

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

FOR BIDDING PURPOSES ONLY

PLANS FOR PROPOSED  
**PROJECT IM 0291(143)12**  
**INTERSTATE 29**  
**AT PORT OF ENTRY**  
**UNION COUNTY**  
WEIGH SCALE RESTORATION & SCALE PIT REPAIR  
PCN 0A45

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(143)12	1	14
Plotting Date: 9/12/2025		Rev. 9/16/2025 JDL	

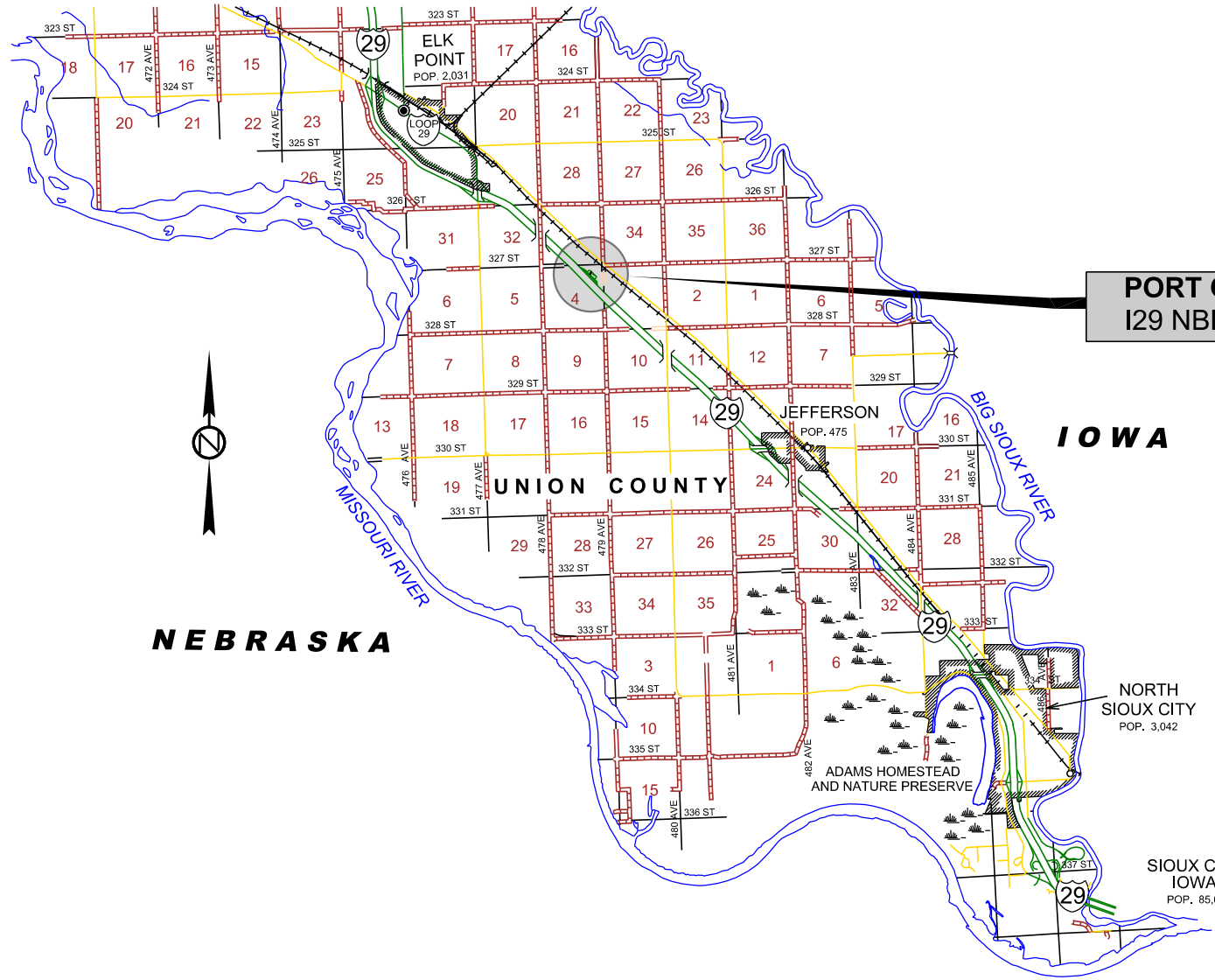
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PROJECT



DESIGN DESIGNATION  
ADT (2025) 7,845  
ADT (2045) 12,913  
T ADT 35.6%  
V (Posted) 80 MPH

STORM WATER PERMIT  
(None Required)



PORT OF ENTRY (WEIGH STATION)  
I29 NBL MRM 13.00+0.473

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
110E1100	Remove Concrete Pavement	29.1	SqYd
250E0020	Incidental Work, Grading	Lump Sum	LS
260E1010	Base Course	11.2	Ton
420E0400	Structure Excavation, Miscellaneous	5.9	CuYd
460E0100	Class A45 Concrete, Miscellaneous	8.5	CuYd
460E0300	Breakout Structural Concrete	2.0	CuYd
460E0380	Install Dowel in Concrete	93	Each
480E0200	Epoxy Coated Reinforcing Steel	972	Lb
634E0110	Traffic Control Signs	104.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	4	Each
634E0420	Type C Advance Warning Arrow Board	1	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges is available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications>.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor’s primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT’s Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf> >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at: <https://sdleastwanted.sd.gov/maps/default.aspx> >

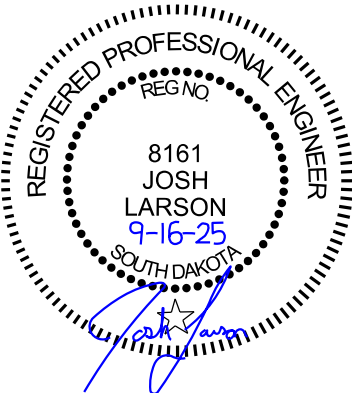
< [South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04): <https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04> >

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.



FOR BIDDING PURPOSES ONLY

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COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

- Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, “No Dumping Allowed”.
- Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06. Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SCOPE OF WORK

Work on this project involves remove for reset of the existing northmost static scale, Removal of Reinforced Concrete Approach Slab and the north end wall of the static scale pit, placement of Reinforced Concrete Approach Slab, repair north end wall of the static scale pit, and reset static scale.

SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

The interstate will remain open to traffic at all times. Closure of static scale and work area will be responsibility of the Contractor with coordination of Motor Carrier staff.

- 1. Install construction signing as needed.
- 2. Disconnect static scale equipment and remove for reset north end static scale.
- 3. Saw cut and remove approach slab pavement and excavation adjacent to scale pit.
- 4. Repair scale pit.
- 5. Place Approach Slab.
- 6. Reset static scale.
- 7. Restore any disturbed areas.
- 8. Confirm the static scale operates properly and meets all required certifications. The static scale must meet the manufactures specifications on allowable movement prior to static scale being placed in service.
- 9. Remove construction signing and traffic control.

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GENERAL TRAFFIC CONTROL

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

A Type 3 Barricade will be installed as detailed in the standard plates.

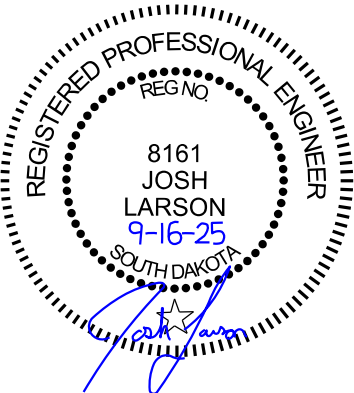
Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

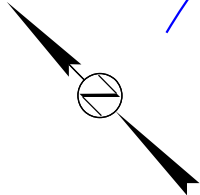
INCIDENTAL WORK, GRADING

Station	Remarks
North end of static scale	Remove Static Scale for Reset, and Reset Static Scale

WATER FOR COMPACTION

The cost of water for compaction of the granular material will be incidental to the various other contract items. A minimum of 4% moisture will be required at the time of compaction unless otherwise directed by the Engineer.





