LETTING DATE
July 21 2026

Bridge Deck Replacement
BRF-061-5(153)--38-82

SCOTT COUNTY

## Index of Sheets

| No. | Description |
|---|---|
| Sheets | Bridge Plan |
| A.1 | Title Sheet |
| A.2 | Location Map Sheet |
| | |
| V.1 | Estimated Quantities - Design 0328 |
| V.1 - V.43 | Design 0328 |
| V.44 | Estimated Quantities - Design 0428 |
| V.44 - V.86 | Design 0428 |
| | |
| Road Sheets | Road Plan |
| A.3 - U.2 | Road Plans |
| C.1 - C.2 | Estimated Quantities - Road |
| C.8 | Standard Plans - Road |

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM
# SCOTT COUNTY
## Bridge Deck Replacement

**US 61 over DME RR**
**0.8 mi N of I-80**

**FRA No. 393010P**

Refer to the Plan Sheets for list of applicable specifications.

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

IOWA ONE CALL
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www.iowaonecall.com
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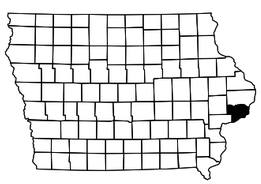
Revisions

| | |
|---|---|
| TOTAL | 109 |
| PROJECT IDENTIFICATION NUMBER | |
| 23-82-061-020 | |
| PROJECT NUMBER | |
| BRF-061-5(153)--38-82 | |
| R.O.W. PROJECT NUMBER | |
| | |
| | |
| | |
| PROJECT DIRECTORY NUMBER | |
| 8206102023 | |

Iowa DOT Bridges and Structures Bureau
Consultant Reviewer: Mike Vander Wert



## Standard Road Plans

Standard Road Plans are listed on sheet number C.8

## Design Data Urban

Refer to individual Situation Plans for Traffic Data information.

## Index Of Seals

| Sheet No. | Name | Type |
|---|---|---|
| A.1 | Dallas R. Schechinger | Structural Design |
| A.3 | Seth Morling | Roadway Design |

## Structural Design

LICENSED PROFESSIONAL ENGINEER
Dallas R. Schechinger
20298
IOWA

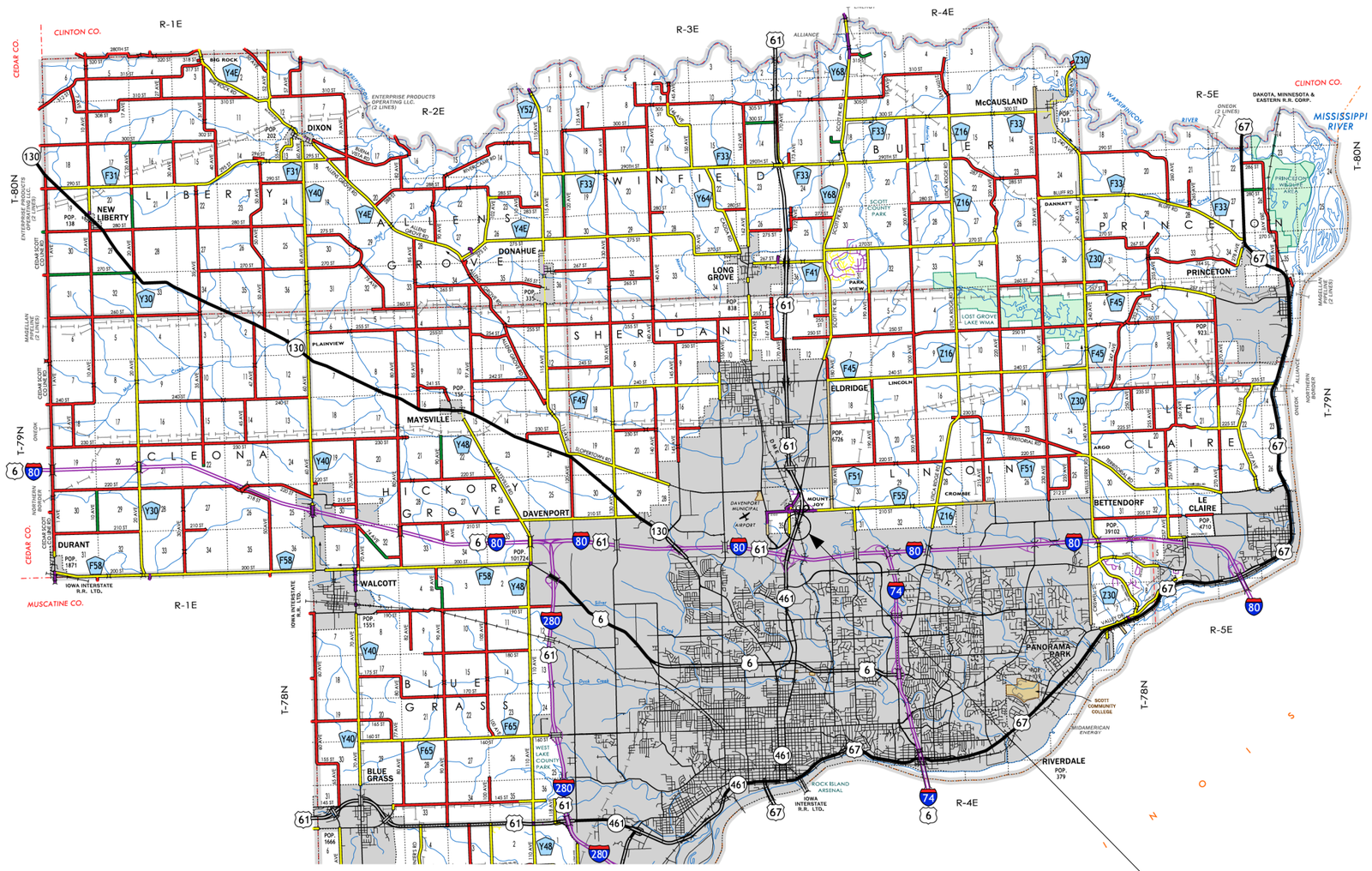
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature — Date 4/15/2026

Dallas R. Schechinger
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 thru V.86



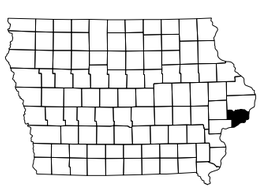

## LEGEND

- 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

# Scott County Location Map

Not To Scale

Design Nos. 0328 (NB), 0428 (SB)
FHWA Nos. 604640 (NB), 604645 (SB)



| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER A.2 |
|---|---|---|---|---|---|

2:24:35 PM 4/15/2026 10117 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8206102023\Bridge\(153)_Bridge Deck Replacement\SHT_82061153_A01.dgn

# Estimate Bridge Repair Quantities and Reference Notes – Design No. 328

| Item No. | Item Code | Item | Unit | Quantities Estimated Design No. 328 | Estimate Reference Notes |
|---|---|---|---|---|---|
| 1 | 2401-6750001 | Removals, as Per Plan | LS | 1 | Includes removal and off-site disposal of all items as described in the "General bridge notes" and "Removal details" shown 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.<br><br>Name of asbestos inspector: Brad Azeltine<br>Date inspected: 11/1/2022<br>IA License number: Iowa DOT<br>Inspector phone: 515-239-1938<br>Asbestos present: No<br>Procedure used to detect the presence of asbestos material: Polarized Light Microscopy (PLM). |
| 2 | 2402-2720000 | Excavation, Class 20 | CY | 130.8 | Includes excavation behind the abutments and around the wings. Includes furnishing and placing special backfill behind the abutments and around the wings. Includes dressing up the slopes around the wings disturbed by construction. |
| 3 | 2403-0100010 | Structural Concrete (Bridge) | CY | 95.9 | Includes concrete for abutment backwalls, paving notches, and wingwalls. Includes cleaning and sealing the abutment seats and the face of the abutment footing. Includes all resilient joint filler required. Includes furnishing and placing subdrains and subdrain outlets at abutments. Includes the cost of water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric. Includes cost of setting dowels in drilled holes. |
| 4 | 2403-1000005 | Fiber Reinforcement for Structural Concrete | CY | 675.8 | Includes furnishing and incorporating fiber reinforcement in the concrete for both the Structural Concrete (Bridge) and High Performance Structural Concrete items. Refer to the "Developmental Specifications for Fiber Reinforcement for Structural Concrete". |
| 5 | 2403-1000010 | Trial Batch and Test Placement (Fiber Reinforced Concrete) | LS | 1 | Includes Trial Batch and Test Placement for Fiber Reinforced Concrete. Trial Batch and Test Placement shall apply to bridge deck mix and shall simulate bridge deck placement conditions. Refer to the "Developmental Specifications for Fiber Reinforcement for Structural Concrete". |
| 6 | 2403-7000210 | High Performance Structural Concrete | CY | 579.9 (F) | Includes concrete for bridge deck. Includes all costs for the temporary bracing system to stabilize the girders during construction. Refer to Developmental Specifications for High Performance Concrete for Structures. |
| 7 | 2404-7775005 | Reinforcing Steel, Epoxy Coated | LB | 222,099 | ---- |
| 8 | 2404-7775009 | Reinforcing Steel, Stainless Steel | LB | 6,266 | ---- |
| 9 | 2408-7800000 | Structural Steel | LB | 1,360 | Includes furnishing and installing 10 deck drains. |
| 10 | 2414-6424110 | Concrete Barrier Rail | LF | 747.4 | If placement of concrete is done by the slipforming method, Class BR concrete is required. Cast-in-place barrier rails shall use Class C mix. Price bid for this item shall include the cost of cast-in-place forms if required for placement of the concrete. Includes material and labor associated with providing and installing the reigid steel conduit, junction boxes, and fittings. Includes 767.4 LF of 2" diameter rigid steel conduit. |
| 11 | 2426-6772016 | Concrete Repair | SF | 2.0 | Includes concrete repairs to be made to the existing abutment footings. Exact locations and areas shall be determined in the field by the Engineer. Refer to Concrete Repairs Sheet in plans for additional information. |
| 12 | 2507-2638650 | Bridge Wing Armoring - Erosion Stone | SY | 39.4 | Includes furnishing and placing Engineering fabric, erosion stone, and all required excavating, shaping and compacting for wing armoring. |
| 13 | 2508-0970000 | Containment | LS | 1 | ---- |
| 14 | 2508-0991000 | Painting of Structural Steel | LS | 1 | Includes bridge cleaning for painting and blast cleaning of structural steel. See General Notes for locations, limits, and additional information. |
| 15 | 2533-4980005 | Mobilization | LS | 1 | ---- |
| 16 | 2595-0005125 | Railroad Protective Liability Insurance For Dakota, Minnesota, And Eastern Railroad Corp. | LS | 1 | Refer to Developmental Specifications for Construction or Maintenance Work on Railroad Right-of-Way (Dakota, Minnesota, & Eastern Railroad Corporation dba CPKC) |
| 17 | 2599-9999005 | Expansion Joint (Drainage System) | EA | 2 | Includes furnishing, installing and testing the drainage system beneath the finger plate joints. Includes all costs associated with furnishing and installing neoprene curtains, bent plate troughs, downspouts and associated hardware. Measurement will be each expansion device drainage system required in the contract documents. The payment shall be the contract unit price for each drainage system and shall be full compensation for furnishing all material, equipment and labor and for performance of all work necessary for fabricating and installing the expansion device drainage system as per plan. |
| 18 | 2599-9999009 | Expansion Joint (Finger Plates) | LF | 223.2 | Includes all costs associated with furnishing and installing the finger plate joints at abutments. Includes finger plates, support plates, support brackets, anchor plates, abutment anchor system, shim plates, barrier plates, and associated hardware. Measurement will be linear feet of expansion device finger plates required in the contract documents. The payment shall be the contract unit price per linear foot of finger plates and shall be full compensation for furnishing all material, equipment and labor and for performance of all work necessary for fabricating and installing the expansion device finger plates as per plan. |

Roadway Quantities shown elsewhere in these plans.

Construction Survey shall be completed by the Iowa DOT

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Estimated Bridge Quantities

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 1 of 43 FHWA No. 604640

# 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 High Performance Concrete for Structures
- Developmental Specifications for Fiber Reinforcement for Structural Concrete
- Developmental Specifications for Construction or Maintenance Work on Railroad Right-of-way (Dakota, Minnesota, & Eastern Railroad Corporation dba CPKC)

# Design Stresses:

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

Reinforcing steel in accordance with Section 8, Grade 60.
Concrete in accordance with Section 8, f'c = 4.0 ksi.
Structural steel in accordance with Section 10. ASTM A709 Grade 36, Grade 50, and Grade 50W (AASHTO M270 Grade 36, Grade 50, and Grade 50W).

# General Bridge Notes:

This design is for repairs to the existing 336'-0" x Varies Continuous Welded Plate Girder Bridge on US 61 over DME Railroad in Scott County. Electronic copies of original design plans will be made available to the Contractor as part of the e-files supplied with the contract documents.

See Design Sheet No. 4 for list of repair items.

Dimensions shown on these plans are based on the original design plans. All alignment, stationing, connecting dimensions, and elevations used in the new details in these plans were developed based on the exisitng bridge plans and field survey. The Bridge Contractor shall field verify the details and elevations before starting construction.

Elevations shown are based on the existing bridge plans. The existing plan elevations are based on datum NGVD 1929. Based on recently obtained survey at this site using datum NAVD 88, it is anticipated that current survey elevations will be approximately 0.45' higher than existing plan elevations.

It is the intent of these plans to use the existing steel beams, existing intermediate diaphragms, existing pier diaphragms, and exisitng abutment diaphragms as constructed.

The utility companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the construction starting date.

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.

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

Keyway dimensions shown 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.

Faint lines on plans indicate the existing structure.

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 ⅝ 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 |

# General Bridge Notes, Cont.:

The tops of the abutment backwalls as shown shall be constructed using Class C structural concrete. Promptly after the concrete has been placed and vibrated as provided in Articles 2403.03, C, and 2403.03, D, of the Standard Specifications, it shall be hand finished to provide a smooth surface with the proper crown. The Contractor may elect to use formwork which is marked or trimmed to the correct elevation and crown to provide the limits for the hand finishing.

The bridge deck is design for HS20-44 loading plus 20 lb. per square foot for future wearing surface.

It will be necessary to support the earth and/or granular material behind the abutment during reconstruction of the abutment backwalls by some method approved by the Engineer. All costs for supporting the earth and/or granular material shall be included in the price bid for "Excavation, Class 20".

The Contractor is responsible to provide sufficient temporary bracing to minimize lateral deflection and rotation of exterior steel beams during deck placement. Lateral deflection and rotation of exterior beams may result in thin decks and an upwards shift in bar mats which can decrease concrete cover. Partially or fully installed permanent bracing as shown in these design plans shall not be assumed sufficient to minimize lateral deflection and rotation of exterior beams during deck placement. Temporary bracing shall not be welded to the steel beams or its attachments including the studs.

Substructure concrete shall be protected from staining by a wrapping of polyethylene or similar materials which shall be left in place and kep in a servicable condition until after the deck has been placed. If substructure concrete is stained, the stains shall be removed by methods approved by the Engineer. All costs associated with the protection and any required cleaning of the substructure concrete shall be included in the price bid for "Structural Steel".

The lump sum bid for "Painting Structural Steel" shall include the cost of preparing all the existing structural steel for painting (including bearings) and field painting existing structural steel as noted in these plans. Cleaning and painting shall be in accordance with Section 2508, of the Standard Specifications. An epoxy paint system shall be used. Color shall match existing paint color of steel beam. The Contractor shall supply a color sample for review and approval prior to painting.

Containment and disposal of waste shall be in accordance with Section 2508 of the Standard Specifications. All costs associated with hauling and depositing of waste at the designated site/facility shall be the responsibility of the Contractor and included in the contract price bid for the "Containment" item.

Scrape samples were taken from several areas of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead and total chromium on these samples were:

| Location: | Total Lead | Total Chromium |
|---|---|---|
| Girder | 2,250 PPM | 538 PPM |
| Expansion Plate | 1,730 PPM | 535 PPM |
| Abutment Bearing | 412 PPM | 94.9 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.

The lump sum bid for "Removals, As Per Plan" shall include all costs associated with removing the bridge deck, barrier rails, portions of wings, and abutment backwalls. Removal of scheduled items shall be in accordance with section 2401 of the specifications. Any damage to any steel or concrete not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state.

The Contractor shall clean existing reinforcement bars incorporated in the new work to ensure that reinforcement is free from dirt, detrimental scale, rust, paint, oil, or other foreign substances.

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

Concrete removal shall be initiated with a ¾" saw cut wherever possible.

Concrete barrier rails placed using the slipform method will require the use of a class br concrete in accordance with article 2513.03, A, 2, of the Standard Specifications. Cast-in-place barrier rails shall use Class C mix. Class D concrete is not permitted for concrete barrier rails (cast-in-place or slipformed method)

It is the intent of these plans to reuse the existing steel shear studs on top of the beams. The Contractor shall exercise care not to damage these studs during the concrete deck removal operation. Any replacement of damaged shear studs will be as directed by the Engineer and repaired at no cost to the State.

# General Bridge Notes, Cont.:

No torchwork, cutting, grinding or drilling of holes on the existing structural steel of the bridge shall be performed when the air temperatue and steel temperature are below 40°F.

The 6c2, 5c3, 5c4, & 5c6 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. The dowels shall be installed in accordance with the Manufacturer's recommendations. Either of the following systems may be used as a bonding agent for vertical dowels, but only System "A" may be used for horizontal dowels:

A. Polymer grout system in accordance with Article 2301.03, E, of the Standard Specifications.
B. Hydraulic cement grout systems. Drilled holes are to be 2½ times the dowel diameter and are to be blown clean with compressed air immediately prior to placing grout. The hydraulic cement grout shall be one of those approved in Materials I.M. 491.13 and shall be used in accordance with the Manufacturer's recommendations.

The price bid for "Structural Concrete (Bridge)" shall include the costs of setting bars as dowels, as shown in these plans.

Longitudinal Grooving will not be a part of this contract, but will be done by others prior to opening the bridge to traffic.

During construction of this project the Bridge Contractor will be required to coordinate operations with those of other Contractors working within the same area. Other work in progress during the same period of time will include, but is not limited to, construction of the following projects:

-BRF-061-5(151)--38-82
-BRF-061-5(157)--38-82
-NHSX-061-5(156)--3H-82

The Bridge Contractor shall work in such a manner that equipment and materials shall not be allowed to interfere with train traffic or be allowed to fall on the railroad tracks. Interference above the railroad track area shall be coordinated with the railroad.

Work within railroad right-of-way, inclusive of overhead work, shall comply with railroad requirements. Work activities which have potential to impact the operation, property and/or facilities of the railroad shall be subject to review and approval by the railroad. Prior to construction, the Contractor shall submit proposed materials and procedures applicable to shoring, erection, demolition, falsework, and other work activities identified by the railroad as relevant. All costs of labor, equipment and materials for coordinating and executing the work in accordance with railroad requirements shall be incidental to the price bid for the work.

DME RR will have 4-hour work windows for this type of work. Contractor shall coordinate timing of work with DME RR.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

General Notes

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 2 of 43 FHWA No. 604640

## 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 | Expansion Devices | 153_Scott_Design328_Expansion Device.pdf | No |
| 2 | Deck Drains | 153_Scott_Design328_Deck Drains.pdf | No |
| 3 | Demolition Plan | 153_Scott_Design328_Demolition Plan.pdf | Yes |
| 4 | Girders Survey After Deck Removal | 153_Scott_Design328_Girders Survey After Deck Removal.pdf | No |
| 5 | Temporary Supports | 153_Scott_Design328_Temporary Supports.pdf | No |
| No. | Calculation Description | Calculation File Name Convention For Submittal | Certified by Iowa P.E. (Yes/No) |
| 1 | Temporary Deck Support and Brackets | 153_Scott_Design328_Temporary Deck Support and Brackets.pdf | Yes |
| 2 | Demolition Plan | 153_Scott_Design328_Demolition Plan.pdf | Yes |
| X | | | |
| X | | | |

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

Note:
All plan dimensions are horizontal unless noted otherwise.

Pollution Prevention Plan shown elsewhere in these plans.

## Design History At This Site

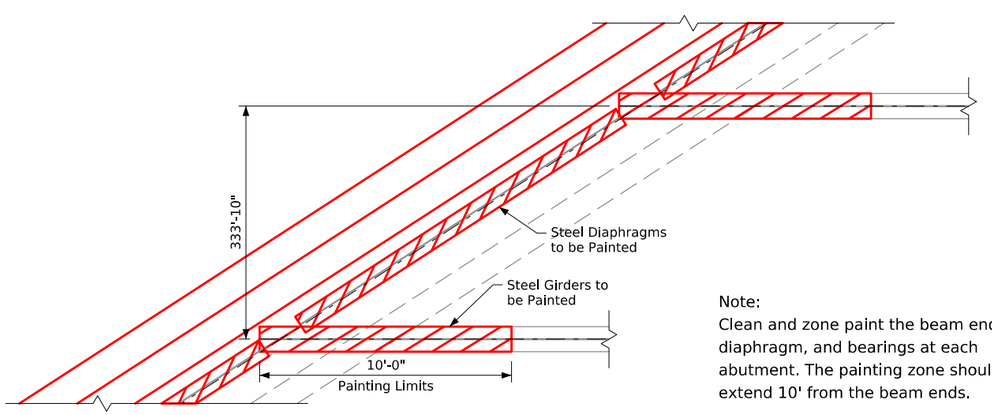
(Includes This Design)

| Des. No. | Type Of Work |
|---|---|
| 880 | Original Design |
| 328 | Deck Replacement |
| | |
| | |

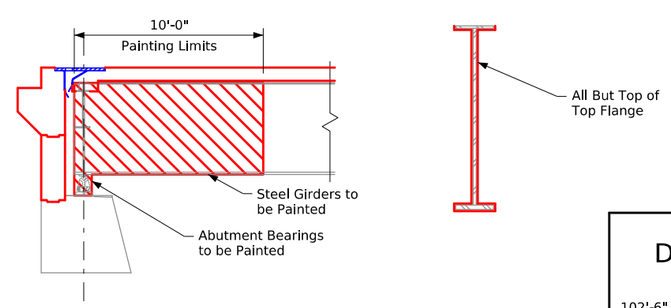
## Bridge Deck Dimension Table

| No. | Item | Unit | Quantity |
|---|---|---|---|
| 1 | Minimum Deck Length | L.F. | 321.01 |
| 2 | Maximum Deck Length | L.F. | 338.03 |
| 3 | Minimum Deck Width | L.F. | 58.35 |
| 4 | Maximum Deck Width | L.F. | 69.39 |
| 5 | Deck Area | S.F. | 21,563.59 |

1. Deck length is measured from face-to-face of paving notches along the centerline of the roadway.
2, 3. Deck widths are measured from out-to-out of deck perpendicular to the centerline of roadway.
4. Deck area is to be based on the face-to-face paving notch distance and out-to-out deck dimensions.




Note:
Clean and zone paint the beam ends, diaphragm, and bearings at each abutment. The painting zone should extend 10' from the beam ends.

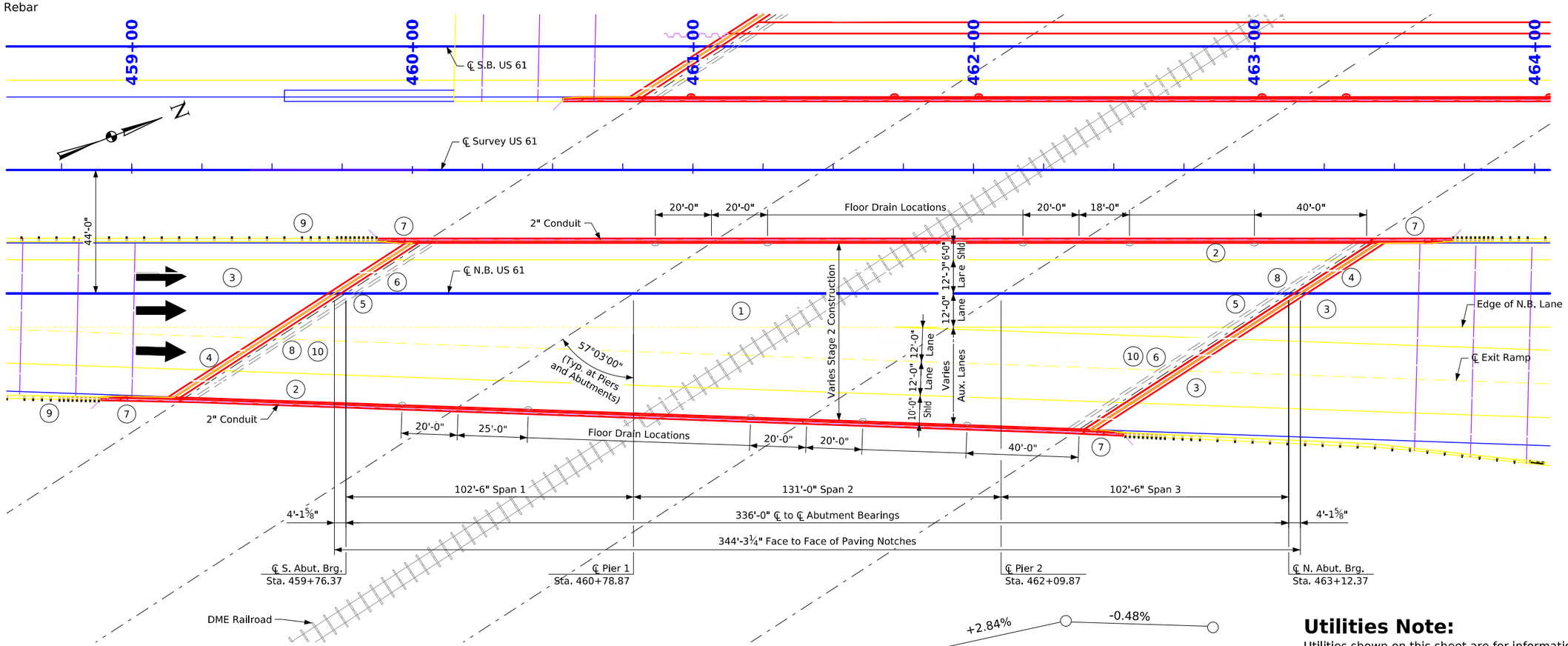



## Limits of Painting Structural Steel

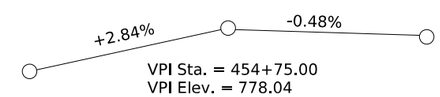
Note: Details and limits of cleaning and painting shown above are typical for all 8 beams at both abutment ends.

Design For Repairs to 57°03' LA
Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges
102'-6" End Spans 131'-0" Interior Span
General Notes
STA. 462+06.89 (US 61) Turn-in Date: May 2026
Scott County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0328 Design Sheet No. 3 of 43 FHWA No. 604640

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar




## Situation Plan




VPI Sta. = 454+75.00
VPI Elev. = 778.04
L = 1100'

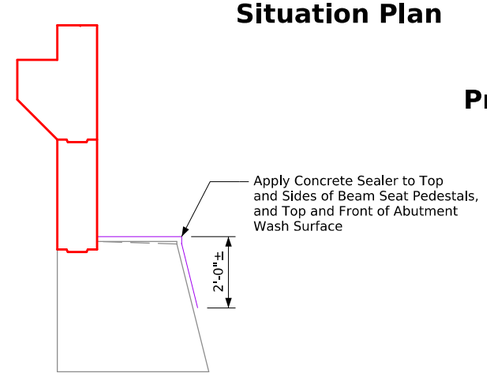
## Proposed Profile Grade N.B. US 61

Note: PGL taken from existing plans and increased by ½" to reflect proposed grade raise.
Refer to General Notes for anticipated elevation adjustment due to datum change.

## Repairs shall consist of:

1. Remove and replace bridge deck.
2. Remove and replace concrete railings.
3. * Remove and replace approaches with 70' standard bridge approaches.
4. Remove and replace backwall and paving notches at each abutment.
5. Clean and paint bearings and girder ends.
6. Concrete repairs along backwalls and abutments.
7. Remove and replace rail end sections.
8. Replace existing sliding plate joints with finger joints.
9. * Remove and replace guardrail in accordance with current standards.
10. Clean and seal existing footing and abutment seats.

* Note: Refer to roadway plans for additional information.




## Concrete Sealer Placement

## Concrete Sealer Notes

The abutment seats and footings are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. All costs associated with cleaning and sealing of the concrete areas shall be included in the lump sum price bid item "Structural Concrete (Bridge)". See details shown on these plans for loacations of concrete sealing.

## Utilities Note:

Utilities shown on this sheet are for information only.See Road Design sheets for utility information.

## General Utility Symbols:

E - Electric Line
G - Gas Line
SAN. - Sanitary Sewer
T - Telephone Line
W - Water Line
FO - Fiber Optic Line
GHP - Gas High Pressure
ST S - Storm Sewer
TV - TV
- Power Poles

| Traffic Estimate | | |
|---|---|---|
| N.B. US 61 | | |
| 2024 AADT | 19,150 | V.P.D. |
| TRUCKS | 11 | % |

## Location

US 61 over DME Railroad
In City of Davenport
T-79N R-3E
Section 36
Sheridan Township
Scott County
FHWA No. 604640
Bridge Maint. No. 8223.8R061
FRA No. *393010P*
Latitude 41.606125°
Longitude -90.565289°

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

Situation Plan

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

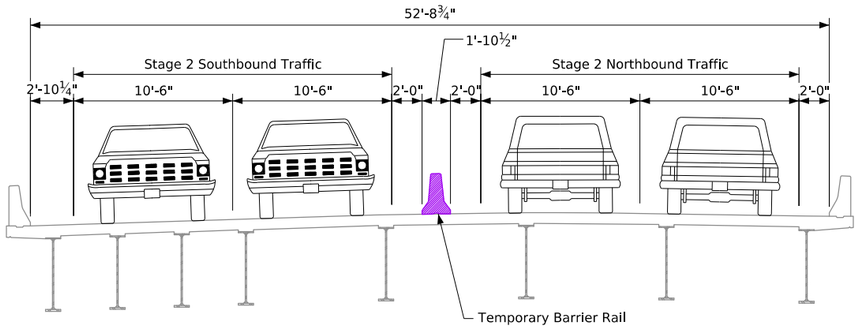
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

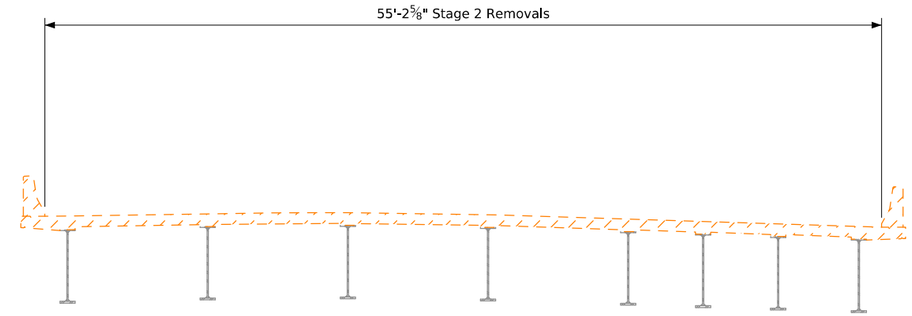
Design No. 0328 — Design Sheet No. 4 of 43 — FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.4 |
|---|---|---|---|---|---|

11:04:43 AM 4/23/2026 10117 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8206102023\Bridge\(153)_Bridge Deck Replacement\SHT_82061153_Stanley_0328_604640_Z11.dgn



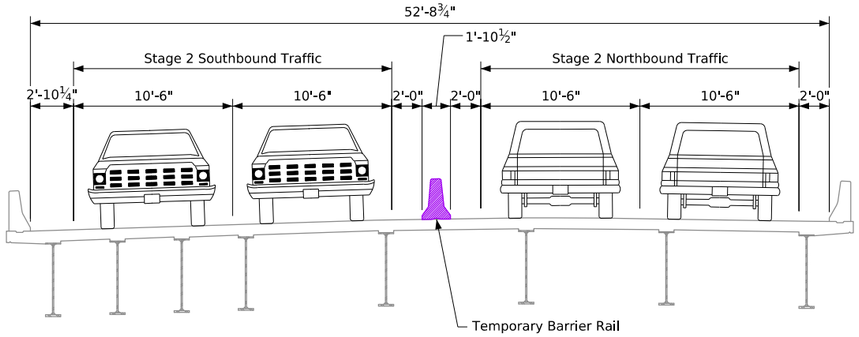

Southbound Lanes



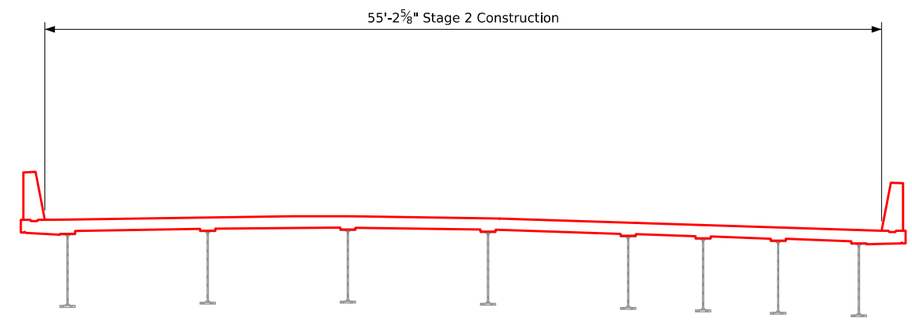

Northbound Lanes

## Typical Stage 2 Removals

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Stage 2 Construction

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 2 for tied projects.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

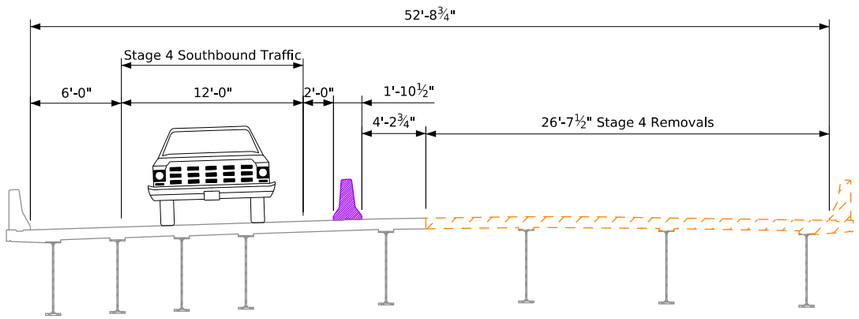
Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

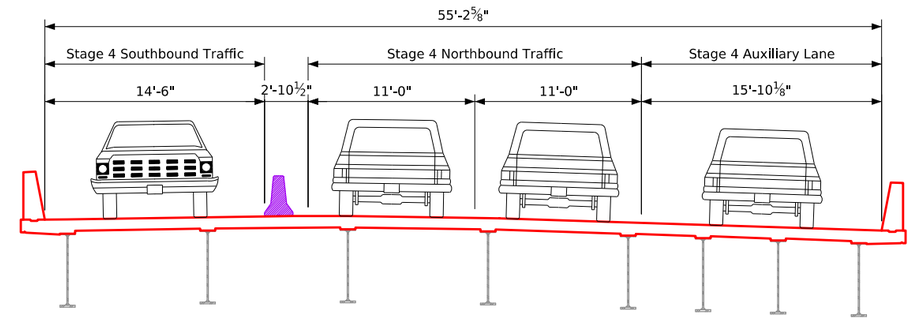
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 5 of 43 FHWA No. 604640



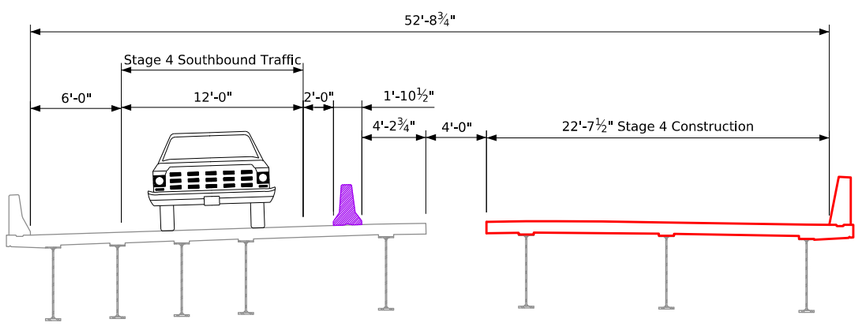

Southbound Lanes



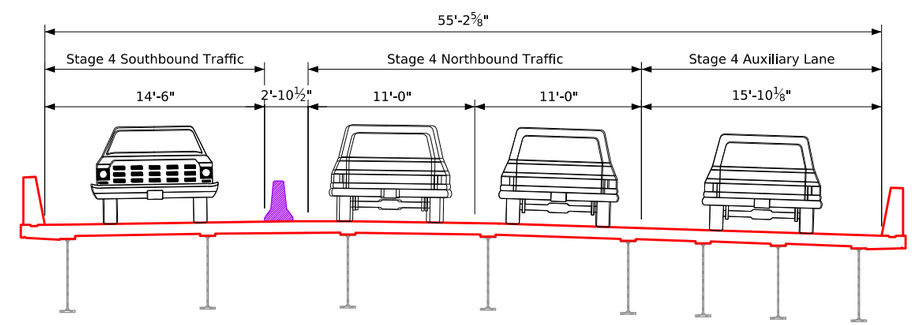

Northbound Lanes

## Typical Stage 4 Removals

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Stage 4 Construction

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 2 for tied projects.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

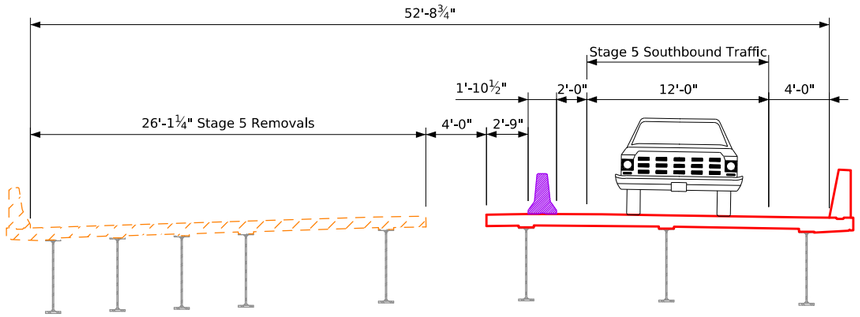
Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

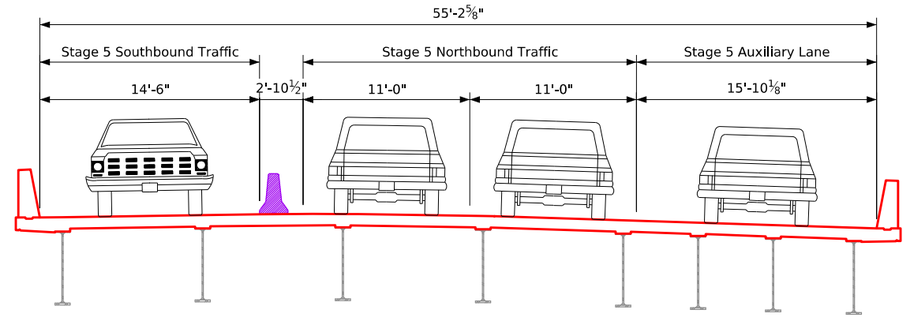
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 6 of 43 FHWA No. 604640




Southbound Lanes




Northbound Lanes

## Typical Stage 5 Removals

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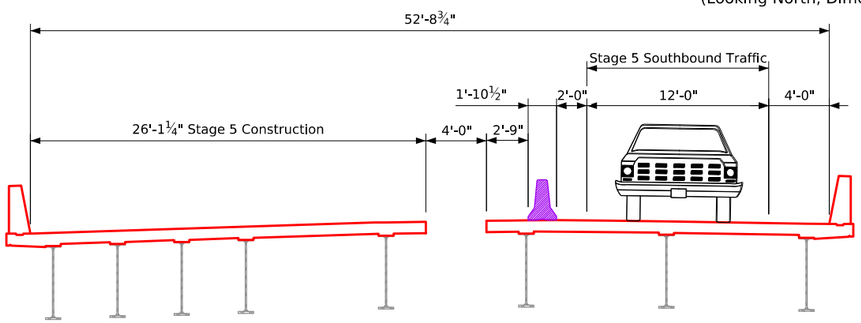
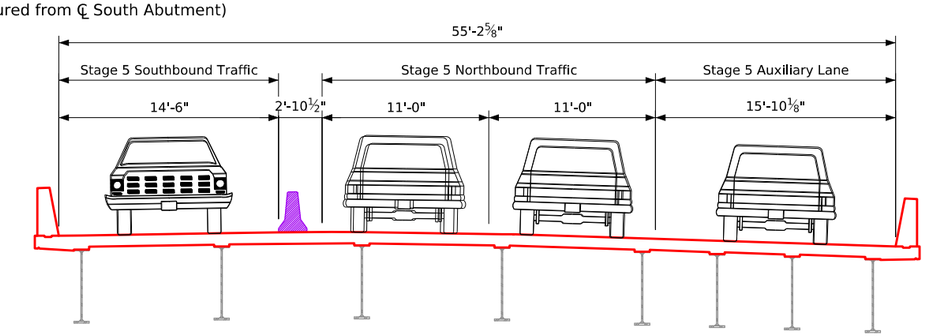


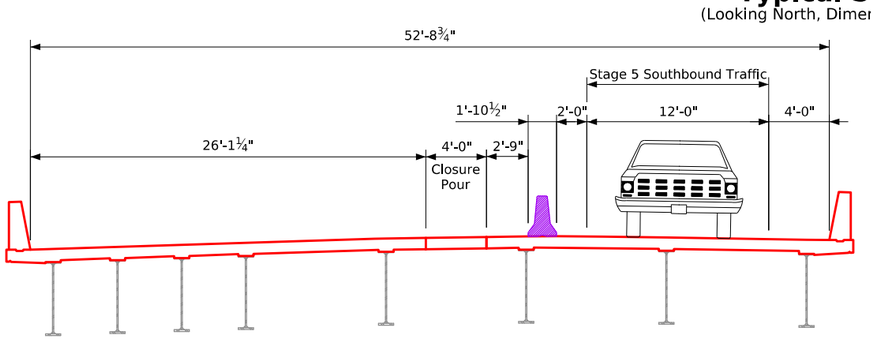

Southbound Lanes



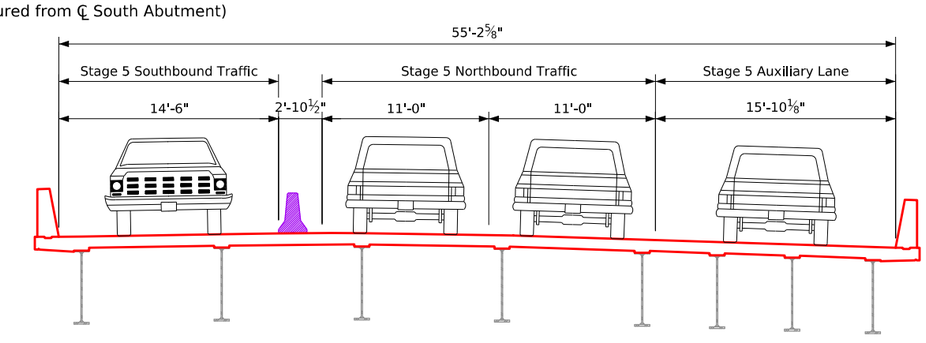

Northbound Lanes

## Typical Stage 5 Construction

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Closure Pour

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 2 for tied projects.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 7 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.7 |
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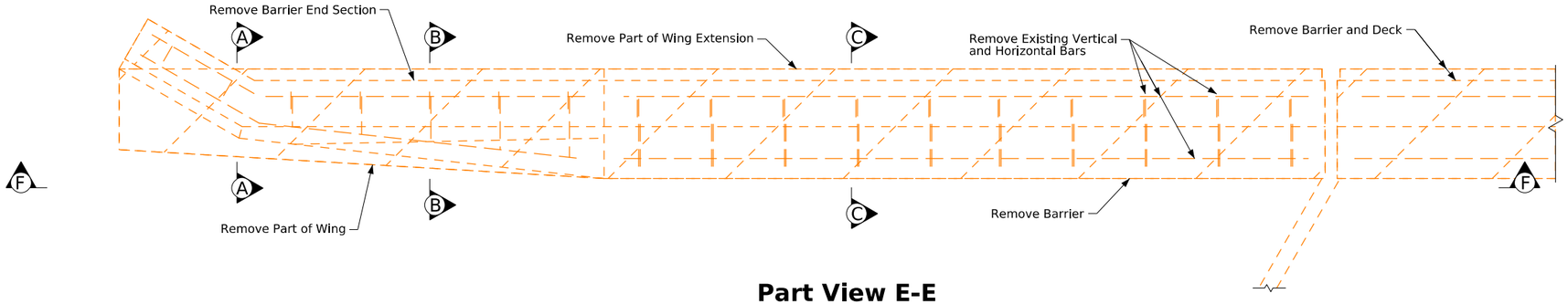
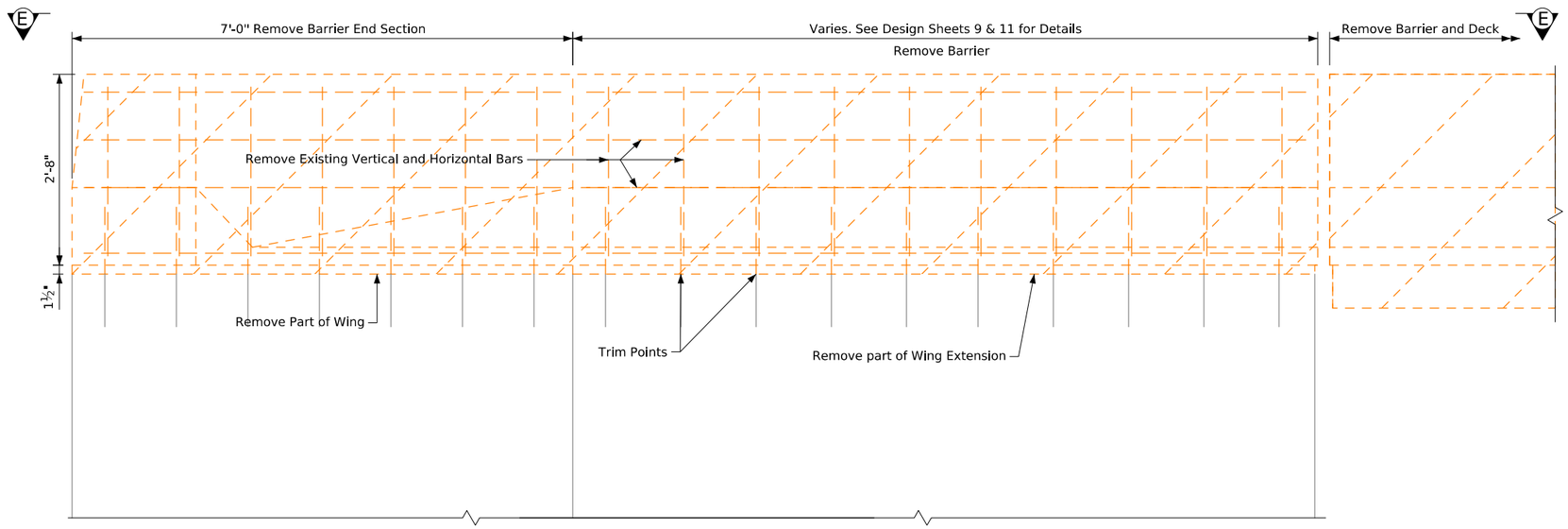
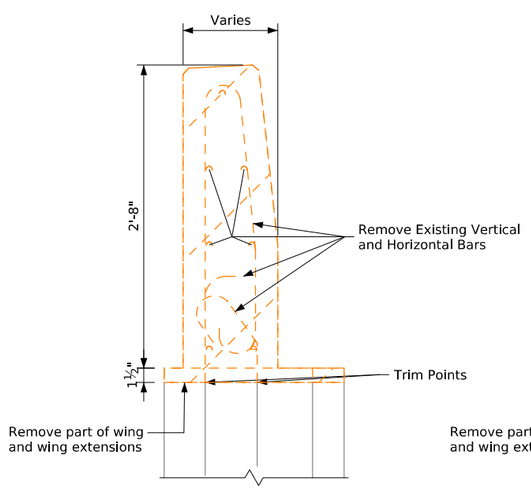


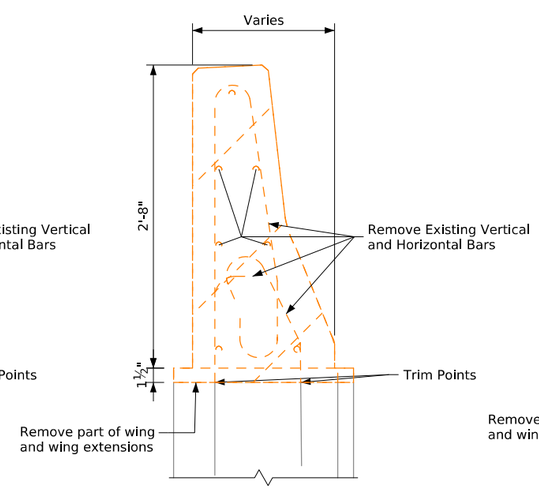

## Part View E-E




## Part View F-F




## Section A-A

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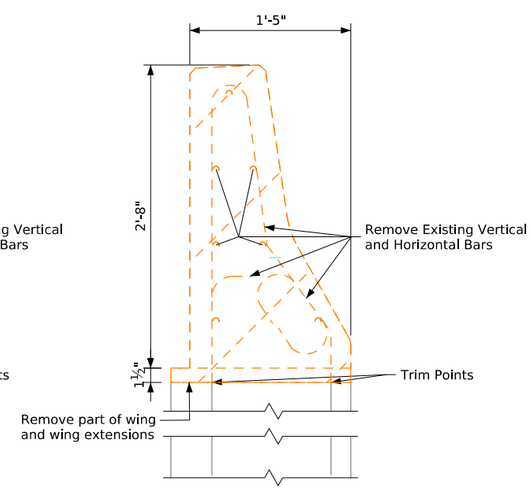


## Section C-C

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

# Barrier Rail End Section Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 8 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.8 |
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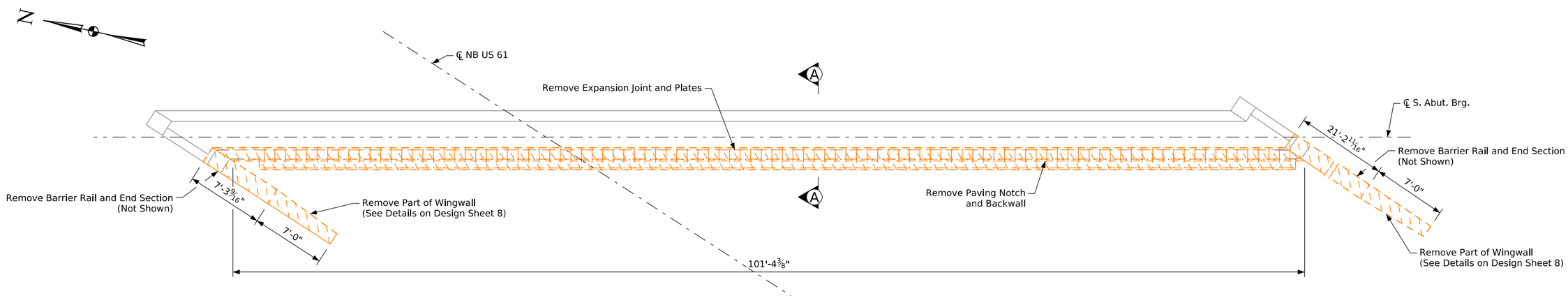
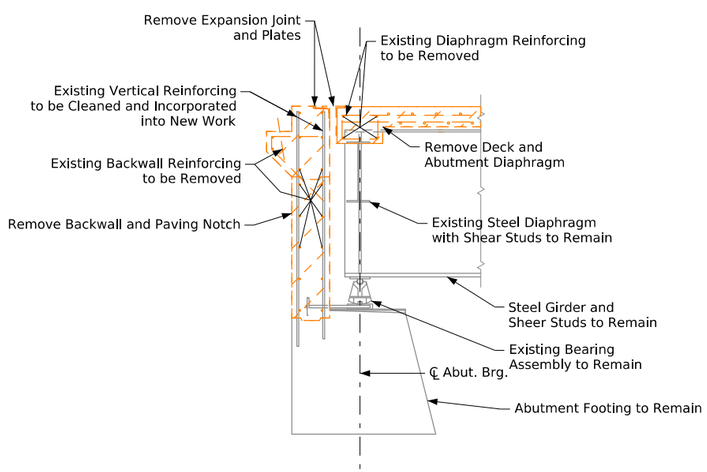



## Part Removal Plan at South Abutment




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## South Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 9 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.9 |
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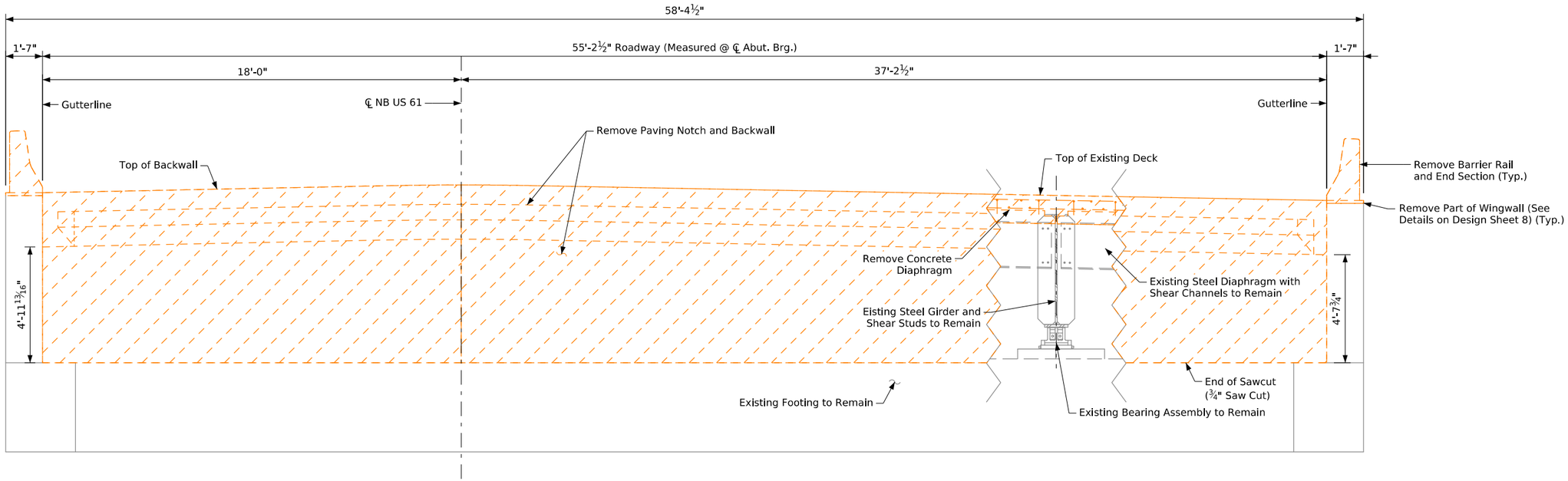


## Rear Elevation of South Abutment

(Looking North)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

South Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 10 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.10 |
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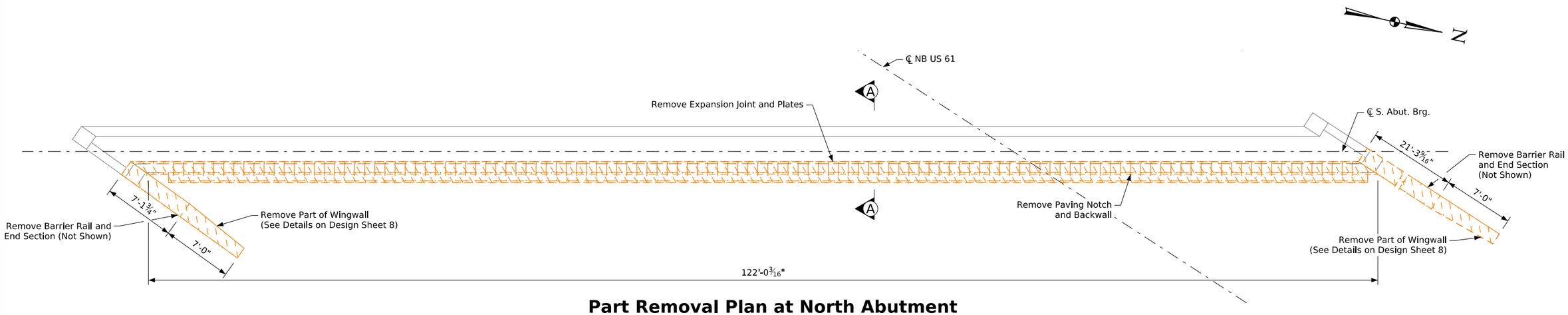
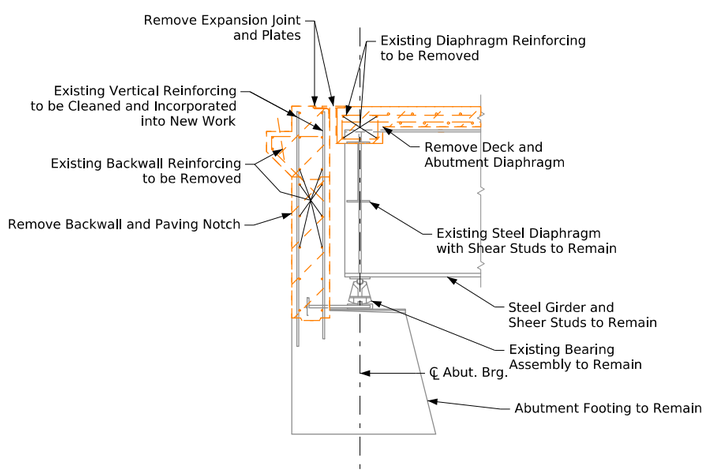



## Part Removal Plan at North Abutment




## Section A-A

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

North Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 11 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.11 |
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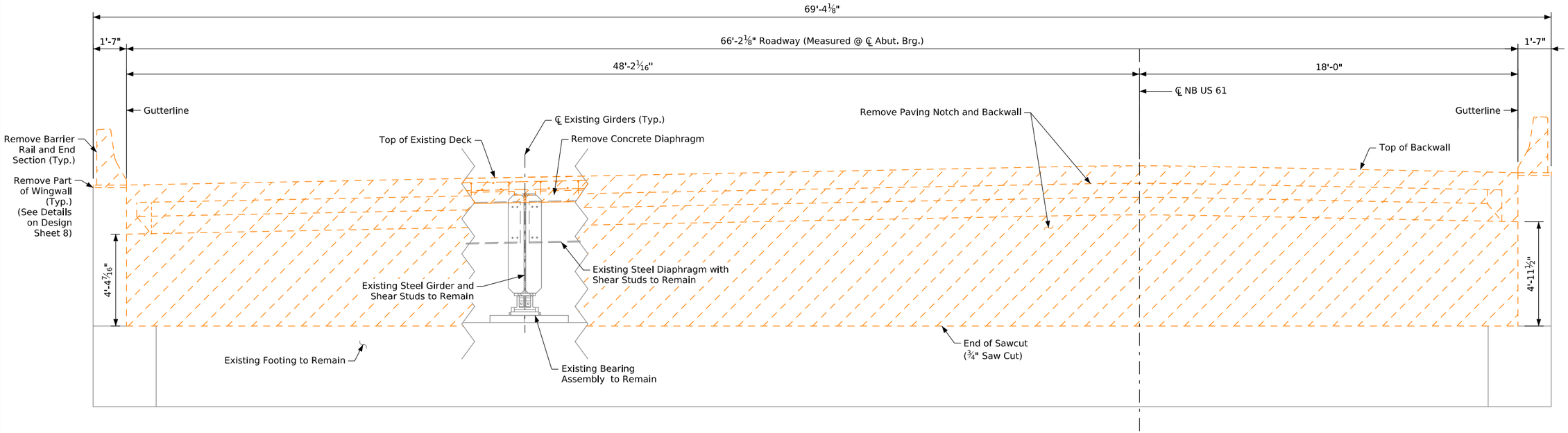


## Rear Elevation of North Abutment

(Looking South)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

North Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 12 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.12 |
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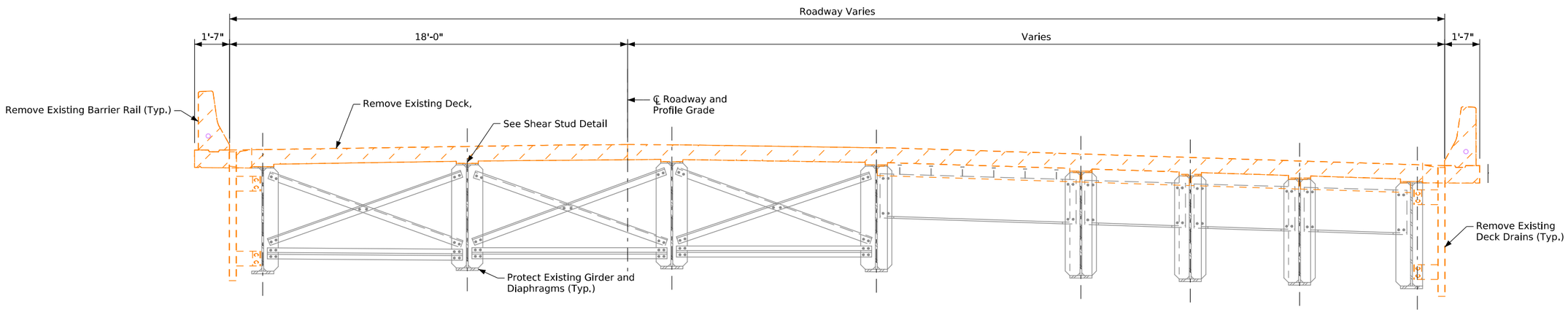



## Transverse Section
(Looking North)

## Deck Removal Notes

Hatched areas indicate concrete, railing, and floor drain removals.

See Roadway Plans for removal of approaches.

The Bridge Contractor is to use extreme care when remvoing the deck concrete at the beam locations to avoid damaging the top flange of the beam. Prior to commencing any deck removal work, the Contractor shall submit a demolition plan to the Engineer for approval. The Contractor shall notify the Engineer of the start date for deck removal work in order to demonstrate the removal procedure on a small portion of the deck while the Field Inspector is present. Damage may require the Contractor to modify the removal process prior to approval to proceed.

Removals shall be in accordance with Section 2401 of the Standard Specificationss. Any damage to other portions of the existing structure not noted for removal shall be the responsibility of the Bridge Contractor and shall be repaired, as directed by the Engineer, at the Contractor's expense.

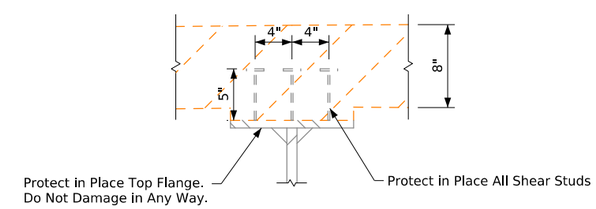
Once the deck concrete over the beam is removed, all remaining debris shall be cleaned from the beams to provide a suitable bond to the concrete deck. The removed material shall become property of the Contractor and shall be removed from the project site.

