LETTING DATE
Nov 17, 2026

Bridge Deck Overlay
BRF-002-1(146)--38-36

FREMONT COUNTY

Index of Sheets

No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design No. 127
V.1 - V.10	Design No. 127
V.11	Estimated Quantities - Design No. 227
V.11-V.20	Design No. 227
Road Sheets	Road Plan
A,3-U,1	Road Plans
C.1	Estimated Quantities - Road
C.3	Standard Plans - Road

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
FREMONT COUNTY
Bridge Deck Overlay

IA 2 over Missouri River Overflow
0.5 Mi E of the Missouri River (EB/WB)

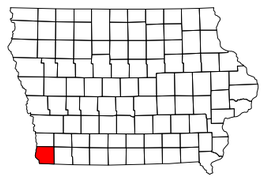
Refer to the Plan Sheets for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.13 of the Specifications.

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Revisions

	TOTAL
	53
PROJECT IDENTIFICATION NUMBER	
22-36-002-010	
PROJECT NUMBER	
BRF-002-1(146)--38-36	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
3600201022	



Standard Road Plans

Standard Road Plans are listed on Sheet Number C.3

Design Data Rural

(IA 2)

Refer to individual Situation Plans for Traffic Data information.

Iowa DOT Bridges and Structures
Consultant Coordinator Contact:
Zahrah Alghalibi

Index of Seals

Sheet No.	Name	Type
A.1	R. Calvin Martin	Structural Design
A.3	Lucas D. Fatka	Roadway Design

Structural Design

LICENSED PROFESSIONAL ENGINEER
R. Calvin Martin
27875
IOWA

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 — Date: 8/11/2026

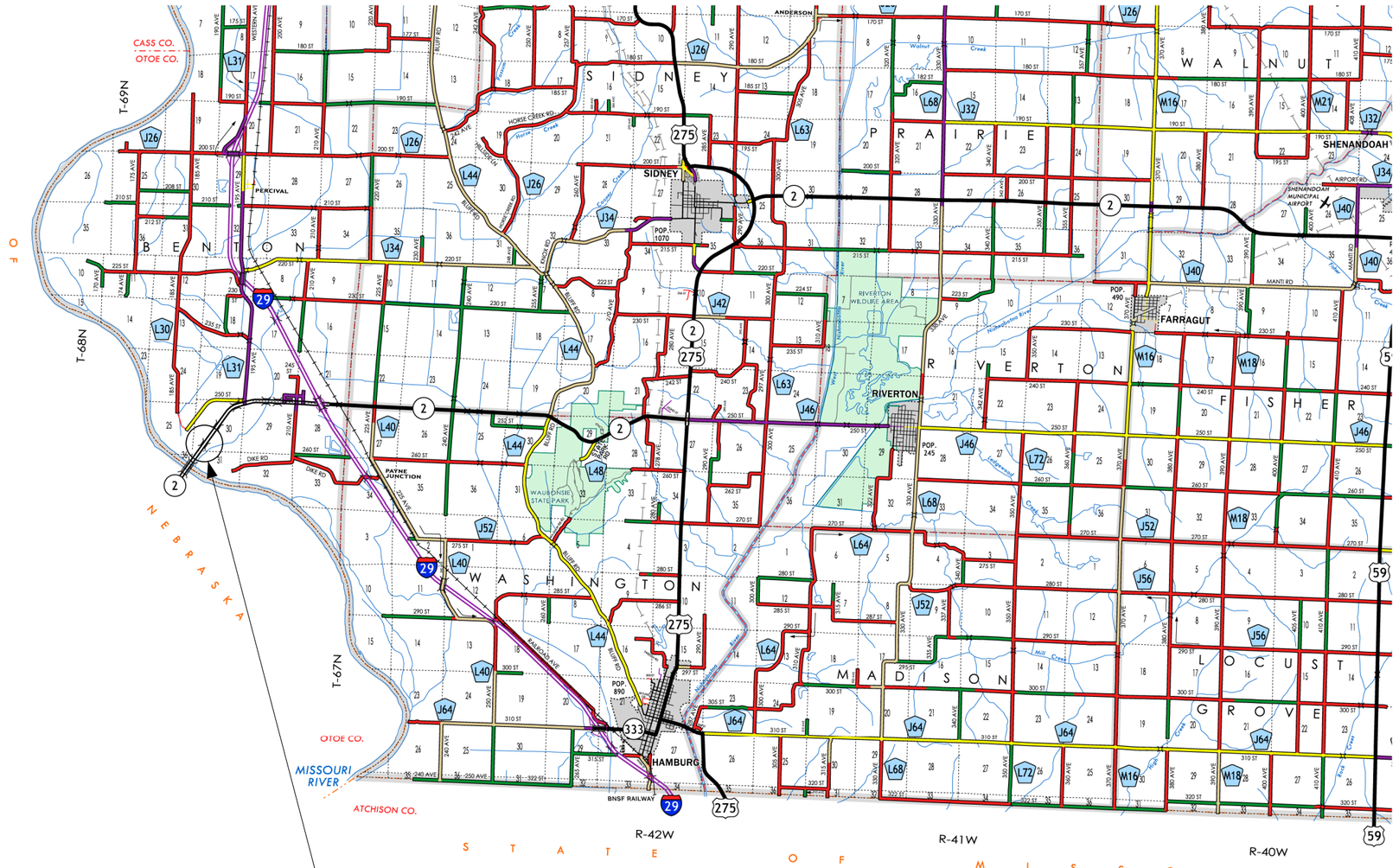
R. Calvin Martin
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: A.1-A.2, V.1-V.20

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & Co.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER A.1	

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LEGEND

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

- INTERSTATE HIGHWAY 80
- UNITED STATES HIGHWAY 65
- STATE HIGHWAY 237
- COUNTY HIGHWAY S27

- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES — ABBEY ROAD
- UNINCORPORATED PLACE — ELWOOD

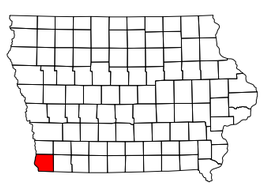
- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

N

Fremont County Location Map

Not To Scale

Design Nos. 127 (EB) & 227 (WB)
FHWA Nos. 701075 (EB) & 701080 (WB)



FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & Co.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER A.2

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ESTIMATED BRIDGE REPAIR QUANTITIES - FREMONT 127

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	6.6
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	485
4	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	50
5	2408-7800000	STRUCTURAL STEEL	LB	1,415
6	2426-6772016	CONCRETE REPAIR	SF	17.2
7	2506-4984000	FLOWABLE MORTAR	CY	1
8	2507-3250005	ENGINEERING FABRIC	SY	15.4
9	2507-4011100	CONCRETE GROUT FOR REVETMENT OR GABION	CY	3
10	2507-6800061	REVETMENT, CLASS E	TON	21.7
11	2533-4980005	MOBILIZATION	LS	1
12	2599-9999005	('EACH' ITEM) REMOVE AND REINSTALL FINGER JOINT	EACH	2
13	2599-9999018	('SQUARE YARDS' ITEM) MULTI-LAYER POLYMER CONCRETE OVERLAY	SY	4,868.9

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
1	2401-6750001	REMOVALS, AS PER PLAN Includes all work for removal and off-site disposal of portions of the rails at each corner, the north expansion barrier plates, and portions of the concrete deck and abutment diaphragm at both abutments to facilitate finger joint removal. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS) Includes cleaning existing concrete rails, furnishing and placing concrete sealer.
3	2404-7775005	REINFORCING STEEL, EPOXY COATED - -
4	2404-7775009	REINFORCING STEEL, STAINLESS STEEL - -
5	2408-7800000	STRUCTURAL STEEL Finger joint expansion device shim packs and nuts shall be incidental to the cost of structural steel.
6	2426-6772016	CONCRETE REPAIR - -
7	2506-4984000	FLOWABLE MORTAR - -
8	2507-3250005	ENGINEERING FABRIC Engineering fabric shall be material as specified for embankment erosion control in accordance with Article 4196.01, B, 3, of the Standard Specifications.
9	2507-4011100	CONCRETE GROUT FOR REVETMENT OR GABION See Design Sheet No. 9 for information.
10	2507-6800061	REVETMENT, CLASS E Estimated at 1.5 ton/cu yd. Class E revetment shall meet requirements of Article 4130.
11	2533-4980005	MOBILIZATION - -
12	2599-9999005	('EACH' ITEM) REMOVE AND REINSTALL FINGER JOINT Includes all work for removal and reinstallation of the existing finger joint assembly and south expansion barrier plates. Portions of the finger joint assembly that are not salvaged shall be disposed of off site. See Design Sheet No. 5 for additional removal details and notes pertaining to specific items to remain, salvage, or dispose of. Where Neoprene curtain and trough connections have come loose since construction, Contractor shall install new stainless steel bolts, washers, and nuts as directed by the Engineer to restore connections in accordance with original design details. Material, equipment, and labor to restore these connections is incidental to this item.
13	2599-9999018	('SQUARE YARDS' ITEM) MULTI-LAYER POLYMER CONCRETE OVERLAY Includes preparation of the existing deck surface (scarification and cleaning) prior to overlay placement. Refer to the Special Provisions for Multi-Layer Polymer Concrete Overlay.

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Roadway Quantities shown elsewhere in these plans.

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans 157'-0" Interior Spans

Estimated Quantities

STA. 400+85.00, RT. 32.00' (EB IA 2) Turn-in Date: September 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 Design Sheet No. 1 of 10 FHWA No. 701075

General Notes

This design is for repairs to the existing 1097'-0" x 40" pretensioned prestressed concrete beam bridge on EB IA 2 over Missouri River Overflow in Fremont County.

Electronic copies of original design plans and repair plans are available to the Contractor as part of the E-Files supplied with the contract documents. Dimensions shown on these plans are based on original design plans (Original Design No. 119).

See Design Sheet No. 3 for list of repair items.

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 starting date.

Faint lines on plans indicate existing portions of the bridge.

All dimensions and details shown on these plans pertinent to new construction shall be verified in the field by the Contractor before starting construction.

The road will be closed to traffic during construction. See Traffic Control Plan note on this sheet.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing portions of the rails at each corner, the north expansion barrier plates, and portions of the concrete deck and abutment diaphragm at both abutments to facilitate finger joint removal. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to any steel or concrete not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.

These bridge plans label all reinforcing steel with english notation (5a1 is $\frac{5}{8}$ 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

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

The top and interior faces of the existing concrete railing are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. If new sections of rail are constructed, the new sections shall not be sealed. All costs associated with cleaning and sealing of the concrete rails shall be include in the unit price bid item "Structural Concrete (Miscellaneous)".

Areas of rail indicated on the "Situation Plan" and on Design Sheet No. 10 or designated by the Engineer are to be repaired using concrete repair notes and details included in these plans.

Present deck thickness is about 8 inches. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

Ready mix trucks are not allowed on the prepared portion of the bridge deck.

Both mats of reinforcing bars in the deck are epoxy coated. The Contractor shall take care not to damage the epoxy coating during deck repairs. Use two part liquid epoxy coating from any epoxy powder manufacturer approved by Iowa DOT to repair scrapes, scars, or damage.

The Contractor shall note the redefining of the classification line for this project. The classification line will be defined as $\frac{3}{8}$" below the existing deck surface.

Specifications:

Design:

AASHTO LRFD 8th Ed, Series of 2017, except as noted in the current Iowa Bridge Design Manual.

Construction:

Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Special Provisions for Multi-Layer Polymer Concrete Overlay.

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Ed, Series of 2017, except as noted in the current Iowa Bridge Design Manual.

Reinforcing steel in accordance with AASHTO LRFD Section 5, Grade 60 for epoxy coated and non-coated, and Grade 60 or 75 for stainless.

Concrete in accordance with AASHTO LRFD Section 5, f'c = 4.0 ksi.

Structural steel in accordance with AASHTO LRFD Section 6. ASTM A709 Grade 36 (AASHTO M270 Grade 36).

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawings and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

No.	Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Mounting Plates & Barrier Plates	(146)_Fremont_127_MountingPlatesAndBarrierPlates.pdf	No

No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1			

Traffic Control Plan
The roadway will be closed to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Design History at this Site
(Includes this Design)

Des. No.	Type of Work
119	Original Design
824	Bearing Repair
127	Deck Overlay

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

General Notes

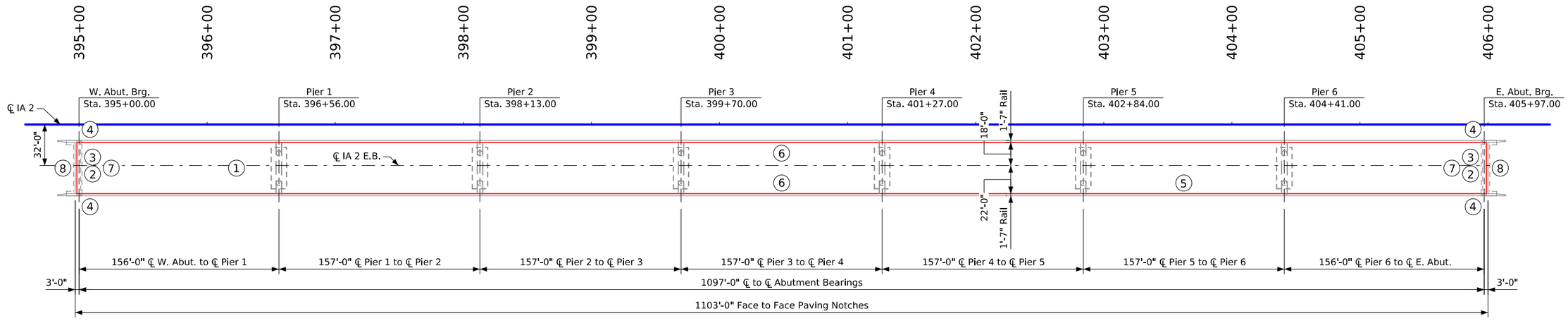
STA. 400+85.00, RT. 32.00' (EB IA 2) — Turn-in Date: September 2026

Fremont County

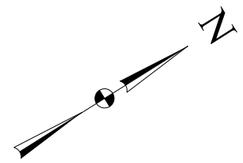
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Design No. 127 — Design Sheet No. 2 of 10 — FHWA No. 701075

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Situation Plan



Repairs Shall Consist of:

1. Scarify the deck and overlay the bridge with multi-layer polymer concrete.
2. Remove and replace 1'-9" sections of deck and 2'-0" sections of barrier rail at both abutments.
3. Remove portions of the finger joint at both abutments. Finger joint assembly to be salvaged and reused as detailed in these plans.
4. Remove barrier plates at each abutment corner. Install new barrier plates at the north rail. Existing barrier plates shall be salvaged and reused in the correct orientation at the south rail.
5. Perform concrete repairs to the rail along the south gutterline.
6. Clean and seal the barrier rails.
7. Restore the slope protection at the berm blocks.
8. Seal cracks and perform partial-depth patches in the approaches.

Location

IA 2 E.B. over Missouri River Overflow
T-68N R-43W
Section 30/31
Benton Township
Fremont County
FHWA No. 701075
Bridge Maint. No. 3600.5R002
Latitude 40.676833°
Longitude -95.824989°

Design Data Rural

(EB IA 2)

2024 AADT	4,100 V.P.D.
TRUCKS	20 %

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Situation Plan

STA. 400+85.00, RT. 32.00' (EB IA 2)

Turn-in Date: September 2026

Fremont County

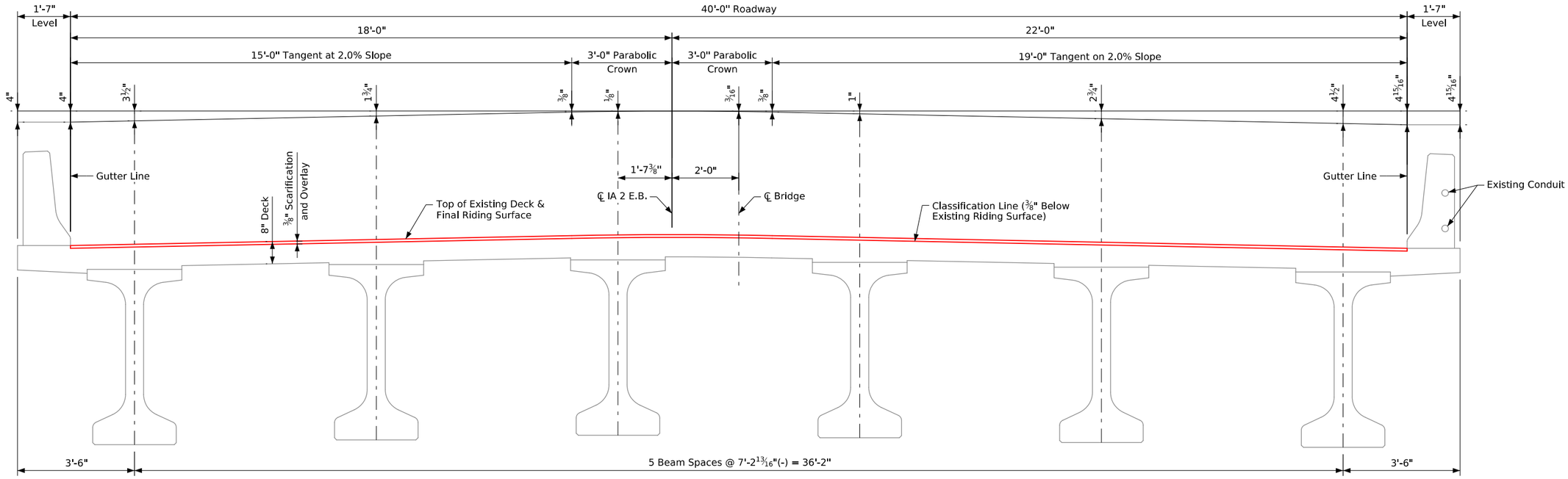
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Design No. 127 | Design Sheet No. 3 of 10 | FHWA No. 701075

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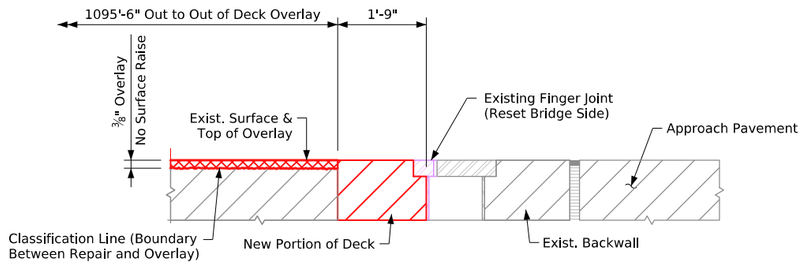
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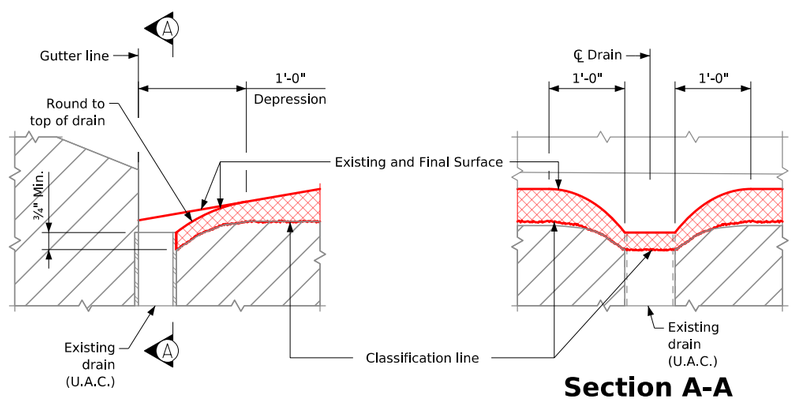
Typical Section

(Looking Upstation)



Part Longitudinal Section Along Roadway

Both Abutments

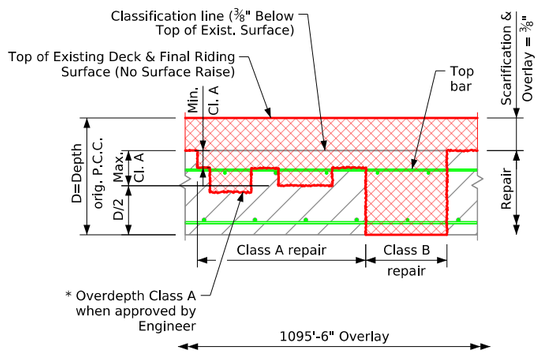


Section A-A

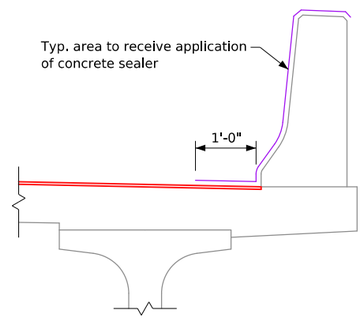
Deck Repair Detail at Drain

(Required at 46 Locations)

* Per IDOT Std. Spec. 2413.03.C.3.b, limited areas of Class A removal may exceed 50% of the floor thickness at the Engineer's direction. These limited areas of excess depth (overdepth) will be measured as Class A deck repair.



