

WEBSTER COUNTY

PIER AND JOINT REPAIRS	LETTING DATE
BREN-926-0(23)--39-94	07/20/2021

INTERSTATE HIGHWAY
PRIMARY HIGHWAY-DIVIDED
PRIMARY HIGHWAY
PORTLAND CEMENT CONCRETE ROAD
ASPHALT ROAD
BITUMINOUS ROAD
GRAVEL ROAD
EARTHEN ROAD



WEBSTER COUNTY

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

STANDARD	ISSUED	REVISED
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REVISIONS

PROJECT NUMBER

BRFN-926-0(23)--39-94

R.O.W. PROJECT NUMBER

PROJECT IDENTIFICATION NUMBER

21-94-926-010

NO.	DESCRIPTION
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I	TITLE SHEET
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I	TITLE SHEET
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2	ESTIMATE SHEET - DESIGN 322
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2-21	DESIGN 322
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C.I	ESTIMATE SHEET FOR ROADWAY
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A.I-J.14	ROADWAY SHEETS
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DESIGN 322
FHWA 052300



www.iowaonecall.com



STANDARD ROAD PLANS ARE LISTED
ON SHEET NUMBER C.1

2019 AADT	<u>3190</u>	V.P.D.
TRUCKS	<u>4.7</u>	%
Total		
Design ESALs	<u>---</u>	

SHEET NO.	NAME	TYPE
I	BRENDA P. FOREE	STRUCTURAL DESIGN
A.I	DAVID M. GREEN	ROADWAY DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Brenda P Force 04-27-2021

Signature **Brenda P. Foree** Date

Printed or Typed Name _____
My license renewal date is December 31, 2022

Pages or sheets covered by this seal: SHEETS 1 THRU 21 OF 39

DESIGN TEAM **HNTB**

ENGLISH	IOWA DOT * BRIDGES AND STRUCTURES BUREAU
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FILE NO. 32048

WEBSTER COUNTY

PROJECT NUMBER	BRFN-926-0(23)--39-94
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SHEET NUMBER |

4/26/2021	10:05:05 AM	CTompkins	pw:\\projectwise.dot.int.lan\\PWMain\\Documents\\Projects\\9492601021\\Bridge\\BRFinal\\HNTB\\BRC_94926023.dgn	940322S000	11x17_.pdf.pltcf
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SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002.

REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.

CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI.

STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 10 ASTM A709 GRADE 36, AND GRADE 50 (AASHTO M270 GRADE 36 AND GRADE 50).

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 1111'-3 X 58'-0 MULTISPAN CONTINUOUS WELDED PLATE GIRDER PLUS 90'-0 X 58'-0 SLAB BRIDGE ON IA 926 OVER THE DES MOINES RIVER. ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. SEE SITUATION PLAN FOR LIST OF REPAIR ITEMS.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

ALL DIMENSIONS REQUIRED TO FABRICATE NEW STRUCTURAL STEEL SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

FAINT LINES ON PLANS INDICATE THE EXISTING PORTIONS OF THE BRIDGE.

THE CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

"REMOVALS AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE FOLLOWING:
1. REMOVAL OF DECK EXPANSION DEVICES AT PIER 3 AND PIER 7.

2. PARTIAL REMOVAL OF BRIDGE DECK AND CURBS, TO THE DIMENSIONS SHOWN.

THE LUMP SUM BID ITEMS FOR "BRIDGE CLEANING FOR PAINTING", "BLAST CLEANING OF THE STRUCTURAL STEEL" AND "PAINTING OF STRUCTURAL STEEL" SHALL INCLUDE THE COSTS OF CLEANING, BLAST CLEANING AND FIELD PAINTING OF THE EXISTING STRUCTURAL STEEL AREA WHERE THE STRENGTHENING BENT PLATES WILL BE INSTALLED. THE BID ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS. THE PAINT SYSTEM REQUIRED IS DESCRIBED IN THE "BEAM STRENGTHENING NOTES" IN THESE PLANS.

CONTAINMENT AND DISPOSAL OF WASTE SHALL BE IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS. ALL COSTS ASSOCIATED WITH HAULING AND DEPOSITING OF WASTE AT THE DESIGNATED SITE/FACILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACT AND INCLUDED IN THE CONTRACT PRICE BID FOR THE "CONTAINMENT" ITEM.

A SCRAPE SAMPLE WAS TAKEN OF GIRDER PAINT FROM AN AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL LEAD AND TOTAL CHROMIUM. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 2280 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 645 PPM. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS, NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE IOWA DOT'S TESTING AND ANALYSIS FOR ANY OTHER PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

CONTRACTOR SHALL PREVENT DEBRIS/MATERIAL FROM FALLING INTO THE RIVER OR ONTO PEDESTRIAN PATHS PER STANDARD SPECIFICATION 1107.08.M. PREVENTION METHODS SHALL BE APPROVED BY THE ENGINEER BEFORE BEING USED. COST SHALL BE INCIDENTAL TO THE "REMOVALS, AS PER PLAN" BID ITEM.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5d1 IS 5/8" INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

AREAS OF PIERS, MEDIAN CURBS AND SOUTH SIDEWALK OVERHANGS INDICATED ON THE "CONCRETE REPAIR DETAILS" OR DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS.

CONSTRUCTION SHALL BE DONE IN STAGES WITH TWO-WAY TRAFFIC (ONE LANE TRAFFIC IN EACH DIRECTION) MAINTAINED AT ALL TIMES IN ACCORDANCE WITH TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN:
THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNITS	QUANTITY	AS BUILT QUANTITY
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	19.8	
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	2,203	
4	2408-7800000	STRUCTURAL STEEL	LB	620	
5	2413-1200000	STEEL EXTRUSION JOINT WITH NEOPRENE	LF	122.5	
6	2413-1200100	NEOPRENE GLAND INSTALLATION AND TESTING	LF	122.5	
7	2426-6772016	CONCRETE REPAIR	SF	1,429	
8	2508-0804000	BRIDGE CLEANING FOR PAINTING	LS	1.00	
9	2508-0805000	BLAST CLEANING FOR STRUCTURAL STEEL	LS	1.00	
10	2508-0970000	CONTAINMENT	LS	1.00	
11	2508-0991000	PAINTING OF STRUCTURAL STEEL	LS	1.00	
12	2533-4980005	MOBILIZATION	LS	1.00	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF CONCRETE AND EXPANSION DEVICES. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, STANDARD SPECIFICATIONS. ANY DAMAGE NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.
2	INCLUDES ALL RESILIENT JOINT FILLER REQUIRED.
5	INCLUDES ALL NECESSARY HARDWARE AND ACCESSORIES INCLUDING THE ANCHORAGE SYSTEM, TEMPORARY ERECTION MATERIAL AND COVER PLATES WITH THEIR ANCHORAGE SYSTEM. EXCLUDES INSTALLATION OF NEOPRENE GLAND. EXPANSION CONDITIONS DO NOT ALLOW THE USE OF DS BROWN JOINT FOR THIS INSTALLATION.
6	INCLUDES INSTALLATION OF NEOPRENE GLAND AND WATER TESTING OF JOINT.
7	INCLUDES STUD CONCRETE ANCHORS AT SOUTH SIDEWALK OVERHANG CONCRETE REPAIRS.

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03, OF THE STANDARD SPECIFICATIONS, FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

SHOP DRAWINGS SHALL BE SUBMITTED WITH THE FOLLOWING NAMING CONVENTION:
(Paren)_County_DesignNumber_SubmittalDescription.pdf
Example: (090)_Blackhawk_Design915_DeckDrains.pdf

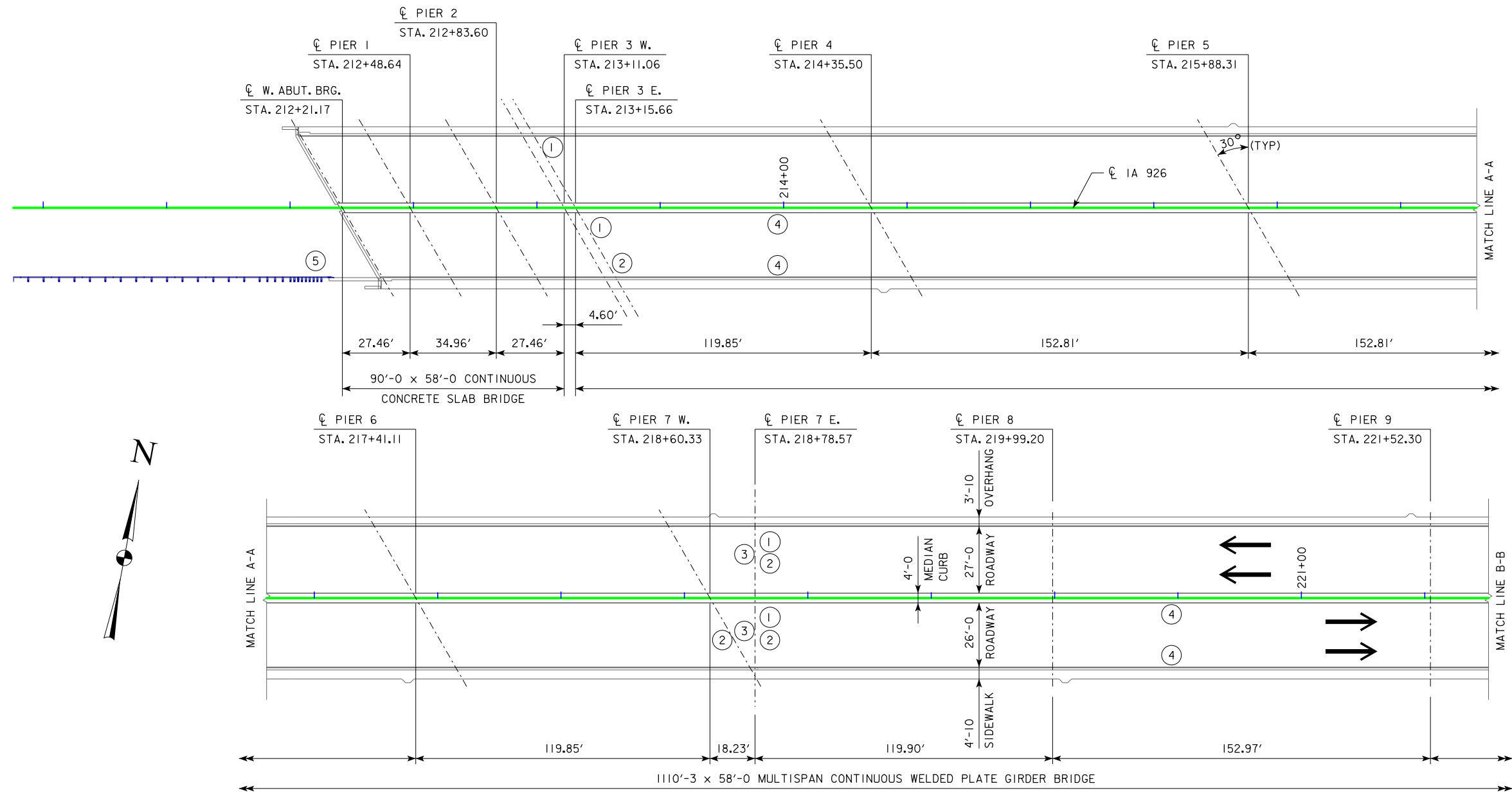
1	EXPANSION JOINTS & COVER PLATES
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DESIGN HISTORY
AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
1457	ORIGINAL DESIGN
1471	BRIDGE EXTENSION
177	OVERLAY AND REPAIR
679	PIER REPAIR
382	REPAIR
108	OVERLAY AND REPAIR
322	PIER REPAIR & JOINT REPLACEMENT

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0 x 58'-0 CONC. SLAB BRIDGE**
GENERAL NOTES AND QUANTITIES
STA. 212+21 TO 224+25 & IA 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 1 OF 20 FILE NO. 32048 DESIGN NO. 322



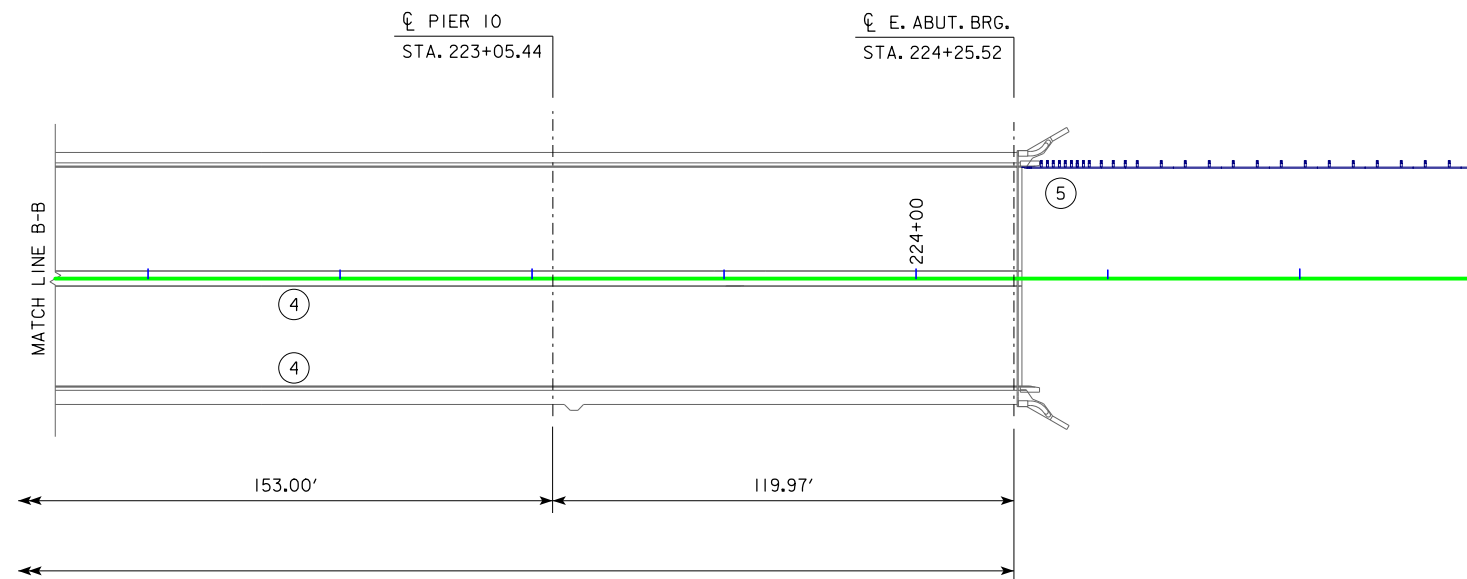
TRAFFIC ESTIMATE		
2019 AADT	<u>3,190</u>	V.P.D.
TRUCKS	<u>4.7</u>	%

LOCATION
 IA-926 OVER DES MOINES RIVER
 T-89N R-28W
 SECTION 19
 WAHKONSA TOWNSHIP
 WEBSTER COUNTY
 CITY OF FORT DODGE
 MAINT. NO. 9402.5S926
 FHWA NO. 052300
 LATITUDE 42.501284°
 LONGITUDE -94.202095°

REPAIR LEGEND

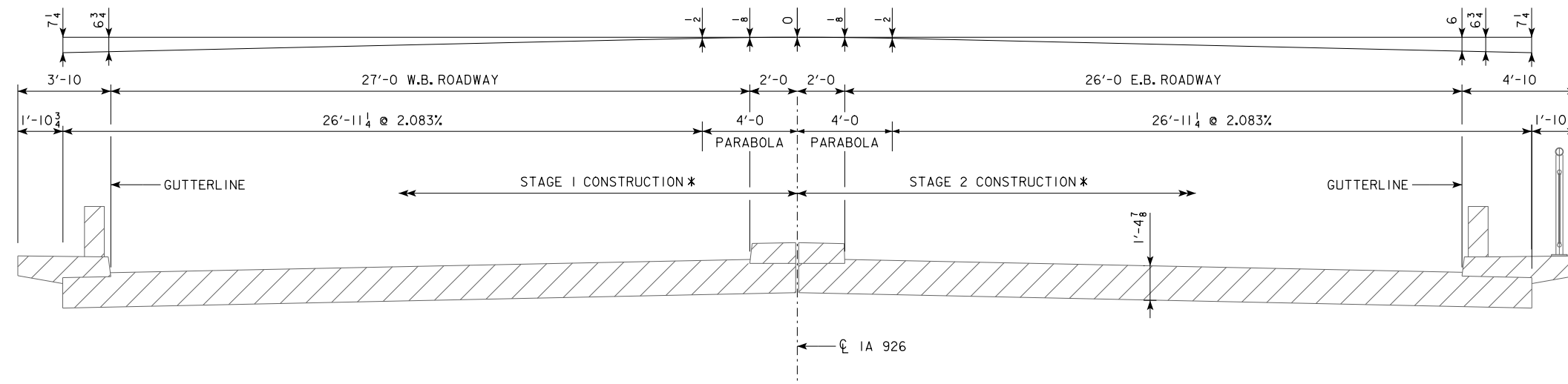
REPAIR SHALL CONSIST OF:

1. REMOVE EXISTING SLIDING PLATE TYPE EXPANSION JOINTS AT PIERS #3 AND #7 AND REPLACE WITH STRIP SEAL TYPE EXPANSION JOINTS.
2. PERFORM CONCRETE REPAIRS TO PIERS #3 AND #7.
3. REPAIR TRANSITION SPAN BEAM ENDS AT PIER #7 E. BY INSTALLING STRENGTHENING BENT PLATES.
4. PERFORM CONCRETE REPAIR TO MEDIAN CURBS AND SOUTH SIDEWALK OVERHANGS.
5. REMOVE AND REPLACE EXISTING GUARDRAIL. (SEE ROADWAY SHEETS.)



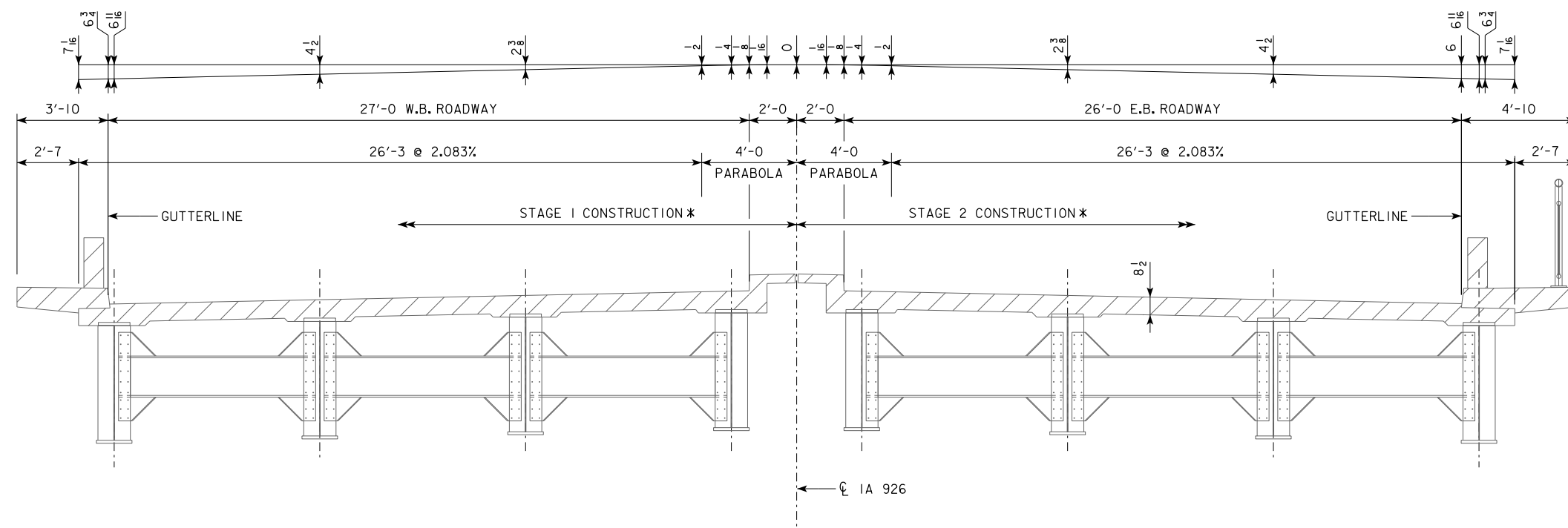
SITUATION PLAN

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE**
SITUATION PLAN
 STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 2 OF 20 FILE NO. 32048 DESIGN NO. 322



TYPICAL SECTION OF SLAB SPANS

(LOOKING EAST)



TYPICAL SECTION OF GIRDER SPANS

(LOOKING EAST)

NOTE:
*SEE ROADWAY J SHEETS FOR ADDITIONAL
STAGE CONSTRUCTION INFORMATION.