All damage sustained to the top flange shall be identified and repaired. In addition to being repaired, any damage located in a negative moment region shall undergo magnetic particle testing for cracks. Acceptable repair methods:

Girder top flange:
- Gouges – grind out in a 10:1 taper
- Bends or tears – to be evaluated by the Engineer

Angle and Bar Shear Lugs:
- Minor gouges – grind smooth
  Bends and gouges to angle – Grind sharp corners and, if in a negative moment region, magnetic particle test angle to flange weld. Any crack detected will necessitate the removal of the angle as noted below.
- Tears to angle – If in a negative moment region, remove angle by mechanically cutting to just above the top of flange, grind surface of flange smooth, and perform magnetic particle testing on the repair area. If in a positive moment region, remove angle by mechanically cutting to location of tear and grind sharp edges smooth.
- Bend or tear to bar – Remove bar and grind top of angle smooth.

Magnetic particle testing is to be done at the Contractor's expense by an approved third party. Any cracks identified shall be repaired or the section of the damaged beam replaced at the Engineer's direction at no additional cost to the State.




## Shear Stud Detail

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

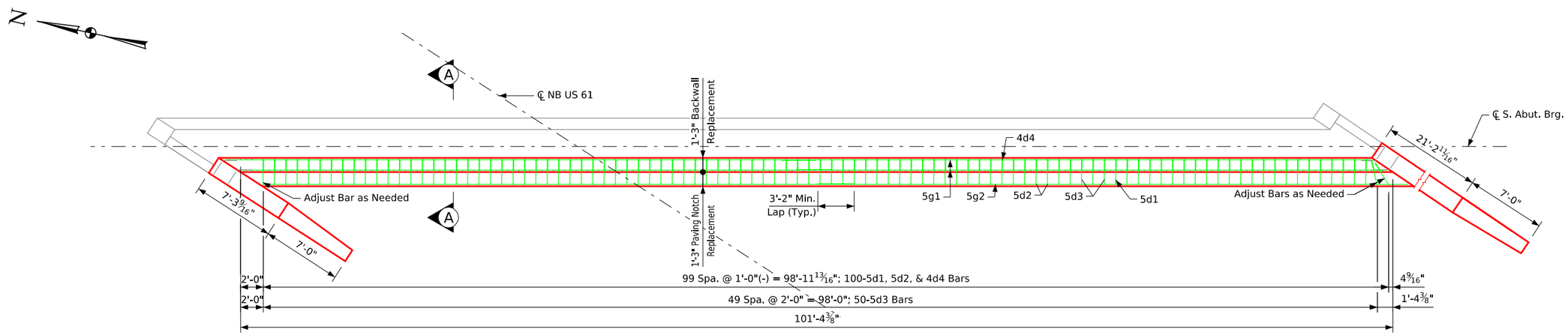
Superstructure Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

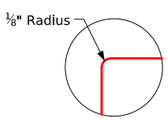
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

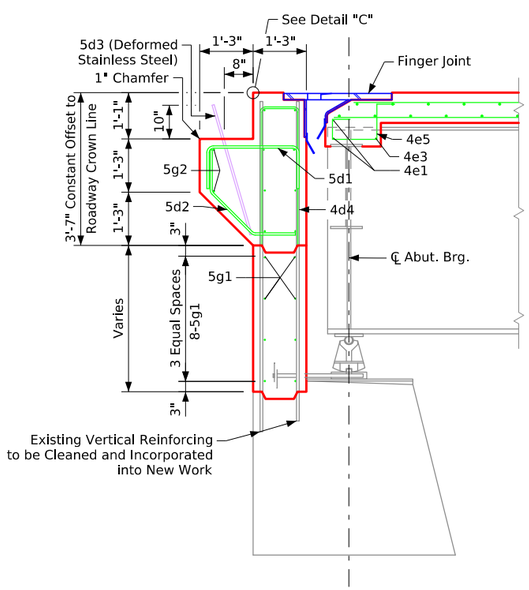
Design No. 0328 Design Sheet No. 13 of 43 FHWA No. 604640




## Part Plan at South Abutment




## Detail "C"




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## South Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 14 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.14 |
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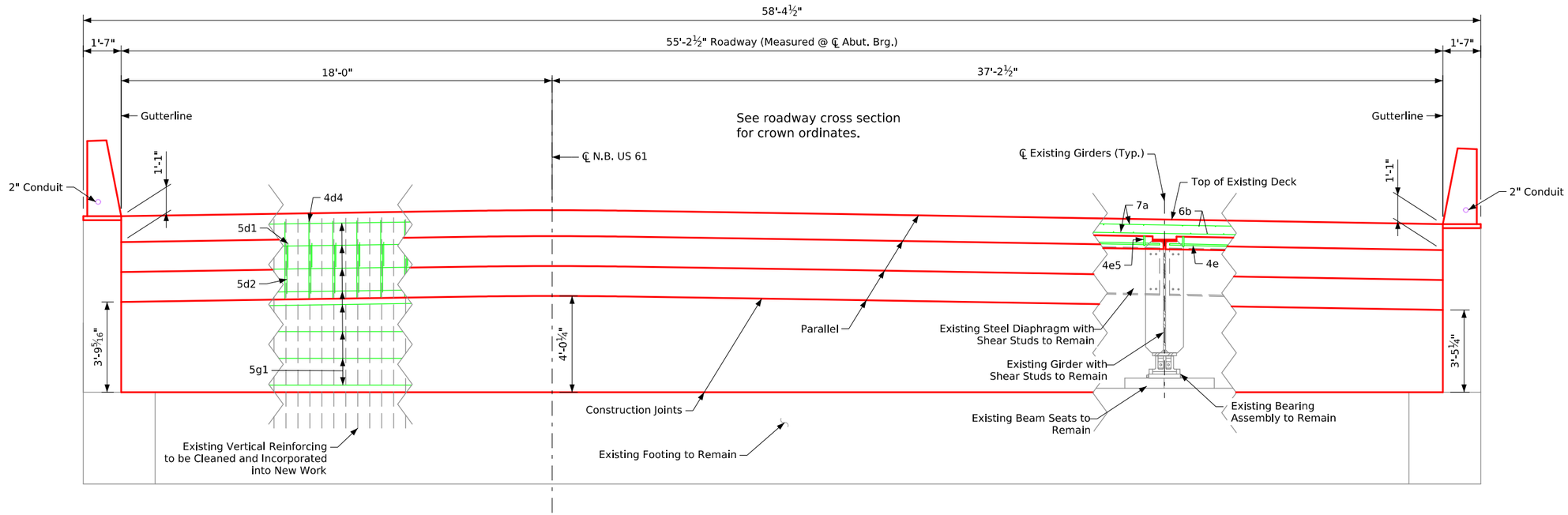


## Rear Elevation of South Abutment

(Looking North)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous
Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

South Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 15 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.15 |
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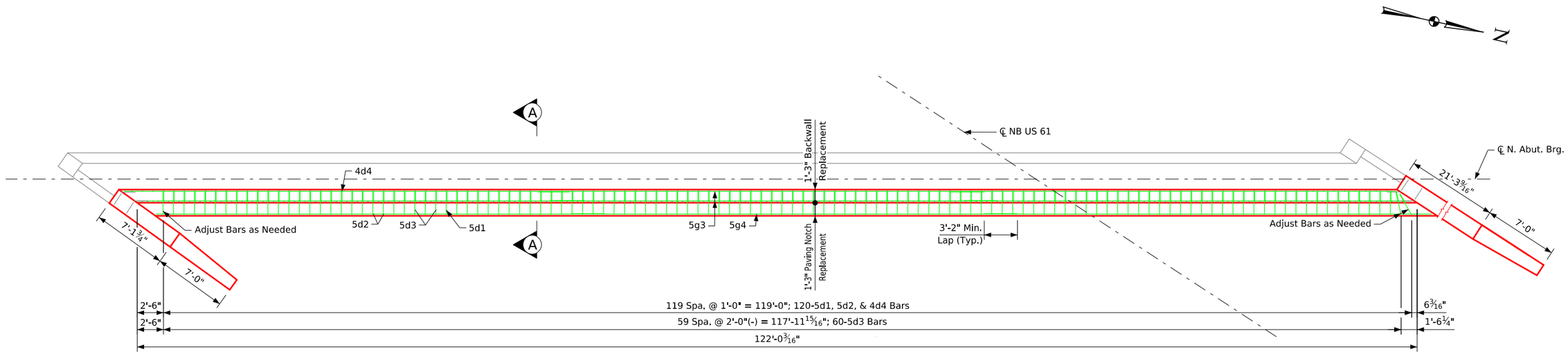
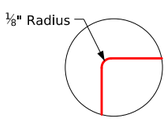
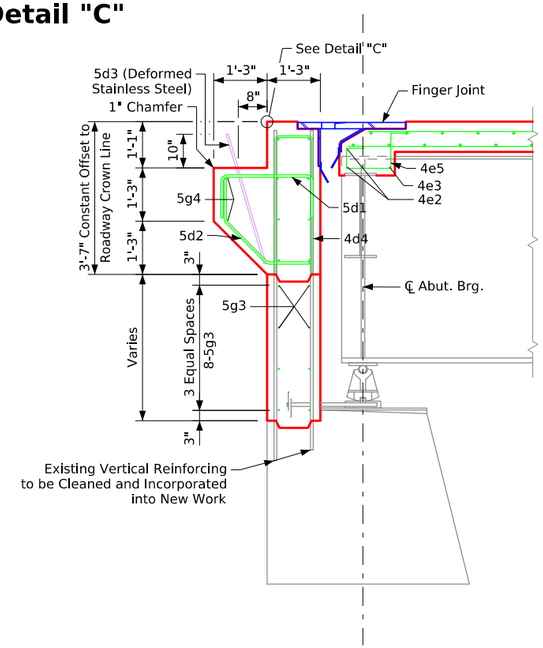



## Part Plan at North Abutment




## Detail "C"




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## North Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

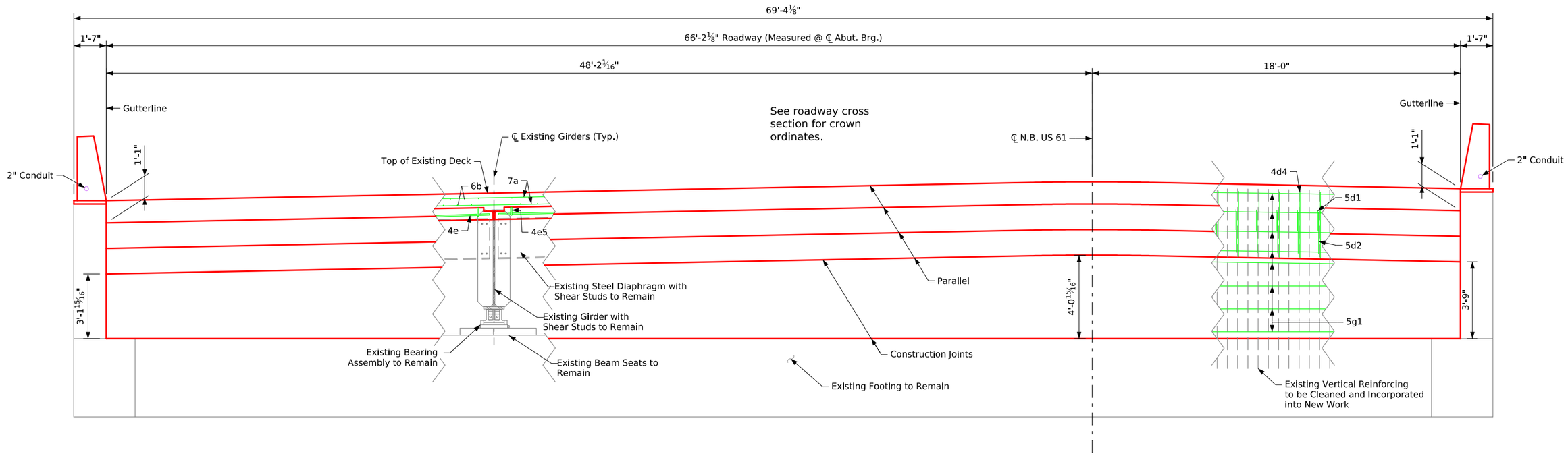
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 16 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.16 |
|---|---|---|---|---|---|

2:25:18 PM 4/15/2026 10117 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8206102023\Bridge\(153)_Bridge Deck Replacement\SHT_82061153_Stanley_0328_604640_Z11.dgn




## Rear Elevation of North Abutment

(Looking North)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

North Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 17 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.17 |
|---|---|---|---|---|---|

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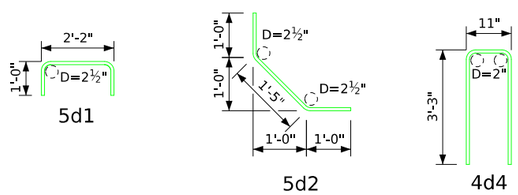
## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

## Stainless Steel Bar List – South Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d3 | Paving Notch Dowels | | 50 | 3'-2" | 165 |
| | | | | | |
| | | | | | |
| | | | | Stainless Steel – Total Weight (lbs.) | 165 |

## Epoxy Coated Reinforcing Steel Bar List – South Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d1 | Paving Notch | | 100 | 4'-2" | 435 |
| 5d2 | Paving Notch | | 100 | 3'-5" | 356 |
| 4d4 | Backwall Vertical Hoop | | 100 | 7'-5" | 495 |
| | | | | | |
| 5g1 | Backwall Longitudinal | | 32 | 52'-0" | 1,736 |
| 5g2 | Backwall Longitudinal | | 4 | 52'-0" | 217 |
| | | | | | |
| | | | | Reinforcing Steel – Epoxy Coated – Total Weight (lbs.) | 3,239 |

## Stainless Steel Bar List – North Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d3 | Paving Notch Dowels | | 60 | 3'-2" | 198 |
| | | | | | |
| | | | | | |
| | | | | Stainless Steel – Total Weight (lbs.) | 198 |

## Epoxy Coated Reinforcing Steel Bar List – North Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d1 | Paving Notch | | 120 | 4'-2" | 522 |
| 5d2 | Paving Notch | | 120 | 3'-5" | 428 |
| 4d4 | Backwall Vertical Hoop | | 120 | 7'-5" | 595 |
| | | | | | |
| 5g1 | Backwall Longitudinal | | 48 | 42'-9" | 2,139 |
| 5g2 | Backwall Longitudinal | | 6 | 42'-9" | 267 |
| | | | | | |
| | | | | Reinforcing Steel – Epoxy Coated – Total Weight (lbs.) | 3,951 |

## Concrete Placement Quantities

| Location | S Abut. | N Abut. |
|---|---|---|
| Backwall | 43.4 | 51.5 |
| East Wing | 0.3 | 0.2 |
| West Wing | 0.2 | 0.3 |
| | | |
| | | |
| Structural Concrete (Bridge) Total (cu. yd.) | 43.9 | 52.0 |

Note:
Concrete quantity for abutment diaphragms included in the Superstructure Concrete shown on Design Sheet 21.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

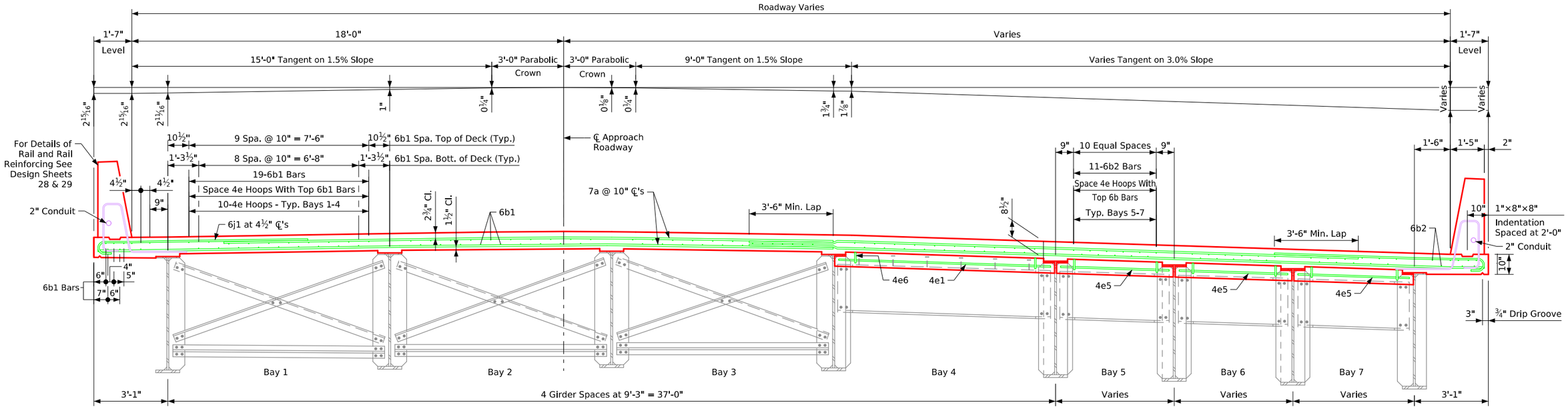
Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 18 of 43 FHWA No. 604640




## Half Section Near Intermediate Diaphragm

## Half Section Near Abutment

## Superstructure Notes:

The bridge deck as shown includes ¾" integral wearing surface. Forms for the bridge deck and barrier rail are to be supported by the girders.

Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown.

Top transverse reinforcing steel is to be parallel to and 2Б" clear below top of deck. Bottom transverse reinforcing steel is to be parallel to and 1½" clear above bottom of deck.

Top and bottom reinforcing steel is to be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or deck bolsters spaced 4'-0" apart. I.M. 451.01 requirements shall apply for bar chairs, high bar chairs, and deck bolsters.

Transverse deck reinforcing may be spliced with one lap located as follows:
Top bar - Lap midway between beams (min. lap = 3'-10")
Bottom bars - Lap over beams (min. lap = 4'-8")
Payment for reinforcing bars shall be based on no splices, and no allowance shall be made for the additional length of bar required for the use of splices.

All field connections are to be bolted using "high tensile strength bolts". Unless otherwise noted, all open holes are to be ∃" Ø and all bolts are to be ↄ" Ø.

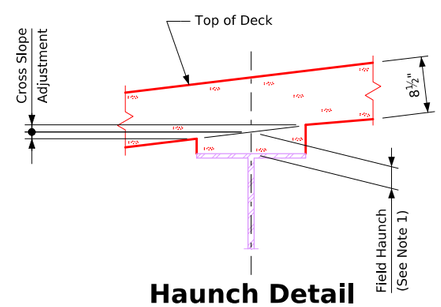
Bottom flanges are to be perpendicular to webs at the reaction points.

Fill ¢ thicknesses shown on plans are based on nominal girder dmensions. These thicknesses are to be verified or adjusted during fabrication to secure a close fit. Each fill plate shall fit to the nearest Ć" thickness and single plates are required at each fill location. Girders are to be truly square at splice points with flanges perpendicular to webs.

The design drawings indicate AWS prequalified welded joints. Alternate joint details may be submitted for approval.

Magnetic particle inspection of welds, in accordance with the Standard Specifications, will be required.

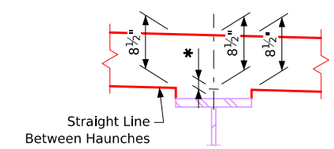
Shop welded flange splices shall be a minimum of 6 inches from a stiffener. Splices shall not interfere with any other bridge components. All shop welded butt splices shall be shown on the shop drawings and subject to approval by the Engineer.




## Haunch Detail

Note:
Existing bridge girder elevations were used to set theoretical camber and girder deflections. The estimated bridge girder elevations will provide a theoretical girder haunch within design parameters. Field haunches are determined using surveyed top of girder elevations and "Girder Line Haunch Elevation" data. Allowable maximum and minimum "Field Haunch" values are given in inches and decimals of feet in the "Miscellaneous Data Table". "Cross Slope Adjustment" values will aid the Contractor in determining actual formed haunch dimensions at the edges of the top flange.

Note 1:
To calculate field haunch required at each location, survey the girder tops consistent with the spacings shown on the "Top of Slab Elevations Layout". Subtract the surveyed girder shot from the "Girder Line Haunch Elevation". This value will be the haunch needed (see "Field Haunch" in haunch detail). The "Girder Line Haunch Elevation" includes adjustments for slab thicknesses and anticipated deflections. No additional calculations are required. If the field haunch exceeds the maximums and minimums shown in inches and decimals of feet in the "Miscellaneous Data Table", adjustments to the grade or additional haunch reinforcement will be required.




## Typ. Deck & Haunch Detail

✱ Concrete haunch dimension measured between bottom of deck and top of top flange plate. Refer to haunch details shown elsewhere in these plans.

The maximum embedment of the edge of the top flange in the deck shall be ½". Shear studs are to have a minimum penetration of 2" into the deck and be at least 2½" clear of the top of the deck. These requirements were used in setting the maximum and minimum allowable field haunch values shown in the "Miscellaneous Data Table" shown elsewhere on these plans.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

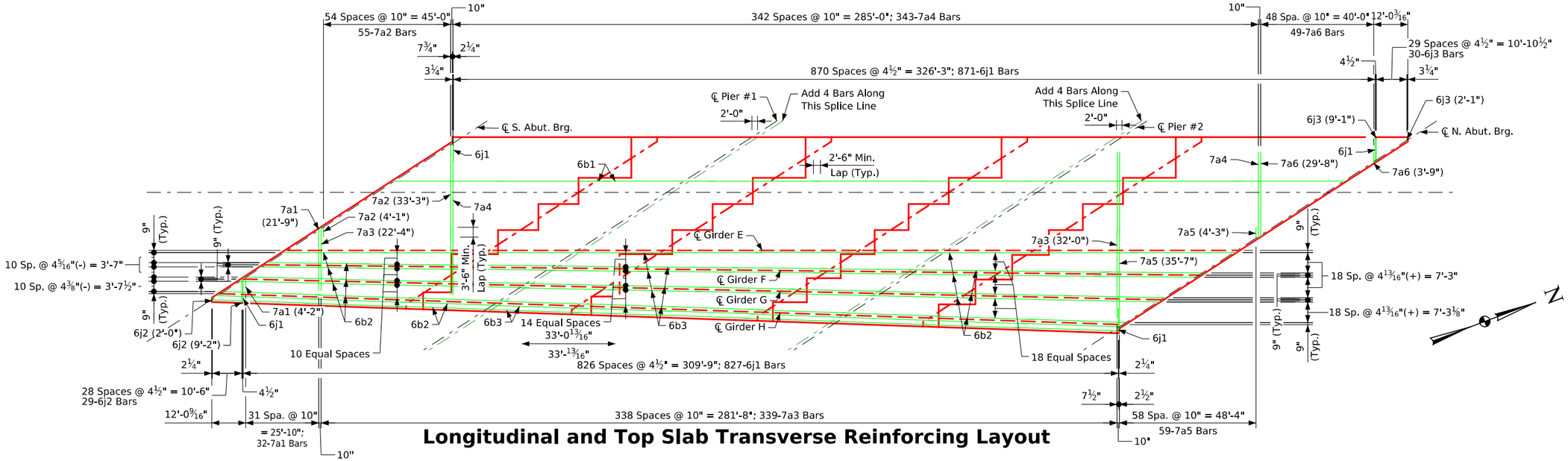
Superstructure Typical Section

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

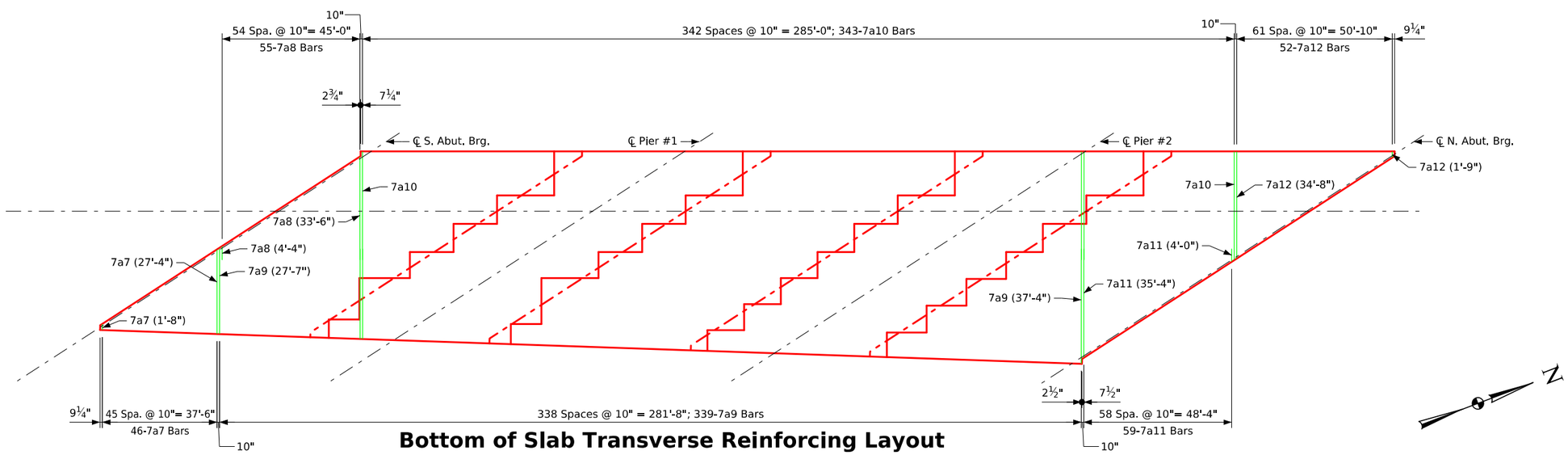
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 — Design Sheet No. 19 of 43 — FHWA No. 604640




## Longitudinal and Top Slab Transverse Reinforcing Layout




## Bottom of Slab Transverse Reinforcing Layout

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## Superstructure Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 — Design Sheet No. 20 of 43 — FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.20 |
|---|---|---|---|---|---|

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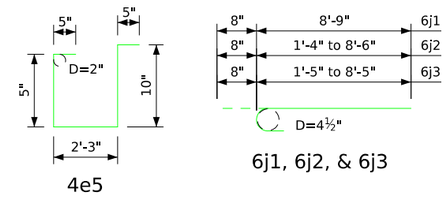
## Concrete Placement Quantities

| Location | Quantity |
|---|---|
| Section 1, Deck & Abut. Diaph. | 116.8 |
| Section 2, Deck | 119.8 |
| Section 3, Deck & Abut. Diaph. | 134.5 |
| Section 4, Deck | 101.0 |
| Section 5, Deck | 107.8 |
| | |
| High Performance Structural Concrete Total (cu. yds.) | 579.9 (F) |

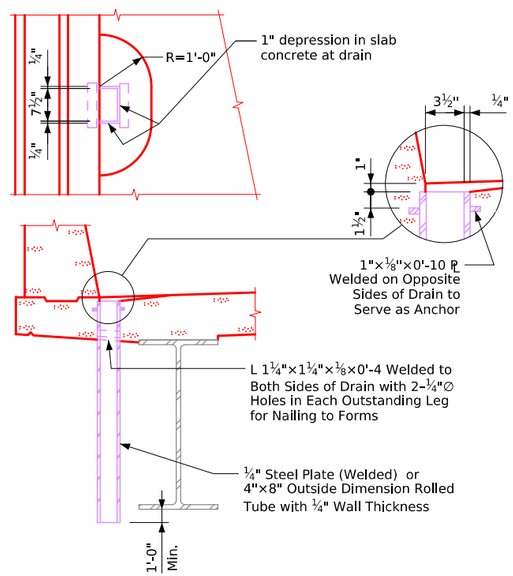
## Bent Bar Details




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

## Epoxy Coated Reinforcing Steel Bar List – Bridge Deck

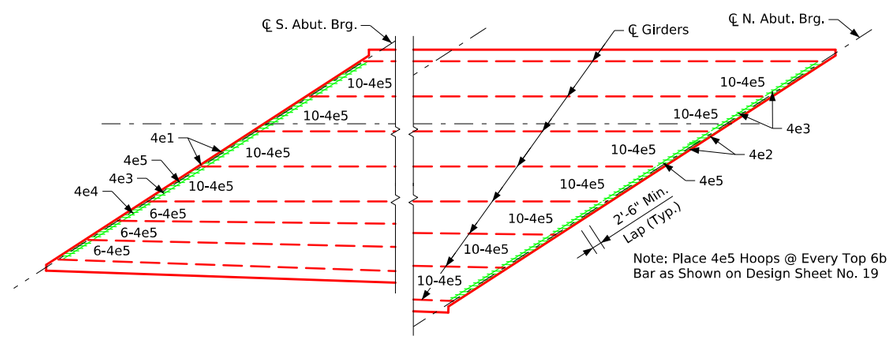
| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 7a1 | Deck Transv. Top | | 32 | Varies | 848 |
| 7a2 | Deck Transv. Top | | 55 | Varies | 2,099 |
| 7a3 | Deck Transv. Top | | 339 | Varies | 18,824 |
| 7a4 | Deck Transv. Top | | 343 | 30'-0" | 21,033 |
| 7a5 | Deck Transv. Top | | 59 | Varies | 2,402 |
| 7a6 | Deck Transv. Top | | 49 | Varies | 1,673 |
| 7a7 | Deck Transv. Bott. | | 46 | Varies | 1,363 |
| 7a8 | Deck Transv. Bott. | | 55 | Varies | 2,127 |
| 7a9 | Deck Transv. Bott. | | 339 | Varies | 22,491 |
| 7a10 | Deck Transv. Bott. | | 343 | 35'-3" | 24,713 |
| 7a11 | Deck Transv. Bott. | | 59 | Varies | 2,372 |
| 7a12 | Deck Transv. Bott. | | 52 | Varies | 1,935 |
| | | | | | |
| 6b1 | Deck Longit. Top & Bott. | | 756 | 39'-9" | 45,137 |
| 6b2 | Deck Longit. Top & Bott. | | 318 | 37'-2" | 17,746 |
| 6b3 | Deck Longit. Top & Bott. | | 212 | 34'-3" | 10,896 |
| | | | | | |
| 4e1 | Abut. Diaph. Longit. | | 4 | 49'-0" | 131 |
| 4e2 | Abut. Diaph. Longit. | | 6 | 40'-3" | 161 |
| 4e3 | Abut. Diaph. Longit. (Between Girders) | | 11 | 16'-5" | 120 |
| 4e4 | Abut. Diaph. Longit. (Between Girders) | | 3 | 8'-9" | 18 |
| 4e5 | Abut. Diaph. Hoops | | 128 | 4'-4" | 371 |
| | | | | | |
| 6j1 | Deck Transv. Top (at Rail) | | 1,698 | 9'-5" | 24,016 |
| 6j2 | Deck Transv. Top (at Rail) | | 29 | Varies | 243 |
| 6j3 | Deck Transv. Top (at Rail) | | 30 | Varies | 252 |
| | | | | | |
| | Reinforcing Steel Epoxy Coated Total Weight (lbs.) | | | | 200,971 |



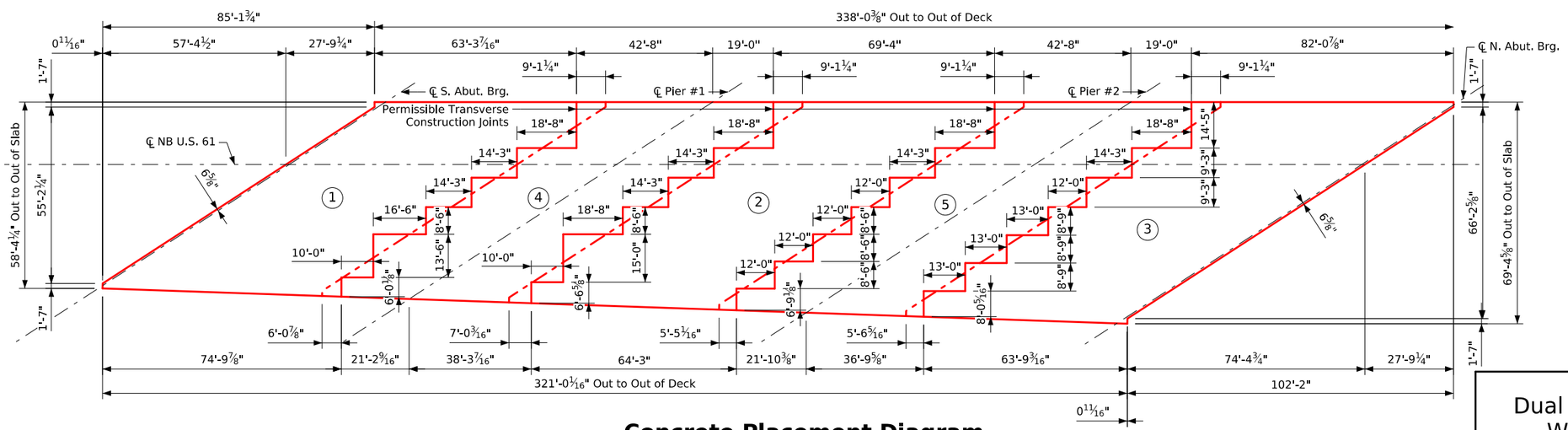

## Data for One Drain

| | |
|---|---|
| Drain Weight (lbs.) | 136 |
| Drain Length (ft.) | 6'-8" |

Ten (10) deck drains required. Refer to Situation Plan for locations.




## Abutment Diaphragm Hoop Placement Diagram




## Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck concrete shall cure for a minimum of 48 hours and shall achieve a minimum strength of 75% of the 28 day deck conrete strength prior to removing deck headers and beginning an adjacent pour.

Design For Repairs to 57°03' LA

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102'-6" End Spans 131'-0" Interior Span

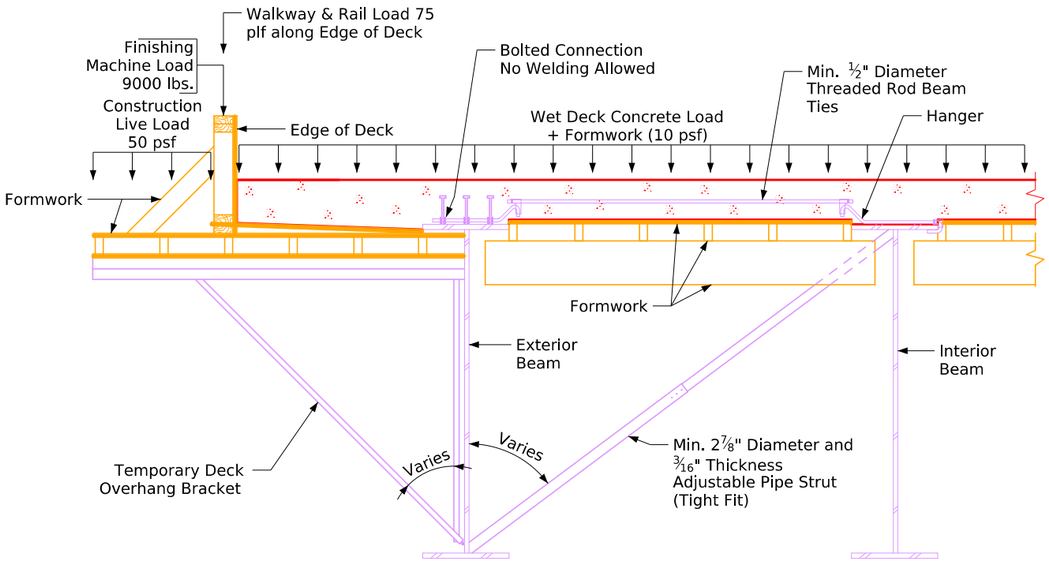
Superstructure Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

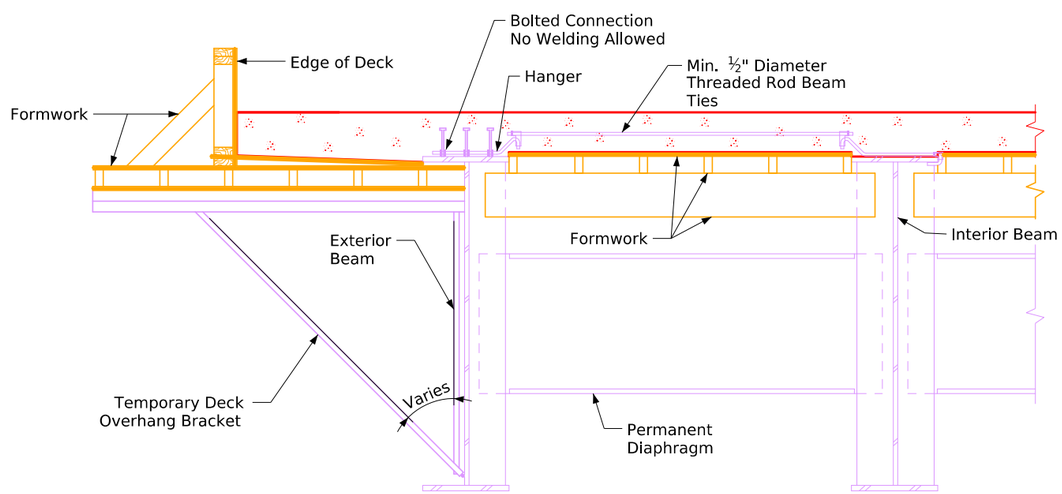
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

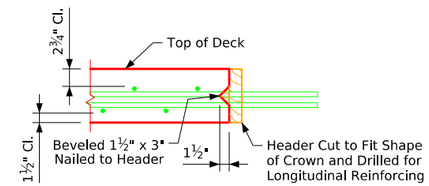
Design No. 0328 Design Sheet No. 21 of 43 FHWA No. 604640



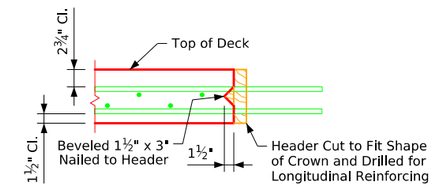

**Temporary Deck Overhang Bracket and Bracing System Details Between Diaphragms**




**Temporary Deck Overhang Bracket and Bracing System Details at Permanent Diaphragms**




**Permissible Transverse Deck Construction Joint**




**Longitudinal Portion of Deck Construction Joint**

## Overhang Bracket and Temporary Bracing Notes:

The details of the temporary overhang brackets and struts shall be the responsibility of the contractor based on the manufacturer's design handbook. The contractor is responsible for the stability of the girders and use of a temporary bracing system during the deck removal, throughout construction, and during deck placement.

The designer recommends the use of adjustable pipe struts located in the first interior bay, adjacent to the overhang bracket, which is intended to limit exterior beam rotation due to construction loading.

Temporary pipe struts or any temporary bracing system shall be considered incidental to the cost of "High Performance Structural Concrete".

Welding to the girder flanges, web, or shear studs is not allowed.

The bottom joint of the overhang bracket and pipe strut shall be located within 12" of the girder bottom flange, but preferably as close as possible to the bottom flange.

A maximum finishing machine load and the angle of the diagonal member of the overhang bracket shown were assumed by the designer. These assumptions, in addition to other construction loadings, were used to check the strength of the exterior girder during critical stages of construction. If the finishing machine load or angle of the diagonal member of the overhang bracket deviate significantly from values shown, the contractor shall submit to the engineer this information on proposed construction equipment to be used.

The spacing of the overhang bracket and the angle of the diagonal member shall be determined per the manufature's design handbook including type and size of overhang bracket and anticipated construction loads.

If the vertical height of the overhang bracket is adjustable, the base of the bracket is to be located as close as possible to the bottom flange of the girder.

Design For Repairs to 57°03' LA

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Superstructure Details

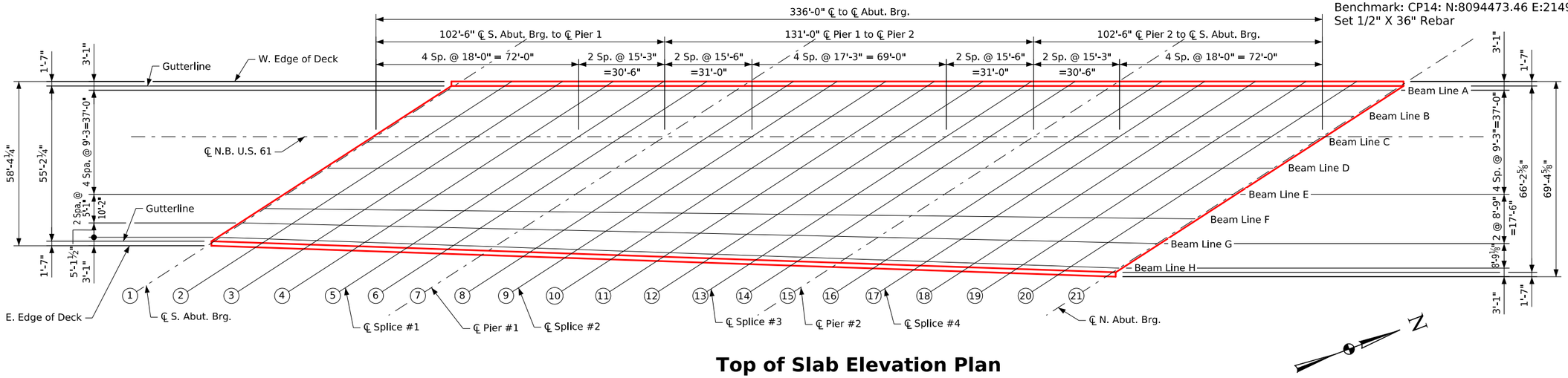
STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 22 of 43 FHWA No. 604640

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar



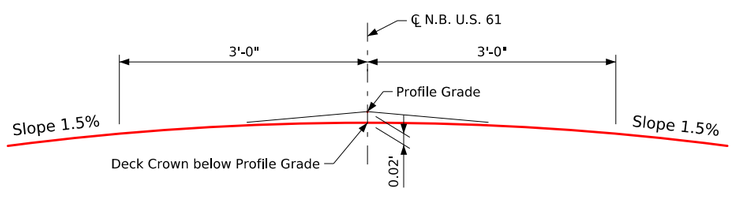

## Top of Slab Elevation Plan

Note: Span lengths and spacings shown above are for Beam Lines A - E. See Design Sheet 25 for span lengths and spacings for Beam Lines F - H.

## Top Of Slab Elevations

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 | Line 6 | Line 7 | Line 8 | Line 9 | Line 10 | Line 11 | Line 12 | Line 13 | Line 14 | Line 15 | Line 16 | Line 17 | Line 18 | Line 19 | Line 20 | Line 21 |
| West Gutter Line | 775.25 | 775.17 | 775.08 | 775.00 | 774.91 | 774.84 | 774.77 | 774.69 | 774.62 | 774.53 | 774.45 | 774.37 | 774.29 | 774.21 | 774.14 | 774.06 | 773.99 | 773.90 | 773.82 | 773.73 | 773.64 |
| Beam Line A | 775.28 | 775.20 | 775.12 | 775.03 | 774.94 | 774.87 | 774.80 | 774.72 | 774.65 | 774.57 | 774.48 | 774.40 | 774.32 | 774.24 | 774.17 | 774.09 | 774.02 | 773.94 | 773.85 | 773.76 | 773.68 |
| Beam Line B | 775.48 | 775.41 | 775.33 | 775.24 | 775.15 | 775.08 | 775.01 | 774.93 | 774.86 | 774.77 | 774.69 | 774.61 | 774.53 | 774.45 | 774.38 | 774.30 | 774.23 | 774.14 | 774.06 | 773.97 | 773.89 |
| Centerline | 775.60 | 775.53 | 775.46 | 775.38 | 775.29 | 775.22 | 775.14 | 775.07 | 774.99 | 774.91 | 774.83 | 774.75 | 774.66 | 774.59 | 774.51 | 774.44 | 774.37 | 774.28 | 774.20 | 774.11 | 774.02 |
| Beam Line C | 775.60 | 775.54 | 775.46 | 775.38 | 775.29 | 775.22 | 775.15 | 775.07 | 775.00 | 774.92 | 774.83 | 774.75 | 774.67 | 774.59 | 774.52 | 774.45 | 774.37 | 774.29 | 774.20 | 774.11 | 774.03 |
| Beam Line D | 775.51 | 775.45 | 775.39 | 775.31 | 775.23 | 775.15 | 775.08 | 775.01 | 774.93 | 774.85 | 774.77 | 774.68 | 774.60 | 774.53 | 774.45 | 774.38 | 774.31 | 774.22 | 774.13 | 774.05 | 773.96 |
| Beam Line E | 775.28 | 775.23 | 775.17 | 775.11 | 775.03 | 774.96 | 774.88 | 774.81 | 774.74 | 774.65 | 774.57 | 774.49 | 774.40 | 774.33 | 774.26 | 774.18 | 774.11 | 774.02 | 773.94 | 773.85 | 773.76 |
| Beam Line F | 775.14 | 775.09 | 775.04 | 774.97 | 774.89 | 774.82 | 774.74 | 774.66 | 774.59 | 774.50 | 774.41 | 774.32 | 774.24 | 774.16 | 774.08 | 774.00 | 773.93 | 773.84 | 773.75 | 773.65 | 773.56 |
| Beam Line G | 775.01 | 774.96 | 774.90 | 774.83 | 774.75 | 774.68 | 774.60 | 774.52 | 774.44 | 774.35 | 774.26 | 774.16 | 774.07 | 773.99 | 773.91 | 773.83 | 773.75 | 773.65 | 773.56 | 773.46 | 773.37 |
| Beam Line H | 774.87 | 774.82 | 774.76 | 774.69 | 774.61 | 774.54 | 774.46 | 774.38 | 774.29 | 774.19 | 774.10 | 774.00 | 773.91 | 773.82 | 773.74 | 773.65 | 773.57 | 773.47 | 773.37 | 773.27 | 773.17 |
| East Gutter line | 774.83 | 774.78 | 774.72 | 774.65 | 774.57 | 774.50 | 774.42 | 774.34 | 774.25 | 774.15 | 774.06 | 773.96 | 773.87 | 773.78 | 773.70 | 773.61 | 773.53 | 773.43 | 773.33 | 773.23 | 773.13 |

Note: Elevations are based on the existing plans and increased by 1/2" to reflect the proposed grade raise. Refer to General Notes for anticipated elevation adjustment due to datum change.




## Crown Template

No Scale

Notes:
Elevations along ℄ N.B. U.S. 61 are located at Deck Crown below Profile Grade as shown in the Crown Template Detail.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Top of Deck Elevations

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 23 of 43 FHWA No. 604640

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar

## Table of Beam Line Haunch Elevations

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| A | 774.57 | 774.55 | 774.49 | 774.39 | 774.27 | 774.17 | 774.09 | 774.03 | 773.98 | 773.93 | 773.86 | 773.77 | 773.65 | 773.55 | 773.46 | 773.40 | 773.35 | 773.30 | 773.22 | 773.11 | 772.97 |
| B | 774.77 | 774.76 | 774.70 | 774.61 | 774.49 | 774.38 | 774.30 | 774.24 | 774.20 | 774.15 | 774.08 | 773.98 | 773.86 | 773.76 | 773.67 | 773.61 | 773.57 | 773.52 | 773.44 | 773.32 | 773.18 |
| C | 774.89 | 774.89 | 774.84 | 774.75 | 774.63 | 774.53 | 774.44 | 774.38 | 774.34 | 774.29 | 774.23 | 774.13 | 774.01 | 773.90 | 773.81 | 773.75 | 773.71 | 773.66 | 773.58 | 773.46 | 773.32 |
| D | 774.80 | 774.80 | 774.77 | 774.68 | 774.56 | 774.46 | 774.37 | 774.31 | 774.27 | 774.22 | 774.16 | 774.06 | 773.94 | 773.83 | 773.74 | 773.68 | 773.64 | 773.59 | 773.51 | 773.40 | 773.25 |
| E | 774.57 | 774.57 | 774.54 | 774.46 | 774.36 | 774.26 | 774.18 | 774.12 | 774.07 | 774.02 | 773.95 | 773.85 | 773.74 | 773.63 | 773.55 | 773.49 | 773.45 | 773.40 | 773.32 | 773.20 | 773.06 |
| F | 774.43 | 774.41 | 774.38 | 774.30 | 774.20 | 774.12 | 774.03 | 773.97 | 773.92 | 773.86 | 773.78 | 773.67 | 773.56 | 773.46 | 773.37 | 773.31 | 773.27 | 773.21 | 773.12 | 773.00 | 772.85 |
| G | 774.30 | 774.28 | 774.24 | 774.16 | 774.06 | 773.98 | 773.89 | 773.83 | 773.77 | 773.70 | 773.62 | 773.51 | 773.39 | 773.29 | 773.20 | 773.14 | 773.08 | 773.01 | 772.93 | 772.80 | 772.66 |
| H | 774.16 | 774.14 | 774.10 | 774.02 | 773.92 | 773.84 | 773.75 | 773.68 | 773.61 | 773.53 | 773.45 | 773.34 | 773.23 | 773.12 | 773.03 | 772.95 | 772.89 | 772.82 | 772.72 | 772.60 | 772.46 |

Note: Elevations are based on the existing plans. Refer to General Notes for anticipated elevation adjustment due to datum change.

## Miscellaneous Data Table

| | Beam Line | | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 | Line 6 | Line 7 | Line 8 | Line 9 | Line 10 | Line 11 | Line 12 | Line 13 | Line 14 | Line 15 | Line 16 | Line 17 | Line 18 | Line 19 | Line 20 | Line 21 |
| Anticipated Deflection Due to Deck (in.) | A | | 0 | 9/16 | 7/8 | 13/16 | 7/16 | 1/8 | 0 | 1/8 | 7/16 | 13/16 | 1 | 13/16 | 7/16 | 1/8 | 0 | 1/8 | 7/16 | 13/16 | 7/8 | 9/16 | 0 |
| | B, C, D | | 0 | 5/8 | 1 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 15/16 | 1 1/8 | 15/16 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 1 | 5/8 | 0 |
| | E | | 0 | 9/16 | 13/16 | 3/4 | 3/8 | 1/8 | 0 | 3/16 | 1/2 | 15/16 | 1 1/16 | 7/8 | 1/2 | 1/8 | 0 | 3/16 | 9/16 | 15/16 | 1 1/16 | 11/16 | 0 |
| | F | | 0 | 5/16 | 1/2 | 7/16 | 3/16 | 1/16 | 0 | 1/8 | 7/16 | 11/16 | 13/16 | 5/8 | 5/16 | 1/16 | 0 | 3/16 | 1/2 | 13/16 | 7/8 | 9/16 | 0 |
| | G | | 0 | 5/16 | 7/16 | 7/16 | 3/16 | 1/16 | 0 | 1/8 | 3/8 | 5/8 | 3/4 | 9/16 | 5/16 | 1/16 | 0 | 3/16 | 7/16 | 3/4 | 13/16 | 9/16 | 0 |
| | H | | 0 | 5/16 | 7/16 | 3/8 | 3/16 | 1/16 | 0 | 1/8 | 5/16 | 9/16 | 5/8 | 1/2 | 1/4 | 1/16 | 0 | 1/8 | 5/16 | 5/8 | 5/8 | 7/16 | 0 |
| Cross Slope Adjustments (in.) | A, B, C, D | | 3/16 | | | | 1/4 | | | | | 3/16 | | | 1/4 | | | | | 3/16 | | | |
| | E, F, G, H | | 3/8 | | | | 1/2 | | | | | 3/8 | | | 1/2 | | | | | 3/8 | | | |
| Allowable Field Haunch (in & ft.) | Max. | All | 2.5" (0.208') | | | | | | | | | | | | | | | | | | | | |
| | Min. | All | -0.5" (-0.042') | | | | | | | | | | | | | | | | | | | | |

Note:
See Design Sheet 23 for locations of tabulated values.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

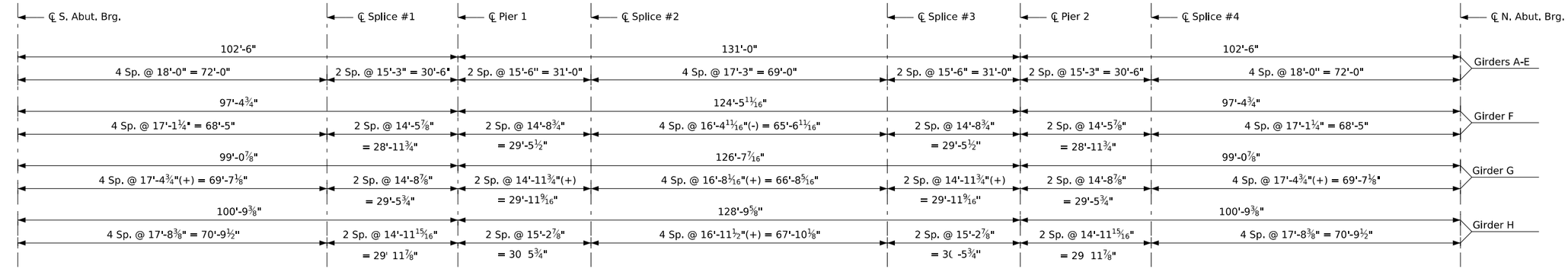
## Beam Line Haunch Data

STA. 462+06.89 (US 61) Turn-in Date: May 2026

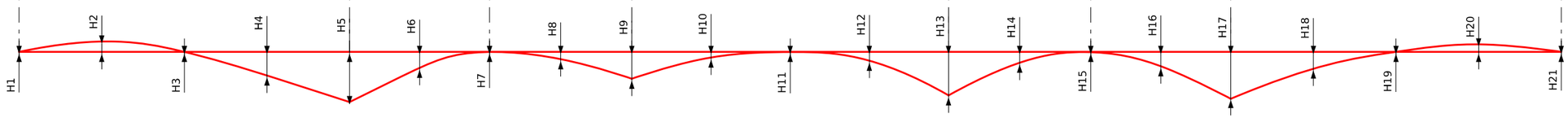
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 24 of 43 FHWA No. 604640




## Dead Load Deflection Diagram




## Theoretical Concrete Haunch Diagram

(For estimating purposes only, field verify)

## Dead Load Deflection Total (in.)

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 0 | 3/4 | 1 1/8 | 1 | 9/16 | 3/16 | 0 | 3/16 | 5/8 | 1 1/16 | 1 1/4 | 1 1/16 | 5/8 | 3/16 | 0 | 3/16 | 9/16 | 1 | 1 1/8 | 3/4 | 0 |
| B, C, D | 0 | 13/16 | 1 1/4 | 1 1/8 | 5/8 | 3/16 | 0 | 3/16 | 11/16 | 1 3/16 | 1 7/16 | 1 3/16 | 11/16 | 3/16 | 0 | 3/16 | 5/8 | 1 1/8 | 1 1/4 | 13/16 | 0 |
| E | 0 | 11/16 | 1 | 15/16 | 1/2 | 1/8 | 0 | 3/16 | 5/8 | 1 1/16 | 1 1/4 | 1 1/16 | 9/16 | 1/8 | 0 | 3/16 | 5/8 | 1 1/8 | 1 1/4 | 13/16 | 0 |
| F | 0 | 1/2 | 3/4 | 5/8 | 5/16 | 1/16 | 0 | 3/16 | 9/16 | 15/16 | 1 1/16 | 7/8 | 7/16 | 1/8 | 0 | 3/16 | 5/8 | 1 1/16 | 1 1/8 | 3/4 | 0 |
| G | 0 | 7/16 | 11/16 | 5/8 | 5/16 | 1/16 | 0 | 3/16 | 1/2 | 7/8 | 1 | 13/16 | 7/16 | 1/8 | 0 | 3/16 | 9/16 | 1 | 1 1/16 | 11/16 | 0 |
| H | 0 | 7/16 | 11/16 | 9/16 | 5/16 | 1/16 | 0 | 1/8 | 7/16 | 3/4 | 7/8 | 11/16 | 3/8 | 1/8 | 0 | 1/8 | 7/16 | 13/16 | 7/8 | 9/16 | 0 |

## Dead Load Deflection - Concrete Only (in.)

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 0 | 5/8 | 15/16 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 1 1/16 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 15/16 | 5/8 | 0 |
| B, C, D | 0 | 11/16 | 1 1/16 | 15/16 | 9/16 | 1/8 | 0 | 3/16 | 9/16 | 1 | 1 3/16 | 1 | 9/16 | 3/16 | 0 | 3/16 | 9/16 | 15/16 | 1 1/16 | 11/16 | 0 |
| E | 0 | 9/16 | 13/16 | 3/4 | 3/8 | 1/8 | 0 | 3/16 | 1/2 | 15/16 | 1 1/16 | 7/8 | 1/2 | 1/8 | 0 | 3/16 | 9/16 | 15/16 | 1 1/16 | 11/16 | 0 |
| F | 0 | 3/8 | 9/16 | 1/2 | 1/4 | 1/16 | 0 | 1/8 | 7/16 | 3/4 | 7/8 | 11/16 | 3/8 | 1/16 | 0 | 3/16 | 1/2 | 7/8 | 15/16 | 5/8 | 0 |
| G | 0 | 3/8 | 1/2 | 7/16 | 1/4 | 1/16 | 0 | 1/8 | 7/16 | 11/16 | 13/16 | 5/8 | 5/16 | 1/16 | 0 | 3/16 | 1/2 | 13/16 | 7/8 | 9/16 | 0 |
| H | 0 | 5/16 | 1/2 | 7/16 | 1/4 | 1/16 | 0 | 1/8 | 3/8 | 5/8 | 11/16 | 9/16 | 5/16 | 1/16 | 0 | 1/8 | 3/8 | 5/8 | 11/16 | 7/16 | 0 |

## Theoretical Concrete Haunch

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 0 | - 5/16 | - 3/8 | - 1/8 | 1/2 | 3/16 | 0 | 1/8 | 1/2 | - 3/16 | - 5/16 | - 3/16 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 0 | - 1/4 | - 1/4 | 0 |
| B | 1/8 | - 1/8 | - 1/16 | 1/16 | 5/8 | 1/4 | 1/16 | 1/4 | 11/16 | 1/16 | - 1/16 | 0 | 5/8 | 1/4 | 1/8 | 1/4 | 5/8 | 3/16 | - 1/16 | - 1/8 | 1/16 |
| C | 0 | - 3/16 | - 1/8 | 0 | 9/16 | 3/16 | 0 | 3/16 | 9/16 | - 1/16 | - 3/16 | - 1/16 | 9/16 | 3/16 | 0 | 1/8 | 1/2 | 1/16 | - 3/16 | - 3/16 | 0 |
| D | 0 | - 3/16 | - 1/8 | 1/16 | 1/2 | 1/8 | 0 | 1/8 | 9/16 | - 1/16 | - 3/16 | - 1/16 | 9/16 | 3/16 | 0 | 1/8 | 1/2 | 1/16 | - 1/8 | - 3/16 | 0 |
| E | 0 | - 5/16 | - 5/16 | - 1/8 | 3/8 | 1/8 | 0 | 3/16 | 9/16 | - 1/16 | - 1/4 | - 1/8 | 9/16 | 1/16 | -3/16 | 1/8 | 5/8 | 1/8 | - 1/16 | - 1/8 | 1/16 |
| F | 1/16 | - 1/16 | 0 | 1/16 | 1/4 | 1/8 | 0 | 1/8 | 9/16 | 1/16 | - 1/16 | - 1/16 | 7/16 | 3/16 | 1/16 | 3/16 | 5/8 | 3/16 | 1/16 | - 3/16 | 1/16 |
| G | 1/16 | - 1/16 | - 1/16 | - 1/16 | 1/16 | 0 | -1/16 | 1/8 | 7/16 | 1/16 | - 1/8 | - 1/8 | 1/4 | 1/16 | 0 | 3/16 | 1/2 | 1/16 | - 1/16 | - 3/16 | 1/16 |
| H | 1/16 | - 3/16 | - 1/4 | - 3/16 | 1/16 | 0 | -1/16 | 1/8 | 3/8 | - 1/4 | - 3/8 | - 1/4 | 3/8 | 1/8 | 1/8 | 1/8 | 3/8 | - 1/16 | - 1/4 | - 1/4 | 1/16 |

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

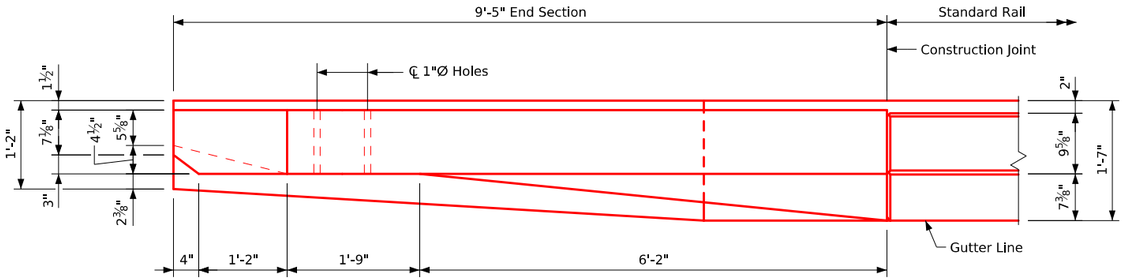
Deflection and Haunch Diagrams

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

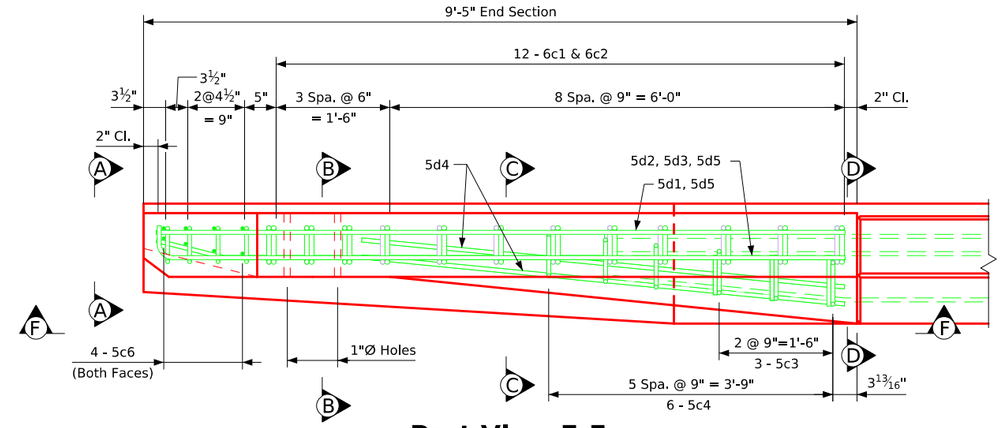
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

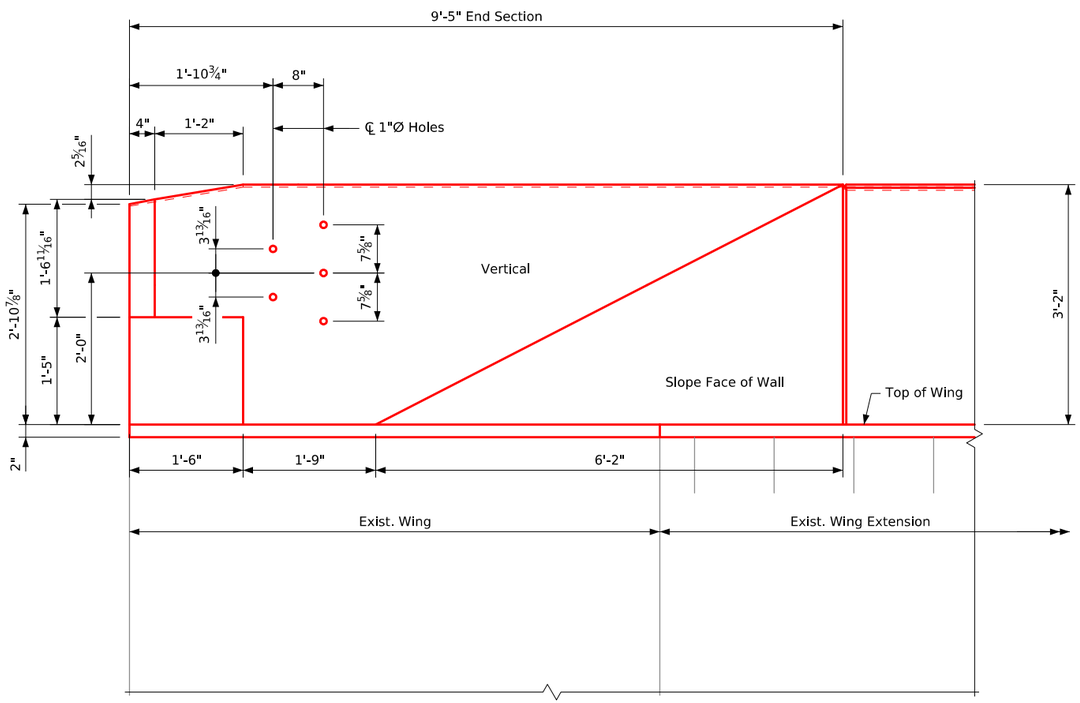
Design No. 0328 — Design Sheet No. 25 of 43 — FHWA No. 604640




## Part Plan View

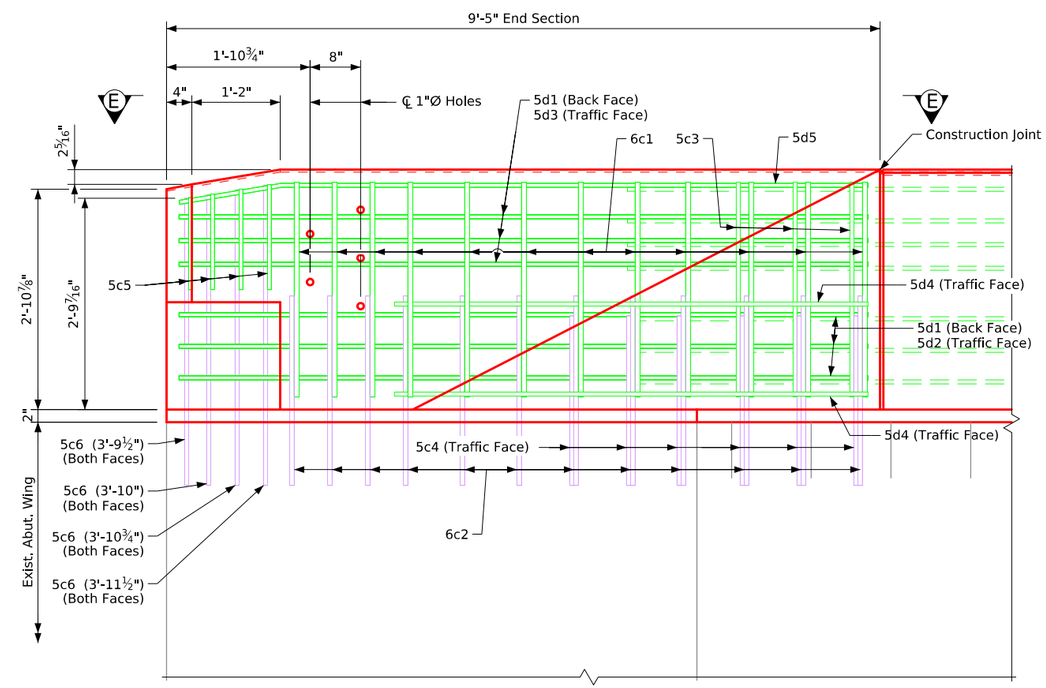



## Part View E-E




## Part Elevation View

Provide 5 holes formed with 1"Ø plastic conduit.
Cost to be included in price of bid for Concrete Barrier Railing.