Repair and Overlay Definition



Detail of Concrete Sealer Area

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans | 157'-0" Interior Spans

Deck Repair Details

STA. 400+85.00, RT. 32.00' (EB IA 2)

Turn-in Date: September 2026

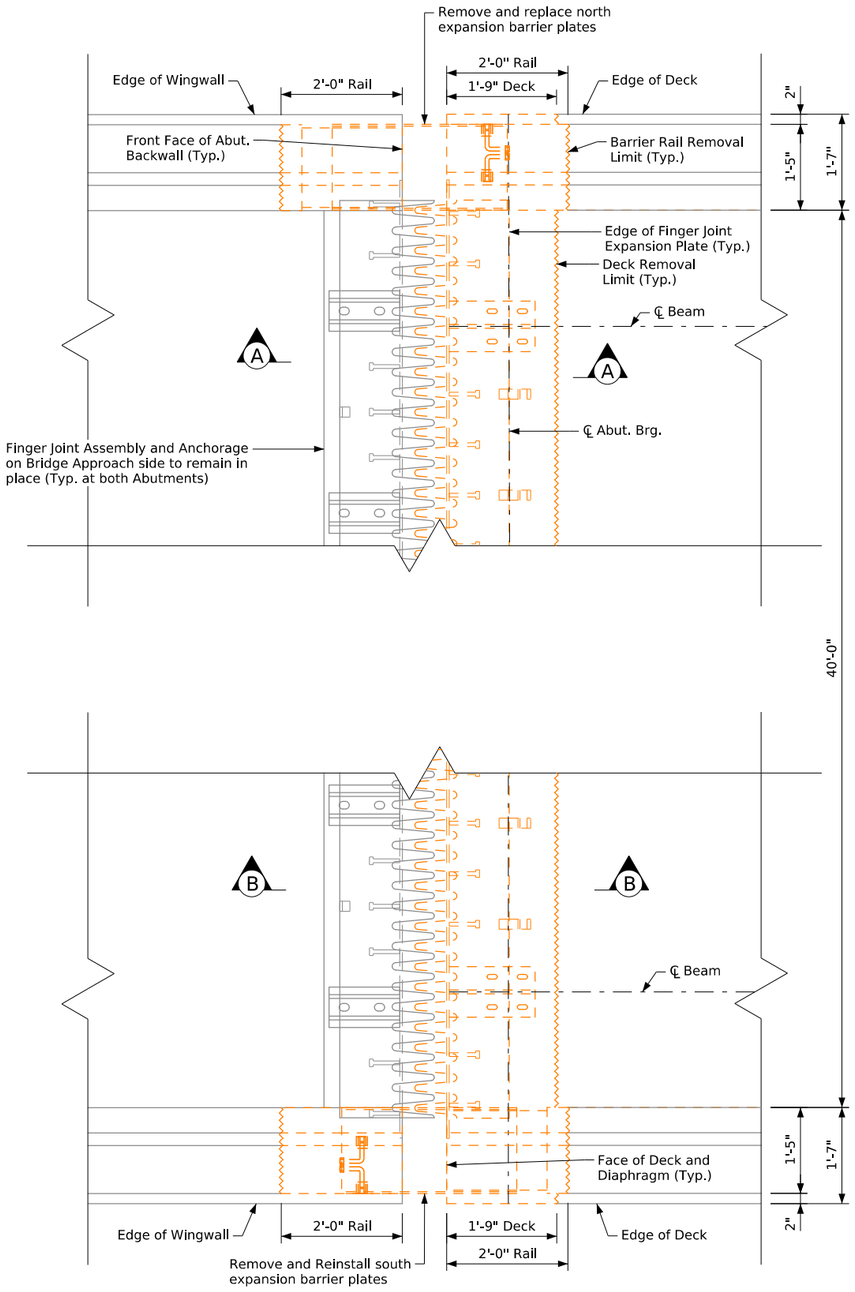
Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 | Design Sheet No. 4 of 10 | FHWA No. 701075

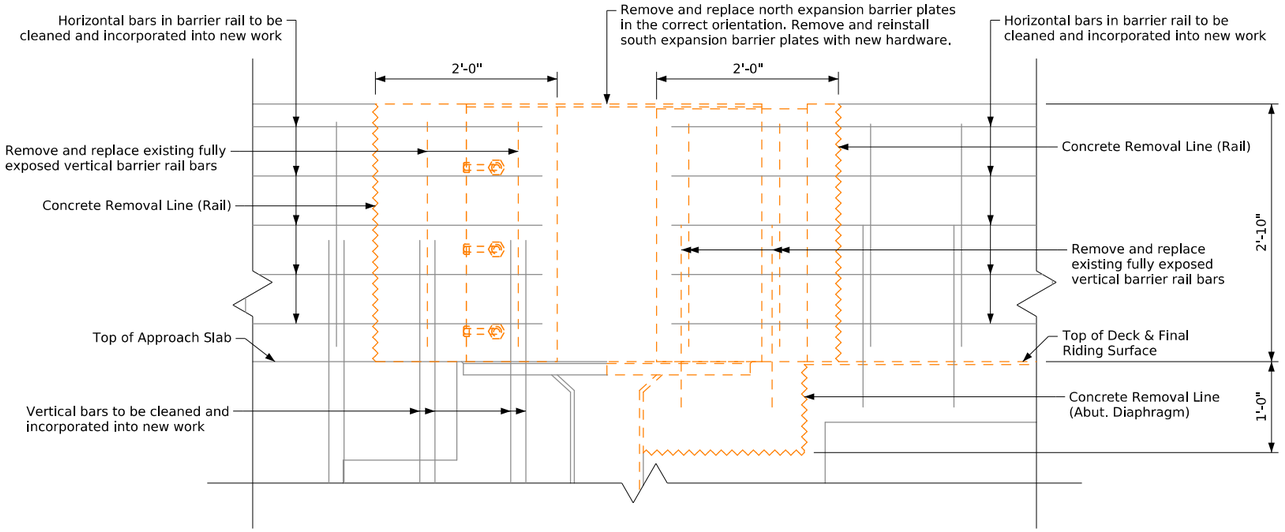
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Abutment Removal Details

(West Abutment Shown, East Abutment Similar)
(Conduit in rail not shown for clarity)

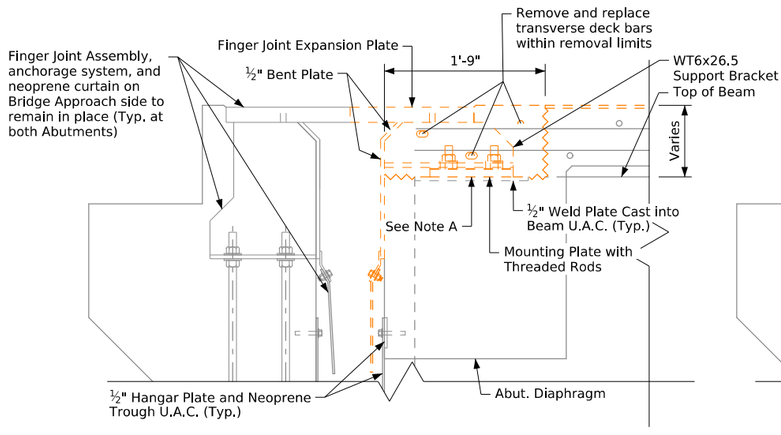


Barrier Rail Removal Details

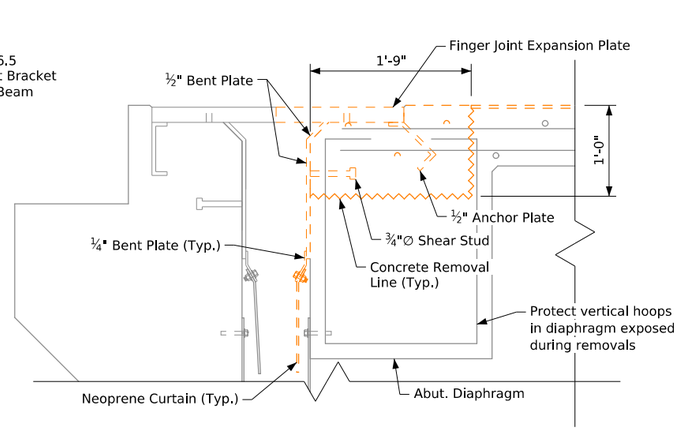
(Conduit in rail not shown for clarity)

Note A:
Cut weld between ½" Cast-in Weld Plate and Mounting Plate to remove Support Bracket Assembly.

Note:
Protect conduit in outside rail during removals. See Design Sheet No. 8 for details.



Section A-A



Section B-B

Removal Notes:

Contractor shall use extreme care when removing deck, diaphragm, and rail concrete around the finger joint assembly and existing conduits in South Rail to avoid damaging any parts that are to remain or be salvaged and reused. Any parts that are to remain or be reused that are damaged during removals shall be replaced at no additional cost to the State.

Parts that are to remain in place shall consist of the ½" cast-in weld plate and ½" hanger plate with attached neoprene trough, the entire finger joint assembly, anchorage system, and neoprene curtain and trough on the bridge approach side, and the existing conduit with expansion devices in the barrier rail.

Parts that are to be salvaged and reused shall consist of the finger joint expansion plates, ½" anchor plates, WT6x26.5 sections, ½" bent plates with welded on ¾"Ø shear studs, and ¼" bent plate with neoprene curtain.

Parts that are to be removed and replaced shall consist of the mounting plate with welded on ⅞"Ø threaded rods and any shims, nuts, and washers associated.

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

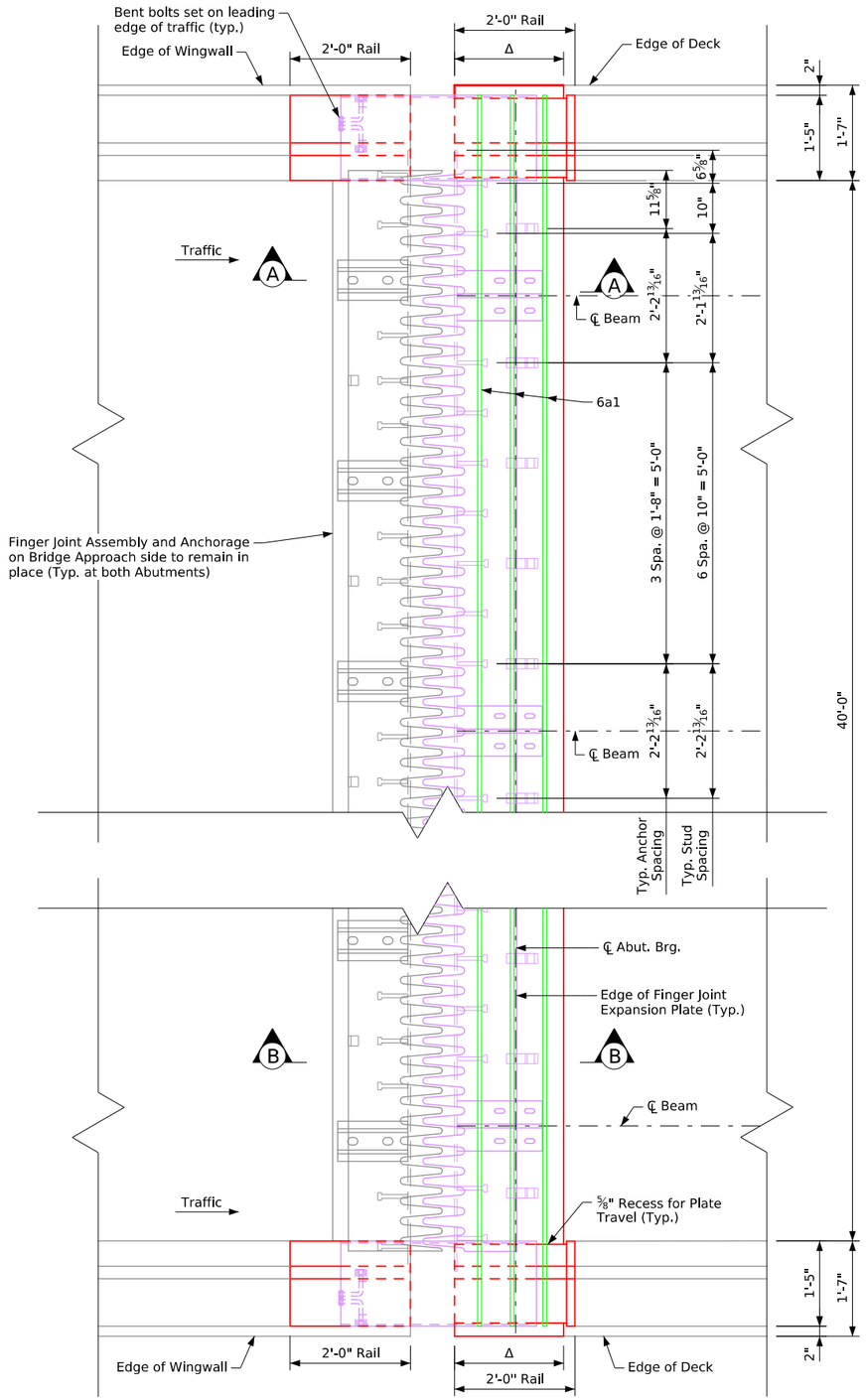
Removal Details

STA. 400+85.00, RT. 32.00' (EB IA 2)
Turn-in Date: September 2026

Fremont County

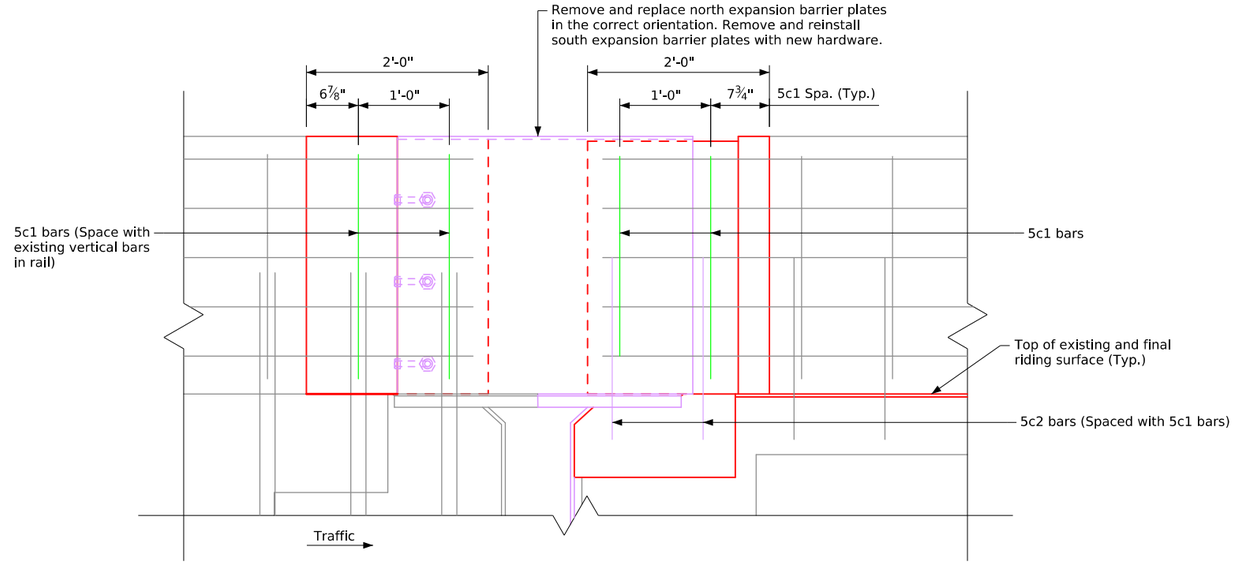
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 — Design Sheet No. 5 of 10 — FHWA No. 701075



Abutment Repair Details

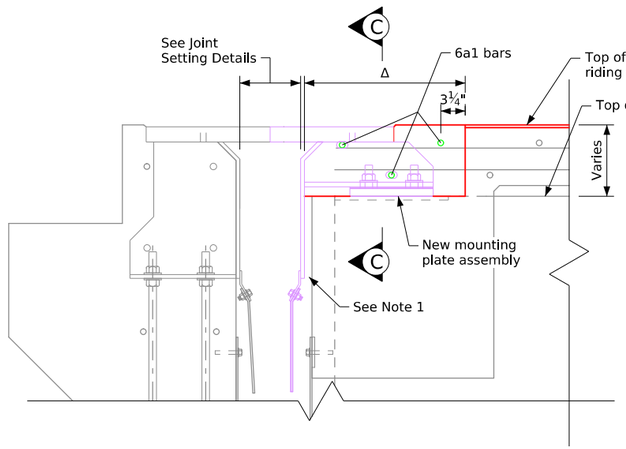
(West Abutment Shown, East Abutment Similar)
(Conduit in rail not shown for clarity)



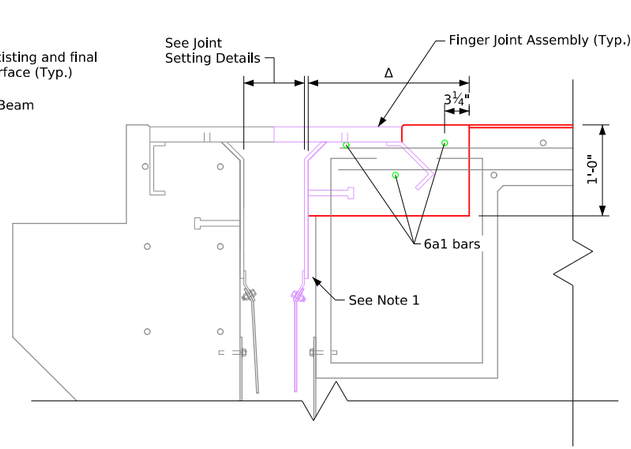
Barrier Rail Repair Details

(Conduit in rail not shown for clarity)

Δ Dimension may be adjusted as necessary to achieve proper expansion joint opening.



Section A-A



Section B-B

Note 1:
Contractor shall form and block the gap between the existing face of diaphragm and finger joint assembly as approved by the Engineer.

See Design Sheet No. 5 for breakdown of finger joint assembly parts to remain in place, be removed and reinstalled, or be removed and replaced.

See Design Sheet No. 7 for Section C-C, Joint Setting Details, Mounting Plate details, and additional Finger Joint Noes.

See Design Sheet No. 8 for Barrier Rail Expansion Plate and Conduit details.

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Repair Details

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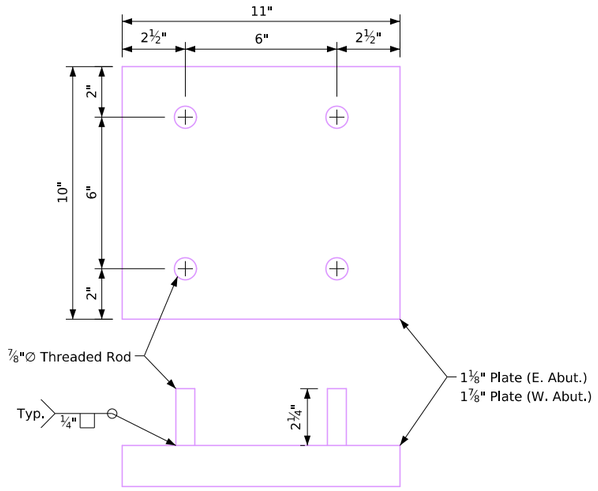
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 | Design Sheet No. 6 of 10 | FHWA No. 701075

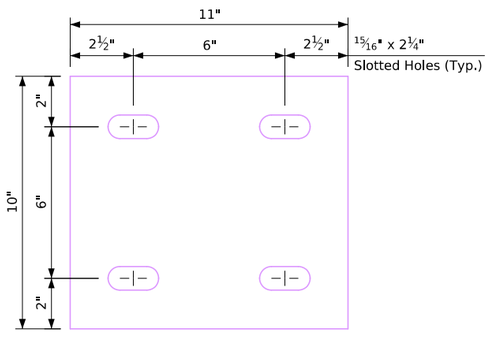
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FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.6

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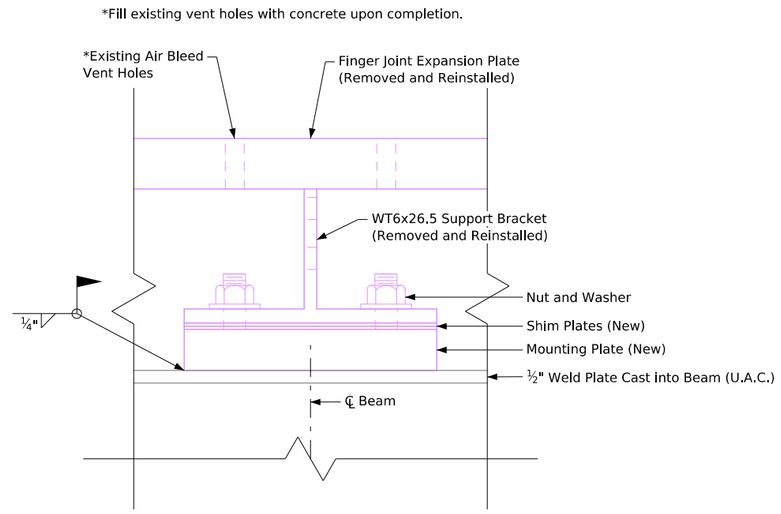
Mounting Plate
(12 Total)



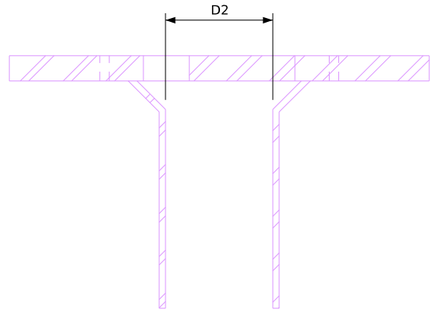
Shim Plan View

Shim Note:
Contractor to provide 2 - ¼" shims and 1 - ⅛" shim for each bracket connected to concrete beam. In addition, one tapered shim shall be provided at each bracket to account for the cross slope of the bridge deck. All shims may not be used.

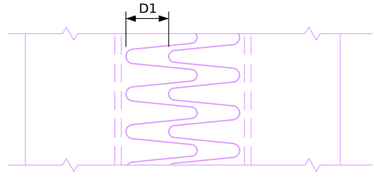
*Fill existing vent holes with concrete upon completion.



Section C-C
(Support Bracket Assembly)
See Design Sheet No. 6 for Section C-C location.



Expansion Opening Detail



Joint Setting Detail
(Plan View)

Finger Joint Settings		
Temperature (°F)	D1	D2
10	5⅜"	9½"
50	3 13⁄16"	8"
90	2 3⁄16"	6⅜"

Setting Note:
Joint settings for other temperatures are proportional. Temperatures shown are concrete deck temperatures on the underside or shaded portion of the deck.

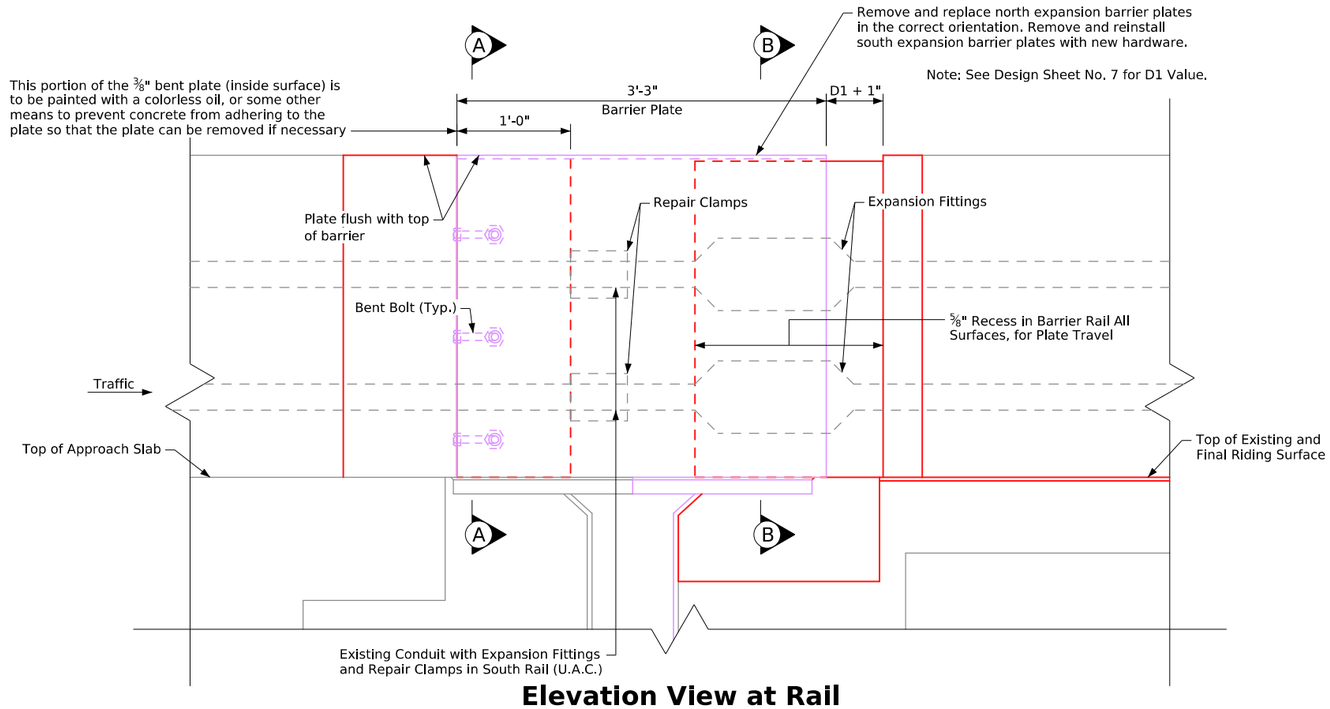
See Design Sheet No. 8 for Finger Joint Notes.