# TRAFFIC CONTROL

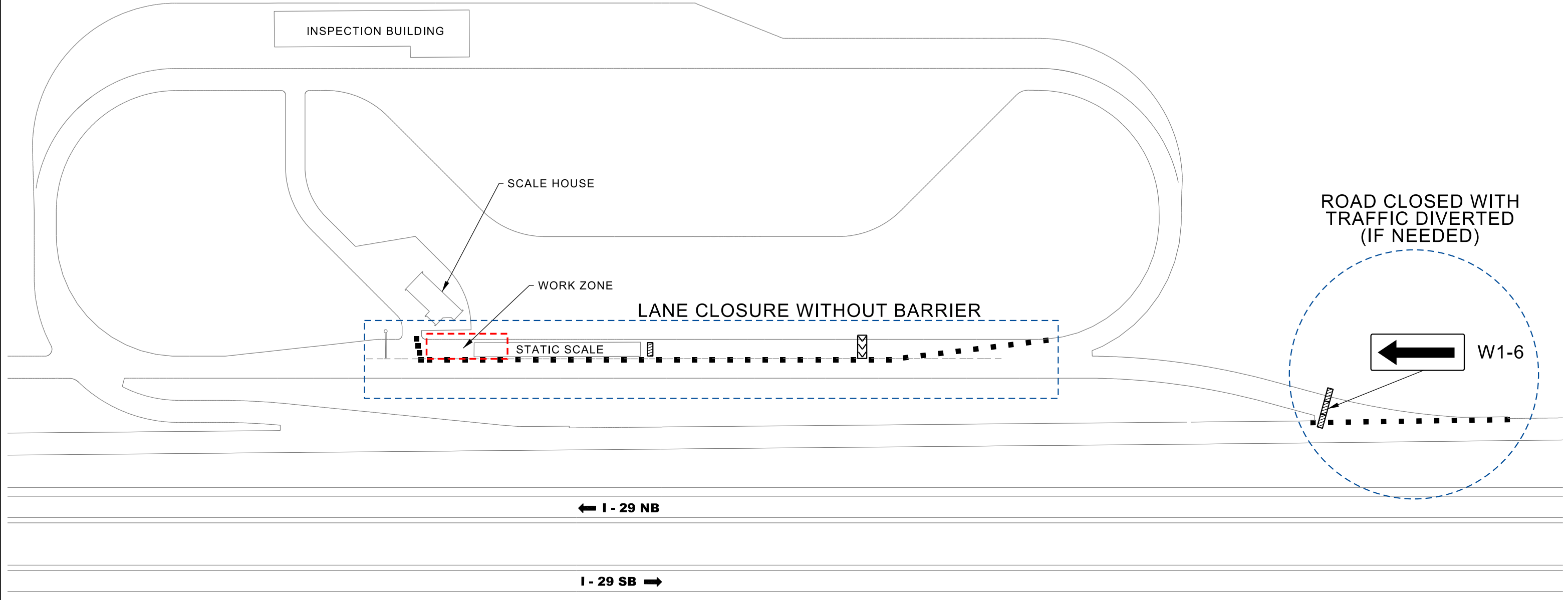
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(143)12	4	14

Plotting Date: 9/12/2025

## ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

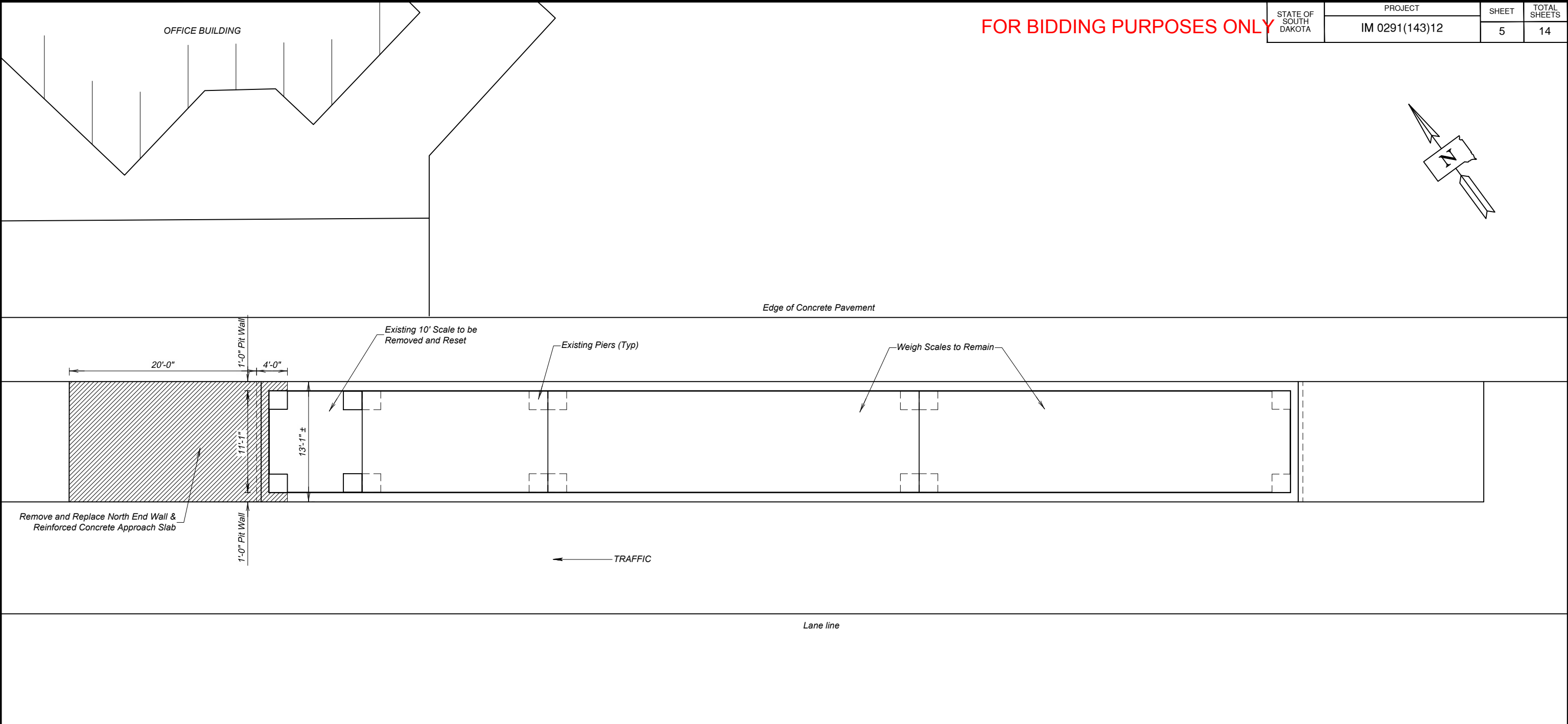
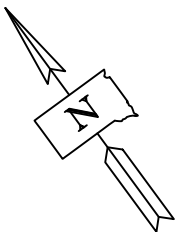
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-6	LARGE ARROW (one direction)	1	48" x 24"	8.0	8.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W20-1	ROAD WORK AHEAD	3	48" x 48"	16.0	48.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		104.0			





FOR BIDDING PURPOSES ONLY

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**INDEX OF STRUCTURE SHEETS-**

- Sheet No. 1 - General Drawing
- Sheet No. 2 - Estimate of Structure Quantities and Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Details of Removal
- Sheet No. 5 - Weigh Scale Pit Repair Details (A)
- Sheet No. 6 - Weigh Scale Pit Repair Details (B)
- Sheet No. 7 - Angle Assembly
- Sheet No. 8 - Standard Plate No. 380.15
- Sheet No. 9 - Standard Plate No. 380.20

**PLAN**



PLANS BY: ULTEIG ENGINEERS, INC.

**GENERAL DRAWING**  
FOR  
**PORT OF ENTRY SCALE PIT REPAIR**  
11'-0" ROADWAY  
JEFFERSON POE SCALE  
PCN 0A45  
0° SKEW  
SEC. 04-T90N-R49W  
IM 0291(143)12  
HL-93  
UNION COUNTY  
S. D. DEPT. OF TRANSPORTATION  
SEPTEMBER 2025  
1 OF 9

DESIGNED BY CMM	CK. DES. BY MTH	DRAFTED BY TCM	BRIDGE ENGINEER
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ESTIMATE OF STRUCTURE QUANTITIES

BID ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	29.1	SqYd
260E1010	Base Course	11.2	Tons
420E0400	Structure Excavation, Miscellaneous	5.9	CuYd
460E0100	Class A45 Concrete, Miscellaneous	8.5	CuYd
460E0300	Breakout Structural Concrete	2.0	CuYd
460E0380	Install Dowel in Concrete	93	Each
480E0200	Epoxy Coated Reinforcing Steel	972	Lb

SPECIFICATIONS

- Design Specifications: AASHTO LRFD Bridge Design Specifications, 9<sup>th</sup> Edition (2020).
- Construction Specifications: Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges is available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications>.
- All Welding and Welding Inspection will be in conformance with the AASHTO/AWS Bridge Welding Code D1.5M/D1.5:2010 unless otherwise noted in this plan set.

SCOPE OF WORK & SEQUENCE OF OPERATIONS

- Remove the existing northernmost scale. The bearings are damaged and require repair by the manufacturer. The Contractor will coordinate with scale manufacturer for transport/staging of the scale for the manufacturer to perform repairs. Any additional damage to scale caused by the Contractor during the removal or reset of the scale will require repair to be paid for by the Contractor.
- Repair the North End Wall of the Scale Pit as shown in the plan details.
- Reset the scale in place.

