

Index of Sheets	
No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design No. 0128
V.2 - V.12	Design No. 0128
Road Sheets	Road Plan
A.3-U.3	Road Plans
C.1 - C.2	Estimated Quantities - Road
C.5	Standard Plans - Road



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

Bremer COUNTY

Bridge Deck Overlay

IA 3 over Drainage Ditch
2.1 Mi. W. Jct. SR V56

Refer to the Plan Sheets for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



Iowa DOT Bridges and Structures
Consultant Coordinator Contact:
Linda Narigon

Design Data Rural	
2024 AADT	2010 V.P.D.
TRUCKS	14 %
TOTAL DESIGN ESALS	850,000

Index of Seals		
Sheet No.	Name	Type
A.1	Matthew K. Rasmussen	Structural Design
A.3	Adam W. Sleeper	Roadway Design

Structural Design



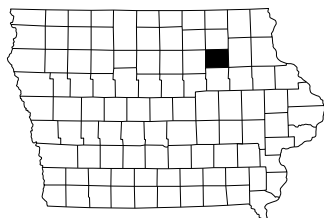
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Matthew K. Rasmussen Date 7-28-2026

Printed or Typed Name _____

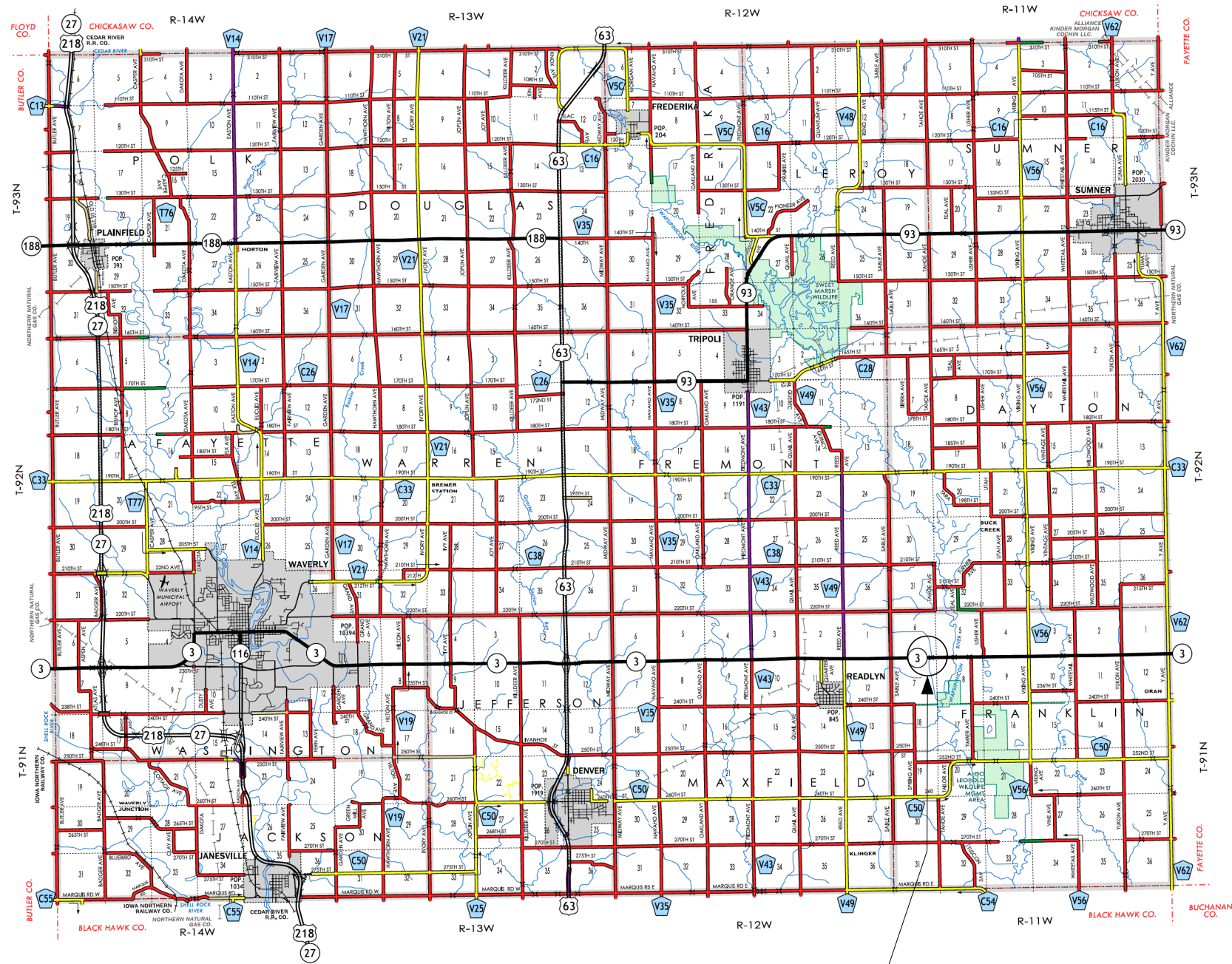
My license renewal date is December 31, 2026

Pages or sheets covered by this seal: A.1, A.2. V.1 - V.12



Standard Road Plans

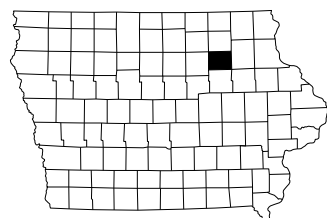
Standard Road Plans are listed on
Sheet No. C.5



Bremer County Location Map

Not To Scale

Design No. 0128
FHWA No. 015620



LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY
- UNITED STATES HIGHWAY
- STATE HIGHWAY
- COUNTY HIGHWAY
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES
- UNINCORPORATED PLACE
- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

Estimated Bridge Repair Quantities				
Item No.	Item Code	Item	Unit	Total
1	2401-6750001	Removals, as Per Plan	LS	1
2	2402-2720000	Excavation, Class 20	CY	34.6
3	2403-0100000	Structural Concrete (Miscellaneous)	CY	8.0
4	2404-7775005	Reinforcing Steel, Epoxy Coated	LB	1352
5	2413-0698074	Deck Repair, Class A	SY	30
6	2426-6772016	Concrete Repair	SF	36
7	2499-0800000	Paving Notch Replacement	LF	66.8
8	2533-4980005	Mobilization	LS	1
		Alternate AA Option 1		
9	2413-0698066	Deck Overlay (Class O PCC)	SY	216
		Alternate AA Option 2		
10	2403-1000010	Trial Batch and Test Placement (Fiber Reinforced Concrete)	LS	1
11	2413-0698067	Deck Overlay (Class HPC-O PCC)	SY	216
12	2413-1000005	Fiber Reinforcement for Concrete Repair/Overlay	SY	216

Estimate Reference Information		
Item No.	Item Code	Description
1	2401-6750001	Removals, as Per Plan Includes all work for removal and off-site disposal of portions of the existing barrier rail end sections, subjacent curbs, and ends of wings as detailed in these plans. 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	2402-2720000	Excavation, Class 20 Includes excavation for the abutment wings.
3	2403-0100000	Structural Concrete (Miscellaneous) Includes concrete for the barrier rail end section, subjacent curb, and wing remodeling. All concrete shall be Class C mix.
4	2404-7775005	Reinforcing Steel, Epoxy Coated Includes epoxy-coated reinforcing steel for the barrier rail end section, subjacent curb, and wing remodeling. Includes the cost of drilling holes for dowel bars and polymer grout material. See Design Sheet No. 10 for Dowel Setting Note.
5	2413-698074	Deck Repair, Class A --
6	2426-6772016	Concrete Repair Includes curb and abutment seat repair.
7	2499-0800000	Paving Notch Replacement Includes 4.7 cu yd of structural concrete Class C, 1067 lbs of epoxy-coated reinforcing steel, excavation, removing and disposing of the existing paving notch and concrete removed to form the shear keyways, drilling holes for dowel bars, and polymer grout material. See Design Sheet No. 5 for Dowel Setting Note. Includes all Mechanical Splice Assemblies required.
8	2533-4980005	Mobilization --
9	2413-0698066	Deck Overlay (Class O PCC) Includes cleaning existing curbs and rails, and furnishing and placing concrete sealer.
10	2403-1000010	Trial Batch and Test Placement (Fiber Reinforced Concrete) Refer to the Developmental Specifications for Fiber Reinforcement for Structural Concrete for additional information.
11	2413-0698067	Deck Overlay (Class HPC-O PCC) Includes cleaning existing curbs and rails, and furnishing and placing concrete sealer. Refer to Developmental Specifications for High Performance Concrete for Structures and Developmental Specifications for Fiber Reinforcement for Structural Concrete for additional information.
12	2413-1000005	Fiber Reinforcement for Concrete Repair/Overlay Refer to the Developmental Specifications for Fiber Reinforcement for Structural Concrete for additional information.

Summary of Quantities			
Item	Stage I	Stage II	Unit
Excavation, Class 20	17.3	17.3	CY
Structural Concrete (Bridge)	4.0	4.0	CY
Reinforcing Steel, Epoxy Coated	676	676	LB
Deck Repair, Class A	14	16	SY
Concrete Repair	5	31	SF
Paving Notch Replacement	33.9	32.9	LF
Alternate AA Option 1			
Deck Overlay (Class O PCC)	108	108	SY
Alternate AA Option 2			
Deck Overlay (Class HPC-O PCC)	108	108	SY
Fiber Reinforcement for Concrete Repair/Overlay	108	108	SY

Roadway Quantities shown elsewhere in these plans.

Design For Repairs to a 0 Degree Skew
**40'-0" x 44'-0" I-Beam
& PPCB Bridge**
41'-3" Single Span
Bridge Quantities
STA. 410+53.60 (IA 3) Turn-in Date: Aug. 2026
Bremer County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 1 of 12 FHWA No. 015620

General Notes:

This design is for the repair of the existing 40'-0" x 44'-0" I-Beam and PPCB Bridge on IA 3 over Drainage Ditch (Design No. 0128) with a year of construction of 1929. Electronic plans of the existing structure are available to the Contractor as part of the E-Files supplied with the contract documents. See Situation Plan for list of repair items.

All alignment, stationing, connecting dimensions, and elevations used in the new details in these plans were developed based on the existing bridge plans. The Bridge Contractor shall field verify these details before starting construction.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing portions of the existing barrier rail end sections, subjacent curbs, and wings as detailed in these plans. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to other portions of the existing structure not noted for removal shall be the responsibility of the Bridge Contractor and repaired at no extra cost to the State.

Faint lines on plans indicate the existing structure.

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.

It shall be the Bridge Contractor's responsibility to provide sites for excess excavated material. No payment for overhaul will be allowed for material hauled to these sites.

The Contractor shall reconstruct the slopes around the wings which are disturbed during construction. This work shall be considered incidental and no extra payment will be made.

Keyway dimensions shown on the plans are based on nominal dimensions unless stated otherwise. In addition, the bevel used on the keyway shall be limited to a maximum of 10 degrees from vertical.

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

All reinforcing bars and bars noted as dowels supplied for this structure shall be deformed reinforcement unless otherwise noted or shown.

These bridge plans label all reinforcing steel with english notation (5a1 is 5⁄8 inch diameter bar). English reinforcing steel received in the field may display the following "Bar Designation". The "Bar Designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

English Size	3	4	5	6	7	8	9	10	11
Bar Designation	10	13	16	19	22	25	29	32	36

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 "Deck Overlay".

Surface raise, as shown on the plans, shall be considered a minimum. In order to limit the additional dead load surface raise shall be restricted to a maximum of ½" more than shown on the plans. Profile may be adjusted to the extent possible within these limits.

Present deck thickness varies from 8" at Ȣ IA 3. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

General Notes (Cont'd):

In lieu of a preliminary deck survey, the Estimated Class A Deck Repair Map is provided on Design Sheet No. 7 based upon the 2022 and 2024 bridge inspection reports. The plan quantity for “Class A Deck Repair” is estimated as 30 sy based on the 2022 and 2024 inspection reports, plus 25% increase for estimating purposes. The actual quantity is determined by the Engineer at the time of repair. Actual spalled and hollow areas as determined by the Engineer shall be repaired.

If the Contractor uses HPC-O mix the surface shall be cured for at least 168 hours. For the first 96 hours, keep the burlap continuously wet by means of an automatic sprinkling or wetting system. After 96 hours, the Contractor may cover the wet burlap with a layer of 4 mil polyethylene film for a minimum of 72 hours in lieu of using the sprinkling or wetting system. If the polyethylene film is used, the Contractor will be required to verify the burlap remains wet for the 72 hour period.

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

Construction shall be done in stages with at least one lane traffic maintained at all times in accordance with "Traffic Control Plan" note.

Surface preparation shall be according to Article 2413.03, B and C of the Standard Specifications. The Contractor shall ensure the vertical edge of the Stage 1 overlay is prepared for placement of the new concrete for Stage 2 by sandblasting or shot blasting, followed by an air blast. Ensure this cleaning removes all dirt, oil, and other foreign material. Ensure it removes all unsound concrete, laitance, or loose material from the surface and edges against which the surface mixture is to be placed. The cleaning should roughen the surface in order to provide satisfactory bond with the surfacing mixture.

A scrape sample was taken from an area of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead on this sample was 68.0 parts per million (ppm). Analysis of total chromium on this sample was <24.3 ppm. These analyses show the existence of these two toxic constituents. Levels indicated by these tests could create conditions above regulatory limits for health and safety requirements. No other constituents were analyzed. The Bidder should not rely on the Iowa DOT's testing and analysis for any purpose other than as an indication of the existence of these two toxic constituents.

Specifications:

Design:
AASHTO series of 2002.

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.
Developmental Specifications for Fiber Reinforcement for Structural Concrete

Developmental Specifications for High Performance Concrete for Structures

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Series of 2002.

Reinforcing steel in accordance with Section 8, Grade 60.
Concrete in accordance with Section 8, f'c = 4.0 ksi.

Traffic Control Plan

The roadway will be open 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
929	Original I-Beam Bridge
365	Bridge Widening
187	Bridge Deck Replacement
128	Bridge Deck Overlay

Design For Repairs to a 0 Degree Skew
40'-0" x 44'-0" I-Beam & PPCB Bridge
41'-3" Single Span

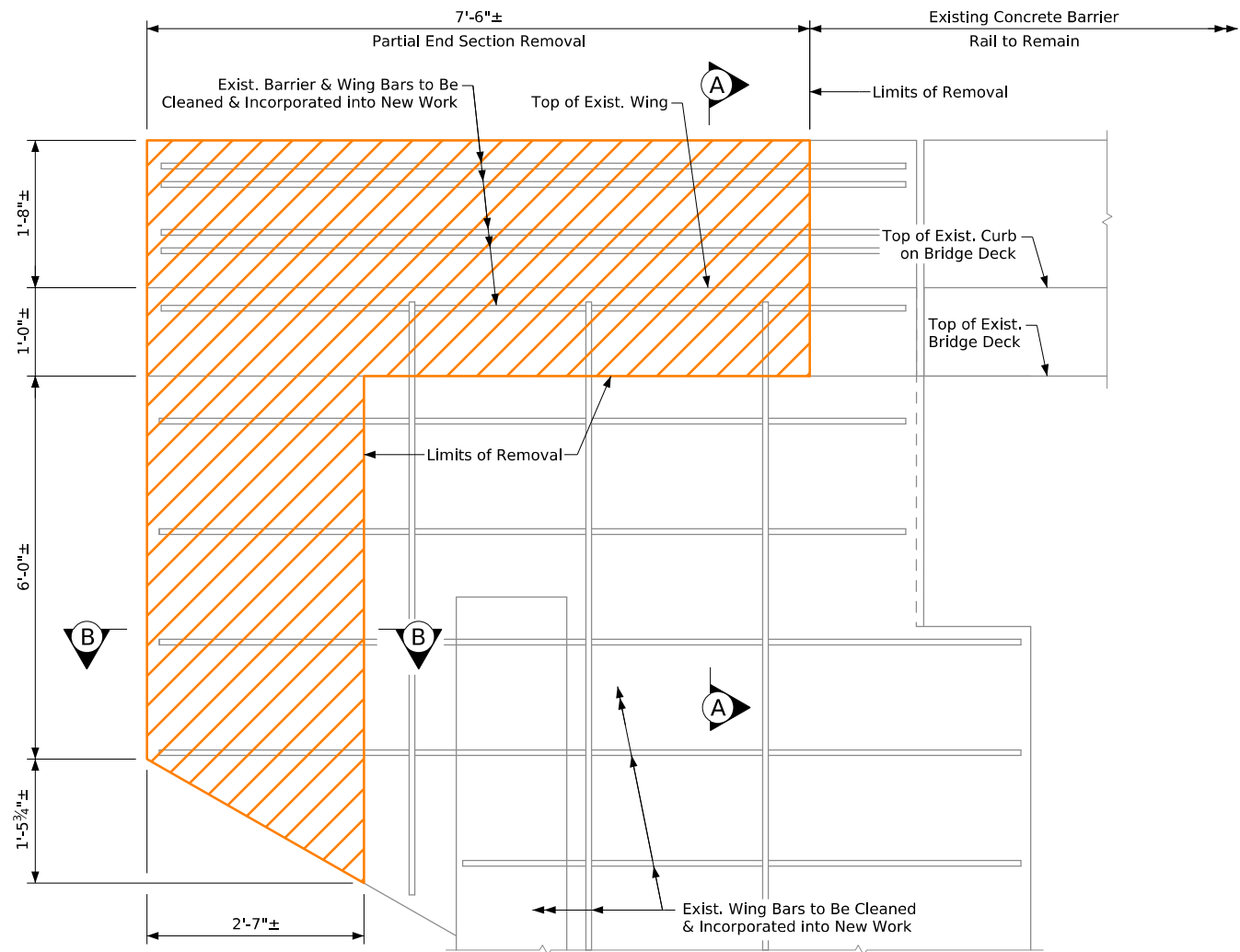
General Notes

STA. 410+53.60 (IA 3)Turn-in Date: Aug. 2026

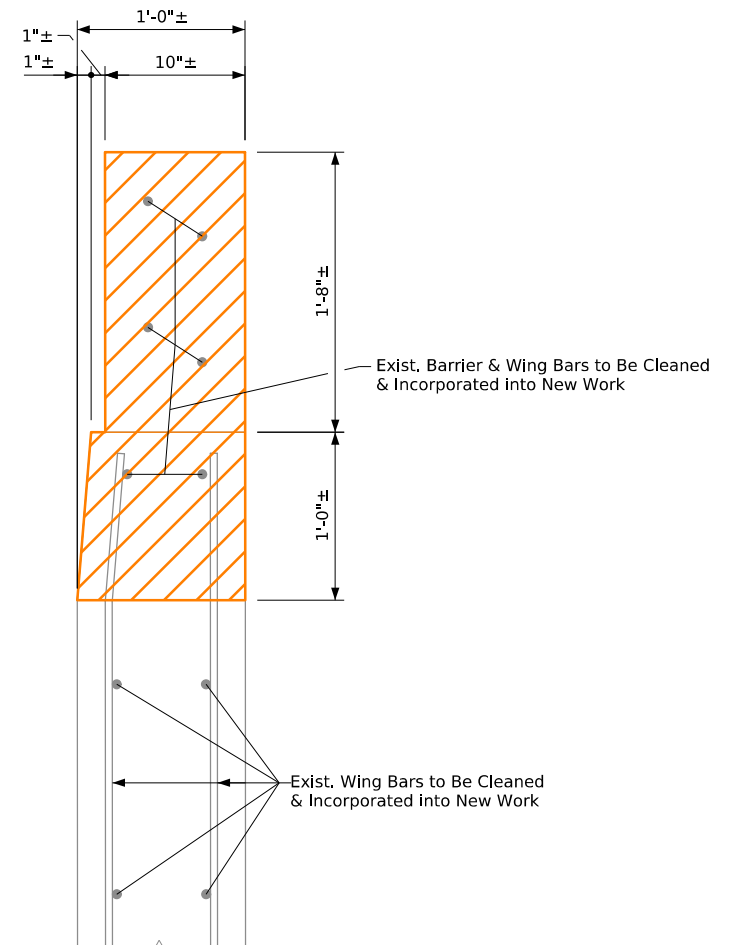
Bremer County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0128Design Sheet No. 2 of 12FHWA No. 015620



Part Elevation of Wing



Section A-A

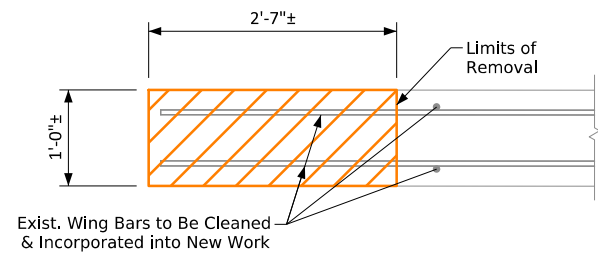
Removal Notes:

This sheet shows details of the partial removal of portions of the existing bridge. All partial removals shall be in accordance with Section 2401 of the Standard Specifications. All such removals shall be to neat saw cuts to provide clean straight surfaces at interfaces between new concrete and remaining concrete. The removal shall be done in a manner which will prevent any damage to the existing structure to remain. The Contractor shall assume full responsibility for any damage caused, and shall repair any damaged area to its original condition, as directed by the Engineer, at the Contractor's expense.

Any existing reinforcing steel which is to be "saved" that is exposed during removal operations is to be carefully protected, cleaned and incorporated into new construction unless noted otherwise.

Start all removals with 3/4" saw cut.

Existing Paving Notch removals not shown. Existing Paving Notch shall be removed to facilitate construction of the proposed Paving Notch as detailed on Design Sheet 5. Existing Paving Notch bars shall be exposed, cleaned, and incorporated into new work as indicated on Design Sheet No. 5.



Section B-B

Legend

Removals

Design For Repairs to a 0 Degree Skew
40'-0" x 44'-0" I-Beam
& PPCB Bridge

41'-3" Single Span

Removal Details

STA. 410+53.60 (IA 3)

Turn-in Date: Aug. 2026

Bremer County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0128

Design Sheet No. 4 of 12

FHWA No. 015620

FILE NO. 32553

ENGLISH

DESIGN TEAM Schemmer

Bremer COUNTY

PROJECT NUMBER BRFN-003-6(073)--39-09

SHEET NUMBER V.4

3:16:00 PM 7/28/2026 jkoch pw:\\projectwise.dot.int.lan:PWM\\Main\\Documents\\Projects\\0900301023\\Bridge\\(073)_Bridge Deck Overlay\\09003073_SCHEMMER_0128_015620_Z05.dgn

Revised 07-2019: Changed Bent Ends (Hook Leg) of 5k1 Bar to 6" (Was 4½"). Changed All References of "Slab" to "Deck". MiscellaneousBridges.dgn - 1068 - This Sheet Re-Issued 11-2023. Sheet Format Update.

* Construction joint for notch repair to extend a minimum of 3 inches past construction joint for pavement. Provide 2'-5" minimum lap for reinforcement.

Paving Notch Replacement Notes:

The Paving Notch Replacement is to be Class "C" structural concrete. Minimum clear distance from face of concrete to near reinforcing bar is to be 2", unless otherwise noted or shown.