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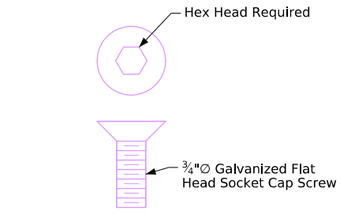
Design For Repairs to 0 Degree Skew
1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge
156'-0" End Spans — 157'-0" Interior Spans
Finger Plate Joint Details
STA. 400+85.00, RT. 32.00' (EB IA 2)
Turn-in Date: September 2026
Fremont County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 127 — Design Sheet No. 7 of 10 — FHWA No. 701075

FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.7	

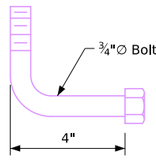
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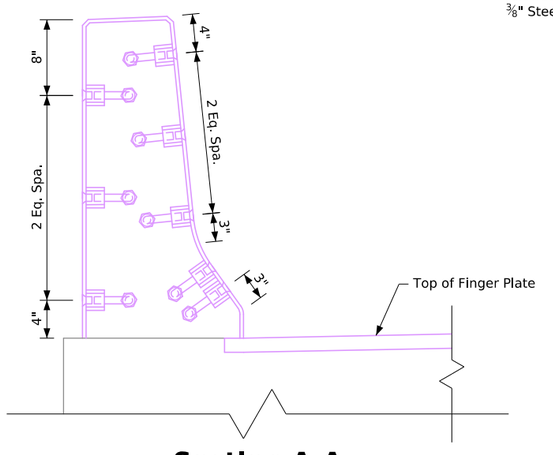
Elevation View at Rail



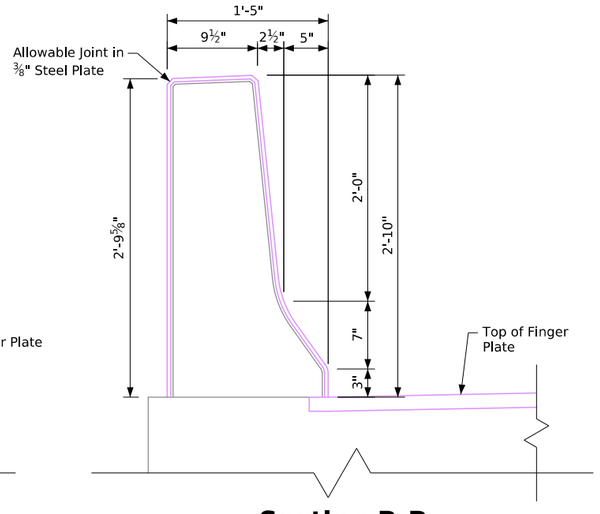
Cap Screw Detail



Bent Bolt Detail



Section A-A

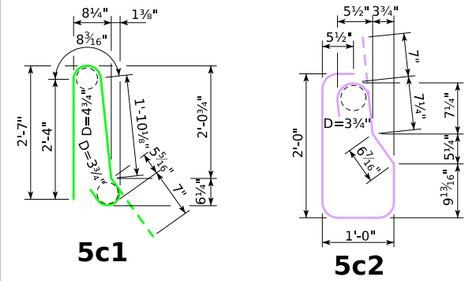


Section B-B

Epoxy Coated Reinforcing Steel					
Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transverse		6	42'-10"	386
5c1	Rail, Vertical		16	5'-11"	99
			Epoxy Coated Reinforcing Steel - Total (lbs)		485

Stainless Steel Reinforcing Steel					
Bar	Location	Shape	No.	Length	Weight
5c2	Rail, Vertical		8	6'-0"	50
			Stainless Steel Reinforcing Steel - Total (lbs)		50

BENT BAR DETAILS



5c1 **5c2**

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

Finger Joint Notes:

The Contractor shall submit for approval shop drawings of the mounting plate, shim plates, and barrier plates showing layout, material to be used, and provisions for securely holding the joint in place during placing of concrete.

Structural steel is to be ASTM A709 Grade 36 Steel.

All bolts, except those designated as stainless steel, shall meet the requirements of ASTM A-307.

The mounting plate, shim plates, barrier plates, and all hardware required, except hardware designated as stainless steel, shall be galvanized prior to placement in accordance with Article 4100.07 of the Standard Specifications. Existing and new galvanized coating damaged by field welding shall be repaired in accordance with Materials I.M. 410.

The new 3/8" bolts, washers, nuts, and concrete anchors attaching the neoprene curtain and trough are to be ASTM A193 stainless steel in accordance with materials I.M. 453.07.

The top of the expansion device shall be recessed ¼" below the top of deck, parallel to grade, and match the roadway cross slope.

Concrete shall be forced under and around finger plate supporting hardware, studs, and bars. Proper consolidation shall be achieved by localized internal vibration.

Barrier Plate Notes:

Contractor to note that the cap screw achorage system for the ⅜" barrier plates are always to be placed on the oncoming traffic side.

It is intended that the ⅝" recessed area be formed so that when the ⅜" plate is installed, the plate will be able to move freely in this recessed area.

Cap screws shall be countersunk 1/16" below top of plate.

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans | 157'-0" Interior Spans

Repair Details

STA. 400+85.00, RT. 32.00' (EB IA 2)

Turn-in Date: September 2026

Fremont County

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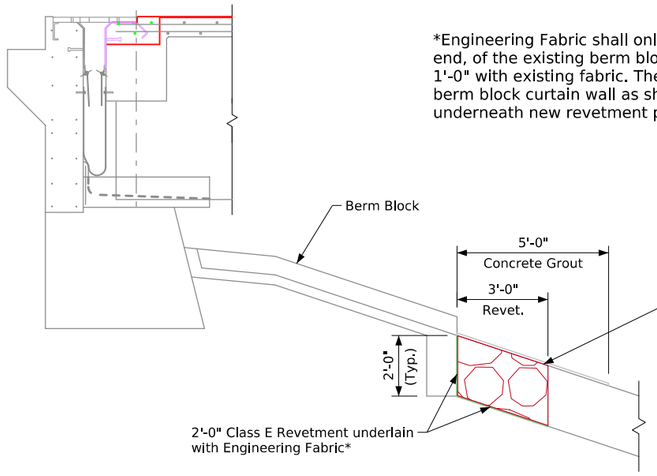
Design No. 127 | Design Sheet No. 8 of 10 | FHWA No. 701075

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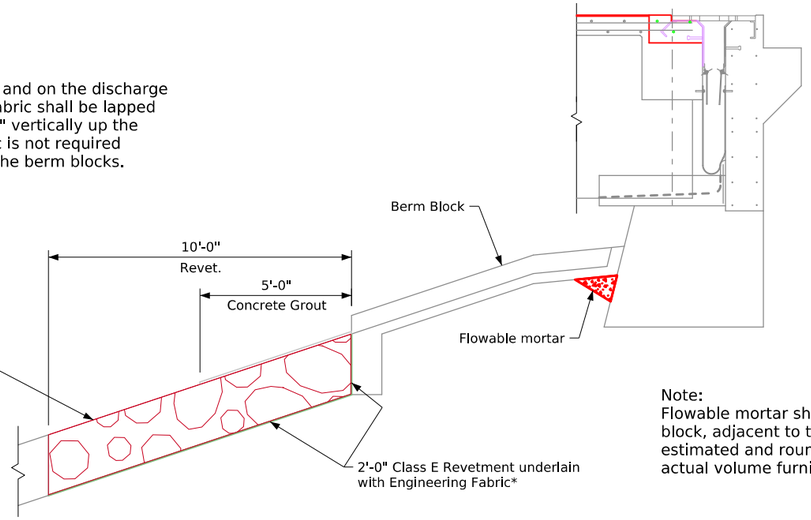
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*Engineering Fabric shall only be placed adjacent to, and on the discharge end, of the existing berm blocks. New Engineering Fabric shall be lapped 1'-0" with existing fabric. The fabric shall extend 2'-0" vertically up the berm block curtain wall as shown. Engineering Fabric is not required underneath new revetment placed on either side of the berm blocks.



Section A-A



Section B-B

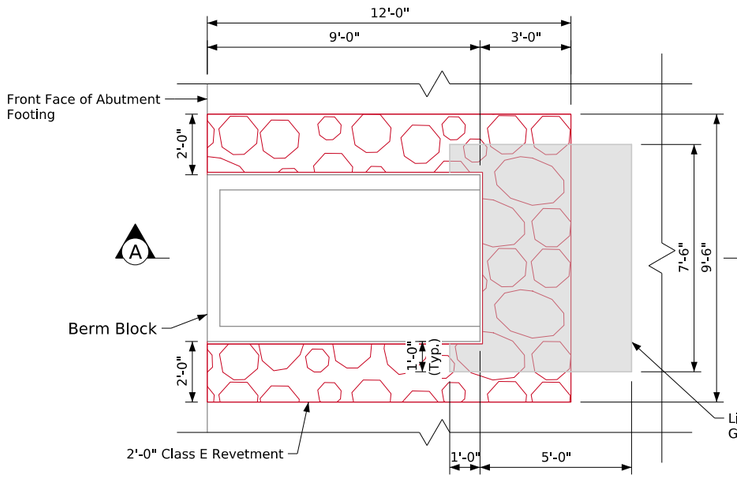
Concrete Grout Notes:

Concrete grout shall be placed over top and between individual stones after placement of the Class E Revetment, where detailed on this sheet. Concrete grout shall be placed in accordance with Article 2507.03, E, of the Standard Specifications.

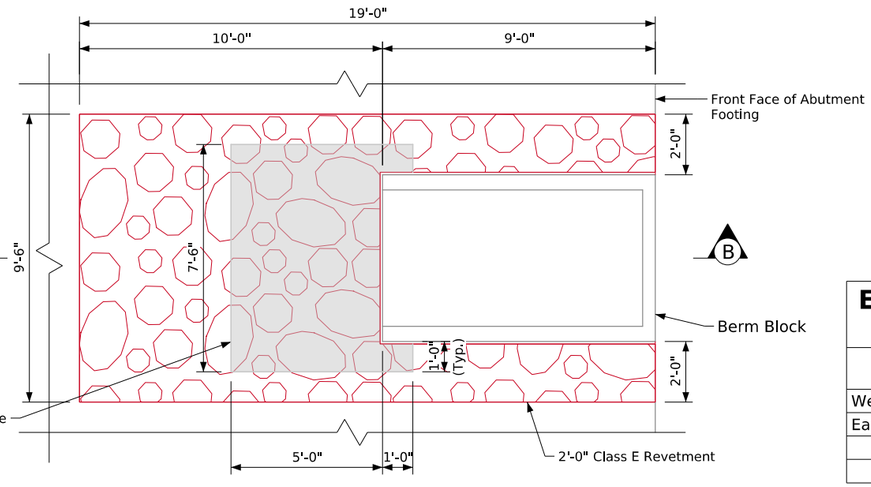
The price bid for "Concrete Grout for Revetment or Gabion" shall include all costs associated with placement of concrete grout and for furnishing all materials, equipment, and labor necessary to complete the work.

The quantity of concrete grout was estimated assuming it fills 40% of voids within the Class E Revetment and was rounded up to the nearest cubic yard. Payment will be based on the actual volume furnished and placed at the contract price per cubic yard.

Note:
Flowable mortar shall be placed under the undermined portion of the berm block, adjacent to the East Abutment, to fill the void. The quantity of 1 CY was estimated and rounded to the nearest cubic yard. Payment will be based on the actual volume furnished and placed at the contract price per cubic yard.



West Abutment



East Abutment

Estimated Berm Repair Quantities

Location	Revetment Class E (Ton)	Engineering Fabric (SY)
West Abutment	7.6	4.0
East Abutment	15.5	11.4
Totals	23.1	15.4

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans 157'-0" Interior Spans

Berm Protection Repair

STA. 400+85.00, RT. 32.00' (EB IA 2)

Turn-in Date: September 2026

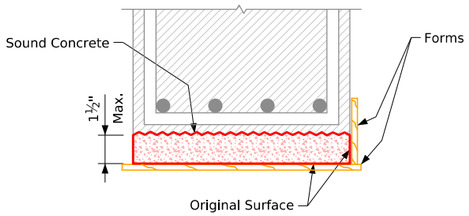
Fremont County

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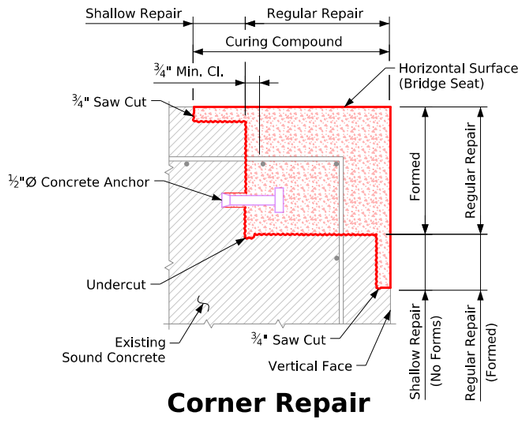
Design No. 127 Design Sheet No. 9 of 10 FHWA No. 701075

FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.9	

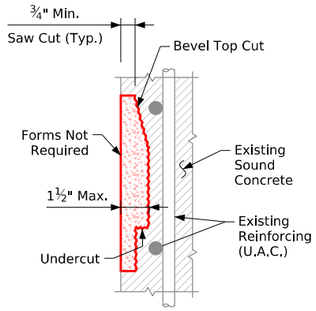
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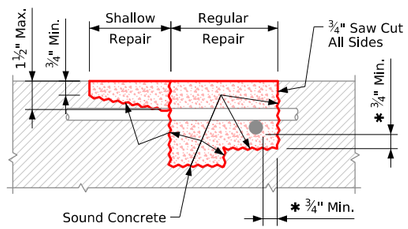
Shallow Repair Bottom Surface



Corner Repair

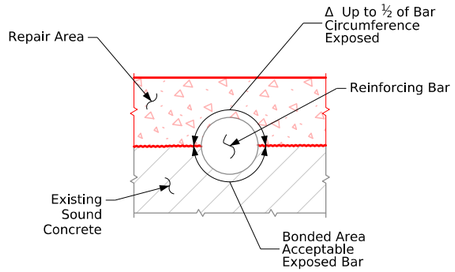


Shallow Repair Vertical Face

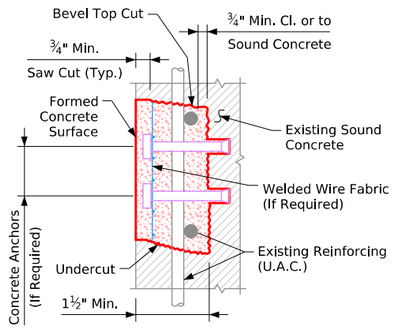


Repair Definition

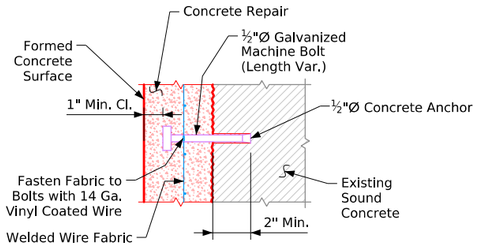
✱ Indicates Clearance for an Un-Bonded Rebar.



Δ If more than ½ of the rebar is exposed it shall be treated as an un-bonded rebar.

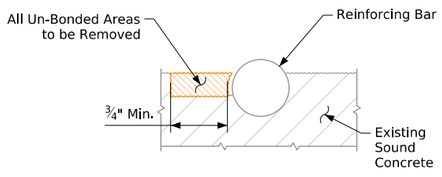


Regular Repair Vertical Face



Anchor Detail

For Spacing and Use of Concrete Anchors and WWF See the Repair Notes.



Concrete Removal Adjacent to Reinforcing

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 the 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 5,000 lbs based on 4,000 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 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 square inch inclusive, example "WWF 3x3 - W1.4xW2.9".

Where reinforcement has been exposed and clearance around theperiphery 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 feet or larger. For this condition ½"∅ 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.

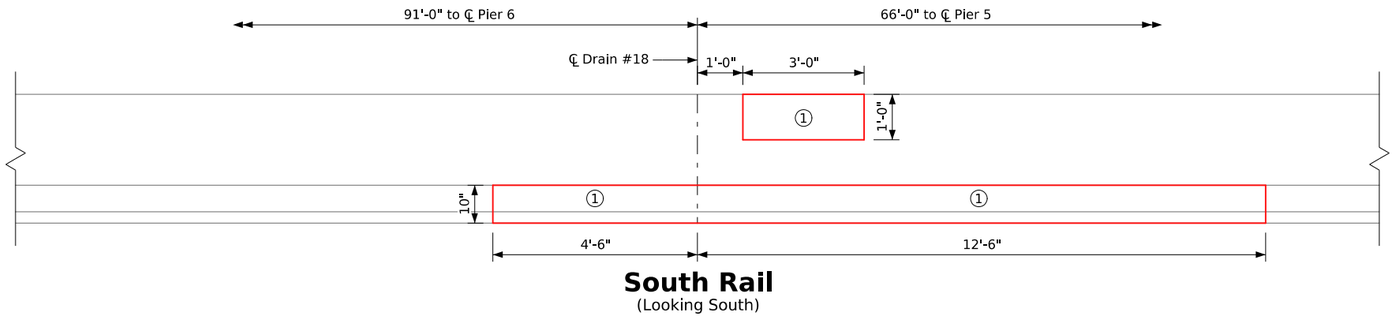
Repairing the structural concrete shall be in accordance with Section 2426 of the Standard Specifications.

Concrete Placement Quantities

Mark	Type	Units	Quantity
①	Shallow Repair	Sq. Ft.	17.2
②	Regular Repair	Sq. Ft.	
		Total (Sq. Ft.)	17.2

Estimated Concrete Repair Quantities

Description	Units	Amount
Concrete Repair	Sq. Ft.	17.2



South Rail

(Looking South)

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans 157'-0" Interior Spans

Concrete Repair

STA. 400+85.00, RT. 32.00' (EB IA 2)

Turn-in Date: September 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 Design Sheet No. 10 of 10 FHWA No. 701075

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Revised 10-2014 - Deleted All References to Grout. Section 2426 Covers this Requirement and Doesn't Need to be Stated on the Plans.
RepairRetrofitBridges.dgn - 1045 - This Sheet Redrawn 09-27-1990.
RepairRetrofitBridges.dgn - 1045 - This Sheet Re-Issued 07-2023.

ESTIMATED BRIDGE REPAIR QUANTITIES - FREMONT 227

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	6.5
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	485
4	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	50
5	2408-7800000	STRUCTURAL STEEL	LB	1,415
6	2426-6772016	CONCRETE REPAIR	SF	4.6
7	2507-3250005	ENGINEERING FABRIC	SY	6.1
8	2507-4011100	CONCRETE GROUT FOR REVETMENT OR GABION	CY	3
9	2507-6800061	REVETMENT, CLASS E	TON	9.3
10	2533-4980005	MOBILIZATION	LS	1
11	2599-9999005	('EACH' ITEM) REMOVE AND RESET FINGER JOINT	EACH	2
12	2599-9999018	('SQUARE YARDS' ITEM) MULTI-LAYER POLYMER CONCRETE OVERLAY	SY	4,868.9

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
1	2401-6750001	REMOVALS, AS PER PLAN Includes all work for removal and off-site disposal of portions of the rails at each corner, the south expansion barrier plates, and portions of the concrete deck and abutment diaphragm at both abutments to facilitate finger joint removal. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS) Includes cleaning existing concrete rails, furnishing and placing concrete sealer.
3	2404-7775005	REINFORCING STEEL, EPOXY COATED - -
4	2404-7775009	REINFORCING STEEL, STAINLESS STEEL - -
5	2408-7800000	STRUCTURAL STEEL Finger joint expansion device shim packs and nuts shall be incidental to the cost of structural steel.
6	2426-6772016	CONCRETE REPAIR - -
7	2507-3250005	ENGINEERING FABRIC Engineering fabric shall be material as specified for embankment erosion control in accordance with Article 4196.01, B, 3, of the Standard Specifications.
8	2507-4011100	CONCRETE GROUT FOR REVETMENT OR GABION See Design Sheet No. 9 for information.
9	2507-6800061	REVETMENT, CLASS E Estimated at 1.5 ton/cu yd. Class E revetment shall meet requirements of Article 4130. Compacted fill shall be incidental to the cost of Revetment, Class E.
10	2533-4980005	MOBILIZATION - -
11	2599-9999005	('EACH' ITEM) REMOVE AND REINSTALL FINGER JOINT Includes all work for removal and reinstallation of the existing finger joint assembly and north expansion barrier plates. Portions of the finger joint assembly that are not salvaged shall be disposed of off site. See Design Sheet No. 5 for additional removal details and notes pertaining to specific items to remain, salvage, or dispose of. Where Neoprene curtain and trough connections have come loose since construction, Contractor shall install new stainless steel bolts, washers, and nuts as directed by the Engineer to restore connections in accordance with original design details. Material, equipment, and labor to restore these connections is incidental to this item.
12	2599-9999018	('SQUARE YARDS' ITEM) MULTI-LAYER POLYMER CONCRETE OVERLAY Includes preparation of the existing deck surface (scarification and cleaning) prior to overlay placement. Refer to the Special Provisions for Multi-Layer Polymer Concrete Overlay.

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Roadway Quantities shown elsewhere in these plans.

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans 157'-0" Interior Spans

Estimated Quantities

STA. 400+85.00, LT. 32.00' (WB IA 2) Turn-in Date: September 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 Design Sheet No. 1 of 10 FHWA No. 701080

General Notes

This design is for repairs to the existing 1097'-0" x 40" pretensioned prestressed concrete beam bridge on WB IA 2 over Missouri River Overflow in Fremont County.

Electronic copies of original design plans and repair plans are available to the Contractor as part of the E-Files supplied with the contract documents. Dimensions shown on these plans are based on original design plans (Original Design No. 219).

