



Planning & Engineering
Office of Project Development
700 East Broadway Avenue
Pierre, South Dakota 57501-2586
O: 605.773.3275
dot.sd.gov

September 11, 2026

To Whom it May Concern,

Beginning with the 10/7/2026 letting, the SDDOT will be using the new Electronic Standard Specifications for Roads and Bridges, 10-7-26 Version. The Standard Specifications for Roads and Bridges is available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications> . A printed version of the Standard Specifications for Roads and Bridges will not be provided.

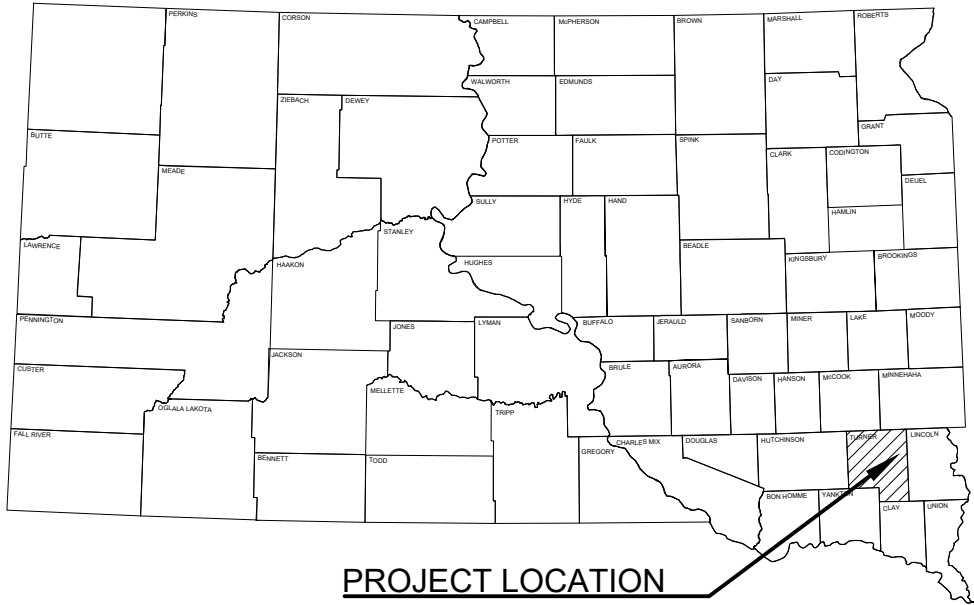
A revised Buy America specification is in effect beginning with the 10/7/26 letting, which aligns with the expiration of the Federal Manufactured Products General Waiver. Contractors should be aware that new provisions for manufactured products, along with updates to material classifications, documentation requirements, and compliance procedures, are included in Section 6.9 of the Standard Specifications (10/07/2026 version). All contractors and suppliers are strongly encouraged to review the updated specification in full. Contractors are encouraged to attend the Buy America Informational Webinar being put on by the SDDOT and AGC. Information on the webinar can be found at:

<https://dot.sd.gov/doing-business/contractors/webinars/>

FHWA has updated the FHWA-1273 commonly known as the "Pink Sheets". The new FHWA-1273 will be incorporated into all contracts awarded after 10/7/26. Additional information regarding the updated FHWA-1273 can be found at:

<https://www.fhwa.dot.gov/construction/cqit/form1273.cfm>

Sincerely,
SDDOT – Bid Letting Office



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT BRO-B 8063(21)
TURNER COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
STRUCTURE No. 63-186-100
PCN 09MF

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	1	58

INDEX OF SHEETS

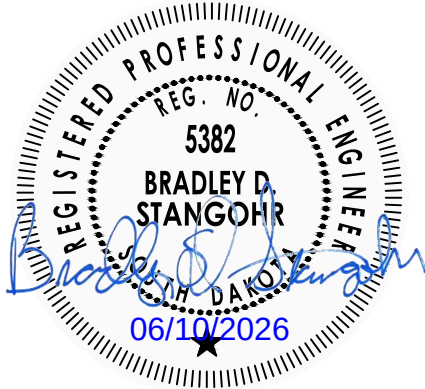
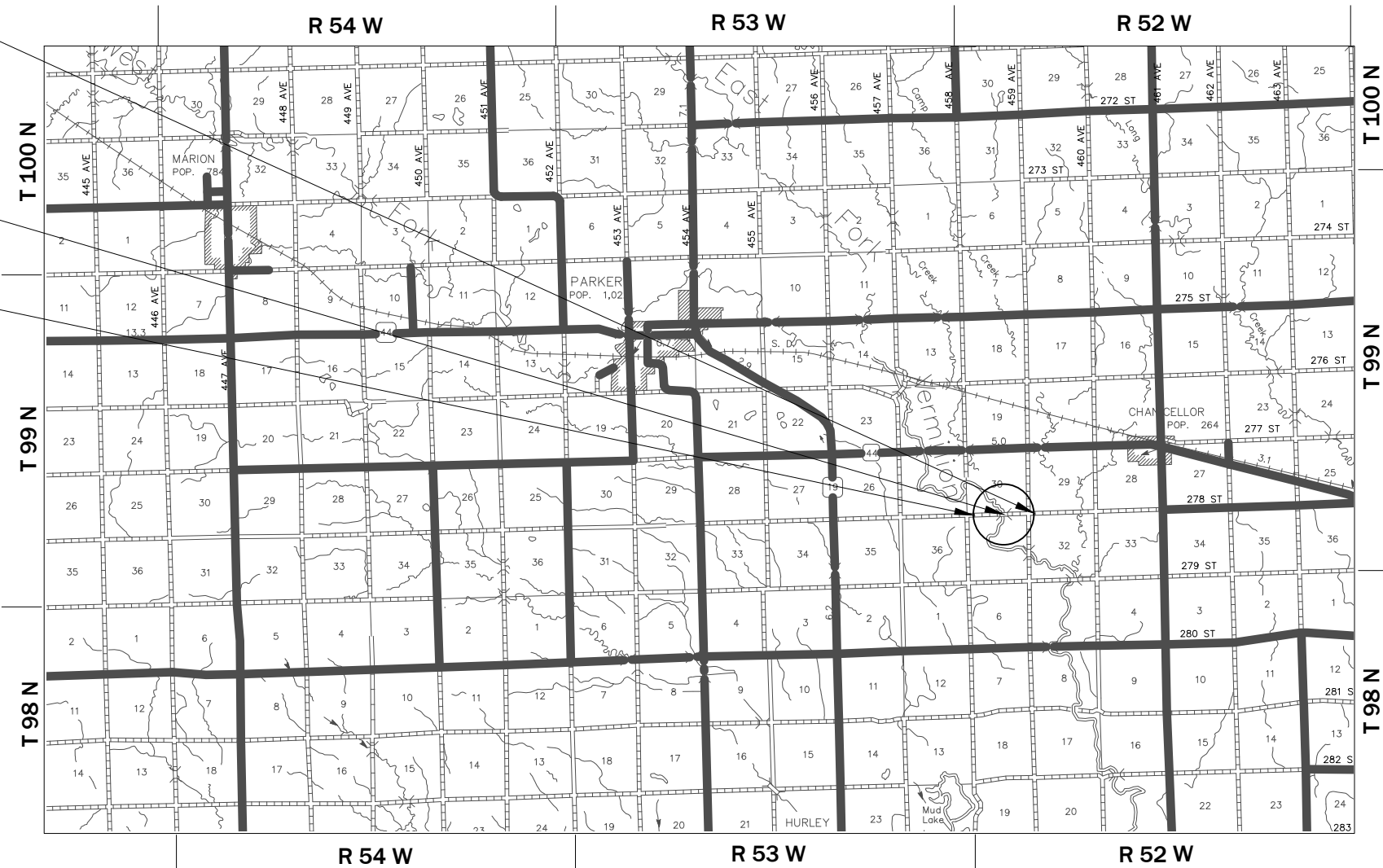
- SHEET 1: TITLE SHEET
SHEET 2-9: ESTIMATE OF QUANTITIES & NOTES
SHEET 10-13: SWPPP
SHEET 14-16: TYPICAL SECTIONS
SHEET 17: TRAFFIC CONTROL
SHEET 18: EROSION CONTROL
SHEET 19: SURVEY DATA & EASEMENTS
SHEET 20-21: PLAN & PROFILE
SHEET 22-28: STANDARD PLATES
SHEET 29-46: STRUCTURE SHEETS
SHEET 47-58: CROSS SECTIONS

PROJECT LOCATION

END PROJECT
STA 43+00.00

STRUCTURE NO.
63-186-100

BEGIN PROJECT
STA 33+75.00



DESIGN DESIGNATION

ADT (2022): 65
ADT (2042): 110
DHV: 17
d: 50%
T DHV: 3.7%
T ADT: 8.1%
V: 55 MPH

STORM WATER PERMIT

MAJOR STREAM: Vermillion River
AREA DISTURBED: 3.30 ACRES
PROJECT AREA: 4.30 ACRES



5701 S Corporate Place, Suite 1
Sioux Falls, South Dakota 57108
Phone: 605.323.2306
Fax: 605.323.2308
Web: www.Ulteig.com

4

November 4, 2026

GRADING

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.200	Mile
009E3250	Miscellaneous Staking	0.200	Mile
009E3280	Slope Staking	0.200	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0500	Remove Pipe Culvert	40	Ft
110E5010	Salvage Delineator	17	Each
110E5500	Salvage Pipe	26	Ft
120E0010	Unclassified Excavation	4,509	CuYd
120E0600	Contractor Furnished Borrow Excavation	871	CuYd
230E0010	Placing Topsoil	1,550	CuYd
450E4758	18" CMP 14 Gauge, Furnish	48	Ft
450E4760	18" CMP, Install	48	Ft
450E4787	36" CMP 12 Gauge, Furnish	42	Ft
450E4790	36" CMP, Install	42	Ft
450E5406	18" CMP Safety End, Furnish	2	Each
450E5407	18" CMP Safety End, Install	2	Each
450E5421	36" CMP Safety End with Bars, Furnish	2	Each
450E5423	36" CMP Safety End, Install	2	Each
634E0110	Traffic Control Signs	134.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	8	Each
734E0010	Erosion Control	Lump Sum	LS
734E0102	Type 2 Erosion Control Blanket	9,335	SqYd
734E0154	12" Diameter Erosion Control Wattle	280	Ft
734E0165	Remove and Reset Erosion Control Wattle	70	Ft
734E0325	Surface Roughening	0.8	Acre
734E0510	Shaping for Erosion Control Blanket	1,785	Ft
734E0604	High Flow Silt Fence	150	Ft
734E0610	Mucking Silt Fence	11	CuYd
734E0620	Repair Silt Fence	38	Ft
734E0630	Floating Silt Curtain	545	Ft

STRUCTURE No. 63-186-100

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
120E7000	Select Granular Backfill	10.7	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0100	Structure Excavation, Bridge	947	CuYd
430E0200	Bridge End Embankment	257	CuYd
430E0300	Granular Bridge End Backfill	25.9	CuYd
460E0030	Class A45 Concrete, Bridge Deck	268.3	CuYd
460E0050	Class A45 Concrete, Bridge	188.6	CuYd
460E0230	Concrete Penetrating Sealer	555.8	SqYd
470E0420	Type T101 Bridge Railing	360	Ft
480E0100	Reinforcing Steel	47,799	Lb
480E0200	Epoxy Coated Reinforcing Steel	93,667	Lb
510E0100	Extract Pile	6	Each
510E0300	Preboring Pile	100	Ft
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	410	Ft
510E3405	HP 12x53 Steel Bearing Pile, Furnish and Drive	2,905	Ft
700E0210	Class B Riprap	2,239.0	Ton
700E1100	Overburden Excavation for Riprap	4,511	CuYd
734E0090	Perforated Geocell	425	SqFt
831E0110	Type B Drainage Fabric	2,616	SqYd

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/doing-business/environmental/about-environmental/>>

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 A: AQUATIC RESOURCES

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.61 acre(s) of stream (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted streams.

Table of Impacted Streams

Stream Name	Station	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact (Acres)
Vermillion River	38+86.69 to 39+76.13 (L and R)	0.11	0.50	0.61

Action Taken/Required:

Final compensatory mitigation requirements will be determined by the USACE during the Section 404 permitting process. It is anticipated that SDDOT will acquire credits from the Ducks Unlimited stream mitigation bank site or In-Lieu Fee program to mitigate permanent impacts.

The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any stream. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any streams beyond the work limits and easements shown in the plans.



COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B1: CONSTRUCTION PRACTICES FOR STREAMS INHABITED BY THE TOPEKA SHINER

The SDDOT Environmental Office has identified the following as Topeka Shiner streams.

Table of Topeka Shiner Streams

Station	Stream Name	Ordinary High-Water Elevation
38+86.69 to 39+76.13 (L and R)	Vermillion River	1281.55'

Action Taken/Required:

The Contractor will adhere to the “Special Provision for Construction Practices in Streams Inhabited by the Topeka Shiner”.

Stream turbidity will be monitored during all stages of the project. Turbidity measurements are to be taken in conjunction with normal storm water inspections but can also be taken at the Project Engineer’s discretion during construction activities that may result in increased turbidity (e.g., placing riprap or installing a coffer dam).

Prior to the pre-construction meeting the Contractor will produce and provide the SDDOT Environmental Office a comprehensive Construction Plan that includes all products, materials, and methods of installation and removal for temporary water barriers, cofferdams, and diversion channels including de-watering, handling, storage, and disposal of excavated material and pumped effluent throughout all phases of construction, including post-construction stabilization. Work will not proceed on any of the streams identified in the Table of Topeka Shiner Streams without approval of the Construction Plan by the SDDOT Environmental Office. Upon plan approval, the Construction Plan will be amended to the SWPPP. Fish rescue and seining activities cannot be conducted in freezing conditions or during inclement weather events.

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight, and their long dark legs trail behind. Adult Whooping Cranes’ black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B5: NORTHERN LONG-EARED AND TRI-COLORED BAT

This project is within the range of suitable habitat for the Northern Long-Eared Bat (NLEB) and/ or the Tri-Colored Bat (TCB) and project work will avoid conflicts with NLEB and/or TCB roosting habitat.

Action Taken/Required:

GAMM1:

Ensure all operators, employees, and contractors are aware the project occurs adjacent to NLEB or TCB suitable habitat and tree trimming/clearing is limited to that designated in the plans.

If bats are observed roosting on trees or infrastructure within the project area prior to and/or during construction, the contractor will halt all on-site activities. The contractor will notify the Project Engineer and the Environmental Office (605-773- 3309 or 605-773-5679) of the observed bat presence.

COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

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.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

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 (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website:

<https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx>

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> >

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

The Vermillion River is classified as a warmwater semi-permanent fishery with a total suspended solids standard of less than 90 mg/L 30-day average, less than 158 mg/L daily maximum.

This project may be in the vicinity of multiple streams and wetlands. These waters are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that this water body is not impacted.

Action Taken/Required:

The Contractor is advised that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Agriculture and Natural Resources (DANR), apply to this project. Special construction measures will be taken to ensure the above standard(s) of the surface waters are maintained and protected.



COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge Activities is required for temporary dewatering and discharges to waters of the state. The effluent limit for total suspended solids will be 90 mg/L 30-day average. The effluent limit applies to discharges to all waters of the state except discharges to waters classified as coldwater permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as coldwater permanent fish life propagation waters, the effluent limit for total suspended solids will be 53 mg/L daily maximum.

The permittee has the option of completing effluent testing or implementing a pollution prevention plan for compliance with this permit. If the permittee develops a pollution prevention plan instead of total suspended solids sampling, the plan must be developed and implemented prior to discontinuing total suspended solids sampling. Refer to Section 4.0 of the permit. If any pollutants are suspected of being discharged, a sample must be taken for those parameters listed in Section 3.4 of the permit.

Refer to Commitment D1: Surface Water Quality for stream classification.

Action Taken/Required:

If construction dewatering is required and this project is currently covered under a General Permit for Stormwater Discharges Associated with Construction Activities, the contractor will need to submit the dewatering information to the Project Engineer using the following SDDOT Dewatering Info CDX form:

<<https://dot.sd.gov/doing-business/environmental/forms/>>

The Contractor will provide a copy of the approved permit or the submitted dewatering information to the Project Engineer prior to proceeding with any dewatering activities. The approved permit or submitted dewatering information must be kept on-site and as part of the project records.

Effluent monitoring, as a result of dewatering activities, will be summarized for each month and recorded on a separate Discharge Monitoring Report (DMR) and submitted to DANR monthly. Additional information can be found at:

<

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/swdpermitting/Ereporting.aspx> >

COMMITMENT E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance and/or work in a waterway.

Action Taken/Required:

The DANR General Permit for Stormwater Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DANR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DANR letter of approval is received.

The Contractor must adhere to the “Special Provision Regarding Storm Water Discharges to Waters of the State.”

The Contractor will complete the DANR Contractor Authorization Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DANR.

The form can be found at:

<

https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAppendixCCA2023Fillable.pdf >

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

Storm Water Pollution Prevention Plan

The Storm Water Pollution Prevention Plan (SWPPP) will be developed prior to the submittal of the NOI and will be implemented for all construction activities for compliance with the permit. The SWPPP must be kept on-site and updated as site conditions change. Erosion control measures and best management practices will be implemented in accordance with the SWPPP.

The DOT 298 Form will be used for site inspections and to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents and retained for a minimum of three years.

The inspection will include disturbed areas of the construction site that have not been finally stabilized, areas used for storage materials, structural control measures, and locations where vehicles enter or exit the site. These areas will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP will be observed to ensure that they are operating correctly, and sediment is not tracked off the site.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT: < <https://dot.sd.gov/doing-business/environmental/stormwater> >

DANR:<

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/default.aspx> >

EPA: < <https://www.epa.gov/npdes> >

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:

1. 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”.
2. 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) 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 review does not relieve the Contractor of the responsibility for 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.

COMMITMENT N: SECTION 404 PERMIT

The SDDOT has obtained a Section 404 Permit from the USACE for the permanent actions associated with this project.

Action Taken/Required:

The Contractor will comply with all requirements contained in the Section 404 Permit.

The Contractor will also be responsible for obtaining a Section 404 Permit for any dredge, excavation, or fill activities associated with material sources, storage areas, waste sites, and Contractor work sites outside the plan work limits that affect wetlands, floodplains, or waters of the United States.

SEQUENCE OF OPERATIONS

The Contractor will use the following sequence of operations:

1. Install temporary traffic control signs as shown in the plans and notify County to install temporary fence.
2. Install erosion control procedures.
3. Salvage the items noted in the plans for the County, then deconstruct and remove existing structure.
4. Construct new structure.
5. Grading operations, place topsoil, and install riprap.
6. Notify the County to install final surfacing and permanent signing.
7. Install final erosion control then remove temporary traffic control.
8. Open the roadway to traffic.
9. Complete miscellaneous cleanup under traffic.

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 County's intent for traffic control and sequencing of the work.

An alternate sequence will be submitted for review a minimum of two weeks prior to potential implementation.

COUNTY RESPONSIBILITIES

Turner County will be responsible for the following at no cost to the Contractor:

1. Right of way temporary and permanent easements.
2. Coordination of any utility adjustments.
3. Furnish and install temporary and/or permanent fencing.
4. Haul salvaged materials away from the project site as called for in the plans.
5. Furnish and install final surfacing without federal participation.
6. Furnish and install new permanent signing for the project.
7. Remove silt fence and erosion control wattles in permanently seeded areas.

GENERAL MAINTENANCE OF TRAFFIC

The Contractor will maintain access to any field and farm entrances within the project limits throughout the duration of construction. All costs associated with the foregoing work will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 25 MGal. No separate payment will be made for the Water for Embankment and all costs associated will be incidental to the contract unit price per cubic yard of "Unclassified Excavation".

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

The estimated excavation required for placing the Granular Bridge End Backfill and/or Bridge End Embankment, and for constructing the Bridge Berm(s) between bridge abutments and shaping the bridge waterway channel(s) are included in the Table of Unclassified Excavation. Overburden Excavation for Riprap is not included in the Unclassified Excavation quantity. Refer to structure sheets for information regarding the Overburden Excavation for Riprap. The excavated material from the construction of the Bridge Berm(s) and shaping the bridge waterway channel(s) should be disposed of at a site provided by the Contractor and approved by the Engineer. This waste material is included in the Waste shown in the Table of Excavation Quantities by Balances.

Special ditch grades and other sections of the roadway different than the typical sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

Generally, all shallow inlet and outlet ditches as noted on the plan sheets will be cut with a 10-foot-wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

Temporary fence and/or permanent fence will be placed ahead of the grading operation unless otherwise directed by the Engineer.

Compaction of earth embankment and structure backfill material will be governed by the Ordinary Compaction Method.



UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities.

Location	Utility	Owner	Phone Number
33+75 to 43+00 Rt.	Electric Facilities	Northwestern Energy	(605) 978-2981
33+75 to 43+00 Lt.	Underground Communication	Bluepeak	(605) 498-4922
33+75 to 43+00 Rt.	Underground Water	TM Rural Water District	(605) 297-3334

SHRINKAGE FACTOR: Embankment 35%

EARTHWORK BALANCE

Excavation is the quantity of Unclassified Excavation less the quantity of topsoil, and gravel surfacing.

These quantities are for informational purposes only, compensation for these is accounted for within the various bid items. These quantities include excavation and embankment to the catch point on the inslopes from the top of the subgrade in cut sections.

Excavation*	2,676	CuYd	Embankment	1,869	CuYd
Waste**	1,023	CuYd	35% Shrinkage	655	CuYd
Contractor Furnished Borrow Excavation	871	CuYd			
Total	2,524	CuYd		2,524	CuYd

* Existing gravel surfacing is included in Excavation.
** Volume of excavation is in the channel between the proposed abutments

The Contractor may, at the discretion of the Engineer, use the material from waste excavation in the inslopes and as sub-base with the condition that the material meets all requirements as set forth in the Specifications.

It is assumed (for the purpose of earthwork balance) that the Contractor will not be able to use any of the material from riprap or channel excavation, shown above as waste, and will have to waste the material at a site(s) provided by the Contractor and approved by the Engineer. All cost for labor, materials, and equipment necessary to waste material as well as restoration of the waste site(s) will be incidental to the contract unit price per cubic yard of "Unclassified Excavation."

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	2,676
Exc. for Granular Bridge End Backfill and Bridge End Embankment	283
Topsoil	1,550
Total	4,509

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The following paragraphs are general earthwork information and information in regard to computing the Unclassified Excavation quantity. There will be no final cross sections taken in the field for final payment:

The Topsoil quantity in the Placing Topsoil note will be used for final payment with no adjustment for final measurements. The quantity of Topsoil from the cuts will be paid for twice as Unclassified Excavation, as it will be in both the Excavation and Topsoil quantities. This will be full compensation for Excavation, which includes necessary undercutting to provide space for placement of topsoil.

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow Excavation" as shown in the Estimate of Quantities will be the basis of final payment for this item.

Restoration of the Contractor furnished borrow excavation site will be the responsibility of the Contractor.

SALVAGE DELINEATORS

All delineators listed for salvage in the Table of Salvage Delineators will become property of Turner County and will have the existing posts, bases, and signs dismantled and stockpiled within the right-of-way. The Contractor will contact the Turner County Highway Superintendent at 605-297-3404 for pick-up of salvaged materials. All bolts, nuts, and washers will be placed in individual containers. Wooden posts will be stockpiled separately from steel posts. The Contractor will replace and pay for any salvaged delineators damaged in their care.