## Part View F-F

Notes:
Construction joint between top of abutment wing and abutment wing extension with barrier rail is roughened concrete.
For Bar List, Bent Bar Details, View A-A, Sections B-B, C-C, and D-D see Design Sheet No. 27.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## Barrier Rail End Section

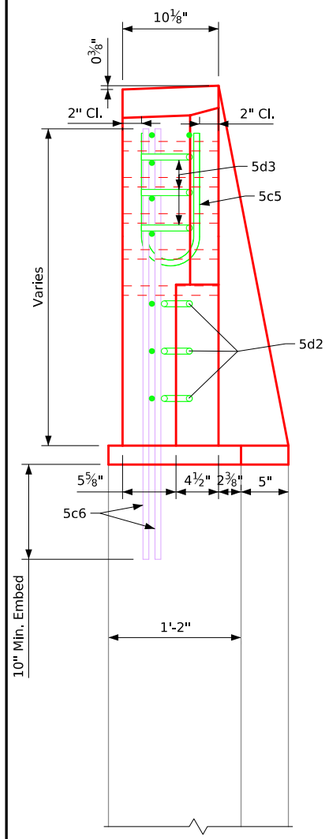
STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

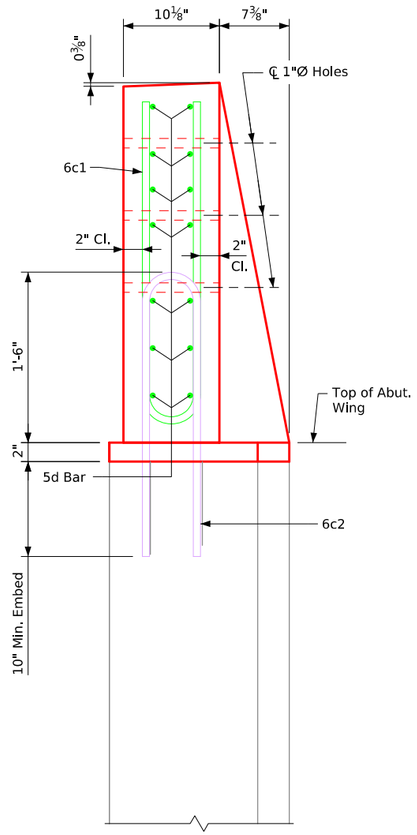
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 26 of 43 FHWA No. 604640

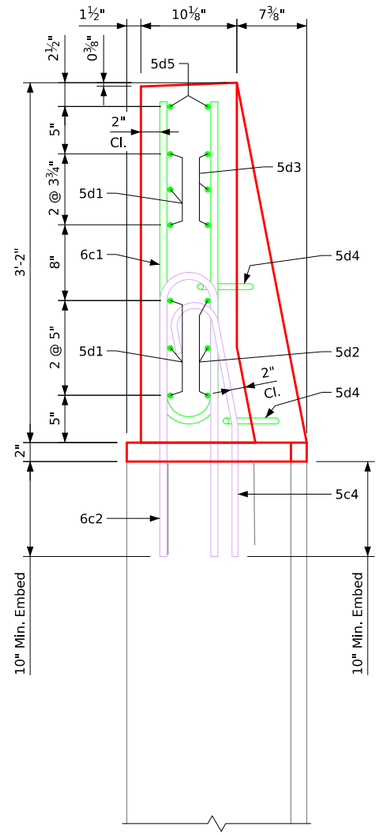
| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL END SECTION (STAINLESS) - (1 OF 2) | STANDARD SHEET 1017S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.26 |
|---|---|---|---|---|---|---|---|



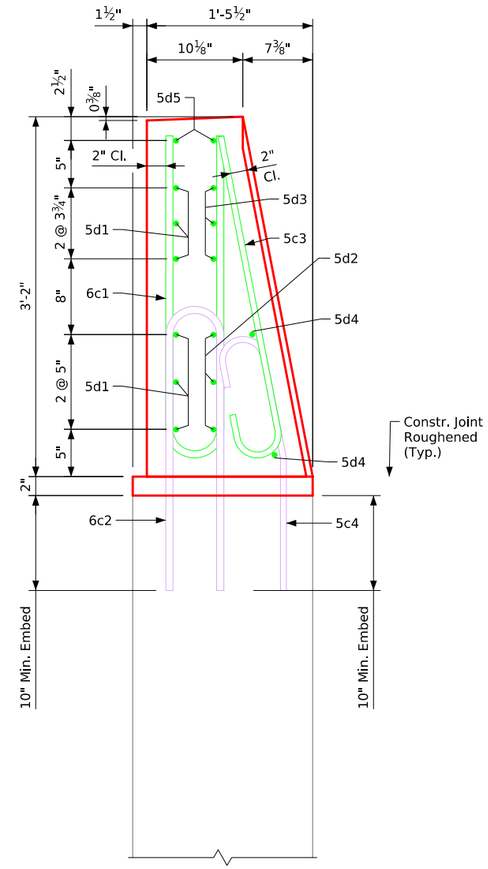

View A-A




Section B-B




Section C-C




Section D-D

Abutment wing bars in View A-A and Sections B-B & C-C are not shown for clarity.

## Epoxy Coated Reinforcing Steel - One End Section

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 6c1 | Rail, Vertical | | 12 | 5'-11" | 107 |
| 5c3 | Rail, Vertical (Traffic Face) | | 3 | 3'-5" | 11 |
| 5c5 | Rail, Vertical (End) | | 4 | Varies | 14 |
| | | | | | |
| | | | | | |
| 5d1 | Rail, Horizontal (Back Face) | | 6 | 9'-1" | 57 |
| 5d2 | Rail, Horizontal (Traffic Face) | | 3 | 9'-1" | 28 |
| 5d3 | Rail, Horizontal (Traffic Face) | | 3 | 9'-7" | 30 |
| 5d4 | Rail, Horizontal (Traffic Face) | | 2 | 6'-3" | 13 |
| 5d5 | Rail, Horizontal (Top) | | 2 | 9'-1" | 19 |
| | | | | | |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 279 |

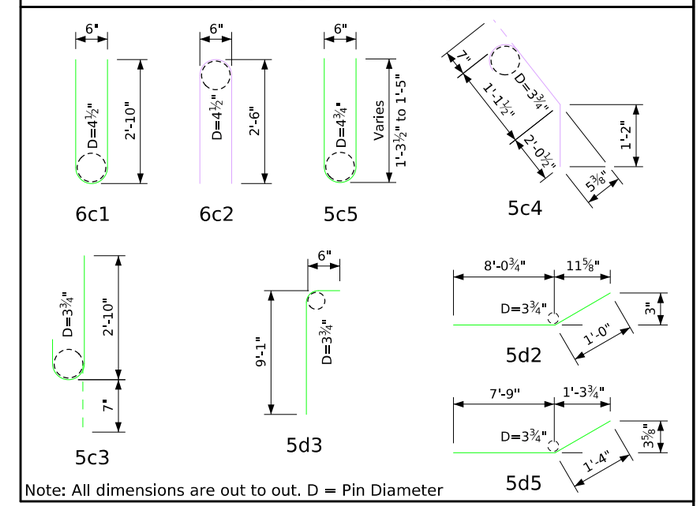
## Stainless Steel Reinforcing Steel - One End Section

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 6c2 | Rail, Vertical | | 12 | 5'-3" | 95 |
| 5c4 | Rail, Vertical (Traffic Face) | | 6 | 2'-11" | 18 |
| 5c6 | Rail, Vertical (End) | | 8 | Varies | 32 |
| | | | | | |
| | | | | Stainless Steel Reinforcing Total Weight (lbs.) | 145 |

## Concrete Placement Summary

| Section | Total |
|---|---|
| Barrier Rail, One End Section | 1.0 cu. yd. |
| | |

## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

Notes:

5c6, 6c2, & 5c4 bars shall be drilled and doweled into the existing concrete. See the "General Notes" Sheet for additional information.

Construction joint between top of abutment wing and abutment wing extension with barrier rail is roughened concrete.

For locations of View A-A, Sections B-B, C-C, and D-D see Design Sheet No. 26.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

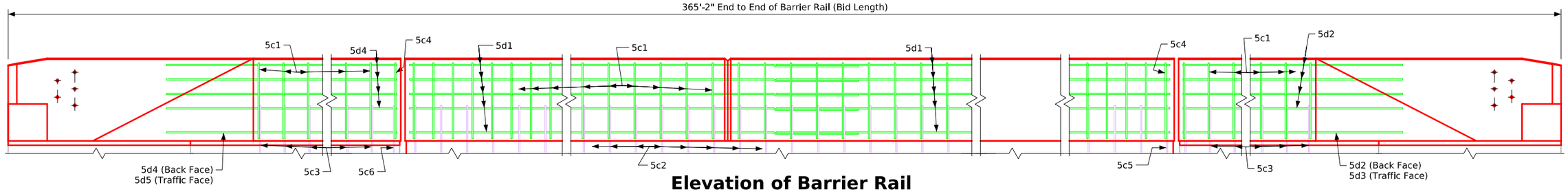
Barrier Rail End Section

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

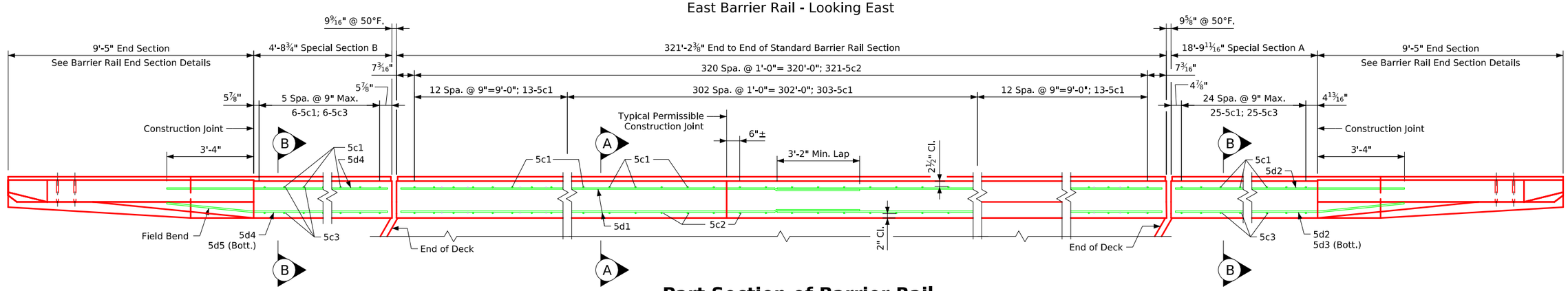
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 27 of 43 FHWA No. 604640

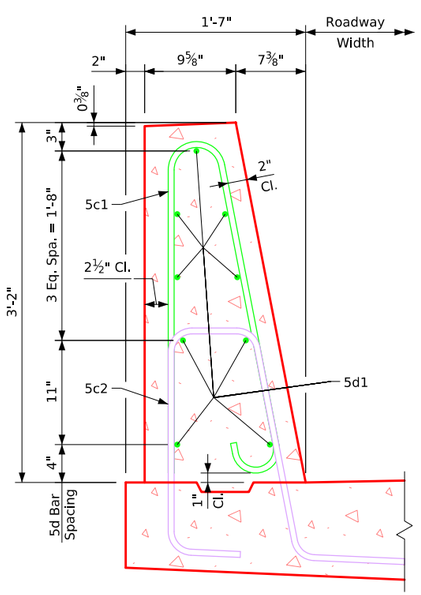



## Elevation of Barrier Rail

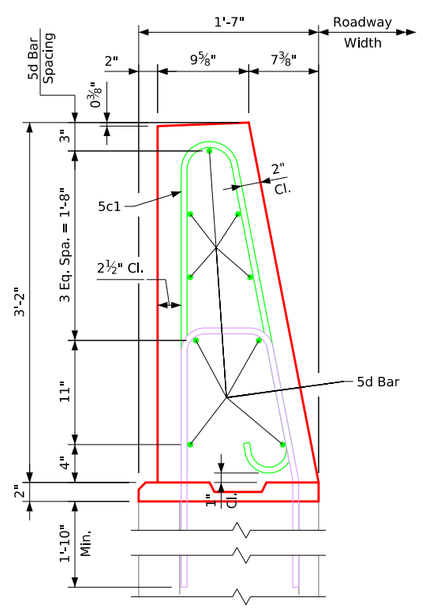
East Barrier Rail - Looking East




## Part Section of Barrier Rail




## Part Section A-A




## Part Section B-B

See Barrier Rail Details on Design Sheet No. 30 for notes, reinforcing steel details, and quantities.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## East Barrier Rail Details

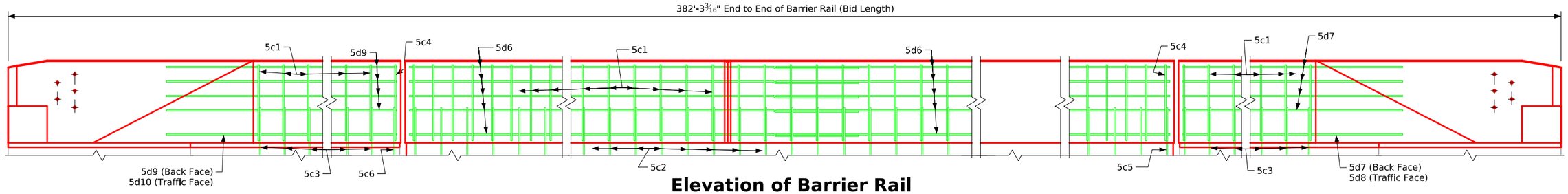
STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

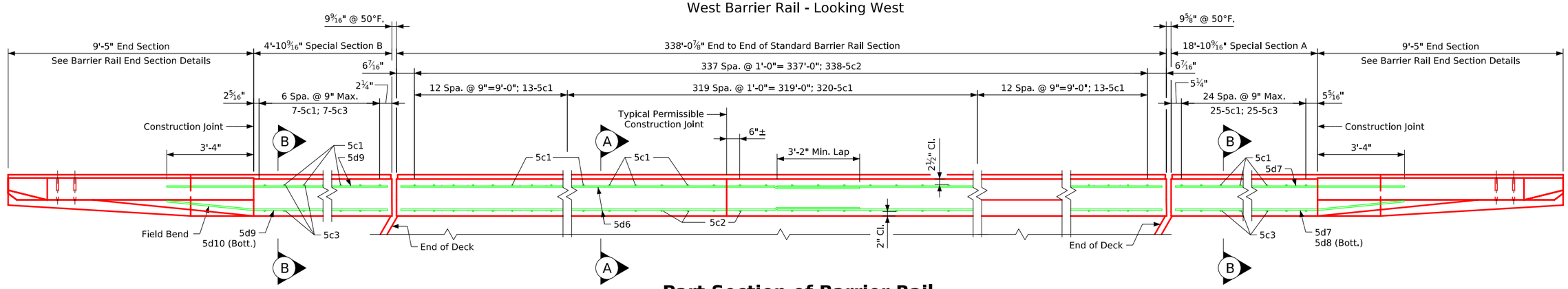
Design No. 0328 — Design Sheet No. 28 of 43 — FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL (TSS TL-4) (STAINLESS) - LA SKEW STUB ABUT. W/WING EXT. (1 OF 2) | STANDARD SHEET 1018S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.28 |
|---|---|---|---|---|---|---|---|

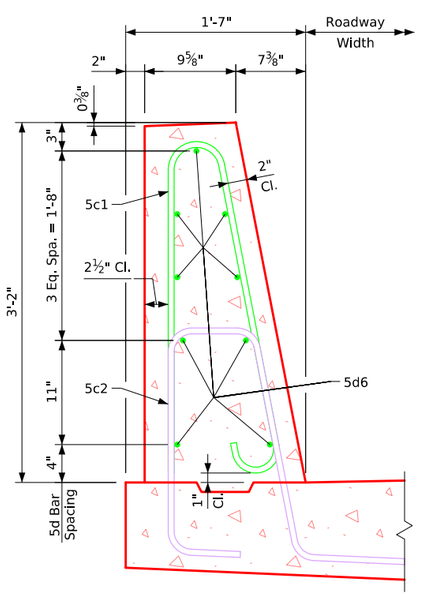



## Elevation of Barrier Rail

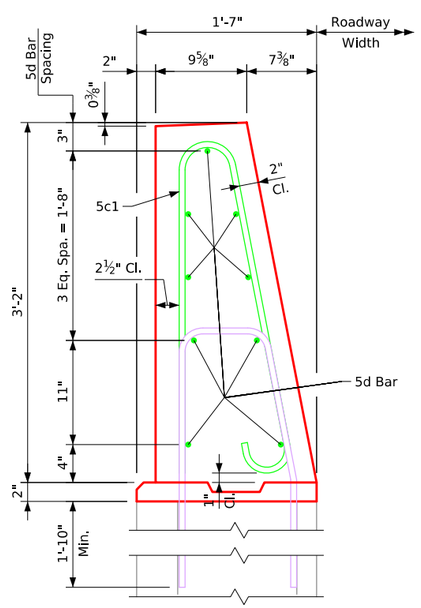
West Barrier Rail - Looking West




## Part Section of Barrier Rail




## Part Section A-A




## Part Section B-B

See Barrier Rail Details on Design Sheet No. 30 for notes, reinforcing steel details, and quantities.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## West Barrier Rail Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 — Design Sheet No. 29 of 43 — FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL (TSS TL-4) (STAINLESS) - LA SKEW STUB ABUT. W/WING EXT. (1 OF 2) | STANDARD SHEET 1018S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.29 |
|---|---|---|---|---|---|---|---|

## Barrier Rail Notes:

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

The permissible construction joints are to be placed between vertical bars at a minimum spacing of 20 feet. Construction joint contact surfaces are to be coated with an approved bond breaker.

Cost of the joint sealer and bond breaker shall be considered incidental to other construction.

All barrier rail reinforcing steel is to be either epoxy coated or stainless steel as shown. The stainless steel reinforcing steel shall be deformed bar grade 60 meeting the requirements of Construction and Materials I.M. 452.

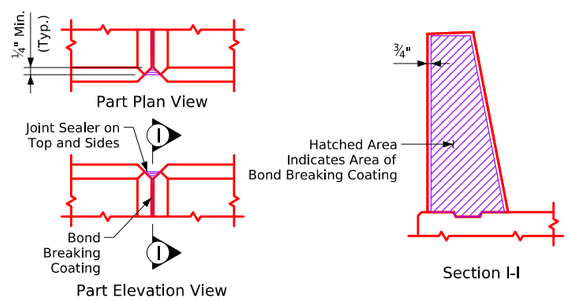
The concrete barrier rail is to be bid on a lineal foot basis. The number of linear feet of barrier rail installed will be paid for at the contract price per lineal foot based on plan quantities. Price bid for concrete barrier railing shall be full compensation for furnishing all material, excluding reinforcing steel, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications. If conduit is required in this plan the rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.

The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. No testing or certification is required.

Top of the barrier rail is to be parallel to the theoretical ℄ grade.

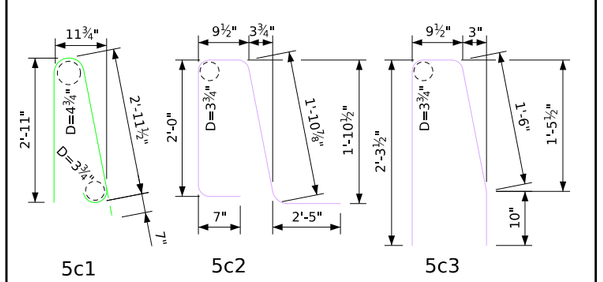
All exposed corners on the top of the barrier and all other corners 90° or sharper to be filleted with a ¾" dressed and beveled strip.

Cross sectional area of the Standard Sections of the barrier rail = 3.50 square feet.




## Barrier Rail Joint Details

## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

## Epoxy Coated Reinf. Steel - East Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c1 | Rail, Vertical | | 329 | 6'-8" | 2,288 |
| | 5d1 | Rail, Longitudinal | | 81 | 39'-0" | 3,295 |
| Special Section A | 5c1 | Rail, Vertical | | 25 | 6'-8" | 174 |
| | 5d2 | Rail, Longitudinal | | 8 | 22'-0" | 183 |
| | 5d3 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 22'-0" | 23 |
| Special Section B | 5c1 | Rail, Vertical | | 6 | 6'-8" | 42 |
| | 5d4 | Rail, Longitudinal | | 8 | 7'-11" | 66 |
| | 5d5 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 7'-11" | 8 |
| | | | | | Epoxy Reinf. Total Weight (lbs.) | 6,079 |

## Epoxy Coated Reinf. Steel - West Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c1 | Rail, Vertical | | 346 | 6'-8" | 2,406 |
| | 5d6 | Rail, Longitudinal | | 81 | 41'-0" | 3,464 |
| Special Section A | 5c1 | Rail, Vertical | | 25 | 6'-8" | 174 |
| | 5d7 | Rail, Longitudinal | | 8 | 22'-1" | 184 |
| | 5d8 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 22'-1" | 23 |
| Special Section B | 5c1 | Rail, Vertical | | 6 | 6'-8" | 42 |
| | 5d9 | Rail, Longitudinal | | 8 | 8'-1" | 67 |
| | 5d10 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 8'-1" | 8 |
| | | | | | Epoxy Reinf. Total Weight (lbs.) | 6,368 |

## Stainless Steel Reinf. Steel - East Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c2 | Rail, Vertical | | 321 | 7'-3" | 2,427 |
| Special Section A | 5c3 | Rail, Vertical | | 25 | 5'-2" | 135 |
| Special Section B | 5c3 | Rail, Vertical | | 6 | 5'-2" | 32 |
| | | | | | Stainless Steel Reinf. Total Weight (lbs.) | 2,594 |

## Stainless Steel Reinf. Steel - West Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c2 | Rail, Vertical | | 338 | 7'-3" | 2,556 |
| Special Section A | 5c3 | Rail, Vertical | | 25 | 5'-2" | 135 |
| Special Section B | 5c3 | Rail, Vertical | | 7 | 5'-2" | 38 |
| | | | | | Stainless Steel Reinf. Total Weight (lbs.) | 2,729 |

## Concrete Placement Summary

| Section | Total |
|---|---|
| East Rail Standard Section 321'-2⅜" at 0.130 cu. yd. per ft. | 41.9 |
| East Rail Special Section A 18'-9 11/16" at 0.130 cu. yd. per ft. | 2.4 |
| East Rail Special Section B 4'-8¾" at 0.130 cu. yd. per ft. | 0.6 |
| West Rail Standard Section 338'-0⅞" at 0.130 cu. yd. per ft. | 43.9 |
| West Rail Special Section A 18'-10 9/16" at 0.130 cu. yd. per ft. | 2.5 |
| West Rail Special Section B 4'-10 9/16" at 0.130 cu. yd. per ft. | 0.6 |
| Total (cu. yd.) | 91.9 |

## Concrete Barrier Rail Quantities

| Item | Unit | Quantity |
|---|---|---|
| Concrete Barrier Railing | L.F. | 747.4 |

5c3 bars shall be drilled and doweled into the existing concrete. See the "General Notes" Sheet for additional information.

See Barrier Rail Details on Design Sheet Nos. 28 & 29 for details and sections.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

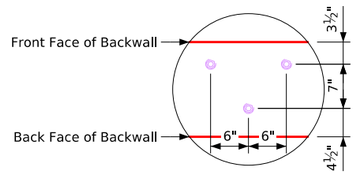
Barrier Rail Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

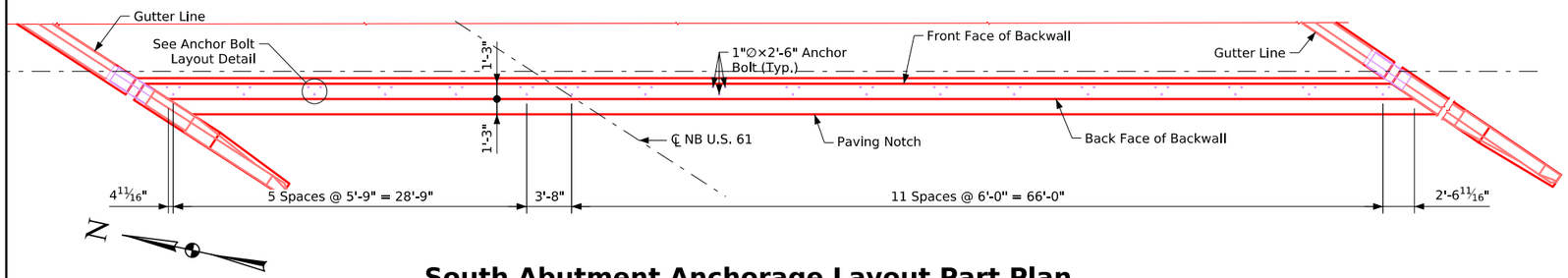
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 30 of 43 FHWA No. 604640




## Anchor Bolt Layout Detail




## South Abutment Anchorage Layout Part Plan

## Expansion Device Notes:

The Contractor shall submit for approval shop drawings of the entire finger joint assembly, barrier plates, drain spouts, and neoprene curtain/steel bent plate trough system showing layout and material to be used.

The entire expansion device and bridge seat drain spouts (except hardware as stainless steel) shall be galvanized in accordance with Article 4100.07 after welding, including the anchorages, shims, support plates, bent plate troughs, and non-stainless steel hardware.

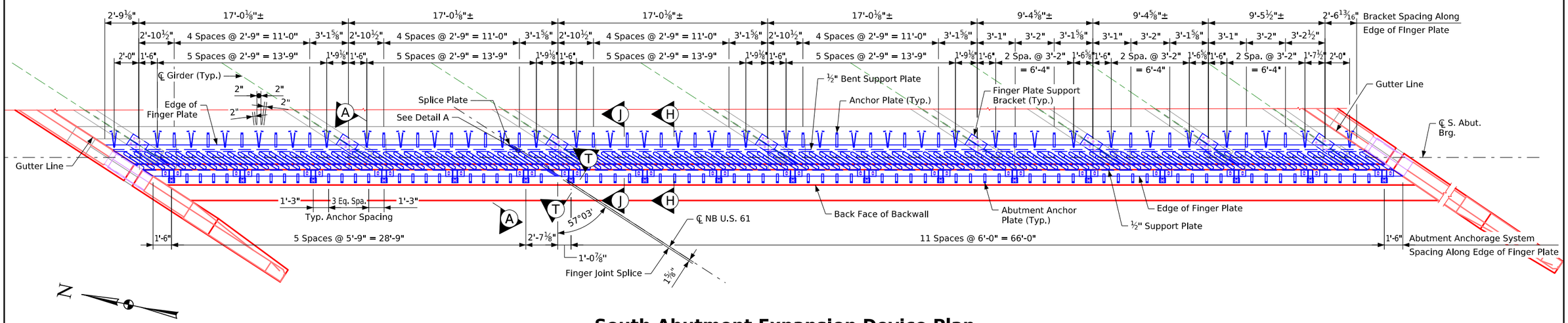
The top of the expansion device shall be recessed ¼" below the top of deck and be parallel to grade.

The material for the 1¾"×2'-3" finger joint plates is to be ASTM A572 Grade 50 steel. All other structural steel is to be ASTM A709 Grade 36 steel. All bolts shall meet the requirements of ASTM A307.

All stainless steel fasteners shall conform to Iowa DOT Materials I.M. 453.07.

The elastomer compound for curtains shall be in accordance with Table B of Article 4195.02 of the Standards Specifications, except the tensile strength shall be 1500 psi (10.3 mpa) minimum or it shall be ethylene propylene diene monomer (EPDM) (ASTM D2000, line call-outs 3BA, 515, A14, B13, C12, K21).

The finger joint and drainage system details shown in these plans are provided to give the contractor one option, and provide critical dimensions and information required for fabrication and construction. The contractor and fabricator may develop and submit alternate details for approval as long as they comply with the Standard Specifications and those specifications noted above, and satisfy the general intent of the details and design shown.




## South Abutment Expansion Device Plan

## Notes:

Barrier and curb plate details not shown. See Design Sheet 38 for barrier and curb plate details.

See Design Sheet 33 for Section A-A.

See Design Sheet 34 for Sections H-H and J-J.

See Design Sheet 32 for Section T-T and Detail A.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

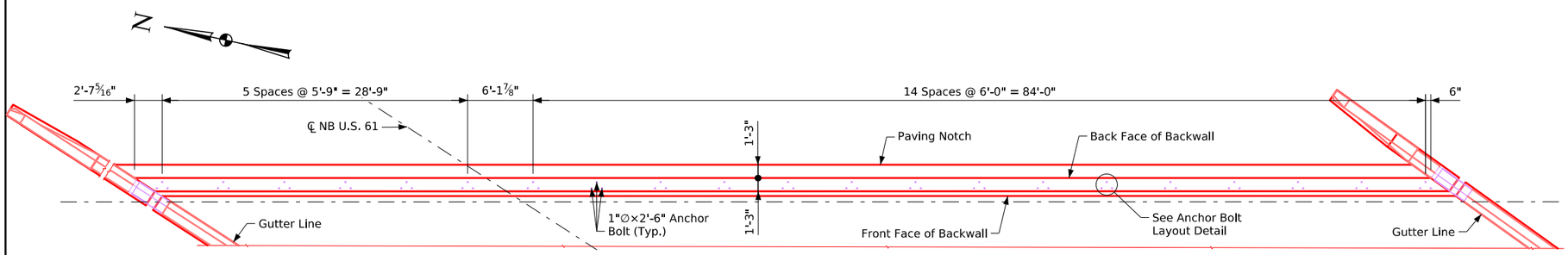
Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

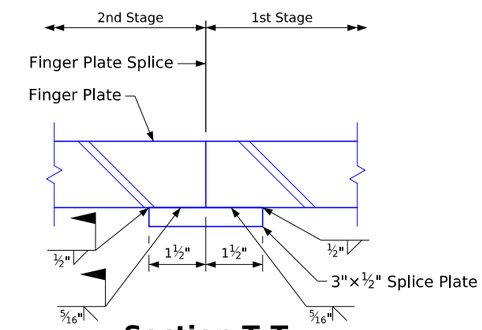
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

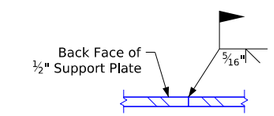
Design No. 0328 — Design Sheet No. 31 of 43 — FHWA No. 604640



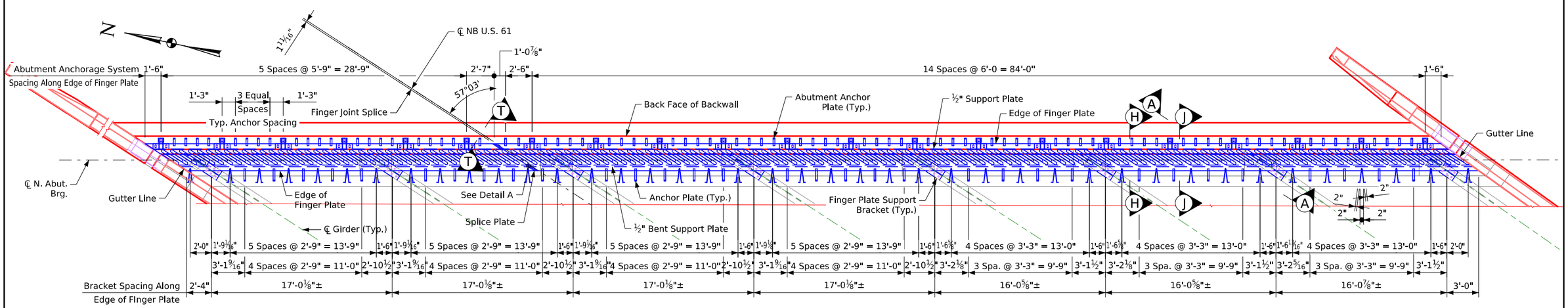

## North Abutment Anchorage Layout Part Plan




## Section T-T




## Detail A




## North Abutment Expansion Device Plan

## Notes:

Barrier plate details not shown. See Design Sheet 38 for barrier plate details.

See Design Sheet 33 for Section A-A.

See Design Sheet 34 for Sections H-H and J-J.

See Design Sheet 31 for Anchor Bolt Layout Detail.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

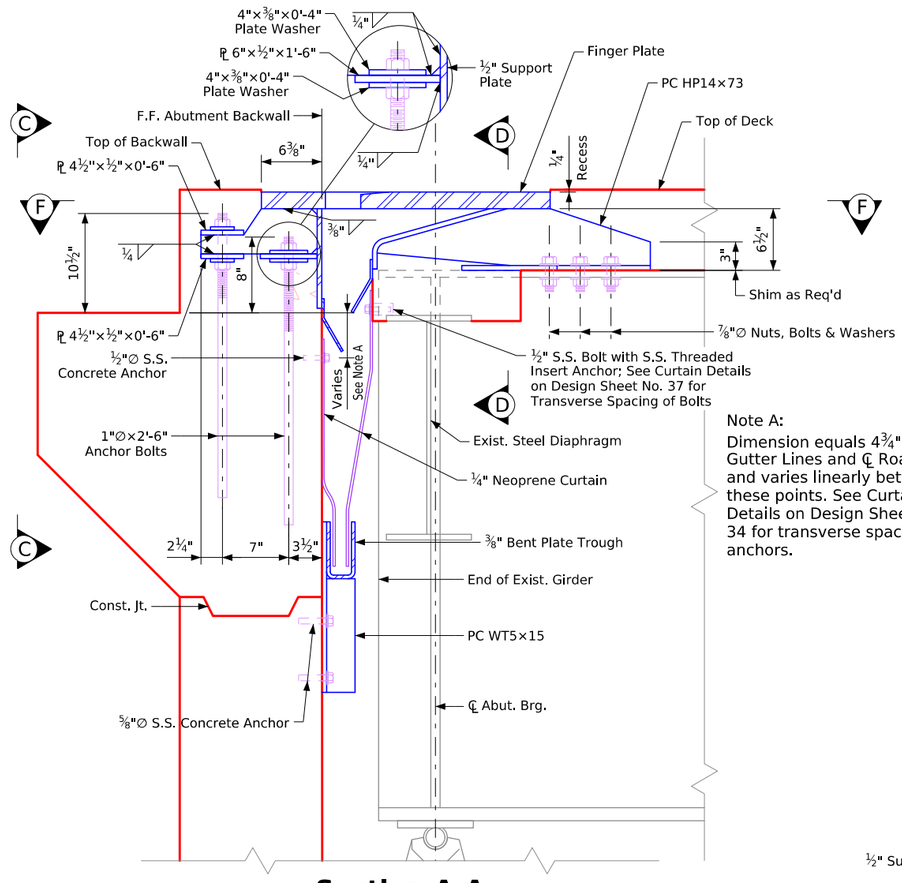
# Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

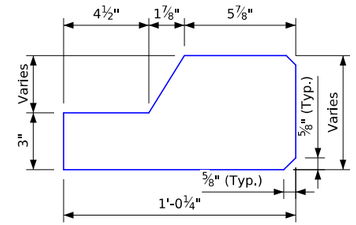
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 — Design Sheet No. 32 of 43 — FHWA No. 604640



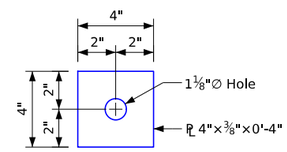

## Section A-A

Note A:
Dimension equals 4¾" at Gutter Lines and ℄ Roadway and varies linearly between these points. See Curtain Details on Design Sheet No. 34 for transverse spacing of anchors.

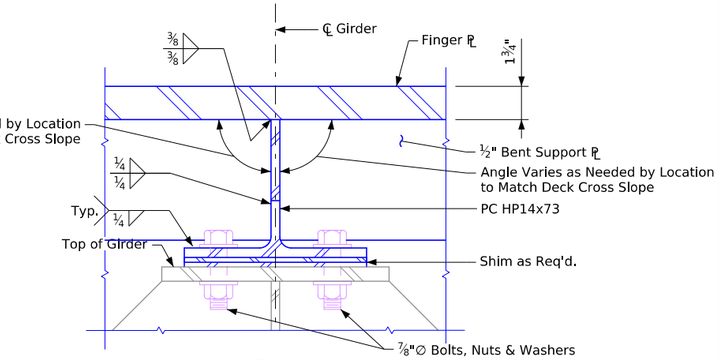



## ½" Plate Detail

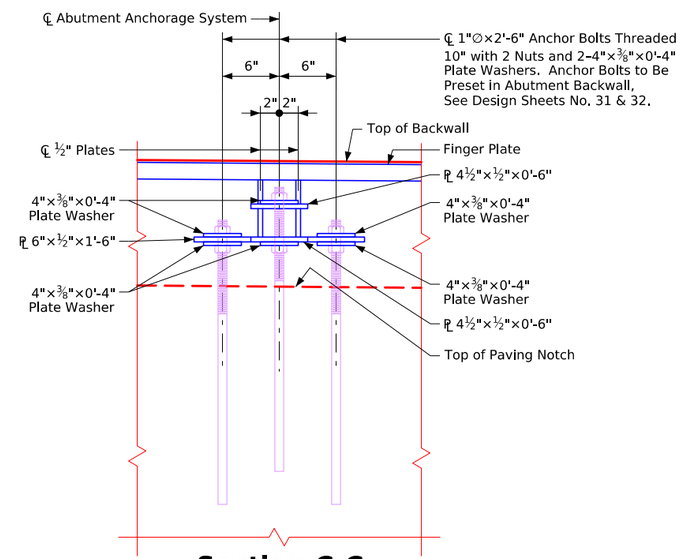
Note:
39 pairs of plates are required for abutment anchorage system (18 at the south expansion device and 21 at the north expansion device). See "Expansion Device Plan" on Design Sheet No. 31 & 32 for location of plates.



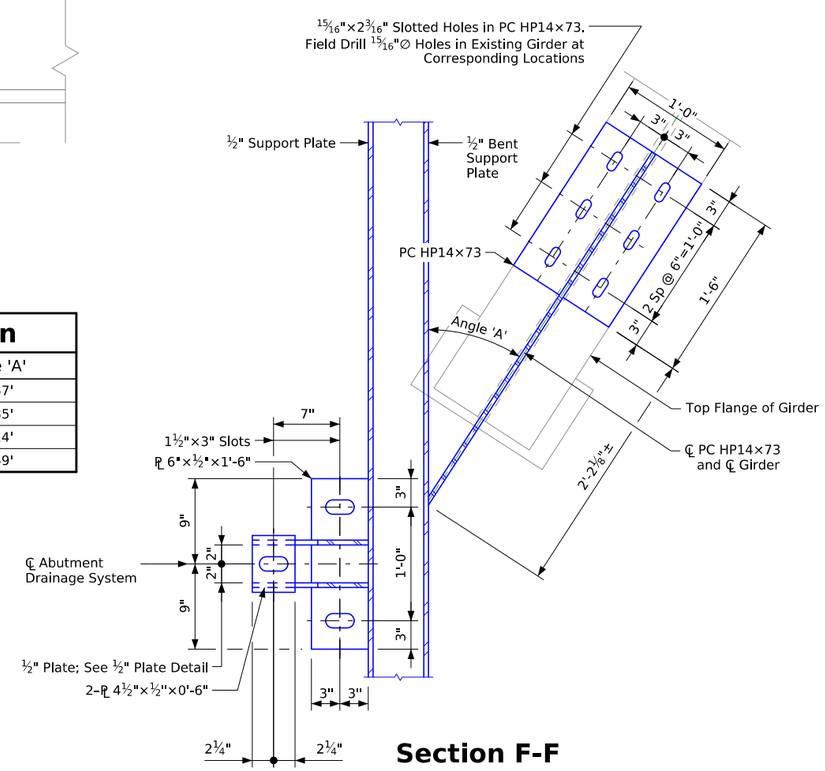

## Plate Washer Detail




## Section D-D




## Section C-C




## Section F-F

## Girder Position

| Beam Line | Angle 'A' |
|---|---|
| 1–5 | 32°57' |
| 6 | 33°35' |
| 7 | 34°14' |
| 8 | 34°59' |

Design For Repairs to 57°03' LA

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102'-6" End Spans 131'-0" Interior Span

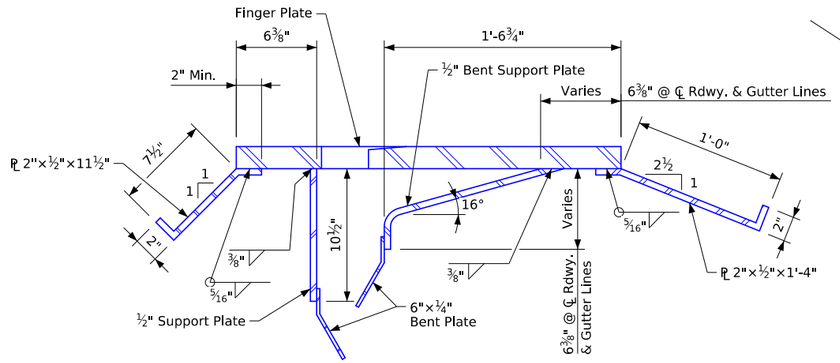
## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

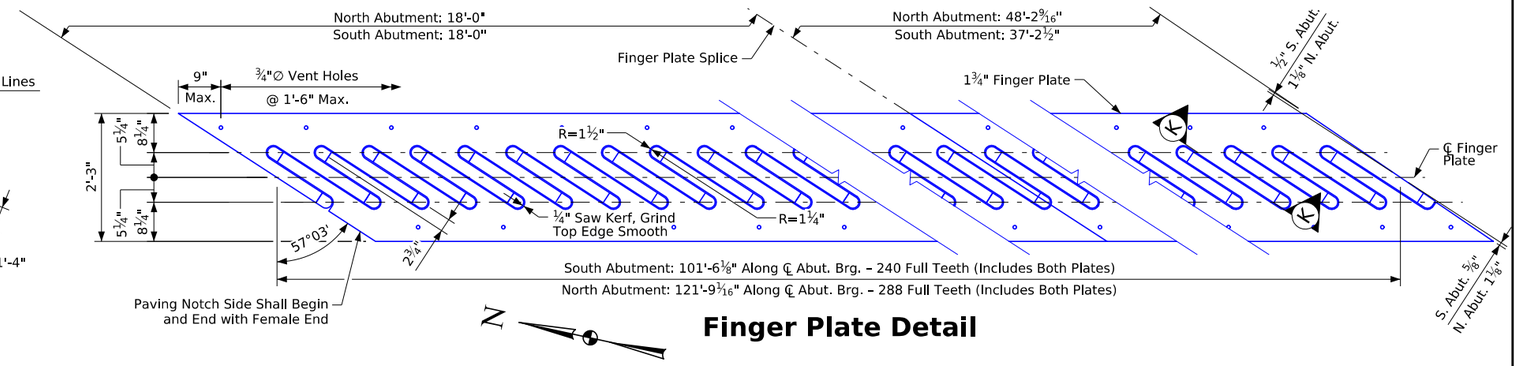
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

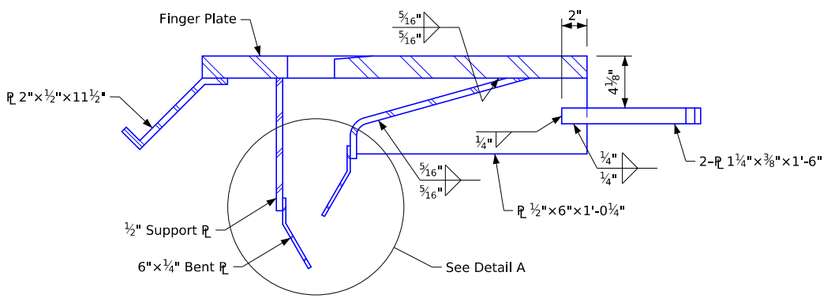
Design No. 0328 Design Sheet No. 33 of 43 FHWA No. 604640



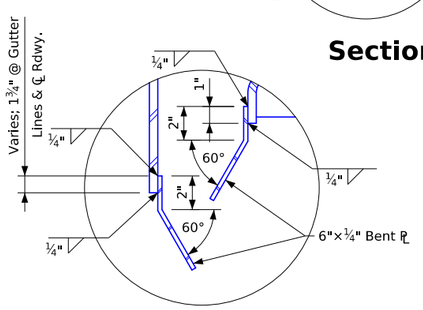

## Section H-H



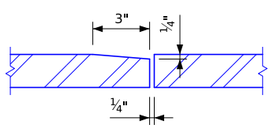

## Finger Plate Detail




## Section J-J

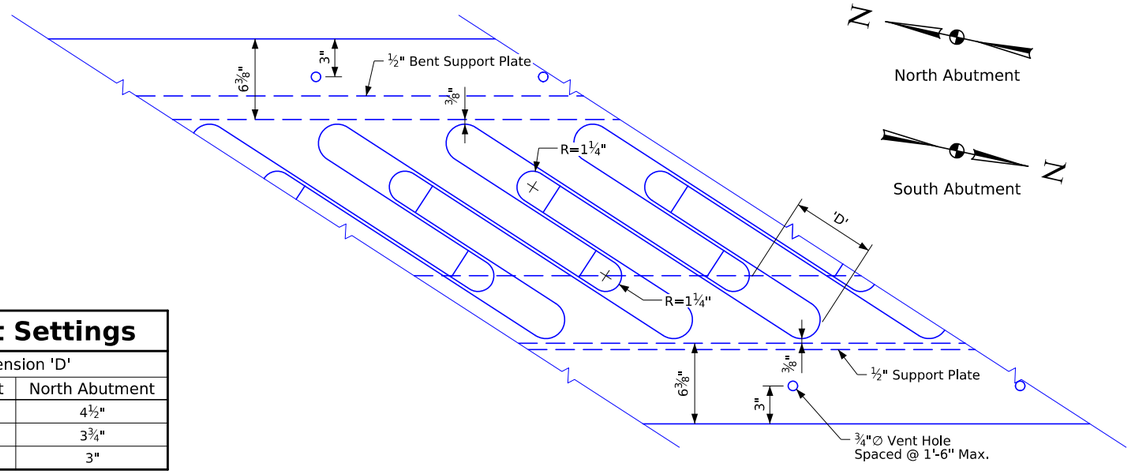



## Detail A




## Section K-K

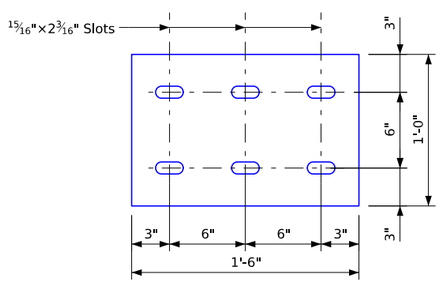
Note:
Top of expansion device is to be parallel to grade. Flame cut from 2'-3"×1¾" plate. Bevel each tooth ¼"×3".




## Joint Setting Detail

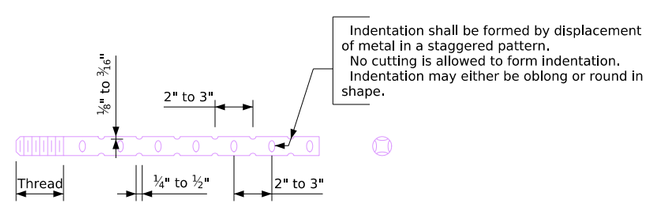
| Finger Joint Settings | | |
|---|---|---|
| Temp. (°F) | Dimension 'D' | |
| | South Abutment | North Abutment |
| 10° | 4 1/16" | 4½" |
| 50° | 3¾" | 3¾" |
| 90° | 3 7/16" | 3" |

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




## Girder Shim Detail

Note:
Provide three ¼" and two ⅛" shims for each bracket, to be used as required.




## Anchor Bolt Swedge Detail

Note:
See Design Sheet No. 31 & 32 for locations of Sections H-H and J-J.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

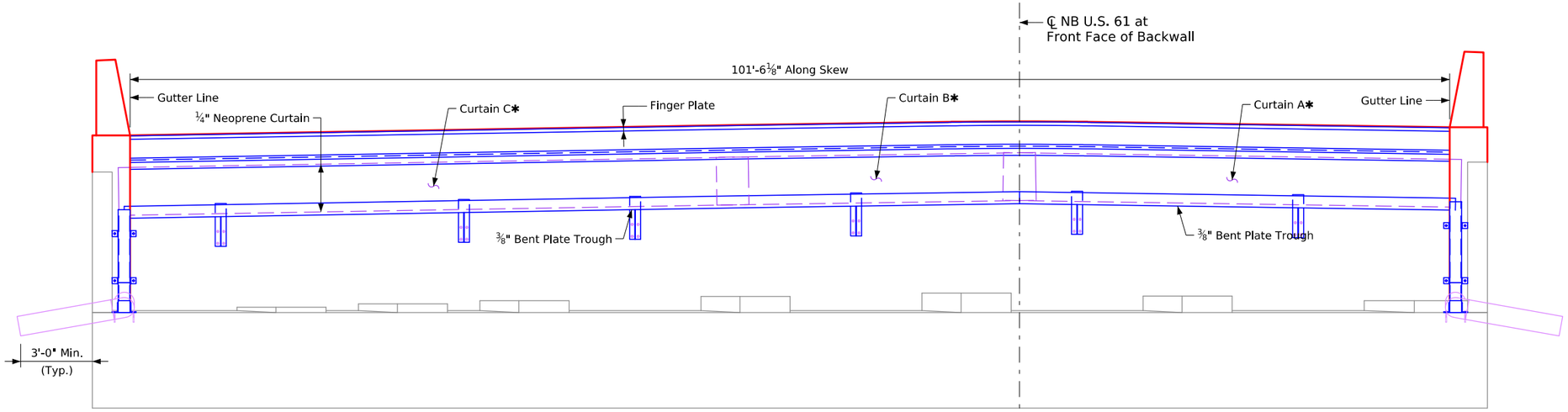
# Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

# Scott County

IOWA DEPARTMENT OF TRANSPORTATION

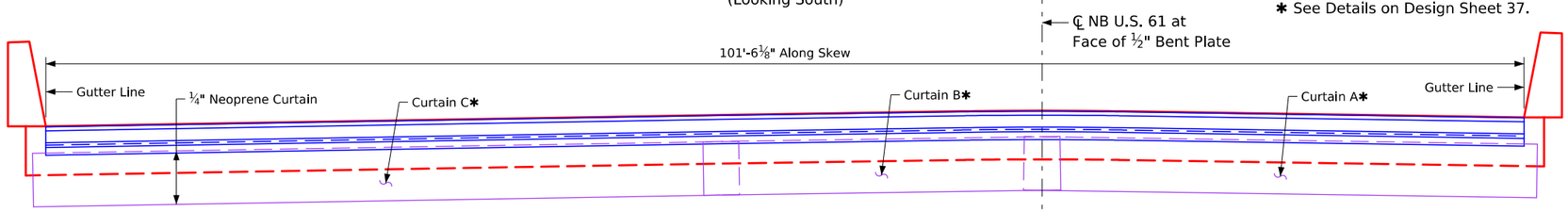
Design No. 0328 — Design Sheet No. 34 of 43 — FHWA No. 604640




## South Abutment Front Face Elevation

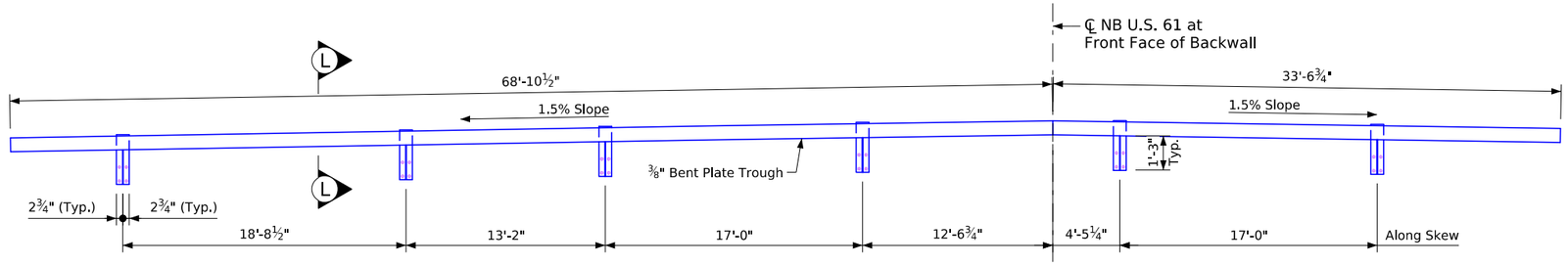
(Looking South)

Note:
✱ See Details on Design Sheet 37.




## South Abutment Diaphragm Elevation

(Looking South)




## South Abutment Bent Plate Trough Elevation

(Looking South)

See Design Sheet 37 for Section L-L

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

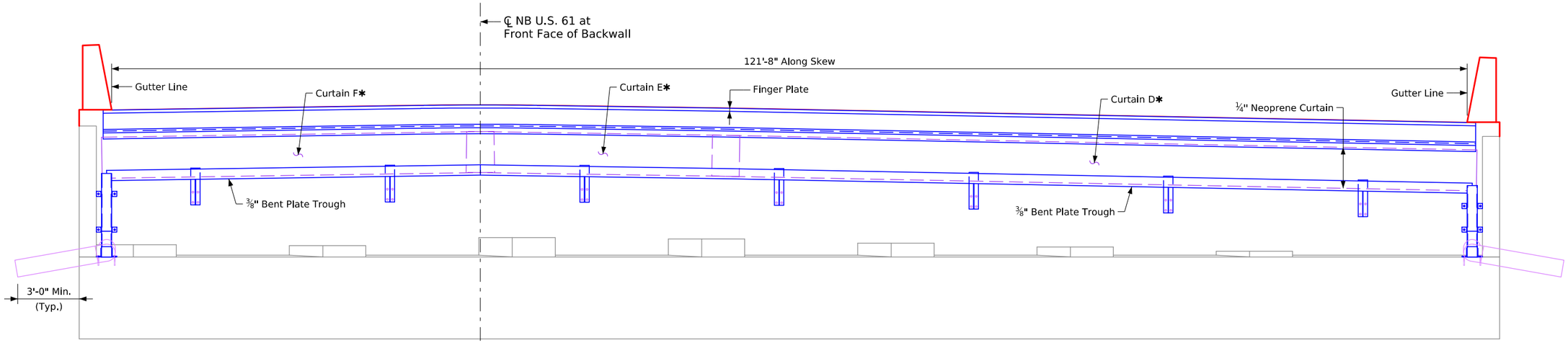
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 35 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.35 |
|---|---|---|---|---|---|

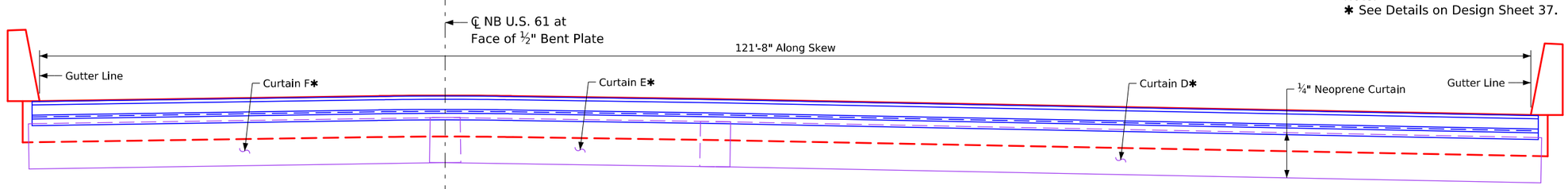
2:25:35 PM 4/15/2026 10117 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8206102023\Bridge\(153)_Bridge Deck Replacement\SHT_82061153_Stanley_0328_604640_Z11.dgn




## North Abutment Front Face Elevation

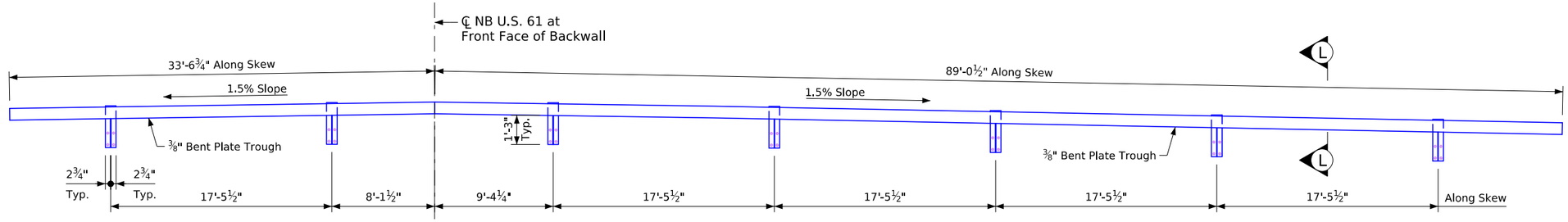
(Looking North)

Note:
✱ See Details on Design Sheet 37.