See Design Sheet No. 3 for list of repair items.

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 starting date.

Faint lines on plans indicate existing portions of the bridge.

All dimensions and details shown on these plans pertinent to new construction shall be verified in the field by the Contractor before starting construction.

The road will be closed to traffic during construction. See Traffic Control Plan note on this sheet.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing portions of the rails at each corner, the south expansion barrier plates, and portions of the concrete deck and abutment diaphragm at both abutments to facilitate finger joint removal. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to any steel or concrete not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.

These bridge plans label all reinforcing steel with english notation (5a1 is $\frac{5}{8}$ 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

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

The top and interior faces of the existing concrete railing are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. If new sections of rail are constructed, the new sections shall not be sealed. All costs associated with cleaning and sealing of the concrete rails shall be include in the unit price bid item "Structural Concrete (Miscellaneous)".

Areas of maskwall indicated on the "Situation Plan" and on Design Sheet No. 10 or designated by the Engineer are to be repaired using concrete repair notes and details included in these plans.

Present deck thickness is about 8 inches. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

Ready mix trucks are not allowed on the prepared portion of the bridge deck.

Both mats of reinforcing bars in the deck are epoxy coated. The Contractor shall take care not to damage the epoxy coating during deck repairs. Use two part liquid epoxy coating from any epoxy powder manufacturer approved by Iowa DOT to repair scrapes, scars, or damage.

The Contractor shall note the redefining of the classification line for this project. The classification line will be defined as $\frac{3}{8}$" below the existing deck surface.

Specifications:

Design:

AASHTO LRFD 8th Ed, Series of 2017, except as noted in the current Iowa Bridge Design Manual.

Construction:

Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Special Provisions for Multi-Layer Polymer Concrete Overlay.

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Ed, Series of 2017, except as noted in the current Iowa Bridge Design Manual.

Reinforcing steel in accordance with AASHTO LRFD Section 5, Grade 60 for epoxy coated and non-coated, and Grade 60 or 75 for stainless.

Concrete in accordance with AASHTO LRFD Section 5, f'c = 4.0 ksi.

Structural steel in accordance with AASHTO LRFD Section 6. ASTM A709 Grade 36 (AASHTO M270 Grade 36).

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawings and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

No.	Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Mounting Plates & Barrier Plates	(146)_Fremont_227_MountingPlatesAndBarrierPlates.pdf	No

No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1			

Traffic Control Plan
The roadway will be closed to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Design History at this Site
(Includes this Design)

Des. No.	Type of Work
219	Original Design
724	Bearing Repair
227	Deck Overlay

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

General Notes

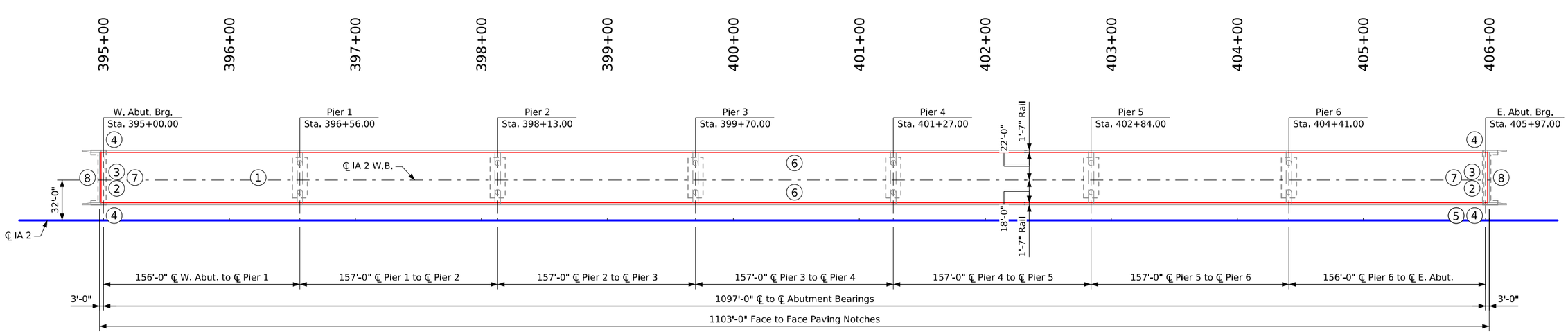
STA. 400+85.00, LT. 32.00' (WB IA 2) — Turn-in Date: September 2026

Fremont County

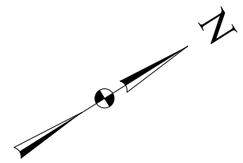
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 — Design Sheet No. 2 of 10 — FHWA No. 701080

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Situation Plan



Repairs Shall Consist of:

1. Scarify the deck and overlay the bridge with multi-layer polymer concrete.
2. Remove and replace 1'-9" sections of deck and 2'-0" sections of barrier rail at both abutments.
3. Remove portions of the finger joint at both abutments. Finger joint assembly to be salvaged and reused as detailed in these plans.
4. Remove barrier plates at each abutment corner. Install new barrier plates at the south rail. Existing barrier plates shall be salvaged and reused in the correct orientation at the north rail.
5. Perform concrete repairs to the south maskwall in the east abutment.
6. Clean and seal the barrier rails.
7. Restore the slope protection at the berm blocks.
8. Seal cracks and perform partial-depth patches in the approaches.

Location

IA 2 W.B. over Missouri River Overflow
T-68N R-43W
Section 30/31
Benton Township
Fremont County
FHWA No. 701080
Bridge Maint. No. 3600.5L002
Latitude 40.676931°
Longitude -95.825181°

Design Data Rural

(WB IA 2)

2024 AADT	4,100 V.P.D.
TRUCKS	20 %

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Situation Plan

STA. 400+85.00, LT. 32.00' (WB IA 2)

Turn-in Date: September 2026

Fremont County

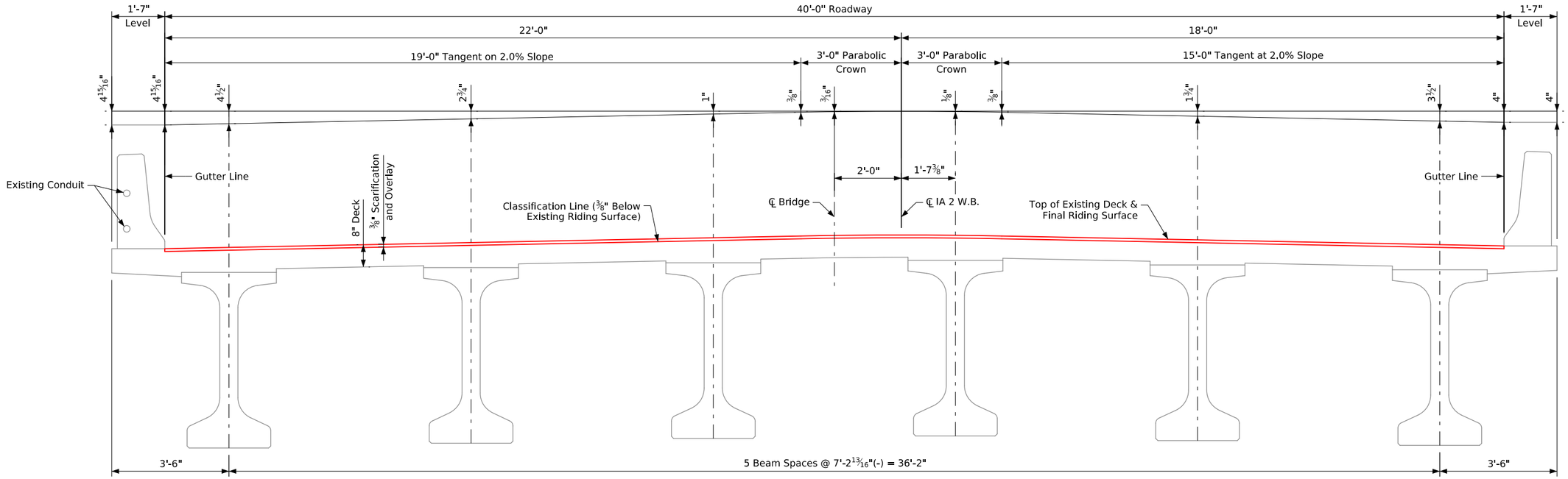
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 — Design Sheet No. 3 of 10 — FHWA No. 701080

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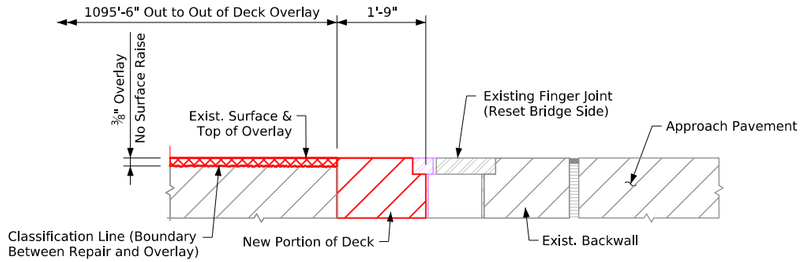
FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.13

10:23:03 AM 8/6/2026 tlangel pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\SHT_36002146_WHKS_0127-0227_701075-701080_Z06



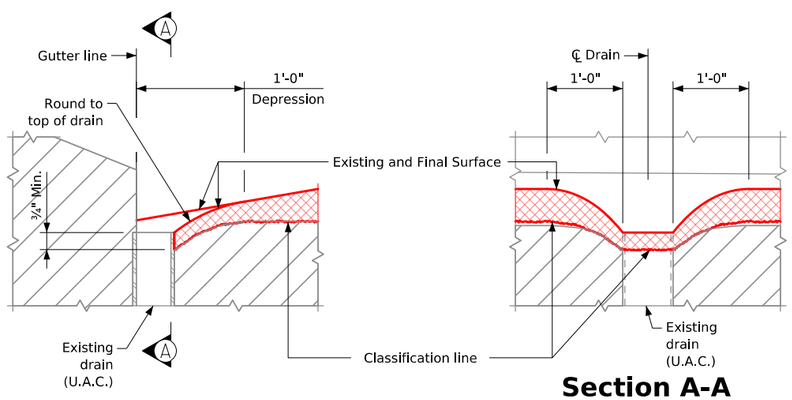
Typical Section

(Looking Upstation)



Part Longitudinal Section Along Roadway

Both Abutments

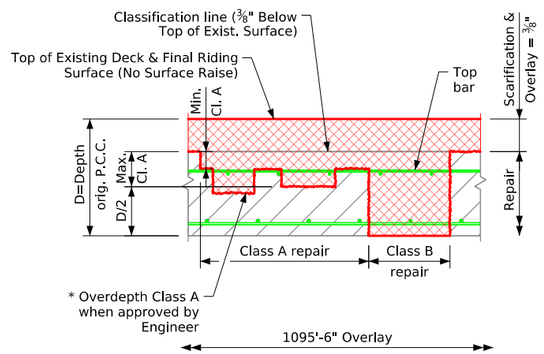


Section A-A

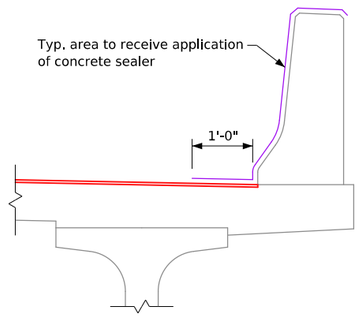
Deck Repair Detail at Drain

(Required at 46 Locations)

* Per IDOT Std. Spec. 2413.03.C.3.b, limited areas of Class A removal may exceed 50% of the floor thickness at the Engineer's direction. These limited areas of excess depth (overdepth) will be measured as Class A deck repair.



Repair and Overlay Definition



Detail of Concrete Sealer Area

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans | 157'-0" Interior Spans

Deck Repair Details

STA. 400+85.00, LT. 32.00' (WB IA 2)

Turn-in Date: September 2026

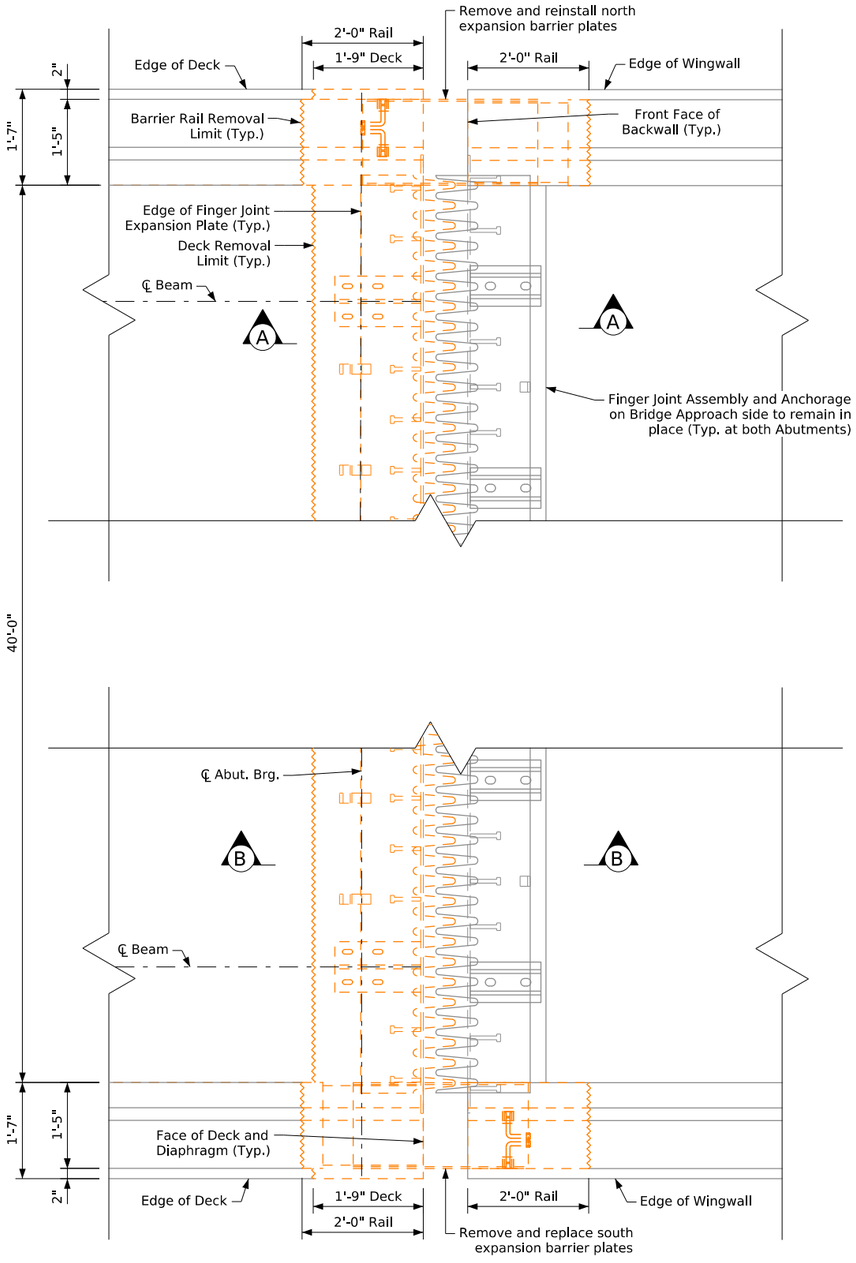
Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 | Design Sheet No. 4 of 10 | FHWA No. 701080

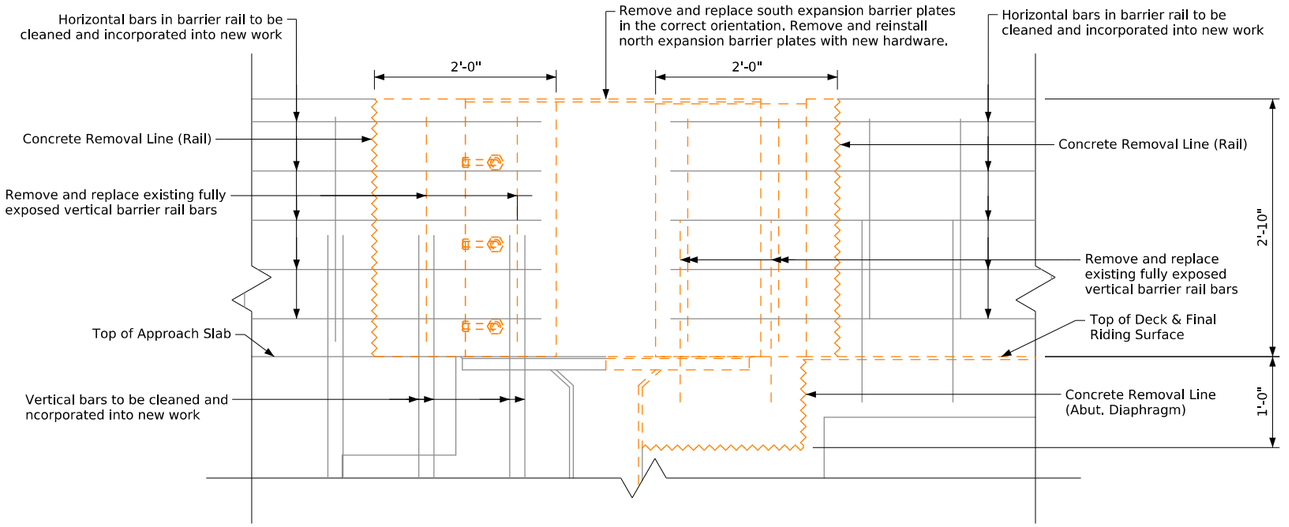
FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.14

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Abutment Removal Details

(East Abutment Shown, West Abutment Similar)
(Conduit in rail not shown for clarity)

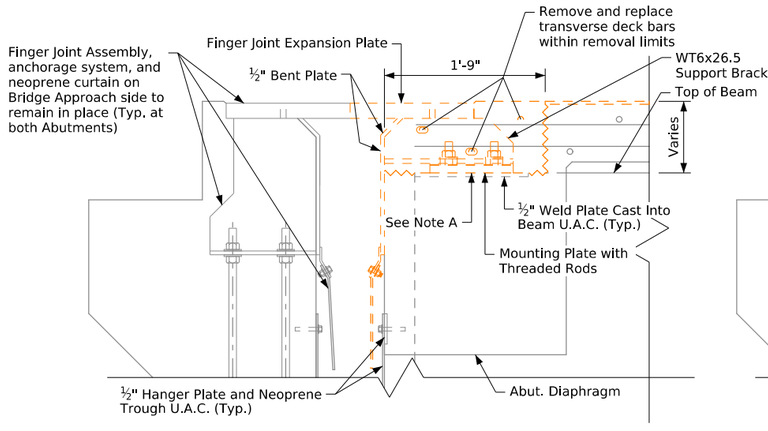


Barrier Rail Removal Details

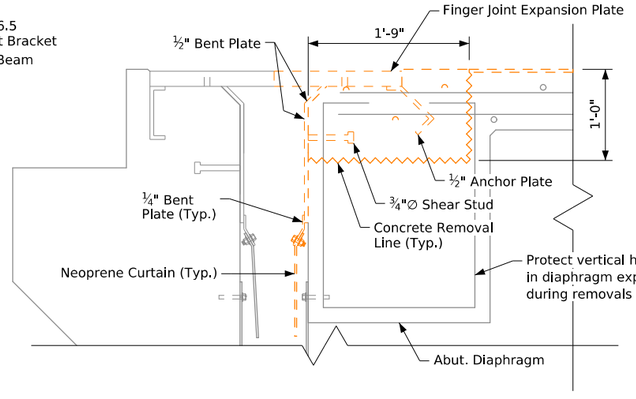
(Conduit in rail not shown for clarity)

Note A:
Cut weld between ½" Cast-in Weld Plate and Mounting Plate to remove Support Bracket Assembly.

Note:
Protect conduit in outside rail during removals.
See Design Sheet No. 8 for details.



Section A-A



Section B-B

Removal Notes:

Contractor shall use extreme care when removing deck, diaphragm, and rail concrete around the finger joint assembly and existing conduits in North Rail to avoid damaging any parts that are to remain or be salvaged and reused. Any parts that are to remain or be reused that are damaged during removals shall be replaced at no additional cost to the State.

Parts that are to remain in place shall consist of the ½" cast-in weld plate and ½" hanger plate with attached neoprene trough, the entire finger joint assembly, anchorage system, and neoprene curtain and trough on the bridge approach side, and the existing conduit with expansion devices in the barrier rail.

Parts that are to be salvaged and reused shall consist of the finger joint expansion plates, ½" anchor plates, WT6x26.5 sections, ½" bent plates with welded on ¾"∅ shear studs, and ¼" bent plate with neoprene curtain.

Parts that are to be removed and replaced shall consist of the mounting plate with welded on ⅞"∅ threaded rods and any shims, nuts, and washers associated.