The bid item "Paving Notch Replacement" linear feet, shall include all costs of labor and materials associated with excavation, removing, and disposing of the existing paving notch, granular backfill and compaction as needed, and installing the new paving notch. This work shall include, cutting of the existing #5 bars, removing the concrete for the shear keyways, drilling the holes for the deformed dowels, and constructing the new notch to the dimensions shown. The new notch is estimated at 0.07 cubic yards per foot of structural concrete and 16.0 pounds of epoxy coated reinforcing steel per foot. Removals shall be in accordance with Section 2401, of the Standard Specifications.

The Contractor shall carefully mark the existing steel girder and prestressed concrete beam locations on the back face of the abutment prior to drilling holes for dowels, measuring the locations from a common point on both faces of the abutment to ensure accurate locating. Verify dowel placement will not encounter the existing girder or beam webs or flanges marked on the back face of the abutment. Notify the Engineer if the dowels will conflict with any portion of the existing girders or beams prior to drilling holes for the dowels.

Dowel Setting Note:

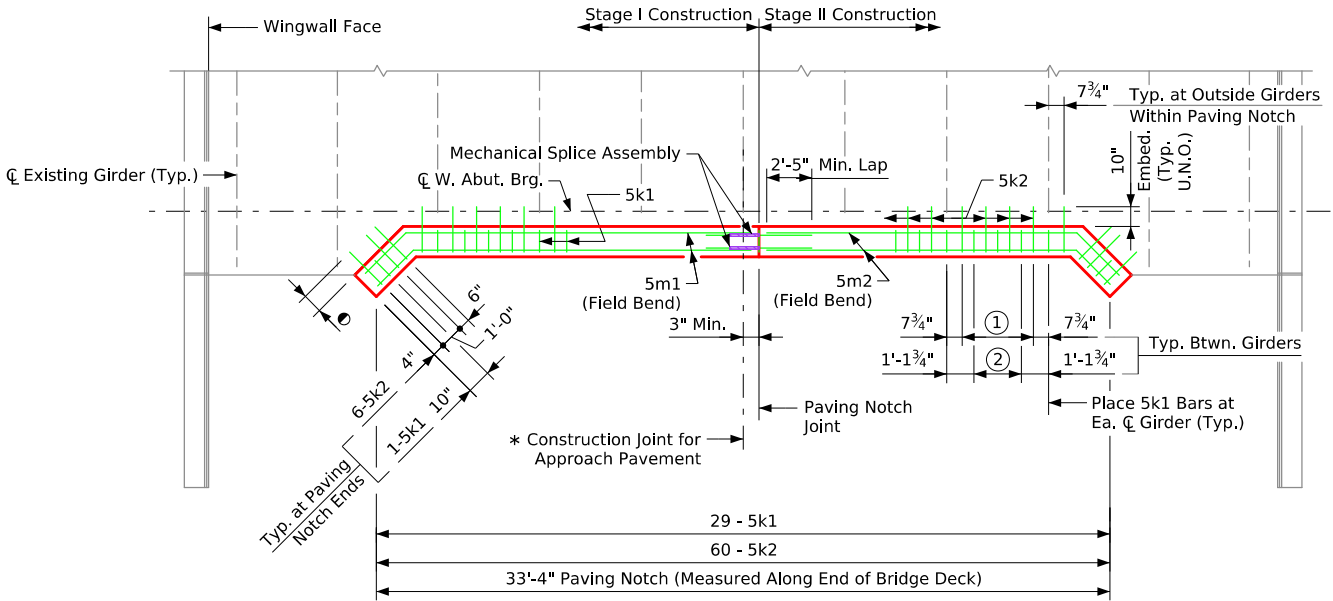
The deformed 5k2 bars shall be set as dowels in drilled holes. Holes are to be 10" deep, except at Paving Notch ends, where 8" max. deep holes are required to avoid interference with existing prestressed concrete beams. Polymer grout system shall be used to install the deformed dowel bars in accordance with Article 2301.03,E, of the Standard Specifications and the Grout Manufacturer's recommendations. The grout system chosen shall be capable of developing full yield strength of a #5 bar with 8" embedment.

Mechanical Splice Assemblies:

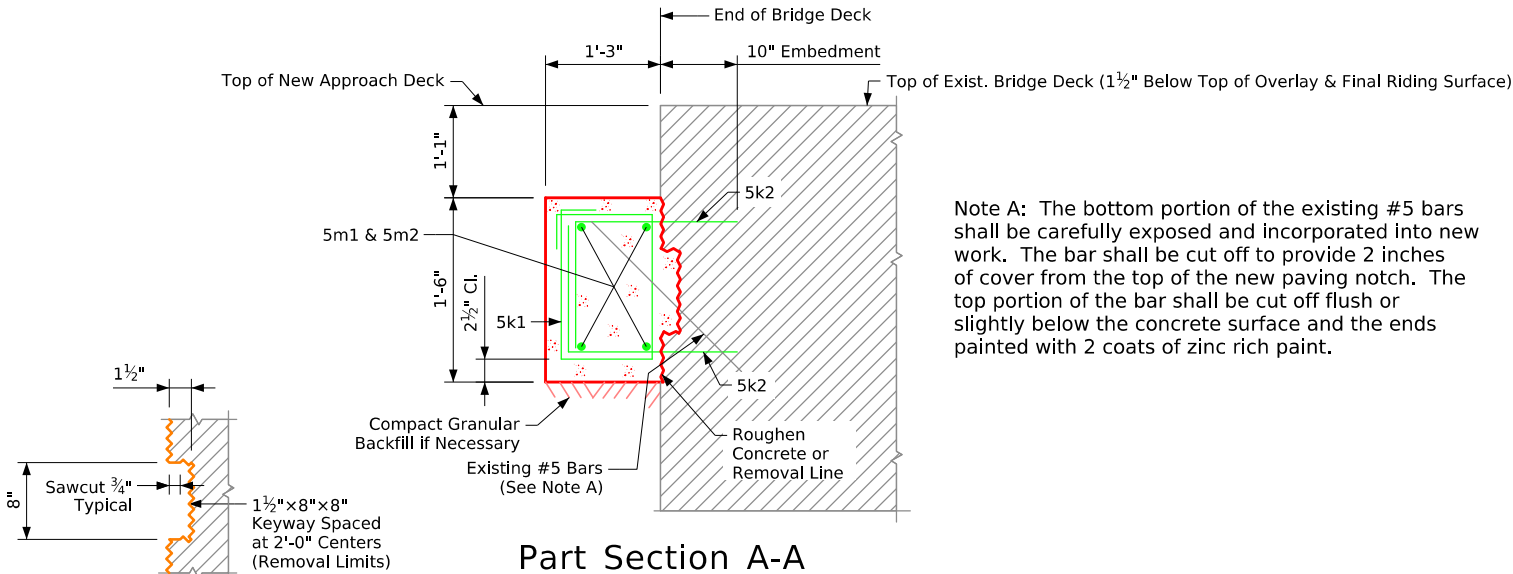
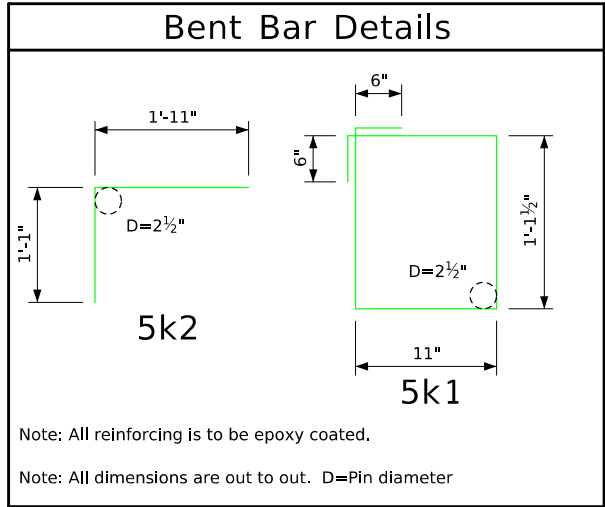
The 5m1 & 5m2 bars in the paving notch shall be spliced at the locations shown using Mechanical Splice Assemblies. Mechanical Splice Assemblies consist of mechanical splicers and reinforcing splice bars as required to facilitate the use of the mechanical splicer. The Mechanical Splice Assembly used shall meet requirements of materials IM 451 Appendix E. Reinforcing splice bars shall be a minimum of ⅝ inch dia.

All Mechanical Splice Assemblies to be used shall be epoxy coated.

The cost of all splice assemblies is to be included in the price bid for "Paving Notch Replacement" and no separate payment will be made. A total of 8 epoxy coated splice assemblies will be required.

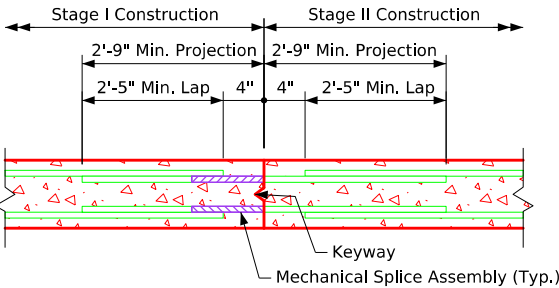


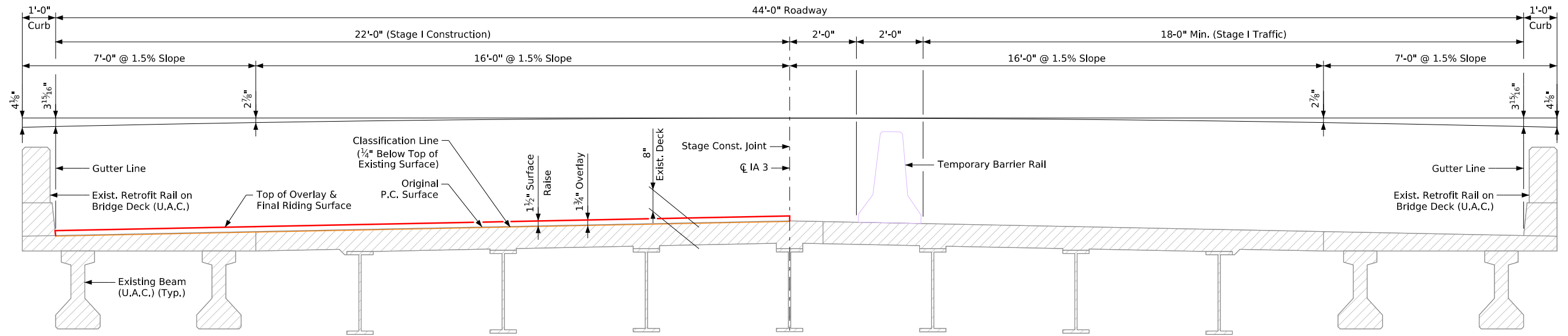
Part Plan View At Abutment
(End Section Remodeling Not Shown for Clarity)
(W. Abut. Shown; E. Abut. Similar)



Note A: The bottom portion of the existing #5 bars shall be carefully exposed and incorporated into new work. The bar shall be cut off to provide 2 inches of cover from the top of the new paving notch. The top portion of the bar shall be cut off flush or slightly below the concrete surface and the ends painted with 2 coats of zinc rich paint.

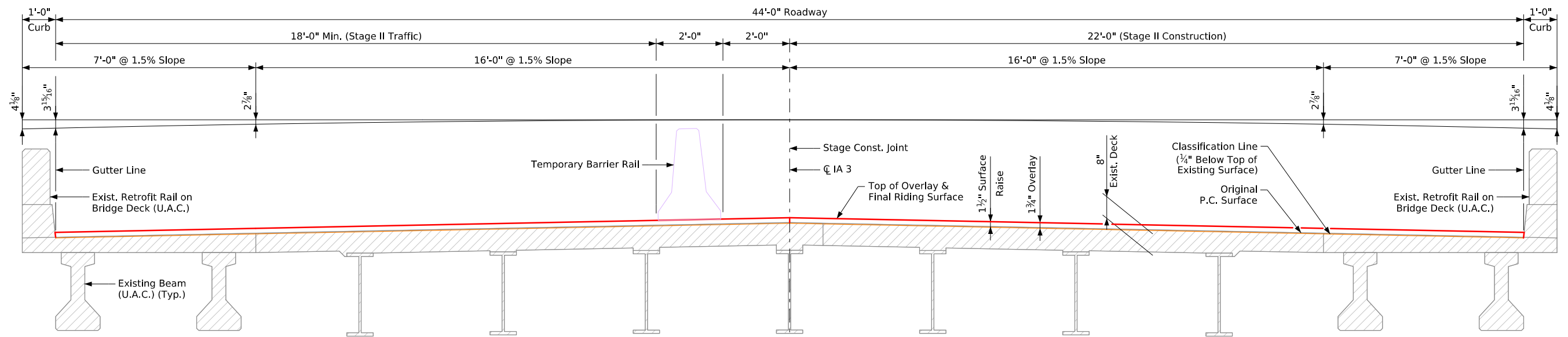
Mechanical Splice Detail



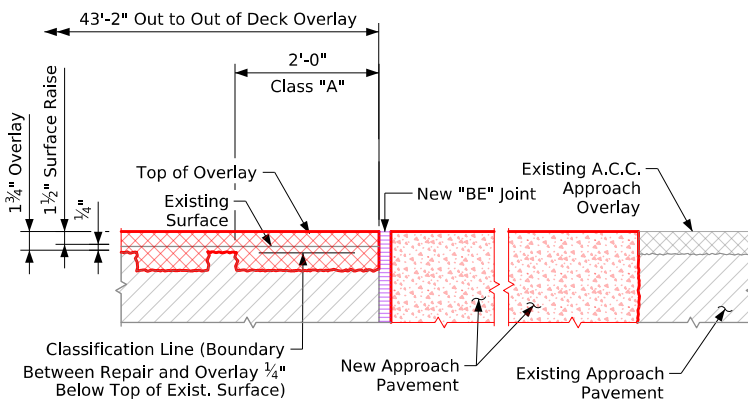


Stage I Construction
(Looking East)

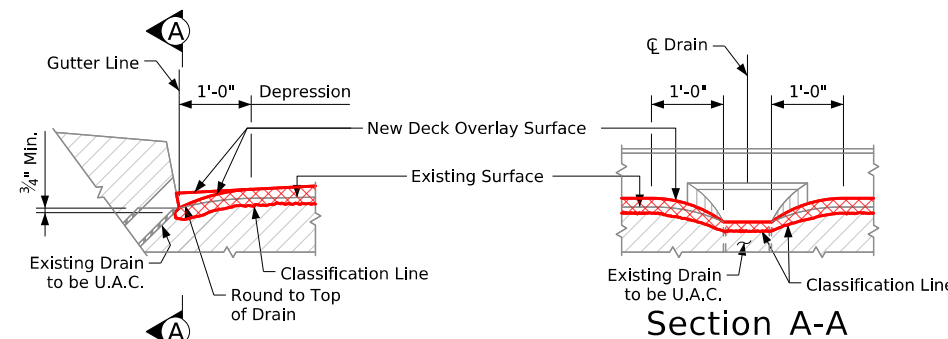
Note: Deck thickness varies from dimension provided.



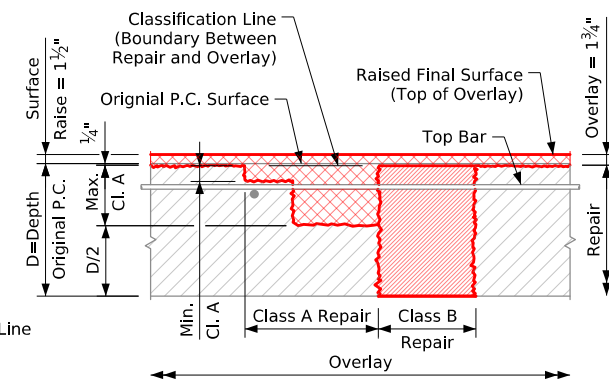
Stage II Construction
(Looking East)



Part Longitudinal Section Along Roadway
Both Abutments



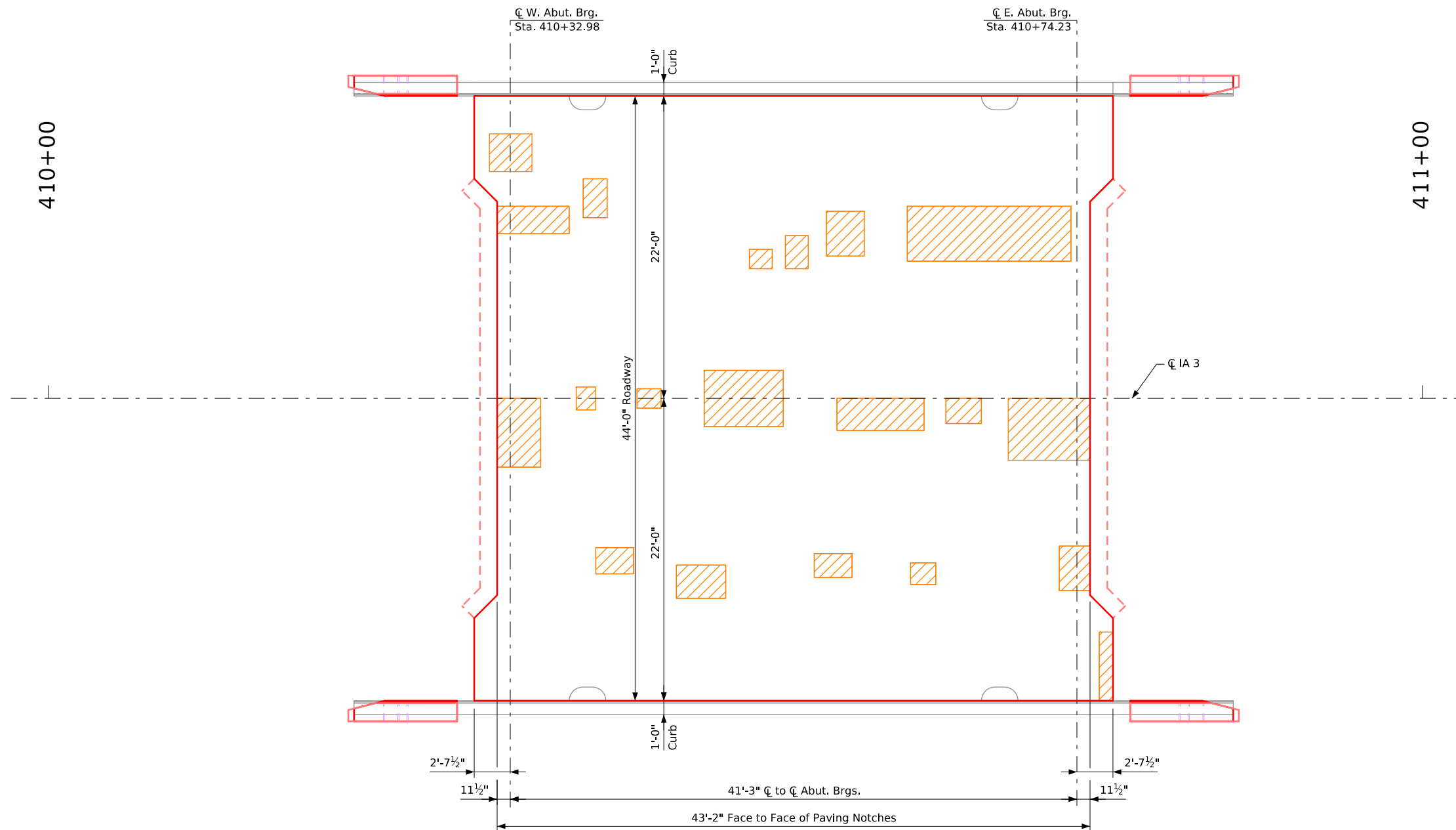
Deck Repair Detail at Drain
(Required at 4 Locations)



Repair and Overlay Definition

Note: The 2'-0" Class "A" repair area shown at the joint shall be removed to a minimum depth 1" below the existing top mat of reinforcing. The existing bridge deck reinforcing bars shall be carefully exposed and incorporated into the new construction work. The Class "A" repair area shall be poured monolithically with the overlay.

Design For Repairs to a 0 Degree Skew
40'-0" x 44'-0" I-Beam & PPCB Bridge
 41'-3" Single Span
Overlay & Deck Repair Details
 STA. 410+53.60 (IA 3) Turn-in Date: Aug. 2026
Bremer County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0128 Design Sheet No. 6 of 12 FHWA No. 015620



Estimated Class A Deck Repair Map

Deck Repair Notes:

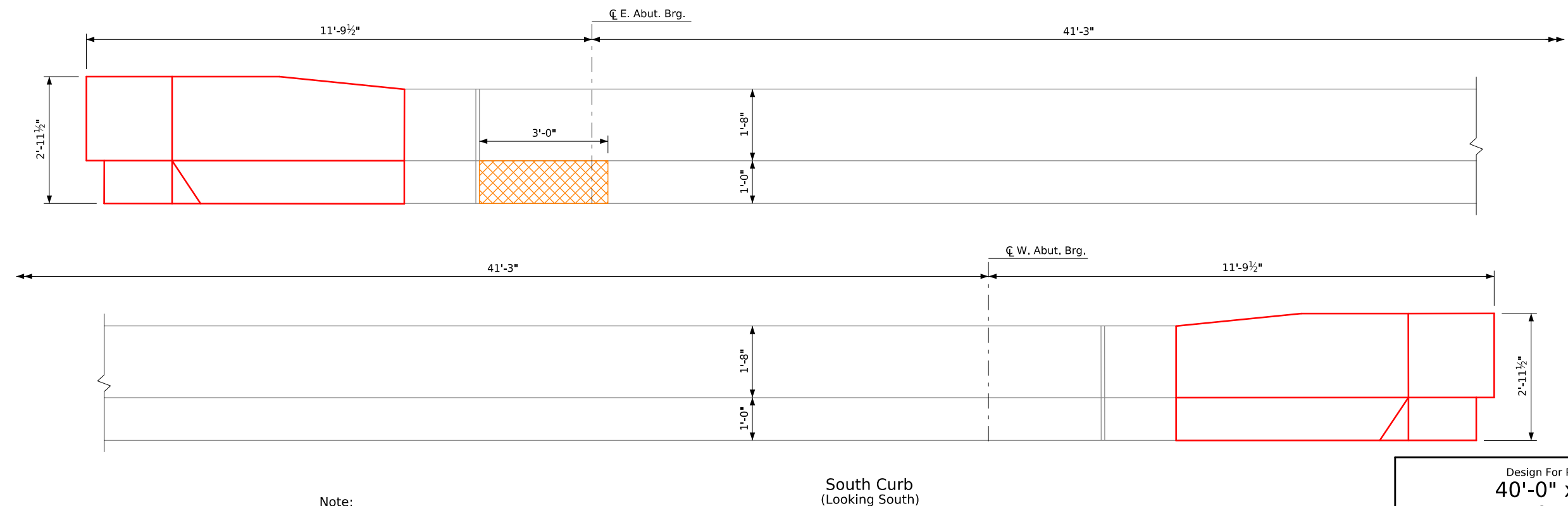
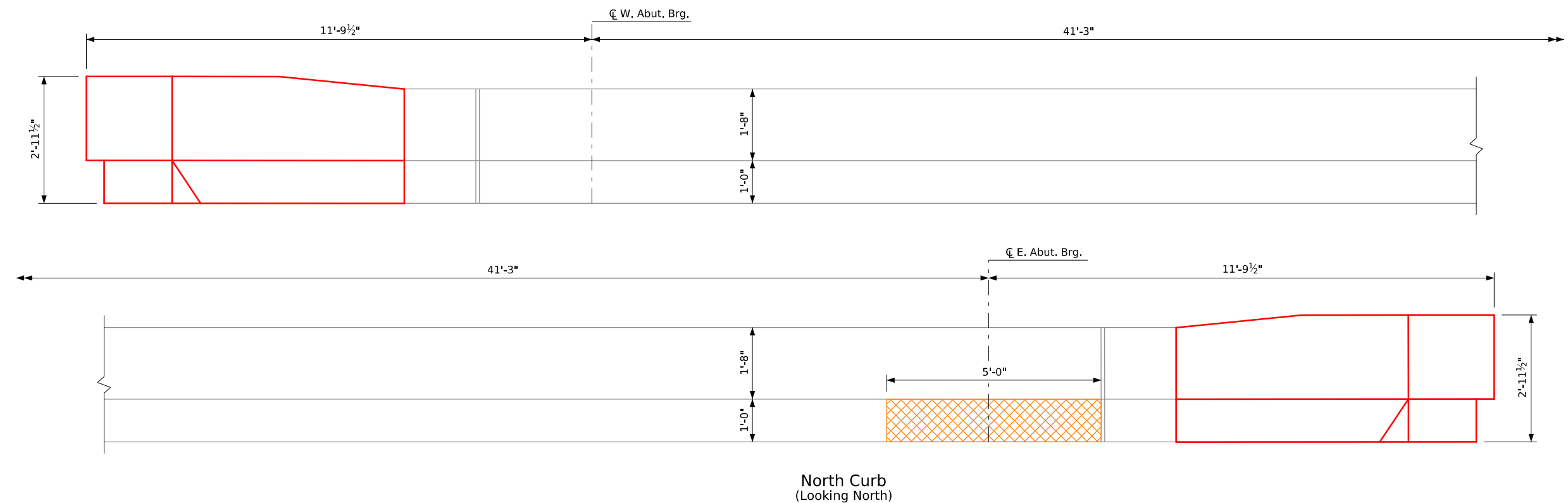
Data shown for Class A repair areas are estimated from the 2022 and 2024 bridge inspection reports. Limits on Class A repair areas are approximate. Actual areas as designated by the Engineer shall be repaired.

