LETTING DATE
Feb 20, 2024

Bridge Repair

BRFN-150-4(63)--39-33

Fayette COUNTY

Index of Sheets	
No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design 125
V.2 - V.9	Design 125
Road Sheets	Road Plan
B.1-RR.1	Road Plans
C.1	Estimated Quantities - Road

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

Fayette COUNTY

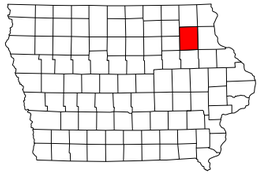
Bridge Repair

IA 150
over Volga River
0.2 miles north of Junction IA 93

Refer to the Plan Sheets for list of applicable specifications.

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

	TOTAL
	22
PROJECT IDENTIFICATION NUMBER	
20-33-150-020	
CONTRACT ID NUMBER	
33-1504-063	
PROJECT NUMBER	
BRFN-150-4(63)--39-33	
R.O.W. PROJECT NUMBER	
--	
PROJECT DIRECTORY NUMBER	
3315002020	



Standard Road Plans

Standard Road Plans are listed on Sheet No. C.1

Design Data Urban

2020 AADT	2760 V.P.D.
TRUCKS	16 %
Total Design ESALs	1,200,000

Index Of Seals

Sheet No.	Name	Type
A.1	Kevin M. Placzek	Structural Design
B.1	Jeff Tardy	Roadway Design

Structural Design

LICENSED PROFESSIONAL ENGINEER
Kevin M. Placzek
19175
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.

Kevin M. Placzek — 11/13/2023
Signature — Date

Kevin M. Placzek
Printed or Typed Name

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: Sheets A.1, A.2, V.1 thru V.9

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER A.1	

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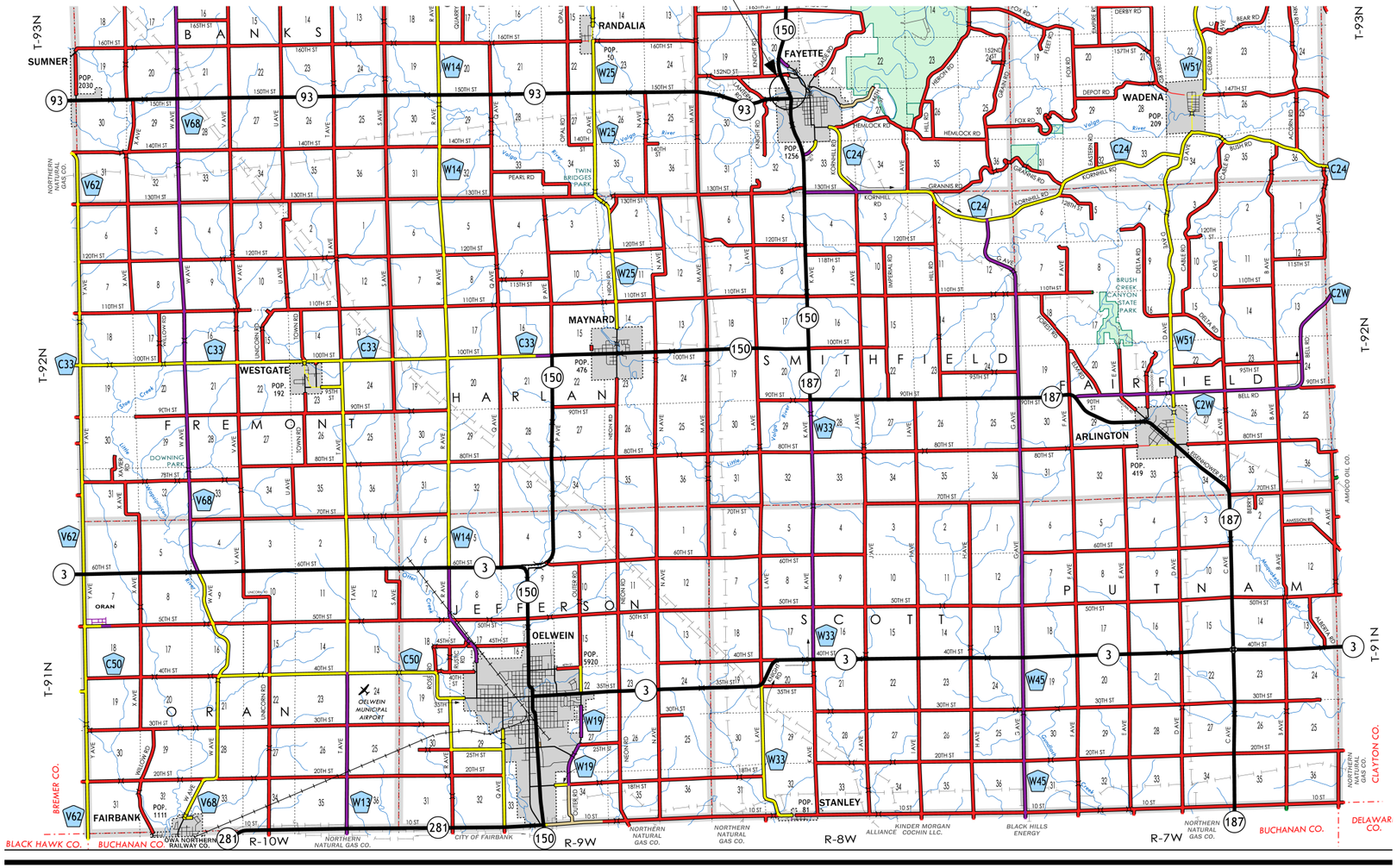
Design No. 125
FHWA No. 24760



N

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

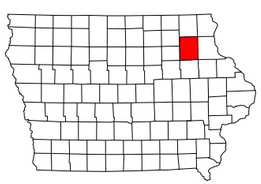
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

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

- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

Fayette County Location Map

Not To Scale



FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER A.2

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General Notes:

This design is for repair to the existing 350'-0" x 30' Welded Girder Bridge on IA 150 over Volga River in Fayette County.

Electronic copies of original design 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 design plans (original Design No. 359).

See design sheet 4 for list of repair items.

Faint lines on plans indicate the existing structure.

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

Utility Companies and Municipalities whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Contractor of the construction starting date.

Keyway dimensions shown on these 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.

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

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

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

No preliminary deck survey is shown, The plan quantity for "Class A Bridge Deck Repair" is estimated as 20% of the total deck area. The actual quantity is determined by the engineer after the overlay has been removed. Actual spalled and hollow areas as determined by the Engineer shall be repaired.

Present deck thickness is about 9 inches, including existing overlay. The contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

The bridge deck is covered with a $1\frac{1}{2}$ inch thick portland cement concrete overlay. The contractor shall note the redefining of the classification line (boundary between repair and overlay) for this project due to the existing $1\frac{1}{2}$ inch overlay. The classification line will be defined as 2 inches below the top of existing overlay. This will necessitate the removal of the existing bridge deck overlay before placing the proposed new bridge deck overlay.

The bridge deck may have been epoxy-injected. The contractor shall remove all exposed epoxy. Removal of epoxy is incidental to "Removal of Existing P.C.C. Overlay" and "Deck Repair, Class A" as appropriate.

All costs associated with the removal of the existing overlay shall be included in the bid item "Removal of Existing P.C.C. Overlay". Removal of existing overlay shall be computed in square yards from the measurement of areas removed. The contractor will be paid the contract price per square yard for furnishing all equipment and labor necessary to remove the concrete to within $\frac{1}{4}$ inch above the classification line. All costs, including furnishing equipment and labor, associated with removal of the next $\frac{1}{4}$ inch of concrete (to the classification line) shall be included in the bid item "Deck Overlay".

Upon completion of the removal of concrete down to the classification line, the Engineer shall determine the areas of bridge deck to be repaired as "Deck Repair, Class A". Actual hollow areas, as determined by the Engineer, shall be repaired.

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 $\frac{1}{2}$" more than shown on the plans. Profile may be adjusted to the extent possible within these limits.

The top and interior faces of the existing concrete railing, curb and end sections 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 included in the unit price bid item "Deck Overlay".

In addition to the requirements of Article 2413.03, G, of the Standard Specifications, both exposed abutment bridge seats and wash surfaces shall have an application of concrete sealer in accordance with Article 2403.03, P, 3, of the Standard Specifications.

The Bridge Contractor Shall dress up the slopes around the wings which are disturbed during construction. This work shall be considered incidental an no extra payment will be made.

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

Construction Stages I & II as detailed on these plans may be reversed at the contractor's option subject to the Engineer's approval.

Ready mix trucks are not allowed on the bridge during construction.

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.

The Contractor shall provide temporary shoring (sheet pile or other) to prevent the earth under the traffic lane, from sloughing in during construction. All cost of shoring, will be considered incidental to construction and no direct payment will be made. All material used for shoring shall remain the property of the Contractor. Shoring is to be removed only after backfilling has been completed. The Contractor shall submit shoring plans for review. In addition to the requirements noted above, Article 1107.07 of the Standard Specifications, still applies.