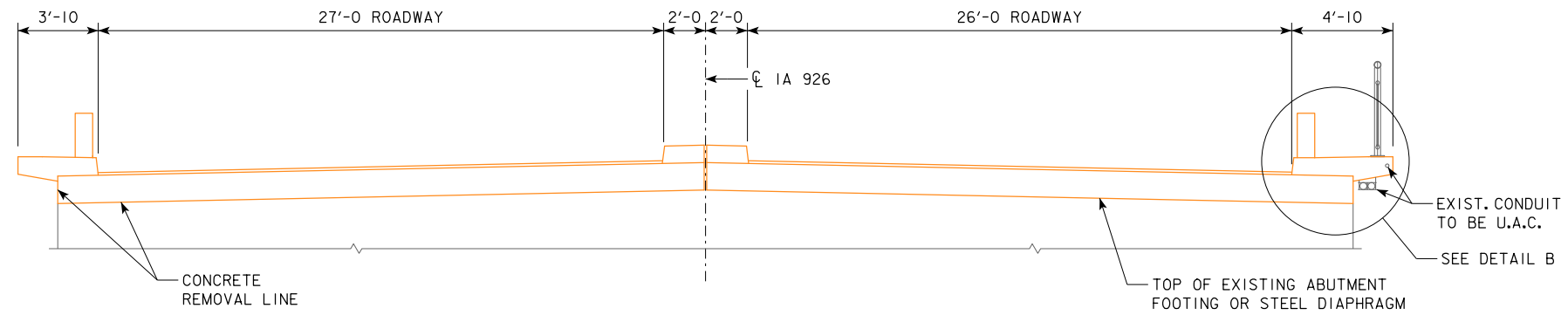
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0" x 58'-0" CONC. SLAB BRIDGE
TYPICAL SECTIONS

STA. 212+21 TO 224+25 @ 1A 926 MAY, 2021

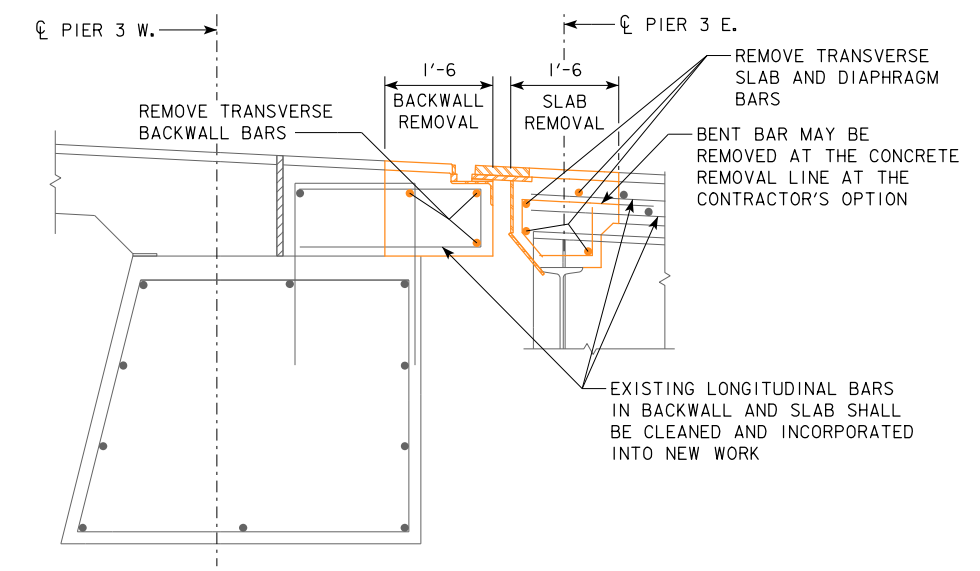
WEBSTER COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

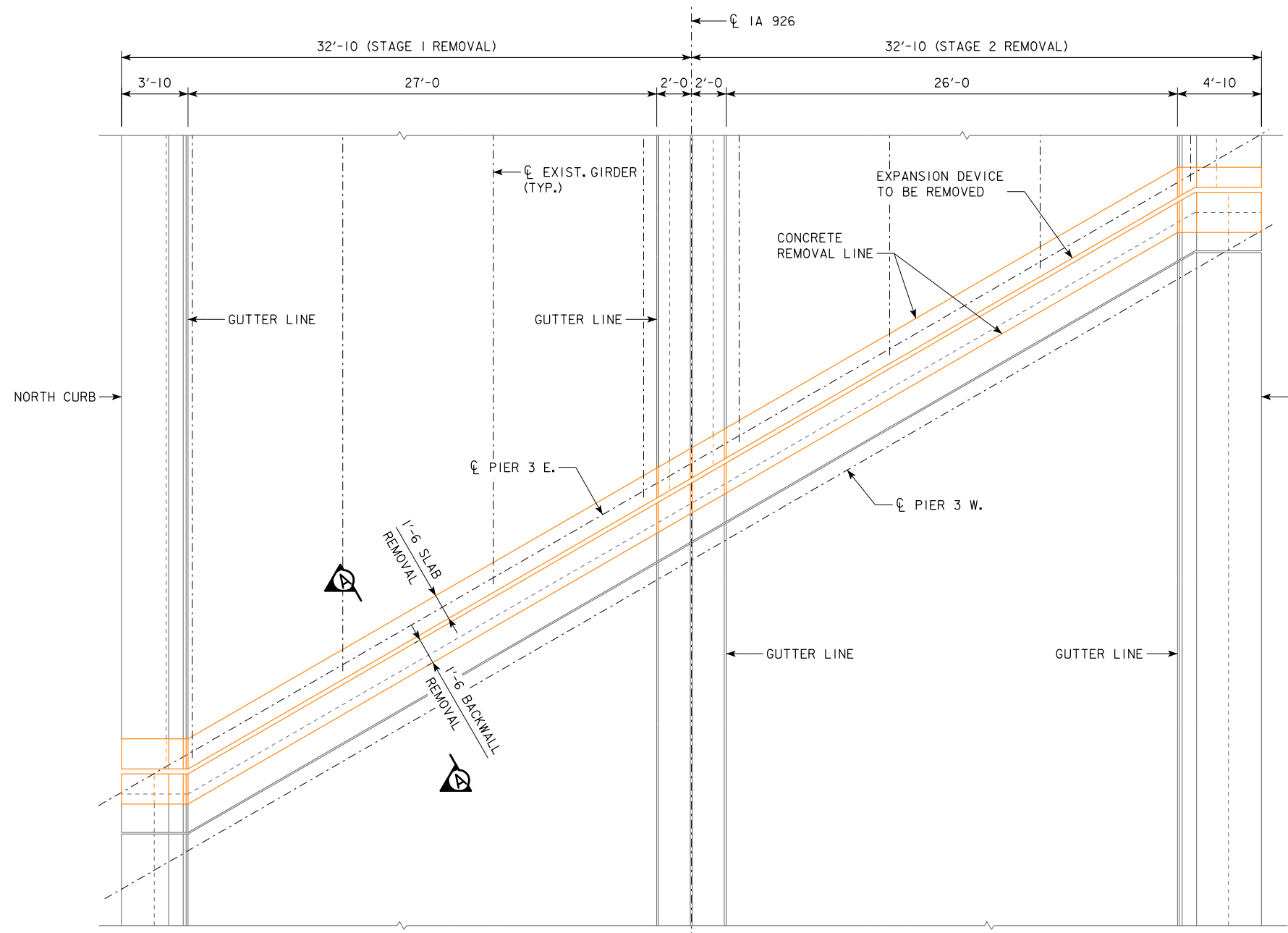
DESIGN SHEET NO. 3 OF 20 FILE NO. 32048 DESIGN NO. 322



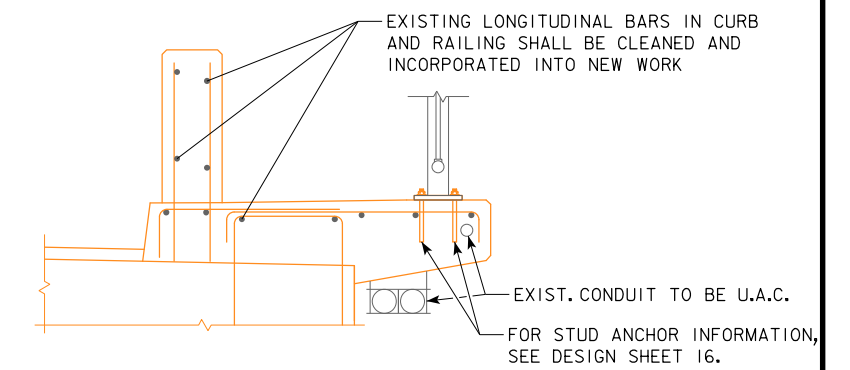
REAR ELEVATION
SLAB SPAN SHOWN
(LOOKING EAST)



SECTION A-A



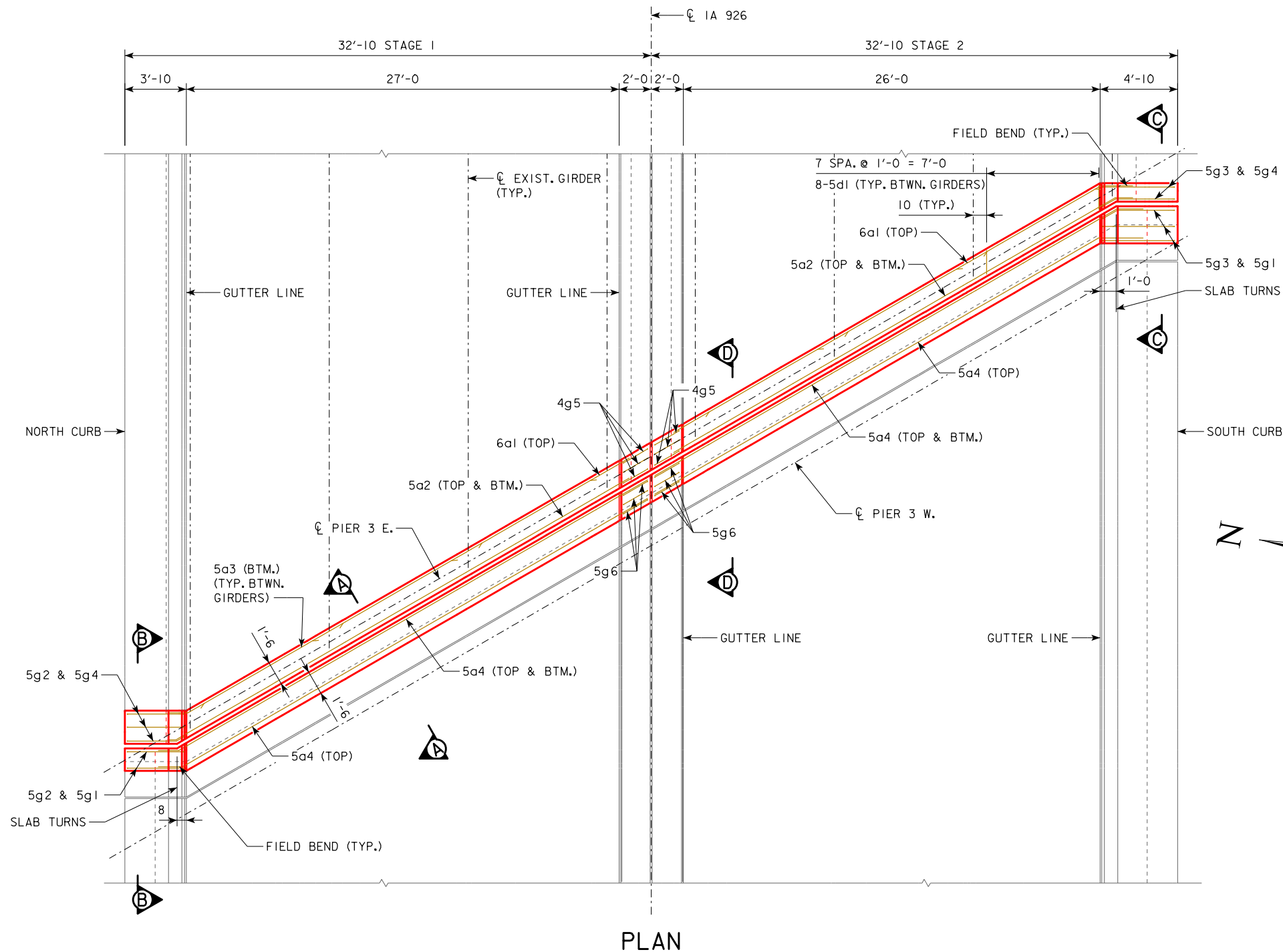
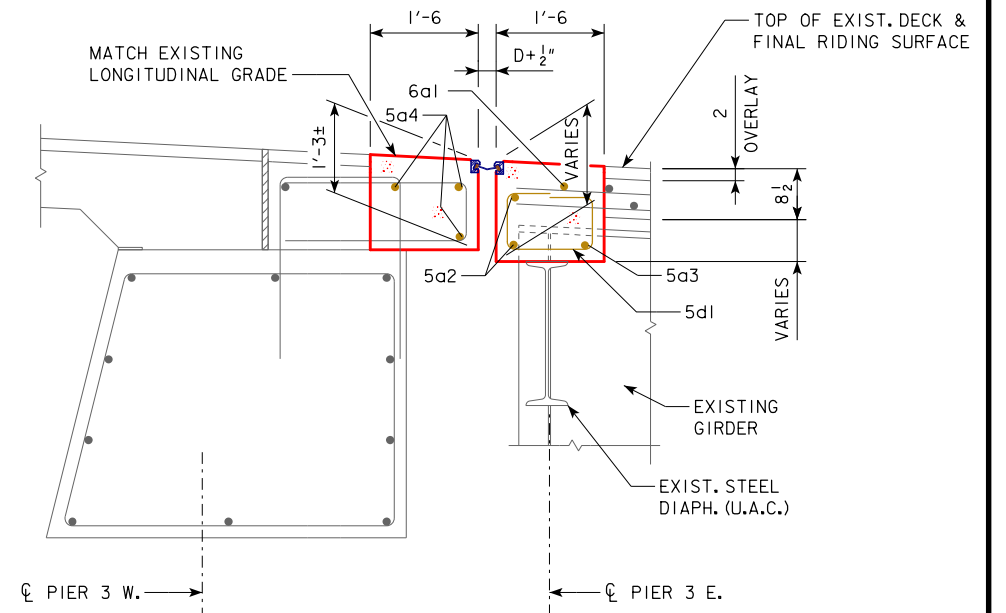
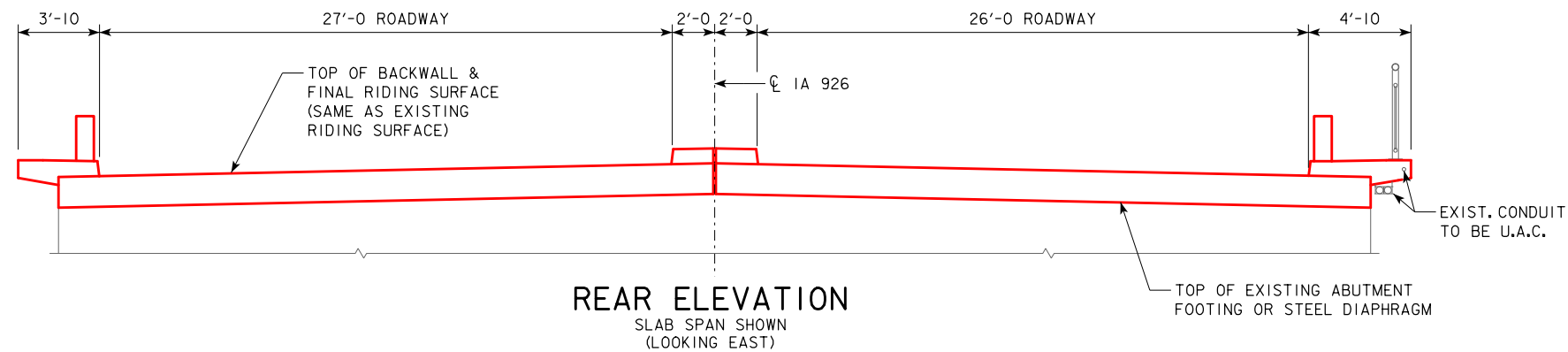
REMOVAL PLAN



DETAIL B
SOUTH CURB SHOWN, NORTH CURB SIMILAR.

NOTES:
EXISTING CONDUIT AND HANGERS TO BE INCORPORATED INTO NEW WORK. ANY DAMAGE TO THE EXISTING CONDUIT SHALL BE REPLACED AT THE DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
DO NOT REUSE EXISTING CONDUIT HANGERS DISTURBED BY CONCRETE REPAIRS OR EXPANSION JOINT REPLACEMENTS. HANGER CONDUITS SHALL BE REPLACED IN KIND AND SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR "CONCRETE REPAIR" AND/OR "STRUCTURAL CONCRETE (MISCELLANEOUS)".

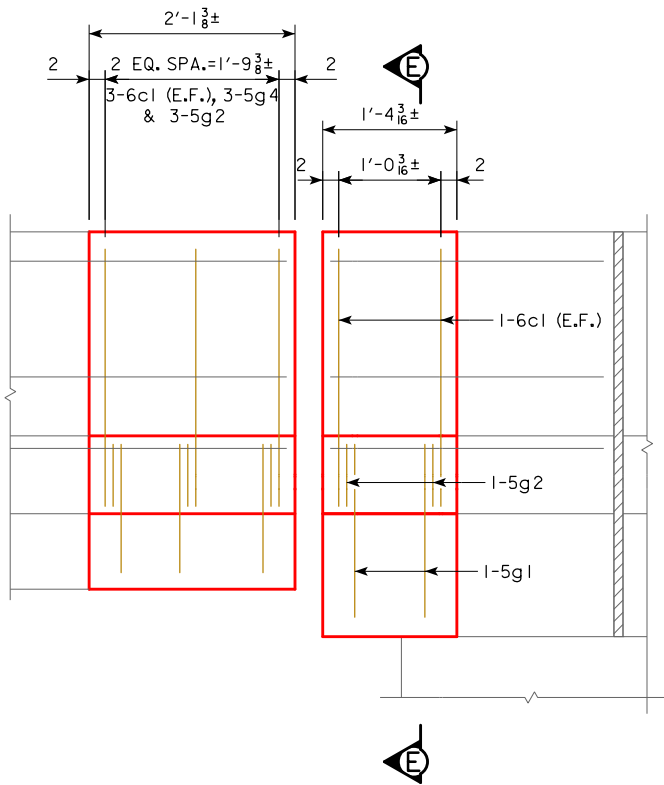
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0" x 58'-0" CONC. SLAB BRIDGE
 PIER 3 REMOVAL DETAILS**
 STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 4 OF 20 FILE NO. 32048 DESIGN NO. 322



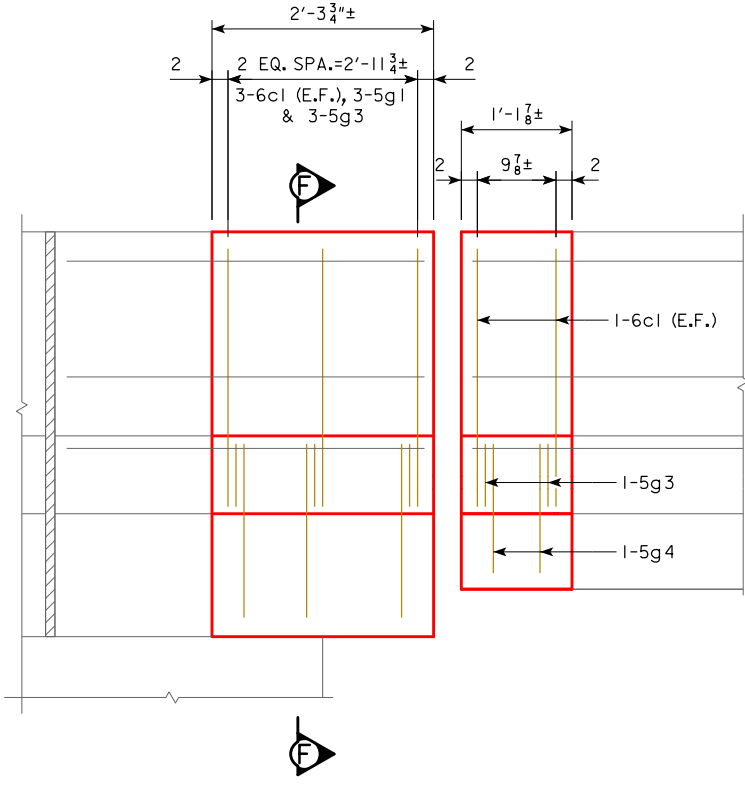
NOTES:
 FOR SECTIONS B-B & C-C, SEE DESIGN SHEET 6.
 FOR SECTION D-D, SEE DESIGN SHEET 7.
 FOR DIMENSION "D", SEE DESIGN SHEET 12.

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0" x 58'-0" CONC. SLAB BRIDGE
 PIER 3 CONC. REPAIR DETAILS**
 STA. 212+21 TO 224+25 $\angle$ 1A 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 5 OF 20 FILE NO. 32048 DESIGN NO. 322

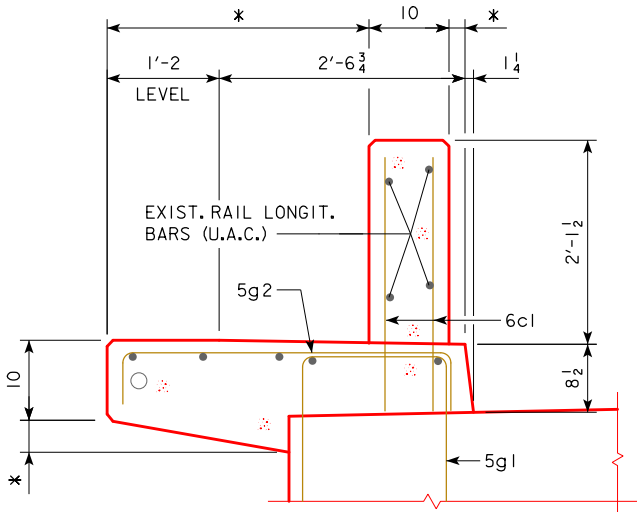
* MATCH EXISTING



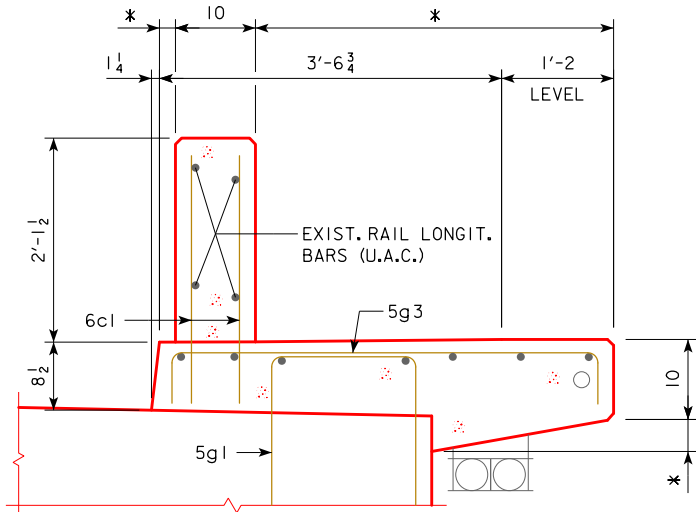
SECTION B-B



SECTION C-C



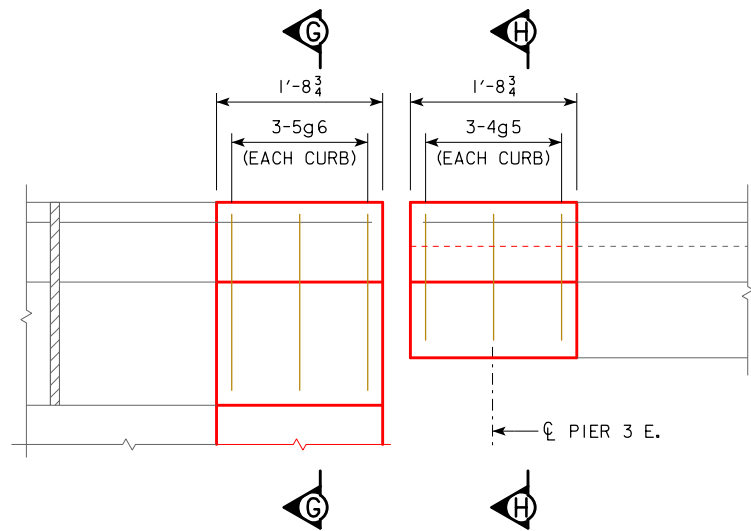
SECTION E-E



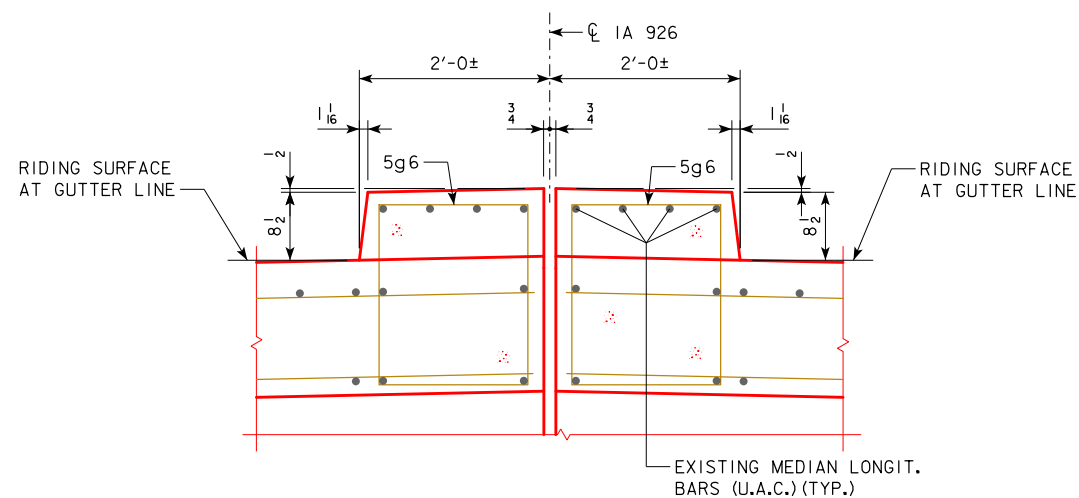
SECTION F-F

NOTE:
FOR LOCATION OF SECTIONS B-B & C-C, SEE DESIGN SHEET 5.

