



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

VIA WEBSITE POSTING AND MAILING

March 4, 2020

Contract No. T201907404.01
Federal Aid Project No. NH-N059(46)
Rehabilitation of I-95, Bearing Replacements
New Castle County

Ladies and Gentlemen:

Enclosed is Addendum No. 4 for the referenced contract consisting of the following:

1. The Bid Proposal Cover, revised, to be substituted for the same page of the Proposal.
2. One (1) page, Table of Contents, page v, revised, to be substituted for the same page in the Proposal.
3. Three (3) pages, Special Provision, 628503 - FRP Jacket and Epoxy Grout Concrete Pier Encasement, pages 60A through 60C, new, to be added to the Proposal.
4. Six (6) pages, Bid Proposal Forms, pages 1 through 6, **revised**, to be substituted for the same pages in the Proposal.

The following Item Numbers have revised quantities: 628001, 628041 and 628042

The following Item Numbers have been added: 613000, 613001 and 628503

5. The following plan sheets have been added: 18A, 18B, 20A, 20B, 24A and 112A.
6. The following plan sheets have been revised: 1A, 3, 5, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 30, 83 and 102.
7. Bid Express Amendment File No. 1, **new**.

Please note the revisions listed above and submit your bid based upon this information.

Sincerely,

~signature on file~

Connie Ivins
Competitively Bid Contracts Coordinator
Delaware Department of Transportation

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T201907404.01

FEDERAL AID PROJECT NO. NH-N059(46)

CFDA NO. 20.205

REHABILITATION OF I-95, BEARING REPLACEMENTS

NEW CASTLE COUNTY

ADVERTISEMENT DATE: January 20, 2020

COMPLETION TIME: 411 Calendar Days

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
DELAWARE DEPARTMENT OF TRANSPORTATION
AUGUST 2016

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time ~~February 18~~
March 3 24, 2020

Contract No. T201907404.01

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623500 - BRONZE BEARINGS	<u>58</u>
628503 - FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	<u>60A</u>
763501 - CONSTRUCTION ENGINEERING	<u>61</u>
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628503 - FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT

Description:

This work consists of furnishing all materials and constructing a protective pier encasement. The encasement shall consist of a fiber reinforced plastic (FRP) outer jacket with the space between the jacket and pier filled with a pourable epoxy grout.

Materials:

1. Jackets - The FRP jackets shall have interlocking joints. The jackets shall be fabricated from fiberglass and polyester resins and shall be a minimum thickness of 1/8 inch (3 mm), unless otherwise shown on the Plans. The inside face of the jacket shall be textured similar to a sandblasted surface and the surface shall have no bond-inhibiting agents that will come into contact with the epoxy grout. The jackets shall be provided with non-corrosive standoffs, which will maintain the jackets in the required positions (away from the face of the pier) to provide the specified void. The jacket shall be capable of being opened, placed around a pier and then returned to its original shape without damaging the jacket. Compressible sealing strips shall be installed at the bottoms of the jackets to seal the annular space between the pier and the jacket.

The jacket shall meet the following physical-characteristics:

- a. Water Absorption (ASTM D570) 1% Max.
 - b. Ultimate Tensile Strength (ASTM D638) Longitudinal,
transverse and diagonal. 15,000 psi Min.
 - c. Flexural Strength (ASTM D796) 25,000 psi Min.
 - d. Flexural Modulus of Elasticity (ASTM D790) 700,000 psi Min.
 - e. Barcol Hardness (ASTM D2583) 45 ± 5
 - f. Color Grey or Translucent
2. Pourable Epoxy Grout - The epoxy grout shall be a 100% solids pourable epoxy grout. The epoxy grout shall consist of an epoxy binder and epoxy extender as follows:
 - a. Binder - The binder shall be a two (2) component 2:1 ratio 100% solids pourable epoxy material. It shall be moisture insensitive for application both above and below water and it shall adhere to wet wood, steel, concrete and the FRP jacket.
 - b. Epoxy Extender - The filler shall be an epoxy extender compatible with and supplied by the manufacturer of the epoxy.
 - c. Mixing - The binder shall be mechanically mixed in strict accordance with manufacturer's instructions. One 3-gallon unit of the mixed binder shall be combined with the designated volume of epoxy extender to achieve the following consistencies:
 - i. Pourable. (3) gallons epoxy plus (3) – 48 pound bags epoxy extender
 - d. Mortar Strength - When mixed on a ratio of one part binder to one part epoxy extender, 2 inch cubes of this material at seven (7) days [curing at 66° F to 74° F] shall be 8,000 psi when tested according to ASTM C109 Modified.

3. Trowelable Epoxy Mortar - The trowel grade epoxy shall be composed of 100% solids trowel grade epoxy binder and epoxy extender as follows:
 - a. Binder - The binder shall be a two (2) component 2:1 ratio trowel grade epoxy material. It shall be moisture insensitive for application both above and below water. It shall adhere to wet concrete, steel and the FRP jacket.
 - b. Epoxy Extender - The epoxy extender shall be an epoxy extender compatible with and supplied by the manufacturer of the epoxy.
 - c. Mixing - The binder shall be machine mixed in strict accordance with manufacturer's instructions. One part of binder shall be combined with a maximum of one part of epoxy extender.
 - d. Mortar Strength - When mixed on a ratio of one-part binder to one-part filler, 2 inch cubes of this material at seven (7) days [curing at 60° F to 74° F] shall be 8,000 psi when tested according to ASTM C109 Modified.
 - e. All materials shall be compatible and shall be supplied from a single source.

Construction Methods:

Shop drawings, showing location of stand-off spacers, method of fastening jacket form to pier surface, sealing the jacket after installation and bracing during placement of materials in the annular space between the jacket and the pier, shall be prepared by the Contractor and submitted for approval prior to any field installations.

The surface of the pier shall be prepared in accordance with manufacturer's recommendations. All surfaces to be covered with protective jackets shall be thoroughly cleaned of oil, grease, dirt, broken and unsound concrete, marine growth, and any other deleterious material, which would prevent proper bonding of filled jacket or seating of the non-filled jacket. Cleaning may be accomplished by high pressure blasting, wire brushing, or water laser. Sandblasting is not permitted. In addition to the above surface preparation, any exposed reinforcing steel shall be cleaned using similar methods to remove all rust and scale prior to installation of the protective jacket. If the Contractor elects to use an alternative method, they will be responsible for amending the permit at no additional time or cost to the Department. No placement of the jackets will be allowed until the surface preparation has been approved.

The Contractor shall submit, for approval, a method for cleaning the piers (as per manufacturer's recommendations) and for the collection and proper disposal of all material removed. Cleaning the piers may be done under wet or dry conditions. If under wet conditions, the area must be contained to collect all removed materials. Under dry conditions, all removed materials shall be collected prior to entering the stream or soil.

The FRP jacket shall be spread open by disengaging the interlocking joint. Then placed in position around the pier and fitted together and the bottom of the jacket form shall be sealed against the pier surface. Filling of the annular void between the pier and the pier jacket shall be done in accordance with the material manufacturer's instructions. External bracing materials shall be removed after completion of the work and the exterior surfaces of the jackets shall be cleaned of any filler material or other extraneous material deposited on the FRP jackets. Around the top of the jacket a bevel shall be constructed with the trowel grade epoxy mortar to prevent water from ponding on the FRP jacket tops.

Method of Measurement:

The quantity of FRP jacket and epoxy grout pier encasement will be field measured as the total number of square feet of pier surface encased and accepted.

Basis of Payment:

The quantity of FRP jacket and epoxy grout pier encasement will be paid for at the Contract unit price per square foot. Price and payment will constitute full compensation for furnishing and placing all materials as described in this specification, for cleaning and preparing the piers, collecting and disposing of material removed during the pier cleaning process, for excavating and backfilling streambed material, and for all labor, equipment, tools and incidentals required to complete the work.

03/02/2020



Delaware Department of Transportation

03/04/2020 11:42:40 AM

AASHTOWare Project™ Version 4.2 Revision 026

Proposal Schedule of Items

Page 1 of 6

Proposal ID: T201907404.01

Project(s): T201907404

Contractor: _____

SECTION: 0001 REHABILITATION OF I-95, BEARING REPLACEMENTS

Alt Set ID: _____ **Alt Mbr ID:** _____

All figures must be typewritten

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0010	202000 EXCAVATION AND EMBANKMENT	700.000 CY	_____	_____	_____	_____
0020	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	LUMP SUM		_____	_____
0030	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	110.000 SY	_____	_____	_____	_____
0040	211500 TREE REMOVAL, 6" TO 15" DIAMETER	1.000 EACH	_____	_____	_____	_____
0050	211501 TREE REMOVAL, GREATER THAN 15" TO 25" DIAMETER	2.000 EACH	_____	_____	_____	_____
0060	211502 TREE REMOVAL, GREATER THAN 25" TO 37" DIAMETER	2.000 EACH	_____	_____	_____	_____
0070	301001 GRADED AGGREGATE BASE COURSE, TYPE B	250.000 CY	_____	_____	_____	_____
0080	401007 SUPERPAVE TYPE C, PG 76-22 (CARBONATE STONE)	170.000 TON	_____	_____	_____	_____
0090	401016 SUPERPAVE TYPE B, PG 76-22	170.000 TON	_____	_____	_____	_____
0100	604000 JACKING BRIDGE	LUMP SUM	LUMP SUM		_____	_____
0110	604001 PROTECTIVE SHIELD	LUMP SUM	LUMP SUM		_____	_____



Delaware Department of Transportation

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			Dollars	Cents	Dollars	Cents
0120	607010 MODULAR BLOCK RETAINING WALLS	796.000 SF	_____	_____	_____	_____
0130	610005 PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	13.000 CY	_____	_____	_____	_____
0140	611001 BAR REINFORCEMENT, EPOXY COATED	2,152.000 LB	_____	_____	_____	_____
0145	613000 EPOXY CONCRETE SEALER	4,043.000 SF	_____	_____	_____	_____
0146	613001 SILICONE-BASED ACRYLIC CONCRETE SEALER	23,170.000 SF	_____	_____	_____	_____
0150	615001 STEEL STRUCTURES	LUMP SUM	LUMP SUM		_____	_____
0160	615004 REPLACING STEEL RIVETS/BOLTS	8.000 EACH	_____	_____	_____	_____
0170	623000 ELASTOMERIC BEARINGS	73.000 EACH	_____	_____	_____	_____
0180	623002 DISC BEARINGS	8.000 EACH	_____	_____	_____	_____
0190	623003 REPLACE ANCHOR BOLTS	24.000 EACH	_____	_____	_____	_____
0200	623500 BRONZE BEARINGS	95.000 EACH	_____	_____	_____	_____



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0210	628001 REPAIR OF CONCRETE STRUCTURE BY EPOXY INJECTION	272.000 LF	_____	_____	_____	_____
0220	628041 DEEP SPALL REPAIR	265.000 CF	_____	_____	_____	_____
0230	628042 REHABILITATION OF PORTLAND CEMENT CONCRETE MASONRY	3.000 CY	_____	_____	_____	_____
0240	628070 DRILLING HOLES AND INSTALLING DOWELS	288.000 EACH	_____	_____	_____	_____
0245	628503 FRP JACKET AND EPOXY GROUTCONCRETE PIER ENCASUREMENT	4,990.000 SF	_____	_____	_____	_____
0250	705001 PORTLAND CEMENT CONCRETE SIDEWALK, 4"	980.000 SF	_____	_____	_____	_____
0260	727000 CHAIN LINK FENCE	545.000 LF	_____	_____	_____	_____
0270	727006 TEMPORARY CONSTRUCTION FENCE	210.000 LF	_____	_____	_____	_____
0280	727010 CHAIN LINK FENCE GATE	2.000 EACH	_____	_____	_____	_____
0290	762001 SAW CUTTING, CONCRETE, FULL DEPTH	8.000 LF	_____	_____	_____	_____