All costs for labor and equipment necessary to remove, dismantle, and stockpile delineators within the right-of-way will be incidental to the contract unit price per each for Salvage Delineator. The quantity of delineators to be salvaged is shown in the Table of Salvage Delineators. The plans quantity is shown as per assembly. Payment for salvaging delineators will be paid per assembly at the contract unit price per each for "Salvage Delineator".

TABLE OF SALVAGE DELINEATORS

Location	Work Item	Salvage Delineator
36+65 – 16' Lt.	Salvage Delineator	1
36+66 – 14' Rt.	Salvage Delineator	1
37+16 – 15' Lt.	Salvage Delineator	1
37+18 – 13' Rt.	Salvage Delineator	1
37+68 – 12' Rt.	Salvage Delineator	1
37+68 – 13' Lt.	Salvage Delineator	1
38+20 – 11' Rt.	Salvage Delineator	1
38+20 – 11' Lt.	Salvage Delineator	1
38+63 – 9' Lt.	Salvage Object Marker	1
38+63 – 10' Rt.	Salvage Object Marker	1
40+05 – 11' Rt.	Salvage Object Marker	1
40+10 – 9' Lt.	Salvage Object Marker	1
40+51 – 12' Lt.	Salvage Delineator	1
40+53 – 11' Rt.	Salvage Delineator	1
41+03 – 13' Rt.	Salvage Delineator	1
41+56 – 14' Rt.	Salvage Delineator	1
42+07 – 14' Lt.	Salvage Delineator	1

17

SALVAGE PIPE

All pipe listed for salvage in the plans will become property of Turner County and will have the existing pipe culvert removed and stockpiled within the right-of-way. The Contractor will contact the Turner County Highway Superintendent at 605-297-3404 for pick-up of salvaged materials. All bolts, nuts, and washers will be placed in individual containers. The Contractor will replace and pay for any salvaged pipe damaged in their care.

All costs for labor and equipment necessary to remove, dismantle, and stockpile pipe within the right-of-way will be incidental to the contract unit price per each for Salvage Pipe. The quantity of pipe to be salvaged is shown in the plans. Payment for salvaging pipe will be paid per foot the contract unit price for "Salvage Pipe".



PLACING TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements. The estimated amount of topsoil to be placed is as follows:

Station	to	Station	Topsoil (CuYd)
33+75		43+00 LT	850
33+75		43+00 RT	700
Total:			1,550

All costs associated with placing the topsoil along areas to be resurfaced will be incidental to the contract unit price per cubic yard for “Placing Topsoil”.

The plans quantity for “Placing Topsoil” as shown in the Estimate of Quantities will be the basis for payment for this item.

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 ⅜-inch x ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes will have 3-inch x 1-inch or 5-inch x 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

The gauge of the corrugated metal elbows, tees, crosses, wyes, and ends will match the thickest gauge of corrugated metal pipe to which it is connected.

EROSION CONTROL

The estimated area requiring erosion control is 3.3 acres. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, mulching, and mycorrhizal inoculum will be incidental to the contract lump sum price for “Erosion Control”.

The estimated area of Erosion Control is calculated from neat line dimensions of disturbed areas. Additional seeding and mulching of disturbed areas from the Contractor’s operations are not eligible for additional payment.

Permanent Seeding

The areas to be seeded consist of all newly graded or disturbed areas within the project limits except for the top of roadways,

Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	16
Canada Wildrye	Mandan	2
Total:		18

Application of fertilizer will not be required on this project.

Mulching

The estimated area that will be mulched is 0.4 acres, which includes areas outside the erosion control blanket limits that require permanent seeding. Mulch will consist of grass hay or straw and will be blown on and punched in to a 3 inch depth at the rate of 2 tons per acre on all newly seeded areas without erosion control blanket.

Mycorrhizal Inoculum

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract lump sum for “Erosion Control”. The Mycorrhizal Inoculum provided will be from the approved product list. The approved product list may be viewed at the following internet site:

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds. Erosion control wattles will remain on the project until vegetation has been established and then they will be removed in accordance with the Engineer.

An additional quantity of 12” Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to high flow silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

TABLE OF EROSION CONTROL WATTLE

Station		Diameter (Inch)	Quantity (Ft)
33+73.44	L	12	20
35+51.47	R	12	20
36+69.83	L	12	20
38+24.53	L	12	20
38+25.56	R	12	20
40+40.40	L	12	20
40+39.24	R	12	20
42+10.85	L	12	20
42+12.67	R	12	20
Additional Quantity:		12	100
Total:			280

HIGH FLOW SILT FENCE

The high flow silt fence fabric provided will be from the approved product list. The approved product list for high flow silt fence may be viewed at the following internet site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

High flow silt fence will be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 for details.

An additional quantity of high flow silt fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF HIGH FLOW SILT FENCE

Station	Quantity (Ft)
Additional Quantity:	150
Total:	150



SURFACE ROUGHENING

Surface roughening will be done after topsoil placement and before permanent seeding, and mulching applications. Refer to Standard Plate 734.25 for details.

TABLE OF SURFACE ROUGHENING

Station	Location	Area (Acre)
38+75 R	Channel Bank	0.1
38+75 L	Channel Bank	0.2
39+95 R	Channel Bank	0.1
39+90 L	Channel Bank	0.2
Additional Quantity:		0.2
Total:		0.8

FLOATING SILT CURTAIN

Floating silt curtains will be installed at locations noted in the table and at locations determined by the Engineer during construction.

The Contractor will determine the water depth and other waterway characteristics such as stream flow velocity and seek technical advice from the manufacturer before ordering the floating silt curtain so that the floating silt curtain installed is the correct type for the individual sites.

The Contractor will install the floating silt curtain in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor will maintain the floating silt curtains for the duration of the project to ensure continuous protection of the waterway.

A list of known manufacturers of floating silt curtain is shown below for informational purpose. Contractors may also use Engineer approved floating silt curtain from manufacturers that are not included in the list.

ABASCO, LLC
Humble, TX
Phone: 1-281-466-1500
www.abasco.net

ACME Environmental
Tulsa, OK
Phone: 1-855-563-2666
www.acmeboom.com

Elastec/American Marine, Inc.
Carmi, IL
Phone: 1-618-382-2525
www.turbiditycurtains.com

Parker Systems, Inc.
Chesapeake, VA
Phone: 1-866-472-7537
www.parkersystemsinc.com

Aer-Flo, Inc.
Bradenton, FL
Phone: 1-800-823-7356
www.aerflo.com

ENVIRO-USA, LLC
Cape Canaveral, FL
Phone: 1-321-222-9551
www.enviro-usa.com

Geo-Synthetics, LLC (GSI)
Waukesha, WI
Phone: 1-800-444-5523
www.geosynthetics.com

TABLE OF FLOATING SILT CURTAIN

Station	Location	Quantity (Ft)
39+15.24	L/R	Along Channel Toe
39+44.39	L/R	Along Channel Toe
Total:		545

EROSION CONTROL BLANKET

Erosion control blanket will be installed at the locations noted in the table and at locations determined by the Engineer during construction.

The erosion control blanket provided will be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

An additional quantity of Type 2 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

TABLE OF EROSION CONTROL BLANKET

Station		Type	Quantity (SqYd)
33+74.67 to 39+03.95	R	2	3,070
33+74.97 to 35+56.19	L	2	600
35+67.82 to 38+84.70	L	2	1,865
39+53.16 to 41+65.11	L	2	1,605
39+95.51 to 41+72.52	R	2	1,330
41+94.60 to 43+00.78	L	2	340
42+02.51 to 42+99.97	R	2	425
Additional Quantity:		2	100
Total Type 2 Erosion Control Blanket:			9,335

SHAPING FOR EROSION CONTROL BLANKET

The ditches will be shaped for the erosion control blanket as specified on Standard Plate 734.01.

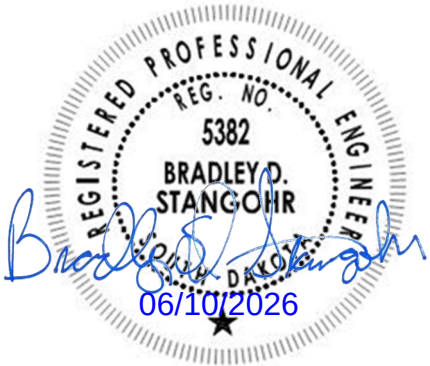
TABLE OF SHAPING FOR EROSION CONTROL BLANKET

Station	Location	(Ft)
33+75 to 38+25	Rt	450
33+75 to 35+50	Lt	175
35+75 to 38+25	Lt	250
38+90 to 38+95	Lt / Rt	230
39+75 to 40+00	Lt / Rt	230
40+25 to 41+50	Lt	125
40+25 to 41+50	Rt	125
42+00 to 43+00	Lt	100
42+00 to 43+00	Rt	100
Total:		1,785



TABLE OF CONSTRUCTION STAKING

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking				Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
					Length (Mile)	Lane Factor	Sets of Stakes	Grade Staking Quantity (Mile)			
278th St (2 Lanes Gravel)	33+75.00	43+00.00	2	925	0.2	1	1	0.2	0.2	0.2	1
Totals:								0.2	0.2	0.2	1



STORMWATER POLLUTION PREVENTION PLAN CHECKLIST
*(The numbers left of the title headings are **reference numbers** to the **GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES** (Stormwater Permit))*

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
 - ☒ Clearing and grubbing
 - ☒ Excavation/borrow
 - ☒ Grading and shaping
 - ☒ Filling
 - ☐ Other (describe):
- **5.3 (3b): Total Project Area** 4.30 Acres
- **5.3 (3b): Total Area to be Disturbed** 3.30 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 3.30 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 80
- **5.3 (3d): Description of Vegetative Cover** Native Grasses and Crop Lands
- **5.3 (3e): Soil Properties:** Brown gravelly silty sand, underlain by Brown silt clay (flowline), underlain by Dark gray silty sand, underlain by Dark gray sandy clay (glacial till), underlain by Brown sand and gravel, underlain by brown sandy silt, and underlain by Sioux Quartzite.
- **5.3 (3f): Name of Receiving Water Body/Bodies** Vermillion River
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install temporary traffic control signs as shown on the plans and notify County to install temporary fence.	
Install erosion control procedures.	
Salvage the items noted in the plans for the County, then deconstruct and remove existing structure.	
Construct new structure.	
Grading operations, place topsoil, and install riprap.	
Notify County to install final surfacing and permanent signing.	
Install final erosion control then remove temporary traffic control.	
Open the roadway to traffic.	
Complete miscellaneous cleanup under traffic.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)	
Description	Estimated Start Date
☐ Natural Buffers (within 50 ft of Waters of State)	
☒ Silt Fence	
☒ Erosion Control Wattles	
☐ Temporary Berm / Windrow	
☒ Floating Silt Curtain	
☐ Stabilized Construction Entrances	
☐ Entrance/Exit Equipment Tire Wash	
☐ Other:	

Structural Erosion and Sediment Controls	
Description	Estimated Start Date
☒ Silt Fence	
☐ Temporary Berm/Windrow	
☒ Erosion Control Wattles	
☐ Temporary Sediment Barriers	
☐ Erosion Bales	
☐ Temporary Slope Drain	
☐ Turf Reinforcement Mat	
☒ Riprap	
☐ Gabions	
☐ Rock Check Dams	
☐ Sediment Traps/Basins	
☐ Culvert Inlet Protection	
☐ Transition Mats	
☐ Median/Area Drain Inlet Protection	
☐ Curb Inlet Protection	
☐ Interceptor Ditch	
☐ Concrete Washout Facility	
☐ Work Platform	
☐ Temporary Water Barrier	
☐ Temporary Water Crossing	
☐ Permanent Stormwater Ponds	
☐ Permanent Open Vegetated Swales	
☐ Natural Depressions to allow for Infiltration	
☐ Sequential Systems that combine several practices	
☐ Other:	

Dust Controls

Description	Estimated Start Date
☐ Tarps & Wind impervious fabrics	
☐ Watering	
☐ Stockpile location/orientation	
☐ Dust Control Chlorides	
☐ Other	

Dewatering BMPs

Description	Estimated Start Date
☐ Sediment Basins	
☐ Dewatering bags	
☐ Weir tanks	
☐ Temporary Diversion Channel	
☐ Other:	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities **(3.18)**)

Description	Estimated Start Date
☐ Vegetation Buffer Strips	
☐ Temporary Seeding (Cover Crop Seeding)	
☒ Permanent Seeding	
☐ Sodding	
☐ Planting (Woody Vegetation for Soil Stabilization)	
☒ Mulching (Grass Hay or Straw)	
☐ Fiber Mulching (Wood Fiber Mulch)	
☐ Soil Stabilizer	
☐ Bonded Fiber Matrix	
☐ Fiber Reinforced Matrix	
☒ Erosion Control Blankets	
☒ Surface Roughening (e.g. tracking)	
☐ Other:	

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☒ No ☐ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

- **Material Management**
 - Housekeeping
 - Only needed products will be stored on-site by the Contractor.
 - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
 - Products must be stored in original containers and labeled.
 - Material mixing will be conducted in accordance with the manufacturer's recommendations.
 - When possible, all products will be completely used before properly disposing of the container off-site.
 - The manufacturer's directions for disposal of materials and containers will be followed.
 - The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
 - Dust generated will be controlled in an environmentally safe manner.
- Hazardous Materials
 - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.

- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ **Spill Control Practices**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➤ **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ **Waste Disposal**

All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➤ **Hazardous Waste**

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➤ **Sanitary Waste**

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading “POLLUTION PREVENTION PROCEDURES” (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☐ Paints
- ☒ Metals
- ☐ Bituminous Materials
- ☒ Petroleum Based Products
- ☒ Diesel Exhaust Fluid
- ☒ Cleaning Solvents
- ☒ Wood
- ☒ Cure
- ☐ Texture
- ☐ Chemical Fertilizers
- ☐ Other:

Product Specific Practices

- **Petroleum Products**
All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- **Fertilizers**
Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- **Paints**
All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer’s instructions and any applicable state and local regulations.
- **Concrete Trucks**
Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- ☐ Discharges from water line flushing.
- ☐ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☒ Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor’s site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
 - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
 - The release or spill causes an immediate danger to human health or safety
 - The release or spill exceeds 25 gallons
 - The release or spill causes a sheen on surface water
 - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
 - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
 - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
 - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.
- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature (See the General Permit, Section 7.4 (1))

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

➤ **Contractor Information:**

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cellphone: _____ Fax: _____

➤ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cellphone: _____ Fax: _____

➤ **Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cellphone: _____ Fax: _____

➤ **SDDANR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SDDANR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

➤ **SDDANR Stormwater Contact Information**

- SDDANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➤ **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➤ **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➤ **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

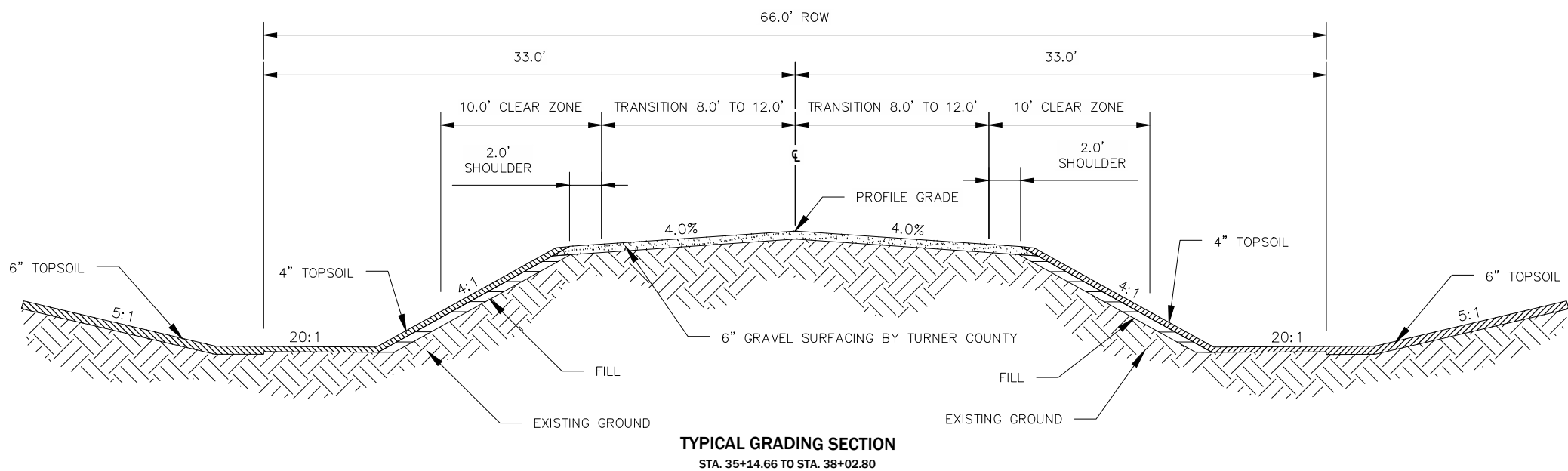
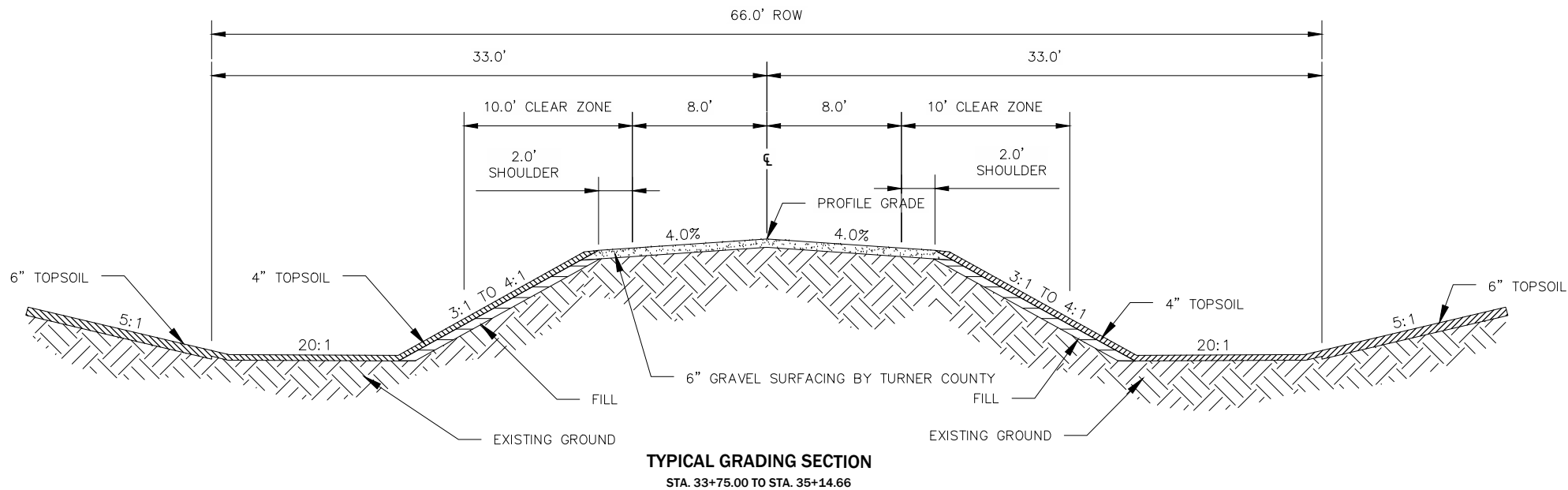
➤ **5.5 (5): Required Notice to Other Operators**

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

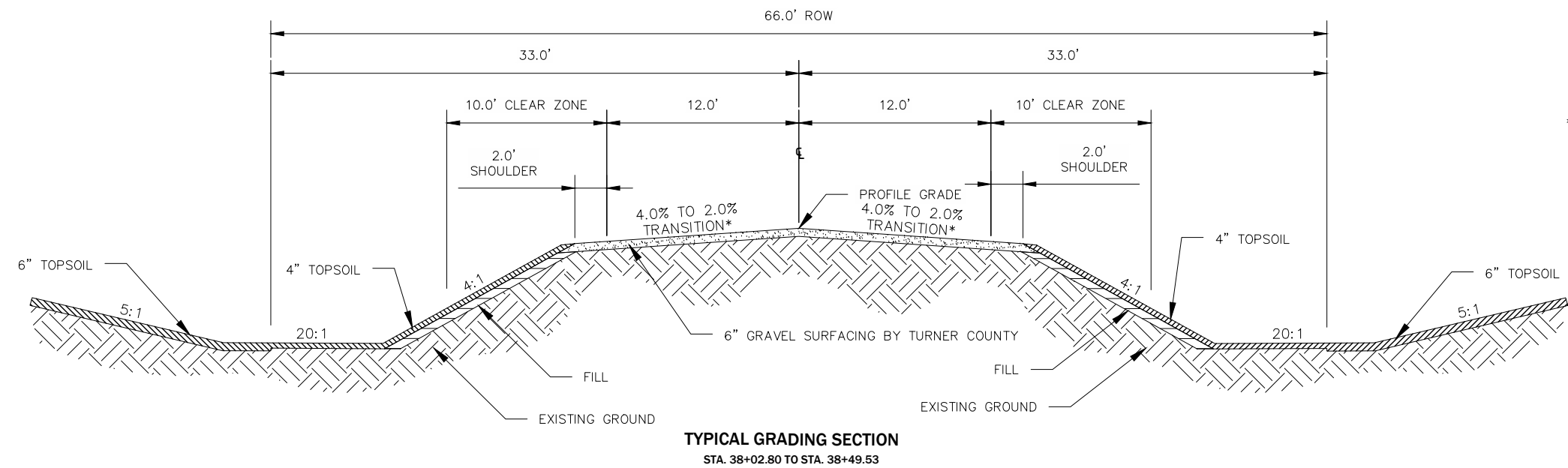
TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	14	58

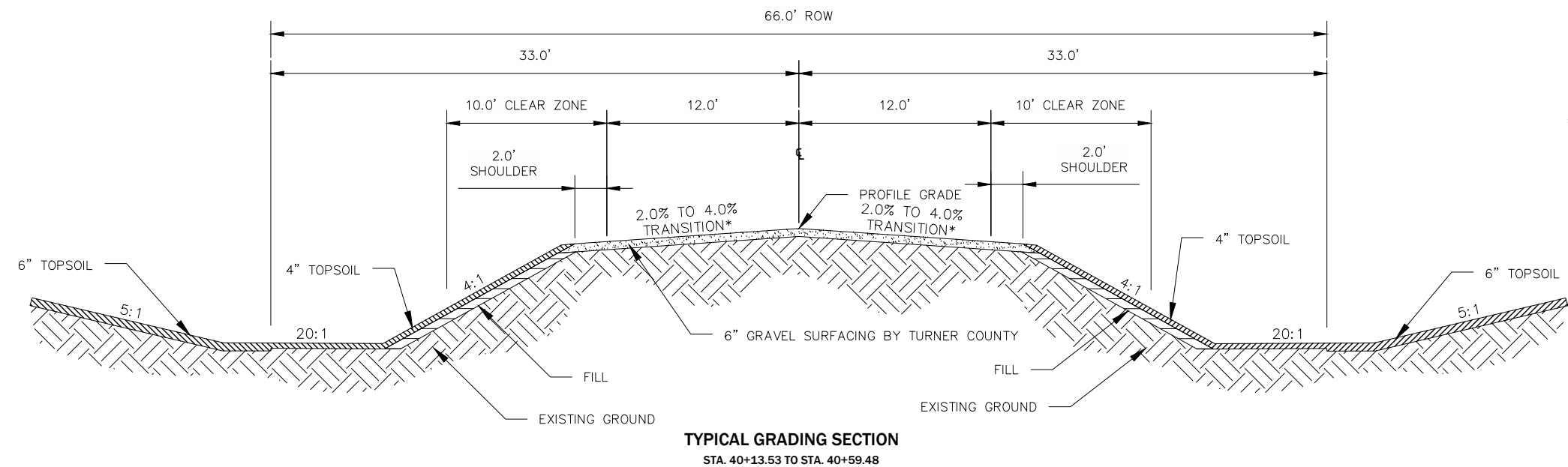


TYPICAL SECTIONS

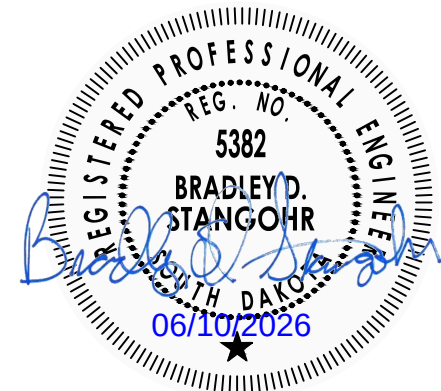
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	15	58