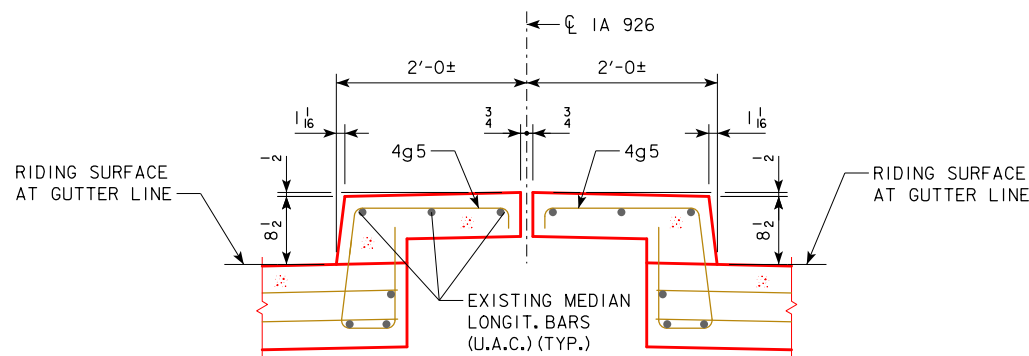
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0 x 58'-0 CONC. SLAB BRIDGE
PIER 3 CONC. REPAIR DETAILS**
STA. 212+21 TO 224+25 @ 1A 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 6 OF 20 FILE NO. 32048 DESIGN NO. 322



SECTION D-D



SECTION G-G



SECTION H-H

NOTE:
FOR LOCATION OF SECTION D-D, SEE DESIGN SHEET 5.

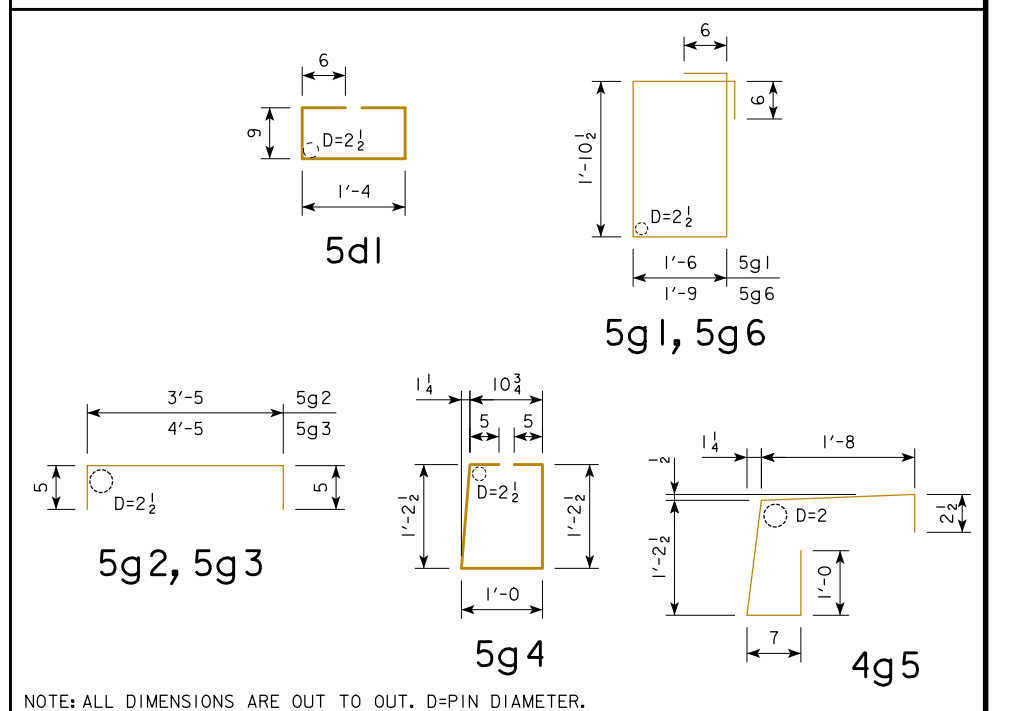
EPOXY COATED REINFORCING STEEL

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	SLAB, HORIZONTAL		2	32'-9	98
5a2	SLAB, HORIZONTAL		4	32'-9	137
5a3	SLAB, HORIZONTAL		6	8'-5	53
5a4	BACKWALL, HORIZONTAL		6	35'-1	220
6c1	RAILING, VERTICAL		20	2'-8	80
5d1	DIAPHRAGM, TRANSVERSE		48	3'-10	192
5g1	CURB, HOOP		5	7'-9	40
5g2	NORTH CURB, HORIZONTAL		5	4'-3	22
5g3	SOUTH CURB, HORIZONTAL		5	5'-3	27
5g4	CURB, HORIZONTAL		5	4'-3	22
4g5	MEDIAN, ANCHOR		6	4'-8	19
5g6	MEDIAN, HOOP		6	8'-3	52
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					962

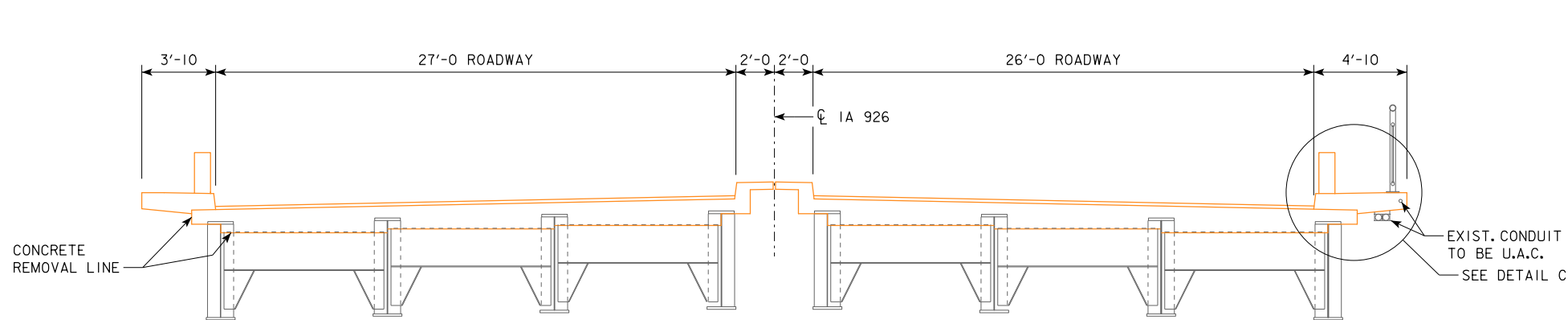
CONCRETE PLACEMENT SUMMARY

LOCATION	TOTAL
BACKWALL, CURBS & RAIL, STAGE 1	2.8
BACKWALL, CURBS & RAIL, STAGE 2	3.1
DECK, CURBS & RAIL, STAGE 1	2.6
DECK, CURBS & RAIL, STAGE 2	2.5
TOTAL (CY)	11.0

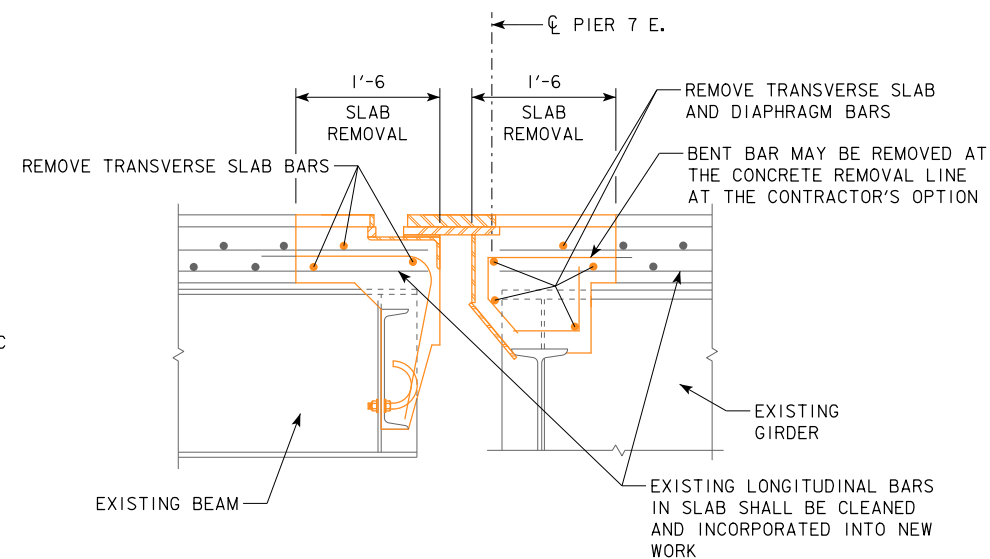
BENT BAR DETAILS



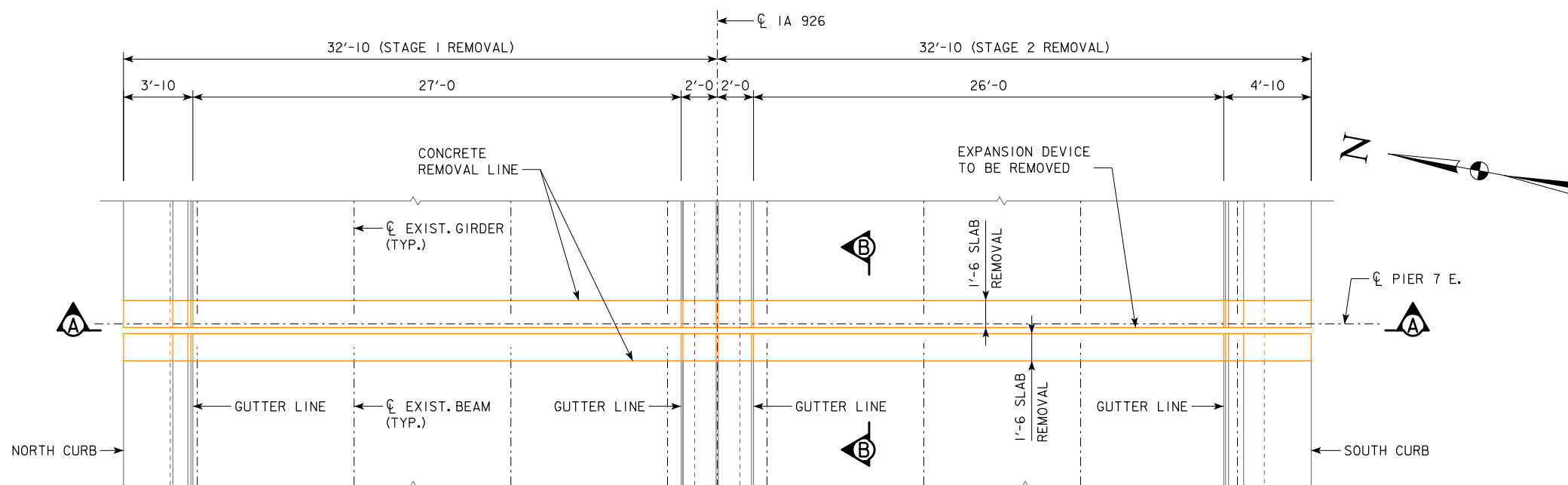
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE
 PIER 3 CONC. REPAIR DETAILS**
 STA. 212+21 TO 224+25 ϕ IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 7 OF 20 FILE NO. 32048 DESIGN NO. 322



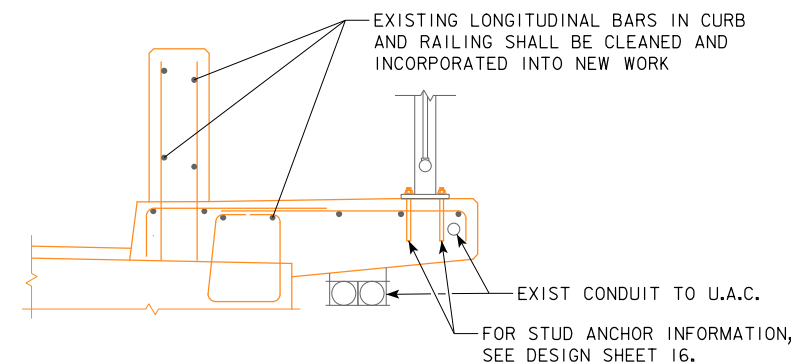
SECTION A-A
(LOOKING EAST)



SECTION B-B



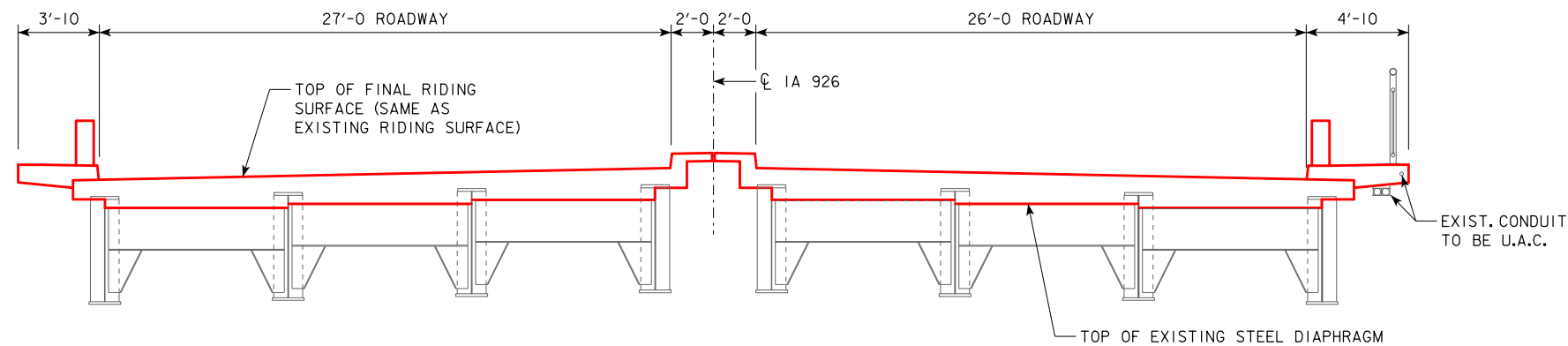
REMOVAL PLAN



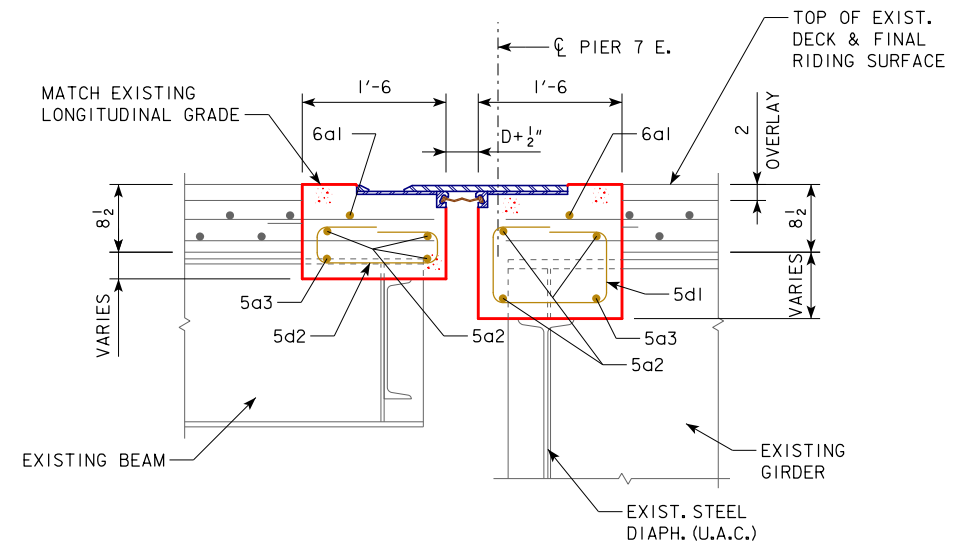
DETAIL C
SOUTH CURB SHOWN, NORTH CURB SIMILAR.

NOTE:
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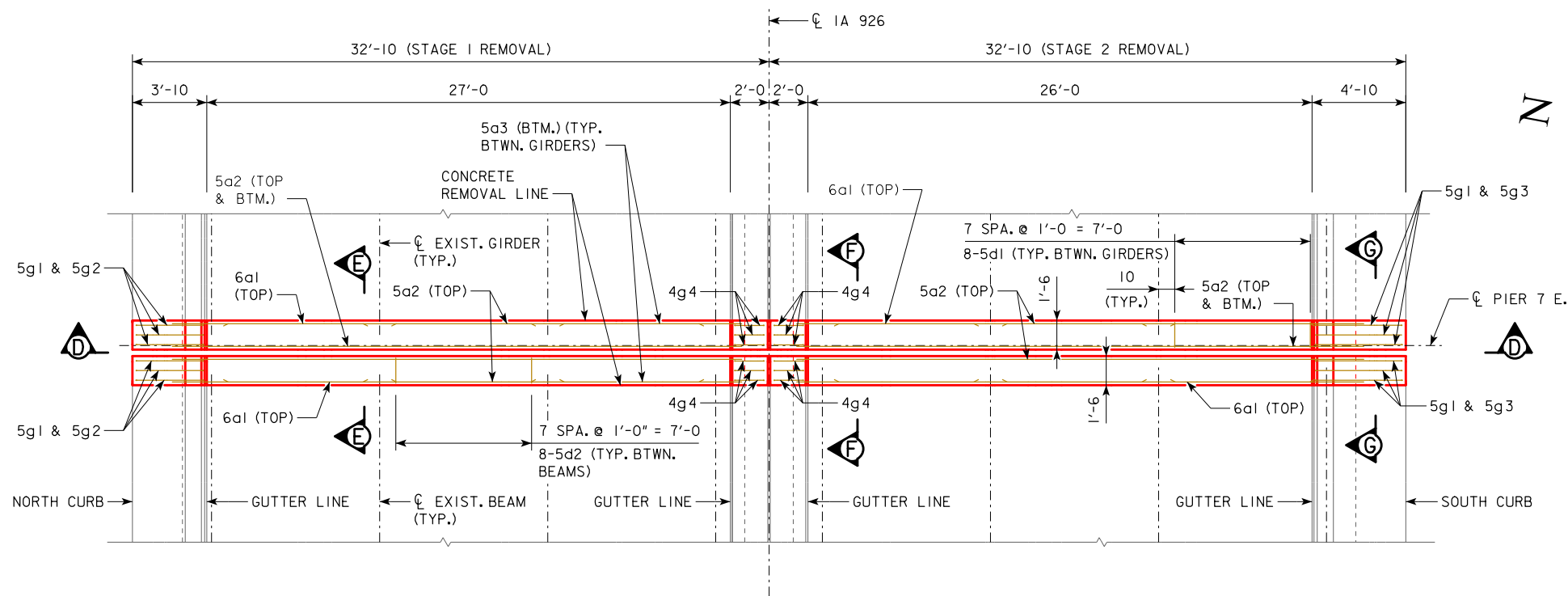
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0" x 58'-0" CONC. SLAB BRIDGE
PIER 7 REMOVAL DETAILS**
STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 8 OF 20 FILE NO. 32048 DESIGN NO. 322



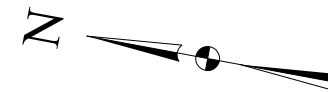
SECTION D-D
(LOOKING EAST)



SECTION E-E

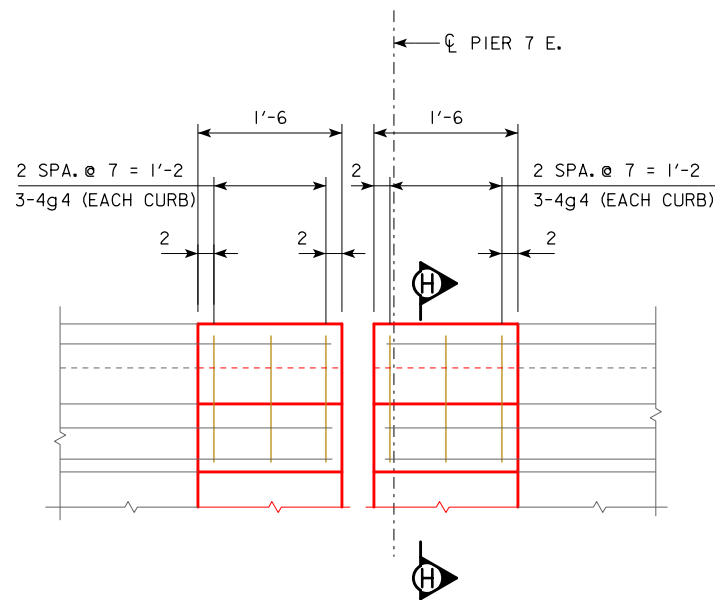


PLAN VIEW

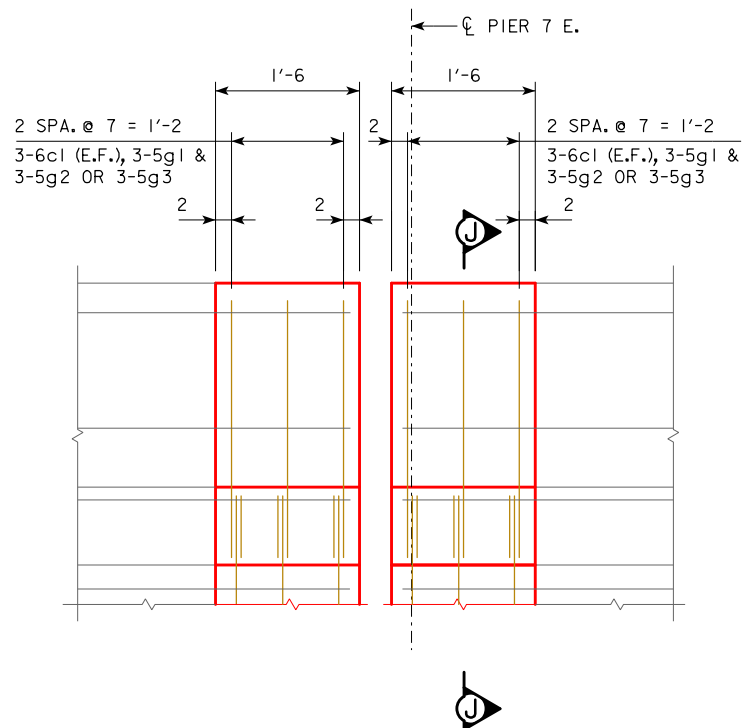


NOTES:
FOR SECTIONS F-F & G-G, SEE DESIGN SHEET 10.
FOR DIMENSION "D", SEE DESIGN SHEET 14.