## North Abutment Diaphragm Elevation

(Looking North)




## North Abutment Diaphragm Elevation

(Looking North)

See Design Sheet 37 for location of Section L-L

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

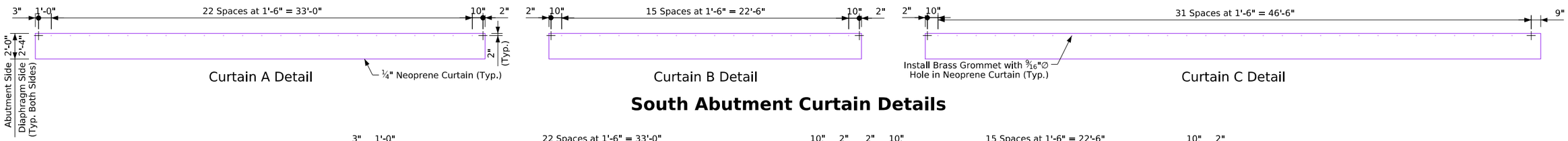
## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

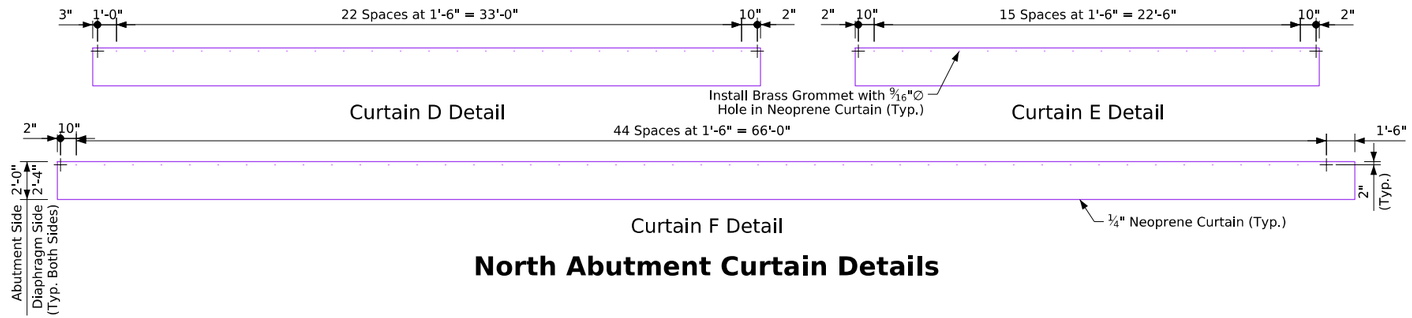
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

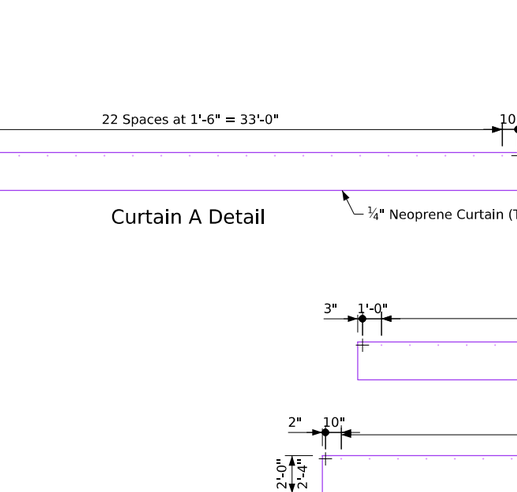
Design No. 0328 Design Sheet No. 36 of 43 FHWA No. 604640




## South Abutment Curtain Details

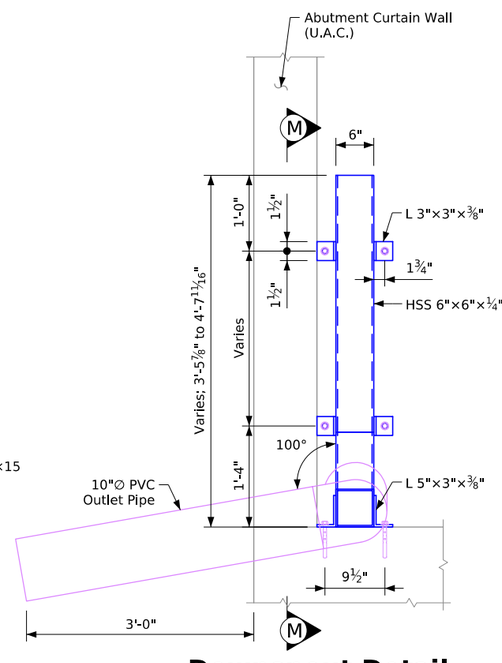



## North Abutment Curtain Details

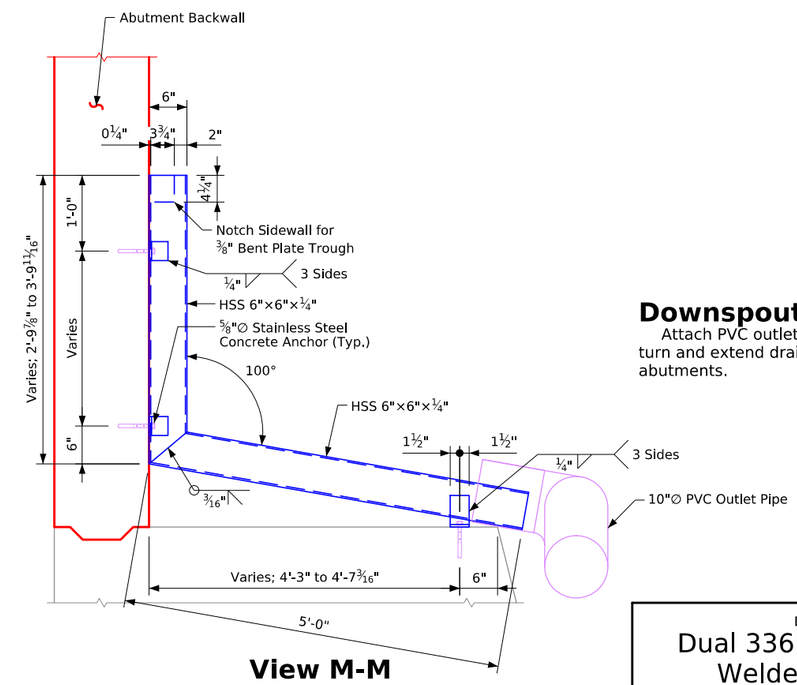



## Section L-L

Note: See Design Sheets No. 35 & 36 for location of Section L-L




## Downspout Detail




## View M-M

(East Side Shown, West Side Reversed)

## Downspout Drain Notes:

Attach PVC outlet pipe to downspout with 90° elbow to turn and extend drainage system 3'-0" beyond the edge of abutments.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

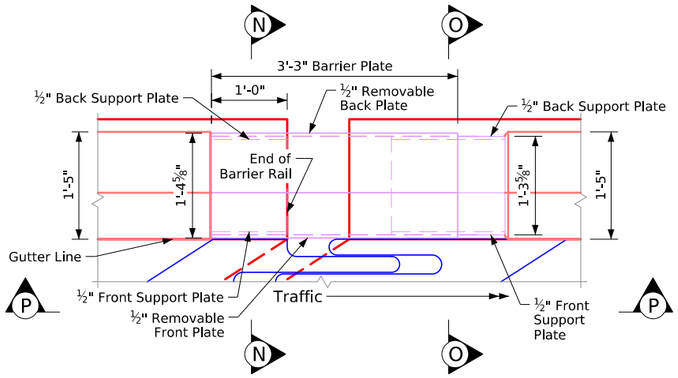
## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

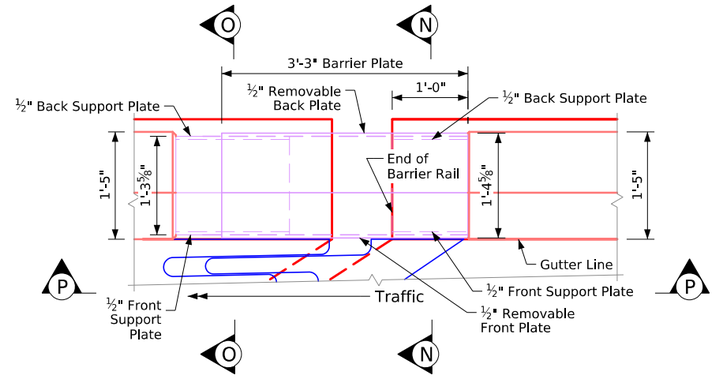
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

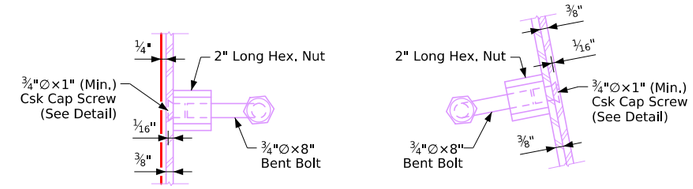
Design No. 0328 Design Sheet No. 37 of 43 FHWA No. 604640




## Part Plan View @ SW & NW Corners

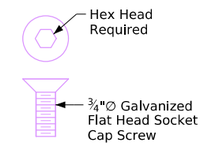


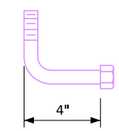

## Part Plan View @ SE & NE Corners




## Detail A

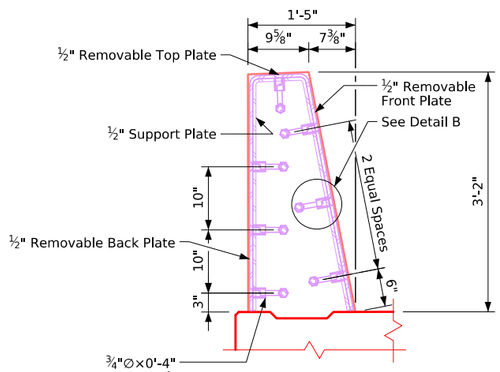
## Detail B



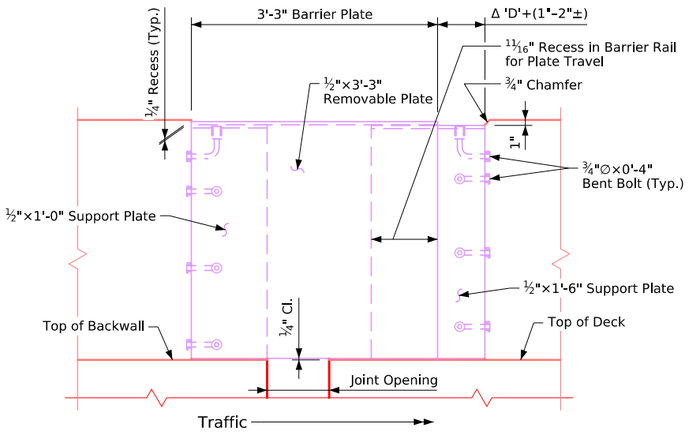




## Cap Screw Detail

## ¾"∅ Bent Bolt Detail

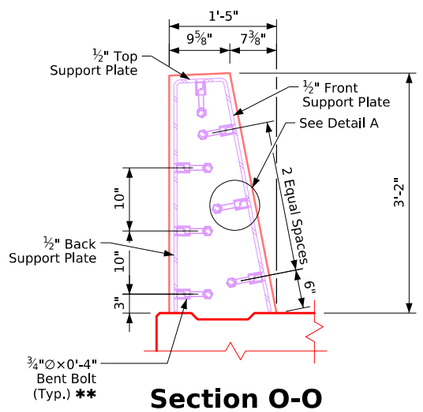



## Section N-N




## Section P-P

Note:
See Design Sheet No. 34 for Dimension 'D'.




## Section O-O

## Barrier Plate Notes:

Cover plates are required on both faces of the barrier rail at the expansion joints.

Cap screws shall be countersunk ⅛" below top of plate.

Contractor to note that the cap screw anchorage system for the ⅜" barrier plates are always to be placed on the oncoming traffic side.
Cover plates are required on both faces of the barrier rail at expansion joints.

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.

In order to maintain alignment of support plates during the casting of the concrete barrier, the Contractor may provide temporary connections between the slider plate and the support plate on the expansion side. Temporary connections shall be removed as soon as possible after casting the barrier.

Cover plate surface shall be recessed ¼" with barrer face and the profile of plate shall match the profile of barrier.

Cost of furnishing and installing the cover plate assembly shall be included in the contract unit price for "Expansion Joints (Finger Plates)".

The Contractor shall submit shop drawings for the cover plate assemblies to the Engineer for approval prior to fabrication.

Front and back removable plates, front and back support pltaes may be bent or welded. Top removable plate shall be welded to front removable plate. Top support plates shall be welded to front and back support plates, grind welds on exterior plate surfaces and surfaces of plates adjacent to adjoining plates to remove burrs and facilitate fit up prior to galvanizing.

The joint sealer shall be light grey nonsag latex caulking sealer marketed for outdoor use. No testing or certification is required.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

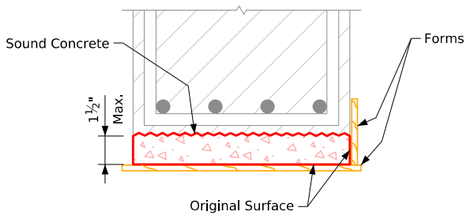
Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

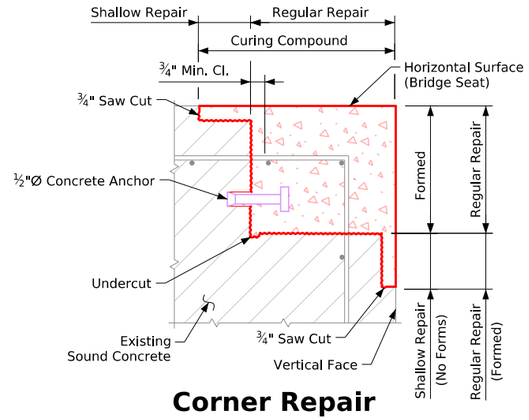
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

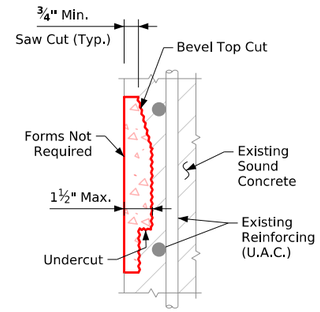
Design No. 0328 Design Sheet No. 38 of 43 FHWA No. 604640



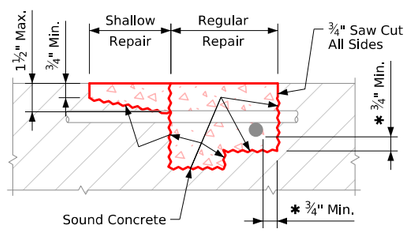

## Shallow Repair Bottom Surface




## Corner Repair

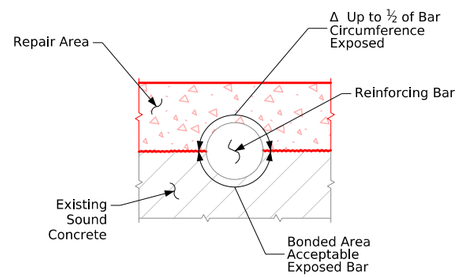



## Shallow Repair Vertical Face

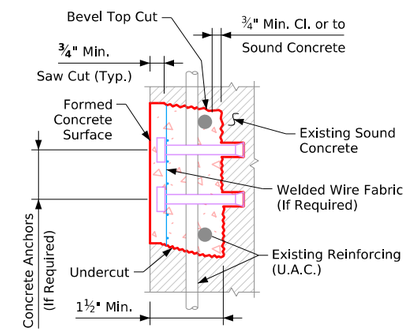



## Repair Definition

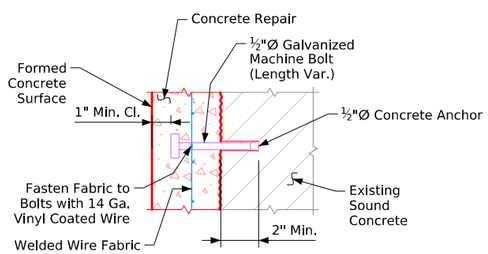
✱ Indicates Clearance for an Un-Bonded Rebar.




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

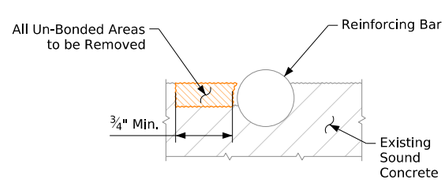



## Regular Repair Vertical Face




## Anchor Detail

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




## Concrete Removal Adjacent to Reinforcing

## Repair Notes:

The spalled and hollow areas of this bridge as noted and shown in these plans shall be repaired as follows:

- All the costs of equipment and materials required to repair the spalled and hollow areas of this bridge shall be included in the price bid for "Concrete Repair".
- The price bid for "Concrete Repair" shall include the cost of all concrete anchors and welded wire fabric required by the plans.
- The Engineer shall determine and outline by visual and audible inspection the actual areas of the concrete repairs. The Contractor shall be paid for the actual amount of repairs made on a square foot basis based on the price bid per square foot.
- All existing reinforcing bars that are exposed by the concrete removal shall be cleaned and carefully incorporated into the new work, except badly deteriorated existing reinforcing which shall be replaced as directed by the Engineer.
- The concrete anchors required shall have a minimum pull out of 5,000 lbs based on 4,000 psi concrete. An anchor meeting the requirements of Iowa D.O.T. Materials I.M. 453.09 and the pull out load above is required. The anchors shall be galvanized and shall be installed according to recommendations of the Manufacturer. The cost of furnishing and installing the concrete anchors shall be included in the price bid for "Concrete Repair".
- The welded wire fabric shall be ASTM A185 and galvanized as per ASTM A-641. The WWF wires shall be spaced 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 square inch inclusive, example "WWF 3x3 - W1.4xW2.9".

Where reinforcement has been exposed and clearance around the periphery of the existing bar is provided, no supplemental reinforcing is required, except where existing reinforcement density and pattern are such that individual open spaces between bars are of 1.5 square feet or larger. For this condition ½"∅ concrete anchors and welded wire fabric shall be installed at the rate of one concrete anchor with WWF per each 1.5 square feet of area within each open space.

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

## Concrete Placement Quantities

| Mark | Type | Units | Quantity |
|---|---|---|---|
| 1 | Shallow Repair | Sq. Ft. | 2.0 |
| | | | |
| | | Total (Sq. Ft.) | 2.0 |

## Estimated Concrete Repair Quantities

| Description | Units | Amount |
|---|---|---|
| Concrete Repair | Sq. Ft. | 2.0 |

Note: Concrete repairs to be made on the existing abutment footings. Exact locations and areas shall be determined in the field by the Engineer.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Concrete Repairs

STA. 462+06.89 (US 61) Turn-in Date: May 2026

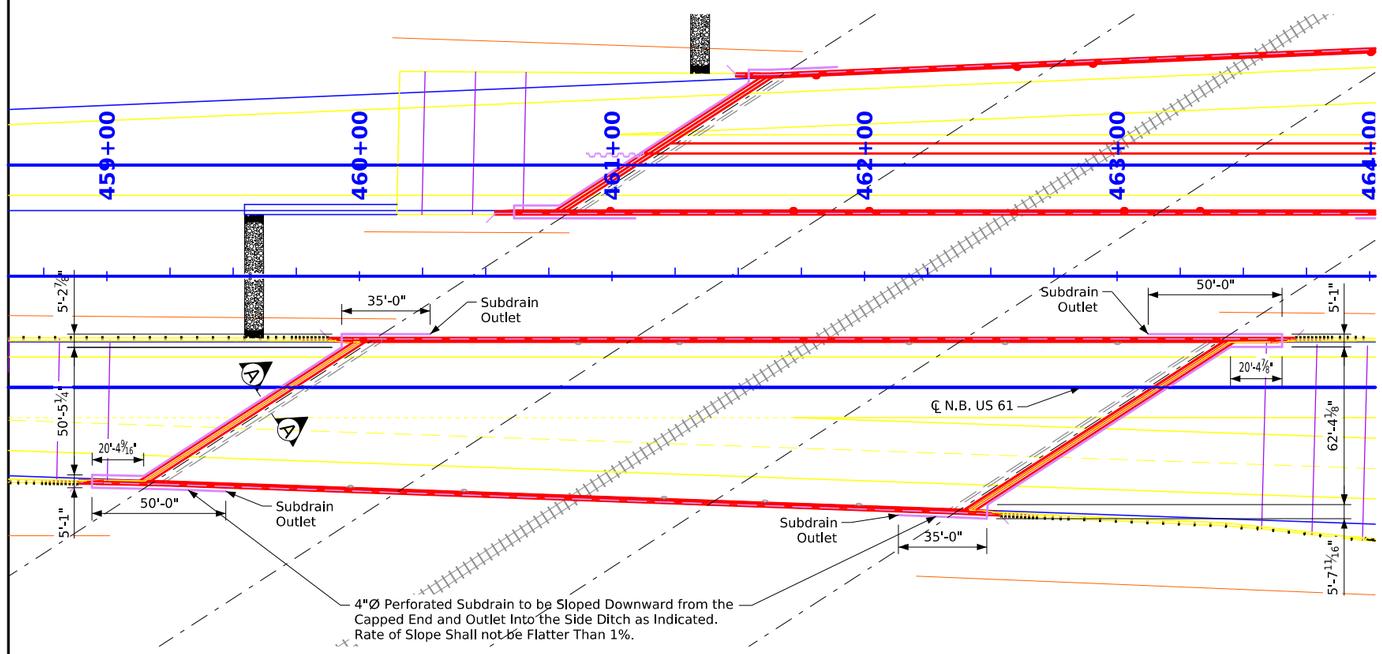
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 39 of 43 FHWA No. 604640

Note: Section A-A is shown on Abutment Backfill Details Sheet on Design Sheet No. 41.

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar




## Situation Plan

Showing Subdrain Locations

## Subdrain Notes:

This plan sheet shows details for placing all subdrains and subdrain outlets required for this structure.

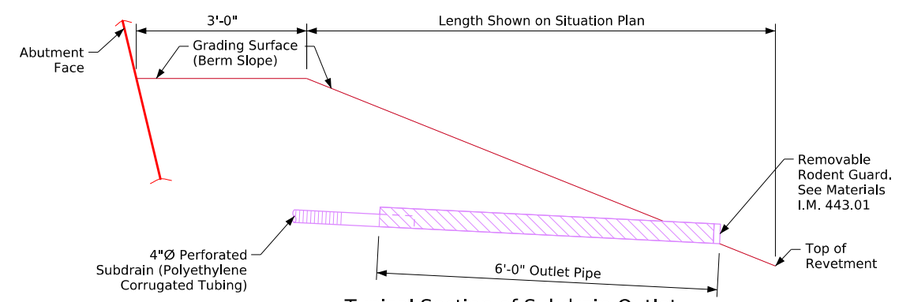
The subdrains shall be 4"Ø and shall be in accordance with Article 4143.01, B, of the Standard Specifications.

The subdrain outlet shall consist of a length of pipe with a removable rodent guard as detailed on this sheet. The length of the outlet pipe shall be determined by the revetment and it's placement location. The Contractor is to insure the outlet pipe is adequately strong enough and will not be damaged when revetment is placed. A check will be made at the subdrain outlet to insure that the subdrain is not damaged and is draining properly during the backfill flooding process. If a metal outlet pipe is used, it shall be 6"Ø and coupled to the 4"Ø subdrain in one of the two following ways.

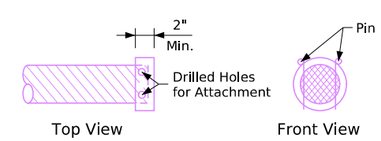
- Use an inside fit reducer coupler (coupler must be inserted a minimum of 1'-0" into the metal outlet pipe).
- Insert 1'-0" of the 4"Ø subdrain into the 6"Ø metal outlet pipe, then fully seal the entire opening with grout.

The cost of furnishing and placing subdrain (including excavation), granular backfill, porous backfill, and subdrain outlet is to be included in the price bid for "Structural Concrete (Bridge)". No extra payment will be made.

The dimensions shown for the proposed subdrains are based on the proposed grading layout of bridge berms. The dimensions shown are for estimating only. Required lengths and general locations of subdrains are subject to change due to field adjustments of the grading layout.




Typical Section of Subdrain Outlet




Removable Rodent Guard Details

## Erosion Stone (Embedded) Outlet Details

### Subdrain Outlet Elevations

| Location | Elevation |
|---|---|
| Southwest | 763.5 |
| Southeast | 763.2 |
| Northwest | 761.5 |
| Northeast | 761.8 |

Design For Repairs to 57°03' LA

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Subdrain Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

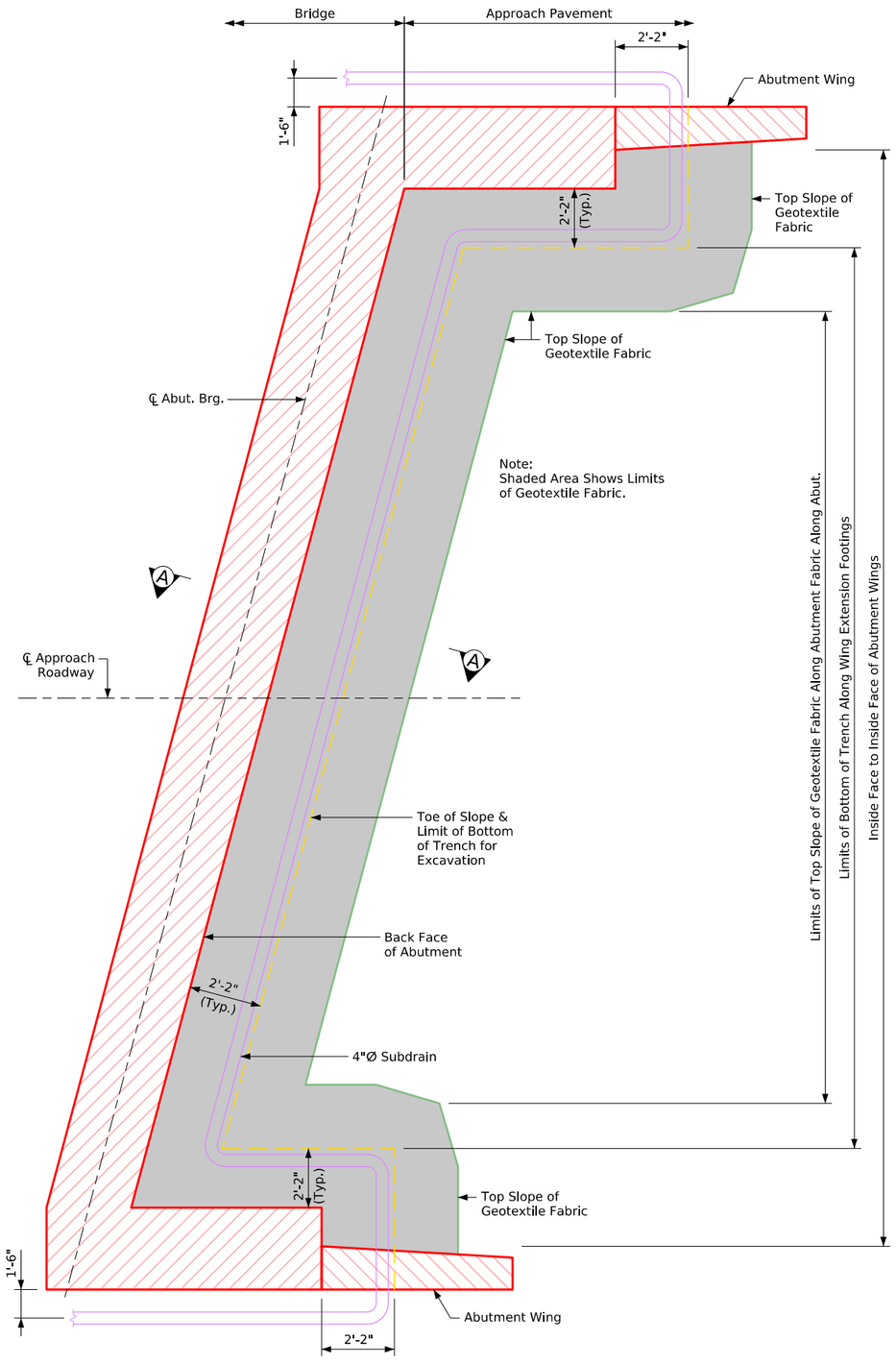
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 40 of 43 FHWA No. 604640

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SUBDRAIN DETAILS FOR CONCRETE SLOPE PROTECTION | STANDARD SHEET 1007 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.40 |
|---|---|---|---|---|---|---|---|

2:25:39 PM 4/15/2026 10117 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8206102023\Bridge\(153)_Bridge Deck Replacement\SHT_82061153_Stanley_0328_604640_Z11.dgn




## Abutment Plan with Wing Extensions

## Abutment Backfill Process:

The base of the excavation subgrade behind the abutment is to be graded with a 4% slope away from the abutment footing and a 2% cross slope in the direction of the subdrain outlet. This excavation shaping is to be done prior to beginning installation of the geotextile and backfill material.

After the subgrade has been shaped, the geotextile fabric shall be installed in accordance with the details shown. The fabric is intended to be installed in the base of the excavation and extended vertically up the abutment backwall, abutment wing walls, and excavation face to a height that will be approximately 1 to 2 ft higher than the height of the porous backfill placement as shown in the "Backfill Details" on this sheet. The strips of the fabric placed shall overlap approximately 1 ft and shall be pinned in place. The fabric shall be attached to the abutment by using lath folded in the fabric and secured to the concrete with shallow concrete nails. The fabric placed against the excavation face shall be pinned.

When the fabric is in place, the subdrain shall be installed directly on the fabric at the toe of the rear excavation slope. A slot will need to be cut in the fabric at the point where the subdrain exits the fabric near the end of the abutment wing wall.

Porous backfill is then placed and leveled, no compaction is required.

The remaining work involves backfilling with floodable backfill, surface flooding, and vibratory compaction. The floodable backfill material shall be in accordance with the Standard Specifications. The floodable backfill shall be placed in individual lifts, surface flooded, and compacted with vibratory compaction to ensure full consolidation. Limit the loose lifts to no more than 2 ft of thickness.

Start surface flooding for each floodable backfill lift at the high point of the subdrain and progress to the low point where the subdrain exits the fabric. To ensure uniform surface flooding, water running full in a 2"Ø hose should be sprayed in successive 6 ft to 8 ft increments for 5 minutes within each increment.

Floodable backfill lift placement, flooding, and compaction shall progress until the required full thickness of the abutment backfill has been completed.

Water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments will not be measured separately for payment.

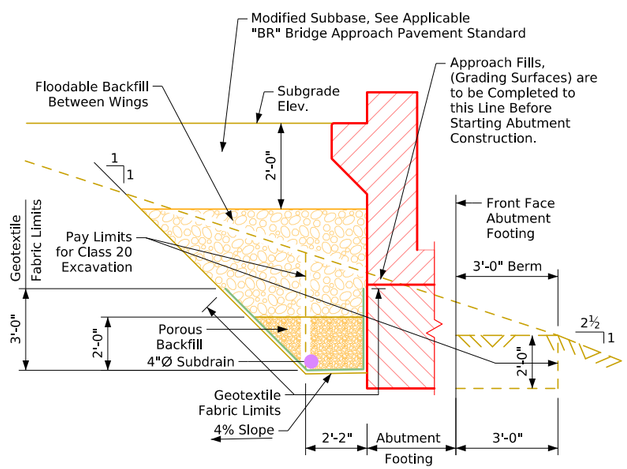
The cost of water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments shall be included in the contract unit price bid for "Structural Concrete".

## Note:

Subdrain shall slope downward 2% from ℄ approach roadway when outletting both sides of the abutment.

Subdrain shall slope downward 2% from high end when outletting at one end of the abutment.

The geotextile fabric shall be in accordance with Article 4196.01, B, 6 of the Standard Specifications. If the engineering fabric is lapped the laps shall be a minimum of 1 ft in length, shingle fashion with up slope lap piece on top and stapled for continuity.




Section A-A

## Backfill Details

Note: Geotextile Fabric will be Attached to Face of Abutment Footing and Wings.

Note:
For Details not Shown on this Sheet which are Pertinent to this Structure See Subdrain Details Sheet on Design Sheet No. 40.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Abutment Backfill Details

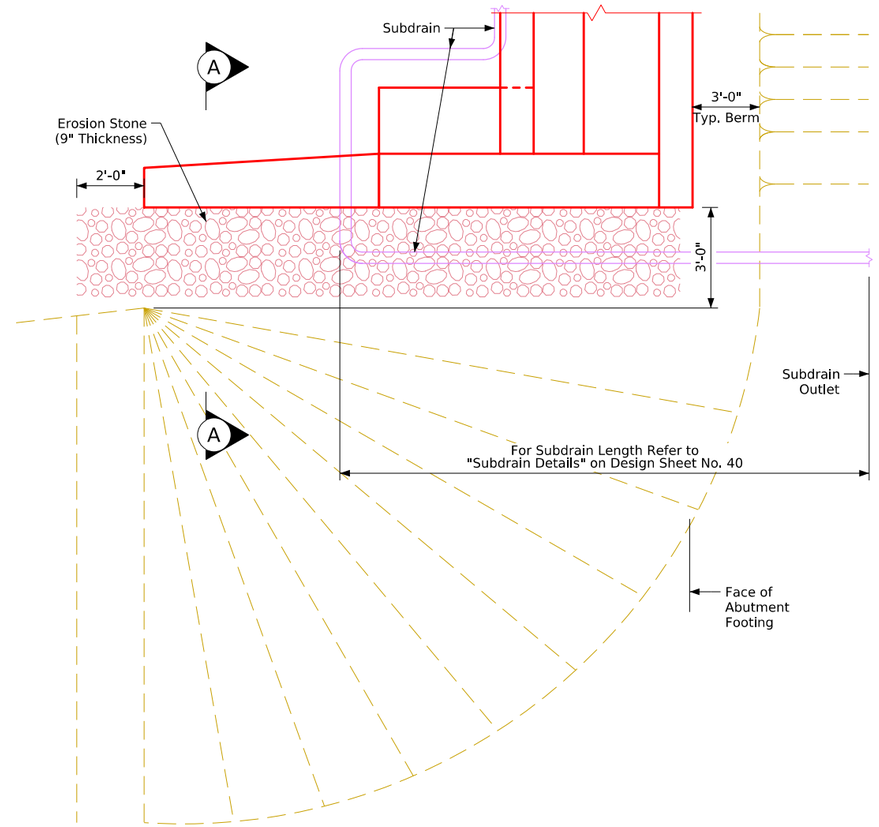
STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

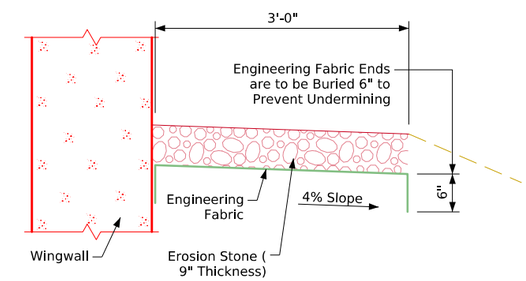
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 41 of 43 FHWA No. 604640

A Check Shall be Made at the Subdrain Outlet to Insure that it is Draining Properly During the Backfill Flooding Process.




## Top View of Wing Armoring with Wing Extension




## Section A-A

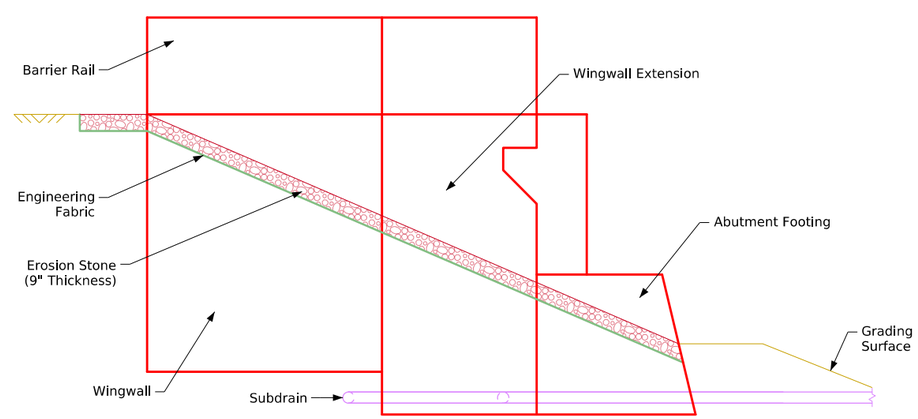
## General Notes:

Erosion stone shall be placed along the sides of the wings and abutment footing as shown in Section A-A. This is typical at each corner of the bridge unless otherwise noted in the plans. The erosion stone at these locations shall be underlayed with engineering fabric in accordance with Article 4196.01, B, 3, of the Standard Specifications.

The erosion stone shall be in accordance with Section 4130, of the Standard Specifications. Material passing the 3 inch screen but 100% retained on a 1 inch screen may be used as choke stone.

The erosion stone shall be deposited, spread, consolidated and shaped by mechanical or hand methods that will provide uniform 9 inch depth and density and provide uniform surface appearance.

Payment for the bridge wing armoring will be bid per square yard. Cost will include engineering fabric, erosion stone, excavation, shaping, and compaction to dimensions shown in these plans. Bid item shall be "Bridge Wing Armoring - Erosion Stone".




## Profile View of Wing Armoring with Wing Extension

(Stub Abutment with Wing Extensions)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

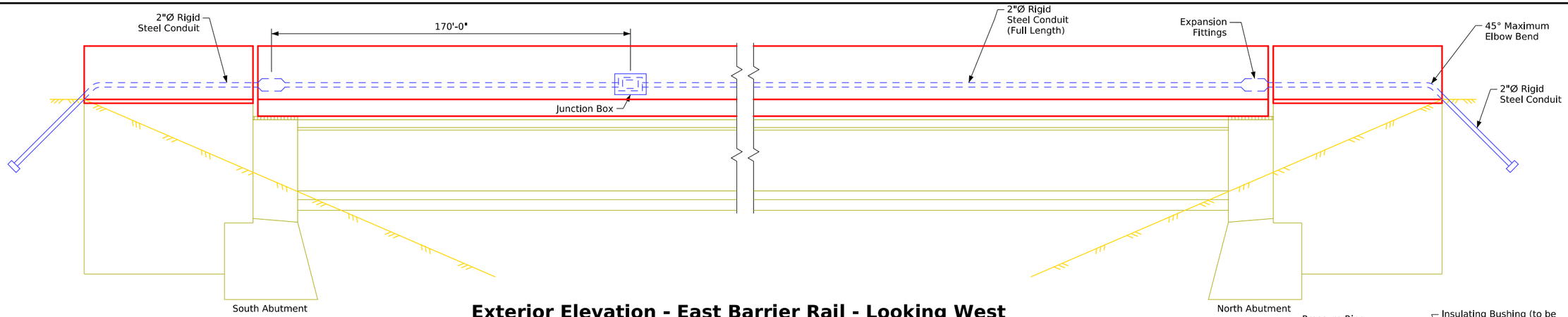
Bridge Wing Armoring

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 42 of 43 FHWA No. 604640




## Exterior Elevation - East Barrier Rail - Looking West

## Lighting Notes:

See LI-104 Standard Road Plan for additional information on junction boxes.

Construction shall conform to the current Iowa D.O.T. Standard and Supplemental Specifications and Special Provisions.

Conduit installation shall be in accordance with Article 2523.03, N, of the Standard Specifications.

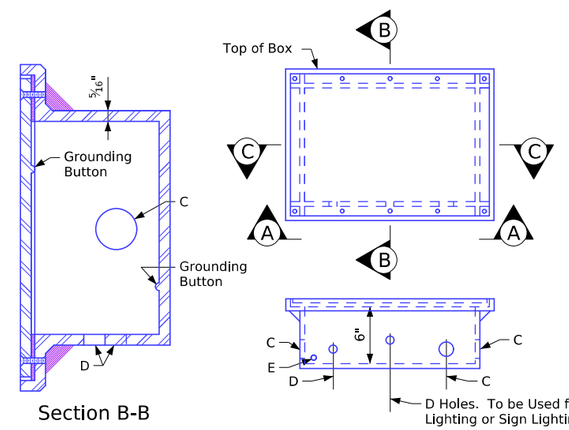
All "C" entrance holes in junction boxes shall be drilled and tapped for the specified conduit size. All other holes shall have a concrete - tight slip fit. Conduit ends shall not protrude into junction box more than ¼". Drain pipe end shall be flush with inside surface of box. Grounding buttons shall be located approximately 3" from the inside surface of the box wall, and not closer than 3" to the edge of any hole in the box floor. Holes for drain pipe shall be placed in the low corner of the box, with a minimum clearance of 1" between the edge of the hole and the inside surface of the box wall. Typical details are shown on this sheet.

The rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.

Expansion fitting shall be as specified or as approved by the Engineer. Typical details are shown on this sheet.

All reinforcing steel is to be epoxy coated and grade 60.

Stainless-steel reinforcement shall not be allowed to be in contact with the uncoated reinforcement, bare metal forming hardware, or to galvanized attachments or galvanized conduit.




Section B-B

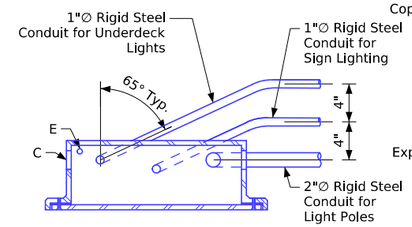
View A-A

## LI-104 Junction Box

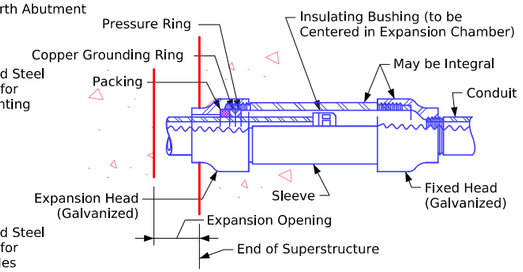
Watertight, Cast Iron - Flush Mount

| Bossed For | Hole | For Conduit Size |
|---|---|---|
| 5 Threads | C | 2" Ø Rigid Steel |
| None | D | 1" Ø Rigid Steel |
| None | E | ½" Ø Rigid Steel |

Note: The grounding buttons are to be blind drilled and tapped for ⅜"Ø x 0'-0¾" bolts.



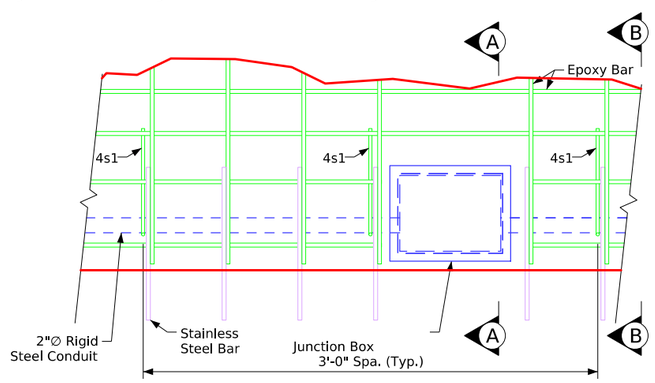

Section C-C




Expansion Chamber Length is 2¾"

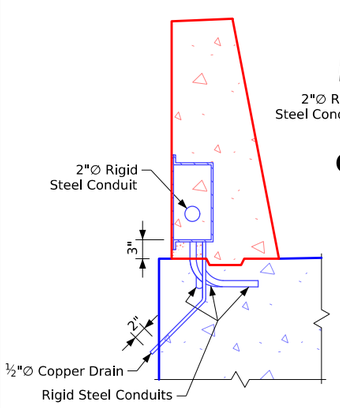
## Expansion Fitting Detail

(4 Required)

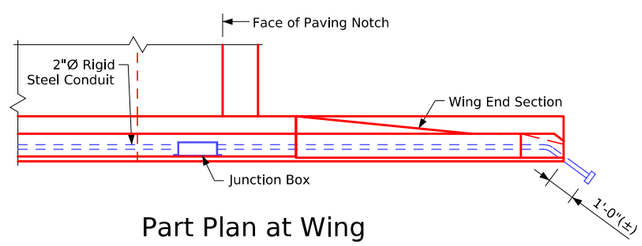



## Conduit Support - Rail Elev. Detail

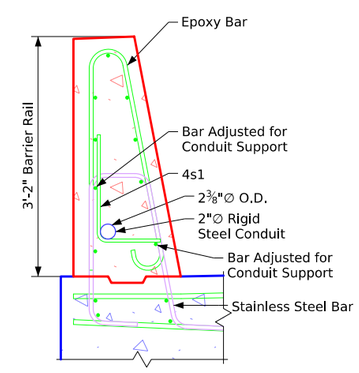
Junction Box Detail - Adjust reinforcing to clear junction box.
Junction boxes are to be placed no further than 300'-0" apart.




## Section A-A Thru Junction Box




Part Plan at Wing




## Section B-B - Conduit Support

Only used in rail with conduit, use 3'-0" spacing. Galvanized conduit shall not come into contact with the stainless steel reinforcing. lower conduit can only be 2" diameter.

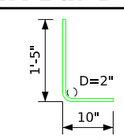
## Epoxy Coated Reinf. Steel - East Rail

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 4s1 | Rail Conduit | | 122 | 2'-3" | 183 |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 183 |

## Epoxy Coated Reinf. Steel - West Rail

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 4s1 | Rail Conduit | | 128 | 2'-3" | 192 |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 192 |

## Bent Bar Details




4s1

Note: All Dimensions are out to out. D = Pin Diameter

Note: Reinforcing steel quantities are included on the Barrier Rail Quantities Sheet.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Conduit Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0328 Design Sheet No. 43 of 43 FHWA No. 604640

## Estimate Bridge Repair Quantities and Reference Notes - Design No. 428

| Item No. | Item Code | Item | Unit | Quantities Estimated Design No. 428 | Estimate Reference Notes |
|---|---|---|---|---|---|
| 1 | 2401-6750001 | Removals, as Per Plan | LS | 1 | Includes removal and off-site disposal of all items as described in the "General bridge notes" and "Removal details" shown 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.<br><br>Name of asbestos inspector: Brad Azeltine<br>Date inspected: 11/1/2022<br>IA License number: Iowa DOT<br>Inspector phone: 515-239-1938<br>Asbestos present: No<br>Procedure used to detect the presence of asbestos material: Polarized Light Microscopy (PLM). |
| 2 | 2402-2720000 | Excavation, Class 20 | CY | 130.1 | Includes excavation behind the abutments and around the wings. Includes furnishing and placing special backfill behind the abutments and around the wings. Includes dressing up the slopes around the wings disturbed by construction. |
| 3 | 2403-0100010 | Structural Concrete (Bridge) | CY | 96.7 | Includes concrete for abutment backwalls, paving notches, and wingwalls. Includes cleaning and sealing the abutment seats and the face of the abutment footing. Includes all resilient joint filler required. Includes furnishing and placing subdrains and subdrain outlets at abutments. Includes the cost of water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric. Includes cost of setting dowels in drilled holes. |
| 4 | 2403-1000005 | Fiber Reinforcement for Structural Concrete | CY | 673.7 | Includes furnishing and incorporating fiber reinforcement in the concrete for both the Structural Concrete (Bridge) and High Performance Structural Concrete items. Refer to the "Developmental Specifications for Fiber Reinforcment for Structural Concrete". |
| 5 | 2403-1000010 | Trial Batch and Test Placement (Fiber Reinforced Concrete) | LS | 1 | Includes Trial Batch and Test Placement for Fiber Reinforced Concrete. Trial Batch and Test Placement shall apply to bridge deck mix and shall simulate bridge deck placement conditions. Refer to the "Developmental Specifications for Fiber Reinforcement for Structural Concrete". |
| 6 | 2403-7000210 | High Performance Structural Concrete | CY | 577.0 (F) | Includes concrete for bridge deck. Includes all costs for the temporary bracing system to stabilize the girders during construction. Refer to Developmental Specifications for High Performance Concrete for Structures. |
| 7 | 2404-7775005 | Reinforcing Steel, Epoxy Coated | LB | 223,501 | ---- |
| 8 | 2404-7775009 | Reinforcing Steel, Stainless Steel | LB | 6,615 | ---- |
| 9 | 2408-7800000 | Structural Steel | LB | 1,632 | Includes furnishing and installing 12 deck drains. |
| 10 | 2414-6424110 | Concrete Barrier Rail | LF | 794.5 | If placement of concrete is done by the slipforming method, Class BR concrete is required. Cast-in-place barrier rails shall use Class C mix. Price bid for this item shall include the cost of cast-in-place forms if required for placement of the concrete. Includes material and labor associated with providing and installing the reigid steel conduit, junction boxes, and fittings. Includes 814.5 LF of 2" diameter rigid steel conduit. |
| 11 | 2426-6772016 | Concrete Repair | SF | 2.0 | Includes concrete repairs to be made to the existing abutment footings. Exact locations and areas shall be determined in the field by the engineer. Refer to Concrete Repairs Sheet in plans for additional information. |
| 12 | 2501-8400172 | Temporary Shoring | LS | 1 | Includes temporary shoring required for staged construction excavation behind the abutments. |
| 13 | 2507-2638650 | Bridge Wing Armoring - Erosion Stone | SY | 41.3 | Includes furnishing and placing engineering fabric, erosion stone, and all required excavating, shaping and compacting for wing armoring. |
| 14 | 2508-0970000 | Containment | LS | 1 | ---- |

## Estimate Bridge Repair Quantities and Reference Notes, Cont. - Design No. 428

| Item No. | Item Code | Item | Unit | Quantities Estimated Design No. 428 | Estimate Reference Notes |
|---|---|---|---|---|---|
| 15 | 2508-0991000 | Painting of Structural Steel | LS | 1 | Includes bridge cleaning for painting and blast cleaning of structural steel. See General Notes for locations, limits, and additional information. |
| 16 | 2533-4980005 | Mobilization | LS | 1 | ---- |
| 17 | 2595-0005125 | Railroad Protective Liability Insurance For Dakota, Minnesota, And Eastern Railroad Corp. | LS | 1 | Refer to Developmental Specifications for Construction or Maintenance Work on Railroad Right-of-Way (Dakota, Minnesota, & Eastern Railroad Corporation dba CPKC) |
| 18 | 2599-9999005 | Expansion Joint (Drainage System) | EA | 2 | Includes furnishing, installing and testing the drainage system beneath the finger plate joints. Includes all costs associated with furnishing and installing neoprene curtains, bent plate troughs, downspouts and associated hardware. Measurement will be each expansion device drainage system required in the contract documents. The payment shall be the contract unit price for each drainage system and shall be full compensation for furnishing all material, equipment and labor and for performance of all work necessary for fabricating and installing the expansion device drainage system as per plan. |
| 19 | 2599-9999006 | Furnish HMWM Bridge Deck Treatment Material | GAL | 7 | Includes sealing the closure pour joint lines after longitudinal grooving is complete. Quantity is based on 1'-0 wide strip (6" each way from center of joint) along the length of both joint lines. Includes furnishing HMWM Bridge Deck Treatment in accordance with the application rates stated in the Special Provisions for High Molecular Weight Methacrylate Bridge Deck Treatment. |
| 20 | 2599-9999009 | Expansion Joint (Finger Plates) | LF | 221.9 | Includes all costs associated with furnishing and installing the finger plate joints at abutments. Includes finger plates, support plates, support brackets, anchor plates, abutment anchor system, shim plates, barrier plates and associated hardware. Measurement will be linear feet of expansion device finger plates required in the contract documents. The payment shall be the contract unit price per linear foot of finger plates and shall be full compensation for furnishing all material, equipment and labor and for performance of all work necessary for fabricating and installing the expansion device finger plates as per plan. |
| 21 | 2599-9999014 | Bridge Deck Sealing, HMWM | SF | 676.6 | Includes sealing the closure pour joint lines after longitudinal grooving is complete. Quantity is based on 1'-0 wide strip (6" each way from center of joint) along the length of both joint lines. Includes surface preparation and application of HMWM in accordance with Special Provisions for High Molecular Weight Methacrylate Resin Bridge Deck Treatment. |

Roadway Quantities shown elsewhere in these plans.

Construction Survey shall be completed by the Iowa DOT

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Estimated Bridge Quantities

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 1 of 43 FHWA No. 604645

# 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 High Performance Concrete for Structures
- Developmental Specifications for Fiber Reinforcement for Structural Concrete
- Developmental Specifications for Construction or Maintenance Work on Railroad Right-of-way (Dakota, Minnesota, & Eastern Railroad Corporation dba CPKC)
- Special Provisions for High Molecular Weight Methacrylate Resin Bridge Deck Treatment

# Design Stresses:

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

Reinforcing steel in accordance with Section 8, Grade 60.
Concrete in accordance with Section 8, f'c = 4.0 ksi.
Structural steel in accordance with Section 10. ASTM A709 Grade 36, Grade 50, and Grade 50W (AASHTO M270 Grade 36, Grade 50, and Grade 50W).

# General Bridge Notes:

This design is for repairs to the existing 336'-0" x Varies Continuous Welded Plate Girder Bridge on US 61 over DME Railroad in Scott County. Electronic copies of original design plans will be made available to the Contractor as part of the e-files supplied with the contract documents.

See Design Sheet No. 4 for list of repair items.

Dimensions shown on these plans are based on the original design plans. All alignment, stationing, connecting dimensions, and elevations used in the new details in these plans were developed based on the exisitng bridge plans and field survey. The Bridge Contractor shall field verify the details and elevations before starting construction.

Elevations shown are based on the existing bridge plans. The existing plan elevations are based on datum NGVD 1929. Based on recently obtained survey at this site using datum NAVD 88, it is anticipated that current survey elevations will be approximately 0.45' higher than existing plan elevations.

The utility companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the construction starting date.

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.

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

Keyway dimensions shown 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.

Faint lines on plans indicate the existing structure.

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 ⅝ 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 |

# General Bridge Notes, Cont.:

The tops of the abutment backwalls as shown shall be constructed using Class C structural concrete. Promptly after the concrete has been placed and vibrated as provided in Articles 2403.03, C, and 2403.03, D, of the Standard Specifications, it shall be hand finished to provide a smooth surface with the proper crown. The Contractor may elect to use formwork which is marked or trimmed to the correct elevation and crown to provide the limits for the hand finishing.

It will be necessary to support the earth and/or granular material behind the abutment during reconstruction of the abutment backwalls by some method approved by the Engineer. All costs for supporting the earth and/or granular material shall be included in the price bid for "Excavation, Class 20".

The Contractor is responsible to provide sufficient temporary bracing to minimize lateral deflection and rotation of exterior steel beams during deck placement. Lateral deflection and rotation of exterior beams may result in thin decks and an upwards shift in bar mats which can decrease concrete cover. Partially or fully installed permanent bracing as shown in these design plans shall not be assumed sufficient to minimize lateral deflection and rotation of exterior beams during deck placement. Temporary bracing shall not be welded to the steel beams or its attachments including the studs.

Substructure concrete shall be protected from staining by a wrapping of polyethylene or similar materials which shall be left in place and kep in a servicable condition until after the deck has been placed. If substructure concrete is stained, the stains shall be removed by methods approved by the engineer. All costs associated with the protection and any required cleaning of the substructure concrete shall be included in the price bid for "Structural Steel".

The lump sum bid for "Painting Structural Steel" shall include the cost of preparing all the existing structural steel for painting (including bearings) and field painting existing structural steel as noted in these plans. Cleaning and painting shall be in accordance with Section 2508, of the Standard Specifications. An epoxy paint system shall be used. Color shall match existing paint color of steel beam. The Contractor shall supply a color sample for review and approval prior to painting.

Containment and disposal of waste shall be in accordance with Section 2508 of the Standard Specifications. All costs associated with hauling and depositing of waste at the designated site/facility shall be the responsibility of the Contractor and included in the contract price bid for the "Containment" item.

Scrape samples were taken from several areas of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead and total chromium on these samples were:

| Location: | Total Lead | Total Chromium |
|---|---|---|
| Expansion Plate | 897 PPM | 542 PPM |
| Girder | 1,630 PPM | 367 PPM |
| Abutment Bearing | 642 PPM | 175 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.

This bridge deck is designed for HS20-44 Loading, plus 20 lbs. per square foot of roadway for future wearing surface.

"Removals as Per Plan" include all costs associated with removing the bridge deck, barrier rails, expansion devices, portions of the wing and wing extensions, paving notches, and abutment backwalls. Removals 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 shall be repaired at no extra cost to the State.

The Contractor shall clean existing reinforcement bars incorporated int he new work to ensure that reinforcement is free from dirt, detrimental scale, rust, paint, oil, or other foreign substances.

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

Concrete removal shall be initiated with a ¾" saw cut wherever possible.

Temporary shoring (sheet pile or other) shall be required as necessary to prevent the earth under the traffic lane from sloughing in during construction.

# General Bridge Notes, Cont.:

The Contractor shall submit a temporary shoring plan for review. The temporary shoring plan shall be designed and certified by a Professional Engineer licensed in the state of Iowa. When determining slope stability to support structures such as bridges, culverts, and retaining walls, a global stability analysis shall be included in the design of the temporary shoring in accordance with Chapter 200F-1 in the design manual of the Iowa DOT, Design Bureau. The Contractor shall not proceed with installation of the temporary shoring without notice to proceed from the Engineer.

The temporary shoring submittal shall include:

- Design calculations (including a global stability analysis)
- Soil properties
- Shoring material properties
- Shoring plan layout (showing location of traffic)
- Shoring details

Temporary shoring shall be paid for as a lump sum including all cost for designing, furnishing, installing, and removal. All material used for shoring shall remain the property of the Contractor. Shoring is to be removed only after backfilling has been completed. In addition to the requirements noted above, Article 1107.07 of the Standard Specifications still applies.

Deck drains including plates welded to the drain for drain support are to be grade 36 steel.

Shear studs are to be of an approved type listed in Materials I.M. 453.10, Appendix A.

Bars indicated as dowels shall be set in drilled holes. Holes are to be 10" deep. The dowels shall be installed in accordance with the Manufacturer's recommendations. Either of the following systems may be used as a bonding agent for vertical dowels, but only System "A" may be used for horizontal dowels:

A. Polymer grout system in accordance with Article 2301.03, E, of the Standard Specifications.
B. Hydraulic cement grout systems. Drilled holes are to be 2½ times the dowel diameter and are to be blown clean with compressed air immediately prior to placing grout. The hydraulic cement grout shall be one of those approved in Materials I.M. 491.13 and shall be used in accordance with the Manufacturer's recommendations.

The price bid for "Structural Concrete (Bridge)" shall include the costs of setting bars as dowels, as shown in these plans.

Longitudinal Grooving will not be a part of this contract, but will be done by others prior to opening the bridge to traffic.

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

Concrete barrier rails placed using the slipform method will require the use of a Class BR Concrete in accordance with Article 2513.03, A, 2, of the Standard Specifications. Cast-in-place barrier rails shall use Class C mix. Class D Concrete is not permitted for concrete barrier rails (cast-in-place or slipformed method).

It is the intent of this design to use the existing girders, existing intermediate diaphragms, existing abutment diaphragms and existing pier diaphragms as constructed.

It is the intent of these plans to reuse the existing steel shear studs on top of the beams. The Contractor shall exercise care not to damage these lugs during the concrete deck removal operation. Any replacement of damaged shear lugs will be as directed by the Engineer and repaired at no cost to the State.

No torchwork, cutting, grinding or drilling of holes on the existing structural steel of the bridge shall be performed when the air temperature and steel temperature are below 40°F.

The Bridge Contractor shall work in such a manner that equipment and materials shall not be allowed to interfere with train traffic or be allowed to fall on the railroad tracks. Interference above the railroad track area shall be coordinated with the railroad.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

General Notes

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 2 of 43 FHWA No. 604645

## 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 | Expansion Devices | 153_Scott_Design428_Expansion Device.pdf | No |
| 2 | Deck Drains | 153_Scott_Design428_Deck Drains.pdf | No |
| 3 | Demolition Plan | 153_Scott_Design428_Demolition Plan.pdf | Yes |
| 4 | Girders Survey After Deck Removal | 153_Scott_Design428_Girders Survey After Deck Removal.pdf | No |
| 5 | Temporary Supports | 153_Scott_Design428_Temporary Supports.pdf | No |
| 6 | Temporary Shoring | 153_Scott_Design428_Temporary Shoring.pdf | Yes |
| **No.** | **Calculation Description** | **Calculation File Name Convention For Submittal** | **Certified by Iowa P.E. (Yes/No)** |
| 1 | Temporary Deck Support and Brackets | 153_Scott_Design428_Temporary Deck Support and Brackets.pdf | Yes |
| 2 | Demolition Plan | 153_Scott_Design428_Demolition Plan.pdf | Yes |
| 3 | Temporary Shoring | 153_Scott_Design428_Temporary Shoring.pdf | Yes |
| X | | | |

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

Note:
All plan dimensions are horizontal unless noted otherwise.

Pollution Prevention Plan shown elsewhere in these plans.

## Design History at this Site
(Includes this Design)

| Des. No. | Type of Work |
|---|---|
| 980 | Original Design |
| 428 | Deck Replacement |
| | |

## Bridge Deck Dimension Table

| No. | Item | Unit | Quantity |
|---|---|---|---|
| 1 | Minimum Deck Length | L.F. | 338.28 |
| 2 | Maximum Deck Length | L.F. | 361.63 |
| 3 | Minimum Deck Width | L.F. | 55.94 |
| 4 | Maximum Deck Width | L.F. | 71.11 |
| 5 | Deck Area | S.F. | 21,516.21 |

1. Deck length is measured from face-to-face of paving notches along the centerline of the roadway.
2, 3. Deck widths are measured from out-to-out of deck perpendicular to the centerline of roadway.
4. Deck area is to be based on the face-to-face paving notch distance and out-to-out deck dimensions.

## General Bridge Notes, Cont.:

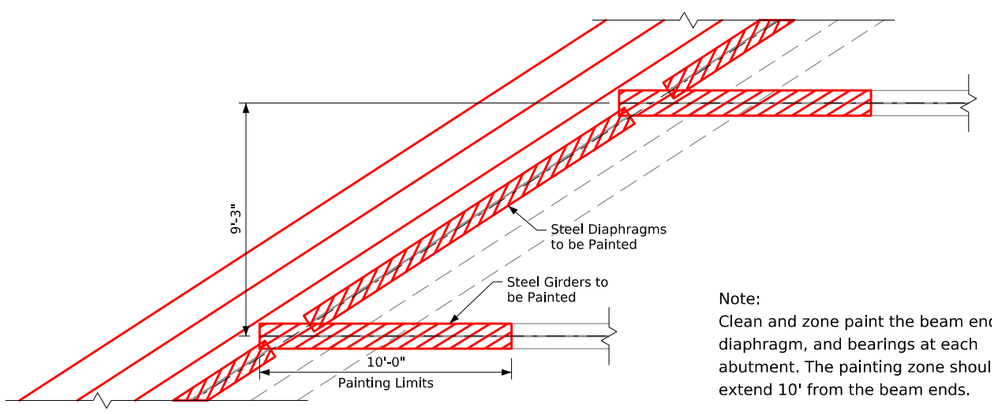
Work within railroad right-of-way, inclusive of overhead work, shall comply with railroad requirements. Work activities which have potential to impact the operation, property and/or facilities of the railroad shall be subject to review and approval by the railroad. Prior to construction, the Contractor shall submit proposed materials and procedures applicable to shoring, erection, demolition, falsework, and other work activities identified by the railroad as relevant. All costs of labor, equipment and materials for coordinating and executing the work in accordance with railroad requirements shall be incidental to the price bid for the work.

DME RR will have 4-hour work windows for this type of work. Contractor shall coordinate timing of work with DME RR.

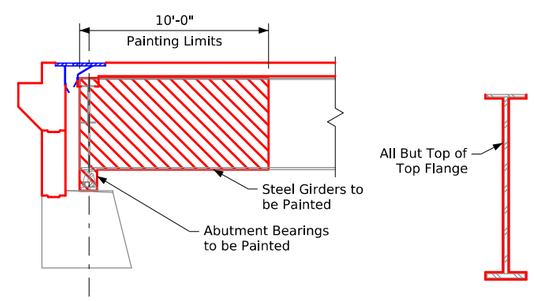
Bridge deck finishing machine screed rails shall not be placed on previously poured stages of the deck or on the decks of existing structures. Screed rails shall ordinarily be placed on beam overhang formwork or, when necessary due to space limitations, directly over a beam. The Contractor is responsible for the structural adequacy and functionality of the support system for the screed rail and finishing machine

During construction of this project the Bridge Contractor will be required to coordinate operations with those of other Contractors working within the same area. Other work in progress during the same period of time will include, but is not limited to, construction of the following projects:

-BRF-061-5(151)--38-82
-BRF-061-5(157)--38-82
-NHSX-061-5(156)--3H-82




Note:
Clean and zone paint the beam ends, diaphragm, and bearings at each abutment. The painting zone should extend 10' from the beam ends.

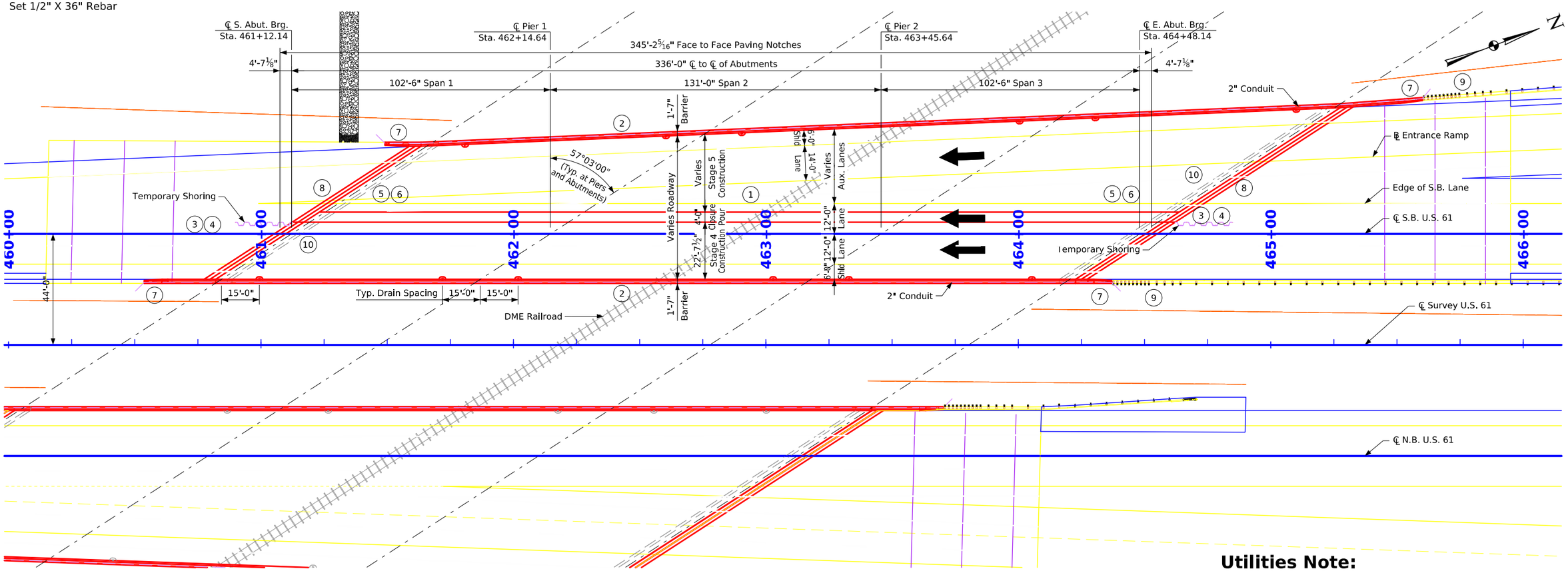



## Limits of Painting Structural Steel

Note: Details and limits of cleaning and painting shown above are typical for all 8 beams at both abutment ends.