* Transition area from STA. 38+02.80 to STA. 38+49.53

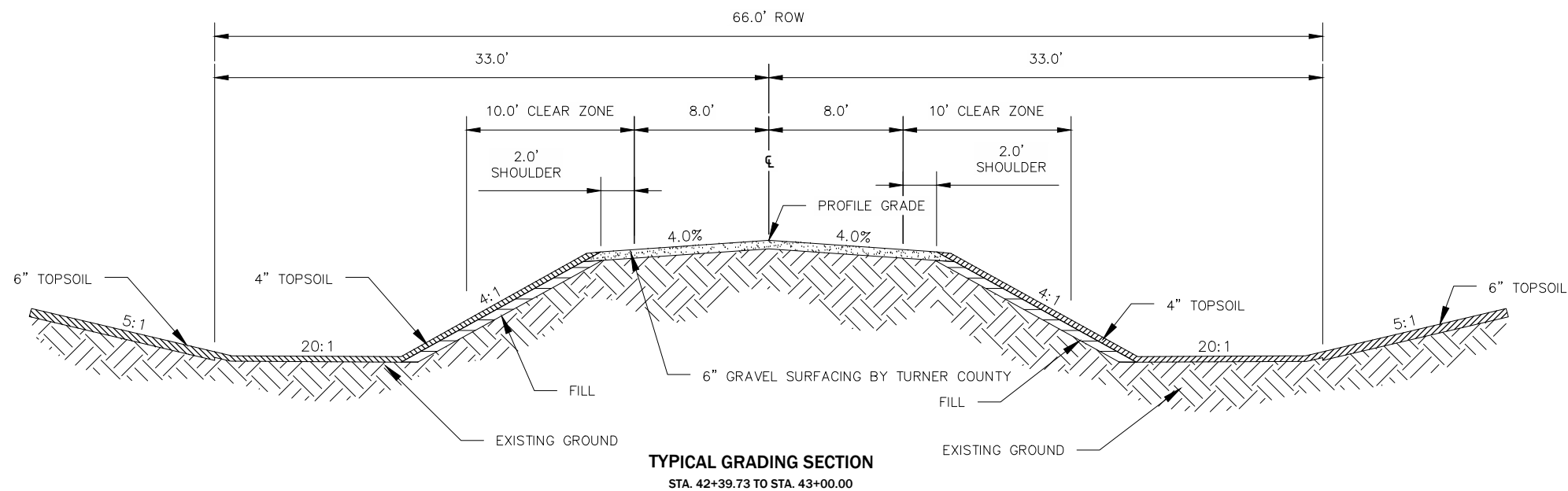
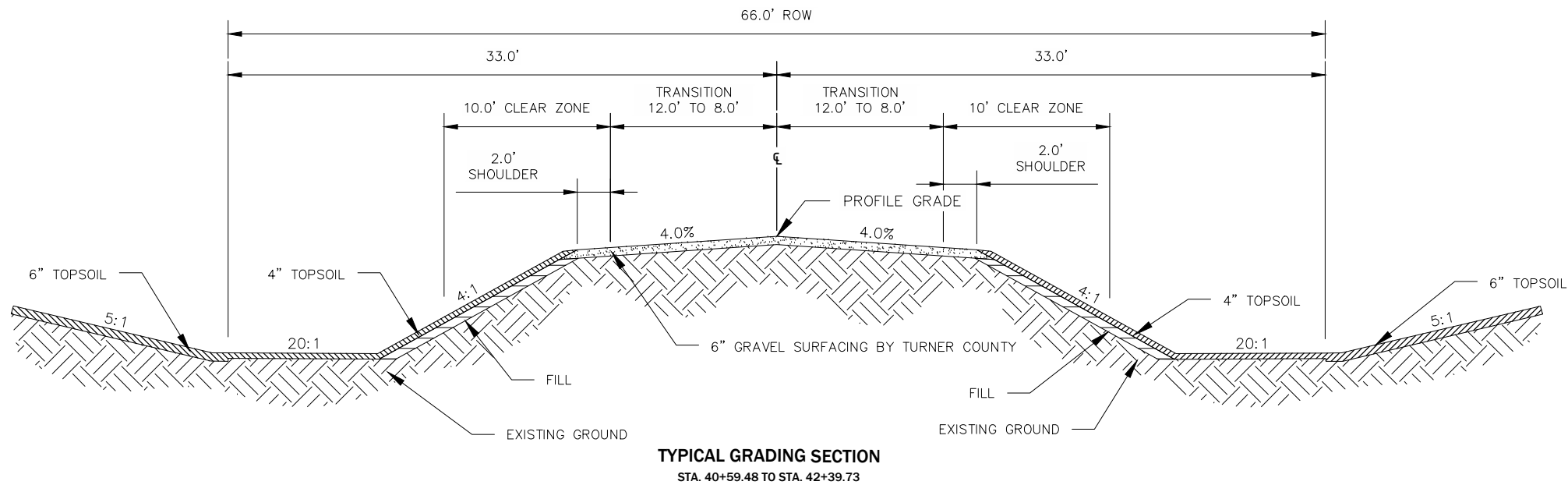


* Transition area from STA. 40+13.53 to STA. 40+59.48



TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	16	58



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	17	58

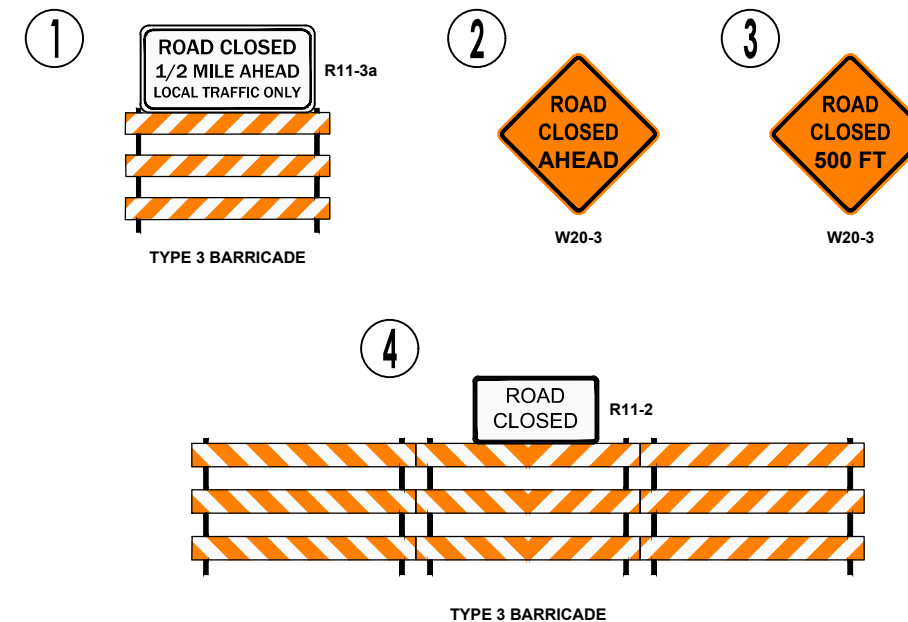


ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

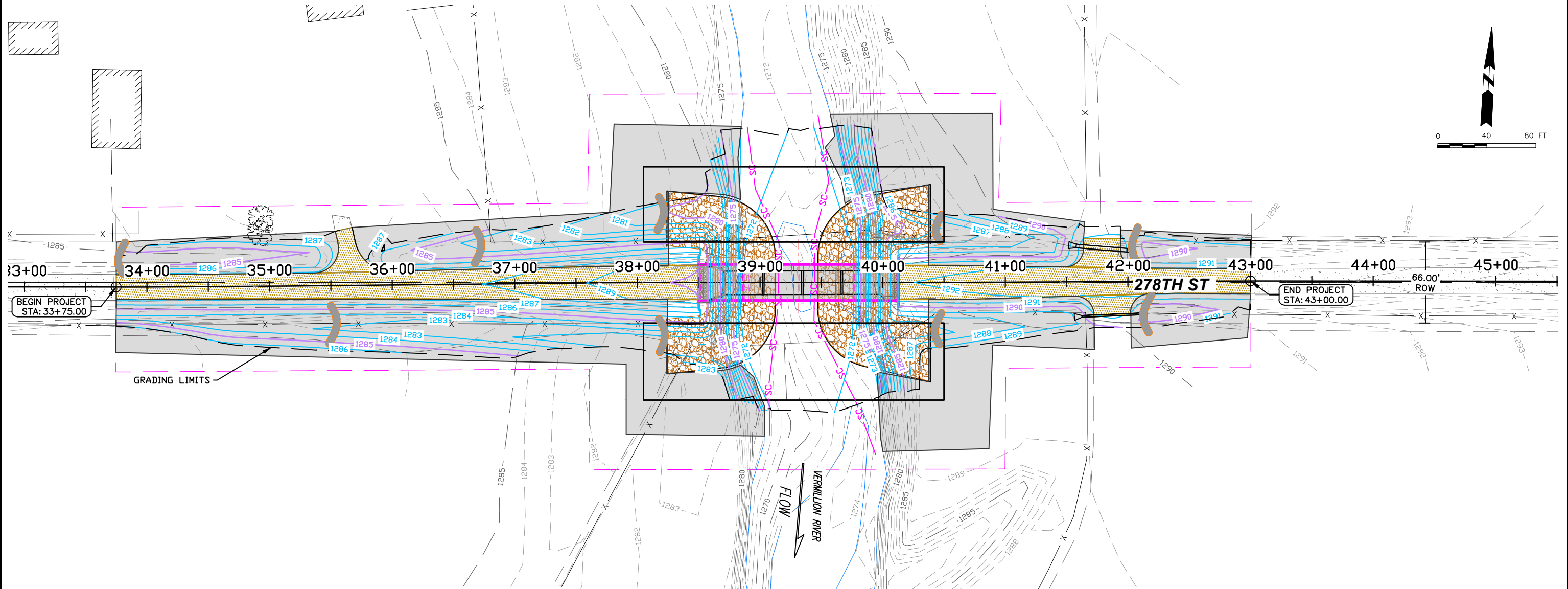
		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
R11-3A	ROAD CLOSED XX MILE AHEAD - LOCAL TRAFFIC ONLY	2	60" x 30"	12.5	50.0
W20-3	ROAD CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-3	ROAD CLOSED 500 FT	2	48" x 48"	16.0	32.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNING SQFT			134.0

TYPE 3 BARRICADES

QUANTITY	8 EACH
----------	--------



EROSION CONTROL



LEGEND

EROSION CONTROL BLANKET

CLASS B RIPRAP

TEMPORARY CONSTRUCTION EASEMENT

PERMANENT CONSTRUCTION EASEMENT

HIGH FLOW SILT FENCE

FLOATING SILT CURTAIN

12" DIAMETER EROSION CONTROL WATTLE

TABLE OF 12" DIAMETER WATTLES

12" Diameter Wattle			
Station	L/R	Diameter (Inch)	Quantity (Ft)
33+73.44	L	12	20
35+51.47	R	12	20
36+69.83	L	12	20
38+24.53	L	12	20
38+25.56	R	12	20
40+40.40	L	12	20
40+39.24	R	12	20
42+10.85	L	12	20
42+12.67	R	12	20
Miscellaneous			100
Total			280

TABLE OF HIGH FLOW SILT FENCE

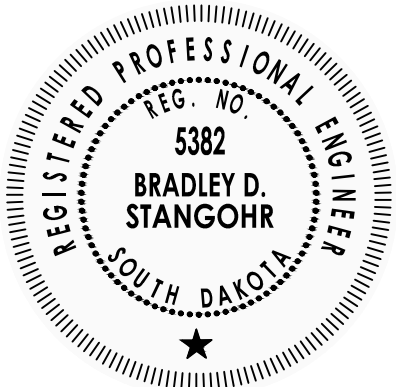
High Flow Silt Fence			
Station			Quantity (Ft)
Additional Quantity:			150
Total:			150

TABLE OF EROSION CONTROL BLANKET

Type 2 Erosion Control Blanket					
Station		Station	L/R	Type	Quantity (SqYd)
33+74.67	To	39+03.95	R	2	3070
33+74.97	To	35+56.19	L	2	600
35+67.82	To	38+84.70	L	2	1865
39+53.16	To	41+65.11	L	2	1605
39+95.51	To	41+72.52	R	2	1330
41+94.60	To	43+00.78	L	2	340
42+02.51	To	42+99.97	R	2	425
Miscellaneous					100
Total					9335

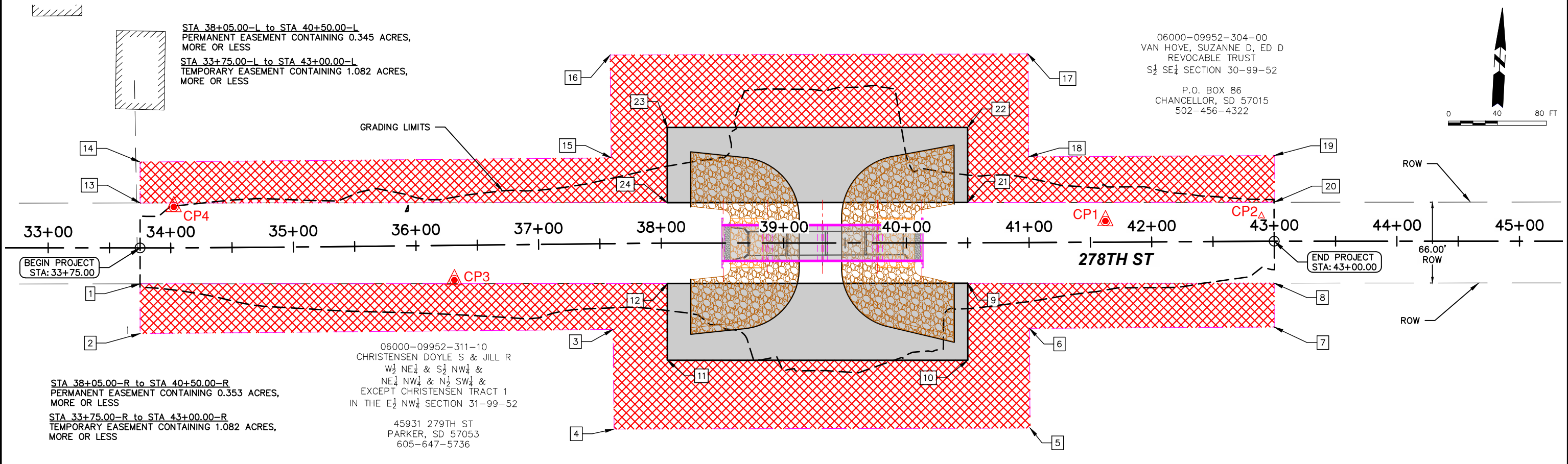
TABLE OF FLOATING SILT CURTAIN

Floating Silt Curtain		
Station	L/R	Quantity (Ft)
39+15.24	L/R	255
39+44.39	L/R	290
Total		545



SURVEY DATA & EASEMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	19	58



LEGEND

PERMANENT DRAINAGE EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

BASIS OF BEARINGS:
SOUTH DAKOTA STATE PLANE
SOUTH ZONE
US SURVEY FOOT
NAVID 88
GEOID18

SURVEY NOTE:
PARCEL LINES SCALED IN APPROXIMATELY
FROM GIS FOR INFORMATIONAL PURPOSES.

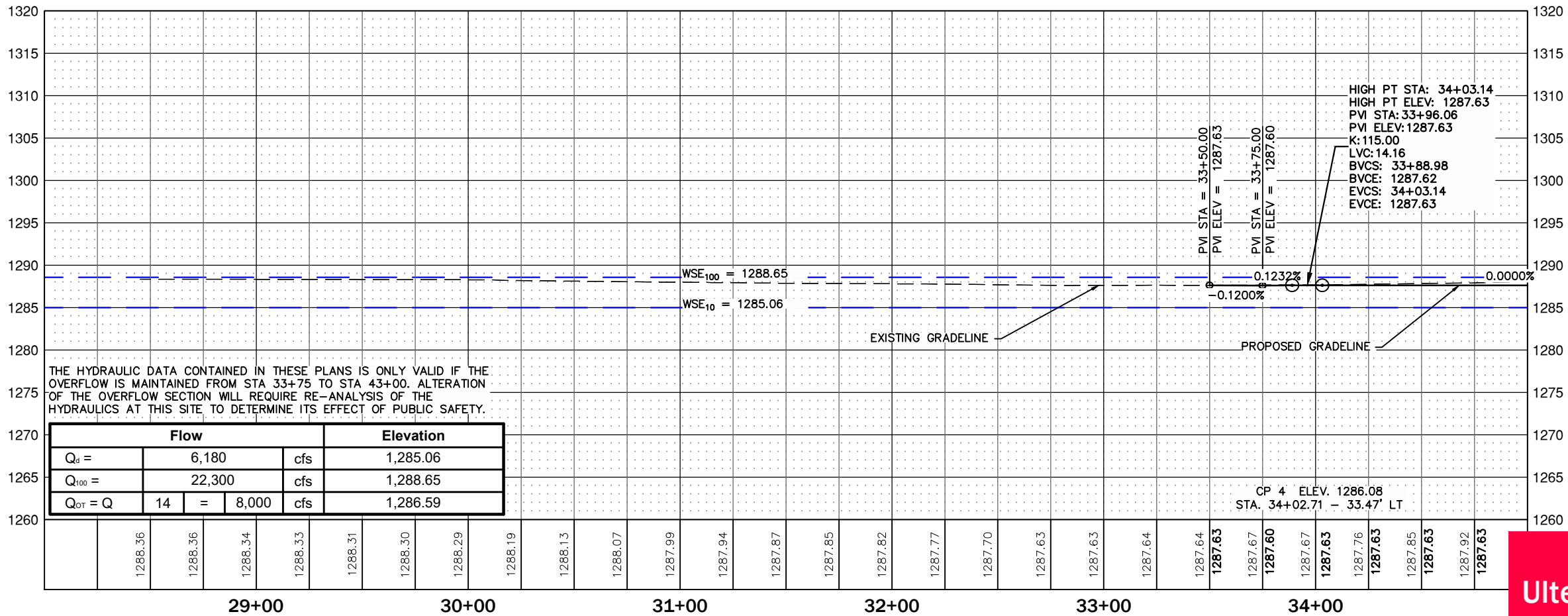
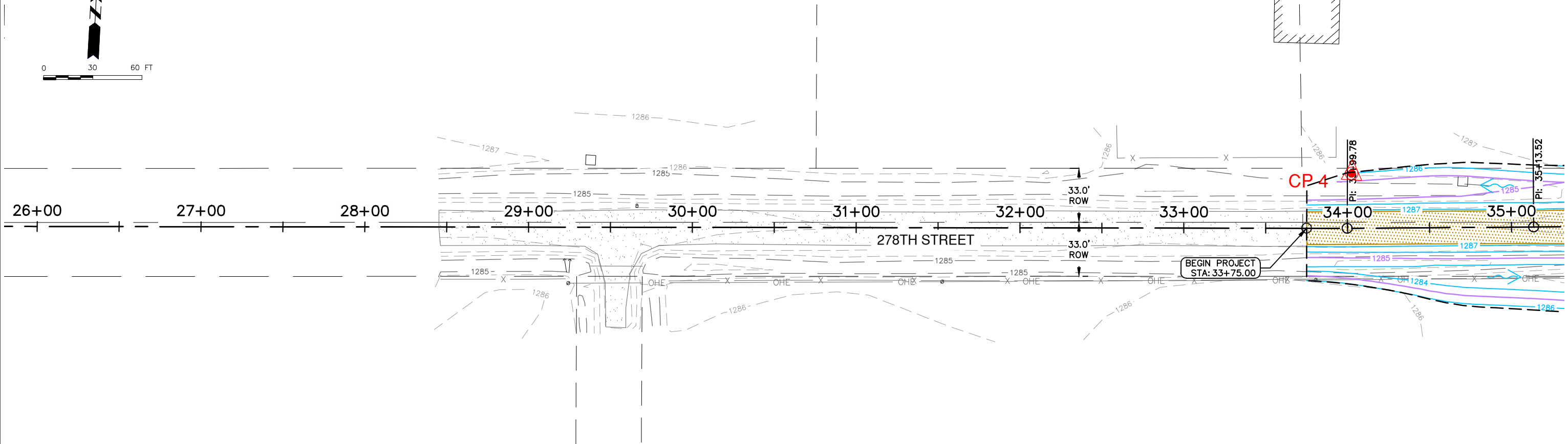
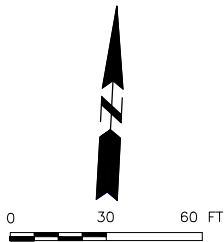
Point Table							
Point #	Raw Description	Station	Offset	L/R	Elevation	Northing	Easting
1	100 5/8 RB W PPC	41+62.39	17.24	L	1291.899	391230.7550	2846546.5700
2	100 5/8 RB W PPC	42+89.55	15.33	L	1291.421	391236.1100	2846673.6120
3	100 5/8 RB W PPC	36+31.04	28.33	R	1287.852	391155.1550	2846018.8380
4	100 5/8 RB W PPC	34+02.71	33.47	L	1286.086	391202.9240	2845787.1830

Permanent and Temporary Easements							
#	Station	Offset	Side	#	Station	Offset	Side
1	33+75.00	29.34	R	13	33+75.00	36.66	L
2	33+75.00	70.00	R	14	33+75.00	70.00	L
3	37+60.00	70.00	R	15	37+60.00	70.00	L
4	37+60.00	151.35	R	16	37+60.00	154.00	L
5	41+00.00	151.35	R	17	41+00.00	154.00	L
6	41+00.00	70.00	R	18	41+00.00	70.00	L
7	43+00.00	70.00	R	19	43+00.00	70.00	L
8	43+00.00	34.16	R	20	43+00.00	31.84	L
9	40+50.00	33.00	R	21	40+50.00	33.00	L
10	40+50.00	95.86	R	22	40+50.00	94.23	L
11	38+05.00	95.69	R	23	38+05.00	94.39	L
12	38+05.00	33.00	R	24	38+05.00	33.00	L