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Removal Details

STA. 400+85.00, LT. 32.00' (WB IA 2)
Turn-in Date: September 2026

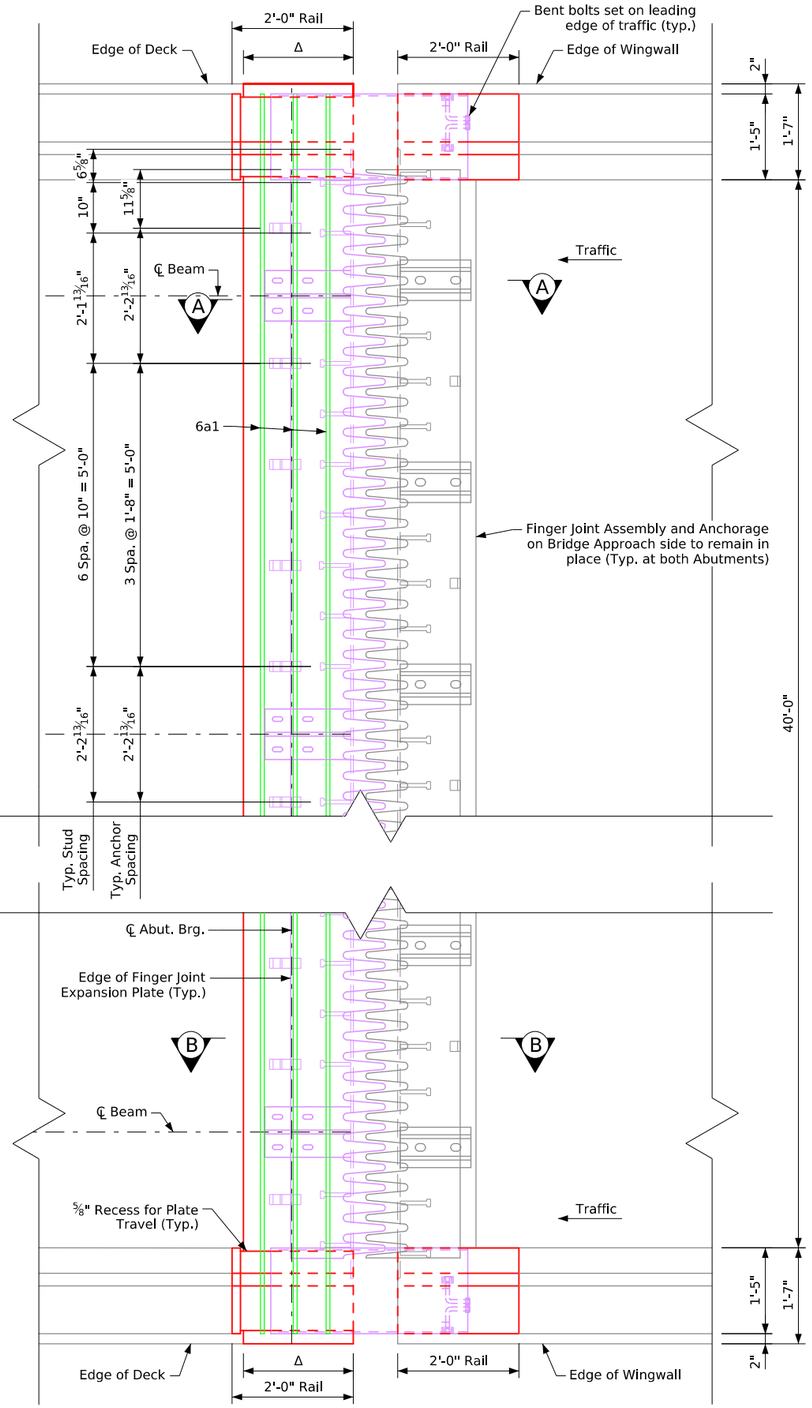
Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 — Design Sheet No. 5 of 10 — FHWA No. 701080

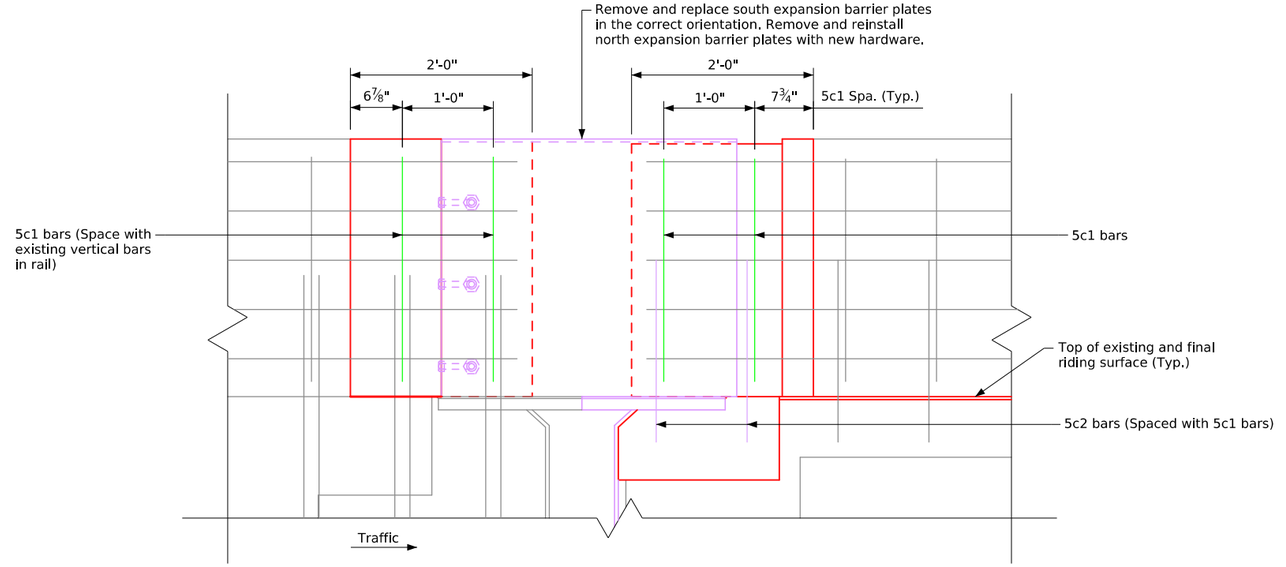
FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.15

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Abutment Repair Details

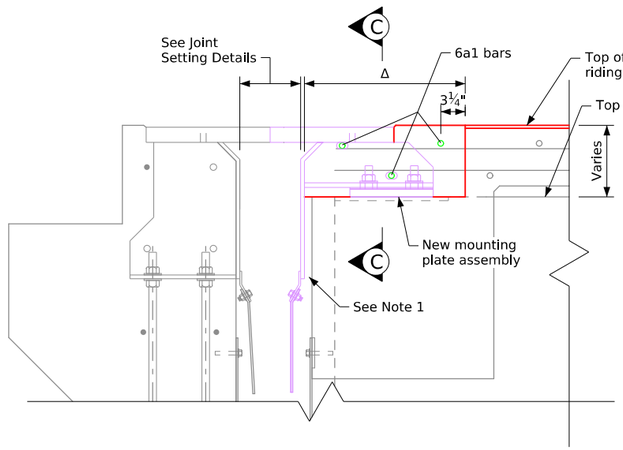
(East Abutment Shown, West Abutment Similar)
(Conduit in rail not shown for clarity)



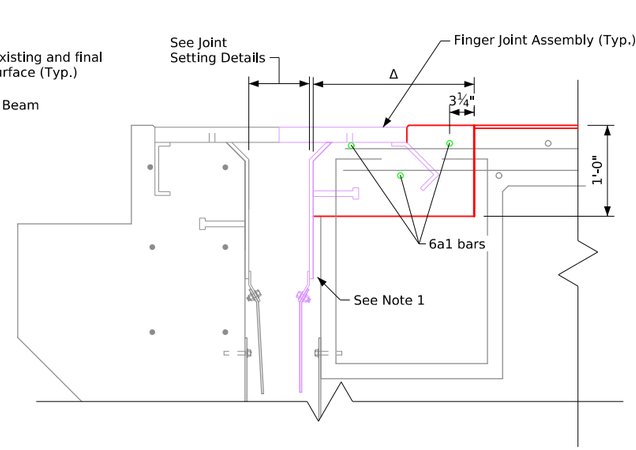
Barrier Rail Repair Details

(Conduit in rail not shown for clarity)

Δ Dimension may be adjusted as necessary to achieve proper expansion joint opening.



Section A-A



Section B-B

Note 1:
Contractor shall form and block the gap between the existing face of diaphragm and finger joint assembly as approved by the Engineer.

See Design Sheet No. 5 for breakdown of finger joint assembly parts to remain in place, be removed and reinstalled, or be removed and replaced.

See Design Sheet No. 7 for Section C-C, Joint Setting Details, Mounting Plate details, and additional Finger Joint Noes.

See Design Sheet No. 8 for Barrier Rail Expansion Plate and Conduit details.

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Repair Details

STA. 400+85.00, LT. 32.00' (WB IA 2)

Turn-in Date: September 2026

Fremont County

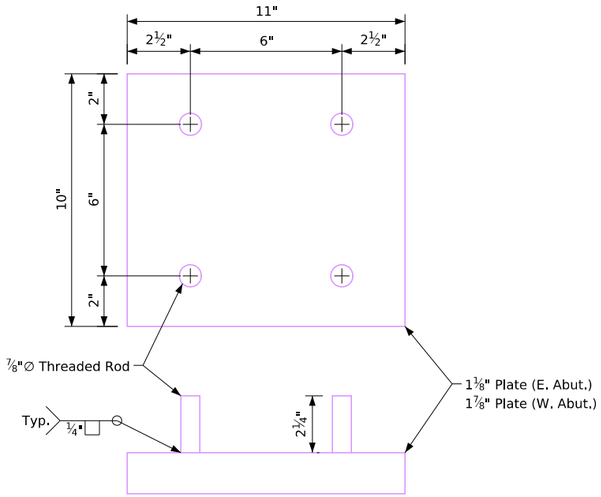
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 | Design Sheet No. 6 of 10 | FHWA No. 701080

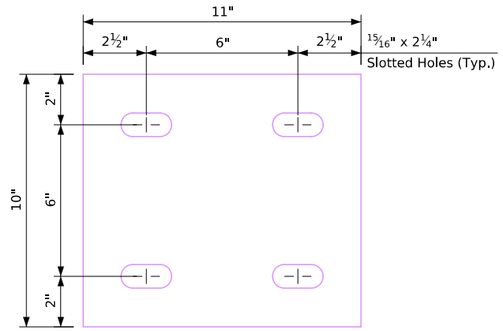
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FILE NO. 32302	ENGLISH	DESIGN TEAM AJL/CVF/RCM	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER V.16

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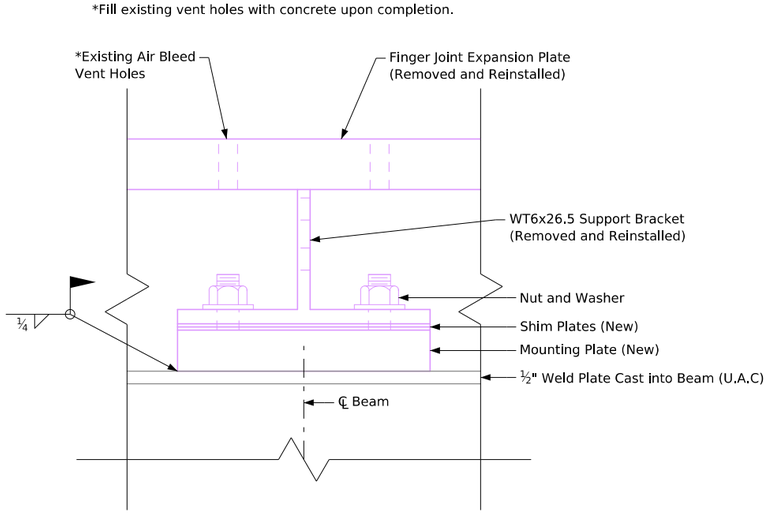
Mounting Plate
(12 Total)



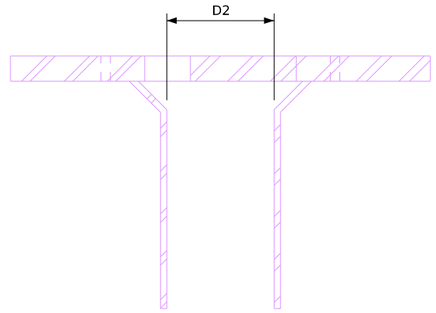
Shim Plan View

Shim Note:
Contractor to provide 2 - ¼" shims and 1 - ⅛" shim for each bracket connected to concrete beam. In addition, one tapered shim shall be provided at each bracket to account for the cross slope of the bridge deck. All shims may not be used.

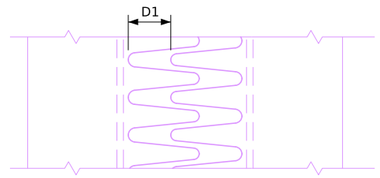
*Fill existing vent holes with concrete upon completion.



Section C-C
(Support Bracket Assembly)
See Design Sheet No. 6 for Section C-C location.



Expansion Opening Detail



Joint Setting Detail
(Plan View)

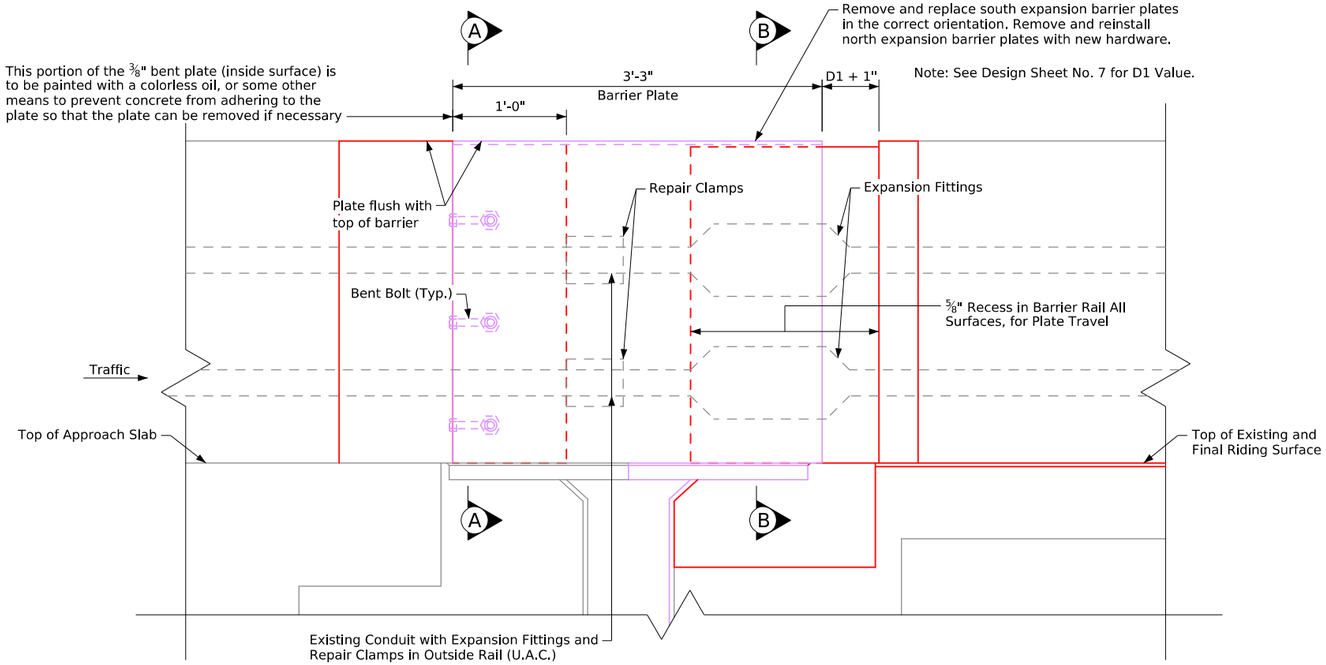
Finger Joint Settings		
Temperature (°F)	D1	D2
10	5⅜"	9½"
50	3 13⁄16"	8"
90	2 3⁄16"	6⅜"

Setting Note:
Joint settings for other temperatures are proportional. Temperatures shown are concrete deck temperatures on the underside or shaded portion of the deck.

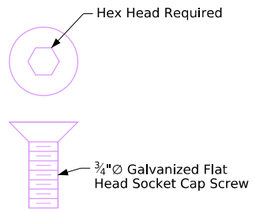
See Design Sheet No. 8 for Finger Joint Notes.

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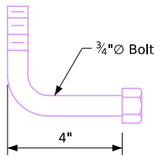
Design For Repairs to 0 Degree Skew
1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge
156'-0" End Spans — 157'-0" Interior Spans
Finger Plate Joint Details
STA. 400+85.00, LT. 32.00' (WB IA 2)
Turn-in Date: September 2026
Fremont County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 227 — Design Sheet No. 7 of 10 — FHWA No. 701080



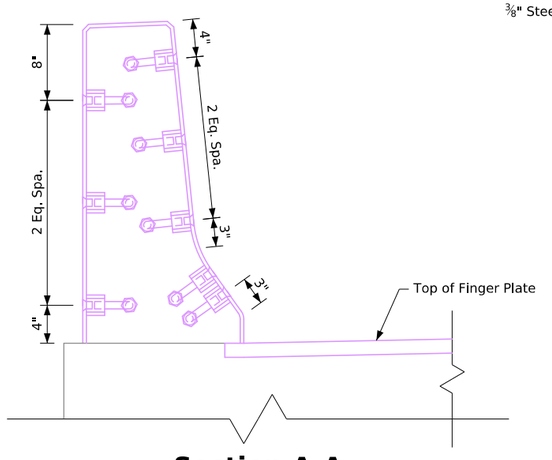
Elevation View at Rail



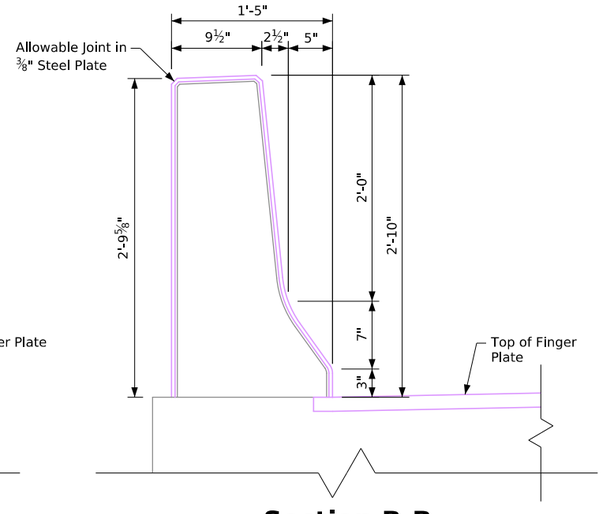
Cap Screw Detail



Bent Bolt Detail



Section A-A



Section B-B

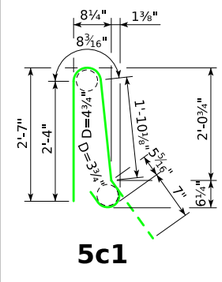
Epoxy Coated Reinforcing Steel

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transverse		6	42'-10"	386
5c1	Rail, Vertical		16	5'-11"	99
			Epoxy Coated Reinforcing Steel - Total (lbs)		485

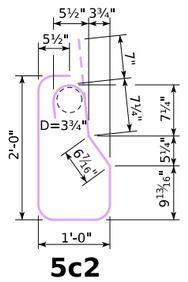
Stainless Steel Reinforcing Steel

Bar	Location	Shape	No.	Length	Weight
5c2	Rail, Vertical		8	6'-0"	50
			Stainless Steel Reinforcing Steel - Total (lbs)		50

BENT BAR DETAILS



5c1



5c2

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

Finger Joint Notes:

The Contractor shall submit for approval shop drawings of the mounting plate, shim plates, and barrier plates showing layout, material to be used, and provisions for securely holding the joint in place during placing of concrete.

Structural steel is to be ASTM A709 Grade 36 Steel.

All bolts, except those designated as stainless steel, shall meet the requirements of ASTM A-307.

The mounting plate, shim plates, barrier plates, and all hardware required, except hardware designated as stainless steel, shall be galvanized prior to placement in accordance with Article 4100.07 of the Standard Specifications. Existing and new galvanized coating damaged by field welding shall be repaired in accordance with Materials I.M. 410.

The new 3/8" bolts, washers, nuts, and concrete anchors attaching the neoprene curtain and trough are to be ASTM A193 stainless steel in accordance with Materials I.M. 453.07.

The top of the expansion device shall be recessed ¼" below the top of deck, parallel to grade, and match the roadway cross slope.

Concrete shall be forced under and around finger plate supporting hardware, studs, and bars. Proper consolidation shall be achieved by localized internal vibration.

Barrier Plate Notes:

Contractor to note that the cap screw achorage system for the ⅜" barrier plates are always to be placed on the oncoming traffic side.

It is intended that the ⅝" recessed area be formed so that when the ⅜" plate is installed, the plate will be able to move freely in this recessed area.

Cap screws shall be countersunk 1/16" below top of plate.

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Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans | 157'-0" Interior Spans

Repair Details

STA. 400+85.00, LT. 32.00' (WB IA 2)

Turn-in Date: September 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 | Design Sheet No. 8 of 10 | FHWA No. 701080

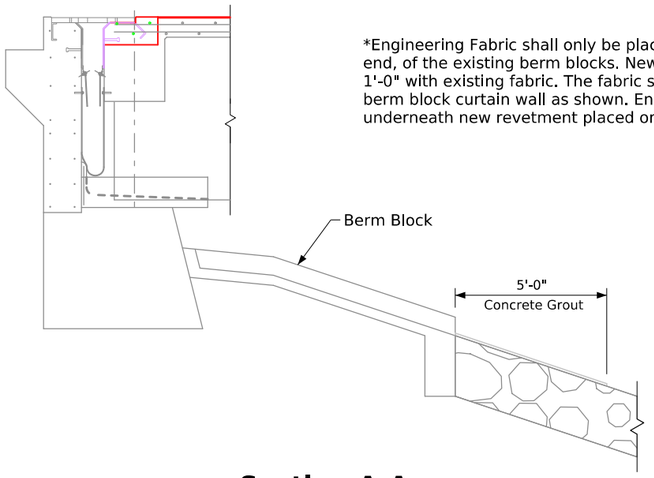
Concrete Grout Notes:

Concrete grout shall be placed over top and between individual stones after placement of the Class E Revetment, where detailed on this sheet. Concrete grout shall be placed in accordance with Article 2507.03, E, of the Standard Specifications.

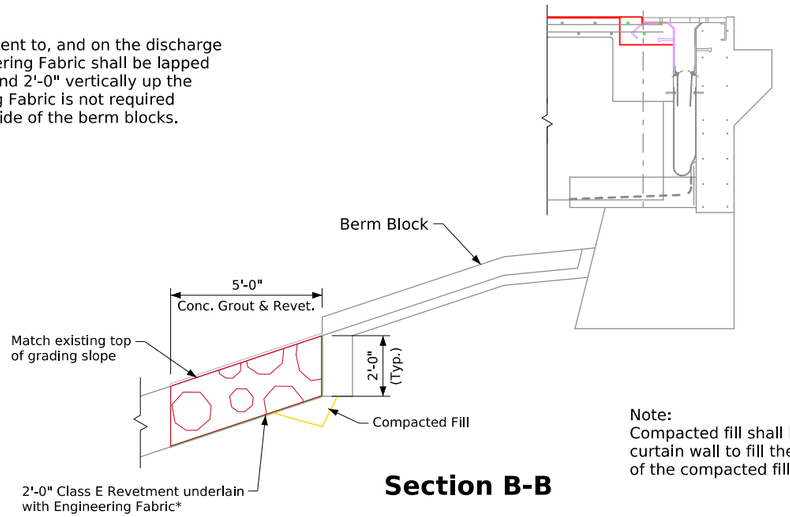
The price bid for "Concrete Grout for Revetment or Gabion" shall include all costs associated with placement of concrete grout and for furnishing all materials, equipment, and labor necessary to complete the work.

The quantity of concrete grout was estimated assuming it fills 40% of voids within the Class E Revetment and was rounded up to the nearest cubic yard. Payment will be based on the actual volume furnished and placed at the contract price per cubic yard.

*Engineering Fabric shall only be placed adjacent to, and on the discharge end, of the existing berm blocks. New Engineering Fabric shall be lapped 1'-0" with existing fabric. The fabric shall extend 2'-0" vertically up the berm block curtain wall as shown. Engineering Fabric is not required underneath new revetment placed on either side of the berm blocks.