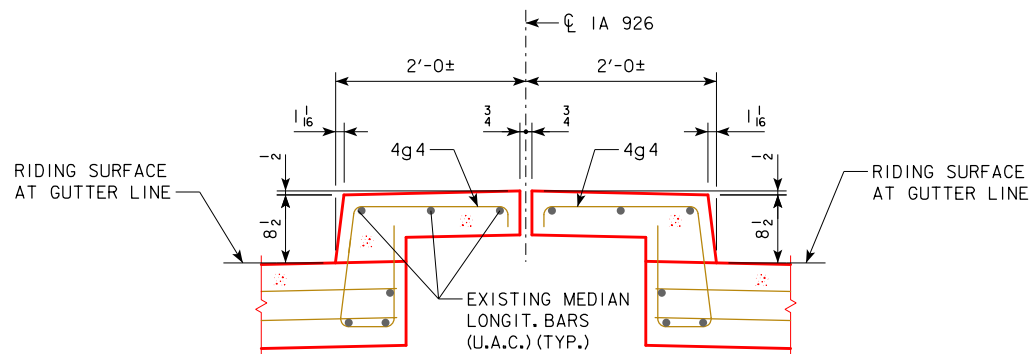
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0" x 58'-0" CONC. SLAB BRIDGE
PIER 7 CONC. REPAIR DETAILS**
STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 9 OF 20 FILE NO. 32048 DESIGN NO. 322



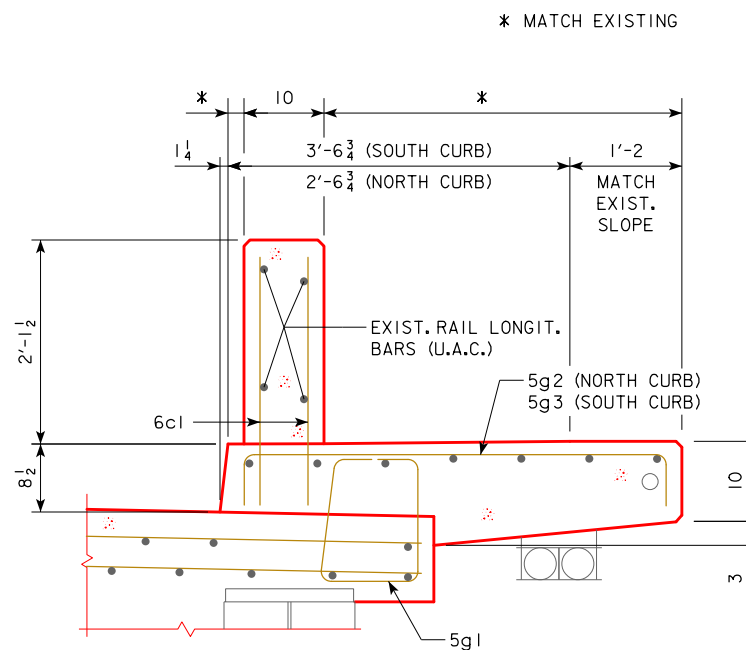
SECTION F-F



SECTION G-G



SECTION H-H



SECTION J-J

NOTE:
FOR LOCATION OF SECTIONS F-F & G-G, SEE DESIGN SHEET 9.

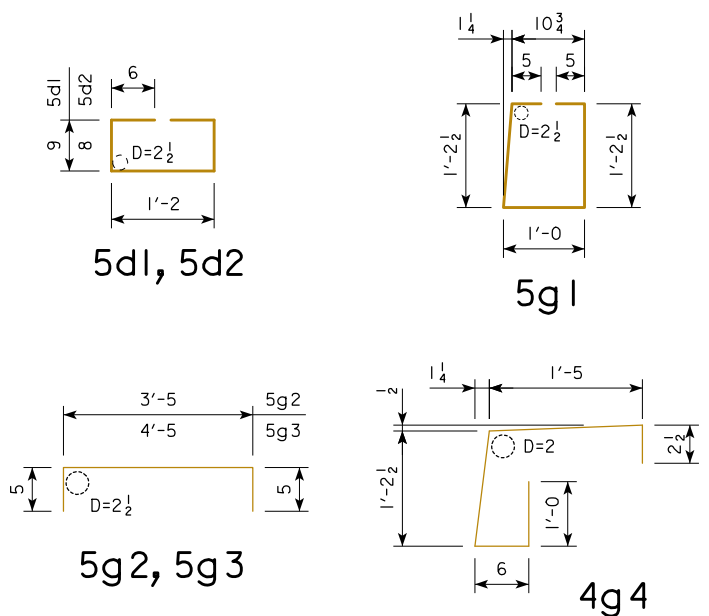
EPOXY COATED REINFORCING STEEL

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	SLAB, HORIZONTAL		4	28'-9	173
5a2	SLAB, HORIZONTAL		12	28'-9	360
5a3	SLAB, HORIZONTAL		12	8'-5	105
6c1	RAILING, VERTICAL		24	2'-8	96
5d1	DIAPHRAGM, TRANSVERSE		48	3'-8	184
5d2	DIAPHRAGM, TRANSVERSE		48	3'-6	175
5g1	CURB, HOOP		12	4'-3	53
5g2	NORTH CURB, HORIZONTAL		6	4'-3	27
5g3	SOUTH CURB, HORIZONTAL		6	5'-3	33
4g4	MEDIAN, ANCHOR		12	4'-4	35
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					1,241

CONCRETE PLACEMENT SUMMARY

LOCATION	TOTAL
DECK, CURBS & RAIL, STAGE 1 (2 @ 2.2 CY)	4.4
DECK, CURBS & RAIL, STAGE 2 (2 @ 2.2 CY)	4.4
TOTAL (CY)	8.8

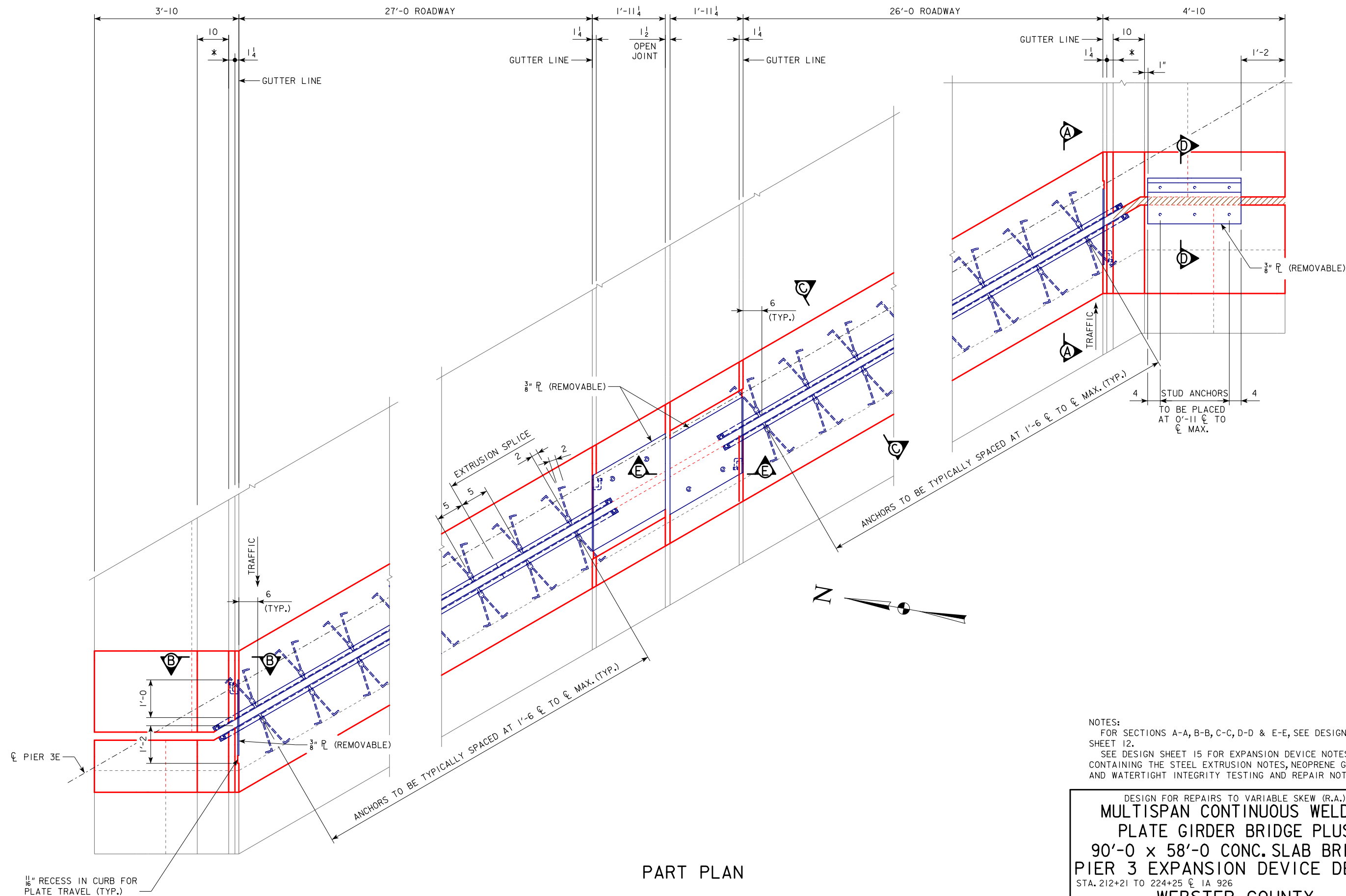
BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER.

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
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 STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 10 OF 20 FILE NO. 32048 DESIGN NO. 322

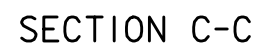
*MATCH EXISTING DIMENSION.



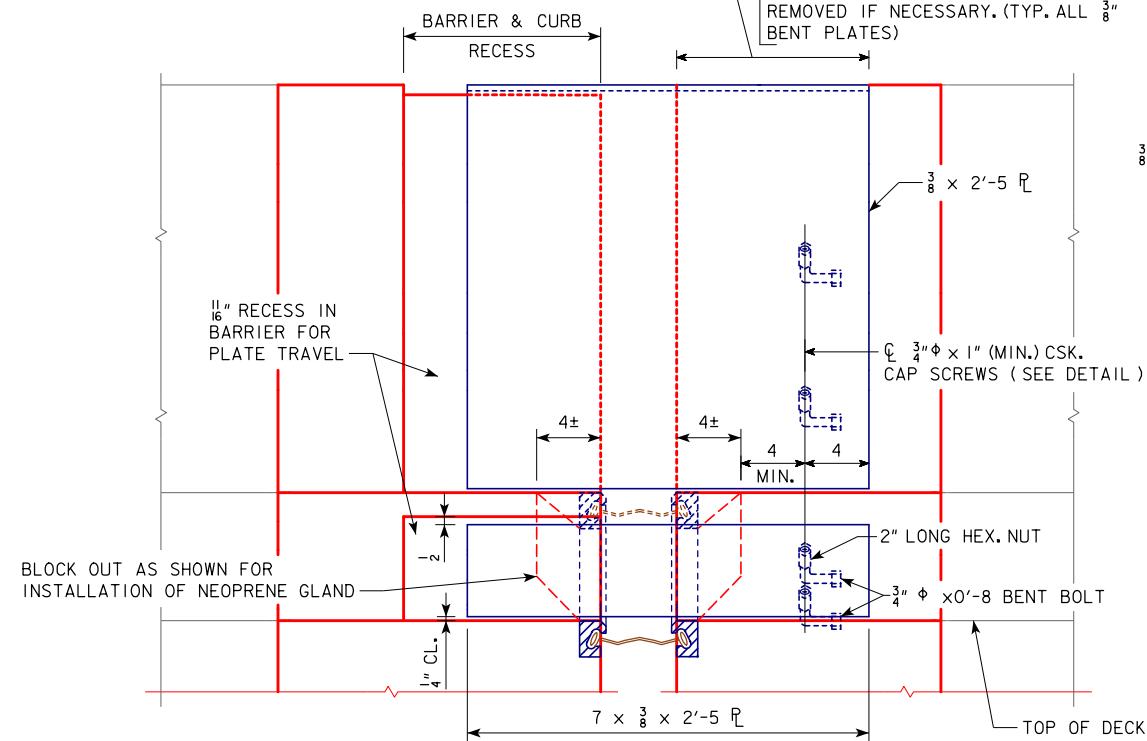
NOTES:
 FOR SECTIONS A-A, B-B, C-C, D-D & E-E, SEE DESIGN SHEET 12.
 SEE DESIGN SHEET 15 FOR EXPANSION DEVICE NOTES CONTAINING THE STEEL EXTRUSION NOTES, NEOPRENE GLAND, AND WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES.

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE
 PIER 3 EXPANSION DEVICE DETAIL**
 STA. 212+21 TO 224+25 & IA 926
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 11 OF 20 FILE NO. 32048 DESIGN NO. 322

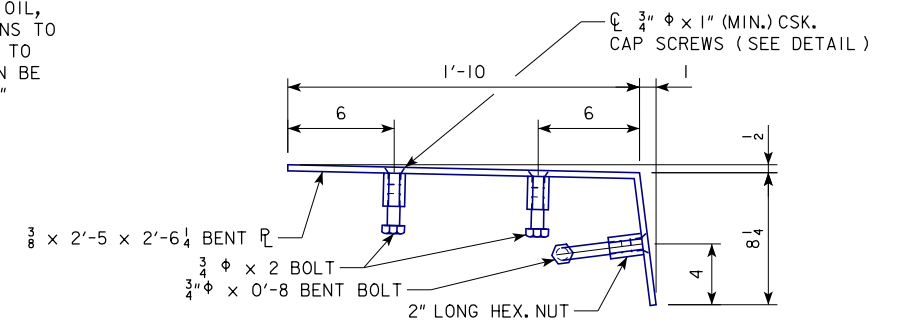
PART PLAN



THIS PORTION OF THE $\frac{3}{8}$ " BENT PLATE IS TO BE PAINTED WITH A COLORLESS OIL, OR SOME OTHER SATISFACTORY MEANS TO PREVENT CONCRETE FROM ADHERING TO THE PLATE SO THAT THE PLATE CAN BE REMOVED IF NECESSARY. (TYP. ALL $\frac{3}{8}$ " BENT PLATES)



VIEW E-E



MEDIAN CURB COVER PLATE DETAIL

THE MATERIAL USED FOR THE BARRIER & CURB PLATES IS TO BE ASTM A36 STEEL. THE BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A307. THE PLATES, BOLTS, NUTS AND CAP SCREWS ARE TO BE GALVANIZED IN ACCORDANCE WITH ARTICLE 4100.07 OF THE STANDARD SPECIFICATIONS.

TEXTURED COVER PLATE $\frac{3}{4} \times$
1'-9 RECESSED $\frac{1}{8}$ " BELOW TOP
OF PAVEMENT OR SIDEWALK

$\frac{3}{4} \times 2$ BAR RECESSED
 $\frac{1}{8}$ " BELOW TOP OF
PAVEMENT OR SIDEWALK

TOP OF DECK OR CURB

SEE DETAIL "F"

$\frac{3}{8} \times 10$

$\frac{3}{4} \phi$ 6 HEADED STUDS
45° BEND (TYP.)

STEEL EXTRUSION

EXPANSION JOINT
SETTINGS

$2\frac{1}{2}$ AT 90° F.
 $4\frac{1}{4}$ AT 50° F.
6 AT 10° F.

TOP OF DECK OR CURB

$\frac{3}{8} \times 10$

2" LONG HEX NUT (TYP.)

$\frac{3}{4} \phi \times 0'-8$ BENT BOLT
(TYP.)

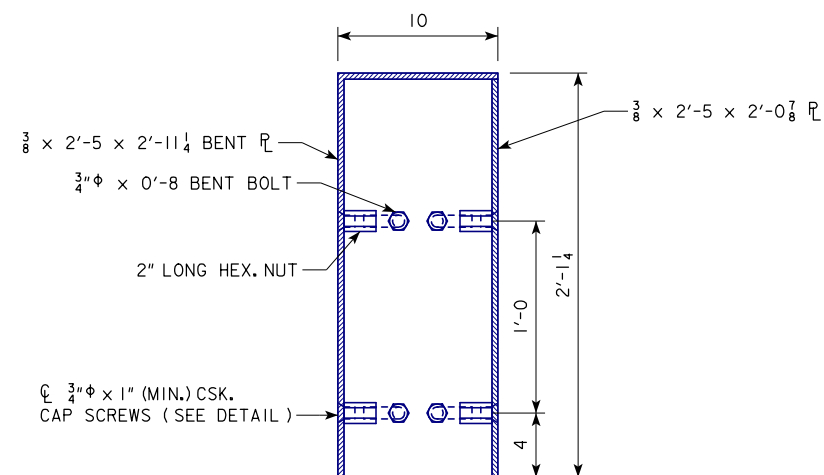
$\frac{3}{4} \phi \times 0'-4$ BOLT
(TYP.)

3

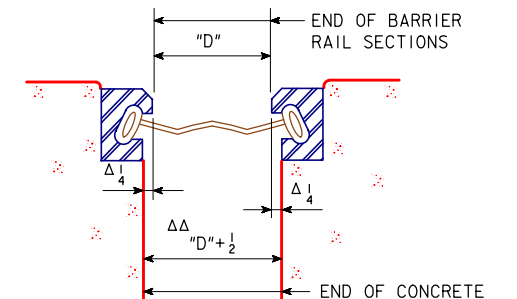
4

3

SECTION D-D



BARRIER COVER PLATE DETAIL

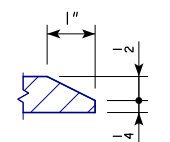


EXPANSION OPENING DETAIL

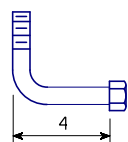
ΔΔ USED FOR ALL OUT TO OUT DIMENSIONS OF SLAB.
THE DIMENSION MAY VARY SLIGHTLY DEPENDING ON
MANUFACTURER FURNISHING THE JOINT.

TABLE OF APPROVED EXPANSION DEVICES	
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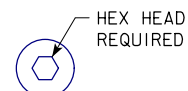
MANUFACTURER	TYPE OF STEEL EXTRUSION	NEOPRENE GLAND	MINIMUM OPENING FOR GLAND INSTALLATION	CORRESPONDING MAXIMUM DECK TEMPERATURE
WATSON-BOWMAN & ACME CORP.	A	SE-800	2½"	90° F.
APPROVED EQUAL				



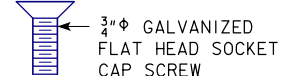
DETAIL F



BENT BOLT DETAIL



- HEX HEAD
REQUIRED



CAP SCREW DETAIL

NOTES:
FOR LOCATION OF SECTION C-C & D-D AND VIEW E-E,
SEE DESIGN SHEET 13.
SEE DESIGN SHEET 15 FOR EXPANSION DEVICE NOTES
CONTAINING THE STEEL EXTRUSION NOTES, NEOPRENE GLAND,
AND WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES.

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0 x 58'-0 CONC. SLAB BRIDGE
PIER 7 EXPANSION DEVICE DETAIL
STA. 212+21 TO 224+25 $\frac{1}{4}$ IA 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 14 OF 20 FILE NO. 32048 DESIGN NO. 322

REVISION 08-13 - STEEL EXTRUSION NOTE WAS ADDED TO SHOW A WELD DETAIL ON THE SHOP DRAWINGS FOR SPLICES.
AN ADDITIONAL NEOPRENE GLAND NOTE ABOUT THE CORRESPONDING MAXIMUM DECK TEMPERATURE WAS ADDED.
ENGLISHDECKRAILBRIDGES.DGN - 1026s2 - THIS SHEET ISSUED 11-08.