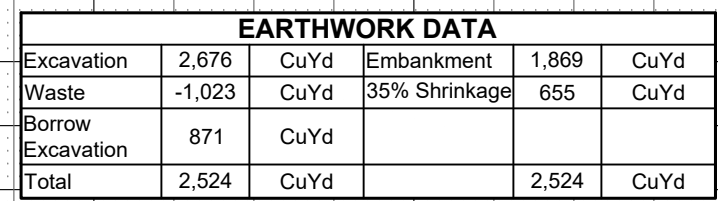
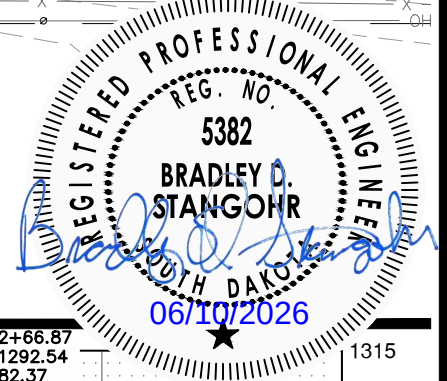


PLAN & PROFILE

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	20	58



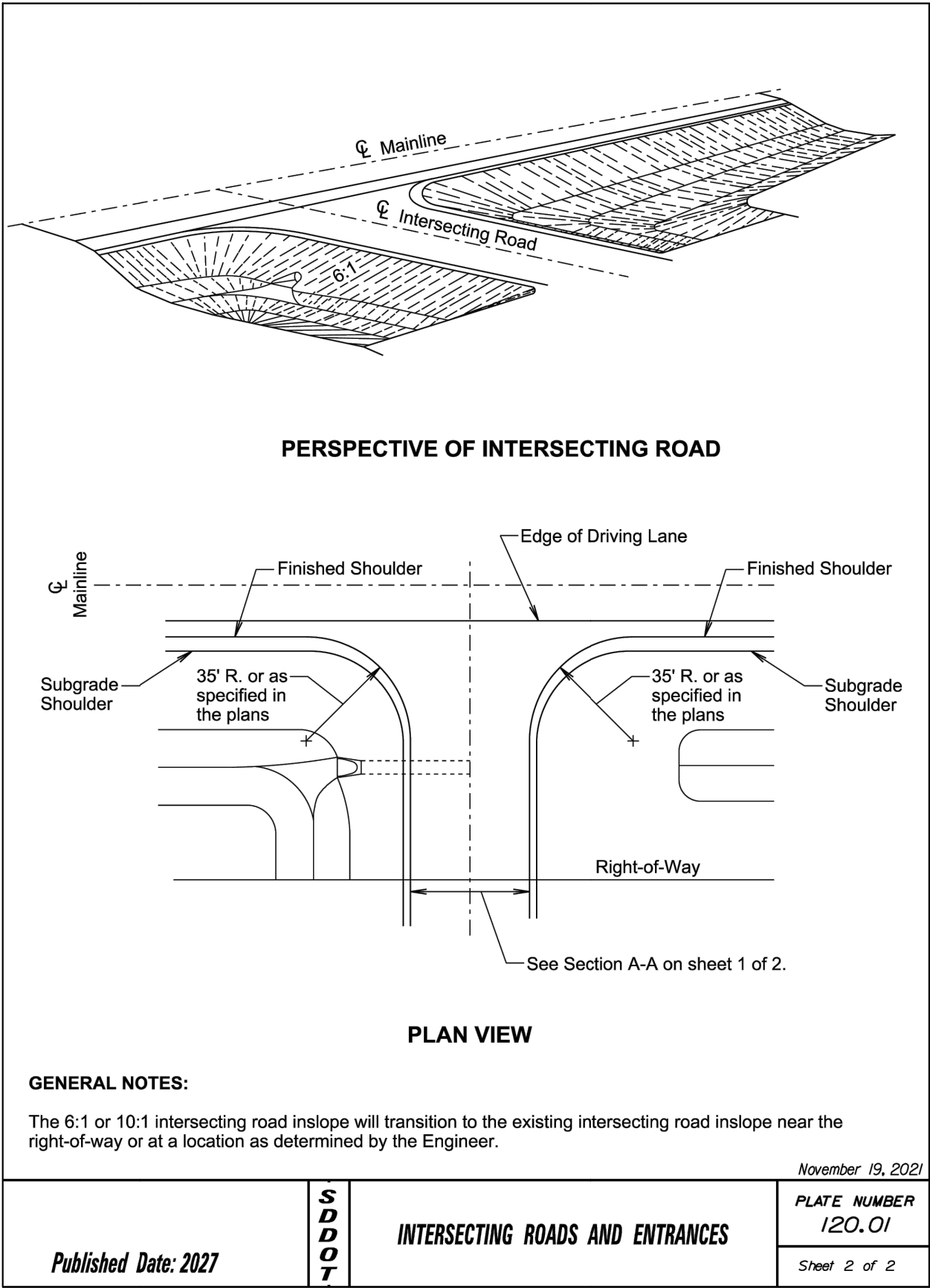
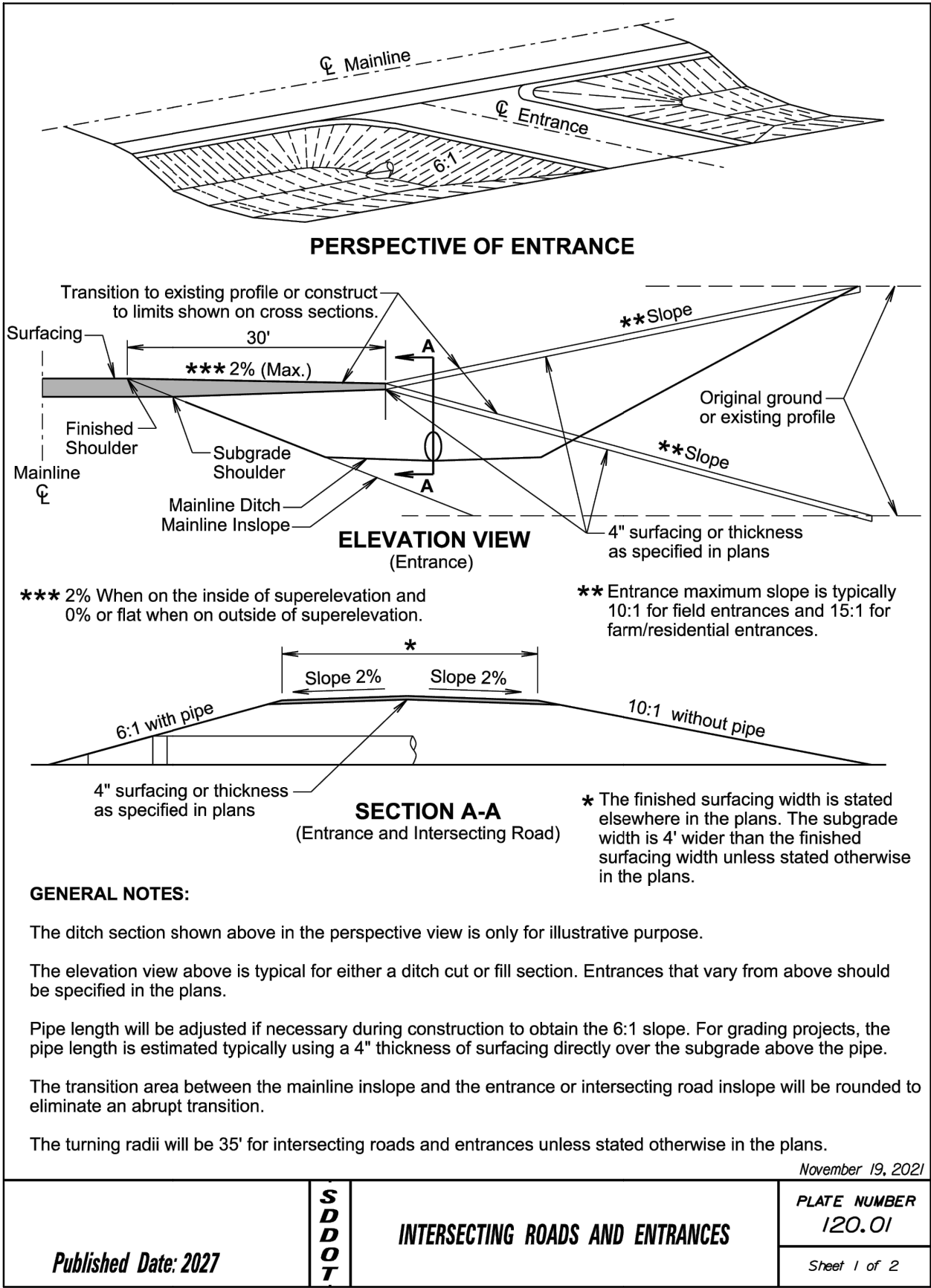
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	21	58

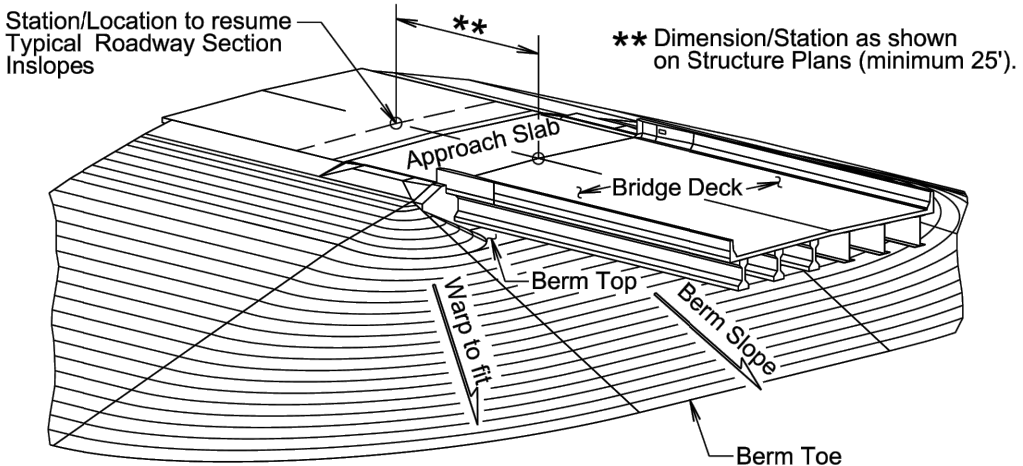


listen. We solve.®

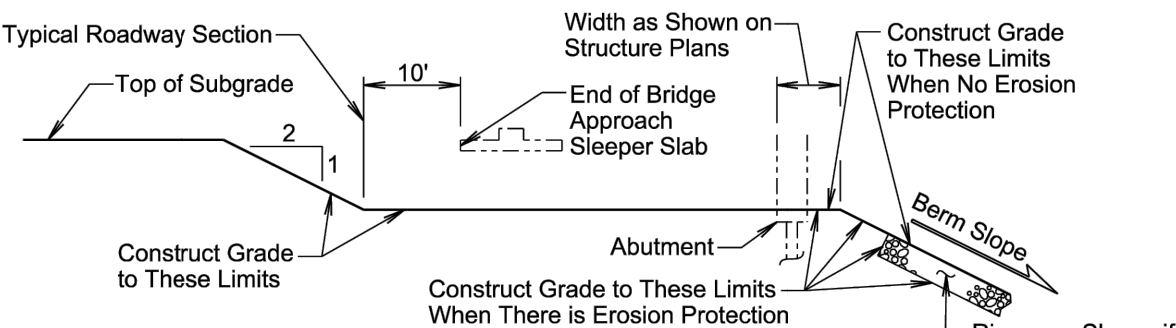
STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	22	58

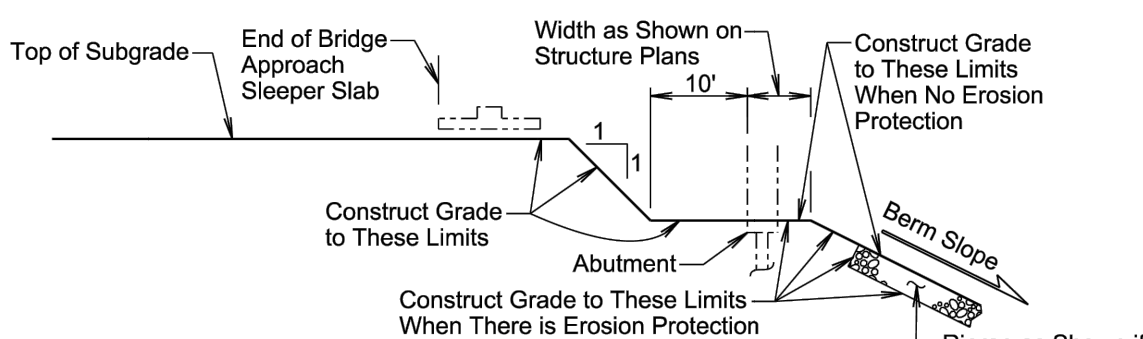




ISOMETRIC VIEW OF BRIDGE BERM
(Girder Bridge shown, others similar)



TYPICAL GRADING PROFILE AT BRIDGE BERM
(Normal to centerline of abutment at centerline of roadway)



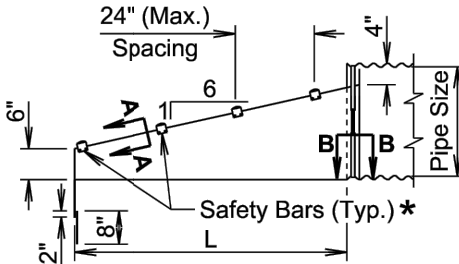
TYPICAL GRADING PROFILE AT BRIDGE BERM
(Normal to centerline of abutment at centerline of roadway)

GENERAL NOTES:

The bridge berm elevation and slope will be as shown in the Structure Plans.
See Structure Plans to determine which grading profile to use.

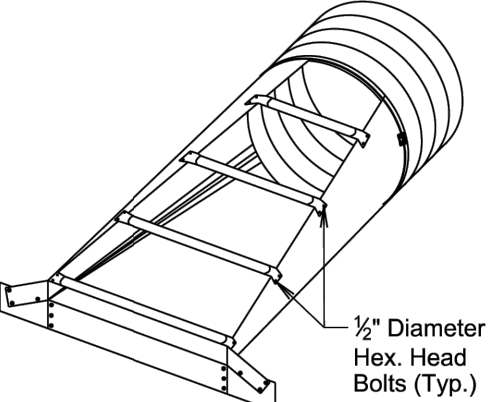
January 22, 2021

Published Date: 2027	S D D O T	BRIDGE BERM (PROJECTING EMBANKMENT)	PLATE NUMBER
			120.11
			Sheet 1 of 1

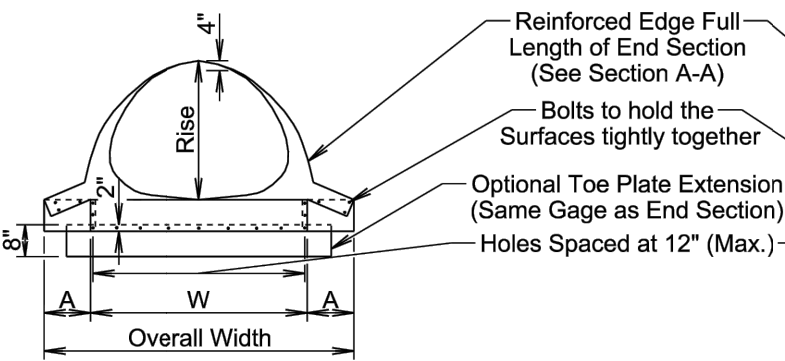


* Number of bars required will vary depending on the length of the end section.

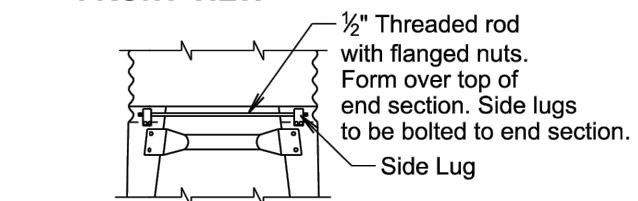
ELEVATION VIEW



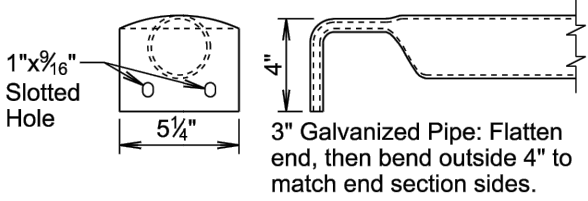
ISOMETRIC VIEW



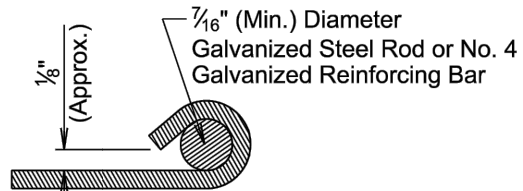
FRONT VIEW



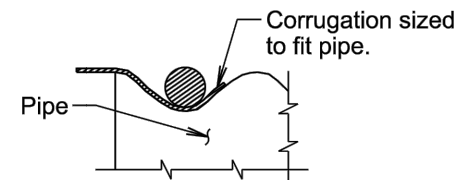
TYPE #2 CONNECTOR DETAIL
(For 30\"/>



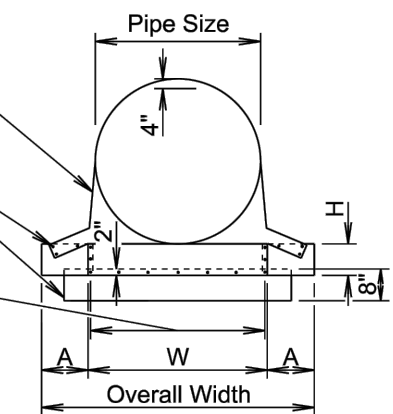
DETAIL OF SAFETY BARS



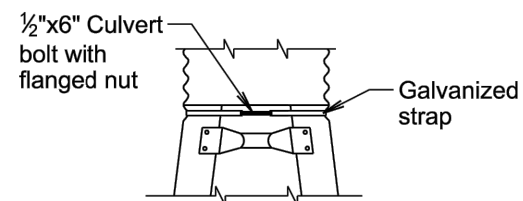
SECTION A-A



SECTION B-B



FRONT VIEW



TYPE #1 CONNECTOR DETAIL
(For 15\"/>

April 8, 2025

Published Date: 2027	S D D O T	C.M.P. SAFETY ENDS	PLATE NUMBER
			450.38
			Sheet 1 of 2

STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	24	58

ARCH C.M.P. SAFETY ENDS										
Equiv. Dia. (Inch)	(Inches)		(Min.) Thick.	Dimensions (Inches)				L Dimensions		
	Span	Rise	Inch	Gage	A	H	W	Overall Width	Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

CIRCULAR C.M.P. SAFETY ENDS								
Pipe Dia. (Inch)	(Min.) Thick.	Dimensions (Inches)				L Dimensions		
	Inch	Gage	A	H	W	Overall Width	Slope	Length (Inch)
15	.064	16	8	6	21	37	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety bars will be provided when specified in the plans.

Safety ends will be fabricated from galvanized steel conforming to the requirements of the Specifications.

Safety bars will be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5x.216 in conformance with ASTM A500, grade B or C.

Slotted holes for safety bar attachment will be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter will be made with Type #1 straps. All other sizes will be attached with Type #2 rods and lugs.

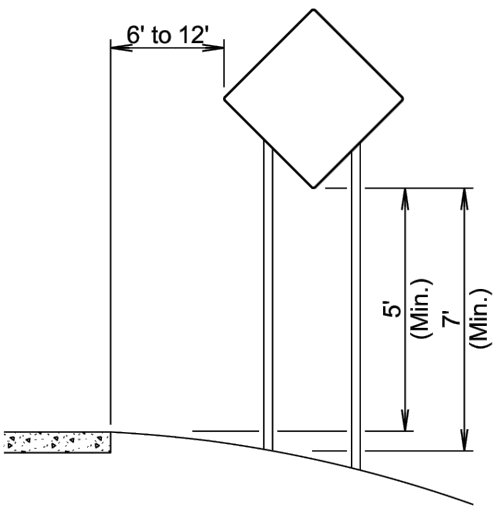
When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

Installation will be performed in accordance with the Specifications.

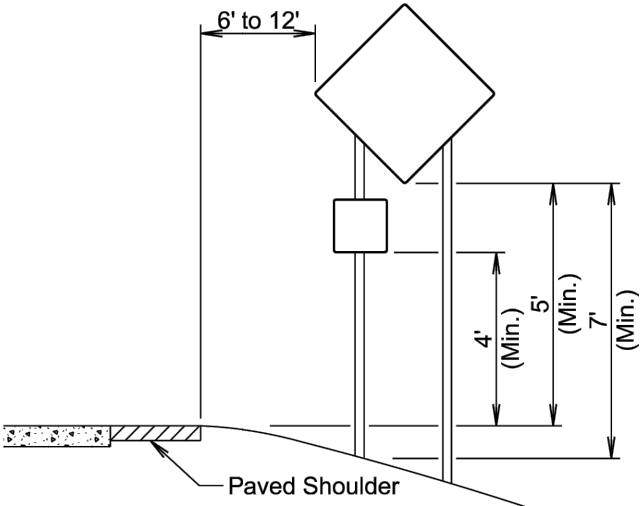
Cost of all work and materials required for fabrication and installation of safety ends will be incidental to the bid items for the various sizes of safety ends.

April 8, 2025

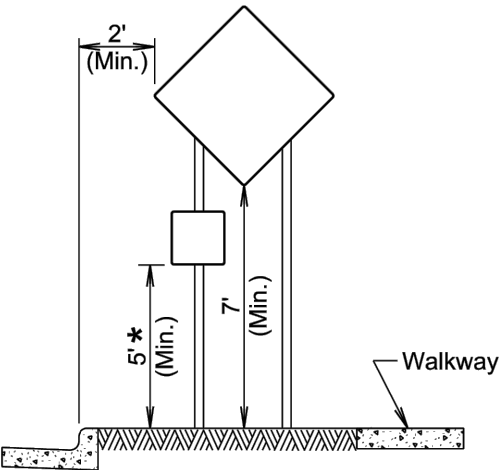
Published Date: 2027	S D D O T	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2



RURAL DISTRICT

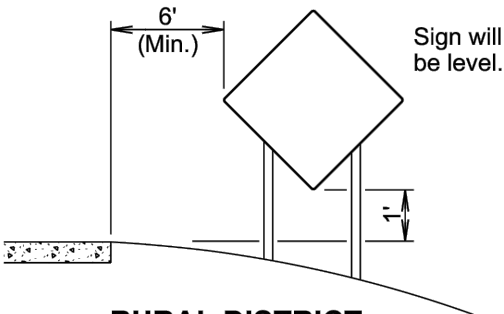


RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

January 22, 2021

Published Date: 2027	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	25	58

PLAN VIEW
(Examples of stub height clearance checks)

ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

Published Date: 2027	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

STANDARD DITCH SECTION

SLOPED DITCH SECTION

TRENCH DETAIL

MEDIAN SECTION

OVERLAP DETAIL

PIPE END DETAIL

GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas will be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket will be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket will be buried in a trench 6" wide by 6" deep. There will be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

The erosion control blanket will be pinned to the ground according to the manufacturer's installation recommendations.

After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections will be shaped when installing the erosion control blanket. All costs for shaping the ditches will be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

February 14, 2020

Published Date: 2027	S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	26	58

MANUAL HIGH FLOW SILT FENCE INSTALLATION

1 EXCAVATE TRENCH

2 DRIVE STEEL T FENCE POSTS

3 ATTACH SILT FENCE FABRIC

4 BACKFILL TRENCH AND WHEEL COMPACT SOIL

DETAIL B

8" staples will be placed at each post to secure the silt fence fabric to the bottom of the trench.