Estimate Project Quantities and Reference Notes - Design #125

Item No.	Item Code	Item	Unit	Quantities Estimated Design No. 125	As-built Quantities Design No. 125	Estimate Reference Notes
1	2413-0698074	Deck Repair, Class A	SY	231		Method of measurement and basis of payment are included in the general notes.
2	2413-1200100	Neoprene Gland Installation and Testing	LF	65		Includes cost of material and installation of neoprene gland and water testing of joint.
3	2499-0800000	Paving Notch Replacement	LF	65		Includes 4.2 CY Structural Concrete, Class C, 957 lbs. epoxy-coated reinforcing steel, mechanical splicers, excavation, removing and disposing of the existing paving notch and concrete removed from shear keyways, drilling holes for the dowel bars, and polymer grout material.
4	2507-3250005	Engineering Fabric	SY	1040		Engineering fabric shall be material as specified for embankment erosion control, Article 4196.01C.
5	2507-6800061	Revetment, Class E	TON	1261		Estimated at 1.6 Ton/CY. Includes all work in preparation of grade for placement of revetment including excavation to the limtis shown on the drawings and backfill utilizing the excavated material. The bounding limits of Article 2402.12(A) are not applicable. Broken Concrete and granite is not allowed.
6	2510-6745640	Removal of Existing P.C. Overlay	SY	1157		Method of measurement and basis of payment are included in the general notes.
7	2533-4980005	Mobilization	LS	1		----
		Alternate AA Option 1				
8A	2413-0698066	Deck Overlay (Class O PCC)	SY	1157		Includes cleaning and sealing existing concrete barrier railing, curbs, end sections, abutment backwall and abutment seats furnishing and placing concrete sealer.
		Alternate AA Option 2				
8B	2599-9999005	Trial Batch and Test Placement	EACH	1		Refer to the Special Provisions for Fiber Reinforced HPC-O Concrete Bridge Deck Overlay for additional information.
8C	2599-9999018	Deck Overlay (Fiber-Reinforced Class HPC-0 PCC)	SY	1157		Refer to the Special Provisions for Fiber Reinforced HPC-O Concrete Bridge Deck Overlay for additional information. Includes cleaning and sealing existing concrete barrier railing, curbs, end sections, abutment backwall and abutment seats furnishing and placing concrete sealer.

Specifications:

Design:

AASHTO LRFD 8th Edition, 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 Fiber Reinforced HPC-O Concrete Bridge Deck Overlay

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.

Roadway Quantities shown elsewhere in these plans.

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

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

Estimated Quantities & General Notes

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 1 of 9 FHWA No. 24760

Design History at this Site

(Includes this Design)

Des. No.	Type of Work
359	Original Design
178	Overlay
299	Rail Retrofit
118	Joint Repair
125	Re-Overlay

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	Temporary Shoring	033_Fayette_Design125_TempShoring.pdf	Yes

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

General Notes

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 2 of 9 FHWA No. 24760

Watertight Integrity Testing and Repair Notes:

After installation of each neoprene gland, the contractor shall perform watertight integrity tests at the deck level to detect any leakage. The tests are to check for leakage at the upturned ends of the expansion device and for leakage along the expansion device across the deck and any medians or sidewalks. The contractor may conduct a single test of the entire device including upturned ends or may conduct separate tests of upturned ends and one or more tests of overlapping lengths between the upturned ends.

At each upturned end of the expansion device, the contractor shall block out on the deck at least 3 feet of the expansion device leading to the upturned end and flood the area. A minimum water depth of 3" shall be maintained at the gutterline for at least 30 minutes. During the test, the inspector shall observe for any overflow at the upturned end. At the conclusion of the test the inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if the inspector observes no overflow during the test and if no dripping water or water droplets are visible in the underdeck areas near the upturned end.

The contractor shall test the expansion device between upturned ends by blocking out and covering the device with ponded or flowing water to a depth of at least 1" at all points, for at least 30 minutes. Vertical curb surfaces may be tested with an unnozzled hose delivering approximately one gallon per minute directed to flow over the entire curb height for 30 minutes. At the conclusion of the test, the inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if no dripping water or water droplets are visible in the underdeck areas along the full length of the expansion joint. Damp concrete that does not show dripping water or water droplets is not considered a sign of leakage.

If the expansion device leaks at an upturned end or along its length, the contractor shall locate the leak(s) and take repair measures to stop the leakage. The repair measures shall be as recommended by the manufacturer and approved by the engineer prior to beginning corrective work.

If measures to eliminate leakage are taken, the contractor shall perform subsequent watertight integrity tests subject to the same conditions as the original test.

Neoprene Gland Notes:

The neoprene gland is to be placed as one continuous piece from end to end of the steel extrusion.

The neoprene gland shall conform to ASTM-2628 modified to exclude recover test and compression set.

The contractor shall install the gland above the minimum temperature of 45° and the minimum joint opening and corresponding maximum deck temperature shown in these plans. The deck temperature shall be measured by recording the surface temperatures on the underside of the deck adjacent to the joints. If the deck temperature does not fall within the specified temperature range before the contractor has completed all other required work, it will be necessary for the contractor to return to the project site to complete installation and testing of the neoprene gland. If the contractor is required to return to the project site after all other required work has been completed, the contractor shall complete installation and testing of neoprene gland at no extra charge to the state.

The number of feet of neoprene gland installed shall be paid for at the contract price per foot based on plan quantities. The price for "neoprene gland installation and testing" shall be full compensation for installing and testing of the new neoprene gland. This work will consist of cleaning the extrusion, installation of the neoprene gland and water tight testing of the expansion joint system. All work and materials necessary for the installation of the neoprene gland shall comply with the recommendations of the expansion joint manufacturer. The price bid for "Neoprene Gland Installation and Testing" shall include all watertight integrity testing, leak repairs as directed by the engineer, and subsequent watertight testing until a leak free installation is achieved.

Table of Approved Expansion Devices

Manufacturer	Type of Steel Extrusion	Neoprene Gland	Minimum Opening for Gland Installation	Corresponding Maximum Deck Temperature
Watson-Bowman & Acme Corp.	A	SE-300	1½"	90° F.
		SE-400	1½"	90° F.
		SE-500	2"	90° F.
D.S. Brown Co.	SSA2	A2R-400	2"	90° F.

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

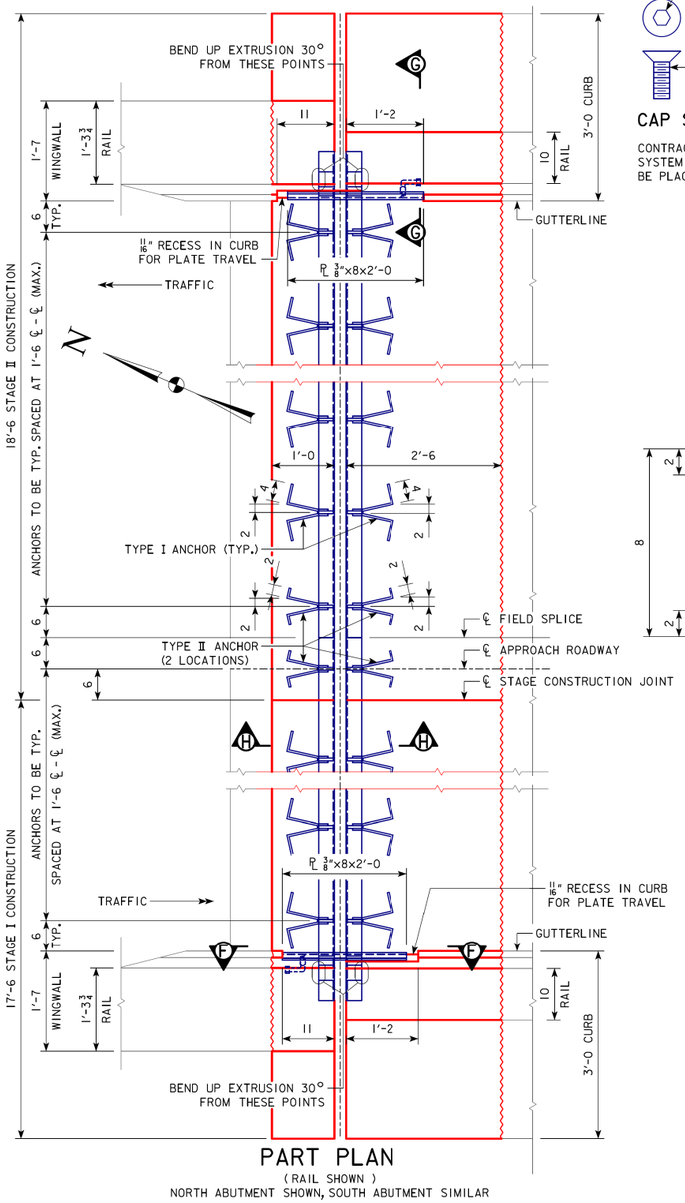
Expansion Device Details

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

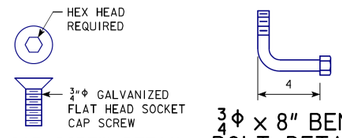
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 3 of 9 FHWA No. 24760



PART PLAN

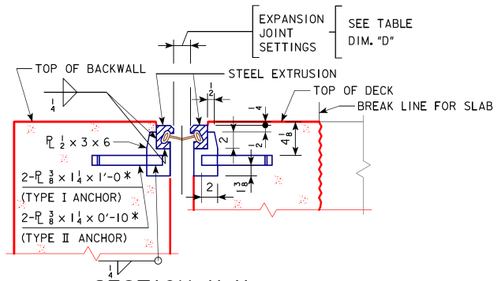
(RAIL SHOWN)
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR



CAP SCREW DETAIL

¾Φ x 8" BENT BOLT DETAIL

CONTRACTOR TO NOTE THAT THE CAP SCREW ANCHORAGE SYSTEM FOR THE ⅜" CURB PLATES ARE ALWAYS TO BE PLACED ON THE ONCOMING TRAFFIC SIDE.



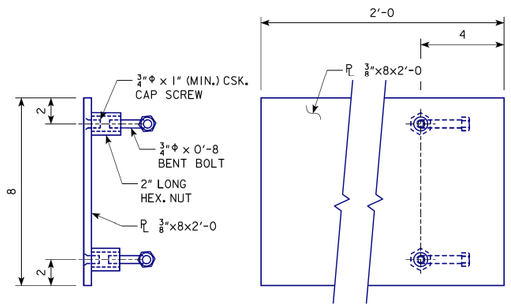
SECTION H-H

* DIMENSION IS TOTAL LENGTH OF ANCHOR PLATE INCLUDING BENT END.