Concrete placement for Class A or B repairs within the bounded area described shall be placed to the level of the scarified/roughened deck surface and shall be scarified/roughened in a manner that will provide a uniform scarified/roughened deck surface prior to placement of the overlay concrete.

Legend:

 Class A Repair Area

Design For Repairs to a 0 Degree Skew
**40'-0" x 44'-0" I-Beam
& PPCB Bridge**
41'-3" Single Span
Deck Repair Details
STA. 410+53.60 (IA 3) Turn-in Date: Aug. 2026
Bremer County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 7 of 12 FHWA No. 015620



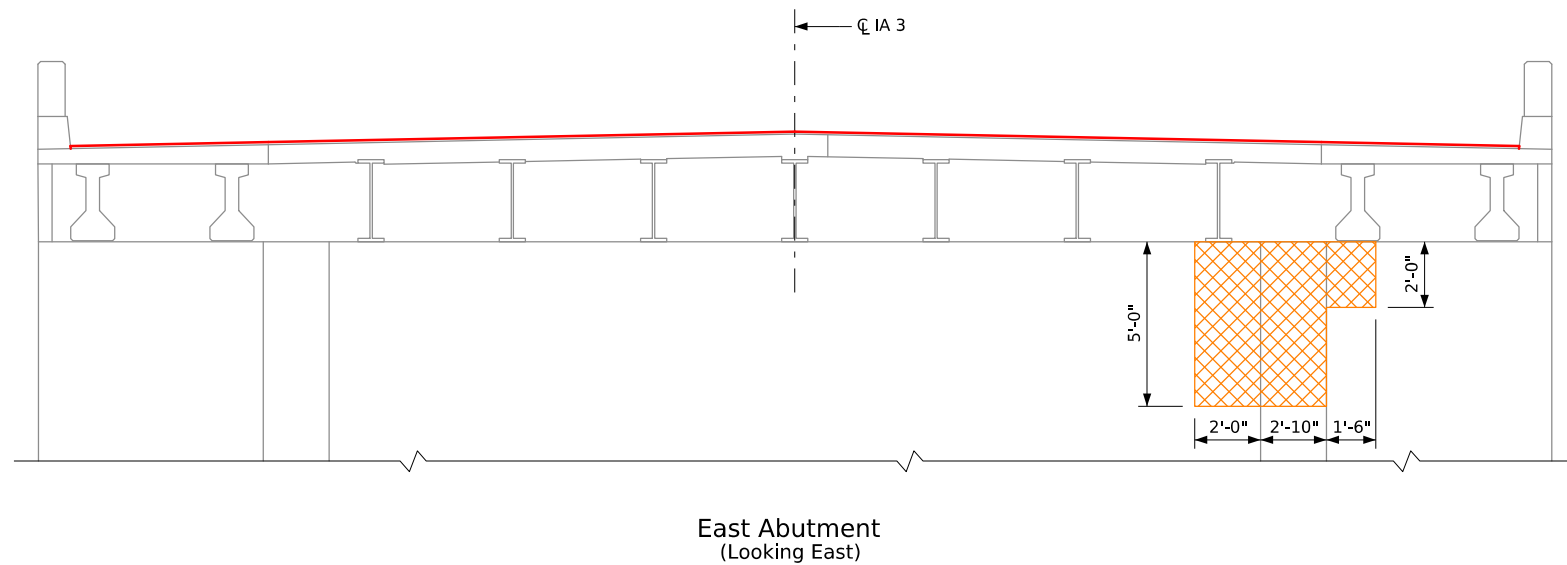
Legend
Indicates Regular Repair

Note:
Actual concrete repair areas are to
be determined by the Engineer at
the time of construction.

South Curb
(Looking South)

Curb Repair

Design For Repairs to a 0 Degree Skew
**40'-0" x 44'-0" I-Beam
& PPCB Bridge**
41'-3" Single Span
Curb Repair Details
STA. 410+53.60 (IA 3) Turn-in Date: Aug. 2026
Bremer County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 8 of 12 FHWA No. 015620



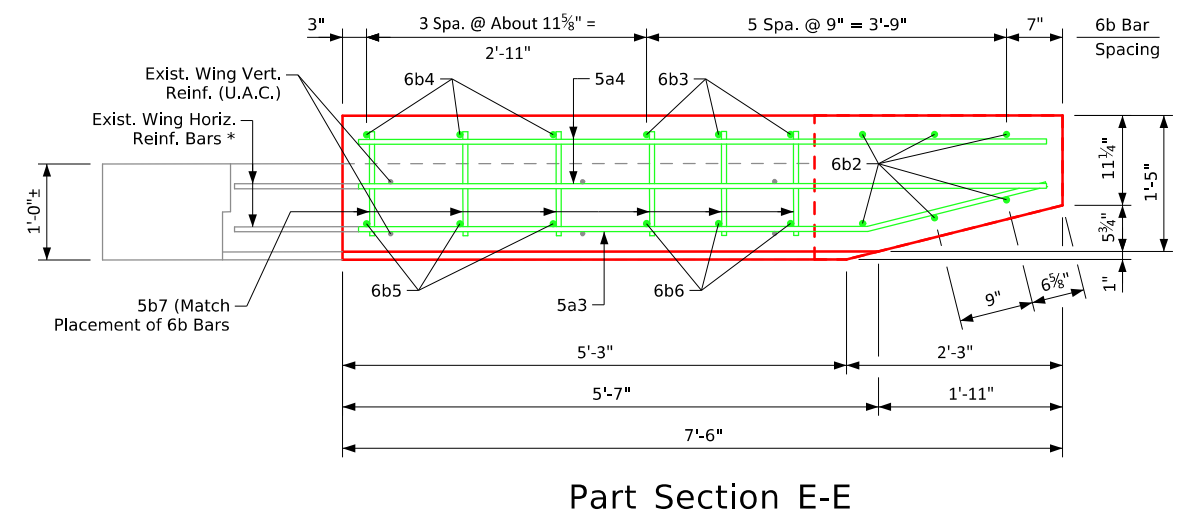
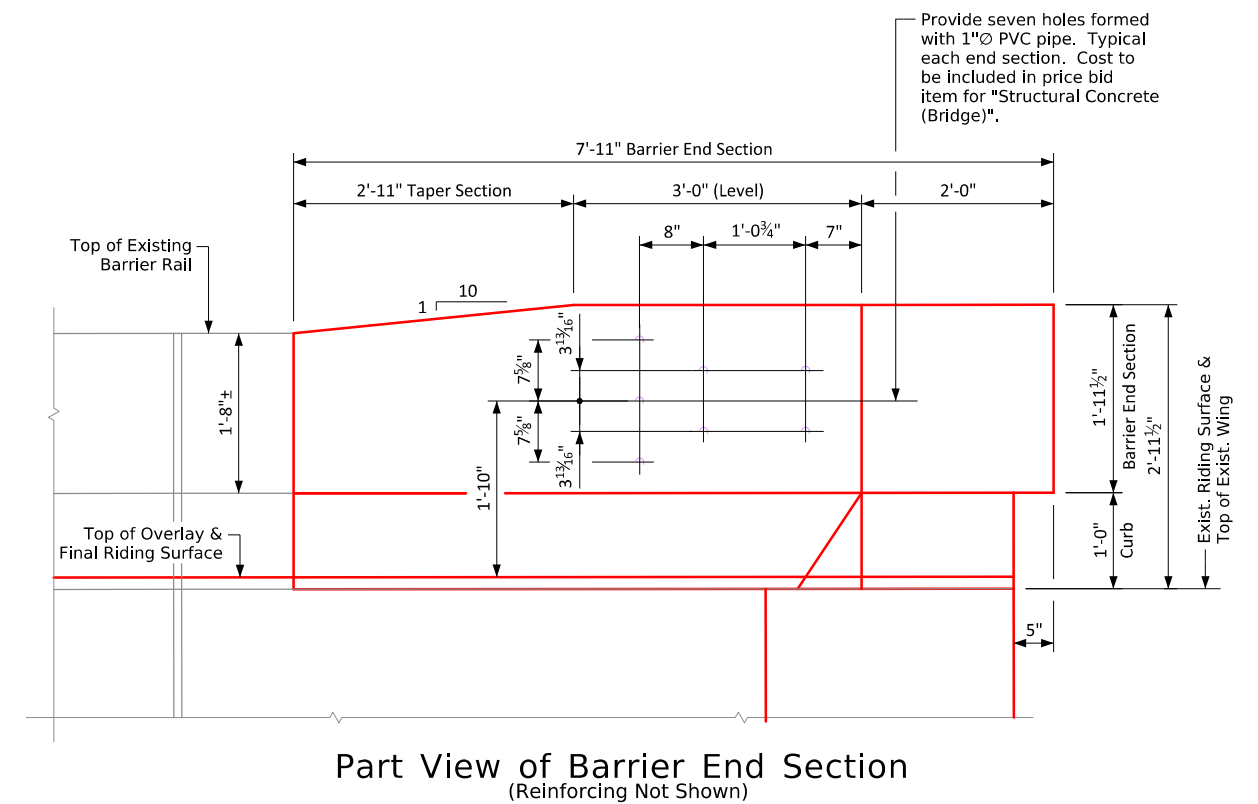
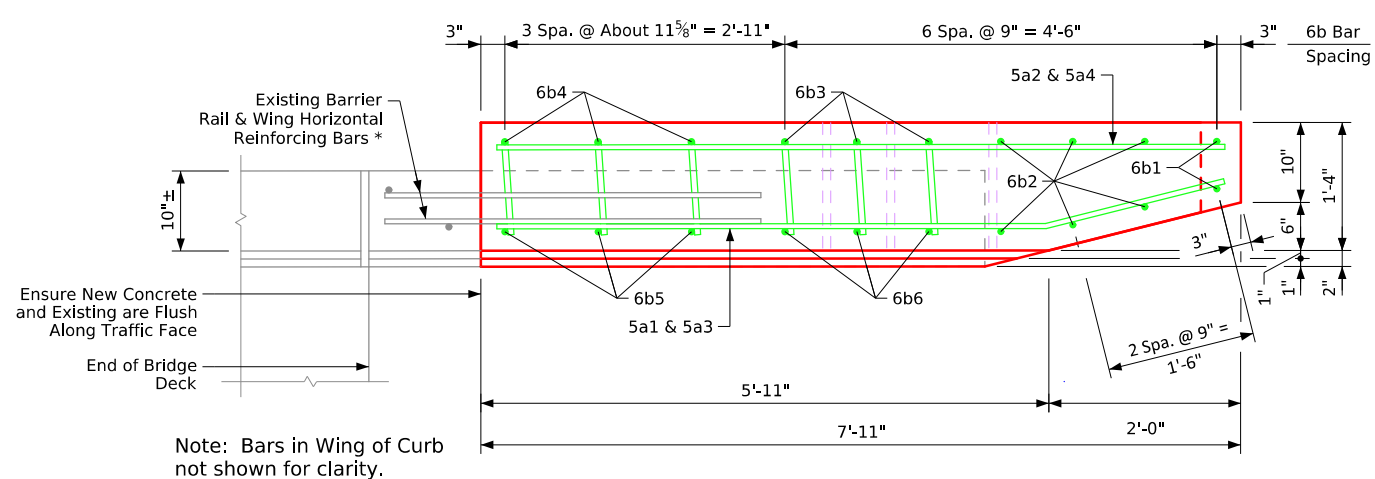
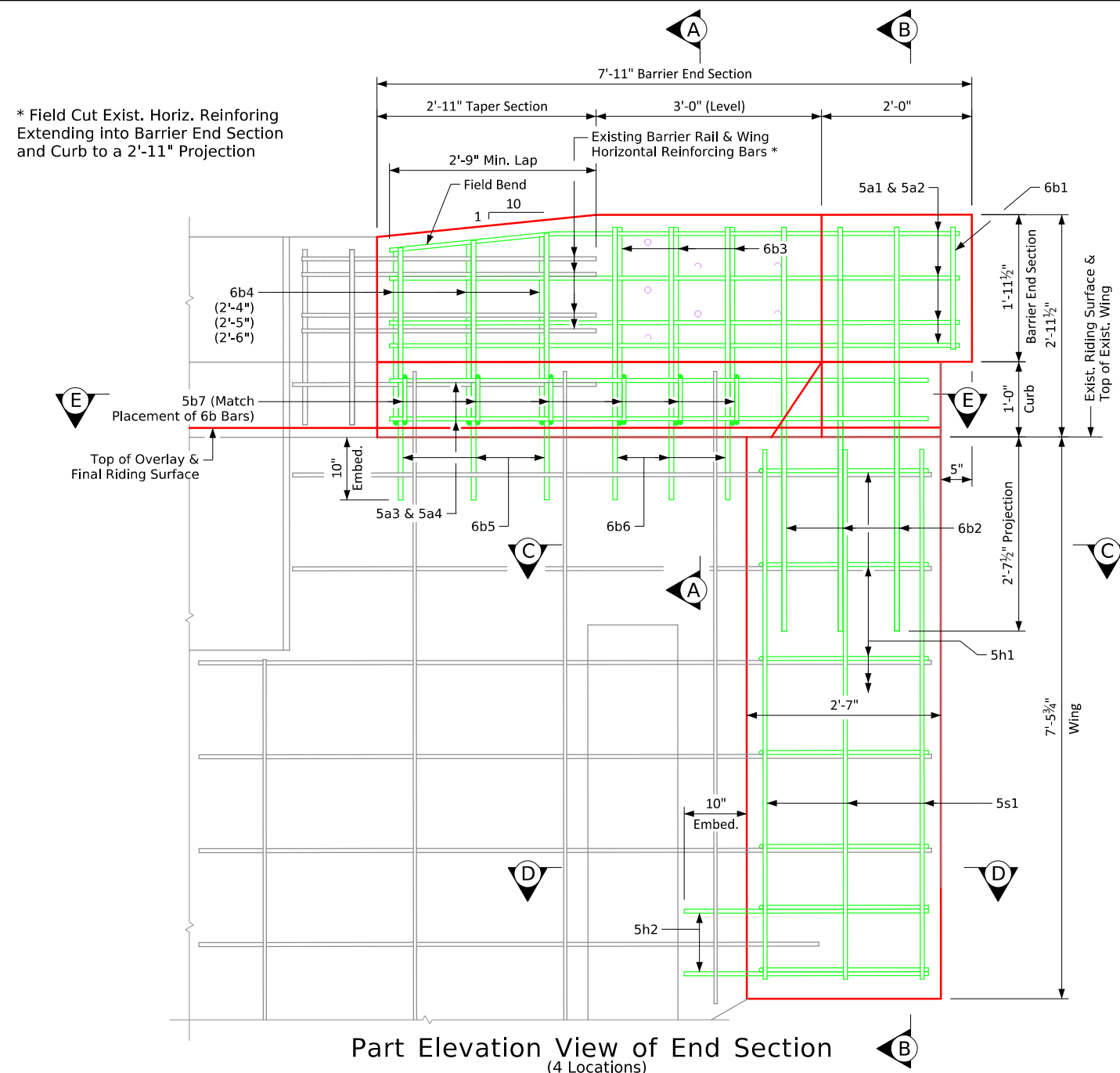
Legend
Indicates Regular Repair

Notes:
Areas shown for repair are approximate. Engineer shall determine actual areas of repair at the time of construction.

If repair depth at abutment seat will exceed 4" in depth from the face of the abutment, notify Engineer before proceeding with repair.

Existing wing not shown for clarity.

Design For Repairs to a 0 Degree Skew
**40'-0" x 44'-0" I-Beam
& PPCB Bridge**
41'-3" Single Span
STA. 410+53.60 (IA 3)
Turn-in Date: Aug. 2026
Bremer County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 9 of 12 FHWA No. 015620



Note:
See Design Sheet No. 11 for additional notes and Part Sections A-A,
B-B, C-C, and D-D.

Design For Repairs to a 0 Degree Skew 40'-0" x 44'-0" I-Beam & PPCB Bridge

End Section Details (1 of 2)

STA. 410+53.60 (IA 3) Turn-in Date: Aug. 2026

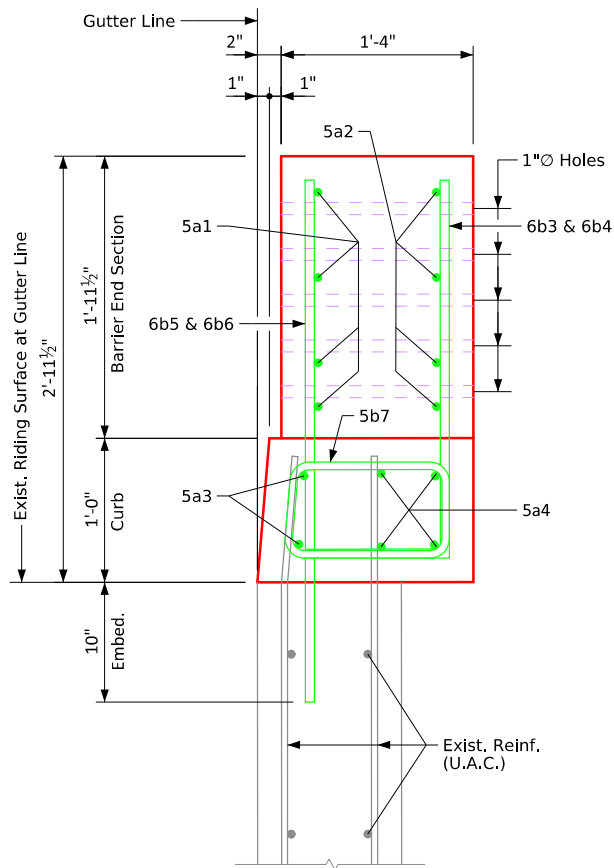
Bremer County

IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0128 Design Sheet No. 10 of 12 FHWA No. 015620

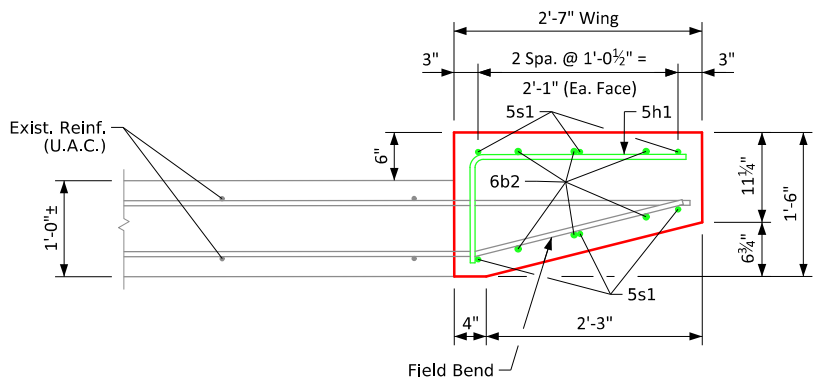
9	SHEET NUMBER	V.10
---	--------------	------

Dowel Setting Note:

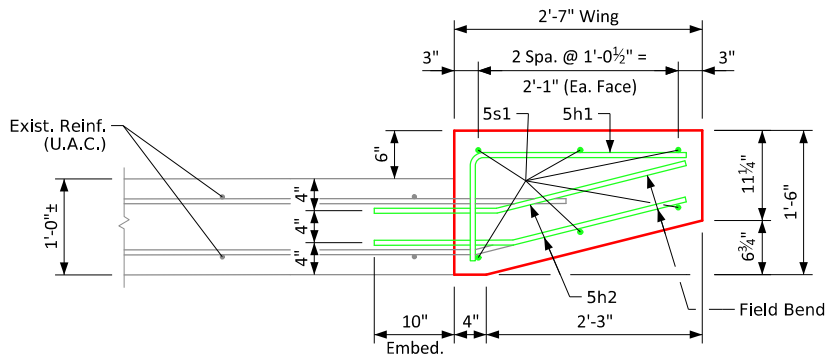
The deformed 6b5, 6b6, & 5h2 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. Polymer grout system shall be used to install the deformed dowel bars in accordance with Article 2301.03,E, of the Standard Specifications and the Grout Manufacturer's recommendations.