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.

Post spacing will be 3' for these types of applications of silt fence. All other components of the silt fence will be the same as shown above.

The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

February 14, 2020

Published Date: 2027	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

1 INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

2 WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

3 ATTACH SILT FENCE FABRIC

DETAIL B

SECTION A-A

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.

The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

The radius of the silt fence will be the minimum capable by the slicing machine. The post spacing will be 3' for these types of applications of silt fence. All the other components of the silt fence will be the same as shown above.

GENERAL NOTE:

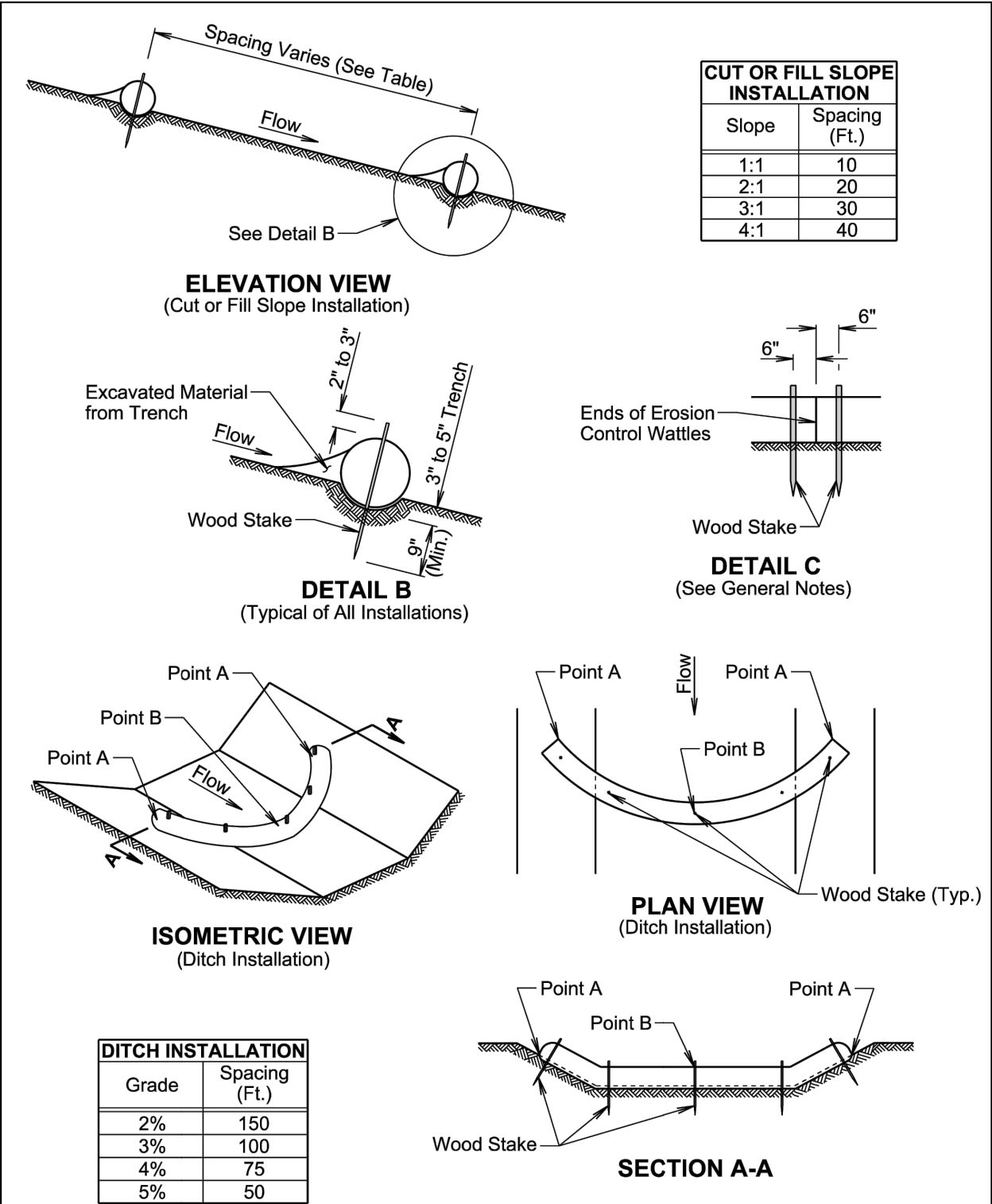
If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 2027	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2

STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	27	58



February 14, 2020

Published Date: 2027	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER
			734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

February 14, 2020

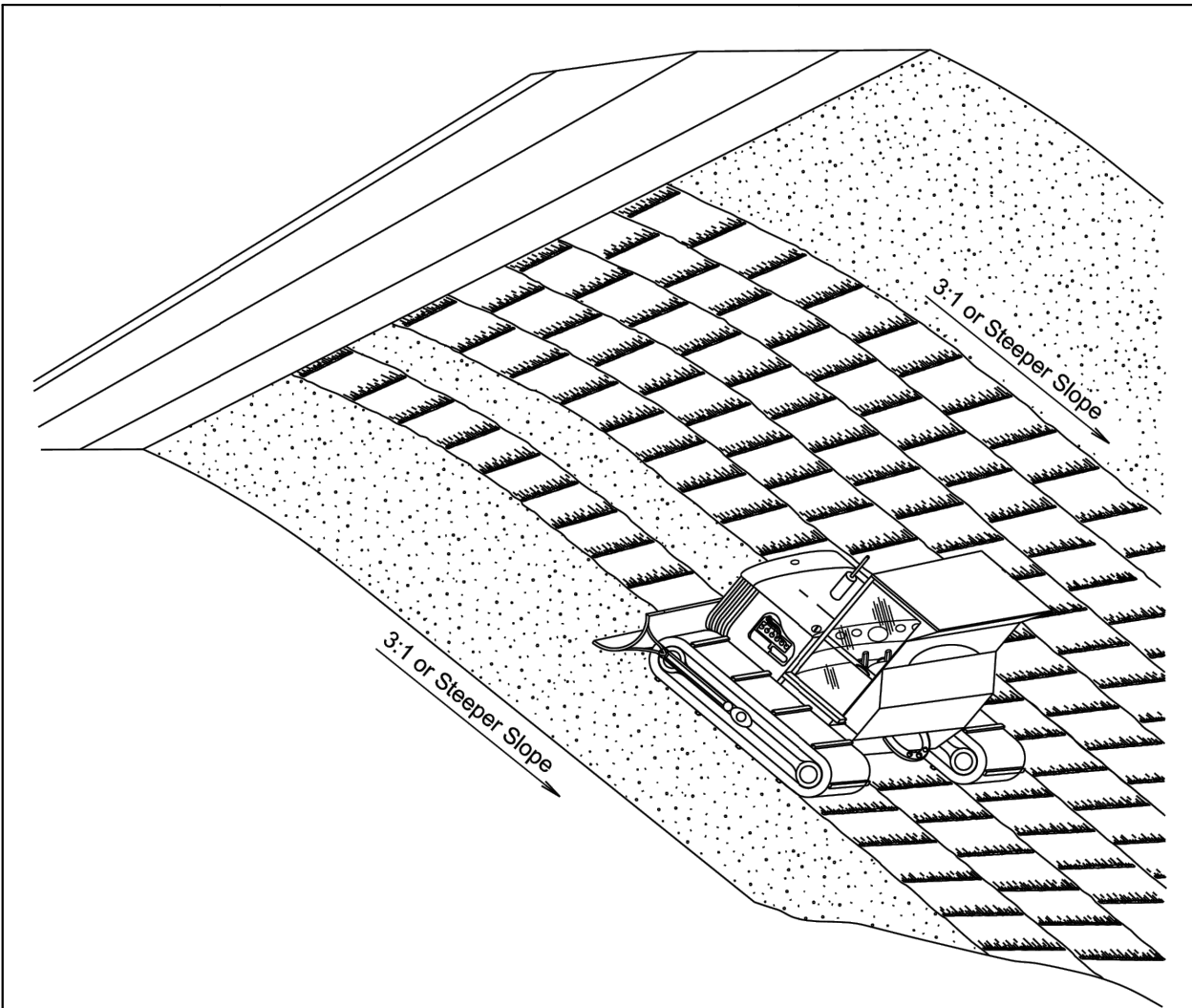
Published Date: 2027	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER
			734.06
			Sheet 2 of 2

Ulteig

We listen. We solve.®

STANDARD PLATES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	28	58



GENERAL NOTES:

Where practical, surface roughening will be done on slopes 3:1 and steeper and on slopes deemed necessary by the Engineer.

The equipment used for surface roughening will be equipped with tracks that are capable of creating ridges in the soil that are perpendicular to the slope. The final condition of the surface roughening will be approved by the Engineer.

Measurement for surface roughening will be to the nearest tenth of an acre.

All costs associated with surface roughening including labor, equipment, and materials will be incidental to the contract unit price per acre for "Surface Roughening".

February 14, 2020

Published Date: 2027	S D D O T	SURFACE ROUGHENING	PLATE NUMBER 734.25
			Sheet 1 of 1



The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8063(21)	29	58

-X020- INDEX OF BRIDGE SHEETS-

Sheet No. 1 - General Drawing
Sheet No. 2 - Estimate of Structure Quantities and Notes
Sheet No. 3 - Notes (Continued)
Sheet No. 4 - Notes (Continued)
Sheet No. 5 - Subsurface Investigation
Sheet No. 6 - Piling Layout
Sheet No. 7 - Abutment No. 1 & 5 Details
Sheet No. 8 - Bent Details (A)
Sheet No. 9 - Bent Details (B)
Sheet No. 10 - Superstructure Details (A)
Sheet No. 11 - Superstructure Details (B)
Sheet No. 12 - T101 Railing Details
Sheet No. 13 - Details of Bridge End Backfill (A)
Sheet No. 14 - Details of Bridge End Backfill (B)
Sheet No. 15 - Riprap Details
Sheet No. 16 - As - Built Elevation Survey
Sheet No. 17 - Standard Plate No's. 460.02 & 460.05
Sheet No. 18 - Standard Plate No's. 510.40

HYDRAULIC DATA

Q_d	6180 cfs
A_d	2007 sq. ft.
V_d	2.1 fps
Q_F	6180 cfs
Q_{100}	22300 cfs
Q_{OT}	8000 cfs
V_{max}	5.6 fps

Q_d = Design discharge for the proposed bridge based on 10 year frequency. El. 1285.06

Q_{ot} = Overtopping discharge and frequency 14 year recurrence interval. El. 1286.59 at 450 feet west of the structure.

Q_i = Designated peak discharge for the basin approaching proposed project based on 10 year frequency.

Q_{100} = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 1288.65.

V_{max} = Maximum computed outlet velocity for the proposed bridge based on a 25 year frequency.

◆ Topeka Shiner Stream

GENERAL DRAWING FOR

164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY
VERMILLION RIVER
STA. 38+49.53 TO STA. 40+13.53
STR. NO. 63-186-100
PCN 09MF

0° SKEW
SEC. 30/31-T99N-R52W
BRO-B 8063(21)
HL-93

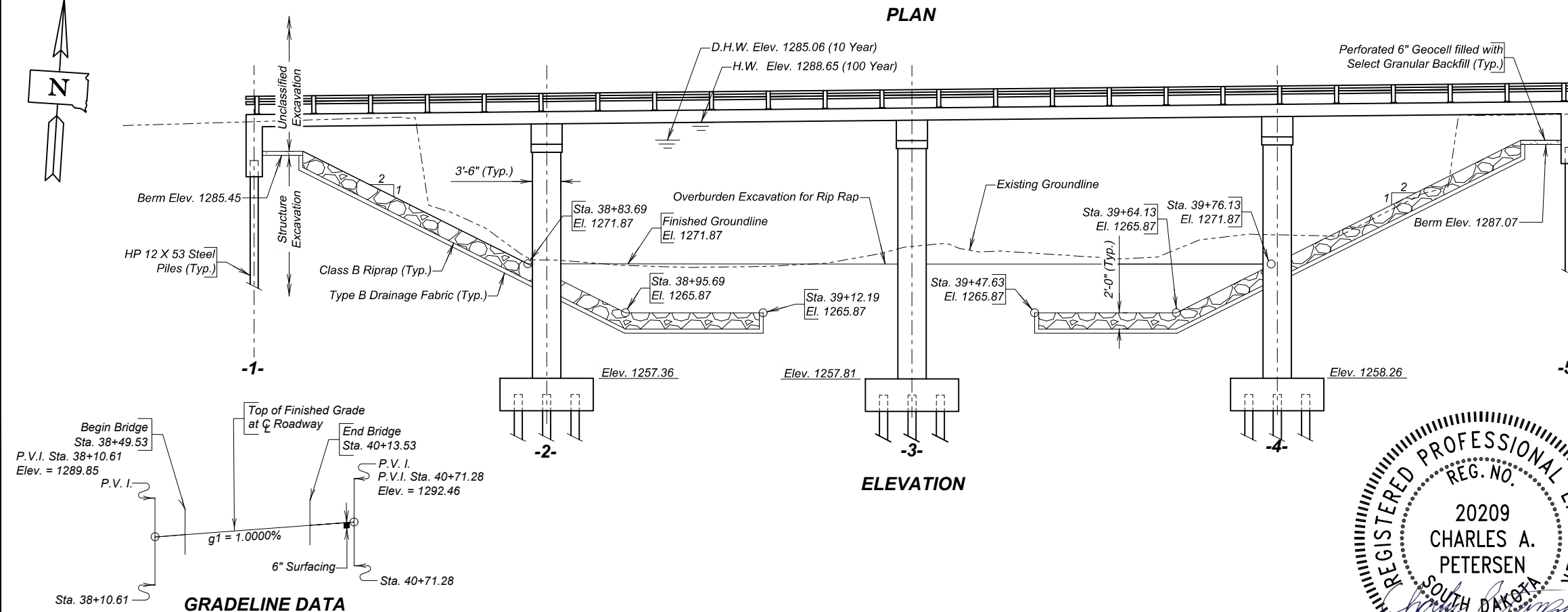
TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION

MARCH 2026

1 OF 18

-X020-

DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------



GRADELINE DATA

NOTES: T.S. @ ϕ Elev. = Top of Slab at Centerline Elevation
NOTES: T.S. @ E. El. = Top of Slab at Edge Elevation

PLANS BY: ULTEIG ENGINEERS, INC.



ESTIMATE OF STRUCTURE QUANTITIES

DESCRIPTION	QUANTITY	UNIT	REMARKS
Bridge Elevation Survey	Lump Sum	LS	
Select Granular Backfill	10.7	Ton	
Incidental Work, Structure	Lump Sum	LS	
Structure Excavation, Bridge	947	CuYd	
Bridge End Embankment	257	CuYd	
Granular Bridge End Backfill	25.9	CuYd	
Class A45 Concrete, Bridge Deck	268.3	CuYd	
Class A45 Concrete, Bridge	188.6	CuYd	
Concrete Penetrating Sealer	555.8	SqYd	
T101 Bridge Railing	360	Ft	
Reinforcing Steel	47,799	Lb	
Epoxy Coated Reinforcing Steel	93,667	Lb	
Extract Pile	6	Each	
Preboring Pile	100	Ft	
HP 12x53 Steel Test Pile, Furnish and Drive	410	Ft	
HP 12x53 Steel Bearing Pile, Furnish and Drive	2,905	Ft	
Class B Riprap	2,239.0	Ton	
Overburden Excavation for Riprap	4,511	CuYd	
Type B Drainage Fabric	2,616	SqYd	
Perforated Geocell	425	SqFt	

BRIDGE SPECIFICATIONS

- Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-7-26 Version, Required Provisions, and Special Provisions as included in the proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications/2026-standard-specifications/>

BRIDGE DESIGN LOADING

- AASHTO HL-93.
- Dead Load includes 22 psf for future wearing surface on the roadway.

DESIGN MATERIAL STRENGTHS

Class A45 Concrete
Reinforcing Steel (ASTM A615, Gr. 60)
Piling (ASTM A572 Grade 50)

$f_c = 4,500$ psi
 $f_y = 60,000$ psi
 $f_y = 50,000$ psi

DESIGN MIX OF CONCRETE

- All structural concrete will be Class A45 unless otherwise indicated.
- Type II 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.
- Contractor will imprint on the structure the date of new construction as specified and detailed on Standard Plate 460.02.
- 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.
- Bridge berms will be constructed to the plans template prior to any pile driving or construction of abutment footings. See Standard Plate 120.11. Berm slopes will not be disturbed after construction. Any alterations to the berm or slopes after berm construction will be submitted to the Bridge Construction Engineer for approval. Allow 30 days for review of proposals.
- Compaction of the Earth End Embankment and Bridge Berm Material will be governed by the Specified Density Method.
- The elevation of the bridge deck is 6 inches above subgrade elevation.

INCIDENTAL WORK, STRUCTURE

- In place centerline Sta. 38+70.76 to centerline Sta. 39+98.76 is a 128.0' 4 span bridge with a 18-0" clear roadway. The superstructure consists of concrete deck on steel stringers with steel pipe railing on both side of the bridge. The substructure consists of 3 column reinforced concrete bents and reinforced concrete vertical abutments.
- Break down and remove the existing bridge to 1-foot below finished groundline, or as required to construct the new structure in accordance with Section 110 of the Construction Specifications. All portions of the existing bridge will be removed and disposed of by the Contractor at an approved site. An appropriate site will be as described in the Environmental Commitments Notes in the plans.
- During demolition of the structure, efforts will be taken to prevent material from falling into the river.

- The foregoing is a general description of the in-place bridge and should not be construed to be complete in all details. Before preparing the bid, it will be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved.
- Costs associated with the forgoing work will be incidental to the contract lump sum price for "Incidental Work, Structure."
- Original plans for the existing structure are not available. It is unknown whether the existing abutments or bents have piling. Any existing pile that interferes with the piling for the new structure will be extracted. It is assumed the 6 piles may need extracting (if present).
- Payment for extracting piling will be contract unit price per each for Extract Pile and will be fill compensation for extracting piling including materials, labor, and equipment necessary or incidental to the satisfactory completion of this work.

NOTICE - LEAD BASED PAINT

Be advised that the paint on the steel surfaces of the existing structure contains lead. The Contractor should plan operations accordingly and inform employees of the hazards of lead exposure

PILE DRIVING

- Approximately 50 feet of dense sand and gravel is present below elevation 1234. Piling may achieve bearing prior to reaching the full expected depth. Pile tips are anticipated to vary significantly.
- The Contractor will initially order half the plans quantity of piling to reduce the amount of potential overrun. Following initial pile driving operations, once a more refined understanding of how much variability to expect has been developed, the remainder of the pile can be ordered.
- A drivability analysis was performed using the wave equation analysis program (GRLWEAP). The following pile hammers were evaluated and found to produce acceptable driving stresses:

Delmag D36-23
APE D 36-26
SPI D36-26

- Pile hammers not listed will require evaluation and approval prior to use from the Geotechnical Engineering Activity. Requests for evaluation of hammers not listed will be submitted a minimum of 5 business days prior to installation of pile



NOTES (CONTINUED)
FOR
164'-0" CONT. CONCRETE BRIDGE

Str. No. 63-186-100

MARCH 2026

2 OF 18

DESIGNED BY: CAP	CHECKED BY: TF	DRAFTED BY: TCM	BRIDGE ENGINEER
---------------------	-------------------	--------------------	-----------------

ABUTMENTS

1. Preboring piling at each abutment is required to whichever is greater, ten feet or to natural ground.
2. The HP 12x53 Piling were designed using a factored bearing resistance of 98 tons per pile. Piling will develop a field verified nominal bearing resistance of 245 tons per pile.
3. One test pile will be driven at each abutment and will become part of the pile group. The test pile will be driven before any other pile and will be driven to the required field verified nominal bearing resistance or as directed by the Engineer prior to driving any portion of the bearing piles.
4. The Contractor will have sufficient pile splice material on hand before pile driving is started. See Standard Plate 510.40.
5. A pile-driving template will be used to ensure this accuracy.
6. Each finished abutment will include a Bridge Survey Marker. See Standard Plate 460.05.

BENTS

1. The HP 12x53 Piling were designed using a factored bearing resistance of 98 tons per pile. Piling will develop a field verified nominal bearing resistance of 245 tons per pile.
2. One test pile will be driven at each pier and will become part of the pile group. The test pile will be driven before any other pile and will be driven to the required field verified nominal bearing resistance or as directed by the Engineer prior to driving any portion of the bearing piles.
3. The Contractor will have sufficient pile splice material on hand before pile driving is started. See Plate 510.40.
4. The maximum horizontal out of position tolerance at the cutoff elevation is 3 inches. A pile driving template will be used to aid in accuracy.
5. It is anticipated that Cofferdams will be necessary. Cofferdams will be designed and constructed in accordance with Section 423 of the Construction Specifications.

SUPERSTRUCTURE

1. Preplanned construction joints may be used in accordance with Section 460.3 of the Construction Specifications. Contact the Engineer of Record for joint configuration and allowable location. Emergency slab construction joints will be as shown with the superstructure details. If an emergency slab joint is used, contact the Engineer of Record before proceeding with deck pour.
2. The use of an approved deck finishing machine will be required during placement of bridge deck concrete. The deck finishing machine will be adjusted and operated in such a manner that the screed or screeds are parallel with the centerline of the bridge. The finish machine and concrete placement will be parallel to the centerline of the bridge.

3. The minimum pour rate will be in accordance with Section 460.3.J.2 of the Construction Specifications.
4. Concrete used in the bridge deck slab will be in accordance with the requirements for bridge deck concrete specified in Section 460.3 A of the Construction Specifications.
5. Superstructure falsework will not be removed until bridge deck concrete has attained a strength of 2400 psi.
6. See Special Provision for Concrete Penetrating Sealer.

ABUTMENT DRAINAGE SYSTEM

1. A vertical composite drain will be placed behind the abutments as shown in the plans in accordance with Section 435 of the Construction Specifications
2. The 2-inch diameter PVC Outlet Pipe will be Schedule 40 PVC Pipe conforming to ASTM D1785 designated as PVC 1120, PVC 1220, or PVC 2120.
3. Care will be taken to ensure that the 2-inch diameter PVC Outlet Pipe is not damaged during construction. Any damaged pipes will be replaced by the Contractor at no additional cost to the County.
4. All labor, tools, equipment, and any incidentals necessary for the installation of vertical composite drain and 2-inch diameter PVC Outlet Pipe will be incidental to the contract unit price per cubic yard for Granular Bridge End Backfill.

CLASS B COMMERCIAL TEXTURE FINISH

1. A Class B commercial texture finish will be applied to the following areas:
 - a. **Abutments:** all exposed surfaces to an elevation 1-foot below finished ground line.
 - b. **Slab:** edge of slab.
 - c. **Bents/Piers:** All exposed surfaces.
2. The Class B commercial texture finish will be applied in accordance with Section 460.3 L.1.c and Section 460.3 M.1 of the Construction Specifications.
3. Where the Class B commercial texture finish is to be applied, concrete curing will be accomplished with cotton or burlap mats and polyethylene sheeting. Curring will continue for not less than seven days after placing concrete before the commercial texture finish is applied. The commercial texture finish will be applied in accordance with the manufacturer's recommendations. The commercial texture finish itself does not require a specific cure except for drying.

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 Charles Petersen, Ulteig Engineers, Inc. 5575 DTC Parkway, Suite 200 Greenwood Village, CO 80111 and (charlie.petersen@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.