TABLE OF EXPANSION JOINT SETTINGS

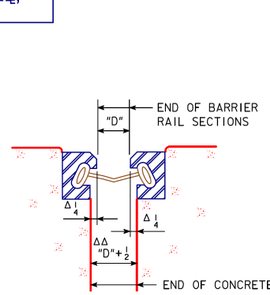
NEOPRENE GLAND	JOINT OPENING "D" AT TEMP. OF		
	90°F	50°F	10°F
SE-300	1½"	1 13/16"	2 3/16"
SE-400	1½"	1 13/16"	2 3/16"
SE-500	2"	2 5/16"	2 11/16"
A2R-400	2"	2 5/16"	2 11/16"

NOTE: JOINT SETTINGS FOR OTHER TEMPERATURES ARE PROPORTIONAL. TEMPERATURES SHOWN ARE CONCRETE DECK TEMPERATURES ON THE UNDERSIDE OR SHADED PORTION OF THE DECK.



CURB COVER PLATE DETAIL

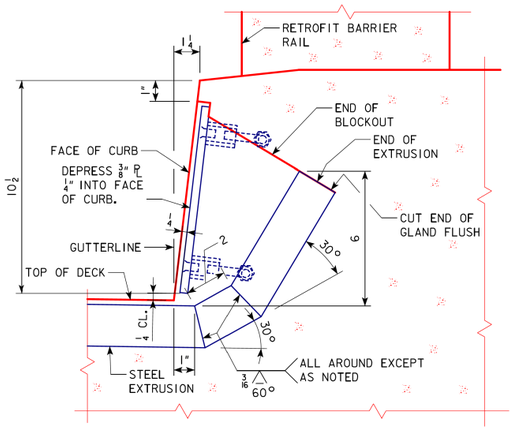
THE MATERIAL USED FOR THE BARRIER PLATES IS TO BE ASTM A36 STEEL. THE BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A307. THE PLATES, BOLTS, NUTS AND CAP SCREWS ARE TO BE GALVANIZED IN ACCORDANCE WITH ARTICLE 4100.07 OF THE STANDARD SPECIFICATIONS.



EXPANSION OPENING DETAIL

Δ THIS DIMENSION MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER FURNISHING THE JOINT.

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



SECTION G-G

NOTE:
SEE DESIGN SHEET NO. 9 FOR EXPANSION DEVICE NOTES CONTAINING THE STEEL EXTRUSION NOTES, NEOPRENE GLAND NOTES, AND WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES.

SEE DESIGN SHEET NO. 9 FOR DETAILS OF SECTION F-F.

TABLE OF APPROVED EXPANSION DEVICES

MANUFACTURER	TYPE OF STEEL EXTRUSION	NEOPRENE GLAND	MINIMUM OPENING FOR GLAND INSTALLATION	CORRESPONDING MAXIMUM DECK TEMPERATURE
WATSON-BOWMAN & ACME CORP.	A	SE-300	1½"	90° F
		SE-400	1½"	90° F
		SE-500	2"	90° F
D.S. BROWN CO.	SSA2	A2R-400	2"	90° F

DESIGN FOR REPAIRS TO 0° SKEW

350'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE

106'-6 END SPANS — 137'-0 INTERIOR SPAN

EXPANSION DEVICE DETAILS

STA. 850+83.00 — OCTOBER, 2018

FAYETTE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 8 OF 10 FILE NO. 31415 DESIGN NO. 0118

DESIGN TEAM MJE / AMA / DRE | FAYETTE COUNTY | PROJECT NUMBER MB-150-2(500)73--77-33 | SHEET NUMBER 9

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This sheet from original design plans is included for information only.

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans — 136'-10 3/4" Interior Span

Expansion Device Details

STA. 850+83.00 (IA 150) — Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 — Design Sheet No. 4 of 9 — FHWA No. 24760

FILE NO. 32103 | ENGLISH | DESIGN TEAM Benesch | Fayette COUNTY | PROJECT NUMBER BRFN-150-4(63)--39-33 | SHEET NUMBER V.4

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STEEL EXTRUSION NOTES:

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

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

THE EXPANSION DEVICE IS TO BE PARALLEL TO GRADE.

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

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

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

THE NUMBER OF FEET OF STEEL EXTRUSION INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL INCLUDE THE COST OF FURNISHING BUT NOT THE COST OF INSTALLING THE NEOPRENE GLAND. THE CONTRACT PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING STEEL EXTRUSIONS. THIS WORK WILL CONSIST OF FURNISHING ALL REQUIRED MATERIALS, (INCLUDING THE $\frac{3}{8}$" PLATES AT THE CURBS AND THEIR ANCHORAGE SYSTEMS), AND THE INSTALLATION AND ADJUSTMENT OF THE EXPANSION JOINTS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE FURNISHING AND INSTALLATION OF ALL NECESSARY HARDWARE AND ACCESSORIES AS SUPPLIED BY THE EXPANSION JOINT MANUFACTURER ARE TO BE INCLUDED IN THIS WORK, INCLUDING THE ANCHORAGE SYSTEM AND ANY TEMPORARY ERECTION MATERIAL. ALL WORK AND MATERIALS FOR THE INSTALLATION OF THE EXPANSION JOINTS ARE TO COMPLY WITH THE WRITTEN RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER.

NEOPRENE GLAND NOTES:

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

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

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

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

FIELD CONSTRUCTION NOTES:

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

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

WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES:

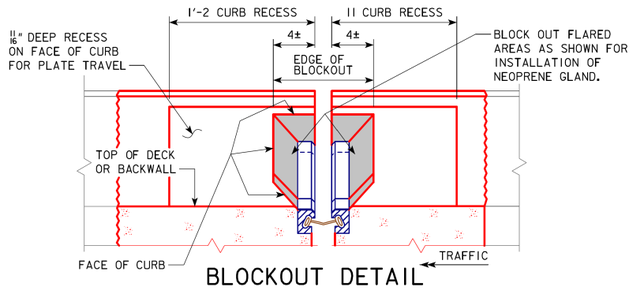
AFTER INSTALLATION OF EACH NEOPRENE GLAND, THE CONTRACTOR SHALL PERFORM WATERTIGHT INTEGRITY TESTS AT THE DECK LEVEL TO DETECT ANY LEAKAGE. THE TESTS ARE TO CHECK FOR LEAKAGE AT THE UPTURNED ENDS OF THE EXPANSION DEVICE AND FOR LEAKAGE ALONG THE EXPANSION DEVICE ACROSS THE DECK AND ANY MEDIANS OR SIDEWALKS.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

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

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

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

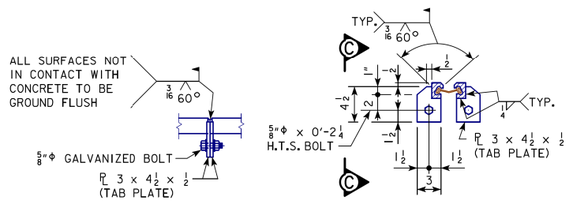
IF MEASURES TO ELIMINATE LEAKAGE ARE TAKEN, THE CONTRACTOR SHALL PERFORM SUBSEQUENT WATERTIGHT INTEGRITY TESTS SUBJECT TO THE SAME CONDITIONS AS THE ORIGINAL TEST.



BLOCKOUT DETAIL

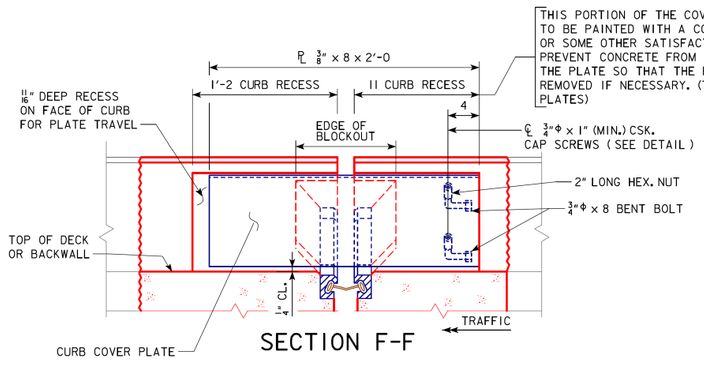
(NOT SHOWING CURB COVER PLATE)

CONTRACTOR TO NOTE THAT THE CAP SCREW ANCHORAGE SYSTEM FOR THE $\frac{3}{8}$" BARRIER PLATES ARE ALWAYS TO BE PLACED ON THE ONCOMING TRAFFIC SIDE.



VIEW C-C SECTION THRU EXTRUSION

FIELD SPLICE DETAIL



THIS PORTION OF THE COVER PLATE IS TO BE PAINTED WITH A COLORLESS OIL, OR SOME OTHER SATISFACTORY MEANS TO PREVENT CONCRETE FROM ADHERING TO THE PLATE SO THAT THE PLATE CAN BE REMOVED IF NECESSARY. (TYP. ALL CURB PLATES)

℄ $\frac{3}{4}$"Φ × 1" (MIN.) CSK. CAP SCREWS (SEE DETAIL)

2" LONG HEX. NUT

$\frac{3}{4}$"Φ × 8 BENT BOLT

SECTION F-F

NOTE: IT IS INTENDED THAT THE RECESSED AREA BE FORMED SO THAT WHEN THE COVER PLATE IS INSTALLED THE PLATE WILL BE ABLE TO MOVE FREELY IN THE RECESSED AREA.

SEE DESIGN SHEET NO. 8 FOR LOCATION OF SECTION F-F.

DESIGN FOR REPAIRS TO 0° SKEW

350'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE

106'-6 END SPANS 137'-0 INTERIOR SPAN

EXPANSION DEVICE DETAILS

STA. 850+83.00 OCTOBER, 2018

FAYETTE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 9 OF 10 FILE NO. 31415 DESIGN NO. 0118

DESIGN TEAM MJE / AMA / DRE	MODIFIED STANDARD SHEET 1026s2	FAYETTE COUNTY	PROJECT NUMBER MB-150-2(500)73--77-33	SHEET NUMBER 10

9/27/2018 9:37:31 AM mericks pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\33150020\16\BRFinal\33150500.brq 330118S009 11x17_pdf.pltcfg

Note:

Remove existing neoprene gland and replace with approved equal neoprene gland.