DETAILS AND DIMENSIONS OF EXISTING SCALE

All details and dimensions of the existing structure, contained in these plans, are based on the prior construction plans and shop plans. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary dimensions affecting the satisfactory completion of the work required for this project.

DESIGN LOADING

AASHTO HL-93.

DESIGN MATERIAL STRENGTHS

Class A45 Concrete  
Reinforcing Steel (ASTM A615, Gr. 60)  
Angle Iron (ASTM A36)

$f'_c = 4,500$  psi  
 $f_y = 60,000$  psi  
 $f_y = 36,000$  psi

DESIGN MIX OF CONCRETE

- All structural concrete will be Class A45 unless otherwise indicated.
- Type IL cement is required.

GENERAL CONSTRUCTION

- All lap splices shown are contact lap splices unless noted otherwise.
- All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise.
- Use 2-inch clear cover on all reinforcing steel except as shown.
- Requests for construction joints or reinforcing steel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.
- Surfaces of fresh concrete at construction joints will be rough floated sufficiently to consolidate the surface. All construction joints will be cleaned of surface laitance, curing compounds, and other foreign materials prior to placing fresh concrete against the joint.
- Approach slab smoothness will conform to Section 460.L.4.
- The Base Course gradation will be in accordance with Section 882 along the North wall of the Scale pit. Compaction will be per Section 260.3.B to the satisfaction of the Engineer.

EXISTING REINFORCEMENT

The condition of the existing reinforcement within the existing pit walls and approach slab is unknown. See note "Concrete Breakout" for additional information.

SHOP PLANS

Shop plans will be required as specified by the Construction Specifications.

The fabricator will submit shop plans in accordance with the Construction Specifications. Send shop plan submittals to Matthew Henderson, Ulteig Engineers, Inc. 5575 DTC Parkway, Suite 200 Greenwood Village, CO 80111. ([matthew.henderson@ulteig.com](mailto:matthew.henderson@ulteig.com)). After review, corrections (if necessary), and approval by Ulteig Engineers, the Office of Bridge Design will review the submittals, authorize fabrication, arrange for fabrication inspection, and distribute the shop drawings.

CONCRETE BREAKOUT

The existing scale wall and approach slab will be broken out to the limits shown on the plans. Breakout limits will be defined with a ¾" deep sawcut (unless specified otherwise in these plans), where practical, as approved by the Engineer. Existing reinforcement will be removed flush with the top of the concrete breakout surface. The Contractor will coat the flush ends of the existing reinforcement in accordance with Section 480.3.A. Coating of the existing reinforcement is incidental to bid item "480E0200 – Epoxy Coated Reinforcing Steel".

All broken out concrete, discarded reinforcing bars, and angle devices will be disposed of by the Contractor. Any disposal of discarded material will be in accordance with the Environmental Commitments.

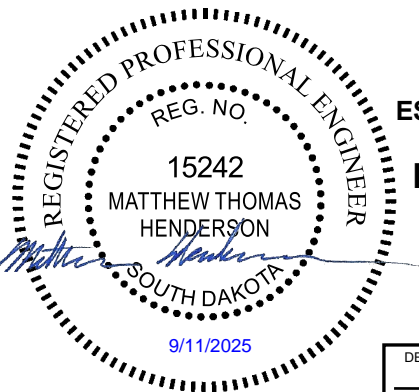
The contract unit price per cubic yard for "Breakout Structural Concrete" will include breaking out concrete, cleaning, cutting existing reinforcing steel, removal of the existing angle devices, and disposal of all broken out material.

ANGLE ASSEMBLY STRUCTURAL STEEL

- Structural steel will conform to ASTM A36. The Automatic End Welded Deformed Bar Anchor Studs will conform to ASTM A1064. The angle assembly complete in-place will be a continuous unit.
- Galvanize the Angle and any attachments after all welding is completed. Galvanizing in accordance with AASHTO M111 (ASTM A123). If welded splices are used subsequent to galvanizing, the weld details and the procedures for preparing the surface for welding and repairing the galvanizing after welding will be included with the shop plans. Repair of galvanizing will be by the zinc-based solder method in conformance with ASTM A780.I
- Welding will be in accordance with AWS D1.5 Welding Code – Steel.
- The cost of the angle assembly complete in-place, including fabrication, welding, and galvanizing will be incidental to the contract price per cubic yard for Class A45, Miscellaneous.

TEMPORARY SHORING

The Contractor will utilize temporary shoring to confine the limits of excavations on the West and East sides of the proposed slab to the plan limits of the approach without the need for additional side excavation. The temporary shoring is incidental to bid item "420E0400 - Structure Excavation, Miscellaneous".



ESTIMATE OF STRUCTURE QUANTITIES & NOTES  
FOR  
PORT OF ENTRY SCALE PIT REPAIR

JEFFERSON POE SCALE

SEPTEMBER 2025

2 OF 9

DESIGNED BY: CMM	DRAWN BY: CMM	CHECKED BY: MTH	BRIDGE ENGINEER
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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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INSTALLING DOWELS IN CONCRETE

- Holes drilled in the existing concrete will be true and normal or as shown in the plans. Drilling holes using a core drill will not be allowed. Care will be taken not to damage the existing reinforcing steel. It is likely that some of the existing reinforcing steel shown in the original construction plans may have been placed out of position during original construction. Therefore, prior to the start of drilling any holes in the concrete, an effort will be made by Department forces to mark on the concrete surface where practical any locations of the in-place reinforcing steel. In spite of this precaution, the Contractor can still expect to encounter and have to drill through reinforcing steel or shift the dowel spacing as approved by the Engineer to miss the existing reinforcing steel. If the Contractor shifts the dowel spacing, the unused drill holes will be completely filled with the epoxy resin as approved by the Engineer.
- The epoxy resin mixture will be of a type for bonding steel to hardened concrete, and will conform to AASHTO M235 Type IV, Grade 3 (Equivalent to ASTM C881, Type IV, Grade 3). Grade 1,2, or 3 may be used for vertical dowels and Grade 3 epoxy will be used for all horizontal dowels.
- The diameter of the drilled holes will not be less than 1/8-inch greater, nor more than 3/8-inch greater than the diameter of the dowels or as per the Manufacturer's recommendations. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.
- Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes 1/3 to 1/2 full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel bar. Care will be taken to prevent epoxy from running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping or painting method will not be allowed.
- No loads will be applied to the epoxy grouted dowel bars until the epoxy resin has had sufficient time to cure as specified by the epoxy resin manufacturer.
- Dowel bars will be deformed bars conforming to ASTM A615 Grade 60.
- The cost of epoxy resin, dowels, installation, and other incidental items will be incidental to the contract unit price per each for "Install Dowel in Concrete".