NOTES (CONTINUED)
FOR
164'-0" CONT. CONCRETE BRIDGE

Str. No. 63-186-100

MARCH 2026

3 OF 18

OVERBURDEN EXCAVATION FOR RIPRAP

1. This work will consist of the removal and replacement of material between the limits of the finished groundline and the top of the riprap. See Riprap Details sheet.
2. Excavation is to be completed after temporary diversion method is in place, if required, with minimal standing water to create the profile of slope protection specified in plans.
3. The removed material will be placed on top of the riprap to the natural ground, proposed groundline, or specified shape and elevations shown in plans. When overburden extends into the streambed it will form the channel bottom and profile as specified in plans. The finished ground under the bridge will be shaped to match the upstream and downstream channel and flood plain.
4. The overburden material will be placed on top of the riprap and have a maximum lift depth of 1' – 0" and compacted free of flowing water or standing water above the riprap at the lowest elevation.
5. Compaction effort will produce a surface that does not pump, rut, or otherwise displace when traveled over with construction equipment to the satisfaction of the Engineer. Material may be added to excavated material to facilitate compaction and handling. Importing, stockpiling, blending, and/or wasting of materials will be incidental to the contract unit price for Overburden Excavation for Riprap.
6. Payment for Overburden Excavation for Riprap will be at the contract unit price and will be full compensation for labor, equipment, tools, and incidentals, including furnishing, installing, and removal of any temporary works necessary to complete the work. Payment will be for plans quantity unless measurement is ordered by the Engineer.
7. Before preparing the bid, it is the responsibility of the Contractor to verify existing conditions to determine if a temporary diversion method and/or dewatering will be required. If required, the Contractor must submit the temporary diversion method and/or dewatering for approval to the Engineer of Record 30 days prior to Construction.

PERFORATED GEOCELL

1. Perforated Geocell will be from the following company or equivalent:

Company: Agtec

Phone: 1-818-724-7657

Website: <http://www.agtec.com>
2. Perforated Geocell will be 6 inches tall with Type B Drainage Fabric underlying the perforated Geocell. Installation will adhere to the manufacturer's recommendation.
3. Perforated Geocell will be filled with the Select Granular Backfill in accordance with Section 850 of the Construction Specifications.
4. Perforated Geocell will be paid for at the contract unit price per square foot. Payment will be full compensation for furnishing and installing the Perforated Geocell.

5. Select Granular Backfill will be paid for at the contract unit price per ton of material furnished. Payment will be full compensation for furnishing, loading, hauling, and placing the Select Granular Backfill.

INSTALLING ANCHOR BOLTS IN CONCRETE

1. 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 reinforcing steel. In spite of this precaution, the Contractor can still expect to encounter and have to drill through reinforcing steel or shift the anchor rod placement as approved by the Engineer to miss the reinforcing steel. If the Contractor shifts the anchor rod placement, the unused drill holes will be completely filled with the epoxy resin as approved by the Engineer.
2. The epoxy resin mixture will be of a type 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 anchor rods.
3. 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.
4. 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.
5. 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.
6. Anchor rods shall conform to ASTM A449.
7. The cost of epoxy resin, anchor rods, installation, and other incidental items will be incidental to the contract unit price per each for "T101 Bridge Railing".

AS-BUILT ELEVATION SURVEY

The Contractor will be responsible for producing an as-built elevation survey soon after construction is completed but before the bridge is opened to traffic. The completed table will be given to the Engineer and copies forwarded to the Office of Bridge Design and the Senior Region Bridge Engineer. The elevations will be based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88). The Engineer will provide the Contractor with a description, elevation, and location of the nearest benchmark that has a NAVD88 established elevation for the Contractor's use. The benchmark shown in the plans has not been tied to the NAVD88. The Contractor will be responsible for establishing a NAVD99 elevation for the benchmark provided in the plans. All cost associated with obtaining the NAVD88 elevation at the locations shown in the table and for the benchmark shown in the plans, including equipment, labor, and any incidentals required will be incidental to the contract lump sum price for Bridge Elevation Survey.



ESTIMATE OF STRUCTURE QUANTITIES & NOTES
FOR
164'-0" CONT. CONCRETE BRIDGE

Str. No. 63-186-100

MARCH 2026

4 OF 18

DESIGNED BY: CAP	CHECKED BY: TF	DRAFTED BY: TCM	BRIDGE ENGINEER
---------------------	-------------------	--------------------	-----------------

Glaciated Terrain contains all sizes of natural mineral sediment ranging from clay to boulders. Streams originating in or flowing through glaciated topography contain sediment loads derived from glaciated sources. Stream and river crossings contain sediment naturally sorted and randomly concentrated. Alluvial sediment located at this project location may have concentrated coarser gravel such as pebbles, cobbles and boulders. The borings shown only represent material that was found at the exact location of the small diameter drill hole. Coarse granular material may be present in areas not penetrated by the depicted borings.

The Geotechnical Engineering Activity has all of the boring logs and laboratory test results available for review at the Central Office in Pierre.

LEGEND

- Penetration Test
- ▽

 Water
- Drive Test
- ⊖

 Caved
- Sample Zone

Drive tests are conducted by dropping a 490 pound hammer 30 inches to drive a 278 inch drill stem to measure the resistance to penetration of the soil.

Penetration test holes are drilled with a 658 inch diameter hollow stem auger. Penetration tests are conducted by dropping a 140 pound hammer 30 inches to collect samples and measure the resistance to penetration of the soil. Samples are collected using a lined Modified California Sampler. Penetration test results are listed as uncorrected "N" values in blows per foot. Blows over inches are listed if refusal is achieved, which is 50 blows within one 6 inch set.

GROUNDWATER ELEVATIONS

JULY 2024

M1	(Caved)	1276.2
M2		1275.2
M3		1271.0
M4		1266.7

MEASURED SKIN FRICTION

	ELEV.	PSF
M1	1233.7	1006
M2	1232.3	333

SUBSURFACE PROFILE

FOR

164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY

0° SKEW

VERMILLION RIVER

SEC. 30/31-T99N-R52W

STA. 38+49.53 TO STA. 40+13.53

BRO-B 8063(21)

STR. NO. 63-186-100

HL-93

PCN 09MF

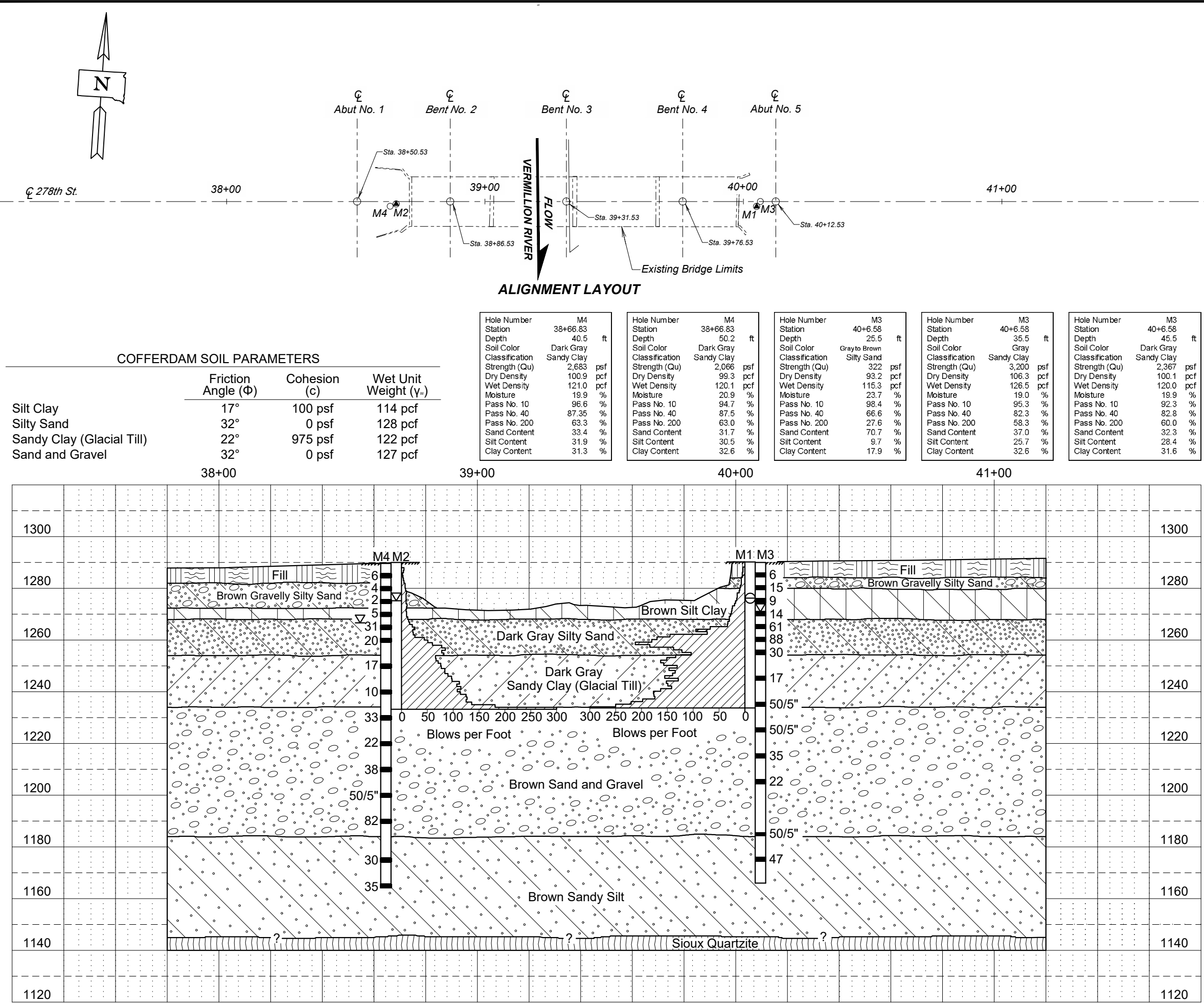
TURNER COUNTY

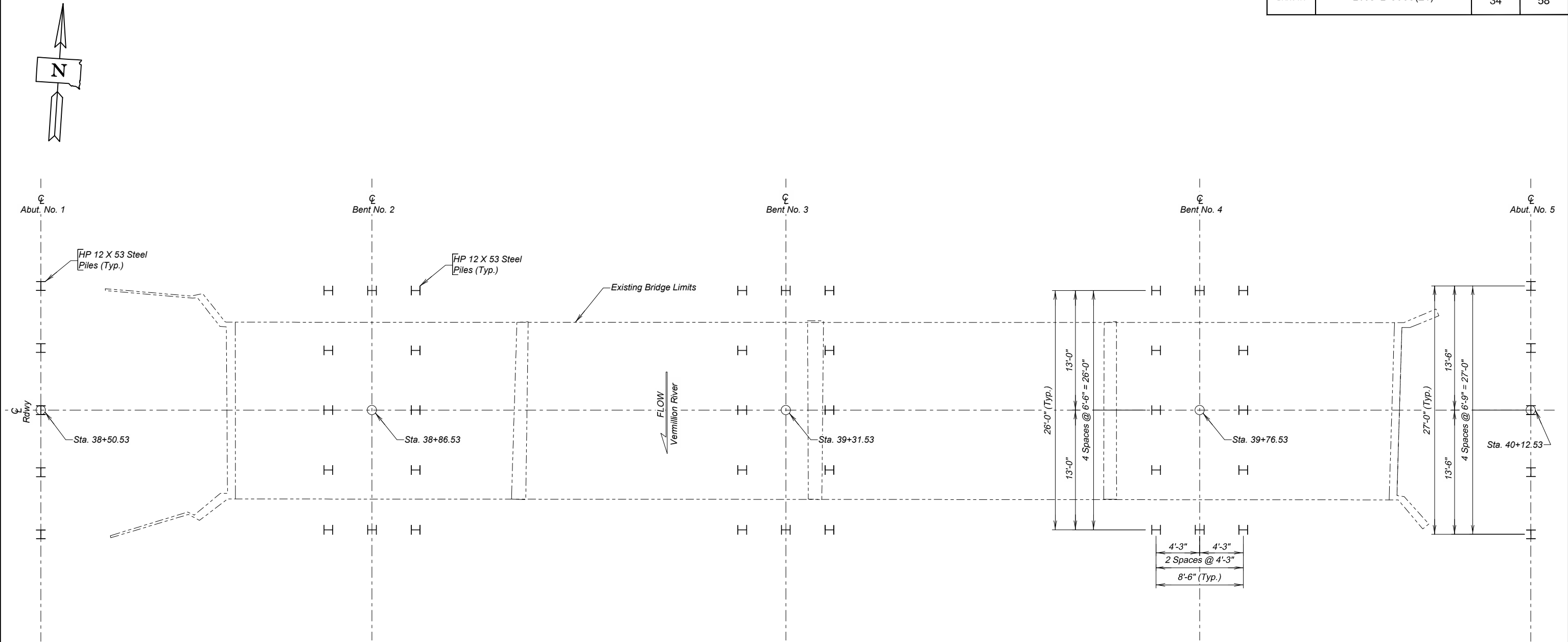
S. D. DEPT. OF TRANSPORTATION

MARCH 2026

5 OF 18

DESIGNED BY	CK. DES. BY SH	DRAFTED BY HK	BRIDGE ENGINEER
-------------	-------------------	------------------	-----------------





PLAN
PILING LAYOUT

NOTE:
This sheet is to be used in conjunction with the
SUBSURFACE PROFILE sheet.

It is unknown the precise location of piling or whether
the existing substructure has piling. For estimating
purposes, it is assumed that 6 piles may need
extracting due to interference with the new substructure.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Extract Pile	Each	6

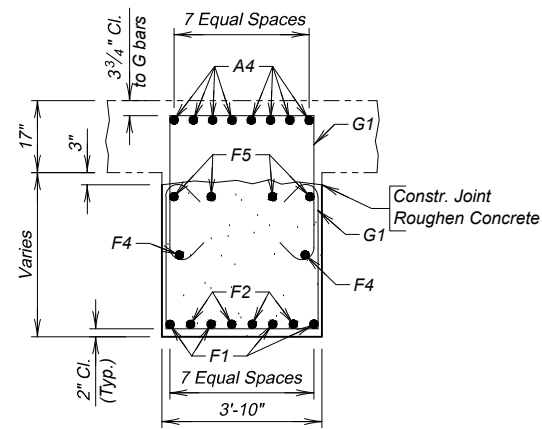


**PILING LAYOUT
FOR
164'-0" CONT. CONCRETE BRIDGE**

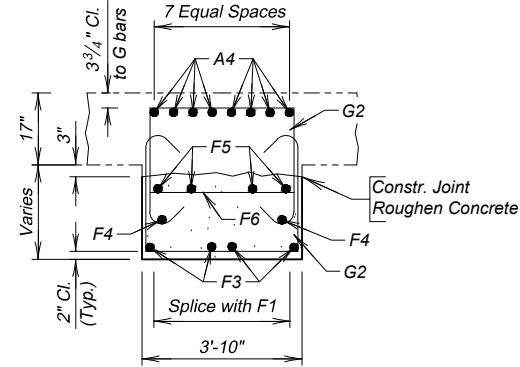
28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026

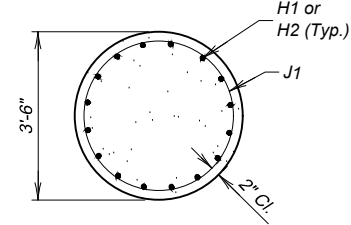
DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------



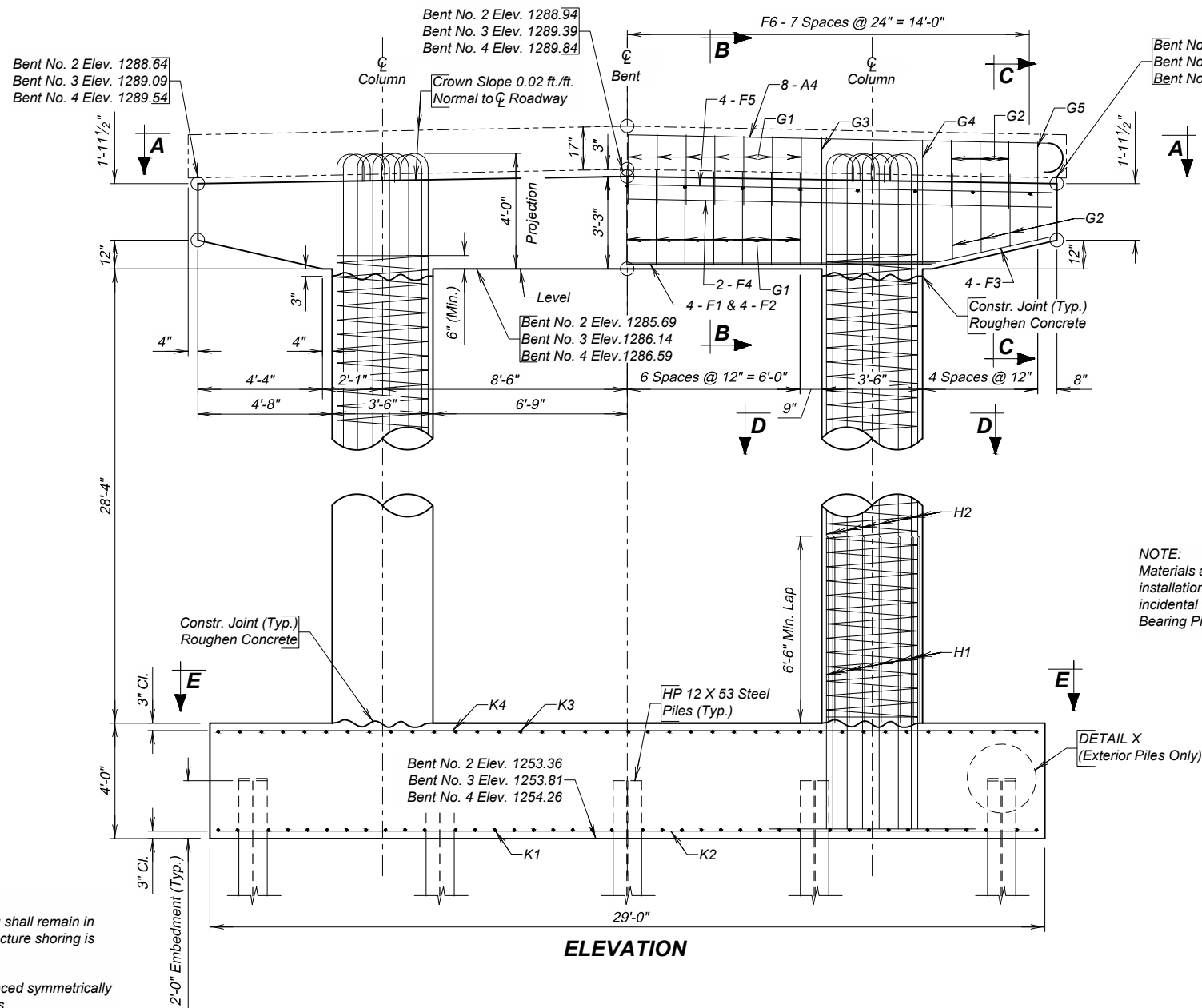
SEC. B - B



SEC. C - C

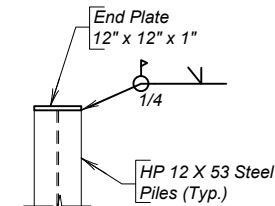


SEC. D - D



NOTE:
Substructure shoring shall remain in place until Superstructure shoring is removed.

F2 bars are to be placed symmetrically between the columns.



DETAIL X

NOTE:
Materials and work associated with installation of the end plates is incidental to Item HP 12 X 53 Steel Bearing Pile.

REINFORCING SCHEDULE (For One Bent)					Bending Details	
Mk.	No.	Size	Length	Type		
A4	8	10	32'-10"	1	30'-0" A4	
F1	4	9	21'-0"	Str.	Type 1	
F2	4	9	15'-6"	Str.		
F3	8	6	7'-6"	19B		
F4	2	4	29'-6"	Str.		
F5	4	6	29'-6"	Str.		
F6	15	4	3'-6"	Str.		
G1	26	5	10'-2"	S3	32'-4" H2	
G2	12	5	9'-8"	S3	Type 1A	
G3	2	5	17'-0"	T1		
G4	2	5	16'-9"	T1		
G5	2	5	14'-10"	T1		
H1	32	11	12'-6"	17A		
H2	32	11	34'-0"	1A		
J1	2	5	604'-6"	Spiral		
K1	40	7	11'-0"	Str.		
K2	22	9	28'-6"	Str.		
K3	39	7	11'-0"	Str.		
K4	23	7	28'-6"	Str.		

NOTES:
All dimensions are out to out of bars.
Bars to be Epoxy Coated
Spirals - Use 6" pitch and 1 1/2 extra turns at each end.
Use 1 1/2 turns for lap at splice as required, or weld as approved by the Engineer of Record. Use 3 vertical spacer bars per column. Spirals may be smooth bars. Bar length shown does not include splices.