$\frac{3}{8}$" steel plates fastened to barriers to be removed and reinstalled to facilitate replacement of glands. Repaint $\frac{3}{8}$" plate with colorless oil as shown in Section F-F before reinstalling plate. Work to be included in "Neoprene gland installation and testing".

This sheet from original design plans is included for information only.

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

Expansion Device Details

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 5 of 9 FHWA No. 24760

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER V.5

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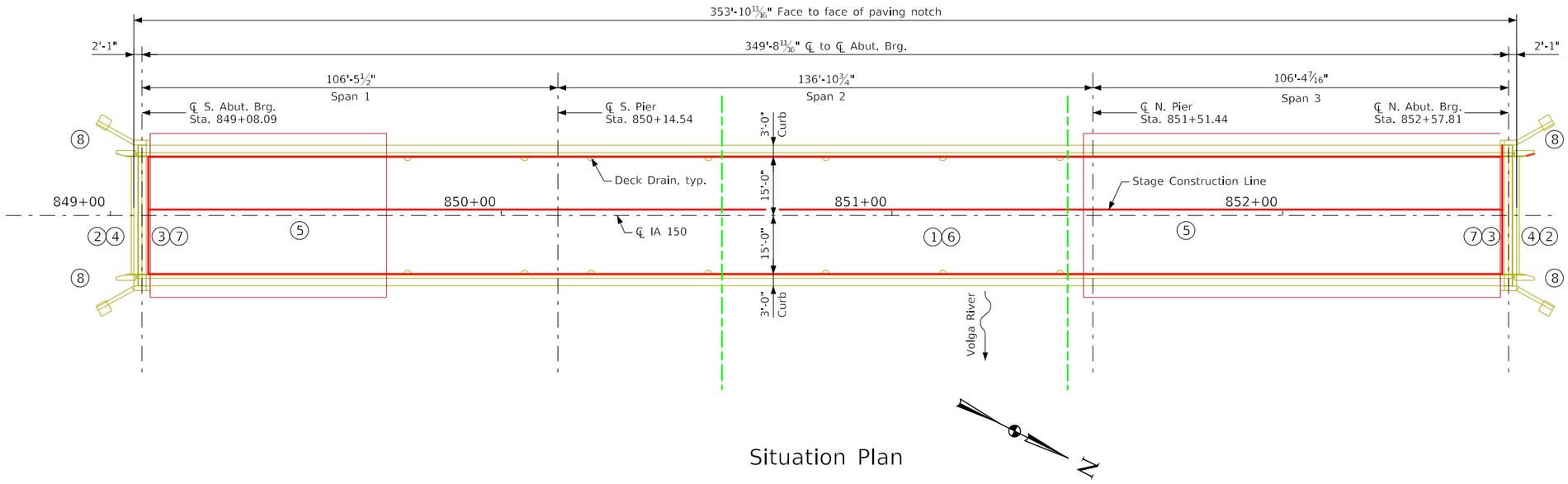
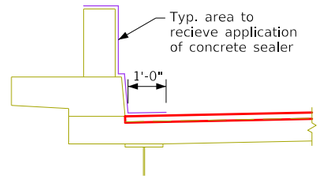


Situation Plan



Detail of Concrete Sealer Area

Repairs shall consist of:

1. Remove existing overlay, complete Class A repairs, and overlay the bridge with PCC.
2. Remove existing approaches and replace with 70' standard bridge approaches.
3. Remove and replace the joint seal at both abutments.
4. Replace existing paving notch with 1'-3" constant depth notch.
5. Add engineering fabric and revetment to the slopewall to mitigate erosion.
6. Seal existing barrier rails and barrier end sections continuously from the outside top edge of the rail to a line on the roadway surface one foot from the curb.
7. Clean and seal bridge seat and backwall.
8. Remove and reinstall the guardrail at the correct height to address the deck overly grade raise.

Location

IA 150 over Volga River
Section 29
T-93N & R-8W
Westfield Township
City of Fayette
Fayette County
Maintenance No 3373.2S150
FHWA No. 24760
Latitude 42.846467°
Longitude -91.810469°

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

Situation Plan

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 6 of 9 FHWA No. 24760

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER V.6	

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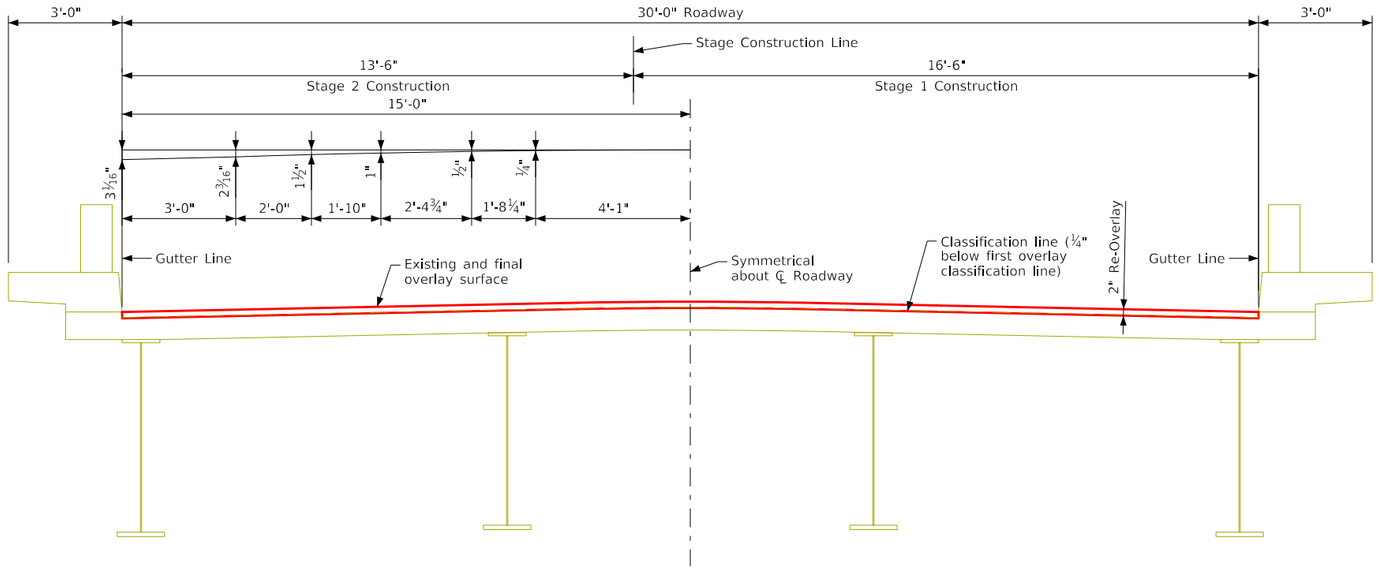
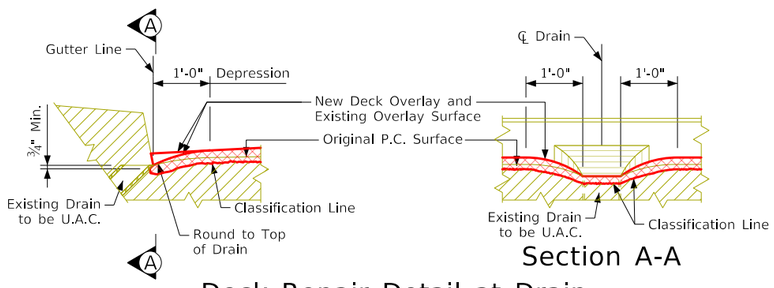
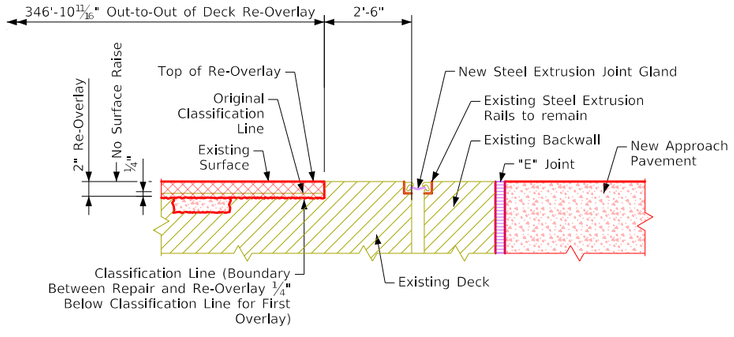


Typical Section
(Looking North)

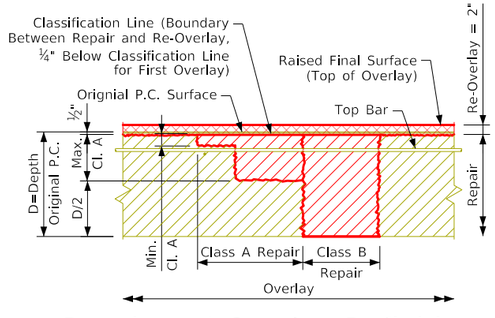


Section A-A

Deck Repair Detail at Drain
(Required at 14 Locations)



