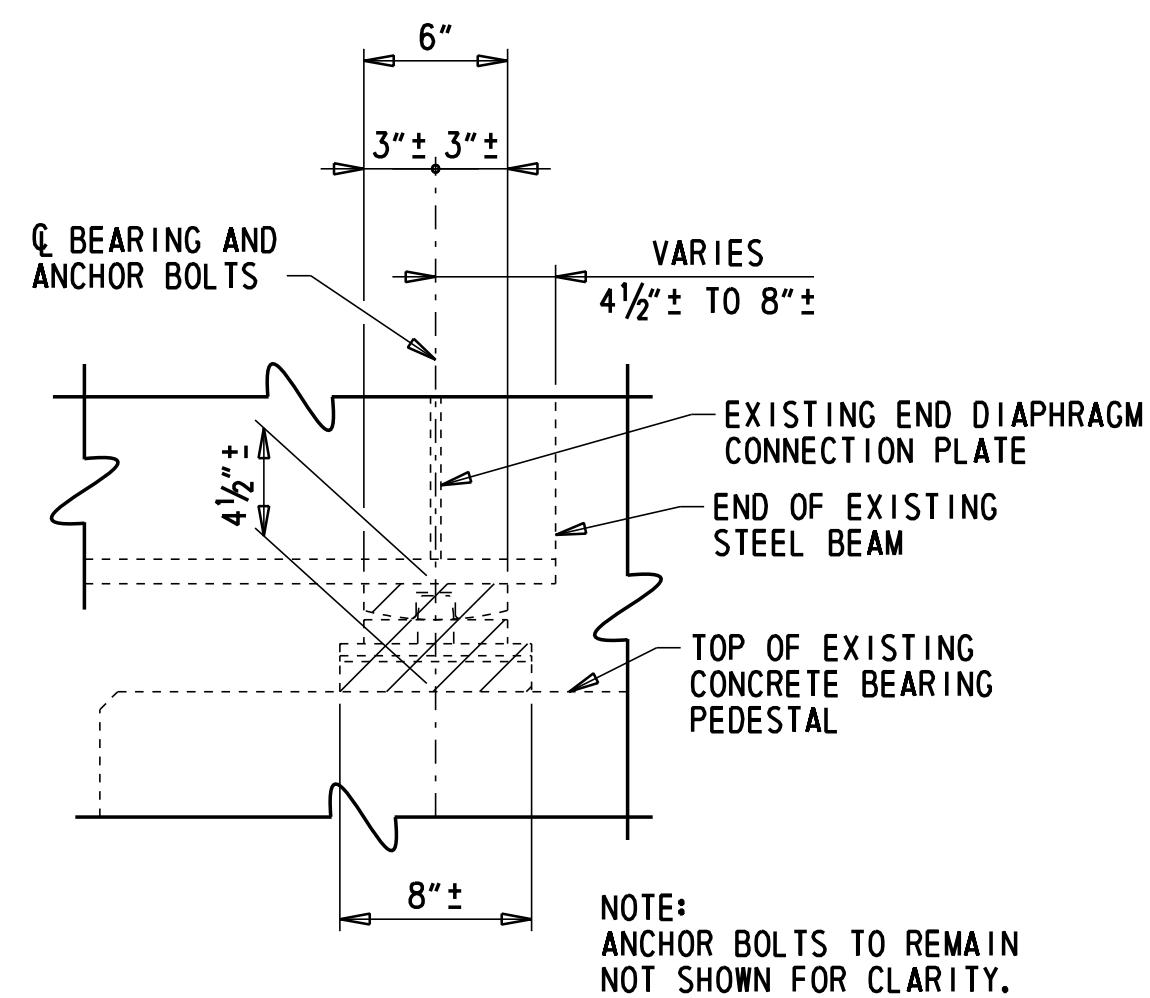
SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS
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CONTRACT T201907404	BRIDGE NO. 1 748 N&S
COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE CHECKED BY: D. NIZAMOFF

BEARING DETAILS - FIXED TYPE FS-3	BB-07 SECTION WRA SHEET NO. 75
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FRONT ELEVATION



SIDE ELEVATION

EXISTING BEARING REMOVAL DETAIL

1/2" = 1'-0"

NOTES:

1. THE EXISTING ANCHOR BOLTS ARE TO REMAIN, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE THE ANCHOR BOLTS DURING THE REMOVAL OF THE EXISTING BEARING. ANY ANCHOR BOLTS DAMAGED BY THE CONTRACTOR DURING REMOVAL OF THE EXISTING BEARINGS SHALL BE REPAIRED TO THE FULL SATISFACTION OF THE ENGINEER AT CONTRACTOR'S EXPENSE.
2. AFTER REMOVAL OF THE EXISTING BEARINGS, THE CONTRACTOR SHALL INSPECT THE EXISTING ANCHOR BOLTS TO REMAIN FOR ANY DEFECTS WHICH MAY ADVERSELY AFFECT THEIR PERFORMANCE. IF THE ENTIRE LINE OF ANCHOR BOLTS EXHIBITS DETERIORATION GREATER THAN 25% OF THE TOTAL CROSS-SECTIONAL AREA, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY. DETERIORATION LESS THAN 25% OF THE TOTAL CROSS-SECTIONAL AREA OF THE ANCHOR BOLTS IS ACCEPTABLE, IN WHICH CASE THE ANCHOR BOLTS SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 616 PRIOR TO INSTALLING NEW BRONZE BEARINGS. IF UNACCEPTABLE, THE ANCHOR BOLT SHALL BE REPAIRED AS SHOWN ON THE DETAILS ON DWG. BB-13.

LEGEND:

PORTIONS OF EXISTING BEARING TO BE REMOVED (ITEM 623500)

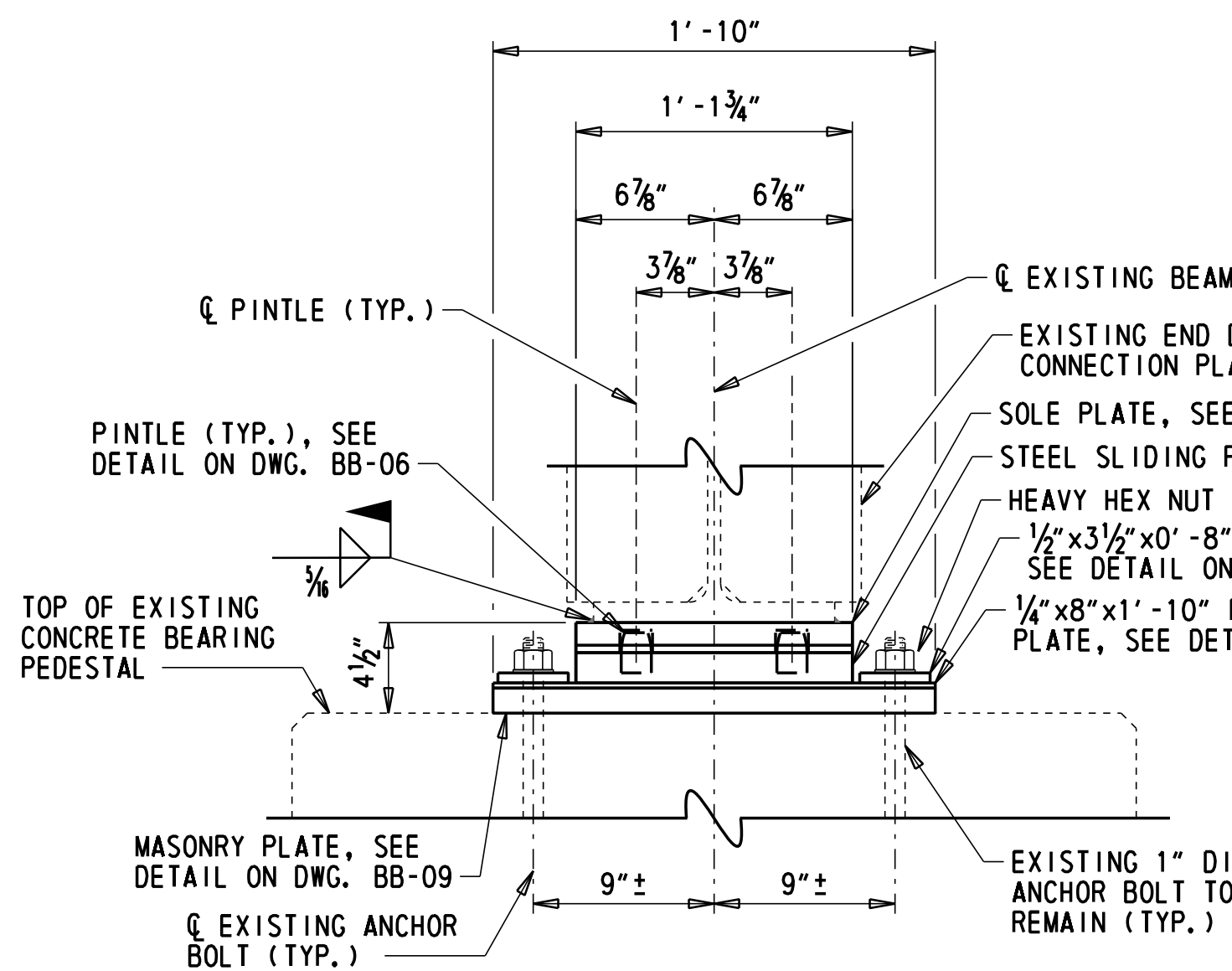
BRONZE BEARING NOTES:

1. PROVIDE ALL BRONZE EXPANSION BEARINGS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 615, SPECIAL PROVISION 623500, AND IN ACCORDANCE WITH CHAPTER 18 OF THE 2017 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4TH EDITION.
2. CONTRACTOR TO VERIFY ALL EXISTING DIMENSIONS PRIOR TO ORDERING OR FABRICATING BEARINGS.
3. SOLE PLATES SHALL BE BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. THE CONTRACTOR IS RESPONSIBLE FOR MEASURING THE EXISTING GRADE OF THE BEAMS IN THE FIELD TO DETERMINE THE PROPER BEVEL AT EACH BEARING REPLACEMENT LOCATION.
4. BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM. THE SKEW ANGLE BETWEEN THE CENTERLINE OF THE EXISTING BEAMS AND THE CENTERLINE OF BEARING AT THE PIERS VARY BY LOCATION. REFER TO DWG. RH-01 AND RH-02 FOR SKEW ANGLES, IDENTIFIED AS ANGLE A.
5. THE CONTRACTOR SHALL PREPARE THE EXISTING CONCRETE BEARING AREA TO ENSURE FULL CONTACT OF THE BEARINGS ON THE CONCRETE PEDESTAL. THE CONTRACTOR MAY USE A NON-SHRINK GROUT LEVELING PAD OR OTHER APPROVED METHOD TO PROVIDE A SMOOTH SURFACE FOR PLACING THE BEARING.
6. PORTIONS OF THE BOTTOM FLANGES OF THE EXISTING STEEL BEAMS TO RECEIVE NEW BEARINGS SHALL BE CLEANED PRIOR TO WELDING. CONTRACTOR SHALL REMOVE THE EXISTING PAINT IN THESE AREAS IN ACCORDANCE WITH SECTION 616 PRIOR TO PERFORMING ANY GRINDING, CUTTING, OR WELDING OF THE EXISTING STRUCTURAL STEEL AS PART OF THIS WORK.
7. ALL FIELD WELDING SHALL BE PERFORMED USING THE SHIELDED METAL-ARC PROCESS. CONTRACTOR SHALL NOT PAINT WELDS PRIOR TO INSPECTION BY THE ENGINEER.
8. ALL PAINT TO BE USED TO TOUCH UP THE EXISTING COATINGS DURING BEARING REPLACEMENT AND FOR PAINTING NEW BRONZE EXPANSION BEARINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 616. THE COLOR OF THE FINISH COAT SHALL MATCH EXISTING.
9. FILL SLOTS AND HOLES IN STEEL PLATES AROUND ANCHOR BOLTS WITH AN APPROVED NON-HARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
10. PAYMENT FOR BRONZE EXPANSION BEARINGS WILL BE MADE UNDER ITEM 623500 - BRONZE BEARINGS. PAYMENT WILL INCLUDE REMOVAL OF EXISTING BEARINGS, PREPARATION OF THE CONCRETE BEARING AREA, FABRICATING AND INSTALLING NEW BEARINGS, WELDING, PAINTING, AND ANY OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK.

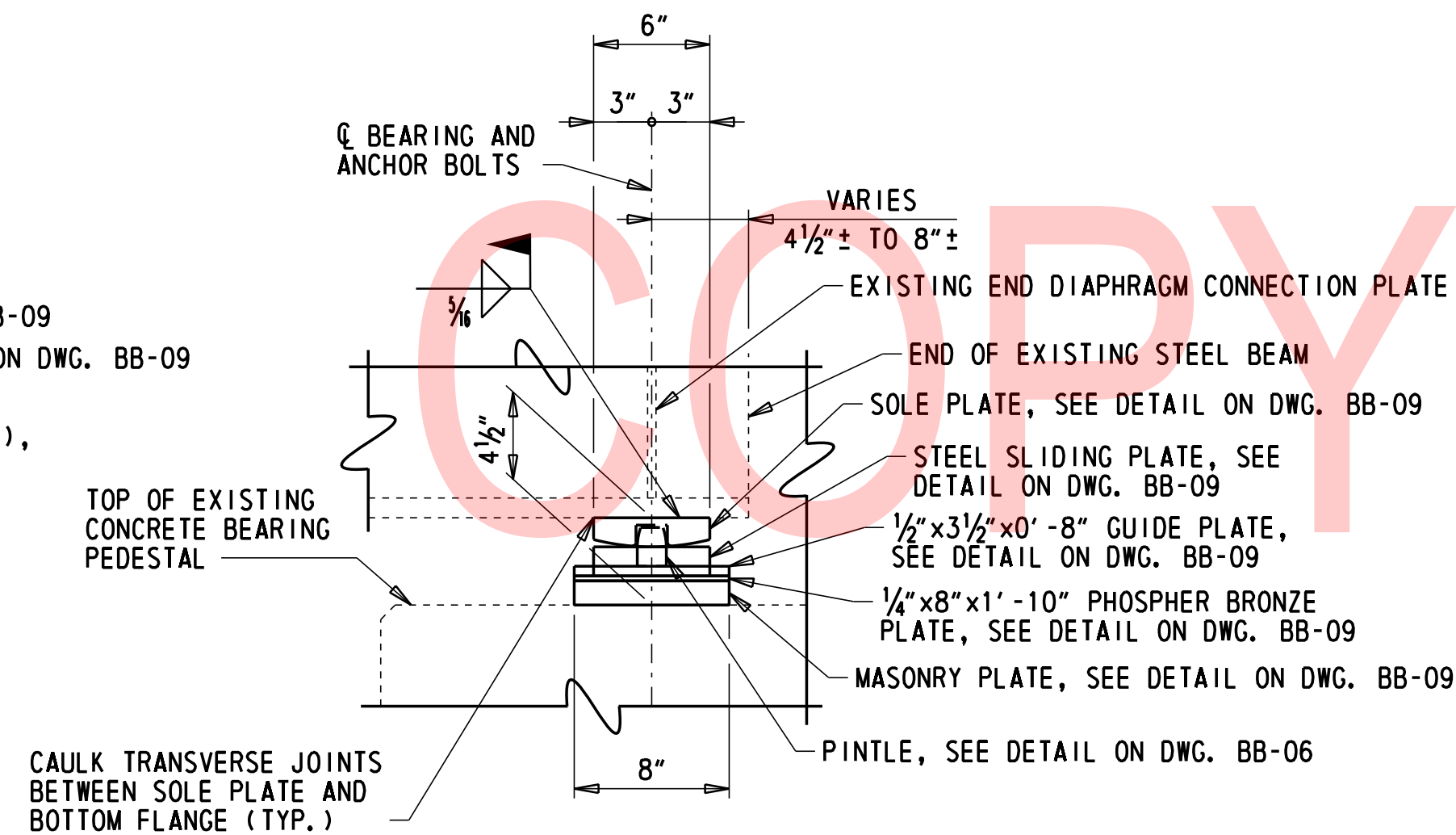
BEARING TABLE						
LOCATION	BEARING DESIGNATION					
	EXISTING MARK	TYPE	TOTAL NO. REQUIRED	CAPACITY PER BEARING		
				SERVICE REACTION ⊗	STRENGTH REACTION ⊙	MOVEMENT 0° TO 110°F ⊠
NORTHBOUND SPANS						
SPAN 35N, PIER 35N	ES-3	EXP.	3	137 KIP	214 KIP	0.56"
SPAN 36N, PIER 37N	ES-3	EXP.	3	138 KIP	215 KIP	0.57"
SPAN 38N, PIER 39N	ES-3	EXP.	2	117 KIP	182 KIP	0.56"
SPAN 39N, PIER 39N	ES-3	EXP.	1	109 KIP	170 KIP	0.56"
SPAN 41N, PIER 41N	ES-3	EXP.	3	137 KIP	214 KIP	0.56"
SPAN 51N, PIER 51N	ES-3	EXP.	6	148 KIP	231 KIP	0.59"
SPAN 51N, PIER E6	ES-3	EXP.	4	149 KIP	232 KIP	0.57"
SPAN 59N, PIER 59N	ES-3	EXP.	1	99 KIP	153 KIP	0.48"
TOTAL - TYPE ES-3			23			

KEY:

- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- ⊙ MAX. FACTORED STRENGTH 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- ⊠ TEMPERATURE MOVEMENT.



FRONT ELEVATION



SIDE ELEVATION

BEARING TYPE ES-3

1/2" = 1'-0"

SUGGESTED SEQUENCE OF INSTALLATION:

1. FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE ES-3:
 - A. CLEAN THE EXISTING ANCHOR BOLTS AND MAKE ANY NECESSARY REPAIRS.
 - B. INSTALL THE NEW MASONRY PLATE BY SLIDING IT AROUND THE EXISTING ANCHOR BOLTS AND ONTO THE CONCRETE BEARING PEDESTAL.
 - C. WELD THE ANCHOR BOLT SLOT PLUG AT BOTH ANCHOR BOLTS. GRIND THE WELD FLUSH WITH THE TOP OF THE MASONRY PLATE.
 - D. INSTALL THE PHOSPHOR BRONZE PLATE OVER THE EXISTING ANCHOR BOLTS, ENSURING THE HOLES FOR THE ASTM A307 BOLTS ARE PROPERLY ALIGNED.
 - E. PLACE THE GUIDE PLATES IN LOCATION AND ATTACH TO THE MASONRY PLATE AND PHOSPHOR BRONZE PLATES WITH ASTM A307 BOLTS. ONCE PLATES ARE ASSEMBLED, INSTALL NEW ANCHOR BOLT HEAVY HEX NUT AND WASHER TO SECURE THE ASSEMBLY TO THE CONCRETE BEARING PEDESTAL.
 - F. SET THE SOLE PLATE AND STEEL SLIDING PLATE INTO THE APPROPRIATE LOCATION FOR THE AMBIENT TEMPERATURE. ONCE SET, WELD TO THE BOTTOM FLANGE OF THE STEEL BEAM AS DETAILED.
 - G. CAULK THE TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE.
 - H. APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT ALL STEEL SURFACES OF THE BEARING WHICH ARE NOT IN CONTACT WITH THE BRONZE SLIDING SURFACE IN ACCORDANCE WITH SECTION 616. DO NOT PAINT THE BRONZE SURFACE.
 - I. GREASE THE ENTIRE BEARING ASSEMBLY.

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ADDENDA / REVISIONS

SCALE AS NOTED

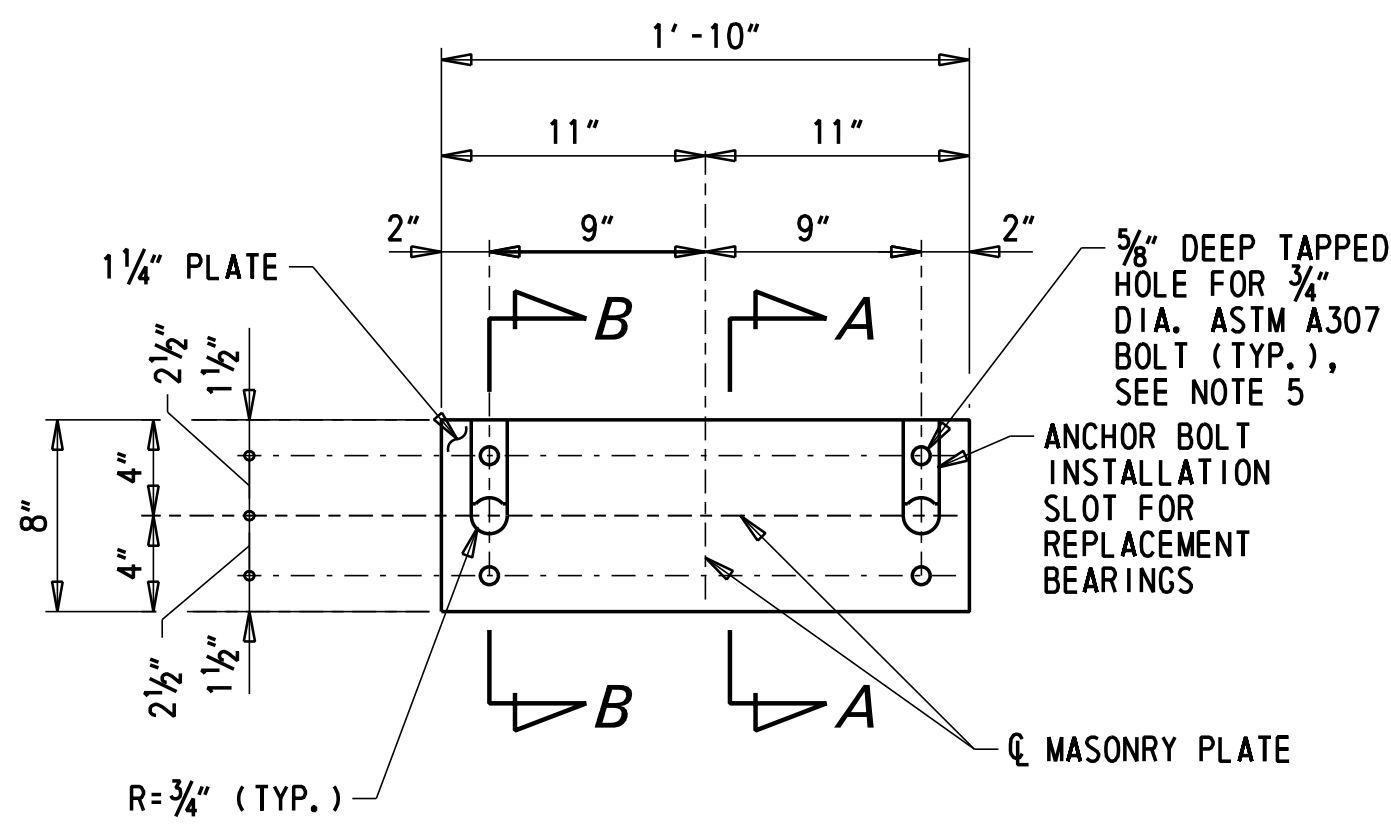
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

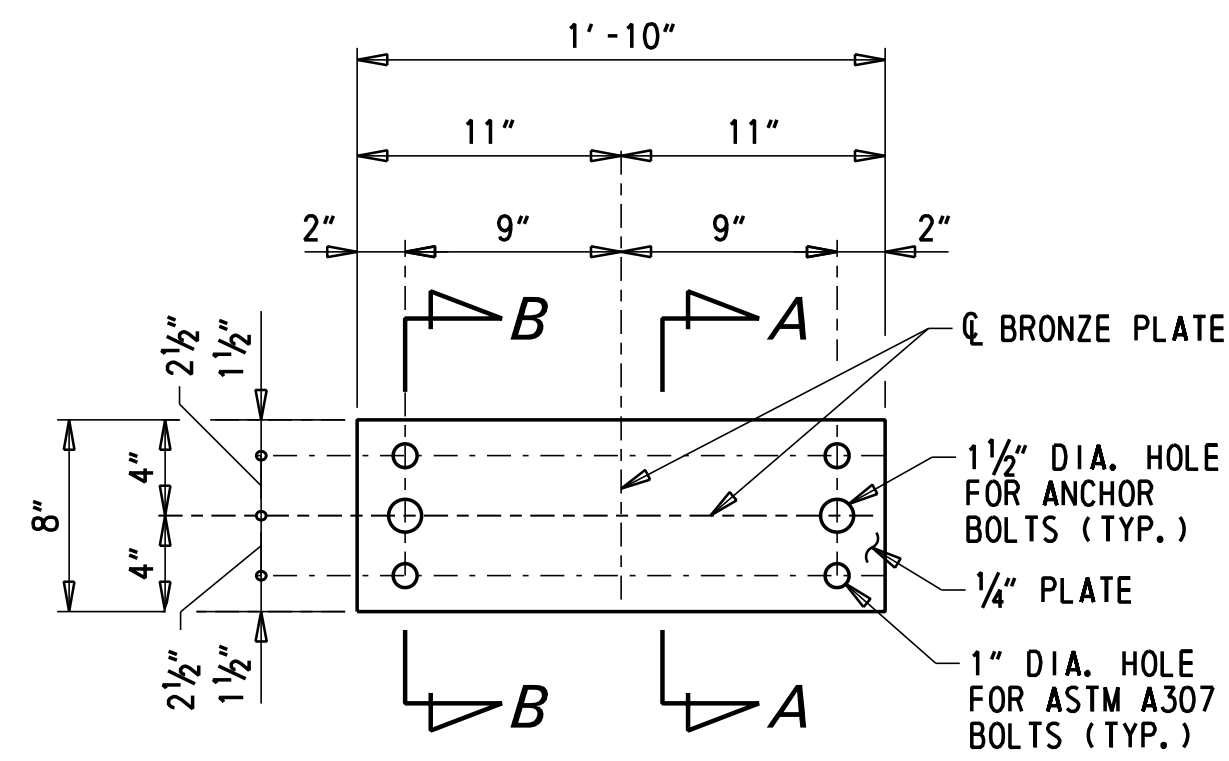
BEARING DETAILS -
EXPANSION TYPE ES-3
1 OF 2

BB-08

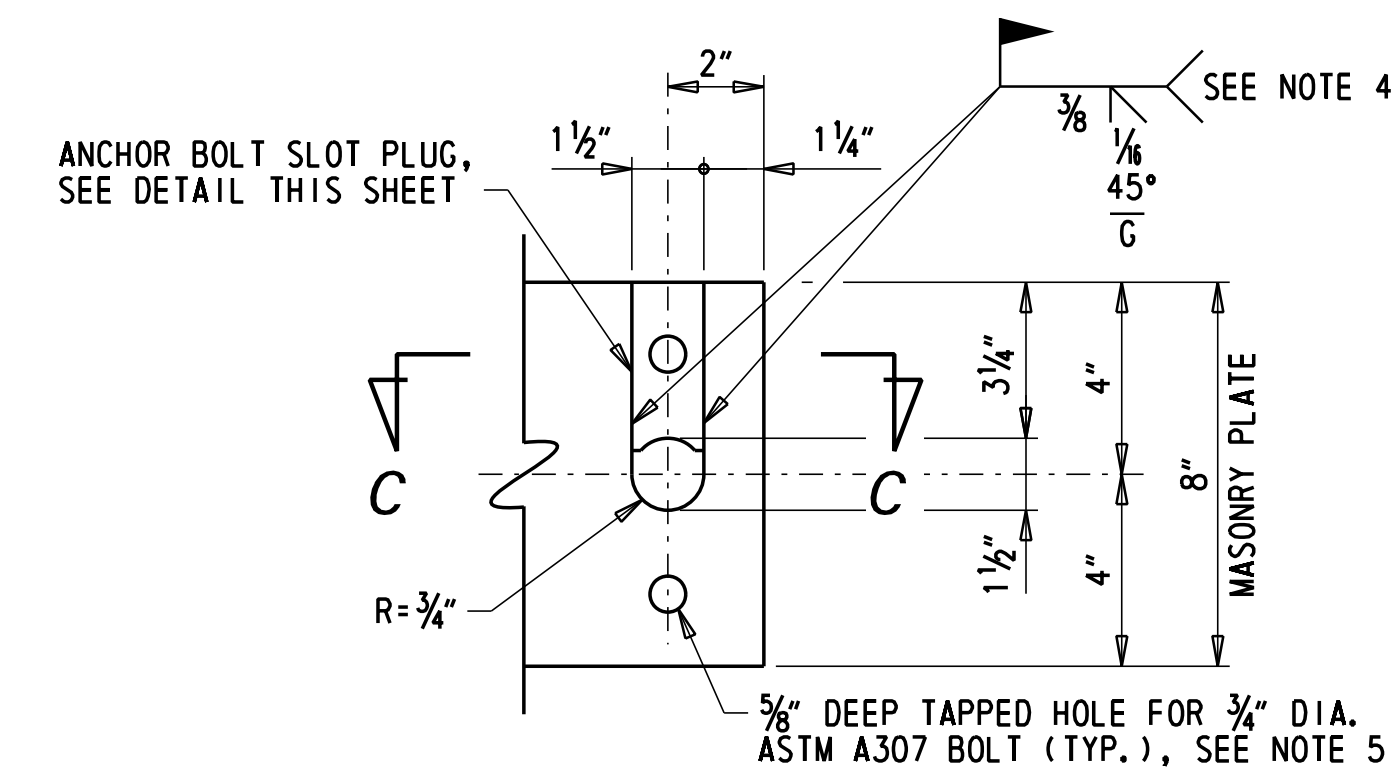
SECTION	WRA
SHEET NO.	76



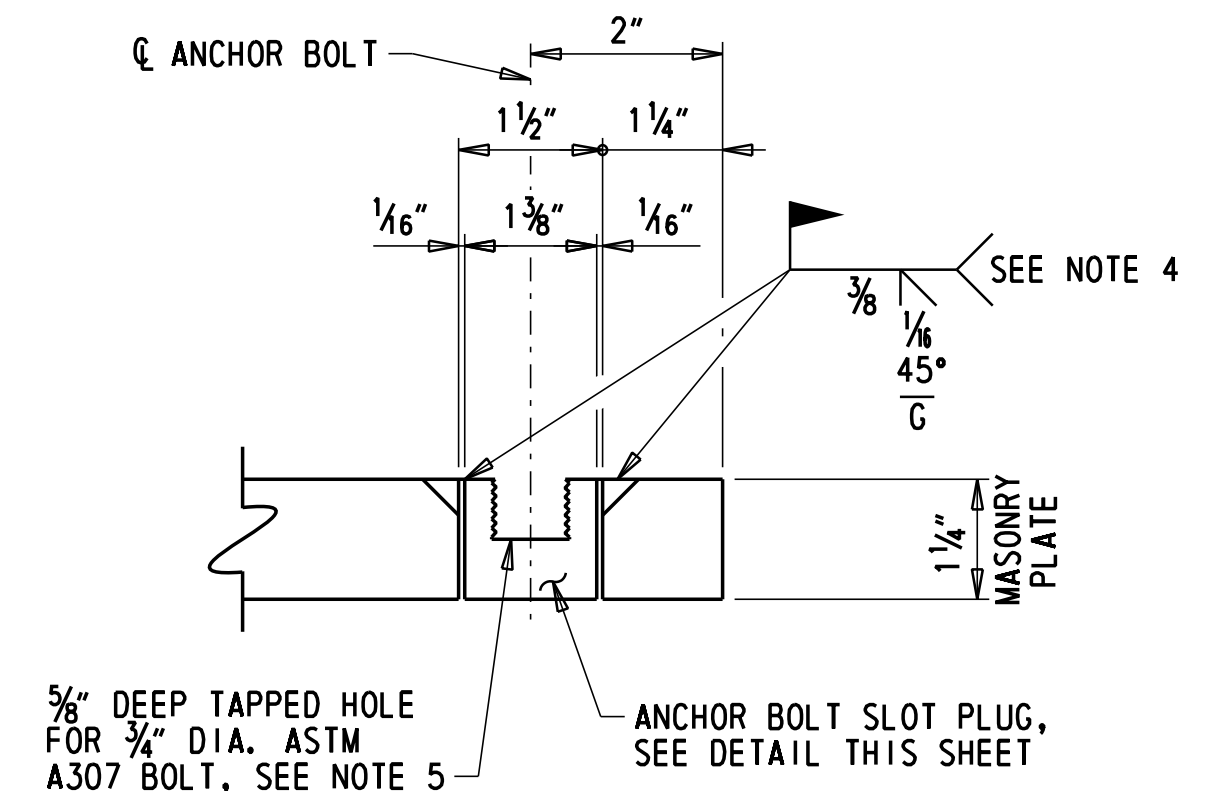
MASONRY PLATE DETAIL
1 1/2" = 1'-0"



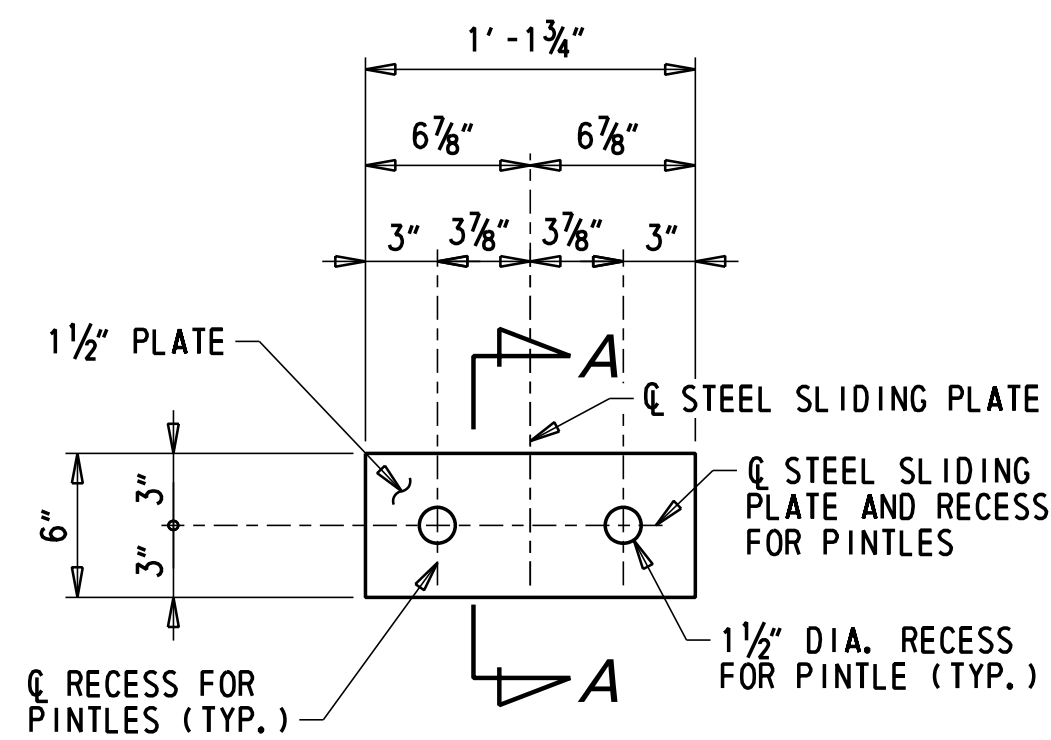
PHOSPER BRONZE PLATE DETAIL
1 1/2" = 1'-0"



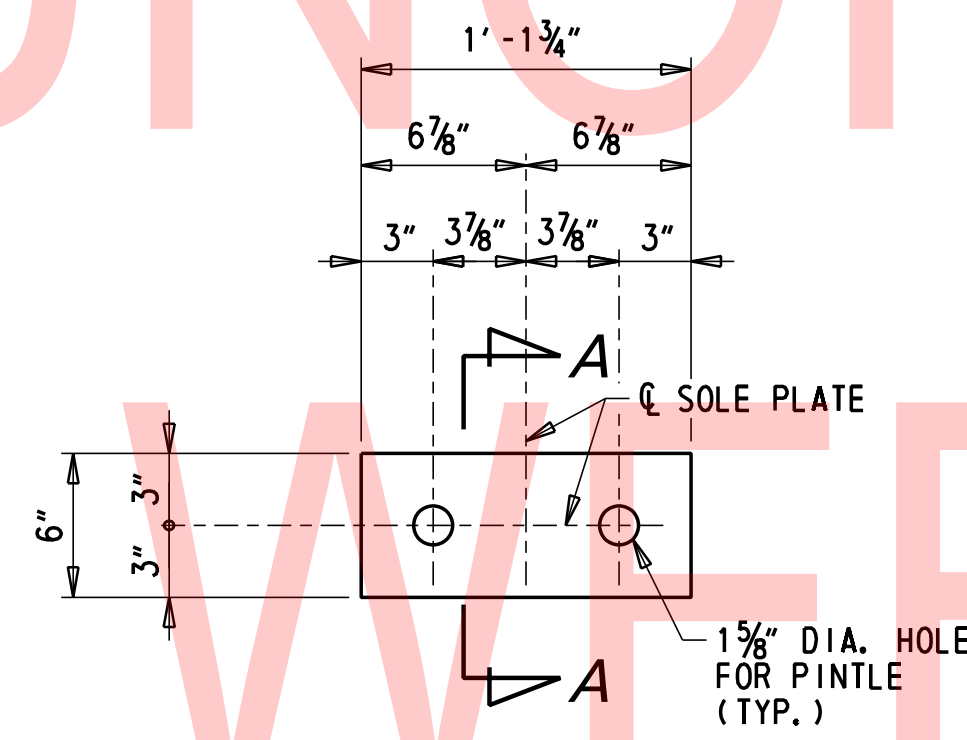
ANCHOR BOLT INSTALLATION SLOT DETAIL
3" = 1'-0"



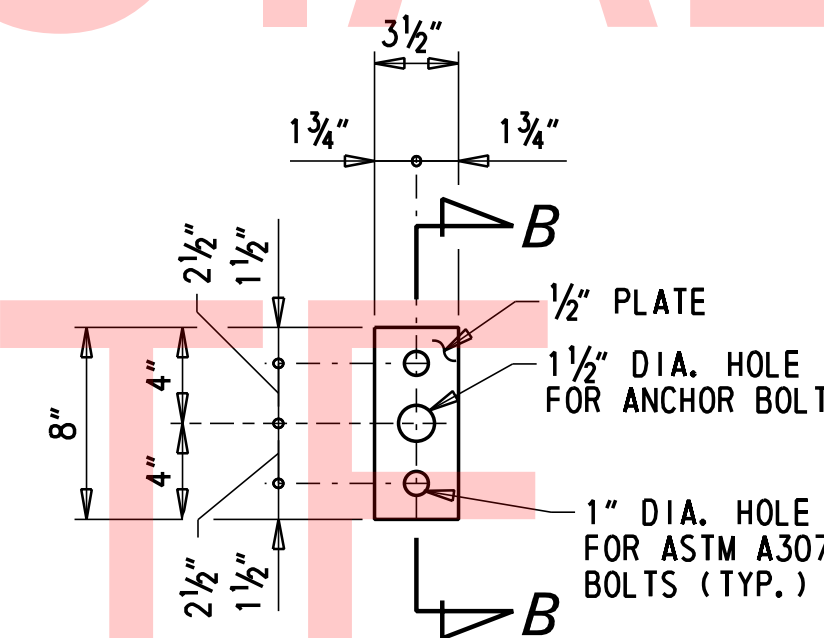
SECTION C-C
6" = 1'-0"



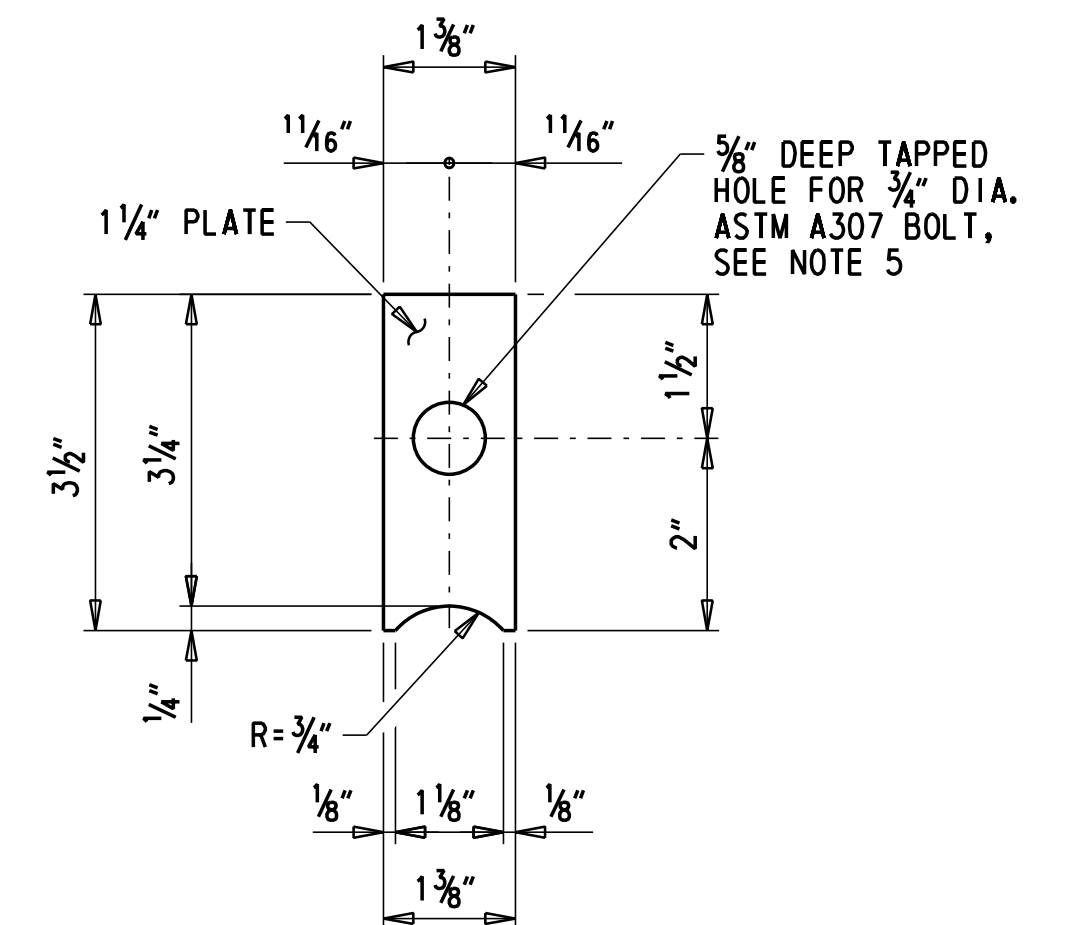
STEEL SLIDING PLATE DETAIL
1 1/2" = 1'-0"



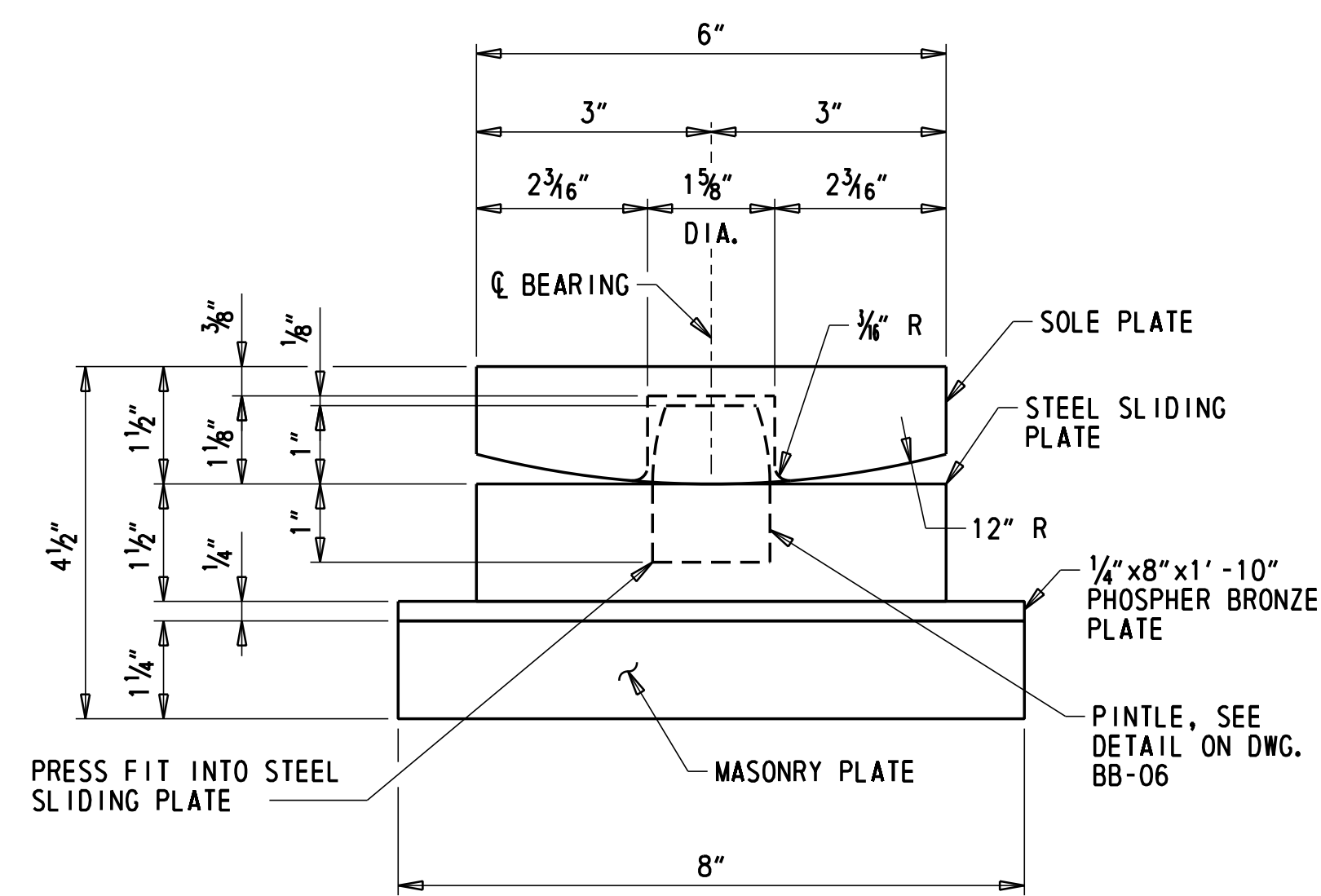
SOLE PLATE DETAIL
1 1/2" = 1'-0"



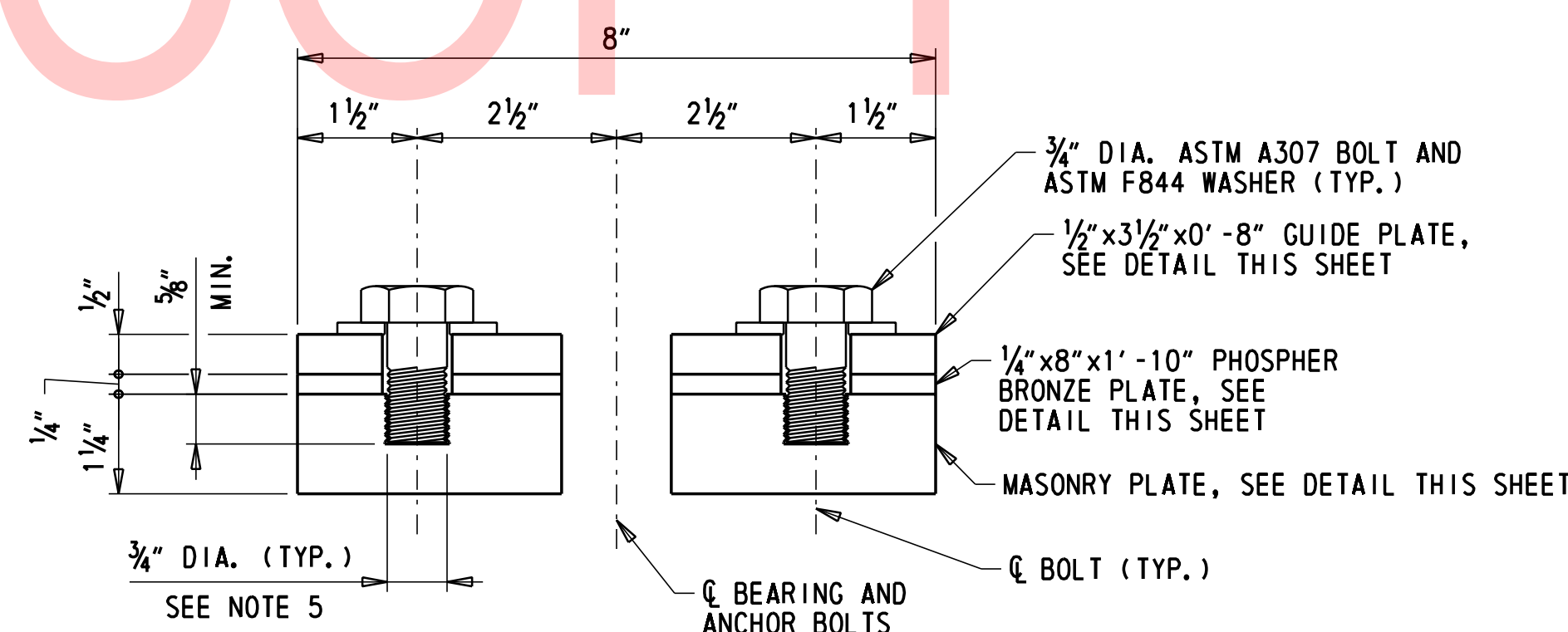
GUIDE PLATE DETAIL
1 1/2" = 1'-0"



ANCHOR BOLT SLOT PLUG DETAIL
6" = 1'-0"



SECTION A-A
6" = 1'-0"



SECTION B-B
6" = 1'-0"

NOTES:

1. FOR ADDITIONAL NOTES, SEE DWG. BB-08.
2. FOR ADDITIONAL DETAILS, SEE DWG. BB-08.
3. FOR SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE ES-3, SEE DWG. BB-08.
4. THE MASONRY PLATE AS SHOWN SHALL BE INSTALLED BY PROVIDING ANCHOR BOLT SLOTS IN THE PLATE TO ALLOW IT TO SLIDE INTO POSITION AROUND THE EXISTING ANCHOR BOLTS. THIS IS DUE TO THE ANCHOR BOLTS EXTENDING TO NEAR THE BOTTOM FLANGE OF THE EXISTING BEAMS. AFTER THE MASONRY PLATE IS SET AROUND THE ANCHOR BOLTS, INSTALL THE ANCHOR BOLT SLOT PLUG, WELD IN PLACE, THEN GRIND THE WELDS SMOOTH WITH THE TOP OF THE MASONRY PLATE.
5. HOLES IN THE MASONRY PLATE AND ANCHOR BOLT SLOT PLUG SHALL BE TAPPED TO RECEIVE THE 3/4" DIAMETER ASTM A307 BOLTS.