ESTIMATED QUANTITIES

ITEM	UNIT	Bent No. 2	Bent No. 3	Bent No. 4
Class A45 Concrete, Bridge	Cu. Yd.	56.0	56.0	56.0
Reinforcing Steel	Lb.	15,253	15,253	15,253
Epoxy Coated Reinforcing Steel	Lb.	1,487	1,487	1,487
Structure Excavation, Bridge	Cu. Yd.	318	310	303
HP 12 X 53 Steel Test Pile, Furnish and Drive	Ft.	1 @ 70' = 70'	1 @ 70' = 70'	1 @ 70' = 70'
HP 12 X 53 Steel Bearing Pile, Furnish and Drive	Ft.	11 @ 65' = 715'	11 @ 65' = 715'	11 @ 65' = 715'

BENT DETAILS (A)

FOR

164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION

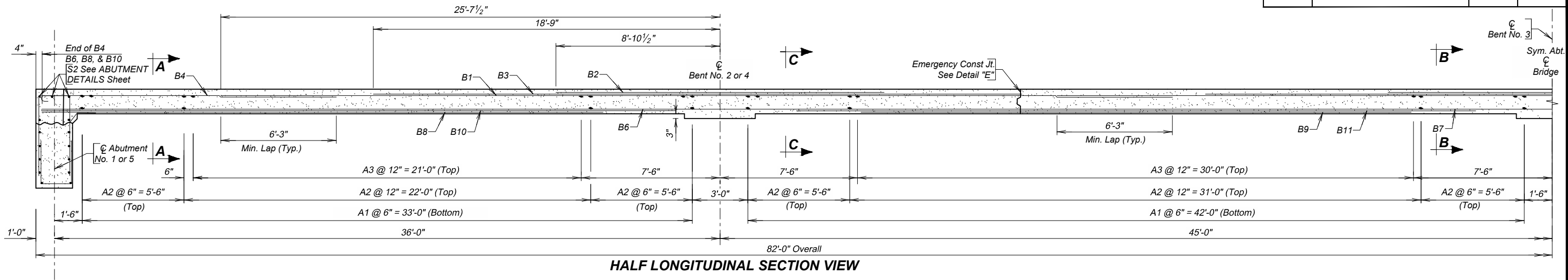
MARCH 2026

8 OF 18

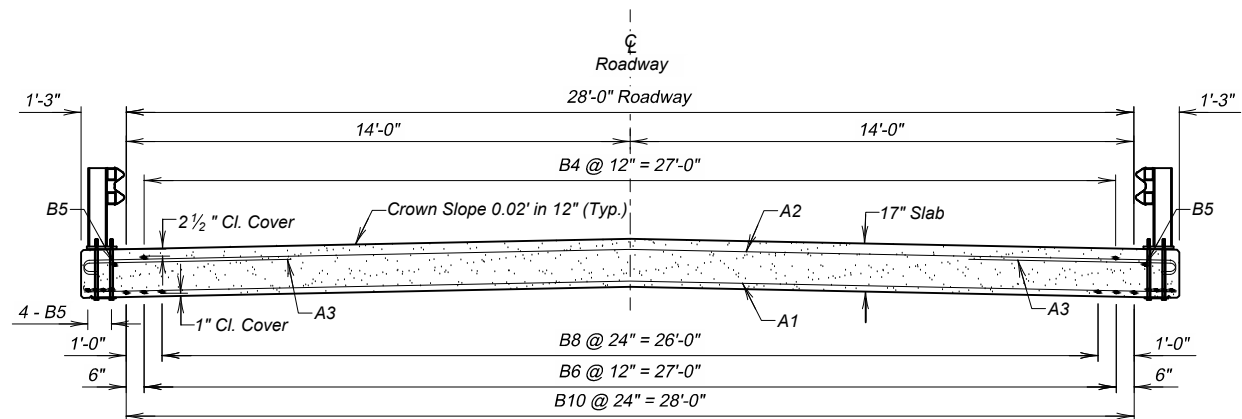
DESIGNED BY CAP	CK. DES. BY MTH	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------



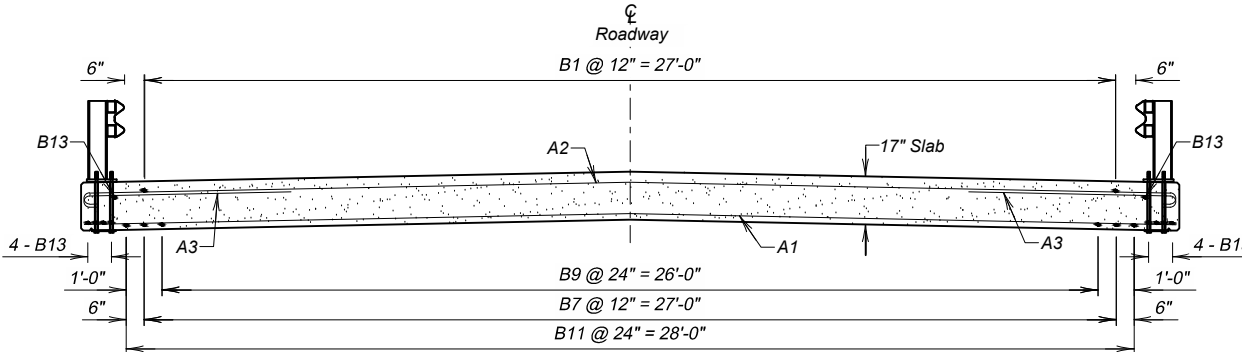
PLANS BY: ULTEIG ENGINEERS, INC.



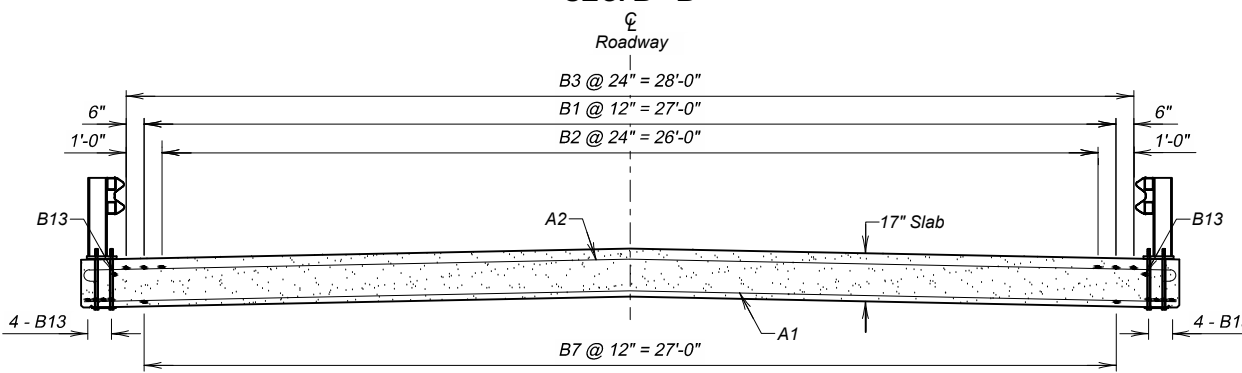
HALF LONGITUDINAL SECTION VIEW



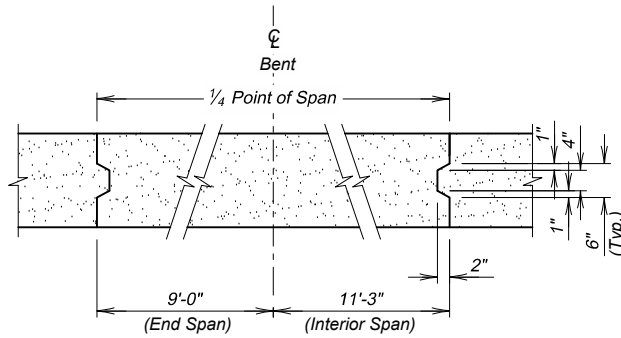
SEC. A - A



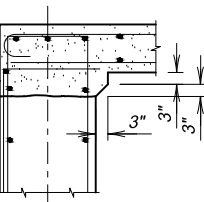
SEC. B - B



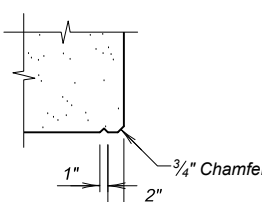
SEC. C - C



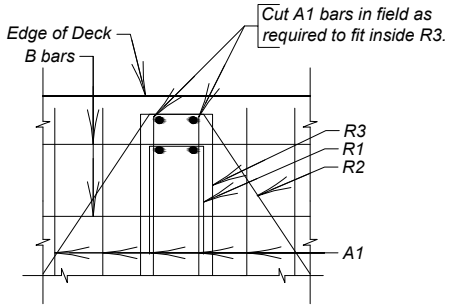
DETAIL "E"



DETAIL "D"



CHAMFER DETAIL



TYPICAL BRIDGE RAILING
POST REINFORCEMENT

- NOTES:
- The cut ends of the A1 bars will be coated with an epoxy repair coating to the satisfaction of the Engineer.
 - R1 and R2 will be placed beneath the A1 and A2 bars; R3 will be placed in same layer as A1 bars with 1 1/2" clear cover to edge of slab.
 - R bars bending details and reinforcing schedule shown on T101 RAIL DETAILS sheet and will be included in the contract unit price per foot for T101 Bridge Railing.

PLANS BY: ULTEIG ENGINEERS, INC.

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
A1	304	6	30'-2"	Str.	
A2	198	5	31'-8"	1	
A3	212	5	7'-9"	1A	
B1	84	10	51'-3"	Str.	
B2	42	10	17'-9"	Str.	
B3	45	11	37'-6"	Str.	
B4	56	8	19'-0"	1A	
B5	20	5	36'-0"	Str.	
B6	56	9	36'-8"	Str.	
B7	56	9	45'-0"	Str.	
B8	28	10	32'-0"	Str.	
B9	28	10	29'-9"	Str.	
B10	30	9	34'-6"	Str.	
B11	30	9	36'-9"	Str.	
B13	20	5	45'-0"	Str.	

NOTES:
All dimensions are out to out of bars.
All reinforcing steel shall be epoxy coated.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge Deck	Cu. Yd.	268.3
Epoxy Coated Reinforcing Steel	Lb.	87,518
Concrete Penetrating Sealer	Sq. Yd.	555.8

SUPERSTRUCTURE DETAILS (A)

FOR
164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY
VERMILLION RIVER
STA. 38+49.53 TO STA. 40+13.53
STR. NO. 63-186-100
PCN 09MF

0° SKEW
SEC. 30/31-T99N-R52W
BRO-B 8063(21)
HL-93

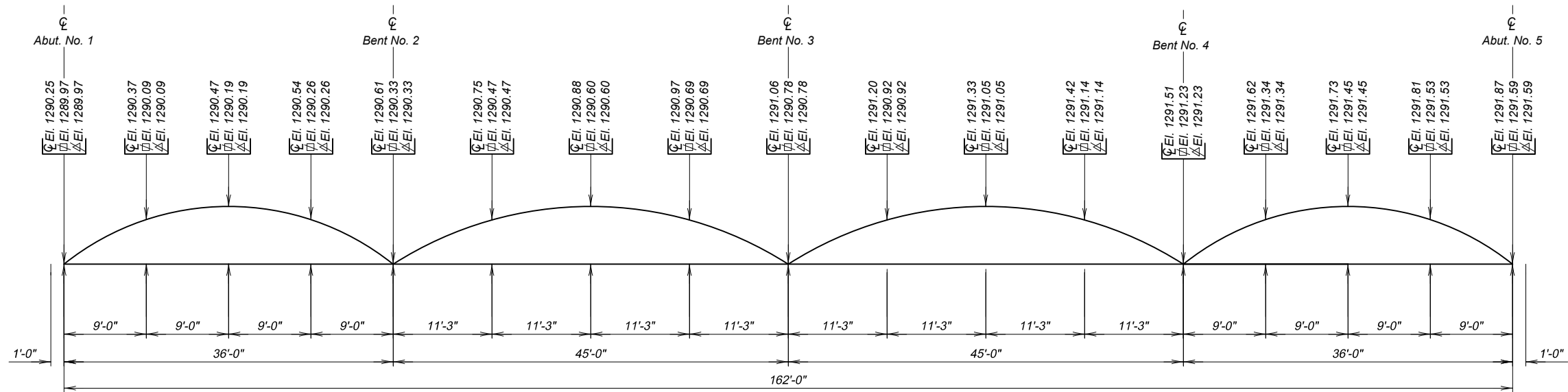
TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION

MARCH 2026

10 OF 18

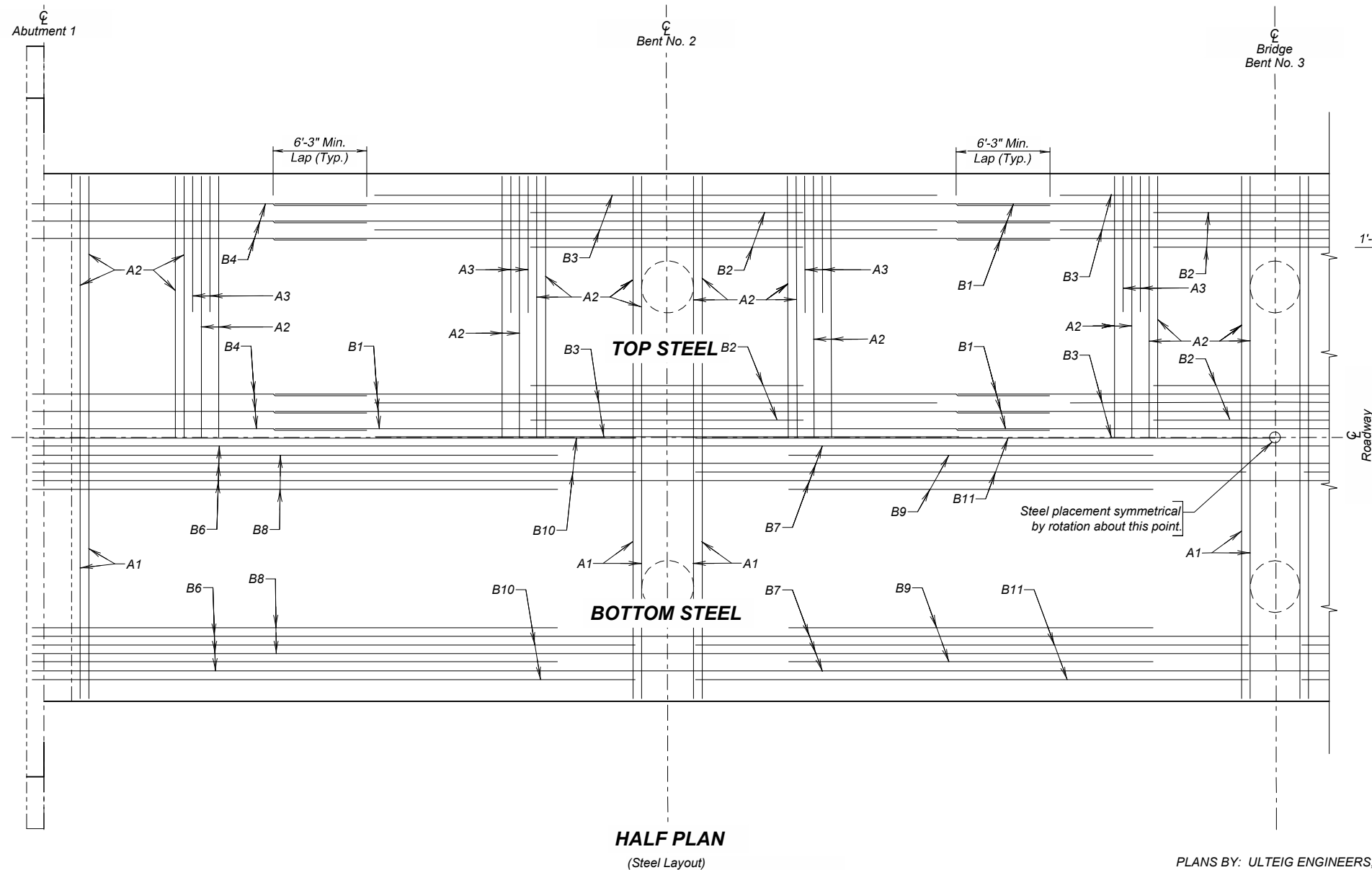
DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------





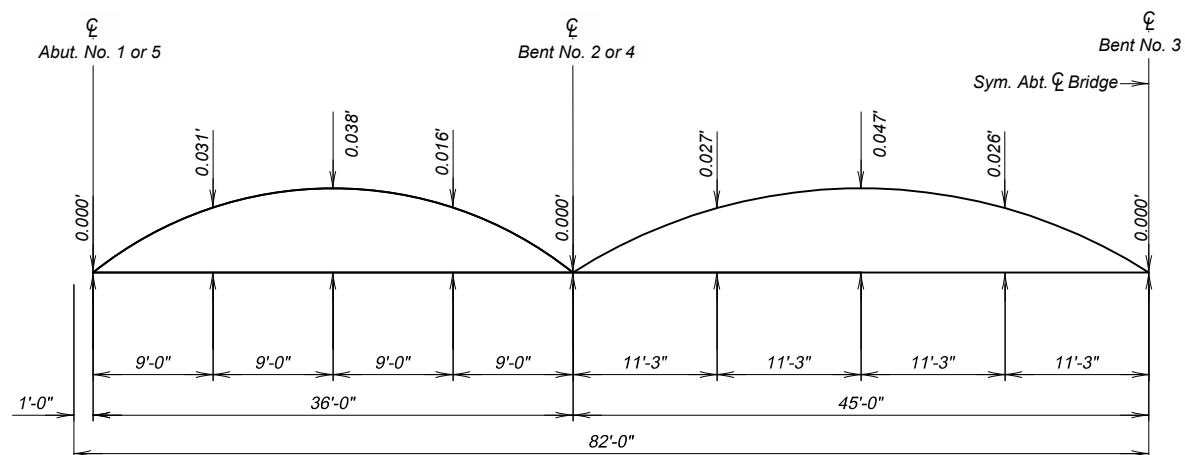
CURB AND CENTERLINE ELEVATION

Elevations with CL are Top of Finished Slab at Left Curb Line, with CL are Top of Finished Slab at Centerline Roadway, and with CL are Top of Finished Slab at Right Curb Line. Camber for Dead Load Deflection Plus Plastic Flow have been included in the elevations shown above.



HALF PLAN
(Steel Layout)

PLANS BY: ULTEIG ENGINEERS, INC.



CAMBER DIAGRAM

Camber is calculated for dead load deflections plus plastic flow and will be added to the proposed grade elevations at the respective stations to establish the elevations of the top of the finished roadway.

SUPERSTRUCTURE DETAILS (B)

FOR

164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026

11 OF 18



DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------

NOTES:

1. *Rail posts will be perpendicular to centerline of roadway.*
2. *W-beam guardrail, pipe sleeves, nuts, washers, and plate washers that go with these will be galvanized. Bolts, nuts, and washers will be galvanized according to ASTM F2329. Pipe sleeves will be galvanized according to ASTM A123.*
3. *Post bolts shall be ¾" diameter F3125 Grade A325. Each bolt will have one hardened and one 2" x 2" x ⅝" ASTM A36 plate washer. Nuts will be A563.*
4. *Steel W-beam guardrail will be Class A, Type 1, conforming to AASHTO M180 and will be fabricated from standard 12.5' or 25' nominal W-beam sections.*
5. *The rail posts, 4" x 3" tube members, base plates, pipe sleeve bases, anchor bolts, nuts, and washers will be galvanized. The nuts, bolts, and washers will be galvanized in accordance with ASTM F2329. The rail posts, tube members, and pipe sleeve bases will be galvanized in accordance with ASTM A123.*
6. *All structural steel parts for the T101 bridge railing will conform to ASTM A709 Gr. 36. Tubes will conform to ASTM A500 Gr. B.*
7. *Provide ½" drain holes in the tubes near ends of rail and near splices.*
8. *All concrete will be class M6 as specified in Section 462 of the specifications.*
9. *All reinforcing steel will conform to ASTM A615, Gr. 60.*
10. *When posts are located at abutment and bent locations, a hole will be drilled at a depth equal to 10" and a ¾" Dia. threaded anchor rod be inserted and will be secured with epoxy. The ⅞" Dia. Std. Wt. Steel Pipe Sleeves are not required at these locations. The R1, R2, and R3 bars are not required at these locations.*
11. *All bolts, nuts, washers, posts, plates, pipe sleeves, steel W-beam, welding, galvanizing, and all costs of installing four rail anchors including concrete, excavation, forming, reinforcing steel, and anchor bolts will be included in the contract price per foot for T101 Bridge Railing.*
12. *Measurement for payment will be from center of anchor to center of anchor for each side of the bridge.*

REINFORCING SCHEDULE

MK.	NO.	SIZE	LENGTH	TYPE	BENDING DETAILS
S2	4	3	51'-7"	Spiral	
H2	24	5	3'-6"	Str.	
R1	40	4	3'-9"	17	
R2	40	4	4'-9"	17A	
R3	40	6	6'-11"	17	

NOTES:

All dimensions are Out to Out of Bars.

Spiral - 6" Pitch and $1\frac{1}{2}$ turns at each end.

Use $1\frac{1}{2}$ turns for lap splices as required.

Use 2 vertical space bars.

T101 RAIL DETAILS

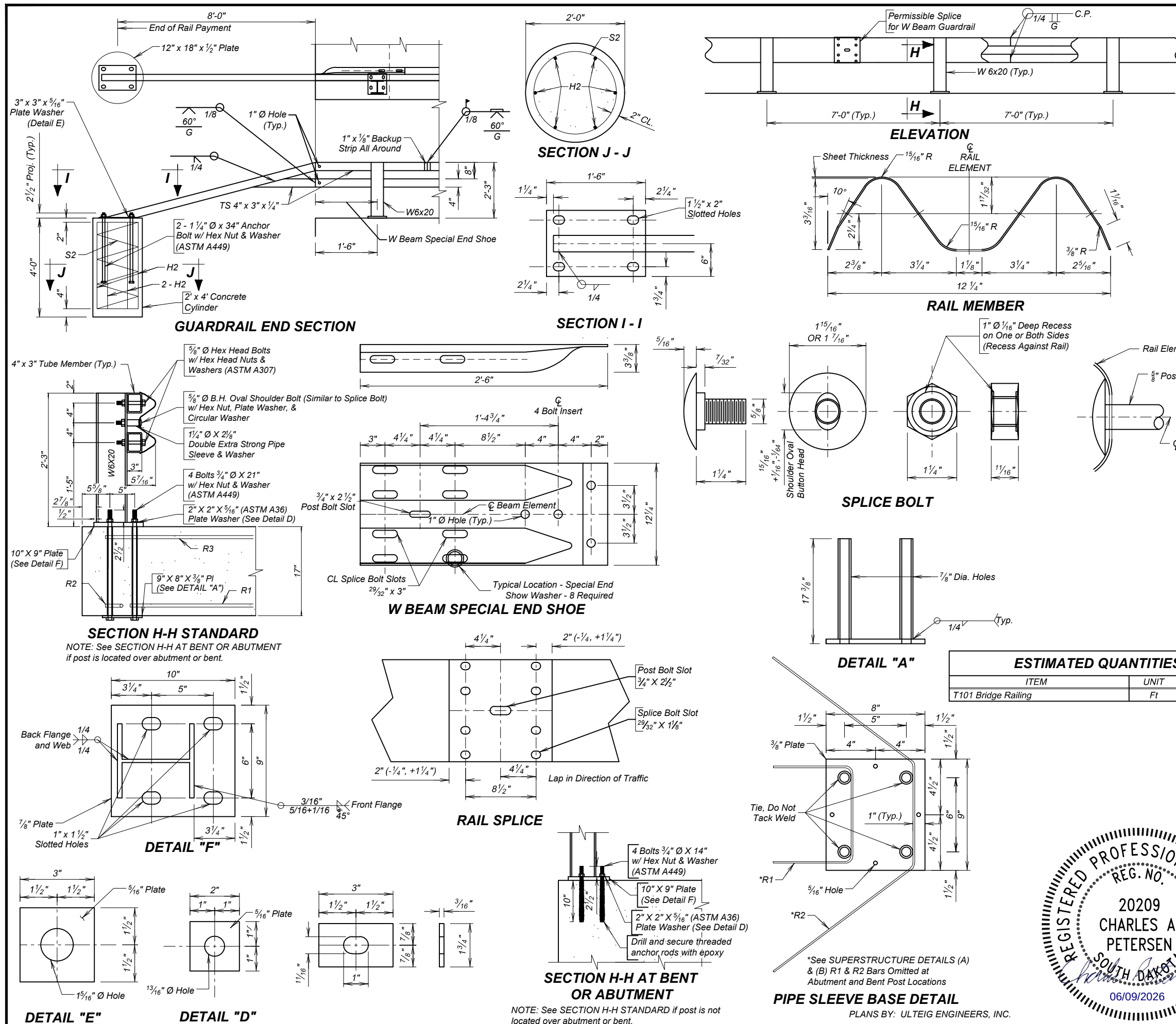
164'-0" CONT. CONCRETE BRIDGE

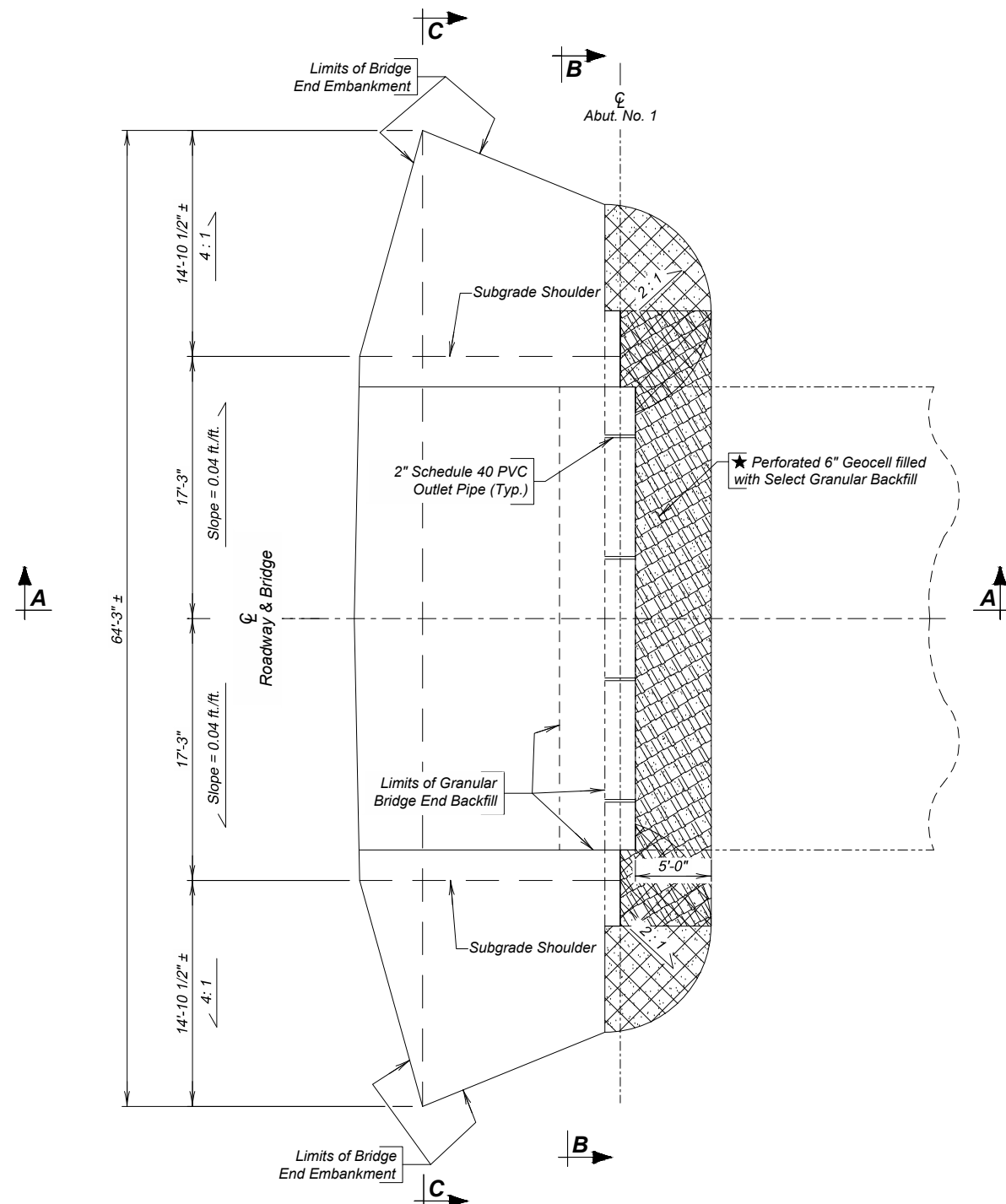
28'-0" ROADWAY
VERMILLION RIVER
STA. 38+49.53 TO STA. 40+13.53
STR. NO. 63-186-100
PCN 09MF