Part Longitudinal Section Along Roadway
Both Abutments



Repair and Overlay Definition

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

Deck Re-Overlay Details

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 7 of 9 FHWA No. 24760

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER V.7	

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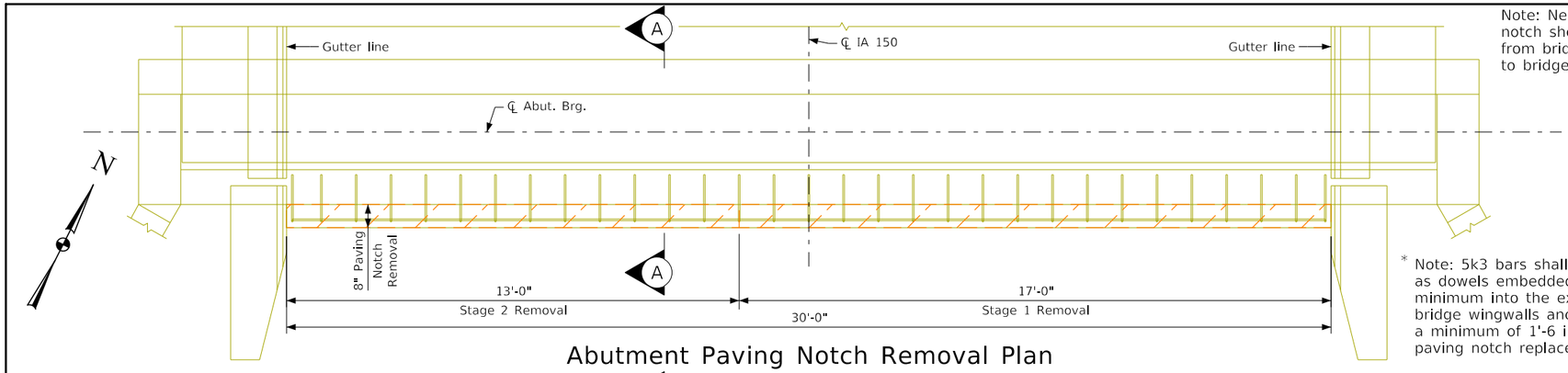
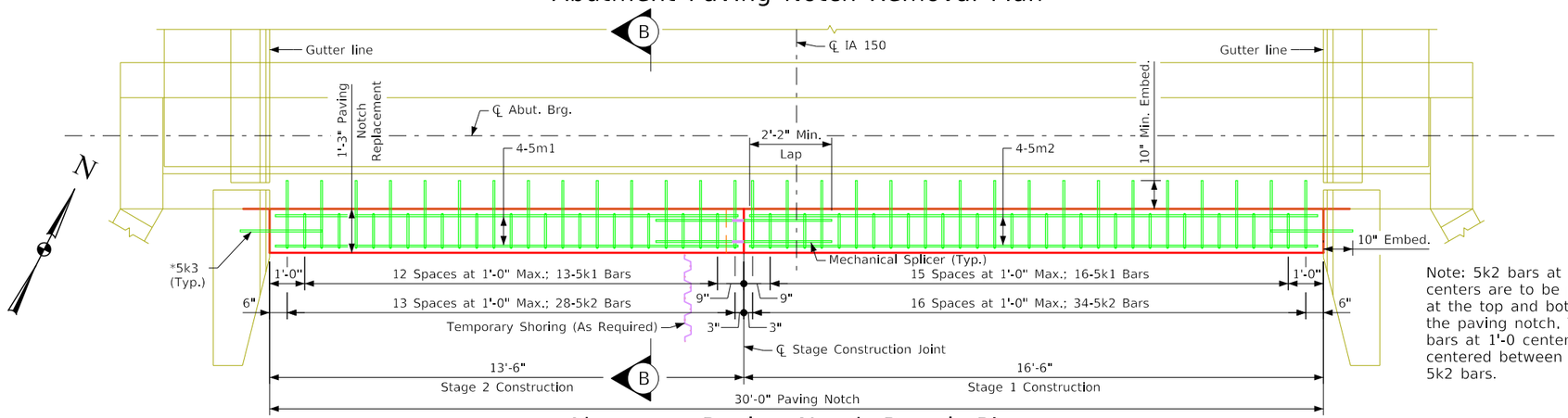


Abutment Paving Notch Removal Plan

Note: New paving notch should extend from bridge wingwall to bridge wingwall.

* Note: 5k3 bars shall be set as dowels embedded 10 inches minimum into the existing bridge wingwalls and extending a minimum of 1'-6 into the new paving notch replacement.



Abutment Paving Notch Repair Plan

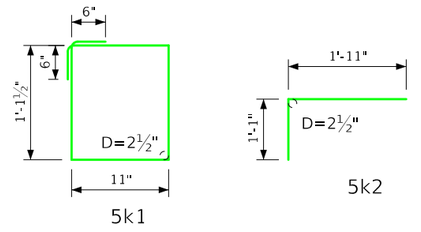
(South Abutment shown, North Abutment similar)

Note: 5k2 bars at 1'-0 centers are to be placed at the top and bottom of the paving notch. The 5k1 bars at 1'-0 centers are centered between the 5k2 bars.

Epoxy-Coated Reinforcing Bar List - Two Paving Notches

Bar	Location	Shape	No.	Length	Weight
5k1	Paving Notch, Transverse	□	58	5'-1"	308
5k2	Paving Notch, Dowels	⌐	124	3'-0"	388
5k3	Wingwall, Dowels	—	8	2'-4"	19
5m1	Paving Notch, Longitudinal	—	8	13'-2"	110
5m2	Paving Notch, Longitudinal	—	8	16'-2"	135
	(For Information Only) - Total (Lbs.)				957

Bent Bar Details



Note: All dimensions are out to out. D = pin diameter

Concrete Placement Both Paving Notches

Location	Total
Paving Notches	4.2
Total (Cu. Yd.)	4.2

Paving Notch Replacement Notes:

The paving notch replacement is to be Class "C" Structural Concrete.

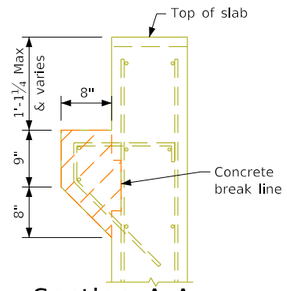
Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

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, supplying and compacting granular backfill, and installing the new notch. This work shall include cutting of existing #5 bars, painting the ends of the #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. Removals shall be in accordance with Section 2401 of the Standard Specifications.

Removals shall be in accordance with Section 2401, of the Standard Specifications.

Dowel Setting Note:

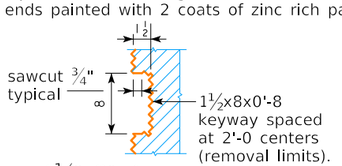
The 5k2 and 5k3 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. A polymer grout system shall be used to install the deformed dowel bars in accordance with Article 2301.03,E, of the Standard Specifications, and the grout manufacturer's recommendations.



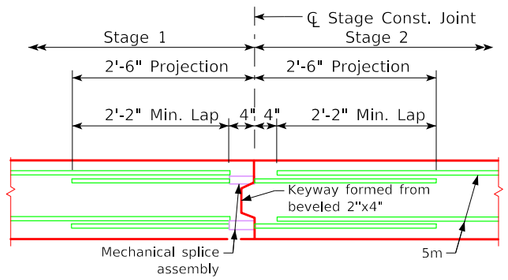
Section A-A

(Showing Removal)

Note: If any portion of the existing #5 bars is located within the new paving notch, it shall be carefully exposed and incorporated into new work. The bar shall be cut off to provide 2 inches of cover from the extents of the new paving notch. All portions of the existing #5 bars that are removed and left exposed outside of new paving notch area shall be cut off flush or slightly below the existing concrete surface and the ends painted with 2 coats of zinc rich paint.



1½"x8" Keyway Detail

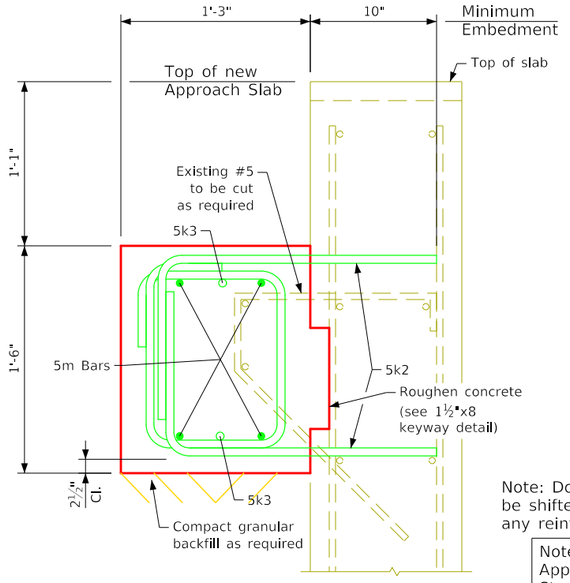


Mechanical Splice Detail

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 the 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 in splicing 5m1 & 5m2 bars in the paving notch 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.



Section B-B

Note: Dowels may be shifted to miss any reinforcing steel.

Note: Use BR-203 Approach Pavement Standard for fixed abutment.