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ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

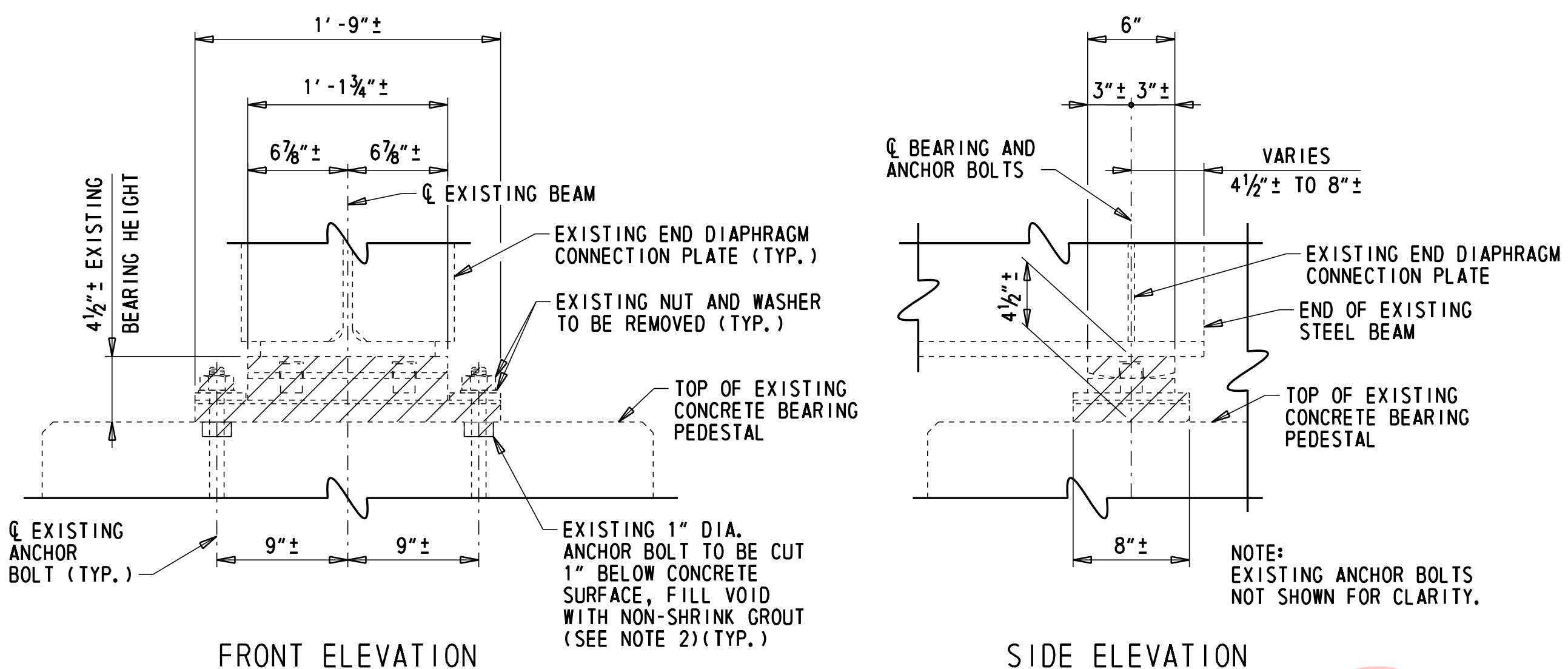
**BEARING DETAILS -
EXPANSION TYPE ES-3
2 OF 2**

BB-09
SECTION
WRA
SHEET NO.
77

NOTES:

- FOR BRONZE BEARING NOTES, SEE DWG. BB-08.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH SUBSECTION 1047.02. COST OF CONCRETE REMOVAL AROUND ANCHOR BOLTS, CUTTING ANCHOR BOLTS, AND NON-SHRINK GROUT SHALL BE INCIDENTAL TO ITEM 623500 - BRONZE BEARINGS.

BEARING TABLE						
LOCATION	BEARING DESIGNATION					
	EXISTING MARK	TYPE	TOTAL NO. REQUIRED	CAPACITY PER BEARING		
				SERVICE REACTION \otimes	STRENGTH REACTION \odot	MOVEMENT \boxtimes 0° TO 110°F
NORTHBOUND SPANS						
SPAN 33N, PIER 34N	ES-3	EXP.	4	132 KIP	207 KIP	0.49"
SPAN 34N, PIER 35N	ES-3	EXP.	4	137 KIP	214 KIP	0.57"
SPAN 37N, PIER 37N	ES-3	EXP.	4	137 KIP	214 KIP	0.56"
SPAN 40N, PIER 41N	ES-3	EXP.	4	137 KIP	214 KIP	0.56"
SPAN 50N, PIER 51N	ES-3	EXP.	4	139 KIP	216 KIP	0.59"
SOUTHBOUND SPANS						
SPAN 40S, PIER 41S	ES-3	EXP.	4	140 KIP	218 KIP	0.59"
SPAN 42S, PIER 43S	ES-3	EXP.	4	144 KIP	223 KIP	0.56"
SPAN 43S, PIER 43S	ES-3	EXP.	4	144 KIP	223 KIP	0.56"
SPAN 48S, PIER 49S	ES-3	EXP.	4	128 KIP	200 KIP	0.51"
SPAN 50S, PIER 51S	ES-3	EXP.	4	140 KIP	218 KIP	0.59"
SPAN 51S, PIER 51S	ES-3	EXP.	4	140 KIP	218 KIP	0.59"
SPAN 59S, PIER 59S	ES-3	EXP.	4	124 KIP	194 KIP	0.48"
TOTAL - TYPE ES-3A			48			

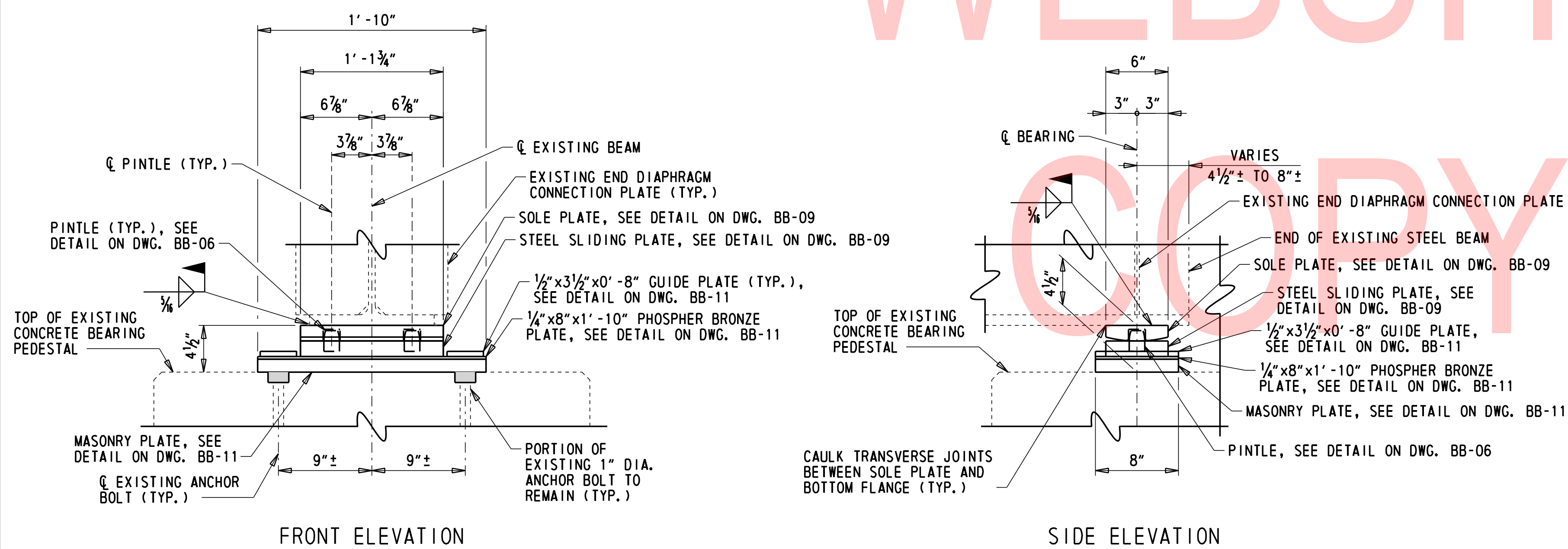


EXISTING BEARING REMOVAL DETAIL

1 1/2" = 1'-0"

LEGEND:

PORTIONS OF EXISTING BEARING TO BE REMOVED (ITEM 623500)



BEARING TYPE ES-3A

1 1/2" = 1'-0"

LEGEND:

NON-SHRINK GROUT

KEY:

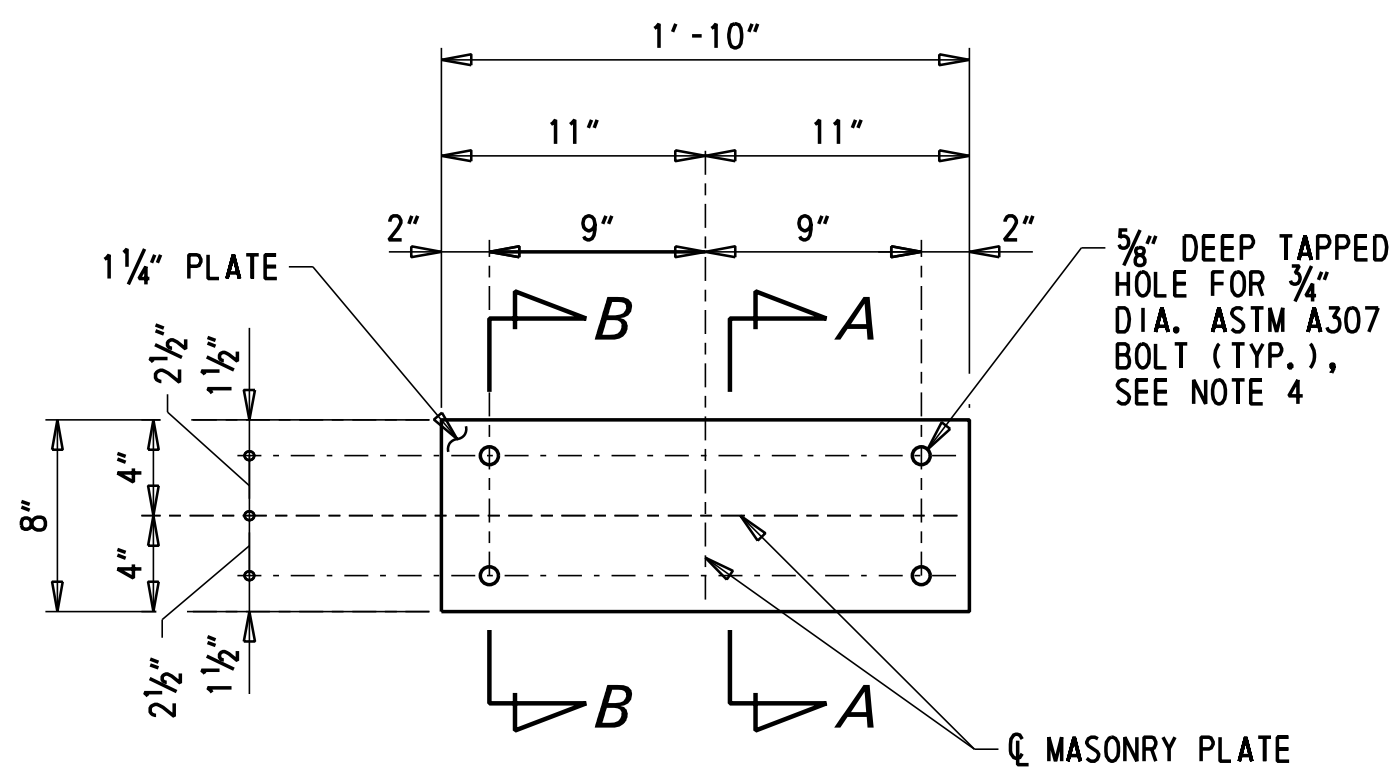
- \otimes MAX. UN-FACTORED SERVICE 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- \odot MAX. FACTORED STRENGTH 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- \boxtimes TEMPERATURE MOVEMENT.

SUGGESTED SEQUENCE OF INSTALLATION:

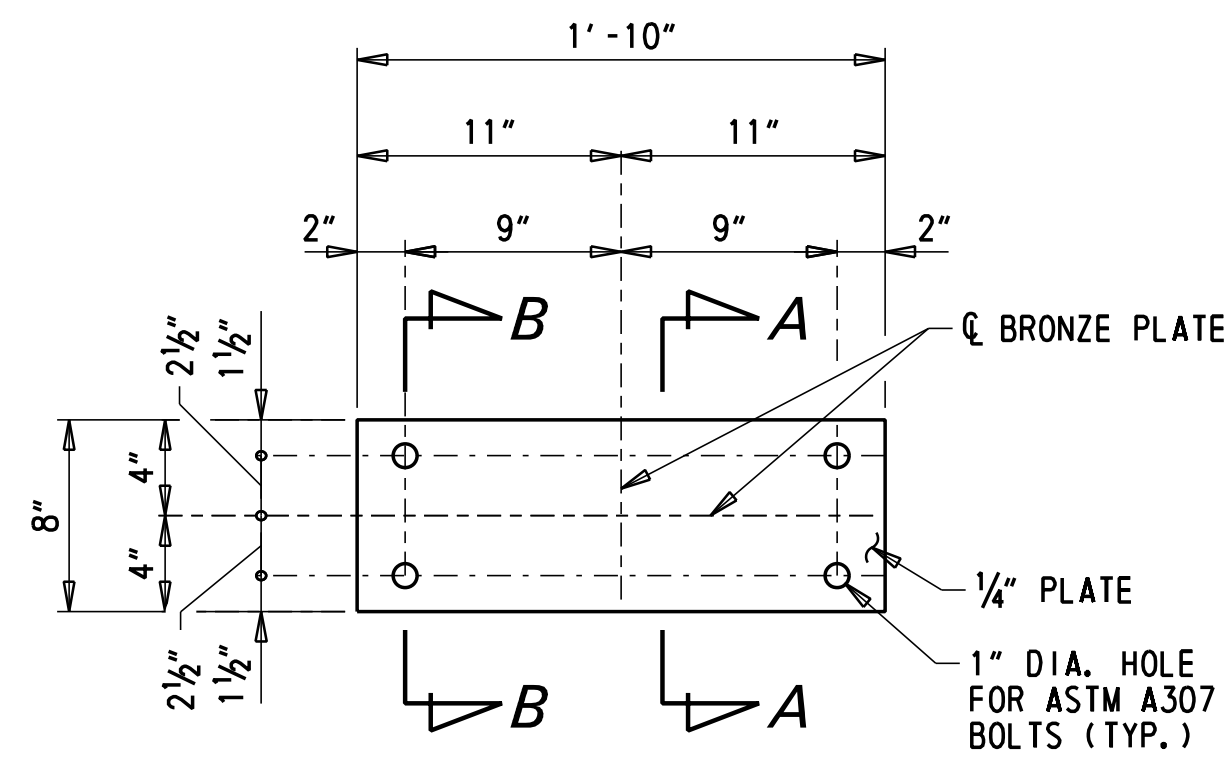
- FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE ES-3A:
 - INSTALL THE NEW MASONRY PLATE ONTO THE CONCRETE BEARING PEDESTAL.
 - INSTALL THE PHOSPHER BRONZE PLATE ENSURING THE HOLES FOR THE ASTM A307 BOLTS ARE PROPERLY ALIGNED.
 - PLACE THE GUIDE PLATES IN LOCATION AND ATTACH TO THE MASONRY PLATE AND PHOSPHER BRONZE PLATES WITH ASTM A307 BOLTS.
 - SET THE SOLE PLATE AND STEEL SLIDING PLATE INTO THE APPROPRIATE LOCATION FOR THE AMBIENT TEMPERATURE. ONCE SET, WELD TO THE BOTTOM FLANGE OF THE STEEL BEAM AS DETAILED.
 - CAULK THE TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE.
 - APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT ALL STEEL SURFACES OF THE BEARING WHICH ARE NOT IN CONTACT WITH THE BRONZE SLIDING SURFACE IN ACCORDANCE WITH SECTION 616. DO NOT PAINT THE BRONZE SURFACE.
 - GREASE THE ENTIRE BEARING ASSEMBLY.

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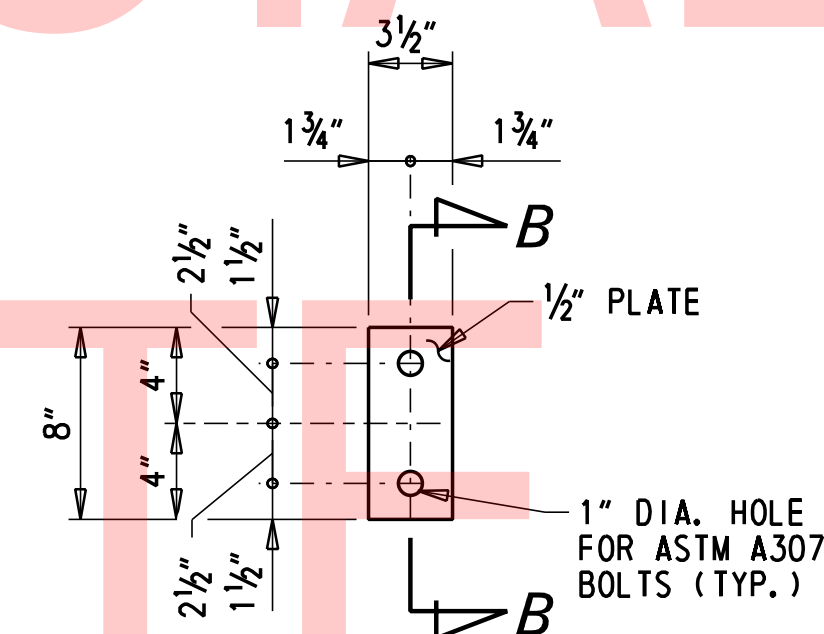
ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 748 N&S	BEARING DETAILS - EXPANSION TYPE ES-3A 1 OF 2	BB-10
				T201907404	DESIGNED BY: K. AMBROSE	SECTION		WRA
		COUNTY	CHECKED BY: D. NIZAMOFF	SHEET NO.	78			



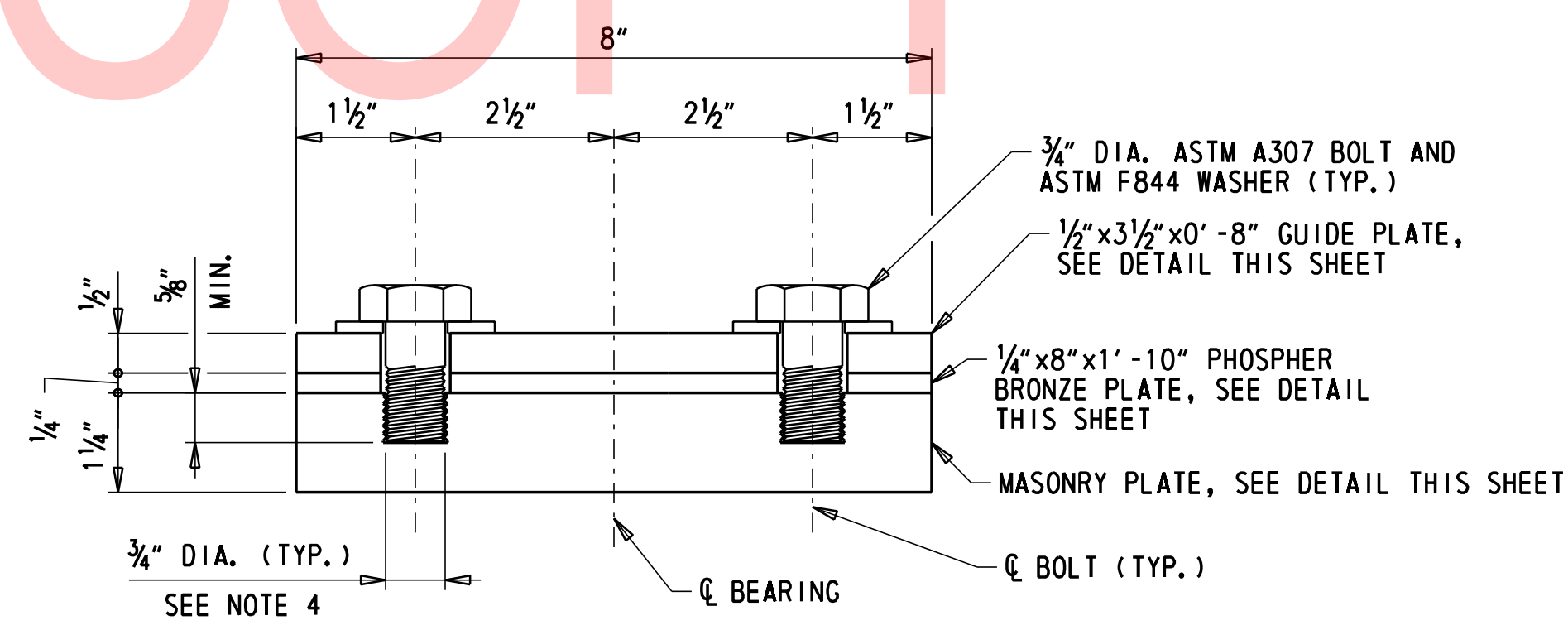
MASONRY PLATE DETAIL
1 1/2" = 1'-0"



PHOSPHER BRONZE PLATE DETAIL
1 1/2" = 1'-0"



GUIDE PLATE DETAIL
1 1/2" = 1'-0"



SECTION B-B
6" = 1'-0"

UNOFFICIAL
WEBSITE
COPY

NOTES:

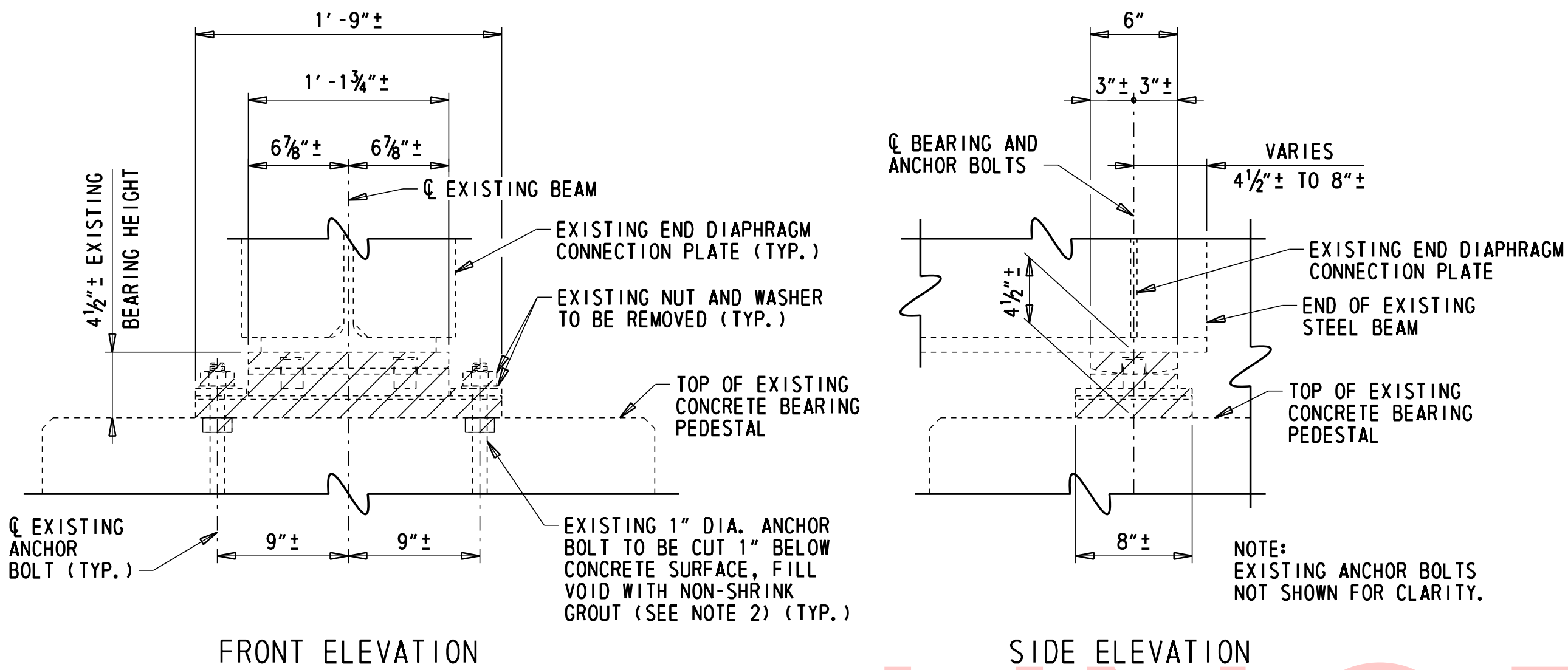
1. FOR ADDITIONAL NOTES, SEE DWG. BB-10.
2. FOR ADDITIONAL DETAILS, SEE DWG. BB-10.
3. FOR SUGGESTED SEQUENCE OF INSTALLATION FOR THE BEARING TYPE ES-3A, REFER TO DWG. BB-10.
4. HOLES IN THE MASONRY PLATE SHALL BE TAPPED TO RECEIVE THE 3/4" DIAMETER ASTM A307 BOLTS.
5. FOR SECTION A-A, SEE BB-09.

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ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404	BRIDGE NO. 1 748 N&S	SECTION BB-11
			COUNTY NEW CASTLE	DESIGNED BY: K. AMBROSE	BEARING DETAILS - EXPANSION TYPE ES-3A 2 OF 2
				CHECKED BY: D. NIZAMOFF	SHEET NO. 79

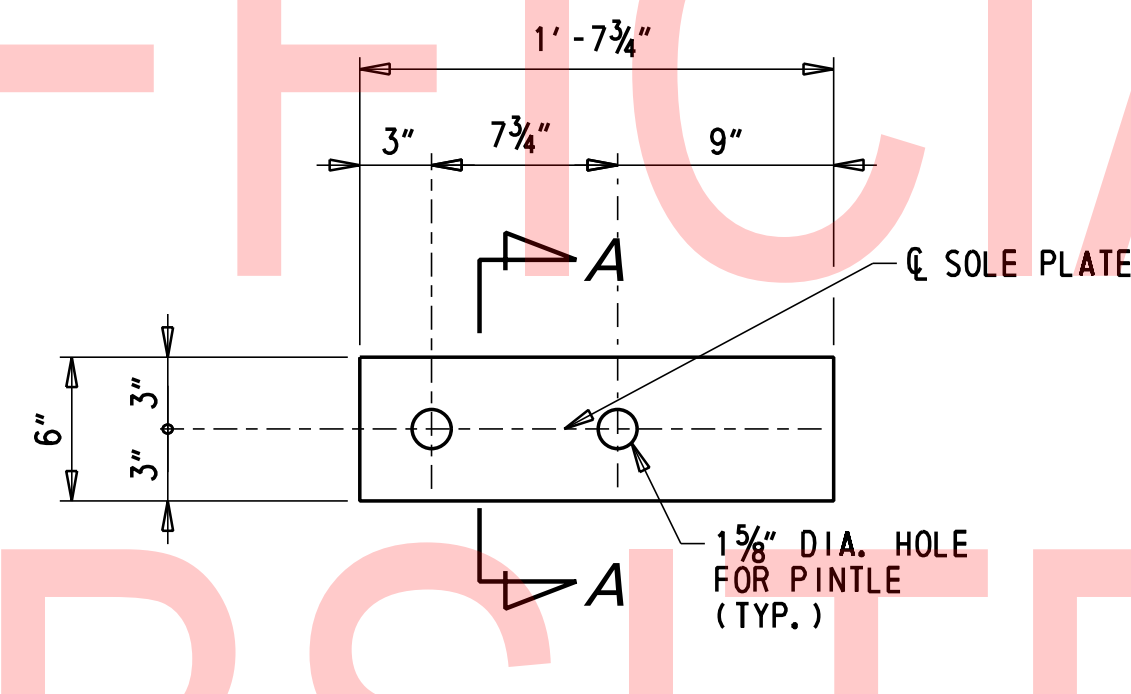
NOTES:

1. FOR BRONZE BEARING NOTES, SEE DWG. BB-08.
2. NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH SUBSECTION 1047.02. COST OF CONCRETE REMOVAL AROUND ANCHOR BOLTS, AND NON-SHRINK GROUT SHALL BE INCIDENTAL TO ITEM 623500-BRONZE BEARINGS.
3. FOR SECTION A-A, SEE BB-09.



EXISTING BEARING REMOVAL DETAIL

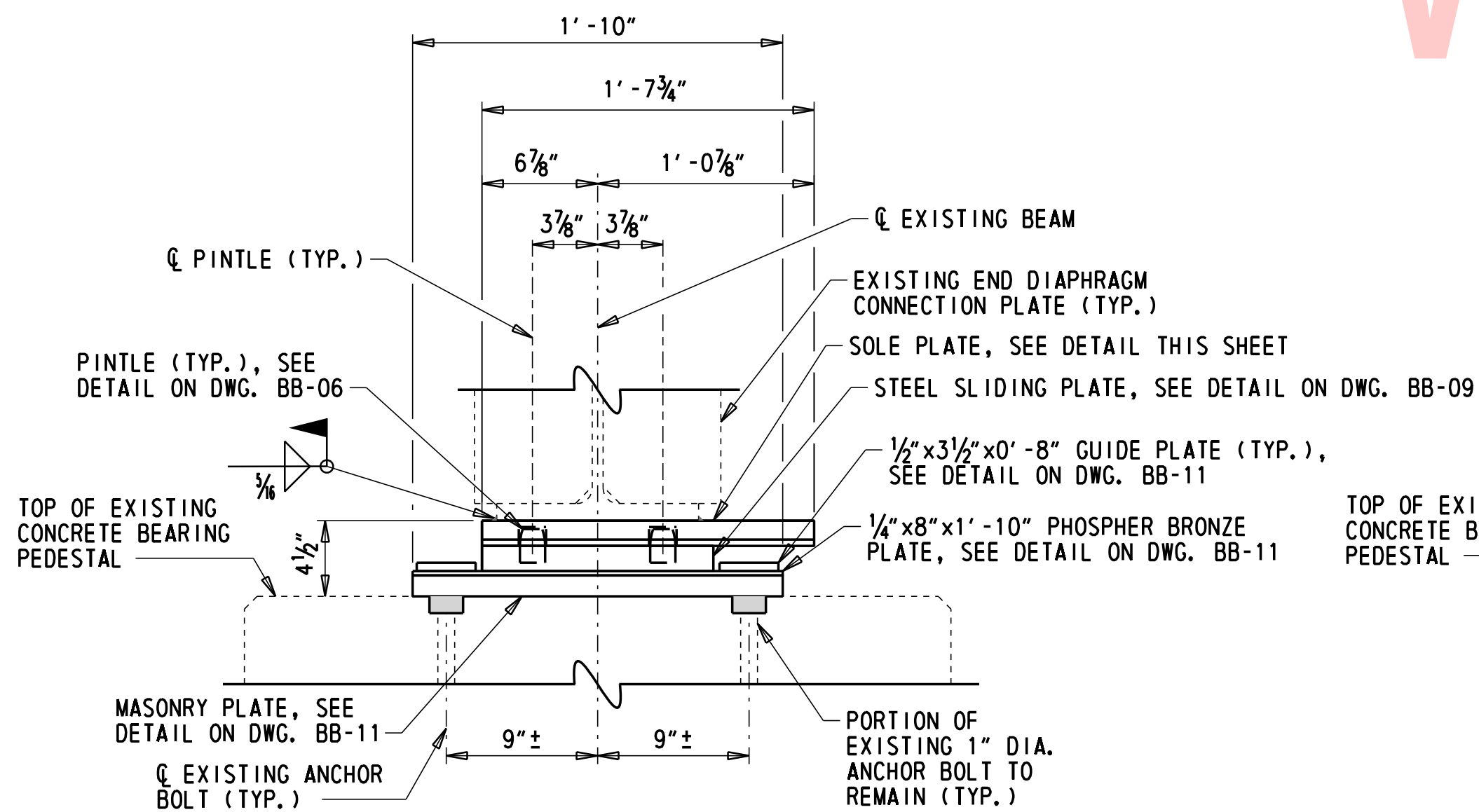
1 1/2" = 1'-0"



SOLE PLATE DETAIL

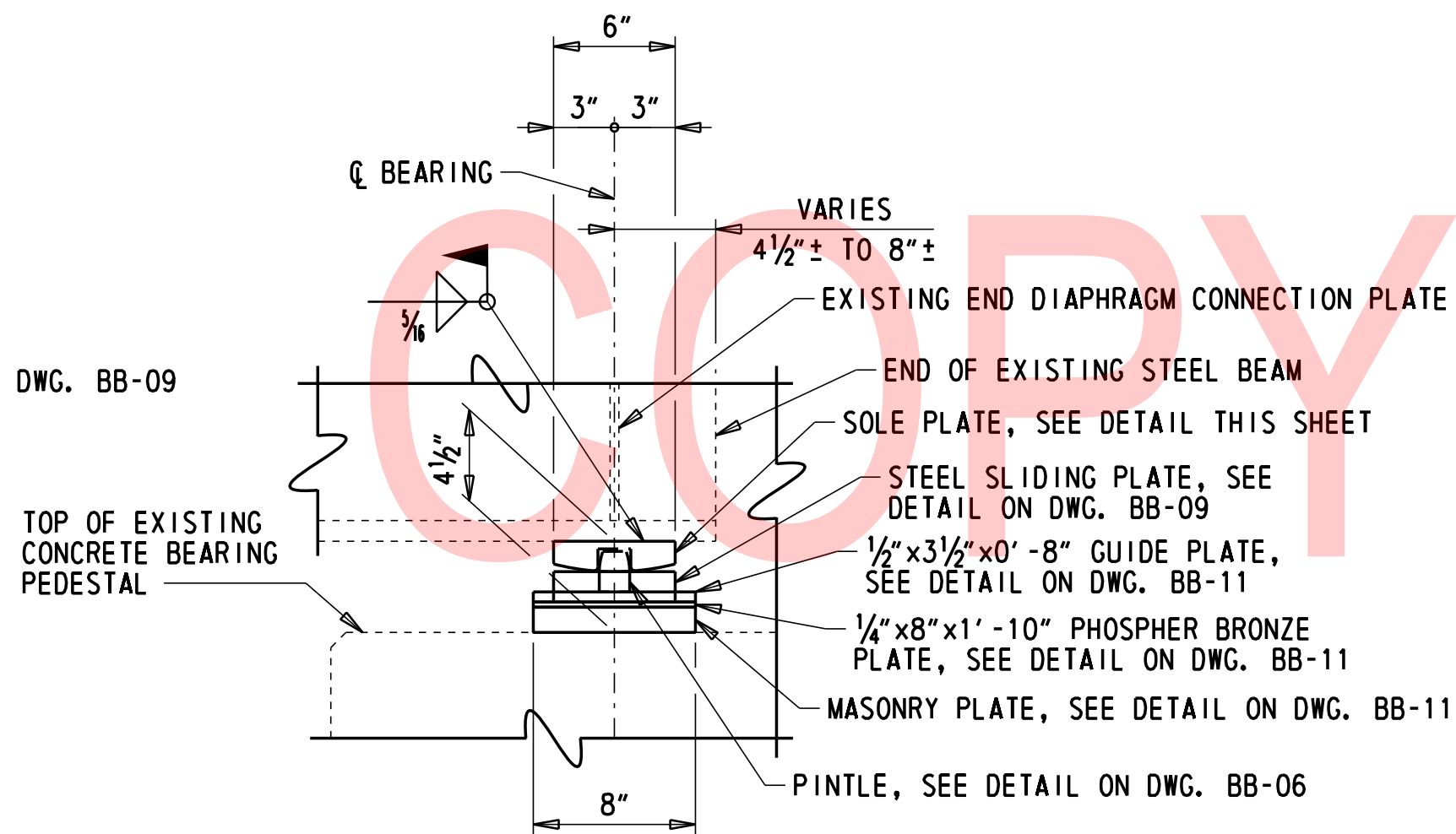
1 1/2" = 1'-0"

LEGEND:
 PORTIONS OF EXISTING BEARING TO BE REMOVED (ITEM 623500)



BEARING TYPE ES-3A

1 1/2" = 1'-0"



SIDE ELEVATION

LEGEND:
 NON-SHRINK GROUT

BEARING TABLE						
LOCATION	BEARING DESIGNATION					
	EXISTING MARK	TYPE	TOTAL NO. REQUIRED	CAPACITY PER BEARING		
				SERVICE REACTION \otimes	STRENGTH REACTION \odot	MOVEMENT \boxtimes 0° TO 110°F
NORTHBOUND SPANS						
SPAN 33N, PIER 34N	ES-3	EXP.	2	132 KIP	207 KIP	0.49"
SPAN 34N, PIER 35N	ES-3	EXP.	2	137 KIP	214 KIP	0.57"
SPAN 37N, PIER 37N	ES-3	EXP.	2	137 KIP	214 KIP	0.56"
SPAN 40N, PIER 41N	ES-3	EXP.	2	137 KIP	214 KIP	0.56"
SPAN 50N, PIER 51N	ES-3	EXP.	2	139 KIP	216 KIP	0.59"
SOUTHBOUND SPANS						
SPAN 40S, PIER 41S	ES-3	EXP.	2	140 KIP	218 KIP	0.59"
SPAN 42S, PIER 43S	ES-3	EXP.	2	144 KIP	223 KIP	0.56"
SPAN 43S, PIER 43S	ES-3	EXP.	2	144 KIP	223 KIP	0.56"
SPAN 48S, PIER 49S	ES-3	EXP.	2	128 KIP	200 KIP	0.51"
SPAN 50S, PIER 51S	ES-3	EXP.	2	140 KIP	218 KIP	0.59"
SPAN 51S, PIER 51S	ES-3	EXP.	2	140 KIP	218 KIP	0.59"
SPAN 59S, PIER 59S	ES-3	EXP.	2	124 KIP	194 KIP	0.48"
TOTAL - TYPE ES-3B			24			

KEY:

- \otimes MAX. UN-FACTORED SERVICE 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- \odot MAX. FACTORED STRENGTH 1 REACTION AT LOCATION (INCLUDING DYNAMIC LOAD ALLOWANCE).
- \boxtimes TEMPERATURE MOVEMENT.

SUGGESTED SEQUENCE OF INSTALLATION:

1. FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPE ES-3B:
 - A. INSTALL THE NEW MASONRY PLATE ONTO THE CONCRETE BEARING PEDESTAL.
 - B. INSTALL THE PHOSPHOR BRONZE PLATE ENSURING THE HOLES FOR THE ASTM A307 BOLTS ARE PROPERLY ALIGNED.
 - C. PLACE THE GUIDE PLATES IN LOCATION AND ATTACH TO THE MASONRY PLATE AND PHOSPHOR BRONZE PLATES WITH ASTM A307 BOLTS.
 - D. SET THE SOLE PLATE AND STEEL SLIDING PLATE INTO THE APPROPRIATE LOCATION FOR THE AMBIENT TEMPERATURE. ONCE SET, WELD TO THE BOTTOM FLANGE OF THE STEEL BEAM AS DETAILED.
 - E. CAULK THE TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE.
 - F. APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT ALL STEEL SURFACES OF THE BEARING WHICH ARE NOT IN CONTACT WITH THE BRONZE SLIDING SURFACE IN ACCORDANCE WITH SECTION 616. DO NOT PAINT THE BRONZE SURFACE.
 - G. GREASE THE ENTIRE BEARING ASSEMBLY.

M:\31987-00A\31987-00A\31987-00A\Bearing\CAD\Bearing\shear_blocks\BR1-748_BB13SB.dgn
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ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

BEARING DETAILS -
EXPANSION TYPE ES-3B

BB-12

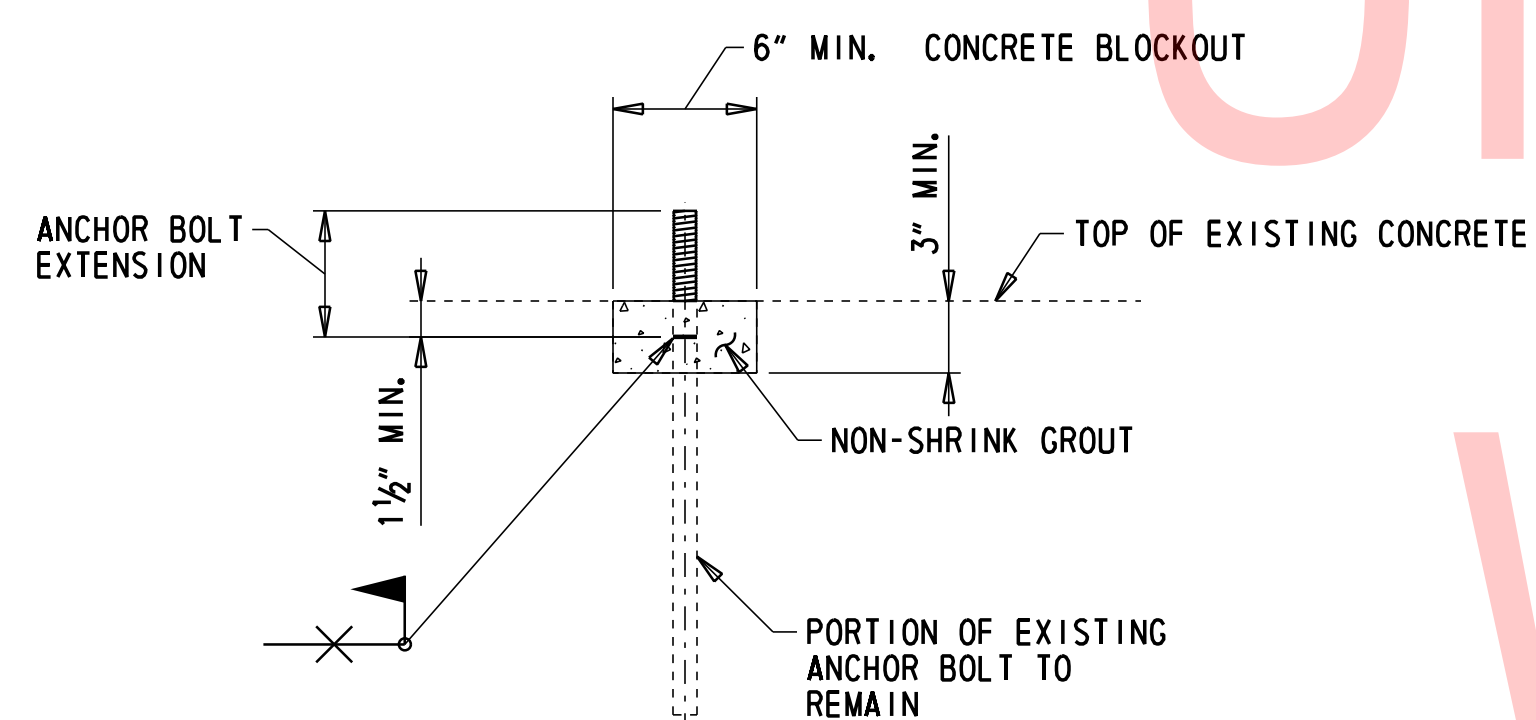
SECTION
WRA
SHEET NO.
80

REINFORCING BAR LIST				
MARK	SIZE	NUMBER	TYPE	LENGTH
PR401	4		17	3' - 10"
PR402	4		STR	3' - 2"

BENDING DIAGRAMS	
(17)	

NOTES:

1. FOR ANCHOR BOLT REPLACEMENT CRITERIA, SEE STEEL SLIDING PLATE AND BRONZE EXPANSION BEARING NOTES ON DWGS. BB-06 AND BB-08.
2. ALL COSTS ASSOCIATED WITH REPAIR OF EXISTING ANCHOR BOLTS SHALL BE PAID FOR UNDER ITEM NO. 623003 - REPLACE ANCHOR BOLTS.
3. IN LIEU OF THE 'WELDED ANCHOR BOLT REPAIR DETAIL' SHOWN ON THIS SHEET, THE CONTRACTOR MAY ELECT TO USE THE 'ANCHOR BOLT REPLACEMENT ALTERNATE' AT NO ADDITIONAL COST TO THE DEPARTMENT.



WELDED ANCHOR BOLT REPAIR DETAIL

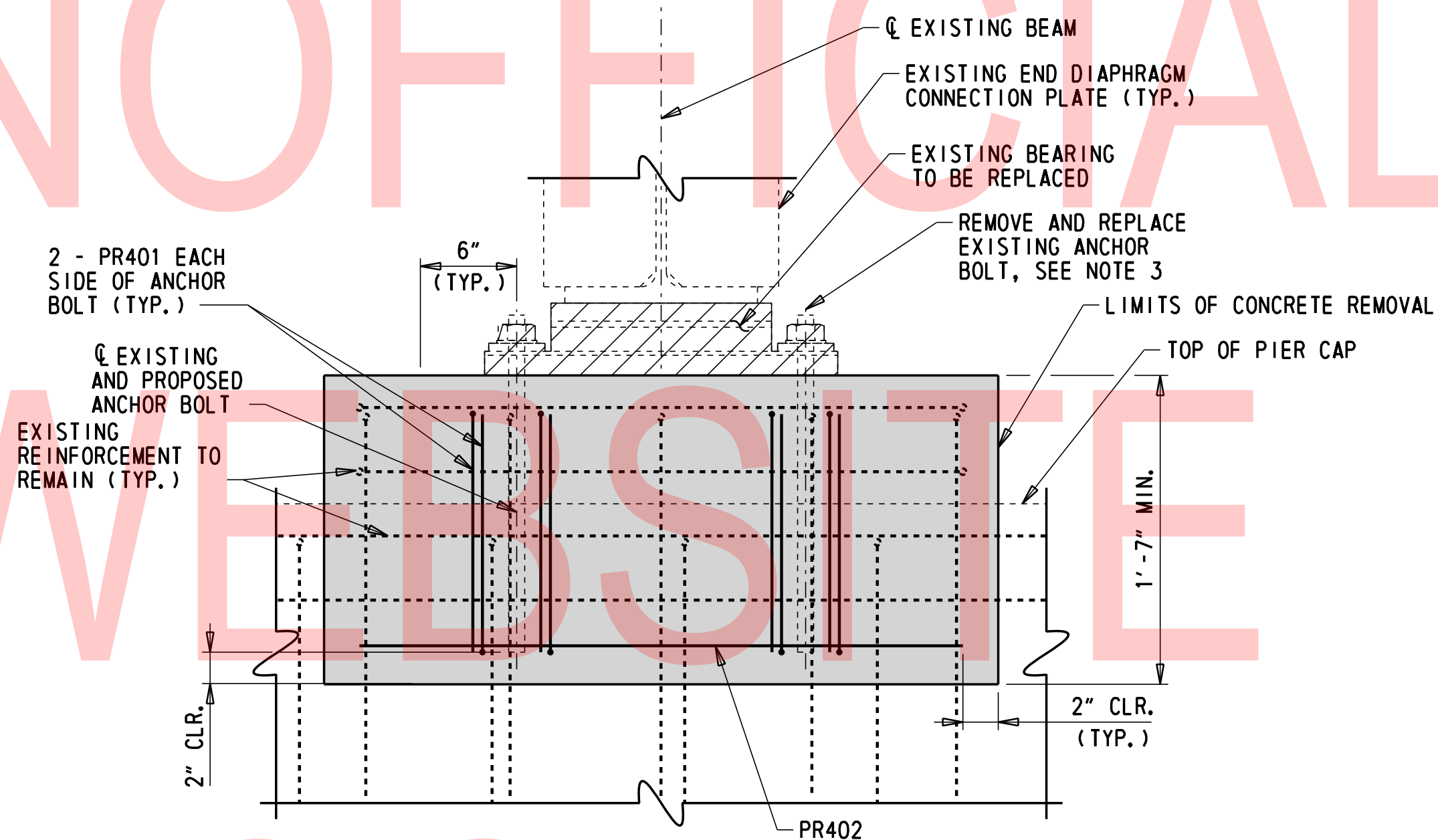
1/2" = 1'-0"

WELDED ANCHOR BOLT REPAIR PROCEDURE:

1. PROVIDE A 6" MIN. SQUARE CONCRETE BLOCKOUT AROUND THE PERIMETER OF EXISTING ANCHOR BOLT TO THE DEPTH SHOWN.
2. REMOVE EXISTING ANCHOR BOLT TO THE LIMIT SHOWN.
3. WELD PROPOSED ANCHOR BOLT EXTENSION TO EXISTING ANCHOR BOLT. PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/1.5S 2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. ALL GROOVE AND BUTT WELDS SHALL BE COMPLETE PENETRATION UNLESS NOTED OTHERWISE. ALL WELDS SHALL BE SUBJECT TO NON-DSTRUCTIVE TESTING AS SPECIFIED IN THE BRIDGE WELDING CODE, AWS D1.5.
4. FILL CONCRETE BLOCK-OUT WITH NON-SHRINK GROUT.
5. ANCHOR BOLT EXTENSIONS SHALL BE GRADE 55.

LEGEND:

LIMITS OF EXISTING CONCRETE REMOVAL AND NEW CLASS A CONCRETE



ELEVATION

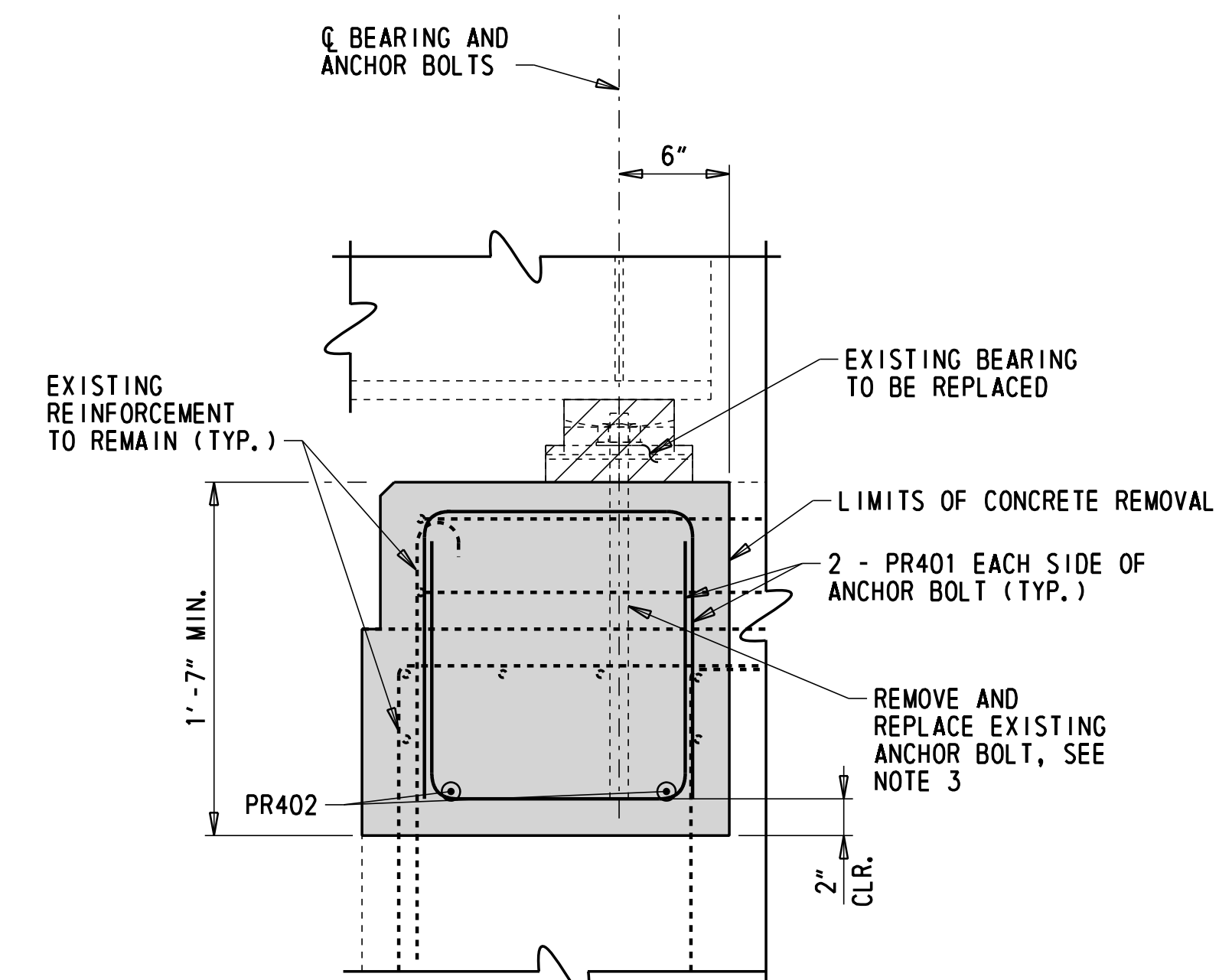
NOTE: EXISTING REINFORCEMENT MAY VARY, CONTRACTOR MAY SUBMIT ALTERNATE DETAIL.