STEEL EXTRUSION NOTES:

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS OF THE EXPANSION DEVICES SHOWING LAYOUT, MATERIAL TO BE USED, AND PROVISIONS FOR THE HOLDING DEVICE DURING PLACEMENT OF CONCRETE.

THE EXPANSION DEVICE SHALL BE GALVANIZED AFTER WELDING. ALL CURB PLATES INCLUDING THEIR ANCHORAGES SHALL BE GALVANIZED.

THE EXPANSION DEVICE IS TO BE PARALLEL TO GRADE.

CAP SCREWS SHALL BE COUNTERSUNK $\frac{1}{16}$ " BELOW TOP OF THE PLATE. THE MINIMUM GRADE OF STRUCTURAL STEEL FOR THE EXPANSION DEVICE SHALL BE ASTM A36.

BLOCKOUT DETAILS MAY BE ALTERED FROM THOSE SHOWN PROVIDED THE GLAND MAY BE INSTALLED AND REMOVED IF NECESSARY AND THE CURB AREA REMAINS WATERTIGHT.

SHOP SPLICES OF THE STEEL EXTRUSION WILL BE PERMITTED. PRIOR TO MAKING SHOP SPLICES STEEL EXTRUSION PIECES SHALL HAVE A MINIMUM LENGTH OF 15 FEET. THE INDIVIDUAL LENGTH OF PIECES SHALL BE CHOSEN SO THAT A MINIMUM NUMBER OF SPLICES IS REQUIRED. ALL PIECES SHALL BE JOINED WITH A PREQUALIFIED PARTIAL PENETRATION SINGLE GROOVE WELD DETAILED ON THE SHOP DRAWING. ALL SURFACES NOT IN CONTACT WITH CONCRETE ARE TO BE GROUND FLUSH. NO WELD SHALL BE PERMITTED IN THE INTERNAL SECTION OF THE EXTRUSION WHERE THE NEOPRENE GLAND IS TO BE INSTALLED.

THE NUMBER OF FEET OF STEEL EXTRUSION INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL INCLUDE THE COST OF FURNISHING BUT NOT THE COST OF INSTALLING THE NEOPRENE GLAND. THE CONTRACT PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING STEEL EXTRUSIONS. THIS WORK WILL CONSIST OF FURNISHING ALL REQUIRED MATERIALS, (INCLUDING THE COVER PLATES AND THEIR ANCHORAGE SYSTEMS), AND THE INSTALLATION AND ADJUSTMENT OF THE EXPANSION JOINTS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE FURNISHING AND INSTALLATION OF ALL NECESSARY HARDWARE AND ACCESSORIES AS SUPPLIED BY THE EXPANSION JOINT MANUFACTURER ARE TO BE INCLUDED IN THIS WORK, INCLUDING THE ANCHORAGE SYSTEM AND ANY TEMPORARY ERECTION MATERIAL. ALL WORK AND MATERIALS FOR THE INSTALLATION OF THE EXPANSION JOINTS ARE TO COMPLY WITH THE WRITTEN RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER.

FIELD CONSTRUCTION NOTES:

IF THE STEEL EXTRUSION IS SPLICED IN THE FIELD, THE SPLICE LOCATION SHALL BE DETAILED ON THE SHOP DRAWINGS. THE CONNECTION DETAILS SHALL INCLUDE TAB PLATES AND PREPARED ENDS TO ACCOMMODATE THE NECESSARY WELDING. SEE DETAILS IN THESE PLANS.

GALVANIZED COATING DAMAGE BY FIELD WELDING SHALL BE REPAIRED IN ACCORDANCE WITH MATERIALS I.M. 410.

NEOPRENE GLAND NOTES:

THE NEOPRENE GLAND IS TO BE PLACED AS ONE CONTINUOUS PIECE FROM END TO END OF THE STEEL EXTRUSION.

THE NEOPRENE GLAND SHALL CONFORM TO ASTM-2628 MODIFIED TO EXCLUDE RECOVER TEST AND COMPRESSION SET.

THE CONTRACTOR SHALL INSTALL THE GLAND ABOVE THE MINIMUM TEMPERATURE OF 45° AND THE MINIMUM JOINT OPENING AND CORRESPONDING MAXIMUM DECK TEMPERATURE SHOWN IN THESE PLANS. THE DECK TEMPERATURE SHALL BE MEASURED BY RECORDING THE SURFACE TEMPERATURES ON THE UNDERSIDE OF THE DECK ADJACENT TO THE JOINTS. IF THE DECK TEMPERATURE DOES NOT FALL WITHIN THE SPECIFIED TEMPERATURE RANGE BEFORE THE CONTRACTOR HAS COMPLETED ALL OTHER REQUIRED WORK, IT WILL BE NECESSARY FOR THE CONTRACTOR TO RETURN TO THE PROJECT SITE TO COMPLETE INSTALLATION AND TESTING OF THE NEOPRENE GLAND. IF THE CONTRACTOR IS REQUIRED TO RETURN TO THE PROJECT SITE AFTER ALL OTHER REQUIRED WORK HAS BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE INSTALLATION AND TESTING OF NEOPRENE GLAND AT NO EXTRA CHARGE TO THE STATE.

THE NUMBER OF FEET OF NEOPRENE GLAND INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL BE FULL COMPENSATION FOR INSTALLING AND TESTING OF THE NEW NEOPRENE GLAND. THIS WORK WILL CONSIST OF CLEANING THE EXTRUSION, INSTALLATION OF THE NEOPRENE GLAND AND WATER TIGHT TESTING OF THE EXPANSION JOINT SYSTEM. ALL WORK AND MATERIALS NECESSARY FOR THE INSTALLATION OF THE NEOPRENE GLAND SHALL COMPLY WITH THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER. THE PRICE BID FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL INCLUDE ALL WATERTIGHT INTEGRITY TESTING, LEAK REPAIRS AS DIRECTED BY THE ENGINEER, AND SUBSEQUENT WATERTIGHT TESTING UNTIL A LEAK FREE INSTALLATION IS ACHIEVED.

WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES:

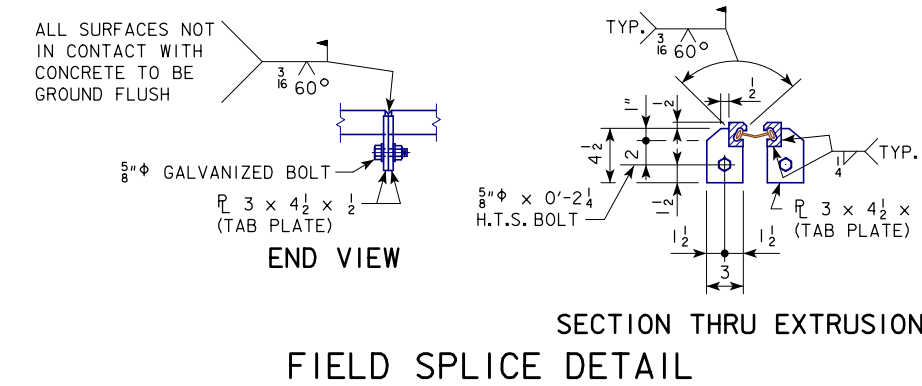
AFTER INSTALLATION OF EACH NEOPRENE GLAND, THE CONTRACTOR SHALL PERFORM WATERTIGHT INTEGRITY TESTS AT THE DECK LEVEL TO DETECT ANY LEAKAGE. THE TESTS ARE TO CHECK FOR LEAKAGE AT THE UPTURNED ENDS OF THE EXPANSION DEVICE AND FOR LEAKAGE ALONG THE EXPANSION DEVICE ACROSS THE DECK AND ANY MEDIANS OR SIDEWALKS. THE CONTRACTOR MAY CONDUCT A SINGLE TEST OF THE ENTIRE DEVICE INCLUDING UPTURNED ENDS OR MAY CONDUCT SEPARATE TESTS OF UPTURNED ENDS AND ONE OR MORE TESTS OF OVERLAPPING LENGTHS BETWEEN THE UPTURNED ENDS.

AT EACH UPTURNED END OF THE EXPANSION DEVICE, THE CONTRACTOR SHALL BLOCK OUT ON THE DECK AT LEAST 3 FEET OF THE EXPANSION DEVICE LEADING TO THE UPTURNED END AND FLOOD THE AREA. A MINIMUM WATER DEPTH OF 3" SHALL BE MAINTAINED AT THE GUTTERLINE FOR AT LEAST 30 MINUTES. DURING THE TEST, THE INSPECTOR SHALL OBSERVE FOR ANY OVERFLOW AT THE UPTURNED END. AT THE CONCLUSION OF THE TEST THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF THE INSPECTOR OBSERVES NO OVERFLOW DURING THE TEST AND IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS NEAR THE UPTURNED END.

THE CONTRACTOR SHALL TEST THE EXPANSION DEVICE BETWEEN UPTURNED ENDS BY BLOCKING OUT AND COVERING THE DEVICE WITH PONDED OR FLOWING WATER TO A DEPTH OF AT LEAST 1" AT ALL POINTS, FOR AT LEAST 30 MINUTES. VERTICAL CURB SURFACES MAY BE TESTED WITH AN UNNOZZLED HOSE DELIVERING APPROXIMATELY ONE GALLON PER MINUTE DIRECTED TO FLOW OVER THE ENTIRE CURB HEIGHT FOR 30 MINUTES. AT THE CONCLUSION OF THE TEST, THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS ALONG THE FULL LENGTH OF THE EXPANSION JOINT. DAMP CONCRETE THAT DOES NOT SHOW DRIPPING WATER OR WATER DROPLETS IS NOT CONSIDERED A SIGN OF LEAKAGE.

IF THE EXPANSION DEVICE LEAKS AT AN UPTURNED END OR ALONG ITS LENGTH, THE CONTRACTOR SHALL LOCATE THE LEAK(S) AND TAKE REPAIR MEASURES TO STOP THE LEAKAGE. THE REPAIR MEASURES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING CORRECTIVE WORK.

IF MEASURES TO ELIMINATE LEAKAGE ARE TAKEN, THE CONTRACTOR SHALL PERFORM SUBSEQUENT WATERTIGHT INTEGRITY TESTS SUBJECT TO THE SAME CONDITIONS AS THE ORIGINAL TEST.



DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)

MULTISPAN CONTINUOUS WELDED

PLATE GIRDER BRIDGE PLUS

90'-0 x 58'-0 CONC. SLAB BRIDGE

EXPANSION DEVICE NOTES

STA. 212+21 TO 224+25 @ 1A 926 MAY, 2021

WEBSTER COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

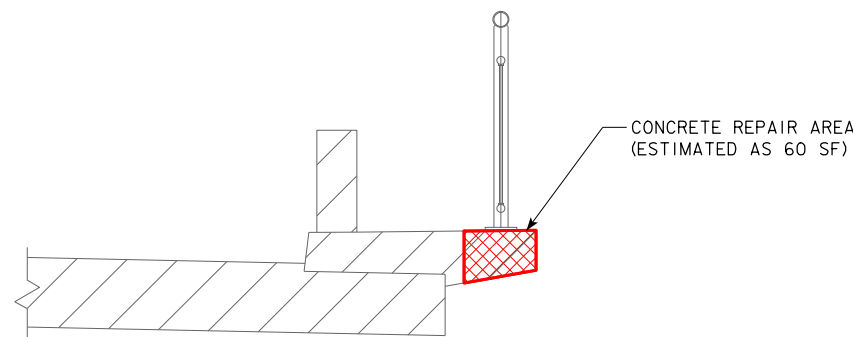
DESIGN SHEET NO. 15 OF 20 FILE NO. 32048 DESIGN NO. 322



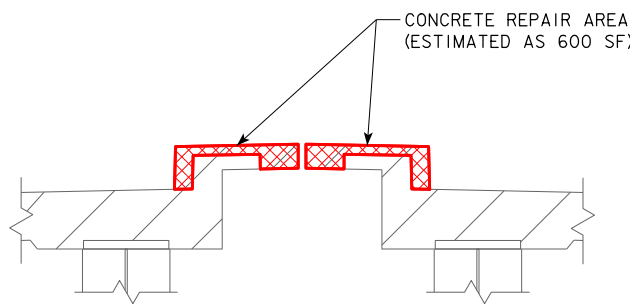
TYPICAL SPALLING IN
SOUTH SIDEWALK OVERHANG



TYPICAL SPALLING IN MEDIAN CURB



DETAIL OF SOUTH SIDEWALK
OVERHANG CONCRETE REPAIR



DETAIL OF MEDIAN CURB
CONCRETE REPAIR

NOTES:

IF SPALLED AREA TO BE REPAIRED HAS EXPOSED STUD ANCHORS, ANCHORS SHALL BE REMOVED AND NEW STUD ANCHORS IN KIND SHALL BE INSTALLED PER RAIL MOUNTING DETAIL. STUD CONCRETE ANCHORS SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIRS".

THE STUD CONCRETE ANCHORS SHALL BE GALVANIZED AND HAVE A MINIMUM PULLOUT STRENGTH OF 8,000 POUNDS BASED ON 4,000 PSI CONCRETE. ANCHORS SHALL BE IN CONFORMANCE WITH MATERIAL I.M. 453.09.

IF RAILING IS DAMAGED, CONTRACTOR SHALL REPLACE SECTION IN KIND AT NO EXTRA COST TO THE STATE.

CURRENT RAILING DETAILS FOUND IN EXISTING DESIGN 108.

AREAS OF CURB DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS. CONCRETE REPAIR IS ESTIMATED AS 600 SF FOR MEDIAN CURB AND 60 SF FOR SOUTH SIDEWALK OVERHANG. THE ACTUAL QUANTITY IS DETERMINED BY THE ENGINEER. ACTUAL SPALLED AND DELAMINATED AREAS AS DETERMINED BY THE ENGINEER SHALL BE REPAIRED.

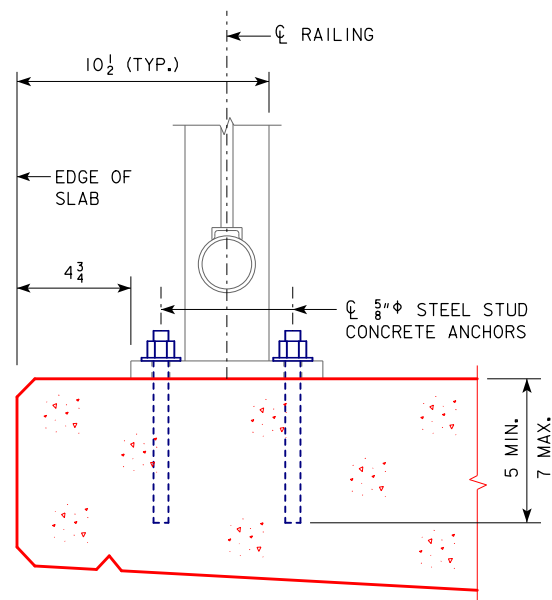
LEGEND



INDICATES SHALLOW REPAIR

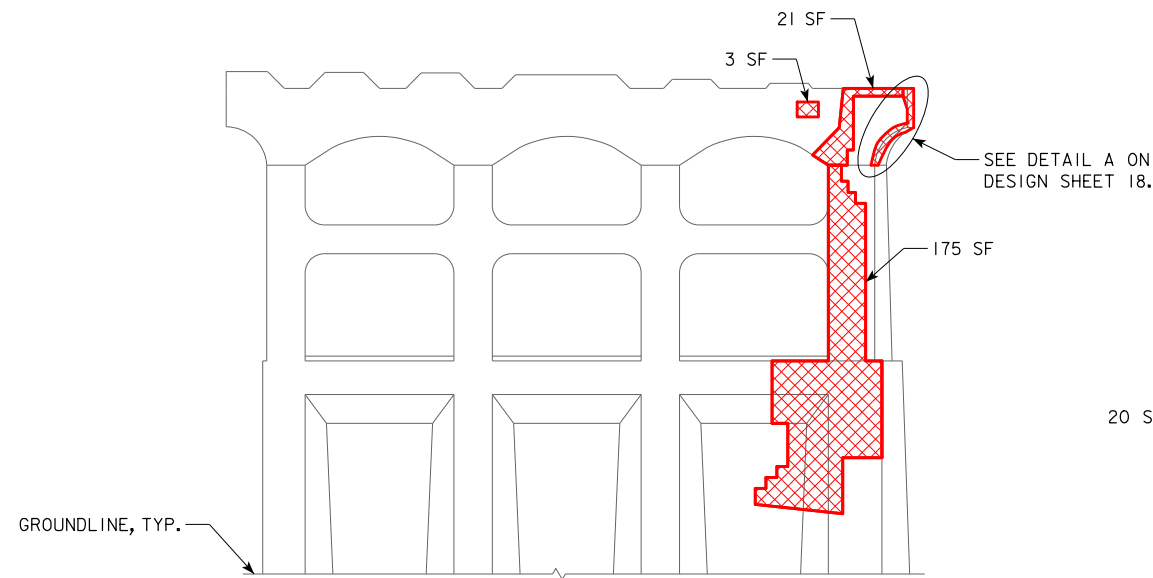


INDICATES REGULAR REPAIR

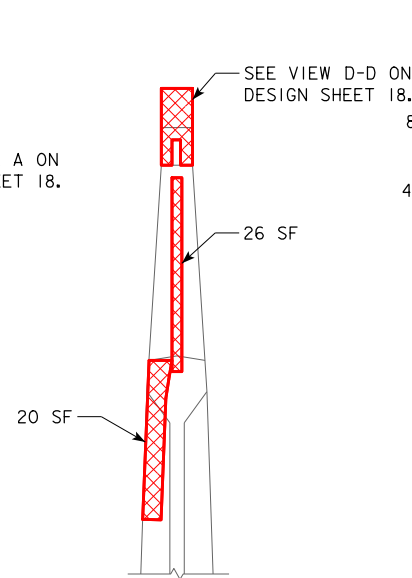


RAIL MOUNTING DETAIL

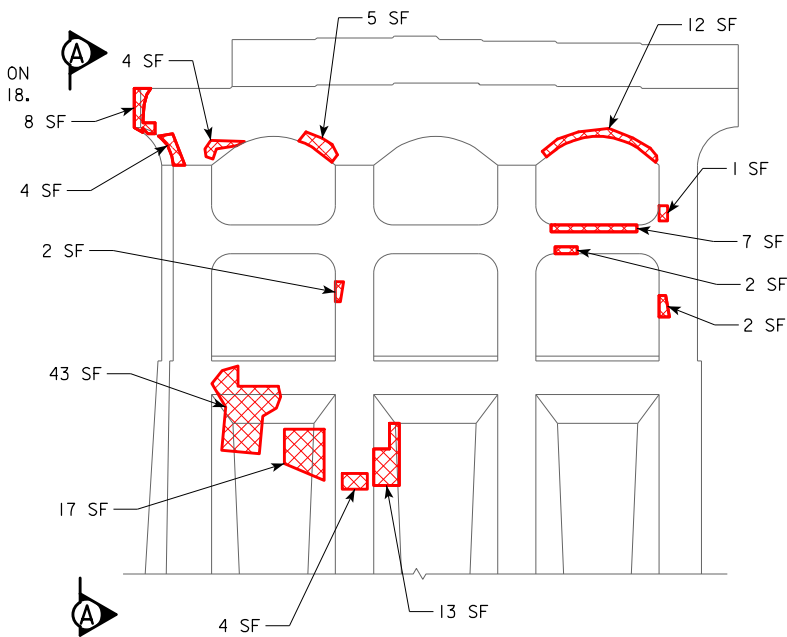
DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE
 CONCRETE REPAIR DETAILS**
 STA. 212+21 TO 224+25 & IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 16 OF 20 FILE NO. 32048 DESIGN NO. 322



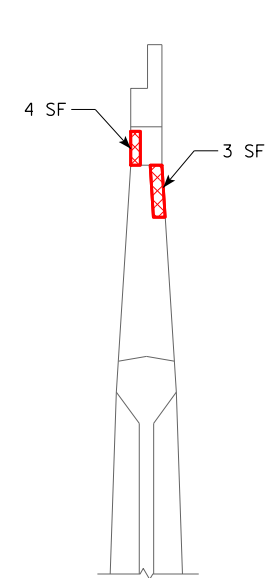
PIER 7 W-WEST FACE
(LOOKING EAST)