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans — 136'-10 3/4" Interior Span

Paving Notch Replacement

STA. 850+83.00 (IA 150) — Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 — Design Sheet No. 8 of 9 — FHWA No. 24760

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	PAVING NOTCH REPLACEMENT	STANDARD SHEET 1068	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER V.8

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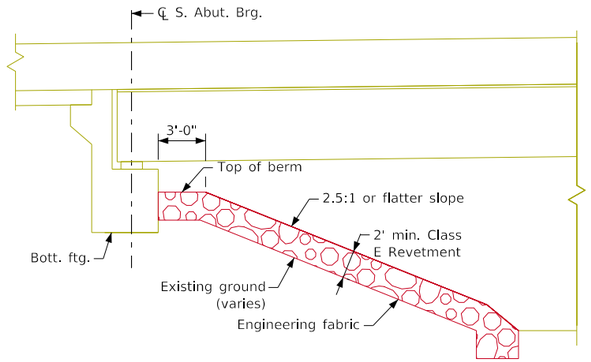
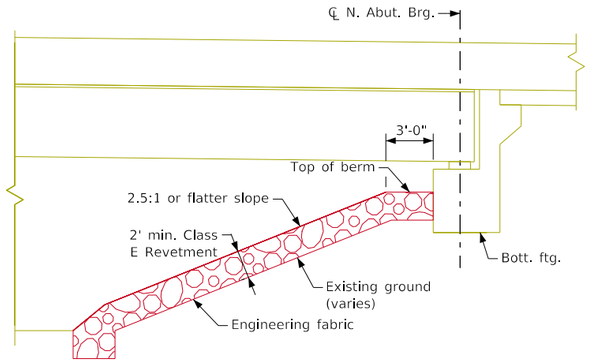
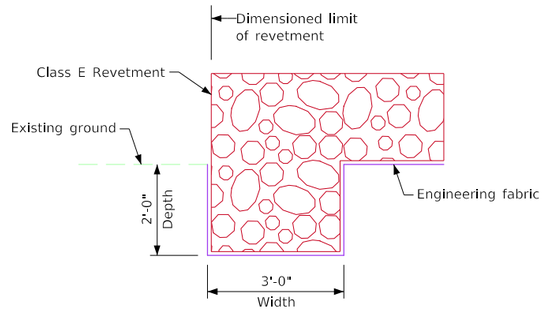


South Abutment



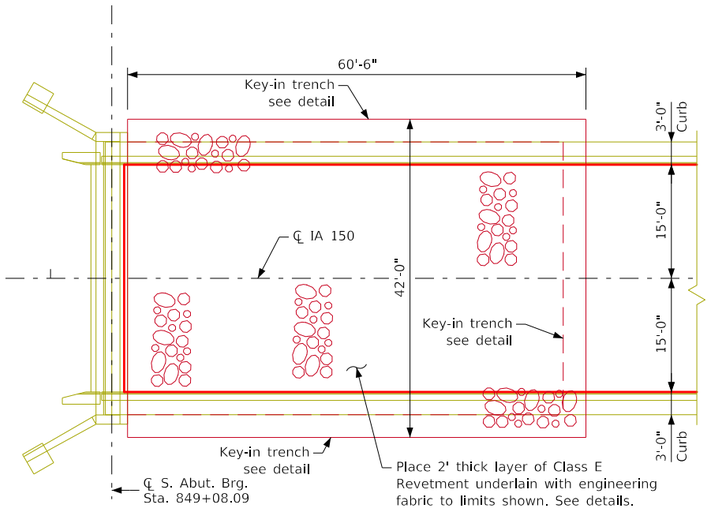
North Abutment

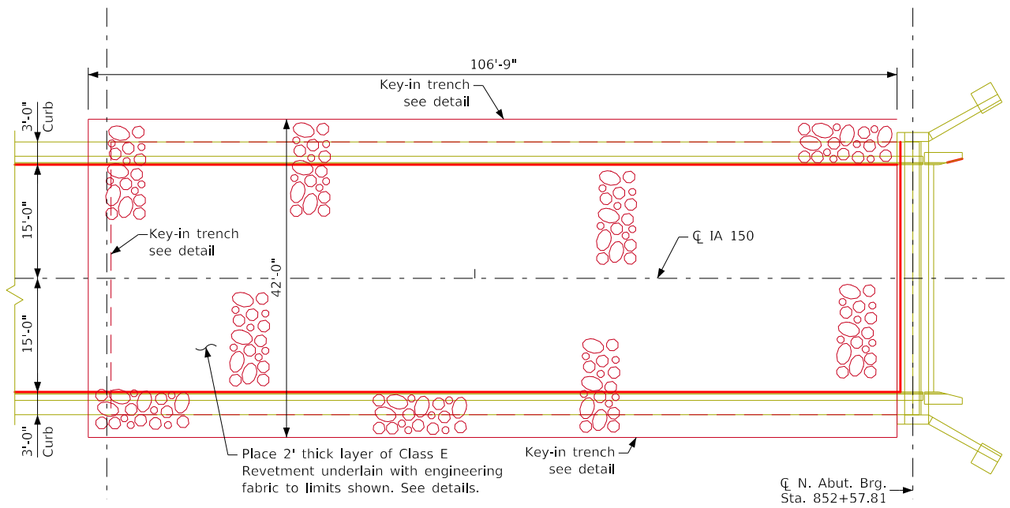
Revetment Repair Section



Section thru key-in Trench

Note:
If there is insufficient fill material generated from the key-in trench to repair the berm erosion, granular material shall be used to complete the grading.





Revetment Repair Plan

N

Design For 0 Skew

350'-0" x 30'-0" Continuous Welded Girder Bridge

106'-5 1/2", 106'-4 7/16" End Spans 136'-10 3/4" Interior Span

Revetment Stone Slope Protection

STA. 850+83.00 (IA 150) Turn-in Date: December 2023

Fayette County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 9 of 9 FHWA No. 24760

FILE NO. 32103	ENGLISH	DESIGN TEAM Benesch	Fayette COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER V.9	

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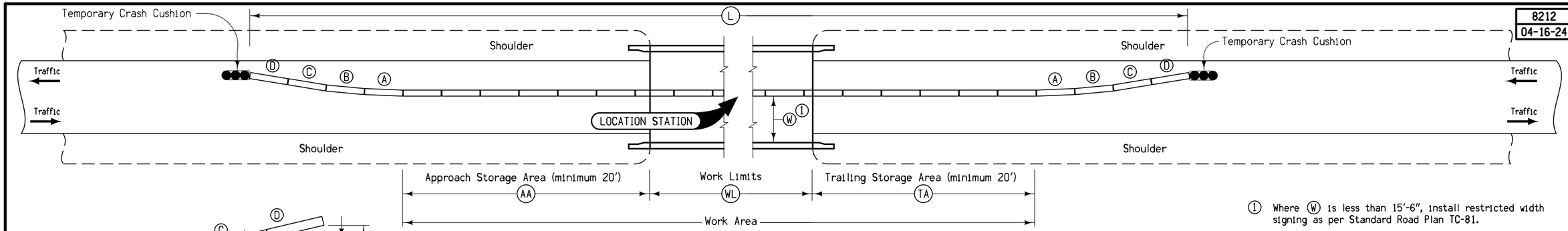

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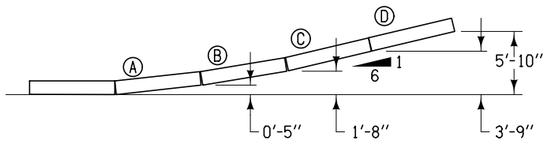


BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	AA	WL	TA	L	Anchored	W (1)	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
850+83.00	RT	20	497.5	20	637.5	X	10-6	Stage 1
850+83.00	LT	20	497.5	20	637.5		10-6	Stage 2

(1) Where (W) is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

TEMPORARY CONCRETE BARRIER LAYOUT for Two-Way Traffic

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
JEFFREY J. TARDY
21284
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: 11/13/2023

Jeffrey J. Tardy
Printed or Typed Name

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: B.1, C.1-C.3, D.1-D.2, J.1-J.4, RR.1

100-1D
10-18-05

PROJECT DESCRIPTION

This project is for construction of bridge approach pavement and the traffic control associated with a bridge deck overlay and repair project on IA 150 over Volga River in Fayette County.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2301-0690203	BRIDGE APPROACH, BR-203	SY	529.4	
2	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE	SY	1713.5	
3	2510-6745850	REMOVAL OF PAVEMENT	SY	529.4	
4	2527-9263109	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	13.04	
5	2527-9263112	PAINTED PAVEMENT MARKING, HIGH-BUILD WATERBORNE	STA	22.39	
6	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	3.3	
7	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	35.44	
8	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1275	
9	2528-8400256	TEMPORARY TRAFFIC SIGNAL	EACH	1	
10	2528-8445110	TRAFFIC CONTROL	LS	1	
11	2528-8445113	FLAGGERS	EACH	SEE PROPOSAL	
12	2551-0000110	TEMP CRASH CUSHION	EACH	4	
13	2602-0000212	FLOATING SILT CURTAIN (HANGING)	LF	200	
14	2602-0000240	MAINTENANCE OF FLOATING SILT CURTAIN	LF	200	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2301-0690203	BRIDGE APPROACH, BR-203 Refer to Tab 112-6 on C sheets for details.
2	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE Refer to Tab 100-28 on the C Sheets.
3	2510-6745850	REMOVAL OF PAVEMENT Refer to Tab 110-1 on C sheets for location and details.
4	2527-9263109	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED
5	2527-9263112	PAINTED PAVEMENT MARKING, HIGH-BUILD WATERBORNE
6	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS
7	2527-9263180	PAVEMENT MARKINGS REMOVED Refer to Tab 108-22 on C Sheets for locations and details. Painted pavement markings, waterborne or solvent based are for use on temporary longitudinal markings and all final markings. Wet retroreflective tape markings are for use on all diagonal temporary markings.
8	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE See Tab 108-33 on C Sheets for locations and details.
9	2528-8400256	TEMPORARY TRAFFIC SIGNAL Refer to Tab 108-28 and C Sheets for locations and details.
10	2528-8445110	TRAFFIC CONTROL See Traffic Control Plan on J Sheets.
11	2528-8445113	FLAGGERS See Proposal.
12	2551-0000110	TEMP CRASH CUSHION Refer to Tab 108-30 on C sheets for locations.
13	2602-0000212	FLOATING SILT CURTAIN (HANGING) Refer to Tab 100-10 on C sheets for locations.
14	2602-0000240	MAINTENANCE OF FLOATING SILT CURTAIN Refer to Tab 100-10 on C sheets for locations.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel
BR-203	10-19-21	Double Reinforced 12" Approach
BR-212	10-18-22	Bridge Approach (Abutting HMA Pavement)
EC-202	10-21-14	Floating Silt Curtain
PM-110	04-21-20	Line Types
PV-101	04-19-22	Joints
SI-881	04-16-19	Special Signs for Workzones
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-81	04-18-23	Restricted Width Signing (Less Than 15.5 Feet)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure With Flaggers
TC-233	10-17-17	Pavement Marking Operations Two-Lane

111-25
10-18-11

INDEX OF TABULATIONS

232-3A
10-19-21

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 distributed 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
10-19-21

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,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.