ANCHOR BOLT REPLACEMENT ALTERNATE

1/2" = 1'-0"

ANCHOR BOLT REPLACEMENT ALTERNATE NOTES:

1. A 1" DEEP SAW CUT SHALL BE MADE INTO THE EXPOSED FACE OF EXISTING SOUND CONCRETE TO ESTABLISH A NEAT LINE AT THE LIMIT OF REMOVAL. HAND REMOVAL OF CONCRETE SHALL BE PERFORMED WHERE ADEQUATE CLEARANCE IS NOT AVAILABLE. CONCRETE SHALL BE FORMED ADJACENT TO THE EXISTING CONCRETE TO PRODUCE A SMOOTH SURFACE.
2. DAMAGE TO THE EXISTING STRUCTURE TO REMAIN SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE DEPARTMENT.
3. ANCHOR BOLTS SHALL BE GRADE 55 AND SIZED TO PROVIDE A MINIMUM OF 1'-5" MIN. EMBEDMENT INTO THE CONCRETE PEDESTALS/CAP.
4. THE NEW CONCRETE PEDESTAL AND BEAM SEAT SHALL BE PLACED MONOLITHICALLY. THE DIMENSIONS SHALL MATCH THE EXISTING.
5. THE TEMPORARY BEAM SUPPORT SHALL NOT BE REMOVED UNTIL THE NEW CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.



SECTION

M:\31987-00A\Contingent\Bearings\CADD\Bridges\BB-13.dwg

ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 748 N&S
T201907404	DESIGNED BY:	K. AMBROSE
COUNTY	CHECKED BY:	D. NIZAMOFF
NEW CASTLE		

CONTINGENT
ANCHOR BOLT REPAIR
DETAILS

BB-13
SECTION
WRA
SHEET NO.
81

SECTION 200

- REMOVAL OF STRUCTURES AND OBSTRUCTIONS:
ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATED WITH BRIDGE 1-758E SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- BEARING PEDESTAL REMOVAL

SECTION 600

- PORTLAND CEMENT CONCRETE:
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
(f'c = 28-DAY COMPRESSIVE STRENGTH)
CLASS A - PIERS (f'c = 4.5 ksi)
A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.
- CHAMFER ALL EXPOSED EDGES 3/4" X 3/4" UNLESS OTHERWISE NOTED.
- STRUCTURAL STEEL:
PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS 'CVN' ON PLANS) OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED. SUPPLEMENTAL NOTCH TOUGHNESS REQUIREMENTS ARE MANDATORY FOR:
- JACKING DIAPHRAGMS AND CONNECTION PLATES

ALL FASTENERS ARE 7/8" DIAMETER ASTM F3125 GR A325 HIGH STRENGTH BOLTS, TYPE 1, UNLESS OTHERWISE NOTED.

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/D1.5:2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED, EXCEPT AS NOTED ON THE PLANS.

DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.

SET ANCHOR BOLTS TO TEMPLATE IN CORED HOLES. FILL THE HOLES WITH NON-SHRINK GROUT TO BE FLUSH WITH THE TOP CONCRETE SURFACE.

- BEARINGS:
ALL ELASTOMERIC BEARINGS SHALL BE LAMINATED ELASTOMERIC DESIGNED AS PER AASHTO 14.7.5, METHOD B, AND SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS. PAYMENT WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARINGS.

ALL DISC BEARINGS SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS. SEE DWG. BB-03 FOR DISC BEARINGS NOTES AND DESIGN REQUIREMENTS. PAYMENT WILL BE MADE UNDER ITEM 623002 - DISC BEARINGS.

MISCELLANEOUS

- DESIGN SPECIFICATIONS:
(A) DELDOT BRIDGE DESIGN MANUAL, 2017 EDITION.
(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIMS.
(C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE 2016 DELDOT STANDARD SPECIFICATIONS INCLUDING 2018 SUPPLEMENTAL SPECIFICATIONS.
- LOADING:
- DEAD LOADS INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB AND 15 PSF FOR STAY-IN-PLACE FORMS (INCLUDES CONCRETE IN FORM CORRUGATIONS). PARAPET LOADS ARE DISTRIBUTED 75% TO THE EXTERIOR AND 25% TO THE FIRST INTERIOR BEAM.
- DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
- FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 3,910 IN YEAR 2040.
- LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD.
- THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0° TO 120°F. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68°F.
- LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
- EXISTING CONDITIONS:
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- ROADWAY CLEARANCES:
A MINIMUM OF 16'-6" SHALL BE MAINTAINED ABOVE ALL ROADWAYS.

MISCELLANEOUS (CONTINUED)

- CONTINGENT QUANTITIES:
THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS AND FIELD INSPECTION NOTES TAKEN FROM NOVEMBER 16, 2014 THROUGH FEBRUARY 5, 2015. ADDITIONAL REPAIRS HAVE BEEN ADDED BASED ON THE AUGUST 2017 BIENNIAL BRIDGE INSPECTION REPORT. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION IN CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DETAILS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY MATERIALS. SEE DWG. PN-02 FOR PAY ITEM CONTINGENCY PERCENTAGES.
 - UTILITIES:
SEE UTILITY STATEMENT FOR FURTHER INFORMATION ON UTILITY COORDINATION.
 - ENVIRONMENTAL COMPLIANCE:
ENVIRONMENTAL COMPLIANCE PLANS ARE NOT REQUIRED FOR THIS PROJECT. NO ENVIRONMENTAL RESOURCES ARE IMPACTED BY THE PROPOSED WORK.
 - COORDINATION WITH DART:
BRIDGE NO. 1-758E IS LOCATED OVER PARKING LOTS OCCUPIED BY DART. THE CONTRACTOR SHALL NOTIFY VINCENT DAMIANIAT (302) 598-0570 AND DAVID REESE AT (302) 353-0897 AT LEAST 35 DAYS PRIOR TO THE START OF ANY WORK IN THE DART PARKING LOTS. AFTER THIS INITIAL CONTACT, THE CONTRACTOR SHALL NOTIFY DART 14 DAYS IN ADVANCE OF ANY ADDITIONAL COORDINATION REQUIREMENTS AND/OR CHANGES IN THE TRAFFIC PATTERNS. AT NO TIME SHALL THE CONTRACTOR OCCUPY AN AREA ON THE GROUND IN THE PARKING LOTS GREATER THAN THE AREA OF TWO SPANS. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR DART BUSES AND EMPLOYEES TO THE REMAINING PORTIONS OF THE PARKING LOT. ADDITIONALLY THE CONTRACTOR WILL NOT BE PERMITTED TO WORK IN MORE THAN ONE PARKING LOT AT A TIME.
 - COORDINATION WITH THE CITY OF WILMINGTON:
THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CITY OF WILMINGTON, ESPECIALLY WORK WHICH IMPACTS CITY STREETS. THE CONTRACTOR SHALL NOTIFY BRIAN MITCHELL AT (302) 576-3089 AT LEAST 14 DAYS PRIOR TO ANY COORDINATION REQUIREMENTS AND/OR CHANGES IN TRAFFIC PATTERNS.
 - CONTRACTOR SUBMISSIONS:
PRIOR TO OR WITH THE SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT THE FIELD VERIFICATION NOTES ON MEMBER SIZES AND DIMENSIONS NECESSARY TO REVIEW THE SHOP DRAWINGS.
 - CONSTRUCTION SAFETY FENCE:
CONSTRUCTION SAFETY FENCE IS REQUIRED AROUND THE PERIMETER OF ALL BELOW-DECK WORK AREAS AND AT LOCATIONS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 727548 - PORTABLE CHAINLINK FENCE. SEE DWGS. CS-01 TO CS-301.
 - CONTRACT RESTRICTIONS:
THE DEPARTMENT HAS NOT OBTAINED A NOISE WAIVER UNDER THE PROVISIONS OF THE CITY OF WILMINGTON CODE FOR THE PURPOSE OF WORKING EXTENDED HOURS AT NIGHT. WORKING HOURS FOR THIS PROJECT SHALL BE LIMITED TO 8:00AM TO 7:00PM, MONDAY THROUGH FRIDAY; 9:00AM TO 7:00PM SATURDAY; 10:00AM TO 5:00PM SUNDAY AND HOLIDAYS. THE CONTRACTOR MAY COORDINATE AND SUBMIT TO OBTAIN A NOISE WAIVER FOR PURPOSES OF EXPEDITING HIS CONSTRUCTION EFFORTS AT NO ADDITIONAL COST TO THE DEPARTMENT. THE CONTRACTOR SHALL ADDRESS ANY CONCERNS ABOUT THE NOISE WAIVER TO THE DEPARTMENT OF LICENSES AND INSPECTIONS, CITY OF WILMINGTON, 800 FRENCH ST., 5TH FLOOR, WILMINGTON, DELAWARE 19801. THE DEPARTMENT WILL NOT BE HELD RESPONSIBLE FOR ANY ISSUES/DELAYS/OR REJECTIONS WITH THE COORDINATION, RECEIPT OR EXECUTION OF THE WORK IN CONJUNCTION WITH THE NOISE WAIVER AND CANNOT BE CAUSE FOR A DELAY CLAIM.
- IN ADDITION, BRIDGE AND ROAD CLOSURES WILL NOT BE PERMITTED ON THE FOLLOWING WEEKENDS: T.B.D.
- NOTE: THESE ARE PROJECTED DATES AND SHALL BE CONFIRMED WITH THE CITY OF WILMINGTON'S EVENTS CALENDAR.
- <http://sites.google.com/site/wilmingtoneventswept/Home>
- FOR ADDITIONAL WORK RESTRICTIONS, SEE THE CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLAN SHEETS ON DWGS. CS-01, CS-02, AND CS-101.
- LOADING RATING:
THIS PROJECT DOES NOT CHANGE THE LOAD RATING OF THE BRIDGE.
 - ABBREVIATIONS:
BRG. = BEARING
CL = CENTERLINE
DIA. = DIAMETER
DWG. = DRAWING
EXP. = EXPANSION
E.F. = EACH FACE
FIX. = FIXED
GR. = GRADE
MAX. = MAXIMUM
MIN. = MINIMUM
NO. = NUMBER
P.C.C. = PORTLAND CEMENT CONCRETE
PTFE = POLYTETRAFLUOROETHYLENE
SHLD. = SHOULDER
STA. = STATION
TYP. = TYPICAL

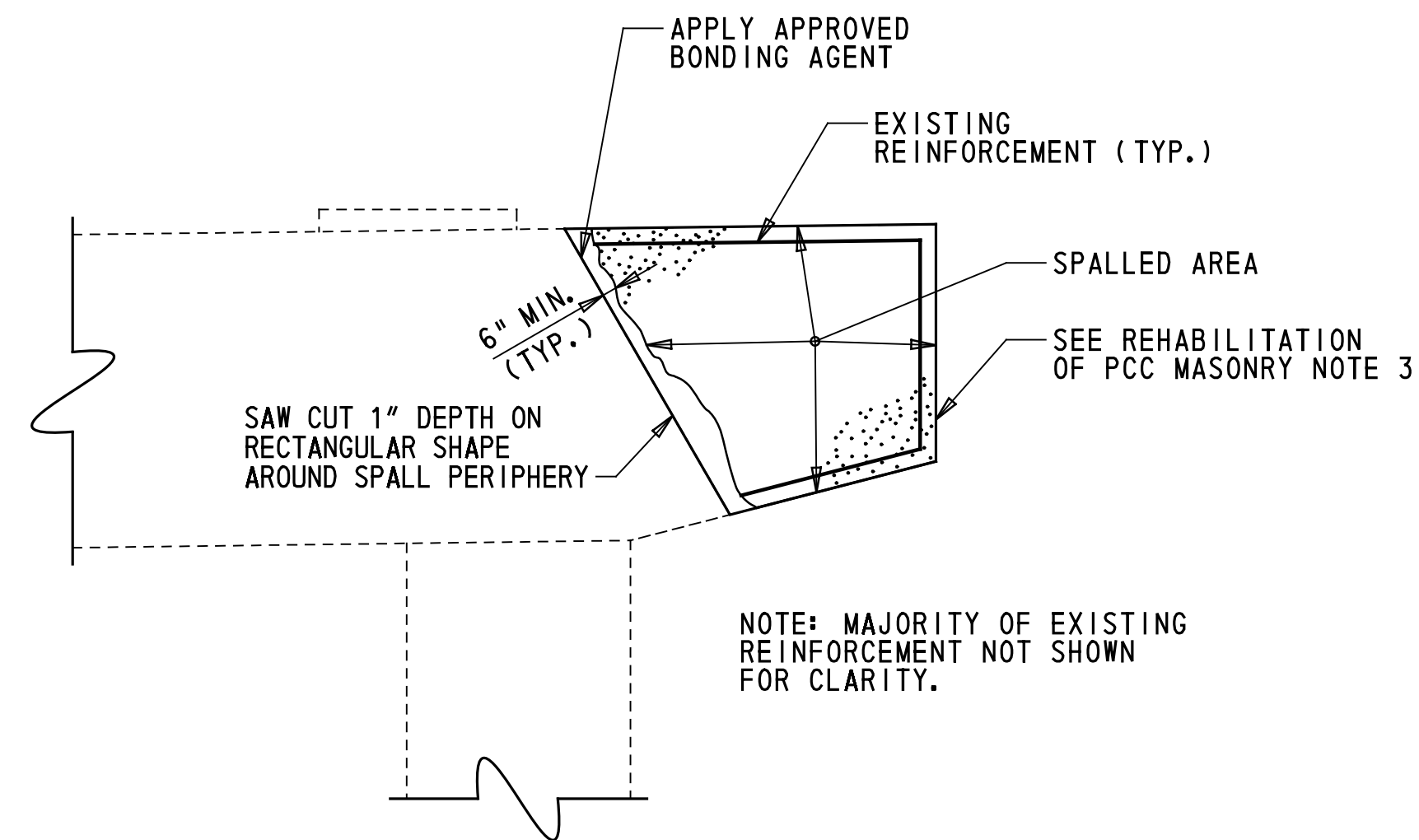
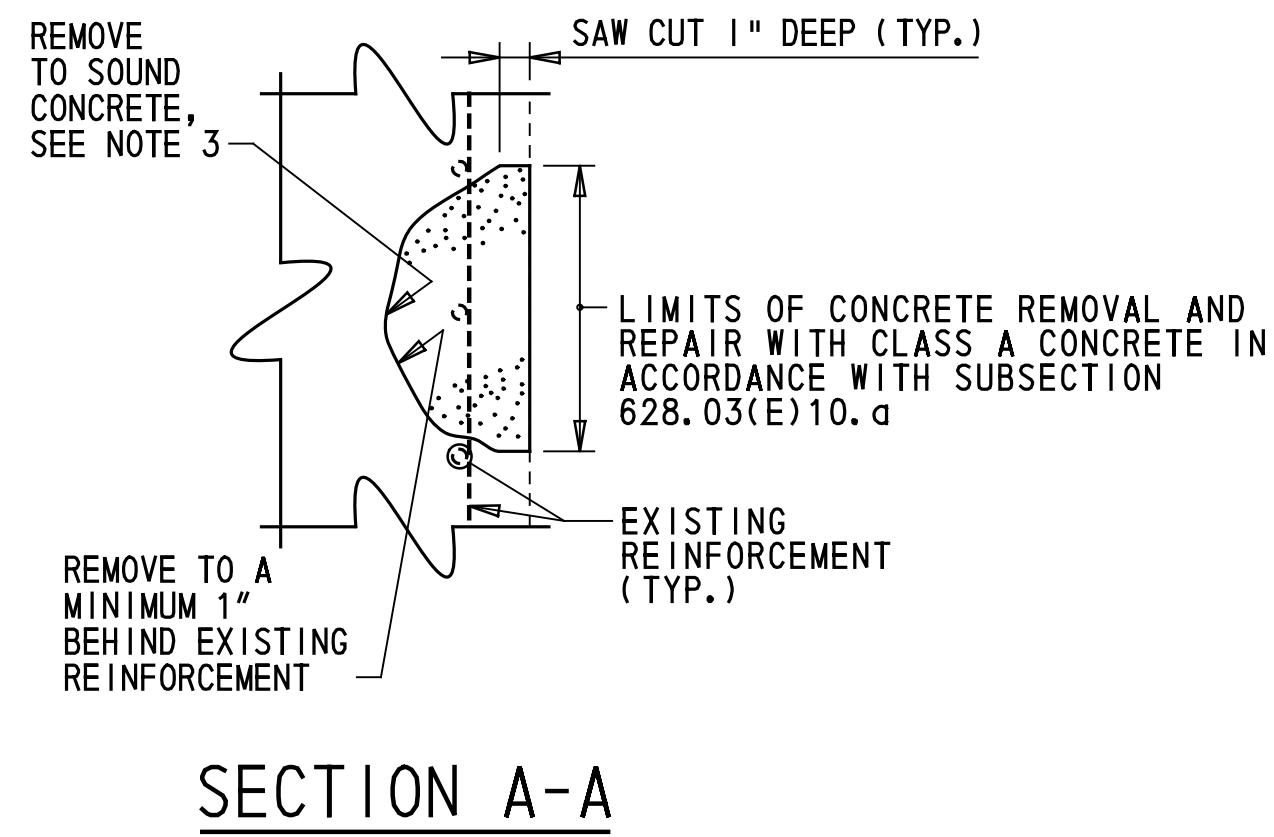
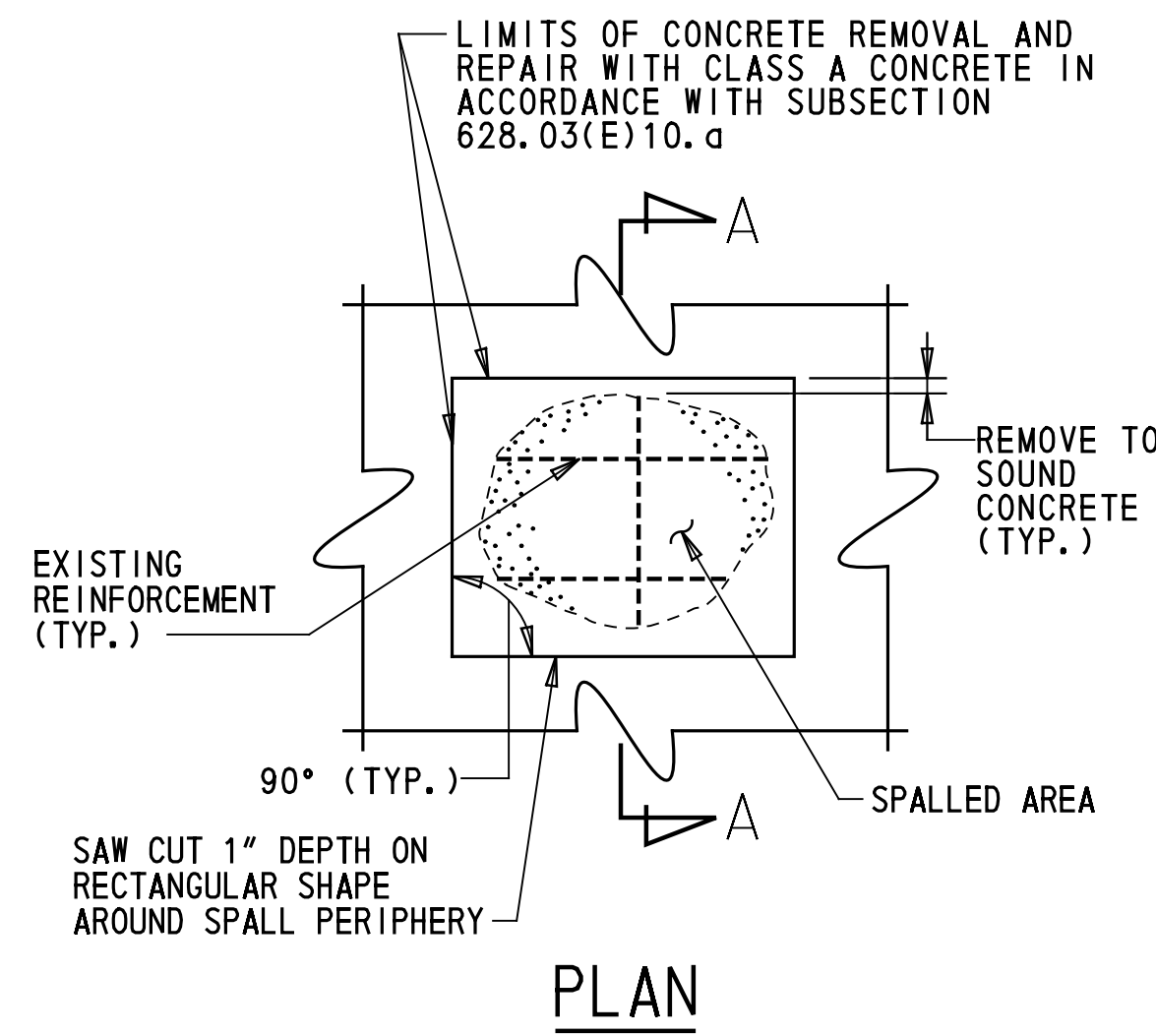
INDEX OF BRIDGE 1-758E SHEETS		
BR. SHEET NO	BR. DWG. NO	TABLE OF CONTENTS
83	PN-01	BRIDGE PROJECT NOTES AND QUANTITIES
84	PN-02	CONCRETE REPAIR DETAILS AND SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS
85	PE-01	GENERAL PLAN AND ELEVATION
86-88	TS-01 TO TS-03	BRIDGE TYPICAL SECTIONS
89-93	PR-01 TO PR-05	PIER CONCRETE REPAIR DETAILS
94	RH-01	JACKING NOTES
95-97	RH-02 TO RH-04	JACKING DETAILS
98	BB-01	BEARING PLAN
99-101	BB-02 TO BB-04	BEARING DETAILS
TOTAL BRIDGE SHEETS: 19		

QUANTITIES			
ITEM NO	ITEM TITLE	UNIT	QUANTITY
211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
604000	JACKING BRIDGE	LS	1
623000	ELASTOMERIC BEARINGS	EA	9
623002	DISC BEARINGS	EA	8
628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	5
628041	DEEP SPALL REPAIR	CF	32
628042	REHABILITATION OF PCC MASONRY	CY	1

NOTE:
QUANTITIES INCLUDE CONTINGENT PERCENTAGES AS NOTED IN NOTE 8.

22 7:56PM - 01/20/19 3:23:09 PM

ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	BRIDGE PROJECT NOTES AND QUANTITIES	PN-01	
				T201907404	DESIGNED BY:	B. MARSHALL		SECTION	PAI
				COUNTY	CHECKED BY:	C. MALKIN		SHEET NO.	83
				NEW CASTLE					



DEEP SPALL REPAIR (ITEM 628041)

REHABILITATION OF PCC MASONRY (ITEM 628042)

LEGEND:
 SPALLED CONCRETE

DEEP SPALL REPAIR NOTES

1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT. DELAMINATED CONCRETE HAS BEEN ASSUMED AS DEEP SPALL REPAIRS.
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 ITEM 628041 - DEEP SPALL REPAIR.
3. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

REHABILITATION OF PCC MASONRY NOTES

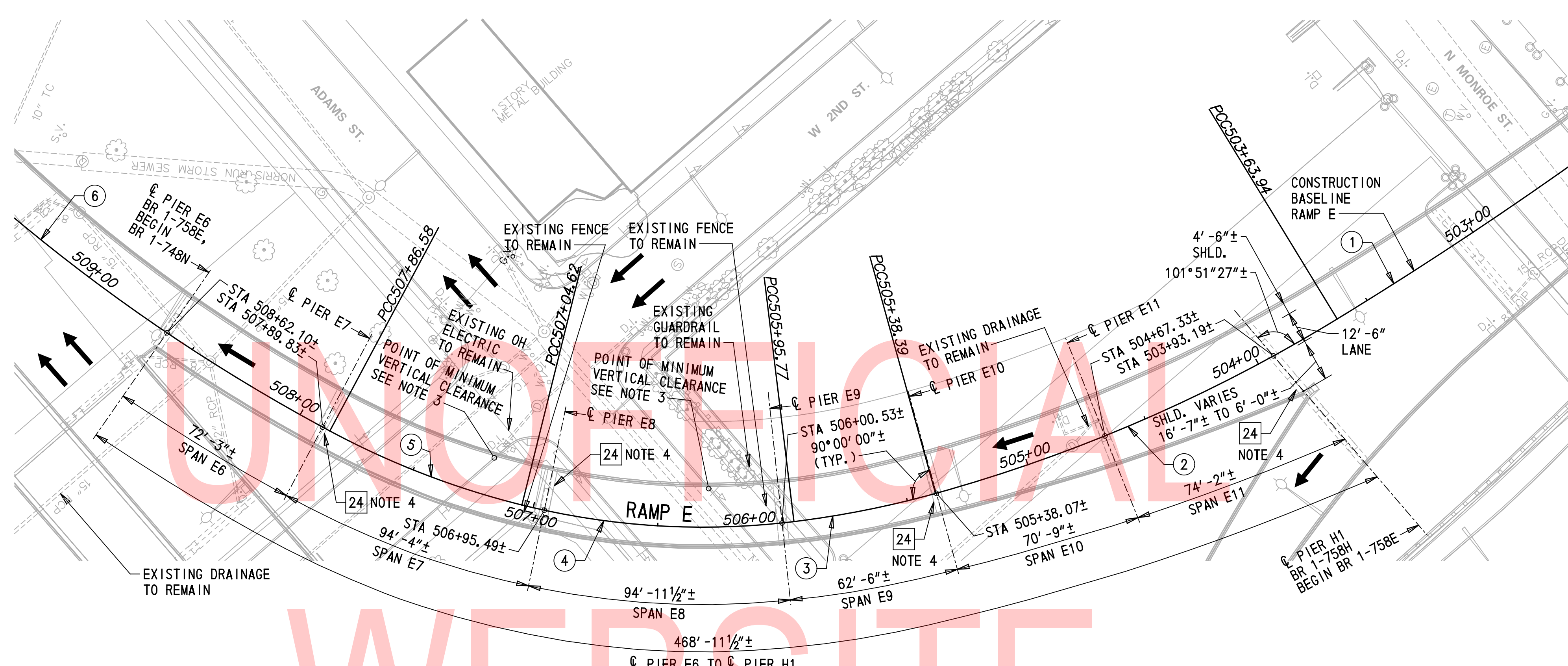
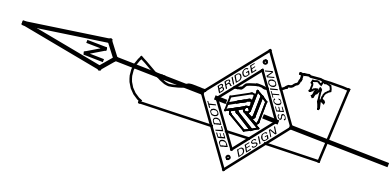
1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXCEED THE 0.5 C.Y. THRESHOLD IN A SINGLE AREA.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL; CLEANING OF CONCRETE SURFACE AND EXISTING REINFORCEMENT; REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES 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 ITEM 628042 - REHABILITATION OF PCC MASONRY.
3. DETAIL SHOWN FOR "REHABILITATION OF EXISTING PCC MASONRY" UTILIZES A GENERIC EXAMPLE USING PARTIAL RECONSTRUCTION OF AN EXISTING PIER CAP. SEE PIER REHABILITATION SHEETS FOR SIZE AND LOCATION OF REPAIRS AT EACH SUBSTRUCTURE UNIT.
4. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

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WEBSITE
COPY

REPAIR NO.	REPAIR DESCRIPTION	LOCATION	REMARKS	DWG. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	CONTINGENT %	TOTAL QTY.
24	JACK AND REPLACE EXISTING BRIDGE BEARINGS	SPAN E11, PIER H1; SPAN E9, PIER E10; SPAN E8, PIER E8; SPAN E7, PIER E7	REPLACE ALL BEARINGS WITHIN THE SPECIFIED BEARING LINE	BB-01 TO	211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1	0	1
				BB-04,	604000	JACKING BRIDGE	LS	1	0	1
				RH-01 TO	623000	ELASTOMERIC BEARINGS	EA	9	0	9
				RH-02	623002	DISC BEARINGS	EA	8	0	8
34	SEAL CRACKS IN CONCRETE SUBSTRUCTURE	PIERS E6, E7 AND E10		PR-01 TO	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	4	25	5
37	REPAIR DEEP SPALLS IN CONCRETE SUBSTRUCTURE	PIERS E6, E7 AND E10		PR-01 TO	628041	DEEP SPALL REPAIR	CF	25	25	32
				PR-05	628042	REHABILITATION OF PCC MASONRY	CY	0	EQ	1

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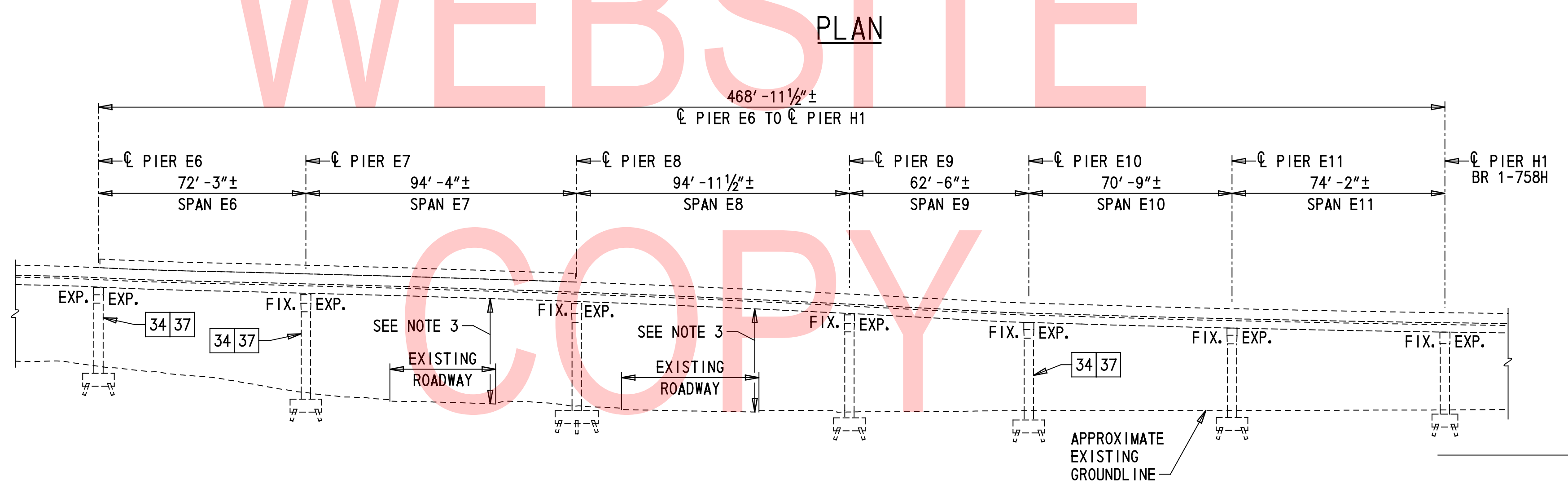
ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	CONCRETE REPAIR DETAILS & SUMMARY OF PROPOSED REPAIR & RECONSTR. ITEMS	PN-02
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		
				COUNTY	CHECKED BY: C. MALKIN	PAI		
				NEW CASTLE		SHEET NO.		
					84			



KEY:
 [24] REPAIR NUMBER AS SHOWN ON DWG. PN-02
 (1) CURVE DATA

HORIZONTAL CURVE DATA

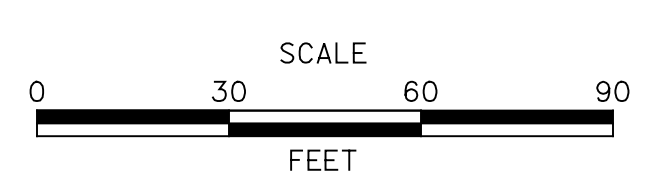
CURVE (1)	CURVE (2)
P. C. STA. = 501+01.39	P. C. C. STA. = 503+63.94
P. I. STA. = 502+32.95	P. I. STA. = 504+51.73
L = 262.55'	L = 174.44'
R = 1646.00'	R = 628.00'
M. O. = 5.23	M. O. = 6.05
P. C. C. STA. = 503+63.94	P. C. C. STA. = 505+38.39
CURVE (3)	CURVE (4)
P. C. C. STA. = 505+38.39	P. C. C. STA. = 505+95.77
P. I. STA. = 505+67.13	P. I. STA. = 506+50.81
L = 57.38'	L = 108.84'
R = 385.00'	R = 298.00'
M. O. = 1.07	M. O. = 4.96
P. C. C. STA. = 505+95.77	P. C. C. STA. = 507+04.62
CURVE (5)	CURVE (6)
P. C. C. STA. = 507+04.62	P. C. C. STA. = 507+86.58
P. I. STA. = 507+45.81	P. I. STA. = 509+23.60
L = 81.96'	L = 270.99'
R = 331.00'	R = 740.52'
M. O. = 2.53	M. O. = 12.36
P. C. C. STA. = 507+86.58	P. T. STA. = 510+57.56



DEVELOPED SECTION ALONG CONSTRUCTION BASELINE RAMP E

- NOTES:**
- DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE RAMP E.
 - PILES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
 - MINIMUM VERTICAL CLEARANCE IS BASED ON 2017 NBIS INSPECTION REPORT. MINIMUM CLEARANCE ABOVE 2ND STREET = 35'-0"±. MINIMUM CLEARANCE ABOVE ADAMS ST. = 34'-3"±.
 - FOR REPAIR 24 LOCATIONS, SEE DWG. BB-01.

ADDENDA / REVISIONS



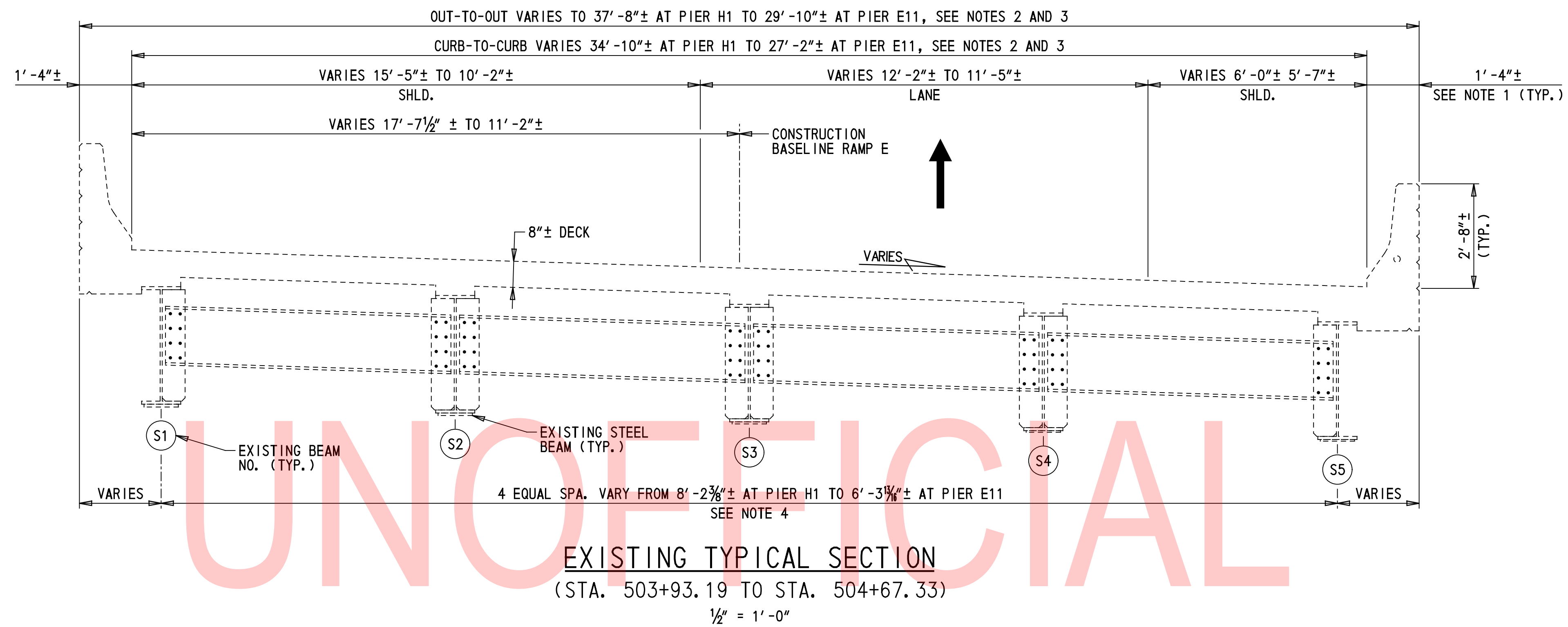
**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT T201907404	BRIDGE NO. 1 758E 6141
COUNTY NEW CASTLE	DESIGNED BY: B. MARSHALL CHECKED BY: C. MALKIN

**GENERAL PLAN
AND ELEVATION**

PE-01
SECTION PAI
SHEET NO. 85

2020/08/20 09:51 AM



UNOFFICIAL

WEBSITE

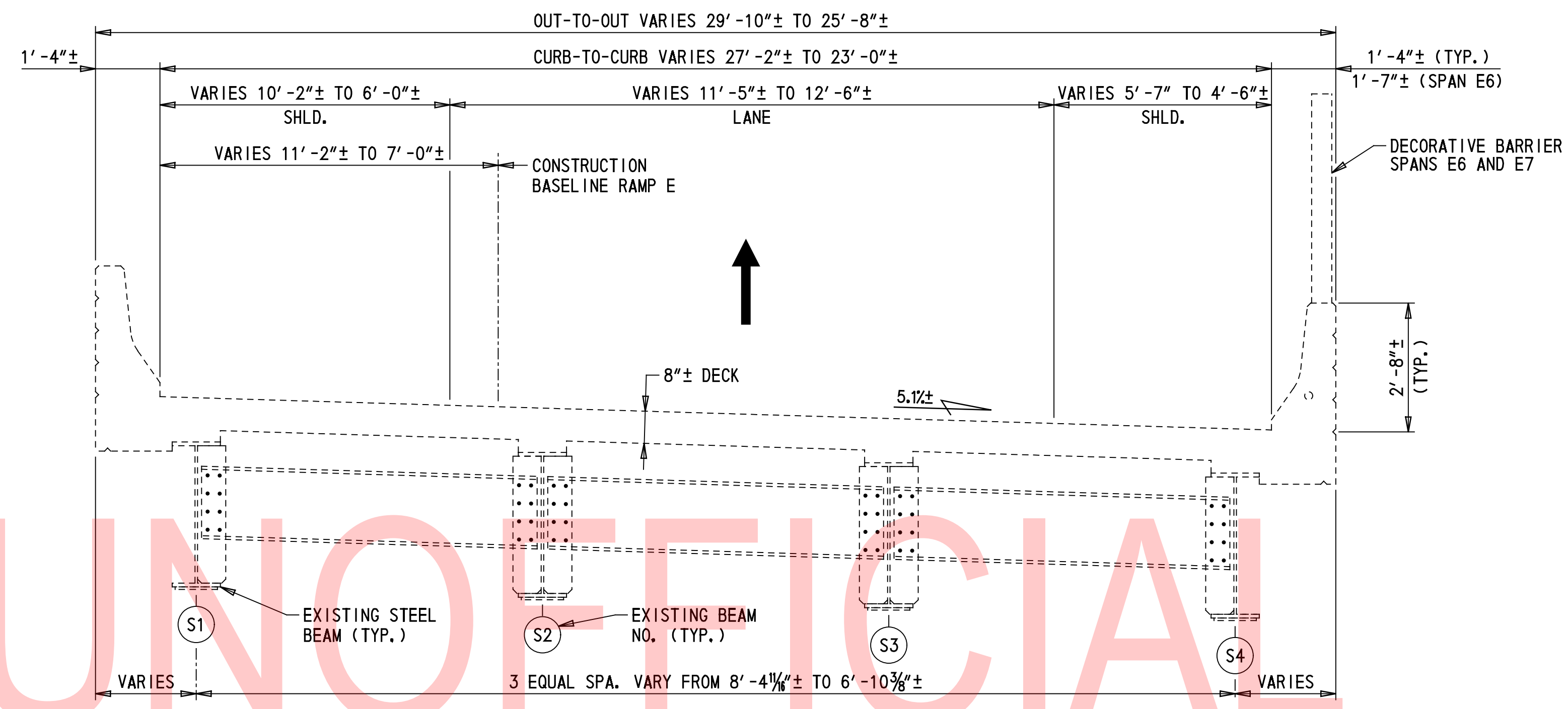
COPY

NOTES:

1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E, EXCEPT AS NOTED.
2. DIMENSIONS SHOWN AT PIER H1 ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP H FROM THE EAST PARAPET TO THE THEORETICAL INTERSECTION OF THE WEST PARAPET AND THE CENTERLINE OF PIER H1.
3. DIMENSIONS SHOWN AT PIER E11 ARE MEASURED PERPENDICULAR TO THE CONSTRUCTION BASELINE RAMP E.
4. BEAM SPACING SHOWN IS MEASURED ALONG THE PIER CENTERLINE.

17:09:15-01:59:22 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	BRIDGE TYPICAL SECTIONS STA. 503+93 TO 504+67	TS-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	86
				NEW CASTLE				



EXISTING TYPICAL SECTION

(STA. 504+67.33 TO STA. 506+00.53 AND STA. 507+89.83 TO STA. 508+62.10)

1/2" = 1'-0"

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WEBSITE

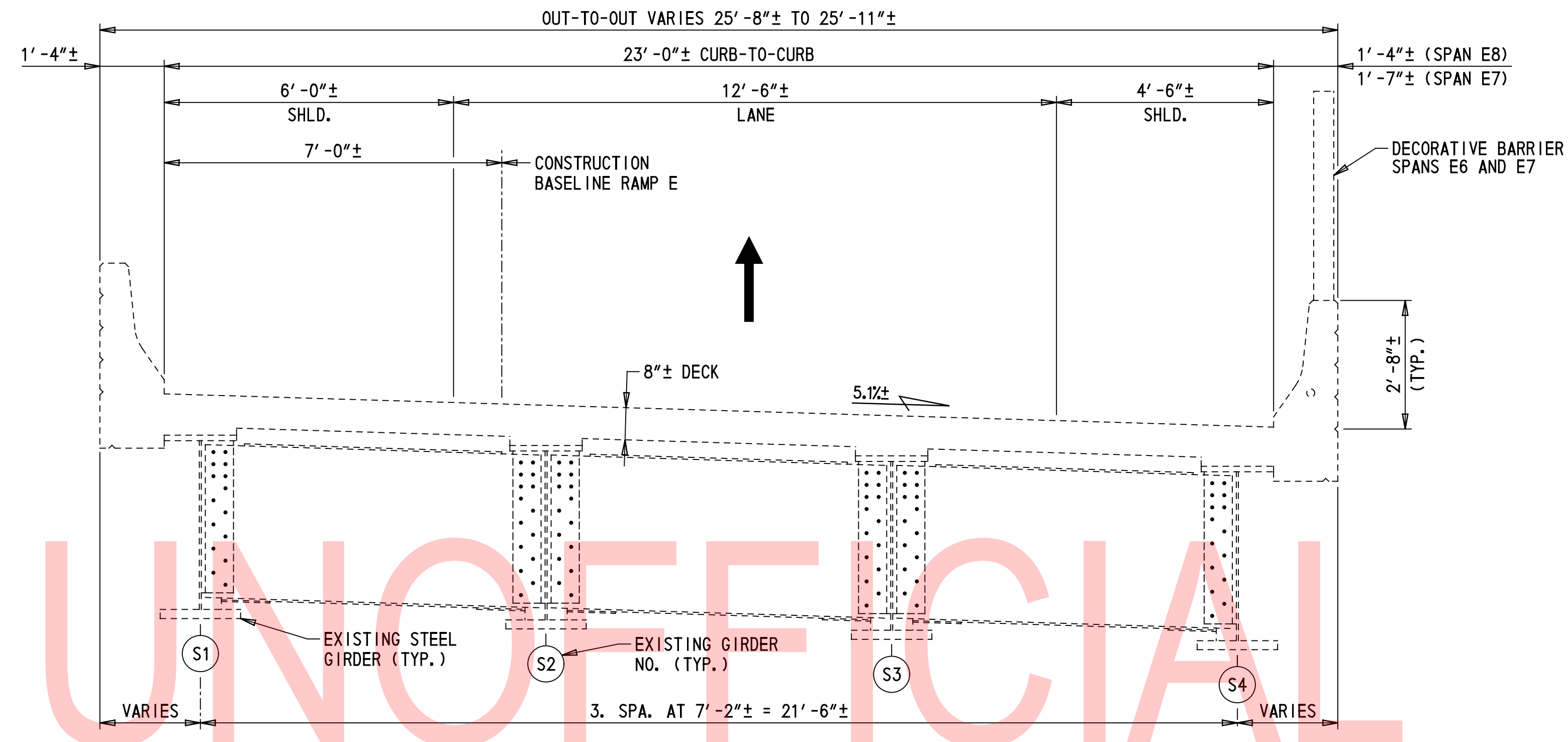
COPY

NOTES:

1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E.

17/09/15-02:49:03 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	BRIDGE TYPICAL SECTIONS STA. 504 + 67 TO 506 + 00 & STA. 507 + 89 TO 508 + 62	TS-02
				T201907404	DESIGNED BY: B. MARSHALL			SECTION
				COUNTY	CHECKED BY: C. MALKIN			PAI
				NEW CASTLE			SHEET NO.	87



EXISTING TYPICAL SECTION
 (STA. 506+00.53 TO STA. 507+89.83)
 1/2" = 1'-0"

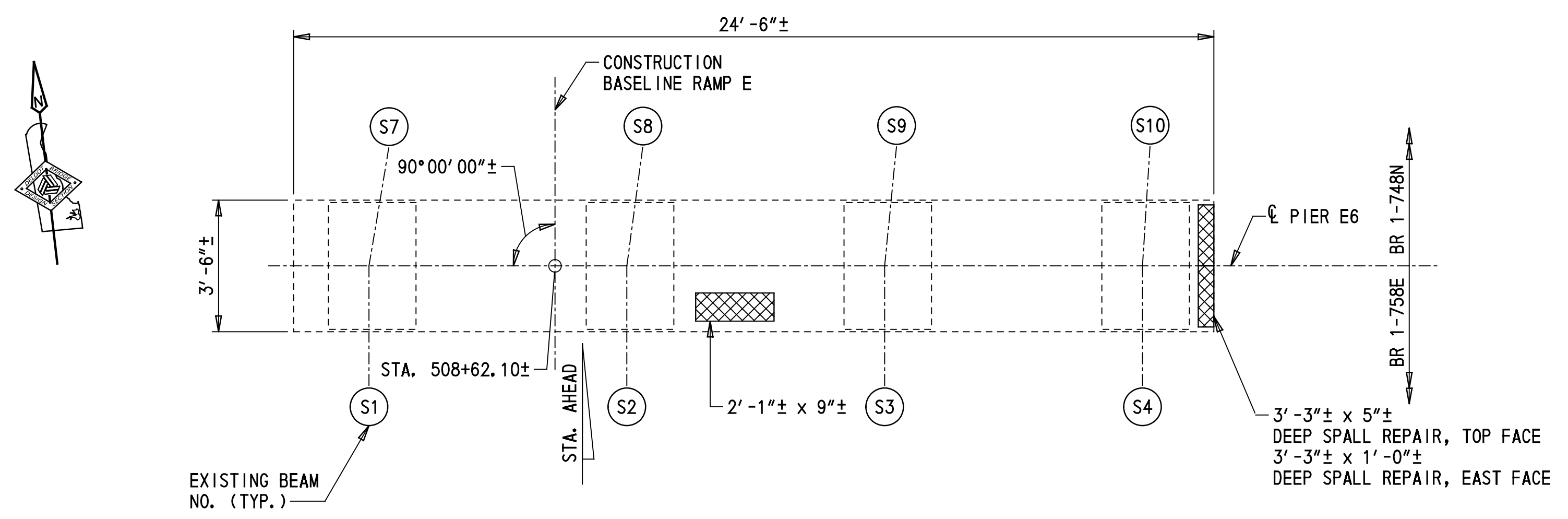
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WEBSITE
COPY

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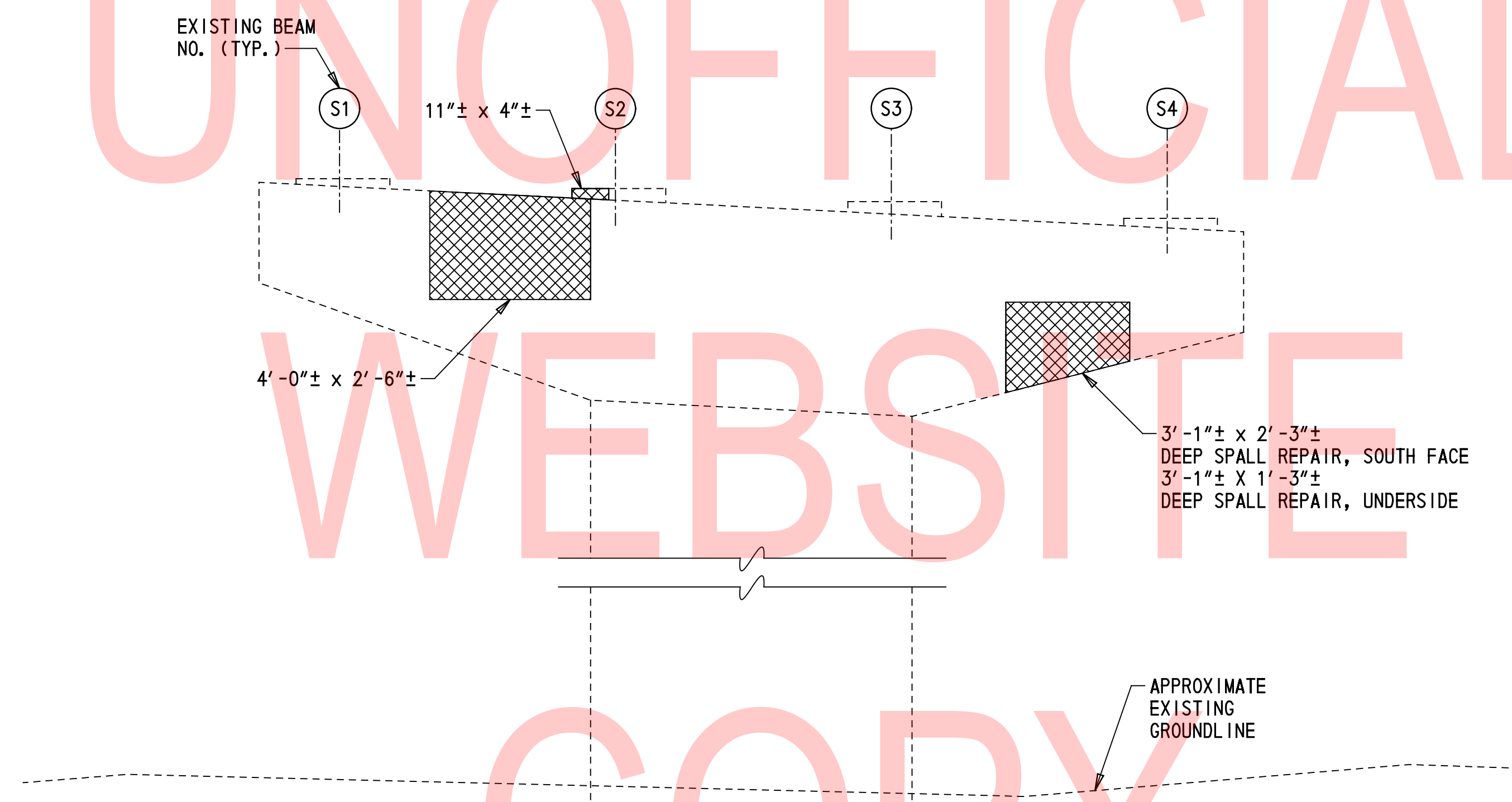
- DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E.