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0300	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP SUM	LUMP SUM		_____	_____
0310	763501 CONSTRUCTION ENGINEERING	LUMP SUM	LUMP SUM		_____	_____
0320	763508 PROJECT CONTROL SYSTEM DEVELOPMENT PLAN	LUMP SUM	LUMP SUM		_____	_____
0330	763509 CPM SCHEDULE UPDATES AND/OR REVISED UPDATES	12.000 EAMO			_____	_____
0340	763516 BASKETBALL COURT EQUIPMENT	LUMP SUM	LUMP SUM		_____	_____
0350	763623 NETTING MIGRATORY BIRD EXCLUSION	LUMP SUM	LUMP SUM		_____	_____
0360	801000 MAINTENANCE OF TRAFFIC	LUMP SUM	LUMP SUM		_____	_____
0370	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	1,025.000 EADY			_____	_____
0380	806001 TRAFFIC OFFICERS	690.000 HOUR		75.00000		51,750.00
0390	807001 FURNISH AND INSTALL TEMPORARY PORTLAND CEMENT CONCRETE SAFETY BARRIER, UNPINNED	400.000 LF			_____	_____
0400	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	300.000 EADY			_____	_____



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Proposal Schedule of Items

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Contractor: _____

SECTION: 0001 REHABILITATION OF I-95, BEARING REPLACEMENTS

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All figures must be typewritten

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0410	809007 FURNISH SAND CRASH CUSHION ARRAY	6.000 EACH	_____	_____	_____	_____
0420	809008 INSTALL SAND CRASH CUSHION ARRAY	6.000 EACH	_____	_____	_____	_____
0430	810001 TEMPORARY WARNING SIGNS AND PLAQUES	600.000 EADY	_____	_____	_____	_____
0440	813001 TEMPORARY BARRICADES, TYPE III	500.000 LFDY	_____	_____	_____	_____
0450	817001 PAINTING OF WHITE OR YELLOW, SYMBOL/LEGEND	9,400.000 SF	_____	_____	_____	_____
0460	839001 FURNISH AND INSTALL WOOD POLE	1.000 EACH	_____	_____	_____	_____
0470	839003 REMOVAL OF WOOD POLE	1.000 EACH	_____	_____	_____	_____
0480	842001 ELECTRIC SERVICE ON WOOD POLE	1.000 EACH	_____	_____	_____	_____
0490	842005 REMOVAL OF ELECTRIC SERVICE ON WOOD OR METAL POLE	1.000 EACH	_____	_____	_____	_____
0500	850532 TEMPORARY LIGHTING	LUMP SUM	LUMP SUM		_____	_____
0510	905500 SUPER SILT FENCE	417.000 LF	_____	_____	_____	_____



Delaware Department of Transportation

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Proposal Schedule of Items

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Proposal ID: T201907404.01

Project(s): T201907404

Contractor: _____

SECTION: 0001 REHABILITATION OF I-95, BEARING REPLACEMENTS

Alt Set ID: _____ **Alt Mbr ID:** _____

All figures must be typewritten

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0520	908004 TOPSOIL, 6" DEPTH	1,100.000 SY	_____	_____	_____	_____
0530	908014 PERMANENT GRASS SEEDING, DRY GROUND	1,100.000 SY	_____	_____	_____	_____
0540	908020 EROSION CONTROL BLANKET MULCH	179.000 SY	_____	_____	_____	_____
0550	908023 STABILIZED CONSTRUCTION ENTRANCE	150.000 SY	_____	_____	_____	_____
Section: 0001			Total:		_____	
			Total Bid:		_____	

ADDENDUM PREPARED BY
WRA Whitman, Requardt and Associates, LLP
 Engineers - Architects - Environmental Planners Est. 1915

William A. Geschke 02/11/2020
 DATE

THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM *1: BID PROPOSAL COVER AND SHEETS 1A, 36, 77

SEAL

ADDENDUM PREPARED BY
 PENNONI ASSOCIATES INC.

Clifford W. Malkin 02/12/2020
 DATE

THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM *2: SHEETS 26, 94, 107

SEAL

ADDENDUM PREPARED BY
WRA Whitman, Requardt and Associates, LLP
 Engineers - Architects - Environmental Planners Est. 1915

William A. Geschke 02/12/2020
 DATE

THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM *2: 1A, 62 & BID PROPOSAL SHEET 77

SEAL

ADDENDUM PREPARED BY
 PENNONI ASSOCIATES INC.

Clifford W. Malkin 03/02/2020
 DATE

THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM *4: 13, 14, 15, 17, 18, 18A, 18B, 19, 20, 20A, 20B, 21, 22, 23, 24, 24A, 83, 102, 112A

SEAL

ADDENDUM PREPARED BY
WRA Whitman, Requardt and Associates, LLP
 Engineers - Architects - Environmental Planners Est. 1915

William A. Geschke 03/02/2020
 DATE

THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM *4: 1A, 3, 5, 30

SEAL

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ADDENDA / REVISIONS

ADDENDUM 1, SHEET ADDED	D.A.N. 02/11/2020
ADDENDUM 2	D.A.N. 02/12/2020
ADDENDUM 4	D.A.N. 03/02/2020

NOT TO SCALE

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

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

ADDENDA AND REVISIONS

AR-01
SECTION
WRA
SHEET NO.
1A

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

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.

SECTION 200

- 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:
 - EXISTING ASPHALT PATH

SECTION 700

- 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

- 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

- 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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WRA	CONSTRUCTION PLAN	5
WRA	GRADING PLAN	6
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WRA	CONSTRUCTION PHASING, MOT AND EROSION CONTROL PLANS	113-115
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ADDENDA / REVISIONS

Added index of sheets

D.A.N. 03/02/2020

NOT TO SCALE

REHABILITATION OF I-95,
BEARING REPLACEMENTS

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

NOTES
& INDEX OF SHEETS

PN-01

SECTION
WRA
SHEET NO.
3

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.
- 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.
- 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.
- 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.
- 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

- 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.

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 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.
- 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.~~
REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED TO THIS PROJECT.
- 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.
- 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.~~
THE CHRISTIANA RIVER IS SUBJECT TO TIME OF YEAR (TOY) RESTRICTION FROM MARCH 1 THROUGH JUNE 30. NO WORK MAY OCCUR IN THE WATER COLUMN DURING THE TOY RESTRICTION.
- 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.
- LOAD RATING:
THIS PROJECT DOES NOT CHANGE THE LOAD RATING OF THE BRIDGE.
- 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. IF THE CONTRACTOR DOES NOT INTEND TO WORK IN THE AREA UNTIL AFTER AUGUST 1, NO NETTING IS REQUIRED. PAYMENT IS INCLUDED IN ITEM 763623 - NETTING, MIGRATORY BIRD EXCLUSION.
- 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
N.T.S. = NOT TO SCALE
FRP = FIBER REINFORCED PLASTIC
- CONCRETE SEALER:
REFER TO THE DIAGRAMS CONTAINING SILICONE ACRYLIC CONCRETE SEALER LIMITS ON DWGS. PR-01 TO PR-08. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS AT EACH PIER. SILICONE ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO THE REMAINING EXPOSED CONCRETE SURFACES AT EACH PIER.

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
24A	PR-08A	FRP JACKET 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: 22		

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
613000	EPOXY CONCRETE SEALER	SF	4043
613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	23170
615004	REPLACE STEEL RIVETS/BOLTS	EA	8
623000	ELASTOMERIC BEARINGS	EA	56
628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	174-227
628041	DEEP SPALL REPAIR	CF	163-185
628042	REHABILITATION OF PCC MASONRY	CY	1
628070	DRILLING HOLES AND INSTALLING DOWELS	EA	140
628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	4990
763623	NETTING, MIGRATORY BIRD EXCLUSION	LS	1

NOTE:

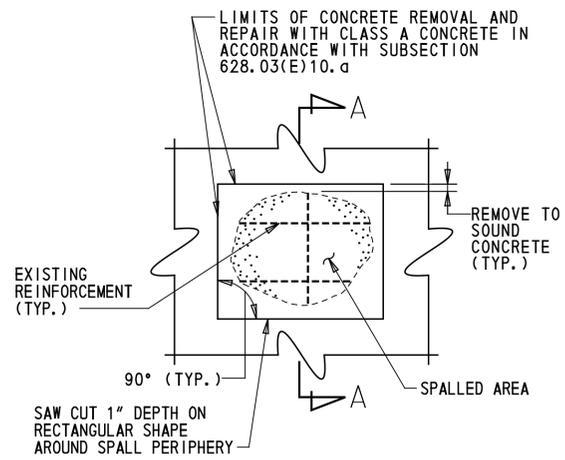
QUANTITIES INCLUDE CONTINGENT PERCENTAGES AS NOTED IN NOTE 9.

- COORDINATION WITH OTHER PROJECTS:
ALL WORK ON THE NORTHBOUND HALF OF BRIDGE 1-744 MUST BE COMPLETED BY MARCH 1, 2021. THIS INCLUDES WORK AT PIERS 1W, 2W, 3W, 4W, 5W, AND 6W.

THE CONTRACTOR IS HEREBY NOTIFIED THAT THERE MAY BE OTHER ACTIVE CONSTRUCTION CONTRACTS WITHIN THE AREA OF THIS WORK AND COORDINATION BETWEEN CONTRACTS MAY BE REQUIRED. NO PAYMENT WILL BE MADE FOR COORDINATION EFFORTS BETWEEN CONTRACTS.