NOTES (CONTINUED)  
FOR  
PORT OF ENTRY SCALE PIT REPAIR

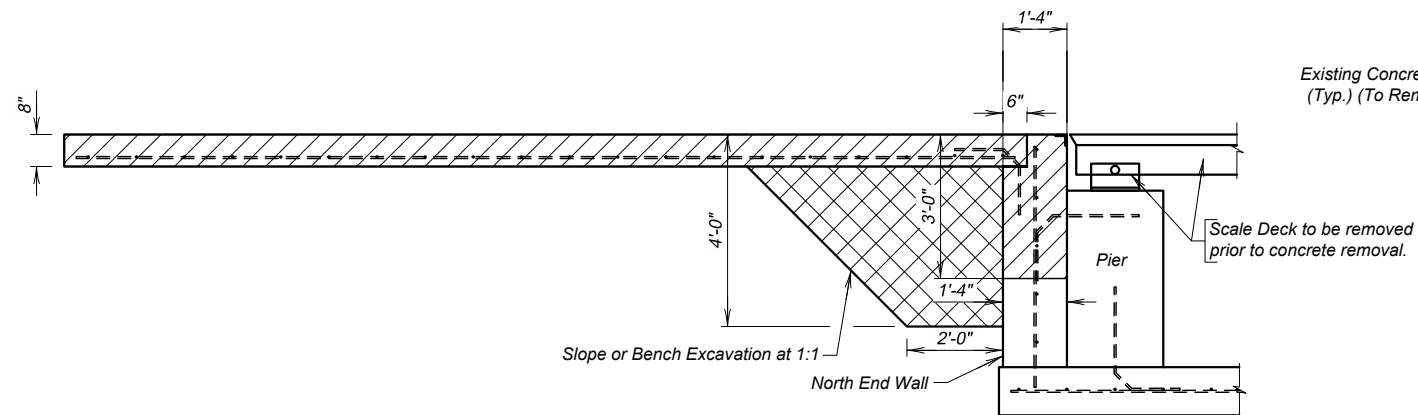
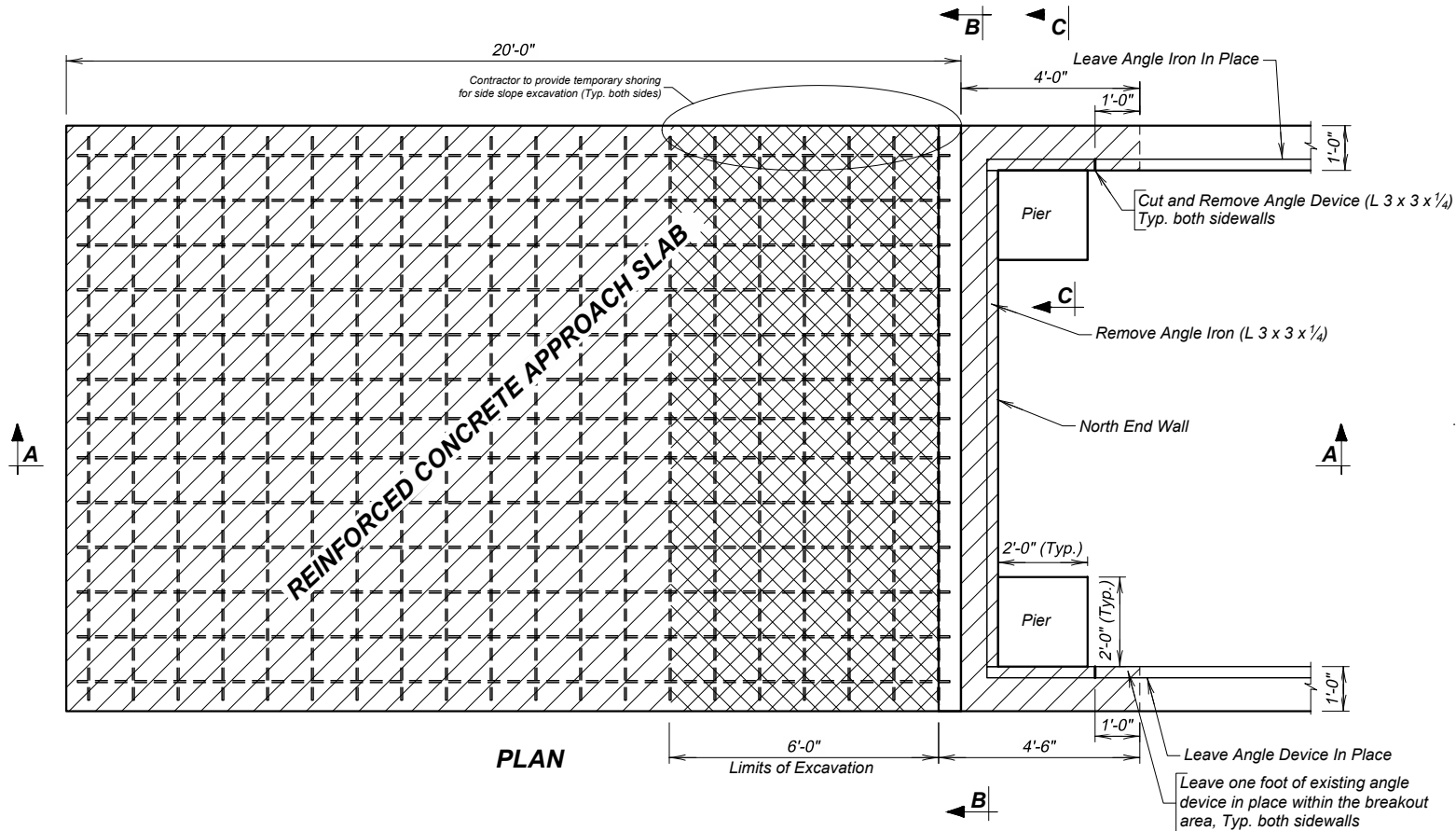
JEFFERSON POE SCALE

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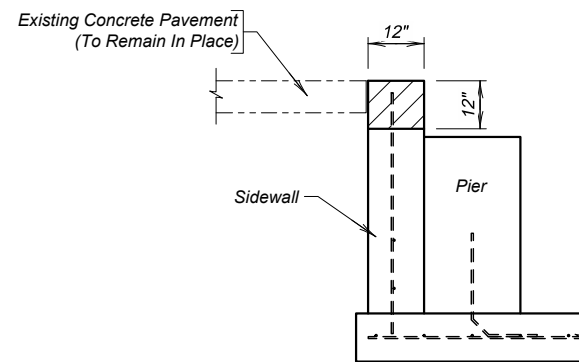
DESIGNED BY: CMM	DRAWN BY: CMM	CHECKED BY: MTH	BRIDGE ENGINEER
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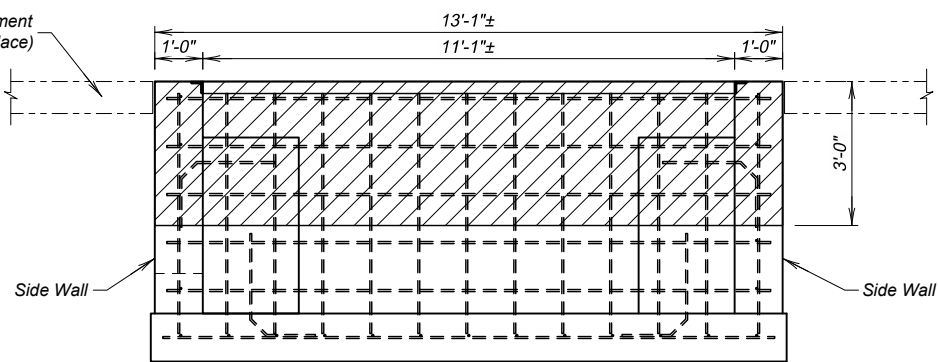
SECTION A-A



SECTION C-C

KEY:

- Breakout Structural Concrete (8.5 CY)
- Structure Excavation, Misc. (5.9 CY)
- Existing Reinforcing Steel (Reinforcing steel may differ than what is shown)