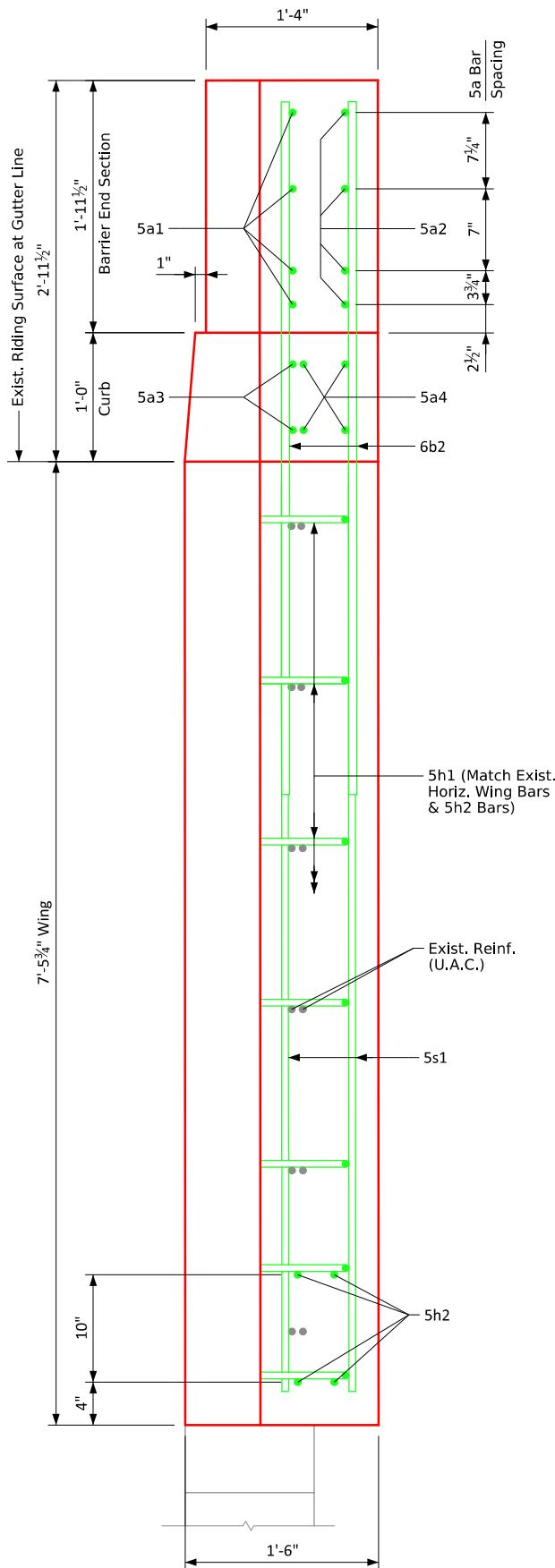
Part Section A-A



Part Section C-C

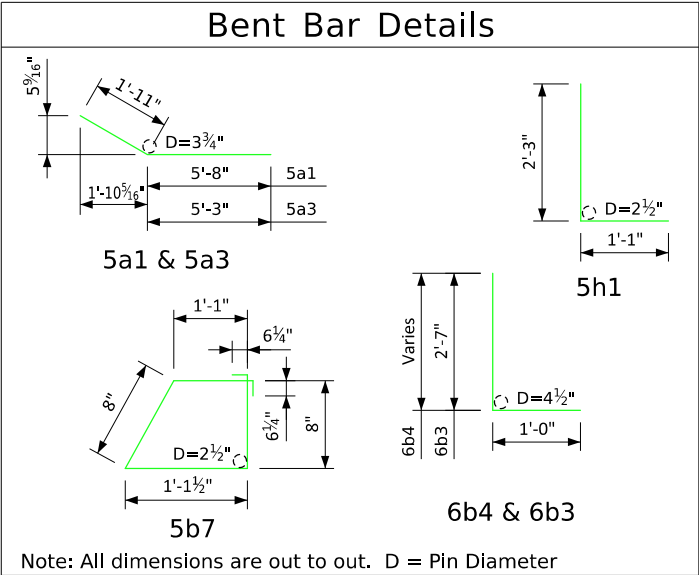


Part Section D-D



Part Section B-B

Epoxy Reinforcing Steel (Ea. End Section)					
Bar	Location	Shape	No.	Length	Weight
5a1	Barrier End Section, Horiz.		4	7'-7"	32
5a2	Barrier End Section, Horiz.		4	7'-7"	32
5a3	Curb, Horiz.		2	7'-2"	15
5a4	Curb, Horiz.		4	7'-2"	30
6b1	Barrier End Sect., Vert.		2	1'-7"	5
6b2	Barrier End Sect., Vert.		6	5'-7"	50
6b3	Barrier End Sect., Vert.		3	3'-7"	16
6b4	Barrier End Sect., Vert.		3	Varies	15
6b5	Barrier End Sect., Vert., Dowel		3	Varies	15
6b6	Barrier End Sect., Vert., Dowel		3	3'-7"	16
5b7	Curb, Hoops		6	4'-7"	29
5h1	Wing, Horiz.		7	3'-4"	24
5h2	Wing, Horiz., Dowel		4	3'-3"	14
5s1	Wing, Vertical		6	7'-2"	45
Total 1 End Section (lbs.)					338
Total 4 End Sections (lbs.)					1352



Concrete Placement Summary		
Section	Total	
End Sections	4 at 2.0 Cu. Yds. Per End Section	8.0 Cu. Yd.
Total		8.0 Cu. Yd.

Notes:
Concrete and reinforcing steel quantities for each End Section include the Barrier End Section, Curb, and Wing remodeling quantities. There are 2 End Sections per stage.

The price bid for "Structural Concrete (Bridge)" shall include the cost of setting bars and dowels in the existing wings.

Construction Joints shall be roughened and thoroughly cleaned.

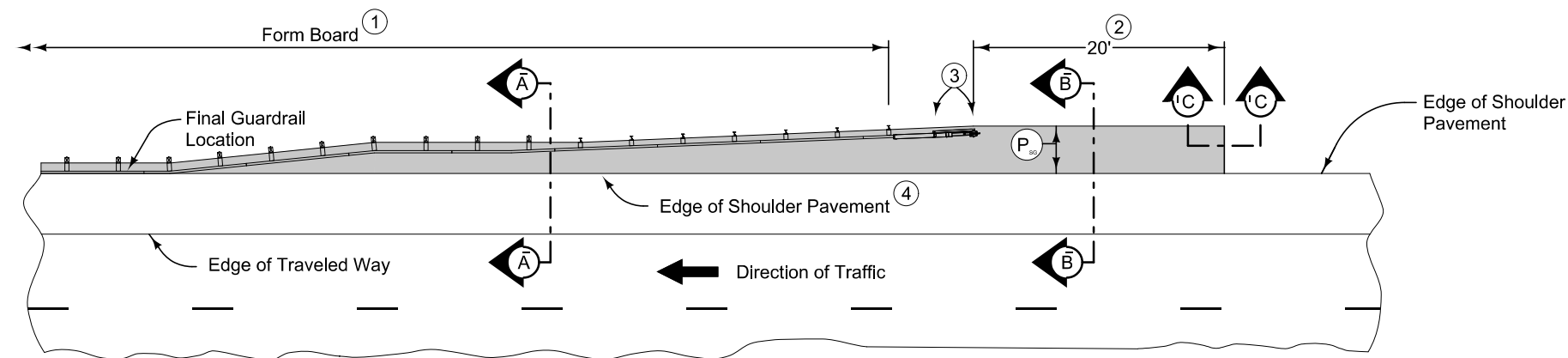
Wing buttress not shown for clarity.

See Design Sheet No. 10 for Dowel Setting Note.

Design For Repairs to a 0 Degree Skew
**40'-0" x 44'-0" I-Beam
& PPCB Bridge**
41'-3" Single Span
End Section Details (2 of 2)
STA. 410+53.60 (IA 3)
Turn-in Date: Aug. 2026
Bremer County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 11 of 12 FHWA No. 015620

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.3	Index of Sheets
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - 2	Estimated Project Quantities and Reference Notes
C.3	Project Description
C.4	Index of Tabulations
C.5	Standard Road Plans
C.6 - 16	Tabulations
C.17	General Notes
D Sheets	Mainline Plan and Profile Sheets
D.1 - 3	Shoulder Strengthening Sheets
D.4 - 5	IA 3 Bridge Repair
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control & Staging Legend & Symbol Info. Sheet
J.2	Staging Cross Section
J.3 - 10	Staging and Traffic Control Sheets by Stage
J.11 - 14	Traffic Control & Staging Notes
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1 - 3	BR-203 Series, Modified Standards and Detail Sheets

ROADWAY DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
	Signature Adam W. Sleeper 07-28-2026Date
	Printed or Typed Name Adam W. Sleeper
	My license renewal date is December 31, 2026
Pages or sheets covered by this seal: A.3, B.1, B.2, C.1-C.17, D.1-D.5, J.1-J.14, U.1-U.3	



PLAN VIEW

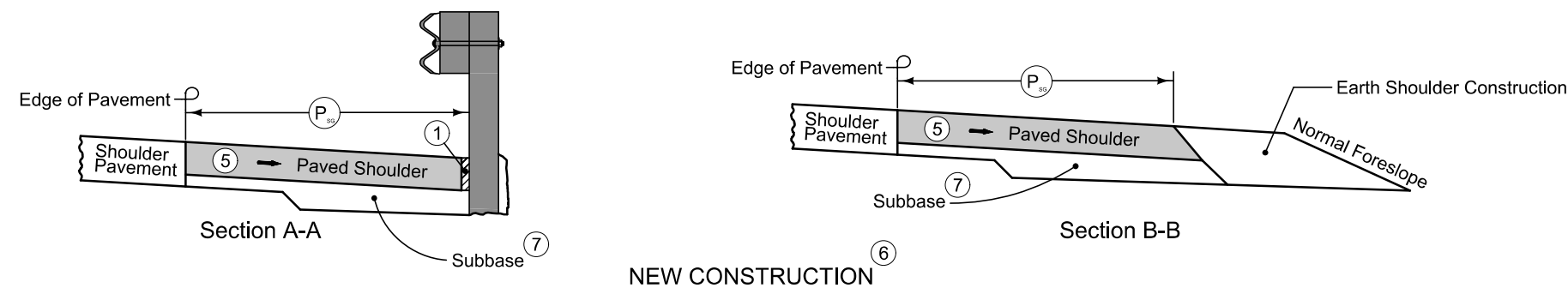
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

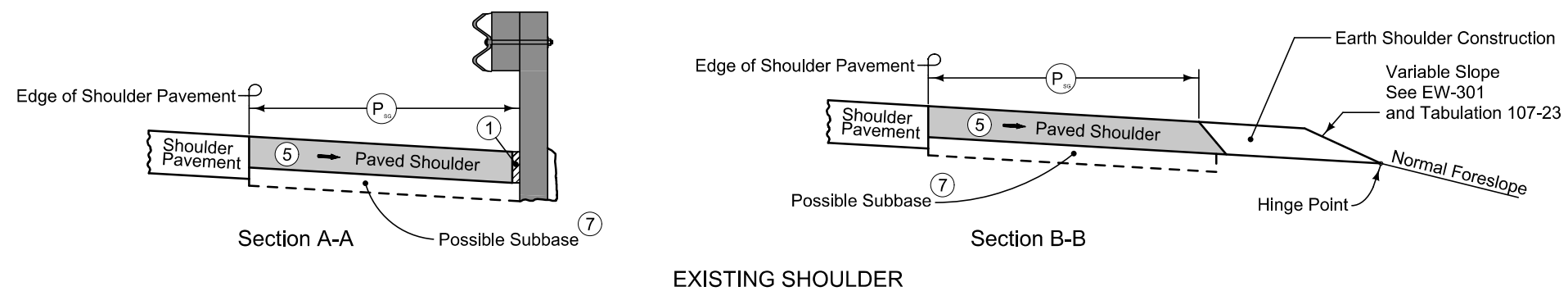
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

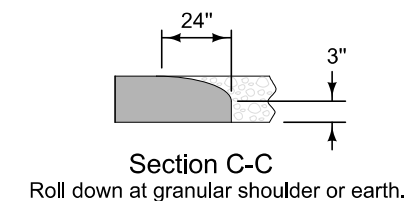
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'BT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



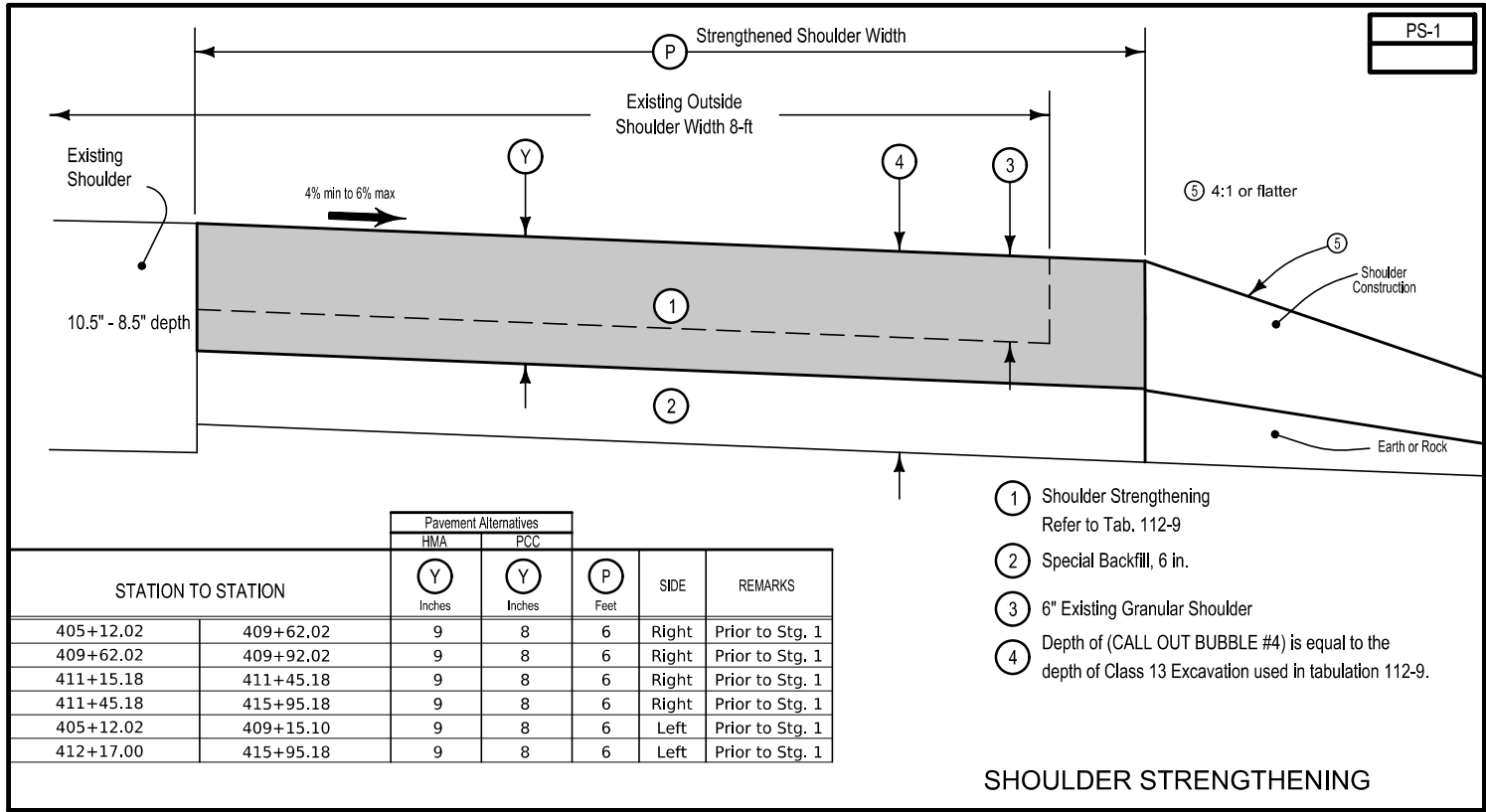
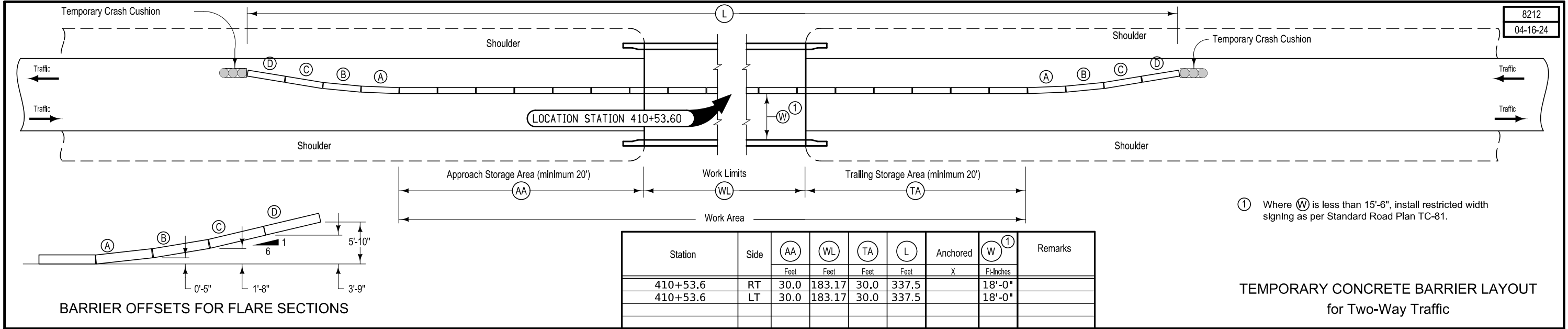
NEW CONSTRUCTION



EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO FULL WIDTH PAVED SHOULDER)



ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2102-0425070	SPECIAL BACKFILL	TON	374.065	Refer to Tab. 112-09. Includes 374 tons used for Strengthening Shoulders. Refer to Typical 7158. Existing HMA and PCC from Pavement removal may be used on the project as special backfill.
2	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	552.4	Dispose of excess material according to Article 1106.07 of the current specifications.
3	2115-0100000	MODIFIED SUBBASE	CY	37.46	Refer to Tab. 112-09 on Sheet C.8. Place 6 inches of modified subbase under shoulders at guardrails.
4	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	217.7	Refer to Tab. 112-09 and detail 7158 on B Sheets. Item is for paved shoulders adjacent to guardrail.
5	2122-7450080	SHOULDER STRENGTHENING, OPTIONAL HOT MIX ASPHALT MIXTURE OR PORTLAND CEMENT CONCRETE, 8 IN.	SY	1,187.4	See detail PS-1 on B Sheets. Refer to Tab. 112-09.
6	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	19.79	Includes construction of earth shoulders adjacent to paved shoulders. Requires a minimum of 4 inches of topsoil. Place according to 2105.03 B of the standard specifications. No payment for overhaul allowed for this material. Refer to Tab. 112-9 and sheet B.2.
7	2301-0690203	BRIDGE APPROACH, BR-203	SY	704.4	Refer to Tab. 112-06, D Sheets, and U Sheets for Modified BR-203.
8	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK AND/OR APPROACHES	SY	869.1	Refer to Tab 100-28.
9	2505-6765006	REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL	LF	414	The intent of this work is to remove and reinstall steel beam guardrail with the updated bolted end anchor layout at the new guardrail mounting height above the new approaches. The Contractor shall install new posts as needed to facilitate the new guardrail mounting height as required and as directed by the Engineer. Carefully remove and stockpile steel beam guardrail for reinstallation. Delineators and object markers are to be reused in place. Replace delineators and object markers damaged by the Contractors operations at no additional cost to the Contracting Authority. Ensure that all posts are firm and plum prior to reinstalling the guardrail. Prior to the start of construction, the Contractor shall field verify the guardrail is compatible with the anchor hole layout specified on the Bridge Plans and post layout specified on the Roadway Plans and notify the Engineer of any discrepancies. Restore the area disturbed by removal and reinstallation operations to an acceptable condition. Method of Measurement: Measurement will be in linear feet, measured along the front of the rail, of steel beam guardrail (includes W-beam and Thrie-beam guardrail) removed and reinstalled. Payment includes all labor, equipment, and materials required to remove and reinstall the steel beam guardrail and install the guardrail posts per these plans. Refer to Tab. 110-07A.
10	2510-6745850	REMOVAL OF PAVEMENT	SY	1,076.3	Refer to Tabs.110-1 and 102-5 on Sheet C.6 and C.7.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
11	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	This item is for construction survey needs, determined by the Contractor. The Engineer will not establish or provide control monuments, benchmarks, or survey information. The Contractor shall provide surveyed locations and elevations utilizing lines, grades, points, dimensions, and distances, relating between the contract documents and existing field information. All alignment, stationing, connecting dimensions, and elevations used in the new details in these plans were developed based upon existing plans. The Contractor shall field verify these details before starting construction.
12	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	18.21	Refer to Tab. 108-22.
13	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	18.21	
14	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	72.34	
15	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	675	Refer to Sheet J.3-J.10 and Tab. 108-33 on Sheet C.16. All temporary barrier rail shall be nominal 12'-6 long concrete units.
16	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	1	Refer to Tab. 108-28 on Sheet C.14.
17	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on J Sheets.
18	2551-0000110	TEMP CRASH CUSHION	EACH	4	Refer to Tab. 108-30. Winterize sand filled or water filled crash cushions according to the manufacturer's recommendations if they are to remain in place during winter months.

100_01D
8/15/22

PROJECT DESCRIPTION

This project is for a bridge deck overlay with associated bridge, roadway approach, and guardrail remove and reinstall for a 40'-0" x 44'-0" I-Beam and PPCB Bridge on IA 3 over Drainage Ditch in Bremer County.