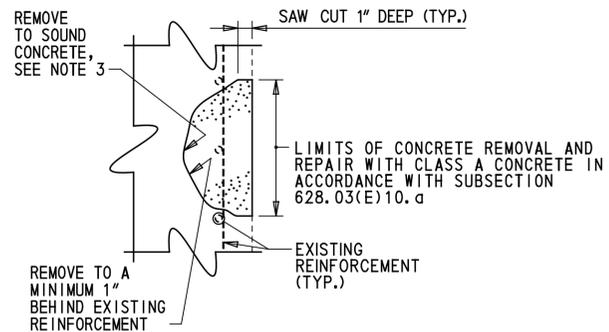
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ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	BRIDGE PROJECT NOTES AND QUANTITIES	PN-01
1. ADDED SUBSTRUCTURE REPAIR NOTES AND QUANTITIES - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
		NEW CASTLE	CHECKED BY: C. MALKIN	SHEET NO.	13			

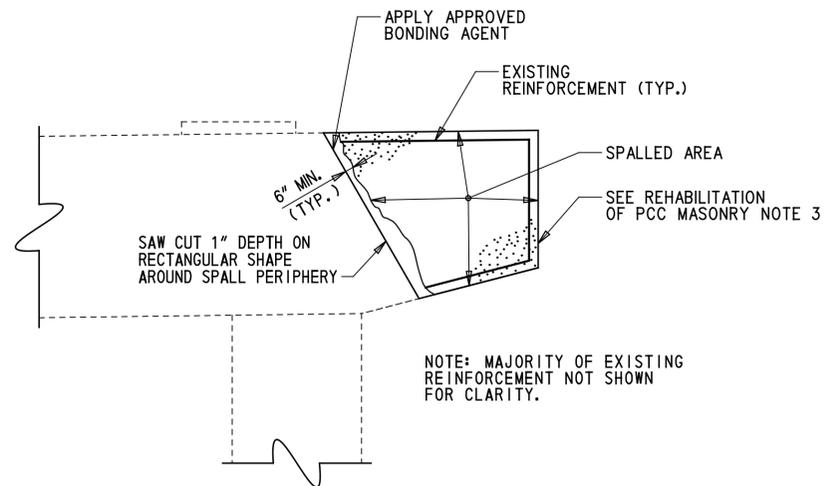


PLAN

DEEP SPALL REPAIR (ITEM 628041)



SECTION A-A



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 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

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	PIERS 1 THROUGH 6	PR-01 TO PR-08	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	139 181	25	174 227
37	REPAIR DEEP SPALLS IN CONCRETE SUBSTRUCTURE	PIERS 1, 3, 5, 6	PIERS 1 THROUGH 6	PR-01 TO PR-08	628041	DEEP SPALL REPAIR	CF	136	148	163
39	CONSTRUCTING SHEAR BLOCKS	PIERS 1, 3, 5, 6		PR-01 TO PR-09	628042	REHABILITATION OF PCC MASONRY	CY	0	EQ	1
					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
41	CLEAN AND SEAL CONCRETE SURFACES	PIERS 1 THROUGH 6	INCLUDES CLEANING DIRT AND DEBRIS FROM TOPS OF SUBSTRUCTURE UNITS	PR-01 TO PR-08	613000	EPOXY CONCRETE SEALER	SF	4043	0	4043
M1	BR 1-744: INSTALL FIBERGLASS JACKET AROUND PIER COLUMN	PIERS 2 THROUGH 5		PR-01 TO PR-08A	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	23170	0	23170
					628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	4990	0	4990

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ADDENDA / REVISIONS
 ADDITIONAL SUBSTRUCTURE REPAIR - C. MALKIN 3/2/2020

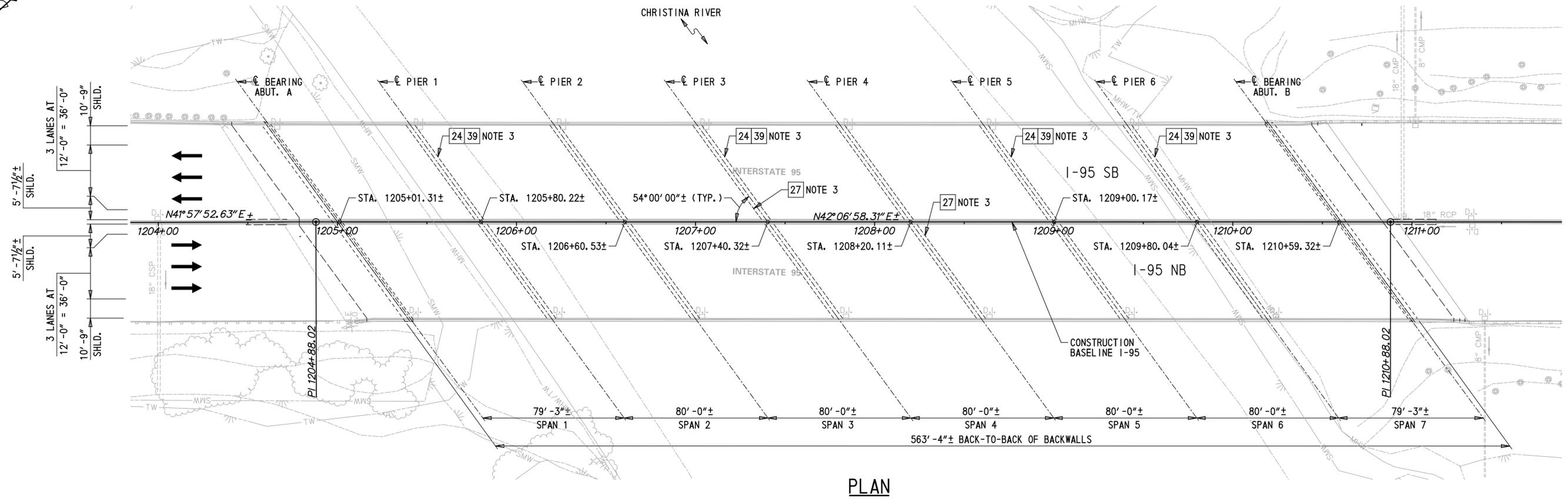
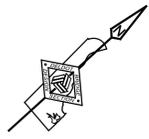
NOT TO SCALE

REHABILITATION OF I-95,
 BEARING REPLACEMENTS

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

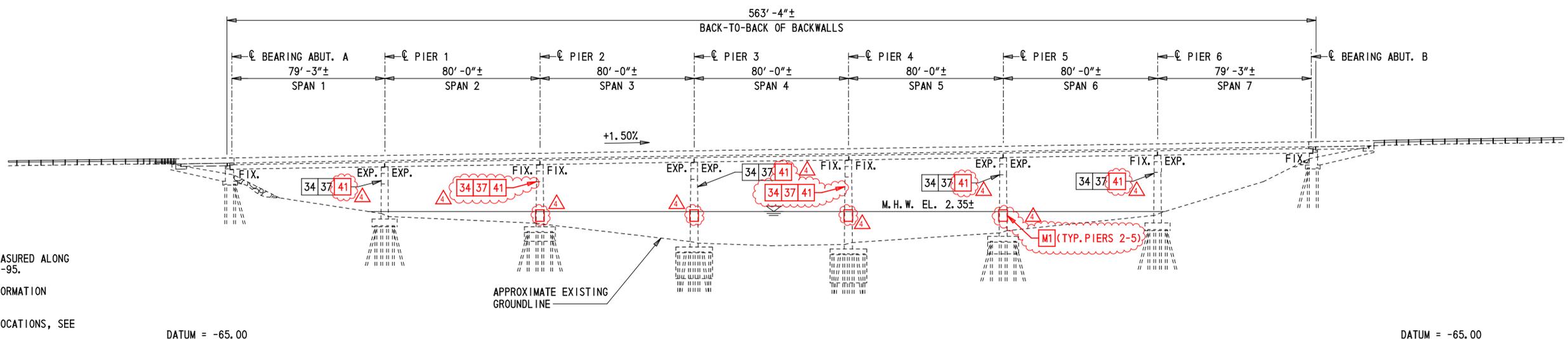
CONCRETE REPAIR DETAILS
 & SUMMARY OF PROPOSED
 REPAIR & RECONSTR. ITEMS

PN-02
SECTION
PAI
SHEET NO.
14



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.

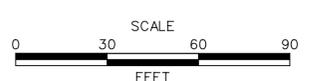
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DEVELOPED SECTION ALONG CONSTRUCTION BASELINE I-95

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ADDENDA / REVISIONS
1. ADDITIONAL SUBSTRUCTURE REPAIR - C. MALKIN 3/2/2020

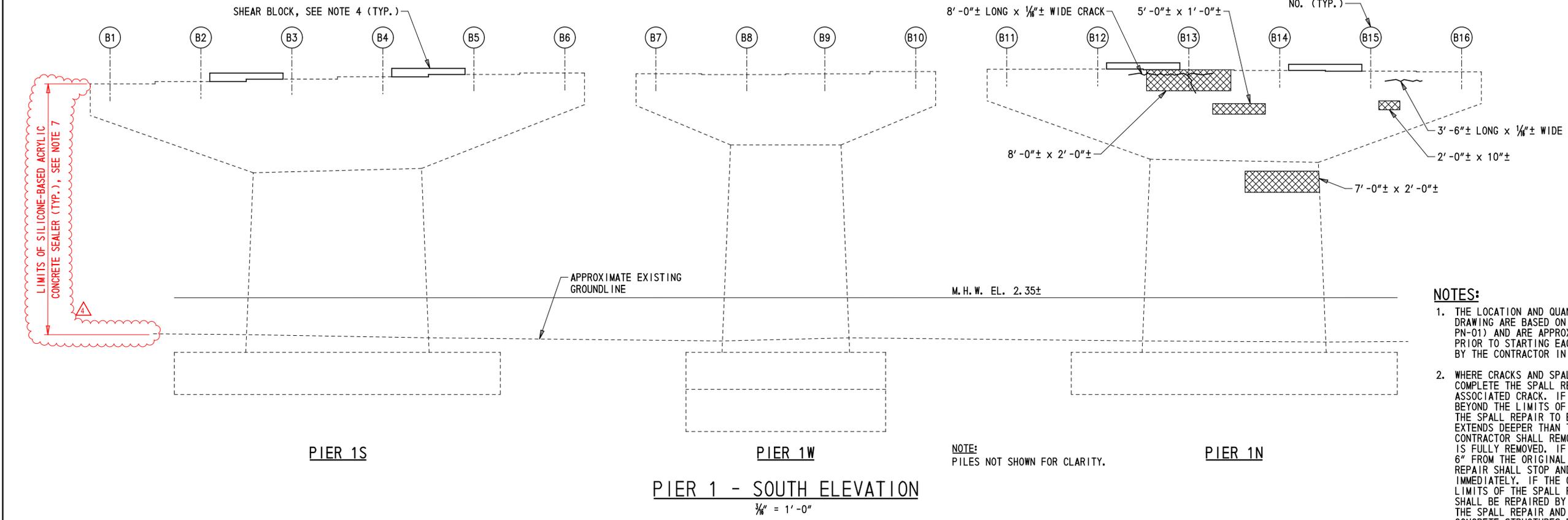
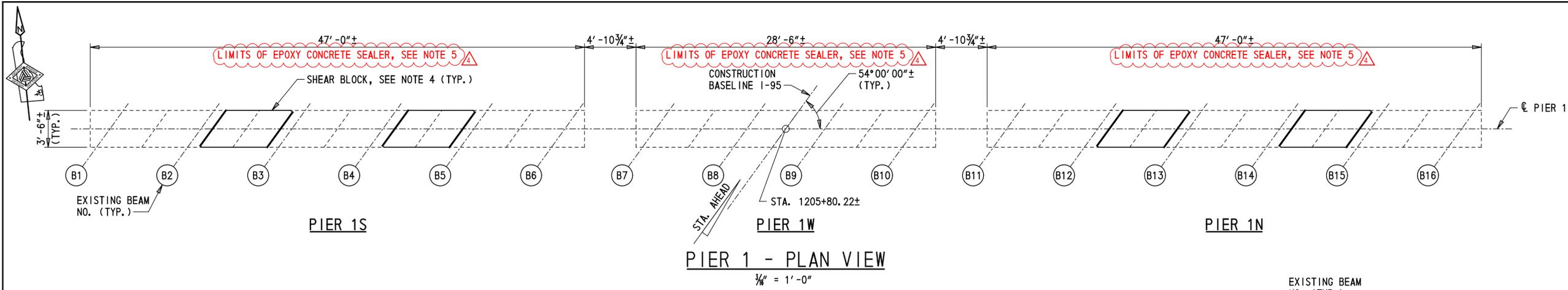


**REHABILITATION OF I-95,
 BEARING REPLACEMENTS**

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

**GENERAL PLAN
 AND ELEVATION**

PE-01
SECTION
PAI
SHEET NO.
15



- 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.
 5. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.
 6. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE EPOXY CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
 7. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE PIER SURFACES THAT DO NOT REQUIRE EPOXY SEALER. PAYMENT WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
 8. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.