SECTION B-B

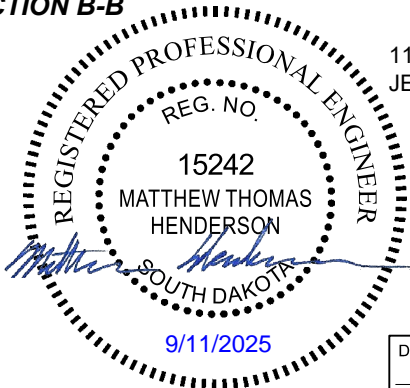
DETAILS OF REMOVAL

FOR

PORT OF ENTRY SCALE PIT REPAIR

11'-0" ROADWAY  
JEFFERSON POE SCALE

0° SKEW  
SEC. 04-T90N-R49W  
IM 0291(143)12  
HL-93



UNION COUNTY  
S. D. DEPT. OF TRANSPORTATION  
SEPTEMBER 2025

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DESIGNED BY CMM	CK. DES. BY MTH	DRAFTED BY TCM	BRIDGE ENGINEER
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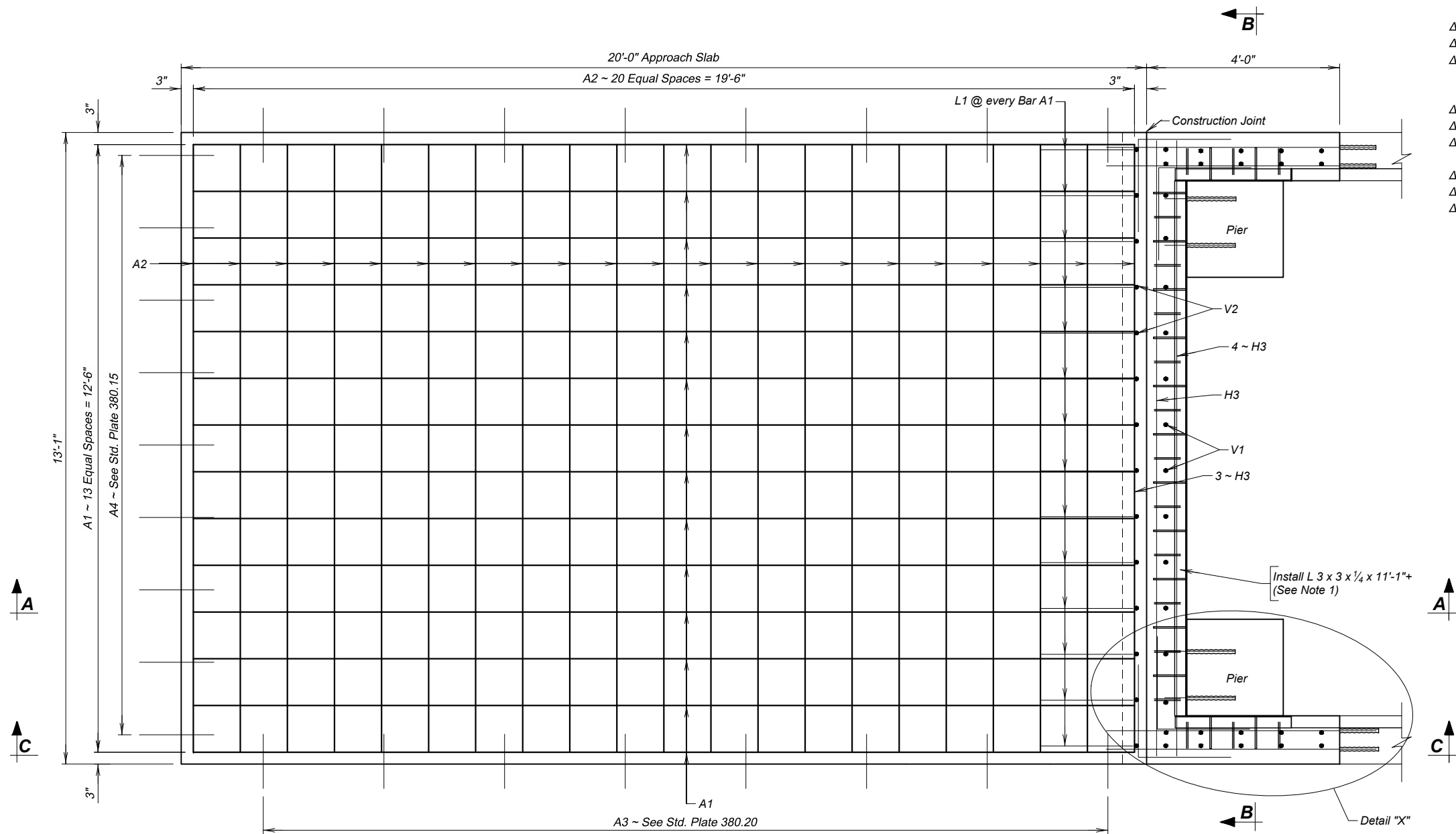
FOR BIDDING PURPOSES ONLY

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REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details	
A1	14	6	19'-6"	Str.		
A2	21	4	12'-7"	Str.		
A3	16	5	2'-0"	Str.		
A4	9	9	1'-6"	Str.		
H1	4	4	5'-7"	Str.		
H3	8	4	12'-7"	Str.		
L1	14	4	4'-5"	17A		
L2	4	4	4'-0"	17A		
L3	6	4	3'-1"	17A		
L4	6	4	3'-10"	17A		
L5	4	4	4'-0"	17A		
V1	16	4	3'-6"	Str.		
V2	16	4	2'-10"	Str.		
V3	16	4	1'-7"	Str.		

NOTES:  
Δ Dowels  
All Reinforcing Steel shall be epoxy coated.  
All Dimensions are out to out bars.



PLAN

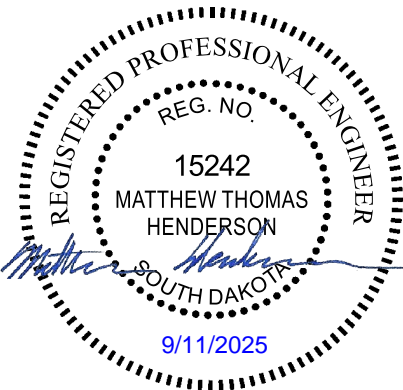
WEIGH SCALE PIT REPAIR DETAILS (A)

FOR

PORT OF ENTRY SCALE PIT REPAIR

11'-0" ROADWAY  
JEFFERSON POE SCALE

0° SKEW  
SEC. 04-T90N-R49W  
IM 0291(143)12  
HL-93



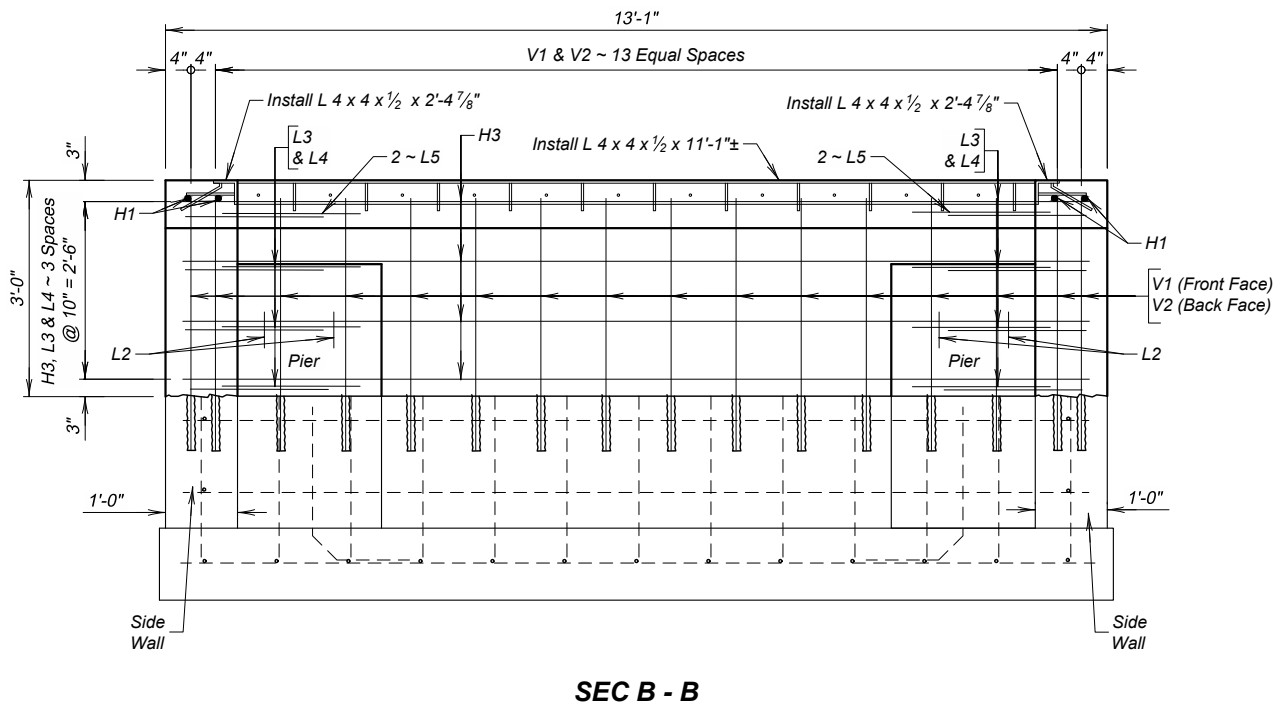
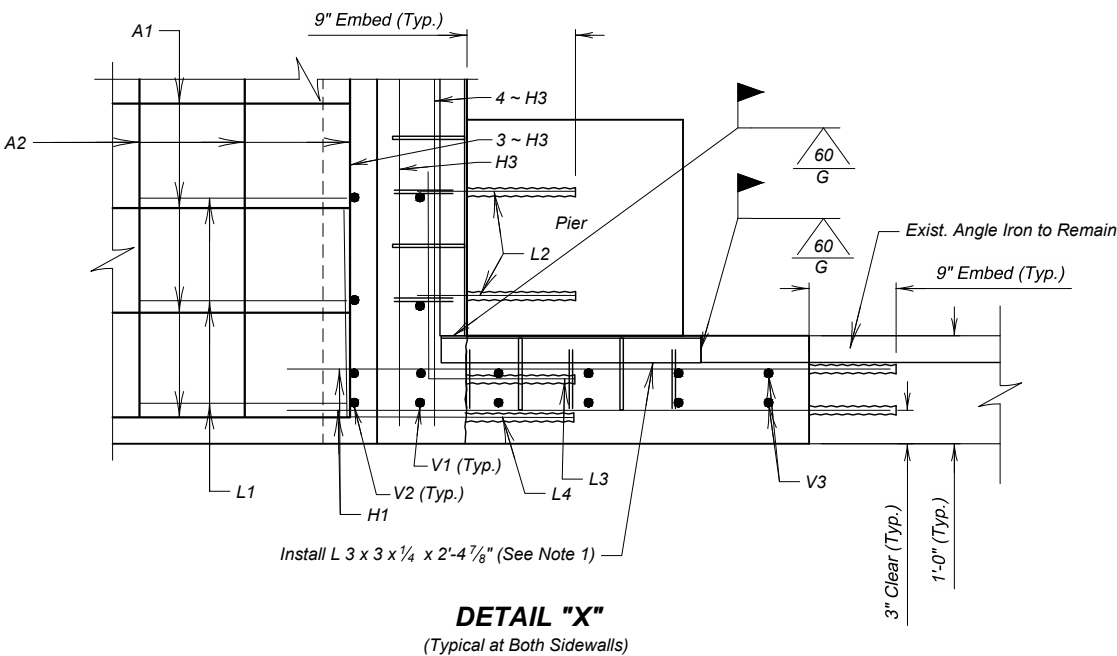
UNION COUNTY  
S. D. DEPT. OF TRANSPORTATION  
SEPTEMBER 2025