262-6
10-18-05

UTILITIES (NOT A POINT 25 PROJECT)

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

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total SY	Remarks
848+35.34	280.4	West Approach
849+05.34	1184.1	Bridge
852+60.56	249.0	East Approach
	1713.5	TOTAL

108-28
08-01-08

TEMPORARY TRAFFIC SIGNALS

No.	Location Station	Type: One Lane Traffic	Type: Haul Road	Type: Intersection	Remarks
1	342+00.00	EB, WB		Trout Creek	To be used in Stages 1 and 2

108-30
04-16-13

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

No.	(1) Direction of Traffic	Location Station	Side	Obstacle Width FT	Crash Cushion (Select One)*: Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	Sand Barrel Details (2): V Length FT	W Length FT	X Length FT	Y Length FT	Z Length FT	Earthwork*: Excavation Class 10 CY	Embankment in Place CY	Spare Parts Kit (Select One)*: Permanent EACH	Permanent Severe Use EACH	Obstacle Description	Remarks
1	NB	847+65.34	RT	2.00	1														TBR	NB STAGE 1
2	SB	854+00.56	RT	2.00	1														TBR	SB STAGE 1
3	NB	847+65.34	LT	2.00	1														TBR	NB STAGE 2
4	SB	854+00.56	LT	2.00	1														TBR	SB STAGE 2
					4															TOTAL

100-10
10-21-14

FLOATING SILT CURTAINS

Refer to EC-202

Station	Hanging LF	Containment LF	Clean-out (Containment) LF	Maintenance of Floating Silt Curtain LF	Remarks
S Abutment	100.0			100.0	
N Abutment	100.0			100.0	
	200.0			200.0	TOTAL

108-33
10-15-19

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.

No.	Station to Station		Length LF	(Select One) Concrete BA-401	(Select One) Steel 560-7	Anchored* (Y/N)	Modular Glare Screen System (Y/N)	Remarks
1	847+65.34	854+00.56	637.5	X		Yes	No	STAGE 1
2	847+65.34	854+00.56	637.5	X		No	No	STAGE 2
			1275.0					TOTAL

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
848+35.34	849+05.34	LT/RT		280.4	73.4	
852+60.56	853+30.56	LT/RT		249.0	62.6	
				529.4	136.0	Total

112-6
04-18-17

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain				* Modified Subbase	* Polymer Grid	* Special Backfill	Remarks
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	(T) Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet	* Porous Backfill	* Class 'A' Crushed Stone Backfill				
				Inches	FT	SY	SY	SY				LF	STA Side	CY	CY	TON	SY	TON	
850+83.00	S			12.0	70.0	71.5	77.2	131.7	BR-203	Fixed	BR-212					215.10	247.9		
850+83.00	N			12.0	70.0	70.0	71.1	107.9	BR-203	Fixed	BR-212					213.30	246.4		
								529.4								428.40	494.3		TOTAL

108-22
04-16-13

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00

Location								Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side L	Side C	Side R	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW2								
								STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
IA 150	845+85.34	855+80.56	NB	Removal of Paint	X							9.95										Existing Marking Removal
IA 150	845+85.34	855+80.56	BOTH	Removal of Paint		X		9.95														Existing Marking Removal
IA 150	845+85.34	855+80.56	SB	Removal of Paint			X					9.95										Existing Marking Removal
IA 150	845+85.34	845+85.34	NB	Waterborne/Solvent Paint			X							0.12								Stage 1 Markings
IA 150	845+85.34	847+50.34	BOTH	Wet Retroreflective Removable Tape			X					1.65										Stage 1 Markings
IA 150	847+50.34	853+30.56	BOTH	Waterborne/Solvent Paint			X					5.80										Stage 1 Markings
IA 150	855+80.56	855+80.56	SB	Waterborne/Solvent Paint	X									0.12								Stage 1 Markings
IA 150	845+85.34	847+50.34	BOTH	Removal of Removable Tape			X					1.65										Stage 1 Marking Removal
IA 150	847+50.34	853+30.56	BOTH	Removal of Paint			X					5.80										Stage 1 Marking Removal
IA 150	848+35.34	854+15.56	BOTH	Waterborne/Solvent Paint	X							5.80										Stage 2 Markings
IA 150	854+15.56	855+80.56	BOTH	Wet Retroreflective Removable Tape	X							1.65										Stage 2 Markings
IA 150	845+85.34	845+85.34	NB	Removal of Paint			X							0.12								Stage 2 Marking Removal
IA 150	848+35.34	854+15.56	BOTH	Removal of Paint			X					5.80										Stage 2 Marking Removal
IA 150	854+15.56	855+80.56	BOTH	Removal of Removable Tape	X							1.65										Stage 2 Marking Removal
IA 150	855+80.56	855+80.56	SB	Removal of Paint			X							0.12								Stage 2 Marking Removal
IA 150	845+85.34	855+80.56	NB	Waterborne/Solvent Paint	X							9.95										Final Markings
IA 150	845+85.34	855+80.56	BOTH	Waterborne/Solvent Paint		X		9.95														Final Markings
IA 150	845+85.34	855+80.56	SB	Waterborne/Solvent Paint			X					9.95										Final Markings
				Factored Total: Waterborne/Solvent Paint				2.49	-	-	-	31.51	-	1.44	-							
				Factored Total: Highbuild Waterborne Paint				-	-	-	-	-	-	-	-							
				Factored Total: Wet Retroreflective Removable Tape				-	-	-	-	3.30	-	-	-							
				Factored Total: Removal of Paint				2.49	-	-	-	31.51	-	1.44	-							
				Factored Total: Removal of Removable Tape				-	-	-	-	3.30	-	-	-							
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							35.44											
				Bid Quantity: Painted Pavement Markings, Highbuild Waterborne							0.00											
				Bid Quantity: Wet Retroreflective Removable Tape Markings							3.30											
				Bid Quantity: Pavement Markings Removed							35.44											
				Incidental Removal of Removable Tape							3.30											

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS (ROAD)

LINE WORK	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.	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	PCC Paved Shoulder Shading
Gray, Light	(48)	Proposed Pavement and Bridge Shading
Gray, Dark	(112)	Previously Constructed Pavement Shading
Brown, Light	(236)	Proposed Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Pink	(11)	HMA Paved Shoulder Shading
Gray, Dark	(112)	HMA Shoulder Runout
Brown, Dark	(216)	Pavement Removal
Blue	(216)	Shoulder Strengthening and Pavement Removal

Legend And Symbol Information Sheet

D SHEETS

848+00

849+00

850+00

851+00

VOLGA RIVER

852+00

853+00

70' BRIDGE APPROACH PAVEMENT
PER STANDARD ROAD PLAN BR-203

70' BRIDGE APPROACH PAVEMENT
PER STANDARD ROAD PLAN BR-203

IA 150

REMOVE AND REINSTALL FORMED
STEEL BEAM GUARDRAIL

REMOVE AND REINSTALL FORMED
STEEL BEAM GUARDRAIL

0 20
FEET

ENGLISH	IOWA DOT	DESIGN TEAM **BENESCH**	**FAYETTE** COUNTY	PROJECT NUMBER **BRFN-150-4(63)--39-33**	SHEET NUMBER **D.2**	

SYSTEMTIME USERNAME DGNSPEC

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic will be maintained on IA 150 Bridge over Volga River at all times. Construction will be performed in 2 stages of single lane closures. See Sheets J.2-J.4 for details. NB and SB traffic will share a single 10'-6" lane on the bridge and traffic will be controlled using temporary traffic signals. Use TC-213 while setting up the TBR used in Stages 1 and 2. Access to all driveways and cross streets shall be maintained at all times. Restricted width signing per TC-81 will be required.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
None Anticipated	

108-26A
08-01-08

STAGING NOTES

Prestage
Install temporary traffic signals to be used in Stage 1 and Stage 2 using TC-213.

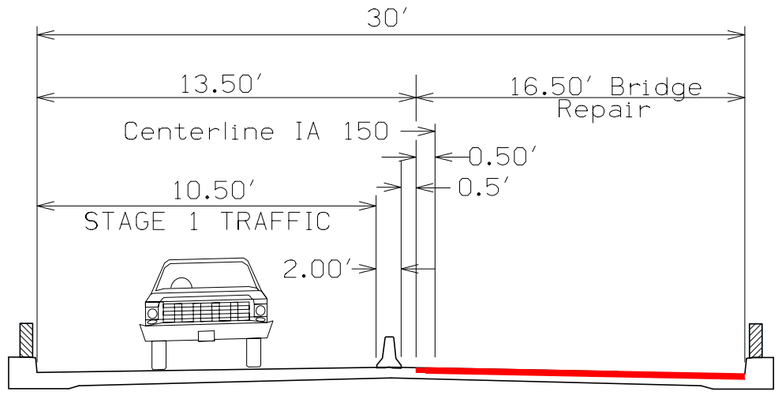
Stage 1
Close the NB lane of IA 150. NB and SB traffic will share a single 10'-6" lane on the West half of the bridge and traffic will be controlled using the temporary traffic signals installed in the Prestage. Perform all approach pavement construction and bridge repairs on the East side of the bridge.

Stage 2
Close the SB lane of IA 150. NB and SB traffic will share a single 10'-6" lane on the East half of the bridge and traffic will be controlled using the temporary traffic signals installed in the Prestage. Perform all approach pavement construction and bridge repairs on the West side of the bridge.