NOTE:
PILES NOT SHOWN FOR CLARITY.

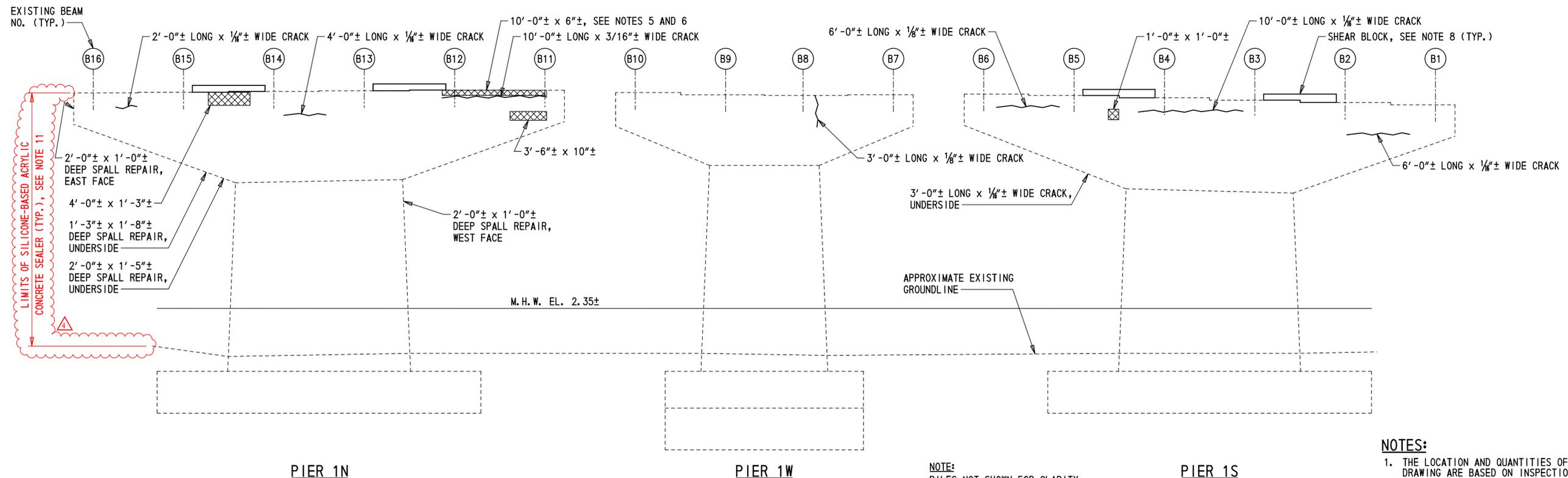
- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

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
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	3840

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

2/28/2020 14:35:53

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
41 ADDED SUBSTRUCTURE REPAIR NOTES AND QUANTITIES - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	17
				NEW CASTLE				



PIER 1N

PIER 1W

PIER 1S

PIER 1 - NORTH ELEVATION

1/8" = 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.
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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.
9. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.
10. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE EPOXY CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
11. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE PIER SURFACES THAT DO NOT REQUIRE EPOXY SEALER. PAYMENT WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
12. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.

LEGEND:

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

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ADDENDA / REVISIONS
△ ADDED SUBSTRUCTURE REPAIR NOTES - C. MALKIN 3/2/2020

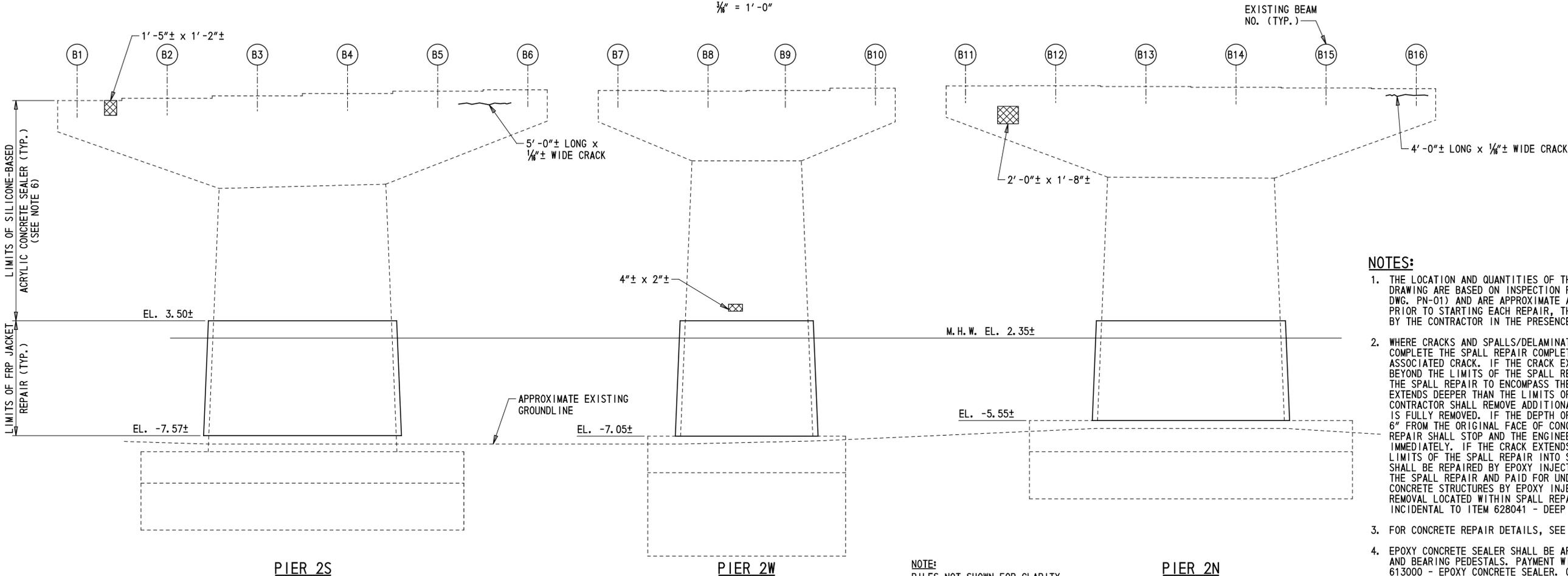
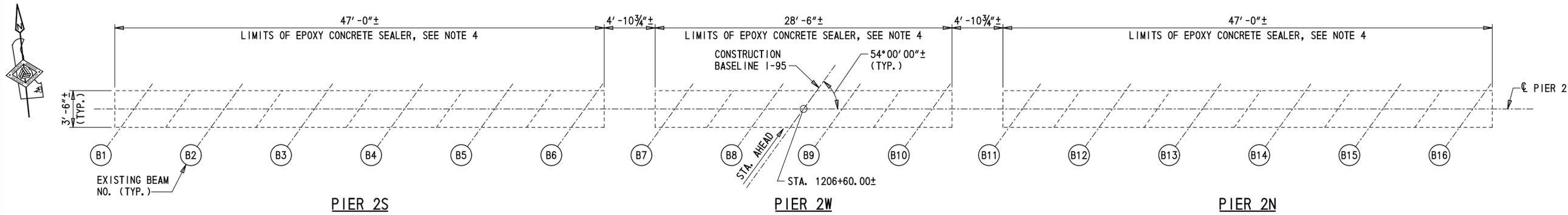
SCALE AS NOTED

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



- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE 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. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.
 5. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE EPOXY CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
 6. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE PIER SURFACES THAT DO NOT REQUIRE EPOXY SEALER. PAYMENT WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
 7. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
 8. FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-08A.

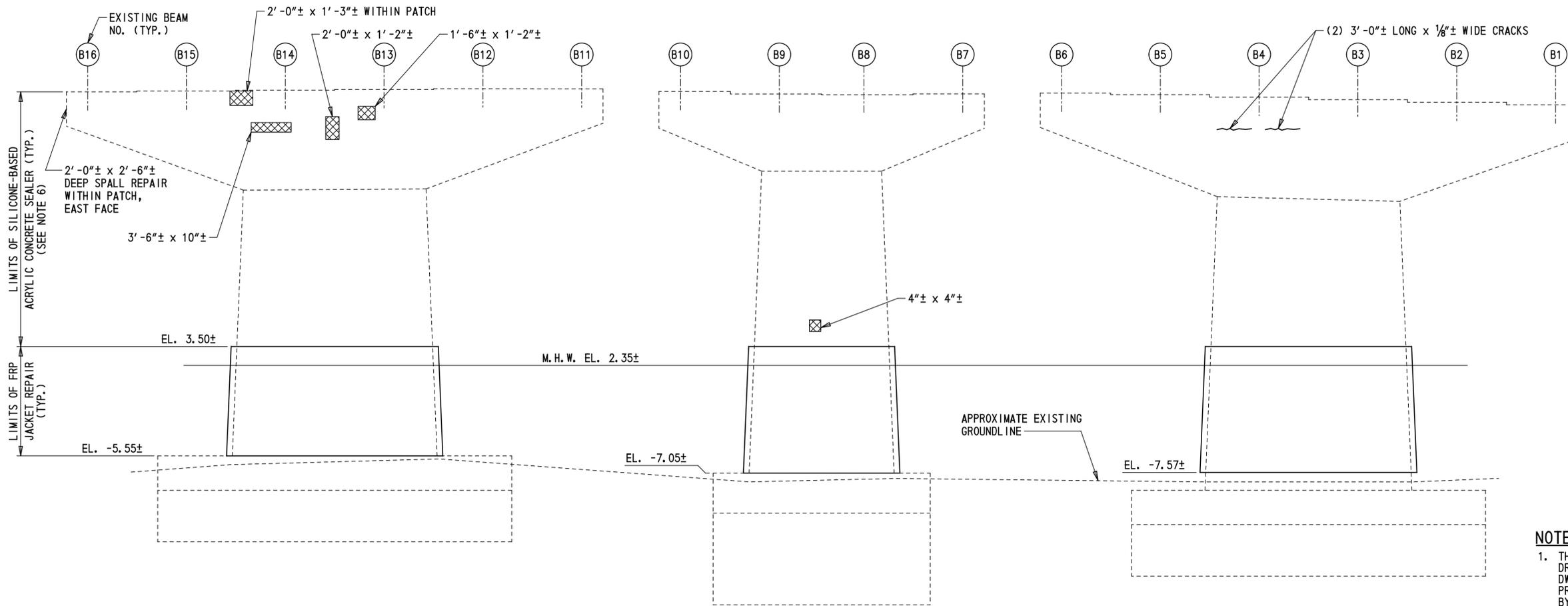
- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 2				
REPAIR NO	ITEM NO	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	15
37	628041	DEEP SPALL REPAIR	CF	6
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	3510
M1	628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	1300

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

ADDENDA / REVISIONS NEW SHEET ADDED - C. MALKIN 3/2/2020	SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 2 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	PR-02A
			T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
			COUNTY	CHECKED BY: C. MALKIN	SHEET NO.		18A
			NEW CASTLE				

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PIER 2N

PIER 2W

PIER 2S

PIER 2 - 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 FIELD NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE 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. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.
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7. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
8. FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-08A.
9. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-02A.