INDEX OF TABULATIONS			
Line No.	Tabulation	Tabulation Title	Sheet No.
1.0	100_01D	PROJECT DESCRIPTION	C3
2.0	100_28	LONGITUDINAL GROOVING	C12
3.0	102_05	EXISTING PAVEMENT	C6
4.0	104_08A	SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN	C16
5.0	105_04	STANDARD ROAD PLANS	C5
6.0	108_22	PAVEMENT MARKING LINE TYPES	C11
7.0	108_23A	TRAFFIC CONTROL PLAN	J11
8.0	108_25	511 TRAVEL RESTRICTIONS	J12
9.0	108_26A	STAGING NOTES	J13
10.0	108_28	TEMPORARY TRAFFIC SIGNALS	C13
11.0	108_30	CRASH CUSHIONS	C14
12.0	108_33	TEMPORARY BARRIER RAIL	C15
13.0	110_01	REMOVAL OF PAVEMENT	C7
14.0	110_07A	REMOVAL OF STEEL BEAM GUARDRAIL	C9
15.0	111_01	COORDINATED OPERATIONS	J14
16.0	111_25	INDEX OF TABULATIONS	C4
17.0	112_06	BRIDGE APPROACH SECTION	C8
18.0	112_09	SHOULDERS	C10
20.0	232_03A	EROSION CONTROL (RURAL SEEDING)	C17
21.0	232_03C	EROSION CONTROL (NATIVE GRASS SEEDING)	C17
22.0	232_11	EROSION CONTROL (STABILIZING CROP SEEDING)	C17
23.0	262_06	UTILITIES (NOT A POINT 25 PROJECT)	C17

105_04 10/20/26 STANDARDS The following Standards apply to construction work on this project.		
Number	Date	Title
BA-200	10-20-26	Steel Beam Guardrail Components
BA-250	10/20/2026	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-401	4/20/2021	Temporary Barrier Rail (Precast Concrete)
BA-500	4/20/2021	Temporary Crash Cushions Sand Barrel
DR-306	10/17/2023	Precast Concrete Headwall for Subdrain Outlets
EW-301	10/20/2026	Guardrail Grading
PM-110	10/15/2024	Line Types
PM-115	10/20/2026	Grooving for Line Types
PV-101	10/20/2026	Joints
PV-102	10/21/2025	PCC Curb Details
PV-105	10/21/2014	PCC Pavement Widening
PV-121	10/21/2025	Jointing PCC Pavement Widening
PV-203	4/21/2020	HMA Base Widening
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	4/18/2023	Work Within 15 ft of Traveled Way
TC-213	4/18/2023	Lane Closure with Flaggers
TC-217	10/20/2026	Lane Closure with Signals and TBR
TC-233	10/17/2017	Pavement Marking Operations Two-Lane

102_05
9/29/23

EXISTING PAVEMENT																					
Line No.	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
1.0	Bremer	IA 3				2017		HSIPX-3-6(64)--3L-09	HMA	3.5											
2.0	Bremer	IA 3		228.41	241.42	1998		MP-3-2(700)228-76-09	MSS												
3.0	Bremer	IA 3				1990		F-3-6(33) -- 21-09	ACC	4.0					MIL	3.0	TRIPOLI-PLATTE	C. LST.			
4.0	Bremer	IA 3				1965		F-88(8)	ACC	3.0							FAIRBANK	C. LST.			
5.0	Bremer	IA 3				1965		F-88(8)	PCC	9.0							BROOKS	GRAVEL	2		

REMOVAL OF PAVEMENT Refer to Tabulation 102-5.							110_01 4/5/24
* Not a bid item.							
Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
0.1	408+90.20	409+92.02	Right	HMA	81.2	218.3	Remove Exist. Guardrail Surf. For Shoulder Streng.
0.2	411+15.18	411+92.00	Right	HMA	64.5	168.4	Remove Exist. Guardrail Surf. For Shoulder Streng.
0.3	409+15.10	409+15.10	Left	HMA		6.0	Saw Exist. Guardrail Surf. For Shoulder Streng.
0.4	412+17.00	412+17.00	Left	HMA		6.0	Saw Exist. Guardrail Surf. For Shoulder Streng.
1.0	409+15.10	409+92.02	Left	HMA	82.7	51.3	Stage 1 Remove Existing Guardrail Surf.
2.0	409+62.02	410+32.02	Left	PCC	139.5	82.0	Stage 1 Remove Mainline Bridge Approach
3.0	410+75.18	411+45.18	Left	PCC	139.5	82.0	Stage 1 Remove Mainline Bridge Approach
4.0	411+15.18	412+17.00	Left	HMA	103.6	76.2	Stage 1 Remove Existing Guardrail Surf.
5.0	408+90.20	409+92.02	Right	HMA	103.6	82.2	Stage 2 Remove Existing Shoulder/Guardrail Surf.
6.0	409+62.02	410+32.02	Right	PCC	139.5	12.0	Stage 2 Remove Mainline Bridge Approach
7.0	410+75.18	411+45.18	Right	PCC	139.5	12.0	Stage 2 Remove Mainline Bridge Approach
8.0	411+15.18	411+92.00	Right	HMA	82.7	57.2	Stage 2 Remove Existing Shoulder/Guardrail Surf.
Total:					1076.3		

112_06

10/20/26

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

** Verify layout of bridge approach does not conflict with guardrail posts.

Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	(T) Thickness (IN)	Pay Length (FT)	Right Edge Offset (FT) **	Left Edge Offset (FT) **	Non-Reinf. Area (SY)	Single-Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Modified * Subbase (TON)	Polymer * Grid (SY)	Special * Backfill (TON)	Remarks
1.0	410+53.60	W			12.0	70.0	23	23	153.3	102.2	96.7	BR-203	Movable	BR-211	56.0	409+72.02		1.6	356.540	378.1		Match Bridge Overlay Grade
2.0	410+53.60	E			12.0	70.0	23	23	153.3	102.2	96.7	BR-203	Movable	BR-211	56.0	411+35.18		1.6	356.540	378.1		Match Bridge Overlay Grade
Total:									306.6	204.4	193.4				112			3.2	713.08	756.2		

110_07A 8/15/22 REMOVAL OF STEEL BEAM GUARDRAIL (1) Lane(s) to which the installation is adjacent. (2) Includes length of End Terminals and End Anchors.						
Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0	1	EB	409+08.00	410+24.00	Right	116.0
2.0	2	EB	410+83.10	411+74.12	Right	91.0
3.0	3	WB	409+33.07	410+20.86	Right	91.0
4.0	4	WB	410+83.10	411+99.14	Right	116.0
Total:						414
ALL GUARDRAIL REMOVED IS TO BE REINSTALLED						

FILE NO. 32553	ENGLISH	DESIGN TEAM	Schemmer	BREMER COUNTY	PROJECT NUMBER	BRFN-003-6(073)--39-09	SHEET NUMBER	C.9
----------------	---------	-------------	----------	---------------	----------------	------------------------	--------------	-----

7/28/2026 4:07:46 PMADAM.SLEEPER@IOWAID

112_09
4/21/26

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.
(7) Paved shoulder thickness specified in Remarks.
(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/ STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grd rail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Pavement Scarifica tion (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
IA 3	EB	405+12.02	409+62.02	Right	6			450.00	125.0	146.813	32.625	8.809	300.0			94.500	21.000	94.500	21.000					4.50			Streng. Shldr.
IA 3	EB	409+62.02	409+92.02	Right	10			30.00	13.9	16.313	54.375	0.979	33.3			10.500	35.000	10.500	35.000					0.30			Streng. Shldr.
IA 3	EB	411+15.18	411+45.18	Right	10			30.00	13.9	16.313	54.375	0.979	33.3			10.500	35.000	10.500	35.000					0.30			Streng. Shldr.
IA 3	EB	411+45.18	415+95.18	Right	6			450.00	125.0	146.813	32.625	8.809	300.0			94.500	21.000	94.500	21.000					4.50			Streng. Shldr.
IA 3	WB	405+12.02	409+15.10	Right	6			403.08	104.4	131.505	32.625	7.890	268.7			84.647	21.000	84.647	21.000					4.03			Streng. Shldr.
IA 3	WB	412+17.00	415+95.18	Right	6			378.18	98.0	123.381	32.625	7.403	252.1			79.418	21.000	79.418	21.000					3.78			Streng. Shldr.
IA 3	WB	409+15.10	409+35.41	Right		8.75		20.31	8.2	9.659	47.560	0.580		19.9							3.69			0.20			9 HMA or 8 PCC
IA 3	WB	409+35.41	409+62.02	Right		7.875		26.61	9.8	11.498	43.210	0.690		23.4							3.99			0.27			9 HMA or 8 PCC
IA 3	WB	411+45.18	411+96.76	Right		7.95		51.58	9.8	22.288	43.210	1.337		45.6							7.69			0.52			9 HMA or 8 PCC
IA 3	WB	411+96.76	412+17.00	Right		8.9		20.24	8.3	9.788	48.358	0.587		20.0							3.37			0.20			9 HMA or 8 PCC
IA 3	EB	408+90.20	409+10.44	Right		8.9		20.24	8.3	9.788	48.358	0.587		20.0							3.37			0.20			9 HMA or 8 PCC
IA 3	EB	409+10.44	409+62.02	Right		7.95		51.58	9.8	22.288	43.210	1.337		45.6							7.69			0.52			9 HMA or 8 PCC
IA 3	EB	411+45.18	411+71.79	Right		7.875		26.61	9.8	11.498	43.210	0.690		23.4							3.99			0.27			9 HMA or 8 PCC
IA 3	EB	411+71.79	411+92.00	Right		8.75		20.21	8.2	9.612	47.560	0.577		19.8							3.67			0.20			9 HMA or 8 PCC
Total:									552.4				1187.4	217.7		374.065		374.065			37.46			19.79			

PAVEMENT MARKING LINE TYPES

108_22
11/25/25

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
CBW6: Crosswalk Bar (White) @ 10.00
CLW6: Crosswalk Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.22
ELW6: Edge Line Right (White) @ 1.00
MNY6: Median Nose (Yellow) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
SPW4: Sloped Curb 4" (White) @ 2.16
STY6: Standard Curb 6" (Yellow) @ 2.03

BCY6: Broken Centerline (Yellow) @ 0.25
CHW8: Channelizing Line (White) @ 1.33
DCY4: Double Centerline (Yellow) @ 1.34
DLW6: Dotted Line (White) @ 0.33
ELY4: Edge Line Left (Yellow) @ 0.67
NPY4: No Passing Zone Line (Yellow) @ 0.84
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SPW6: Sloped Curb 6" (White) @ 2.28
YLW2: Yield Line (White) @ 1.15

BLC6: Broken Line Contrast (White/Black) @ 0.50
CHW10: Channelizing Line (White) @ 1.67
DCY6: Double Centerline (Yellow) @ 2.00
DLY4: Dotted Line (Yellow) @ 0.22
ELY6: Edge Line Left (Yellow) @ 1.00
NPY6: No Passing Zone Line (Yellow) @ 1.25
SLW2: Stop Line (White) @ 4.00
SPY4: Sloped Curb 4" (Yellow) @ 2.16

BLW4: Broken Lane Line (White) @ 0.17
CHY8: Channelizing Line (Yellow) @ 1.33
DDY4: Double Dotted Line (Yellow) @ 0.44
DLY6: Dotted Line (Yellow) @ 0.33
LDW8: Lane Drop (White) @ 0.33
RLW4: Ramp Edge Line Right (White) @ 0.67
SLW4: Solid Lane Line (White) @ 0.67
SPY6: Sloped Curb 6" (Yellow) @ 2.28

BLW6: Broken Lane Line (White) @ 0.25
CHY10: Channelizing Line (Yellow) @ 1.67
DDY6: Double Dotted Line (Yellow) @ 0.67
ELW4: Edge Line Right (White) @ 0.67
LDW10: Lane Drop (White) @ 0.42
RLW6: Ramp Edge Line Right (White) @ 1.00
SLW6: Solid Lane Line (White) @ 1.00
STW6: Standard Curb 6" (Yellow) @ 2.03

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BCY4* Factored (STA)	CHW8 Factored (STA)	ELW4 Factored (STA)	NPY4** Factored (STA)	SLW2 Factored (STA)	Remarks
1.0	IA 3	391+19.78	429+87.42	EB	Removal of Paint	X			No		6.58					Existing marking
2.0	IA 3	406+19.78	414+87.42	Both	Removal of Paint			X	No				11.63			Existing marking
3.0	IA 3	391+19.78	406+19.78	EB	Wet Retroreflective Removable Tape	X			No					12.60		Stage 1 & 2
4.0	IA 3	414+87.42	429+87.42	WB	Wet Retroreflective Removable Tape	X			No					12.60		Stage 1 & 2
5.0	IA 3	406+19.78	406+19.78	EB	Wet Retroreflective Removable Tape			X	No						0.48	Stage 1 & 2
6.0	IA 3	414+87.42	414+87.42	WB	Wet Retroreflective Removable Tape			X	No						0.48	Stage 1 & 2
7.0	IA 3	406+19.78	414+87.42	Both	Wet Retroreflective Removable Tape			X	No			23.09				Stage 1
8.0	IA 3	406+19.78	414+87.42	Both	Removal of Removable Tape			X	No			23.09				Stage 1 Removal
9.0	IA 3	406+19.78	414+87.42	Both	Wet Retroreflective Removable Tape			X	No			23.09				Stage 2
10.0	IA 3	406+19.78	414+87.42	Both	Removal of Removable Tape			X	No			23.09				Stage 2 Removal
11.0	IA 3	391+19.78	406+19.78	EB	Removal of Removable Tape	X			No					12.60		Stage 1 & 2 Removal
12.0	IA 3	414+87.42	429+87.42	WB	Removal of Removable Tape	X			No					12.60		Stage 1 & 2 Removal
13.0	IA 3	406+19.78	406+19.78	EB	Removal of Removable Tape			X	No						0.48	Stage 1 & 2 Removal
14.0	IA 3	414+87.42	414+87.42	WB	Removal of Removable Tape			X	No						0.48	Stage 1 & 2 Removal
15.0	IA 3	391+19.78	429+87.42	EB	Waterborne/Solvent Paint	X			No		6.58					Final Pavement Markings
16.0	IA 3	406+19.78	414+87.42	Both	Waterborne/Solvent Paint			X	No				11.63			Final Pavement Markings

Total:

13.1692.3623.2650.41.92

LONGITUDINAL GROOVING				100_28 8/15/22
Line No.	Location	Total (SY)	Remarks	
1.0	410+53.60	195.9	Bridge	
2.0	410+53.60	336.6	West Bridge Approach	
3.0	410+53.60	336.6	East Bridge Approach	
Total:		869.1		

TEMPORARY TRAFFIC SIGNALS				
Line No.	Item No.	Station	Signal Type	Remarks
1.0	1	410+53.60	One Lane Traffic	IA 3 Traffic Signal Pair

108_28
8/15/22

CRASH CUSHIONS

108_30
4/16/24

- * 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.

Line No.	Lane	Station	Side	Obstacle Width (FT)	Crash Cushion Type	Crash Cushion Quantity	V (FT) (2)	W (FT) (2)	X (FT) (2)	Y (FT) (2)	Z (FT) (2)	Excavation Class 10* (CY)	Embankment in Place* (CY)	Obstacle Description	Remarks
1.0	EB	408+81.00	Left	2.0	Temporary	1								TBR	Stage 1
2.0	EB	412+26.00	Left	2.0	Temporary	1								TBR	Stage 1
3.0	WB	408+81.00	Left	2.0	Temporary	1								TBR	Stage 2
4.0	WB	412+26.00	Left	2.0	Temporary	1								TBR	Stage 2

Total: 4

108_33 8/15/22 TEMPORARY BARRIER RAIL Possible Standard: BA-401 Possible Detail: 560-7 * Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.								
Line No.	No.	Station From	Station To	Length (FT)	Barrier Rail Type	Anchored*	Modular Glare Screen System	Remarks
1.0		408+81.00	412+26.00	337.5	Concrete BA-401	No	No	Stage 1: 27 - 12.5' TBR Sections
2.0		408+81.00	412+26.00	337.5	Concrete BA-401	No	No	Stage 2: 27 - 12.5' TBR Sections
Total:				675				

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN											104_08A 8/15/22
Refer to Standard Road Plan DR-401 and DR-402											
Line No.	Bridge Station	Bridge Corner	Distance DI-1 or DI-2 (FT)	Bridge End Drain Type	Special Ditch Control, Wood Excelsior Mat EC-101 (SQ)	Turf Reinforced Mat (TRM) Type 2 EC-104 (SQ)	Transition Mat EC-105 (SF)	Macadam Stone Base (TONS)	Engineering Fabric (SY)	Erosion Stone (TON)	Remarks
1.0	410+53.60	SW		DR-401							UAC
2.0	410+53.60	NW		DR-401							UAC
3.0	410+53.60	SE		DR-401							UAC
4.0	410+53.60	NE		DR-401							UAC

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.

232_11
6/21/23

EROSION CONTROL (STABILIZING CROP 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.

If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,1 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 incidental to mobilization and will will not be paid for separately.

232_03C
8/28/24

EROSION CONTROL (NATIVE GRASS 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 and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (Andropogon geradii)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarred or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement. Place seed according to the requirements of Article 4169.02 of the Standard Specifications.

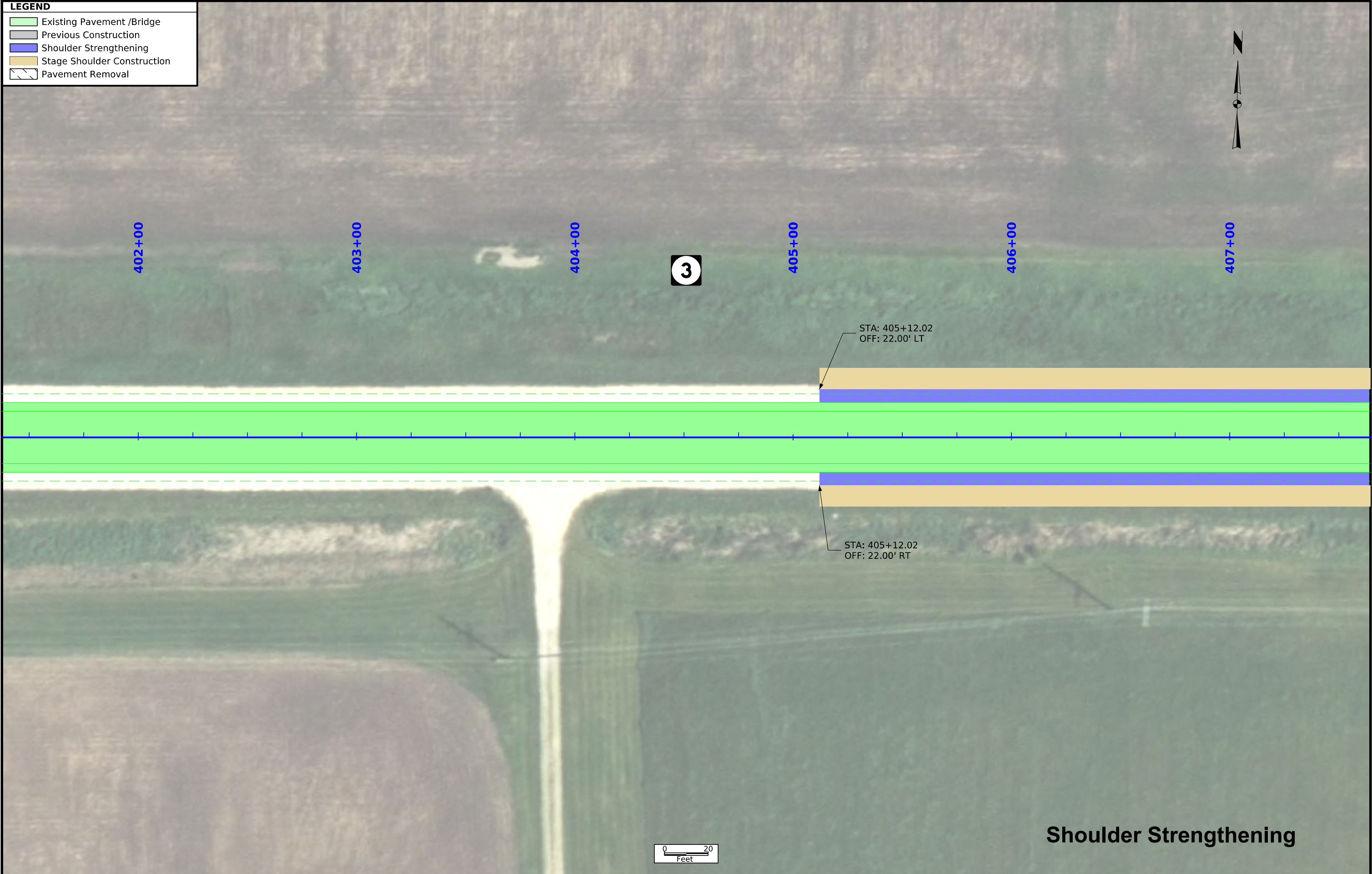
Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

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

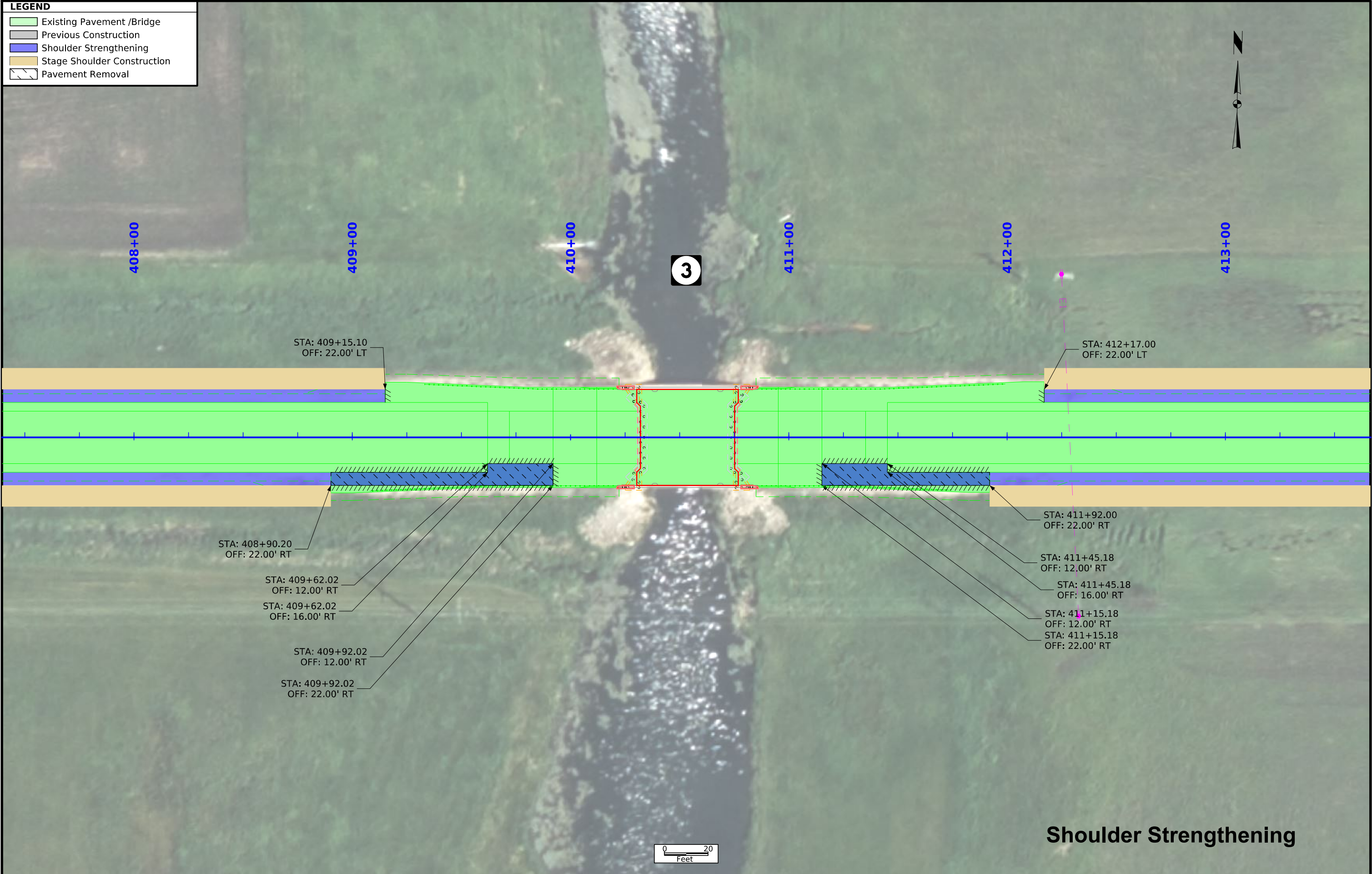
262_06
9/28/22

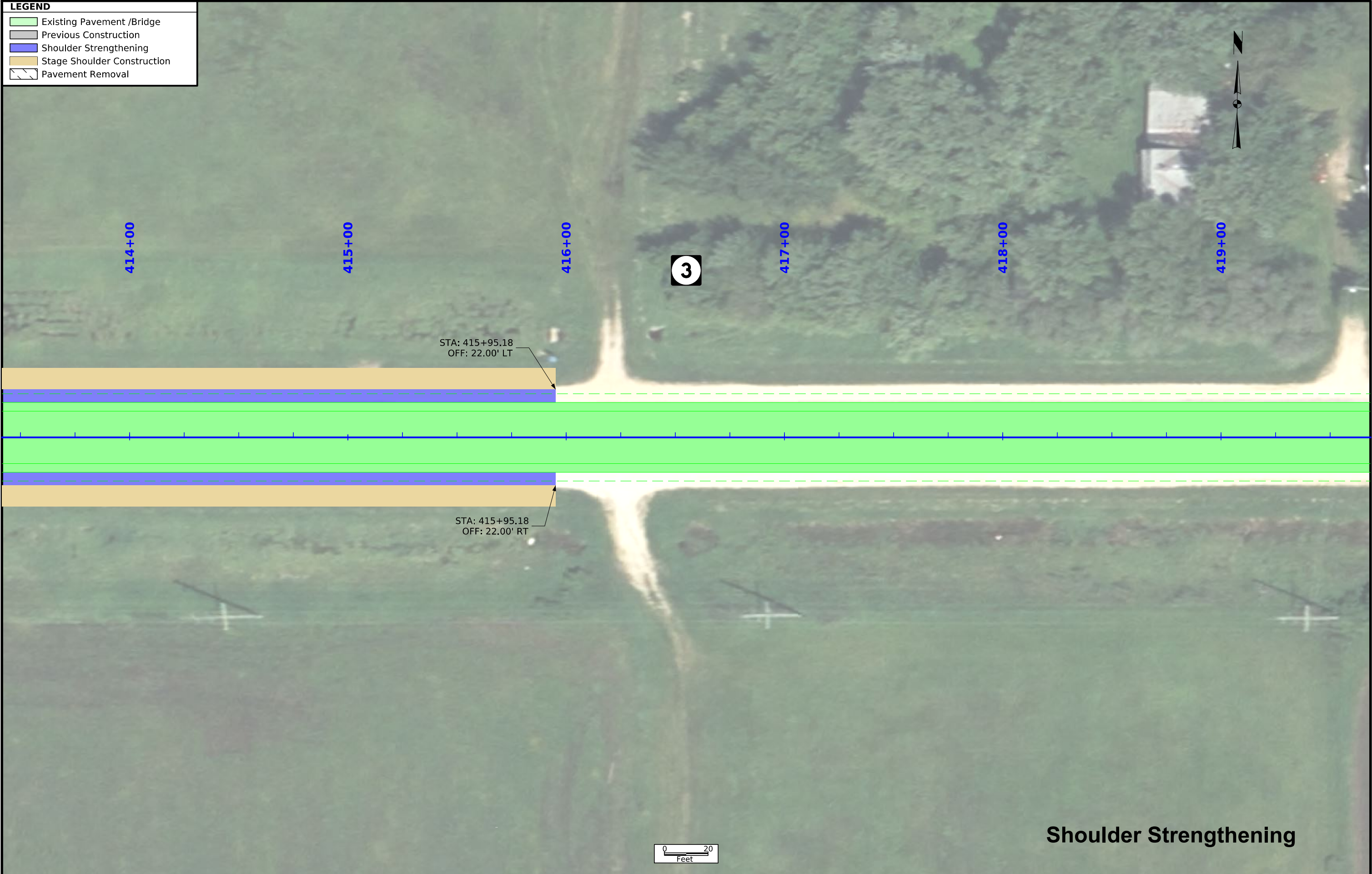
UTILITIES (NOT A POINT 25 PROJECT)