17:09:15 - 03:09:04 PM

ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404	BRIDGE NO. 1 758E 6141	SECTION PAI
			COUNTY NEW CASTLE	DESIGNED BY: B. MARSHALL CHECKED BY: C. MALKIN	SHEET NO. 88
			BRIDGE TYPICAL SECTIONS STA. 506+00 TO 507+89		TS-03



PIER E6 - PLAN VIEW
3/8" = 1'-0"



PIER E6 - SOUTH ELEVATION
3/8" = 1'-0"

UNOFFICIAL
WEBSITE
COPY

LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER E6				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	11

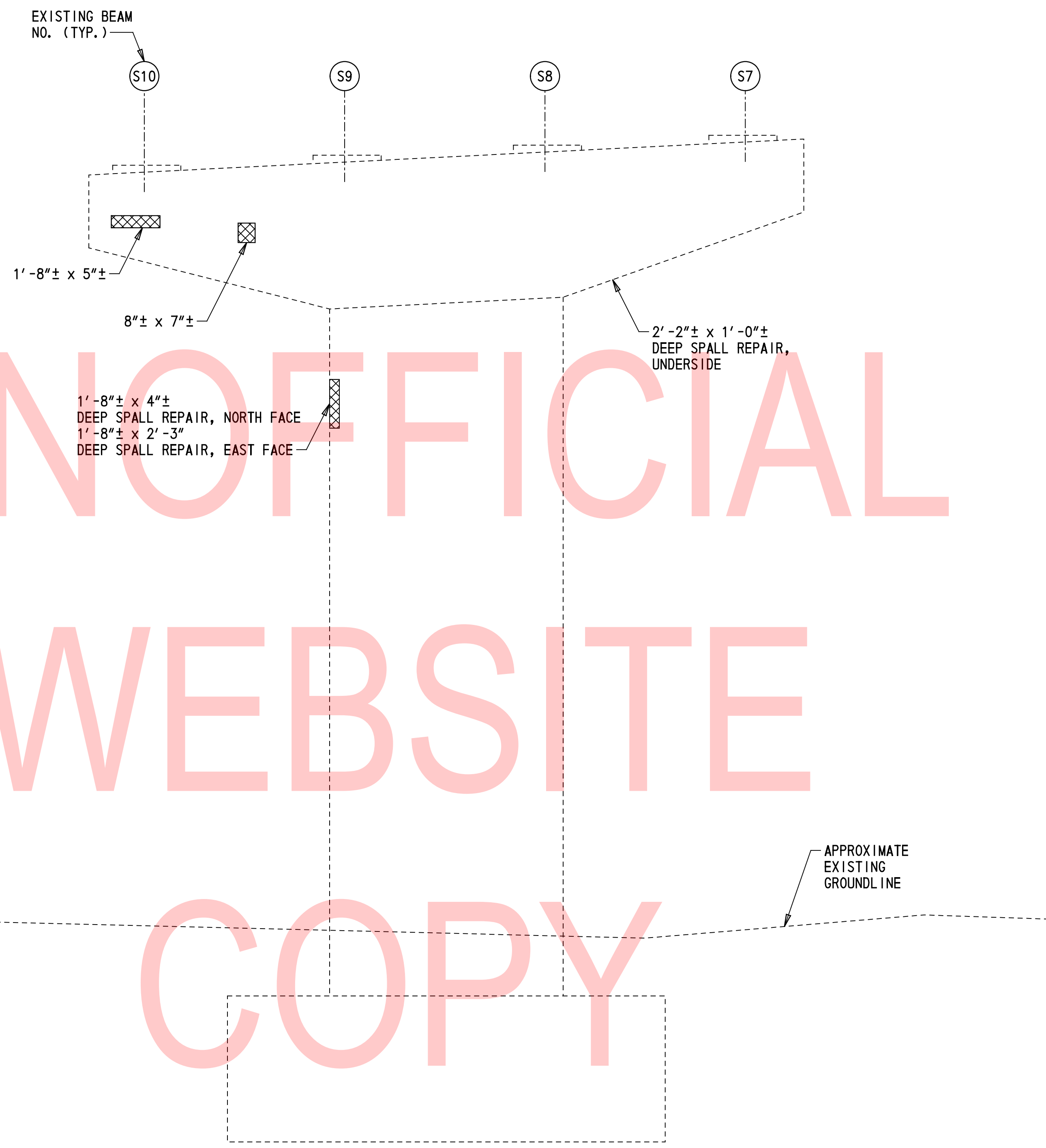
NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- NOTES:**
- THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 8 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 - WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
 - FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 - SEE BR 1-748N PLAN SET FOR BEARING AND JACKING DETAILS.

2025 SEP 01 09:05 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	PIER E6 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	89
				NEW CASTLE				

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PIER E6 - NORTH ELEVATION
3/8" = 1'-0"

NOTE:
PILES NOT SHOWN FOR CLARITY.

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 8 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-01.
 5. SEE BR 1-748N PLAN SET FOR BEARING AND JACKING DETAILS.

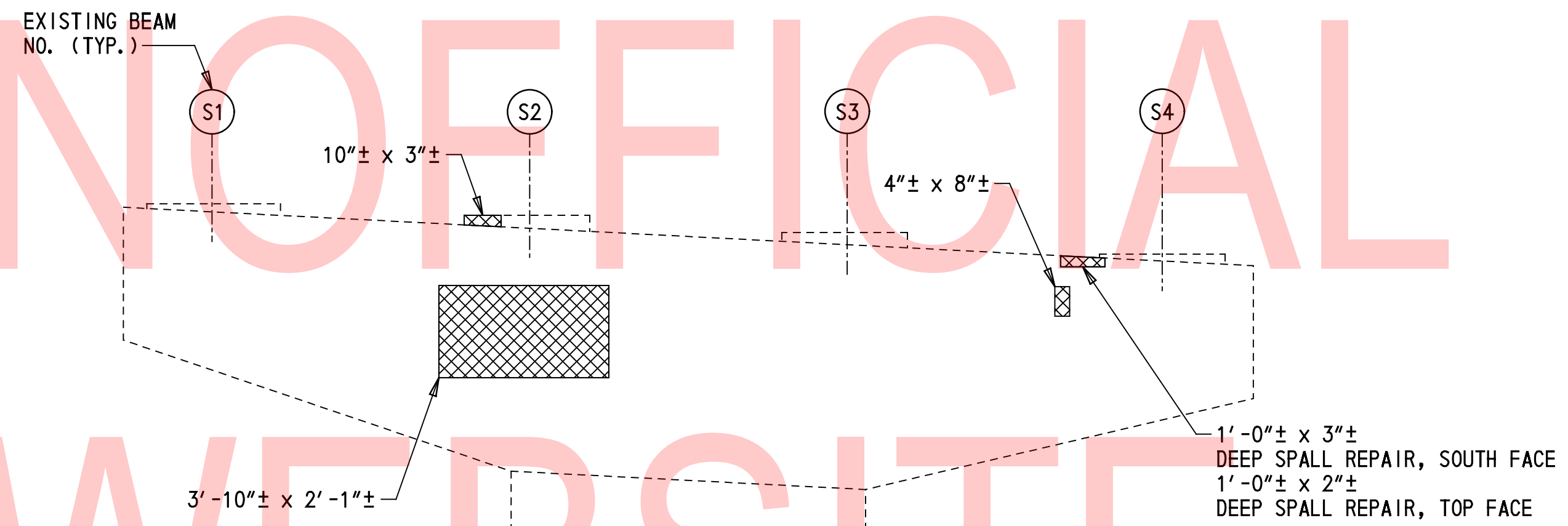
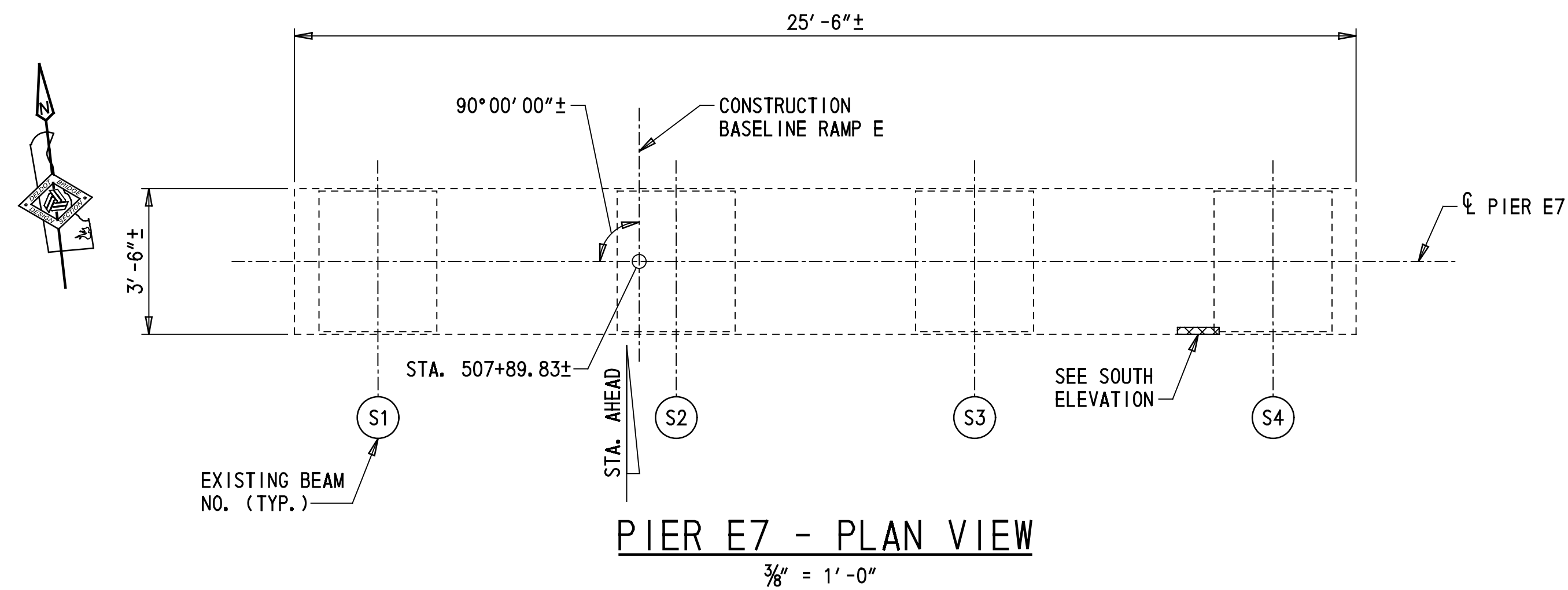
LEGEND:

~ REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

▨ DEEP SPALL REPAIR

17 SEP 02 09:06 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<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 758E 6141</td> </tr> <tr> <td style="font-size: 8px;">T201907404</td> <td style="font-size: 8px;">DESIGNED BY:</td> <td style="font-size: 8px;">B. MARSHALL</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td style="font-size: 8px;">CHECKED BY:</td> <td style="font-size: 8px;">C. MALKIN</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 758E 6141	T201907404	DESIGNED BY:	B. MARSHALL	COUNTY	CHECKED BY:	C. MALKIN	NEW CASTLE			<p style="font-weight: bold; font-size: 10px;">PIER E6 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">PR-02</td> </tr> <tr> <td style="font-size: 8px;">SECTION</td> </tr> <tr> <td style="font-size: 8px;">PAI</td> </tr> <tr> <td style="font-size: 8px;">SHEET NO.</td> </tr> <tr> <td style="font-size: 8px;">90</td> </tr> </table>	PR-02	SECTION	PAI	SHEET NO.	90
CONTRACT	BRIDGE NO.	1 758E 6141																					
T201907404	DESIGNED BY:	B. MARSHALL																					
COUNTY	CHECKED BY:	C. MALKIN																					
NEW CASTLE																							
PR-02																							
SECTION																							
PAI																							
SHEET NO.																							
90																							



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COPY

- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER E7				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	0
37	628041	DEEP SPALL REPAIR	CF	13

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

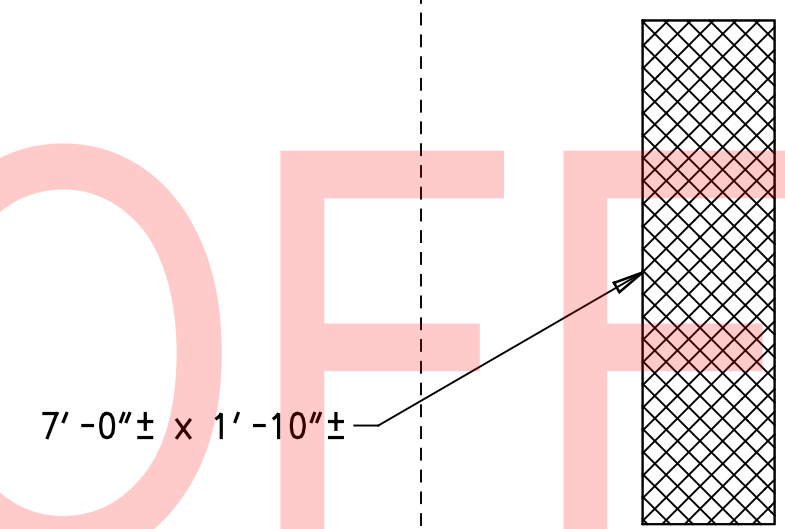
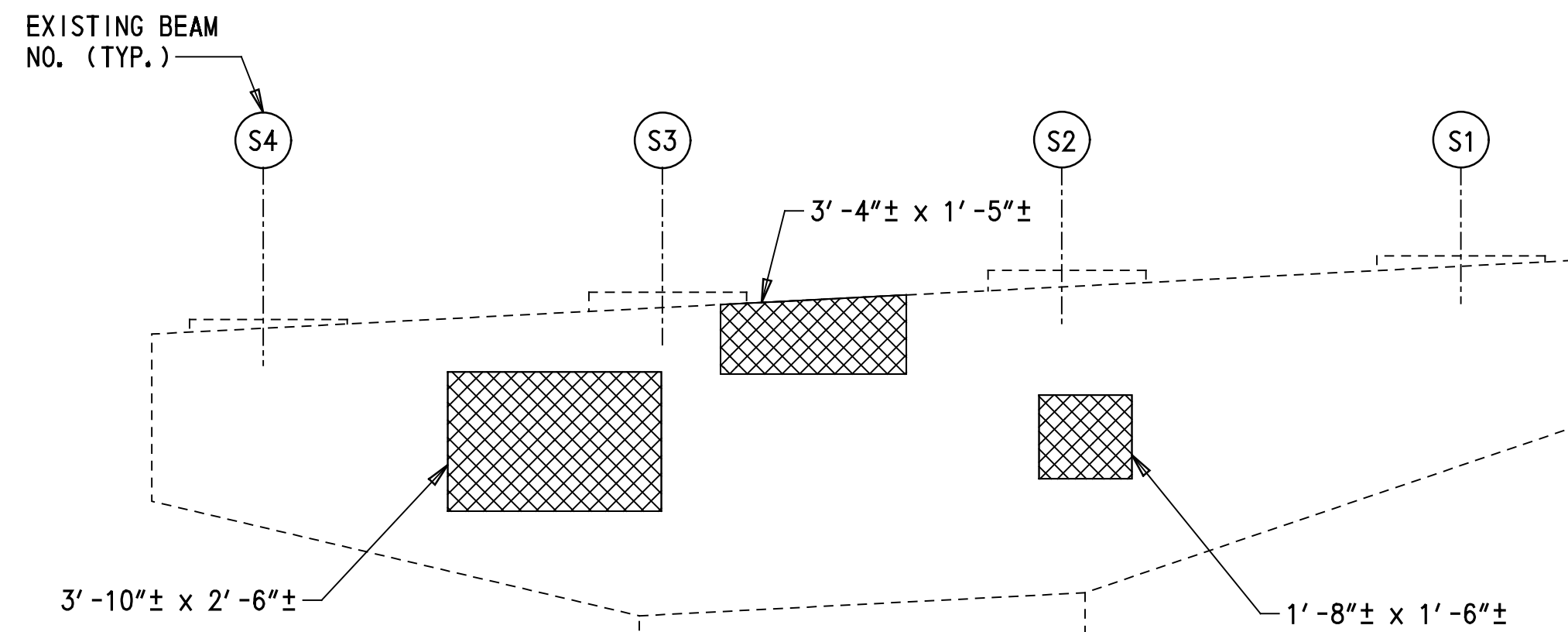
- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 8 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 2. WHERE CRACKS AND SPALLS/DELAMINATIONS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR AND PAID FOR UNDER ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION. PAYMENT FOR CRACK REMOVAL LOCATED WITHIN SPALL REPAIRS WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
 3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
 4. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DAPHRAGMS. SEE DWG. BB-03 FOR SUGGESTED SEQUENCE OF INSTALLATION FOR BEARINGS.

NOTE: PILES NOT SHOWN FOR CLARITY.

PIER E7 - SOUTH ELEVATION
3/8" = 1'-0"

2025 SEP 03 09:07 PM

ADDENDA / REVISIONS	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>CONTRACT</td> <td>BRIDGE NO.</td> <td>1 758E 6141</td> </tr> <tr> <td>T201907404</td> <td>DESIGNED BY:</td> <td>B. MARSHALL</td> </tr> <tr> <td>COUNTY</td> <td>CHECKED BY:</td> <td>C. MALKIN</td> </tr> <tr> <td>NEW CASTLE</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 758E 6141	T201907404	DESIGNED BY:	B. MARSHALL	COUNTY	CHECKED BY:	C. MALKIN	NEW CASTLE			PIER E7 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-03 SECTION PAI SHEET NO. 91
CONTRACT	BRIDGE NO.	1 758E 6141															
T201907404	DESIGNED BY:	B. MARSHALL															
COUNTY	CHECKED BY:	C. MALKIN															
NEW CASTLE																	



2'-6"± x 1'-6"±
WITHIN EXISTING PATCH

APPROXIMATE
EXISTING
GROUNDLINE

NOTE:
PILES NOT SHOWN FOR CLARITY.

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COPY

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

NOTES:

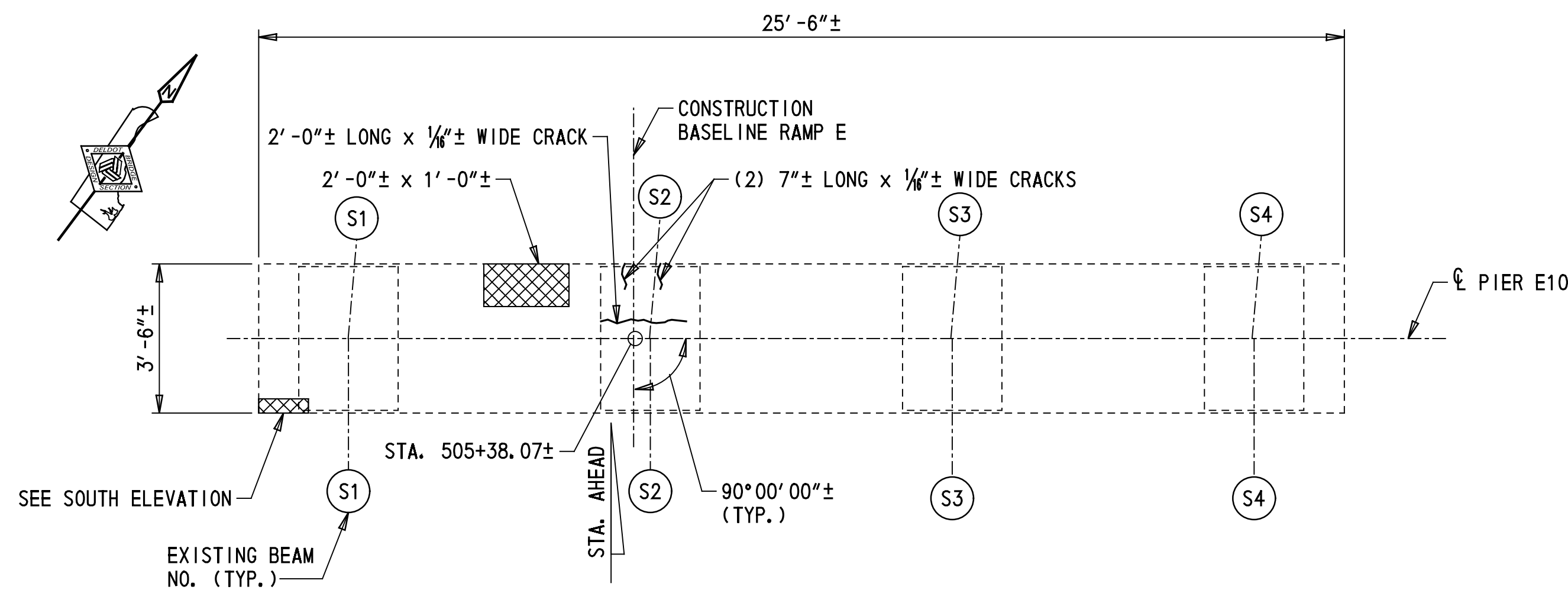
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 8 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
4. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-03.

PIER E7 - NORTH ELEVATION

3/8" = 1'-0"

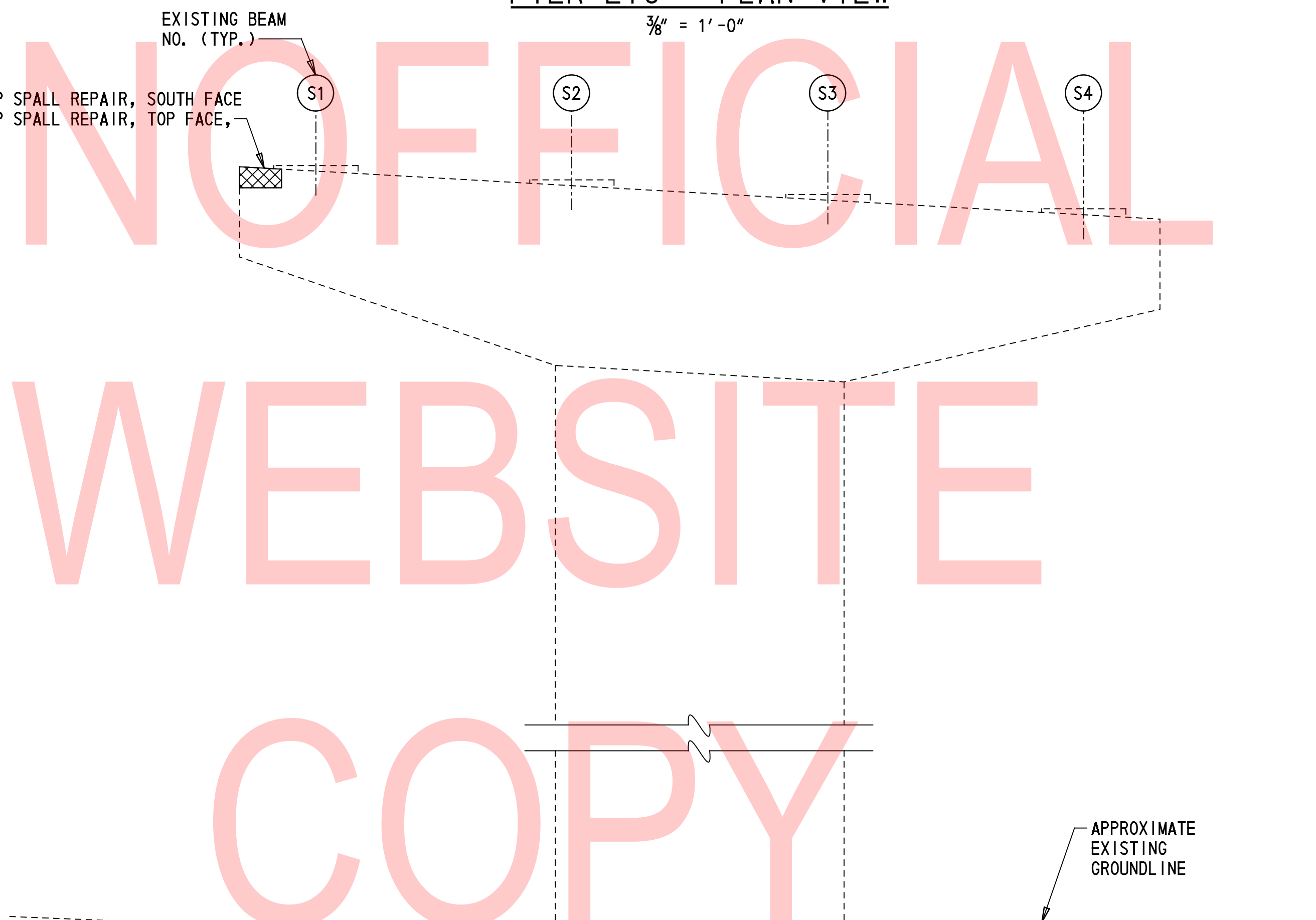
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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">CONTRACT</td> <td style="font-size: 8px;">BRIDGE NO.</td> <td style="font-size: 8px;">1 758E 6141</td> </tr> <tr> <td style="font-size: 8px;">T201907404</td> <td style="font-size: 8px;">DESIGNED BY:</td> <td style="font-size: 8px;">B. MARSHALL</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td style="font-size: 8px;">CHECKED BY:</td> <td style="font-size: 8px;">C. MALKIN</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 758E 6141	T201907404	DESIGNED BY:	B. MARSHALL	COUNTY	CHECKED BY:	C. MALKIN	NEW CASTLE			PIER E7 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">PR-04</td> </tr> <tr> <td style="font-size: 8px;">SECTION</td> </tr> <tr> <td style="font-size: 8px;">PAI</td> </tr> <tr> <td style="font-size: 8px;">SHEET NO.</td> </tr> <tr> <td style="font-size: 8px;">92</td> </tr> </table>	PR-04	SECTION	PAI	SHEET NO.	92
CONTRACT	BRIDGE NO.	1 758E 6141																					
T201907404	DESIGNED BY:	B. MARSHALL																					
COUNTY	CHECKED BY:	C. MALKIN																					
NEW CASTLE																							
PR-04																							
SECTION																							
PAI																							
SHEET NO.																							
92																							



PIER E10 - PLAN VIEW
3/8" = 1'-0"

1'-2" ± x 7"± DEEP SPALL REPAIR, SOUTH FACE
1'-2" ± x 4"± DEEP SPALL REPAIR, TOP FACE,
SEE NOTE 4



PIER E10 - SOUTH ELEVATION
3/8" = 1'-0"

LEGEND:

- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
- DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER E10				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	4
37	628041	DEEP SPALL REPAIR	CF	1

NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION NOTES (SEE NOTE 8 ON DWG. PN-01) AND ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.
4. COMPLETE REPAIR PRIOR TO INSTALLING PROPOSED BEARING.
5. SEE DWG. RH-01 FOR SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING DIAPHRAGMS. SEE DWG. BB-02 FOR SUGGESTED SEQUENCE OF INSTALLATION FOR BEARINGS.

17 SEP 05 09:28 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	PIER E10 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-05
				T201907404	DESIGNED BY: P. SHAW	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	93
				NEW CASTLE				

BRIDGE JACKING NOTES:

- CONTRACTOR SHALL VERIFY COMPATIBILITY OF THE JACKING ASSEMBLY WITH HYDRAULIC JACK (SEE NOTE 16) PRIOR TO FABRICATION. ALTERNATE JACKING SCHEMES OR ASSEMBLIES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. SUBMISSION SHALL INCLUDE DETAILED SHOP DRAWINGS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ANY ALTERNATIVE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND MAY BE REJECTED BY THE ENGINEER FOR ANY REASON INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY. NO ADDITIONAL PAYMENT WILL BE MADE FOR ALTERNATE JACKING SCHEMES OR ASSEMBLIES.

THE CONTRACTOR SHALL SUBMIT A JACKING PROCEDURE TO THE ENGINEER FOR APPROVAL. NO WORK ON THE INSTALLATION OF THE JACKING ASSEMBLY SHALL OCCUR UNTIL APPROVAL OF THE JACKING PROCEDURE IS OBTAINED. THE PROCEDURE SHALL CONTAIN, AT A MINIMUM, THE FOLLOWING INFORMATION:

- CATALOG CUTS OF ALL OF THE JACKS TO BE USED.
- CALIBRATION CERTIFICATES AND CALIBRATION CHARTS FOR EACH JACK TO BE USED.
- A COMPLETE SCHEMATIC OF THE JACKING SYSTEM, INCLUDING THE JACKS, HOSES, GAUGES, VALVES, MANIFOLDS AND PUMPS.
- A NARRATIVE ON THE METHOD TO BE USED TO DETERMINE THE VERTICAL DISPLACEMENTS AT EACH BEAM LOCATION DURING JACKING AND HOW THE DISPLACEMENT LIMITS WILL BE CHECKED AND MAINTAINED DURING THE JACKING.
- A NARRATIVE ON THE METHOD TO BE USED TO KEEP THE LIFTING RATES OF THE JACK SIMILAR AND AT A RATE SLOW ENOUGH TO BE ABLE TO VERIFY THE VERTICAL DISPLACEMENTS BEFORE THE LIMITS ARE EXCEEDED.
- A COMPLETE SEQUENCE OF CONSTRUCTION NARRATIVE.

- THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO ORDERING OR FABRICATING THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.
- ALL STEEL PLATES AND STEEL ROLLED SHAPES SHALL BE AASHTO M270 GRADE 50 MATERIAL.
- UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 7/8" DIAMETER ASTM F3125 GR. A325. ALL BOLTS ARE DESIGNED WITH THE THREADS INCLUDED IN THE SHEAR PLANE. ALL HOLES FOR BOLTS SHALL BE 1/16" DIAMETER. INSTALL BOLTS BY TURN OF NUT METHOD IN ACCORDANCE WITH SUBSECTION 615.03.D.6.c.v11 OF THE STANDARD SPECIFICATIONS.
- ALL METAL WORK AND ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 615.
- JACKING ASSEMBLY AND JACKING STIFFENERS SHALL BE SET PLUMB.
- WORK SHALL CONSIST OF JACKING THE EXISTING BEAMS, REMOVING THE EXISTING BEARINGS, AND INSTALLING NEW ELASTOMERIC AND DISC BEARINGS. FOR LOCATIONS OF BEARING REPLACEMENTS, SEE DWGS. BB-01 TO BB-04. ADDITIONAL CONCRETE REPAIR WORK THAT MAY BE REQUIRED PRIOR TO PERFORMING JACKING OPERATIONS IS DETAILED ON DWGS. PR-01 TO PR-03.
- THE ENGINEER SHALL BE PRESENT DURING ALL JACKING OPERATIONS TO ENSURE CONFORMANCE WITH ALL PERTINENT CONTRACT PROVISIONS.
- IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL INSPECT THE CONDITION OF THE EXISTING STEEL BEAMS FOR ANY DEFECTS WHICH MAY IMPACT THE LOAD CARRYING CAPACITY OF THE BEAM DURING JACKING. IF ANY DEFECTS ARE FOUND, THE CONTRACTOR SHALL STOP WORK AT THAT LOCATION AND DISCUSS WITH THE ENGINEER IMMEDIATELY.
- WHERE CONCRETE REPAIRS TO THE PIER CAPS AND PEDESTALS OVERLAP WITH THE JACKING OPERATIONS, THE CONCRETE SHALL BE REPAIRED PRIOR TO THE JACKING OPERATIONS. ALL CONCRETE REPAIRS SHALL BE PERFORMED AND WILL BE PAID FOR AS SHOWN ON DWG. PN-02. JACKING OPERATIONS SHALL NOT BE PERFORMED UNTIL THE REPAIRED AREAS HAVE REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.
- THE CONTRACTOR SHALL HAVE THE PROPOSED BEARING ASSEMBLIES FOR THE BEARING LINE BEING REPLACED ON SITE PRIOR TO COMMENCING WITH JACKING OPERATIONS. THE PROPOSED BEARING ASSEMBLIES MUST BE ACCEPTED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE HYDRAULIC JACKS FOR THE SAME BEARING LINE REQUIRED TO LIFT THE EXISTING BEAMS SHALL BE OPERATED CONCURRENTLY (MANIFOLDED) TO PROVIDE AN EQUAL AND BALANCED LIFTING FORCE SUCH THAT THE BRIDGE IS LIFTED EVENLY.

THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT BEAMS IS NOT TO EXCEED 1/8" AT ANY TIME.

THE MAXIMUM VERTICAL DISPLACEMENT OF ANY BEAM FROM THE EXISTING LOCATION SHALL NOT EXCEED 1/4" AT ANY TIME.
- THE CONTRACTOR SHALL USE ONLY JACKS WITH LOCK-NUTS CAPABLE OF SUPPORTING A LOAD EQUAL TO THE RATED CAPACITY OF THE JACK. IN THE EVENT THE JACK LOSES HYDRAULIC PRESSURE THE CONTRACTOR SHALL ADVANCE THE LOCK-NUTS ON ALL JACKS SUCH THAT THE MAXIMUM DISTANCE BETWEEN THE TOP OF A JACK AND THE LOCK-NUT DOES NOT EXCEED 1/8" AT ANY TIME DURING THE JACKING PROCEDURE.
- NO REPAIR WORK SHALL BE PERFORMED UNTIL THE JACKING OPERATION IS COMPLETE AND THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLY (JACKING DIAPHRAGM, LOCK-NUT JACK, SPACER COLUMN, ETC).
- LIVE LOAD SHALL BE TEMPORARILY REMOVED FROM THE BRIDGE DURING JACKING UNTIL THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLIES.
- THE HYDRAULIC JACKS SHALL HAVE A MINIMUM CAPACITY OF 200 TONS. THE FACTORED LOADS FOR JACKING WERE USED TO SIZE THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK. THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK DOES NOT ACCOUNT FOR CONDITIONAL CONSTRUCTION LOADS. THEY WILL NEED TO BE REDESIGNED FOR FACTORED DEAD LOADS AND ANY APPLIED CONSTRUCTION LOADS. REDESIGN OF THESE ELEMENTS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

BRIDGE JACKING NOTES (CONTINUED):

- THE FACTORED LOADS FOR JACKING USE A DEAD LOAD FACTOR OF 1.30 AND A LIVE LOAD FACTOR OF 1.75. THE FACTORED LOADS SHOWN WERE USED FOR THE DESIGN OF THE JACKING ASSEMBLY AND THE HYDRAULIC JACK.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE JACKING ASSEMBLY. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- EXISTING STEEL CONNECTION PLATES THAT ARE TO BE CONNECTED TO NEW JACKING DIAPHRAGMS SHALL BE THOROUGHLY CLEANED AND PRIMED PRIOR TO PLACING NEW STEEL IN CONFORMANCE WITH SECTION 616. THE INSIDE SURFACE OF THE JACKING DIAPHRAGM THAT IS TO CONNECT TO THE CONNECTION PLATE SHALL RECEIVE A SHOP PRIME COAT. THE REMAINDER OF THE JACKING DIAPHRAGM SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION 616.
- BRIDGE JACKING SHALL BE PAID FOR UNDER ITEM 604000 - JACKING BRIDGE. REMOVAL AND DISPOSAL OF EXISTING END DIAPHRAGMS TO BE REPLACED WITH JACKING DIAPHRAGMS IS INCLUDED IN ITEM 604000 - JACKING BRIDGE.

SUGGESTED SEQUENCE OF CONSTRUCTION:

THE FOLLOWING IS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE JACKING OPERATIONS.

- INSTALL ALL NECESSARY TEMPORARY WORK PLATFORMS AND/OR RIGGING. CARE SHALL BE TAKEN NOT TO INTERFERE WITH PROPOSED LOCATIONS OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.
- REMOVE EXISTING DIAPHRAGMS AT LOCATIONS OF PROPOSED JACKING DIAPHRAGMS (PIERS E10/H1). REMOVE EXISTING CONNECTION PLATES AND GRIND SMOOTH ANY WELD WHERE PROPOSED JACKING CONNECTIONS ARE LOCATED.
- INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.
- PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING AND CURE TO SPECIFIED STRENGTH.
- INSTALL ALL JACKING ASSEMBLIES AS SHOWN ON DWGS. RH-02 THROUGH RH-04.
- REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.
- PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE BEARINGS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFICE OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
- SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUTS OF THE HYDRAULIC JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES ON DWGS. RH-02 TO RH-04. PROVIDE FOR SUPERSTRUCTURE EXPANSION.
- RELEASE LOAD IN JACK TO TRANSFER ALL LOAD TO THE JACKING ASSEMBLY AND LOCK-NUT.

SUGGESTED SEQUENCE OF CONSTRUCTION (CONTINUED):

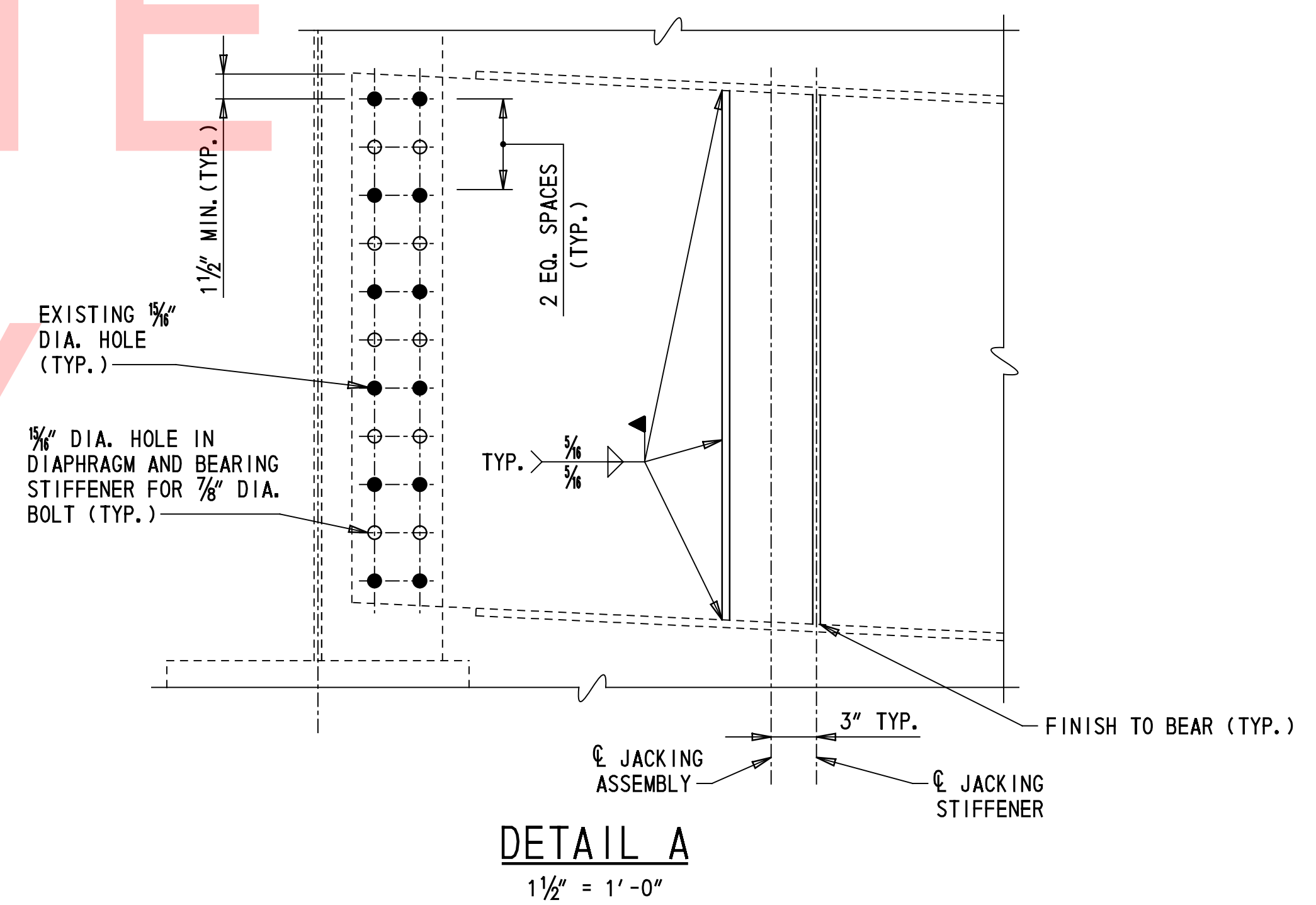
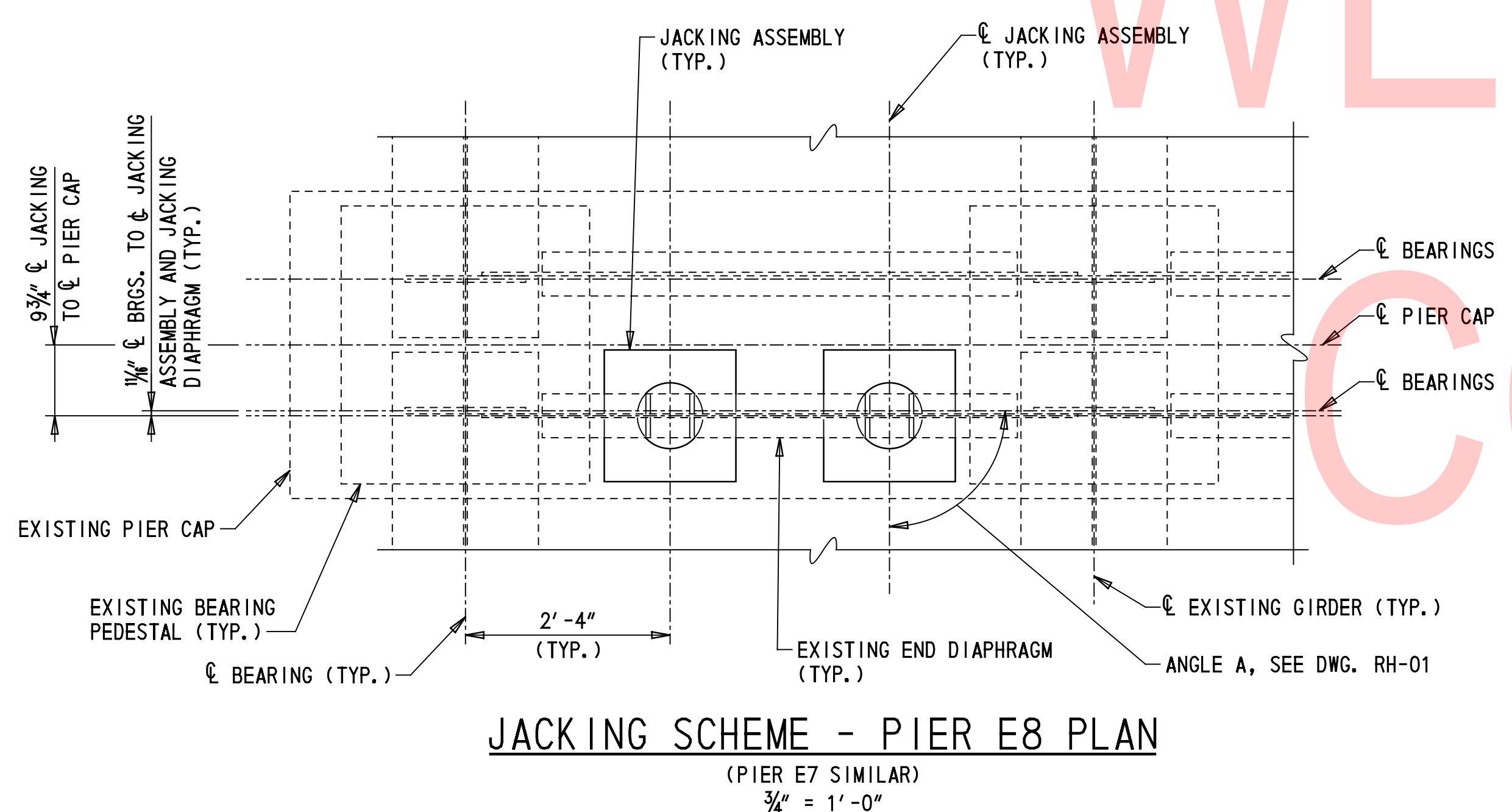
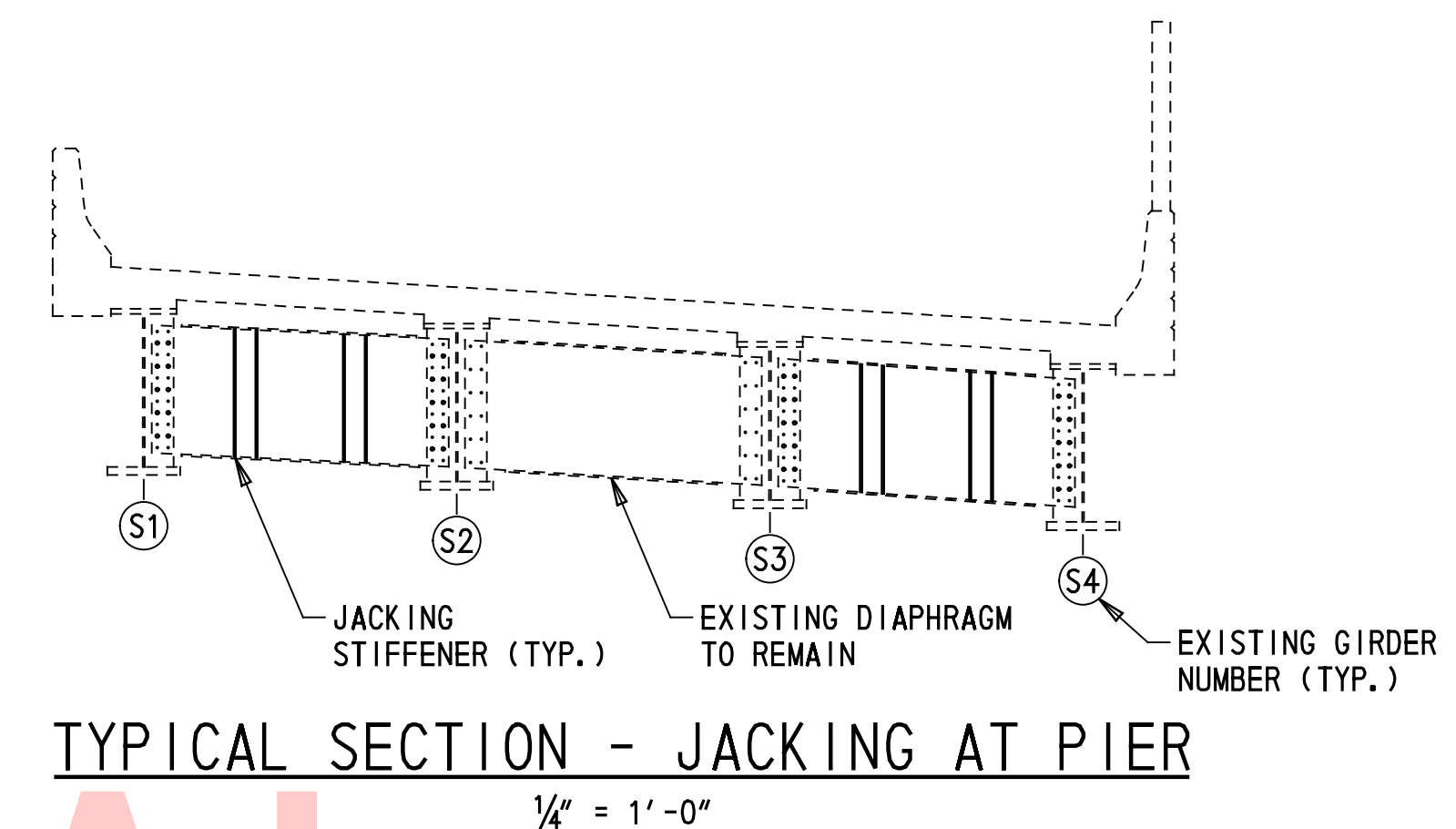
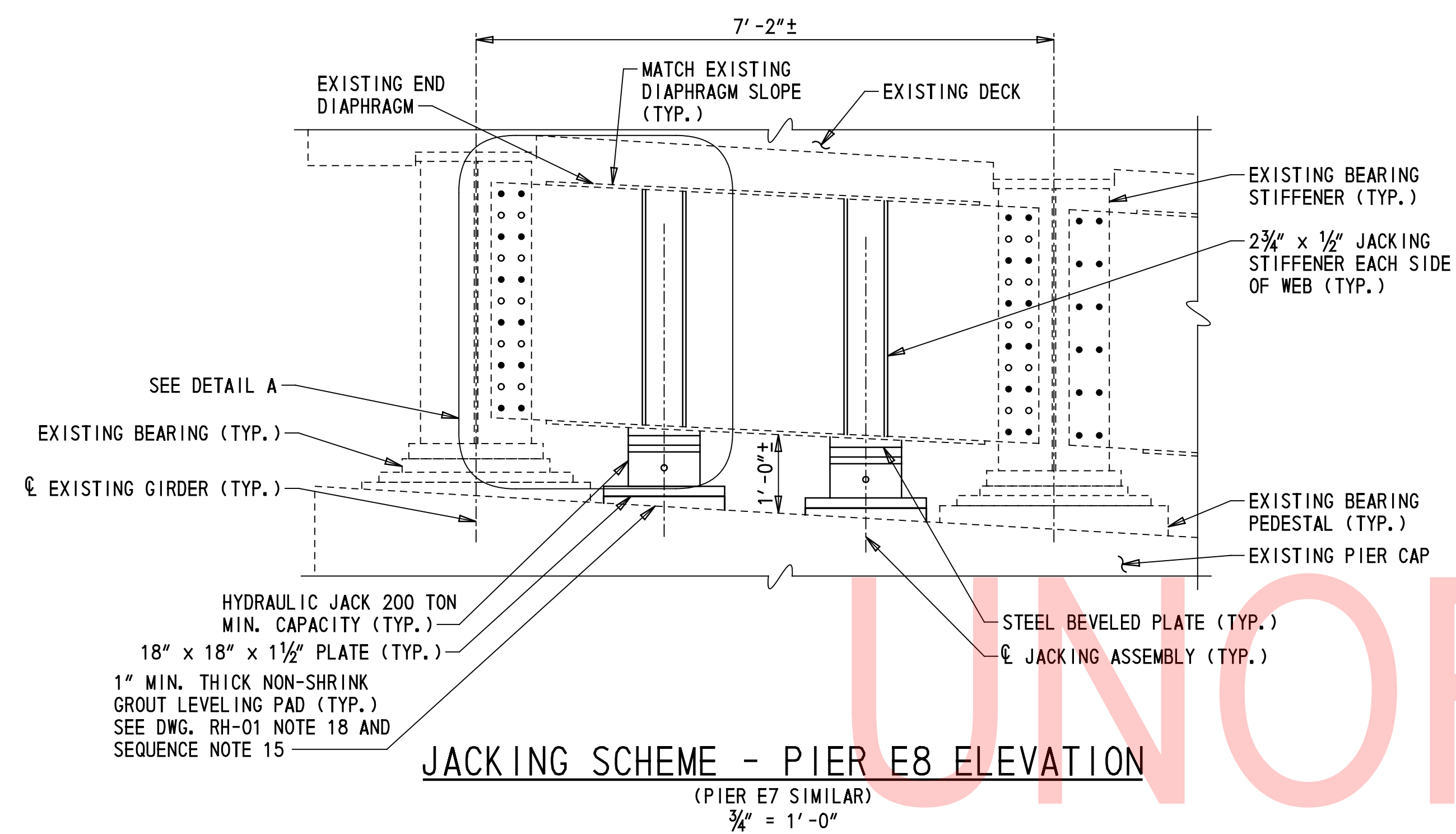
- FOR DISC BEARING REPLACEMENTS AT PIERS E7 AND E8, ADDITIONAL REMOVAL SEQUENCE REQUIRED AS FOLLOWS:
 - REMOVE AND REPLACE ONLY ONE OF THE INTERIOR BEARINGS (FOR PROPOSED TYPE GE-1) PRIOR TO REMOVING THE OTHER THREE BEARINGS. SEE NOTES 11-16 BELOW. THE OTHER THREE EXISTING BEARINGS SHALL REMAIN IN PLACE DURING THE REPLACEMENT TO ENSURE LATERAL FORCES ARE RESTRAINED BY THE EXISTING KEEPER PLATES.
 - ONCE ONE OF THE TYPE GE-1 GUIDED DISC BEARINGS IS INSTALLED AND LATERAL FORCES ARE ABLE TO BE RESISTED BY THE GUIDED DISC BEARING, REMOVE AND REPLACE THE OTHER TYPE GE-1 GUIDED DISC BEARING. SEE NOTES 11-16 BELOW.
 - AFTER THE TYPE GE-1 GUIDED DISC BEARINGS ARE INSTALLED, THE TWO EXTERIOR BEARINGS SHALL BE REMOVED AND REPLACED. SEE NOTES 11-16 BELOW.
- REMOVE EXISTING WELDS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE OF THE EXISTING BEAM. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING BEAM. ANY DAMAGE TO THE EXISTING BEAM CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER. SUBMIT THE WELD REMOVAL PROCEDURE TO THE ENGINEER FOR APPROVAL.
- REMOVE EXISTING ANCHOR BOLTS AS SHOWN ON DWGS. BB-01 AND BB-02.
- REMOVE EXISTING BEARING ASSEMBLY. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING STEEL BEAM DURING ANY CUTTING OF THE EXISTING BEARING.
- CLEAN THE BOTTOM SURFACE OF THE EXISTING BEAM AND APPLY PRIMER IN ACCORDANCE WITH SECTION 616. PAYMENT FOR CLEANING AND PAINTING WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
- THE TOP OF THE EXISTING BEARING LOCATION SHALL BE LEVEL AND FREE OF DEBRIS. IF REQUIRED, NON-SHRINK GROUT SHALL BE USED TO LEVEL AND PROVIDE A SMOOTH BEARING SURFACE FOR THE PROPOSED BEARING. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
- INSTALL PROPOSED BEARINGS. FOR THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARINGS, SEE DWGS. BB-02 AND BB-03.
- DO NOT LOWER BEAMS UNTIL ALL REPAIRS AND BEARING INSTALLATIONS ARE COMPLETE AND TO THE SATISFACTION OF THE ENGINEER.
- PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE JACKING ASSEMBLIES AND LOCK NUTS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFICE OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
- REMOVE ALL JACKING ASSEMBLIES. NON-SHRINK GROUT LEVELING PADS USED UNDER JACKING ASSEMBLIES AND PROPOSED JACKING DIAPHRAGMS MAY BE LEFT IN PLACE WITH APPROVAL OF THE ENGINEER.