LEGEND:

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

ADDENDA / REVISIONS

NEW SHEET ADDED - C. MALKIN 3/2/2020

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 2 - CONCRETE
REPAIR DETAILS
(NORTH ELEVATION)

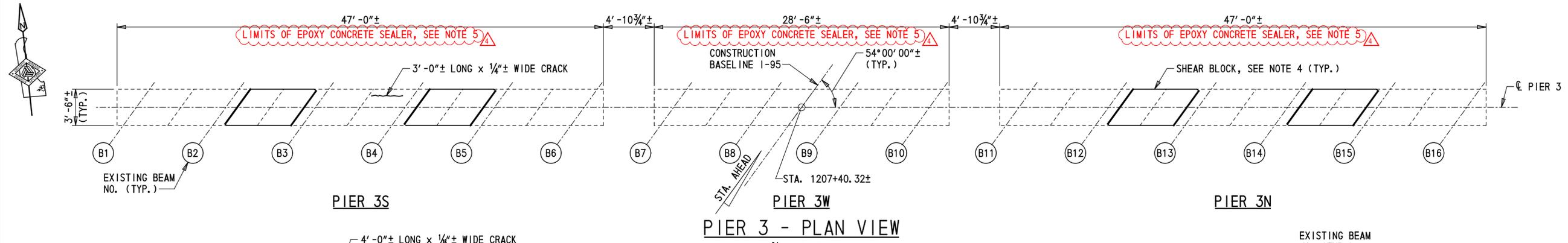
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SECTION

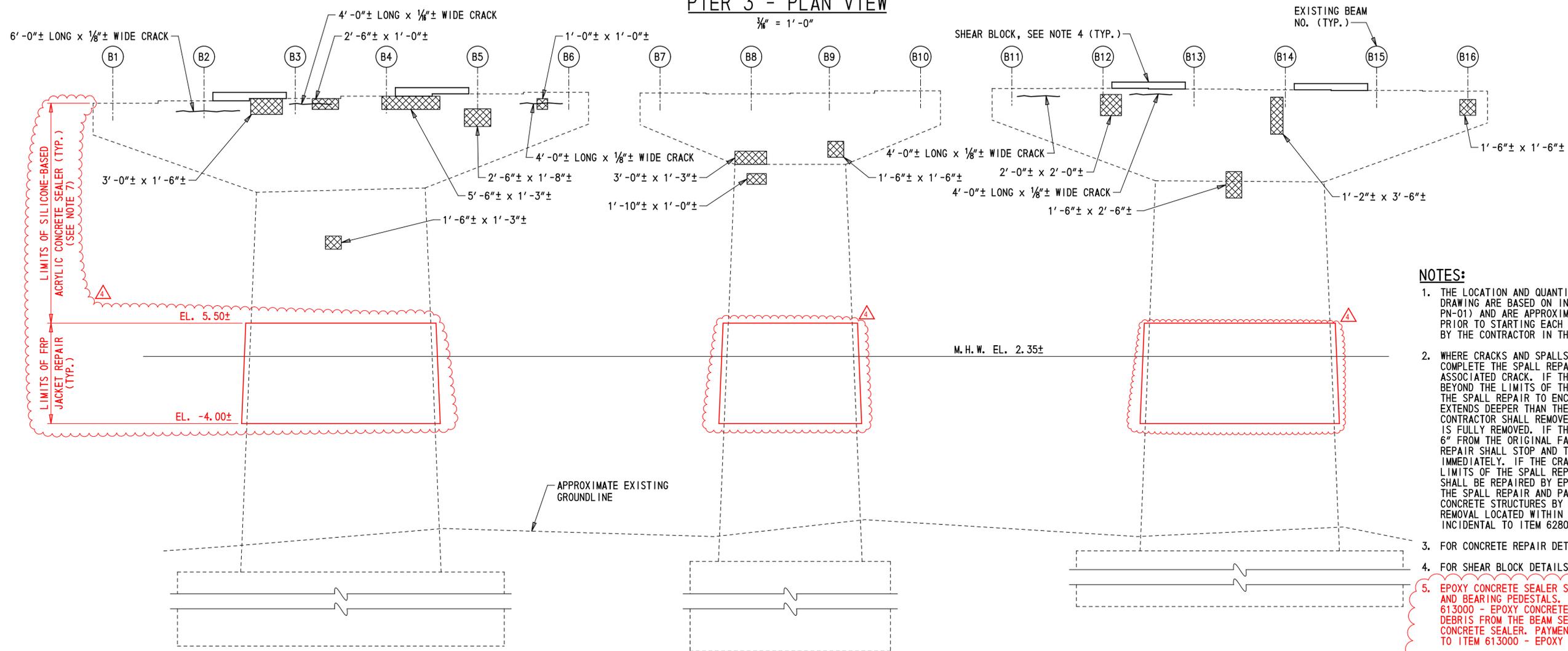
PAI

SHEET NO.

18B



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
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	3480
M1	628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	1170

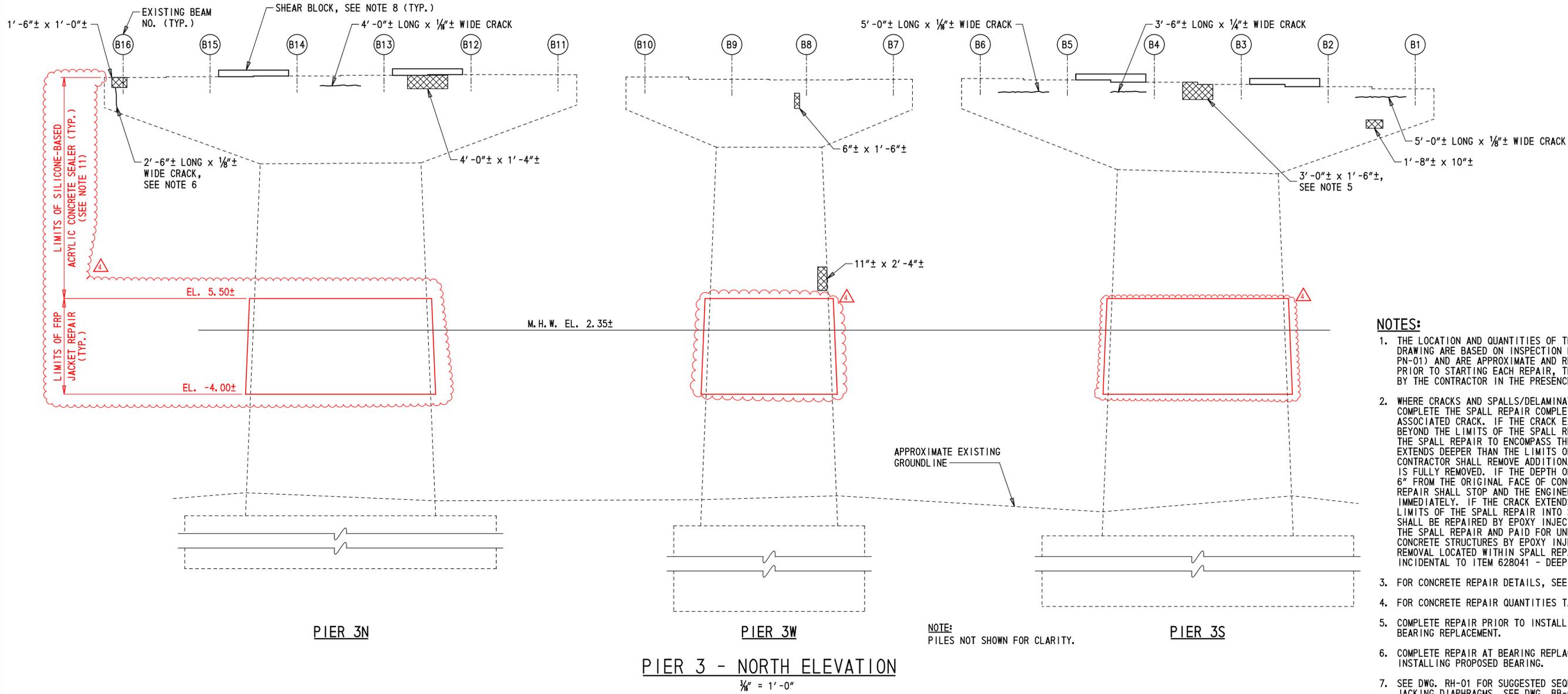
NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

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 - EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
 - FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-08A.

NOTE:
PILES NOT SHOWN FOR CLARITY.

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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
△ ADDED SUBSTRUCTURE REPAIR NOTES AND QUANTITIES - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	19
				NEW CASTLE				



- 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-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.
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 13. FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-08A.

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

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

ADDENDA / REVISIONS
 △ ADDED SUBSTRUCTURE REPAIR NOTES - C. MALKIN 3/2/2020

SCALE AS NOTED

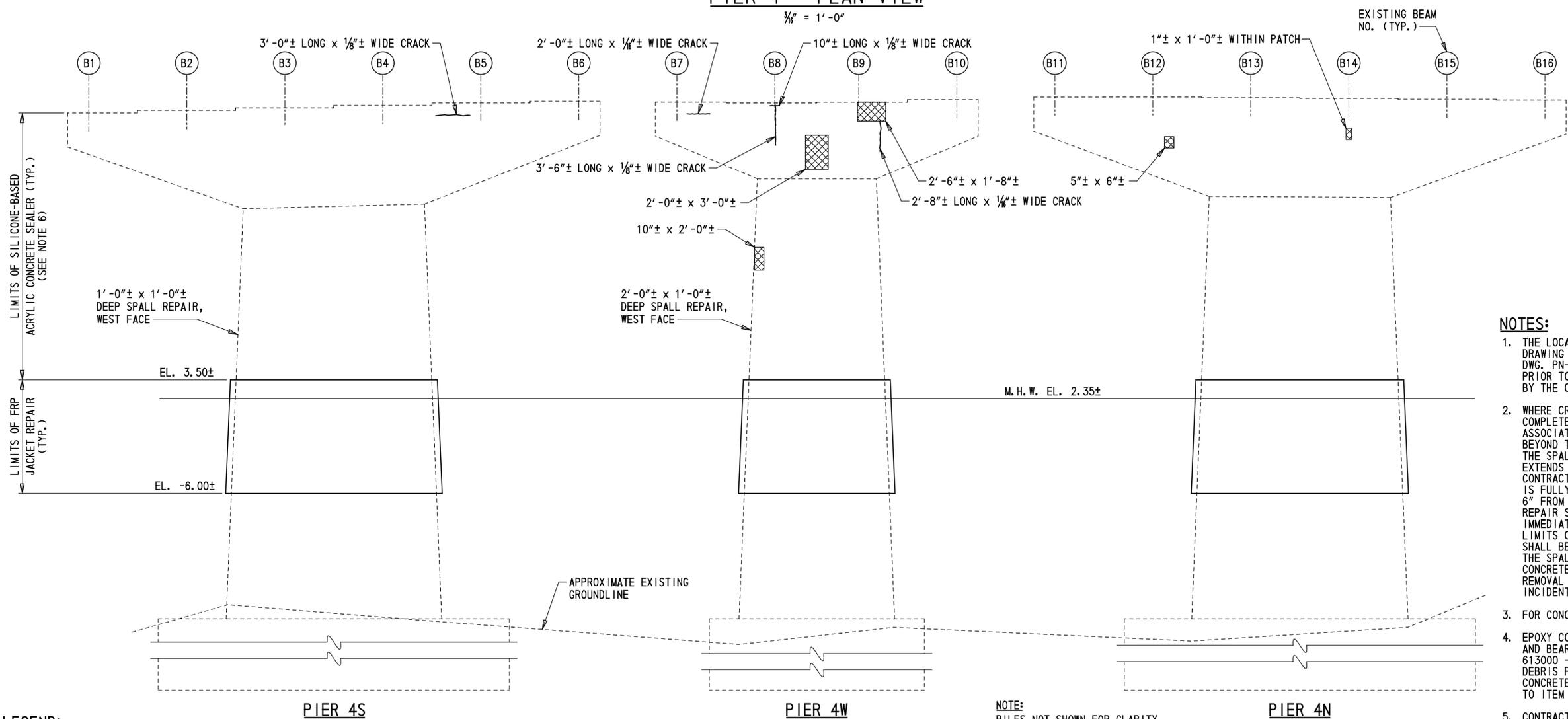
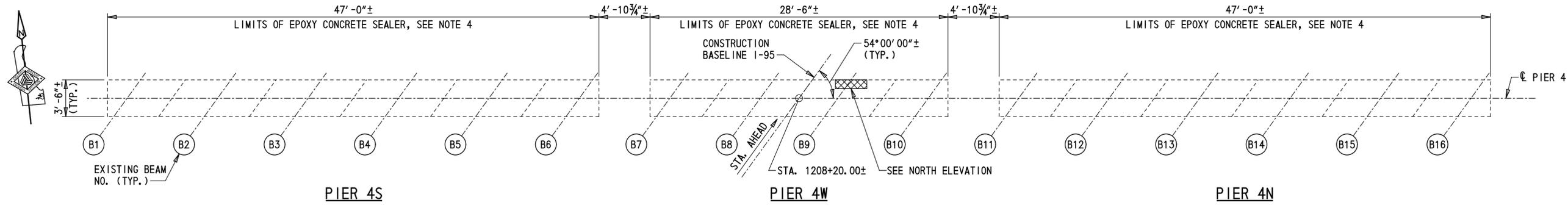
REHABILITATION OF I-95,
 BEARING REPLACEMENTS