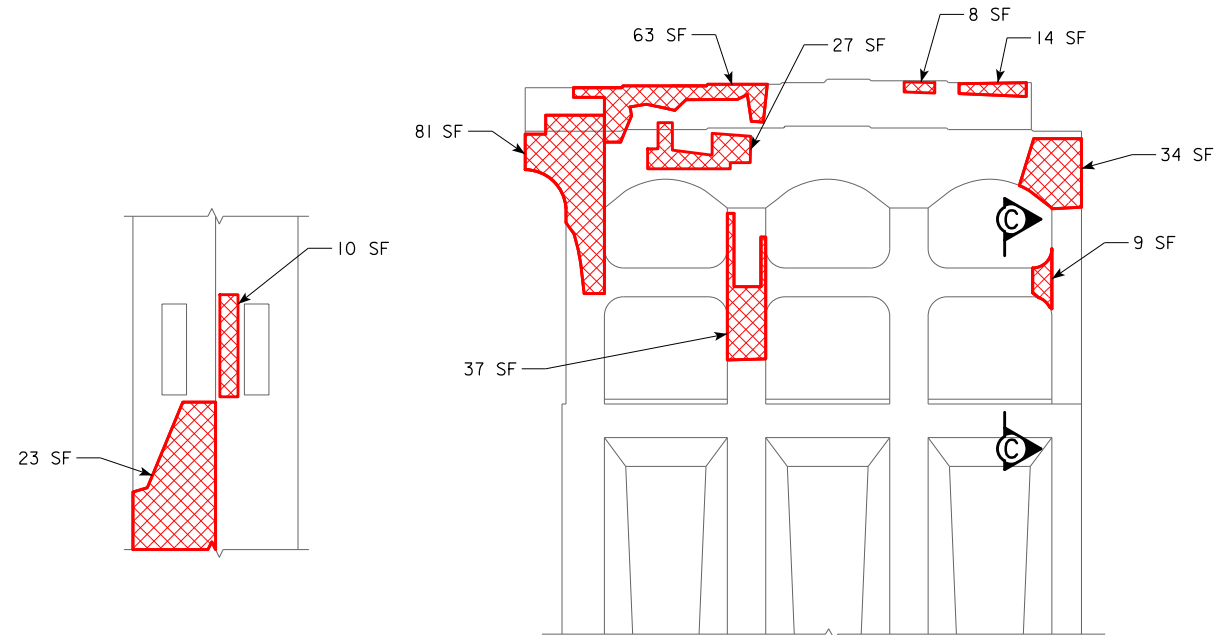
VIEW A-A



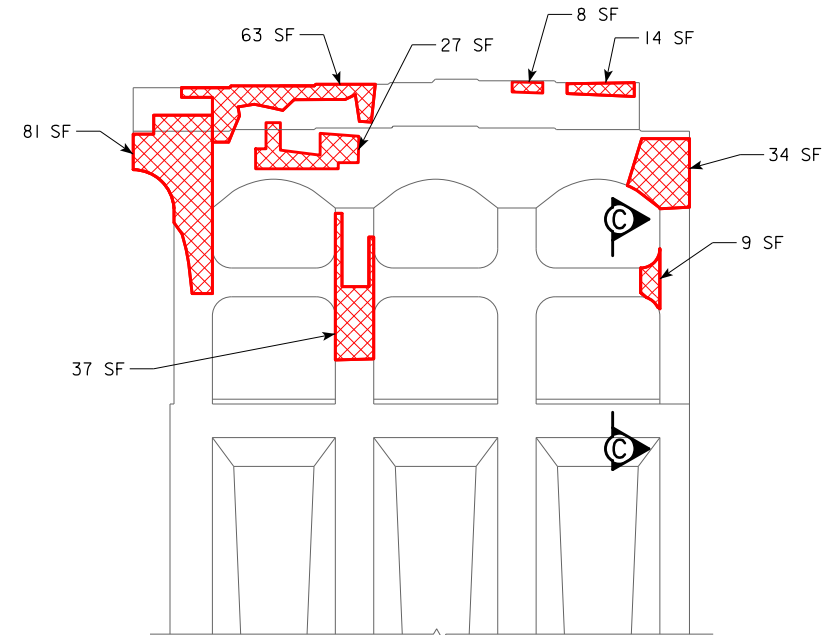
PIER 7 E-EAST FACE
(LOOKING WEST)



VIEW B-B



SECTION C-C

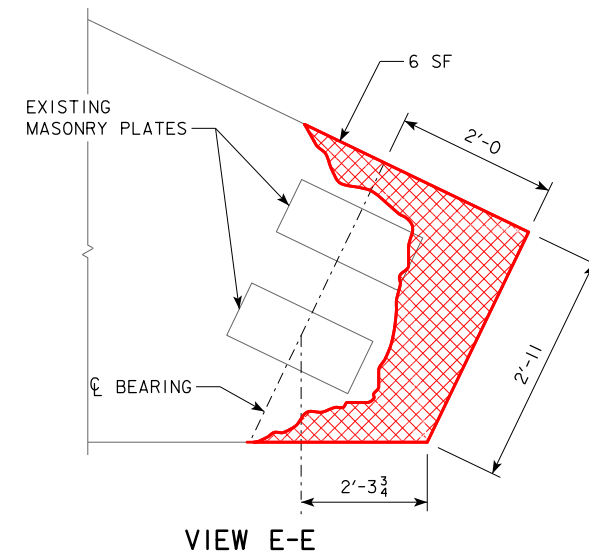
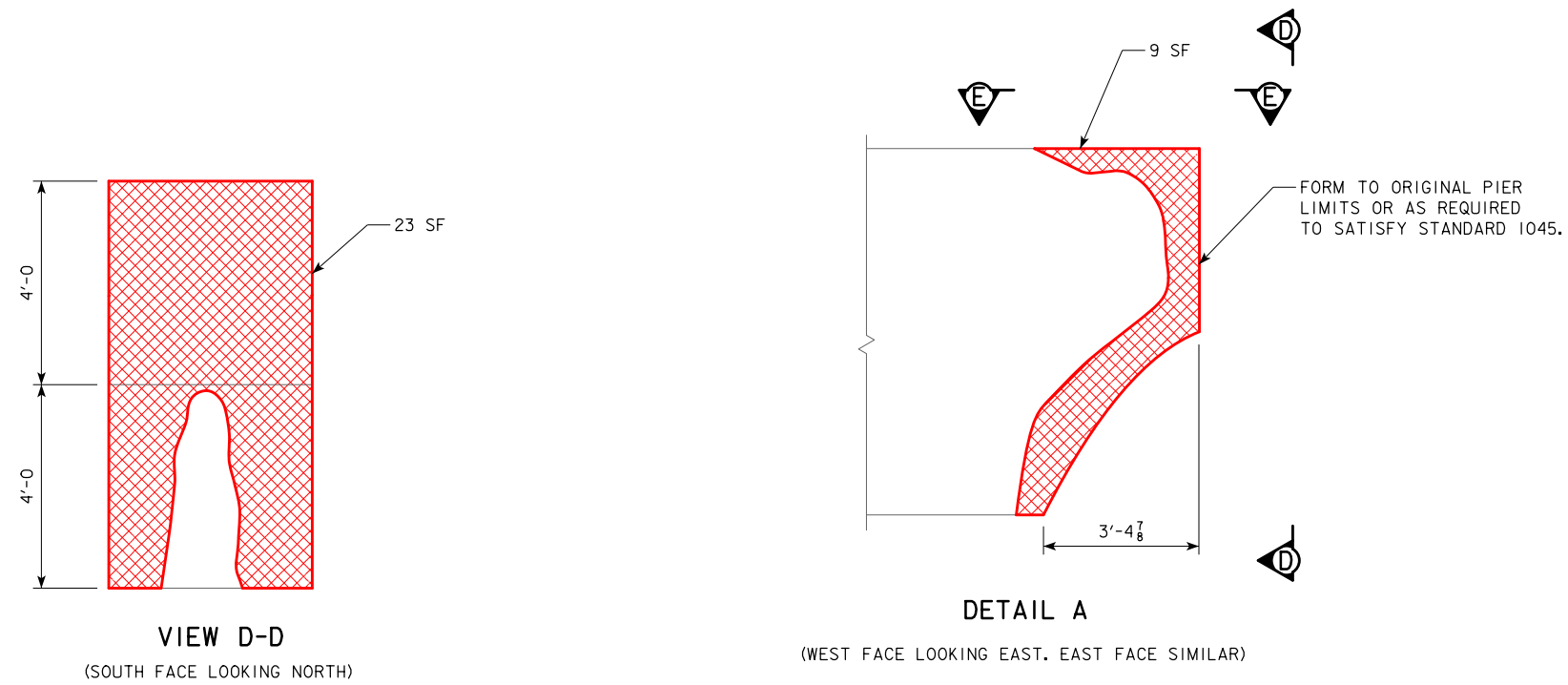


PIER 7 E-WEST FACE
(LOOKING EAST)

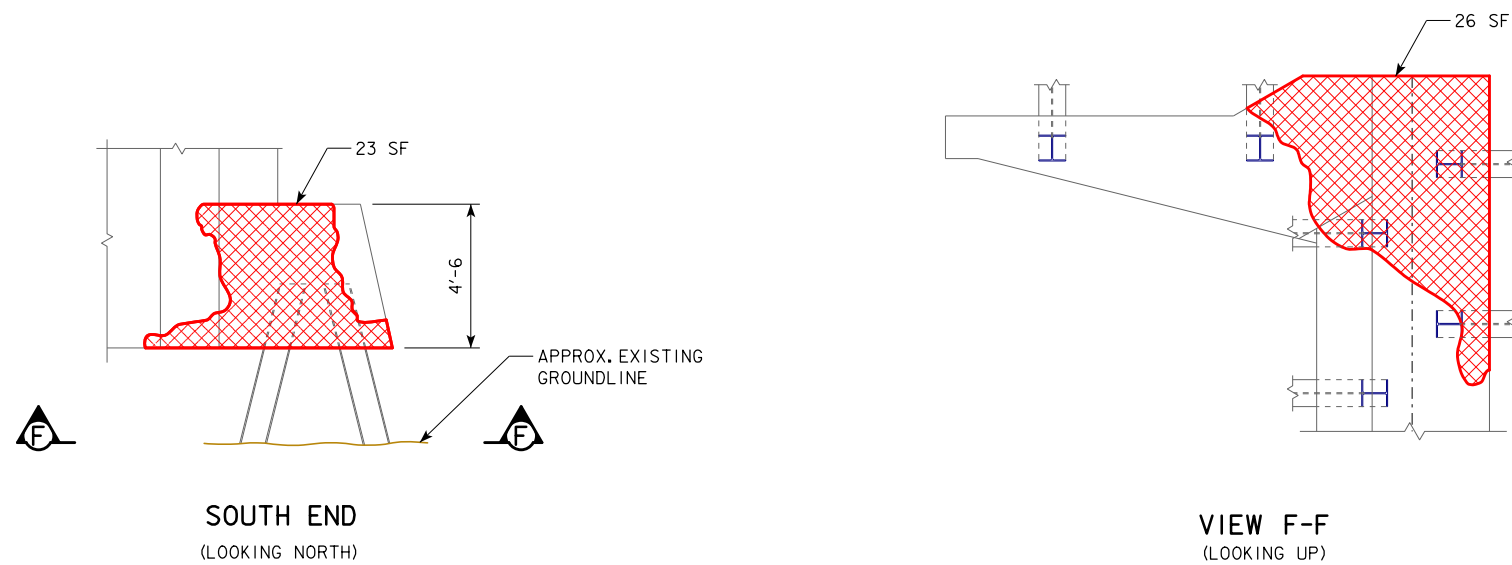
LEGEND	
	INDICATES SHALLOW REPAIR
	INDICATES REGULAR REPAIR

NOTE:
AREAS OF PIERS DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS. CONCRETE REPAIR IS ESTIMATED AS 720 SF FOR PIER 7.

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE
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 STA. 212+21 TO 224+25 C. 1A 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 17 OF 20 FILE NO. 32048 DESIGN NO. 322



CONCRETE REPAIRS (PIER 7)



CONCRETE REPAIRS (PIER 3 E)

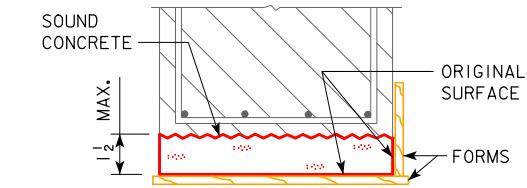
(ESTIMATED AS 49 SF)

NOTES:
AREAS OF PIERS DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS. CONCRETE REPAIR IS ESTIMATED AS 49 SF FOR PIER 3 E AND 720 SF FOR PIER 7.

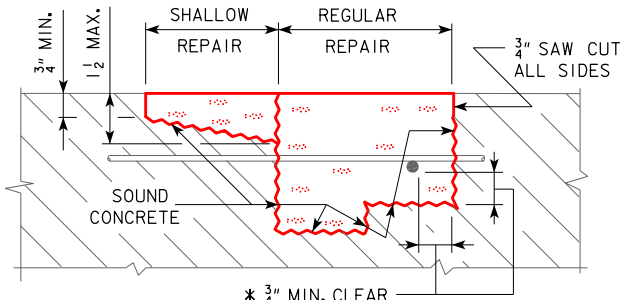
LEGEND	
	INDICATES SHALLOW REPAIR
	INDICATES REGULAR REPAIR

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
 PLATE GIRDER BRIDGE PLUS
 90'-0 x 58'-0 CONC. SLAB BRIDGE
 CONCRETE REPAIR DETAILS**
 STA. 212+21 TO 224+25 CL IA 926 MAY, 2021
WEBSTER COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 18 OF 20 FILE NO. 32048 DESIGN NO. 322

REVISED 10-14 - DELETED ALL REFERENCES TO GROUT. SECTION 2426 COVERS THIS REQUIREMENT AND DOESN'T NEED TO STATED ON THE PLANS.
ENGLISHREPAIRRETR01TBRIDGES.DGN 1045 - THIS SHEET REDRAWN 9-27-90.

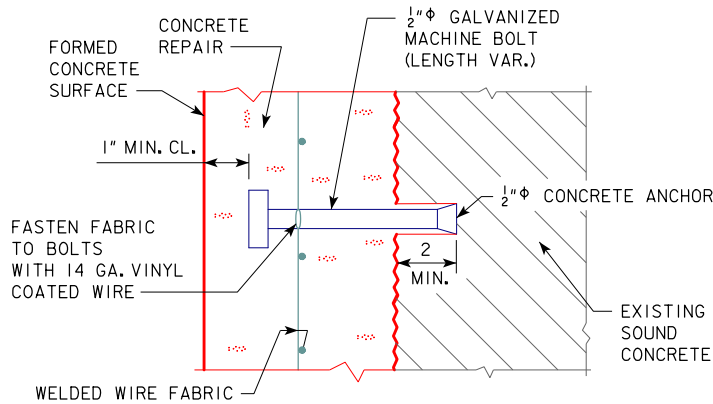


SHALLOW REPAIR
BOTTOM SURFACE



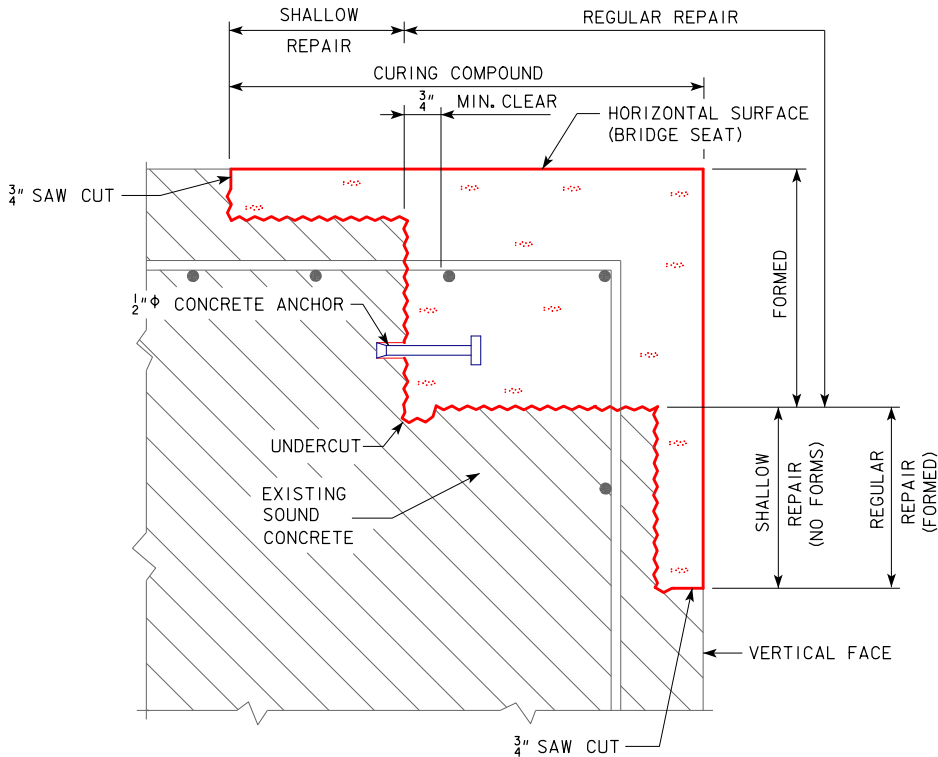
REPAIR DEFINITION

* INDICATES CLEARANCE FOR AN UN-BONDED REBAR.

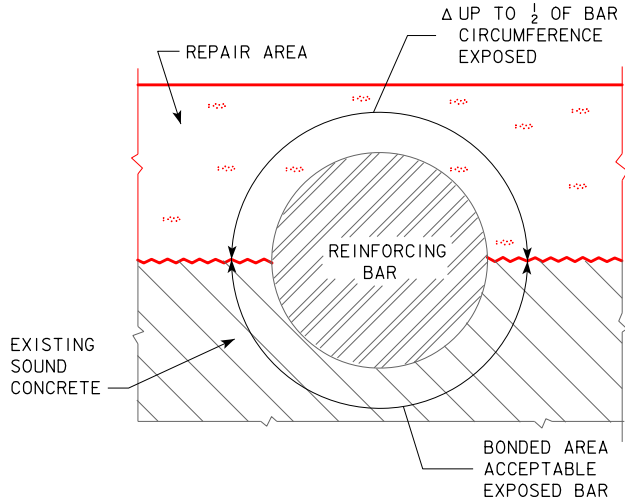


ANCHOR DETAIL

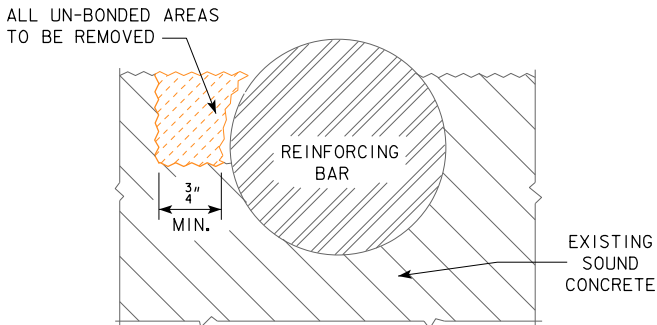
FOR SPACING AND USE OF CONCRETE ANCHORS
AND WWF SEE THE REPAIR NOTES.



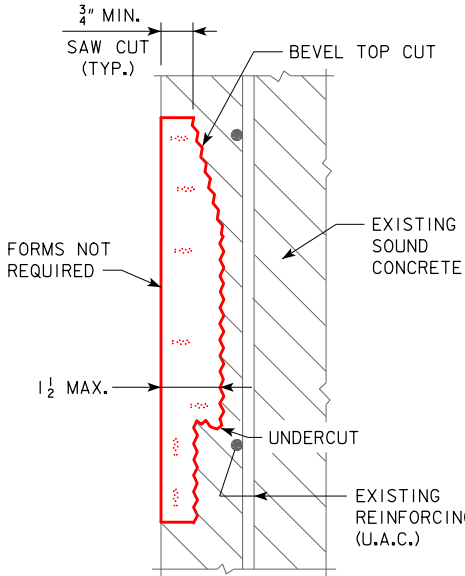
CORNER REPAIR



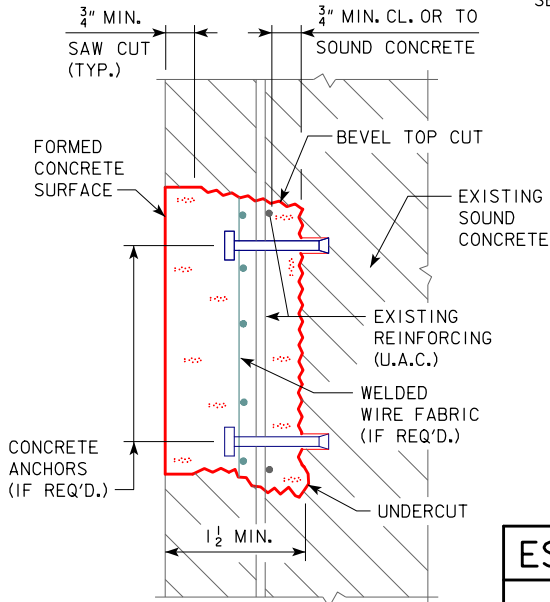
Δ IF MORE THAN 1/2 OF THE REBAR IS EXPOSED IT
SHALL BE TREATED AS AN UN-BONDED REBAR.



CONCRETE REMOVAL
ADJACENT TO REINFORCING



SHALLOW REPAIR
VERTICAL FACE



REGULAR REPAIR
VERTICAL FACE

REPAIR NOTES:

THE SPALLED AND HOLLOW AREAS OF THIS BRIDGE AS NOTED AND SHOWN IN THESE PLANS SHALL BE REPAIRED AS FOLLOWS:
ALL THE COSTS OF EQUIPMENT AND MATERIALS REQUIRED TO REPAIR THE SPALLED AND HOLLOW AREAS OF THIS BRIDGE SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIR".
THE PRICE BID FOR "CONCRETE REPAIR" SHALL INCLUDE THE COST OF ALL CONCRETE ANCHORS AND WELDED WIRE FABRIC REQUIRED BY THE PLANS.
THE ENGINEER SHALL DETERMINE AND OUTLINE BY VISUAL AND AUDIBLE INSPECTION THE ACTUAL AREAS OF THE CONCRETE REPAIRS. THE CONTRACTOR SHALL BE PAID FOR THE ACTUAL AMOUNT OF REPAIRS MADE ON A SQUARE FOOT BASIS BASED ON THE PRICE BID PER SQUARE FOOT.
ALL EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK, EXCEPT BADLY DETERIORATED EXISTING REINFORCING WHICH SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
THE CONCRETE ANCHORS REQUIRED SHALL HAVE A MINIMUM PULL OUT OF 5000 LBS. BASED ON 4000 PSI CONCRETE. AN ANCHOR MEETING THE REQUIREMENTS OF IOWA D.O.T. MATERIALS I.M. 453.09 AND THE PULL OUT LOAD ABOVE IS REQUIRED. THE ANCHORS SHALL BE GALVANIZED AND SHALL BE INSTALLED ACCORDING TO RECOMMENDATIONS OF THE MANUFACTURER. THE COST OF FURNISHING AND INSTALLING THE CONCRETE ANCHORS SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIR".
THE WELDED WIRE FABRIC SHALL BE ASTM A185 AND GALVANIZED AS PER ASTM A-641. THE WWF WIRES SHALL BE SPACED 3 x 3 OR 4 x 4 AND THE WIRES SHALL HAVE A NOMINAL AREA OF 0.014 TO 0.029 SQUARE INCHES INCLUSIVE, EXAMPLE "WWF 3 x 3 - W1.4 x W2.9".
WHERE REINFORCEMENT HAS BEEN EXPOSED AND CLEARANCE AROUND THE PERIPHERY OF THE EXISTING BAR IS PROVIDED NO SUPPLEMENTAL REINFORCING IS REQUIRED, EXCEPT WHERE EXISTING REINFORCEMENT DENSITY AND PATTERN ARE SUCH THAT INDIVIDUAL OPEN SPACES BETWEEN BARS ARE OF 1.5 SQUARE FOOT OR LARGER. FOR THIS CONDITION 1/2" CONCRETE ANCHORS AND WELDED WIRE FABRIC SHALL BE INSTALLED AT THE RATE OF ONE CONCRETE ANCHOR WITH WWF PER EACH 1.5 SQUARE FEET OF AREA WITHIN EACH OPEN SPACE.
REPAIRING THE STRUCTURAL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 2426, OF THE STANDARD SPECIFICATIONS.