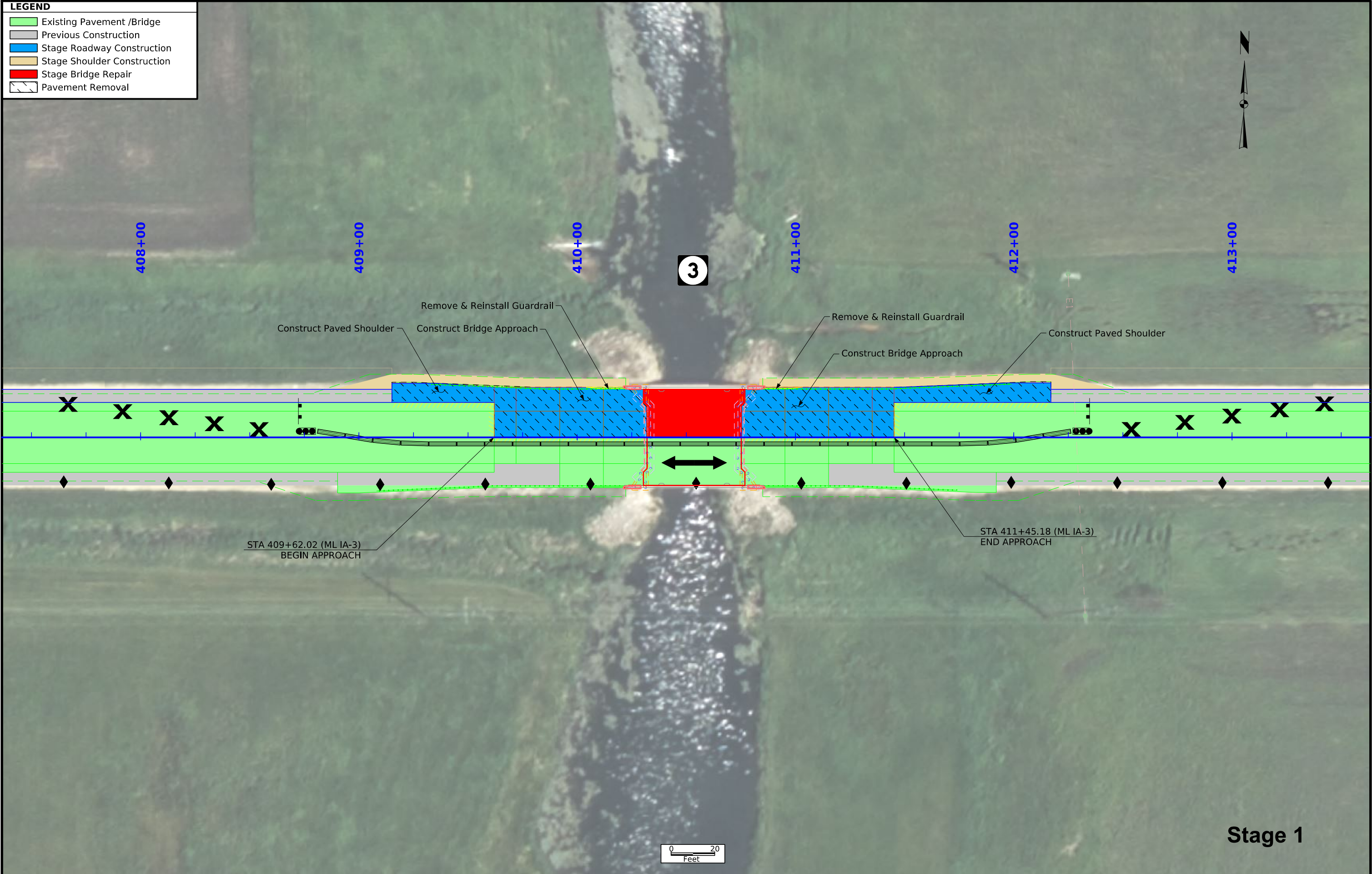
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

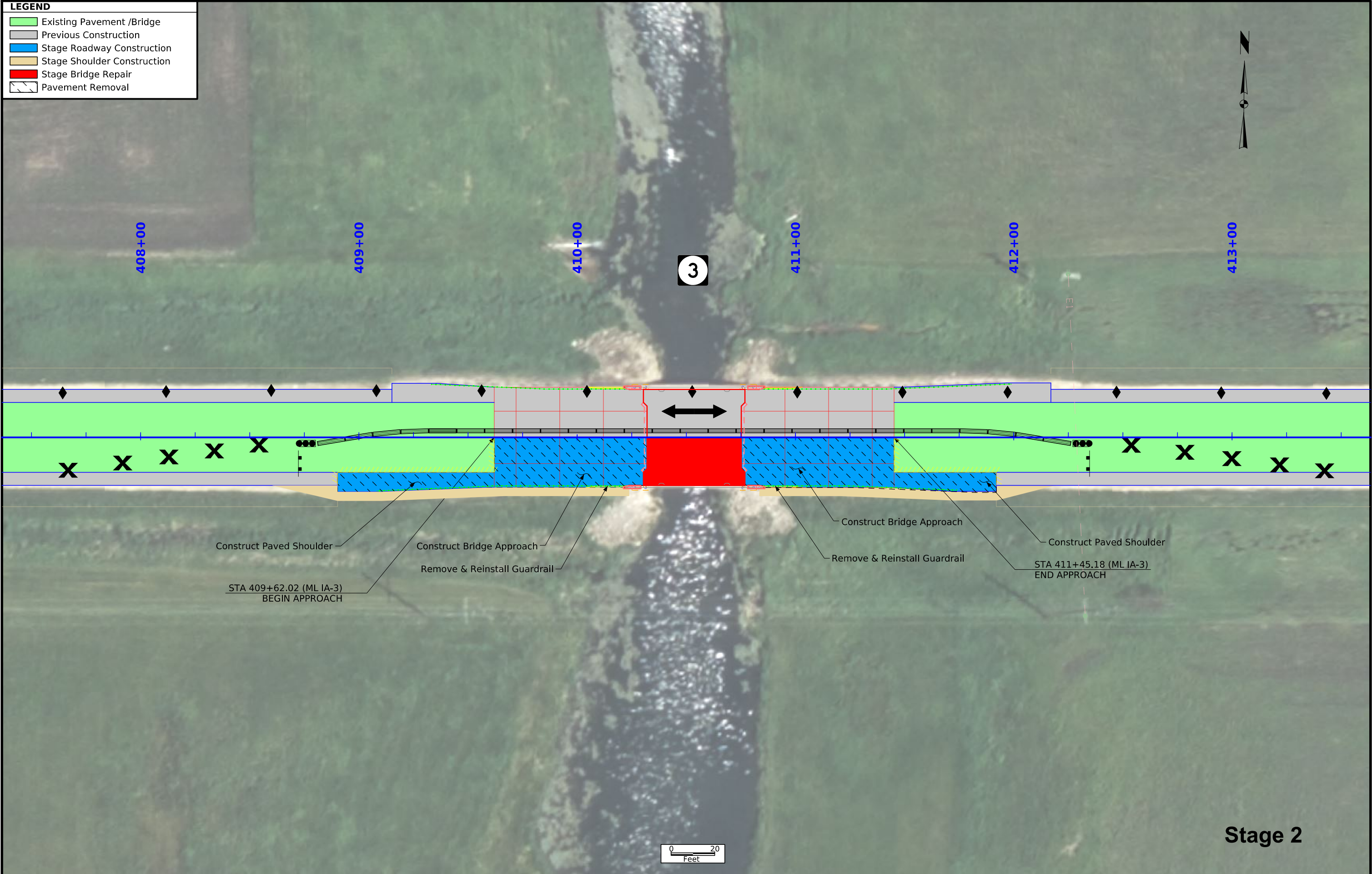


Shoulder Strengthening









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	

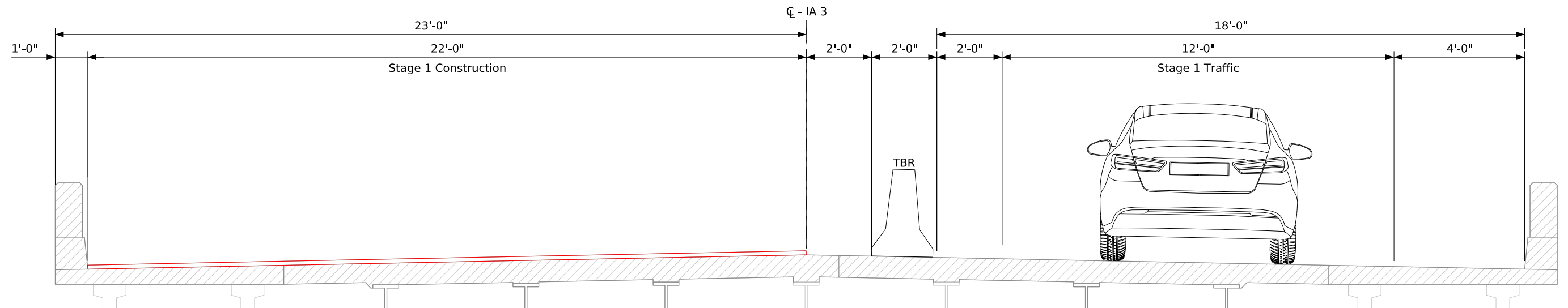
SHADING	Design Color No.		
Green, Light	(225)	Existing Pavement Shading	
Gray, Light	(48)	Previously Constructed Pavement Shading	
Orange	(6)	Proposed Granular Surface Shading	
Gray, Med	(80)	Previously Constructed Granular Surface Shading	
Blue, Light	(230)	Proposed Pavement Shading	
Pink, Dark	(13)	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		Lane Identification

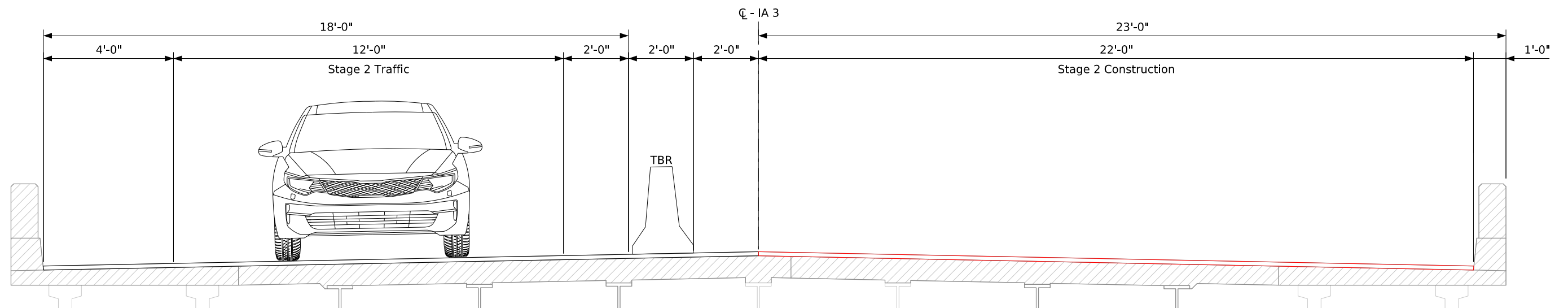
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET

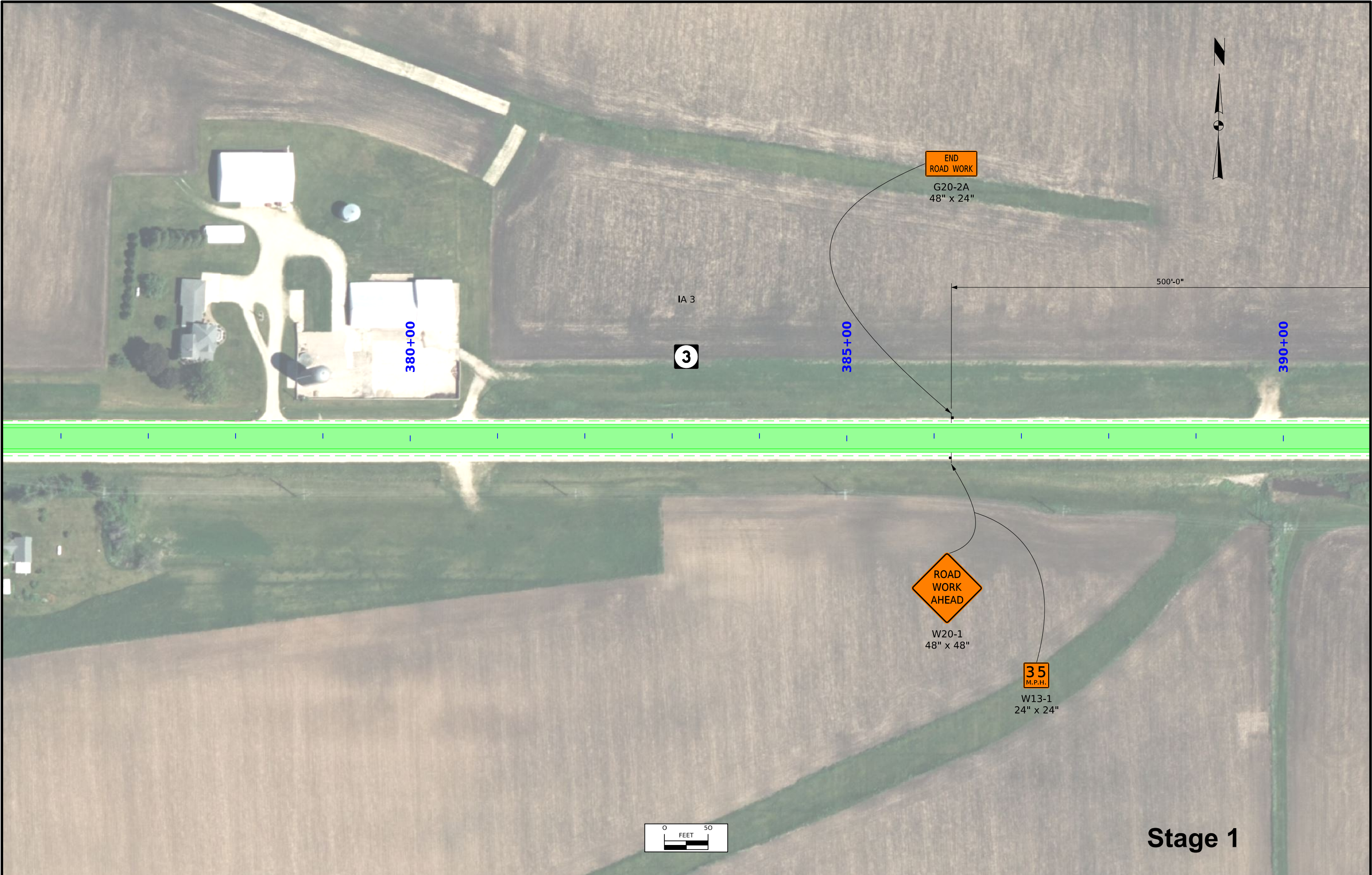
(COVERS SHEET SERIES J)