5 OF 9

DESIGNED BY CMM	CK. DES. BY MTH	DRAFTED BY TCM	BRIDGE ENGINEER
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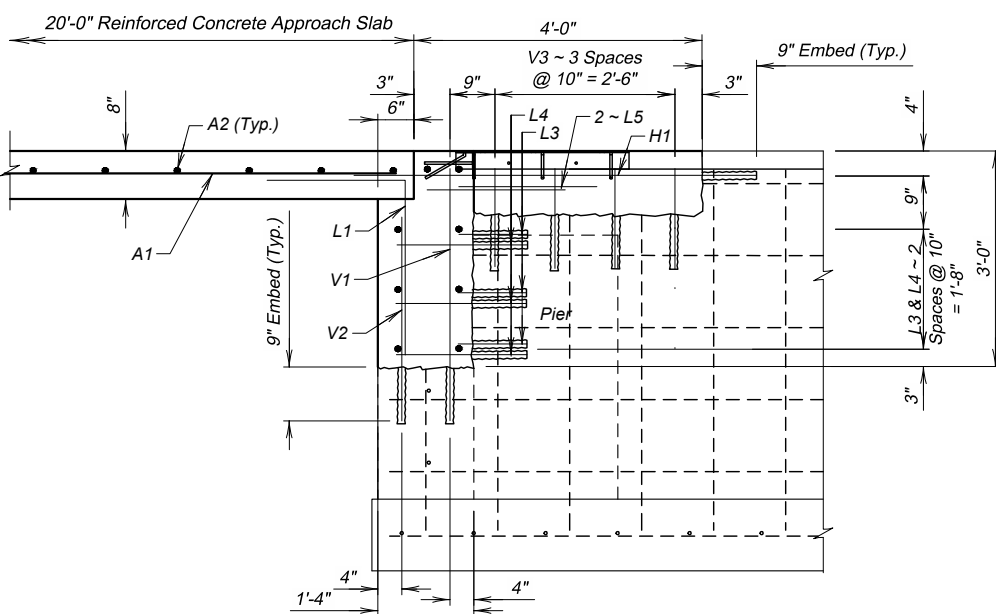
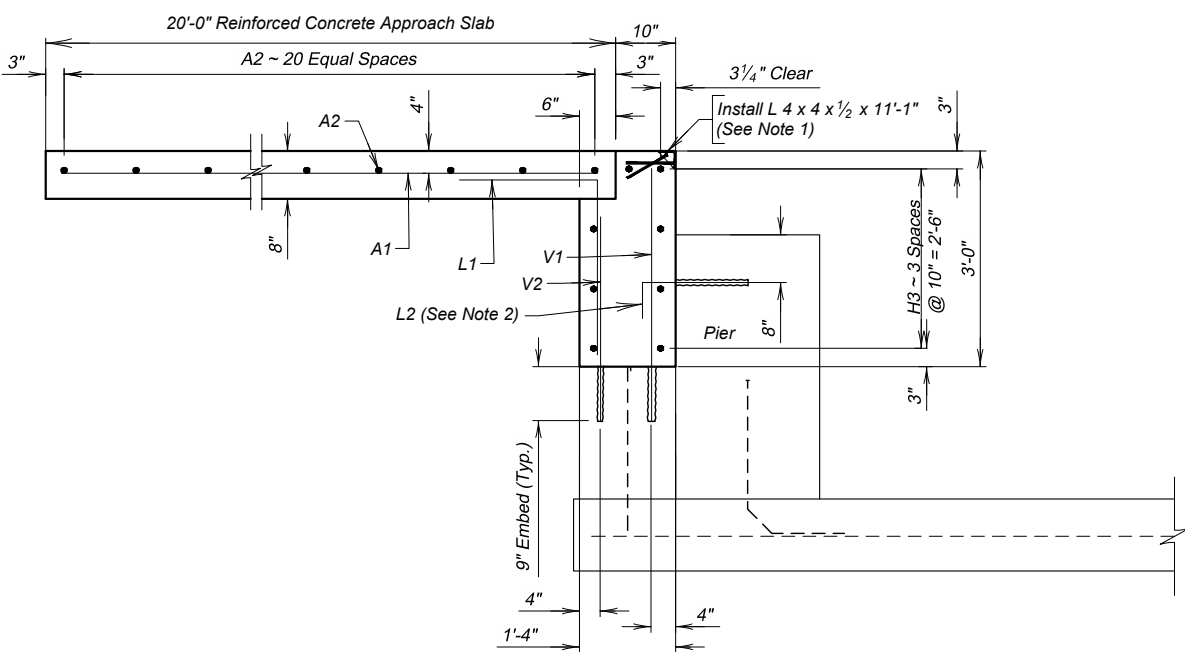
- NOTES:
- Field measure for exact length. See Angle Assembly Details Sheet.
  - Adjust location of embedment of Bars L2 as needed to avoid conflict with existing reinforcement to remain.
  - The approach slab will be poured separately from the scale pit wall, after the wall is cured.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(143)12	10	14



KEY:

- Existing Reinforcing Steel
- (Reinforcing Steel may differ than what is shown)



WEIGH SCALE PIT REPAIR DETAILS (B)  
FOR  
PORT OF ENTRY SCALE PIT REPAIR  
11'-0" ROADWAY 0° SKEW  
JEFFERSON POE SCALE SEC. 04-T90N-R49W  
IM 0291(143)12  
HL-93

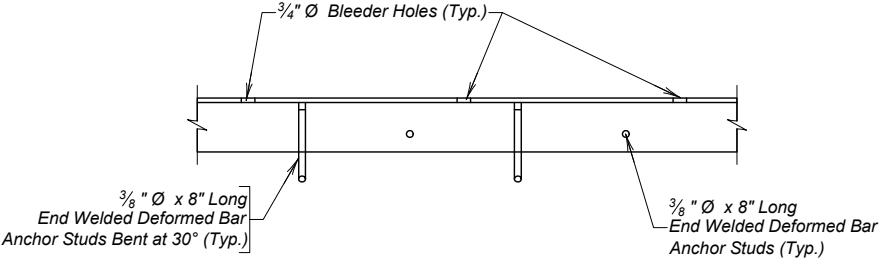
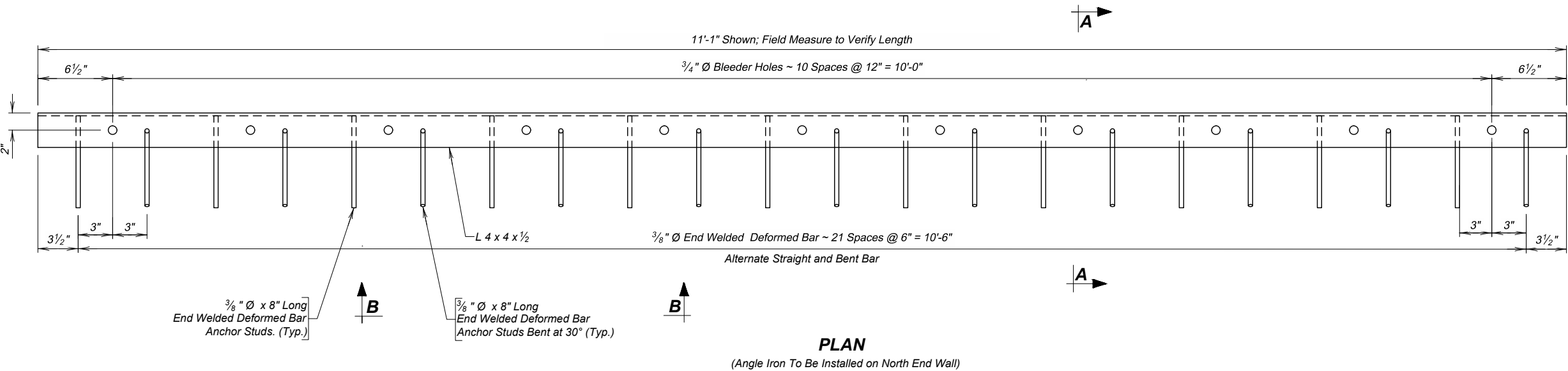
- NOTES:
- Field measure for exact length. See Angle Assembly Details Sheet.
  - Adjust location of embedment of Bars L2 as needed to avoid conflict with existing reinforcement to remain.
  - The approach slab will be poured separately from the scale pit wall, after the wall is cured.