CONCRETE PLACEMENT QUANTITIES

MARK	TYPE	UNITS	QUANTITY
①	SHALLOW REPAIR	SQ. FT.	0.0
②	REGULAR REPAIR	SQ. FT.	1429
TOTAL (SQ. FT.)			1429

ESTIMATED CONCRETE REPAIR QUANTITIES

DESCRIPTION	UNITS	AMOUNT
CONCRETE REPAIR	SQ. FT.	1429

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)
**MULTISPAN CONTINUOUS WELDED
PLATE GIRDER BRIDGE PLUS
90'-0 x 58'-0 CONC. SLAB BRIDGE
CONCRETE REPAIRS**

STA. 212+21 TO 224+25 @ 1A 926 MAY, 2021
WEBSTER COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 19 OF 20 FILE NO. 32048 DESIGN NO. 322

BEAM STRENGTHENING NOTES:

THE EXISTING TRANSITION SPAN BEAMS TO BE STRENGTHENED WITH NEW STEEL STRENGTHENING BENT PLATES IN ACCORDANCE WITH THE FOLLOWING CONSTRUCTION SEQUENCE:

1.)THE AREA OF THE EXISTING BEAMS WHICH WILL BE UNDER THE STRENGTHENING BENT PLATES, THE EXISTING C15x33.9 DIAPHRAGM AND AT LEAST ONE INCH OUTSIDE THESE AREAS SHALL BE BLAST CLEANED TO A NEAR-WHITE CONDITION IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS. VACUUM BLAST SHALL BE USED. IF THE CONTRACTOR RECYCLES THE BLAST MATERIAL, IN NO CASE SHALL THE RECYCLING PROCESS UTILIZE A WET SEPARATION METHOD. CONTAINMENT AND DISPOSAL OF WASTES SHALL BE IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS.

2.)THE PORTION OF THE BLAST-CLEANED SURFACES WHICH WILL BE UNDER THE STRENGTHENING BENT PLATES, THE EXISTING C15x33.9 DIAPHRAGM AND AN ADDITIONAL ONE INCH OUTSIDE THESE AREAS SHALL BE GIVEN A PRIME COAT OF ZINC SILICATE PAINT IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS. THE STRENGTHENING BENT PLATES SHALL RECEIVE THE ZINC SILICATE PRIMER ALSO. THE ZINC SILICATE PAINT SHALL MEET THE REQUIREMENTS OF MATERIALS I.M. 482.02 APPENDIX A. CARE SHALL BE TAKEN TO INSURE THAT ZINC SILICATE PRIMER IS APPLIED ONLY ON BLAST-CLEANED STEEL SURFACES AND THAT NONE IS APPLIED OVER OLD PRIMER OR PAINT.

3.)NO TRAFFIC ALLOWED ON ROADWAY ABOVE BEAMS WHILE BEING STRENGTHENED.

4.)FIELD DRILL THE EXISTING I-BEAM WEB FOR 3/4" DIA.H.S. BOLTS USING THE SHOP DRILLED HOLES IN THE STRENGTHENING BENT PLATES AS A TEMPLATE. FIELD DRILL THE BENT PLATES FOR CONNECTION TO THE BEARING STIFFENER USING THE EXISTING DIAPHRAGM HOLES AS A TEMPLATE.

5. AFTER DRILLING, REMOVE STRENGTHENING BENT PLATES AND CLEAN ALL BURRS AND CUTTINGS FROM THE STRENGTHENING BENT PLATES AND BEAM MEMBERS.

6.)BOLT THE BENT PLATE TO THE I-BEAM WITH 3/4" DIA.H.S. BOLT AND EXISTING BEARING STIFFENERS WITH 7/8" DIA.H.S. BOLTS. FULLY TIGHTEN ALL BOLTS FOR A FRICTION TYPE CONNECTION. DURING THE TIGHTENING OF BOLTS, ALL POSSIBLE EFFORTS SHALL BE MADE BY THE CONTRACTOR TO MINIMIZE THE AMOUNT OF EQUIPMENT AND SUPPLIES STORED ON THE BRIDGE DECK AS DIRECTED BY THE ENGINEER. TRAFFIC MAY BE RESTORED AFTER ALL BOLTS ARE TIGHTENED.

7.)PAINT THE BOLTS,NUTS,BENT PLATES,THE EXISTING C15x33.9 DIAPHRAGM AND THE BLAST-CLEANED AREA AROUND IT IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS, AND WITH THE FOLLOWING ADDITIONS/EXCEPTIONS:

A.)REMOVE ANY SILICATE PRIMER APPLIED (IN STEP 2 ABOVE) OVER OLD PRIMER OR PAINT.

B.)APPLY EPOXY ALUMINUM PRIMER TO THE ATTACHED BENT PLATES AND AN ADDITIONAL 3 INCHES OUTSIDE THE BENT PLATES.

C.)APPLY WATERBORNE ACRYLIC PAINT FINISH COAT OVER THE EPOXY ALUMINUM PRIMER. FINAL PAINT COAT SHALL MATCH THE COLOR OF THE EXISTING PAINT.

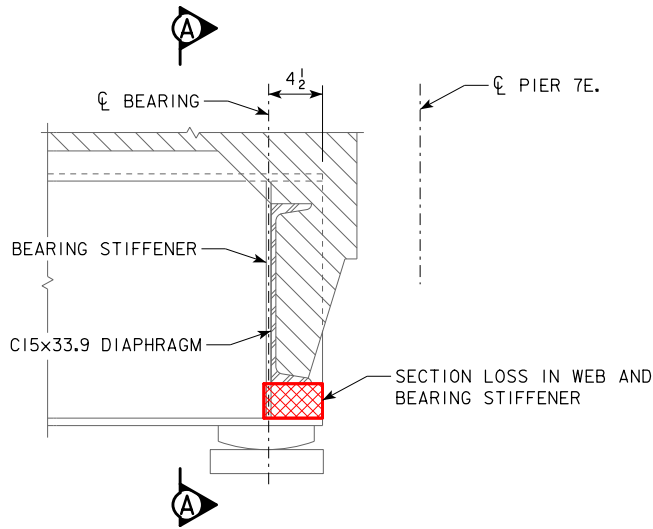
STRENGTHENING BENT PLATES SHOULD BE PLACED PRIOR TO PLACEMENT OF ANY CONCRETE FOR JOINT REPLACEMENT.

ANY DAMAGE BY THE CONTRACTOR TO PORTIONS OF THE STRUCTURE AND ITS PAINT SYSTEM NOT SPECIFICALLY COVERED BY THE SCOPE OF THESE PLANS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

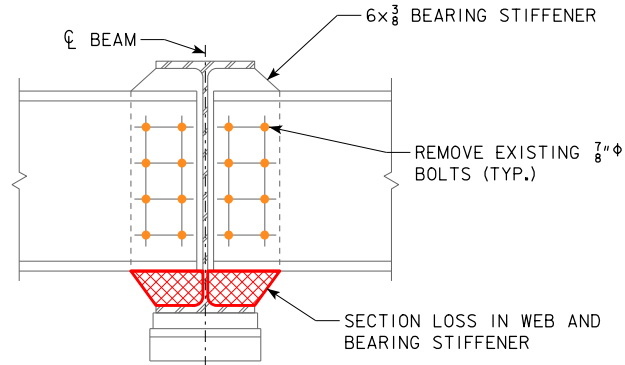
ALL NEW BOLTS TO BE INSTALLED IN THE EXISTING WEBS ARE TO BE 3/4" DIA.H.S. BOLTS AND ALL HOLES ARE TO BE 13/16" DIA. 7/8" DIA.H.S. BOLTS SHALL BE APPLIED IN THE EXISTING BEARING STIFFENER HOLES. BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. NO ADDITIONAL DEAD LOADS AND/OR CONSTRUCTION LOADS WILL BE ALLOWED ON THE BRIDGE WHILE BOLTS ARE BEING TORQUED TO SPECIFICATIONS.

THE PRICE BID FOR "STRUCTURAL STEEL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING STRENGTHENING BENT PLATES (INCLUDING FIELD DRILLING EXISTING BEAMS)AS NOTED ABOVE EXCEPT FOR ITEMS INCLUDED IN THE BID ITEMS FOR "BRIDGE CLEANING FOR PAINTING", "BLAST CLEANING OF STRUCTURAL STEEL", "CONTAINMENT AND PAINTING OF STRUCTURAL STEEL". CHARPY V NOTCH TESTING IS REQUIRED FOR THE STRENGTHENING BENT PLATES. ALSO SEE GENERAL NOTES FOR OTHER ITEMS INCLUDED IN STRUCTURAL STEEL.

STRENGTHENING BENT PLATES TO BE PLACED AT 8 LOCATIONS FOR WB 1A-926 AND 8 LOCATIONS FOR EB 1A-926 AT TRANSITION SPAN BEAM ENDS AT PIER 7 E. TOTAL ESTIMATED STRUCTURAL STEEL WEIGHT IS 620 LBS.



TRANSITION SPAN BEAM END ELEVATION

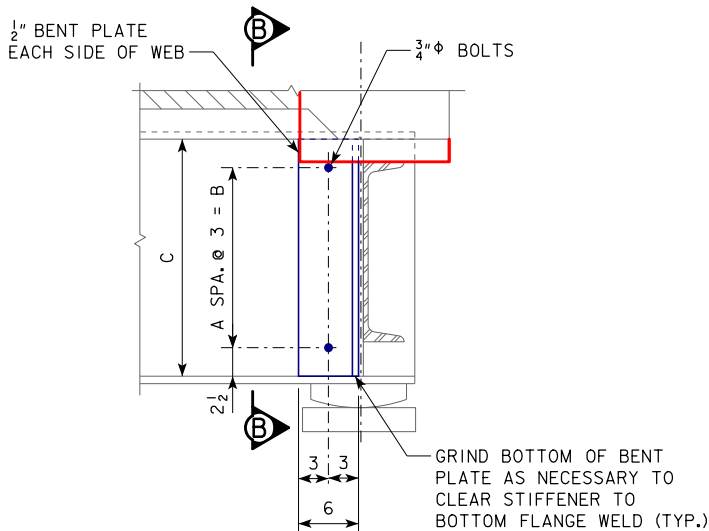


SECTION A-A

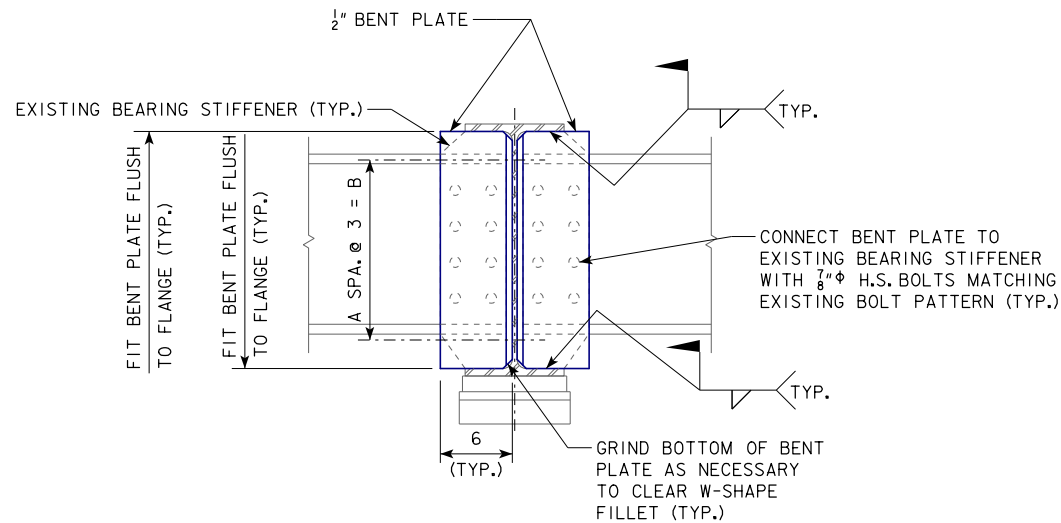
EXISTING CONDITION

TABLE OF DIMENSIONS				
LOCATION	BEAM SIZE	A	B	C
WB 1A 926	W21x62	5	1'-3	1'-7 3/4
EB 1A 926	W18x50	4	1'-0	1'-4 7/8

REFER TO EXISTING DESIGN 1457 FOR TRANSITION SPAN FRAMING PLAN AND BEAM NAMING.



TRANSITION SPAN BEAM END ELEVATION



SECTION B-B

PROPOSED REPAIR

LEGEND	
	SECTION LOSS

DESIGN FOR REPAIRS TO VARIABLE SKEW (R.A.)

MULTISPAN CONTINUOUS WELDED

PLATE GIRDER BRIDGE PLUS

90'-0 x 58'-0 CONC. SLAB BRIDGE

STEEL REPAIRS

STA. 212+21 TO 224+25 @ 1A 926

MAY, 2021

WEBSTER COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 20 OF 20 FILE NO. 32048 DESIGN NO. 322

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
C Sheets	Quantities And General Information
C.1	Project Description and General Information
C.1	Estimated Roadway Quantities
C.1	Estimate Reference Information
C.1	Index of Tabulations
C.1	Standard Road Plans
C.2	General Notes
C.2 - C.3	Tabulations
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes
J.1	Coordinated Operations
J.1	511 Travel Restrictions
* J.2	Legend and Symbols
* J.3	Staging Cross Sections
* J.4 - J.8	Stage 1
* J.9 - J.13	Stage 2
* J.14	Truck Detour Detail Sheet
	 * Color Plan Sheets

ROADWAY DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
	Signature David M. Green Date 4/19/2021
	Printed or Typed Name
	My license renewal date is December 31, 2021
	Pages or sheets covered by this seal: A.1, C.1 - C.3, J.1 - J.14

		100-1D 10-18-05
PROJECT DESCRIPTION This project is for bridge repairs for a 1110'-3 x 58' multispan continuous welded plate girder plus a 90' x 58' slab bridge on IA-926 over the Des Moines River, located 0.6 miles south of the north junction of U.S. 169.		

[illegible][illegible][illegible]

111-25 10-18-11 INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A	ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.1
102-5	EXISTING PAVEMENT	C.2
105-4	STANDARD ROAD PLANS	C.1
108-8A	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION	C.2
108-13A	SAFETY CLOSURES	C.2
108-22	PAVEMENT MARKING LINE TYPES	C.3
108-29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.2
108-35	TEMPORARY LANE SEPARATOR SYSTEM	C.2
110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.2
111-25	INDEX OF TABULATIONS	C.1
262-6	UTILITIES (NOT A POINT 25 PROJECT)	C.2
J SHEETS		
108-23A	TRAFFIC CONTROL PLAN	J.1
108-25	511 TRAVEL RESTRICTIONS	J.1
108-26A	STAGING NOTES	J.1
111-01	COORDINATED OPERATIONS	J.1
113-2	PEDESTRIAN PATH CLOSURES	J.1

FILE NO.	32048	ENGLISH	DESIGN TEAM	HNTB		WEBSTER	COUNTY	PROJECT NUMBER	BRFN-926-0(23) -- 39-94	SHEET NUMBER	C.1	
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262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

FORT DODGE UTILITIES
Contact Name : Jeff Wood
Contact Phone: 515-955-6139
Contact Email: jwood@fortdodgeiowa.org

FRONTIER COMMUNICATIONS
Contact Name : Trent Flockhart
Contact Phone: 515-573-1268
Contact Email: Trent.Flockhart@ftr.com

MEDIACOM COMMUNICATIONS CORPORATION
Contact Name : Julie Bent
Contact Phone: 515-323-8499
Contact Email: jbent@mediacomcc.com

MIDAMERICAN ENERGY COMPANY
Contact Name : Jordan Hohensee
Contact Phone: 515-242-4235
Contact Email: jordan.hohensee@midamerican.com

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
237+49.21	1		S 3rd St
238+23.38	1		2nd Ave Private Entrance
TOTAL:	2		

108-35
04-17-12

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station to Station	Length		Remarks
	LF		
207+65.60	239+15.04	3151.0	Stage 1
207+65.60	238+00.00	3036.4	Stage 2
	TOTAL:	6187.4	

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

① Lane(s) to which the installation is adjacent.
② Includes length of End Terminals and End Anchors.

Location					Removal of Guardrail ② LF
No.	① Direction of Traffic	Station to Station	Side		
1	EB	210+65.80	212+15.80	Rt.	150.0
2	WB	224+32.17	225+42.17	Lt.	105.0
					255.0

108-8A
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

① Lane(s) to which the obstacle is adjacent.
② Not a bid item. Incidental to guardrail installation.

No.	Direction of Traffic	① Side O = Outside M = Median	Location Station	Offset	Layout Lengths				Long-Span System	Delineators and Object Markers ②				Bid Items												Remarks				
					BA-250, BA-260, LS-630, or LS-635					SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor	Post Adapter	Steel Beam Guardrail	Barrier Transition Section	BA-250 or LS-630				BA-260 or LS-635							
					VT1	VF	VT2	ET				Type 3							End Terminal				Barrier Transition Section	End Terminal						
												STATION	TYPE	TYPE					Type 1	Type 2	Type 3	Tangent			Flared		Tangent	Flared	BA-221	BA-225
1	WB	O	224+32.17	29.4	128.125			47.7		2		6		1	B	1	87.5	1	1							Stage 1				
2	EB	O	212+15.80	28.3	140.625			47.7		2		6		1	B	1	100.0	1	1							Stage 2				
									TOTALS:						2		187.5	2	2											

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
1	Webster	IA 926	Both						PCC	10.0											

108-29
04-21-15

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location		STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	Groove Cuts EACH	Remarks
	Station	Side																								
Removals																										
IA 926	236+53.00				1																				Stage 1	
IA 926	238+36.57				1																				Stage 1	
Proposed																										
IA 926	236+53.00				1																				Final Pavement Markings	
IA 926	238+36.57				1																				Final Pavement Markings	
TOTALS:																										
PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED					2																					
SYMBOLS AND LEGENDS REMOVED					2																					

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

****NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.**

ELW4: Edge Line Right (White) @ 1.00

FILE NO.	32048	ENGLISH	DESIGN TEAM	HNTB	WEBSTER COUNTY PROJECT NUMBER	BRFN-926-0(23) -- 39-94	SHEET NUMBER	C.3
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108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
IA 926	EB	Webster	0.6 miles south of the north junction of U.S. 169	Des Moines River	Traffic Control Device	FHWA No. 052300	Horizontal	26'-0"	12'-0"	11'-0"	26'-0"	
IA 926	WB	Webster	0.6 miles south of the north junction of U.S. 169	Des Moines River	Traffic Control Device	FHWA No. 052300	Horizontal	27'-0"	12'-0"	11'-0"	27'-0"	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Maintain traffic on IA 926 at all times in accordance with J Sheets and Standard Road Plans listed in Tab. 105-4 on Sheet C.1.
For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.

Refer to Tab. 108-26A for Staging Notes.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
MB-926-1(505)2--77-94	Deck Joint Repair

113-2
04-16-13

PEDESTRIAN PATH CLOSURES

Refer to TC-601.

*Assumes 6 foot wide barricade.
Closures may need to be removed and re-established.

Location	Side	Type III Barricades*	Remarks
		No.	
Sidewalk west of bridge, east of A Street intersection	Rt.	2	Stage 2
Sidewalk west of bridge	Rt.	2	Stage 2
Sidewalk east of bridge, 3rd Street/Commerce Street intersection	Rt.	2	Stage 2

108-26A
08-01-08

STAGING NOTES

Stage 1

Traffic: Maintain two-way traffic in the eastbound lanes using temporary lane separator system.
See J Sheets for details.
S 3rd St. access east of the bridge shall be closed during construction using Standard Road Plan TC-252.
Commerce St. access east of the bridge shall be closed for westbound traffic during construction.
Restricted width traffic shall use U.S. 169, U.S. Business 20, and 8th St. in accordance with Standard Road Plan TC-81.

Construction: Remove and replace guardrail on the northeast corner of the bridge.
Complete other Stage 1 construction.

Stage 2

Traffic: Maintain two-way traffic in the westbound lanes using temporary lane separator system.
See J Sheets for details.
S 3rd St. access east of the bridge shall be closed during construction using Standard Road Plan TC-252.
Commerce St. access east of the bridge shall be closed for westbound traffic during construction.
Existing sidewalk across bridge shall be closed during Stage 2 construction.
Restricted width traffic shall use U.S. 169, U.S. Business 20, and 8th St. in accordance with Standard Road Plan TC-81.

Construction: Remove and replace guardrail on the southwest corner of the bridge.
Complete other Stage 2 construction.

Final

Traffic: Open both lanes to traffic.
Complete pavement marking operations in accordance with Standard Road Plan TC-433.

Construction: Complete final pavement markings.