LOADS FOR JACKING						UNFACTORED		FACTORED	
SPAN NO.	SUBSTRUCTURE UNIT	GIRDER NO.	BEAM SPACING ALONG C OF BEARING	BEAM MEMBER	ANGLE A*	DL+15%	DL+LL+IMP	DL+15%	DL+LL+IMP
SPAN E7	PIER E7	S1	7' -2"±	PLATE GIRDER	89°56' 17.4"±	46.3 KIP	103.4 KIP	76.4 KIP	160.1 KIP
		S2	7' -2"±	PLATE GIRDER	89°56' 14.8"±	55.9 KIP	123.3 KIP	92.2 KIP	190.6 KIP
		S3	7' -2"±	PLATE GIRDER	89°56' 12.1"±	69.2 KIP	140.7 KIP	114.2 KIP	215.0 KIP
		S4	7' -2"±	PLATE GIRDER	89°56' 09.4"±	99.1 KIP	189.9 KIP	163.4 KIP	287.8 KIP
SPAN E8	PIER E8	S1	7' -2"±	PLATE GIRDER	89°51' 53.9"±	46.3 KIP	103.4 KIP	76.4 KIP	160.1 KIP
		S2	7' -2"±	PLATE GIRDER	89°51' 42.7"±	55.9 KIP	123.3 KIP	92.2 KIP	190.6 KIP
		S3	7' -2"±	PLATE GIRDER	89°51' 31.0"±	69.2 KIP	140.7 KIP	114.2 KIP	215.0 KIP
		S4	7' -2"±	PLATE GIRDER	89°51' 18.6"±	99.1 KIP	189.9 KIP	163.4 KIP	287.8 KIP
SPAN E9	PIER E10	S1	7' -0 1/4"±	W36x160	85°06' 06.7"±	50.5 KIP	117.9 KIP	83.3 KIP	183.6 KIP
		S2	7' -0 1/4"±	W36x150	85°01' 10.4"±	38.0 KIP	109.1 KIP	62.6 KIP	173.8 KIP
		S3	7' -0 1/4"±	W36x135	84°56' 02.3"±	36.7 KIP	107.3 KIP	60.5 KIP	171.2 KIP
		S4	7' -0 1/4"±	W36x135	84°50' 41.7"±	39.1 KIP	98.4 KIP	64.5 KIP	154.6 KIP
SPAN E11	PIER H1	S1	8' -2 3/8"±	W36x135	69°55' 08.5"±	62.3 KIP	145.0 KIP	102.8 KIP	225.8 KIP
		S2	8' -2 3/8"±	W36x135	70°58' 13.3"±	51.6 KIP	141.0 KIP	85.2 KIP	223.6 KIP
		S3	8' -2 3/8"±	W36x135	72°05' 47.3"±	47.8 KIP	134.0 KIP	78.9 KIP	213.0 KIP
		S4	8' -2 3/8"±	W36x135	73°18' 16.9"±	47.8 KIP	134.0 KIP	78.9 KIP	213.0 KIP
		S5	8' -2 3/8"±	W36x135	74°36' 11.1"±	46.7 KIP	117.2 KIP	77.0 KIP	184.1 KIP

*FOR LOCATION OF ANGLE A, SEE DWGS. RH-02 THROUGH RH-04.

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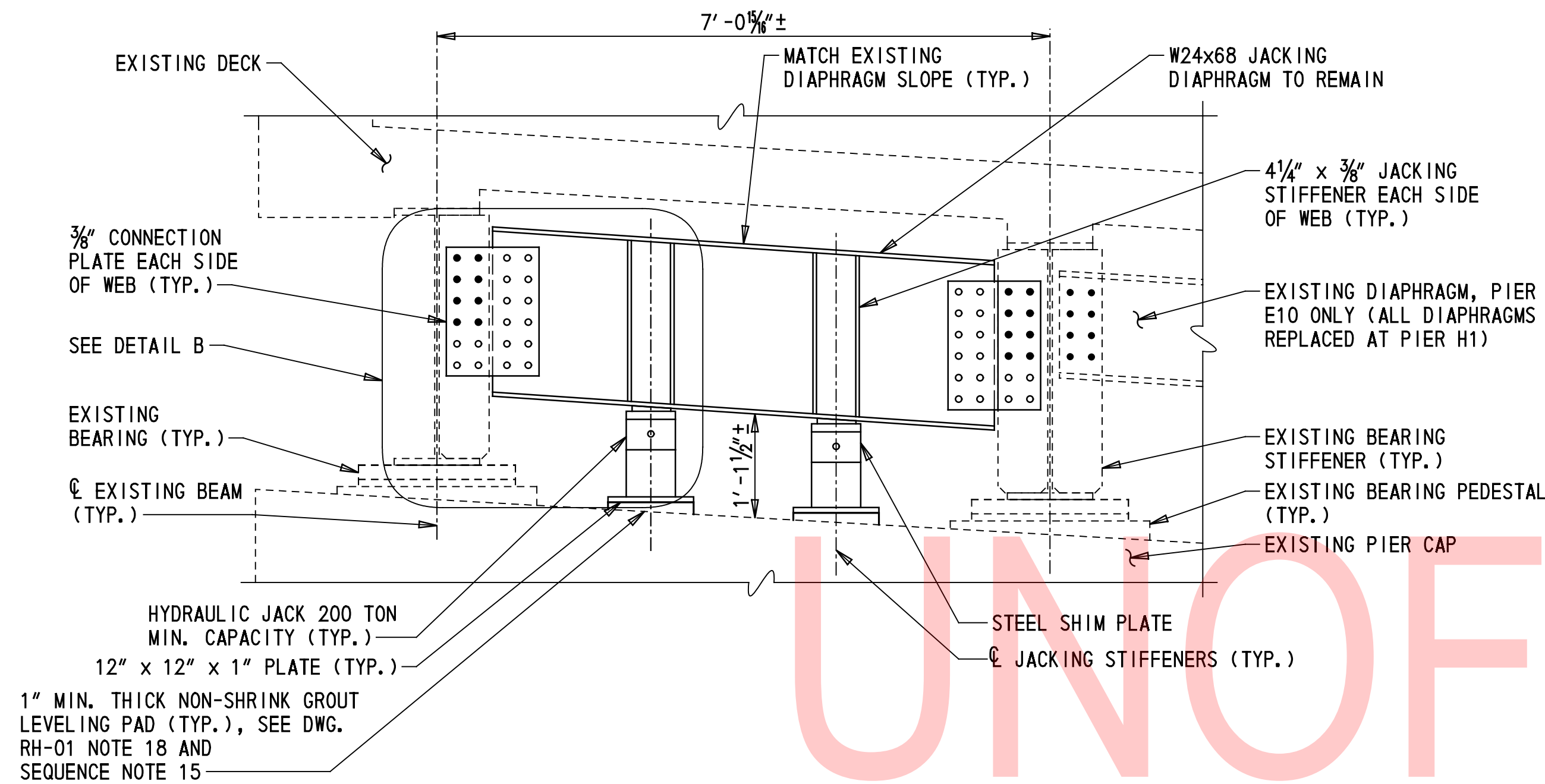
ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6149	JACKING NOTES	RH-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		
				COUNTY	CHECKED BY: C. MALKIN	PAI		
				NEW CASTLE		SHEET NO.		
								94



NOTES:
1. JACKING STIFFENERS AT PIERS E7 AND E8 SHALL BE FIELD WELDED TO THE JACKING DIAPHRAGMS. THE CONTRACTOR SHALL CLIP THE INSIDE CORNERS OF THE STIFFENER PLATES 3/4" x 3/4".

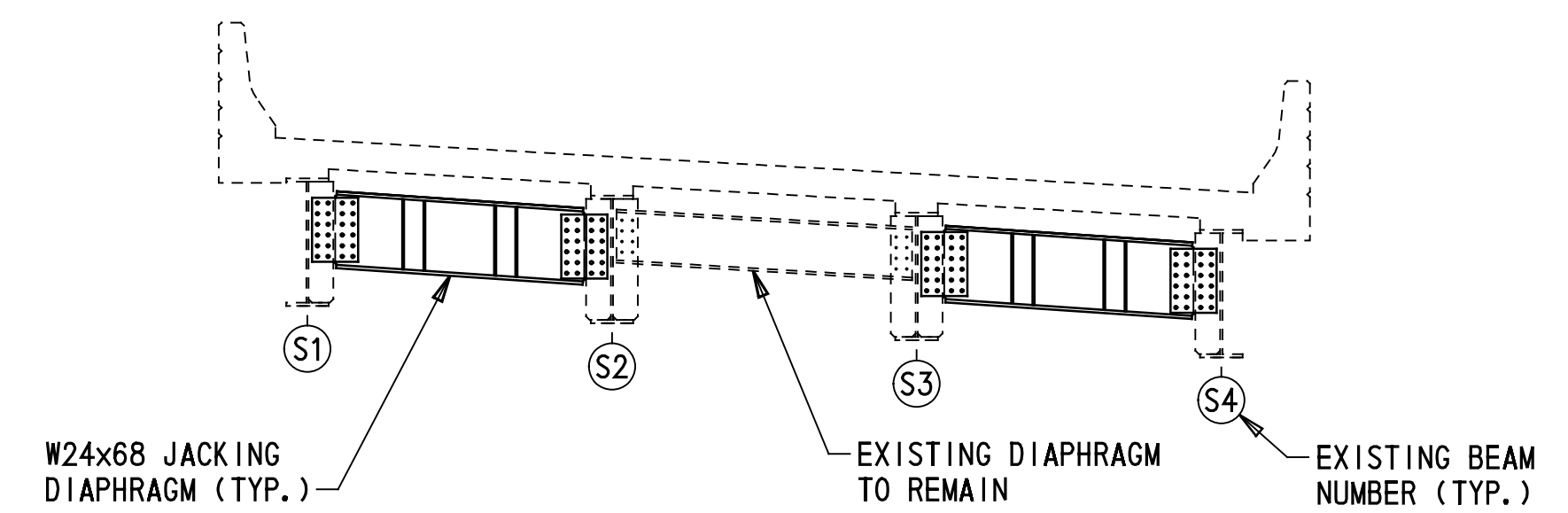
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				T201907404	DESIGNED BY:	B. DEELY	
			COUNTY	NEW CASTLE	CHECKED BY:	C. MALKIN	SHEET NO.
							95



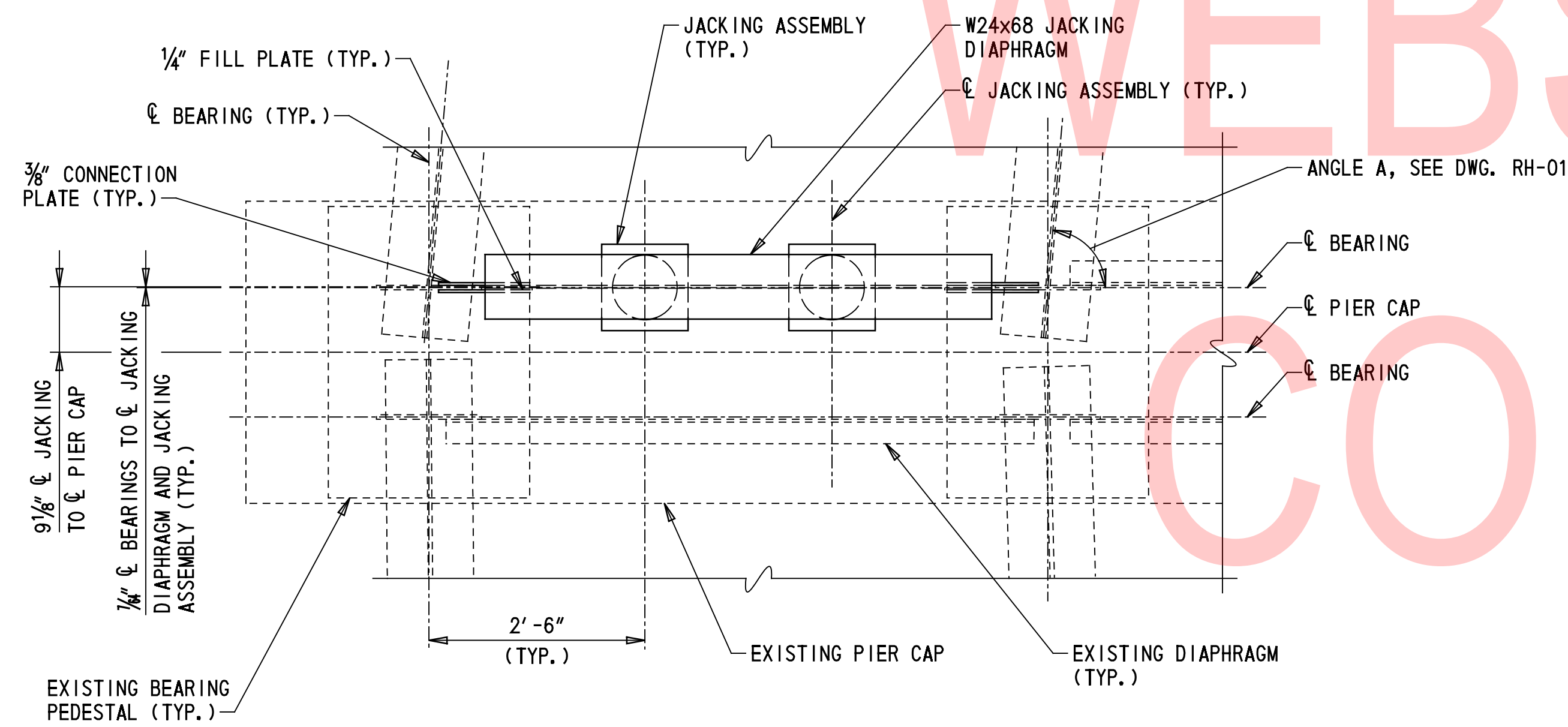
JACKING SCHEME - PIER E10 ELEVATION

3/4" = 1'-0"



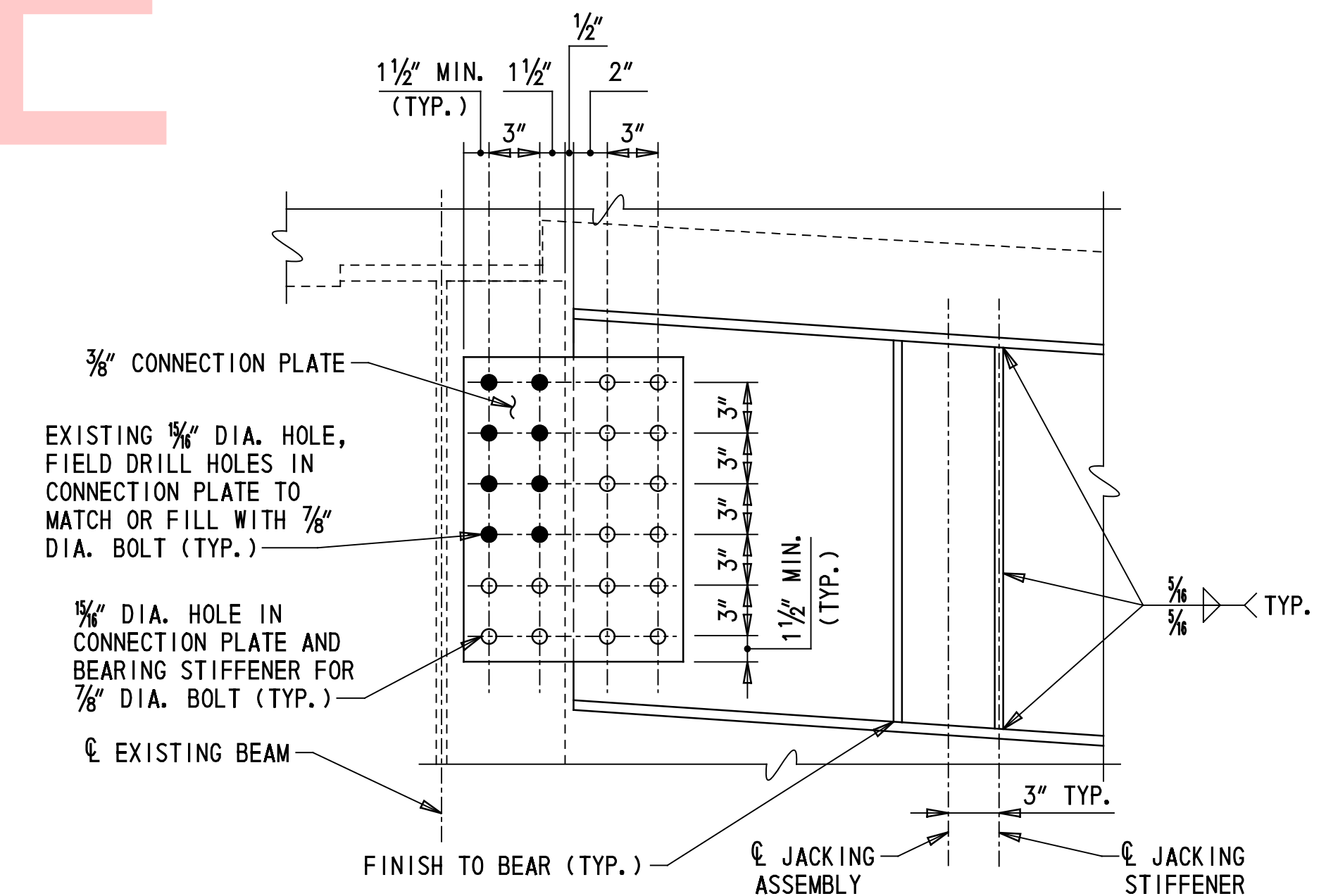
TYPICAL SECTION - JACKING AT PIER E10

1/4" = 1'-0"



JACKING SCHEME - PIER E10 PLAN

3/4" = 1'-0"



DETAIL B

1 1/2" = 1'-0"

NOTES:

1. THE INSIDE SURFACES OF THE TWO CONNECTION PLATES SHALL BE SHOP PRIMED. THE OUTSIDE FACES OF THE CONNECTION PLATES SHALL BE SHOP PRIMED AND PAINTED.

JACKING STIFFENERS SHALL BE SHOP WELDED TO THE JACKING DIAPHRAGMS. THE CONTRACTOR SHALL CLIP THE INSIDE CORNERS OF THE STIFFENER PLATES 3/4" x 3/4".

2. SEE DWG. RH-01 FOR ADDITIONAL NOTES.

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ADDENDA / REVISIONS

SCALE AS NOTED

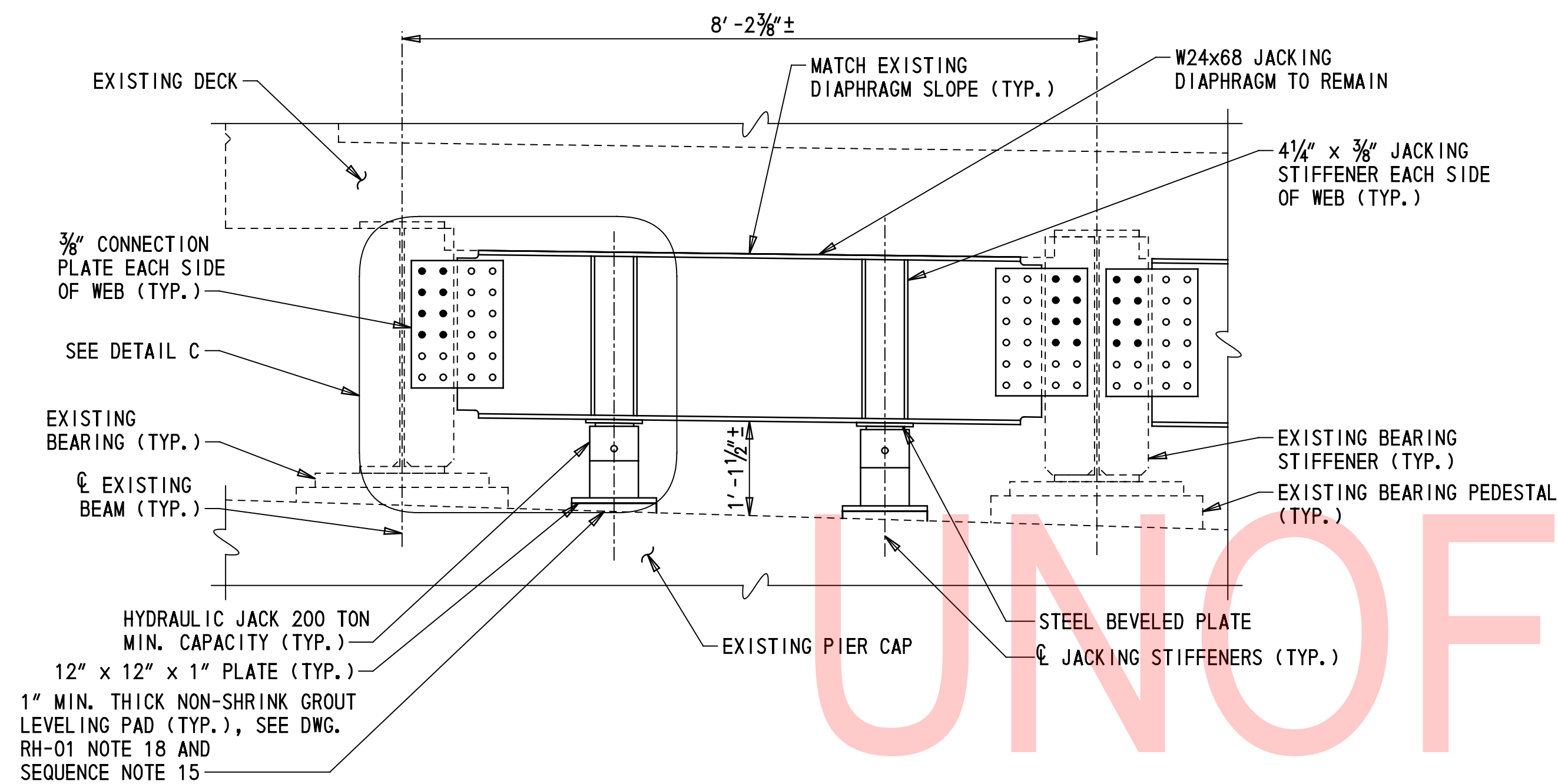
REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT
T201907404
COUNTY
NEW CASTLE

BRIDGE NO. **1 758E 6149**
DESIGNED BY: B. DEELY
CHECKED BY: C. MALKIN

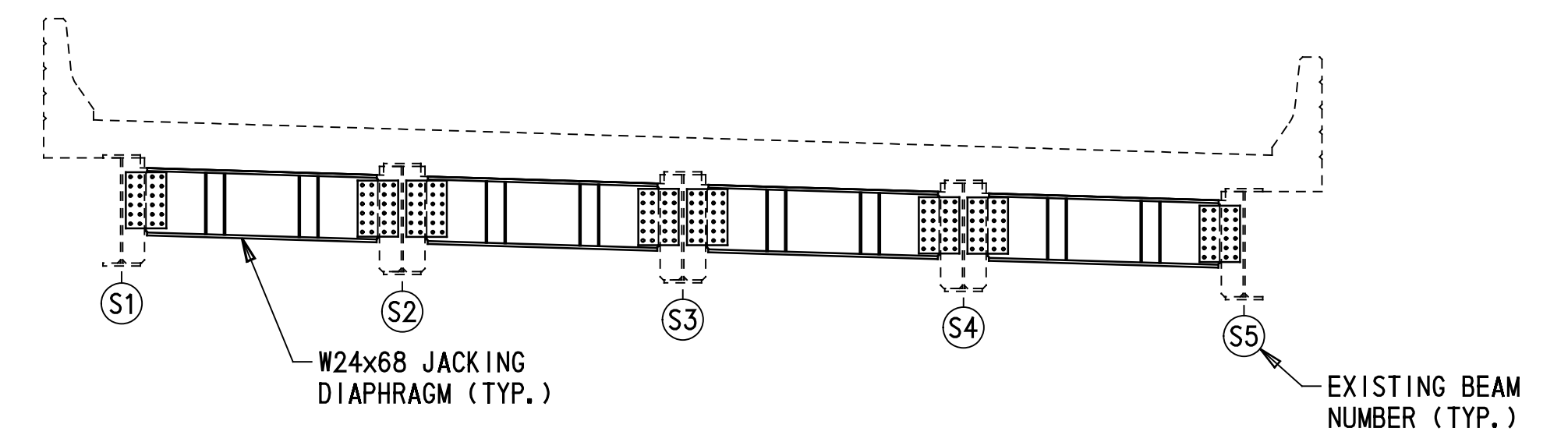
JACKING DETAILS - 2

RH-03
SECTION
PAI
SHEET NO.
96



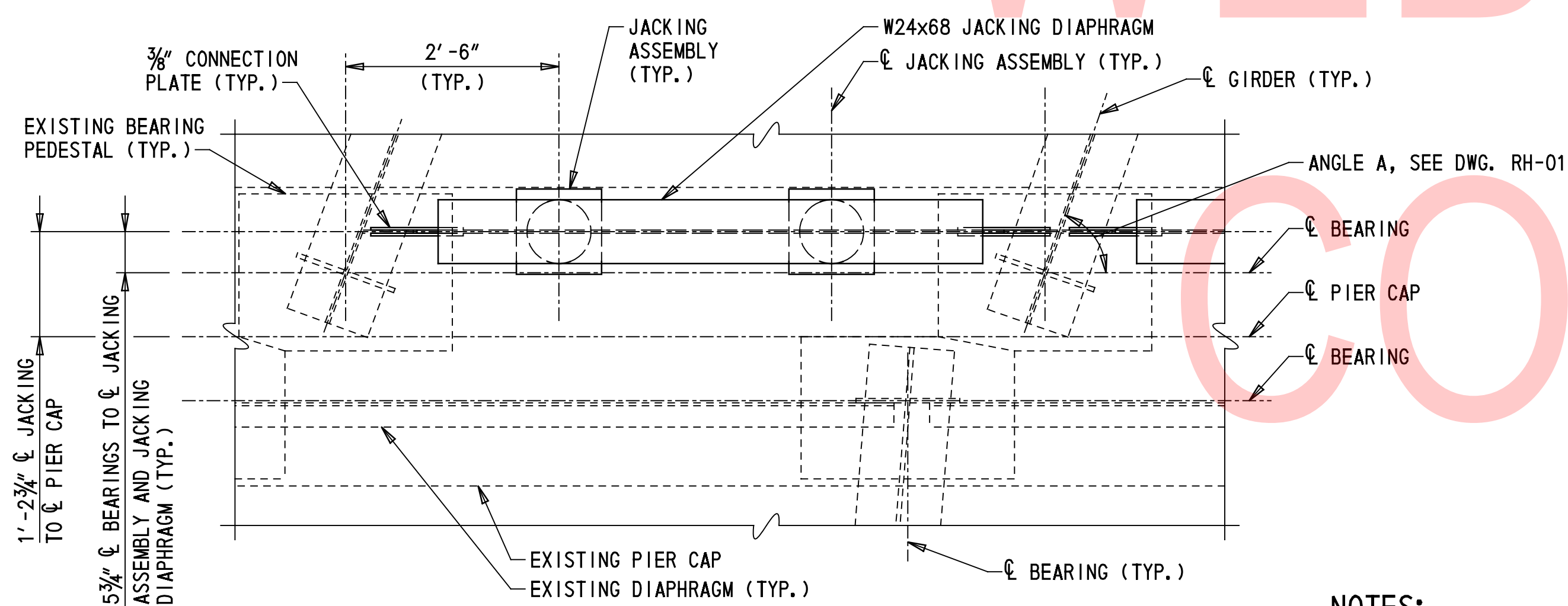
JACKING SCHEME - PIER H1 ELEVATION

3/4" = 1'-0"



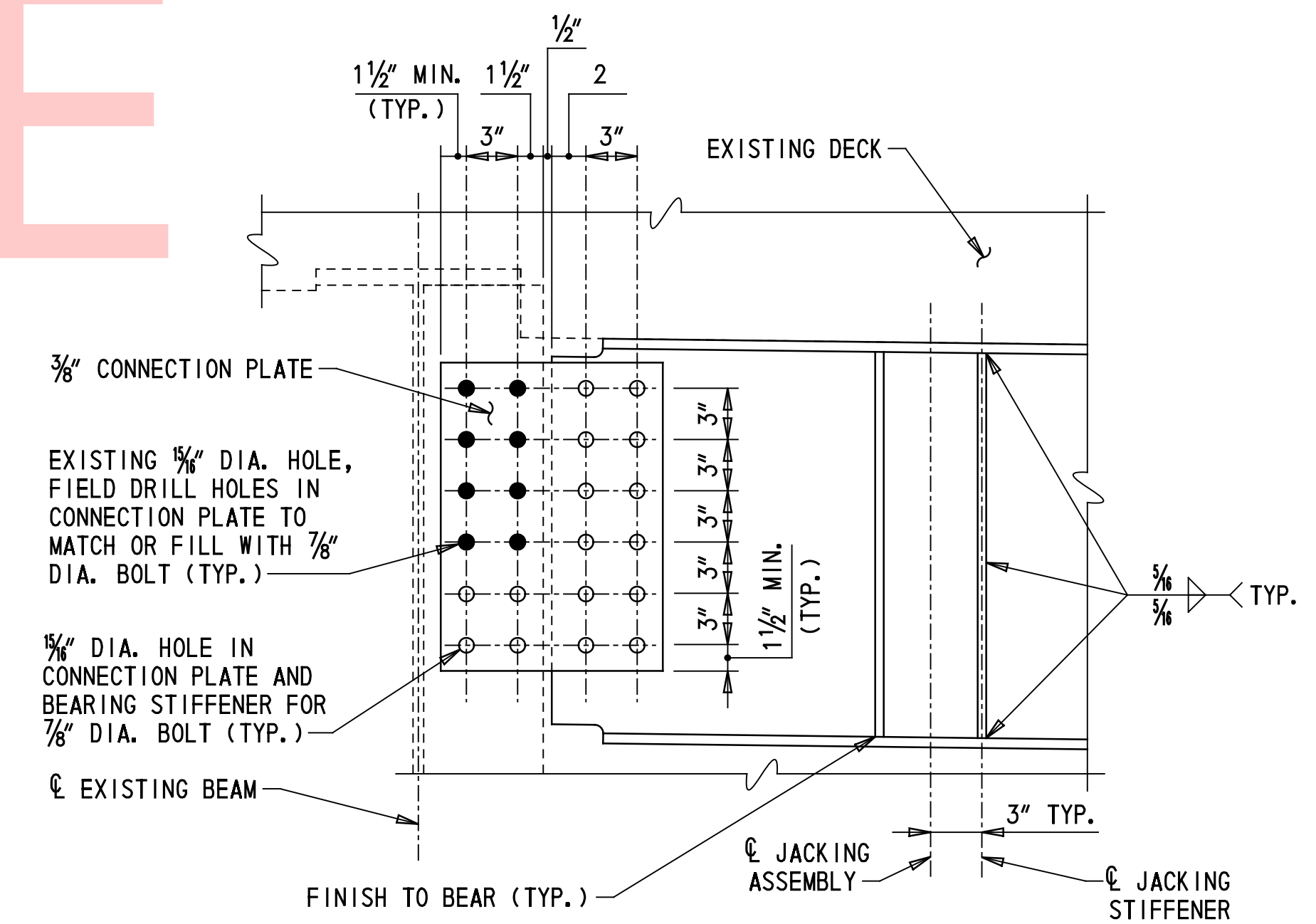
TYPICAL SECTION - JACKING AT PIER H1

1/4" = 1'-0"



JACKING SCHEME - PIER H1 PLAN

3/4" = 1'-0"



DETAIL C

1 1/2" = 1'-0"

NOTES:

1. THE INSIDE SURFACES OF THE TWO CONNECTION PLATES SHALL BE SHOP PRIMED. THE OUTSIDE FACES OF THE CONNECTION PLATES SHALL BE SHOP PRIMED AND PAINTED.

JACKING STIFFENERS SHALL BE SHOP WELDED TO THE JACKING DIAPHRAGMS. THE CONTRACTOR SHALL CLIP THE INSIDE CORNERS OF THE STIFFENER PLATES 3/4" x 3/4".

2. SEE DWG. RH-01 FOR ADDITIONAL NOTES.

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ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT
T201907404
COUNTY
NEW CASTLE

BRIDGE NO. **1 758E 6149**
DESIGNED BY: B. DEELY
CHECKED BY: C. MALKIN

JACKING DETAILS - 3

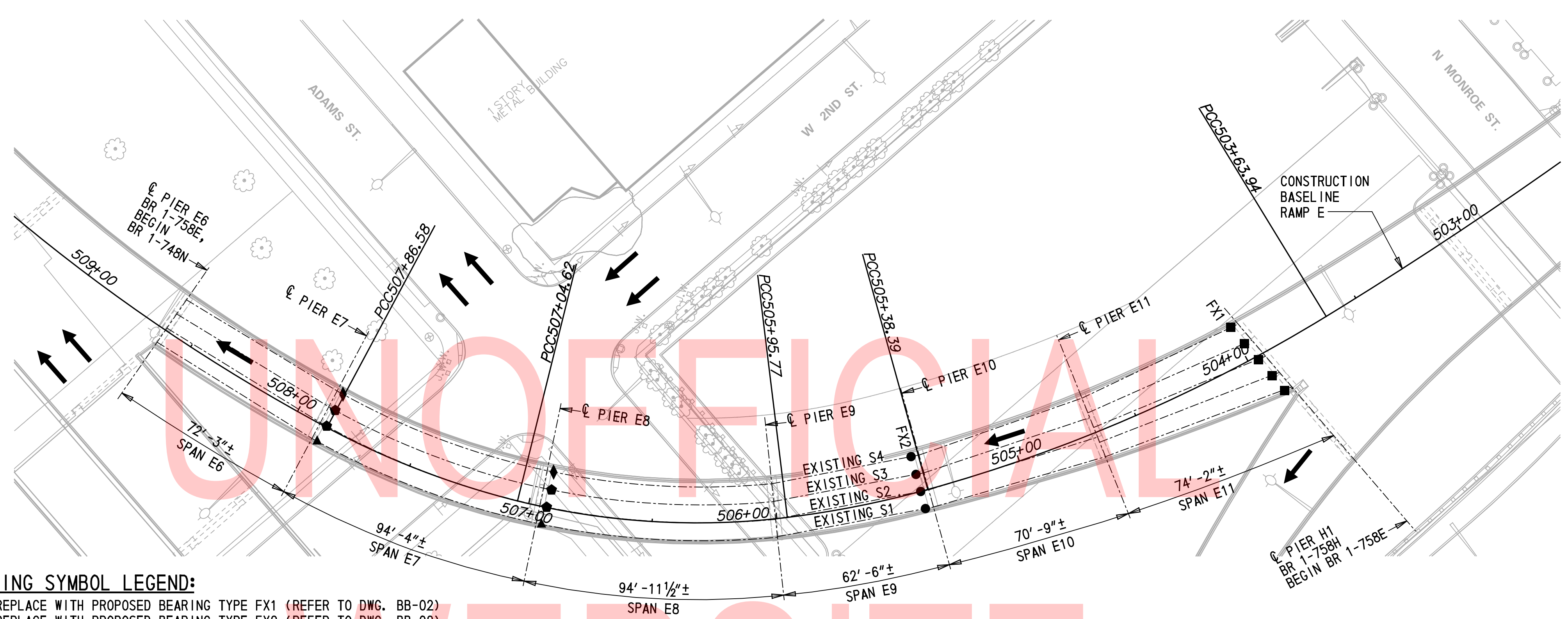
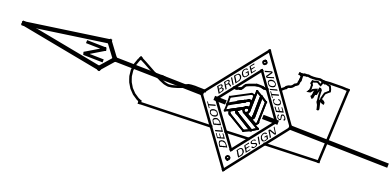
RH-04

SECTION

PAI

SHEET NO.

97



BEARING SYMBOL LEGEND:

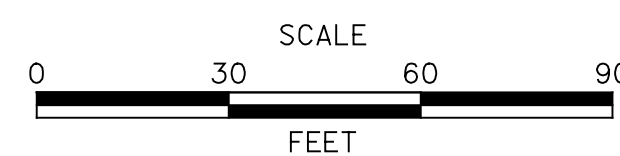
- - REPLACE WITH PROPOSED BEARING TYPE FX1 (REFER TO DWG. BB-02)
- - REPLACE WITH PROPOSED BEARING TYPE FX2 (REFER TO DWG. BB-02)
- ▲ - REPLACE WITH PROPOSED BEARING TYPE E-1 (REFER TO DWG. BB-03)
- ◆ - REPLACE WITH PROPOSED BEARING TYPE E-2 (REFER TO DWG. BB-03)
- ◆ - REPLACE WITH PROPOSED BEARING TYPE GE-1 (REFER TO DWG. BB-03)

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BEARING PLAN

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ADDENDA / REVISIONS



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 758E 6141
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

BEARING PLAN

BB-01
SECTION
PAI
SHEET NO.
98

STEEL REINFORCED ELASTOMERIC BEARING NOTES:

- PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
- ANCHOR BOLTS SHALL BE UNPAINTED AASHTO M 314 (ASTM F 1554) GRADE 105 GALVANIZED STEEL. NUTS AND WASHERS SHALL BE UNPAINTED ASTM A 563 GRADE AND ASTM F 436 TYPE GALVANIZED STEEL, RESPECTIVELY. PLATE WASHERS SHALL BE UNPAINTED AASHTO M270, GRADE 36 GALVANIZED STEEL. ANCHOR BOLTS AND HARDWARE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASM A 153. SET NUTS 1/4" CLEAR OF SOLE PLATES AND BURR THREADS ABOVE AND BELOW NUTS.
- USE SWEDGED ANCHOR BOLTS. BOLTS SHALL BE GROUTED IN CORED HOLES. THE CORED HOLES SHALL HAVE A DIAMETER OF 3/4" UNLESS OTHERWISE NOTED. PRIOR TO CORING HOLES AND FABRICATION OF BEARINGS, CONTRACTOR TO LOCATE EXISTING REINFORCEMENT IN PIERS TO ENSURE NO INTERFERENCE OCCURS.
- SOLE PLATES SHALL BE ASTM A709 GRADE 50 AND BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING THE GRADE OF THE BRIDGE IN THE FIELD TO DETERMINE THE PROPER BEVEL AT EACH BEARING LOCATION. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1.

FOR FIELD WELDING THE NEW BEARING SOLE PLATES TO THE EXISTING GIRDER BOTTOM FLANGES, ONLY USE THE SHIELDED METAL ARC WELDING PROCESS WITH E7018 ELECTRODES WITH THE SUPPLEMENTAL DIFFUSIBLE HYDROGEN DESIGNATOR OF H4. PERFORM 100 PERCENT NDT INSPECTION OF THESE WELDS USING VISUAL (VT) AND MAGNETIC PARTICLE (MT). THE MAXIMUM THICKNESS OF THE BEVELED SOLE PLATE SHALL BE USED WHEN DETERMINING THE MINIMUM PREHEAT VALUE PER AWS D1.5 BRIDGE WELDING CODE.
- 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".
- BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM. BEARING SHALL BE MARKED WITH CENTER LINES AND DIRECTION OF GRADE.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF CONCRETE PEDESTALS 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 THAT THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF THE GIRDERS.
- FIXED BEARINGS:
USE 1 7/8" DIAMETER HOLES IN SOLE PLATE AND 3/8" X 3" DIAMETER WASHERS WITH 1 3/4" DIAMETER HOLE IN WASHERS.
- PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, ANCHOR BOLTS, NUTS, WASHERS AND SOLE PLATES WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARINGS. REMOVAL AND DISPOSAL OF EXISTING BEARING ASSEMBLIES AND ANCHOR BOLTS IS INCLUDED IN ITEM 624000 - JACKING BRIDGE.
- SOLE PLATE SHALL BE SHOP PAINTED IN ACCORDANCE WITH SECTION 616. CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AFTER WELDING THE SOLE PLATE TO THE BEAM. CONTRACTOR SHALL TOUCH UP THE PAINT SYSTEM FOR THE BEAMS AFFECTED BY BEARING INSTALLATION. ALL PAINT SHALL CONFORM TO SECTION 616 OF THE STANDARD SPECIFICATIONS AND MATCH THE COLOR OF THE PROPOSED PAINT SYSTEM.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE BEARINGS. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF THE 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.

SUGGESTED SEQUENCE OF INSTALLATION:

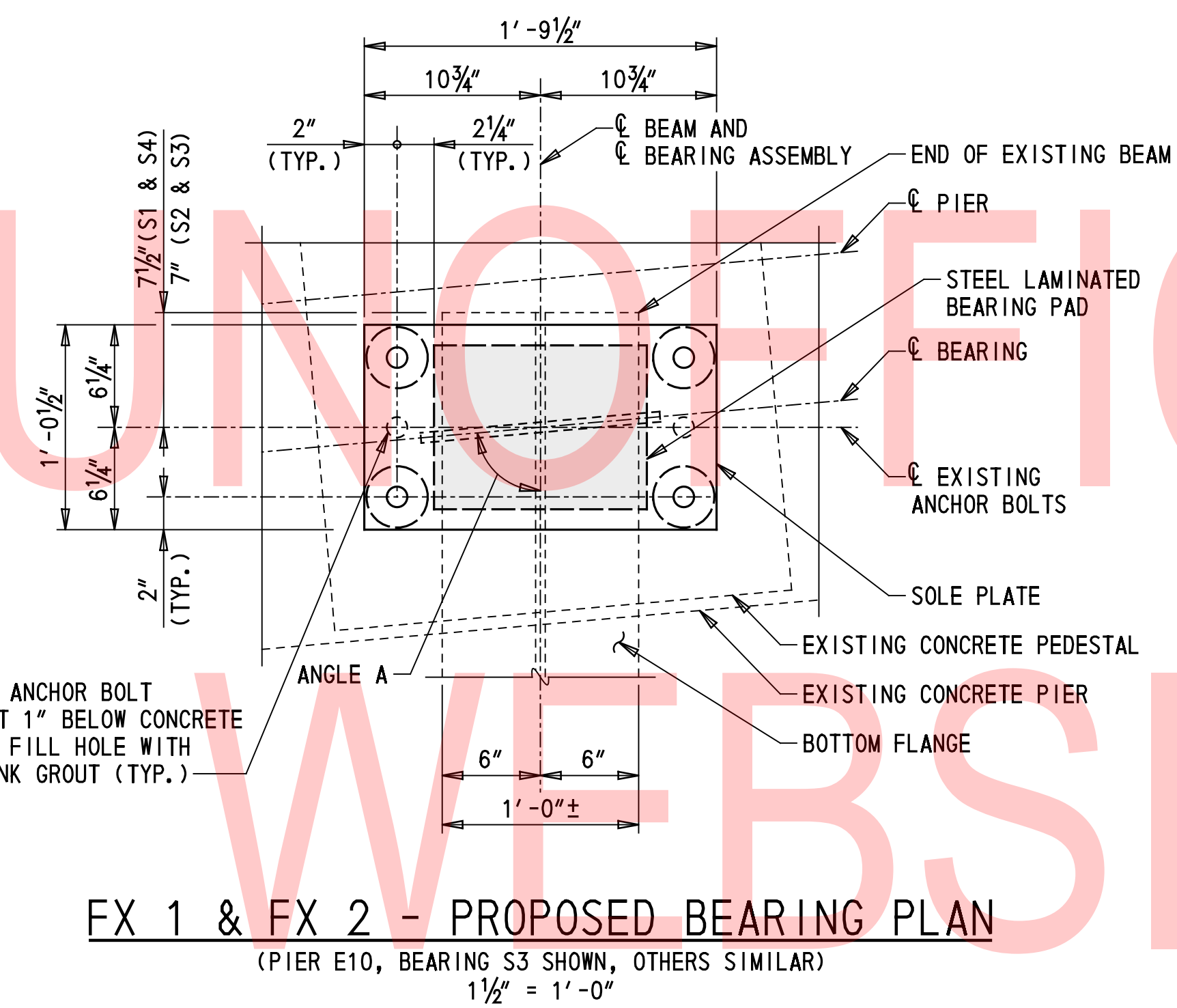
FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPES FX1 AND FX2:

- LOCATE EXISTING REINFORCEMENT. SEE NOTE 3 ABOVE. CORE HOLES FOR PROPOSED ANCHOR BOLTS.
- INSTALL ANCHOR BOLTS AND POUR NON-SHRINK GROUT. PRIOR TO POURING, RUN ANCHOR BOLTS THROUGH SOLE PLATE AND HAVE SOLE PLATE TEMPORARILY HELD IN PLACE DURING ANCHOR BOLT PLACEMENT.
- INSTALL GROUT PAD AS NECESSARY. SEE NOTE 12 ABOVE.
- WELD SOLE PLATE TO BOTTOM FLANGE OF STEEL BEAM. SEE NOTE 4 ABOVE.
- CAULK TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND BOTTOM FLANGE.
- APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND UNPAINTED STEEL SURFACES OF THE BEARING. SEE NOTE 10 ABOVE.
- INSTALL ELASTOMERIC BEARING PAD.
- GREASE ENTIRE BEARING ASSEMBLY.