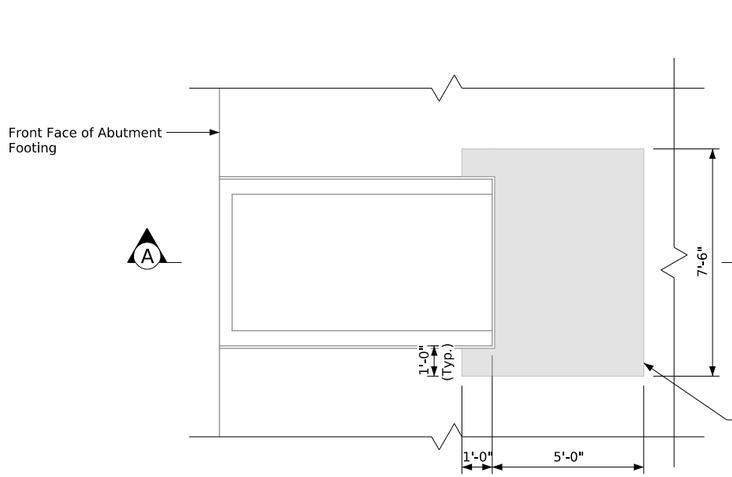


Section A-A

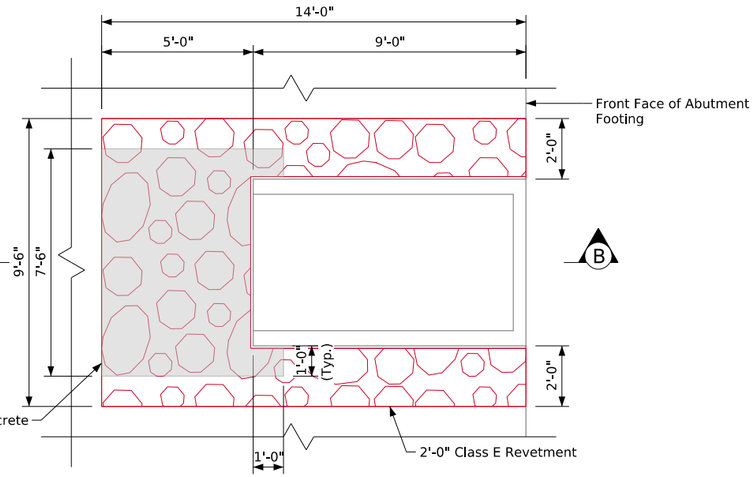


Section B-B

Note:
Compacted fill shall be placed under the scoured portion of the berm block curtain wall to fill the void. All costs associated with furnishing and placement of the compacted fill shall be incidental to the cost for "Revetment, Class E".



West Abutment Revetment



East Abutment Revetment

Estimated Berm Repair Quantities

Location	Revetment Class E (Ton)	Engineering Fabric (SY)
East Abutment	9.9	6.1
Totals	9.9	6.1

whks
engineers + planners + land surveyors

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Berm Protection Repair

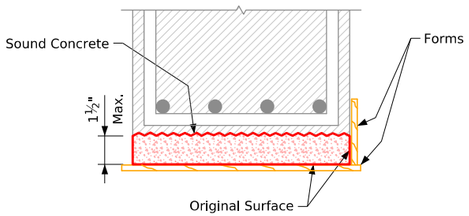
STA. 400+85.00, LT. 32.00' (WB IA 2)

Turn-in Date: September 2026

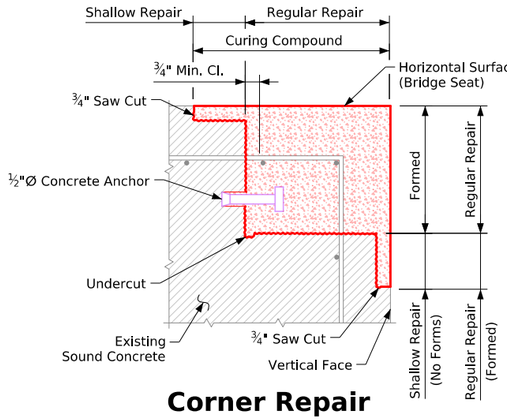
Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

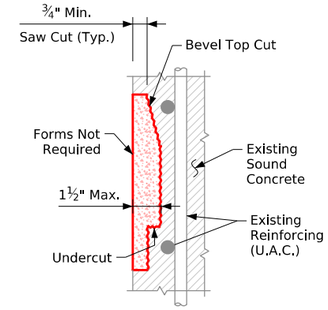
Design No. 227 — Design Sheet No. 9 of 10 — FHWA No. 701080



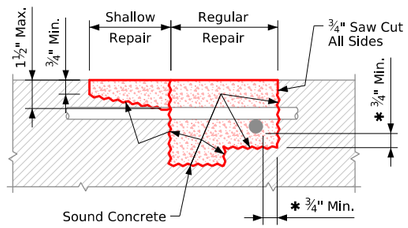
Shallow Repair Bottom Surface



Corner Repair

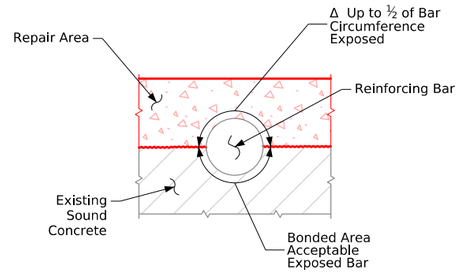


Shallow Repair Vertical Face

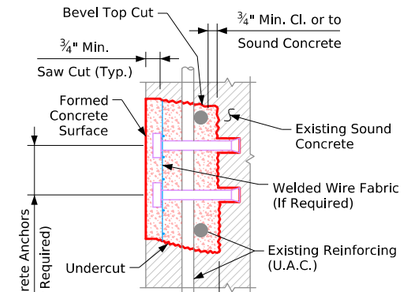


Repair Definition

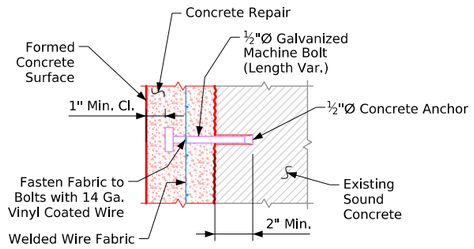
✱ Indicates Clearance for an Un-Bonded Rebar.



Δ If more than ½ of the rebar is exposed it shall be treated as an un-bonded rebar.

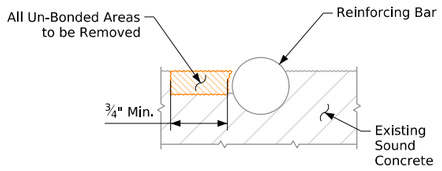


Regular Repair Vertical Face



Anchor Detail

For Spacing and Use of Concrete Anchors and WWF See the Repair Notes.



Concrete Removal Adjacent to Reinforcing

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 the 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 5,000 lbs based on 4,000 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 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 square inch inclusive, example "WWF 3x3 - W1.4xW2.9".

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 feet or larger. For this condition ½"∅ 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.

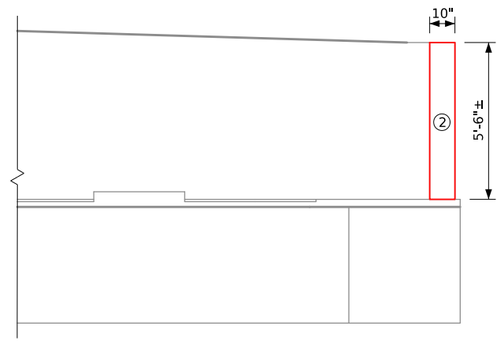
Repairing the structural concrete shall be in accordance with Section 2426 of the Standard Specifications.

Concrete Placement Quantities

Mark	Type	Units	Quantity
①	Shallow Repair	Sq. Ft.	
②	Regular Repair	Sq. Ft.	4.6
		Total (Sq. Ft.)	4.6

Estimated Concrete Repair Quantities

Description	Units	Amount
Concrete Repair	Sq. Ft.	4.6



East Abutment - South Maskwall

(Looking East)

Design For Repairs to 0 Degree Skew

1097'-0" x 40' Pretensioned Prestressed Concrete Beam Bridge

156'-0" End Spans — 157'-0" Interior Spans

Concrete Repair

STA. 400+85.00, LT. 32.00' (WB IA 2) — Turn-in Date: September 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 227 — Design Sheet No. 10 of 10 — FHWA No. 701080

whks engineers + planners + land surveyors

Revised 10-2014 - Deleted All References to Grout. Section 2426 Covers this Requirement and Doesn't Need to be Stated on the Plans.
RepairRetrofitBridges.dgn - 1045 - This Sheet Redrawn 09-27-1990.
RepairRetrofitBridges.dgn - 1045 - This Sheet Re-Issued 07-2023.

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
* A.3	Title Sheet
C Sheets	**Quantities and General Information**
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.2	Project Description
C.3	Standards
C.4	Index of Tabulations
C.5 - 15	Tabulations
C.16	Standard Notes
D Sheets	**Mainline Plan Sheets**
* D.1	Legend Sheet
* D.2 - 3	Plan Sheets
G Sheets	**Survey Sheets**
J.1	Traffic Control Plan
J.2	Staging Notes
J.3	Coordinated Operations
* J.4	Traffic Control Legend and Symbol Information Sheet
* J.5	Staging Cross Sections
* J.6 - 7	Traffic Control Staging Plan View
J.8 - 10	Traffic Control Details for Nebraska Crossover
U Sheets	**Pavement Marking Sheets**
* U.1	Partial Depth Pavement Patch Detail Sheet
	*Color Plan Sheets

LICENSED PROFESSIONAL ENGINEER
Lucas D. Fatka
23466
IOWA

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 _____ Date 8/10/2026

Printed or Typed Name Lucas D. Fatka

My license renewal date is December 31, _____

Pages or sheets covered by this seal: A.3, C.1-16, D.1-3, J.1-10, U.1

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2514-0000200	REMOVAL OF CURB	STA	0.4	Refer to Tab. 110-4. Removal is to facilitate placement of crash cushions. Reinstallation of the curb is considered incidental to this item and shall be completed once the crash cushions are removed.
2	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	16	Refer to Tab. 108-29.
3	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	341.05	Refer to Tab. 108-22.
4	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	16	Refer to Tab. 108-29.
5	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	341.8	Refer to Tab. 108-22.
6	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	100.67	
7	2528-2518000	SAFETY CLOSURE	EACH	8	Refer to Tab. 108-13A.
8	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	8	Refer to Tab. 108-27.
9	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	3,000	Refer to Tab. 108-35 and J Sheets.
10	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	0	See Proposal. Refer to J Sheets.
11	2530-5070210	PATCHES, PARTIAL-DEPTH P.C.C. FINISH	SF	189	See Tab. 102-10. Refer to Sheet U.1 for additional details.
12	2551-0000130	TEMP CRASH CUSHION, SEVERE USE (SU)	EACH	2	Refer to Tab. 108-30.

100_01D
8/15/22

PROJECT DESCRIPTION

This project is for the roadway portions of the dual bridge deck overlay and bridge approach patching of the 1097' x 40' bridges (FHWA NO. 701075 and 701080) over Missouri River Overflow, 0.5 miles East of the Missouri River.

105_04
10/20/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel
EC-502	04-21-15	Seeding in Rural Areas
LI-130	10-17-17	Temporary Floodlighting Luminaires
PM-110	10-15-24	Line Types
PM-111	04-21-20	Symbols and Legends
PR-107	10-20-26	Partial Depth PCC Finish Patches
PV-101	10-20-26	Joints
PV-102	10-21-25	PCC Curb Details
SI-881	10-20-26	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-61	10-21-25	Two-Lane, Two-way Operation
TC-252	10-20-26	Routes Closed to Traffic
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway
TC-433	10-17-17	Pavement Marking Operations

111_25
4/21/26

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
100_01A	ESTIMATED PROJECT QUANTITIES	C.1
100_04A	ESTIMATE REFERENCE INFORMATION	C.1
100_01D	PROJECT DESCRIPTION	C.2
105_04	STANDARD ROAD PLANS	C.3
111_25	INDEX OF TABULATIONS	C.4
110_04	CURB REMOVAL	C.5
102_05	EXISTING PAVEMENT	C.6
102_10	PARTIAL DEPTH PCC FINISH PATCHES	C.7
108_13A	SAFETY CLOSURES	C.8
108_22	PAVEMENT MARKING LINE TYPES	C.9-11
108_27	TEMPORARY FLOODLIGHTING LUMINAIRES	C.12
108_29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.13
108_35	TEMPORARY LANE SEPARATOR SYSTEM	C.14
108_30	CRASH CUSHIONS	C.15
232_03A	EROSION CONTROL (RURAL SEEDING)	C.16
262_06	UTILITIES (NOT A POINT 25 PROJECT)	C.16
262_07	TABULATION OF UTILITIES	C.16
108_23A	TRAFFIC CONTROL PLAN	J.1
108_26A	STAGING NOTES	J.2
111_01	COORDINATED OPERATIONS	J.3

CURB REMOVAL

Station From	Station To	Side	Length (STA)	Remarks
394+65.00	394+85.00	Median	0.20	Stage 1 - At SW Corner of WB Bridge
406+15.00	406+35.00	Median	0.20	Stage 2 - At NE Corner of EB Bridge
			0.40	TOTAL

EXISTING PAVEMENT

County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
Fremont	Iowa Highway 2	Both		0.8	2019	O	NHSN-002-1(122)--2R-36	PCC	10.0	MSB	12.0									

PARTIAL DEPTH PCC FINISH PATCHES

Possible Standard: PR-107

Road Identification	Station From	Station To	Lane	Side	Patch Length (FT)	Patch Width (FT)	Finish Patches (No.)	Finish Patches (SF)	Remarks
Iowa Highway 2 - WB	394+76.00	394+90.00	WB	Left	14.0	2.5	1	27.0	Refer to D and U Sheets for Details (typ.)
Iowa Highway 2 - WB	394+76.00	394+90.00	WB	Right	14.0	2.5	2	27.0	
Iowa Highway 2 - EB	394+76.00	394+90.00	EB	Right	14.0	2.5	3	27.0	
Iowa Highway 2 - WB	406+07.00	406+21.00	WB	Left	14.0	2.5	4	27.0	
Iowa Highway 2 - WB	406+07.00	406+21.00	WB	Right	14.0	2.5	5	27.0	
Iowa Highway 2 - EB	406+07.00	406+21.00	EB	Left	14.0	2.5	6	27.0	
Iowa Highway 2 - EB	406+07.00	406+21.00	EB	Right	14.0	2.5	7	27.0	
								189.0	TOTAL

108_13A
3/27/25

SAFETY CLOSURES

Refer to Section 2528 of the Standard Specifications

Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
350+00.00	1		Stage 1 - EB Iowa Highway 2 at West Crossover
357+50.00	2		Stage 1 - EB Iowa Highway 2 at Valmont Drive
414+00.00	1		Stage 1 - EB Iowa Highway 2 at East Crossover
350+00.00	1		Stage 2 - WB Iowa Highway 2 at West Crossover
357+50.00	2		Stage 2 - WB Iowa Highway 2 at Valmont Drive
414+00.00	1		Stage 2 - WB Iowa Highway 2 at East Crossover
	8		TOTAL

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28
STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03
YLW2: Yield Line (White) @ 1.15

Line No.	Station From	Station To	Lane	Marking Type	Left	Center	Right	BLW6 (STA)	BLW6 Factored (STA)	CHW8 (STA)	CHW8 Factored (STA)	CHW10 (STA)	CHW10 Factored (STA)	CHY8 (STA)	CHY8 Factored (STA)	CHY10 (STA)	CHY10 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	ELY6 (STA)	ELY6 Factored (STA)	Remarks
1.0																								Iowa Highway 2
2.0																								
3.0																								BEFORE STAGE 1
4.0	338+00.00	345+50.00	EB	Removal of Paint		x		7.50	1.88															West X-Over: Broken CL
5.0	345+50.00	348+75.00	EB	Removal of Paint	x																	3.25	3.25	West X-Over: Left Edge Line
6.0	414+00.00	416+55.00	EB	Removal of Paint	x	x		2.55	0.64													2.55	2.55	East X-Over: Broken CL and Left Edge Line
7.0																								
8.0	351+00.00	439+30.00	WB	Removal of Paint		x		88.30	22.07															Mainline: Broken CL
9.0	351+00.00	431+80.00	WB	Removal of Paint	x																	80.80	80.80	Mainline: Left Edge Line
10.0																								
11.0																								PROPOSED PAVEMENT MARKINGS
12.0	338+00.00	343+00.00	EB	Wet Retroreflective Removable Tape			x			5.00	6.65													Mainline: Taper Right Edge Line
13.0	343+00.00	345+50.00	EB	Waterborne/Solvent Paint			x													2.50	2.50			Mainline: Right Edge Line
14.0	345+50.00	354+00.00	EB	Wet Retroreflective Removable Tape			x			8.50	11.30													West X-Over: Right Edge Line
15.0	354+00.00	411+55.00	EB	Waterborne/Solvent Paint			x													57.55	57.55			Mainline: Right Edge Line
16.0	411+55.00	416+55.00	EB	Wet Retroreflective Removable Tape			x			5.00	6.65													East X-Over: Right Edge Line
17.0	416+55.00	419+55.00	EB	Waterborne/Solvent Paint			x					3.00	5.01											Mainline: Right Edge Line - 300' Extension
18.0	345+50.00	354+00.00	EB	Wet Retroreflective Removable Tape	x									8.50	11.30									West X-Over: Left Edge Line
19.0	411+55.00	416+55.00	EB	Wet Retroreflective Removable Tape	x									5.00	6.65									East X-Over: Left Edge Line
20.0																								
21.0	354+00.00	411+55.00	Both	Waterborne/Solvent Paint		x												57.55	115.10					Mainline: Double Centerline
22.0																								
23.0	351+00.00	354+00.00	WB	Waterborne/Solvent Paint	x											3.00	5.01							Mainline: Left Edge Line - 300' Extension
24.0	411+55.00	424+00.00	WB	Waterborne/Solvent Paint	x																	12.45	12.45	Mainline: Left Edge Line
25.0	424+00.00	431+80.00	WB	Wet Retroreflective Removable Tape	x									7.80	10.37									Mainline: Taper Left Edge Line
26.0																								
27.0																								BEFORE STAGE 2
28.0																								
29.0																								REMOVAL OF STAGE 1 PAVEMENT MARKINGS
30.0	338+00.00	343+00.00	EB	Removal of Removable Tape			x			5.00	6.65													Mainline: Taper Right Edge Line
31.0	343+00.00	345+50.00	EB	Removal of Paint			x													2.50	2.50			Mainline: Right Edge Line
32.0	345+50.00	354+00.00	EB	Removal of Removable Tape			x			8.50	11.30													West X-Over: Right Edge Line
33.0	354+00.00	411+55.00	EB	Removal of Paint			x													57.55	57.55			Mainline: Right Edge Line
34.0	411+55.00	416+55.00	EB	Removal of Removable Tape			x			5.00	6.65													East X-Over: Right Edge Line
35.0	416+55.00	419+55.00	EB	Removal of Paint			x					3.00	5.01											Mainline: Right Edge Line - 300' Extension
36.0	345+50.00	354+00.00	EB	Removal of Removable Tape	x									8.50	11.30									West X-Over: Left Edge Line
37.0	411+55.00	416+55.00	EB	Removal of Removable Tape	x									5.00	6.65									East X-Over: Left Edge Line
38.0																								
39.0	354+00.00	411+55.00	Both	Removal of Paint		x												57.55	115.10					Mainline: Double Centerline
40.0																								
41.0	351+00.00	354+00.00	WB	Removal of Paint	x											3.00	5.01							Mainline: Left Edge Line - 300' Extension
42.0	411+55.00	424+00.00	WB	Removal of Paint	x																	12.45	12.45	Mainline: Left Edge Line
43.0	424+00.00	431+80.00	WB	Removal of Removable Tape	x									7.80	10.37									Mainline: Taper Left Edge Line

PAVEMENT MARKING LINE TYPES

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BLW6: Broken Lane Line (White) @ 0.25
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CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28
STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03
YLW2: Yield Line (White) @ 1.15

Line No.	Station From	Station To	Lane	Marking Type	Left	Center	Right	BLW6 (STA)	BLW6 Factored (STA)	CHW8 (STA)	CHW8 Factored (STA)	CHW10 (STA)	CHW10 Factored (STA)	CHY8 (STA)	CHY8 Factored (STA)	CHY10 (STA)	CHY10 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	ELY6 (STA)	ELY6 Factored (STA)	Remarks
44.0																								
45.0																								
46.0																								REMOVAL OF EXISTING PAVEMENT MARKINGS
47.0	345+50.00	348+75.00	EB	Removal of Paint		x		3.25	0.81															Mainline: Broken CL
48.0	348+75.00	414+00.00	EB	Removal of Paint	x	x		65.25	16.31													65.25	65.25	Mainline: Broken CL and Left Edge Line
49.0																								
50.0	346+50.00	351+00.00	WB	Removal of Paint	x																	4.50	4.50	Mainline: Left Edge Line
51.0																								
52.0																								PROPOSED PAVEMENT MARKINGS
53.0	341+50.00	345+50.00	EB	Wet Retroreflective Removable Tape	x									4.00	5.32									Mainline: Taper Left Edge Line
54.0	345+50.00	354+00.00	EB	Waterborne/Solvent Paint	x																	8.50	8.50	Mainline: Left Edge Line
55.0	411+55.00	416+55.00	EB	Waterborne/Solvent Paint	x																	5.00	5.00	Mainline: Left Edge Line
56.0	416+55.00	419+55.00	EB	Waterborne/Solvent Paint		x		3.00	0.75															Mainline: Broken Centerline
57.0																								
58.0	345+10.00	347+60.00	WB	Waterborne/Solvent Paint			x					2.50	4.17											Mainline: Right Edge Line - 250' Extension
59.0	347+60.00	354+00.00	WB	Wet Retroreflective Removable Tape			x			6.40	8.51													West X-Over: Right Edge Line
60.0	354+00.00	411+55.00	WB	Waterborne/Solvent Paint			x													57.55	57.55			Mainline: Right Edge Line
61.0	411+55.00	416+55.00	WB	Wet Retroreflective Removable Tape			x			5.00	6.65													East X-Over: Right Edge Line
62.0	416+55.00	426+55.00	WB	Waterborne/Solvent Paint			x													10.00	10.00			Mainline: Right Edge Line
63.0	426+55.00	434+35.00	WB	Wet Retroreflective Removable Tape			x			7.80	10.37													Mainline: Taper Right Edge Line
64.0	346+50.00	354+00.00	WB	Wet Retroreflective Removable Tape	x									7.50	9.98									West X-Over: Left Edge Line
65.0	411+55.00	416+55.00	WB	Wet Retroreflective Removable Tape	x									5.00	6.65									East X-Over: Left Edge Line
66.0	416+55.00	431+80.00	WB	Waterborne/Solvent Paint	x																	15.25	15.25	Mainline: Left Edge Line
67.0																								
68.0	354+00.00	411+55.00	Both	Waterborne/Solvent Paint		x												57.55	115.10					Mainline: Double Centerline
69.0																								
70.0																								FINAL
71.0																								
72.0																								REMOVAL OF STAGE 2 PAVEMENT MARKINGS
73.0	341+50.00	345+50.00	EB	Removal of Removable Tape	x									4.00	5.32									Mainline: Taper Left Edge Line
74.0	345+50.00	354+00.00	EB	Removal of Paint	x																	8.50	8.50	Mainline: Left Edge Line
75.0	411+55.00	416+55.00	EB	Removal of Paint	x																	5.00	5.00	Mainline: Left Edge Line
76.0																								
77.0	345+10.00	347+60.00	WB	Removal of Paint			x					2.50	4.17											Mainline: Right Edge Line - 250' Extension
78.0	347+60.00	354+00.00	WB	Removal of Removable Tape			x			6.40	8.51													West X-Over: Right Edge Line
79.0	354+00.00	411+55.00	WB	Removal of Paint			x													57.55	57.55			Mainline: Right Edge Line
80.0	411+55.00	416+55.00	WB	Removal of Removable Tape			x			5.00	6.65													East X-Over: Right Edge Line
81.0	416+55.00	426+55.00	WB	Removal of Paint			x													10.00	10.00			Mainline: Right Edge Line
82.0	426+55.00	434+35.00	WB	Removal of Removable Tape			x			7.80	10.37													Mainline: Taper Right Edge Line
83.0	346+50.00	354+00.00	WB	Removal of Removable Tape	x									7.50	9.98									West X-Over: Left Edge Line
84.0	411+55.00	416+55.00	WB	Removal of Removable Tape	x									5.00	6.65									East X-Over: Left Edge Line
85.0	416+55.00	431+80.00	WB	Removal of Paint	x																	15.25	15.25	Mainline: Left Edge Line
86.0																								