FILE NO. 32048

ENGLISH

DESIGN TEAM HNTB

WEBSTER COUNTY

PROJECT NUMBER BRFN-926-0(23)--39-94

SHEET NUMBER J.1

4/8/2021 1:23:23 PM akorff c:\caddlib\pw\hntb_akorff\centraldiv\d0254732\94926023J01.xlsm

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
SHADING	Design Color No.		
Green, Light	(225)		Existing Pavement Shading
Gray, Light	(48)		Previously Constructed Pavement Shading
Gray, Med	(80)		Previously Constructed Granular Surface Shading
Blue, Light	(230)		Proposed Pavement Shading
Lavender	(9)		Temporary Pavement Shading
Brown, Med	(237)		Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

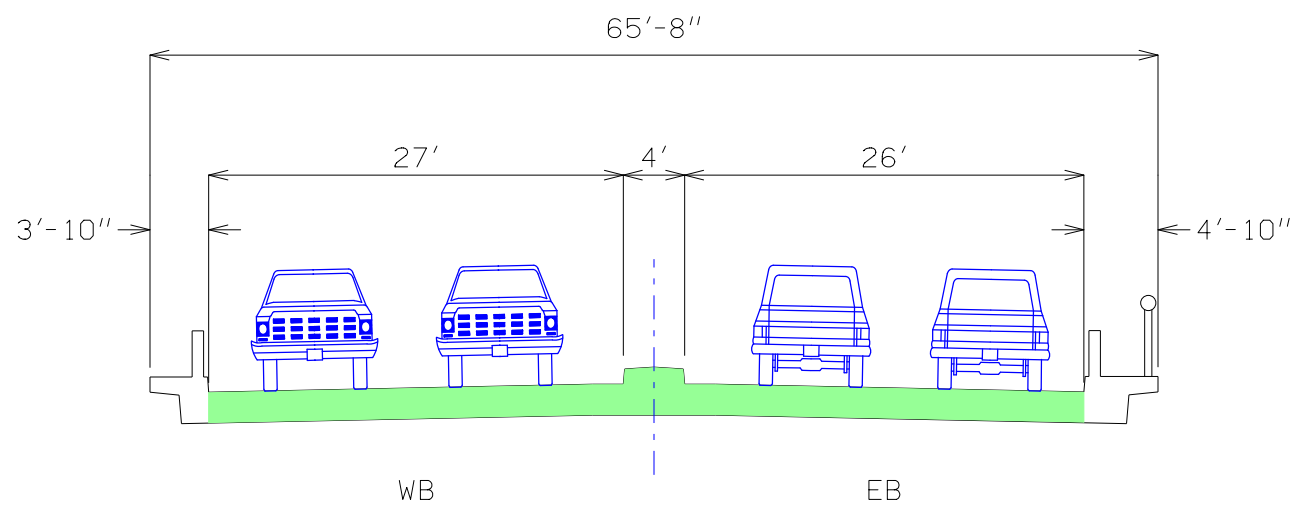
PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
LINEWORK	Design Color No.		
Green	(2)		Existing Topographic Features and Labels
Magenta	(5)		Pavement Marking Call Outs
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)		Pavement Markings, Yellow
Off White	(254)		Pavement Markings, White
Violet	(15)		Temporary barrier rail, Unpinned
Flush Orange	(228)		Temporary barrier rail, Pinned

SHADING	Design Color No.		
Green, Light	(225)		Existing Pavement Shading
Gray, Light	(48)		Previously Constructed Pavement Shading
Gray, Med	(80)		Proposed Granular Surface Shading
Gray, Med	(80)		Previously Constructed Granular Surface Shading
Blue, Light	(230)		Proposed Pavement Shading
Lavender	(9)		Temporary Pavement Shading
Brown, Light	(236)		Proposed Grading Limits Shading
Pink, Dark	(13)		Proposed MSE or CIP Wall Shading
Red	(3)		Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)		Previously Constructed Structure

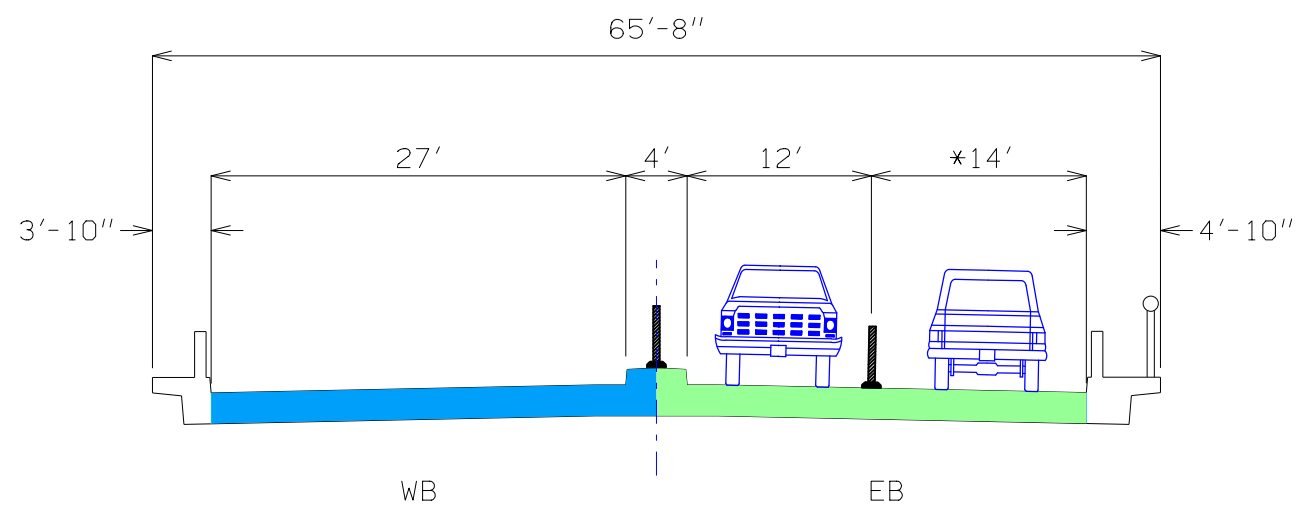
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification
	Arrow Board		

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

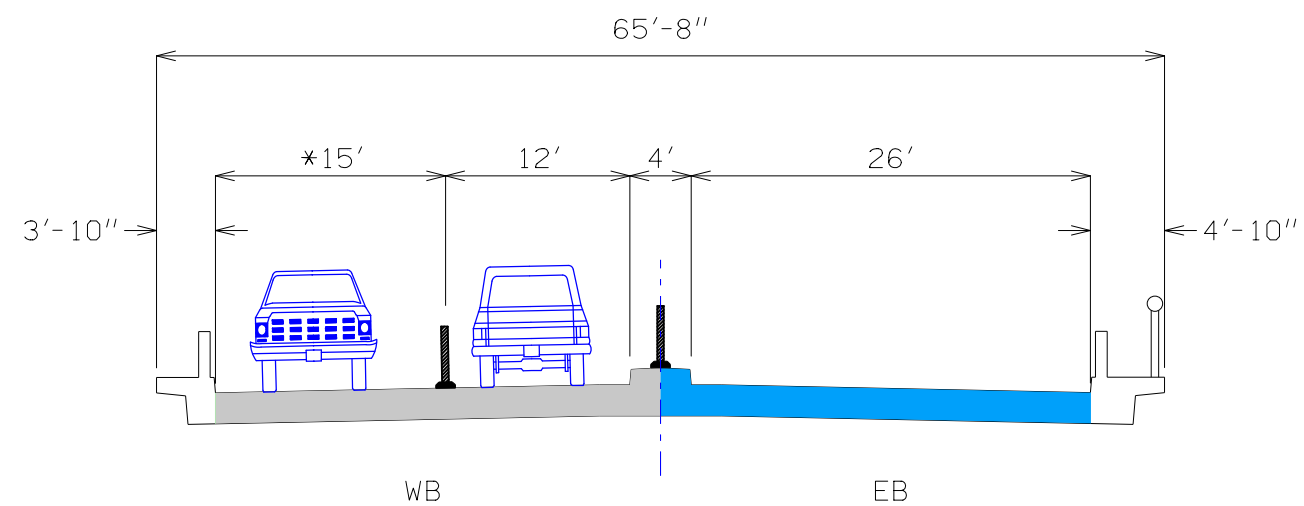
TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET
(COVERS SHEET SERIES J)



PRIOR TO STAGE 1
(LOOKING AHEAD STATION)



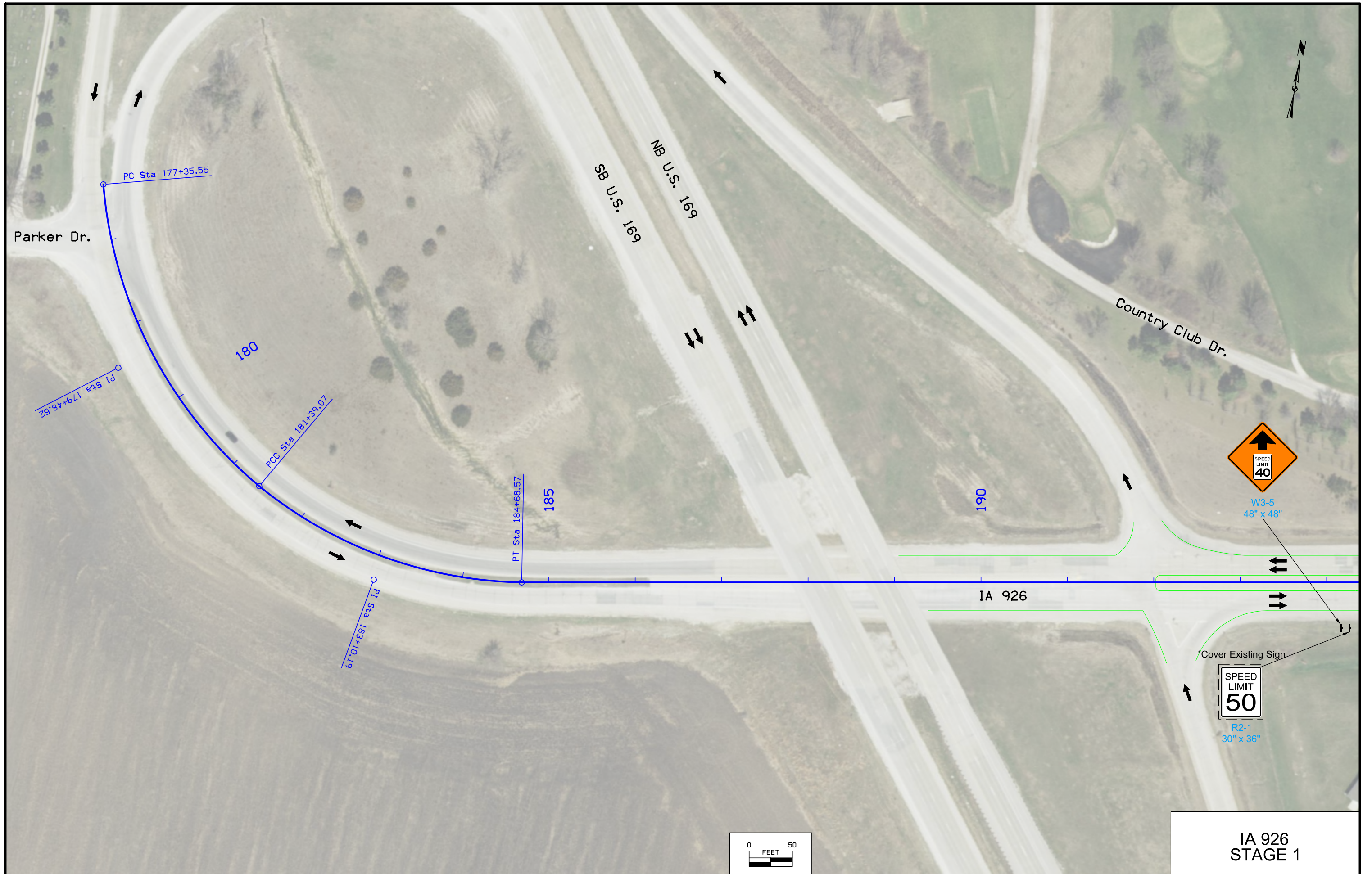
STAGE 1
(LOOKING AHEAD STATION)

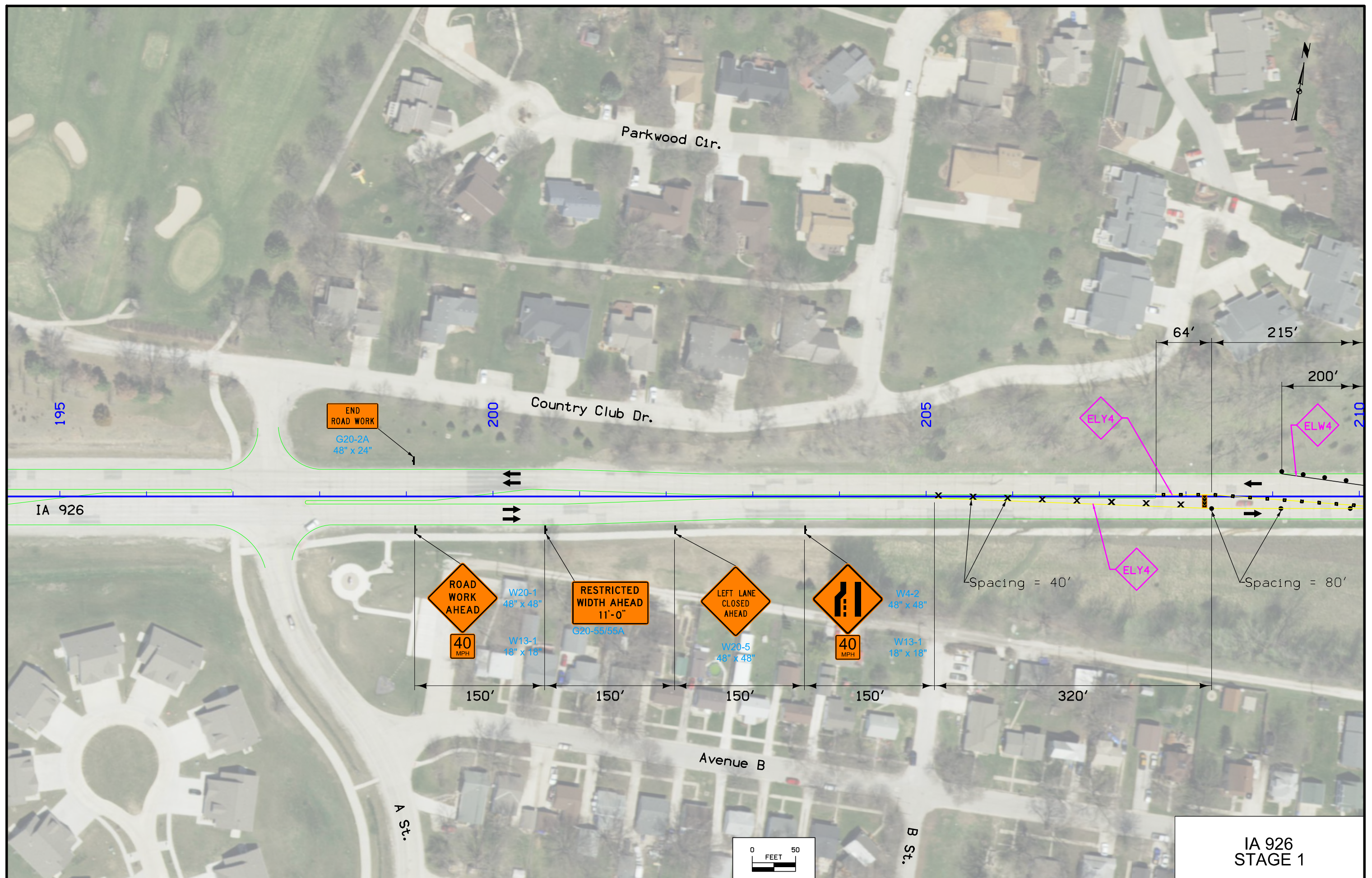


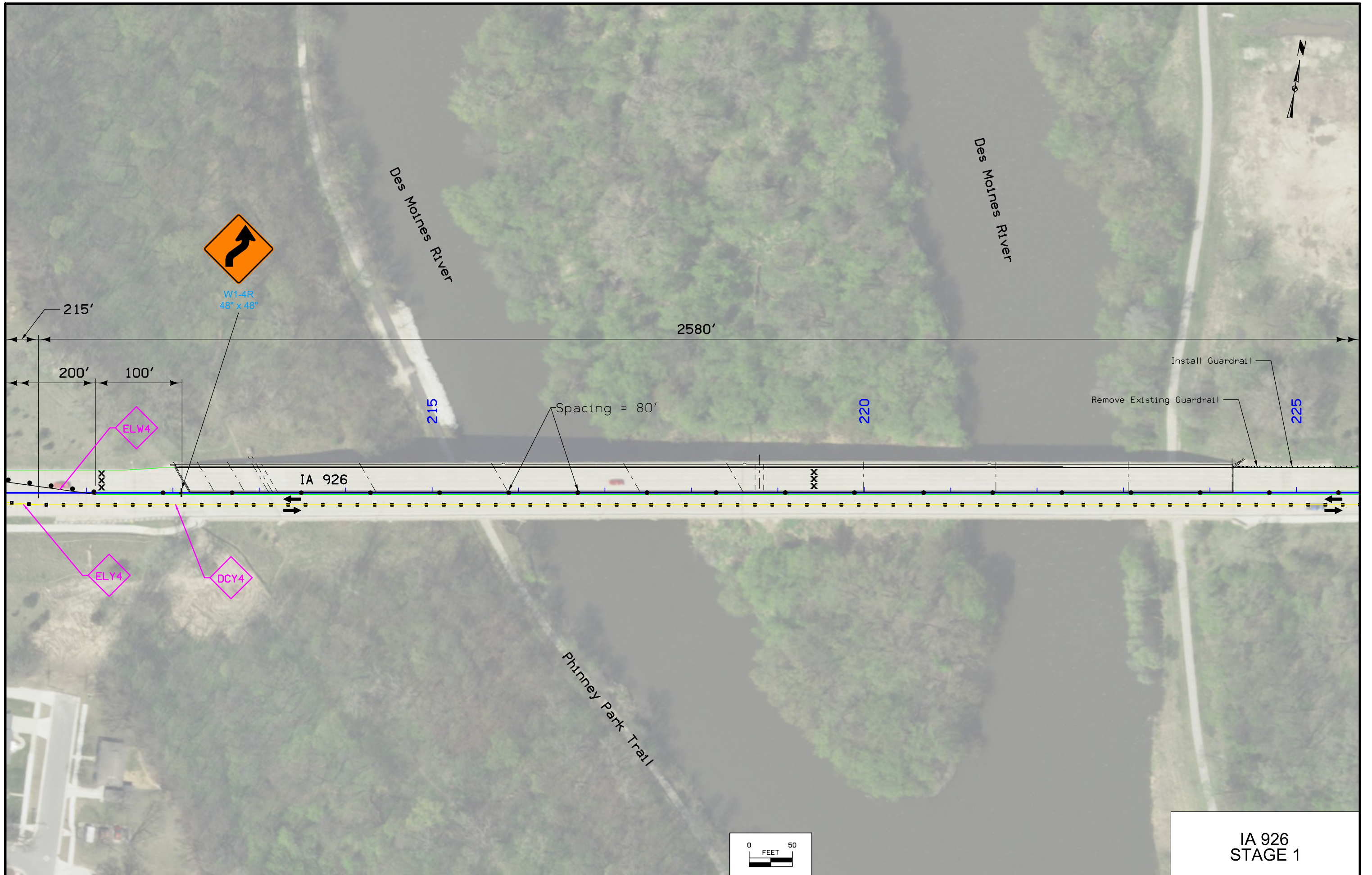
STAGE 2
(LOOKING AHEAD STATION)

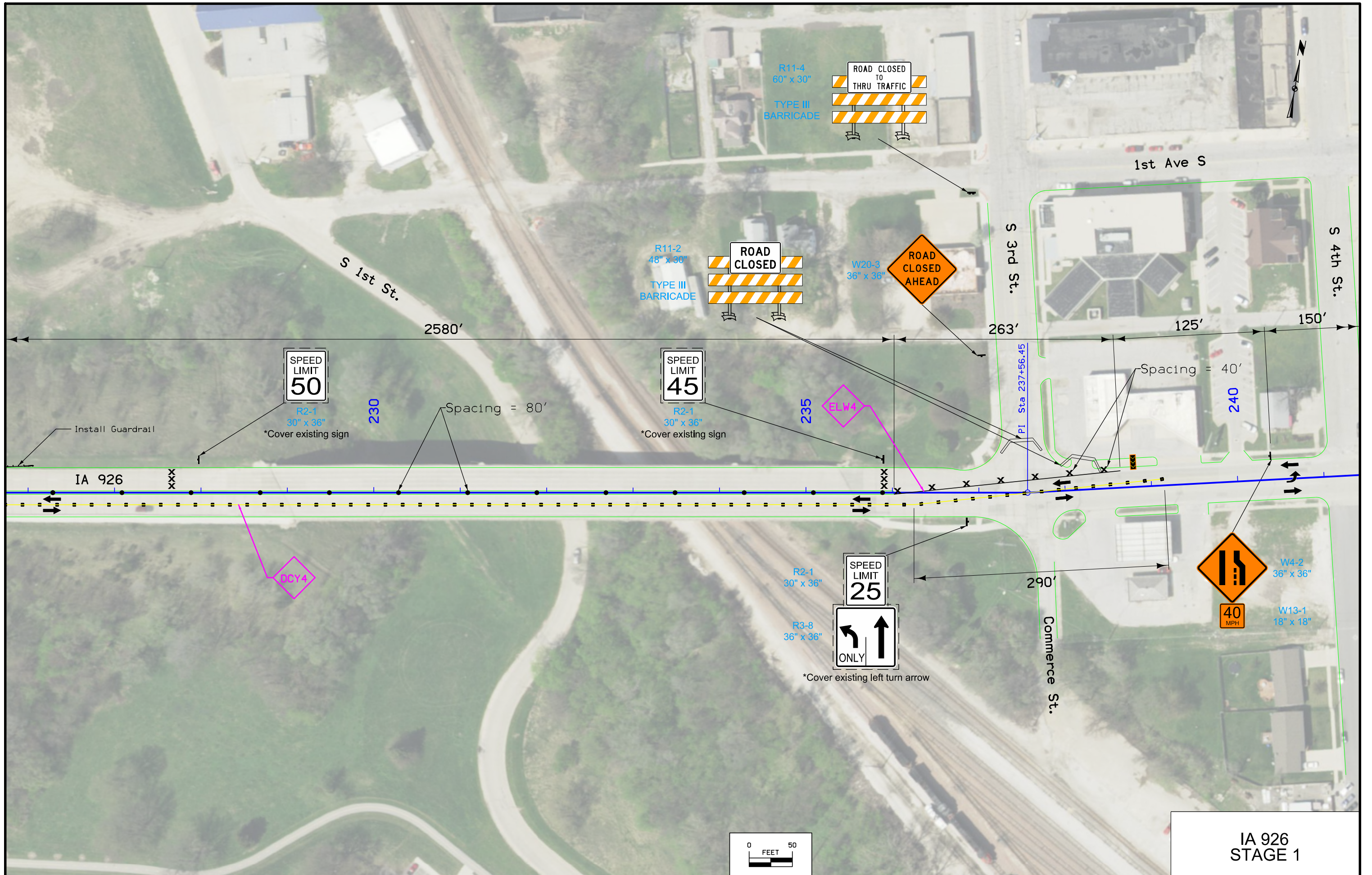
* 12' AT BRIDGE APPROACH

TYPICAL CONSTRUCTION SECTIONS



IA 926
STAGE 1





IA 926
STAGE 1