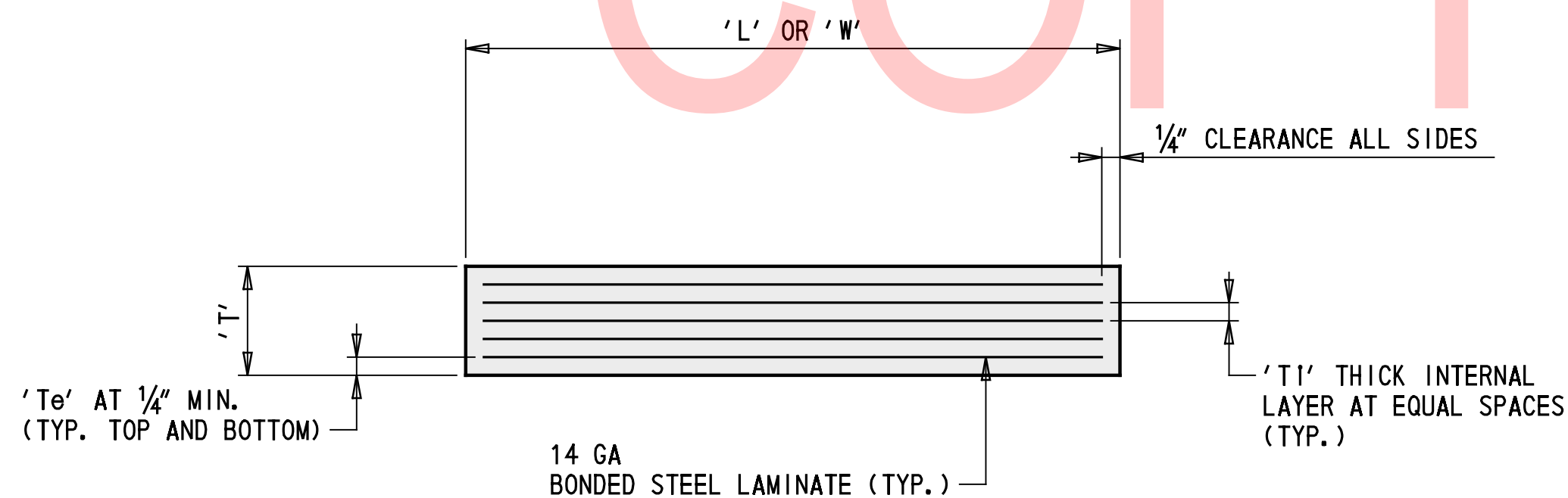
LOCATION	BEARING DESIGNATION				LAMINATED ELASTOMERIC BEARING							
	MARK	TYPE	NEOPRENE HARDNESS (SHORE A)	TOTAL NO. REQUIRED	CAPACITY PER PAD		DIMENSION				TOTAL PAD THICKNESS 'T'	
					REACTION ⊗	MOVEMENT ☒	'L' OR 'D'	'W'	LAYER THICKNESS			INTERIOR LAYERS
PIER E10, SPAN E9	FX 2	FIX.	60± 5 DURO	4	107.18 KIPS	N/A	10"	13"	0.513"	0.250"	2	1.7501"
PIER H1, SPAN E11	FX 1	FIX.	60± 5 DURO	5	131.98 KIPS	N/A	10"	13"	0.513"	0.250"	2	1.7501"

LEGEND:

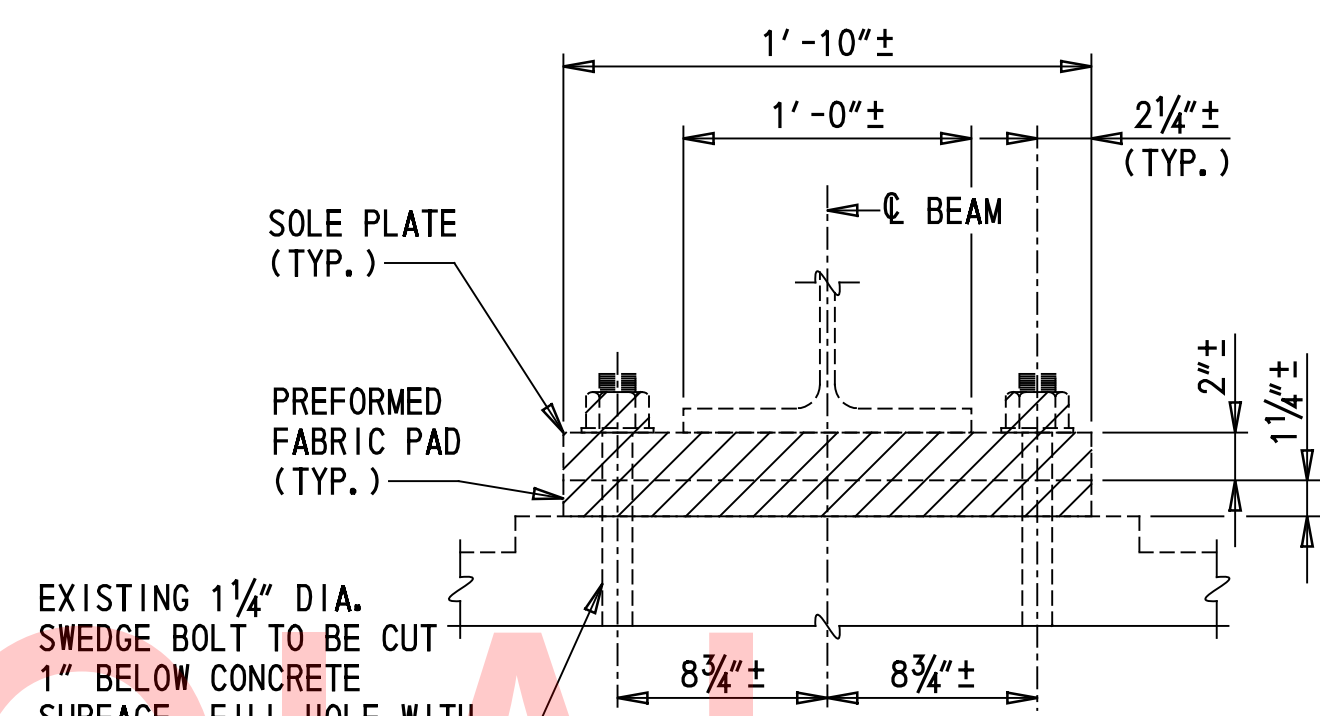
- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION (W/O DYNAMIC LOAD ALLOWANCE)
- ☒ TEMPERATURE MOVEMENT
- ▨ PORTION OF EXISTING STRUCTURE TO BE REMOVED
- PROPOSED STEEL REINFORCED ELASTOMERIC BEARING



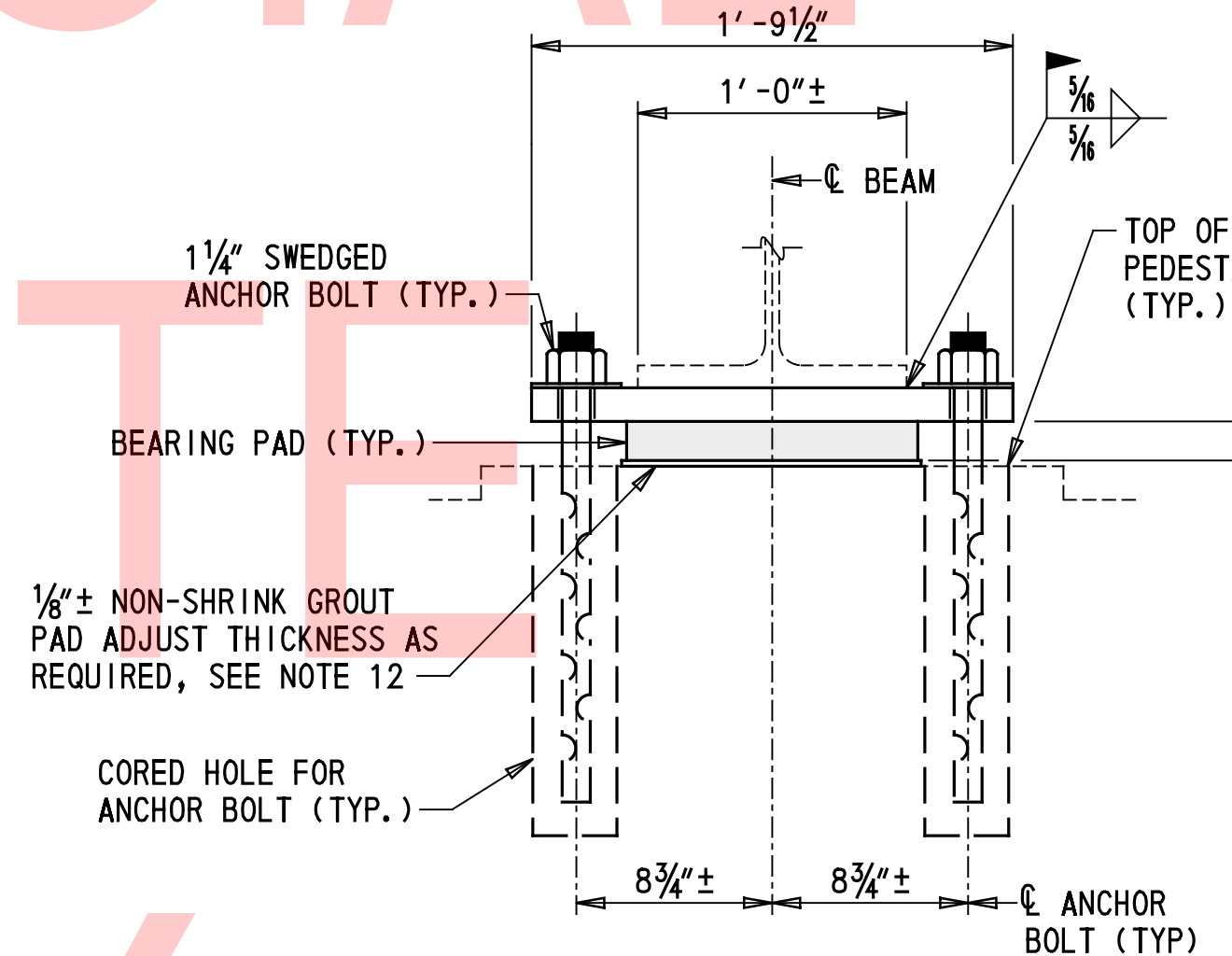
FX 1 & FX 2 - PROPOSED BEARING PLAN
(PIER E10, BEARING S3 SHOWN, OTHERS SIMILAR)
1 1/2" = 1'-0"



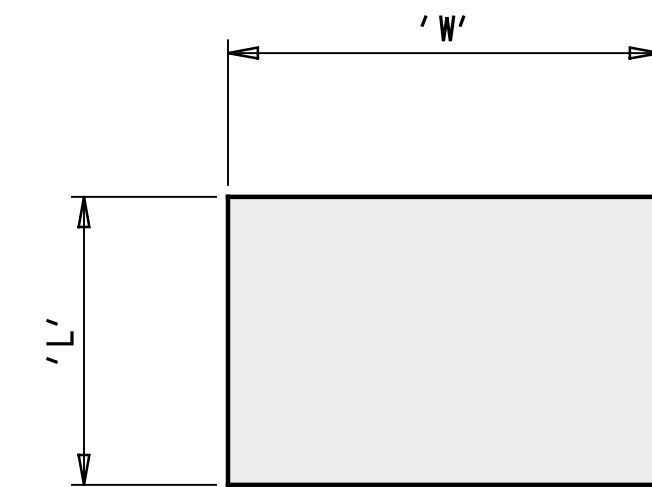
FX 1 & FX 2 - STEEL REINFORCED ELASTOMERIC BEARING ELEVATION
NOT TO SCALE



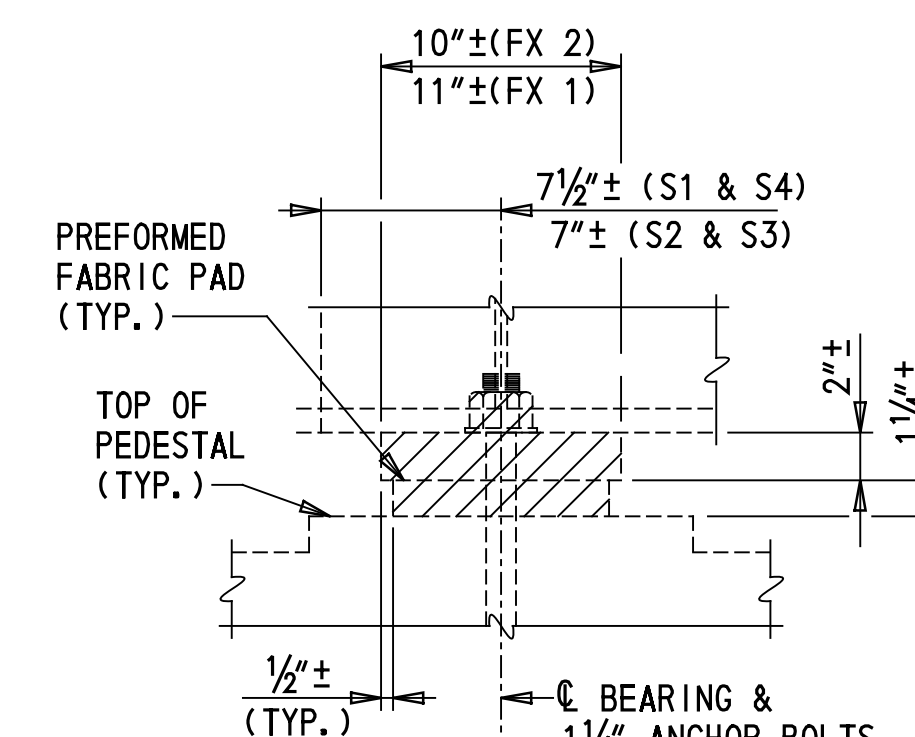
FX 1 & FX 2 - EXISTING BEARING ELEVATION
1 1/2" = 1'-0"



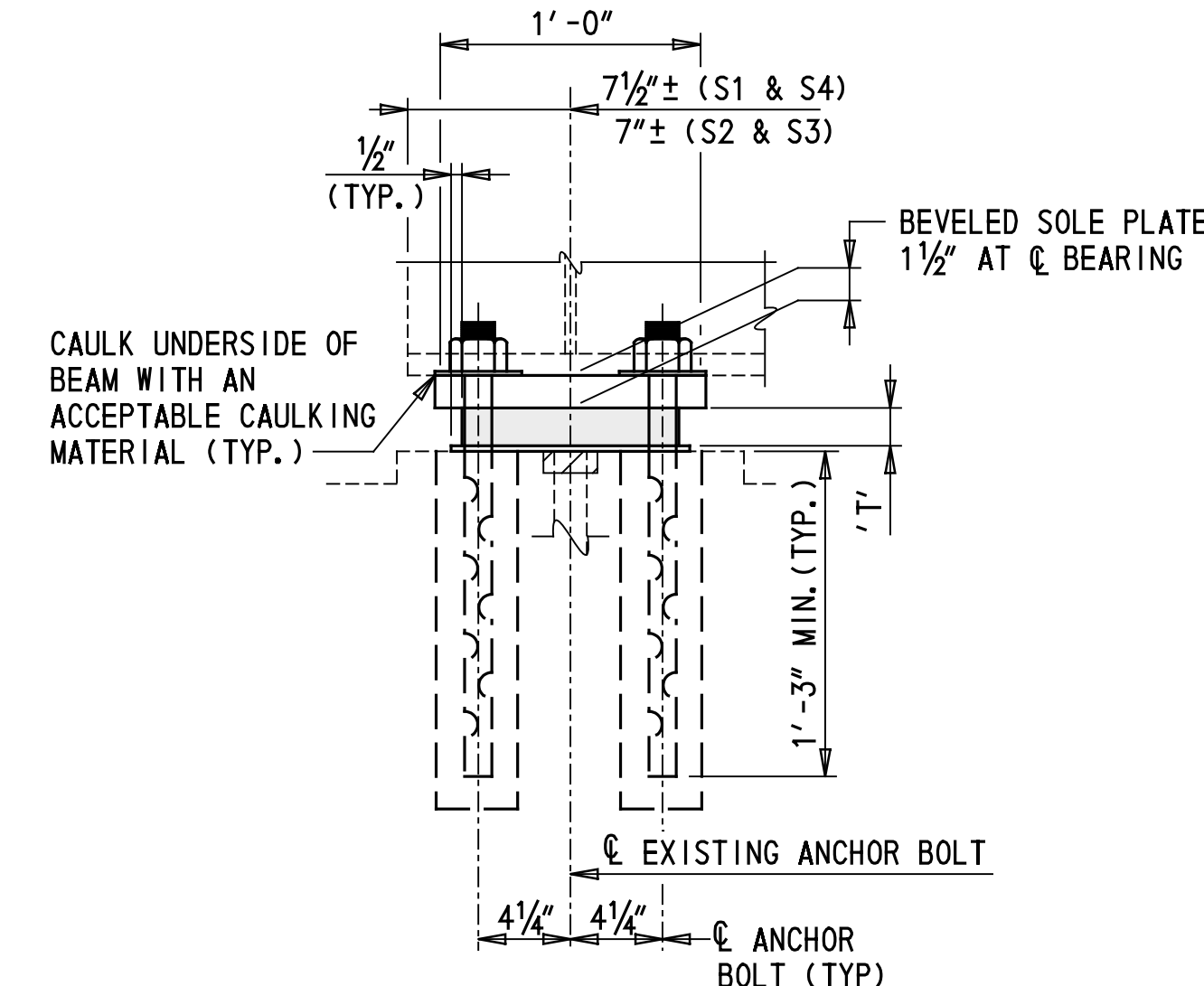
FX 1 & FX 2 - PROPOSED BEARING ELEVATION
1 1/2" = 1'-0"



FX 1 & FX 2 - STEEL REINFORCED ELASTOMERIC BEARING PLAN
NOT TO SCALE



FX 1 & FX 2 - EXISTING BEARING SIDE ELEVATION
1 1/2" = 1'-0"



FX 1 & FX 2 - PROPOSED BEARING SIDE ELEVATION
1 1/2" = 1'-0"

LOCATION	BEAM	ANGLE A
PIER E10, SPAN E9	S1	85° 06' 06.7"±
	S2	85° 01' 10.4"±
	S3	84° 56' 02.3"±
	S4	84° 50' 41.7"±
PIER H1, SPAN E11	S1	69° 55' 08.5"±
	S2	70° 58' 13.3"±
	S3	72° 05' 47.3"±
	S4	73° 18' 16.9"±
	S5	74° 36' 11.1"±

17:59:59 - 02:49:06 PM 08/20/19

ADDENDA / REVISIONS

SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 758E 6141
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

BEARING DETAILS - 1

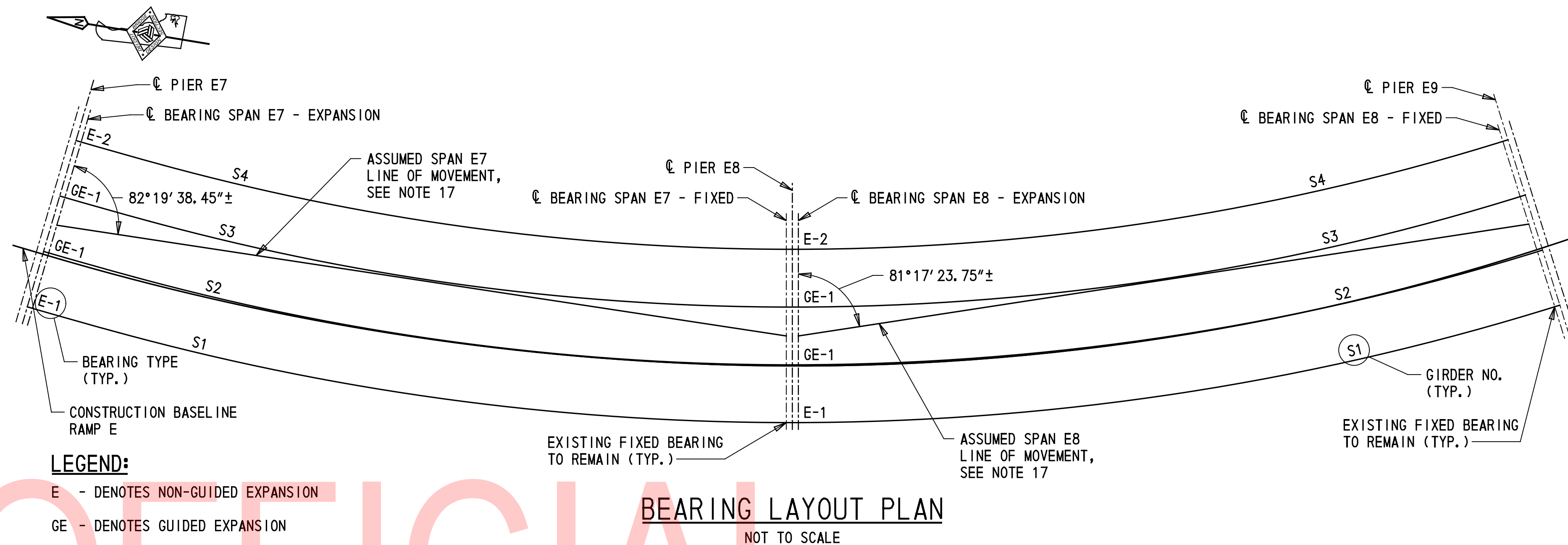
BB-02
SECTION
PAI
SHEET NO.
99

DISC BEARING NOTES:

1. PROVIDE ALL DISC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
2. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS, ANSI/AASHTO/AWS/D1.5 BRIDGE WELDING CODE, AND MANUFACTURER'S RECOMMENDATIONS.
3. REMOVE CONCRETE PEDESTALS AS SHOWN ON DWG. BB-04 FOR INSTALLATION OF DISC BEARINGS IN ACCORDANCE WITH SECTION 211 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS. CUT EXISTING PEDESTAL STEEL REINFORCEMENT AT PEDESTAL REMOVAL LIMITS AND APPLY EPOXY TO THE EXPOSED PORTIONS OF REINFORCEMENT PRIOR TO PLACEMENT OF THE NON-SHRINK GROUT LEVELING PAD AND DISC BEARINGS AND COATING THE PIER CAP.
4. GRIND SMOOTH ALL STEEL SURFACES AND EDGES AND REMOVE ANY SHARP PROTRUSIONS. FABRICATION TOLERANCES AND THE LIMITATIONS ON SURFACE FINISH WILL BE IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS.
5. PAINT ALL STEEL SURFACES IN ACCORDANCE WITH SECTION 616 OF DELDOT STANDARD SPECIFICATIONS. APPLY ALL COATS IN THE FABRICATION SHOP ONLY. DO NOT PAINT PTFE OR STAINLESS STEEL. APPLY ONLY PRIME COAT TO THE CONTACT AREA BETWEEN GIRDER BOTTOM FLANGE AND SOLE PLATE AND TO THE BOTTOM SIDE OF THE MASONRY PLATE.
6. ROUND ALL PTFE CORNERS TO ACCOMMODATE THE MACHINED RECESS IN STEEL GUIDE PLATE.
7. ETCH PTFE ON ONE SIDE FOR BONDING INTO THE MACHINED PRESS.
8. PTFE ON THE SIDE OF THE GUIDE PLATE MUST BE PIGMENTED.
9. PRIOR TO THE APPLICATION OF ADHESIVE, CLEAN ALL MATING STEEL AND PTFE SURFACES BY GRIT BLASTING AND DEGREASING. APPLY ADHESIVE AS PER THE MANUFACTURER'S RECOMMENDATION.
10. MARK THE THICKER EDGE OF THE SOLE PLATE AS SUCH FOR THE PURPOSE OF FIELD IDENTIFICATION. PLACE MARK ON THE EDGE OF SOLE PLATE SO THAT IT WILL BE VISIBLE AFTER BEARING INSTALLATION. IN THE CASE OF A SOLE PLATE WITH A COMPOUND BEVEL, PLACE THE MARK ON EITHER SIDE OF THE THICKEST SOLE PLATE CORNER.
11. MARK CENTERLINE OF GUIDED AND NON-GUIDED POT BEARINGS ON THE SIDE OF MASONRY PLATE AND SOLE PLATE. THE CENTERLINE IDENTIFICATION MARKS WILL BE USEFUL TO LOCATE OFFSET DISTANCES IN THE FIELD. USE INDELIBLE INK TO PLACE ALL MARKS.
12. MARK EACH BEARING WITH THE NAME OF THE MANUFACTURER AND TYPE OR MODEL NUMBER. PLACE THE IDENTIFICATION MARK IN A PERMANENT MANNER AND LOCATION SO THAT IT IS VISIBLE AFTER ERECTION.
13. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE ENGINEER OF ANY PROPOSED VARIATION FROM BEARING DIMENSIONS PROVIDED HEREIN DURING FABRICATION.
14. ENSURE ALL BEARING SURFACES, INCLUDING THE BEARING SEAT, ARE LEVEL PRIOR TO INSTALLATION OF DISC BEARINGS UNLESS NOTED OTHERWISE.
15. TEST ONE BEARING PER TYPE FOR A HORIZONTAL FORCE CAPACITY PRIOR TO SHIPMENT.
16. CONTRACTOR SHALL PROVIDE DISC BEARINGS CAPABLE OF RESISTING THE LOADS SHOWN IN THE DISC BEARING DESIGN LRFD SPECIFICATIONS TABLE.
17. NON-GUIDED EXPANSION BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF GIRDER. GUIDED EXPANSION BEARINGS SHALL BE PLACED SUCH THAT GUIDE PLATES ARE PARALLEL TO THE LINE OF MOVEMENT OF EACH CURVED SPAN AS SHOWN IN THE BEARING LAYOUT PLAN. ASSUMED LINE OF MOVEMENT IS BASED ON GUIDANCE FROM AASHTO-NSBA G9.1-2004, APPENDIX B - RECOMMENDATIONS FOR THERMAL MOVEMENT CALCULATIONS, FIGURE B-1.
18. USE SWEDGED ANCHOR BOLTS. BOLTS SHALL BE GROUTED IN CORED HOLES. THE CORED HOLES SHALL HAVE A DIAMETER OF 3/4" UNLESS OTHERWISE NOTED. WHEN CORING HOLES, DO NOT COME INTO CONTACT WITH THE STEEL REINFORCEMENT.
19. SOLE PLATES SHALL BE BEVELED TO MATCH GRADE. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1.
20. 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".
21. FILL HOLES IN MASONRY PLATES AROUND ANCHOR BOLTS WITH AN APPROVED NON-HARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
22. USE 1 1/8" DIAMETER HOLES IN MASONRY PLATES AND 3/8" X 4" DIAMETER WASHERS WITH 1 1/8" DIAMETER HOLE IN WASHERS.
23. PAYMENT FOR FABRICATION AND INSTALLATION OF DISC BEARING ASSEMBLIES, ANCHOR BOLTS, NUTS, WASHERS, SOLE PLATES, MASONRY PLATES AND NON-SHRINK GROUT WILL BE MADE UNDER ITEM 623002 - DISC BEARINGS. REMOVAL AND DISPOSAL OF EXISTING BEARING ASSEMBLIES AND ANCHOR BOLTS IS INCLUDED IN ITEM 624000 - JACKING BRIDGE.
24. CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS.

MATERIAL NOTES:

25. STRUCTURAL STEEL:
- MATERIAL 4" THICK OR LESS - AASHTO M270 (ASTM A709), GRADE 50.
- MATERIAL GREATER THAN 4" THICK - ASTM A572, GRADE 50.
26. ANCHOR BOLTS SHALL BE UNPAINTED AASHTO M314 (ASTM F1554) GRADE 105 GALVANIZED STEEL. NUTS AND WASHERS SHALL BE UNPAINTED ASTM A563 AND ASTM F436 GALVANIZED STEEL, RESPECTIVELY. ANCHOR BOLTS AND HARDWARE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
27. STAINLESS STEEL SHALL BE ASTM A240, GRADE 30, TYPE 304 WITH AN ANSI 0.02 MIL SURFACE FINISH OR LESS.
28. ELASTOMERIC DISC SHALL BE VIRGIN PLAIN NEOPRENE OR NATURAL RUBBER WITH HARDNESS OF 50 DUROMETER (±10) PER AASHTO M251.
29. PTFE SHEET SHALL BE MADE FROM VIRGIN TFE RESIN PER ASTM D4894.
- MAIN SLIDING SURFACE PTFE - DIMPLED AND LUBRICATED. DIMPLES MUST HAVE A MINIMUM EDGE DISTANCE OF 1/2" AND CONFORM TO AASHTO LRFD, SECTION 14.7.2.
- GUIDE BAR SURFACE PTFE - PIGMENTED, FILLED OR UNFILLED.



LEGEND:

- E - DENOTES NON-GUIDED EXPANSION
- GE - DENOTES GUIDED EXPANSION

MATERIAL DESIGN PARAMETERS:

30. ALLOWABLE PRESSURE IN ELASTOMER AND PTFE:
MAXIMUM = 3500 PSI ELASTOMER & PTFE
MINIMUM = 700 PSI ELASTOMER
31. COEFFICIENT OF FRICTION BETWEEN PTFE AND STAINLESS STEEL: 0.04
32. CONCRETE BEARING STRENGTH: $f'c = 3000$ PSI

SUGGESTED SEQUENCE OF INSTALLATION:

FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPES E-1, E-2, GE-1:

1. LOCATE EXISTING REINFORCEMENT. SEE DWG. BB-02 NOTE 3. CORE HOLES FOR PROPOSED ANCHOR BOLTS.
2. INSTALL ANCHOR BOLTS AND POUR NON-SHRINK GROUT. PRIOR TO POURING, PERFORM DRY FIT TO ENSURE ANCHOR BOLT ALIGNMENT WITH MASONRY PLATE.
3. INSTALL THE NEW ANCHOR BOLT HEAVY HEX NUT AND WASHER TO SECURE THE MASONRY PLATE TO THE CONCRETE PEDESTAL.
4. WELD SOLE PLATE TO BOTTOM FLANGE OF STEEL BEAM.
5. CAULK TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND BOTTOM FLANGE.
6. APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT STEEL SURFACES OF THE BEARING. SEE DWG. BB-02 NOTE 10.
7. INSTALL DISC BEARING ASSEMBLY.
8. GREASE ENTIRE BEARING ASSEMBLY.

DISC BEARING DESIGN LRFD SPECIFICATIONS

LOCATION	MARK	TYPE	TOTAL NO. REQ'D	AASHTO LRFD LIMIT STATES ¹	DESIGN LOADS (KIPS)									ROTATIONS (RADIAN)	THERMAL MOVEMENT (INCHES)		
					VERTICAL						HORIZONTAL						
					DL		LL+IMPACT		WIND		TOTAL	TRANSVERSE ²	LONGITUDINAL			RESOLUTION	
					MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.						MAX.
PIERS E7, SPAN E7, GIRDER S1 & PIER E8, SPAN E8, GIRDER S1	E-1	NON-GUIDED EXPANSION	2	SERVICE I	86.13	95.87	0.00	90.88	-4.76	4.76	81.37	191.51	3.83	3.83	5.42	0.0207	0.8850
				STRENGTH I	77.52	122.27	0.00	159.04	---	---	77.52	281.31	3.83	3.83	5.42	0.0266	
				STRENGTH III	77.52	122.27	---	---	-20.40	11.06	57.12	133.33	3.83	3.83	5.42	---	
				EXTREME EVENT I	77.52	122.27	---	---	---	---	77.52	122.27	3.83	3.83	5.42	---	
PIERS E7, SPAN E7, GIRDERS S2 & S3 PIER E8, SPAN E8, GIRDERS S2 & S3	GE-1	GUIDED EXPANSION	4	SERVICE I	60.16	66.98	0.00	71.48	-1.59	1.59	58.57	140.05	17.26	3.83	17.68	0.0177	0.8660
				STRENGTH I	54.14	85.43	0.00	125.09	---	---	54.14	210.52	3.83	3.83	5.42	0.0225	
				STRENGTH III	54.14	85.43	---	---	-6.80	3.69	47.34	89.12	44.36	3.83	44.52	---	
				EXTREME EVENT I	54.14	85.43	---	---	---	---	54.14	85.43	27.50	3.83	27.76	---	
PIERS E7, SPAN E7, GIRDER S4 & PIER E8, SPAN E8, GIRDER S4	E-2	NON-GUIDED EXPANSION	2	SERVICE I	40.28	44.50	-10.71	57.09	-1.59	4.76	27.98	106.35	3.83	3.83	5.42	0.0129	0.8279
				STRENGTH I	36.25	56.68	-18.74	99.91	---	---	17.51	156.59	3.83	3.83	5.42	0.0160	
				STRENGTH III	36.25	56.68	---	---	-20.40	11.06	15.85	67.74	3.83	3.83	5.42	---	
				EXTREME EVENT I	36.25	56.68	---	---	---	---	36.25	56.68	3.83	3.83	5.42	---	

DISC BEARING LOADING NOTES:

1. ONLY THE GOVERNING STRENGTH LOAD CASES ARE SHOWN FOR THE GIVEN VERTICAL AND HORIZONTAL LOADS AND ROTATIONS.
2. BEARINGS DESIGNED SUCH THAT ALL TRANSVERSE FORCES CAN BE RESISTED BY ONE GUIDED BEARING PER BEARING LINE. TRANSVERSE FORCE REFLECTS THE TOTAL TRANSVERSE FORCE PER BEARING.

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ADDENDA / REVISIONS

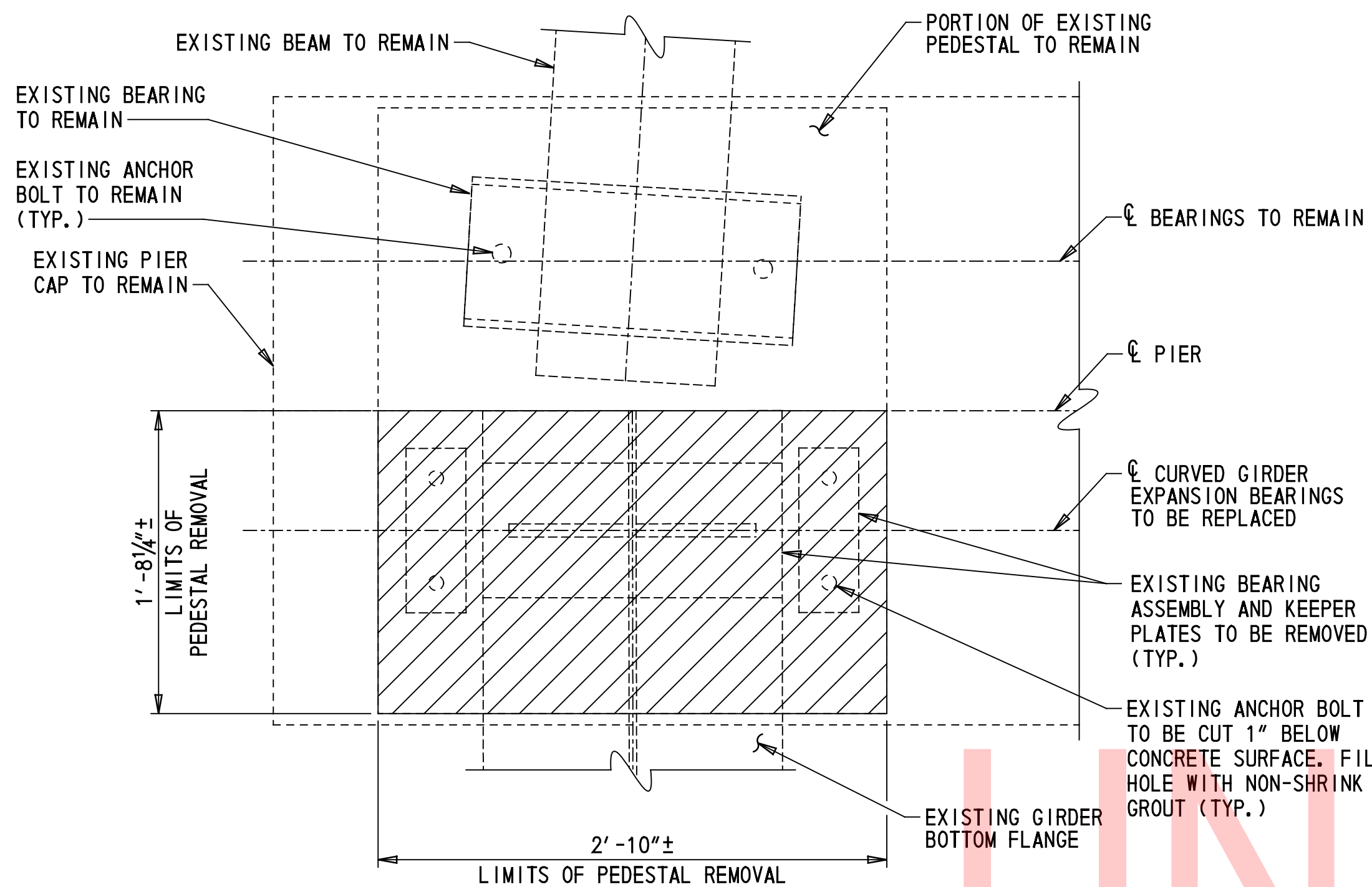
SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 758E 6141
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

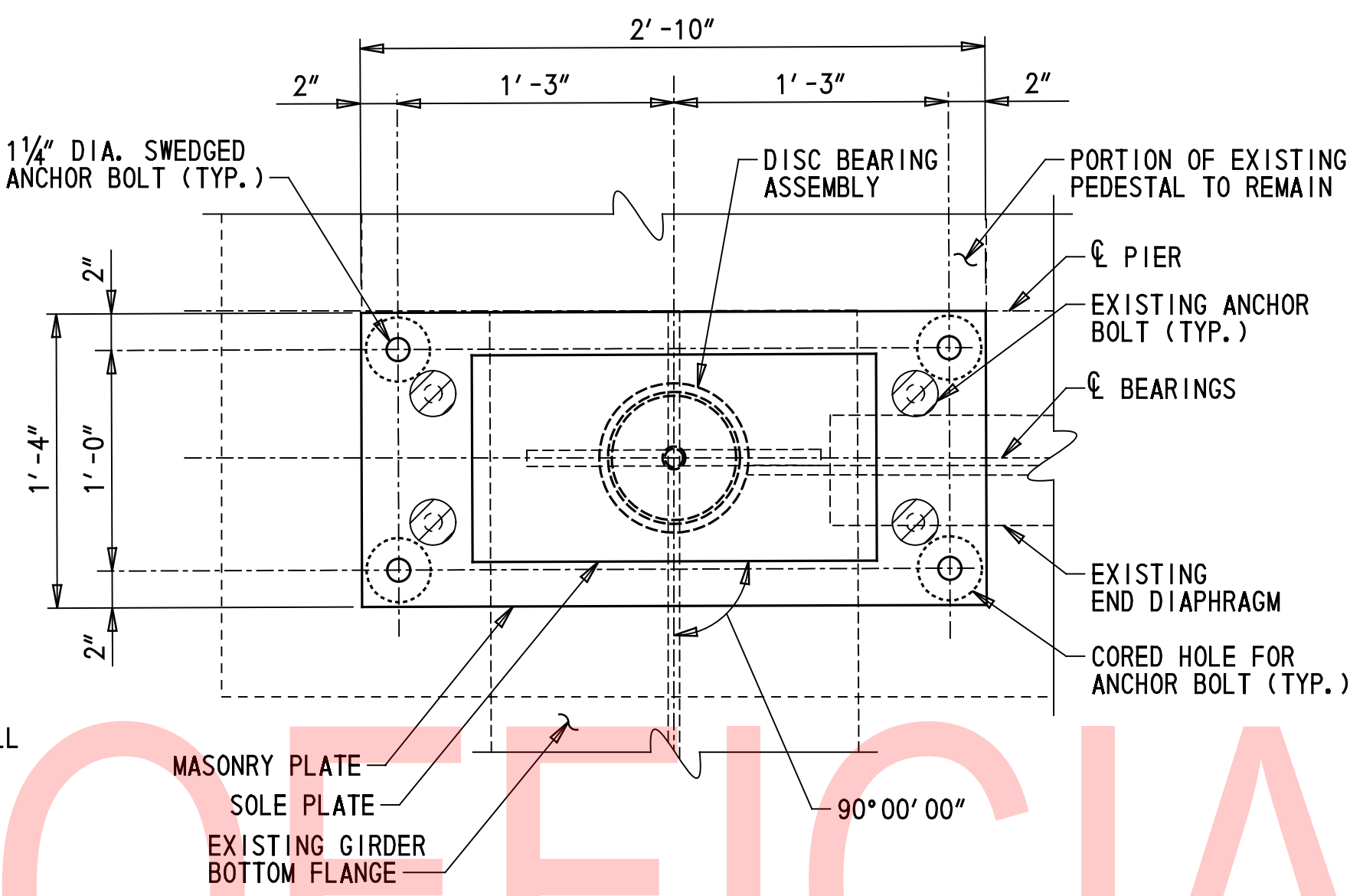
BEARING DETAILS - 2

BB-03
SECTION
PAI
SHEET NO.
100



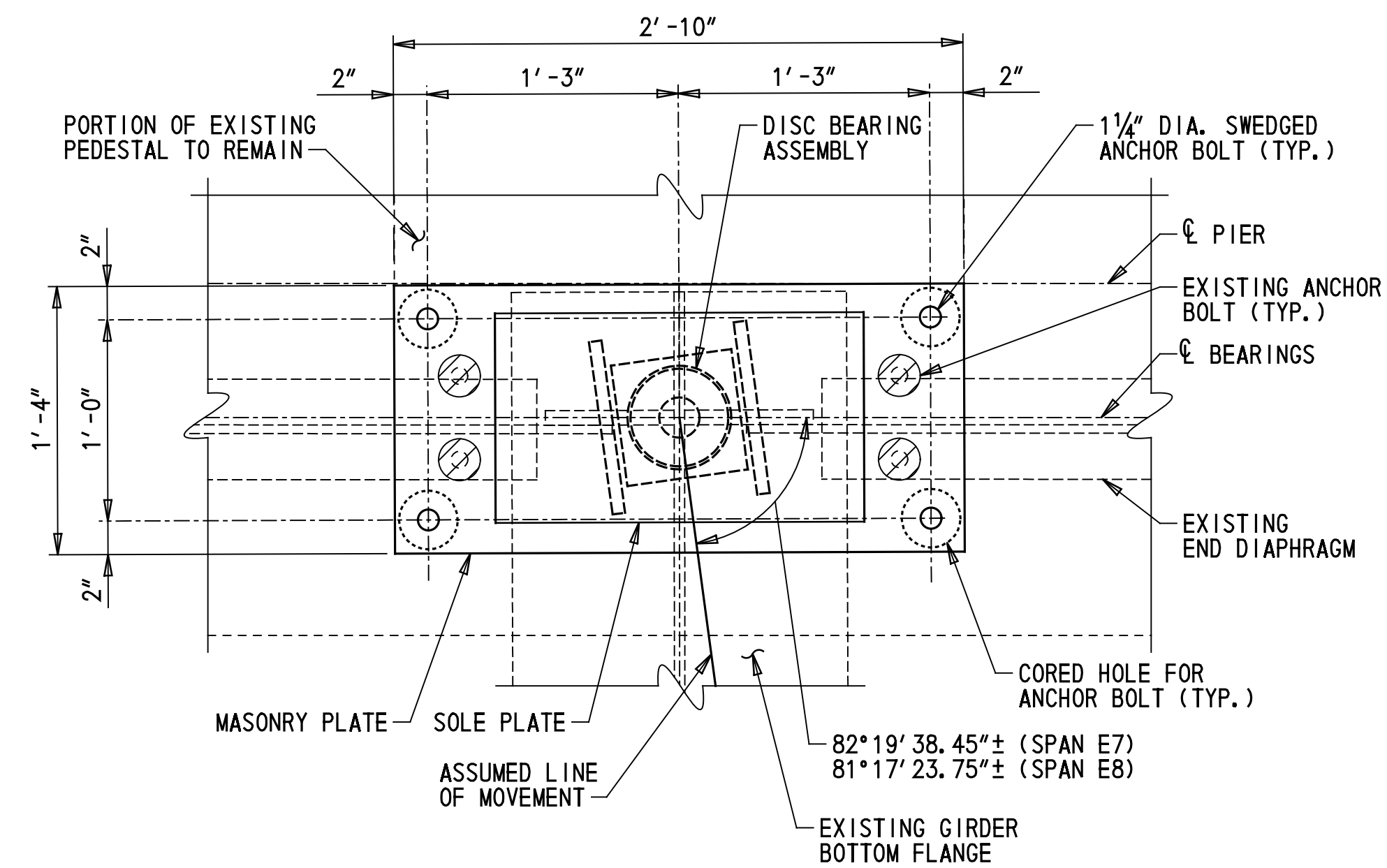
TYPICAL EXISTING BEARING AND PARTIAL PEDESTAL DEMOLITION PLAN

(S1 SHOWN AT PIER E7, OTHERS SIMILAR)
1 1/2" = 1'-0"



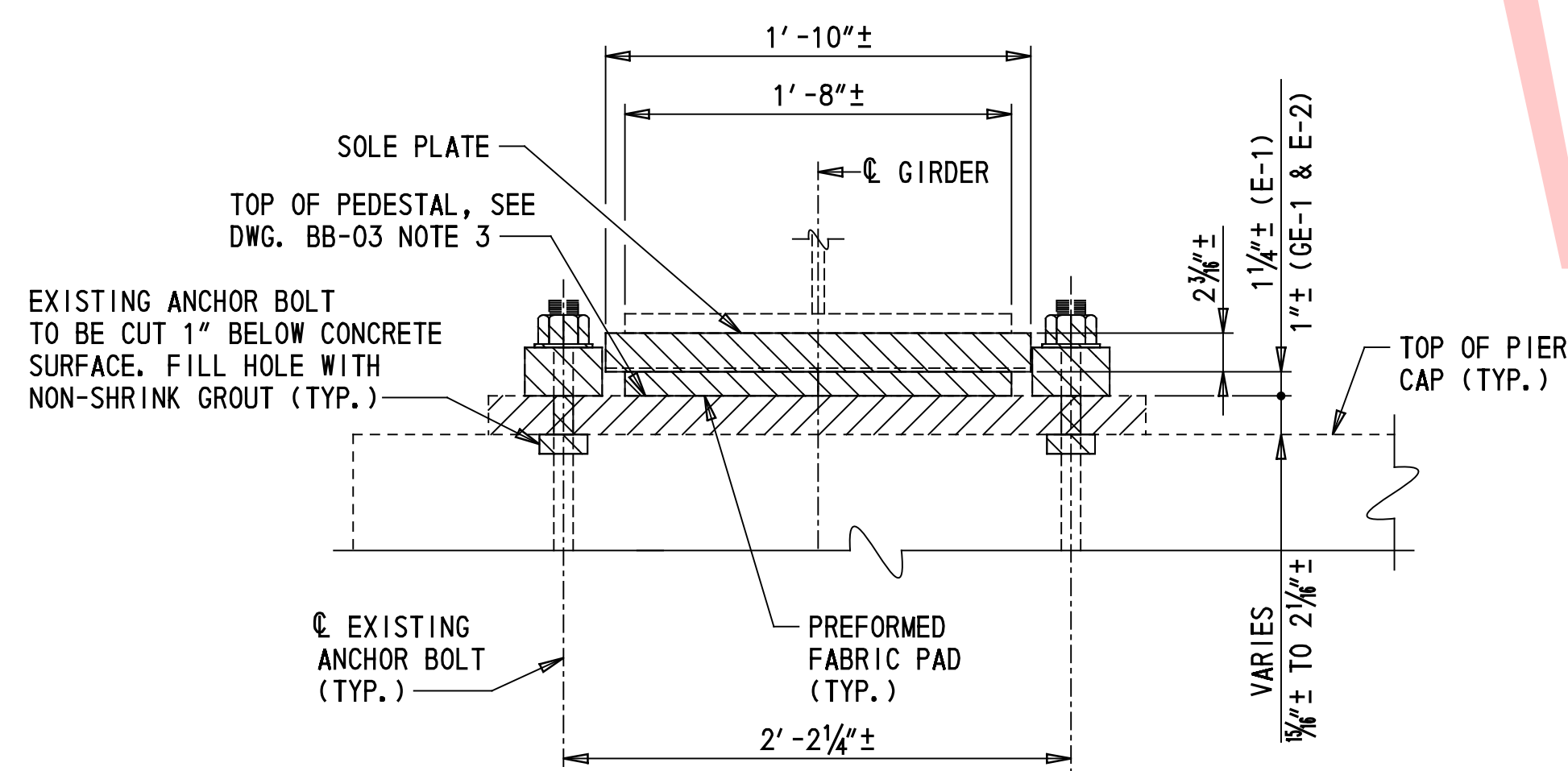
E-1 & E-2 - PROPOSED NON-GUIDED EXPANSION DISC BEARING PLAN

(S1 SHOWN AT PIER E7, S4 SIMILAR)
1 1/2" = 1'-0"



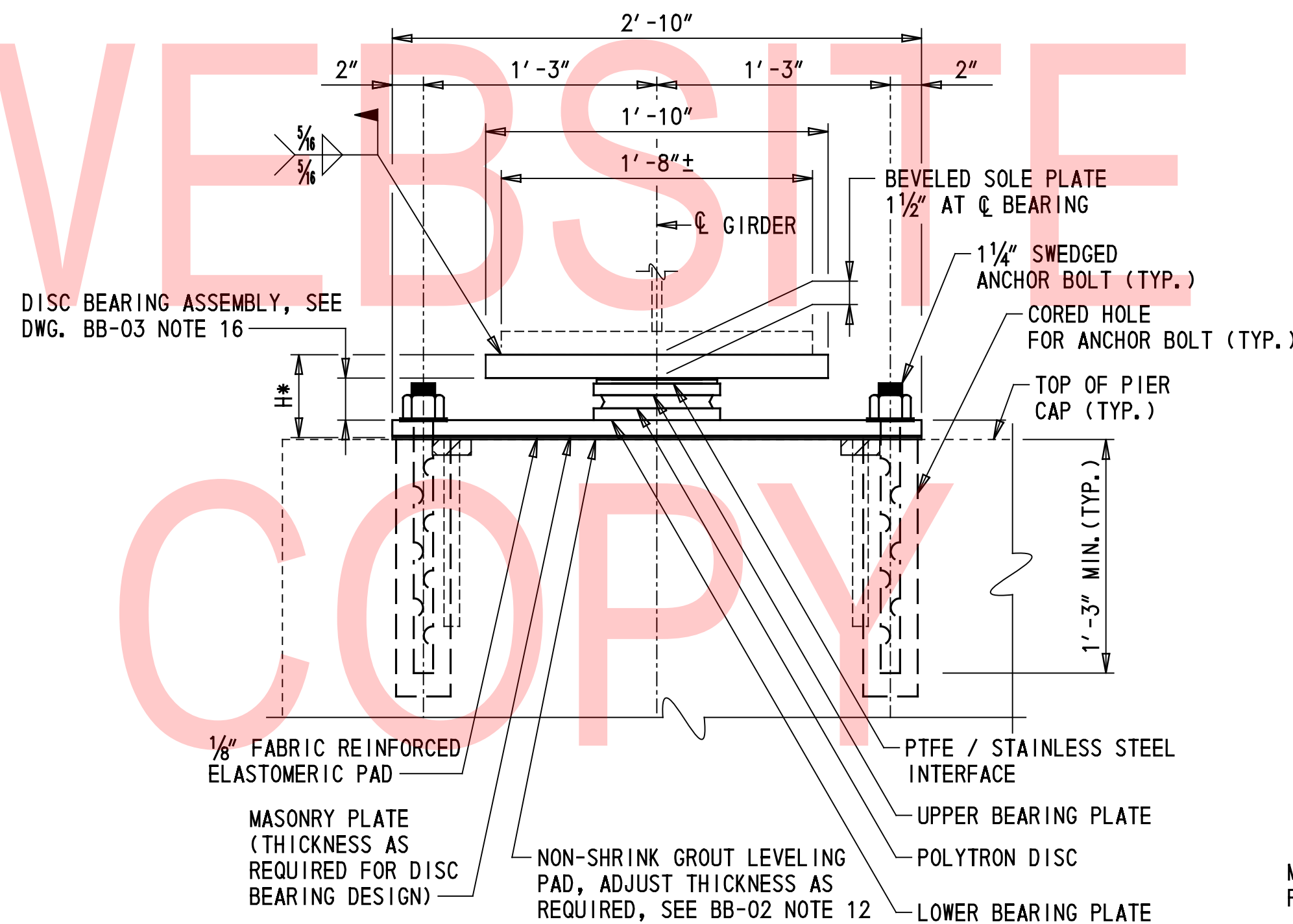
GE-1 - PROPOSED GUIDED EXPANSION DISC BEARING PLAN

(S2 SHOWN AT PIER E7, S3 SIMILAR)
1 1/2" = 1'-0"



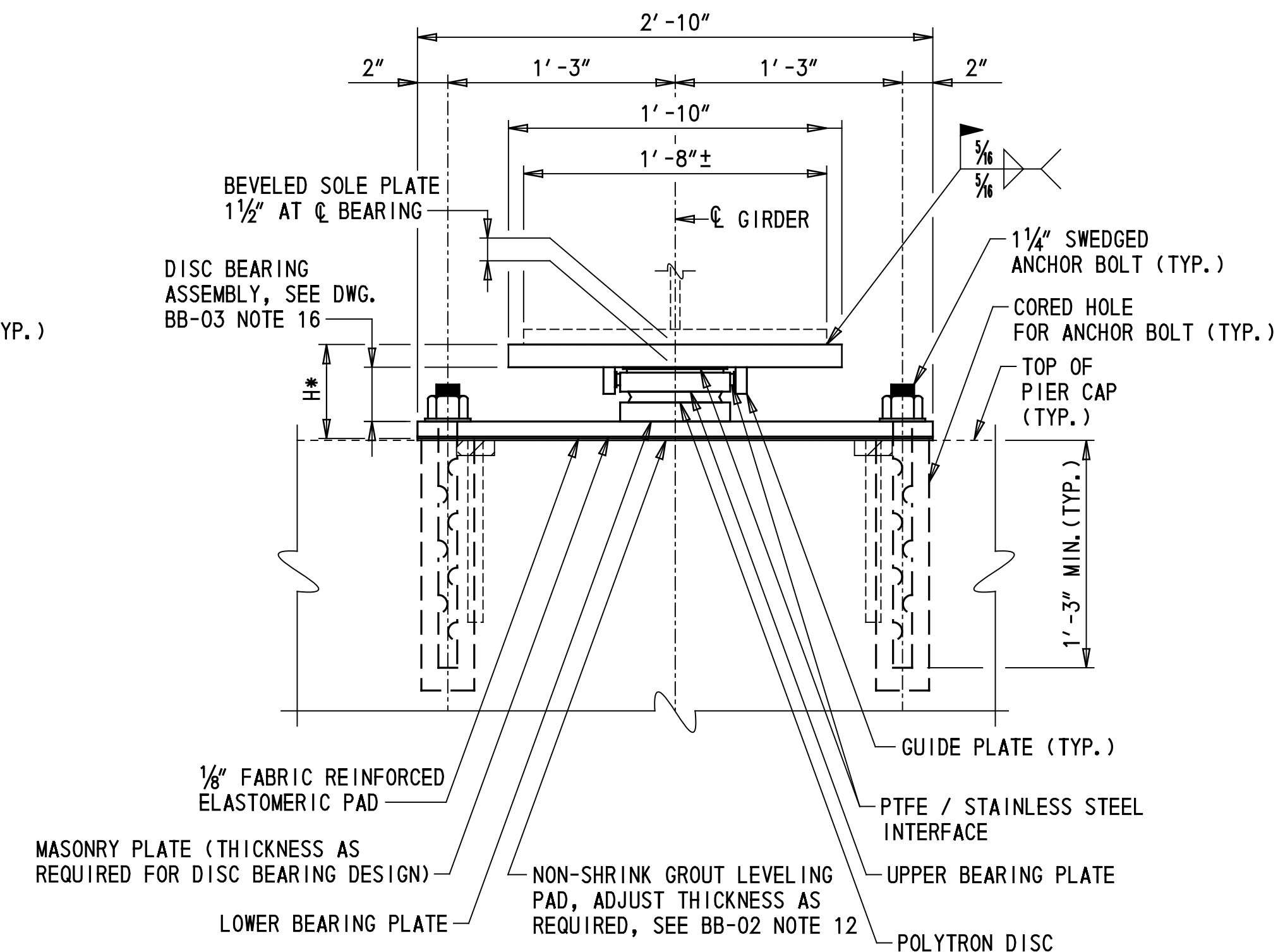
TYPICAL EXISTING EXPANSION BEARING AND PARTIAL PEDESTAL DEMOLITION ELEVATION

1 1/2" = 1'-0"



E-1 & E-2 - PROPOSED NON-GUIDED EXPANSION DISC BEARING ELEVATION

(S1 SHOWN, S4 SIMILAR)
1 1/2" = 1'-0"



GE-1 - PROPOSED GUIDED EXPANSION DISC BEARING ELEVATION

(S2 SHOWN, S3 SIMILAR)
1 1/2" = 1'-0"

BEARING HEIGHTS	
BEARING MARK	H* (INCHES)
E-1	3.9383
GE-1	4.3090
E-2	3.7547

* HEIGHT OF BEARING ASSEMBLY (H) MEASURED AT THE CENTERLINE OF BEARING. INCLUDES THE THICKNESS OF THE FABRIC REINFORCED ELASTOMERIC PAD. ACTUAL HEIGHT OF BEARING ASSEMBLY TO BE PROVIDED BY MANUFACTURER.