Design For Repairs to 57°03' LA
Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges
102'-6" End Spans 131'-0" Interior Span
General Notes
STA. 462+06.89 (US 61) Turn-in Date: May 2026
Scott County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0428 Design Sheet No. 3 of 43 FHWA No. 604645

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar

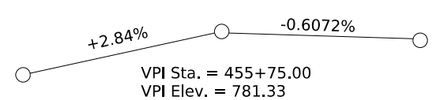



## Repairs shall consist of:

1. Remove and replace bridge deck.
2. Remove and replace concrete railings.
3. * Remove and replace approaches with 70' standard bridge approaches.
4. Remove and replace backwall and paving notches at each abutment.
5. Clean and paint bearings and girder ends.
6. Concrete repairs along abutments.
7. Remove and replace rail end sections.
8. Replace existing sliding plate joints with finger joints.
9. * Remove and replace guardrail in accordance with current standards.
10. Clean and seal existing footing and abutment seats.

* Note: Refer to roadway plans for additional information.

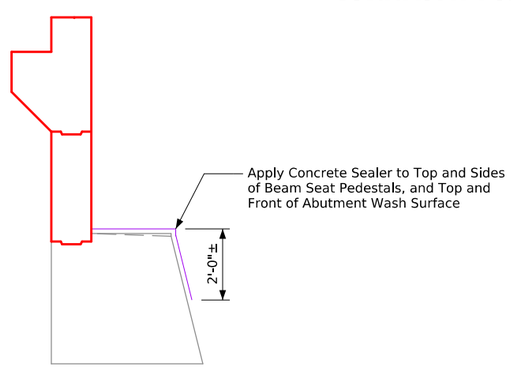
## Situation Plan




VPI Sta. = 455+75.00
VPI Elev. = 781.33
L = 1100'

## Proposed Profile Grade S.B. US 61

Note: PGL taken from existing plans and increased by ½" to reflect proposed grade raise.
Refer to General Notes for anticipated elevation adjustment due to datum change.




## Concrete Sealer Placement

## Concrete Sealer Notes

The abutment seats are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. All costs associated with cleaning and sealing of the concrete areas shall be included in the lump sum price bid item "Structural Concrete (Bridge)". See details shown on these plans for loacations of concrete sealing.

## Utilities Note:

Utilities shown on this sheet are for information only.See Road Design sheets for utility information.

## General Utility Symbols:

| | |
|---|---|
| E - Electric Line | FO - Fiber Optic Line |
| G - Gas Line | GHP - Gas High Pressure |
| SAN. - Sanitary Sewer | ST S - Storm Sewer |
| T - Telephone Line | TV - TV |
| W - Water Line | -●- Power Poles |

## Traffic Estimate

| S.B. US 61 | | |
|---|---|---|
| 2024 AADT | 16,000 | V.P.D. |
| TRUCKS | 11 | % |

## Location

US 61 over DME Railroad
In City of Davenport
T-79N R-3E
Section 36
Sheridan Township
Scott County
FHWA No. 604645
Bridge Maint. No. 8223.8L061
FRA No. 393010P
Latitude 41.607095°
Longitude -90.565220°

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

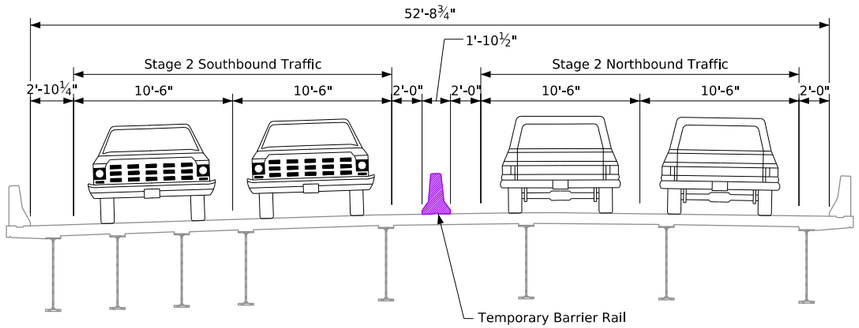
Situation Plan

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

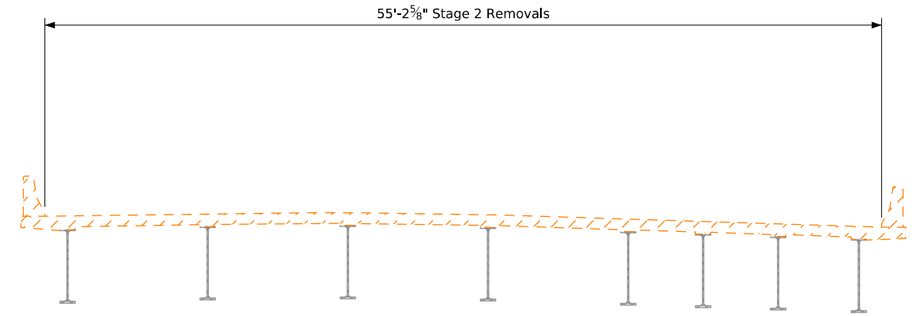
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 4 of 43 — FHWA No. 604645



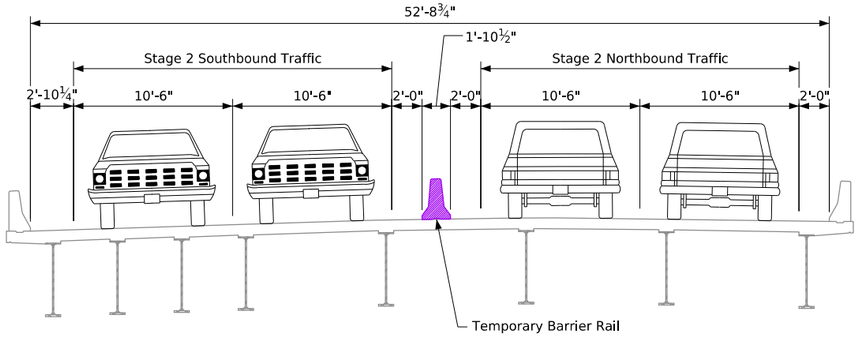

Southbound Lanes



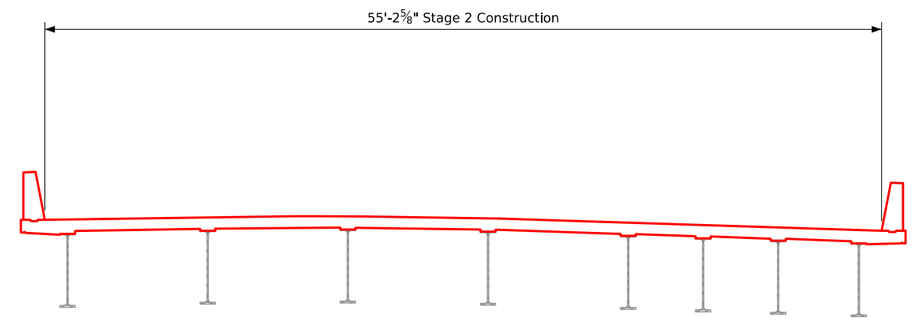

Northbound Lanes

## Typical Stage 2 Removals

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Stage 2 Construction

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 3 for tied projects.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

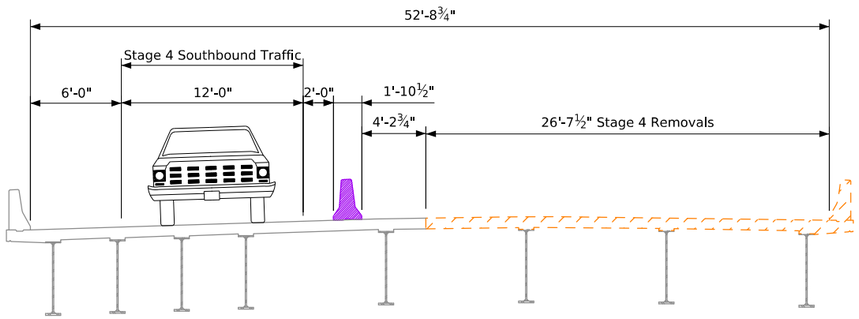
Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

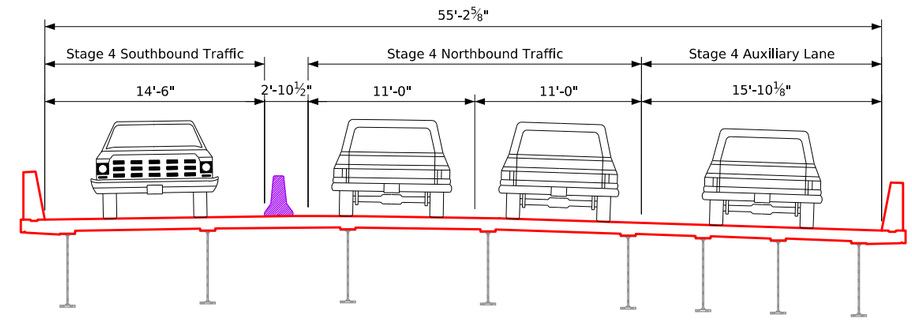
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 5 of 43 FHWA No. 604645



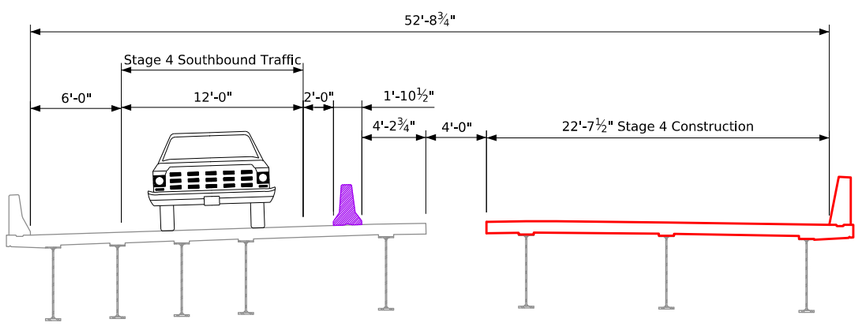

Southbound Lanes



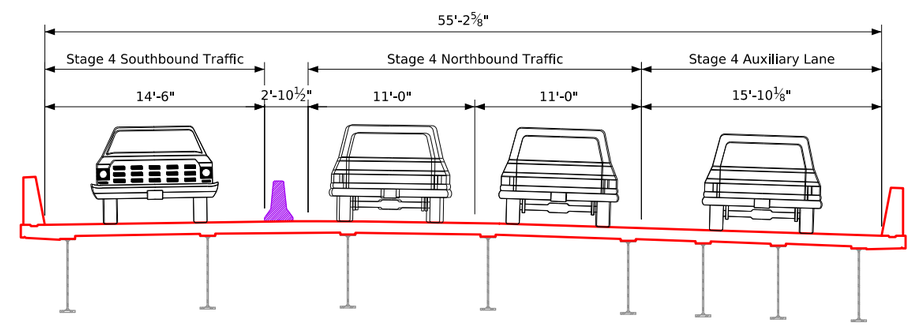

Northbound Lanes

## Typical Stage 4 Removals

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Stage 4 Construction

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 3 for tied projects.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

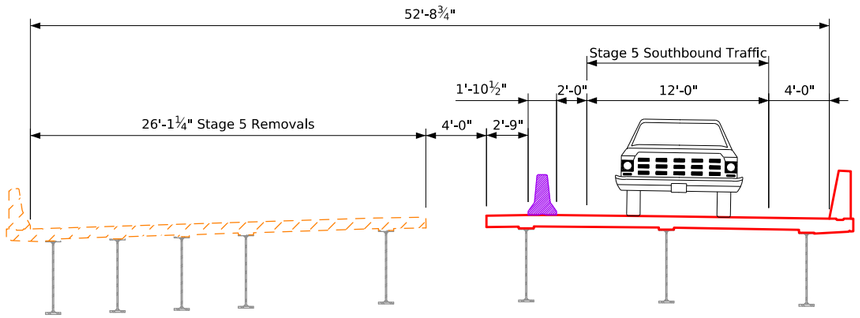
Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

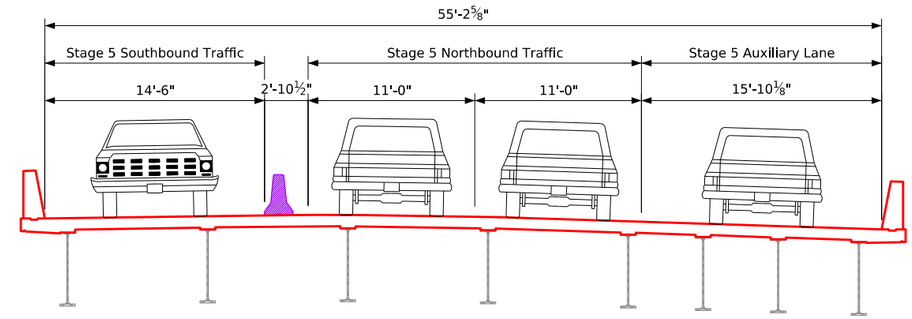
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 6 of 43 FHWA No. 604645



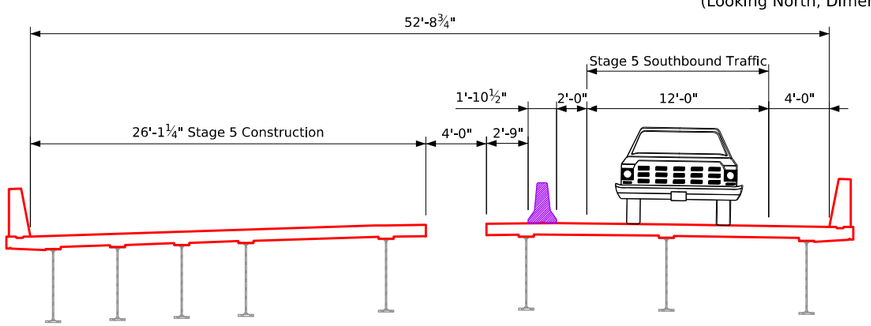

Southbound Lanes



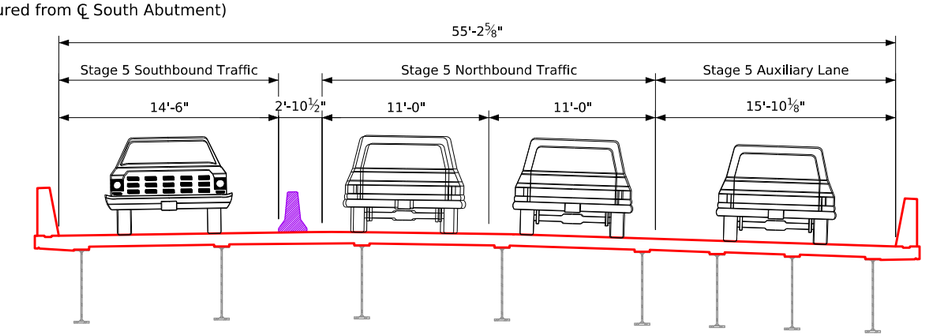

Northbound Lanes

## Typical Stage 5 Removals

(Looking North, Dimensions measured from ℄ South Abutment)



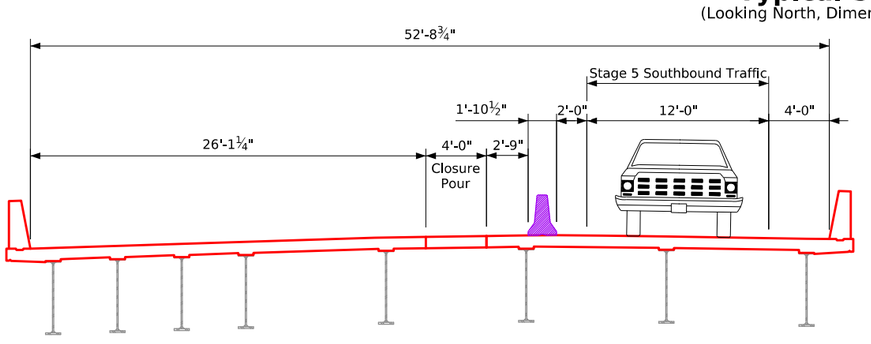

Southbound Lanes



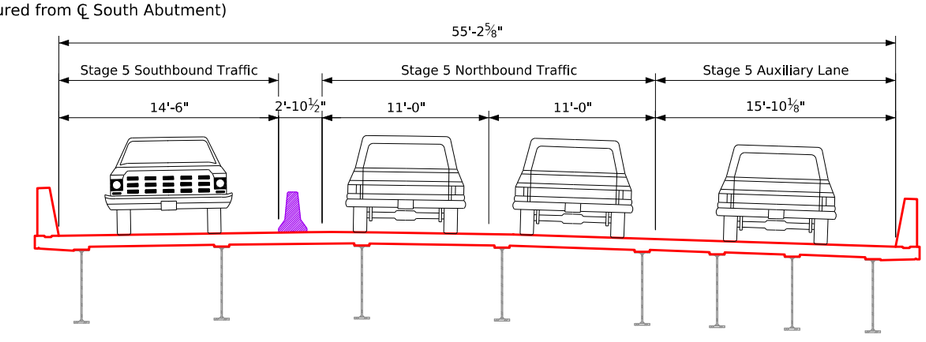

Northbound Lanes

## Typical Stage 5 Construction

(Looking North, Dimensions measured from ℄ South Abutment)




Southbound Lanes




Northbound Lanes

## Typical Closure Pour

(Looking North, Dimensions measured from ℄ South Abutment)

Note: See General Notes on Design Sheet 3 for tied projects.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

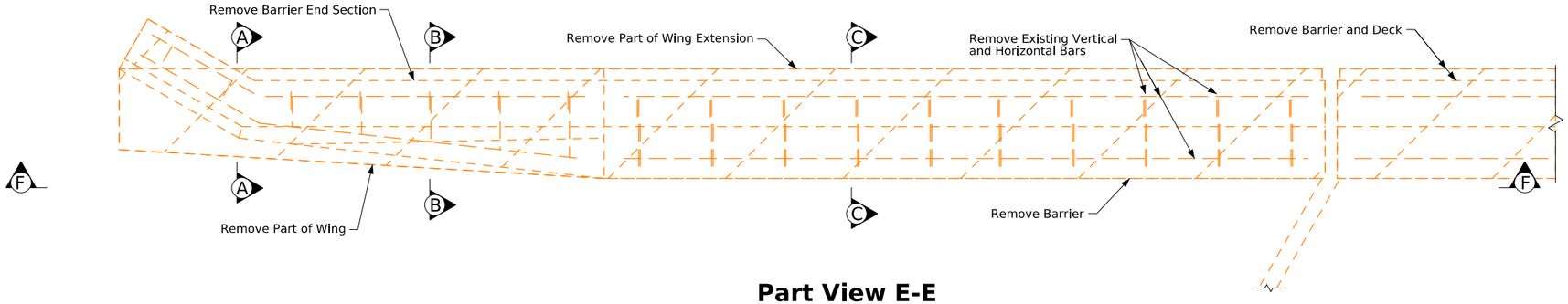
Staging Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

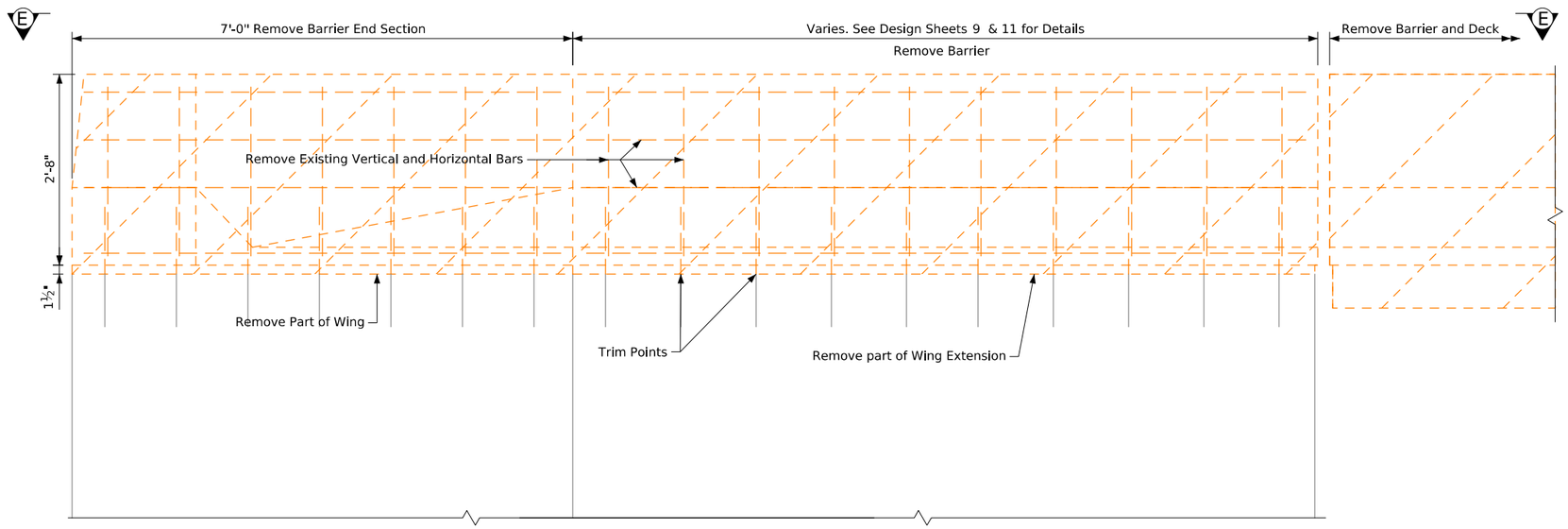
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

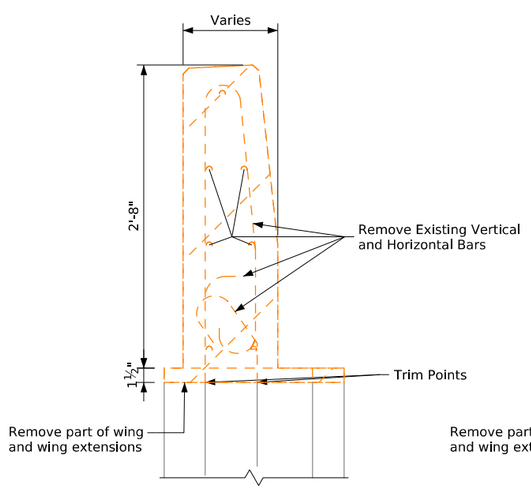
Design No. 0428 Design Sheet No. 7 of 43 FHWA No. 604645



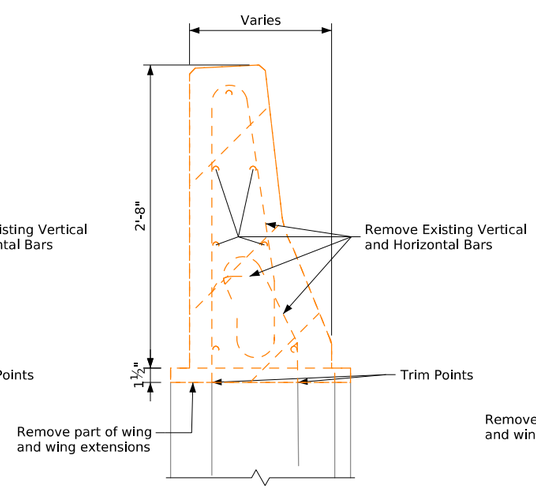

## Part View E-E



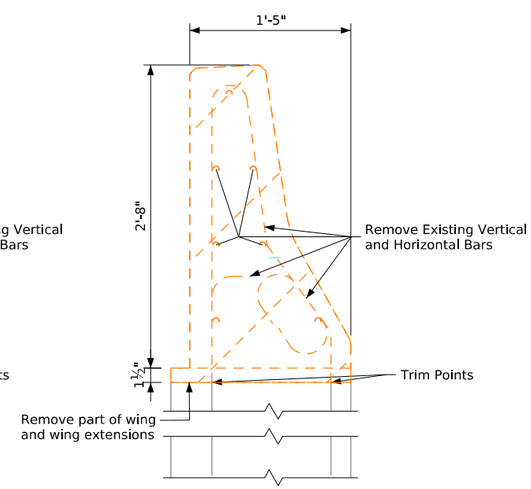

## Part View F-F




## Section A-A




## Section B-B




## Section C-C

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

# Barrier Rail End Section Removal Details

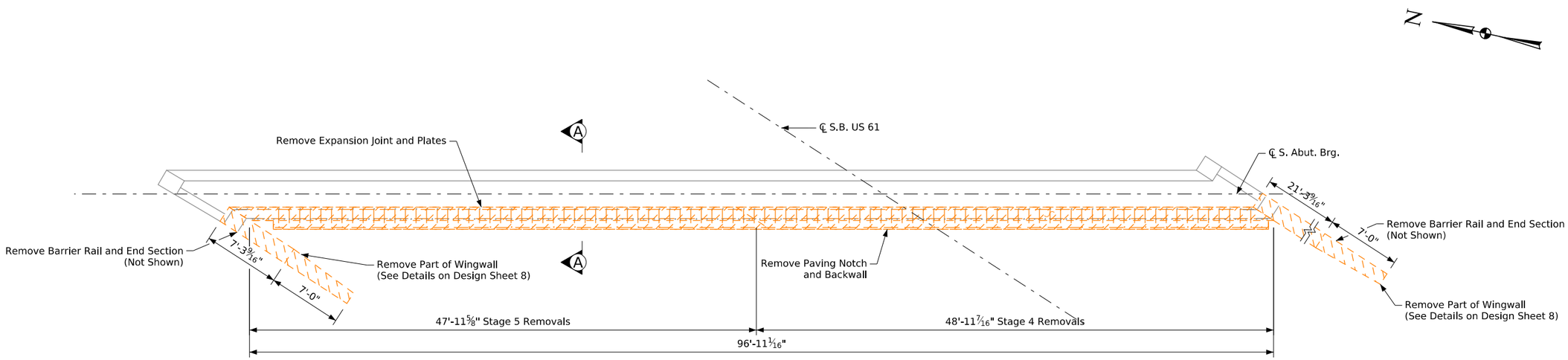
STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

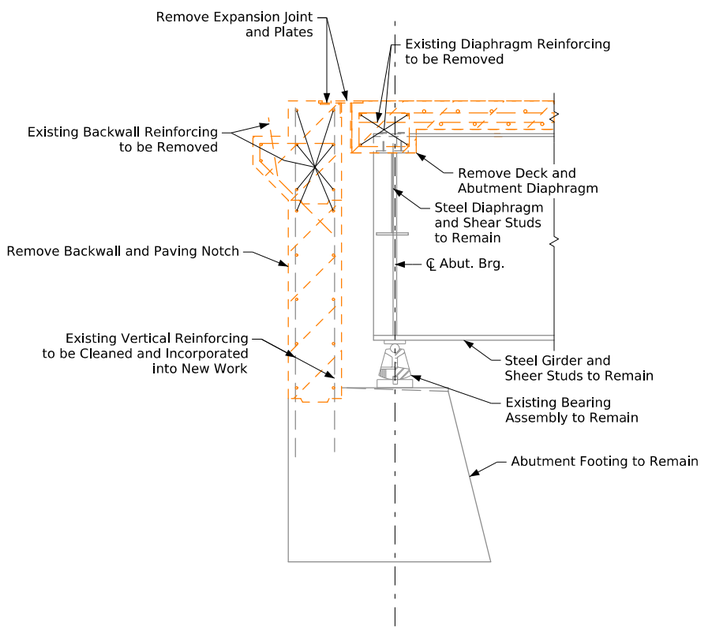
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 8 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.51 |
|---|---|---|---|---|---|




## Part Removal Plan at South Abutment




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## South Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 9 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.52 |
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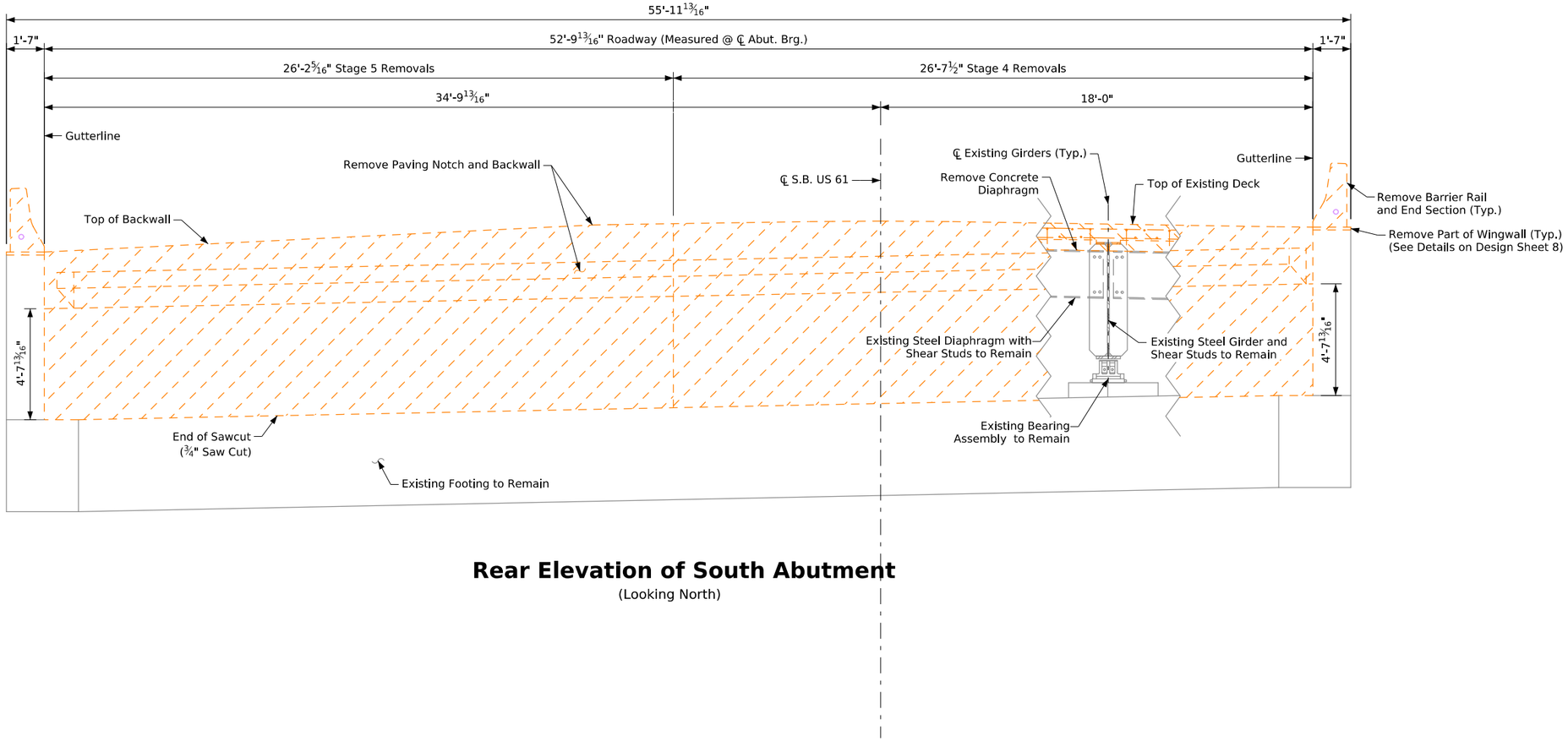



## Rear Elevation of South Abutment

(Looking North)

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

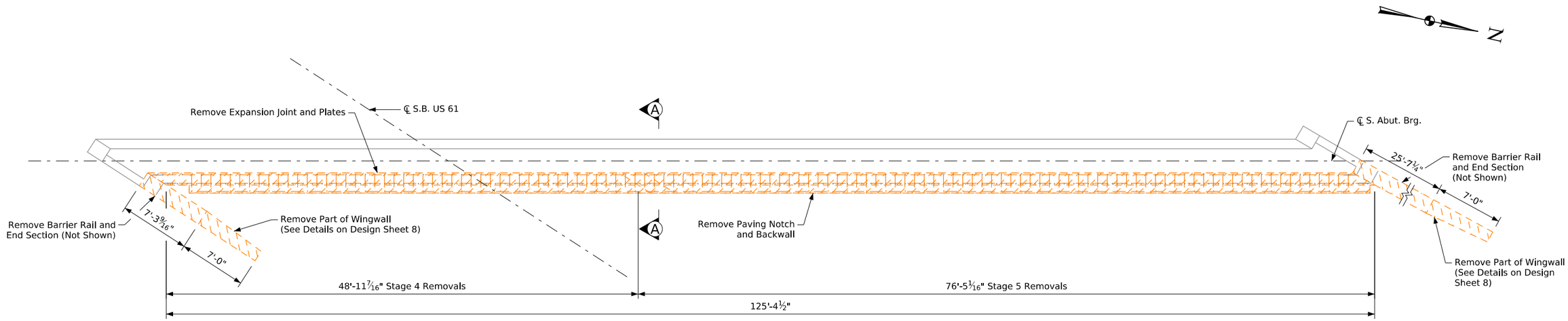
# South Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

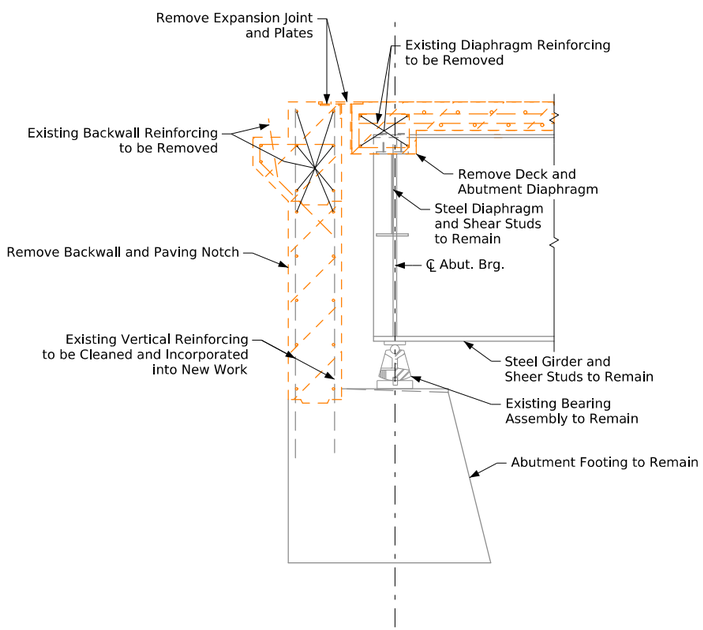
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 10 of 43 FHWA No. 604645




## Part Removal Plan at North Abutment




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## North Abutment Removal Details

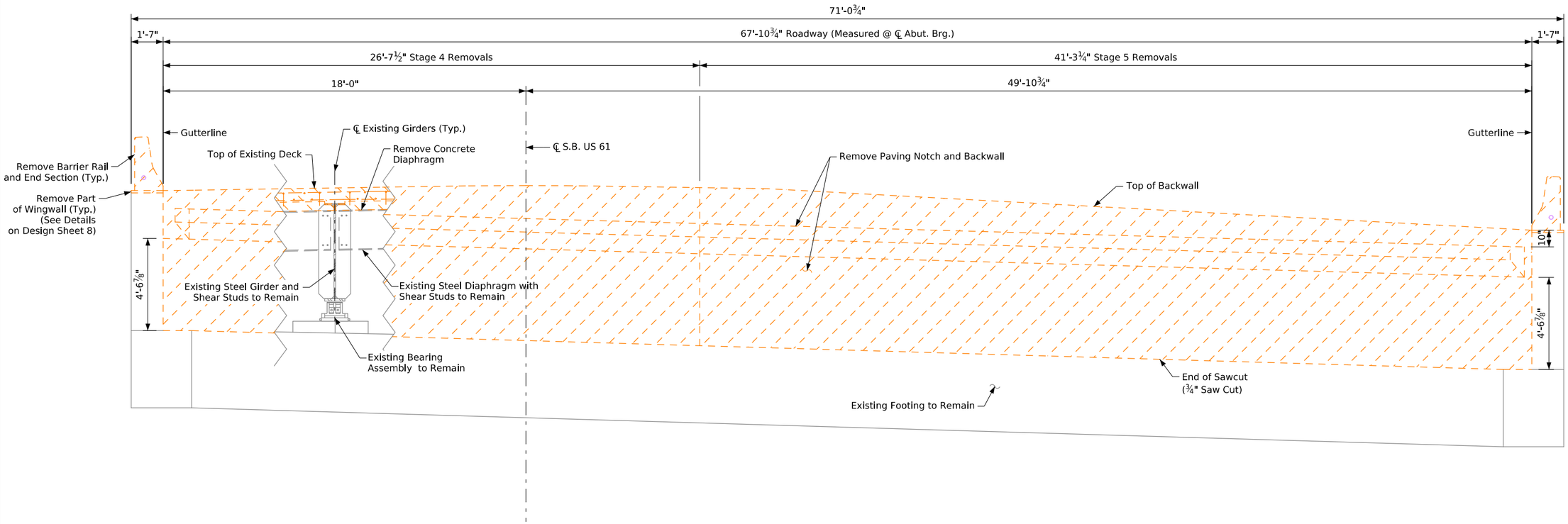
STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 11 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.54 |
|---|---|---|---|---|---|




## Rear Elevation of North Abutment

(Looking South)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

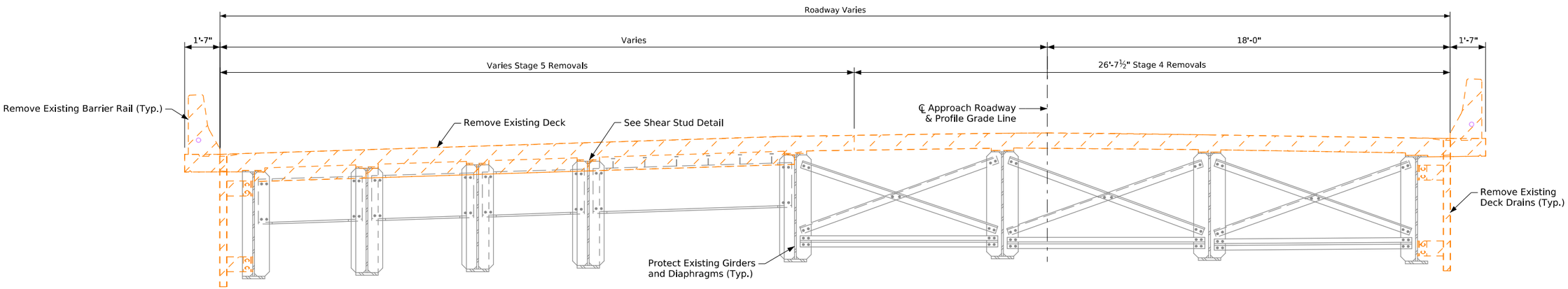
North Abutment Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 12 of 43 FHWA No. 604645




Half Section Near Abutment

Half Section Near Intermediate Diaphragm

## Transverse Section
(Looking North)

## Deck Removal Notes

Hatched areas indicate concrete, railing, and floor drain removals.

See Roadway Plans for removal of approaches.

The Bridge Contractor is to use extreme care when remvoing the deck concrete at the beam locations to avoid damaging the top flange of the beam. Prior to commencing any deck removal work, the Contractor shall submit a demolition plan to the Engineer for approval. The Contractor shall notify the Engineer of the start date for deck removal work in order to demonstrate the removal procedure on a small portion of the deck while the Field Inspector is present. Damage may require the Contractor to modify the removal process prior to approval to proceed.

Removals 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 shall be repaired, as directed by the engineer, at the contractor's expense.

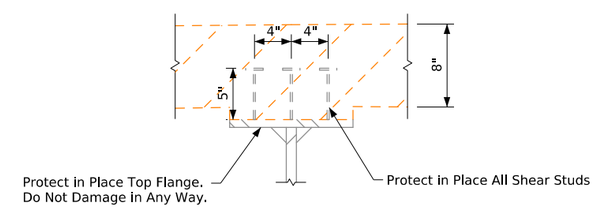
Once the deck concrete over the beam is removed, all remaining debris shall be cleaned from the beams to provide a suitable bond to the concrete deck. The removed material shall become property of the Contractor and shall be removed from the project site.

All damage sustained to the top flange shall be identified and repaired. In addition to being repaired, any damage located in a negative moment region shall undergo magnetic particle testing for cracks. Acceptable repair methods:

Girder top flange:
- Gouges – grind out in a 10:1 taper
- Bends or tears – to be evaluated by the Engineer

Angle and Bar Shear Lugs:
- Minor gouges – grind smooth
- Bends and gouges to angle – Grind sharp corners and, if in a negative moment region, magnetic particle test angle to flange weld. Any crack detected will necessitate the removal of the angle as noted below.
- Tears to angle – If in a negative moment region, remove angle by mechanically cutting to just above the top of flange, grind surface of flange smooth, and perform magnetic particle testing on the repair area. If in a positive moment region, remove angle by mechanically cutting to location of tear and grind sharp edges smooth.
- Bend or tear to bar – Remove bar and grind top of angle smooth.

Magnetic particle testing is to be done at the Contractor's expense by an approved third party. Any cracks identified shall be repaired or the section of the damaged beam replaced at the Engineer's direction at no additional cost to the State.




## Shear Stud Detail

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

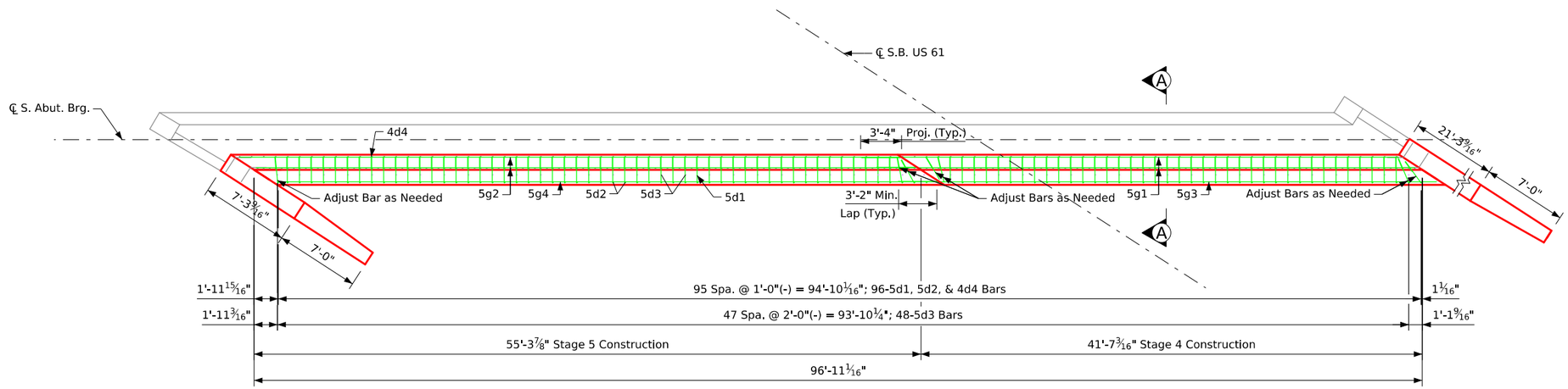
Superstructure Removal Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

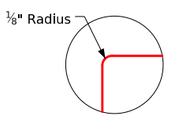
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

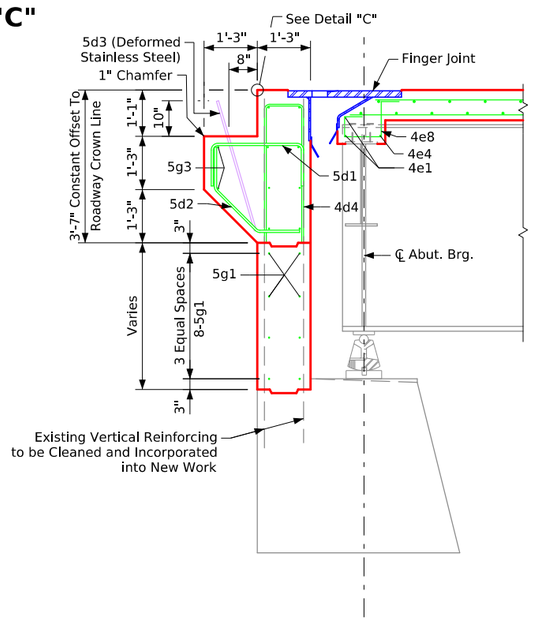
Design No. 0428 Design Sheet No. 13 of 43 FHWA No. 604645




## Part Plan at South Abutment




## Detail "C"




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## South Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 14 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.57 |
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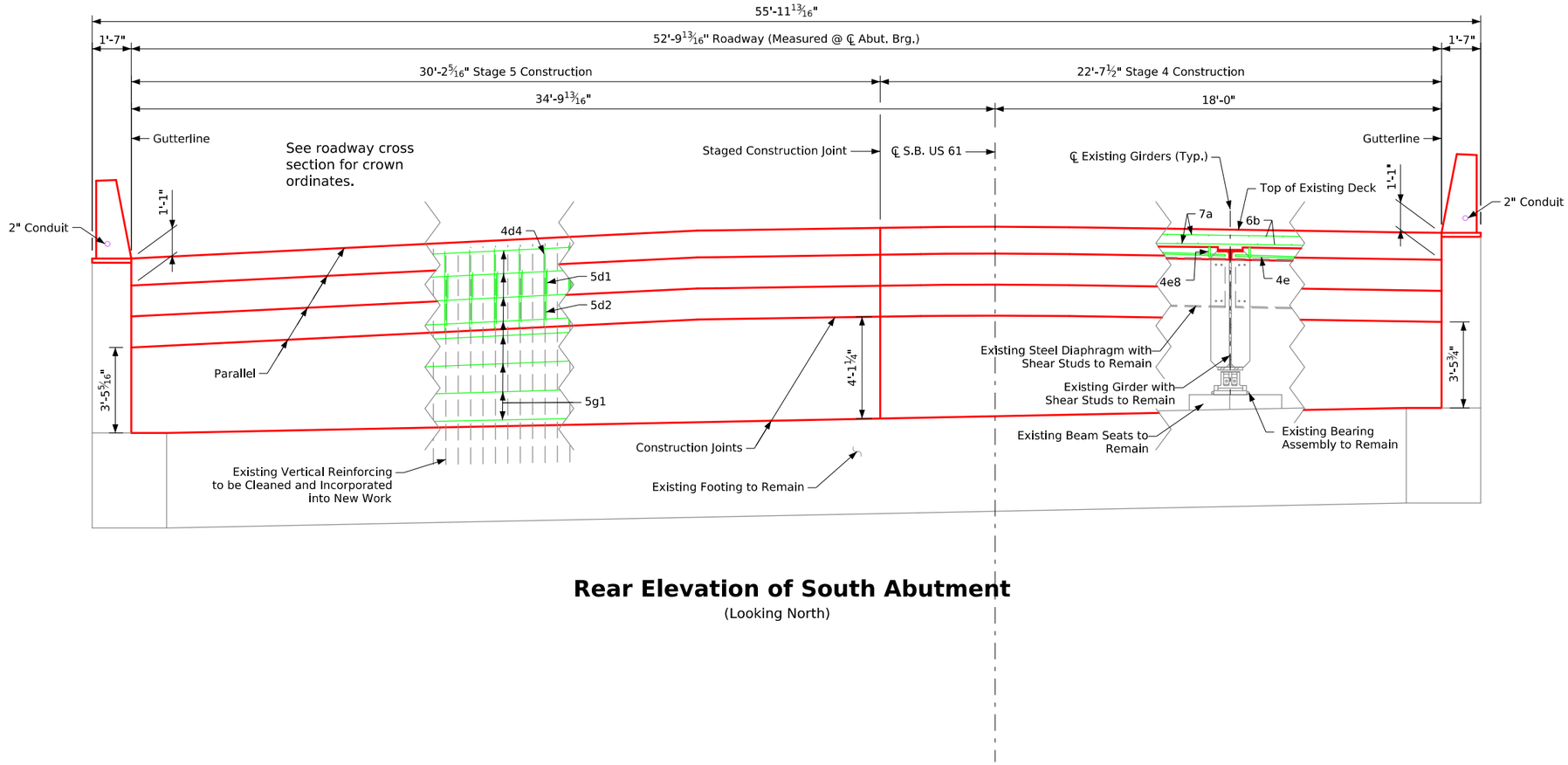



## Rear Elevation of South Abutment

(Looking North)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

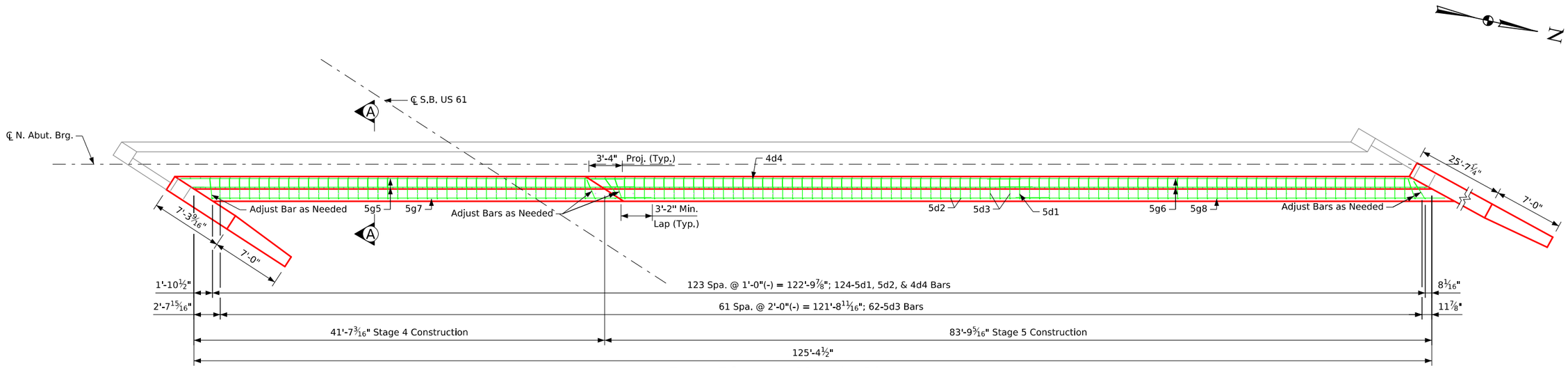
South Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

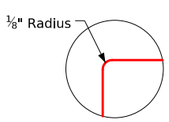
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

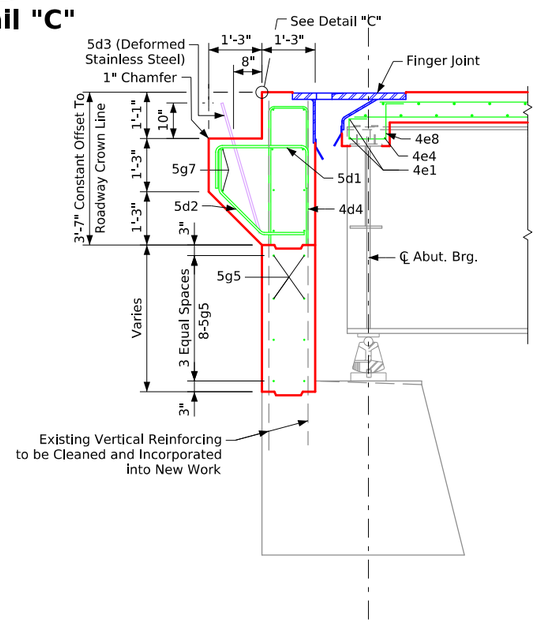
Design No. 0428 Design Sheet No. 15 of 43 FHWA No. 604645




## Part Plan at North Abutment




## Detail "C"




## Section A-A

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## North Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 16 of 43 FHWA No. 604645

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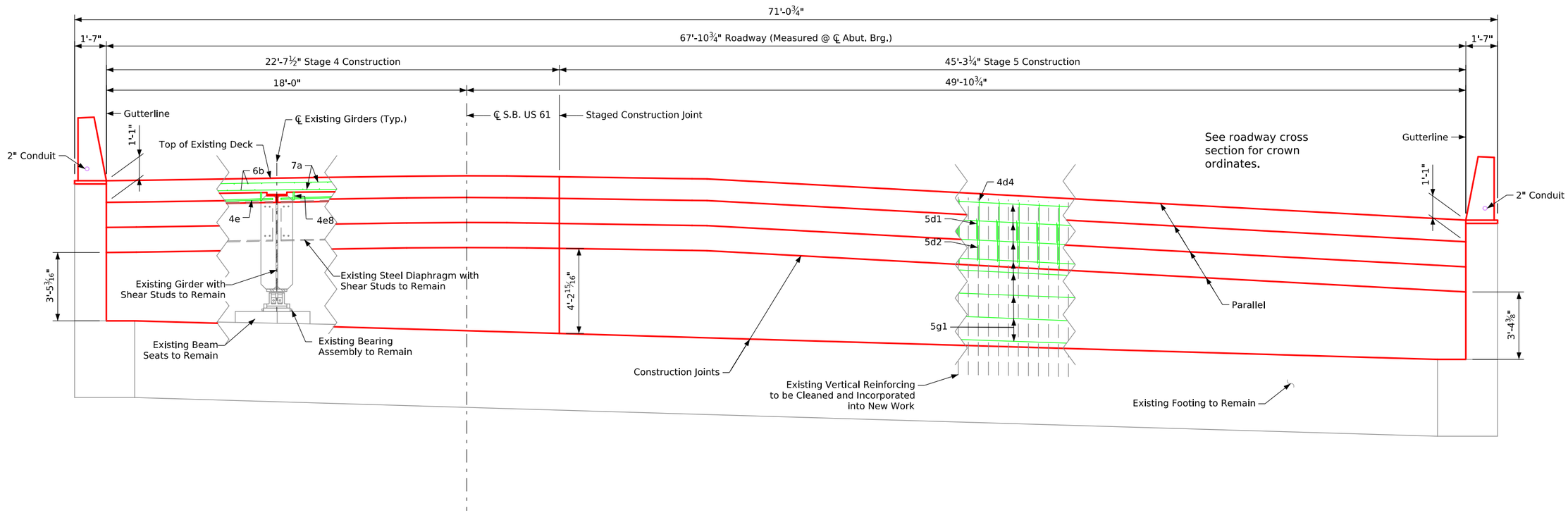



## Rear Elevation of North Abutment

(Looking South)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

North Abutment Repair Details

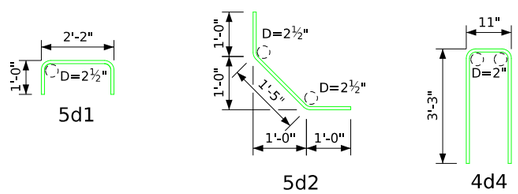
STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 17 of 43 FHWA No. 604645

## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

## Stainless Steel Bar List – South Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d3 | Paving Notch Dowels | | 48 | 3'-2" | 159 |
| | | | | | |
| | | | | | |
| | | | | Stainless Steel – Total Weight (lbs.) | 159 |

## Epoxy Coated Reinforcing Steel Bar List – South Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d1 | Paving Notch | | 96 | 4'-2" | 417 |
| 5d2 | Paving Notch | | 96 | 3'-5" | 342 |
| 4d4 | Backwall Vertical Hoop | | 96 | 7'-5" | 476 |
| | | | | | |
| 5g1 | Backwall Longitudinal (Stage 4) | | 16 | 44'-10 | 748 |
| 5g2 | Backwall Longitudinal (Stage 5) | | 16 | 55'-0" | 918 |
| 5g3 | Paving Notch Longitudinal (Stage 4) | | 2 | 44'-10 | 94 |
| 5g4 | Paving Notch Longitudinal (Stage 5) | | 2 | 55'-0" | 115 |
| | | | | | |
| | | | | Reinforcing Steel – Epoxy Coated – Total Weight (lbs.) | 3,110 |

## Stainless Steel Bar List – North Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d3 | Paving Notch Dowels | | 62 | 3'-2" | 205 |
| | | | | | |
| | | | | | |
| | | | | Stainless Steel – Total Weight (lbs.) | 205 |

## Epoxy Coated Reinforcing Steel Bar List – North Abutment

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 5d1 | Paving Notch | | 124 | 4'-2" | 539 |
| 5d2 | Paving Notch | | 124 | 3'-5" | 442 |
| 4d4 | Backwall Vertical Hoop | | 124 | 7'-5" | 614 |
| | | | | | |
| 5g5 | Backwall Longitudinal (Stage 4) | | 16 | 44'-10 | 748 |
| 5g6 | Backwall Longitudinal (Stage 5) | | 32 | 43'-4" | 1,446 |
| 5g7 | Paving Notch Longitudinal (Stage 4) | | 2 | 44'-10 | 94 |
| 5g8 | Paving Notch Longitudinal (Stage 5) | | 4 | 43'-4" | 181 |
| | | | | | |
| | | | | Reinforcing Steel – Epoxy Coated – Total Weight (lbs.) | 4,064 |

## Concrete Placement Quantities

| Location | S Abut. | N Abut. |
|---|---|---|
| Backwall (Stage 4) | 17.9 | 18.0 |
| Backwall (Stage 5) | 23.7 | 36.0 |
| East Wing | 0.3 | 0.2 |
| West Wing | 0.2 | 0.4 |
| | | |
| | | |
| Structural Concrete (Bridge) Total (cu. yd.) | 42.1 | 54.6 |

Note:
Concrete quantity for abutment diaphragms included in the Superstructure Concrete shown on Design Sheet 21.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

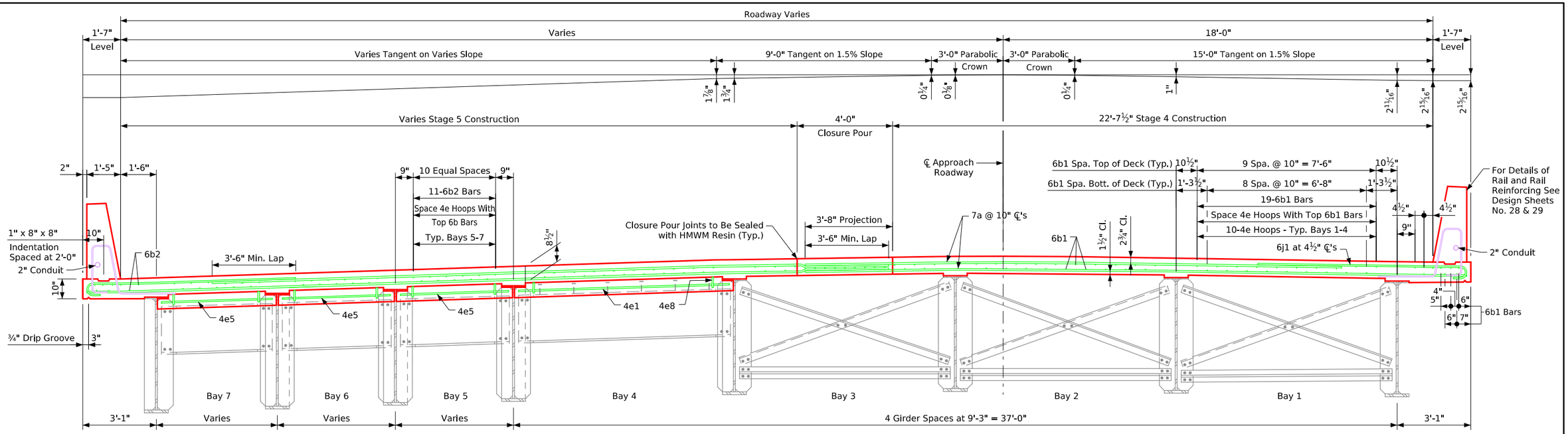
Abutment Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 18 of 43 FHWA No. 604645




Half Section Near Abutment

Half Section Near Intermediate Diaphragm

## Superstructure Notes:

The bridge deck as shown includes ¾" integral wearing surface. Forms for the bridge deck and barrier rail are to be supported by the girders.

Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown.

Top transverse reinforcing steel is to be parallel to and 2Б" clear below top of deck. Bottom transverse reinforcing steel is to be parallel to and 1½" clear above bottom of deck. Top and bottom reinforcing steel is to be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or deck bolsters spaced 4'-0" apart. I.M. 451.01 requirements shall apply for bar chairs, high bar chairs, and deck bolsters.

Transverse deck reinforcing may be spliced with one lap located as follows:

Top bar - Lap midway between beams (min. lap = 3'-10")

Bottom bars - Lap over beams (min. lap = 4'-8")

Payment for reinforcing bars shall be based on no splices, and no allowance shall be made for the additional length of bar required for the use of splices.

All field connections are to be bolted using "high tensile strength bolts". Unless otherwise noted, all open holes are to be Ǝ" Ø and all bolts are to be Ɔ" Ø.

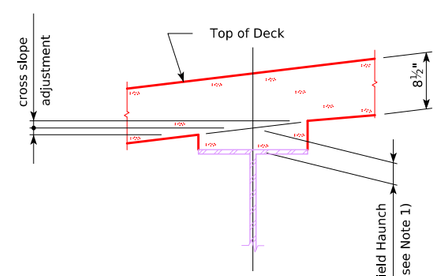
Bottom flanges are to be perpendicular to webs at the reaction points.

Fill ¢ thicknesses shown on plans are based on nominal girder dimensions. These thicknesses are to be verified or adjusted during fabrication to secure a close fit. Each fill plate shall fit to the nearest C" thickness and single plates are required at each fill location. Girders are to be truly square at splice points with flanges perpendicular to webs.

The design drawings indicate AWS prequalified welded joints. Alternate joint details may be submitted for approval.

Magnetic particle inspection of welds, in accordance with the Standard Specifications, will be required.

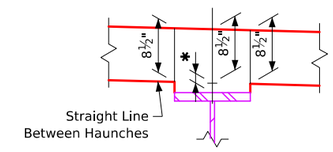
Shop welded flange splices shall be a minimum of 6 inches from a stiffener. Splices shall not interfere with any other bridge components. All shop welded butt splices shall be shown on the shop drawings and subject to approval by the Engineer.




HAUNCH DETAIL

Note:
Existing bridge girder elevations were used to set theoretical camber and girder deflections. The estimated bridge girder elevations will provide a theoretical girder haunch within design parameters. Field haunches are determined using surveyed top of girder elevations and "Girder Line Haunch Elevation" data. Allowable maximum and minimum "Field Haunch" values are given in inches and decimals of feet in the "Miscellaneous Data Table". "Cross Slope Adjustment" values will aid the Contractor in determining actual formed haunch dimensions at the edges of the top flange.

Note 1:
To calculate field haunch required at each location, survey the girder tops consistent with the spacings shown on the "Top of Slab Elevations Layout". Subtract the surveyed girder shot from the "Girder Line Haunch Elevation". This value will be the haunch needed (`see "Field Haunch" in haunch detail`). The "Girder Line Haunch Elevation" includes adjustments for slab thicknesses and anticipated deflections. No additional calculations are required. If the field haunch exceeds the maximums and minimums shown in inches and decimals of feet in the "Miscellaneous Data Table", adjustments to the grade or additional haunch reinforcement will be required.




## Typ. Deck & Haunch Detail

✱ Concrete haunch dimension measured between bottom of deck and top of top flange plate. Refer to haunch details shown elsewhere in these plans.