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28
STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03
YLW2: Yield Line (White) @ 1.15

Line No.	Station From	Station To	Lane	Marking Type	Left	Center	Right	BLW6 (STA)	BLW6 Factored (STA)	CHW8 (STA)	CHW8 Factored (STA)	CHW10 (STA)	CHW10 Factored (STA)	CHY8 (STA)	CHY8 Factored (STA)	CHY10 (STA)	CHY10 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	ELY6 (STA)	ELY6 Factored (STA)	Remarks
87.0	354+00.00	411+55.00	Both	Removal of Paint		x												57.55	115.10					Mainline: Double Centerline
88.0																								
89.0																								PROPOSED PAVEMENT MARKINGS
90.0	338+00.00	416+55.00	EB	Waterborne/Solvent Paint		x		78.55	19.64															Mainline: Broken CL
91.0	345+50.00	416+55.00	EB	Waterborne/Solvent Paint	x																	71.05	71.05	Mainline: Left Edge Line
92.0																								
93.0	351+00.00	439+30.00	WB	Waterborne/Solvent Paint		x		88.30	22.07															Mainline: Broken CL
94.0	346+50.00	431+80.00	WB	Waterborne/Solvent Paint	x																	85.30	85.30	Mainline: Left Edge Line
95.0																								
96.0																								
101.0								169.85	42.46			5.50	9.17			3.00	5.00	115.10	153.47	127.60	85.07	197.55	131.70	Sum: Waterborne/Solvent Paint
102.0										37.70	50.27			37.80	50.40									Sum: Wet Retroreflective Removable Tape
103.0								166.85	41.71			5.50	9.17			3.00	5.00	115.10	153.47	127.60	85.07	197.55	131.70	Sum: Removal of Paint
104.0										37.70	50.27			37.80	50.40									Sum: Removal of Removable Tape
105.0																								
106.0																							341.80	STA - TOTAL: Waterborne/Solvent Paint
107.0																							100.67	STA - TOTAL: Wet Retroreflective Removable Tape
108.0																							341.05	STA - TOTAL: Removal of Paint
109.0																							100.67	STA - TOTAL: Rem. of Rem. Tape (Incidental)

TEMPORARY FLOODLIGHTING LUMINAIRES

Possible Standard: LI-130

Item No.	Station	Offset (FT)	Number Luminaires	Remarks
				As Directed by Engineer (Typ.)
1	350+00.00		2	Stage 1 - East Crossover
2	414+00.00		2	Stage 1 - West Crossover
3	350+00.00		2	Stage 2 - East Crossover
4	414+00.00		2	Stage 2 - West Crossover
			8	TOTAL

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Roadway Identification	Station	Side	Pavement Symbol	Quantity (EA)	Groove Marking Needed?	Remarks
						Stage 1
Iowa Highway 2 WB	444+30.00	Left	LLRW	2		Merge Prior to East Crossover
Iowa Highway 2 WB	454+30.00	Left	LLRW	2		Merge Prior to East Crossover
Iowa Highway 2 EB	309+95.00	Right	RLRW	2		Merge Prior to West Crossover
Iowa Highway 2 EB	319+95.00	Right	RLRW	2		Merge Prior to West Crossover
						Stage 2
Iowa Highway 2 WB	445+80.00	Right	RLRW	2		Merge Prior to East Crossover
Iowa Highway 2 WB	455+80.00	Right	RLRW	2		Merge Prior to East Crossover
Iowa Highway 2 EB	309+70.00	Left	LLRW	2		Merge Prior to West Crossover
Iowa Highway 2 EB	319+70.00	Left	LLRW	2		Merge Prior to West Crossover
				16		TOTAL: Painted Symbols and Legends
						SYMBOLS AND LEGENDS REMOVED
						Stage 2
Iowa Highway 2 WB	444+30.00	Left	LLRW	2		Merge Prior to East Crossover
Iowa Highway 2 WB	454+30.00	Left	LLRW	2		Merge Prior to East Crossover
Iowa Highway 2 EB	309+95.00	Right	RLRW	2		Merge Prior to West Crossover
Iowa Highway 2 EB	319+95.00	Right	RLRW	2		Merge Prior to West Crossover
						After Stage 2
Iowa Highway 2 WB	445+80.00	Left	RLRW	2		Merge Prior to East Crossover
Iowa Highway 2 WB	455+80.00	Left	RLRW	2		Merge Prior to East Crossover
Iowa Highway 2 EB	309+70.00	Right	LLRW	2		Merge Prior to West Crossover
Iowa Highway 2 EB	319+70.00	Right	LLRW	2		Merge Prior to West Crossover
Iowa Highway 2 EB	319+70.00	Right	LLRW	2		Merge Prior to West Crossover
				16		TOTAL: Symbols and Legends Removed

108_35
8/15/22

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station From	Station To	Length (LF)	Remarks
			Stage 1
348+25.00	351+75.00	350.0	West Crossover - As directed by Engineer
355+00.00	360+00.00	500.0	Valmont Drive - As directed by Engineer
411+50.00	418+00.00	650.0	East Crossover - As directed by Engineer
			Stage 2
348+25.00	351+75.00	350.0	West Crossover - As directed by Engineer
355+00.00	360+00.00	500.0	Valmont Drive - As directed by Engineer
411+50.00	418+00.00	650.0	East Crossover - As directed by Engineer
		3000.0	TOTAL

CRASH CUSHIONS

* Bid Item
1. Lane(s) to which the installation is adjacent.
2. Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500.

Lane	Station	Side	Obstacle Width (FT)	Crash Cushion Type	Crash Cushion Quantity	Obstacle Description	Remarks
EB	394+75.00	Right	2.0	Temporary Severe Use	1	SW endpost of the WB Bridge	Stage 1
WB	406+25.00	Left	2.0	Temporary Severe Use	1	NE endpost of the EB Bridge	Stage 2

232_03A
9/28/22

EROSION CONTROL (RURAL SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

262_06
9/28/22

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.

262_07
10/15/24

TABULATION OF UTILITIES

(MWC01) MIDWEST DATA CENTER
Contact Name : Jeremy Davis
Contact Phone: 660-744-4498
Contact Email: jdavis@rptelephone.com

(WINIA) WINDSTREAM COMMUNICATIONS
Contact Name : LOCATE DESK
Contact Phone: 800-289-1901
Contact Email: LOCATE.DESK@WINDSTREAM.COM

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)

- ST Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

(MWC01) MIDWEST DATA CENTER
Contact Name : Jeremy Davis
Contact Phone: 660-744-4498
Contact Email: jdavis@rptelephone.com

(WINIA) WINDSTREAM COMMUNICATIONS
Contact Name : LOCATE DESK
Contact Phone: 800-289-1901
Contact Email: LOCATE.DESK@WINDSTREAM.COM

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)	Existing Topographic Features and Labels	
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation	
Magenta	(5)	Existing Utilities	
SHADING	**Design Color No.**		**Transparency**
Pink, Dark	(13)	Temporary Pavement Shading	50%
Yellow	(4)	Proposed Pavement Shading	50%
Orange	(6)	Proposed Granular Shading	50%
Orange	(70)	Proposed Shoulder Granular Shading	50%
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading	50%
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading	50%
Brown, Light	(236)	Grading Shading	50%
Orange, Light	(134)	Proposed Granular Entrance Shading	50%
Yellow	(220)	Proposed Paved Entrance Shading	50%
Tan	(8)	Proposed Sidewalk Shading	50%
Blue, Light	(230)	Proposed Sidewalk Landing Shading	50%
Pink	(11)	Proposed Sidewalk Ramp Shading	50%
Red	(3)	Proposed Structure Shading	50%
Red	(3)	Delineates Restricted Areas	0%

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D)

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER D.1

12:56:10 PM 11/17/2025 jfeldmann pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\WHKS\Roadway\CADD_Files\Sheet_Files\LegendSheet_Seed.dgn

394+00

395+00

396+00

N

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

WESTBOUND IA HWY 2

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

EASTBOUND IA HWY 2

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

0 10
FEET

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER D.2	

9:01:35 AM 11/25/2025 jfeldmann pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\WHKS\Roadway\CADD_Files\Sheet_Files\SHT_36002146_D02.dgn

405+00

406+00

407+00

N

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

WESTBOUND IA HWY 2

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

EASTBOUND IA HWY 2

CONSTRUCT P.C.C. PARTIAL DEPTH PATCH
REFER TO SHEET U.1 FOR DETAILS

0 10
FEET

FILE NO. **32302**	ENGLISH	DESIGN TEAM **WHKS & CO.**	**FREMONT** COUNTY	PROJECT NUMBER **BRF-002-1(146)--38-36**	SHEET NUMBER **D.3**	

9:02:31 AM 11/25/2025 jfeldmann pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\WHKS\Roadway\CADD_Files\Sheet_Files\SHT_36002146_D02.dgn

108_23A
8/15/22

TRAFFIC CONTROL PLAN

Traffic on Iowa Highway 2 at the bridges over the Missouri River overflow shall be maintained in accordance with the Standard Road Plans listed on Tab. 105-4 and as detailed on the J Sheets.

Portable Dynamic Sign (PDMS) is required to be placed 7 calendar days in advance of construction to alert the traveling public of the upcoming project.

Crossovers are located approximately 760 feet west of Valmont Drive in Nebraska and approximately 800 feet east of the bridge.

The contractor must coordinate with and notify the Fremont County Engineering Department, the Iowa DOT RCE, and the Nebraska DOT prior to beginning work. Use of existing crossovers requires coordination with Kevin Wray of Nebraska DOT (kevin.wray@nebraska.gov).

Fremont County Engineer:
Dan Davis
Phone – 712-374-2613
Email - ddavis@co.fremont.ia.us

Iowa DOT District Engineer:
Scott Schram
Phone – 712-323-6125
Email – scott.schram@iowadot.us

Nebraska DOT Contact:
Kevin Wray
Email – kevin.wray@nebraska.gov

108_26A
8/15/22

STAGING NOTES

Stage 1: Eastbound lanes closed.
Construction:
- Eastbound bridge work (Refer to V Sheets for details).
- Partial depth patching at bridge approach corners.

Traffic Control
-Close eastbound lanes. Shift traffic head-to-head in the westbound lanes in accordance with TC-61.

Stage 2: Westbound lanes closed.
Construction:
- Westbound bridge work (Refer to V Sheets for details).
- Partial depth patching at bridge approach corners.

Traffic Control
-Close westbound lanes. Shift traffic head-to-head in the eastbound lanes in accordance with TC-61.

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
None Provided	

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
Orange	(6)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Pink, Dark	(13)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Cyan	(7)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

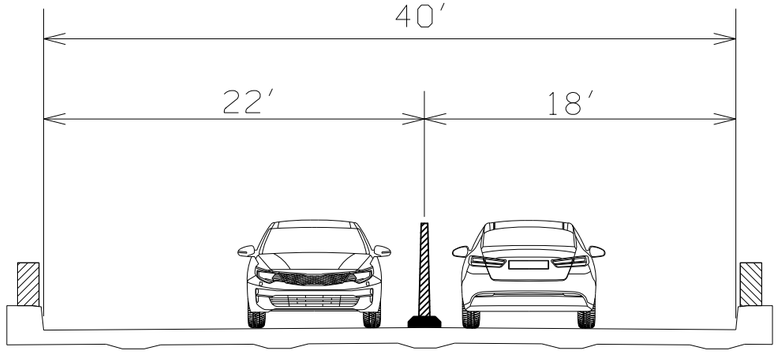
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

●	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	1	Lane Identification

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

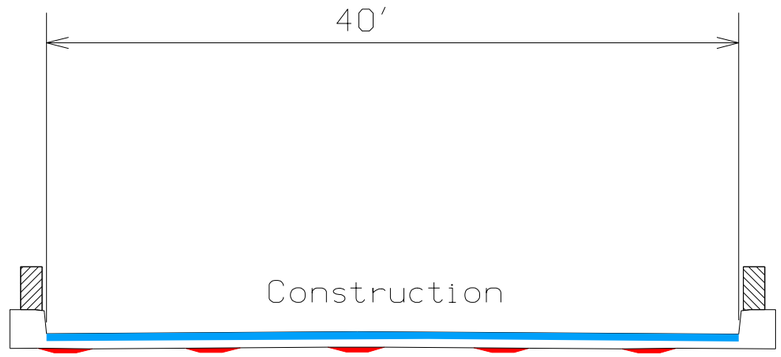
TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)

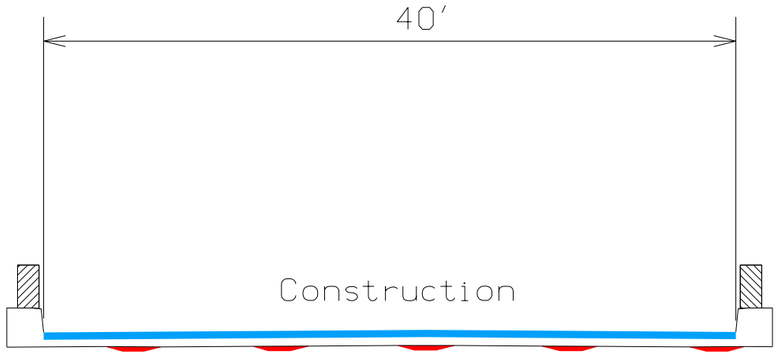


IA 2 WB

STAGE 1
(LOOKING AHEAD STATION)

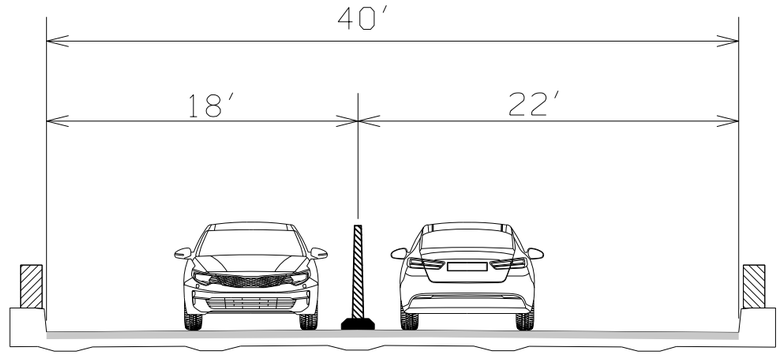


IA 2 EB



IA 2 WB

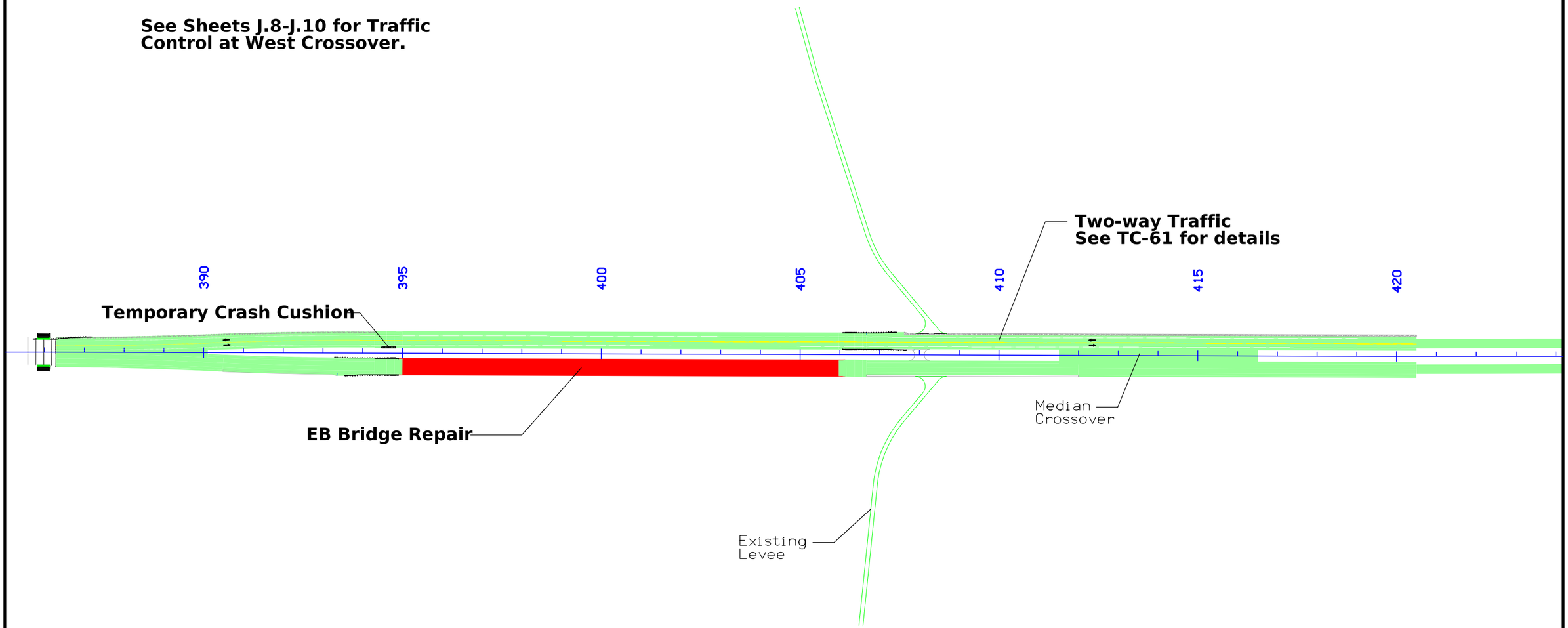
STAGE 2
(LOOKING AHEAD STATION)



IA 2 EB

TYPICAL STAGING SECTIONS
(NOT TO SCALE)

See Sheets J.8-J.10 for Traffic Control at West Crossover.

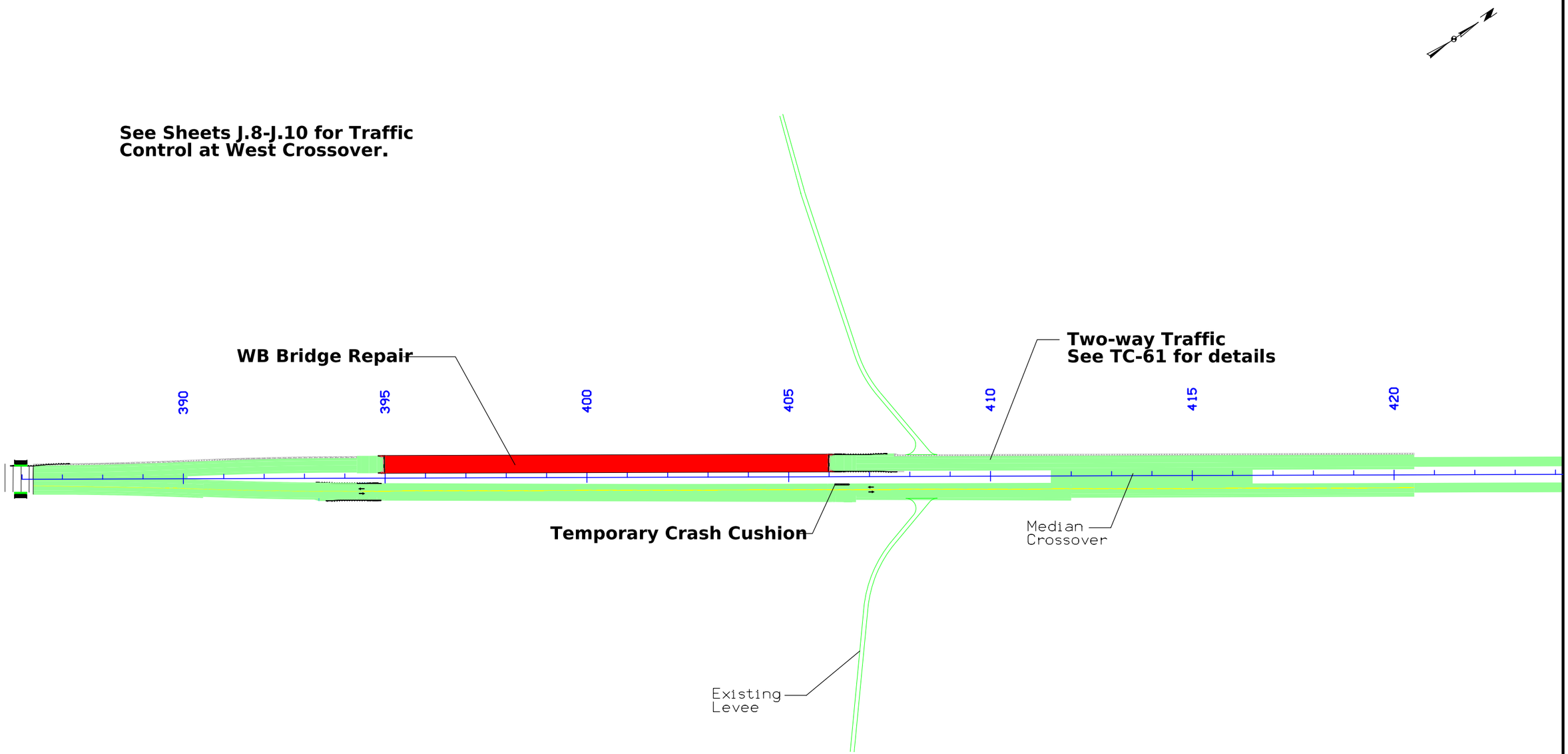


Not to Scale

STAGE 1

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER J.6	

8:28:08 AM 2/5/2026 jfeldmann pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\WHKS\Roadway\CADD_Files\Sheet_Files\SHT_36002146_J06_10.dgn