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

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- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
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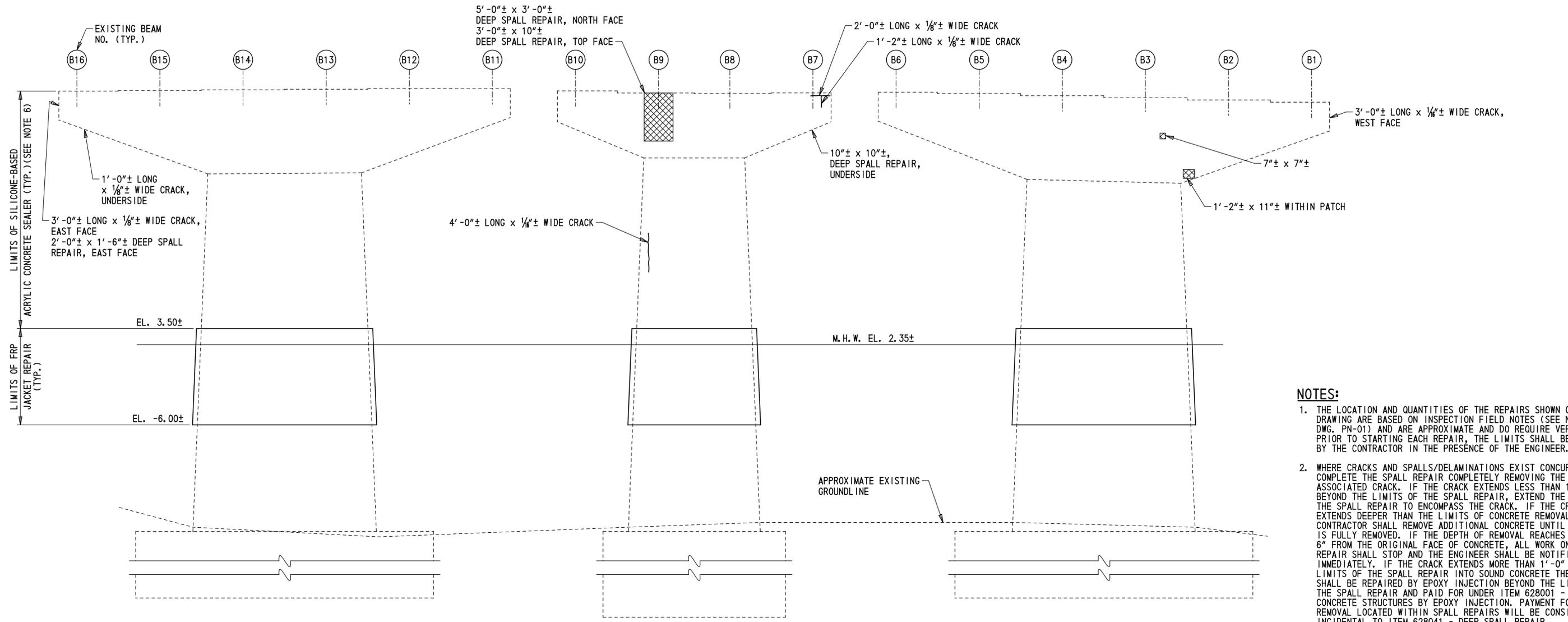
- LEGEND:**
- REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 - DEEP SPALL REPAIR

CONCRETE REPAIR QUANTITIES				
PIER 4				
REPAIR NO.	ITEM NO.	ITEM TITLE	UNIT	QUANTITY
34	628001	REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION	LF	27
37	628041	DEEP SPALL REPAIR	CF	12
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	3790
M1	628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	1250

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

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT T201907404	BRIDGE NO. 1 744 059	PIER 4 - CONCRETE REPAIR DETAILS (SOUTH ELEVATION)	DESIGNED BY: B. MARSHALL	SECTION PAI
NEW SHEET ADDED - C. MALKIN 3/2/2020				COUNTY NEW CASTLE	CHECKED BY: C. MALKIN		SHEET NO. 20A	
				PR-04A				



PIER 4 - NORTH ELEVATION
 $\frac{3}{8}'' = 1'-0''$

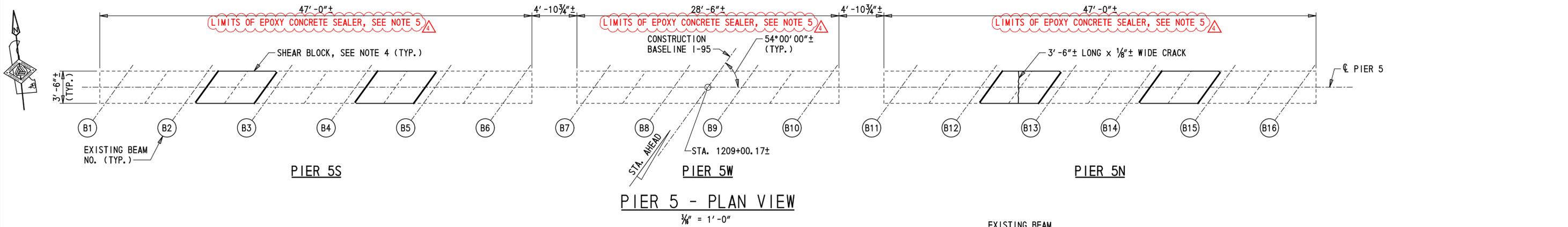
LEGEND:
 REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION
 DEEP SPALL REPAIR

- NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 9 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE 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. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.
 5. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE EPOXY CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
 6. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE PIER SURFACES THAT DO NOT REQUIRE EPOXY SEALER. PAYMENT WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
 7. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
 8. FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-13.
 9. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-07.

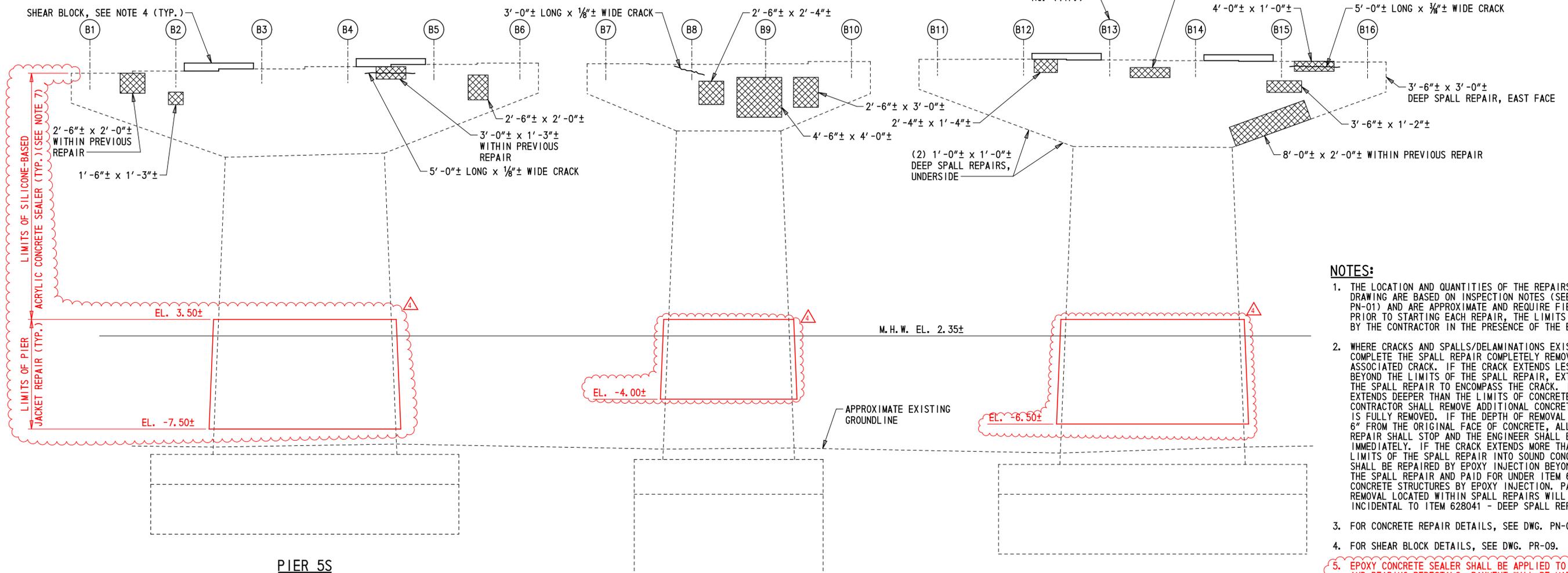
NOTE:
 PILES NOT SHOWN FOR CLARITY.