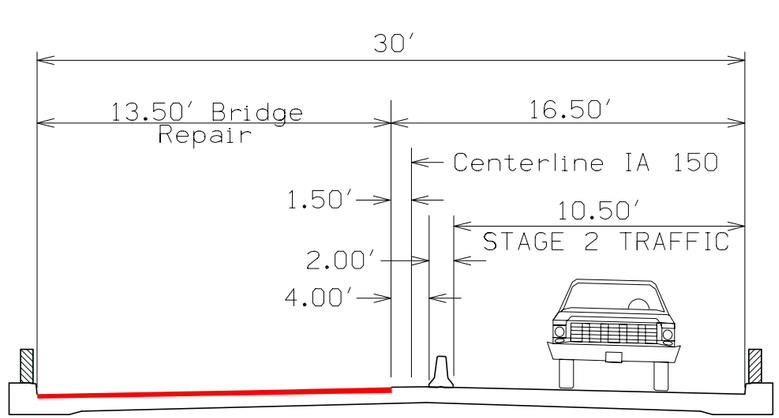
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
IA 150	NB	Fayette	0.2 miles north of Jct. IA 93	Volga River	Barrier	3373.2S150	Horizontal	30'-0"	10'-6"	N/A	30'-0"	
IA 150	SB	Fayette	0.2 miles north of Jct. IA 93	Volga River	Barrier	3373.2S150	Horizontal	30'-0"	10'-6"	N/A	30'-0"	



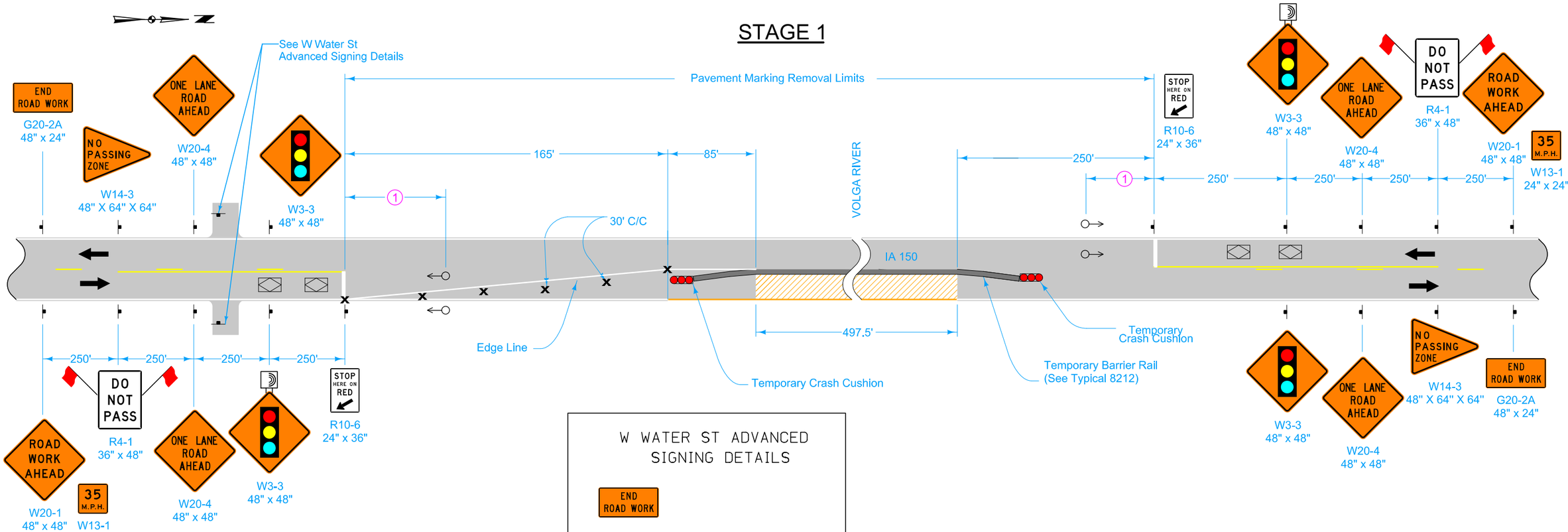
STAGE 1
(Looking Ahead Station)



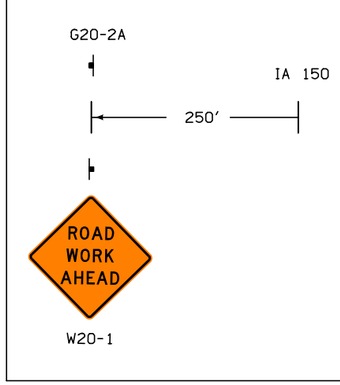
STAGE 2
(Looking Ahead Station)

TYPICAL CONSTRUCTION SECTIONS

STAGE 1



W WATER ST ADVANCED SIGNING DETAILS



LEGEND

- Vehicle Detection Area
- Temporary Crash Cushion
- Direction of Traffic
- Traffic Sign
- Drum
- Type 'B' High-Intensity Flashing Warning Light
- Work Area
- Temporary Traffic Signal

TIMING FOR ACTUATED SIGNALS

Recommended Settings, secs.

Initial = 12.0
Extension = 2.5
Maximum Green = 45.0
Yellow = 5.0
All Red = (see table)

Distance Between Stop Lines	All Red (secs.)*
1050'	20.4-35.7

* Range of values are based on operating speeds between 20 and 35 mph

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

(1) Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

Possible Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Temporary Barrier Rail
- Temporary Crash Cushions
- Temporary Traffic Signals
- Traffic Control

MODIFIED
STANDARD ROAD PLAN

REVISION 8 2-2-22

TC-217

SHEET 1 of 1

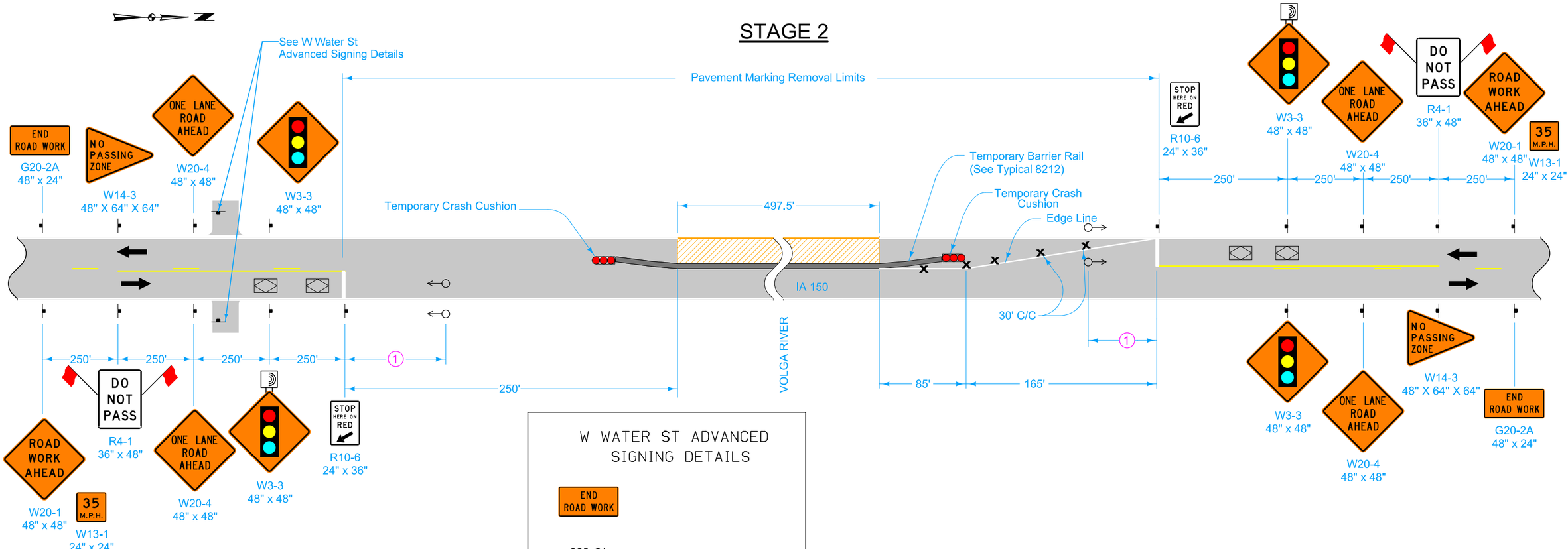
MODIFICATIONS: Cross streets and driveways to remain open on tangent.

LANE CLOSURE WITH SIGNALS AND TBR

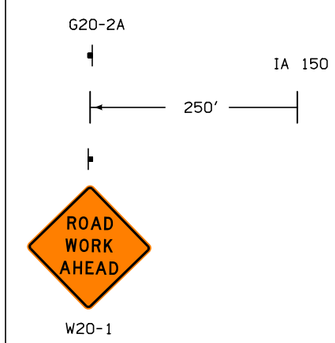
FILE NO.	ENGLISH	DESIGN TEAM BENESCH	FAYETTE COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER J.3

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

STAGE 2



W WATER ST ADVANCED SIGNING DETAILS



LEGEND

- Vehicle Detection Area
- Temporary Crash Cushion
- Direction of Traffic
- Traffic Sign
- Drum
- Type 'B' High-Intensity Flashing Warning Light
- Work Area
- Temporary Traffic Signal

TIMING FOR ACTUATED SIGNALS

Recommended Settings, secs.

Initial = 12.0
Extension = 2.5
Maximum Green = 45.0
Yellow = 5.0
All Red = (see table)

Distance Between Stop Lines	All Red (secs.)*
1050'	20.4-35.7

* Range of values are based on operating speeds between 20 and 35 mph

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

(1) Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

Possible Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Temporary Barrier Rail
- Temporary Crash Cushions
- Temporary Traffic Signals
- Traffic Control

MODIFIED
STANDARD ROAD PLAN

REVISION 8 2-2-22

TC-217

SHEET 1 of 1

MODIFICATIONS: Cross streets and driveways to remain open on tangent.

LANE CLOSURE WITH SIGNALS AND TBR

FILE NO.	ENGLISH	DESIGN TEAM BENESCH	FAYETTE COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER J.4

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

N

ENGLISH	IOWA DOT	DESIGN TEAM BENESCH	FAYETTE COUNTY	PROJECT NUMBER BRFN-150-4(63)--39-33	SHEET NUMBER RR.1

SYSTEMTIME USERNAME DGNSPEC