LEGEND:

- LIMITS OF REMOVAL - ITEM 211000
- LIMITS OF REMOVAL - ITEM 624000

ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 758E 6141
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

BEARING DETAILS - 3

BB-04
SECTION
PAI
SHEET NO.
101

SECTION 600

- STRUCTURAL STEEL:**
 PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS 'CVN' ON PLANS) OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED. SUPPLEMENTAL NOTCH TOUGHNESS REQUIREMENTS ARE MANDATORY FOR:
 - JACKING DIAPHRAGMS AND CONNECTION PLATES

 ALL FASTENERS ARE 7/8" DIAMETER ASTM F3125 GR A325 HIGH STRENGTH BOLTS, TYPE 1, UNLESS OTHERWISE NOTED.

 PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/D1.5:2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED, EXCEPT AS NOTED ON THE PLANS.

 DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.

 SET ANCHOR BOLTS TO TEMPLATE IN CORED HOLES. FILL THE HOLES WITH NON-SHRINK GROUT TO BE FLUSH WITH THE TOP CONCRETE SURFACE.
- BEARINGS:**
 ALL ELASTOMERIC BEARINGS SHALL BE LAMINATED ELASTOMERIC DESIGNED AS PER AASHTO 14.7.5, METHOD B, AND SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS. PAYMENT WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARINGS.

MISCELLANEOUS

- DESIGN SPECIFICATIONS:**
 (A) DELDOT BRIDGE DESIGN MANUAL, 2017 EDITION.
 (B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIMS.
 (C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE 2016 DELDOT STANDARD SPECIFICATIONS INCLUDING 2018 SUPPLEMENTAL SPECIFICATIONS.
- LOADING:**
 - DEAD LOADS INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB AND 15 PSF FOR STAY-IN-PLACE FORMS (INCLUDES CONCRETE IN FORM CORRUGATIONS). PARAPET LOADS ARE DISTRIBUTED 75% TO THE EXTERIOR AND 25% TO THE FIRST INTERIOR BEAM.
 - DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
 - FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: A_{DTT} = 3,910 IN YEAR 2040.
 - LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD.
 - THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0° TO 120°F. THE NORMAL TEMPERATURE SHALL BE CONSIDERED TO BE 68°F.
 - LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
- EXISTING CONDITIONS:**
 - ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- ROADWAY CLEARANCES:**
 A MINIMUM OF 14'-6" SHALL BE MAINTAINED ABOVE LANCASTER AVENUE AND NORTH ADAMS STREET.
- CONTINGENT QUANTITIES:**
 THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS AND FIELD INSPECTION NOTES TAKEN FROM NOVEMBER 16, 2014 THROUGH FEBRUARY 5, 2015. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION IN CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DETAILS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY MATERIALS. SEE TABLE BELOW FOR CONTINGENCY PERCENTAGES.
- UTILITIES:**
 SEE UTILITY STATEMENT FOR FURTHER INFORMATION ON UTILITY COORDINATION.

MISCELLANEOUS (CONTINUED)

- ENVIRONMENTAL COMPLIANCE:**
 ENVIRONMENTAL COMPLIANCE PLANS ARE NOT REQUIRED FOR THIS PROJECT. NO ENVIRONMENTAL RESOURCES ARE IMPACTED BY THE PROPOSED WORK.
- COORDINATION WITH DART:**
 BRIDGE NO. 1-758F IS LOCATED OVER PARKING LOTS OCCUPIED BY DART. THE CONTRACTOR SHALL NOTIFY VINCENT DAMIANI AT (302) 598-0570 AND DAVID REESE AT (302) 353-0897 AT LEAST 35 DAYS PRIOR TO THE START OF ANY WORK IN THE DART PARKING LOTS. AFTER THIS INITIAL CONTACT, THE CONTRACTOR SHALL NOTIFY DART 14 DAYS IN ADVANCE OF ANY ADDITIONAL COORDINATION REQUIREMENTS AND/OR CHANGES IN THE TRAFFIC PATTERNS. AT NO TIME SHALL THE CONTRACTOR OCCUPY AN AREA ON THE GROUND IN THE PARKING LOTS GREATER THAN THE AREA OF TWO SPANS. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR DART BUSES AND EMPLOYEES TO THE REMAINING PORTIONS OF THE PARKING LOT. ADDITIONALLY THE CONTRACTOR WILL NOT BE PERMITTED TO WORK IN MORE THAN ONE PARKING LOT AT A TIME.
- COORDINATION WITH THE CITY OF WILMINGTON:**
 THE CONTRACTOR SHALL COORDINATION ALL WORK WITH THE CITY OF WILMINGTON, ESPECIALLY WORK WHICH IMPACTS CITY STREETS. THE CONTRACTOR SHALL NOTIFY BRIAN MITCHELL (302) 576-3089 AT LEAST 14 DAYS PRIOR TO ANY COORDINATION REQUIREMENTS AND/OR CHANGES IN TRAFFIC PATTERNS.
- CONTRACTOR SUBMISSIONS:**
 PRIOR TO OR WITH THE SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT THE FIELD VERIFICATION NOTES ON MEMBER SIZES AND DIMENSIONS NECESSARY TO REVIEW THE SHOP DRAWINGS.
- CONSTRUCTION SAFETY FENCE:**
 CONSTRUCTION SAFETY FENCE IS REQUIRED AROUND THE PERIMETER OF ALL BELOW-DECK WORK AREAS AND AT LOCATIONS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 727548 - PORTABLE CHAINLINK FENCE. SEE DWGS. CS-01 TO CS-301.
- CONTRACT RESTRICTIONS:**
 THE DEPARTMENT HAS NOT OBTAINED A NOISE WAIVER UNDER THE PROVISIONS OF THE CITY OF WILMINGTON CODE FOR THE PURPOSE OF WORKING EXTENDED HOURS AT NIGHT. WORKING HOURS FOR THIS PROJECT SHALL BE LIMITED TO 8:00AM TO 7:00PM, MONDAY THROUGH FRIDAY; 9:00AM TO 7:00PM SATURDAY; 10:00AM TO 5:00PM SUNDAY AND HOLIDAYS. THE CONTRACTOR MAY COORDINATE AND SUBMIT TO OBTAIN A NOISE WAIVER FOR PURPOSES OF EXPEDITING HIS CONSTRUCTION EFFORTS AT NO ADDITIONAL COST TO THE DEPARTMENT. THE CONTRACTOR SHALL ADDRESS ANY CONCERNS ABOUT THE NOISE WAIVER TO THE DEPARTMENT OF LICENSES AND INSPECTIONS, CITY OF WILMINGTON, 800 FRENCH ST., 5TH FLOOR, WILMINGTON, DELAWARE 19801. THE DEPARTMENT WILL NOT BE HELD RESPONSIBLE FOR ANY ISSUES/DELAYS/OR REJECTIONS WITH THE COORDINATION, RECEIPT OR EXECUTION OF THE WORK IN CONJUNCTION WITH THE NOISE WAIVER AND CANNOT BE CAUSE FOR A DELAY CLAIM.

 IN ADDITION, BRIDGE AND ROAD CLOSURES WILL NOT BE PERMITTED ON THE FOLLOWING WEEKENDS: T.B.D.

 NOTE: THESE ARE PROJECTED DATES AND SHALL BE CONFIRMED WITH THE CITY OF WILMINGTON'S EVENTS CALENDAR.

<http://sites.google.com/site/wilmingtoneventssept/Home>

 FOR ADDITIONAL WORK RESTRICTIONS, SEE THE CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLAN SHEETS ON DWGS. CS-01, CS-02, AND CS-101.
- LOAD RATING:**
 THIS PROJECT DOES NOT CHANGE THE LOAD RATING OF THE BRIDGE.
- ABBREVIATIONS:**
 ABUT. = ABUTMENT
 BRG. = BEARING
 CL = CENTERLINE
 DIA. = DIAMETER
 DWG. = DRAWING
 EXP. = EXPANSION
 E.F. = EACH FACE
 FIX. = FIXED
 GR. = GRADE

 MAX. = MAXIMUM
 MIN. = MINIMUM
 NO. = NUMBER
 P.C.C. = PORTLAND CEMENT CONCRETE
 PTFE = POLYTETRAFLUOROETHYLENE
 SHLD. = SHOULDER
 STA. = STATION
 TYP. = TYPICAL

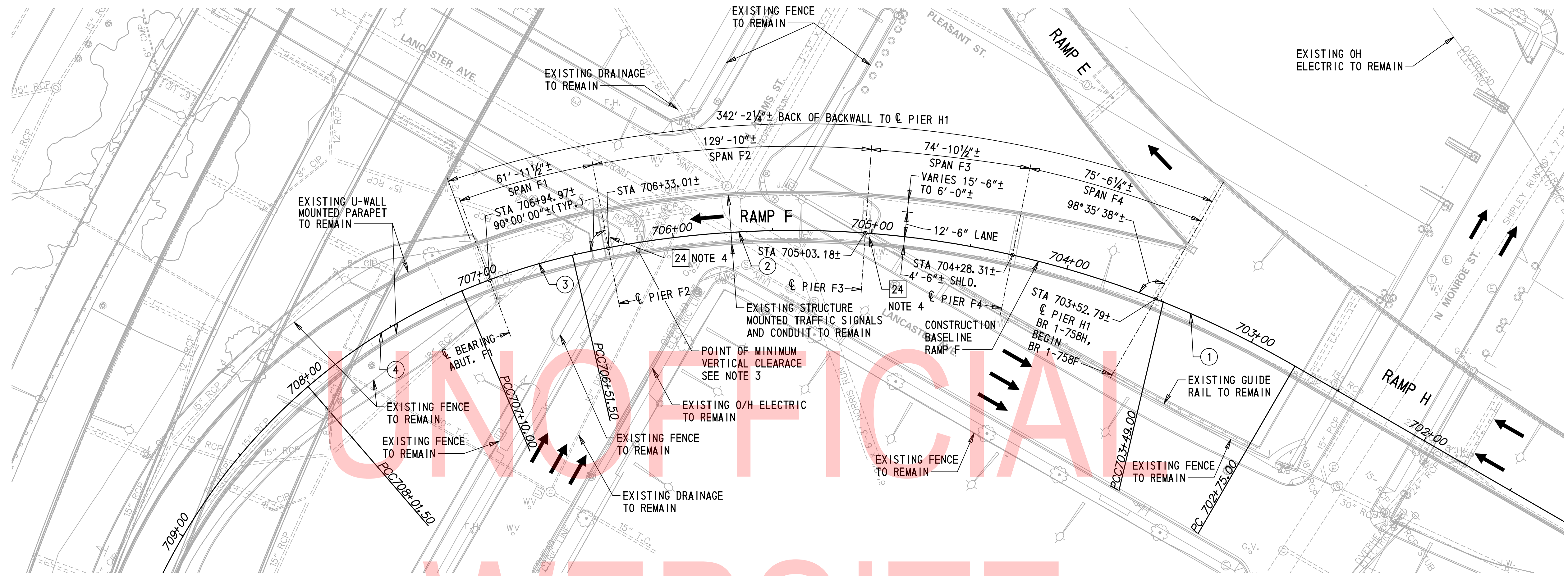
INDEX OF BRIDGE 1-758F SHEETS		
BR. SHEET NO.	BR. DWG. NO.	TABLE OF CONTENTS
102	PN-01	BRIDGE PROJECT NOTES, QUANTITIES, & SUMMARY OF PROPOSED REPAIR ITEMS
103	PE-01	GENERAL PLAN AND ELEVATION
104-106	TS-01 TO TS-03	BRIDGE TYPICAL SECTIONS
107	RH-01	JACKING NOTES
108-109	RH-02 TO RH-03	JACKING DETAILS
110	BB-01	BEARING PLAN
111	BB-02	BEARING DETAILS
112	BB-03	CONTINGENT ANCHOR BOLT REPAIR DETAIL
TOTAL BRIDGE SHEETS: 11		

QUANTITIES			
ITEM NO.	ITEM TITLE	UNIT	QUANTITY
604000	JACKING BRIDGE	LS	1
623000	ELASTOMERIC BEARINGS	EA	8
623003	REPLACE ANCHOR BOLTS	EA	8

REPAIR NO.	REPAIR DESCRIPTION	LOCATION	REMARKS	DWG. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	CONTINGENT %	TOTAL QTY.
24	JACK AND REPLACE EXISTING BRIDGE BEARINGS	SPAN F2, PIER F2 AND SPAN F3, PIER F3	REPLACE ALL BEARINGS WITHIN THE SPECIFIED BEARING LINE	RH-01 TO RH-03, BB-01 TO BB-03	604000	JACKING BRIDGE	LS	1	0	1
					623000	ELASTOMERIC BEARINGS	EA	8	0	8
					623003	REPLACE ANCHOR BOLTS	EA	0	EQ	8

22:09:58 PM 01/24/2015

ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758F 6149	BRIDGE PROJECT NOTES, QTYs, & SUMMARY OF PROPOSED REPAIR ITEMS	SECTION	PN-01
				T201907404	DESIGNED BY:	B. MARSHALL		PAI	
				COUNTY	CHECKED BY:	C. MALKIN		SHEET NO.	
				NEW CASTLE				102	

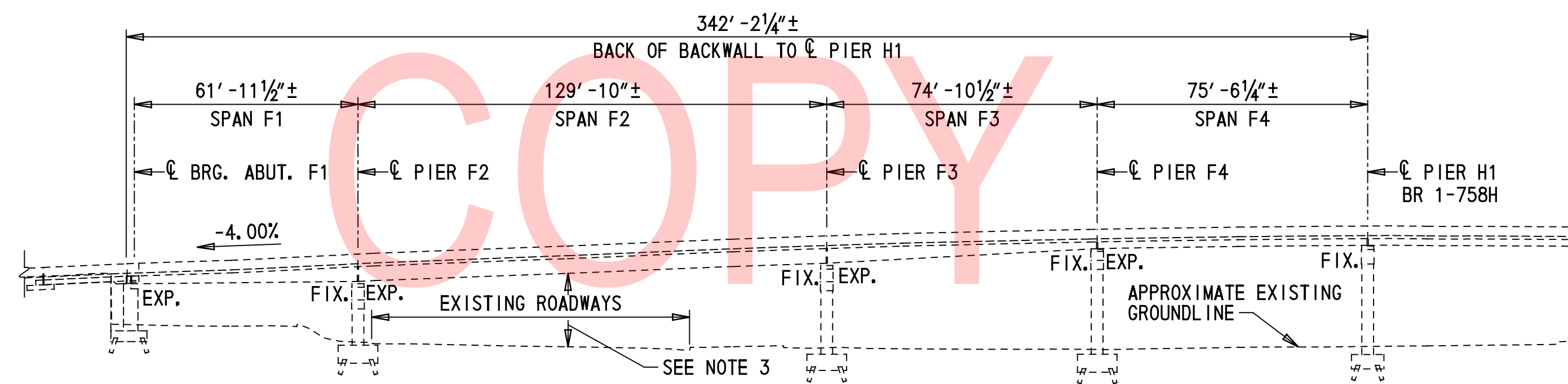


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HORIZONTAL CURVE DATA

CURVE ①	CURVE ②
P. C. STA. = 702+75.00	P. C. C. STA. = 703+49.00
P. I. STA. = 703+12.06	P. I. STA. = 705+05.05
L = 74.00'	L = 302.50'
R = 520.00'	R = 499.50'
M. O. = 1.32	M. O. = 22.73
P. C. C. STA. = 703+49.00	P. C. C. STA. = 706+51.50
CURVE ③	CURVE ④
P. C. C. STA. = 706+51.50	P. C. C. STA. = 707+10.00
P. I. STA. = 706+80.83	P. I. STA. = 707+56.12
L = 58.50'	L = 91.50'
R = 329.50'	R = 294.50'
M. O. = 1.30	M. O. = 3.55
P. C. C. STA. = 707+10.00	P. C. C. STA. = 708+01.50

KEY:
 24 REPAIR NUMBER AS SHOWN ON DWG. PN-01
 ① CURVE DATA



DATUM = 0.00

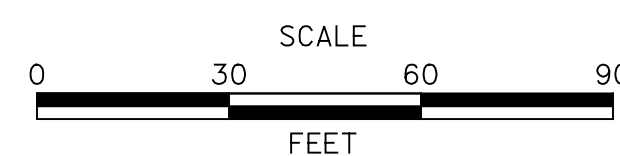
NOTES:

- DIMENSIONS SHOWN ARE MEASURED ALONG CONSTRUCTION BASELINE RAMP F.
- PILES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
- MINIMUM VERTICAL CLEARANCE IS BASED ON 2018 NBIS INSPECTION REPORT. MINIMUM CLEARANCE ABOVE ADAMS ST. = 15'-5"±.
- FOR REPAIR 24 LOCATIONS, SEE DWG. BB-01.

DEVELOPED SECTION ALONG CONSTRUCTION BASELINE RAMP F

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ADDENDA / REVISIONS

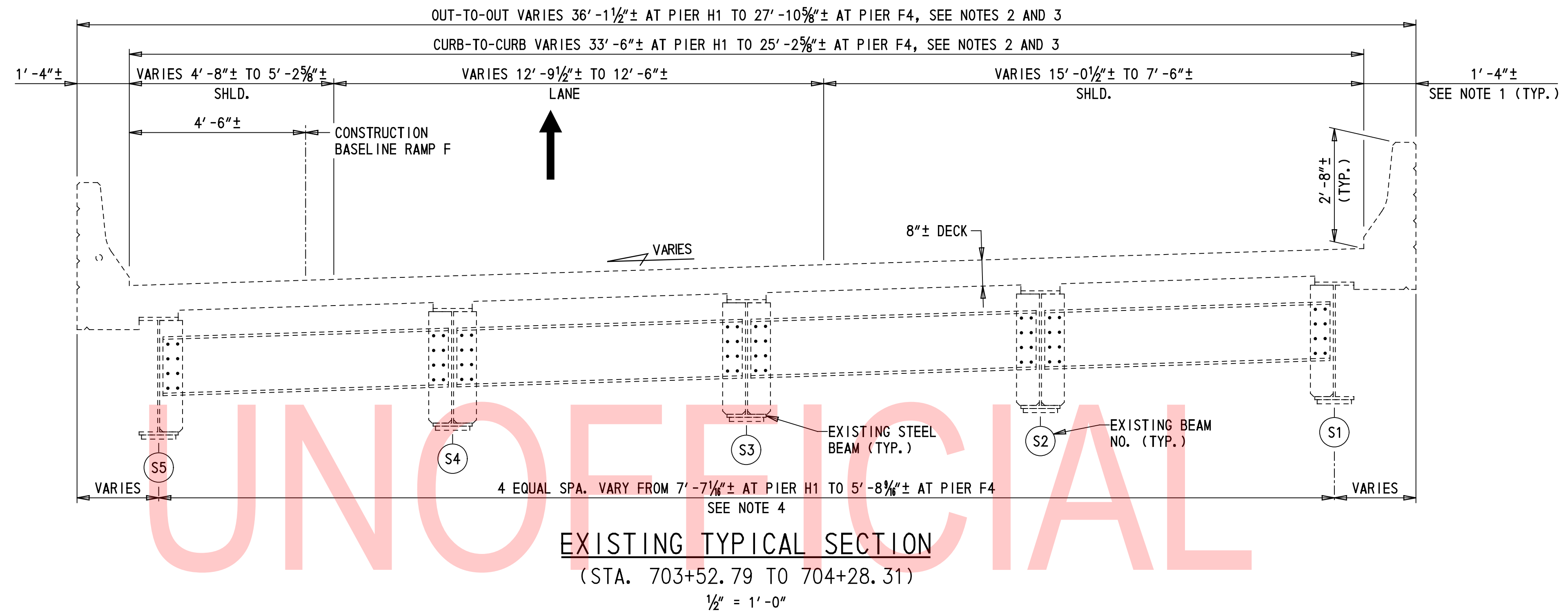


**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 758F 6149
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

**GENERAL PLAN
AND ELEVATION**

PE-01
SECTION
PAI
SHEET NO.
103



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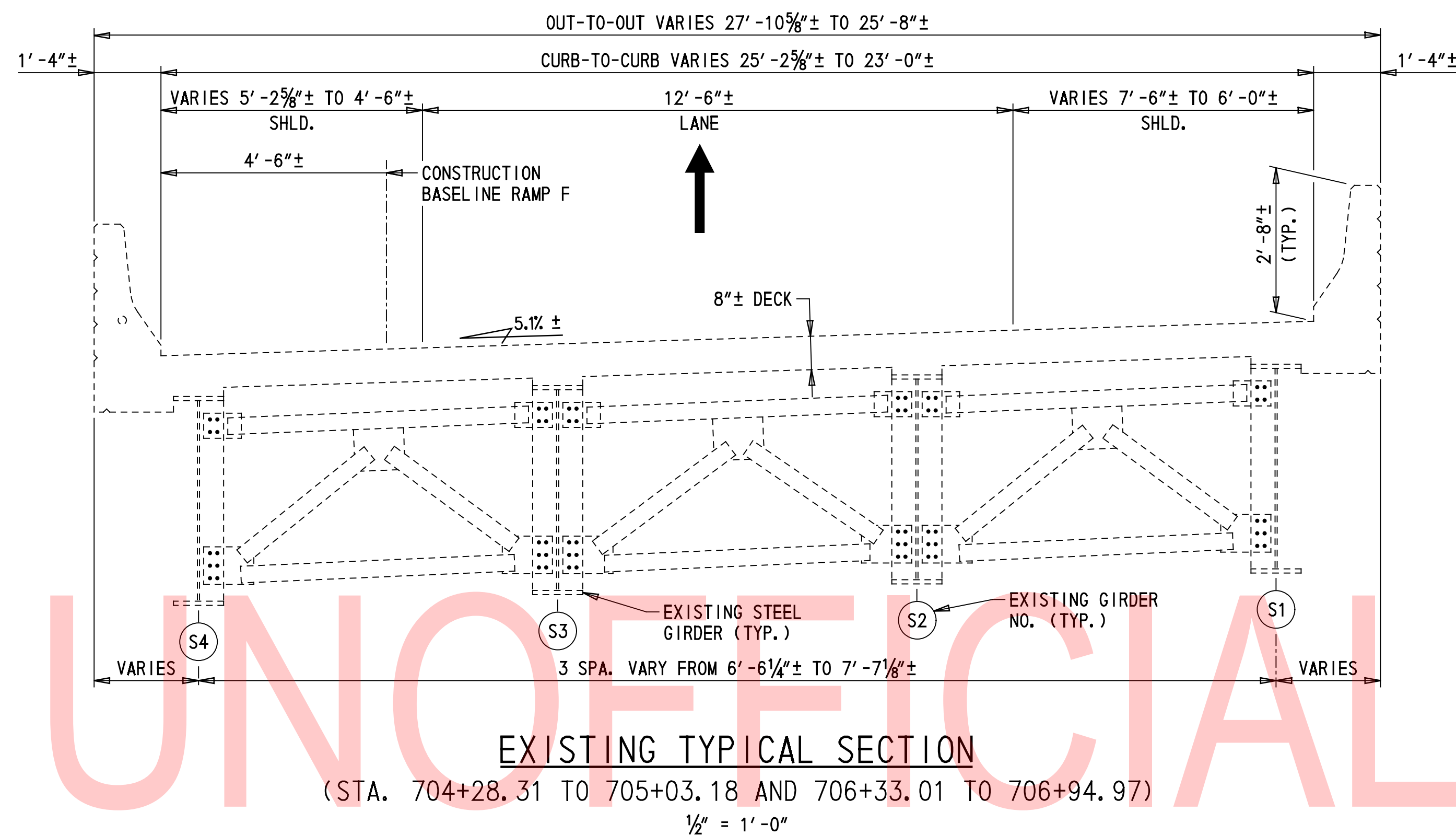
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NOTES:

- DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP F, EXCEPT AS NOTED.
- DIMENSIONS SHOWN AT PIER H1 ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP H FROM THE EAST PARAPET TO THE THEORETICAL INTERSECTION OF THE WEST PARAPET AND THE CENTERLINE OF PIER H1.
- DIMENSIONS SHOWN AT PIER F4 ARE MEASURED PERPENDICULAR TO THE CONSTRUCTION BASELINE RAMP F.
- BEAM SPACING SHOWN IS MEASURED ALONG THE PIER CENTERLINE.

2020/05/28 2:40:05 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758F 6149	BRIDGE TYPICAL SECTIONS STA. 703+52 TO 704+28	TS-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	104
				NEW CASTLE				



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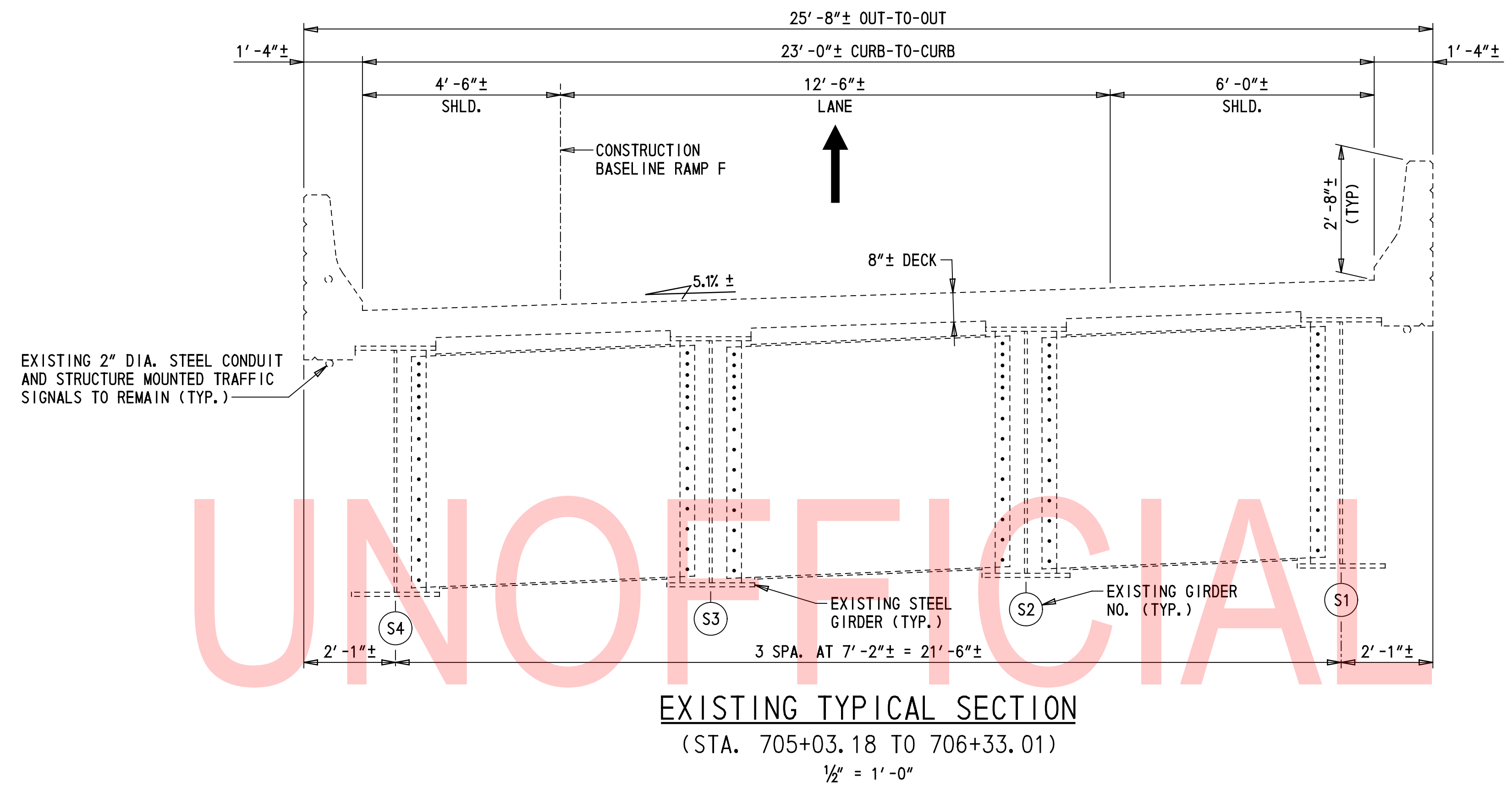
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NOTES:

1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP F.

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758F 6149	BRIDGE TYPICAL SECTIONS STA. 704 + 28 TO 705 + 03 & STA. 706 + 33 TO 706 + 94	TS-02
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
		NEW CASTLE	CHECKED BY: C. MALKIN	COUNTY	SHEET NO.	105		



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NOTES:

1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP F.

2025.05.15 02:49:07 PM

ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	<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 758F 6149</td> </tr> <tr> <td style="font-size: 8px;">T201907404</td> <td colspan="2" style="font-size: 8px;">DESIGNED BY: B. MARSHALL</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td colspan="2" style="font-size: 8px;">CHECKED BY: C. MALKIN</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1 758F 6149	T201907404	DESIGNED BY: B. MARSHALL		COUNTY	CHECKED BY: C. MALKIN		NEW CASTLE			BRIDGE TYPICAL SECTIONS STA. 705 + 03 TO 706 + 33	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">SECTION</td> <td style="font-size: 8px;">PAI</td> </tr> <tr> <td style="font-size: 8px;">SHEET NO.</td> <td style="font-size: 8px;">106</td> </tr> </table>	SECTION	PAI	SHEET NO.	106
CONTRACT	BRIDGE NO.	1 758F 6149																				
T201907404	DESIGNED BY: B. MARSHALL																					
COUNTY	CHECKED BY: C. MALKIN																					
NEW CASTLE																						
SECTION	PAI																					
SHEET NO.	106																					

BRIDGE JACKING NOTES:

1. CONTRACTOR SHALL VERIFY COMPATIBILITY OF THE JACKING ASSEMBLY WITH HYDRAULIC JACK (SEE NOTE 15) PRIOR TO FABRICATION. ALTERNATE JACKING SCHEMES OR ASSEMBLIES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. SUBMISSION SHALL INCLUDE DETAILED SHOP DRAWINGS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ANY ALTERNATIVE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND MAY BE REJECTED BY THE ENGINEER FOR ANY REASON INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY. NO ADDITIONAL PAYMENT WILL BE MADE FOR ALTERNATE JACKING SCHEMES OR ASSEMBLIES.

THE CONTRACTOR SHALL SUBMIT A JACKING PROCEDURE TO THE ENGINEER FOR APPROVAL. NO WORK ON THE INSTALLATION OF THE JACKING ASSEMBLY SHALL OCCUR UNTIL APPROVAL OF THE JACKING PROCEDURE IS OBTAINED. THE PROCEDURE SHALL CONTAIN, AT A MINIMUM, THE FOLLOWING INFORMATION:

- A. CATALOG CUTS OF ALL OF THE JACKS TO BE USED.
 - B. CALIBRATION CERTIFICATES AND CALIBRATION CHARTS FOR EACH JACK TO BE USED.
 - C. A COMPLETE SCHEMATIC OF THE JACKING SYSTEM, INCLUDING THE JACKS, HOSES, GAUGES, VALVES, MANIFOLDS AND PUMPS.
 - D. A NARRATIVE ON THE METHOD TO BE USED TO DETERMINE THE VERTICAL DISPLACEMENTS AT EACH BEAM LOCATION DURING JACKING AND HOW THE DISPLACEMENT LIMITS WILL BE CHECKED AND MAINTAINED DURING THE JACKING.
 - E. A NARRATIVE ON THE METHOD TO BE USED TO KEEP THE LIFTING RATES OF THE JACK SIMILAR AND AT A RATE SLOW ENOUGH TO BE ABLE TO VERIFY THE VERTICAL DISPLACEMENTS BEFORE THE LIMITS ARE EXCEEDED.
 - F. A COMPLETE SEQUENCE OF CONSTRUCTION NARRATIVE.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO ORDERING OR FABRICATING THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.
 3. ALL STEEL PLATES AND STEEL ROLLED SHAPES SHALL BE AASHTO M270 GRADE 50 MATERIAL.
 4. UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 7/8" DIAMETER ASTM F3125 GR. A325. ALL BOLTS ARE DESIGNED WITH THE THREADS INCLUDED IN THE SHEAR PLANE. ALL HOLES FOR BOLTS SHALL BE 1/8" DIAMETER. INSTALL BOLTS BY TURN OF NUT METHOD IN ACCORDANCE WITH SUBSECTION 615.03.D.6.c.vii OF THE STANDARD SPECIFICATIONS.
 5. ALL METAL WORK AND ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 615.
 6. JACKING ASSEMBLY AND JACKING STIFFENERS SHALL BE SET PLUMB.
 7. WORK SHALL CONSIST OF JACKING THE EXISTING BEAMS, REMOVING THE EXISTING BEARINGS, AND INSTALLING NEW ELASTOMERIC AND DISC BEARINGS. FOR LOCATIONS OF BEARING REPLACEMENTS, SEE DWGS. BB-01 AND BB-02. NO ADDITIONAL CONCRETE REPAIR WORK IS ANTICIPATED FOR JACKING.
 8. THE ENGINEER SHALL BE PRESENT DURING ALL JACKING OPERATIONS TO ENSURE CONFORMANCE WITH ALL PERTINENT CONTRACT PROVISIONS.
 9. IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL INSPECT THE CONDITION OF THE EXISTING STEEL BEAMS FOR ANY DEFECTS WHICH MAY IMPACT THE LOAD CARRYING CAPACITY OF THE BEAM DURING JACKING. IF ANY DEFECTS ARE FOUND, THE CONTRACTOR SHALL STOP WORK AT THAT LOCATION AND DISCUSS WITH THE ENGINEER IMMEDIATELY.
 10. THE CONTRACTOR SHALL HAVE THE PROPOSED BEARING ASSEMBLIES FOR THE BEARING LINE BEING REPLACED ON SITE PRIOR TO COMMENCING WITH JACKING OPERATIONS. THE PROPOSED BEARING ASSEMBLIES MUST BE ACCEPTED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
 11. THE HYDRAULIC JACKS FOR THE SAME BEARING LINE REQUIRED TO LIFT THE EXISTING BEAMS SHALL BE OPERATED CONCURRENTLY (MANIFOLDED) TO PROVIDE AN EQUAL AND BALANCED LIFTING FORCE SUCH THAT THE BRIDGE IS LIFTED EVENLY.

THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT BEAMS IS NOT TO EXCEED 1/8" AT ANY TIME.

THE MAXIMUM VERTICAL DISPLACEMENT OF ANY BEAM FROM THE EXISTING LOCATION SHALL NOT EXCEED 1/4" AT ANY TIME.

12. THE CONTRACTOR SHALL USE ONLY JACKS WITH LOCK-NUTS CAPABLE OF SUPPORTING A LOAD EQUAL TO THE RATED CAPACITY OF THE JACK. IN THE EVENT THE JACK LOSES HYDRAULIC PRESSURE THE CONTRACTOR SHALL ADVANCE THE LOCK-NUTS ON ALL JACKS SUCH THAT THE MAXIMUM DISTANCE BETWEEN THE TOP OF A JACK AND THE LOCK-NUT DOES NOT EXCEED 1/8" AT ANY TIME DURING THE JACKING PROCEDURE.
13. NO REPAIR WORK SHALL BE PERFORMED UNTIL THE JACKING OPERATION IS COMPLETE AND THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLY (JACKING DIAPHRAGM, LOCK-NUT JACK, SPACER COLUMN, ETC.)
14. LIVE LOAD SHALL BE TEMPORARILY REMOVED FROM THE BRIDGE DURING JACKING UNTIL THE BRIDGE IS FULLY SUPPORTED BY THE JACKING ASSEMBLIES.
15. THE HYDRAULIC JACKS SHALL HAVE A MINIMUM CAPACITY OF 200 TONS. THE FACTORED LOADS FOR JACKING WERE USED TO SIZE THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK. THE JACKING DIAPHRAGM, JACKING ASSEMBLY, AND HYDRAULIC JACK DOES NOT ACCOUNT FOR CONDITIONAL CONSTRUCTION LOADS. THEY WILL NEED TO BE REDESIGNED FOR FACTORED DEAD LOADS AND ANY APPLIED CONSTRUCTION LOADS. REDESIGN OF THESE ELEMENTS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
16. THE FACTORED LOADS FOR JACKING USE A DEAD LOAD FACTOR OF 1.30 AND A LIVE LOAD FACTOR OF 1.75. THE FACTORED LOADS SHOWN WERE USED FOR THE DESIGN OF THE JACKING ASSEMBLY AND THE HYDRAULIC JACK.
17. NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE JACKING ASSEMBLY. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
18. EXISTING STEEL CONNECTION PLATES THAT ARE TO BE CONNECTED TO NEW JACKING DIAPHRAGMS SHALL BE THOROUGHLY CLEANED AND PRIMED PRIOR TO PLACING NEW STEEL IN CONFORMANCE WITH SECTION 616. THE INSIDE SURFACE OF THE JACKING DIAPHRAGM THAT IS TO CONNECT TO THE CONNECTION PLATE SHALL RECEIVE A SHOP PRIME COAT. THE REMAINDER OF THE JACKING DIAPHRAGM SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION 616.
19. JACKING STIFFENERS SHALL BE SHOP WELDED TO THE JACKING DIAPHRAGMS. THE CONTRACTOR SHALL CLIP THE INSIDE CORNERS OF THE STIFFENER PLATES 3/4" X 3/4".
20. BRIDGE JACKING SHALL BE PAID FOR UNDER ITEM 604000 - JACKING BRIDGE. REMOVAL AND DISPOSAL OF EXISTING END DIAPHRAGMS TO BE REPLACED WITH JACKING DIAPHRAGMS IS INCLUDED IN ITEM 604000 - JACKING BRIDGE.

SUGGESTED SEQUENCE OF CONSTRUCTION:

THE FOLLOWING IS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE JACKING OPERATIONS.

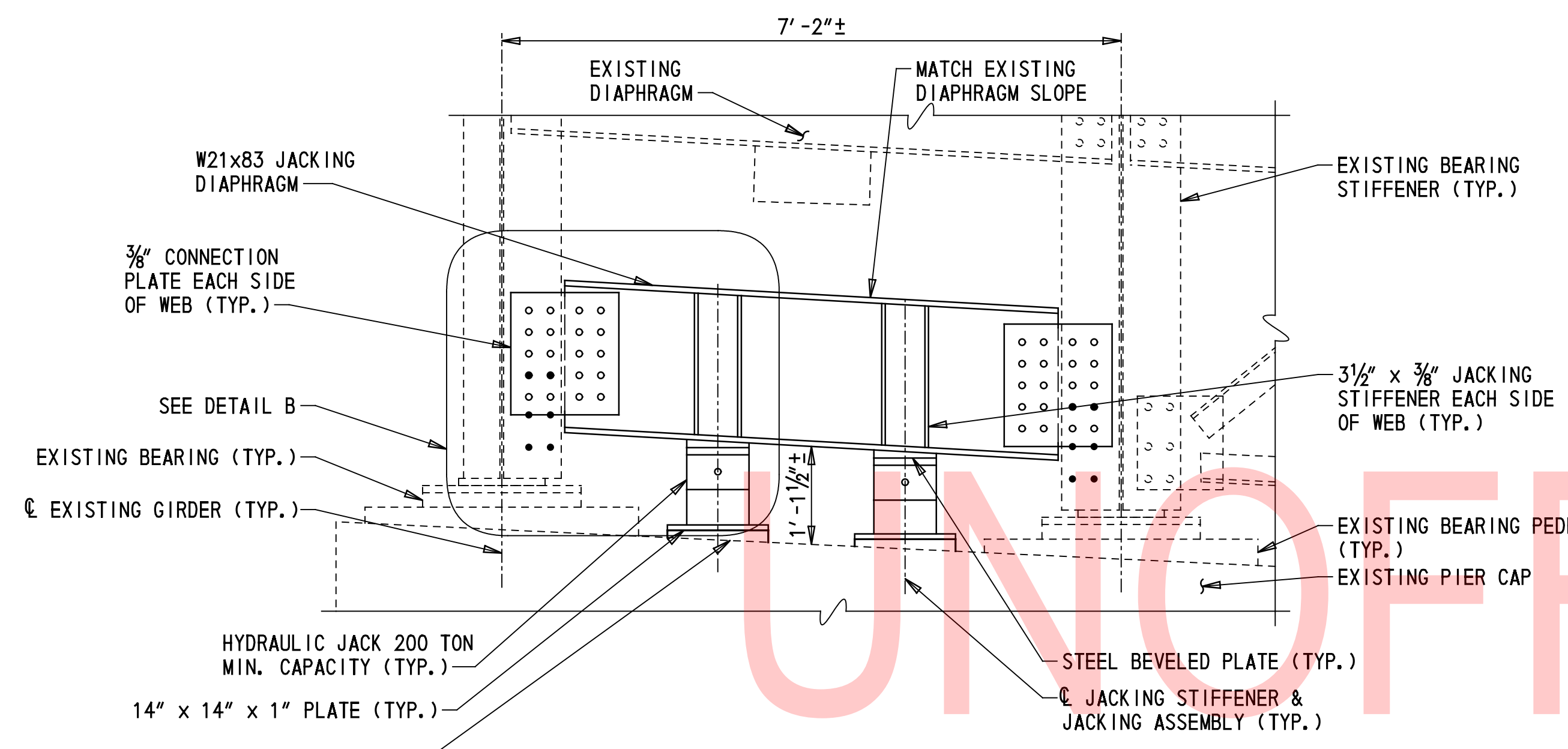
1. INSTALL ALL NECESSARY TEMPORARY WORK PLATFORMS AND/OR RIGGING. CARE SHALL BE TAKEN NOT TO INTERFERE WITH PROPOSED LOCATIONS OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.
2. REMOVE EXISTING DIAPHRAGMS AT LOCATIONS OF PROPOSED JACKING DIAPHRAGMS. REMOVE EXISTING CONNECTION PLATES AND GRIND SMOOTH ANY WELD WHERE PROPOSED JACKING CONNECTIONS ARE LOCATED.
3. INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.
4. PLACE A NON-SHRINK GROUT PAD BENEATH THE JACKING ASSEMBLY AND THE EXISTING BEAM SEAT TO ENSURE FULL AND LEVEL BEARING AND CURE TO SPECIFIED STRENGTH.
5. INSTALL ALL JACKING ASSEMBLIES AS SHOWN ON DWGS. RH-02 AND RH-03.
6. REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.
7. PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE BEARINGS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFICE OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
8. SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUTS OF THE HYDRAULIC JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES ON DWGS. RH-02 TO RH-04. PROVIDE FOR SUPERSTRUCTURE EXPANSION.
9. RELEASE LOAD IN JACK TO TRANSFER ALL LOAD TO THE JACKING ASSEMBLY AND LOCK-NUT.
10. REMOVE EXISTING WELDS BETWEEN THE SOLE PLATE AND THE BOTTOM FLANGE OF THE EXISTING BEAM. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING BEAM. ANY DAMAGE TO THE EXISTING BEAM CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER. SUBMIT THE WELD REMOVAL PROCEDURE TO THE ENGINEER FOR APPROVAL.
11. EXISTING ANCHOR BOLTS ARE TO REMAIN IN PLACE FOR PROPOSED BEARINGS AS SHOWN ON DWG. BB-02. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING ANCHOR BOLTS. ANY DAMAGE TO THE EXISTING ANCHOR BOLTS CAUSED BY THE CONTRACTOR'S REMOVAL METHODS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.
12. REMOVE EXISTING BEARING ASSEMBLY. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING STEEL BEAM DURING ANY CUTTING OF THE EXISTING BEARING.
13. CLEAN THE BOTTOM SURFACE OF THE EXISTING BEAM AND APPLY PRIMER IN ACCORDANCE WITH SECTION 616. PAYMENT FOR CLEANING AND PAINTING WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
14. THE TOP OF THE EXISTING BEARING LOCATION SHALL BE LEVEL AND FREE OF DEBRIS. IF REQUIRED, NON-SHRINK GROUT SHALL BE USED TO LEVEL AND PROVIDE A SMOOTH BEARING SURFACE FOR THE PROPOSED BEARING. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 604000 - JACKING BRIDGE.
15. INSTALL PROPOSED BEARINGS. FOR THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARINGS, SEE DWG. BB-02.
16. DO NOT LOWER BEAMS UNTIL ALL REPAIRS AND BEARING INSTALLATIONS ARE COMPLETE AND TO THE SATISFACTION OF THE ENGINEER.
17. PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN JACKING BEAMS OFF THEIR RESPECTIVE JACKING ASSEMBLIES AND LOCK NUTS. THE CONTRACTOR SHALL PROVIDE TWO TRAFFICE OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATION IN ACCORDANCE WITH TA-35H. LIFTING OF BRIDGE VIA HYDRAULIC PRESSURE UNDER LIVE LOAD IS PROHIBITED.
18. REMOVE ALL JACKING ASSEMBLIES. NON-SHRINK GROUT LEVELING PADS USED UNDER JACKING ASSEMBLIES AND PROPOSED JACKING DIAPHRAGMS MAY BE LEFT IN PLACE WITH APPROVAL OF THE ENGINEER.