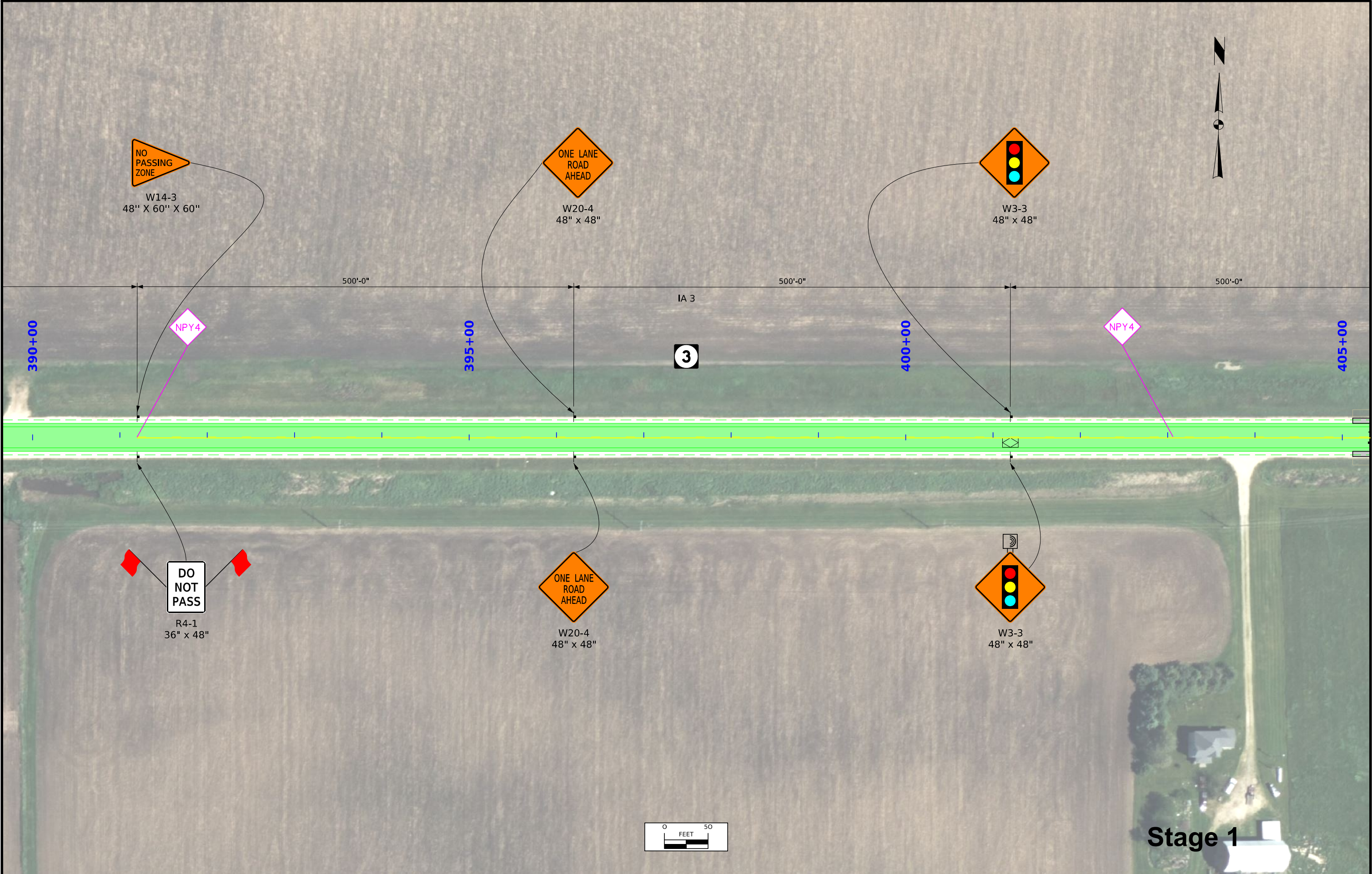


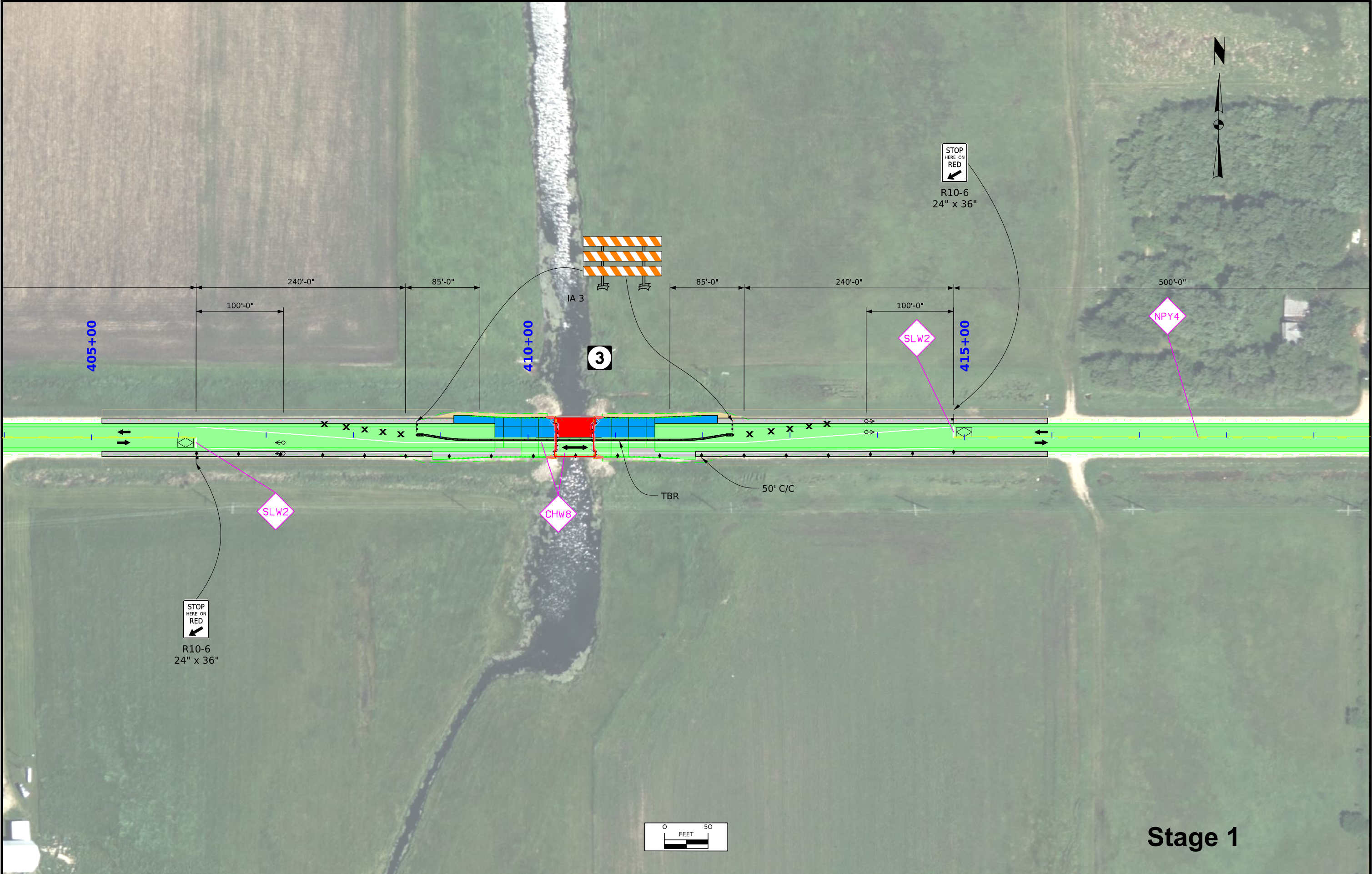
**Stage 1
Looking East**



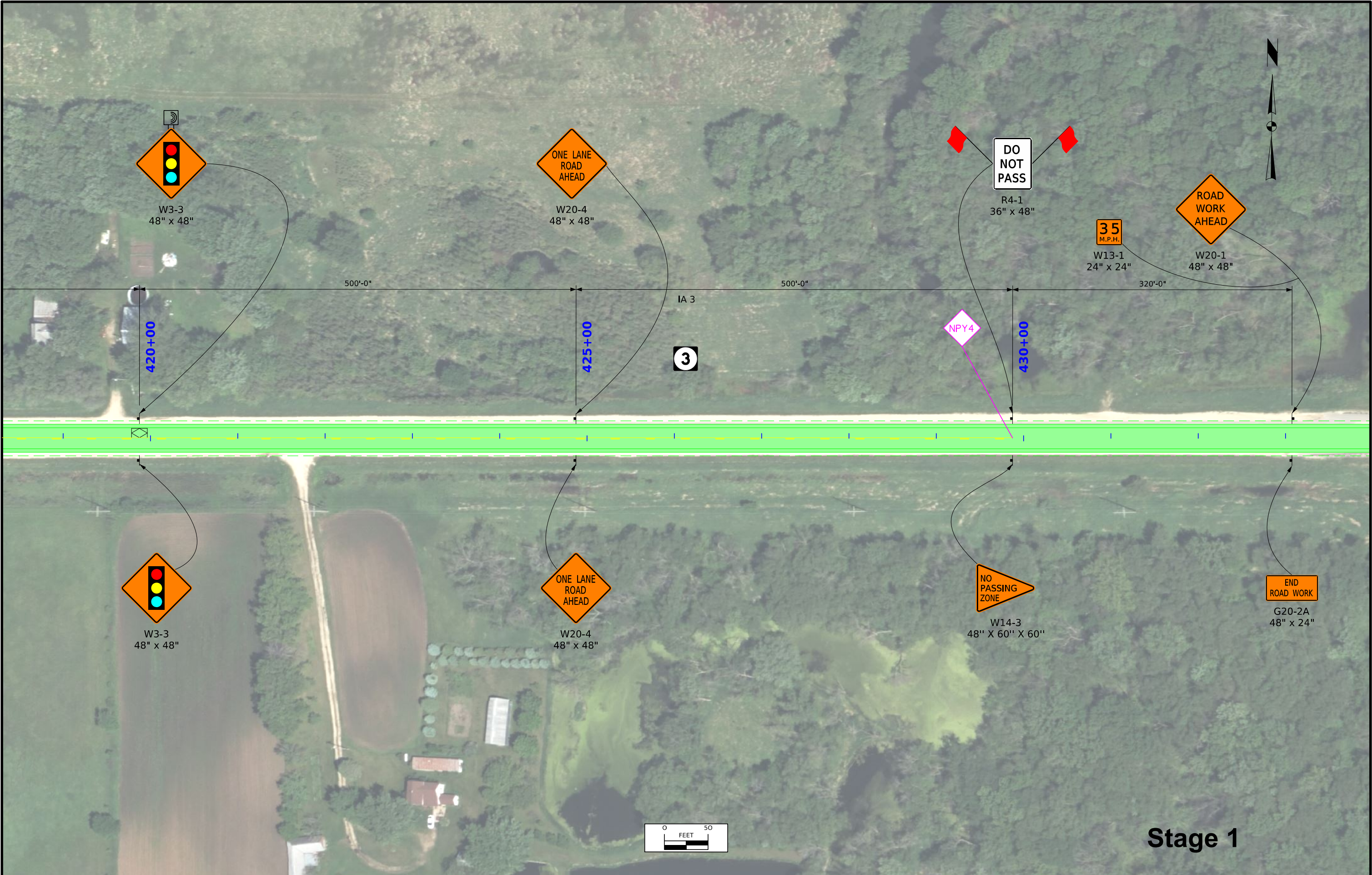
**Stage 2
Looking East**



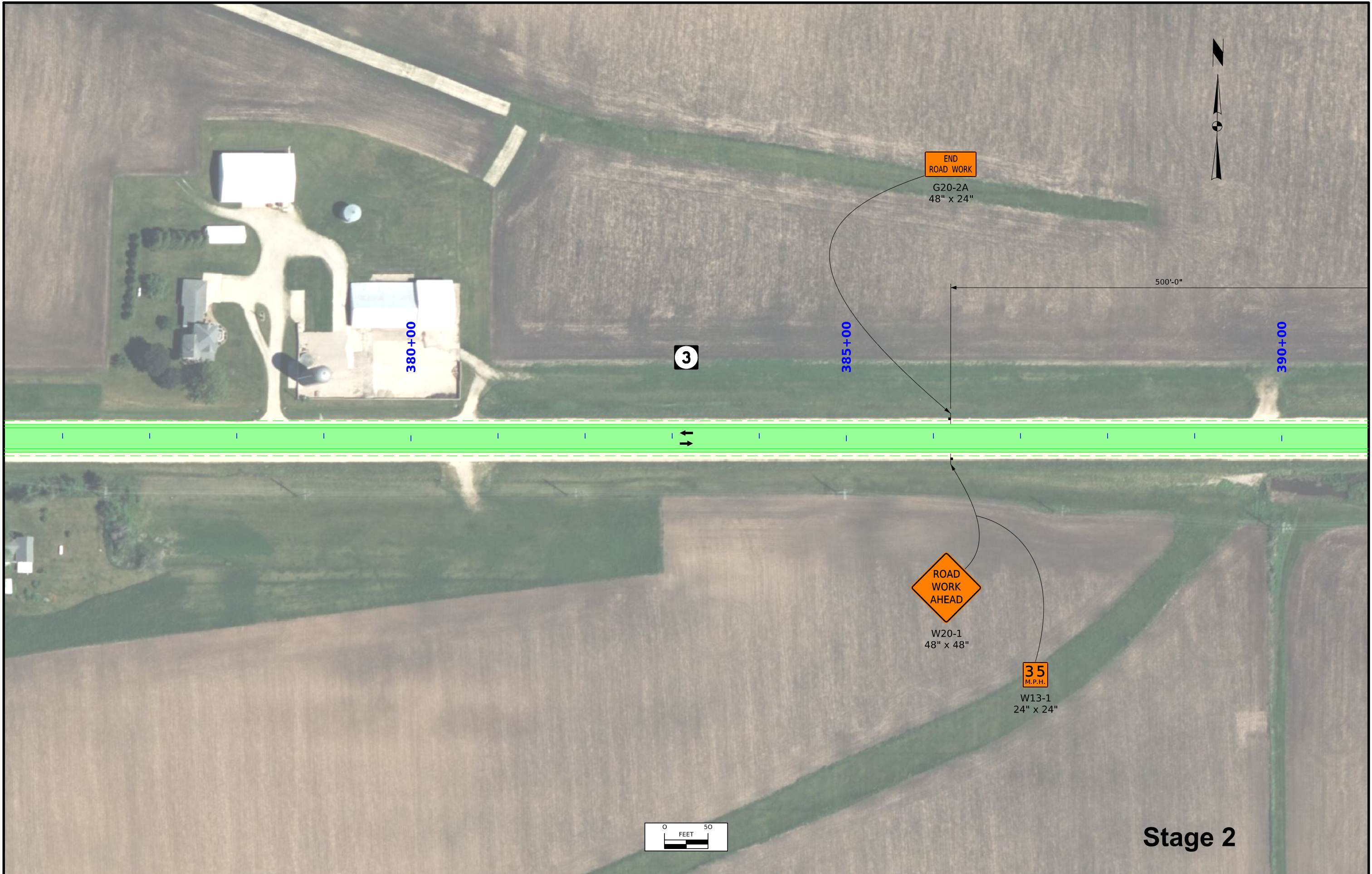




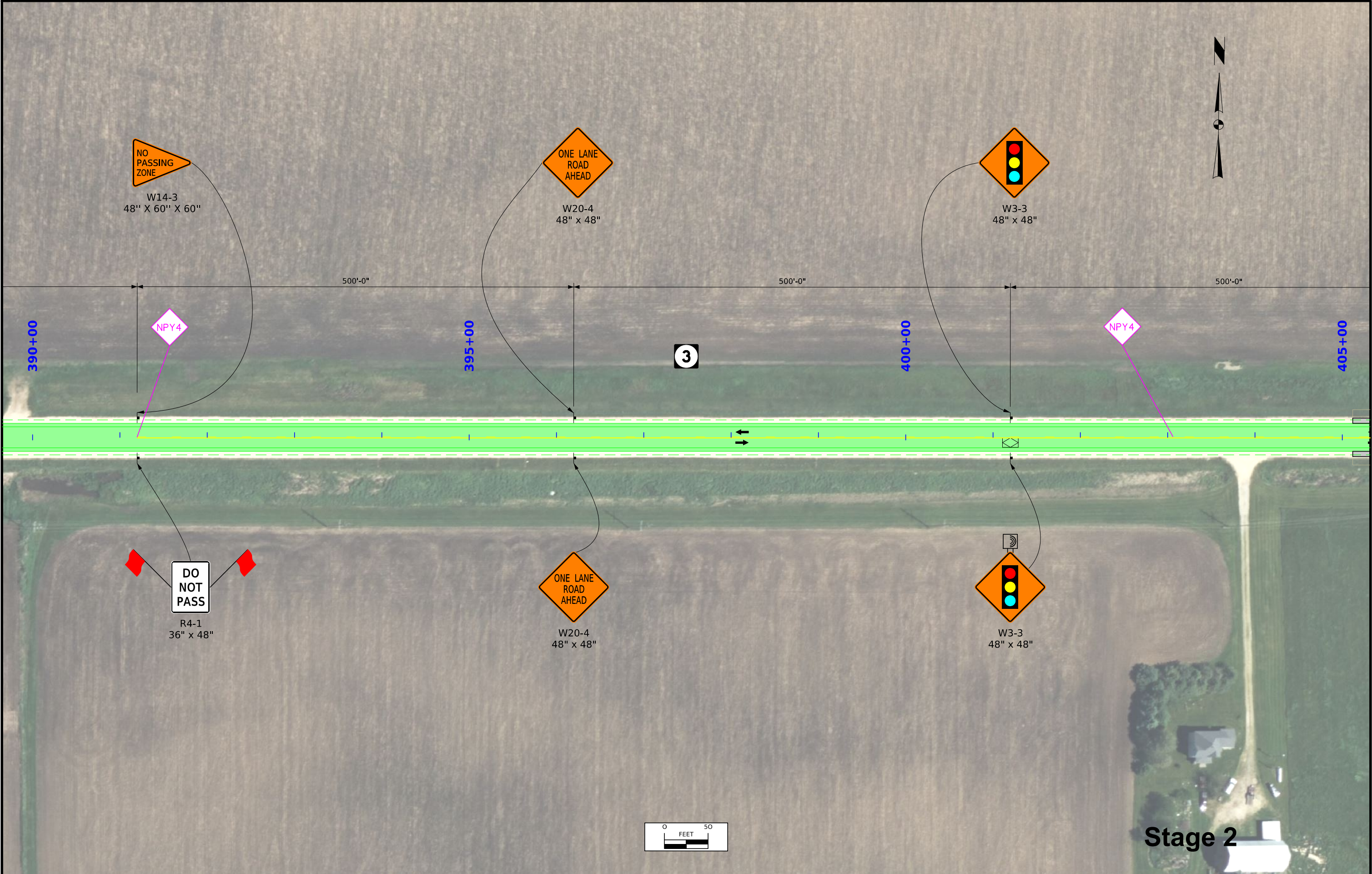
Stage 1



2-J.6

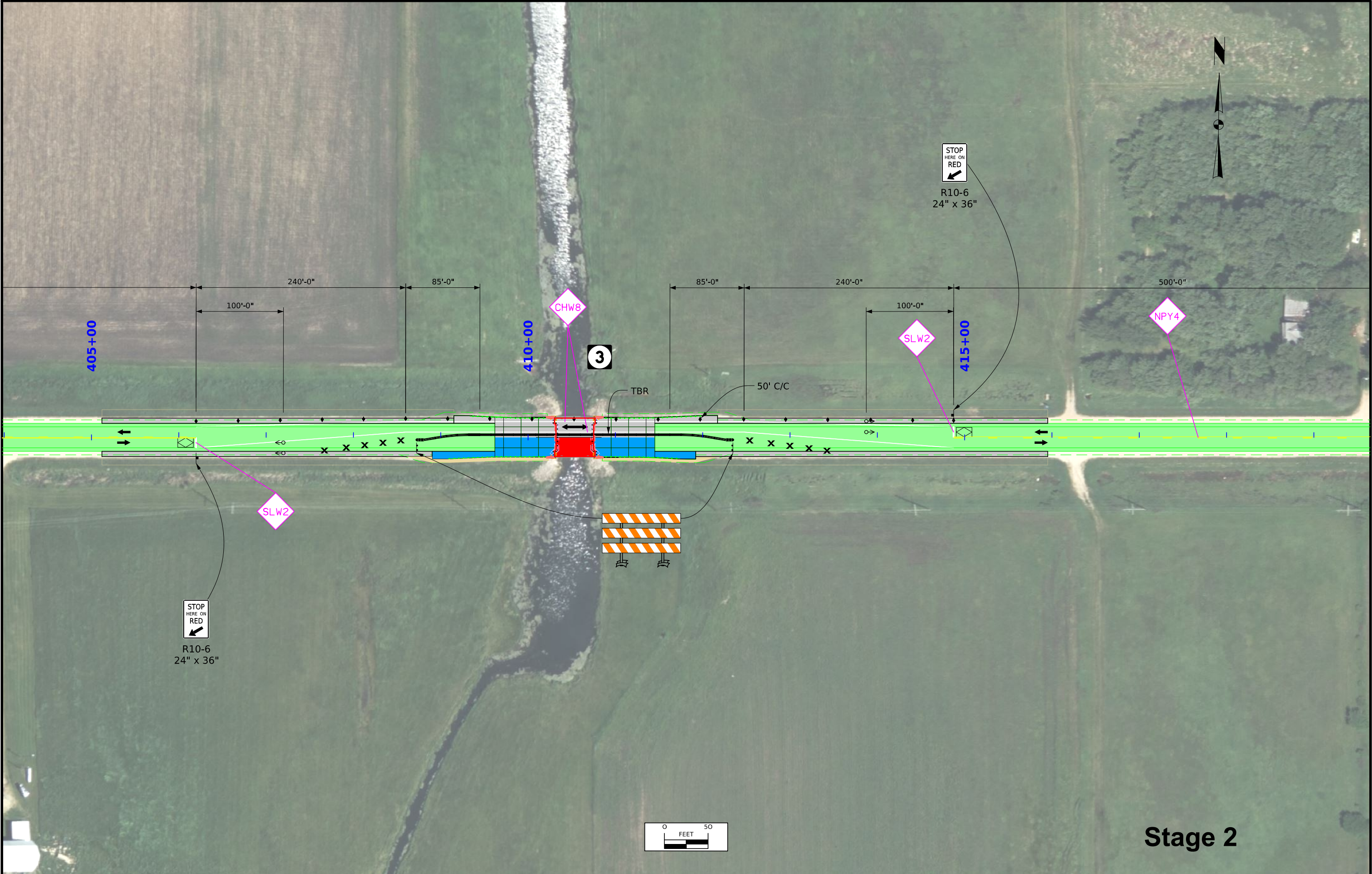


2-J.7

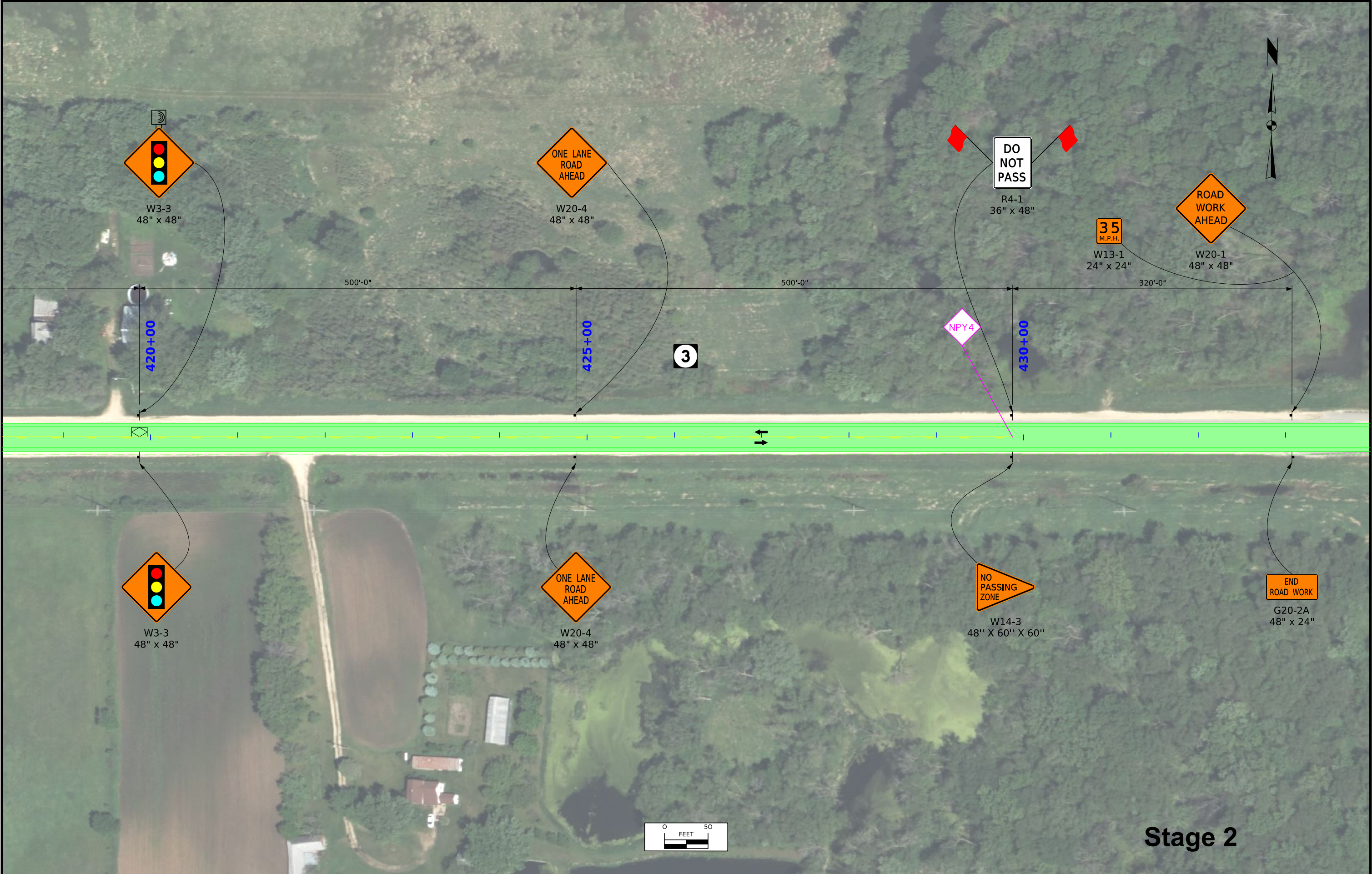


Stage 2

2-J.8



2-J.9



TRAFFIC CONTROL PLAN		108_23A 8/15/22
Maintain traffic on IA 3 at all times in accordance Standard Road Plans listed in Tab. 105-4 on Sheet C.4. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.		
Refer to Tab. 108-26A for Staging Notes.		

511 TRAVEL RESTRICTIONS													108 25 3/28/24
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	IA 3	Both	Bremer	0.87 mi E of Sable Ave & 230th St.	Drainage Ditch	Traffic Control Device	FHWA No. 015620	Horizontal	44'-0"	18'-0"	N/A	44'-0"	Stage 1
2.0	IA 3	Both	Bremer	0.87 mi E of Sable Ave & 230th St.	Drainage Ditch	Traffic Control Device	FHWA No. 015620	Horizontal	44'-0"	18'-0"	N/A	44'-0"	Stage 2

STAGING NOTES

Prior to Stage 1
SHOULDER STRENGTHENING:
Traffic Control:
Shift Eastbound or Westbound traffic to one lane using TC-213. Shift opposite direction of traffic to one lane after one side of shoulder strengthening is completed.

Construction:
Construct HMA /PCC shoulders to be used for shifting traffic during Stage 1. Refer to Detail PS-1 on Sheet B.1 and D Sheets for details. Eastbound shoulder strengthening must be completed before Stage 1. Westbound shoulder strengthening must be complete before Stage 2.