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ADDENDA / REVISIONS		SCALE AS NOTED	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 744 059	PIER 4 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)	PR-04B
NEW SHEET ADDED - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	20B
				NEW CASTLE				



PIER 5 - PLAN VIEW
1/8" = 1'-0"



PIER 5 - SOUTH ELEVATION
1/8" = 1'-0"

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
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	3940
M1	628503	FRP JACKET AND EPOXY GROUT CONCRETE PIER ENCASEMENT	SF	1270

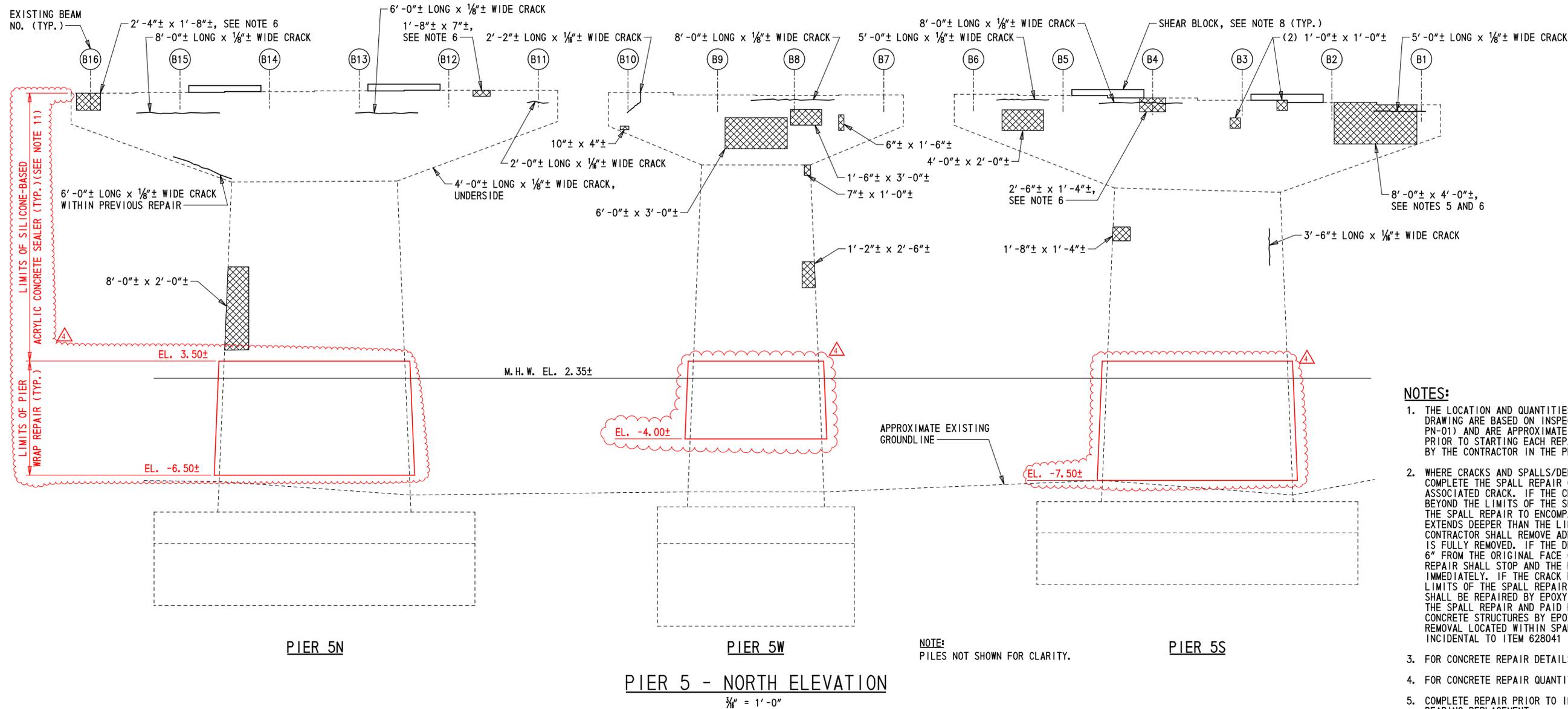
NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

- 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.
 - 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.
 - FOR SHEAR BLOCK DETAILS, SEE DWG. PR-09.
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 - EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
 - FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-08A.

NOTE: PILES NOT SHOWN FOR CLARITY.

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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
△ ADDED SUBSTRUCTURE REPAIR NOTES AND QUANTITIES - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	21
				NEW CASTLE				



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

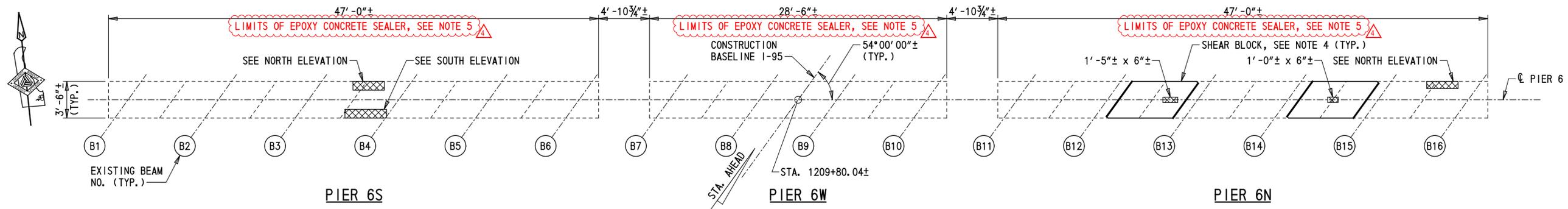
PIER 5 - NORTH ELEVATION
 1/8" = 1'-0"

NOTE:
 PILES NOT SHOWN FOR CLARITY.

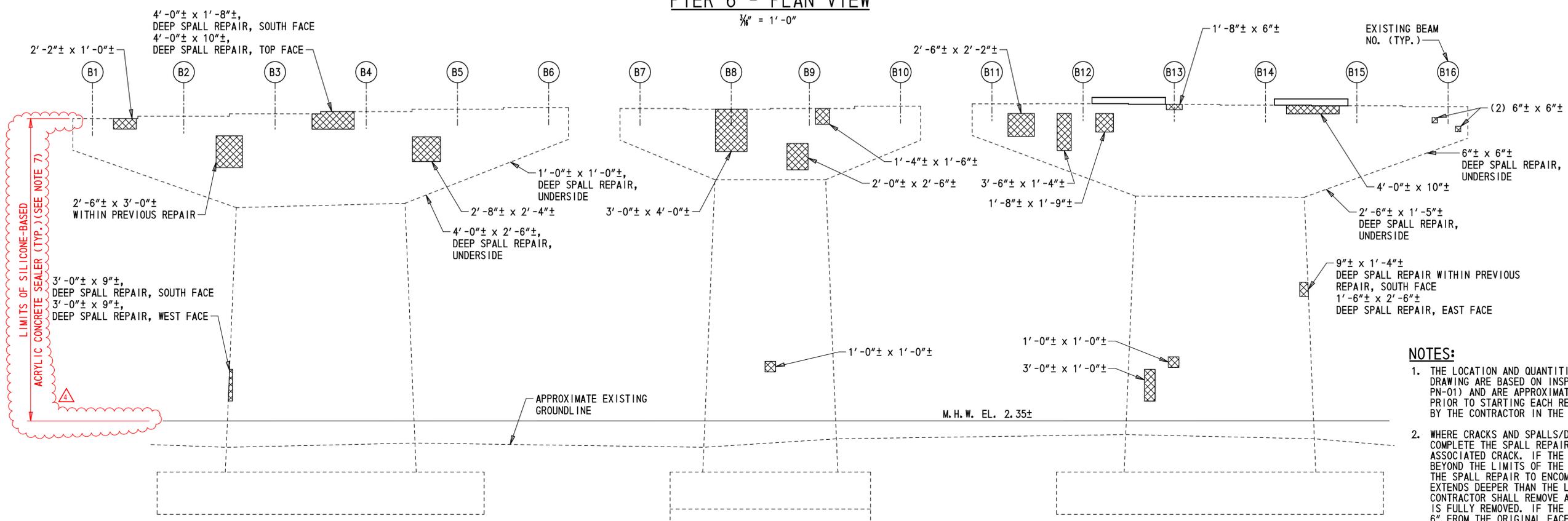
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ADDENDA / REVISIONS
1. ADDED SUBSTRUCTURE REPAIR NOTES - C. MALKIN 3/2/2020

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



PIER 6 - PLAN VIEW
3/8" = 1'-0"



PIER 6 - SOUTH ELEVATION
3/8" = 1'-0"

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
41	613000	EPOXY CONCRETE SEALER	SF	674
41	613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	4610

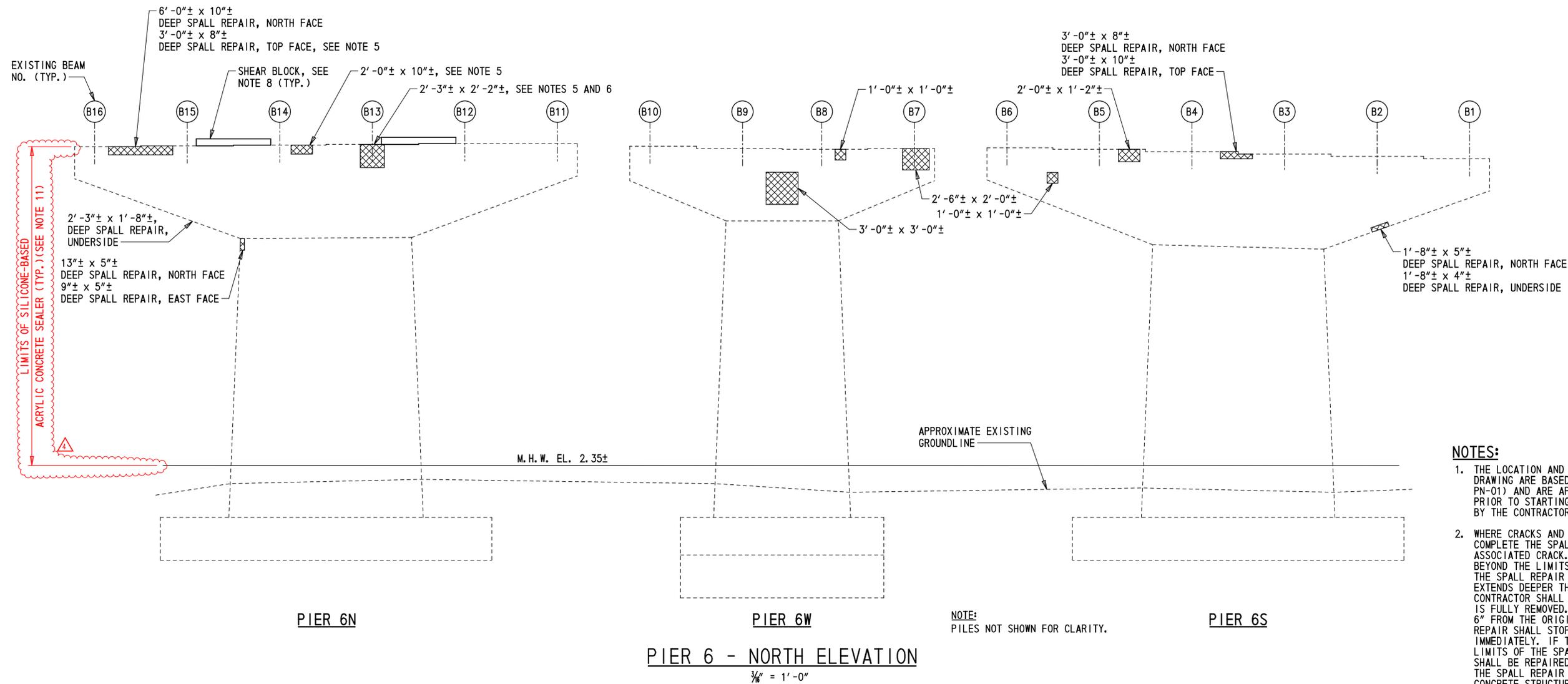
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NOTE: PILES NOT SHOWN FOR CLARITY.