LOADS FOR JACKING						UNFACTORED		FACTORED	
SPAN NO.	SUBSTRUCTURE UNIT	GIRDER NO.	BEAM SPACING ALONG C OF BEARING	BEAM MEMBER	ANGLE A*	DL+15%	DL+LL+IMP	DL+15%	DL+LL+IMP
SPAN F2	PIER F2	S1	7' -2"±	PLATE GIRDER	89°55' 35.0"±	52.3 KIP	115.9 KIP	86.3 KIP	170.5 KIP
		S2	7' -2"±	PLATE GIRDER	89°55' 31.3"±	77.6 KIP	151.9 KIP	128.0 KIP	217.7 KIP
		S3	7' -2"±	PLATE GIRDER	89°55' 27.5"±	114.9 KIP	197.3 KIP	189.5 KIP	274.1 KIP
		S4	7' -2"±	PLATE GIRDER	89°55' 23.6"±	157.6 KIP	257.6 KIP	260.1 KIP	353.2 KIP
SPAN F3	PIER F3	S1	7' -2 1/8"±	PLATE GIRDER	87°21' 42.6"±	57.2 KIP	128.7 KIP	94.3 KIP	199.4 KIP
		S2	7' -2 1/8"±	PLATE GIRDER	87°03' 44.6"±	49.1 KIP	130.4 KIP	81.0 KIP	206.1 KIP
		S3	7' -2 1/8"±	PLATE GIRDER	86°45' 14.7"±	48.4 KIP	129.6 KIP	79.9 KIP	205.0 KIP
		S4	7' -2 1/8"±	PLATE GIRDER	86°26' 11.8"±	51.2 KIP	117.2 KIP	84.4 KIP	182.0 KIP

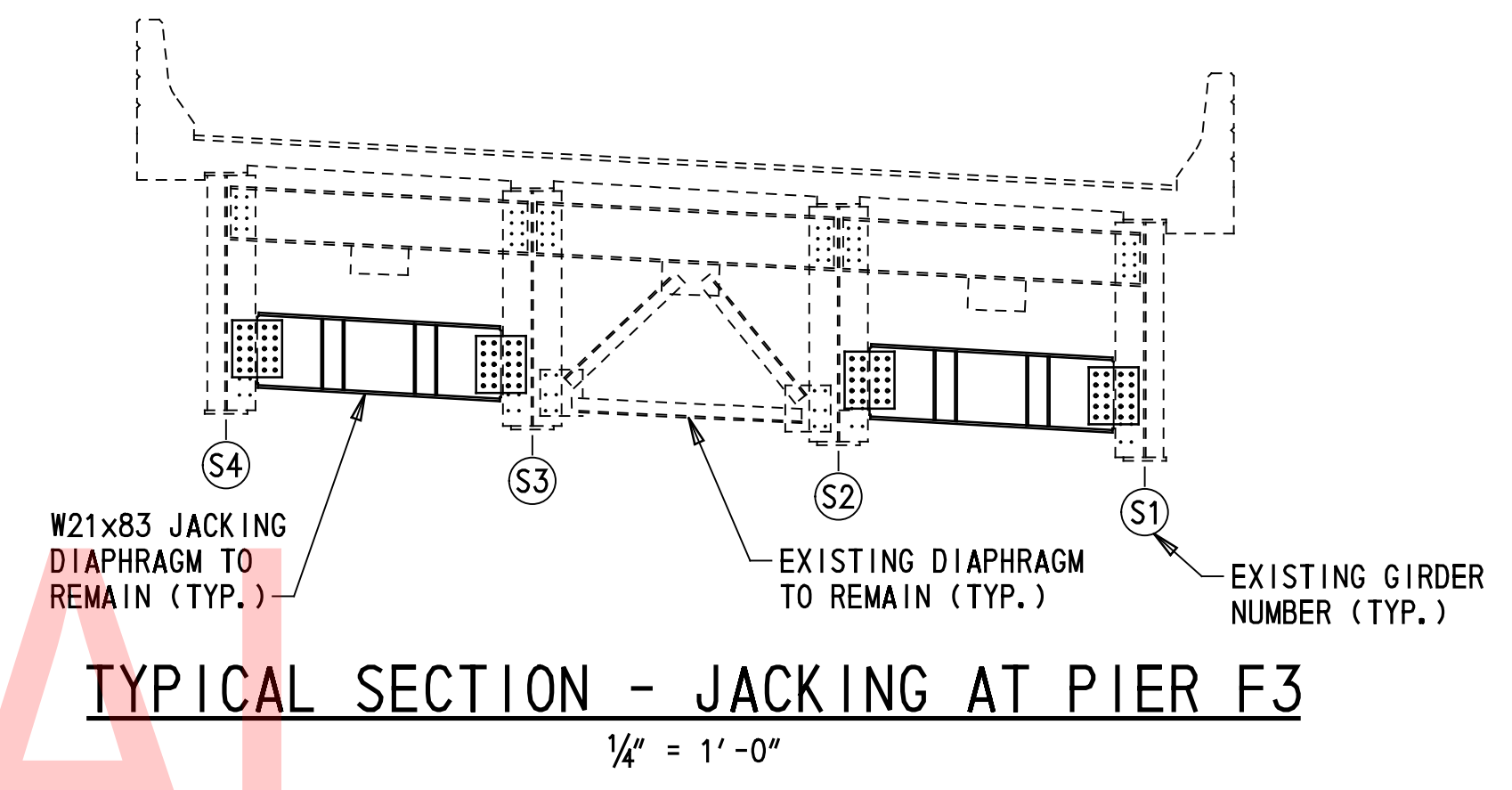
*FOR LOCATION OF ANGLE A, SEE DWGS. RH-02 THROUGH RH-03.

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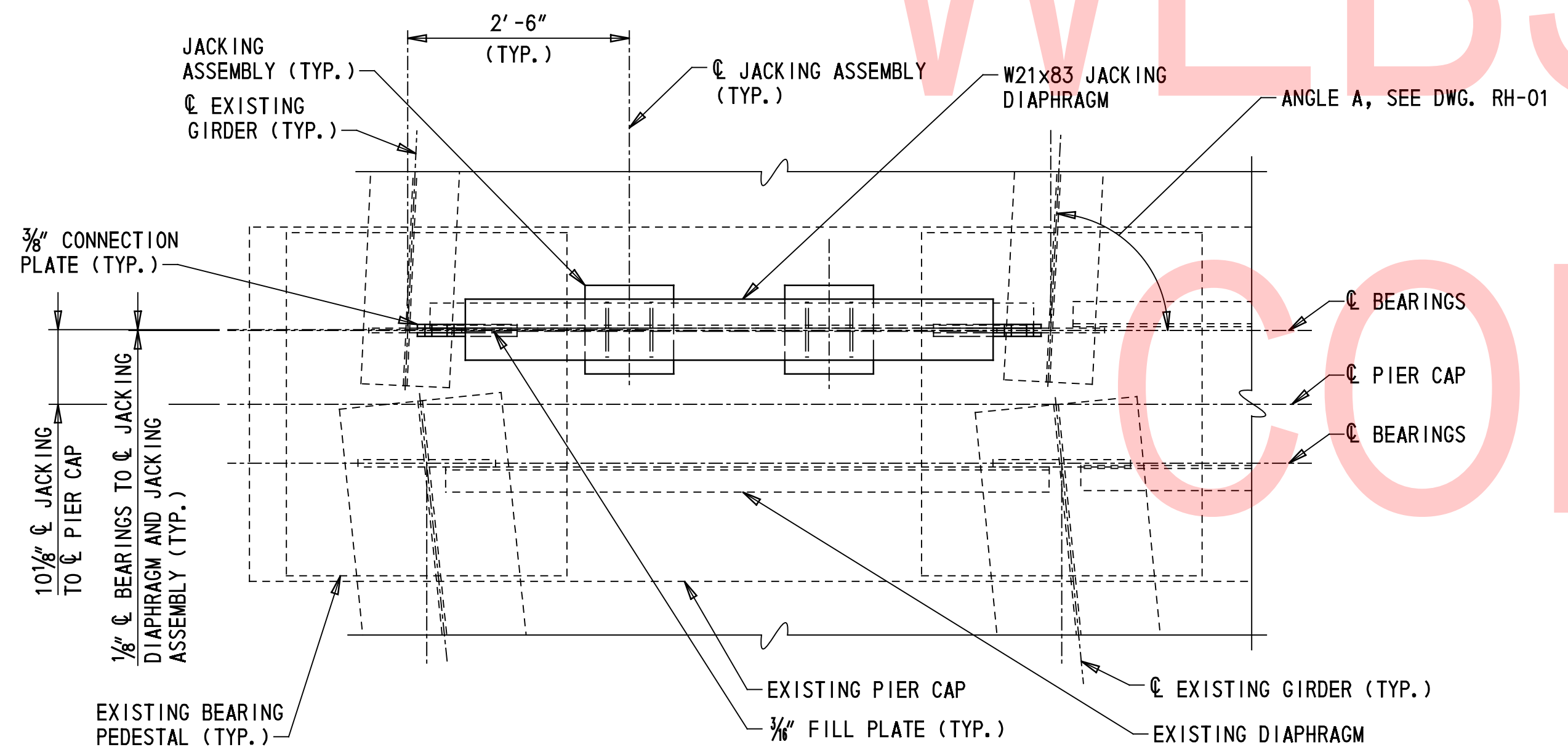
ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758F 6149	JACKING NOTES	RH-01
				T201907404	DESIGNED BY: B. MARSHALL	SECTION		
				COUNTY	CHECKED BY: C. MALKIN	PAI		
				NEW CASTLE		SHEET NO.		
								107



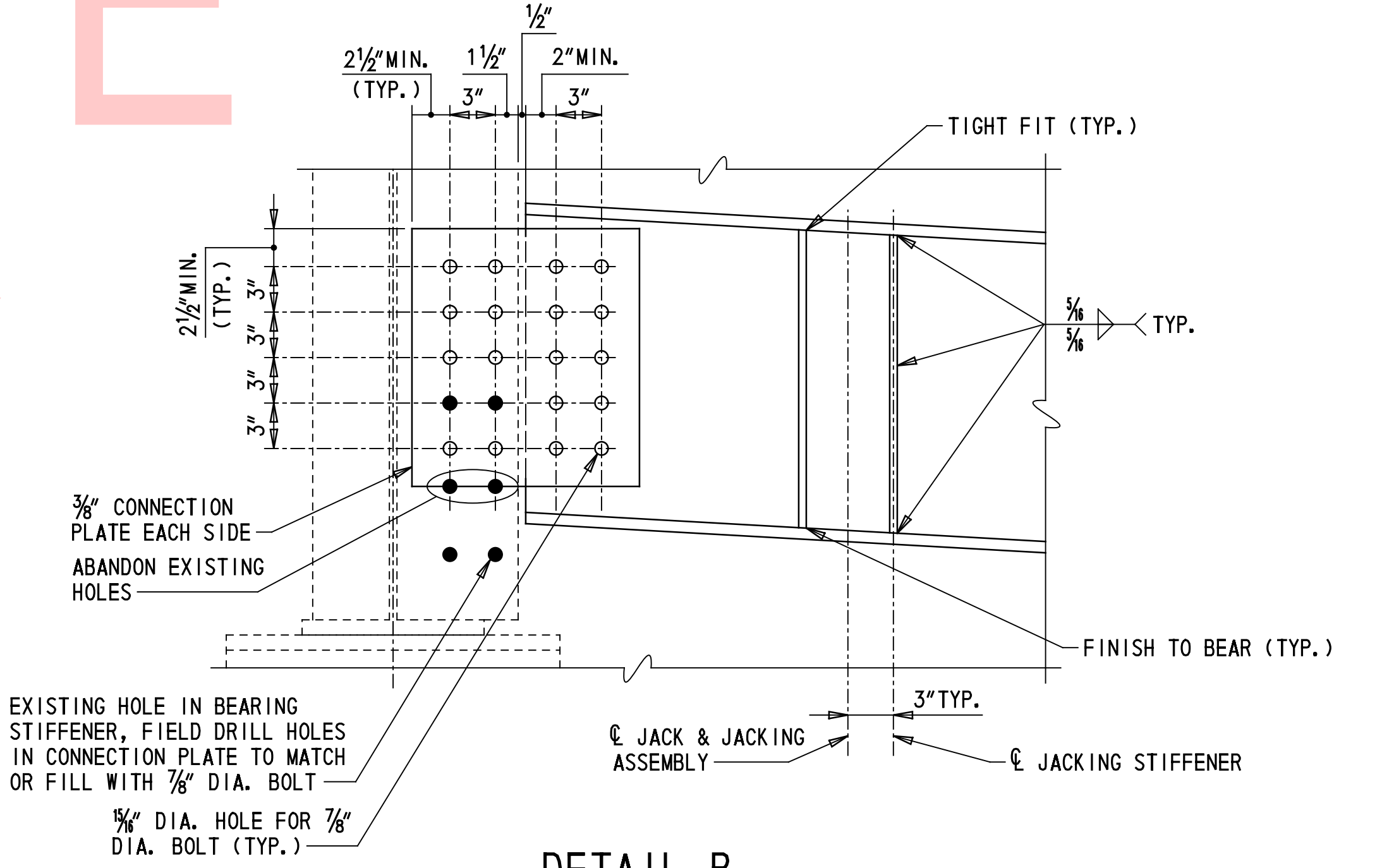
JACKING SCHEME - PIER F3 ELEVATION
3/4" = 1'-0"



TYPICAL SECTION - JACKING AT PIER F3
1/4" = 1'-0"



JACKING SCHEME - PIER F3 PLAN
3/4" = 1'-0"



DETAIL B
1 1/2" = 1'-0"

NON-SHRINK GROUT LEVELING PAD (TYP.),
SEE DWG. SEE RH-01 NOTE 17
AND SEQUENCE NOTE 14

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ADDENDA / REVISIONS

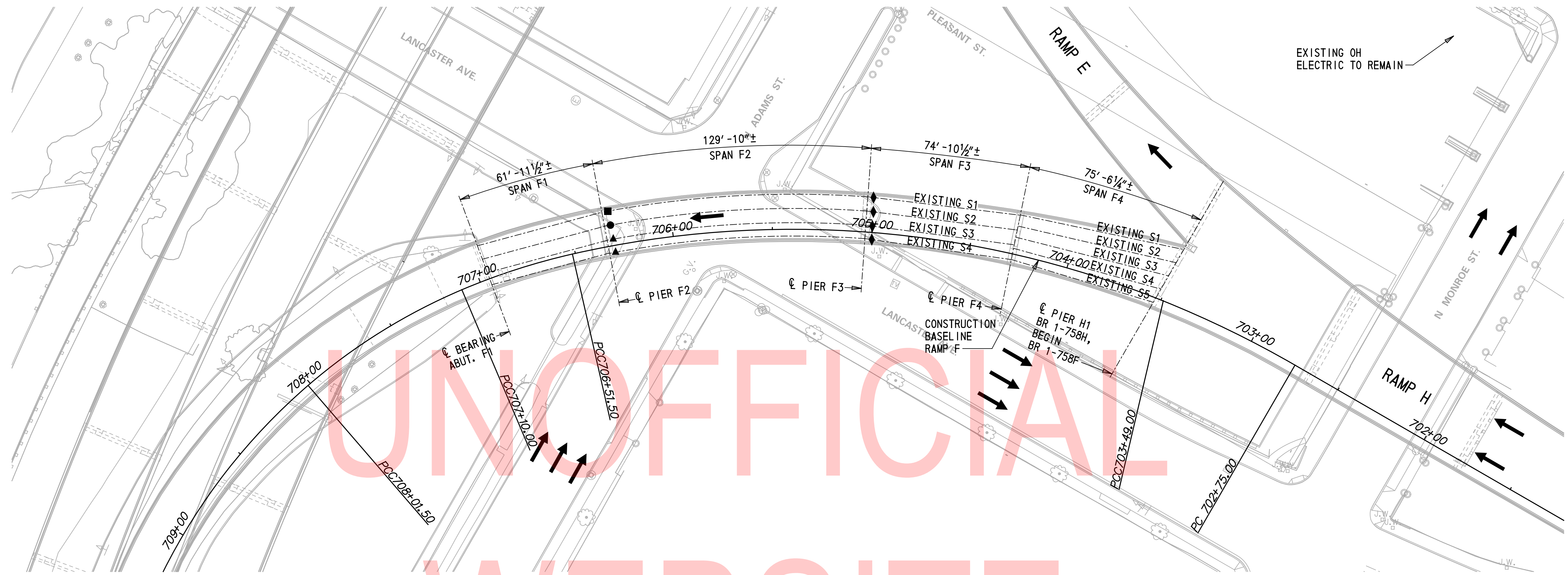
SCALE AS NOTED

**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 758F 6149
T201907404	DESIGNED BY:	B. DEELY
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

JACKING DETAILS - 2

RH-03
SECTION
PAI
SHEET NO.
109



BEARING SYMBOL LEGEND:

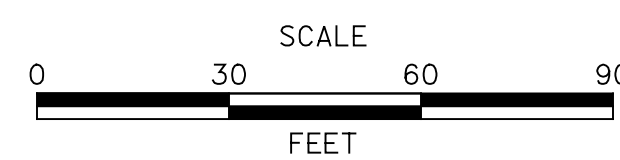
- - REPLACE WITH PROPOSED BEARING TYPE EX1 (REFER TO DWG. BB-02)
- - REPLACE WITH PROPOSED BEARING TYPE EX2 (REFER TO DWG. BB-02)
- ▲ - REPLACE WITH PROPOSED BEARING TYPE EX3 (REFER TO DWG. BB-02)
- ◆ - REPLACE WITH PROPOSED BEARING TYPE EX4 (REFER TO DWG. BB-02)

BEARING PLAN

UNOFFICIAL
WEBSITE
COPY

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ADDENDA / REVISIONS



**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

CONTRACT	BRIDGE NO.	1 758F 6149
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

BEARING PLAN

BB-01
SECTION
PAI
SHEET NO.
110

STEEL REINFORCED ELASTOMERIC BEARING NOTES:

- PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
- ANCHOR BOLT NUTS AND WASHERS SHALL BE UNPAINTED ASTM A 563 GRADE AND ASTM F 436 TYPE GALVANIZED STEEL, RESPECTIVELY. PLATE WASHERS SHALL BE UNPAINTED AASHTO M 270, GRADE 36 GALVANIZED STEEL. HARDWARE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A 153. SET NUTS 1/4" CLEAR OF SOLE PLATES AND BURR THREADS ABOVE AND BELOW NUTS.
- SOLE PLATES SHALL BE AASHTO M 270, GRADE 50. SOLE PLATES SHALL BE BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING THE GRADE OF THE BRIDGE IN THE FIELD TO DETERMINE THE PROPER LEVEL AT EACH BEARING LOCATION. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1.

FOR FIELD WELDING THE NEW BEARING SOLE PLATES TO THE EXISTING GIRDER BOTTOM FLANGES, ONLY USE THE SHIELDED METAL ARC WELDING PROCESS WITH E7018 ELECTRODES WITH THE SUPPLEMENTAL DIFFUSIBLE HYDROGEN DESIGNATOR OF H4. PERFORM 100 PERCENT NDT INSPECTION OF THESE WELDS USING VISUAL (VT) AND MAGNETIC PARTICLE (MT). THE MAXIMUM THICKNESS OF THE BEVELED SOLE PLATE SHALL BE USED WHEN DETERMINING THE MINIMUM PREHEAT VALUE PER AWS D1.5 BRIDGE WELDING CODE.
- 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".
- ALL STAINLESS STEEL SHALL BE ASTM A240 TYPE 304. 11 GAGE STAINLESS STEEL SHEET SHALL HAVE #8 MIRROR FINISH. THE STAINLESS STEEL LOAD PLATE SHALL BE SHOP WELDED TO THE SOLE PLATE.
- BEARING ASSEMBLY SHALL BE SHIPPED FROM FACTORY TO JOB SITE AS AN ASSEMBLED UNIT TO PREVENT DAMAGE OF THE STAINLESS STEEL SHEET AND PTFE SLIDING SURFACE. THE PTFE SHALL BE PROTECTED FROM DIRECT EXPOSURE TO ULTRAVIOLET RAYS AT ALL TIMES.
- BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM. BEARING SHALL BE MARKED WITH CENTERLINES AND DIRECTION OF GRADE.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF CONCRETE PEDESTALS 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 THAT THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF LOAD TO THE GIRDERS.
- EXPANSION BEARINGS: USE 1 3/8" DIAMETER HOLES IN KEEPER PLATES AND 3/8" X 3" DIAMETER WASHERS WITH 1 1/8" DIAMETER HOLES IN WASHERS.
- PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, NUTS, WASHERS, AND SOLE PLATES WILL BE MADE UNDER ITEM 623000 - ELASTOMERIC BEARING. REMOVAL AND DISPOSAL OF EXISTING BEARING ASSEMBLIES AND KEEPER PLATES IS INCLUDED IN ITEM 624000 - JACKING BRIDGE.
- SOLE PLATES SHALL BE SHOP PAINTED IN ACCORDANCE WITH SECTION 616. CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AFTER WELDING THE SOLE PLATE TO THE GIRDER. CONTRACTOR SHALL TOUCH UP THE PAINT SYSTEM FOR THE GIRDERS AFFECTED BY BEARING INSTALLATION. ALL PAINT SHALL CONFORM TO SECTION 616 OF THE STANDARD SPECIFICATIONS AND MATCH THE COLOR OF THE EXISTING GIRDERS.
- PTFE SHEET SHALL BE DIMPLED LUBRICATED MEETING THE REQUIREMENTS OF ASTM D 4894. PTFE SHEET SHALL HAVE THE SAME PLAN AREA AS THE BEARING PAD.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS.
- NON-SHRINK GROUT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 1047.02. GROUT SHALL CURE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO INSTALLING THE BEARINGS. MINIMUM AND MAXIMUM LEVELING PAD THICKNESS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- AFTER REMOVAL OF EXISTING BEARING KEEPER PLATES AND CLEANING OF EXISTING ANCHOR BOLTS, NOTIFY ENGINEER FOR DETERMINATION OF SIGNIFICANT SECTION LOSS TO THE ANCHOR BOLT. IF SIGNIFICANT SECTION LOSS IS OBSERVED, THE EXISTING ANCHOR BOLTS SHALL BE REPAIRED AS SHOWN ON DWG. BB-03. ALL COST ASSOCIATED WITH REPAIR OF EXISTING ANCHOR BOLTS SHALL BE PAID FOR UNDER ITEM NO. 623003 - REPLACE ANCHOR BOLTS.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF THE 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.

SUGGESTED SEQUENCE OF INSTALLATION

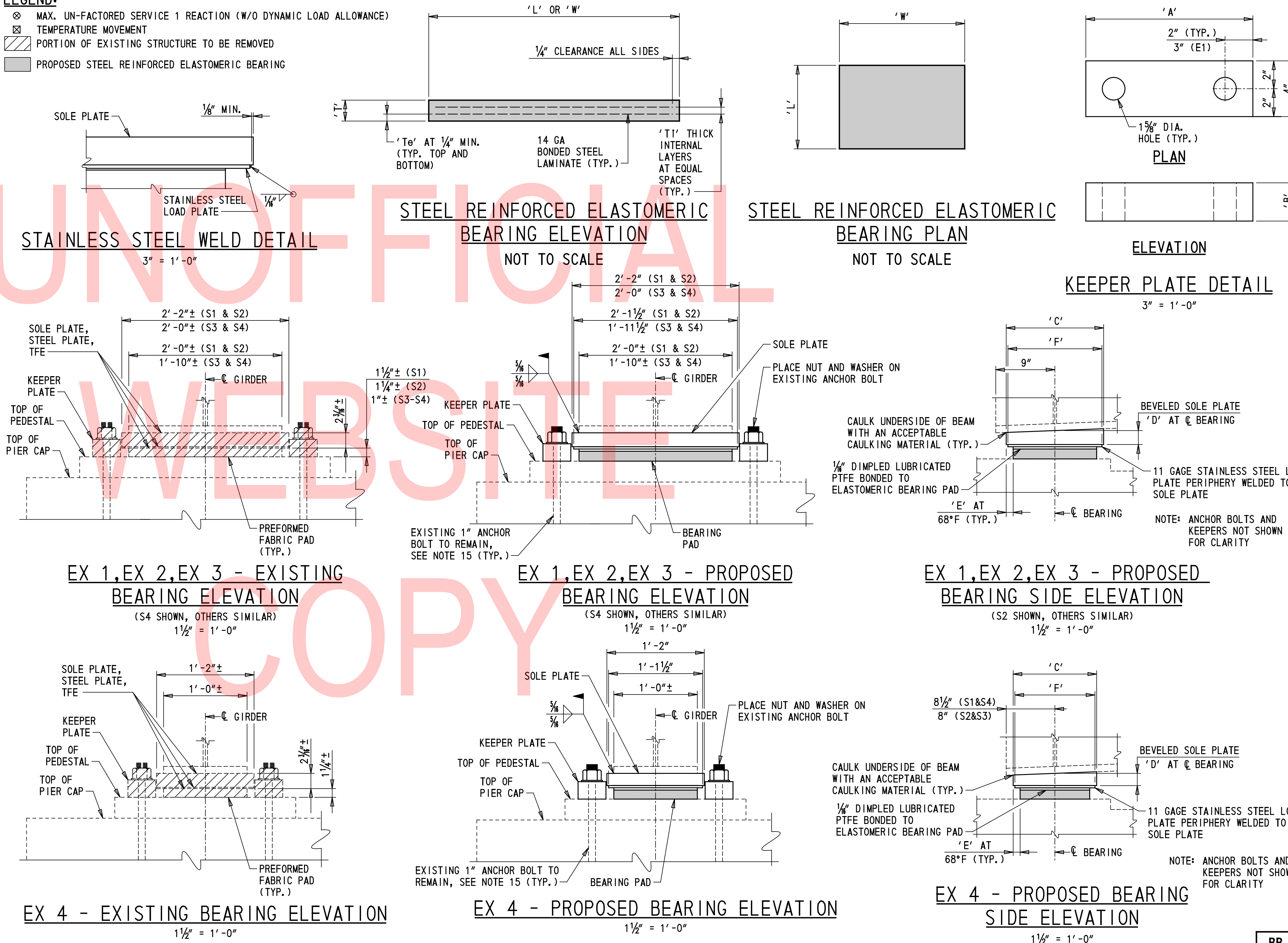
FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION FOR JACKING THE BRIDGE AND REPLACING THE BEARING, REFER TO DWG. RH-01. THE FOLLOWING IS THE SUGGESTED SEQUENCE OF INSTALLATION FOR BEARING TYPES EX1, EX2, EX3, AND EX4:

- CLEAN THE EXISTING ANCHOR BOLTS AND MAKE ANY NECESSARY REPAIRS. SEE NOTE 15 ABOVE.
- INSTALL AND WELD SOLE PLATE TO BOTTOM FLANGE OF STEEL BEAM.
- CAULK TRANSVERSE JOINTS BETWEEN THE SOLE PLATE AND BOTTOM FLANGE.
- APPLY PAINT REPAIRS TO THE EXISTING STEEL BEAM AND PAINT STEEL SURFACES OF THE BEARING. SEE NOTE 11 ABOVE.
- INSTALL PTFE AND ELASTOMERIC BEARING PAD.
- INSTALL KEEPER PLATES AND SECURE WITH FASTENED HEX NUT AND WASHER.
- GREASE THE ENTIRE BEARING ASSEMBLY.

LOCATION	BEARING DESIGNATION				LAMINATED ELASTOMERIC BEARING						KEEPER PLATE		SOLE PLATE			LOAD PLATE		
	MARK	TYPE	NEOPRENE HARDNESS (SHORE A)	TOTAL NO. REQUIRED	CAPACITY PER PAD		DIMENSION				DIMENSION		DIMENSION			DIMENSION		
					REACTION	MOVEMENT	'L'	'W'	LAYER THICKNESS		INTERIOR LAYERS	TOTAL PAD THICKNESS 'T'	'A'	'B'	'C'	'D'	'E'	'F'
PIER F2, SPAN F2, S1	EX 1	EXP.	60± 5 DURO	1	236.37 KIPS	1.243"	11"	24"	0.856"	0.250"			1	1.505"	14"	3"	16"	2"
PIER F2, SPAN F2, S2	EX 2	EXP.	60± 5 DURO	1	178.97 KIPS	1.226"	9"	24"	0.606"	0.250"	1	1.255"	12"	2 3/4"	14"	2"	2 1/2"	13 1/2"
PIER F2, SPAN F2, S3 & S4	EX 3	EXP.	60± 5 DURO	2	136.37 KIPS	1.208"	8"	22"	0.481"	0.250"	1	1.130"	11"	2 1/2"	13"	1 7/8"	2 1/2"	12 1/2"
PIER F3, SPAN F3	EX 4	EXP.	60± 5 DURO	4	127.94 KIPS	0.711"	10"	12"	0.390"	0.250"	2	1.505"	12"	2 3/4"	14"	1 3/4"	2"	13 1/2"

LEGEND:

- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION (W/O DYNAMIC LOAD ALLOWANCE)
- ⊠ TEMPERATURE MOVEMENT
- ▨ PORTION OF EXISTING STRUCTURE TO BE REMOVED
- PROPOSED STEEL REINFORCED ELASTOMERIC BEARING



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ADDENDA / REVISIONS

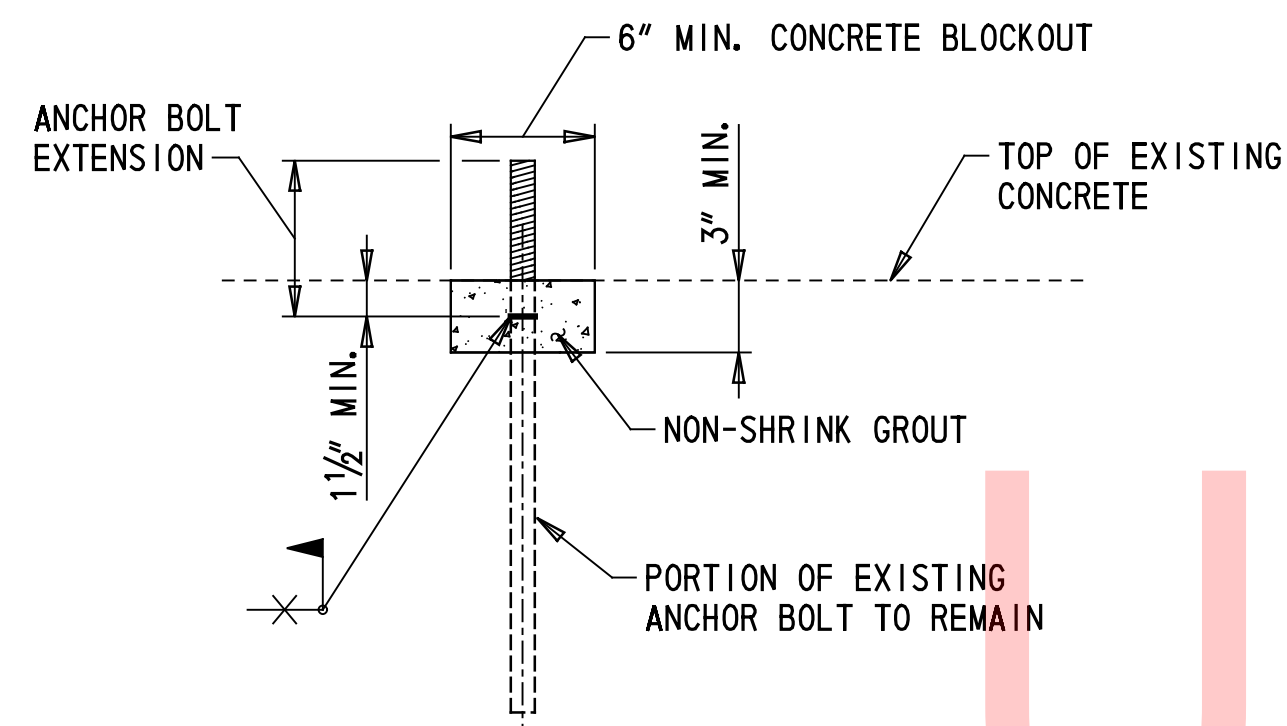
SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 758F 6149
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

BEARING DETAILS

BB-02
SECTION
PAI
SHEET NO.
111



WELDED ANCHOR BOLT REPAIR DETAIL

1 1/2" = 1' - 0"

WELDED ANCHOR BOLT PROCEDURE:

1. PROVIDE A 6" MIN. SQUARE CONCRETE BLOCKOUT AROUND THE PERIMETER OF EXISTING ANCHOR BOLT TO THE DEPTH SHOWN.
2. REMOVE EXISTING ANCHOR BOLT TO THE LIMIT SHOWN.
3. WELD PROPOSED ANCHOR BOLT EXTENSION TO EXISTING ANCHOR BOLT. PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH AASHTO/AWS D1.5M/1.5:2015 BRIDGE WELDING CODE, AND CONTRACT DOCUMENTS. ALL GROOVE AND BUTT WELDS SHALL BE COMPLETE PENETRATION UNLESS NOTED OTHERWISE. ALL WELDS SHALL BE SUBJECT TO NON-DESTRUCTIVE TESTING AS SPECIFIED IN THE BRIDGE WELDING CODE, AWS D1.5.
4. FILL CONCRETE BLOCK-OUT WITH NON-SHRINK GROUT.

ADDENDA / REVISIONS

SCALE AS NOTED

REHABILITATION OF I-95,
BEARING REPLACEMENTS

CONTRACT	BRIDGE NO.	1 758F 6149
T201907404	DESIGNED BY:	B. MARSHALL
COUNTY	CHECKED BY:	C. MALKIN
NEW CASTLE		

**CONTINGENT ANCHOR
BOLT REPAIR DETAIL**

BB-03
SECTION
PAI
SHEET NO.
112

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TRAFFIC CONTROL NOTES

- 1) THE TYPICAL APPLICATIONS FROM PART 6 OF THE DELAWARE MUTCD SHALL BE UTILIZED FOR CONSTRUCTION ACTIVITIES WHICH OCCUR OUTSIDE OF THE WORK AREAS ESTABLISHED ON THE CONSTRUCTION PHASING, MOT AND EROSION CONTROL PLANS, OR AS DIRECTED BY THE ENGINEER:
 - A. TYPICAL APPLICATION 33 - TEMPORARY TRAFFIC CONTROL DEVICE INSTALLATION, RETAINING WALL CONSTRUCTION.
 - B. TYPICAL APPLICATION 35H - ROLLING ROAD BLOCKS ON A LIMITED ACCESS MULTI-LANE, DIVIDED HIGHWAY, BRIDGE JACKING
- 2) AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

x	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
()	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 801000.

- 3) THE USE OF MILLINGS AND GRADED AGGREGATE BASE COURSE (GABC) IN THE TRAVEL WAY, TEMPORARY TRAVEL WAY, HIGH VOLUME ENTRANCES AND ACCESS RAMP FOR THE PURPOSE OF PROVIDING A TEMPORARY ROADWAY SURFACE, POTHOLE REPAIR, TAPERED EDGE FOR UTILITIES, BUTT JOINTS, AND LONGITUDINAL DROP-OFFS (MILLING AND PAVING OPERATIONS) IS PROHIBITED UNLESS IT IS OTHERWISE DESIGNATED TO BE USED IN THE CONTRACT PLANS. USE COLD PATCH, BITUMINOUS CONCRETE, BITUMINOUS CONCRETE WEDGE, OR TAPER MILL, AS NOTED IN THE CONTRACT DOCUMENTS OR APPROVED BY THE ENGINEER. PAYMENT FOR COLD PATCH, BITUMINOUS CONCRETE, BITUMINOUS CONCRETE WEDGE, OR TAPER MILL WILL NOT BE MEASURED AND PAID FOR BUT WILL BE INCIDENTAL TO THE MAINTENANCE OF TRAFFIC ITEM.
- 4) MILLINGS OR GABC SHALL BE USED AT THE FOLLOWING LOCATIONS WHERE ACCESS TO A BUSINESS, RESIDENCE, OR EDGE DROP OFF NEEDS TO BE MAINTAINED UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER TO USE BITUMINOUS CONCRETE OR COLD PATCH. ALL MILLINGS AND GABC WILL BE ROLLED AND COMPACTED TO HELP PREVENT THE MATERIAL FROM UNRAVELLING:
 - a. DRIVEWAYS
 - b. ENTRANCES
 - c. LOW VOLUME ACCESS RAMPS (IDENTIFIED IN THE CONTRACT DOCUMENTS)
 - d. EDGE DROP-OFFS ADJACENT TO LIVE ROADWAY(LANES AND SHOULDER) AND THE PROPOSED ROAD CONSTRUCTION
 - e. EDGE OF ROADWAY DROP-OFF
- 5) GRADING AND MAINTAINING BASE COURSE THAT IS BEING USED FOR ROADWAY WEDGE/FILLET BETWEEN TRAVEL LANES AND PAVEMENT BOX, EDGE OF TRAVELWAY, DRIVEWAY OR ENTRANCE ACCESS SHALL BE INCIDENTAL TO ITEM NO. 801000 - MAINTENANCE OF TRAFFIC. THE BASE COURSE MATERIAL SHALL BE PLACED AT NO GREATER THAN THE SLOPE SPECIFIED IN TABLE 6G-1 AND SHALL BE COMPACTED. EXCESS BASE COURSE MATERIAL SHALL BE PUSHED AHEAD AND USED IN THE NEXT SEGMENT AND SHALL BE INCIDENTAL TO THE PARTICULAR BASE COURSE PAY ITEM. NO SEPARATE PAYMENT SHALL BE MADE FOR MILLINGS OR GABC TEMPORARY ROADWAY MATERIAL (TRM) USED TO PROTECT EDGE DROP-OFFS, UNLESS THE MATERIAL IS EVENTUALLY UTILIZED AS PART OF A PERMANENT ROADWAY AT WHICH TIME THE MATERIAL WOULD BE PAID FOR UNDER THE RESPECTIVE CONTRACT MATERIAL ITEM.
- 6) VERTICAL DIFFERENCES SHALL BE CORRECTED IN ACCORDANCE WITH TABLE 6G-1 OF THE DELAWARE MUTCD.
- 7) W11-10 (48"x48") TRUCK WARNING SIGNS SHALL BE INSTALLED 200 FEET IN ADVANCE OF ALL ACTIVE STABILIZED CONSTRUCTION ENTRANCES (SCEs) OR IN LOCATIONS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE TRUCK WARNING SIGNS WITH OTHER SIGNING AS APPROVED BY THE ENGINEER. SCEs SHALL BE DELINEATED BY TYPE III BARRICADES AT ALL TIMES.
- 8) PERFORM ROLLING ROAD BLOCKS IN ACCORDANCE WITH TA-35H WHEN PERFORMING STRUCTURAL WORK REQUIRING JACKING. REFER TO STRUCTURAL PLANS FOR DETAILS. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMSs) SHALL BE PROVIDED IN ACCORDANCE WITH TA-35H. THE PCMSs SHALL DISPLAY THE MESSAGE "TEMP ROAD CLOSURES" (SCREEN 1) "STARTING MM/DD 10P-5A" (SCREEN 2) FOR 10 DAYS PRIOR TO THE ROAD BLOCKS.

TRAFFIC OFFICER NOTES

- 1) THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATIONS IN ACCORDANCE WITH TA-35H.
- 2) ADDITIONAL USAGE OF TRAFFIC OFFICERS OUTSIDE OF THE ABOVE REQUIREMENTS SHALL BE APPROVED BY THE ENGINEER IN CONSULTATION WITH THE TRAFFIC SAFETY SECTION.

LANE CLOSURE RESTRICTION NOTES

- 1) ALL WORK REQUIRING LANE CLOSURES SHALL BE COMPLETED DURING THE HOURS PERMITTED IN THE FOLLOWING TABLES

SINGLE LANE CLOSURES FOR 2ND ST & JACKSON ST

HOUR	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

ROLLING ROAD BLOCKS (I-95 AND RAMPS)

HOUR	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

LANE CLOSURES NOT PERMITTED
 LANE CLOSURES PERMITTED

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ADDENDA / REVISIONS	NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404 COUNTY NEW CASTLE	BRIDGE NO. DESIGNED BY: WRA CHECKED BY: WRA	CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLAN GENERAL NOTES	CS-01 SECTION WRA SHEET NO. 113
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GENERAL EROSION CONTROL NOTES

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

- THE DISTURBED AREA FOR THIS PROJECT IS 0.59 ACRES.
- THE TOTAL IMPERVIOUS AREA ADDED DUE TO THIS PROJECT IS 0.27 ACRES.
- THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A 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.

SEDIMENT AND STORMWATER MANAGEMENT NOTES

- DUST CONTROL
DUST IS TO BE CONTROLLED EXCLUSIVELY THROUGH THE USE OF WATER. COSTS ASSOCIATED WITH THE FURNISHING AND APPLICATION OF WATER FOR DUST CONTROL SHALL BE INCIDENTAL TO ALL THE CONTRACT ITEMS.
- SLOPE MAINTENANCE
PRIOR TO APPLYING TOPSOIL OR ANY SEEDING ITEM ON FINAL SLOPES, THE SLOPES SHALL BE TRACKED BY DRIVING A BULLDOZER UP AND DOWN THE SLOPES SUCH THAT THE CLEATS MAKE HORIZONTALLY ORIENTED INDENTATIONS IN THE SLOPE. ALL COSTS ASSOCIATED WITH PERFORMING THIS WORK SHALL BE INCIDENTAL TO THE SEEDING ITEM BEING APPLIED TO THE FINAL SLOPE.
- HERBICIDE APPLICATION
THE CONTRACTOR SHALL APPLY AS DIRECTED BY ENGINEER IN THE FIELD. ALL WORK SHALL BE INCIDENTAL TO THE RESPECTIVE SEEDING ITEM.
- REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
- SOIL DISTURBANCE
FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETE TED WITHIN 14 CALENDAR DAYS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR OF ALL EROSION AND SEDIMENT CONTROLS AND STORMWATER MANAGEMENT PRACTICES DURING THE PROJECT.
- EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE CONSTRUCTION PHASING, M.O.T. AND EROSION AND SEDIMENT CONTROL PLAN OR AS DIRECTED BY ENGINEER IN THE FIELD.
- CONTRACTOR SHALL MOW GRASS AREAS AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCIDENTAL TO THE RESPECTIVE SEEDING ITEM.

UNOFFICIAL
WEBSITE
COPY

Vincent W. Davis 11/14/2019

DELDOT STORMWATER ENGINEER

DATE






"I CERTIFY TO THE EST 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."

EROSION & SEDIMENT CONTROL	
— CFL —	COMPOST FILTER LOG
	COMPOST FILTER LOG / LENGTH
	DEWATERING BAG
	DEWATERING BASIN
	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
	REINFORCED SILT FENCE / LENGTH
— RSF —	REINFORCED SILT FENCE
	SUPER SILT FENCE / LENGTH
— SSF —	SUPER SILT FENCE
	SUMP PIT
	SEDIMENT TRAP / NUMBER
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
— T —	TURBIDITY CURTAIN

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ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	EROSION CONTROL NOTES	CS-02
				T201907404	DESIGNED BY: K. VOLZ		SECTION
				COUNTY	CHECKED BY: J. COSLER		WRA
				NEW CASTLE			SHEET NO. 114

CONSTRUCTION PHASING LEGEND

-  PROPOSED CONSTRUCTION THIS PHASE
-  RUNOUT LENGTH SHADING
-  PROPOSED TEMPORARY SIGN
-  TEMPORARY P. C. C. SAFETY BARRIER, UNPINNED
-  TEMPORARY SAND CRASH CUSHION

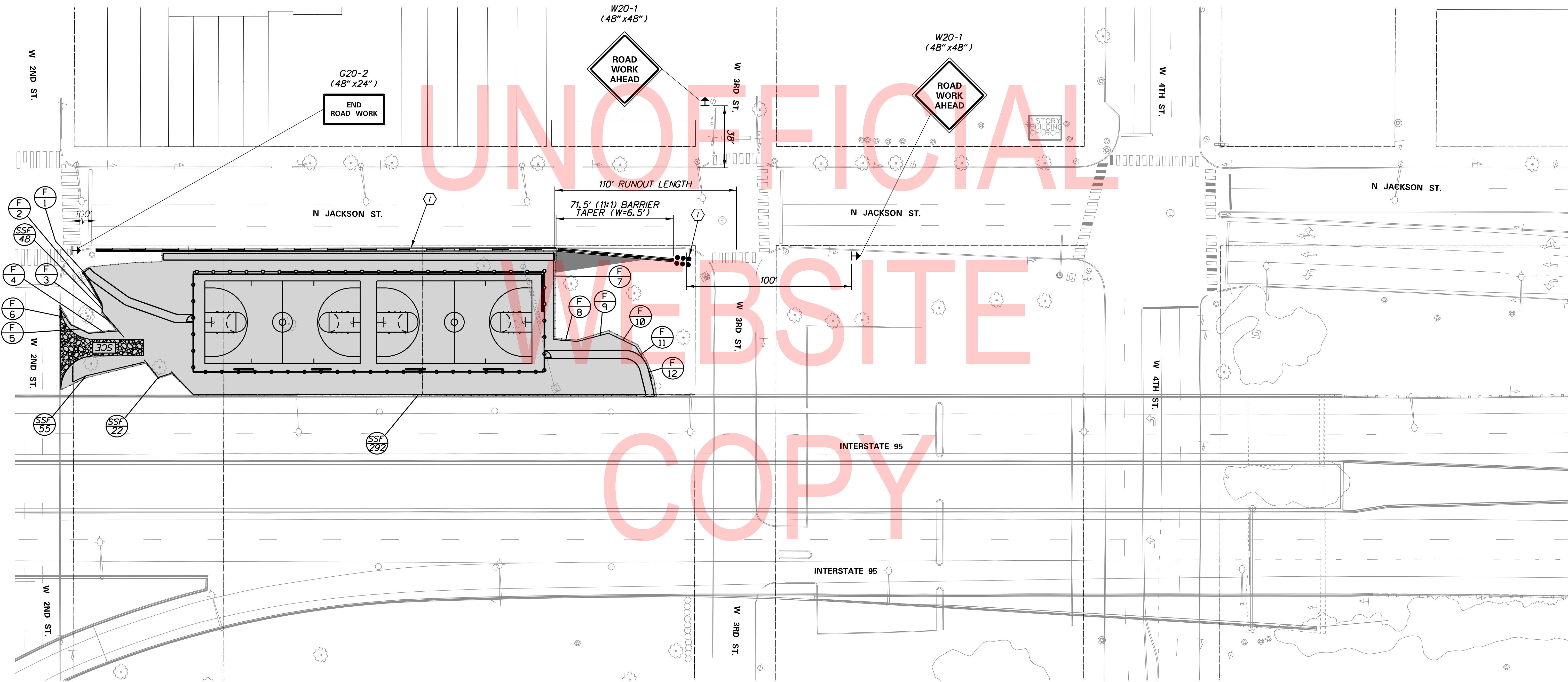
SEQUENCE OF CONSTRUCTION

- ① INSTALL PEDESTRIAN DETOUR AS SHOWN ON DP-01.
- ② INSTALL TEMPORARY TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. MAINTAIN TRAFFIC IN EXISTING TRAVEL LANES. CONCURRENTLY INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCES AS SHOWN.
- ③ CONSTRUCT RETAINING WALL AND BASKETBALL COURTS.
- ④ UPON THE COMPLETION OF THE RETAINING WALL CONSTRUCTION REMOVE TRAFFIC CONTROL DEVICES.
- ⑤ UPON STABILIZATION OF ALL AREAS AND WITH THE APPROVAL OF THE ENGINEER REMOVE THE EROSION AND SEDIMENT CONTROLS AND STABILIZE ALL AREAS DISTURBED BY THE PROCESS.

TEMPORARY FENCE SCHEDULE

NO.	QTY.	DESCRIPTION	NOTES
1	22'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634730.4705, 615381.2363) TO (634731.1004, 615403.4103) (+/-)
2	6'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634731.1004, 615403.4103) TO (634729.0008, 615408.5267) (+/-)
3	15'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634729.0008, 615408.5267) TO (634732.3341, 615422.8507) (+/-)
4	18'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634732.3341, 615422.8507) TO (634715.4829, 615415.6254) (+/-)
5	12'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634715.4829, 615415.6254) TO (634708.2897, 615405.9317) (+/-)
6	11'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634708.2897, 615405.9317) TO (634707.3072, 615395.4366) (+/-)
7	53'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634987.5895, 615503.3507) TO (634962.8057, 615550.3556) (+/-)
8	14'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634962.8057, 615550.3556) TO (634974.9879, 615558.0355) (+/-)
9	19'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634974.9879, 615558.0355) TO (634993.9591, 615562.4395) (+/-)
10	18'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(634993.9591, 615562.4395) TO (635004.7933, 615577.2066) (+/-)
11	12'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(635004.7933, 615577.2066) TO (635005.4578, 615589.3605) (+/-)
12	10'	CONSTRUCTION SAFETY FENCE (ITEM 727006)	(635005.4578, 615589.3605) TO (635004.1721, 615599.3641) (+/-)

NOTE: COORDINATES GIVEN AS (NORTHING, EASTING)



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ADDENDA / REVISIONS




**REHABILITATION OF I-95,
BEARING REPLACEMENTS**

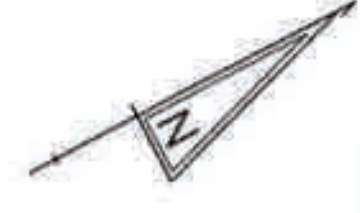
CONTRACT	BRIDGE NO.
T201907404	
COUNTY	DESIGNED BY: WRA
NEW CASTLE	CHECKED BY: WRA

**CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN - PHASE 1**

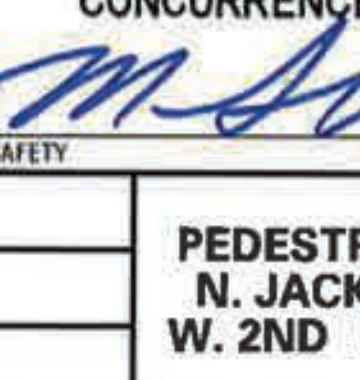
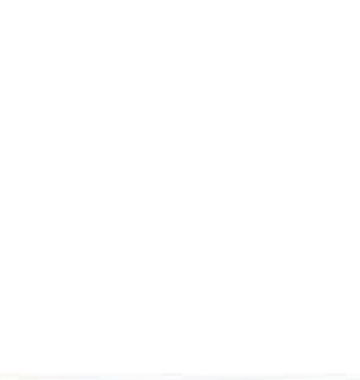
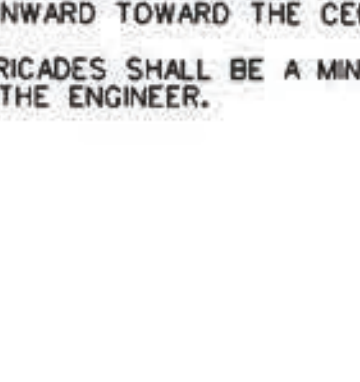
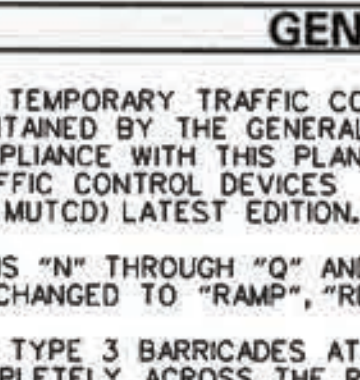
CS-101
SECTION
WRA
SHEET NO.
115

SPECIAL SIGNS

 WORK AREA



LEGEND



GENERAL NOTES

1. ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN COMPLIANCE WITH THIS PLAN AND THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
2. SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
3. "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY, FROM CURB TO CURB, OR FROM EDGE OF ROAD TO EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
4. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

SPECIAL NOTES

5. PEDESTRIAN TRAFFIC SIGNAL DISPLAYS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED AND TURNED AWAY FROM THE CROSSWALK.
6. THE CONTRACT NO. T201907404 CONTRACTOR SHALL COORDINATE WITH THE CONTRACT NO. T201907402 REHABILITATION OF I-95, 2ND STREET ON-RAMP IMPROVEMENTS CONTRACTOR DURING IMPLEMENTATION OF THIS DETOUR TO ENSURE THAT OVERLAPPING OR CONFLICTING DETOURS ARE AVOIDED. THE CONTRACT NO. T201907404 CONTRACTOR SHALL PROVIDE ADDITIONAL SIGNS AS DIRECTED BY THE ENGINEER SHOULD A CONFLICT ARISE.

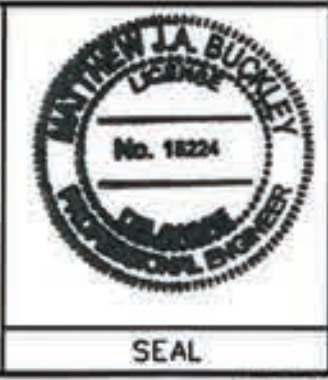
PREPARED BY



Whitman, Reardon and Associates, LLP
Engineers - Architects - Environmental Planners Est. 1915

9/18/19

THIS SEAL APPLIES TO ALL SHEETS BEARING THE "WRA" SECTION DESIGNATION. DATE



SEAL

CONCURRENCE FOR IMPLEMENTATION

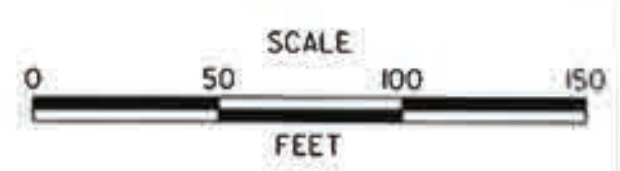
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DP-01

TRAFFIC SAFETY

DATE

ADDENDA / REVISIONS



REHABILITATION OF I-95, BEARING REPLACEMENTS

CONTRACT
T201907404
COUNTY
NEW CASTLE

PERMIT NO.
DESIGNED BY: WRA
CHECKED BY: WRA

PEDESTRIAN DETOUR PLAN
N. JACKSON ST. BETWEEN
W. 2ND ST. AND W. 3RD ST.

SECTION
WRA
SHEET NO.
116

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