The maximum embedment of the edge of the top flange in the deck shall be ½". Shear studs are to have a minimum penetration of 2" into the deck and be at least 2½" clear of the top of the deck. These requirements were used in setting the maximum and minimum allowable field haunch values shown in the "Miscellaneous Data Table" shown elsewhere on these plans.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Superstructure Typical Section

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 19 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.62 |
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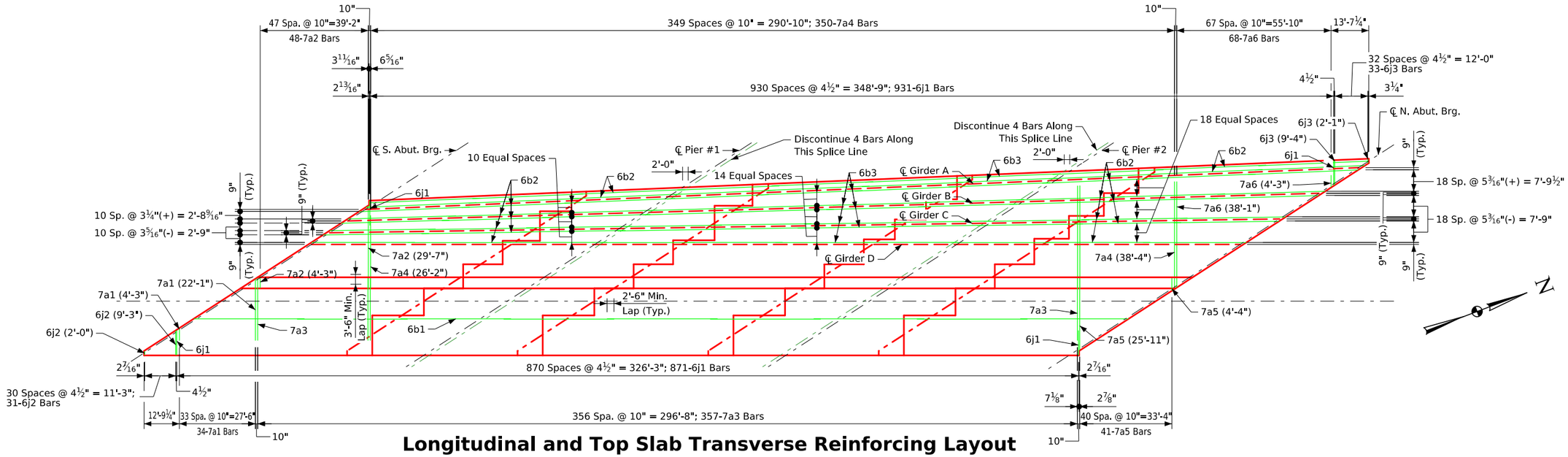
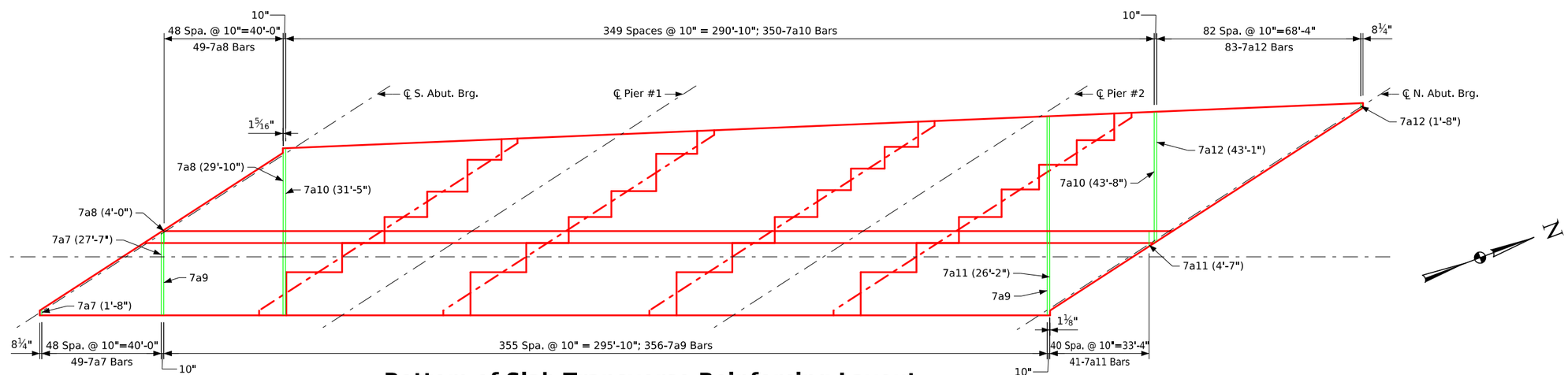



## Longitudinal and Top Slab Transverse Reinforcing Layout




## Bottom of Slab Transverse Reinforcing Layout

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## Superstructure Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 20 of 43 — FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.63 |
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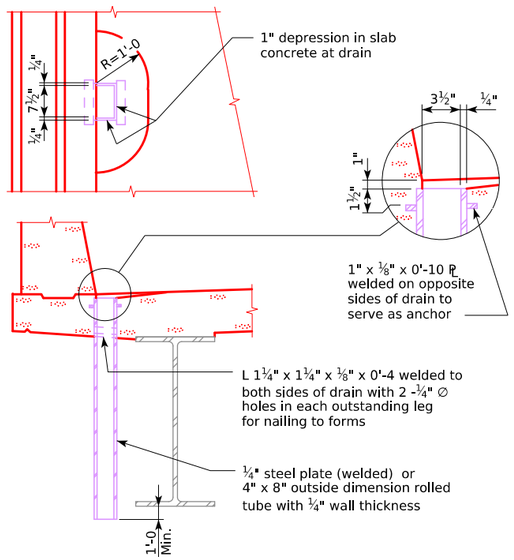



## Data for One Drain

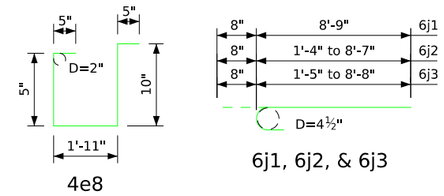
| | |
|---|---|
| Drain Weight (lbs.) | 136 |
| Drain Length (ft.) | 6'-8" |

Twelve (12) deck drains required.
Refer to Situation Plan for locations.

## Concrete Placement Quantities

| Location | Quantity |
|---|---|
| Section 1, Deck & Abut. Diaph. | 48.4 |
| Section 2, Deck | 44.5 |
| Section 3, Deck & Abut. Diaph. | 47.4 |
| Section 4, Deck | 39.7 |
| Section 5, Deck | 39.7 |
| Section 6, Deck & Abut. Diaph. | 58.8 |
| Section 7, Deck | 65.2 |
| Section 8, Deck & Abut. Diaph. | 82.1 |
| Section 9, Deck | 53.5 |
| Section 10, Deck | 62.2 |
| Section 11, Closure Pour | 35.5 |
| | |
| High Performance Structural Concrete Total (cu. yds.) | 577.0 (F) |

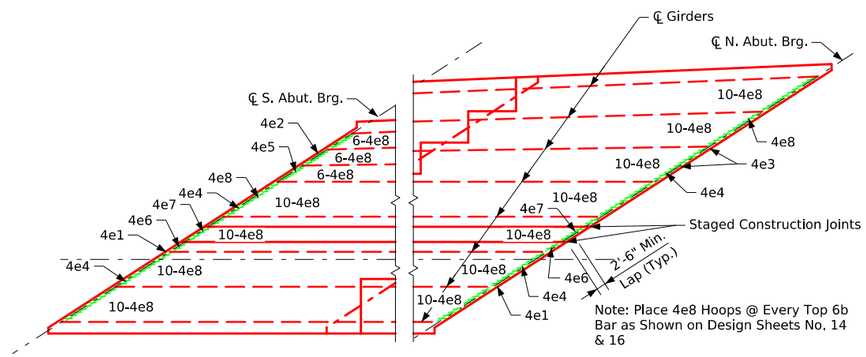
## Bent Bar Details



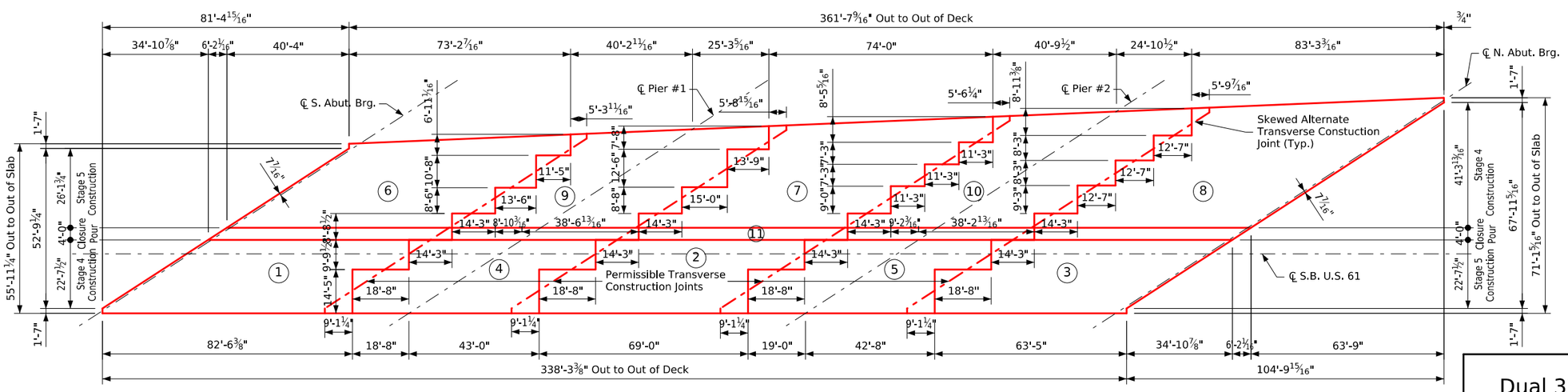

Note: All dimensions are out to out. D= Pin diameter

## Epoxy Coated Reinforcing Steel Bar List – Bridge Deck

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 7a1 | Deck Transv. Top (Stage 4) | | 34 | Varies | 915 |
| 7a2 | Deck Transv. Top (Stage 5) | | 48 | Varies | 1,660 |
| 7a3 | Deck Transv. Top (Stage 4) | | 357 | 22'-6" | 16,418 |
| 7a4 | Deck Transv. Top (Stage 5) | | 350 | Varies | 23,072 |
| 7a5 | Deck Transv. Top (Stage 4) | | 41 | Varies | 1,268 |
| 7a6 | Deck Transv. Top (Stage 5) | | 68 | Varies | 2,942 |
| 7a7 | Deck Transv. Bott. (Stage 4) | | 49 | Varies | 1,465 |
| 7a8 | Deck Transv. Bott. (Stage 5) | | 49 | Varies | 1,694 |
| 7a9 | Deck Transv. Bott. (Stage 4) | | 356 | 27'-9" | 20,168 |
| 7a10 | Deck Transv. Bott. (Stage 5) | | 350 | Varies | 26,857 |
| 7a11 | Deck Transv. Bott. (Stage 4) | | 41 | Varies | 1,288 |
| 7a12 | Deck Transv. Bott. (Stage 5) | | 83 | Varies | 3,796 |
| | | | | | |
| 6b1 | Deck Longit. Top & Bott. | | 756 | 39'-10" | 45,231 |
| 6b2 | Deck Longit. Top & Bott. | | 318 | 39'-10" | 19,026 |
| 6b3 | Deck Longit. Top & Bott. | | 164 | 36'-8" | 9,032 |
| | | | | | |
| 4e1 | Abut. Diaph. Longit. (Stage 4) | | 4 | 41'-5" | 111 |
| 4e2 | Abut. Diaph. Longit. (Stage 5) | | 2 | 51'-10" | 69 |
| 4e3 | Abut. Diaph. Longit. (Stage 5) | | 4 | 41'-2" | 110 |
| 4e4 | Abut. Diaph. Longit. (Between Girders) | | 9 | 16'-5" | 99 |
| 4e5 | Abut. Diaph. Longit. (Between Girders) | | 3 | 7'-3" | 15 |
| 4e6 | Abut. Diaph. Longit. (Between Girders) | | 2 | 7'-5" | 10 |
| 4e7 | Abut. Diaph. Longit. (Between Girders) | | 2 | 11'-8" | 16 |
| 4e8 | Abut. Diaph. Hoops | | 128 | 4'-0" | 342 |
| | | | | | |
| 6j1 | Deck Transv. Top (at Rail) | | 1802 | 9'-5" | 25,487 |
| 6j2 | Deck Transv. Top (at Rail) (Stage 4) | | 31 | Varies | 262 |
| 6j3 | Deck Transv. Top (at Rail) (Stage 5) | | 33 | Varies | 283 |
| | | | | | |
| | Reinforcing Steel Epoxy Coated Total Weight (lbs.) | | | | 201,636 |




## Abutment Diaphragm Hoop Placement Diagram




## Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck concrete shall cure for a minimum of 48 hours and shall achieve a minimum strength of 75% of the 28 day deck conrete strength prior to removing deck headers and beginning an adjacent pour.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

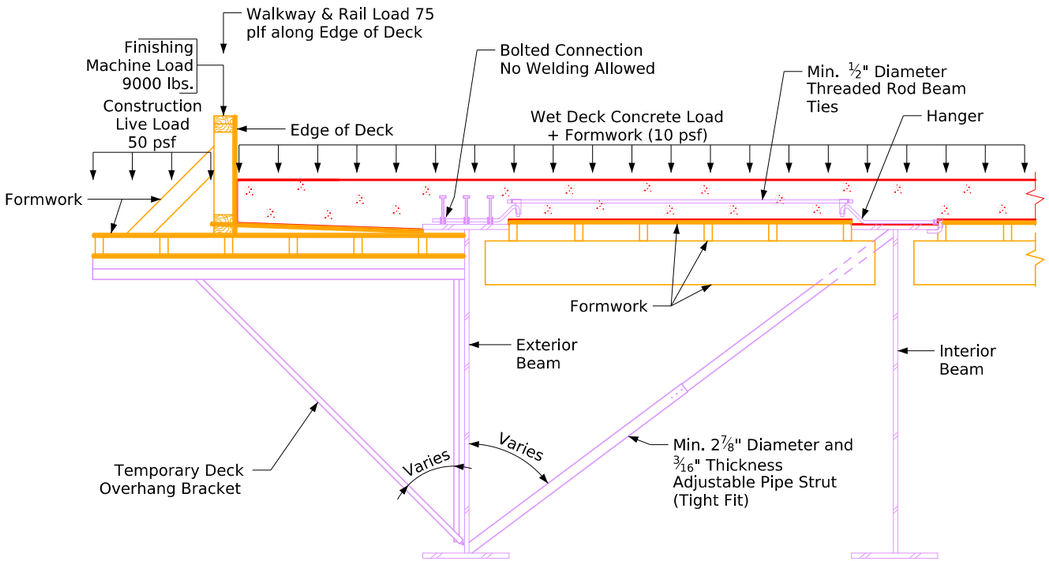
## Superstructure Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

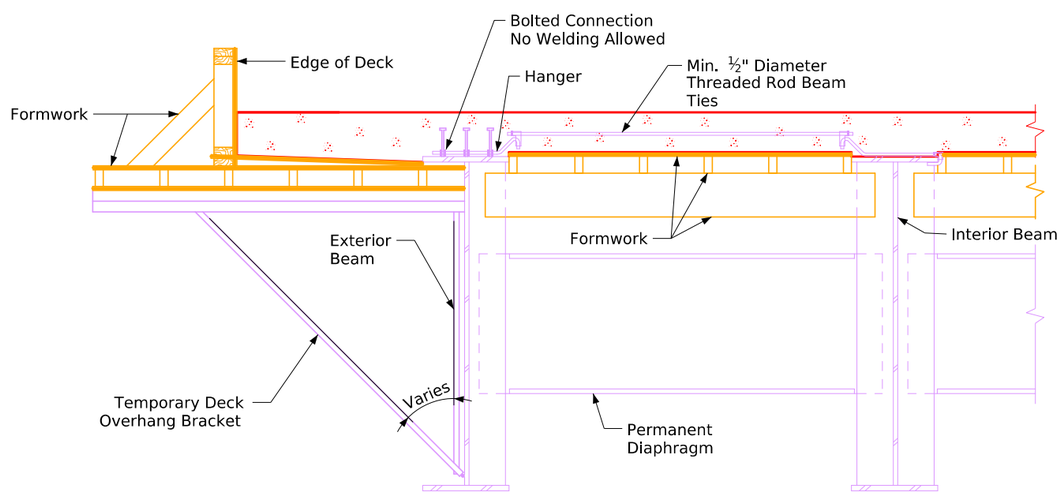
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

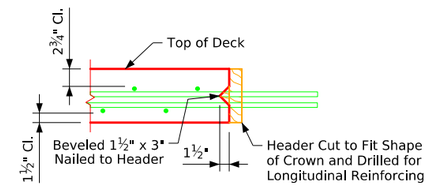
Design No. 0428 — Design Sheet No. 21 of 43 — FHWA No. 604645



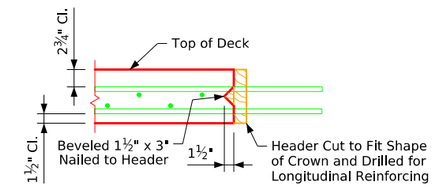

**Temporary Deck Overhang Bracket and Bracing System Details Between Diaphragms**




**Temporary Deck Overhang Bracket and Bracing System Details at Permanent Diaphragms**




**Permissible Transverse Deck Construction Joint**




**Longitudinal Portion of Deck Construction Joint**

## Overhang Bracket and Temporary Bracing Notes:

The details of the temporary overhang brackets and struts shall be the responsibility of the contractor based on the manufacturer's design handbook. The contractor is responsible for the stability of the girders and use of a temporary bracing system during the deck removal, throughout construction, and during deck placement.

The designer recommends the use of adjustable pipe struts located in the first interior bay, adjacent to the overhang bracket, which is intended to limit exterior beam rotation due to construction loading.

Temporary pipe struts or any temporary bracing system shall be considered incidental to the cost of "High Performance Structural Concrete".

Welding to the girder flanges, web, or shear studs is not allowed.

The bottom joint of the overhang bracket and pipe strut shall be located within 12" of the girder bottom flange, but preferably as close as possible to the bottom flange.

A maximum finishing machine load and the angle of the diagonal member of the overhang bracket shown were assumed by the designer. These assumptions, in addition to other construction loadings, were used to check the strength of the exterior girder during critical stages of construction. If the finishing machine load or angle of the diagonal member of the overhang bracket deviate significantly from values shown, the contractor shall submit to the engineer this information on proposed construction equipment to be used.

The spacing of the overhang bracket and the angle of the diagonal member shall be determined per the manufature's design handbook including type and size of overhang bracket and anticipated construction loads.

If the vertical height of the overhang bracket is adjustable, the base of the bracket is to be located as close as possible to the bottom flange of the girder.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Superstructure Details

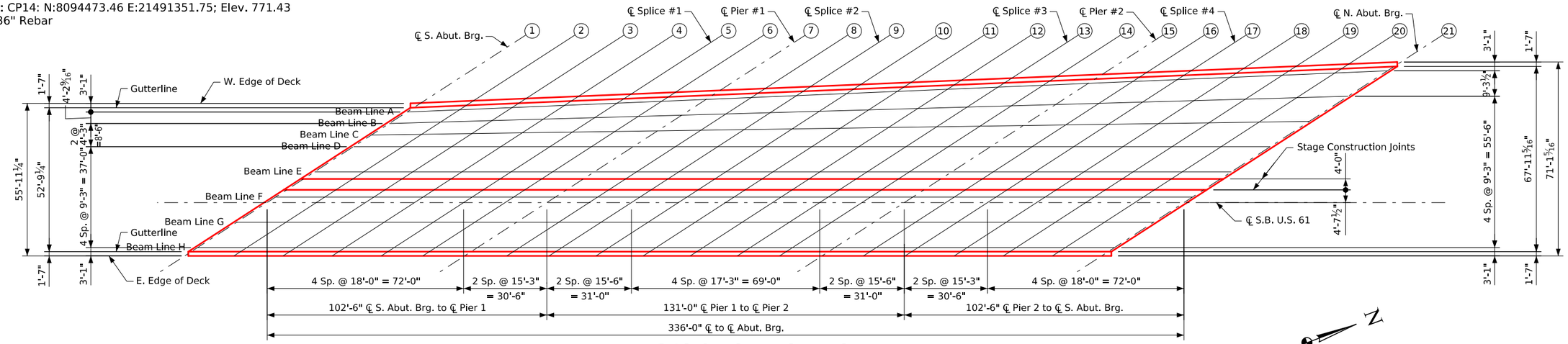
STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 22 of 43 FHWA No. 604645

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar



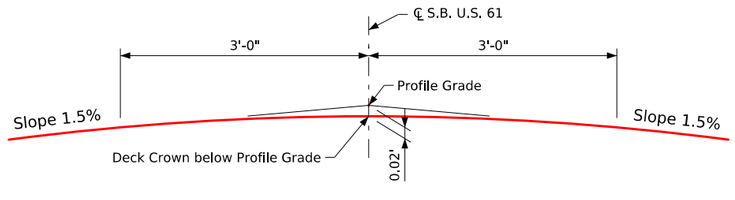

## Top of Slab Elevation Plan

Note: Span lengths and spacings shown above are for Beam Lines D - H. See Design Sheet No. 25 for span lengths and spacings for Beam Lines A - C.

## Top of Slab Elevations

| | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LINE 1 | LINE 2 | LINE 3 | LINE 4 | LINE 5 | LINE 6 | LINE 7 | LINE 8 | LINE 9 | LINE 10 | LINE 11 | LINE 12 | LINE 13 | LINE 14 | LINE 15 | LINE 16 | LINE 17 | LINE 18 | LINE 19 | LINE 20 | LINE 21 |
| West Gutter Line | 776.93 | 776.79 | 776.65 | 776.51 | 776.35 | 776.21 | 776.06 | 775.91 | 775.76 | 775.59 | 775.42 | 775.25 | 775.10 | 774.98 | 774.85 | 774.73 | 774.60 | 774.45 | 774.31 | 774.16 | 774.01 |
| Beam Line A | 776.96 | 776.82 | 776.68 | 776.54 | 776.38 | 776.24 | 776.09 | 775.94 | 775.79 | 775.62 | 775.45 | 775.28 | 775.13 | 775.01 | 774.88 | 774.76 | 774.63 | 774.48 | 774.34 | 774.19 | 774.04 |
| Beam Line B | 777.13 | 777.00 | 776.87 | 776.74 | 776.60 | 776.47 | 776.34 | 776.21 | 776.08 | 775.93 | 775.78 | 775.63 | 775.48 | 775.36 | 775.25 | 775.13 | 775.02 | 774.88 | 774.75 | 774.61 | 774.48 |
| Beam Line C | 777.30 | 777.18 | 777.06 | 776.94 | 776.82 | 776.71 | 776.59 | 776.47 | 776.36 | 776.23 | 776.09 | 775.96 | 775.83 | 775.72 | 775.61 | 775.51 | 775.41 | 775.28 | 775.16 | 775.04 | 774.92 |
| Beam Line D | 777.47 | 777.36 | 777.25 | 777.14 | 777.03 | 776.93 | 776.83 | 776.73 | 776.63 | 776.52 | 776.40 | 776.29 | 776.18 | 776.07 | 775.98 | 775.89 | 775.79 | 775.68 | 775.58 | 775.47 | 775.36 |
| Beam Line E | 777.82 | 777.71 | 777.60 | 777.49 | 777.38 | 777.29 | 777.20 | 777.10 | 777.01 | 776.90 | 776.80 | 776.69 | 776.59 | 776.50 | 776.40 | 776.31 | 776.22 | 776.11 | 776.00 | 775.89 | 775.78 |
| Stage Line | 777.88 | 777.78 | 777.67 | 777.56 | 777.45 | 777.36 | 777.26 | 777.17 | 777.07 | 776.97 | 776.86 | 776.76 | 776.66 | 776.56 | 776.47 | 776.37 | 776.28 | 776.17 | 776.06 | 775.95 | 775.84 |
| Stage Line | 777.98 | 777.87 | 777.76 | 777.65 | 777.55 | 777.45 | 777.36 | 777.27 | 777.17 | 777.07 | 776.96 | 776.86 | 776.75 | 776.66 | 776.56 | 776.47 | 776.38 | 776.27 | 776.16 | 776.05 | 775.94 |
| Beam Line F | 778.04 | 777.93 | 777.82 | 777.71 | 777.60 | 777.51 | 777.42 | 777.32 | 777.23 | 777.13 | 777.02 | 776.92 | 776.81 | 776.72 | 776.62 | 776.53 | 776.44 | 776.33 | 776.22 | 776.11 | 776.00 |
| ℄ S.B. U.S. 61 | 778.07 | 777.96 | 777.85 | 777.74 | 777.63 | 777.54 | 777.45 | 777.35 | 777.26 | 777.15 | 777.05 | 776.95 | 776.84 | 776.75 | 776.65 | 776.56 | 776.47 | 776.36 | 776.25 | 776.14 | 776.03 |
| Beam Line G | 778.05 | 777.94 | 777.84 | 777.73 | 777.62 | 777.52 | 777.43 | 777.34 | 777.24 | 777.14 | 777.03 | 776.93 | 776.83 | 776.73 | 776.64 | 776.54 | 776.45 | 776.34 | 776.23 | 776.12 | 776.01 |
| Beam Line H | 777.98 | 777.89 | 777.78 | 777.67 | 777.56 | 777.47 | 777.38 | 777.28 | 777.19 | 777.09 | 776.98 | 776.88 | 776.77 | 776.68 | 776.58 | 776.49 | 776.40 | 776.29 | 776.18 | 776.07 | 775.96 |
| East Gutter Line | 777.97 | 777.88 | 777.78 | 777.67 | 777.56 | 777.46 | 777.37 | 777.28 | 777.18 | 777.08 | 776.97 | 776.87 | 776.76 | 776.67 | 776.58 | 776.48 | 776.39 | 776.28 | 776.17 | 776.06 | 775.95 |

Note: Elevations are based on the existing plans and increased by 1/2" to reflect the proposed grade raise. Refer to General Notes for anticipated elevation adjustment due to datum change.




## Crown Template

No Scale

Notes:
Elevations along ℄ S.B. U.S. 61 are located at Deck Crown below Profile Grade as shown in the Crown Template Detail.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Top of Deck Elevations

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 23 of 43 FHWA No. 604645

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar

## Table of Beam Line Haunches

| Beam Line | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 2 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| A | 776.25 | 776.16 | 776.04 | 775.89 | 775.70 | 775.54 | 775.38 | 775.25 | 775.13 | 775.00 | 774.84 | 774.65 | 774.46 | 774.31 | 774.17 | 774.07 | 773.97 | 773.86 | 773.73 | 773.55 | 773.33 |
| B | 776.42 | 776.33 | 776.21 | 776.08 | 775.91 | 775.77 | 775.63 | 775.52 | 775.42 | 775.30 | 775.16 | 775.00 | 774.81 | 774.66 | 774.54 | 774.44 | 774.37 | 774.28 | 774.15 | 773.97 | 773.77 |
| C | 776.59 | 776.50 | 776.40 | 776.27 | 776.13 | 776.01 | 775.88 | 775.78 | 775.70 | 775.59 | 775.47 | 775.32 | 775.16 | 775.02 | 774.90 | 774.82 | 774.76 | 774.67 | 774.55 | 774.40 | 774.21 |
| D | 776.76 | 776.70 | 776.61 | 776.49 | 776.35 | 776.23 | 776.12 | 776.04 | 775.97 | 775.89 | 775.78 | 775.66 | 775.51 | 775.37 | 775.27 | 775.20 | 775.13 | 775.06 | 774.96 | 774.82 | 774.65 |
| E | 777.11 | 777.06 | 776.98 | 776.86 | 776.72 | 776.59 | 776.49 | 776.41 | 776.35 | 776.28 | 776.19 | 776.07 | 775.93 | 775.80 | 775.69 | 775.61 | 775.55 | 775.48 | 775.38 | 775.24 | 775.07 |
| F | 777.33 | 777.28 | 777.20 | 777.08 | 776.94 | 776.82 | 776.71 | 776.63 | 776.57 | 776.50 | 776.41 | 776.29 | 776.15 | 776.02 | 775.91 | 775.84 | 775.77 | 775.70 | 775.60 | 775.46 | 775.29 |
| G | 777.34 | 777.29 | 777.22 | 777.10 | 776.95 | 776.83 | 776.72 | 776.64 | 776.58 | 776.51 | 776.43 | 776.31 | 776.16 | 776.04 | 775.93 | 775.85 | 775.79 | 775.71 | 775.61 | 775.47 | 775.31 |
| H | 777.27 | 777.23 | 777.15 | 777.04 | 776.89 | 776.77 | 776.67 | 776.59 | 776.52 | 776.45 | 776.36 | 776.24 | 776.10 | 775.98 | 775.87 | 775.79 | 775.73 | 775.65 | 775.55 | 775.41 | 775.25 |

Note: Elevations are based on the existing plans. Refer to General Notes for anticipated elevation adjustment due to datum change.

## Miscellaneous Data Table

| | Beam Line | | ℄ S. Abut. Bearing | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N. Abut. Bearing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 | Line 6 | Line 7 | Line 8 | Line 9 | Line 10 | Line 11 | Line 12 | Line 13 | Line 14 | Line 15 | Line 16 | Line 17 | Line 18 | Line 19 | Line 20 | Line 21 |
| Anticipated Deflection Due to Deck (in.) | A | | 0 | 1/2 | 11/16 | 5/8 | 5/16 | 1/16 | 0 | 3/16 | 1/2 | 7/8 | 1 | 13/16 | 7/16 | 1/8 | 0 | 3/16 | 9/16 | 1 | 1 1/16 | 11/16 | 0 |
| | B | | 0 | 3/8 | 1/2 | 7/16 | 3/16 | 0 | 0 | 3/16 | 9/16 | 7/8 | 1 | 3/4 | 3/8 | 1/16 | 0 | 1/4 | 11/16 | 1 1/8 | 1 3/16 | 13/16 | 0 |
| | C | | 0 | 5/16 | 1/2 | 3/8 | 3/16 | 0 | 0 | 3/16 | 1/2 | 13/16 | 7/8 | 11/16 | 5/16 | 1/16 | 0 | 1/4 | 5/8 | 1 1/16 | 1 1/8 | 3/4 | 0 |
| | D | | 0 | 1/2 | 11/16 | 5/8 | 5/16 | 1/16 | 0 | 1/8 | 1/2 | 13/16 | 15/16 | 13/16 | 7/16 | 1/8 | 0 | 3/16 | 9/16 | 15/16 | 1 | 11/16 | 0 |
| | E, F, G | | 0 | 5/8 | 1 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 15/16 | 1 1/8 | 15/16 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 1 | 5/8 | 0 |
| | H | | 0 | 9/16 | 7/8 | 13/16 | 7/16 | 1/8 | 0 | 1/8 | 7/16 | 13/16 | 1 | 13/16 | 7/16 | 1/8 | 0 | 1/8 | 7/16 | 13/16 | 7/8 | 9/16 | 0 |
| Cross Slope Adjustments (in.) | A, B, C, D | | 3/8 | | | | 1/2 | | | | | 3/8 | | | 1/2 | | | | | 3/8 | | | |
| | E, F, G, H | | 3/16 | | | | 1/4 | | | | | 3/16 | | | 1/4 | | | | | 3/16 | | | |
| Allowable Field Haunch (in. & ft.) | Max. | All | 2.5" (0.208') | | | | | | | | | | | | | | | | | | | | |
| | Min. | All | -0.5" (-0.042') | | | | | | | | | | | | | | | | | | | | |

Note:
See Design Sheet No. 23 for locations of tabulated values.

**Note: Haunch locations are at the same location as the encircled numbers shown on slab elevations sheet.**

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

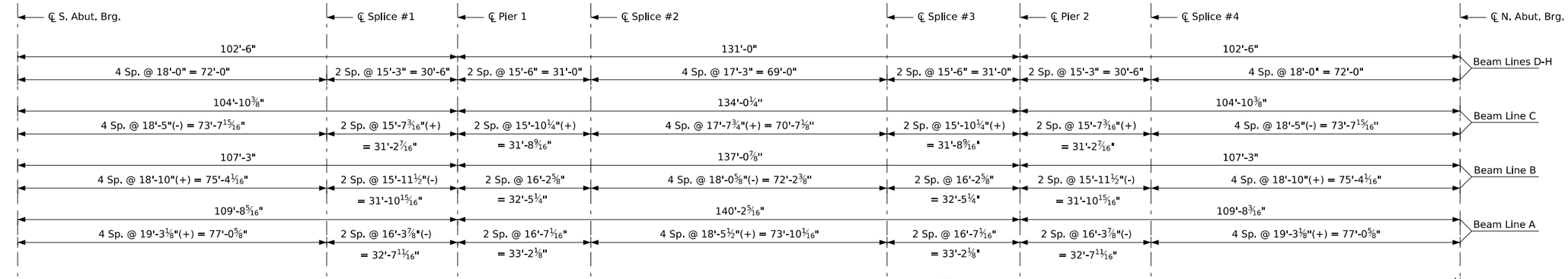
Beam Line Haunch Data

STA. 462+06.89 (US 61) Turn-in Date: May 2026

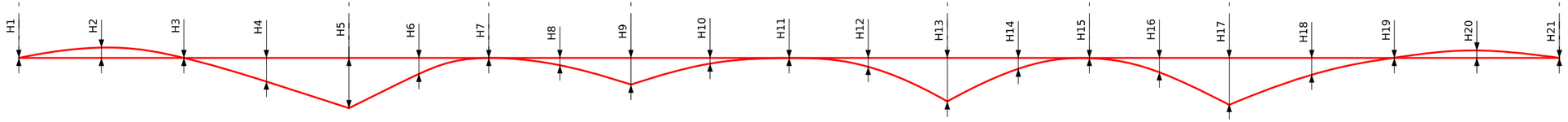
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 24 of 43 FHWA No. 604645




## Dead Load Deflection Diagram




## Theoretical Concrete Haunch Diagram

(For estimating purposes only, field verify)

### Dead Load Deflection Total (in.)

| | ℄ S.Abut. Brg. | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N.Abut. Brg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 0 | 11/16 | 1 1/16 | 15/16 | 1/2 | 1/8 | 0 | 1/4 | 11/16 | 1 1/4 | 1 7/16 | 1 3/16 | 5/8 | 3/16 | 0 | 1/4 | 3/4 | 1 5/16 | 1 3/8 | 15/16 | 0 |
| B, C, D | 0 | 9/16 | 13/16 | 3/4 | 3/8 | 1/16 | 0 | 1/4 | 11/16 | 1 3/16 | 1 3/8 | 1 1/16 | 9/16 | 1/8 | 0 | 5/16 | 13/16 | 1 7/16 | 1 1/2 | 1 | 0 |
| E | 0 | 1/2 | 3/4 | 11/16 | 5/16 | 1/16 | 0 | 1/4 | 5/8 | 1 1/16 | 1 1/4 | 1 | 1/2 | 1/8 | 0 | 1/4 | 3/4 | 1 5/16 | 1 3/8 | 15/16 | 0 |
| F | 0 | 5/8 | 15/16 | 7/8 | 7/16 | 1/8 | 0 | 3/16 | 5/8 | 1 1/16 | 1 1/4 | 1 1/16 | 9/16 | 1/8 | 0 | 3/16 | 11/16 | 1 3/16 | 1 1/4 | 13/16 | 0 |
| G | 0 | 13/16 | 1 1/4 | 1 1/8 | 5/8 | 3/16 | 0 | 3/16 | 11/16 | 1 3/16 | 1 7/16 | 1 3/16 | 11/16 | 3/16 | 0 | 3/16 | 5/8 | 1 1/8 | 1 1/4 | 13/16 | 0 |
| H | 0 | 1 1/4 | 1 15/16 | 1 3/4 | 9/16 | 5/16 | 0 | 5/16 | 5/8 | 1 7/8 | 1 1/4 | 1 7/8 | 5/8 | 5/16 | 0 | 1/4 | 9/16 | 1 3/4 | 1 15/16 | 1 1/4 | 0 |

### Dead Load Deflection - Concrete Only (in.)

| | ℄ S.Abut. Brg. | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N.Abut. Brg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 0 | 9/16 | 13/16 | 3/4 | 3/8 | 1/16 | 0 | 3/16 | 9/16 | 1 | 1 1/8 | 15/16 | 1/2 | 1/8 | 0 | 3/16 | 5/8 | 1 1/16 | 1 1/8 | 3/4 | 0 |
| B, C, D | 0 | 7/16 | 5/8 | 1/2 | 1/4 | 0 | 0 | 3/16 | 5/8 | 15/16 | 1 1/16 | 7/8 | 7/16 | 1/16 | 0 | 1/4 | 3/4 | 1 1/4 | 1 5/16 | 7/8 | 0 |
| E | 0 | 3/8 | 9/16 | 1/2 | 1/4 | 0 | 0 | 3/16 | 9/16 | 7/8 | 1 | 13/16 | 3/8 | 1/16 | 0 | 1/4 | 11/16 | 1 1/8 | 1 3/16 | 13/16 | 0 |
| F | 0 | 1/2 | 3/4 | 11/16 | 3/8 | 1/16 | 0 | 3/16 | 1/2 | 15/16 | 1 1/16 | 7/8 | 7/16 | 1/8 | 0 | 3/16 | 9/16 | 1 | 1 1/16 | 11/16 | 0 |
| G | 0 | 11/16 | 1 1/16 | 15/16 | 9/16 | 1/8 | 0 | 3/16 | 9/16 | 1 | 1 3/16 | 1 | 9/16 | 3/16 | 0 | 1/8 | 1/2 | 15/16 | 1 1/16 | 11/16 | 0 |
| H | 0 | 5/8 | 15/16 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 1 1/16 | 7/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | 7/8 | 15/16 | 5/8 | 0 |

### Theoretical Concrete Haunch

| | ℄ S.Abut. Brg. | | | | ℄ Splice #1 | | ℄ Pier 1 | | ℄ Splice #2 | | | | ℄ Splice #3 | | ℄ Pier 2 | | ℄ Splice #4 | | | | ℄ N.Abut. Brg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beam Line | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 | H17 | H18 | H19 | H20 | H21 |
| A | 1/16 | - 7/16 | - 3/8 | 1/16 | 13/16 | 7/16 | 1/8 | 1/16 | 1/4 | - 3/8 | - 9/16 | - 3/8 | 1/2 | 3/16 | 1/16 | 5/16 | 11/16 | - 3/16 | - 3/8 | - 7/16 | 1/16 |
| B | 1/16 | - 1/8 | - 1/16 | 3/16 | 9/16 | 3/16 | 0 | 1/8 | 3/8 | 0 | - 1/16 | 0 | 7/16 | 1/16 | 1/16 | 1/4 | 13/16 | 3/16 | - 1/16 | - 3/16 | 1/16 |
| C | 1/16 | - 3/16 | - 1/8 | 0 | 7/16 | 3/16 | 0 | 0 | 5/16 | - 1/16 | - 3/16 | 0 | 1/2 | 1/8 | 0 | 1/4 | 11/16 | 1/16 | - 1/8 | - 3/16 | 1/16 |
| D | 1/16 | - 5/16 | - 5/16 | - 1/16 | 1/2 | 1/8 | - 1/16 | 1/16 | 3/8 | - 1/8 | - 5/16 | - 1/8 | 9/16 | 1/16 | 0 | 1/4 | 1/2 | 1/16 | - 1/16 | - 1/8 | 1/16 |
| E | 0 | - 3/16 | - 1/8 | 1/16 | 9/16 | 3/16 | 0 | 3/16 | 9/16 | - 1/16 | - 3/16 | - 1/16 | 9/16 | 3/16 | 0 | 3/16 | 9/16 | 1/16 | - 1/8 | - 3/16 | 0 |
| F | 0 | - 1/8 | - 1/16 | 1/8 | 9/16 | 3/16 | 1/16 | 3/16 | 9/16 | 0 | - 1/8 | 0 | 9/16 | 3/16 | 0 | 3/16 | 9/16 | 1/8 | - 1/8 | - 1/8 | 0 |
| G | - 1/16 | - 1/8 | - 1/16 | 1/8 | 1/2 | 1/8 | 0 | 1/8 | 1/2 | - 1/8 | - 1/4 | - 1/8 | 1/2 | 1/8 | - 1/16 | 1/8 | 1/2 | 1/16 | - 3/16 | - 1/4 | - 1/16 |
| H | 0 | - 5/16 | - 5/16 | - 1/8 | 1/2 | 3/16 | 0 | 1/8 | 1/2 | - 1/4 | - 7/16 | - 1/4 | 1/2 | 3/16 | 1/16 | 3/16 | 1/2 | - 1/16 | - 5/16 | - 5/16 | 0 |

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

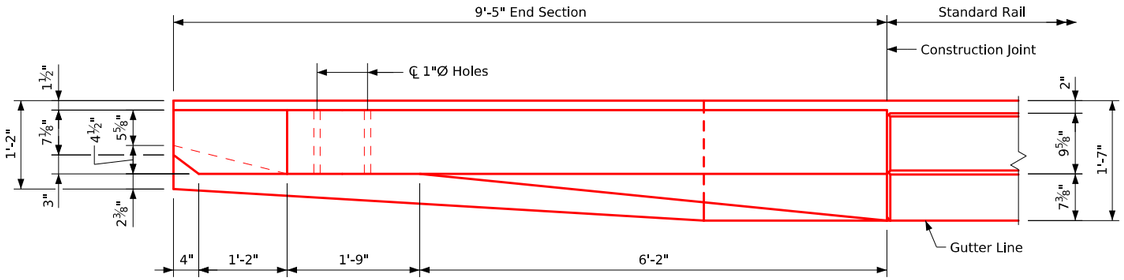
Deflection and Haunch Diagrams

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

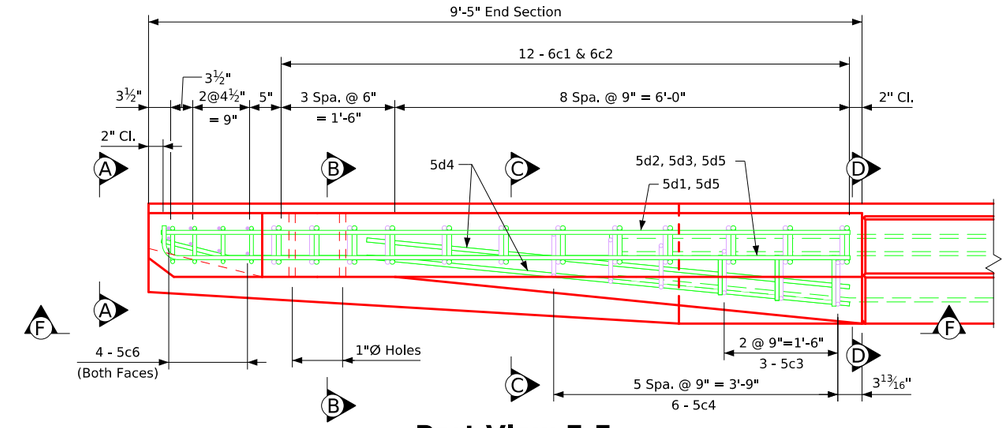
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

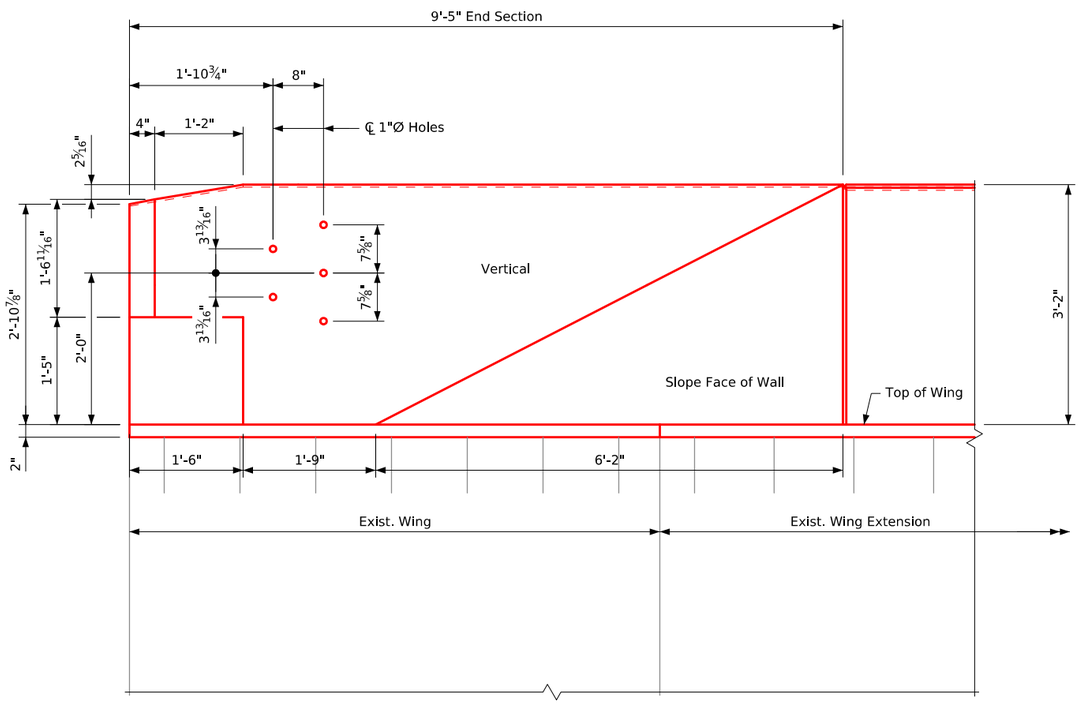
Design No. 0428 — Design Sheet No. 25 of 43 — FHWA No. 604645




## Part Plan View

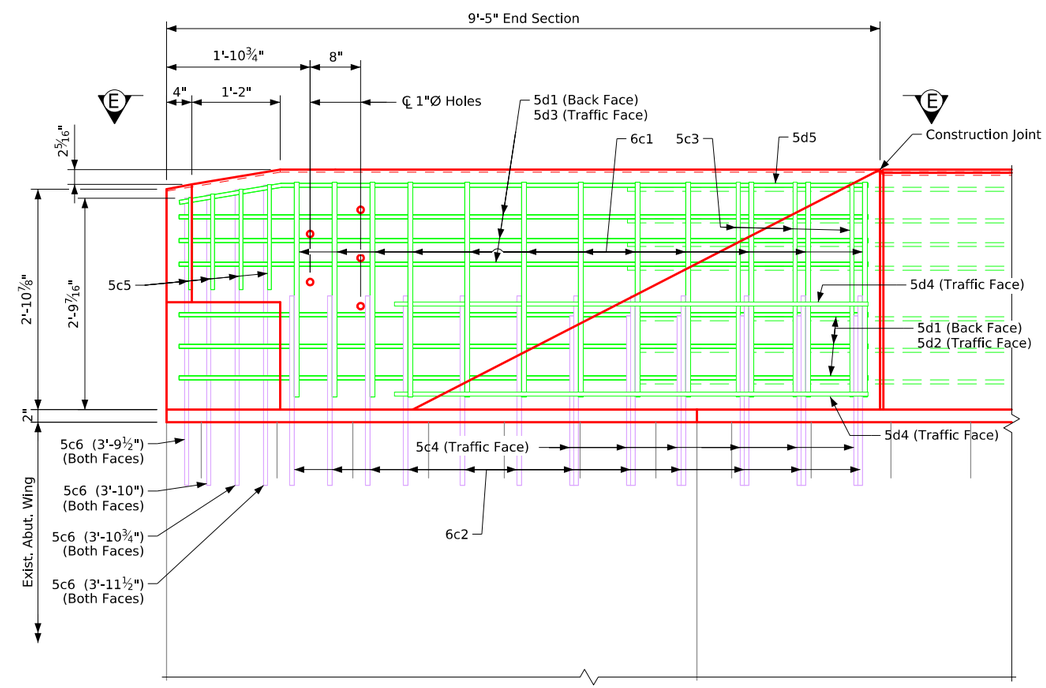



## Part View E-E




## Part Elevation View

Provide 5 holes formed with 1"Ø plastic conduit.
Cost to be included in price of bid for Concrete Barrier Railing.

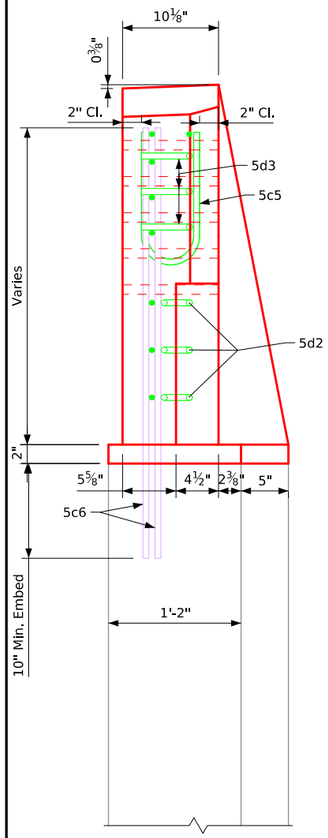



## Part View F-F

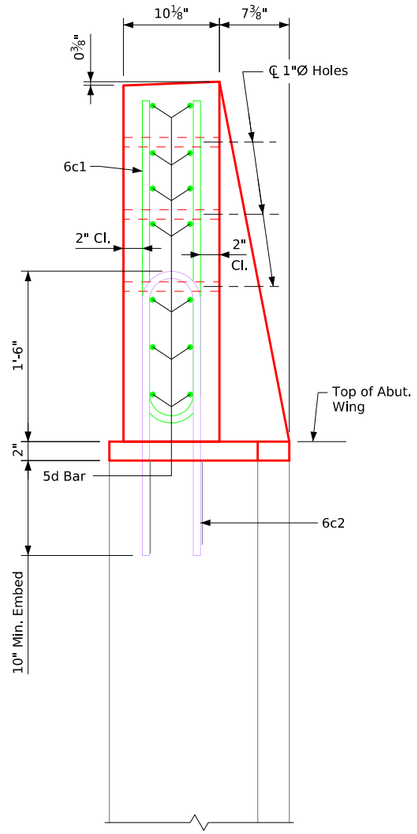
Notes:
Construction joint between top of abutment wing and abutment wing extension with barrier rail is roughened concrete.
For Bar List, Bent Bar Details, View A-A, Sections B-B, C-C, and D-D see Design Sheet No. 27.

Design For Repairs to 57°03' LA
Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges
102'-6" End Spans 131'-0" Interior Span
Barrier Rail End Section
STA. 462+06.89 (US 61) Turn-in Date: May 2026
Scott County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0428 Design Sheet No. 26 of 43 FHWA No. 604645

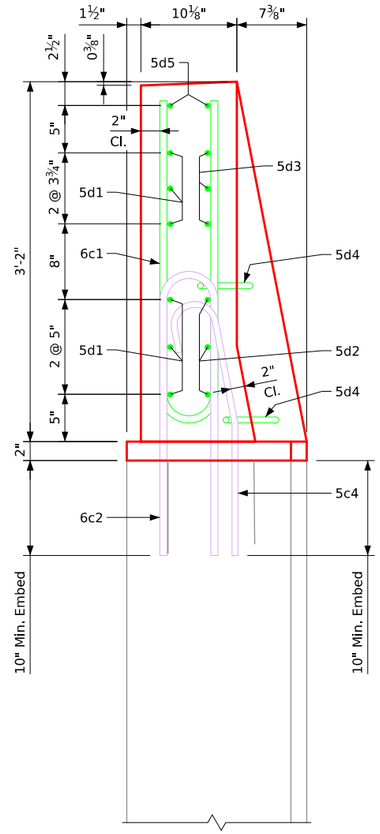
| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL END SECTION (STAINLESS) - (1 OF 2) | MODIFIED STANDARD SHEET 1017S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.69 |
|---|---|---|---|---|---|---|---|



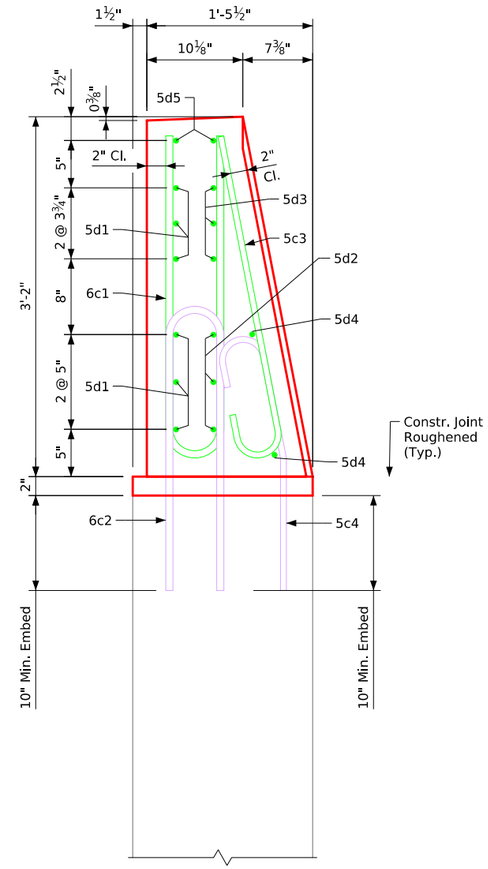

**View A-A**




**Section B-B**




**Section C-C**




**Section D-D**

Abutment wing bars in View A-A and Sections B-B & C-C are not shown for clarity.

## Epoxy Coated Reinforcing Steel - One End Section

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 6c1 | Rail, Vertical | | 12 | 5'-11" | 107 |
| 5c3 | Rail, Vertical (Traffic Face) | | 3 | 3'-5" | 11 |
| 5c5 | Rail, Vertical (End) | | 4 | Varies | 14 |
| | | | | | |
| | | | | | |
| 5d1 | Rail, Horizontal (Back Face) | | 6 | 9'-1" | 57 |
| 5d2 | Rail, Horizontal (Traffic Face) | | 3 | 9'-1" | 28 |
| 5d3 | Rail, Horizontal (Traffic Face) | | 3 | 9'-7" | 30 |
| 5d4 | Rail, Horizontal (Traffic Face) | | 2 | 6'-3" | 13 |
| 5d5 | Rail, Horizontal (Top) | | 2 | 9'-1" | 19 |
| | | | | | |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 279 |

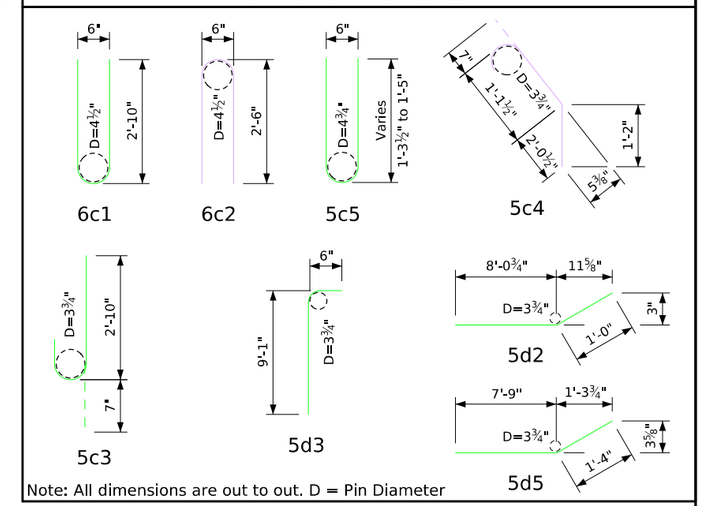
## Stainless Steel Reinforcing Steel - One End Section

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 6c2 | Rail, Vertical | | 12 | 5'-3" | 95 |
| 5c4 | Rail, Vertical (Traffic Face) | | 6 | 2'-11" | 18 |
| 5c6 | Rail, Vertical (End) | | 8 | Varies | 32 |
| | | | | | |
| | | | | Stainless Steel Reinforcing Total Weight (lbs.) | 145 |

## Concrete Placement Summary

| Section | Total |
|---|---|
| Barrier Rail, One End Section | 1.0 cu. yd. |
| | |

## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

Notes: 5c6, 6c2, & 5c4 bars shall be drilled and doweled into the existing concrete. See the "General Notes" Sheet for additional information.
Construction joint between top of abutment wing and abutment wing extension with barrier rail is roughened concrete.
For locations of Sections A-A, B-B, C-C, and D-D see Design Sheet 26.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

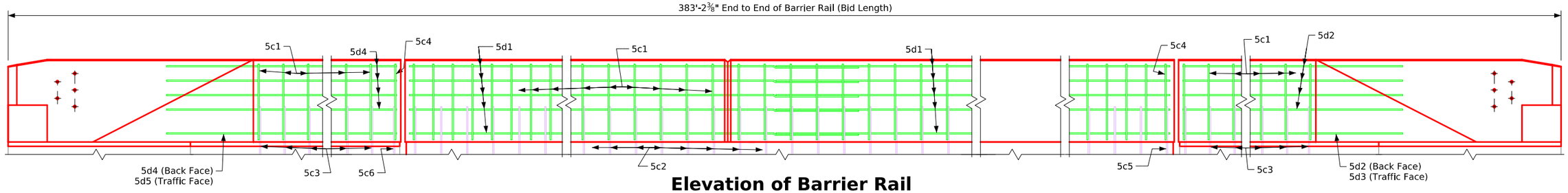
## Barrier Rail End Section

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

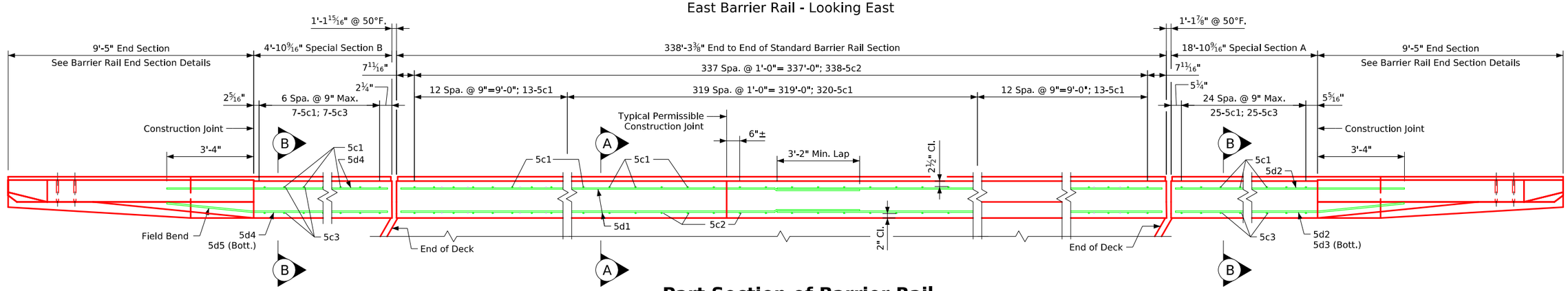
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 27 of 43 — FHWA No. 604645

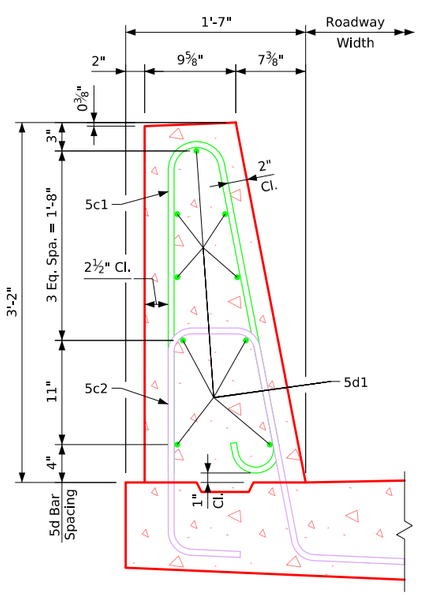



## Elevation of Barrier Rail

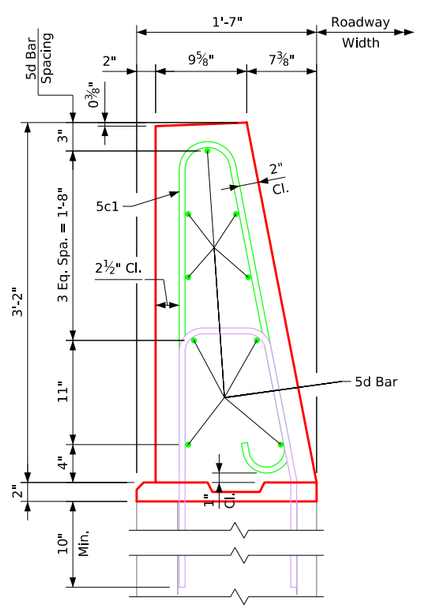
East Barrier Rail - Looking East




## Part Section of Barrier Rail




## Part Section A-A




## Part Section B-B

See Barrier Rail Details on Design Sheet No. 30 for notes, reinforcing steel details, and quantities.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## East Barrier Rail Details

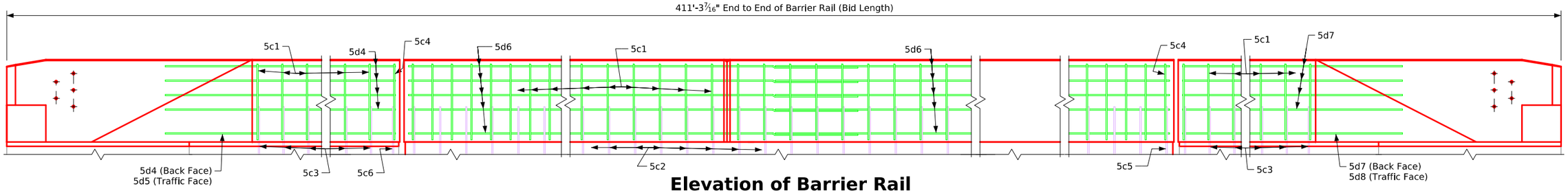
STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

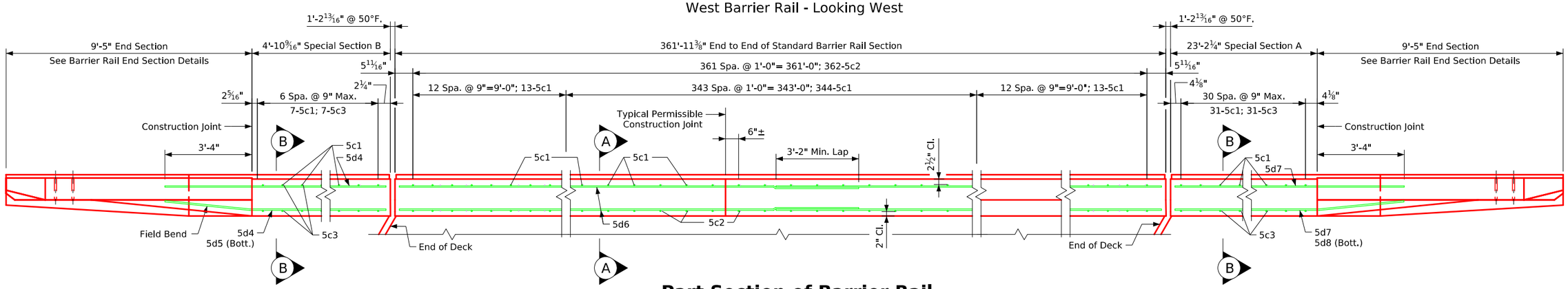
Design No. 0428 — Design Sheet No. 28 of 43 — FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL (TSS TL-4) (STAINLESS) - LA SKEW STUB ABUT. W/WING EXT. (1 OF 2) | MODIFIED STANDARD SHEET 1018S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.71 |
|---|---|---|---|---|---|---|---|

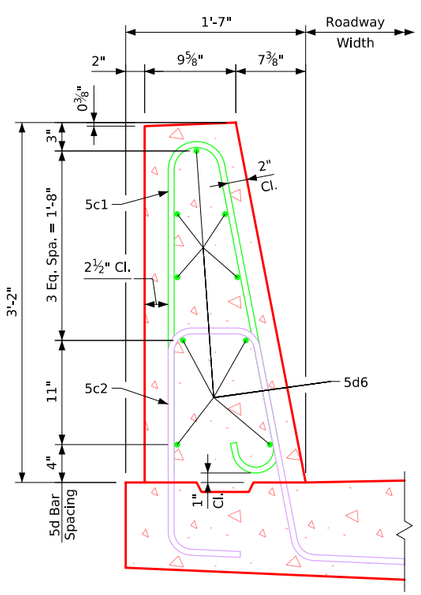



## Elevation of Barrier Rail

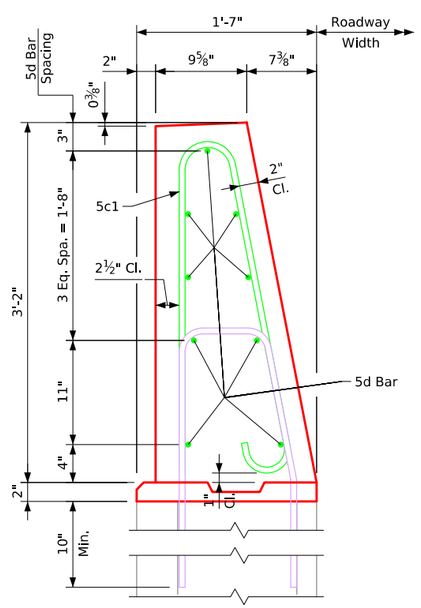
West Barrier Rail - Looking West




## Part Section of Barrier Rail




## Part Section A-A




## Part Section B-B

See Barrier Rail Details on Design Sheet No. 30 for notes, reinforcing steel details, and quantities.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## West Barrier Rail Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 29 of 43 — FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | BARRIER RAIL (TSS TL-4) (STAINLESS) - LA SKEW STUB ABUT. W/WING EXT. (1 OF 2) | MODIFIED STANDARD SHEET 1018S-1 | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.72 |
|---|---|---|---|---|---|---|---|

## Barrier Rail Notes:

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

The permissible construction joints are to be placed between vertical bars at a minimum spacing of 20 feet. Construction joint contact surfaces are to be coated with an approved bond breaker.