UNION COUNTY  
S. D. DEPT. OF TRANSPORTATION  
SEPTEMBER 2025

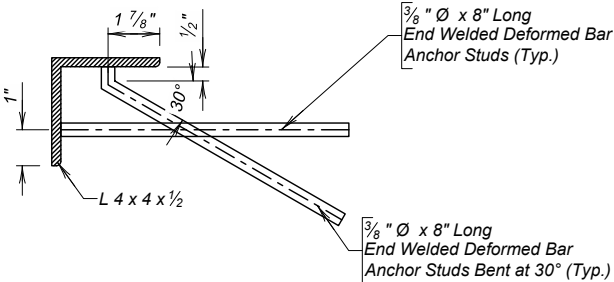
DESIGNED BY CMM	CK. DES. BY MTH	DRAFTED BY TCM	BRIDGE ENGINEER
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FOR BIDDING PURPOSES ONLY

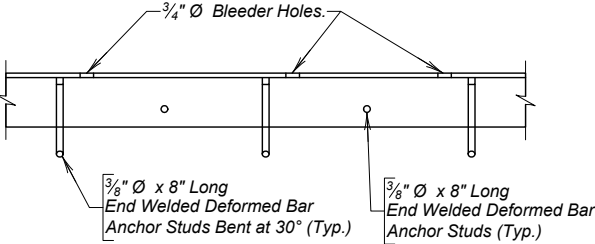
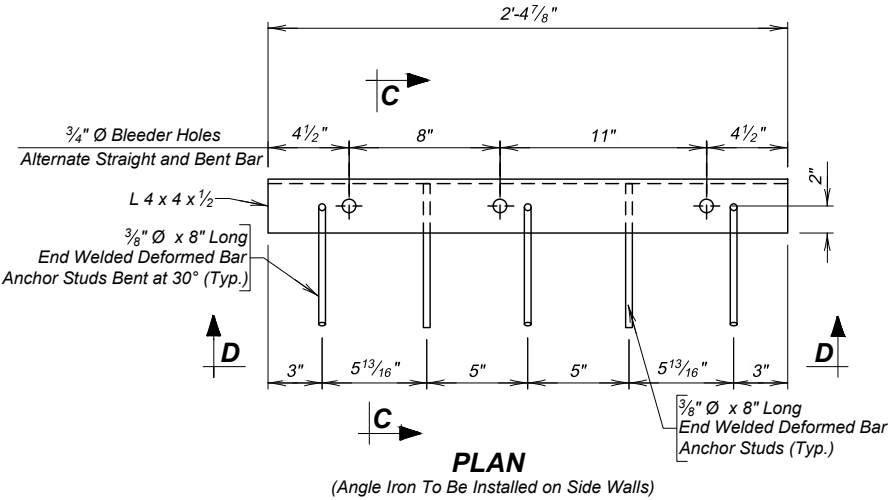
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(143)12	11	14



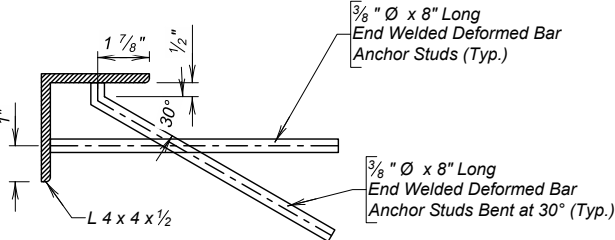
VIEW B - B



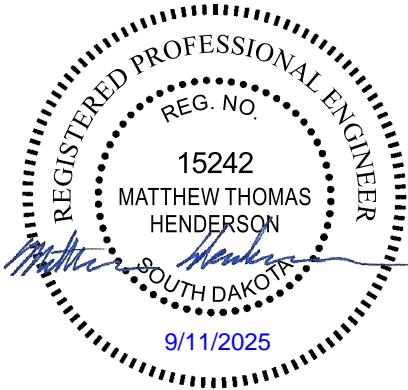
SEC A - A



VIEW D - D



SEC C - C

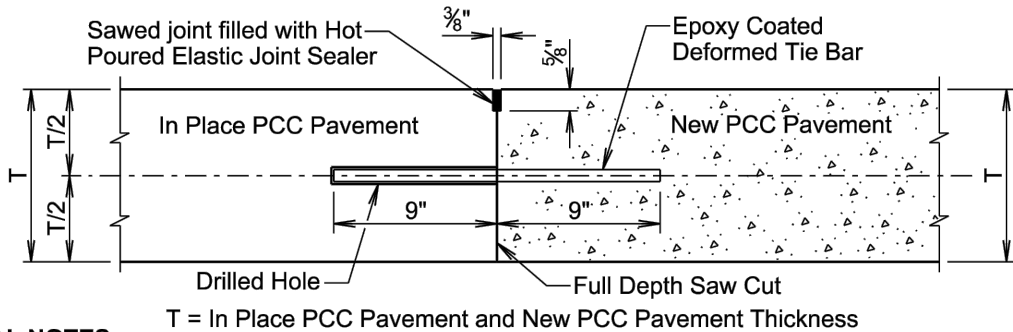


**ANGLE ASSEMBLY**  
FOR  
**PORT OF ENTRY SCALE PIT REPAIR**  
11'-0" ROADWAY  
JEFFERSON POE SCALE  
0° SKEW  
SEC. 04-T90N-R49W  
IM 0291(143)12  
HL-93

UNION COUNTY  
S. D. DEPT. OF TRANSPORTATION  
SEPTEMBER 2025

DESIGNED BY CMM	CK. DES. BY MTH	DRAFTED BY TCM	
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DETAIL A  
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



**GENERAL NOTES:**

T = In Place PCC Pavement and New PCC Pavement Thickness

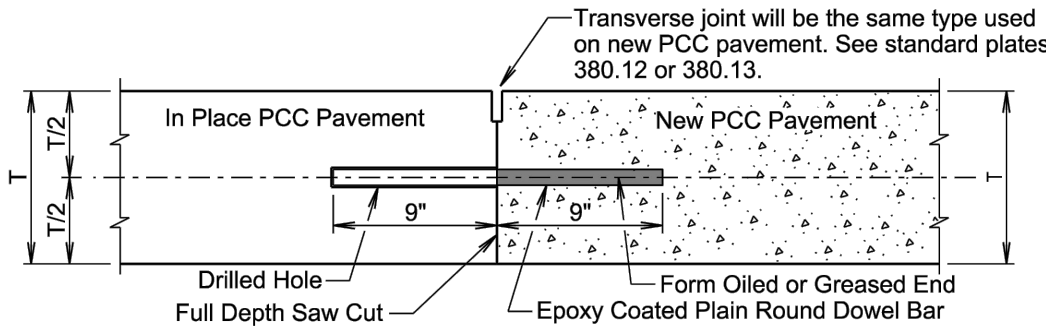
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

See sheet 2 of 2 of this standard plate to determine if Detail A will be used.

The tie bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

No. 9 epoxy coated deformed tie bars will be used in 10 inch thickness and less PCC Pavement and No. 11 epoxy coated deformed tie bars will be used in 10.5 inch thickness and greater PCC Pavement. The tie bar spacing will be 18 inches center to center and will be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

DETAIL B  
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



**GENERAL NOTES:**

T = In Place PCC Pavement and New PCC Pavement Thickness

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

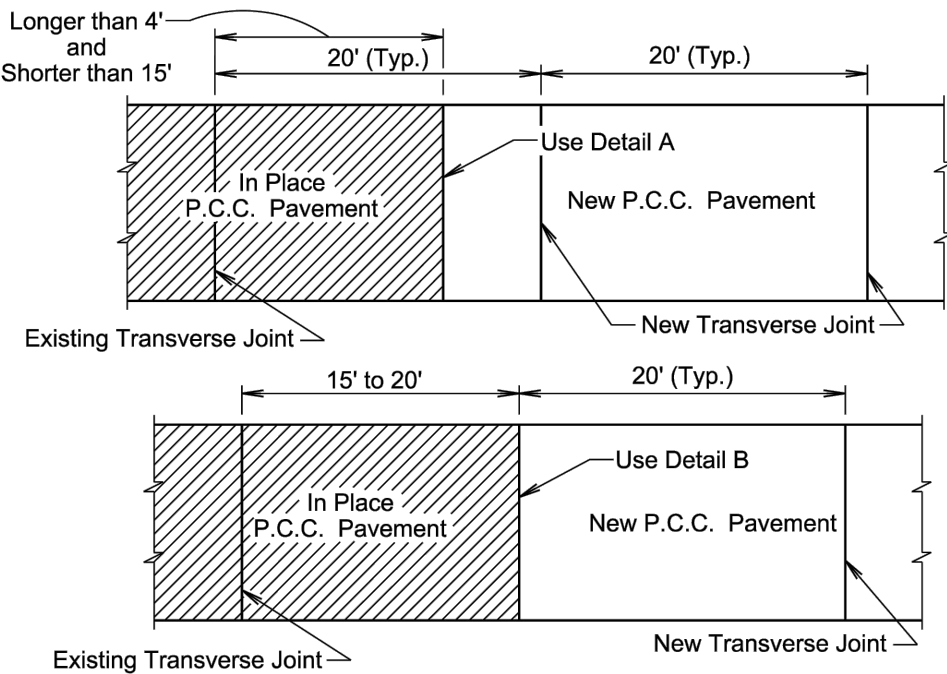
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