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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
1. ADDED SUBSTRUCTURE REPAIR NOTES AND QUANTITIES - C. MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL	SECTION		PAI
				COUNTY	CHECKED BY: C. MALKIN		SHEET NO.	23
				NEW CASTLE				



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

PIER 6N
 PIER 6W
 PIER 6 - NORTH ELEVATION
 3/8" = 1'-0"

NOTE:
 PILES NOT SHOWN FOR CLARITY.

ADDENDA / REVISIONS
 △ ADDED SUBSTRUCTURE REPAIR NOTES - C. MALKIN 3/2/2020

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

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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.
- 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

~~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.

BRIDGE AND ROAD CLOSURES SHALL BE COORDINATED WITH LOCAL EVENTS BY CONTACTING THE CITY'S EVENTS COORDINATOR, TINA BETZ (tbetz@wilmingtonde.gov) AND TIFFANY CHRISTOPHER (tdchristopher@wilmingtonde.gov) AT LEAST 14 DAYS PRIOR TO ANY LANE OR ROAD CLOSURES.

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.

18. COORDINATION WITH OTHER PROJECTS:
ALL WORK ON BRIDGE 1-758E MUST BE COMPLETED BY JANUARY 1, 2021.

THE CONTRACTOR IS HEREBY NOTIFIED THAT THERE MAY BE OTHER ACTIVE CONSTRUCTION CONTRACTS WITHIN THE AREA OF THIS WORK AND COORDINATION BETWEEN CONTRACTS MAY BE REQUIRED. NO PAYMENT WILL BE MADE FOR COORDINATION EFFORTS BETWEEN CONTRACTS.

2/28/2020 10:49:45

ADDENDA / REVISIONS		NOT TO SCALE	REHABILITATION OF I-95, BEARING REPLACEMENTS	CONTRACT	BRIDGE NO.	1 758E 6141	BRIDGE PROJECT NOTES AND QUANTITIES	PN-01
▲ ADDITIONAL COORDINATION NOTES - C.MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL			SECTION
				COUNTY	CHECKED BY: C. MALKIN			PAI
				NEW CASTLE				SHEET NO.
								83

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: 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 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/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.
- BRIDGE AND ROAD CLOSURES SHALL BE COORDINATED WITH LOCAL EVENTS BY CONTACTING THE CITY'S EVENTS COORDINATOR, TINA BETZ (tbetz@wilmingtonde.gov) AND TIFFANY CHRISTOPHER (tdchristopher@wilmingtonde.gov) AT LEAST 14 DAYS PRIOR TO ANY LANE OR ROAD CLOSURES.**
- 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

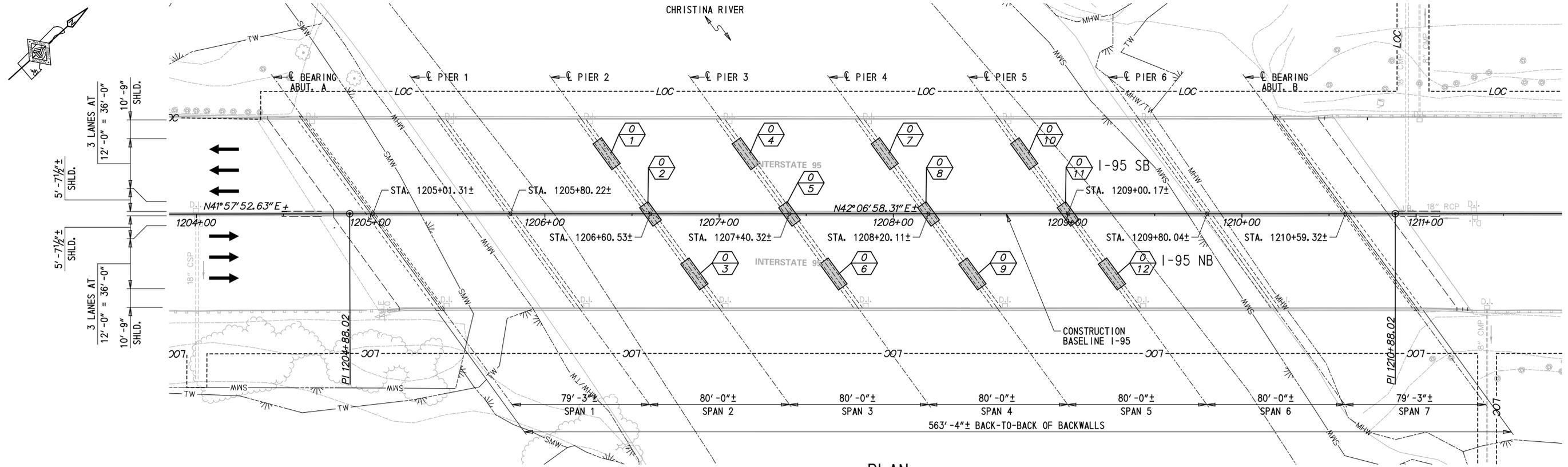
17. COORDINATION WITH OTHER PROJECTS:
 ALL WORK ON BRIDGE 1-758F MUST BE COMPLETED BY MARCH 1, 2021.

THE CONTRACTOR IS HEREBY NOTIFIED THAT THERE MAY BE OTHER ACTIVE CONSTRUCTION CONTRACTS WITHIN THE AREA OF THIS WORK AND COORDINATION BETWEEN CONTRACTS MAY BE REQUIRED. NO PAYMENT WILL BE MADE FOR COORDINATION EFFORTS BETWEEN CONTRACTS.

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

2:28:2020 10:44:45

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
ADDITIONAL COORDINATION NOTES - C.MALKIN 3/2/2020				T201907404	DESIGNED BY: B. MARSHALL			PAGE	1
				COUNTY	CHECKED BY: C. MALKIN			SHEET NO.	102
				NEW CASTLE					



PLAN

LEGEND	
	PERMANENT IMPACT AREA
	LOC - LIMIT OF CONSTRUCTION
	MHW - MEAN HIGH WATER
	SMW - STATE MAPPED WETLAND
	TW - TIDAL WETLAND
	IMPACT AREA TYPE ID. (SEE BELOW) IMPACT AREA ID. AND/OR NUMBER
0 = OPEN WATER IMPACT	

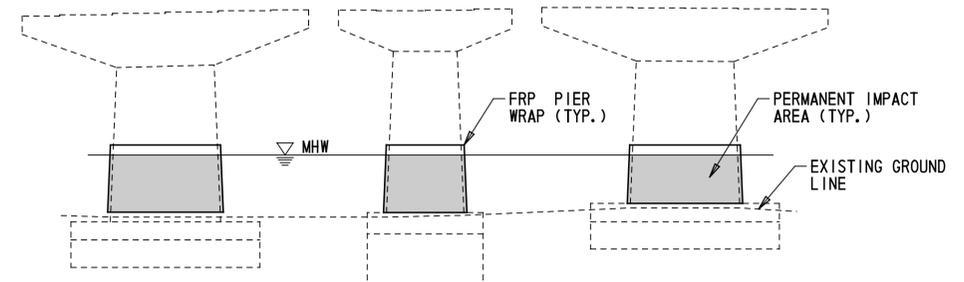
PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
0-1	PIER 2S - FRP PIER WRAP	7.00	0.0002	2.57	USACE/DNREC
0-2	PIER 2W - FRP PIER WRAP	5.00	0.0001	1.74	USACE/DNREC
0-3	PIER 2N - FRP PIER WRAP	7.00	0.0002	2.05	USACE/DNREC
0-4	PIER 3S - FRP PIER WRAP	7.00	0.0002	1.68	USACE/DNREC
0-5	PIER 3W - FRP PIER WRAP	5.00	0.0001	1.17	USACE/DNREC
0-6	PIER 3N - FRP PIER WRAP	7.00	0.0002	1.68	USACE/DNREC
0-7	PIER 4S - FRP PIER WRAP	7.00	0.0002	2.21	USACE/DNREC
0-8	PIER 4W - FRP PIER WRAP	5.00	0.0001	1.55	USACE/DNREC
0-9	PIER 4N - FRP PIER WRAP	7.00	0.0002	2.21	USACE/DNREC
0-10	PIER 5S - FRP PIER WRAP	7.00	0.0002	2.61	USACE/DNREC
0-11	PIER 5W - FRP PIER WRAP	5.00	0.0001	1.19	USACE/DNREC
0-12	PIER 5N - FRP PIER WRAP	7.00	0.0002	2.23	USACE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		76.00	0.0020	22.89	USACE/DNREC

ENVIRONMENTAL COMPLIANCE NOTES

- GENERAL NOTES:
 - THE PURPOSE OF THESE SHEETS IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.
 - IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHALL BE CONTACTED AT (302)760-2264 TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.
 - USE OF THESE SHEETS DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.
- NATURAL RESOURCE ISSUES:
 - PERMIT REQUIREMENTS/APPROVALS*:
 - U.S. ARMY CORPS OF ENGINEERS (COE): NWP 23**
 - DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): SUBAQUEOUS LANDS PERMIT**
 - DNREC WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED (PROJECT NOT LOCATED IN THE CRW)

* THE PERMITS/APPROVALS LISTED (COE, WLSL) ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THIS APPROVAL.

** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS (COE, WLSL) ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE IT IS DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.
- CONSTRUCTION RESTRICTIONS*:
 - FISHERIES - NO IN-WATER WORK SHOULD OCCUR BETWEEN MARCH 1 - JUNE 30 (INCLUSIVE), ANY CALENDAR YEAR. ENDANGERED SPECIES - TO PROTECT ATLANTIC AND SHORTNOSE STURGEON, MAINTAIN PROJECT VESSEL SPEED LIMITS BELOW 10 KNOTS. THE NUMBER OF PROJECT VESSELS MUST BE LIMITED TO THE GREATEST EXTENT PRACTICABLE, AS APPROPRIATE TO SIZE AND SCALE OF PROJECT.
 - MIGRATORY BIRDS - MIGRATORY BIRD NESTING SEASON RESTRICTION IS APRIL 15 TO AUGUST 1, ANY CALENDAR YEAR. IF WORK ON BRIDGE IS TO BEGIN ON OR AFTER APRIL 15, BIRD NETTING IS REQUIRED TO BE INSTALLED ON STRUCTURE PRIOR TO APRIL 15 IN ACCORDANCE WITH SPECIAL PROVISIONS. IF WORK IS TO BEGIN BEFORE APRIL 15 OR AFTER AUGUST 1, NO NETTING IS REQUIRED.

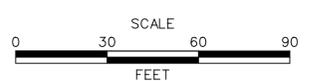


TYPICAL PIER WRAP ELEVATION

NOT TO SCALE

NEW SHEET ADDED - C. MALKIN 3/2/2020

ADDENDA / REVISIONS



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

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

**ENVIRONMENTAL
COMPLIANCE PLAN**

EC-01
SECTION
PAI
SHEET NO.
112A

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