Cost of the joint sealer and bond breaker shall be considered incidental to other construction.

All barrier rail reinforcing steel is to be either epoxy coated or stainless steel as shown. The stainless steel reinforcing steel shall be deformed bar grade 60 meeting the requirements of Construction and Materials I.M. 452.

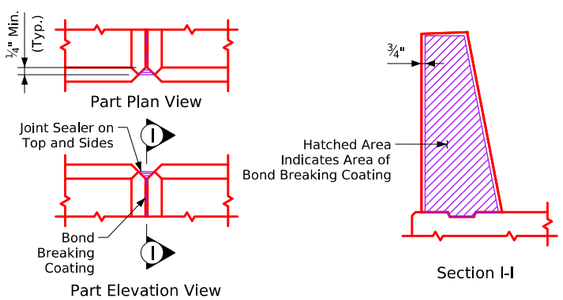
The concrete barrier rail is to be bid on a lineal foot basis. The number of linear feet of barrier rail installed will be paid for at the contract price per lineal foot based on plan quantities. Price bid for concrete barrier railing shall be full compensation for furnishing all material, excluding reinforcing steel, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications. If conduit is required in this plan the rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.

The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. No testing or certification is required.

Top of the barrier rail is to be parallel to the theoretical ℄ grade.

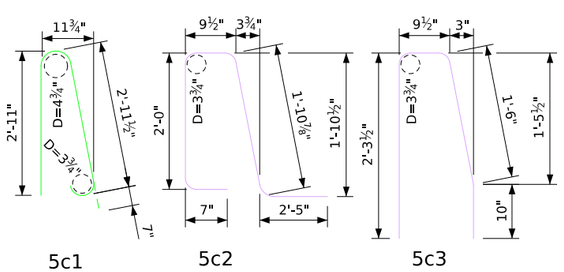
All exposed corners on the top of the barrier and all other corners 90° or sharper to be filleted with a ¾" dressed and beveled strip.

Cross sectional area of the Standard Sections of the barrier rail = 3.50 square feet.




## Barrier Rail Joint Details

## Bent Bar Details




Note: All dimensions are out to out. D = Pin Diameter

## Epoxy Coated Reinf. Steel - East Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c1 | Rail, Vertical | | 346 | 6'-8" | 2,406 |
| | 5d1 | Rail, Longitudinal | | 90 | 36'-8" | 3,442 |
| Special Section A | 5c1 | Rail, Vertical | | 25 | 6'-8" | 174 |
| | 5d2 | Rail, Longitudinal | | 8 | 22'-1" | 184 |
| | 5d3 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 22'-1" | 23 |
| Special Section B | 5c1 | Rail, Vertical | | 7 | 6'-8" | 49 |
| | 5d4 | Rail, Longitudinal | | 8 | 8'-1" | 67 |
| | 5d5 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 8'-1" | 8 |
| | | | | | Epoxy Reinf. Total Weight (lbs.) | 6,353 |

## Epoxy Coated Reinf. Steel - West Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c1 | Rail, Vertical | | 370 | 6'-8" | 2,573 |
| | 5d6 | Rail, Longitudinal | | 90 | 39'-0" | 3,662 |
| Special Section A | 5c1 | Rail, Vertical | | 31 | 6'-8" | 216 |
| | 5d7 | Rail, Longitudinal | | 8 | 26'-5" | 220 |
| | 5d8 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 26'-5" | 28 |
| Special Section B | 5c1 | Rail, Vertical | | 7 | 6'-8" | 49 |
| | 5d4 | Rail, Longitudinal | | 8 | 8'-1" | 67 |
| | 5d5 | Rail, Longitudinal, Traffic Face, Bott. | | 1 | 8'-1" | 8 |
| | | | | | Epoxy Reinf. Total Weight (lbs.) | 6,823 |

## Stainless Steel Reinf. Steel - East Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c2 | Rail, Vertical | | 338 | 7'-3" | 2,556 |
| Special Section A | 5c3 | Rail, Vertical | | 25 | 5'-2" | 135 |
| Special Section B | 5c3 | Rail, Vertical | | 7 | 5'-2" | 38 |
| | | | | | Stainless Steel Reinf. Total Weight (lbs.) | 2,729 |

## Stainless Steel Reinf. Steel - West Rail

| Section | Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|---|
| Standard Sections | 5c2 | Rail, Vertical | | 362 | 7'-3" | 2,737 |
| Special Section A | 5c3 | Rail, Vertical | | 31 | 5'-2" | 167 |
| Special Section B | 5c3 | Rail, Vertical | | 7 | 5'-2" | 38 |
| | | | | | Stainless Steel Reinf. Total Weight (lbs.) | 2,942 |

## Concrete Placement Summary

| Section | Total |
|---|---|
| East Rail Standard Section 338'-3⅜" at 0.130 cu. yd. per ft. | 44.0 |
| East Rail Special Section A 18'-10 9/16" at 0.130 cu. yd. per ft. | 2.5 |
| East Rail Special Section B 4'-10 9/16" at 0.130 cu. yd. per ft. | 0.6 |
| West Rail Standard Section 361'-11⅜" at 0.130 cu. yd. per ft. | 47.1 |
| West Rail Special Section A 24'-2¼" at 0.130 cu. yd. per ft. | 3.0 |
| West Rail Special Section B 4'-10 9/16" at 0.130 cu. yd. per ft. | 0.6 |
| Total (cu. yd.) | 97.8 |

## Concrete Barrier Rail Quantities

| Item | Unit | Quantity |
|---|---|---|
| Concrete Barrier Railing | L.F. | 794.5 |

5c3 bars shall be drilled and doweled into the existing concrete.
See the "General Notes" Sheet for additional information.

See Barrier Rail Details on Design Sheets No. 28 & 29 for details and sections.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

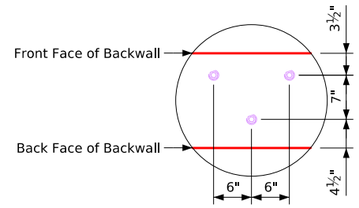
Barrier Rail Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

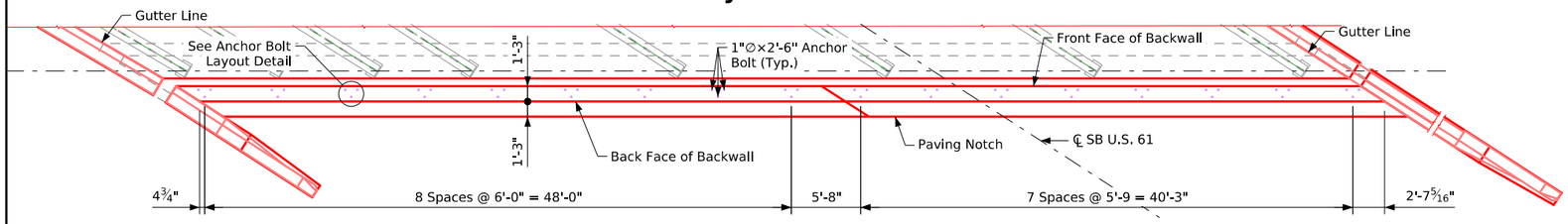
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 30 of 43 FHWA No. 604645




## Anchor Bolt Layout Detail




## South Abutment Anchorage Layout Part Plan

## Expansion Device Notes:

The Contractor shall submit for approval shop drawings of the entire finger joint assembly, barrier plates, drain spouts, and neoprene curtain/steel bent plate trough system showing layout and material to be used.

The entire expansion device and bridge seat drain spouts (except hardware as stainless steel) shall be galvanized in accordance with Article 4100.07 after welding, including the anchorages, shims, support plates, bent plate troughs, and non-stainless steel hardware.

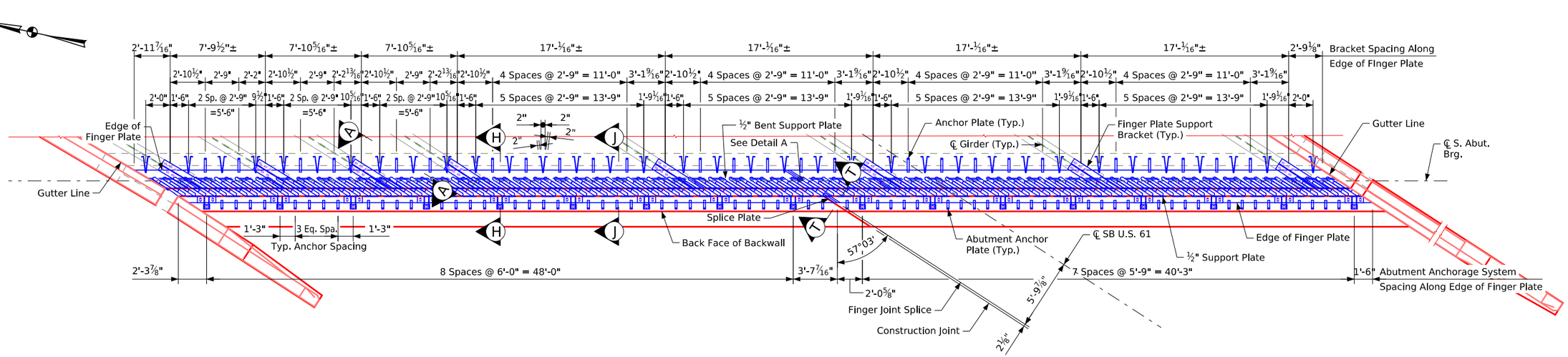
The top of the expansion device shall be recessed ¼" below the top of deck and be parallel to grade.

The material for the 1¾"×2'-3" finger joint plates is to be ASTM A572 Grade 50 steel. All other structural steel is to be ASTM A709 Grade 36 steel. All bolts shall meet the requirements of ASTM A307.

All stainless steel fasteners shall conform to Iowa DOT Materials I.M. 453.07.

The elastomer compound for curtains shall be in accordance with Table B of Article 4195.02 of the Standards Specifications, except the tensile strength shall be 1500 psi (10.3 mpa) minimum or it shall be ethylene propylene diene monomer (EPDM) (ASTM D2000, line call-outs 3BA, 515, A14, B13, C12, K21).

The finger joint and drainage system details shown in these plans are provided to give the contractor one option, and provide critical dimensions and information required for fabrication and construction. The contractor and fabricator may develop and submit alternate details for approval as long as they comply with the Standard Specifications and those specifications noted above, and satisfy the general intent of the details and design shown.




## South Abutment Expansion Device Plan

## Notes:

Barrier plate details not shown. See Design Sheet 38 for barrier plate details.

See Design Sheet 33 for Section A-A.

See Design Sheet 34 for Sections H-H and J-J.

See Design Sheet 32 for Section T-T and Detail A.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 31 of 43 — FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.74 |
|---|---|---|---|---|---|

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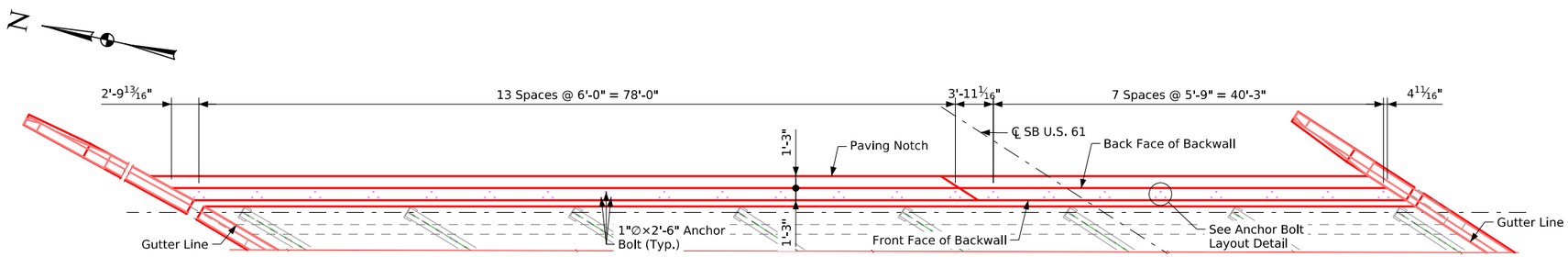
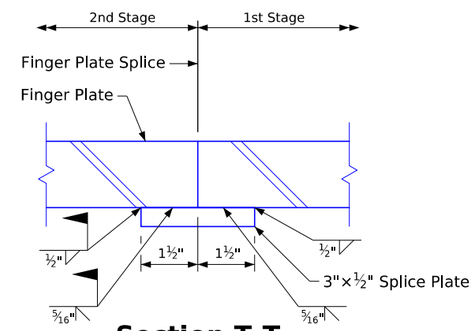
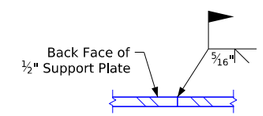


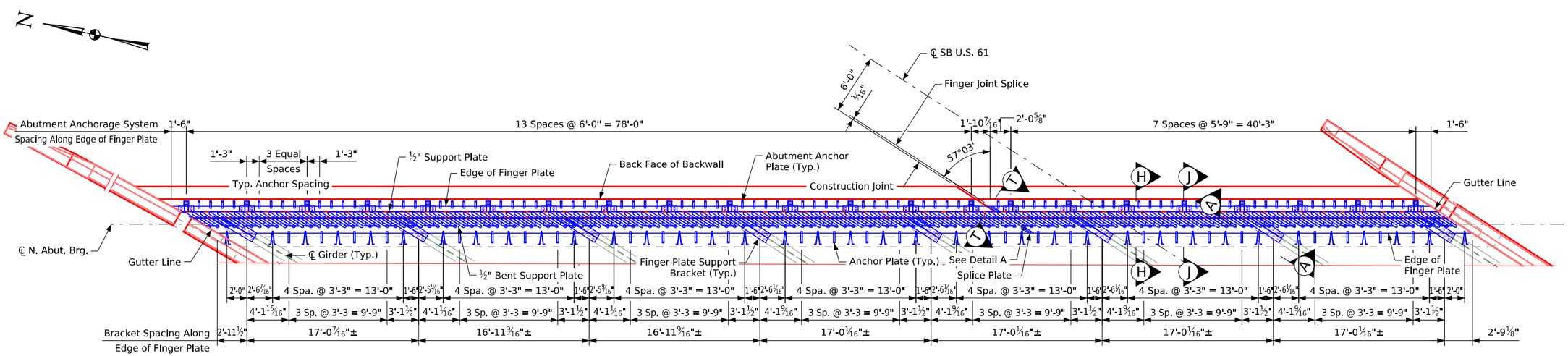

## North Abutment Anchorage Layout Part Plan




## Section T-T




## Detail A




## North Abutment Expansion Device Plan

## Notes:

Barrier plate details not shown. See Design Sheet 38 for barrier plate details.

See Design Sheet 33 for Section A-A.

See Design Sheet 34 for Sections H-H and J-J.

See Design Sheet 31 for Anchor Bolt Layout Detail.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

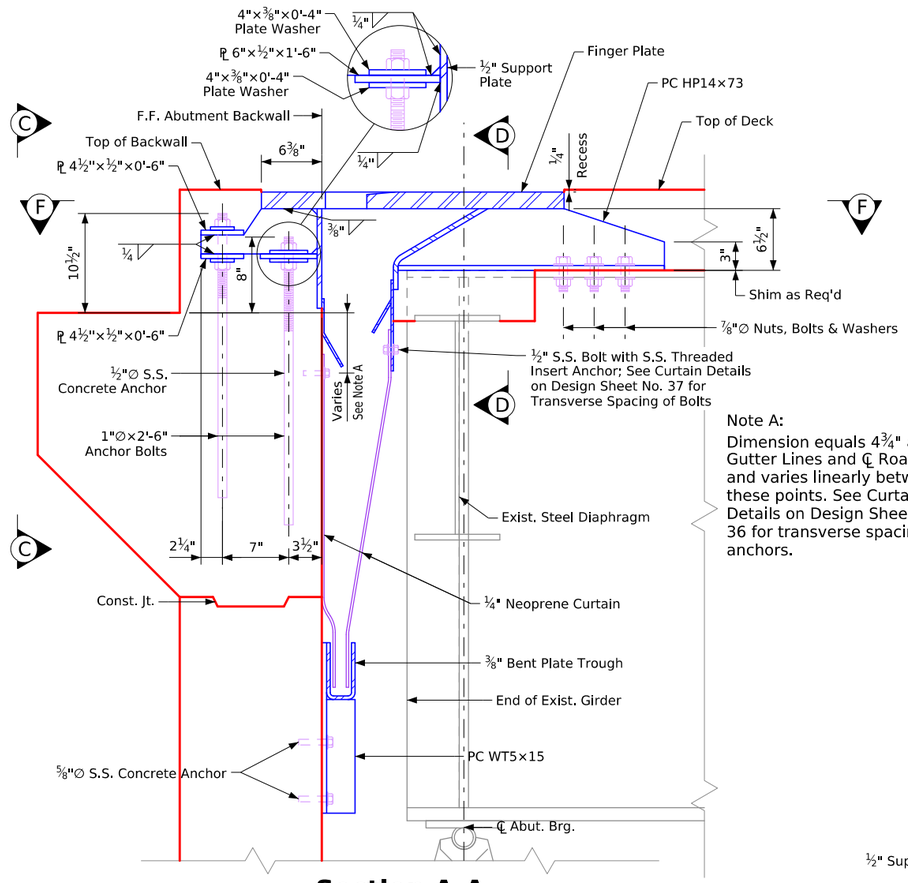
# Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

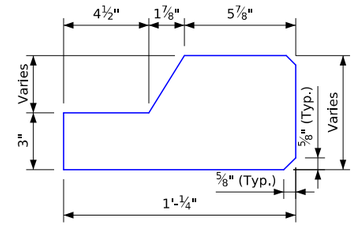
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 32 of 43 — FHWA No. 604645



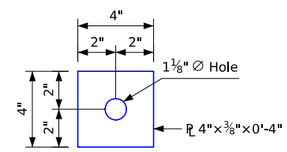

## Section A-A

Note A:
Dimension equals 4¾" at Gutter Lines and ℄ Roadway and varies linearly between these points. See Curtain Details on Design Sheet No. 36 for transverse spacing of anchors.

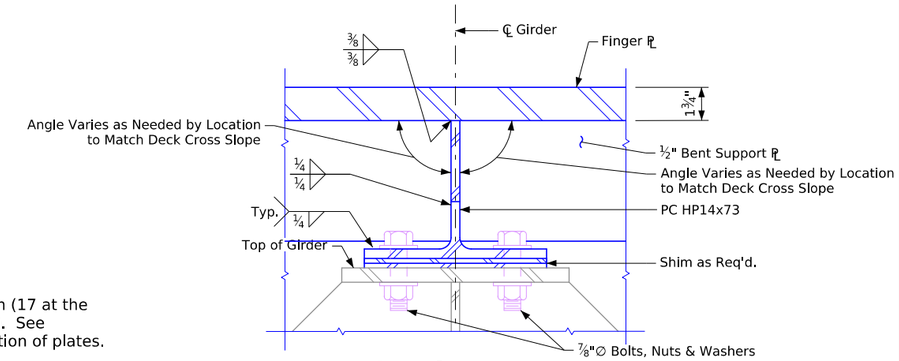



## ½" Plate Detail

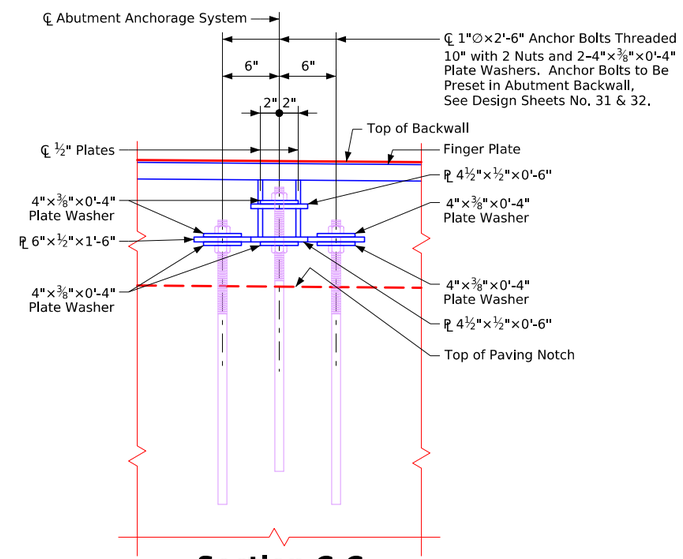
Note:
39 pairs of plates are required for abutment anchorage system (17 at the south expansion device and 22 at the north expansion device). See "Expansion Device Plan" on Design Sheet No. 31 & 32 for location of plates.




## Plate Washer Detail

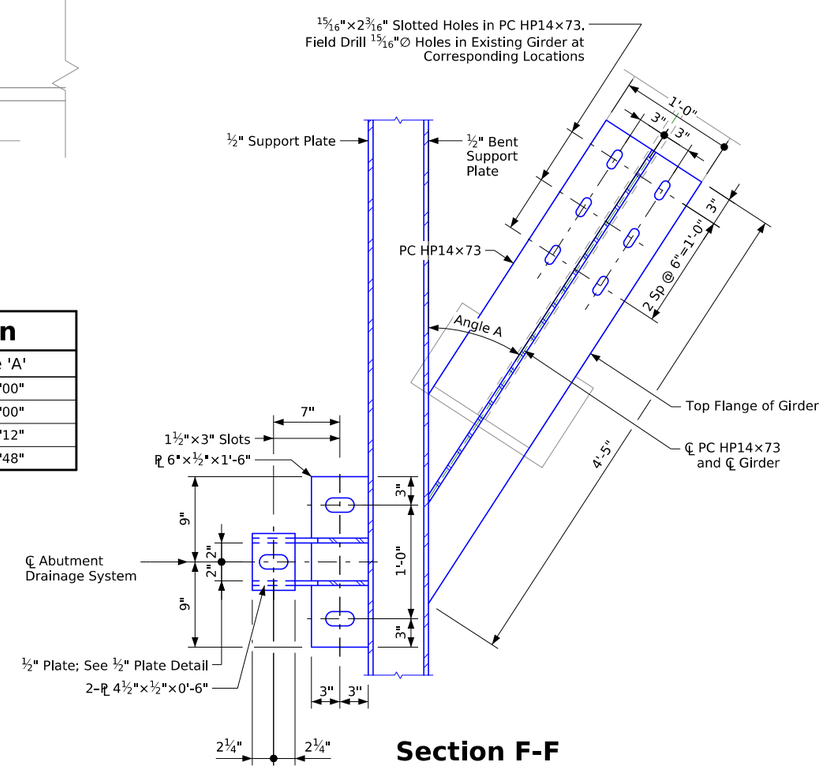



## Section D-D




## Section C-C

| Girder Position | |
|---|---|
| Beam Line | Angle 'A' |
| 1–5 | 32°57'00" |
| 6 | 32°07'00" |
| 7 | 31°19'12" |
| 8 | 30°32'48" |




## Section F-F

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

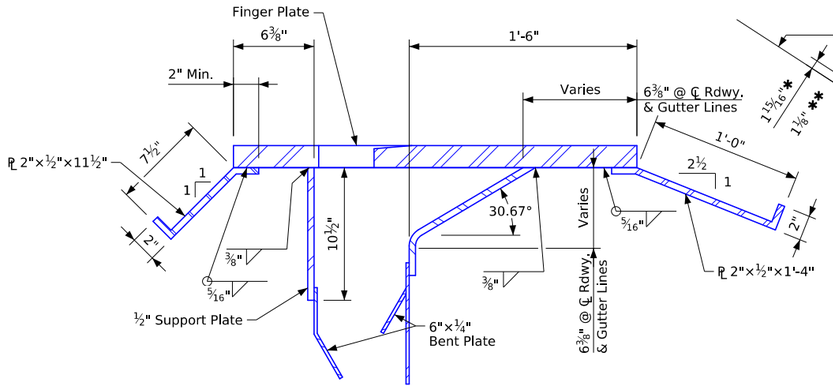
## Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

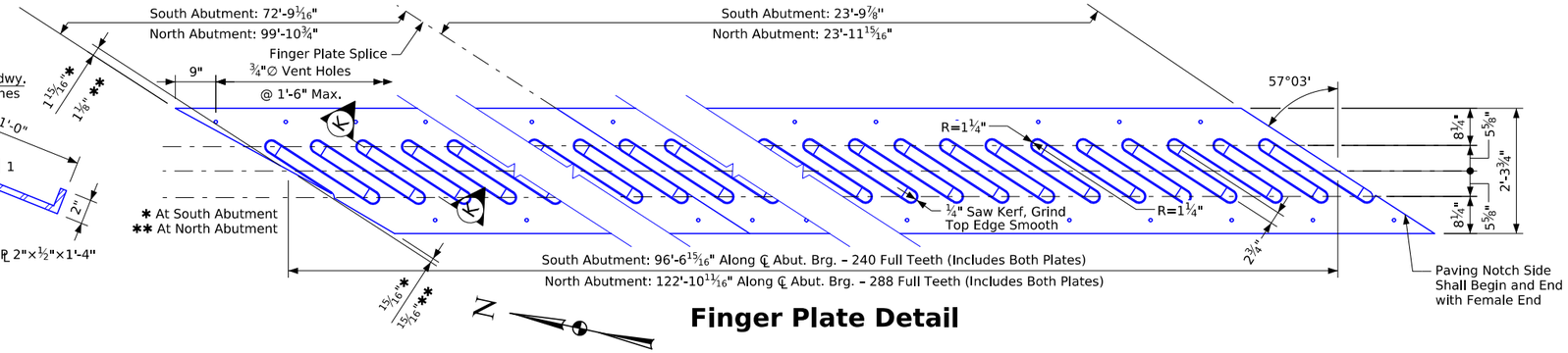
## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

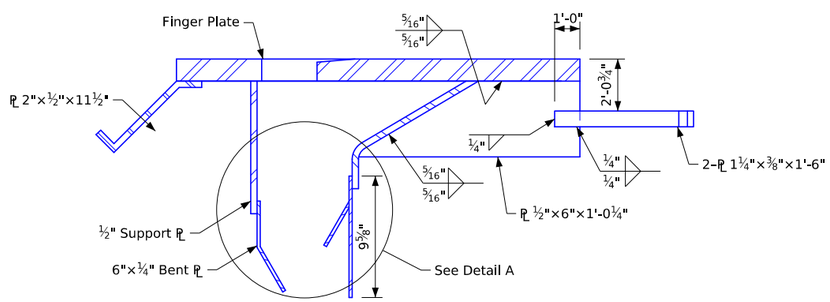
Design No. 0428 — Design Sheet No. 33 of 43 — FHWA No. 604645



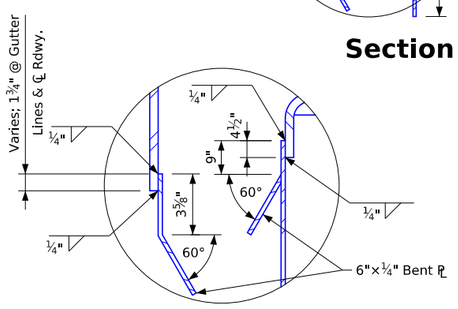

## Section H-H



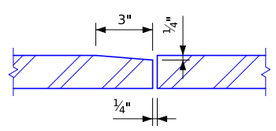

## Finger Plate Detail




## Section J-J




## Detail A

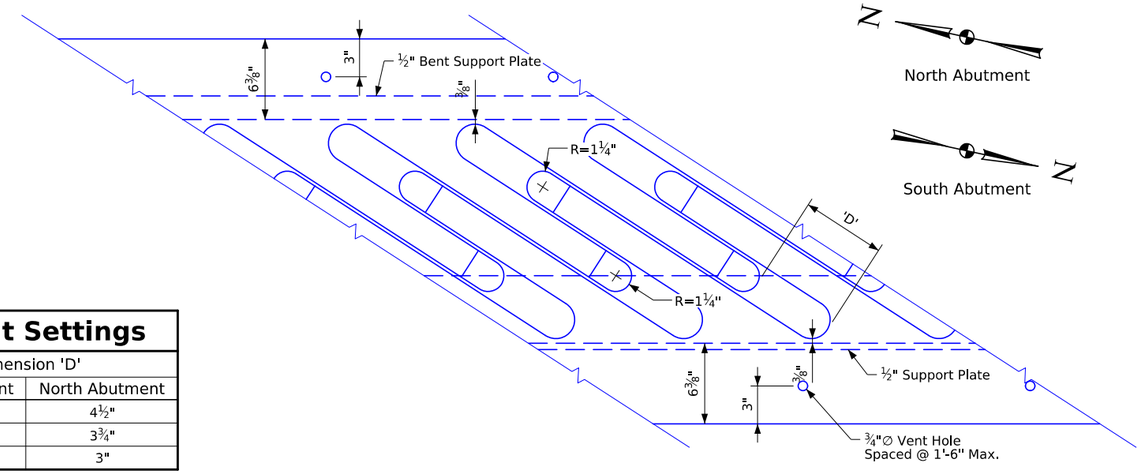



## Section K-K

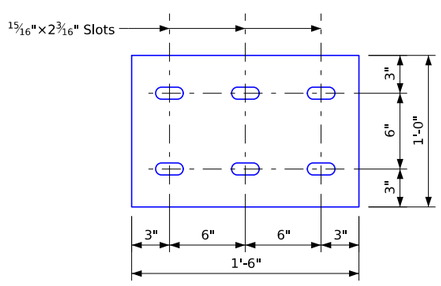
Note:
Top of expansion device is to be parallel to grade. Flame cut from 2'-3"×1¾" plate. Bevel each tooth ¼"×3".

| Finger Joint Settings | | |
|---|---|---|
| Temp. (°F) | Dimension 'D' | |
| | South Abutment | North Abutment |
| 10° | 4 1/16" | 4½" |
| 50° | 3¾" | 3¾" |
| 90° | 3 7/16" | 3" |

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

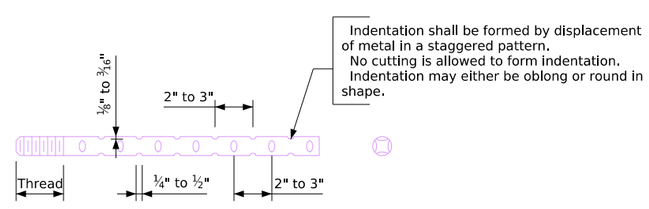



## Joint Setting Detail




## Girder Shim Detail

Note:
Provide three ¼" and two ⅛" shims for each bracket, to be used as required.




## Anchor Bolt Swedge Detail

Note:
See Design Sheet No. 31 & 32 for locations of Sections H-H and J-J.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

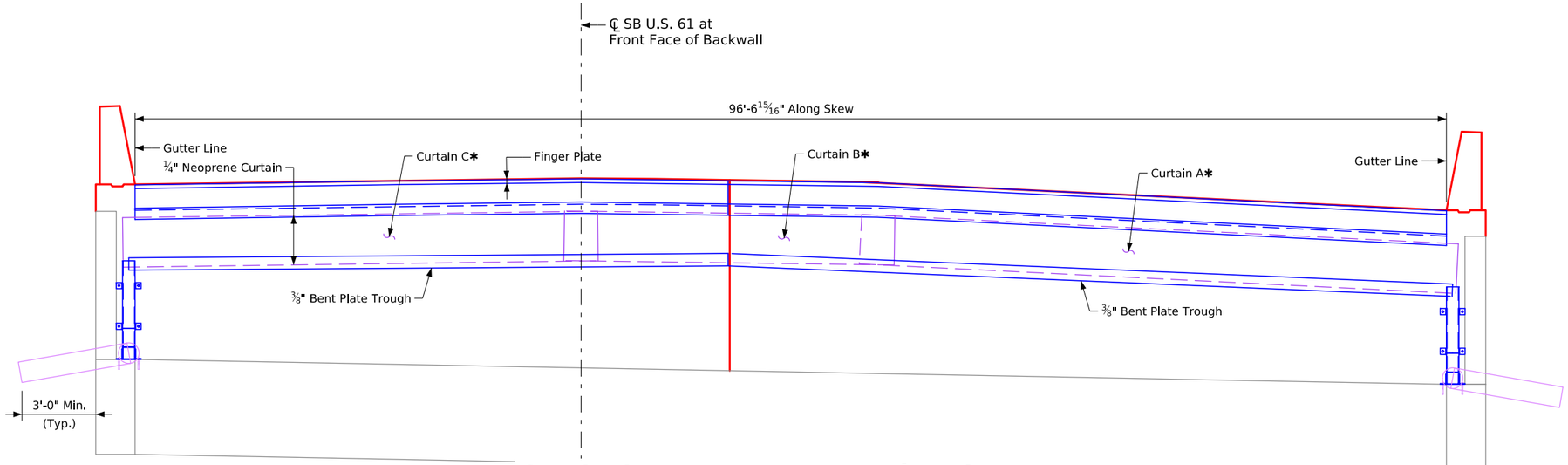
## Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

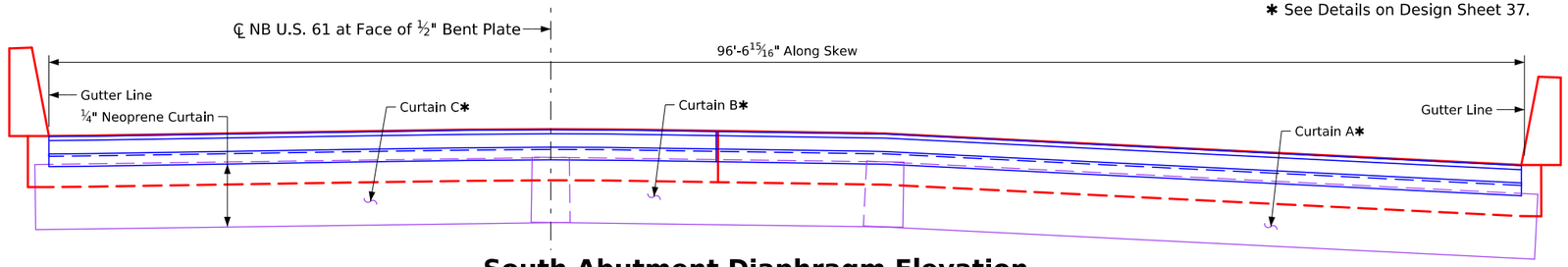
Design No. 0428 — Design Sheet No. 34 of 43 — FHWA No. 604645




## South Abutment Front Face Elevation

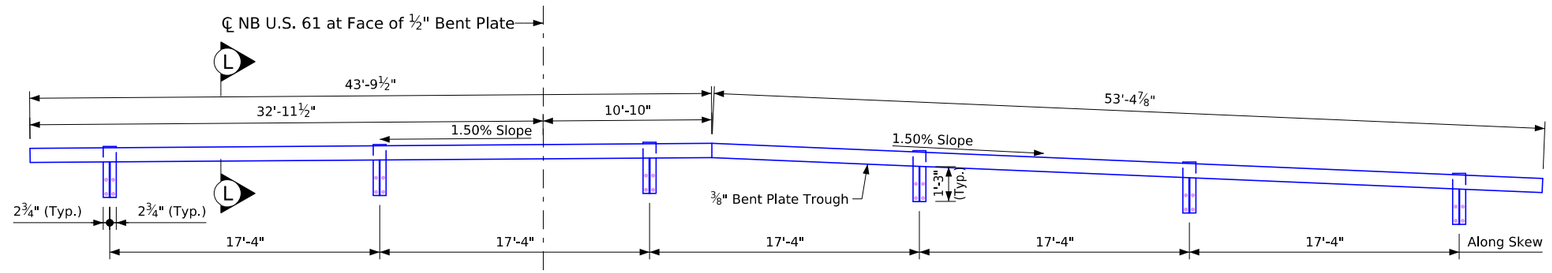
(Looking South)

Note:
✱ See Details on Design Sheet 37.




## South Abutment Diaphragm Elevation

(Looking South)




## South Abutment Bent Plate Trough Elevation

(Looking South)

See Design Sheet 37 for Section L-L

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 35 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.78 |
|---|---|---|---|---|---|

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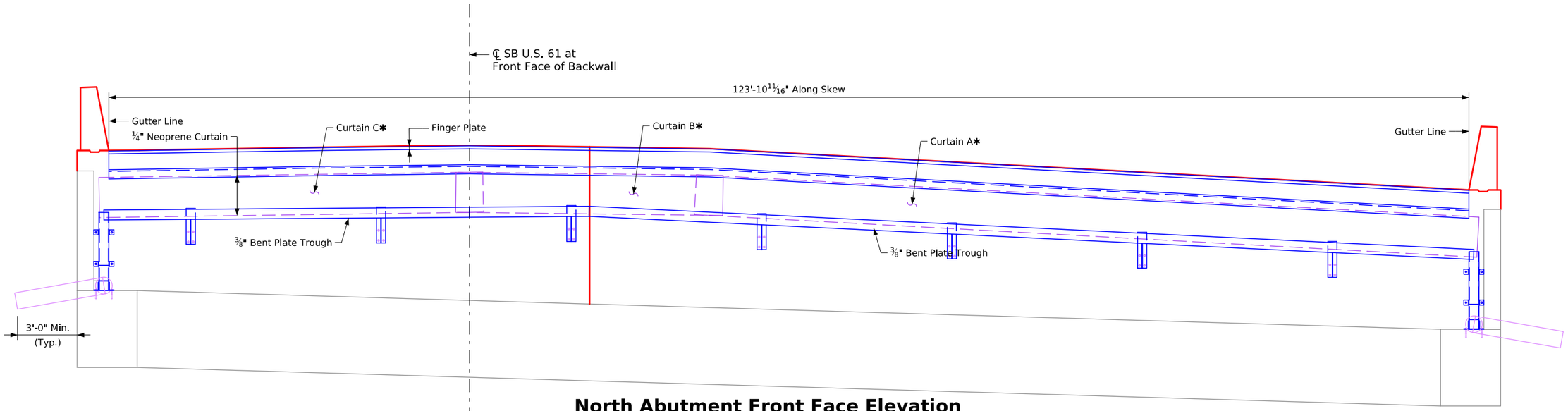
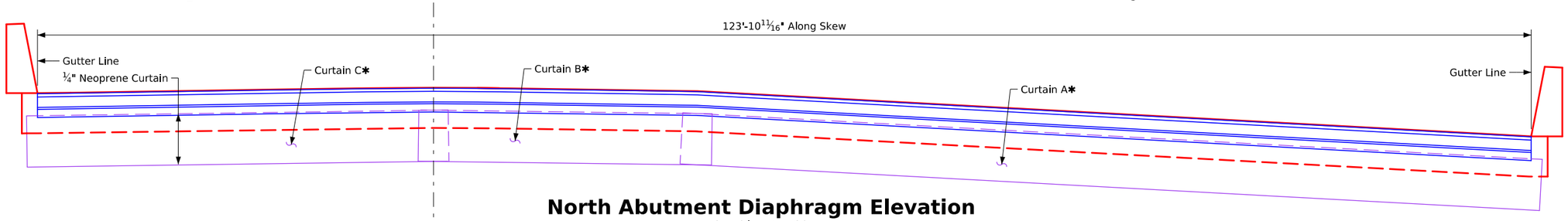



## North Abutment Front Face Elevation

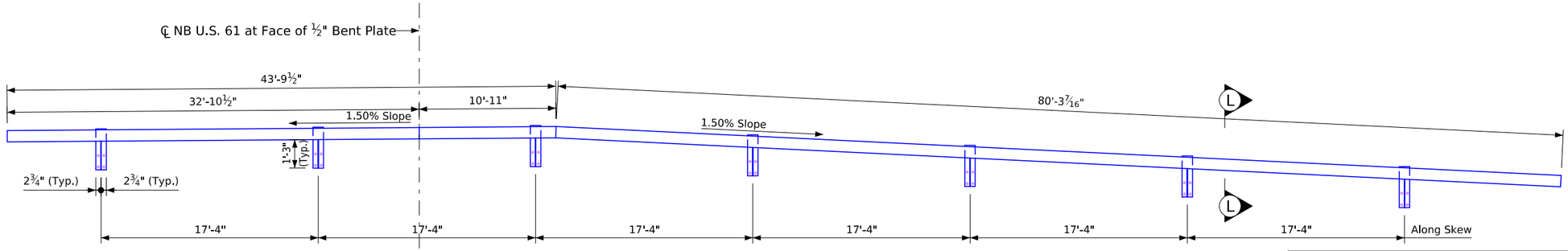
(Looking North)

Note:
✱ See Details on Design Sheet 37.




## North Abutment Diaphragm Elevation

(Looking North)




## North Abutment Diaphragm Elevation

(Looking North)

See Design Sheet 37 for location of Section L-L

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

## Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 36 of 43 FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.79 |
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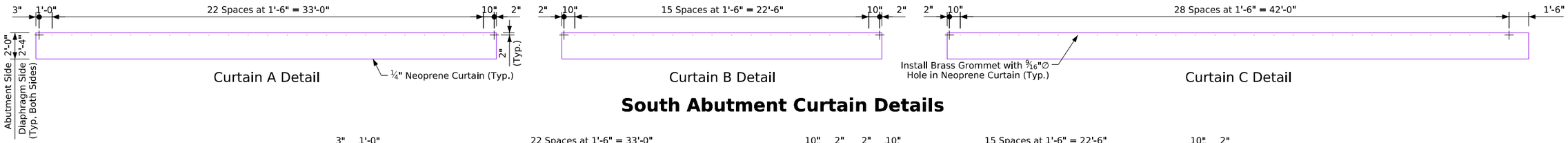
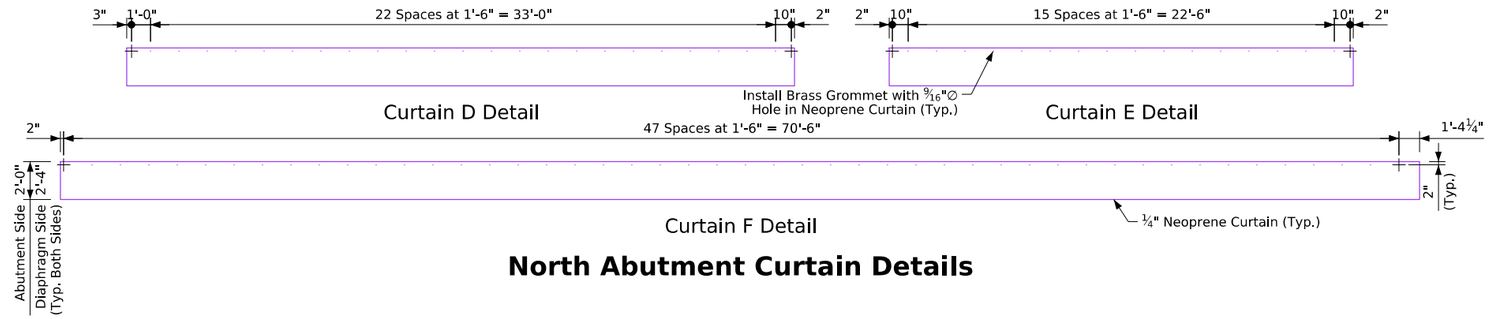
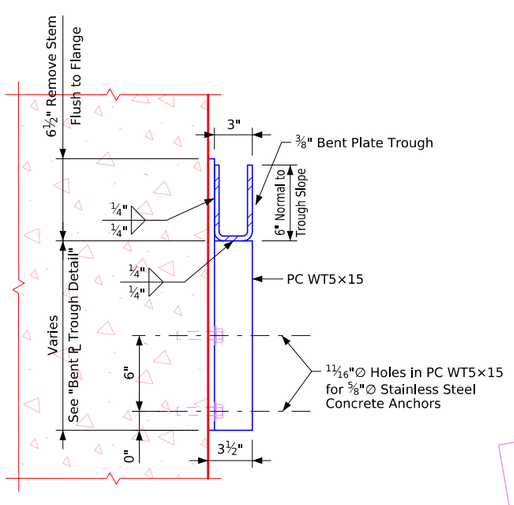



## South Abutment Curtain Details

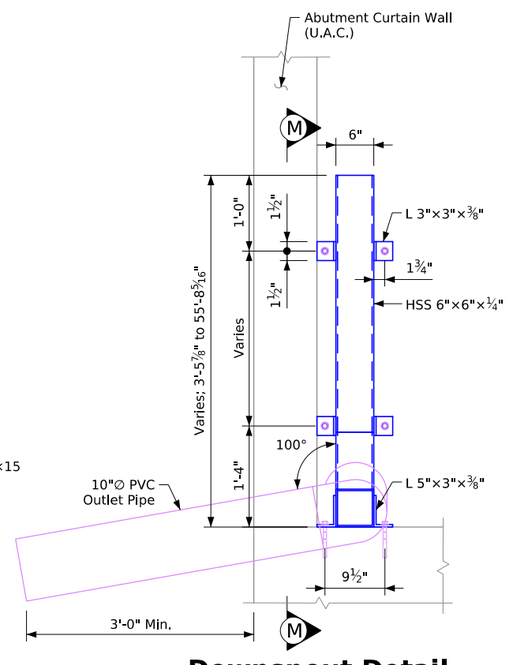



## North Abutment Curtain Details

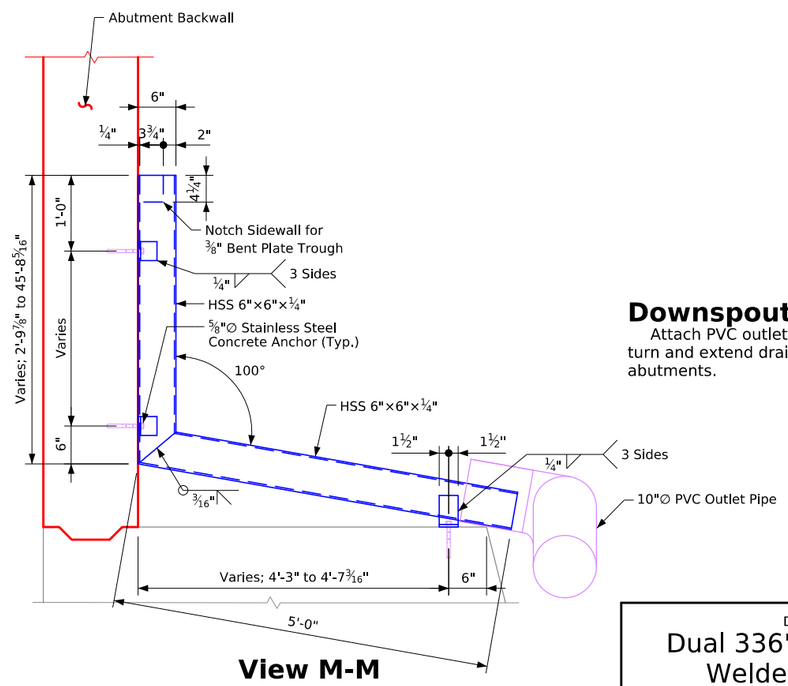



## Section L-L

Note: See Design Sheets No. 35 & 36 for location of Section L-L




## Downspout Detail




## View M-M

(East Side Shown, West Side Reversed)

## Downspout Drain Notes:

Attach PVC outlet pipe to downspout with 90° elbow to turn and extend drainage system 3'-0" beyond the edge of abutments.

Design For Repairs to 57°03' LA

# Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans — 131'-0" Interior Span

## Expansion Device Details

STA. 462+06.89 (US 61) — Turn-in Date: May 2026

## Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 — Design Sheet No. 37 of 43 — FHWA No. 604645

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants, Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER V.80 |
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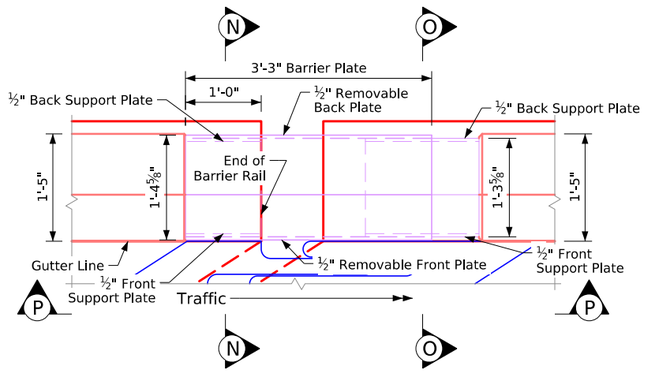
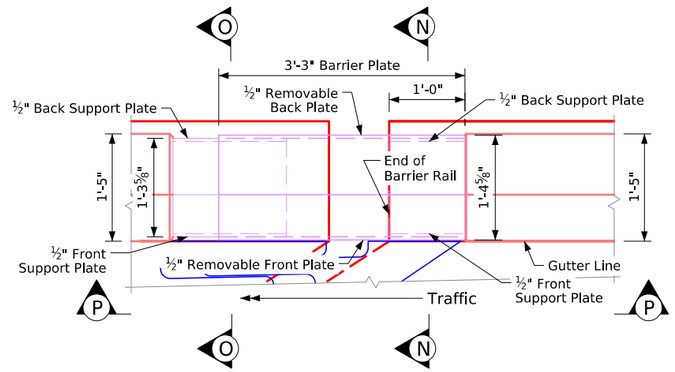
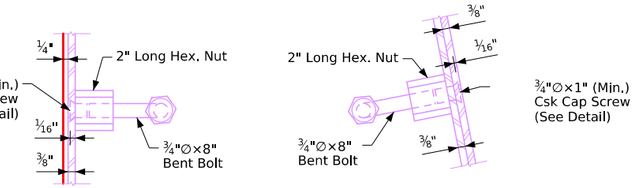



## Part Plan View @ SE & NE Corners

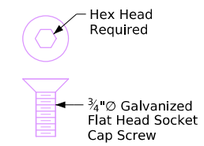



## Part Plan View @ SW & NW Corners

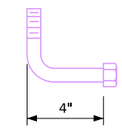



## Detail A

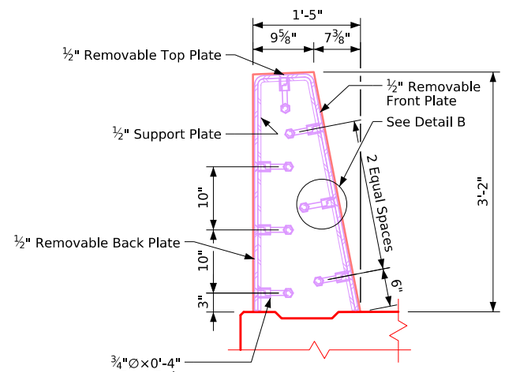
## Detail B



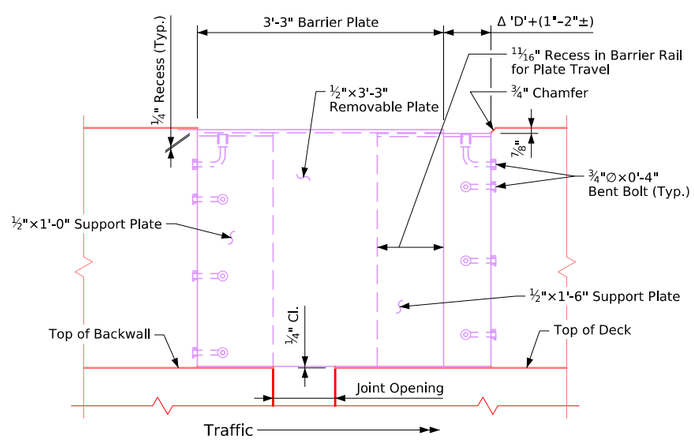

## Cap Screw Detail

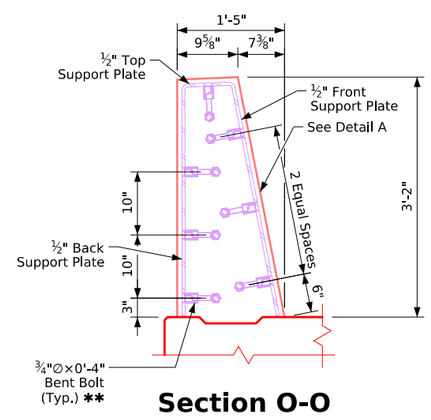



## ¾"∅ Bent Bolt Detail




## Section N-N




## Section O-O

## Barrier Plate Notes:

Cover plates are required on both faces of the barrier rail at the expansion joints.

Cap screws shall be countersunk ⅛" below top of plate.

Contractor to note that the cap screw anchorage system for the ⅜" barrier plates are always to be placed on the oncoming traffic side.
Cover plates are required on both faces of the barrier rail at expansion joints.

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.

In order to maintain alignment of support plates during the casting of the concrete barrier, the Contractor may provide temporary connections between the slider plate and the support plate on the expansion side. Temporary connections shall be removed as soon as possible after casting the barrier.

Cover plate surface shall be recessed ¼" with barrer face and the profile of plate shall match the profile of barrier.

Cost of furnishing and installing the cover plate assembly shall be included in the contract unit price for "Expansion Joints (Finger Plates)".

The Contractor shall submit shop drawings for the cover plate assemblies to the Engineer for approval prior to fabrication.

Front and back removable plates, front and back support pltaes may be bent or welded. Top removable plate shall be welded to front removable plate. Top support plates shall be welded to front and back support plates, grind welds on exterior plate surfaces and surfaces of plates adjacent to adjoining plates to remove burrs and facilitate fit up prior to galvanizing.

The joint sealer shall be light grey nonsag latex caulking sealer marketed for outdoor use. No testing or certification is required.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

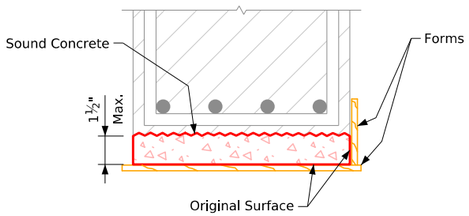
Expansion Device Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

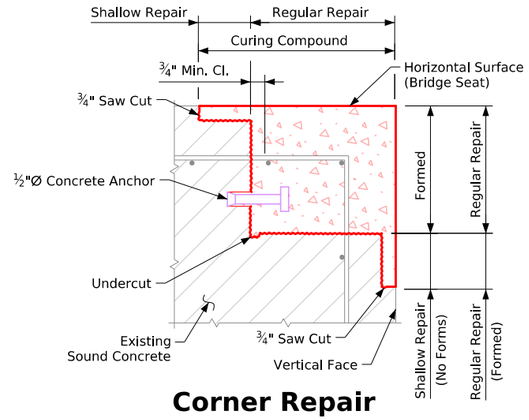
Scott County

IOWA DEPARTMENT OF TRANSPORTATION

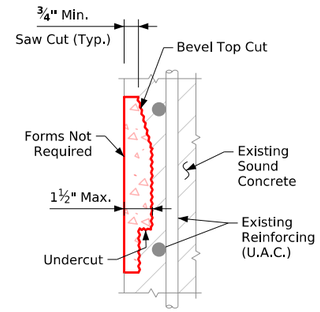
Design No. 0428 Design Sheet No. 38 of 43 FHWA No. 604645



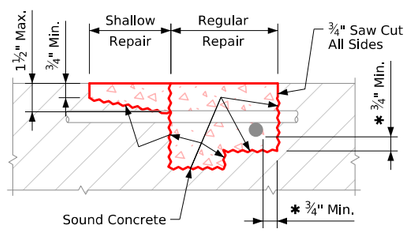

## Shallow Repair Bottom Surface




## Corner Repair

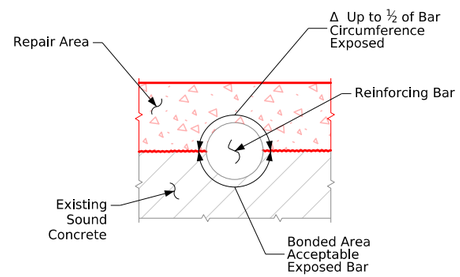



## Shallow Repair Vertical Face

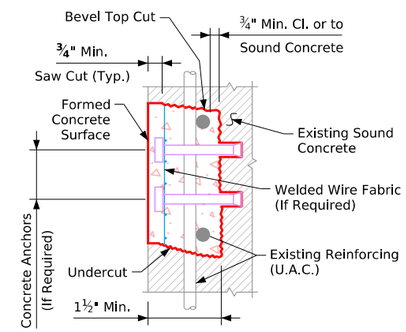



## Repair Definition

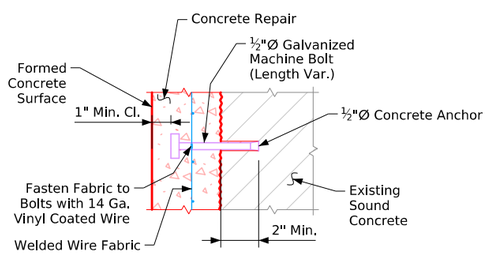
✱ Indicates Clearance for an Un-Bonded Rebar.




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

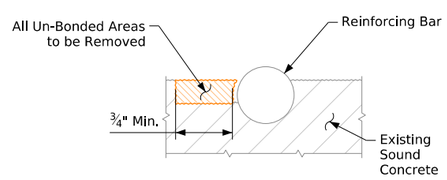



## Regular Repair Vertical Face




## Anchor Detail

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




## Concrete Removal Adjacent to Reinforcing

## Repair Notes:

The spalled and hollow areas of this bridge as noted and shown in these plans shall be repaired as follows:

- All the costs of equipment and materials required to repair the spalled and hollow areas of this bridge shall be included in the price bid for "Concrete Repair".
- The price bid for "Concrete Repair" shall include the cost of all concrete anchors and welded wire fabric required by the plans.
- The Engineer shall determine and outline by visual and audible inspection the actual areas of the concrete repairs. The Contractor shall be paid for the actual amount of repairs made on a square foot basis based on the price bid per square foot.
- All existing reinforcing bars that are exposed by the concrete removal shall be cleaned and carefully incorporated into the new work, except badly deteriorated existing reinforcing which shall be replaced as directed by the Engineer.
- The concrete anchors required shall have a minimum pull out of 5,000 lbs based on 4,000 psi concrete. An anchor meeting the requirements of Iowa D.O.T. Materials I.M. 453.09 and the pull out load above is required. The anchors shall be galvanized and shall be installed according to recommendations of the Manufacturer. The cost of furnishing and installing the concrete anchors shall be included in the price bid for "Concrete Repair".
- The welded wire fabric shall be ASTM A185 and galvanized as per ASTM A-641. The WWF wires shall be spaced 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 square inch inclusive, example "WWF 3x3 - W1.4xW2.9".

Where reinforcement has been exposed and clearance around the periphery of the existing bar is provided, no supplemental reinforcing is required, except where existing reinforcement density and pattern are such that individual open spaces between bars are of 1.5 square feet or larger. For this condition ½"Ø concrete anchors and welded wire fabric shall be installed at the rate of one concrete anchor with WWF per each 1.5 square feet of area within each open space.

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

## Concrete Placement Quantities

| Mark | Type | Units | Quantity |
|---|---|---|---|
| | Shallow Repair | Sq. Ft. | 2.0 |
| | | | |
| | | Total (Sq. Ft.) | 2.0 |

## Estimated Concrete Repair Quantities

| Description | Units | Amount |
|---|---|---|
| Concrete Repair | Sq. Ft. | 2.0 |

Note: Concrete repairs to be made on the existing abutment footings. Exact locations and areas shall be determined in the field by the engineer.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Concrete Repair Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 39 of 43 FHWA No. 604645

Note: Section A-A is shown on Abutment Backfill Details Sheet on Design Sheet No. 41.

Benchmark: CP14: N:8094473.46 E:21491351.75; Elev. 771.43
Set 1/2" X 36" Rebar

## Subdrain Notes:

This plan sheet shows details for placing all subdrains and subdrain outlets required for this structure.

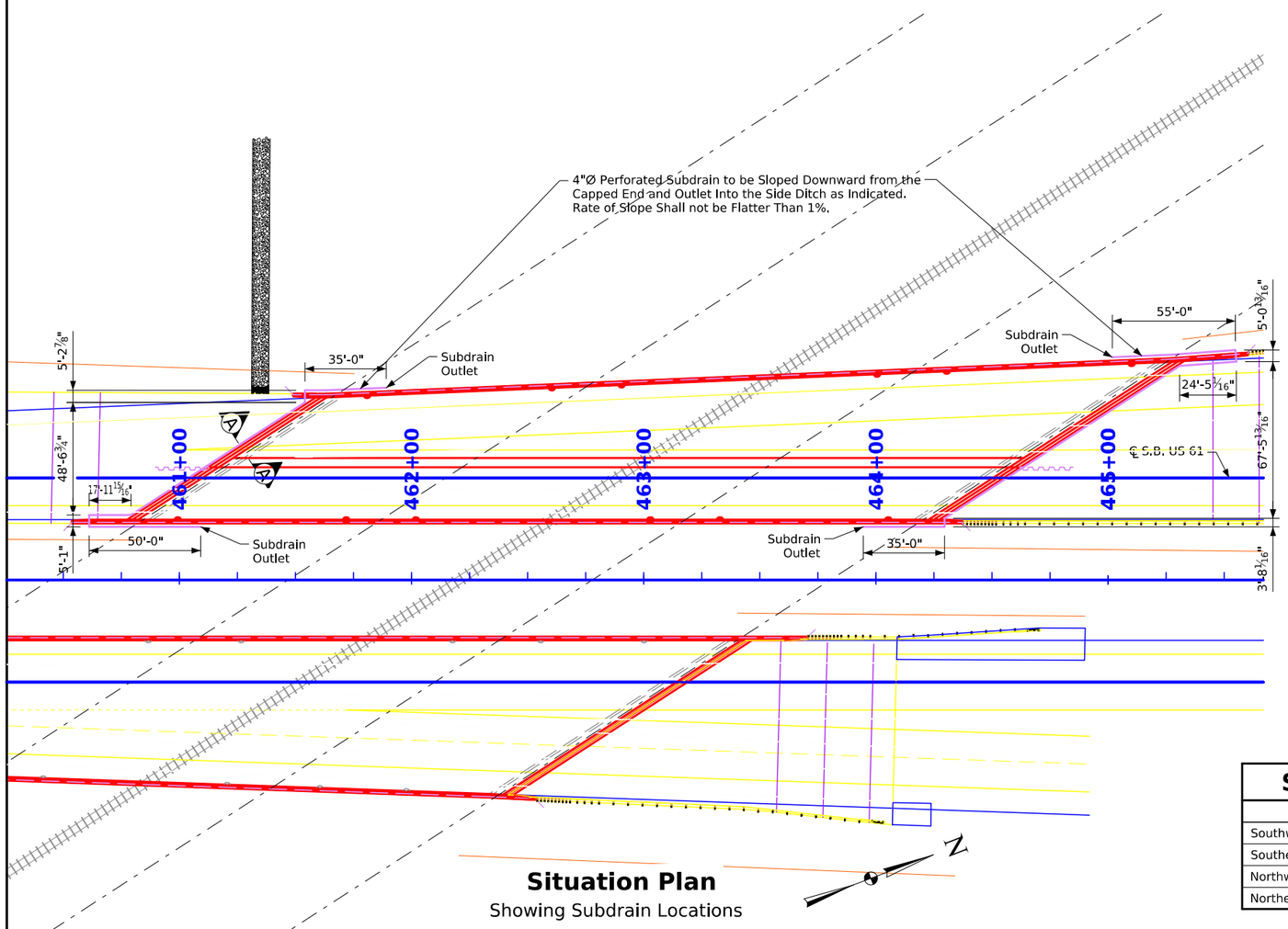
The subdrains shall be 4"Ø and shall be in accordance with Article 4143.01, B, of the Standard Specifications.