The plain round dowel bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

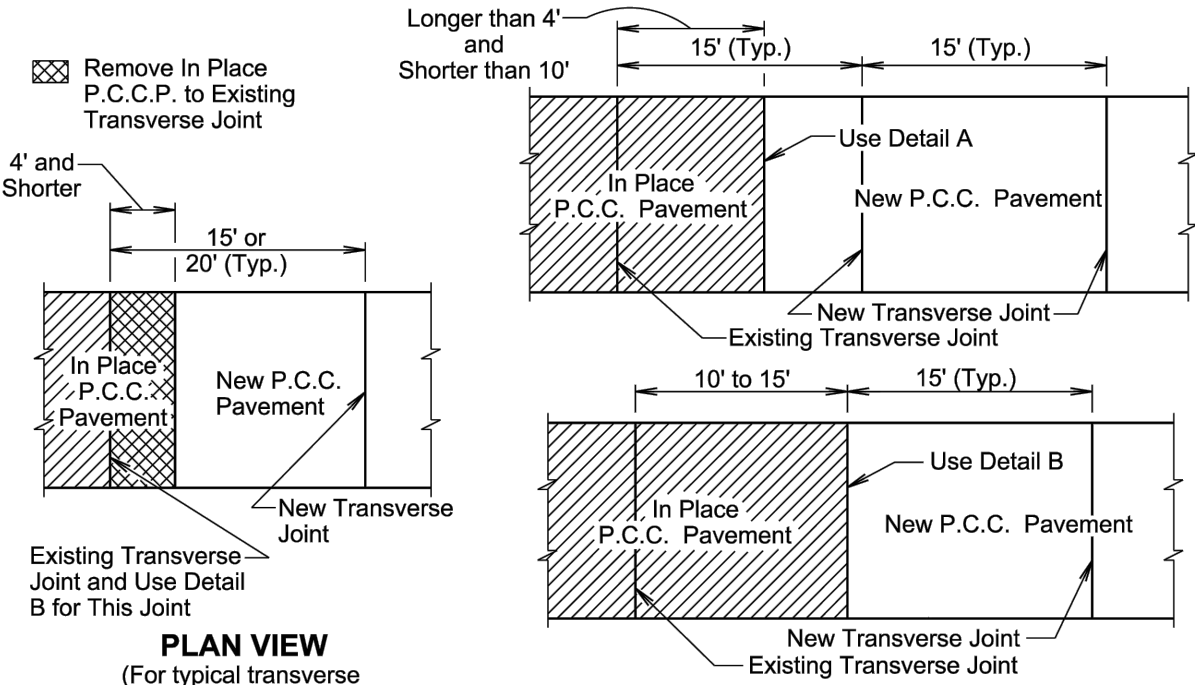
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

Published Date: 2026	S D D O T	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER
			380.15
			Sheet 1 of 2



PLAN VIEW  
(For typical transverse joint spacing of 20' on the current project)



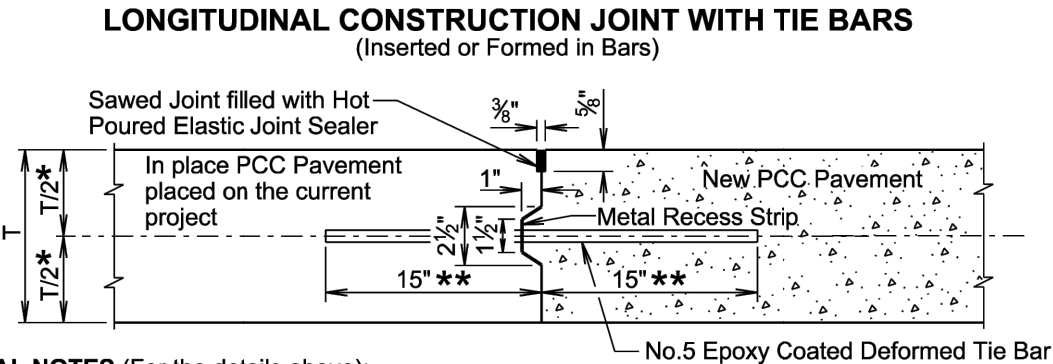
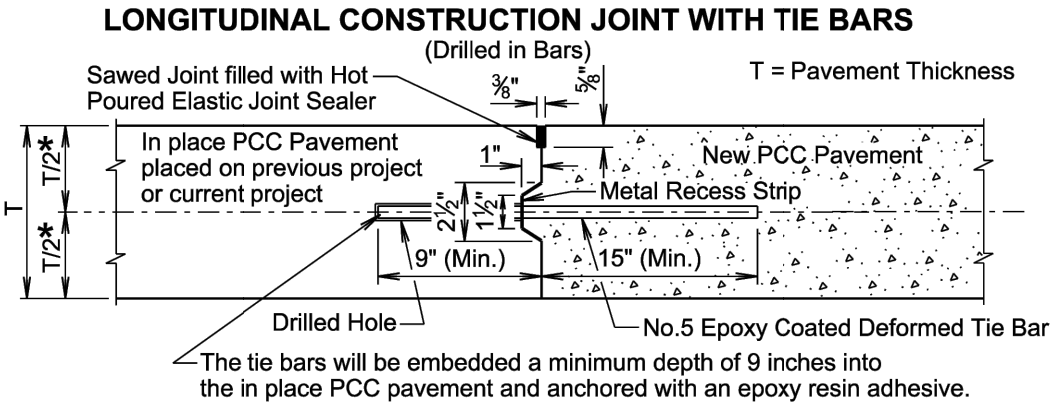
PLAN VIEW  
(For typical transverse joint spacing of 15' or 20' on the current project)

PLAN VIEW  
(For typical transverse joint spacing of 15' on the current project)

January 22, 2023

Published Date: 2026	S D D O T	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER
			380.15
			Sheet 2 of 2





**GENERAL NOTES** (For the details above):

The epoxy coated deformed tie bars will be spaced in accordance with the following tables:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

TIE BAR SPACING 30" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars will be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel. The uniformly spaced tie bars will be spaced a maximum of 48 inches center to center for a female keyway and will be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing will apply to tie bars within each panel.

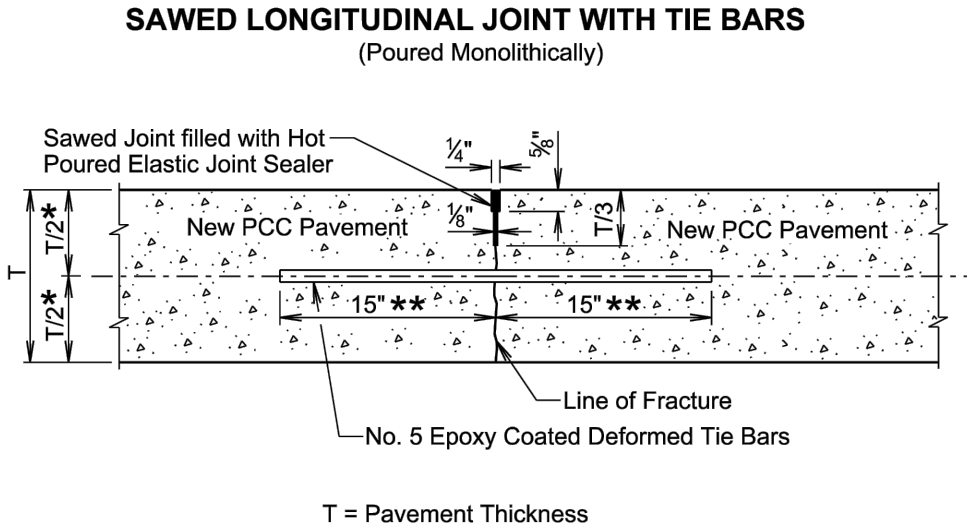
The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

- \* The vertical placement tolerance for any part of the tie bar will be  $\pm T/6$ .
- \*\*The transverse placement (side shift) tolerance will be  $\pm 3$  inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2026	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2



**GENERAL NOTES** (For the detail above):

The epoxy coated deformed tie bars will be spaced in accordance with the following table:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

The tie bars will be placed a minimum of 15 inches from the transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing will apply to tie bars within each panel.

The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

- \* The vertical placement tolerance for any part of the tie bar will be  $\pm T/6$ .
- \*\*The transverse placement (side shift) tolerance will be  $\pm 3$  inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2026	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2