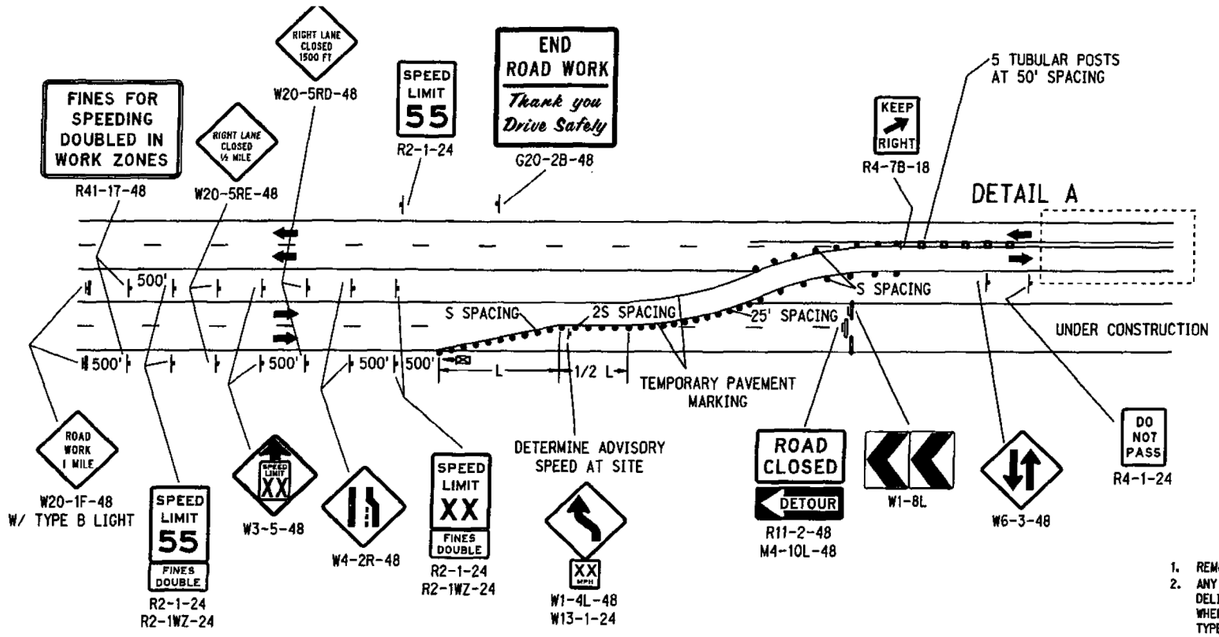


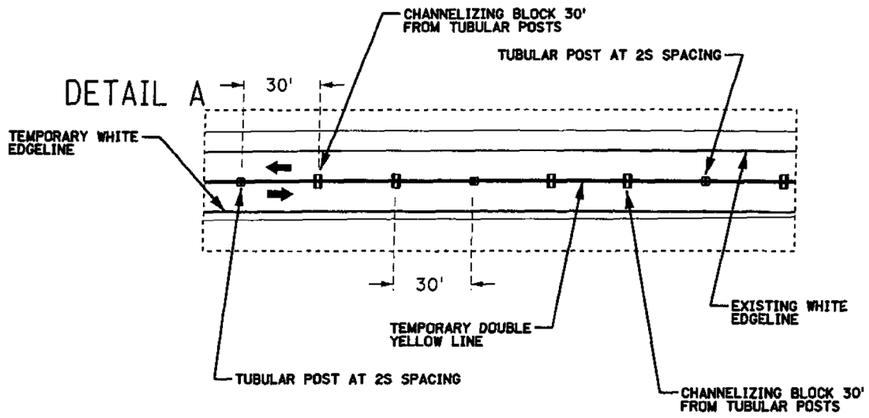
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STAGE 2

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER J.7	

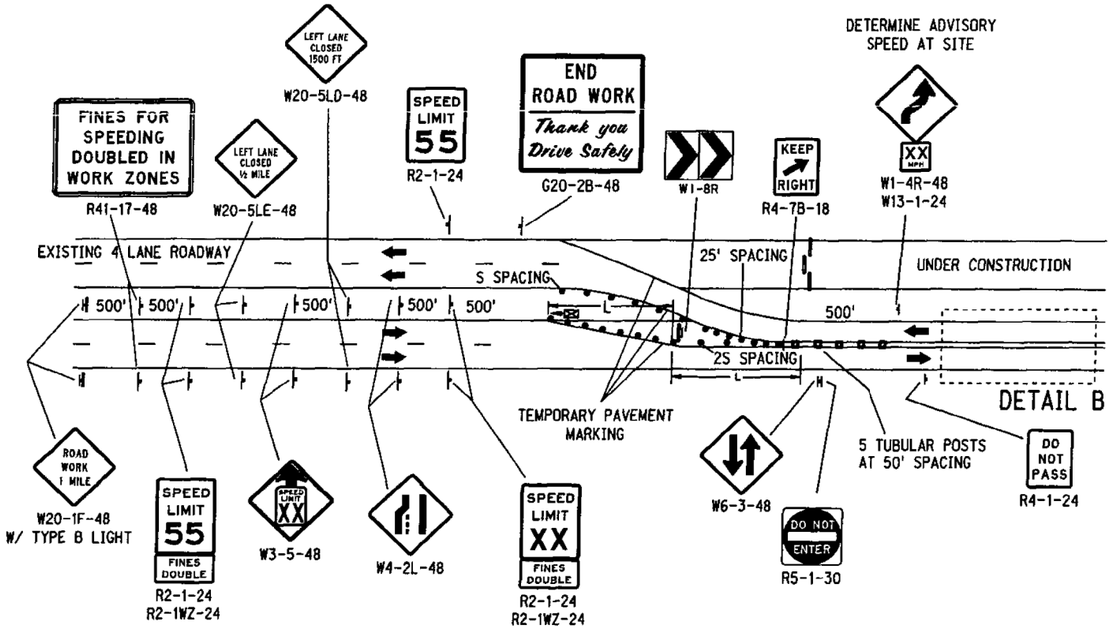
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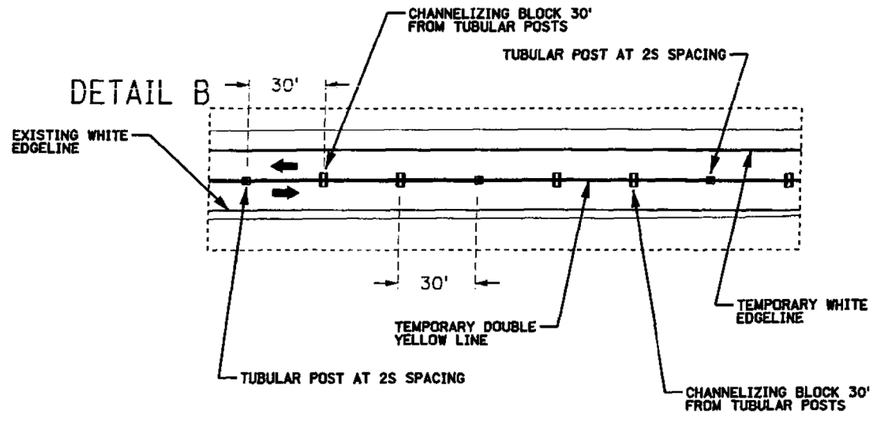




GENERAL NOTES

1. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
2. ANY DROP-OFF ADJACENT TO THE TRAVEL LANE WHICH EXCEEDS 2" SHALL BE DELINEATED WITH TYPE II BARRICADES OR PLASTIC DRUMS AT 2S TO 4S SPACING. WHERE LATERAL SPACE IS LIMITED, VERTICAL PANELS MAY BE USED IN LIEU OF TYPE II BARRICADES OR DRUMS WITH THE APPROVAL OF THE ENGINEER.
3. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH THE MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
4. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.
5. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY, AND MAY NOT BE THE SAME AS THE SPEED LIMITS FOR THE ROADWAY OR THE PROJECT. SPEED LIMIT AND DOUBLE FINE SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN THE SPEED LIMIT IS REDUCED.
6. FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
7. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
8. FOR HORIZONTAL CURVES THE SPACING OF PLASTIC DRUMS AND BARRICADES USED FOR CHANNELIZATION MAY BE REDUCED AS DIRECTED BY THE ENGINEER.
9. THE FLASHING ARROW PANEL SHOULD BE VISIVBLE FOR AT LEAST 1/2 MILE AND IF NECESSARY SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
10. TEMPORARY PAVEMENT MARKINGS WILL BE REMOVED AS REQUIRED.





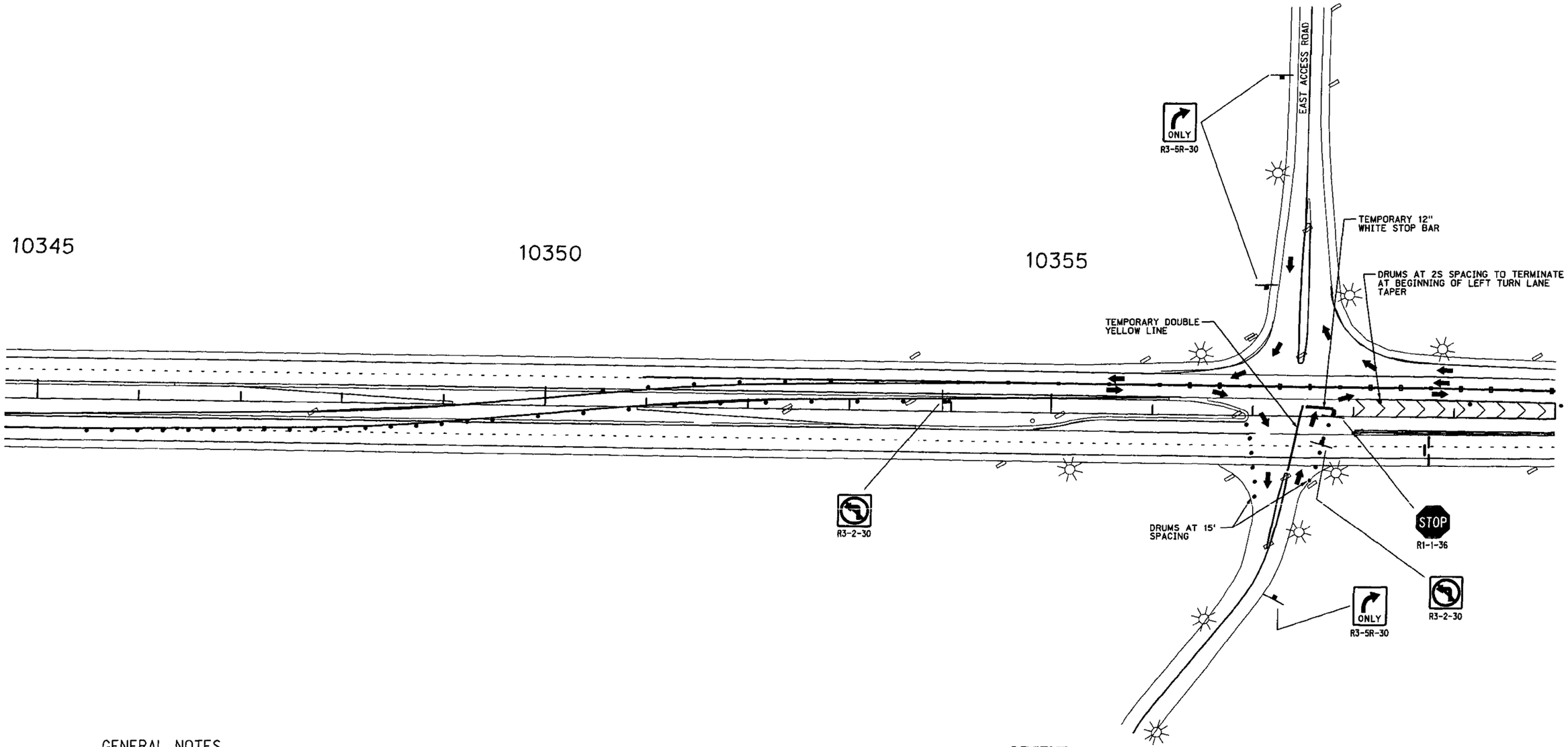
LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN
- TUBULAR POST
- CHANNELIZING BLOCK

TRAFFIC CONTROL DETAILS FOR NEBRASKA CROSSOVER (Sheet 1 of 3)

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER J.8

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GENERAL NOTES

THIS SHEET INTENDED TO BE USED IN COMBINATION WITH TEMPORARY TRAFFIC CONTROL PLAN SHEET 1 OF 3 "4 LANE CROSSOVER".

WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.

FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE REGULATORY SIGNS.

ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.

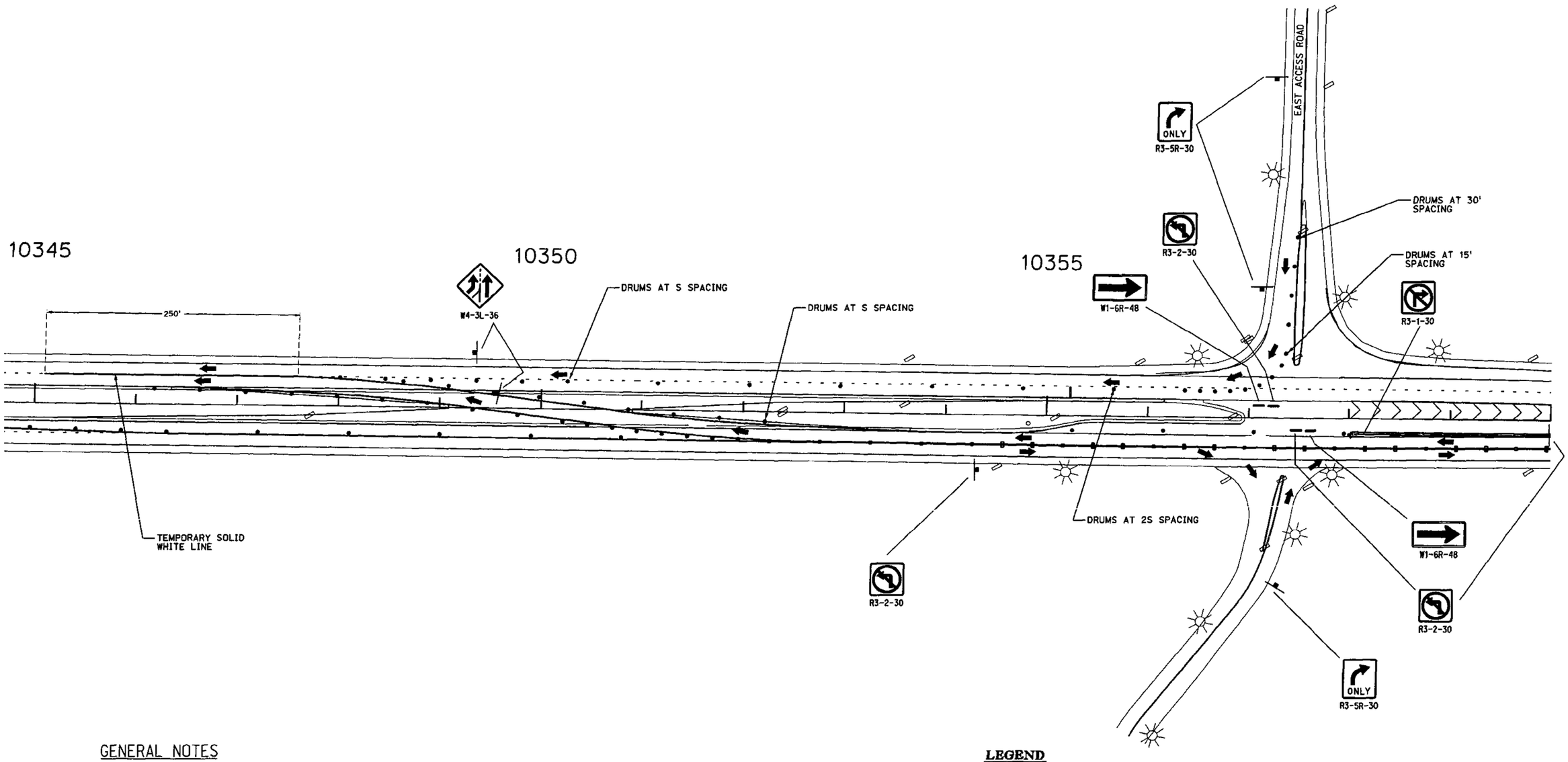
LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN
- TUBULAR POST
- CHANNELIZING BLOCK

TRAFFIC CONTROL DETAILS FOR NEBRASKA CROSSOVER (Sheet 2 of 3)

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER J.9

9:36:23 AM 11/20/2025 jfeldmann pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201022\Bridge\(146)_Bridge Deck Overlay\WHKS\Roadway\CADD_Files\Example_J_Sheets.dgn



GENERAL NOTES

THIS SHEET INTENDED TO BE USED IN COMBINATION WITH TEMPORARY TRAFFIC CONTROL PLAN SHEET 1 OF 3 "4 LANE CROSSOVER".

WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE WILL NOT BE PERMITTED ON THE FACE OF THE SIGN.

FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE REGULATORY SIGNS.

ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.

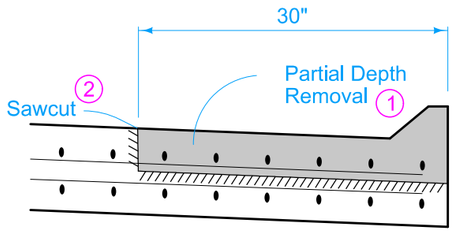
LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN
- TUBULAR POST.
- CHANNELIZING BLOCK

TRAFFIC CONTROL DETAILS FOR NEBRASKA CROSSOVER (Sheet 3 of 3)

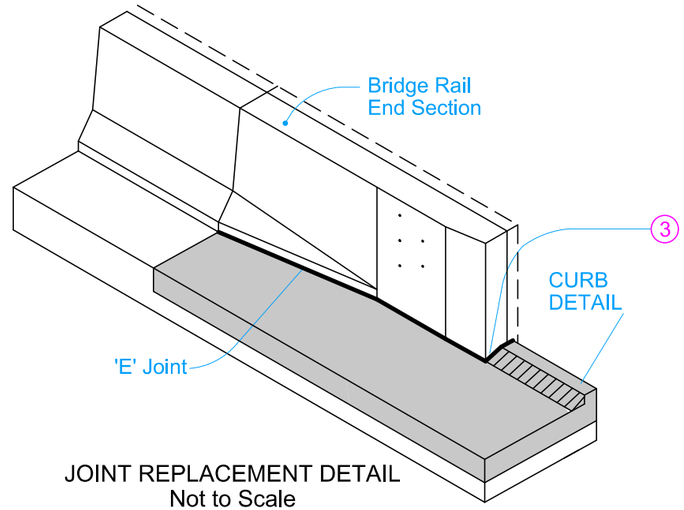
FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER J.10

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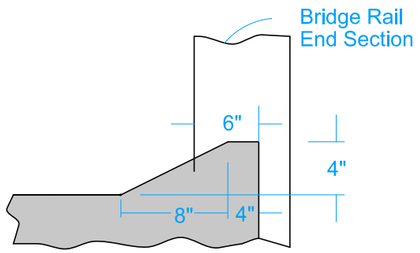


PARTIAL DEPTH PAVEMENT PATCH
Not to Scale

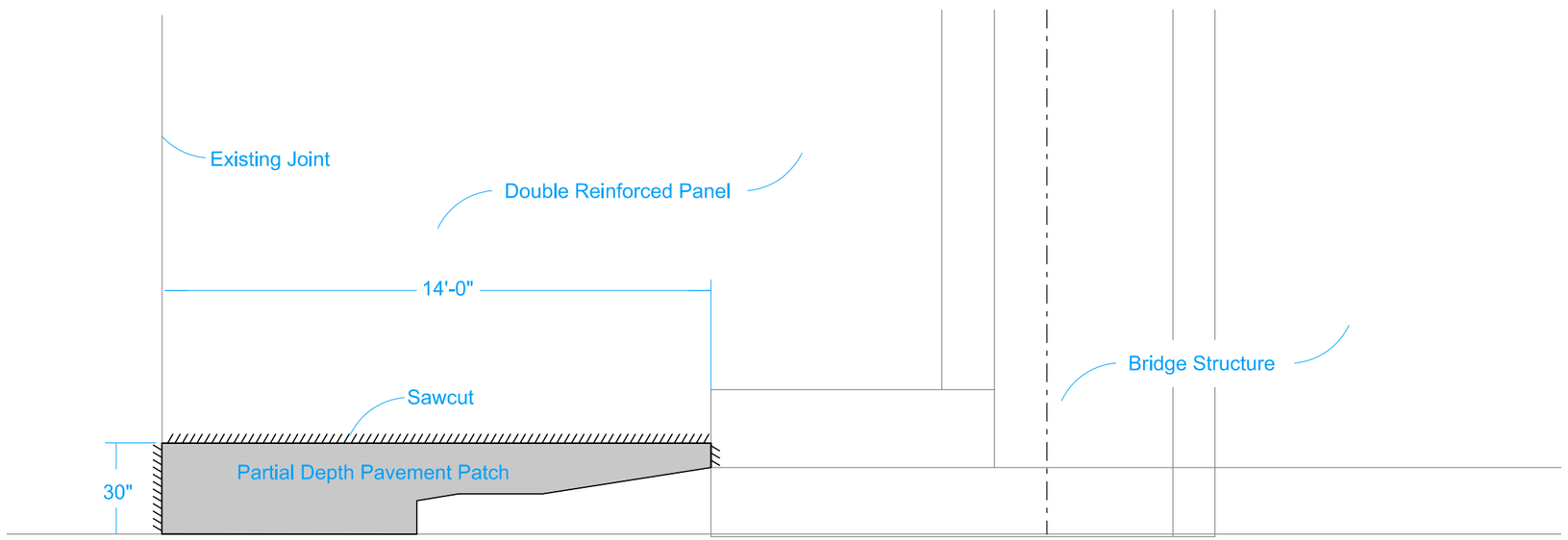
1. Care to be used to ensure that there is no damage to existing reinforcing steel and the epoxy coating shall be repaired if damaged.
2. Provide 1.5 inch deep sawcut to ensure vertical edge at removal limits.
3. Joint at end of Bridge Rail End Section: Place joint filler. In areas with curb, place to depth of pavement patch plus curb and shape material to fit the shape of the curb per Section B-B of PV-101. Seal joint per Detail F of PV-101.



JOINT REPLACEMENT DETAIL
Not to Scale



CURB DETAIL
Not to Scale



PARTIAL DEPTH PAVEMENT PATCH DETAILS

FILE NO. 32302	ENGLISH	DESIGN TEAM WHKS & CO.	FREMONT COUNTY	PROJECT NUMBER BRF-002-1(146)--38-36	SHEET NUMBER U.1

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