The subdrain outlet shall consist of a length of pipe with a removable rodent guard as detailed on this sheet. The length of the outlet pipe shall be determined by the revetment and it's placement location. The Contractor is to insure the outlet pipe is adequately strong enough and will not be damaged when revetment is placed. A check will be made at the subdrain outlet to insure that the subdrain is not damaged and is draining properly during the backfill flooding process. If a metal outlet pipe is used, it shall be 6"Ø and coupled to the 4"Ø subdrain in one of the two following ways.

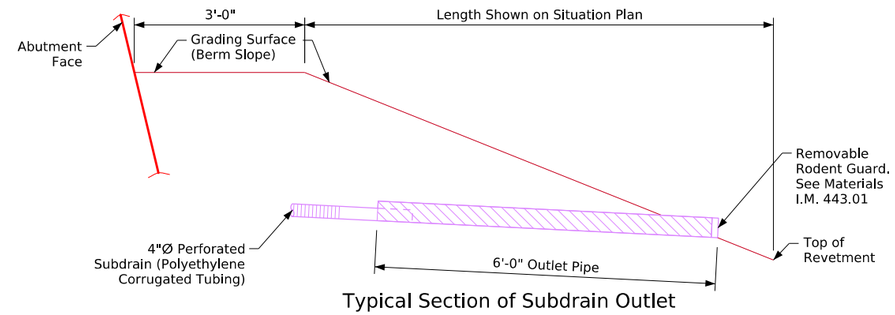
- Use an inside fit reducer coupler (coupler must be inserted a minimum of 1'-0" into the metal outlet pipe).
- Insert 1'-0" of the 4"Ø subdrain into the 6"Ø metal outlet pipe, then fully seal the entire opening with grout.

The cost of furnishing and placing subdrain (including excavation), granular backfill, porous backfill, and subdrain outlet is to be included in the price bid for "Structural Concrete (Bridge)". No extra payment will be made.

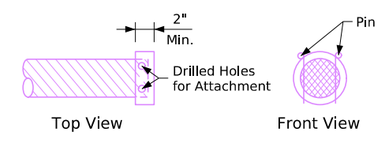
The dimensions shown for the proposed subdrains are based on the proposed grading layout of bridge berms. The dimensions shown are for estimating only. Required lengths and general locations of subdrains are subject to change due to field adjustments of the grading layout.




**Situation Plan**
Showing Subdrain Locations




Typical Section of Subdrain Outlet




Removable Rodent Guard Details

## Erosion Stone (Embedded) Outlet Details

### Subdrain Outlet Elevations

| Location | Elevation |
|---|---|
| Southwest | 765.5 |
| Southeast | 766.2 |
| Northwest | 762.1 |
| Northeast | 764.5 |

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

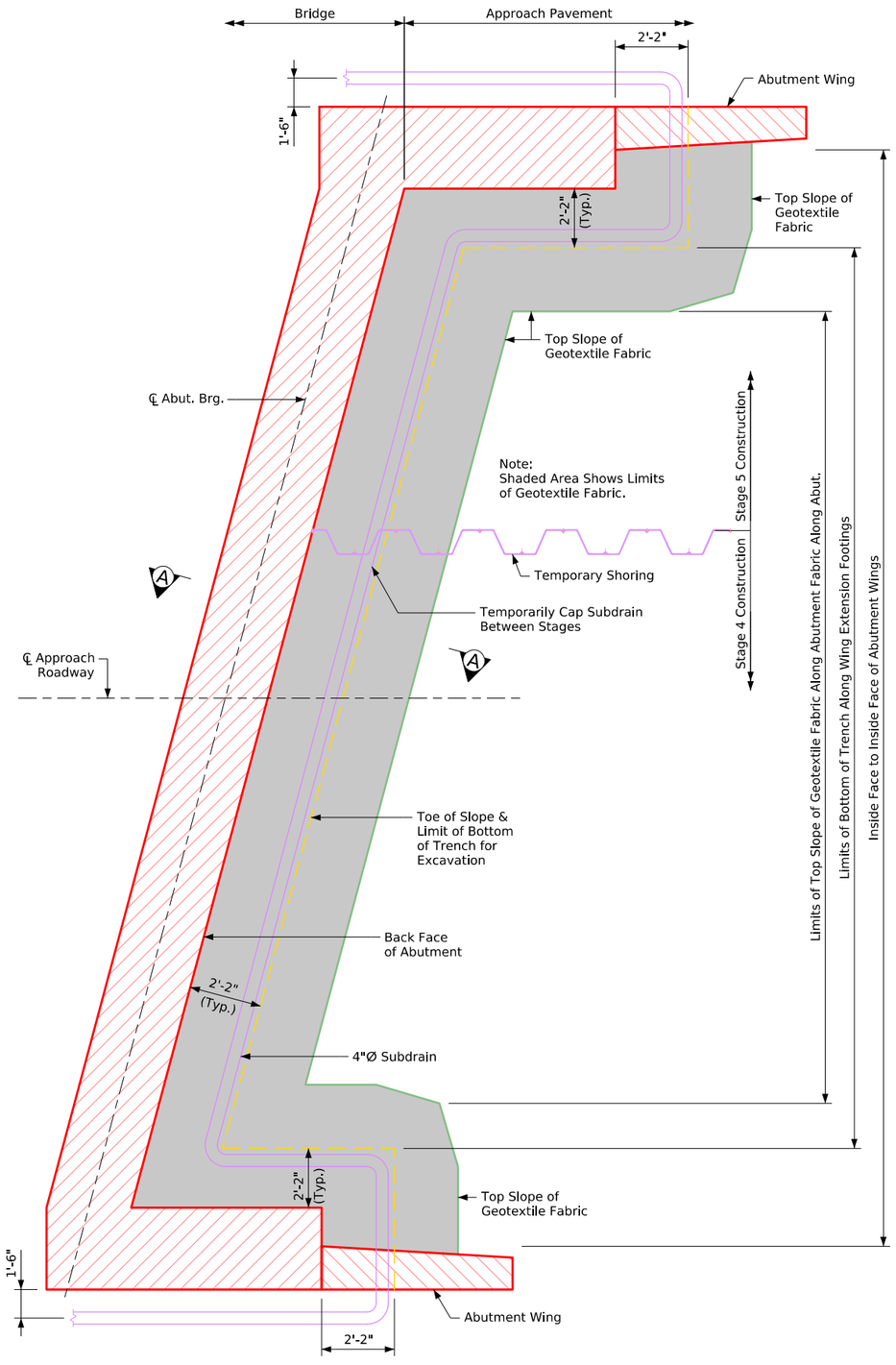
Subdrain Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 40 of 43 FHWA No. 604645




## Abutment Plan with Wing Extensions

## Abutment Backfill Process:

The base of the excavation subgrade behind the abutment is to be graded with a 4% slope away from the abutment footing and a 2% cross slope in the direction of the subdrain outlet. This excavation shaping is to be done prior to beginning installation of the geotextile and backfill material.

After the subgrade has been shaped, the geotextile fabric shall be installed in accordance with the details shown. The fabric is intended to be installed in the base of the excavation and extended vertically up the abutment backwall, abutment wing walls, and excavation face to a height that will be approximately 1 to 2 ft higher than the height of the porous backfill placement as shown in the "Backfill Details" on this sheet. The strips of the fabric placed shall overlap approximately 1 ft and shall be pinned in place. The fabric shall be attached to the abutment by using lath folded in the fabric and secured to the concrete with shallow concrete nails. The fabric placed against the excavation face shall be pinned.

When the fabric is in place, the subdrain shall be installed directly on the fabric at the toe of the rear excavation slope. A slot will need to be cut in the fabric at the point where the subdrain exits the fabric near the end of the abutment wing wall.

Porous backfill is then placed and leveled, no compaction is required.

The remaining work involves backfilling with floodable backfill, surface flooding, and vibratory compaction. The floodable backfill material shall be in accordance with the Standard Specifications. The floodable backfill shall be placed in individual lifts, surface flooded, and compacted with vibratory compaction to ensure full consolidation. Limit the loose lifts to no more than 2 ft of thickness.

Start surface flooding for each floodable backfill lift at the high point of the subdrain and progress to the low point where the subdrain exits the fabric. To ensure uniform surface flooding, water running full in a 2"Ø hose should be sprayed in successive 6 ft to 8 ft increments for 5 minutes within each increment.

Floodable backfill lift placement, flooding, and compaction shall progress until the required full thickness of the abutment backfill has been completed.

Water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments will not be measured separately for payment.

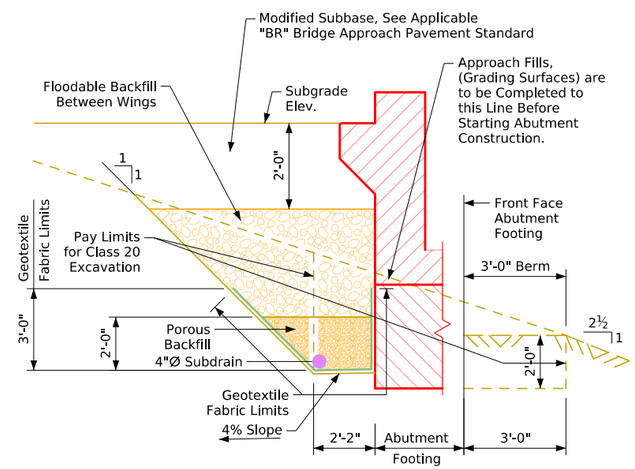
The cost of water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments shall be included in the contract unit price bid for "Structural Concrete".

## Note:

Subdrain shall slope downward 2% from ℄ approach roadway when outletting both sides of the abutment.

Subdrain shall slope downward 2% from high end when outletting at one end of the abutment.

The geotextile fabric shall be in accordance with Article 4196.01, B, 6 of the Standard Specifications. If the engineering fabric is lapped the laps shall be a minimum of 1 ft in length, shingle fashion with up slope lap piece on top and stapled for continuity.




Section A-A

## Backfill Details

Note: Geotextile Fabric will be Attached to Face of Abutment Footing and Wings.

Note:
For Details not Shown on this Sheet which are Pertinent to this Structure See Subdrain Details Sheet on Design Sheet No. 40.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Abutment Backfill Details

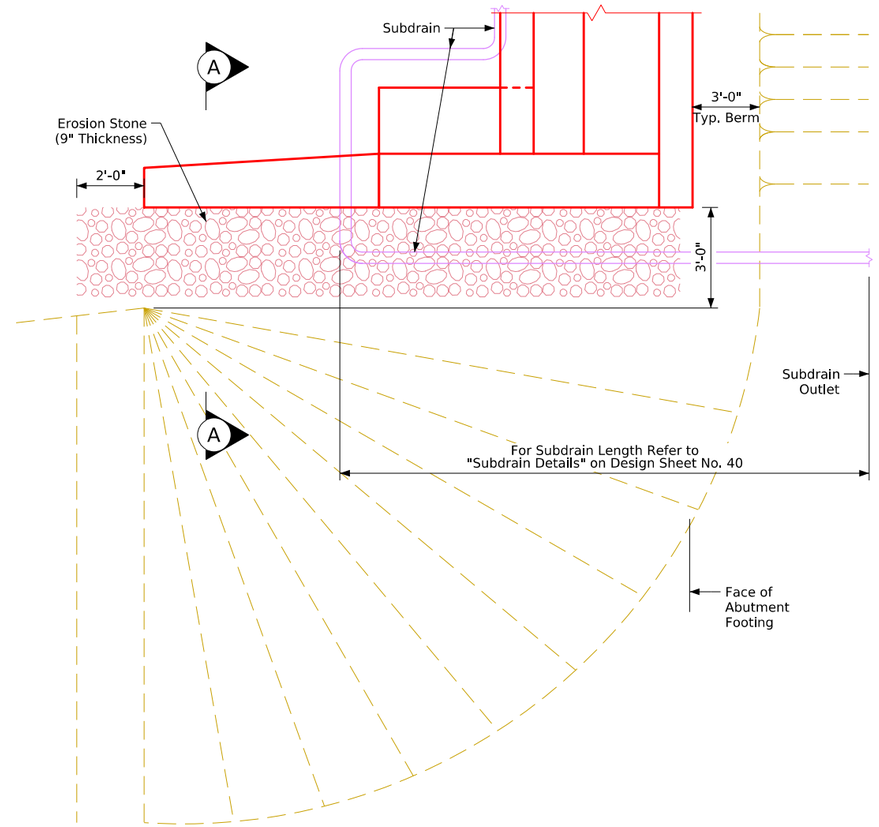
STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

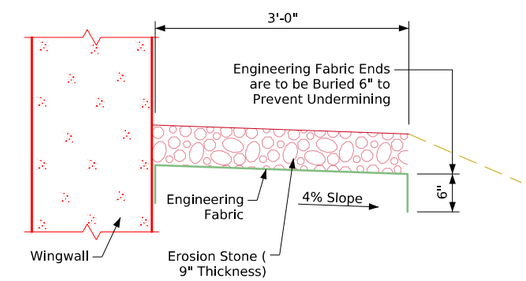
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 41 of 43 FHWA No. 604645

A Check Shall be Made at the Subdrain Outlet to Insure that it is Draining Properly During the Backfill Flooding Process.




## Top View of Wing Armoring with Wing Extension




## Section A-A

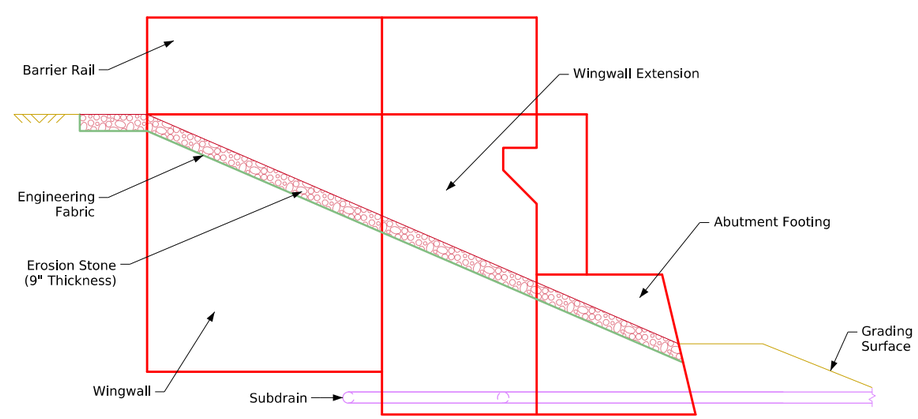
## General Notes:

Erosion stone shall be placed along the sides of the wings and abutment footing as shown in Section A-A. This is typical at each corner of the bridge unless otherwise noted in the plans. The erosion stone at these locations shall be underlayed with engineering fabric in accordance with Article 4196.01, B, 3, of the Standard Specifications.

The erosion stone shall be in accordance with Section 4130, of the Standard Specifications. Material passing the 3 inch screen but 100% retained on a 1 inch screen may be used as choke stone.

The erosion stone shall be deposited, spread, consolidated and shaped by mechanical or hand methods that will provide uniform 9 inch depth and density and provide uniform surface appearance.

Payment for the bridge wing armoring will be bid per square yard. Cost will include engineering fabric, erosion stone, excavation, shaping, and compaction to dimensions shown in these plans. Bid item shall be "Bridge Wing Armoring - Erosion Stone".




## Profile View of Wing Armoring with Wing Extension

(Stub Abutment with Wing Extensions)

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

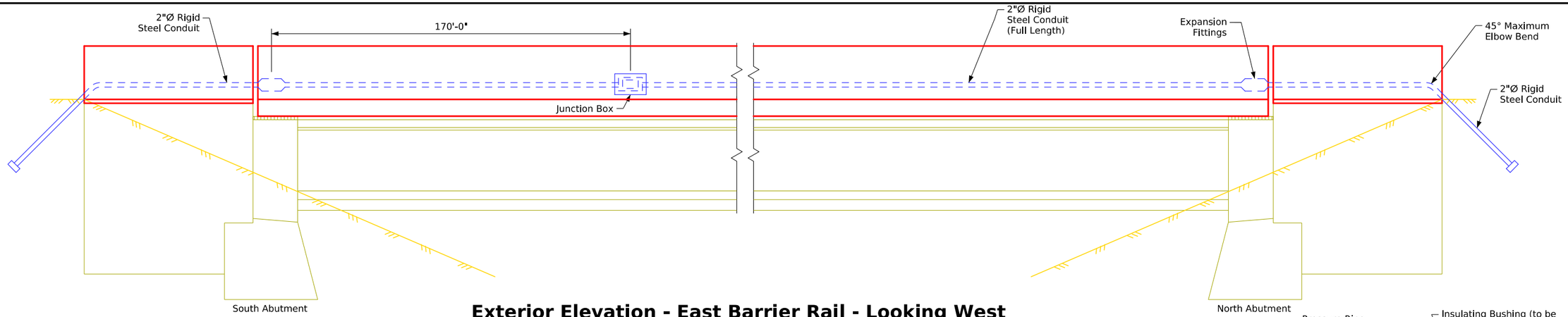
Bridge Wing Armoring

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 42 of 43 FHWA No. 604645




## Exterior Elevation - East Barrier Rail - Looking West

## Lighting Notes:

See LI-104 Standard Road Plan for additional information on junction boxes.

Construction shall conform to the current Iowa D.O.T. Standard and Supplemental Specifications and Special Provisions.

Conduit installation shall be in accordance with Article 2523.03, N, of the Standard Specifications.

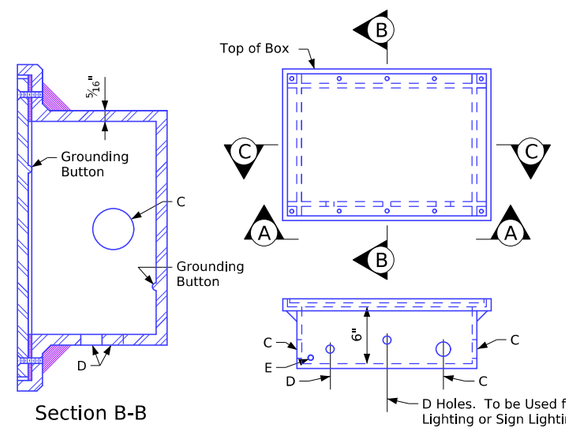
All "C" entrance holes in junction boxes shall be drilled and tapped for the specified conduit size. All other holes shall have a concrete - tight slip fit. Conduit ends shall not protrude into junction box more than ¼". Drain pipe end shall be flush with inside surface of box. Grounding buttons shall be located approximately 3" from the inside surface of the box wall, and not closer than 3" to the edge of any hole in the box floor. Holes for drain pipe shall be placed in the low corner of the box, with a minimum clearance of 1" between the edge of the hole and the inside surface of the box wall. Typical details are shown on this sheet.

The rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.

Expansion fitting shall be as specified or as approved by the Engineer. Typical details are shown on this sheet.

All reinforcing steel is to be epoxy coated and grade 60.

Stainless-steel reinforcement shall not be allowed to be in contact with the uncoated reinforcement, bare metal forming hardware, or to galvanized attachments or galvanized conduit.




Section B-B

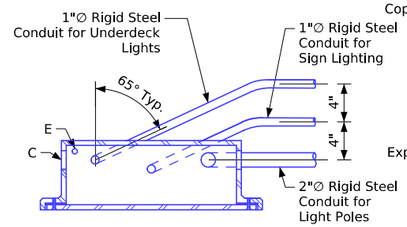
View A-A

## LI-104 Junction Box

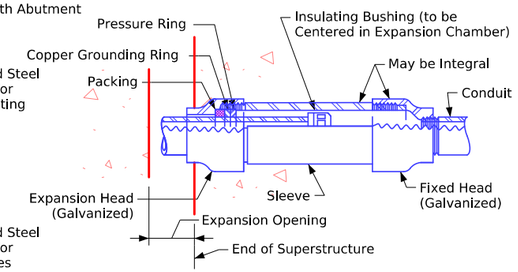
Watertight, Cast Iron - Flush Mount

| Bossed For | Hole | For Conduit Size |
|---|---|---|
| 5 Threads | C | 2" Ø Rigid Steel |
| None | D | 1" Ø Rigid Steel |
| None | E | ½" Ø Rigid Steel |

Note: The grounding buttons are to be blind drilled and tapped for ⅜"Ø x 0'-0¾" bolts.



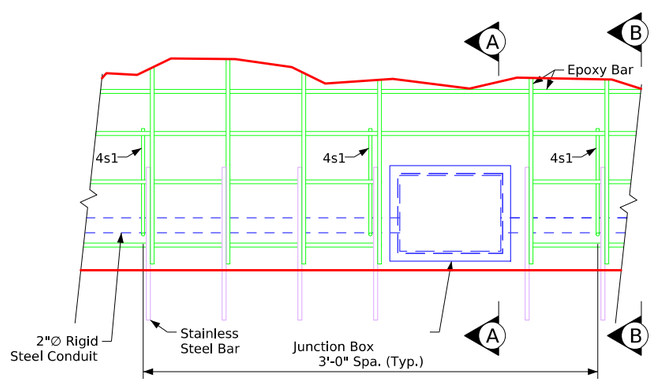

Section C-C




Expansion Chamber Length is 2¾"

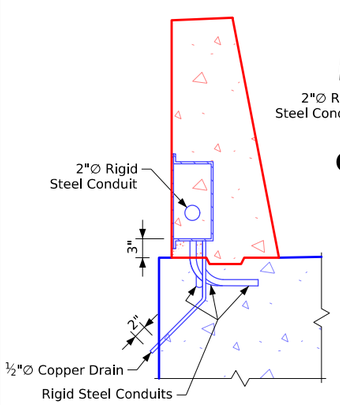
## Expansion Fitting Detail

(4 Required)

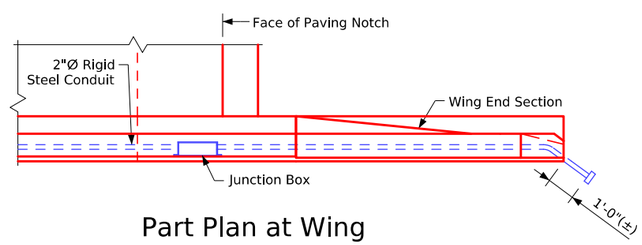



## Conduit Support - Rail Elev. Detail

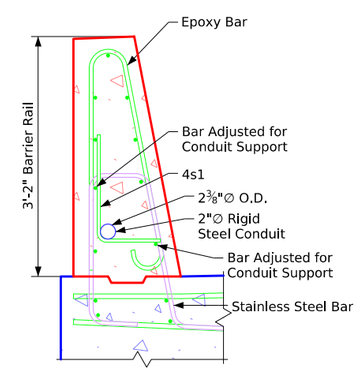
Junction Box Detail - Adjust reinforcing to clear junction box.
Junction boxes are to be placed no further than 300'-0" apart.




## Section A-A Thru Junction Box




Part Plan at Wing




## Section B-B - Conduit Support

Only used in rail with conduit, use 3'-0" spacing. Galvanized conduit shall not come into contact with the stainless steel reinforcing. lower conduit can only be 2" diameter.

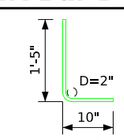
## Epoxy Coated Reinf. Steel - East Rail

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 4s1 | Rail Conduit | | 128 | 2'-3" | 192 |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 192 |

## Epoxy Coated Reinf. Steel - West Rail

| Bar | Location | Shape | No. | Length | Weight |
|---|---|---|---|---|---|
| 4s1 | Rail Conduit | | 138 | 2'-3" | 207 |
| | | | | | |
| | | | | Epoxy Reinforcing Total Weight (lbs.) | 207 |

## Bent Bar Details




4s1

Note: All Dimensions are out to out. D = Pin Diameter

Note: Reinforcing steel quantities are included on the Barrier Rail Quantities Sheet.

Design For Repairs to 57°03' LA

Dual 336'-0"×Variable Continuous Welded Plate Girder Bridges

102'-6" End Spans 131'-0" Interior Span

Conduit Details

STA. 462+06.89 (US 61) Turn-in Date: May 2026

Scott County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0428 Design Sheet No. 43 of 43 FHWA No. 604645

# INDEX OF SHEETS


| NO. | DESCRIPTION |
|---|---|
| **A Sheets** | **Title Sheets** |
| A.3 | Index of Sheets |
| **B Sheets** | **Typical Sheets** |
| B.1 | US 61 Typicals |
| **C Sheets** | **Quantities and General Information** |
| C.1-2 | Estimated Project Quantities and Reference Notes |
| C.3 | Project Description |
| C.8 | Standard Road Plans |
| C.3-14 | Tabulations |
| **D Sheets** | **Mainline Plan Sheets** |
| D.1 | US 61 |
| **J Sheets** | **Traffic Control and Staging Sheets** |
| J.1-2 | Traffic Control Plan |
| **U Sheets** | **Detail Sheets** |
| U.1-2 | Guardrail and Shoulder Layout |

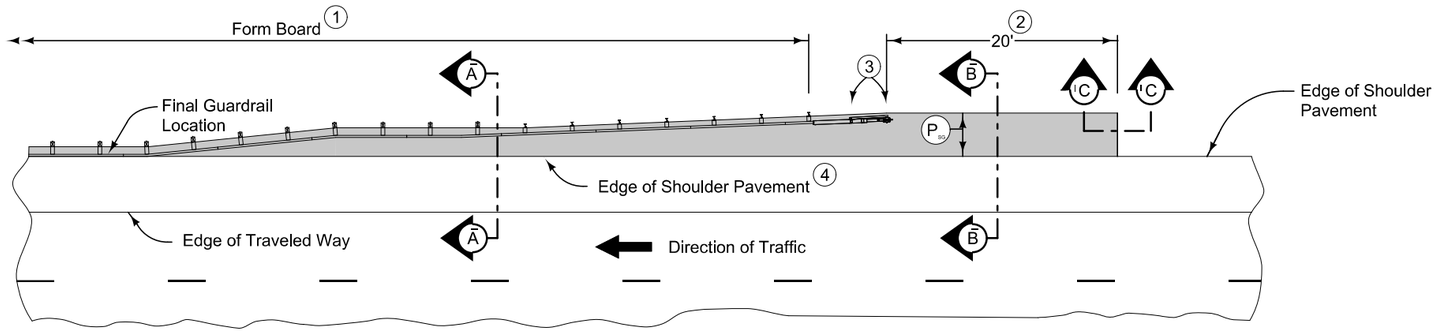

LICENSED PROFESSIONAL ENGINEER
SETH A. MORLING
P27141
IOWA

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.

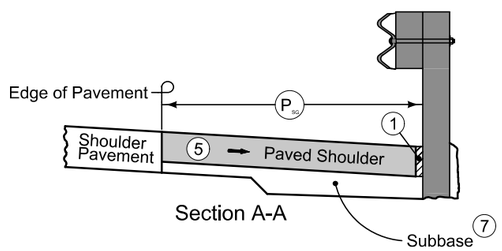
Seth Morling — 4/15/2026
Signature — Date

Seth A. Morling
Printed or Typed Name
My license renewal date is December 31, 20 26

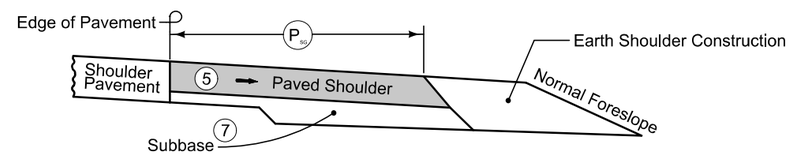
Pages or sheets covered by this seal: A.3, B.1, C.1-C.14, D.1, J.1-2, U.1-2




PLAN VIEW

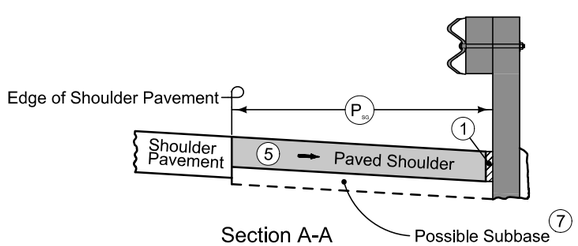



Section A-A

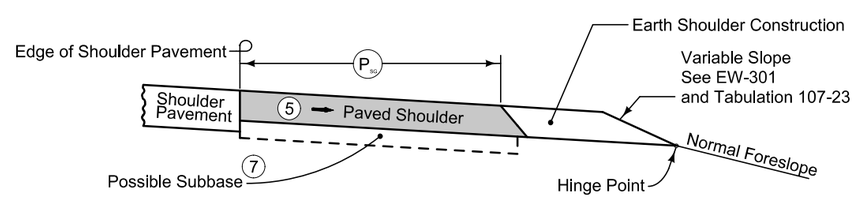



Section B-B

NEW CONSTRUCTION 6




Section A-A




Section B-B

EXISTING SHOULDER

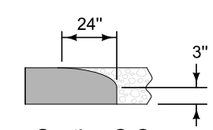
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.




Section C-C
Roll down at granular shoulder or earth.

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

# ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

(153) Roadway Items 1 : Participating (Federal Aid)
(153) Alternate Shoulder Option 1 : HMA Shoulder Option
(153) Alternate Shoulder Option 2 : PCC Shoulder Option

| Item no. | Item Code | Item | Unit | Quantities | | | | Estimate Reference Notes |
|---|---|---|---|---|---|---|---|---|
| | | | | Estimated | | | | |
| | | | | (153) Roadway Items 1 | (153) Alternate Shoulder Option 1 | (153) Alternate Shoulder Option 2 | Total | |
| 1 | 2102-0425070 | SPECIAL BACKFILL HMA Option | TON | | 159.942 | | 159.942 | Refer to Tab. 112-9 in C Sheets and Detail 7158 for locations and details. Calculated for 6" thick special backfill under HMA Shoulders. Special Backfill density estimated at 140lbs/cu.ft. |
| 2 | 2102-0425070 | SPECIAL BACKFILL PCC Option | TON | | | 283.135 | 283.135 | Refer to Tab. 112-9 in C Sheets and Detail 7158 for locations and details. Calculated for 7" thick special backfill under PCC Shoulders. Special Backfill density estimated at 140lbs/cu.ft. |
| 3 | 2102-2713090 | EXCAVATION, CLASS 13, WASTE | CY | 344.3 | | | 344.3 | Refer to Tab. 112-9 in C Sheets for locations and details. Dispose of excess material according to Article 1106.07 of the current specifications. |
| 4 | 2122-5190008 | PAVED SHOULDER, P.C. CONCRETE, 8 IN. | SY | 267.1 | | 507.8 | 774.9 | Refer to Tab. 112-9 in C Sheets and Detail 7158 for locations and details.<br>Refer to Tab. 112-9 in C Sheets for locations and details. |
| 5 | 2122-5500090 | PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN. | SY | | 507.8 | | 507.8 | Refer to Tab. 112-9 in C Sheets for locations and details. |
| 6 | 2123-7450000 | SHOULDER CONSTRUCTION, EARTH | STA | 7.34 | | | 7.34 | |
| 7 | 2301-0690203 | BRIDGE APPROACH, BR-203 | SY | 3,242.78 | | | 3,242.78 | Refer to Tab. 112-6 in C Sheets for locations and details. |
| 8 | 2412-0000100 | LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK | SY | 7,066.1 | | | 7,066.1 | Refer to Tab. 100-28 in C Sheets for locations and details. |
| 9 | 2503-0500402 | BRIDGE END DRAIN, DR-402 | EACH | 4 | | | 4 | Refer to Tab. 104-8A in C Sheets for locations and details. |
| 10 | 2505-4008120 | REMOVAL OF STEEL BEAM GUARDRAIL | LF | 1,135 | | | 1,135 | Refer to Tab. 110-7A in C Sheets for locations and details. |
| 11 | 2505-4008300 | STEEL BEAM GUARDRAIL | LF | 612.5 | | | 612.5 | Refer to Tab. 108-8A in C Sheets for locations and details. |
| 12 | 2505-4008410 | STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201 | EACH | 1 | | | 1 | |
| 13 | 2505-4008415 | STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-209 | EACH | 6 | | | 6 | |
| 14 | 2505-4021010 | STEEL BEAM GUARDRAIL END ANCHOR, BOLTED | EACH | 7 | | | 7 | |
| 15 | 2505-4021720 | STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205 | EACH | 7 | | | 7 | |
| 16 | 2510-6745850 | REMOVAL OF PAVEMENT | SY | 3,574.1 | | | 3,574.1 | Refer to Tab. 110-01 in C Sheets for locations and details. |
| 17 | 2527-9263209 | PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED | STA | 51.51 | | | 51.51 | Refer to Tab. 108-22 in C Sheets for locations and details. |
| 18 | 2527-9270112 | GROOVES CUT FOR PAVEMENT MARKINGS | STA | 51.51 | | | 51.51 | |

| Item no. | Item Code | Item | Unit | Quantities | | | | Estimate Reference Notes |
|---|---|---|---|---|---|---|---|---|
| | | | | Estimated | | | | |
| | | | | (153) Roadway Items 1 | (153) Alternate Shoulder Option 1 | (153) Alternate Shoulder Option 2 | Total | |
| 19 | 2601-2634100 | MULCHING | ACRE | 2.6 | | | 2.6 | Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre. |
| 20 | 2601-2636015 | NATIVE GRASS SEEDING | ACRE | 0.3 | | | 0.3 | Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding". Refer to Standard Road Plan EC-502. |
| 21 | 2601-2636043 | SEEDING AND FERTILIZING (RURAL) | ACRE | 0.9 | | | 0.9 | Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side roads according to Article 2601.03, C, 3, of the Standard Specifications. Use ground driven equipment. Refer to Standard Road Plan EC-502. |
| 22 | 2601-2642100 | STABILIZING CROP - SEEDING AND FERTILIZING | ACRE | 1.2 | | | 1.2 | Item is included for disturbed areas.<br><br>Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications. |
| 23 | 2602-0000312 | PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. | LF | 2,125 | | | 2,125 | Refer to Tab. 100-19. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. |
| 24 | 2602-0000351 | REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE | LF | 2,125 | | | 2,125 | |
| 25 | 2602-0010010 | MOBILIZATIONS, EROSION CONTROL | EACH | 1 | | | 1 | |
| 26 | 2602-0010020 | MOBILIZATIONS, EMERGENCY EROSION CONTROL | EACH | 1 | | | 1 | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

100_01D
8/15/22

# PROJECT DESCRIPTION

This project involves bridge deck replacements, bridge approaches, shoulders, and guardrail work on northbound and southbound US 61 over DME Railroad, located 0.8 mi. N of Jct I-80.

# PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

| Line No. | Station From | Station To | Side | Sediment Control Device Type | Diameter Size | Length (LF) | Remarks |
|---|---|---|---|---|---|---|---|
| 1.0 | 456+10.00 | 459+20.00 | Right | Perimeter and Slope | 12 inch | 310.00 | |
| 2.0 | 457+20.00 | 460+10.00 | Median | Perimeter and Slope | 12 inch | 290.00 | |
| 3.0 | 462+20.00 | 464+30.00 | Right | Perimeter and Slope | 12 inch | 210.00 | |
| 4.0 | 463+40.00 | 464+90.00 | Median | Perimeter and Slope | 12 inch | 150.00 | |
| 5.0 | 460+00.00 | 460+80.00 | Median | Perimeter and Slope | 12 inch | 80.00 | |
| 6.0 | 460+00.00 | 461+70.00 | Left | Perimeter and Slope | 12 inch | 170.00 | |
| 7.0 | 464+00.00 | 467+10.00 | Median | Perimeter and Slope | 12 inch | 310.00 | |
| 8.0 | 465+30.00 | 467+10.00 | Left | Perimeter and Slope | 12 inch | 180.00 | |
| **Total:** | | | | | | **1700** | |

# LONGITUDINAL GROOVING

| Line No. | Location | Total (SY) | Remarks |
|---|---|---|---|
| 1.0 | 458+50.00 | 525.5 | Northbound Approach |
| 2.0 | 462+06.89 | 2201.0 | Northbound Bridge |
| 3.0 | 464+08.87 | 817.8 | Northbound Approach |
| 4.0 | 460+14.85 | 508.9 | Southbound Approach |
| 5.0 | 462+06.89 | 2184.9 | Southbound Bridge |
| 6.0 | 525+87.53 | 828.0 | Southbound Approach |
| **Total:** | | **7066.1** | |

# 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 | Scott | US-61 | | 123.02 | 127.55 | 2022 | M | MP-061-6(724)123--76-82 | PCC | | | | | | | | | | | | PCC patching |
| 2.0 | | | | | | 2019 | M | MP-061-6(721)122--76-82 | | | | | | | | | | | | | HMA crack filling |
| 3.0 | | | | | | 2018 | M | MP-061-6(719)123--76-82 | PCC | | | | | | | | | | | | PCC patching |
| 4.0 | | | | | | 2005 | | NHSN-61-5(129)--2R-82 | AAC | 1.5 | AAC | 1.5 | AAC | 2.0 | | | MCCAUSLAND | C.LST. | | | |
| 5.0 | | | | | | 1983 | | FFD-561-1(6)--2N-82 | PCC | 9.5 | CTB | 4.0 | | | | | MCCAUSLAND | C.LST. | I | | |

# SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

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 | 462+06.89 | SE | 135.0 | DR-402 | | | | 1.500 | 143.1 | 94.500 | Northbound Bridge |
| 2.0 | 462+06.89 | SW | 35.0 | DR-402 | | | | 1.500 | 34.5 | 18.000 | Northbound Bridge |
| 3.0 | 462+06.89 | SE | 95.0 | DR-402 | | | | 1.500 | 34.5 | 18.000 | Southbound Bridge |
| 4.0 | 462+06.89 | SW | 15.0 | DR-402 | | | | 1.500 | 143.1 | 94.500 | Southbound Bridge |

# STANDARDS

The following Standards apply to construction work on this project.

| Number | Date | Title |
|---|---|---|
| BA-200 | 4/21/2026 | Steel Beam Guardrail Components |
| BA-201 | 10/18/2022 | Steel Beam Guardrail Barrier Transition Section (MASH TL-3) |
| BA-202 | 4/15/2025 | Steel Beam Guardrail Bolted End Anchor |
| BA-205 | 10/17/2023 | Steel Beam Guardrail Tangent End Terminal (MASH TL-3) |
| BA-209 | 10/15/2024 | Steel Beam Guardrail Barrier Transition Section (Mash Tl-3, 34in Mounting Height) |
| BA-250 | 10/21/2025 | Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3) |
| BR-203 | 4/21/2026 | Double Reinforced 12in Approach |
| BR-211 | 4/21/2026 | Bridge Approach (Abutting PCC or Composite Pavement) |
| DR-306 | 10/17/2023 | Precast Concrete Headwall for Subdrain Outlets |
| DR-402 | 4/16/2024 | Rock Flume for Bridge End Drain |
| EC-204 | 10/19/2021 | Perimeter, Slope and Ditch Check Sediment Control Devices |
| EC-502 | 4/21/2015 | Seeding in Rural Areas |
| LI-104 | 10-21-14 | Junction box (cast Iron) |
| PM-110 | 10/15/2024 | Line Types |
| PM-310 | 4/15/2025 | Entrance and Exit Ramps |
| PV-101 | 10/21/2025 | Joints |
| PV-102 | 10/21/2025 | PCC Curb Details |
| PV-12 | 4/16/2024 | Milled Shoulder Rumble Strips |
| SI-172 | 4/19/2016 | Delineators |
| SI-173 | 4/19/2016 | Object Markers |
| SI-211 | 10/18/2022 | Object Marker and Delineator Placement with Guardrail |
| TC-1 | 10/15/2019 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) |

# STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

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

| Line No. | Direction of Travel (1) | Side | Station | Offset (FT) | Barrier Transition Section | Barrier Transition Section (EA) | End Terminal | End Terminal Count (EA) | VT1 (LF) | VF (LF) | VT2 (LF) | ET (LF) | SI-211 (Type) (2) | Delineator SI-172 Type 1 (EA) (2) | Object Marker Type 2 (EA) (2) | Object Marker Type 3 Lt (EA)(2) | Object Marker Type 3 Rt (EA)(2) | Bolted End Anchor BA-202 (Type) | Bolted End Anchor BA-202 (EA) | Post Adapter BA-210 (EA) | Steel Beam Guardrail BA-200 (LF) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | NB | Outside | 458+89.09 | 80.9 | BA-209 | 1 | BA-205 | 1 | 203.125 | | | 47.70 | 2 | | 8 | | 1 | D | 1 | | 162.5 | 34" Mounting Height |
| 2.0 | NB | Median | 459+88.00 | 25.6 | BA-209 | 1 | BA-205 | 1 | 203.125 | | | 47.70 | 3 | | | 1 | | D | 1 | | 162.5 | 34" Mounting Height |
| 3.0 | NB | Outside | 462+53.54 | 93.5 | BA-209 | 1 | BA-205 | 1 | 103.125 | | | 47.70 | 2 | | 5 | 1 | | D | 1 | | 62.5 | 34" Mounting Height |
| 4.0 | NB | Median | 463+70.00 | 25.5 | BA-209 | 1 | BA-205 | 1 | 53.125 | | | 47.70 | 2 | | 5 | | 1 | D | 1 | | 12.5 | 34" Mounting Height |
| 5.0 | SB | Median | 464+36.97 | 25.6 | BA-209 | 1 | BA-205 | 1 | 203.125 | | | 47.70 | 2 | | 8 | 1 | | D | 1 | | 162.5 | 34" Mounting Height |
| 6.0 | SB | Outside | 465+60.06 | 96.9 | BA-209 | 1 | BA-205 | 1 | 78.125 | | | 47.70 | 3 | | | | 1 | D | 1 | | 37.5 | 34" Mounting Height |
| 7.0 | SB | Median | 460+53.77 | 25.5 | BA-201 | 1 | BA-205 | 1 | 53.125 | | | 47.70 | 2 | | 3 | | 1 | C | 1 | | 12.5 | Temp. for Stage 2 |
| **Total:** | | | | | | **7** | | **7** | | | | | | | | | | | **7** | | **612.5** | |

# PAVEMENT MARKING LINE TYPES

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

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

| Line No. | Road ID | Station From | Station To | Lane | Marking Type | Left | Center | Right | Groove Marking Needed? | Groove Qty. (STA) | BLW6 (STA) | BLW6 Factored (STA) | CHW10 (STA) | CHW10 Factored (STA) | ELW6 (STA) | ELW6 Factored (STA) | ELY6 (STA) | ELY6 Factored (STA) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | US 61 NB | 458+51.00 | 464+08.33 | | Waterborne/Solvent Paint | X | X | X | Yes | 13.93 | 11.14 | 2.79 | | | 5.57 | 5.57 | 5.57 | 5.57 | |
| 2.0 | US 61 NB | 461+62.22 | 464+08.33 | | Waterborne/Solvent Paint | | X | | Yes | 8.22 | | | 4.92 | 8.22 | | | | | |
| 3.0 | US 61 SB | 460+14.85 | 465+95.00 | | Waterborne/Solvent Paint | X | X | X | Yes | 14.50 | 11.60 | 2.90 | | | 5.80 | 5.80 | 5.80 | 5.80 | |
| 4.0 | US 61 SB | 461+49.84 | 465+95.00 | | Waterborne/Solvent Paint | | X | | Yes | 14.86 | | | 8.90 | 14.86 | | | | | |
| **Total:** | | | | | | | | | | **51.51** | | **5.69** | | **23.08** | | **11.37** | | **11.37** | |

# REMOVAL OF PAVEMENT

Refer to Tabulation 102-5.

* Not a bid item.

| Line No. | Station From | Station To | Side | Pavement Type | Area (SY) | Saw Cut* (LF) | Remarks |
|---|---|---|---|---|---|---|---|
| 1.0 | 456+19.00 | 458+50.00 | Right | PCC/HMA | 102.9 | 240.0 | NB, South Approach Shoulder |
| 2.0 | 457+18.00 | 458+51.00 | Left | PCC/HMA | 59.2 | 143.3 | NB, South Approach Shoulder |
| 3.0 | 458+50.00 | 460+00.00 | | PCC/HMA | 680.3 | 158.0 | NB, South Approach |
| 4.0 | 462+42.00 | 464+09.17 | | PCC/HMA | 969.7 | 203.1 | NB, North Approach |
| 5.0 | 464+07.08 | 464+23.77 | Right | PCC/HMA | 7.3 | 26.4 | NB, North Approach Shoulder |
| 6.0 | 464+08.92 | 464+89.86 | Left | PCC/HMA | 36.0 | 91.0 | NB, North Approach Shoulder |
| 7.0 | 459+54.48 | 460+15.00 | Left | PCC/HMA | 26.8 | 68.3 | SB, South Approach Shoulder |
| 8.0 | 460+15.00 | 461+61.10 | | PCC/HMA | 650.6 | 258.3 | SB, South Approach |
| 9.0 | 464+25.00 | 465+95.00 | | PCC/HMA | 942.4 | 319.1 | SB, North Approach |
| 10.0 | 465+95.00 | 467+07.00 | Left | PCC/HMA | 49.8 | 116.0 | SB, North Approach Shoulder |
| 11.0 | 465+95.00 | 467+05.24 | Right | PCC/HMA | 49.1 | 114.5 | SB, North Approach Shoulder |
| **Total:** | | | | | **3574.1** | **1738** | |

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 | | NB | 456+50.00 | 458+80.00 | Right | 230.0 |
| 2.0 | | NB | 457+40.00 | 459+60.00 | Median | 220.0 |
| 3.0 | | NB | 462+50.00 | 464+10.00 | Right | 160.0 |
| 4.0 | | NB | 463+60.00 | 464+40.00 | Median | 80.0 |
| 5.0 | | SB | 464+40.00 | 466+65.00 | Median | 225.0 |
| 6.0 | | SB | 465+50.00 | 466+70.00 | Left | 120.0 |
| 7.0 | | SB | 459+50.00 | 460+50.00 | Median | 100.0 |
| **Total:** | | | | | | **1135** |

# BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

| Line No. | Bridge Station | End | Skew Ahead Left (Degrees) | Skew Ahead Right (Degrees) | (T) Thickness (IN) | Pay Length (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) | Class 'A' * Crushed Stone Backfill (CY) | Modified * Subbase (TON) | Polymer * Grid (SY) | Special * Backfill (TON) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 462+06.98 | S | 57.0 | | 12.0 | | 190.6 | 126.4 | 363.3 | BR-203 | Fixed | BR-211 | 70.0 | 458+61.50 | Median | 1.8 | | 672.304 | 711.4 | | North Bound Approach |
| 2.0 | 462+06.98 | N | 57.0 | | 12.0 | | 264.8 | 168.7 | 536.1 | BR-203 | Fixed | BR-211 | 100.0 | 463+96.60 | Right | 2.6 | | 945.620 | 1000.7 | | North Bound Approach |
| 3.0 | 462+06.98 | S | 57.0 | | 12.0 | | 187.2 | 123.6 | 339.7 | BR-203 | Fixed | BR-211 | 70.0 | 460+25.80 | Left | 1.8 | | 644.059 | 681.5 | | South Bound Approach |
| 4.0 | 462+06.98 | N | 57.0 | | 12.0 | | 250.0 | 160.0 | 532.4 | BR-203 | Fixed | BR-211 | 90.0 | 465+85.00 | Median | 2.3 | | 920.000 | 973.5 | | South Bound Approach |
| **Total:** | | | | | | | **892.6** | **578.7** | **1771.5** | | | | **330** | | | **8.5** | | **3181.983** | **3367.1** | | |

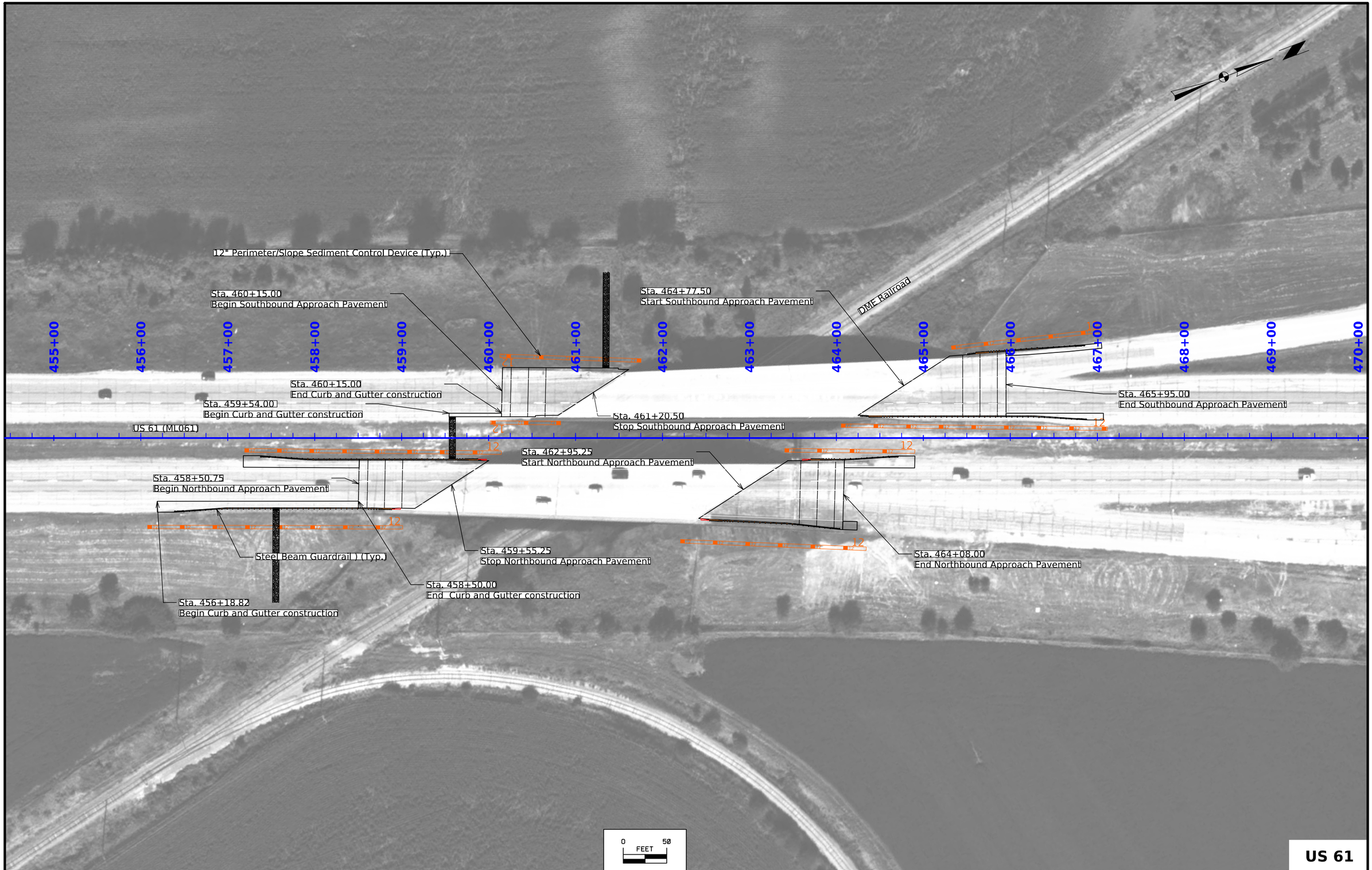
BR-203 Total = 3242.78 SY

# 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 Grdrail (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 Scarification (SY) | Polymer Grid (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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US 61 | NB | 456+20.00 | 456+40.00 | Right | 6 | 6.6 | | 20.00 | 12.4 | | | | 13.3 | 14.7 | | | | 10.231 | 51.156 | | | | | | 0.20 | 9.20 | 9.20 | |
| | NB | 456+40.00 | 457+00.00 | Right | 6 | 4.5 | | 60.00 | 31.3 | | | | 40.0 | 30.3 | | | | 25.700 | 42.833 | | | | | | 0.60 | 27.60 | 27.60 | |
| | NB | 457+00.00 | 458+50.00 | Right | 6 | 2.5 | | 150.00 | 63.0 | | | | 100.0 | 41.7 | | | | 51.765 | 34.510 | | | | | | 1.50 | 68.90 | 68.90 | |
| | NB | 457+20.00 | 457+40.00 | Left | 10 | 3.4 | | 20.00 | 13.2 | 14.980 | 74.902 | 0.899 | 22.2 | 7.6 | | 9.380 | 46.900 | 10.881 | 54.404 | | | | | | 0.20 | 9.20 | 9.20 | |
| | NB | 457+40.00 | 458+00.00 | Left | 10 | 1.7 | | 60.00 | 34.7 | 39.395 | 65.658 | 2.364 | 66.7 | 11.3 | | 24.570 | 40.950 | 28.501 | 47.502 | | | | | | 0.60 | 27.60 | 27.60 | |
| | NB | 458+00.00 | 458+51.00 | Left | 10 | | | 51.00 | 25.2 | 28.771 | 56.414 | 1.726 | 56.7 | | | 17.850 | 35.000 | 20.706 | 40.600 | | | | | | 0.51 | 23.40 | 23.40 | |
| | NB | 464+08.00 | 464+24.00 | Right | 9 | 0.6 | | 16.00 | 7.6 | 8.678 | 54.239 | 0.521 | 16.0 | 1.1 | | 5.376 | 33.600 | 6.236 | 38.976 | | | | | | 0.16 | 7.30 | 7.30 | |
| | NB | 464+08.00 | 464+69.00 | Left | 10 | 1.8 | | 61.00 | 35.8 | 40.715 | 66.745 | 2.443 | 67.8 | 12.9 | | 25.407 | 41.650 | 29.472 | 48.314 | | | | | | 0.61 | 28.00 | 28.00 | |
| | NB | 464+69.00 | 464+89.00 | Left | 10 | 3.8 | | 20.00 | 13.6 | 15.415 | 77.077 | 0.925 | 22.2 | 8.4 | | 9.660 | 48.300 | 11.206 | 56.028 | | | | | | 0.20 | 9.20 | 9.20 | |
| | SB | 459+54.00 | 460+15.00 | Left | 4 | | | 61.00 | 12.0 | | | | 27.1 | | | | | 9.906 | 16.240 | | | | | | 0.61 | 28.00 | 28.00 | |
| | SB | 465+95.00 | 467+00.00 | Left | 4 | 1.85 | | 105.00 | 30.3 | 35.541 | 33.848 | 2.132 | 46.7 | 21.6 | | 21.499 | 20.475 | 24.939 | 23.751 | | | | | | 1.05 | 48.20 | 48.20 | |
| | SB | 465+95.00 | 467+05.00 | Right | 6 | 6 | | 110.00 | 65.2 | 74.018 | 67.289 | 4.441 | 73.3 | 73.3 | | 46.200 | 42.000 | 53.592 | 48.720 | | | | | | 1.10 | 50.50 | 50.50 | |
| **Total:** | | | | | | | | | **344.3** | **257.513** | | **15.451** | **552** | **222.9** | | **159.942** | | **283.135** | | | | | | | **7.34** | | | |

PAVED SHOULDER, PCC = 267.1 SY
PAVED SHOULDER, HMA/PCC Alternatives = 507.8 SY




US 61

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER D.1 |
|---|---|---|---|---|---|

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8/15/22

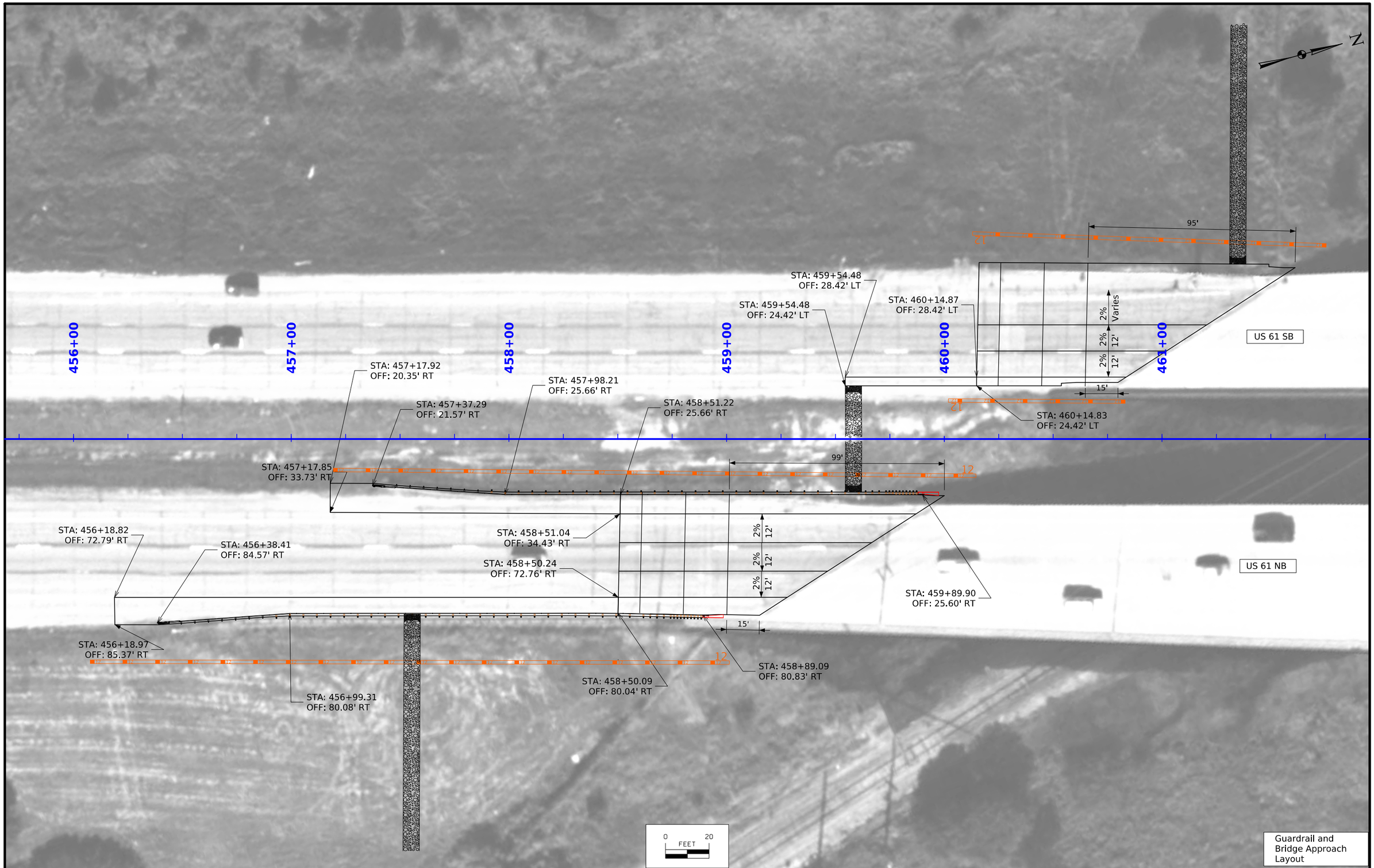
# TRAFFIC CONTROL PLAN

Refer to J Sheets in Project BRF-061-5(157)--38-82 for staging.

# 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 |
|---|---|
| BRF-061-5(151)--38-82 | Bridge Deck Overlay |
| BRF-061-5(152)--38-82 | Bridge Deck Overlay |
| BRF-061-5(153)--38-82 | Bridge Deck Replacement |
| MB-061-6(510)123--77-82 | Bridge Repair |
| NHSX-061-5(156)--3H-82 | HMA Resurfacing |
| BRF-061-5(147)--38-82 | Bridge Deck Replacement |
| NHSX-061-5(154)--3H-82 | PCC Pavement - Replace |
| MP-061-6(732)123--76-82 | PCC Patching |




Guardrail and Bridge Approach Layout

| FILE NO. 32568 | ENGLISH | DESIGN TEAM Stanley Consultants Inc. | SCOTT COUNTY | PROJECT NUMBER BRF-061-5(153)--38-82 | SHEET NUMBER U.1 |
|---|---|---|---|---|---|

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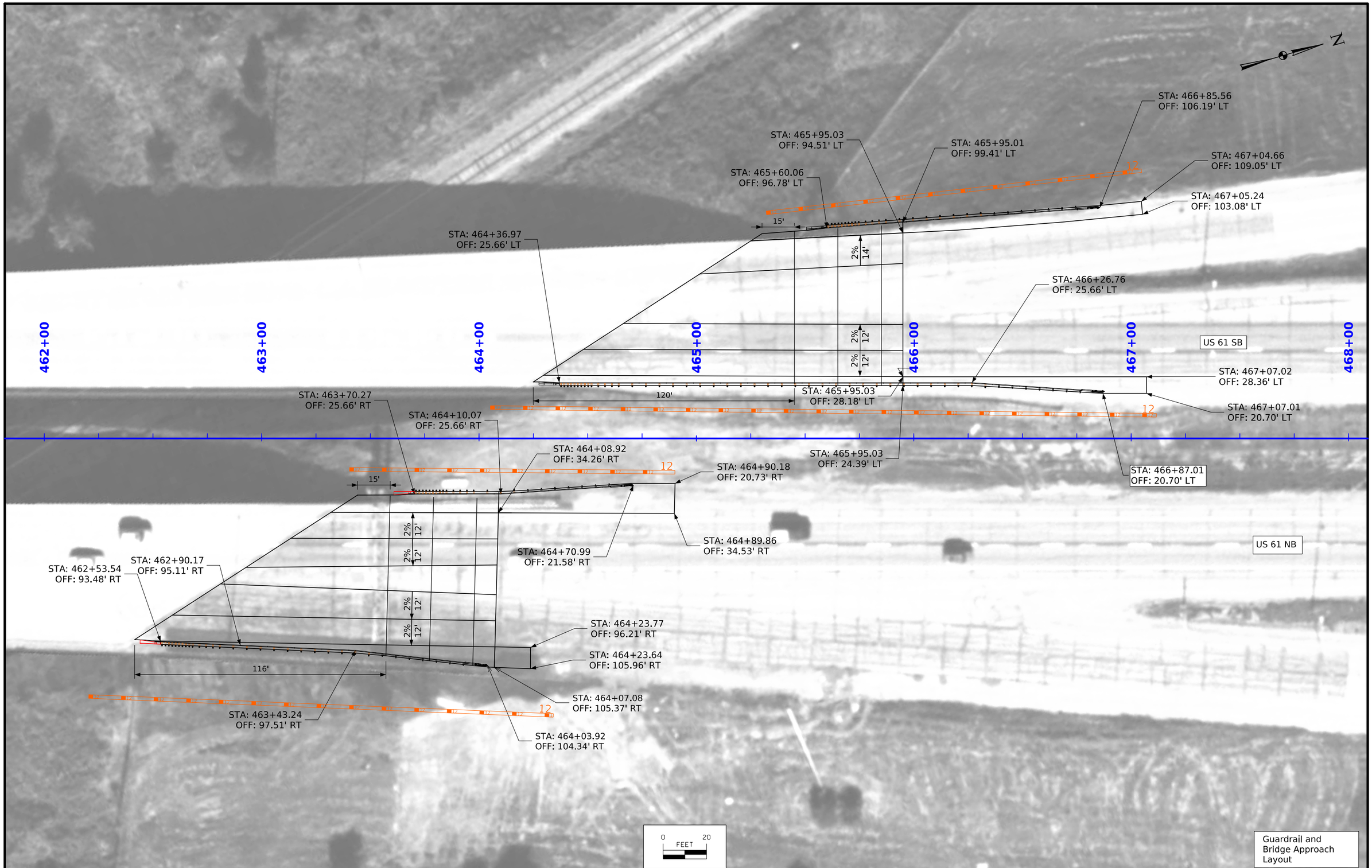


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