Stage 1
Traffic:
Maintain two-way traffic in the Eastbound lane using temporary traffic signals and temporary barrier rail. See J Sheets and Standard Road Plan TC-217 for details.
Existing private and field entrances within the traffic control limits to remain open during construction.

Construction:
Construct bridge deck overlay on the north half of the bridge.
Remove and replace 70' of approach pavement on each end of the bridge on the north side.
Remove and replace guardrail on the north side of the bridge and pave shoulders at guardrail.
Complete other Stage 1 construction.

Stage 2
Traffic:
Maintain two-way traffic in the Westbound lane using temporary traffic signals and temporary barrier rail. See J Sheets and Standard Road Plan TC-217 for details.
Existing private and field entrances within the traffic control limits to remain open during construction.

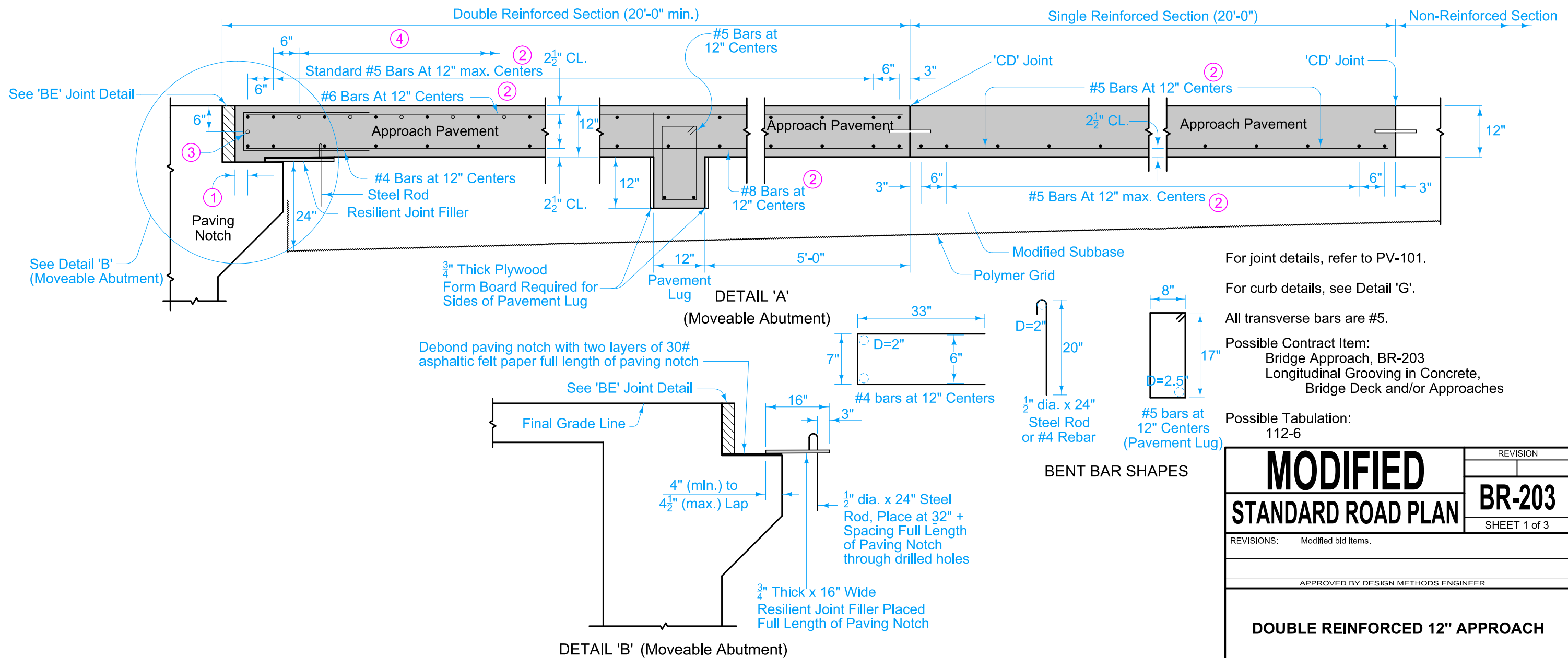
Construction:
Construct bridge deck overlay on the south half of the bridge.
Remove and replace 70' of approach pavement on each end of the bridge on the south side.
Remove and replace guardrail on the south side of the bridge and pave shoulders at guardrail.
Complete other Stage 2 construction.

Final
Traffic:
Open both lanes to traffic.
Complete pavement marking operations in accordance with Standard Road Plan TC-233.

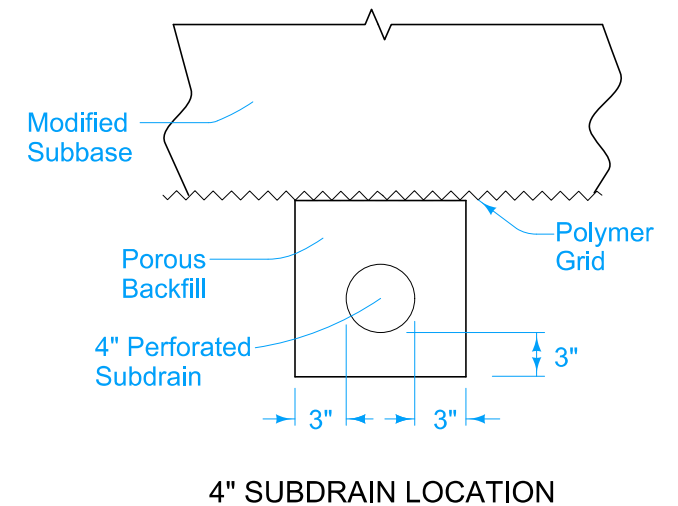
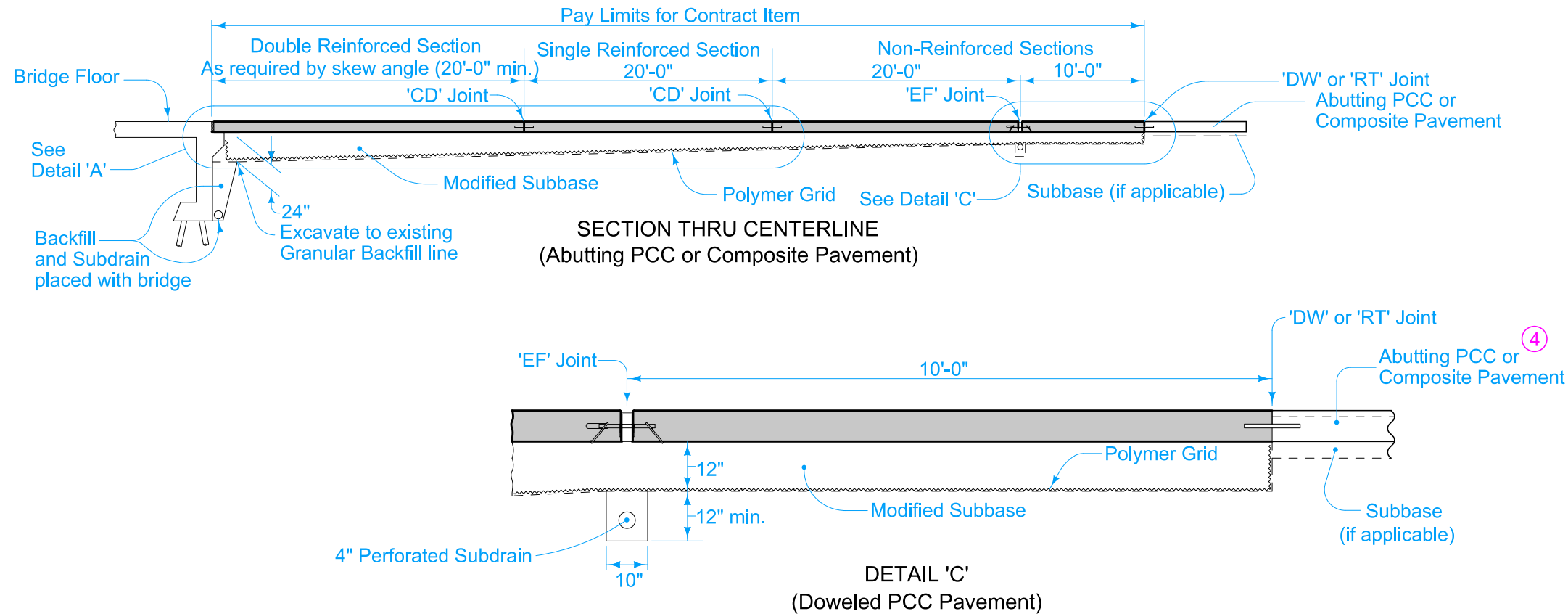
Construction: Complete final pavement markings.

111_01 10/14/22 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
N/A	N/A

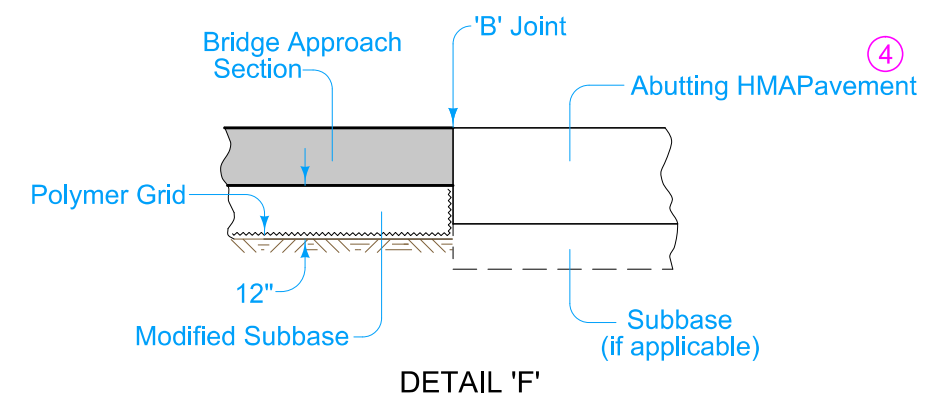
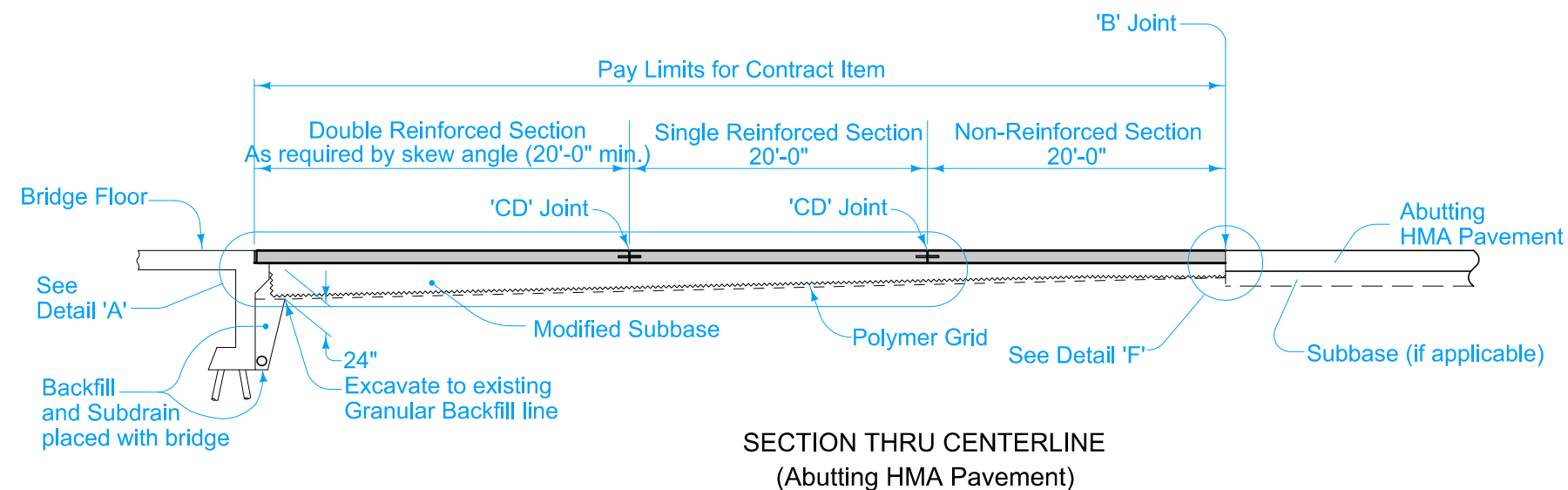
- ① 2" min. to 2 1/2" max. clear to bent bar.
- ② Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"
- ③ If bridge is skewed, place additional #5 bar parallel to skewed face.
- ④ Additional #5 Bars At 12" Centers Btwn. Standard #5 Bars for 10'-0"



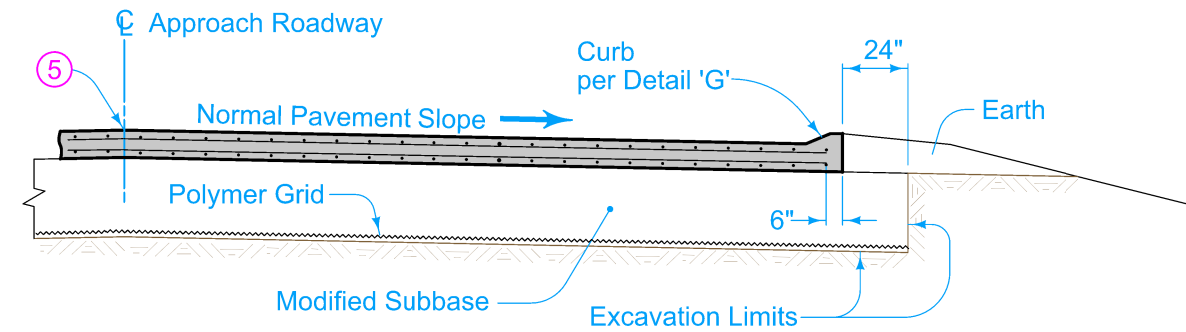
MODIFIED STANDARD ROAD PLAN		REVISION
		BR-203
		SHEET 1 of 3
REVISIONS: Modified bid items.		
APPROVED BY DESIGN METHODS ENGINEER		
DOUBLE REINFORCED 12" APPROACH		



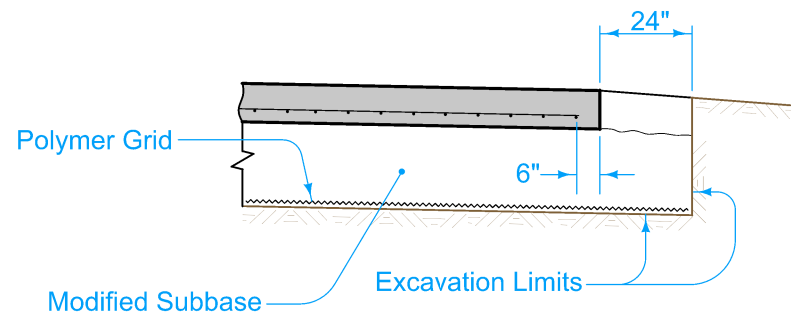
④ If abutting pavement (PCC or HMA) is not in place, refer to BR-213.



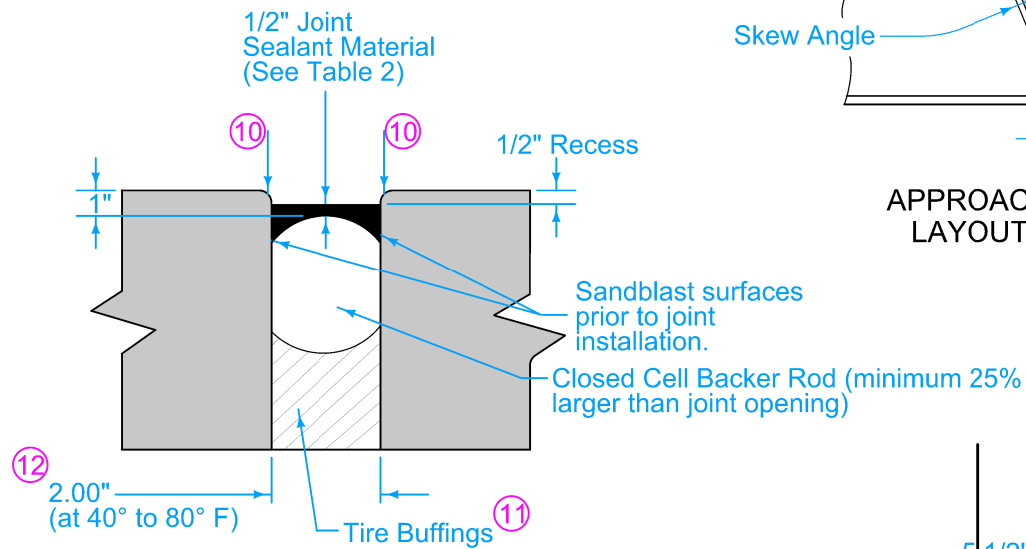
MODIFIED STANDARD ROAD PLAN		REVISION
		BR-203
REVISIONS: Modified bid items.		SHEET 2 of 3
APPROVED BY DESIGN METHODS ENGINEER		
DOUBLE REINFORCED 12" APPROACH		



SECTION A-A

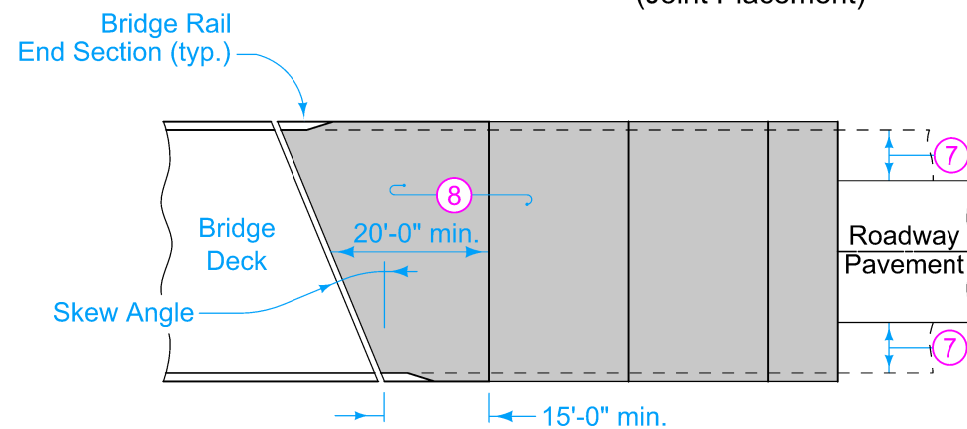


SECTION B-B

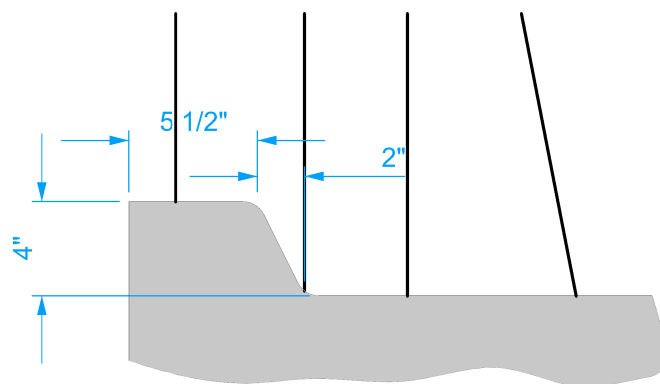


'BE' JOINT DETAIL

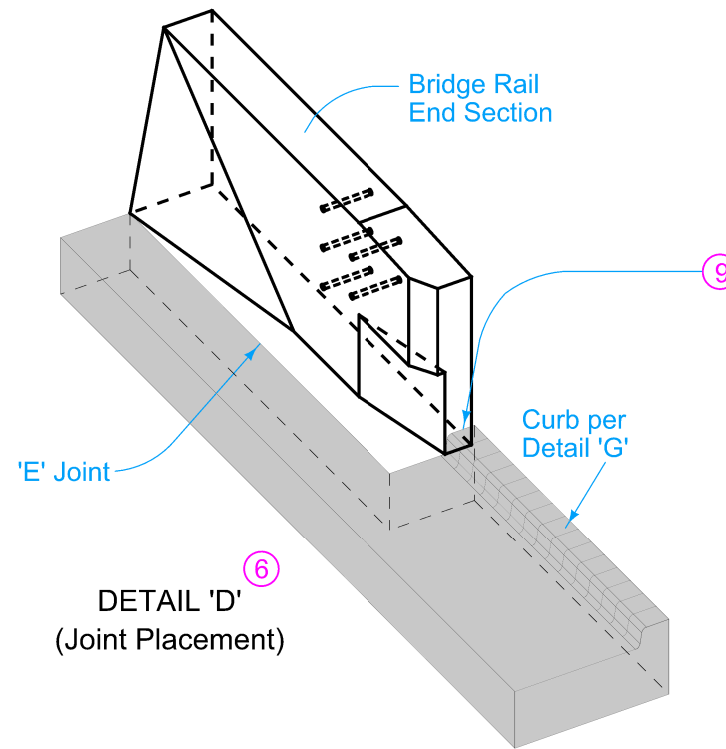
Table 2
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



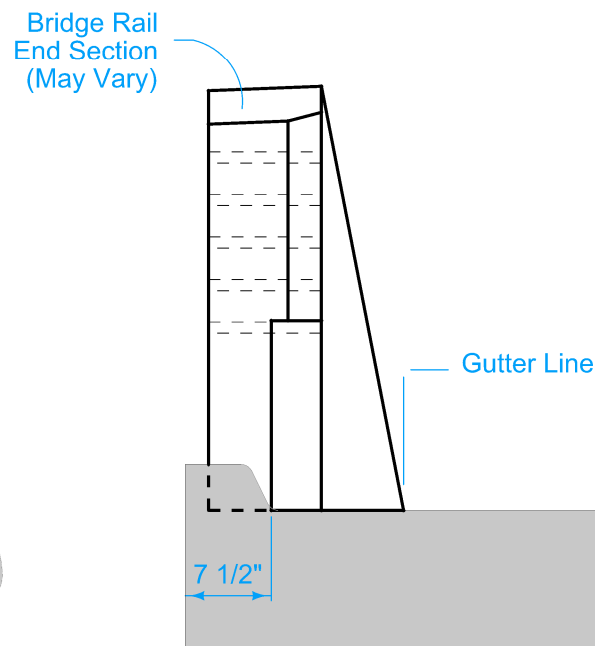
APPROACH PAVEMENT LAYOUT AT A SKEW



DETAIL 'G'



DETAIL 'D'
(Joint Placement)



DETAIL 'E'

- ⑤ Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'BT-2' Joint.
- ⑥ Refer to BR-211, BR-212, or BR-231.
- ⑦ Design shoulder width.
- ⑧ Reinforced bridge approach section.
- ⑨ Joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement 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.
 - Fixed Abutment Bridges: Type 'E' Joint.
 - Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.
- ⑩ Edge with 1/4 inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.
- ⑪ Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than 1/2 inch.
- ⑫ Setting Width Notes:
 - Width is perpendicular to abutment.
 - Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Fahrenheit when placing approach slab concrete.
 - This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

MODIFIED STANDARD ROAD PLAN		REVISION
		BR-203
		SHEET 3 of 3
REVISIONS: Modified bid items.		
APPROVED BY DESIGN METHODS ENGINEER		
DOUBLE REINFORCED 12" APPROACH		