0° SKEW
SEC. 30/31-T99N-R52W
BRO-B 8063(21)
HL-93

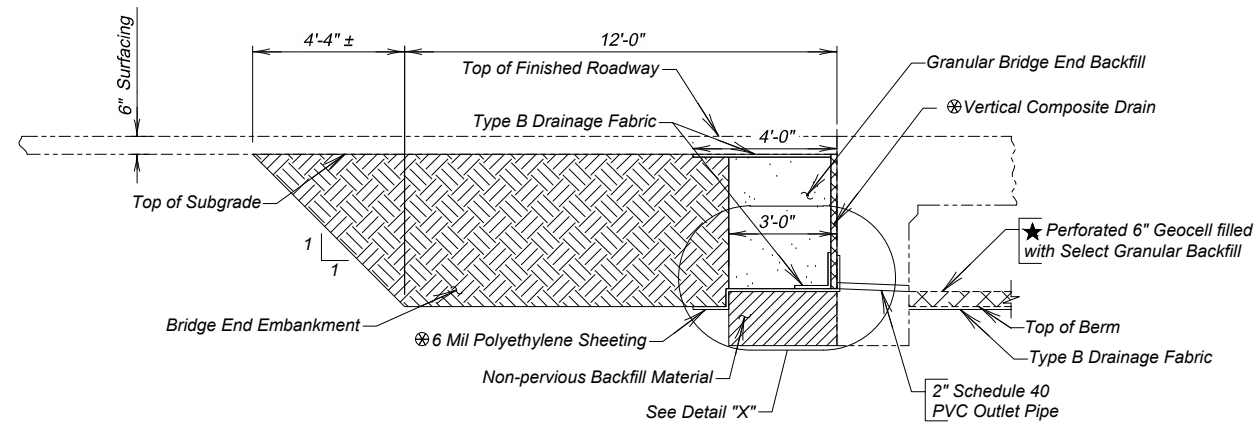
TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026

DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------

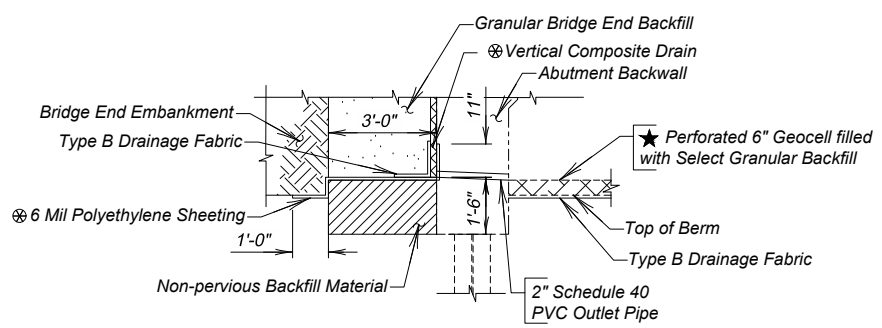




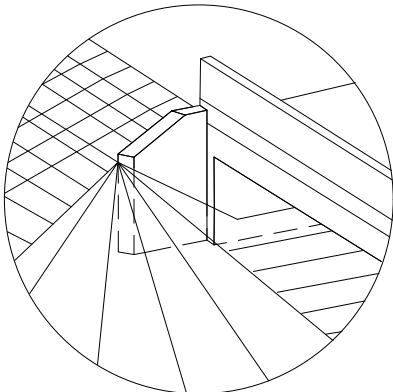
PLAN
(Bridge End Backfill shown adjacent to Abut. No. 1
Abut. No. 5 similar opposite hand except as shown)



SECTION A - A
(at Roadway)



DETAIL "X"



SPILL CONE DETAIL AT EMBANKMENT

ESTIMATED QUANTITIES (For Two Abutments)		
ITEM	UNIT	QUANTITY
Granular Bridge End Backfill	Cu. Yd.	25.9
Bridge End Embankment	Cu. Yd.	256.6

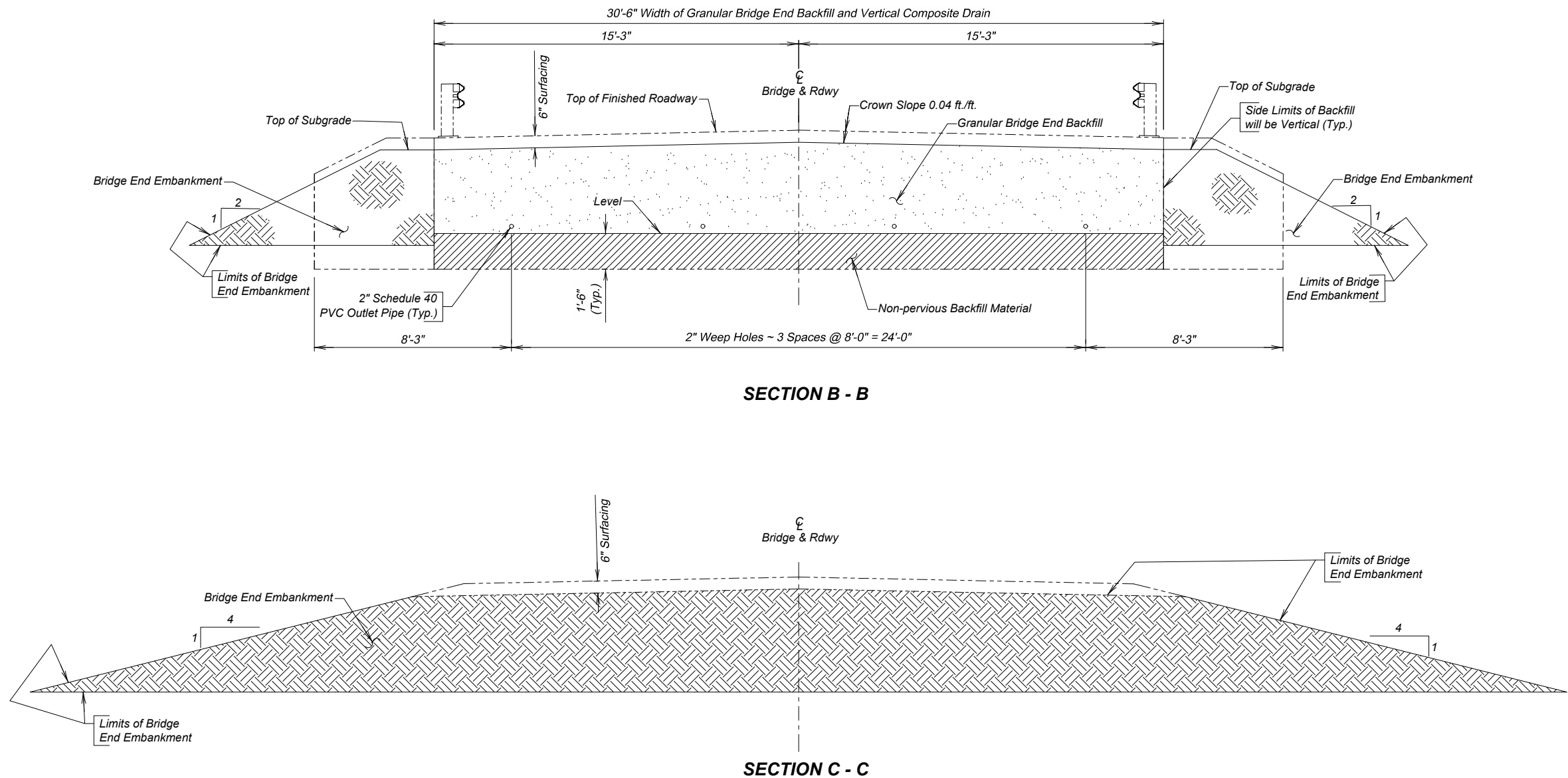
- 1. 16 ft. 2" dia. PVC Outlet Pipe.
- 2. 233 sq. ft. Vertical Composite Drain.
- Item 1 is incidental to the Granular Bridge End Backfill.
- Item 2 is incidental to the Granular Bridge End Backfill.
- 3. 336 sq. ft. 6 mil Polyethylene Sheeting, not including laps.
- 4. 40.7 sq. yds. Type B Drainage Fabric.
- Items 3 and 4 are approximate quantities contained in the Granular Bridge End Backfill and are for information only.
- Shrinkage Factor of 1.25 used.
- Provide hole in vertical composite drain and 6 mil polyethylene sheeting to provide drainage through weep holes
- See PERFORATED GEOCELL notes for payment information.

DETAILS OF BRIDGE END BACKFILL (A)
FOR
164'-0" CONT. CONCRETE BRIDGE
28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF
TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026



PLANS BY: ULTEIG ENGINEERS, INC.

DESIGNED BY CAP	CK. DES. BY VLV	DRAFTED BY MJB	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------



DETAILS OF BRIDGE END BACKFILL (B)

FOR
164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION

MARCH 2026

14 OF 18

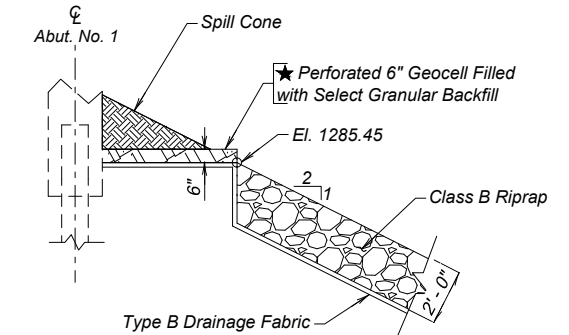
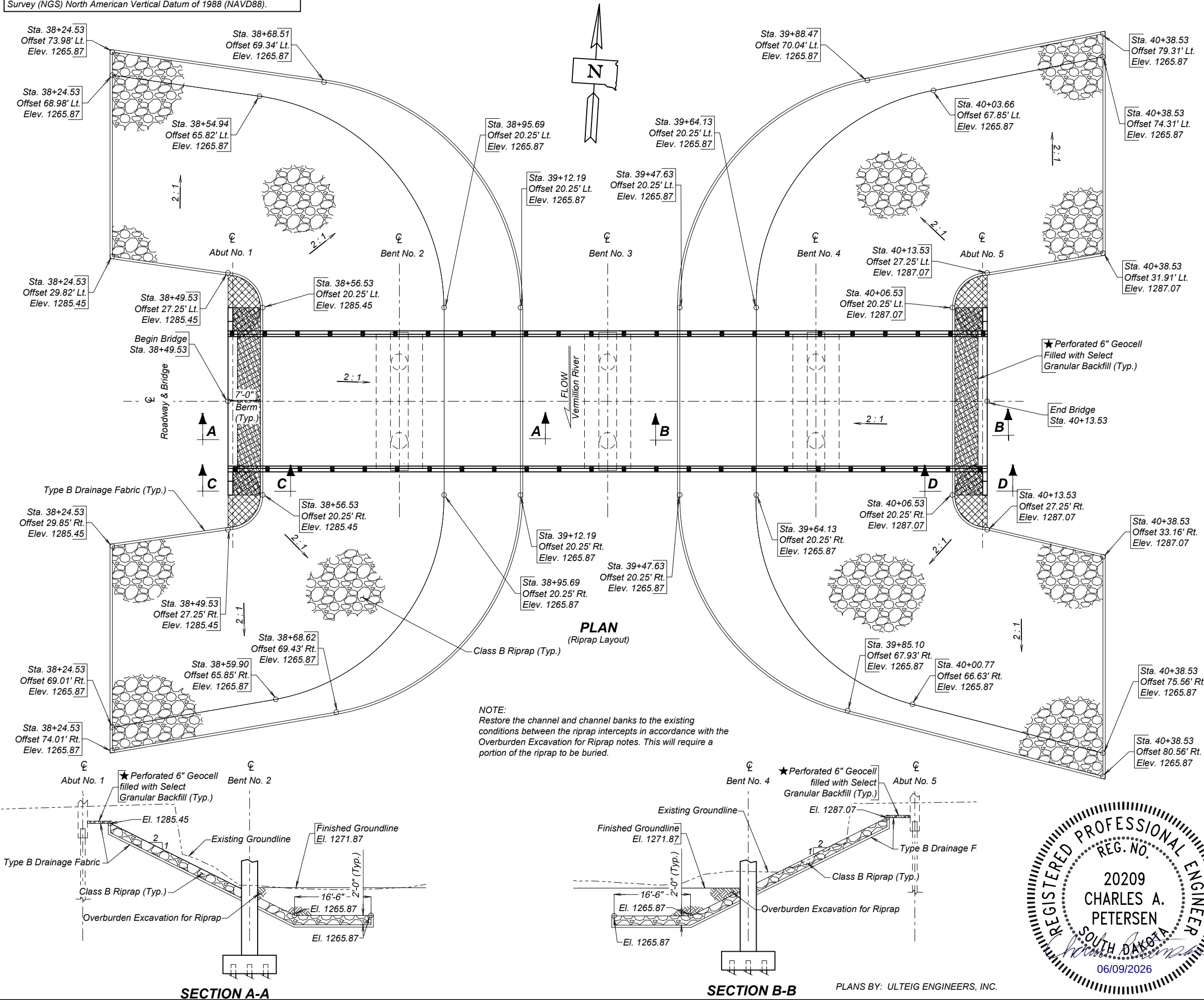


PLANS BY: ULTEIG ENGINEERS, INC.

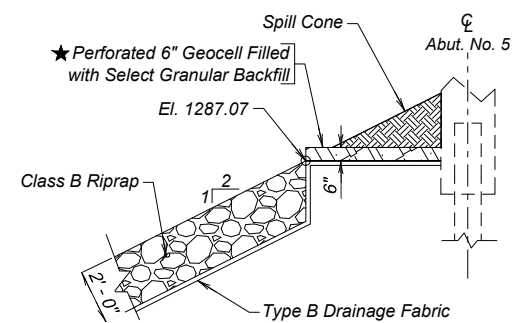
DESIGNED BY CAP	CK. DES. BY VLV	DRAFTED BY MJB	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------

The Elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8063(21)	43	58



SECTION C-C



SECTION D-D

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class B Riprap	Ton	2,239
Type B Drainage Fabric	Sq. Yd.	2,616
Overburden Excavation for Riprap	Cu. Yd.	4,511
Select Granular Backfill	Ton	10.7
Perforated Geocell	Sq. Ft.	425

- * For estimating purposes only, a factor of 1.4 tons/cu. yd. was used to convert Cu. Yds. to Tons.
- ★ See PERFORATED GEOCELL notes for payment information.
- For estimating purposes only, a factor of 1.89 tons/cu. yd. was used to convert Cu. Yds. to Tons.

RIPRAP DETAILS FOR

164'-0" CONT. CONCRETE BRIDGE

28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026

15 OF 18

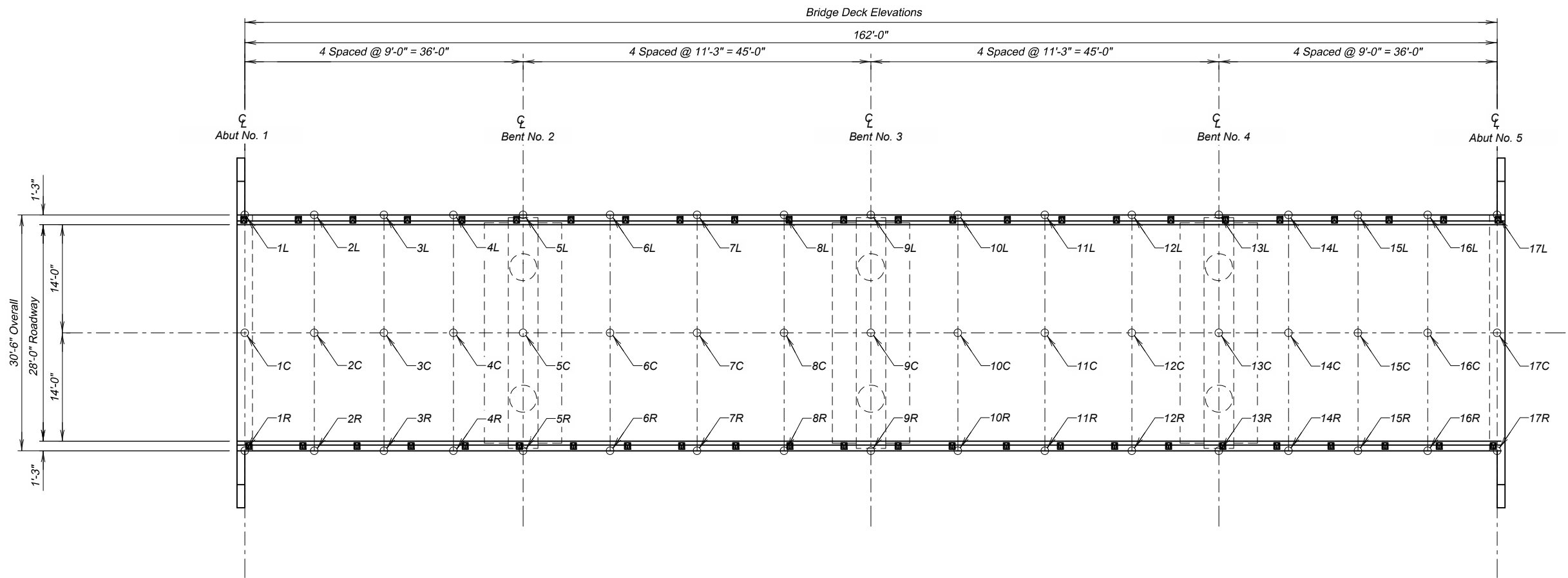
DESIGNED BY CAP	CK. DES. BY VLV	DRAFTED BY MJB	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------



PLANS BY: ULTEIG ENGINEERS, INC.

The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8063(21)	44	58



PLAN

Table of As-Built Elevations - Bridge Deck					
Location	Elevation	Location	Elevation	Location	Elevation
1L		1C		1R	
2L		2C		2R	
3L		3C		3R	
4L		4C		4R	
5L		5C		5R	
6L		6C		6R	
7L		7C		7R	
8L		8C		8R	
9L		9C		9R	
10L		10C		10R	
11L		11C		11R	
12L		12C		12R	
13L		13C		13R	
14L		14C		14R	
15L		15C		15R	
16L		16C		16R	
17L		17C		17R	

Table of Elevations - Bridge Survey Markers		
Location	Station - Offset	Elevation
Begin Bridge		
End Bridge		

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Bridge Elevation Survey	LS	Lump Sum

NOTE:
The Contractor will be responsible for producing the As - Built Elevation Survey soon after construction is complete and before the bridge is opened to traffic. The As - Built Elevations of the Bridge will be taken and recorded at the locations shown by the tables on this sheet. The completed tables will be given to the Engineer who will forward a copy to the Office of Bridge Design and the Region Office.



AS-BUILT ELEVATION SURVEY
FOR
164'-0" CONT. CONCRETE BRIDGE
28'-0" ROADWAY 0° SKEW
VERMILLION RIVER SEC. 30/31-T99N-R52W
STA. 38+49.53 TO STA. 40+13.53 BRO-B 8063(21)
STR. NO. 63-186-100 HL-93
PCN 09MF

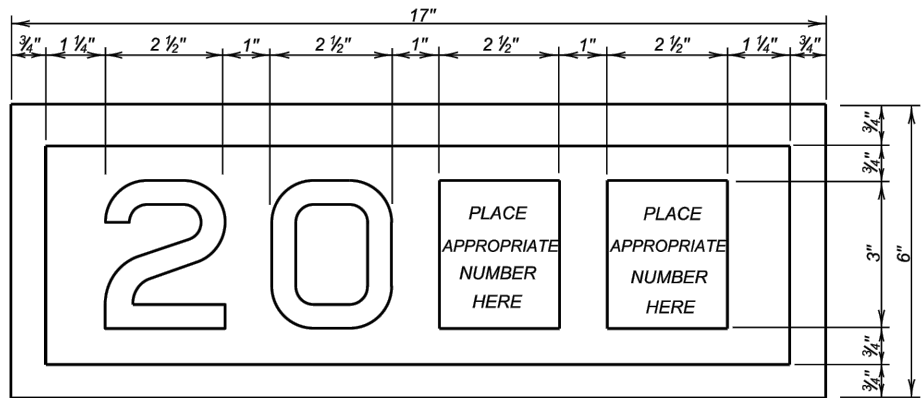
TURNER COUNTY
S. D. DEPT. OF TRANSPORTATION

MARCH 2026

16 OF 18

PLANS BY: ULTEIG ENGINEERS, INC.

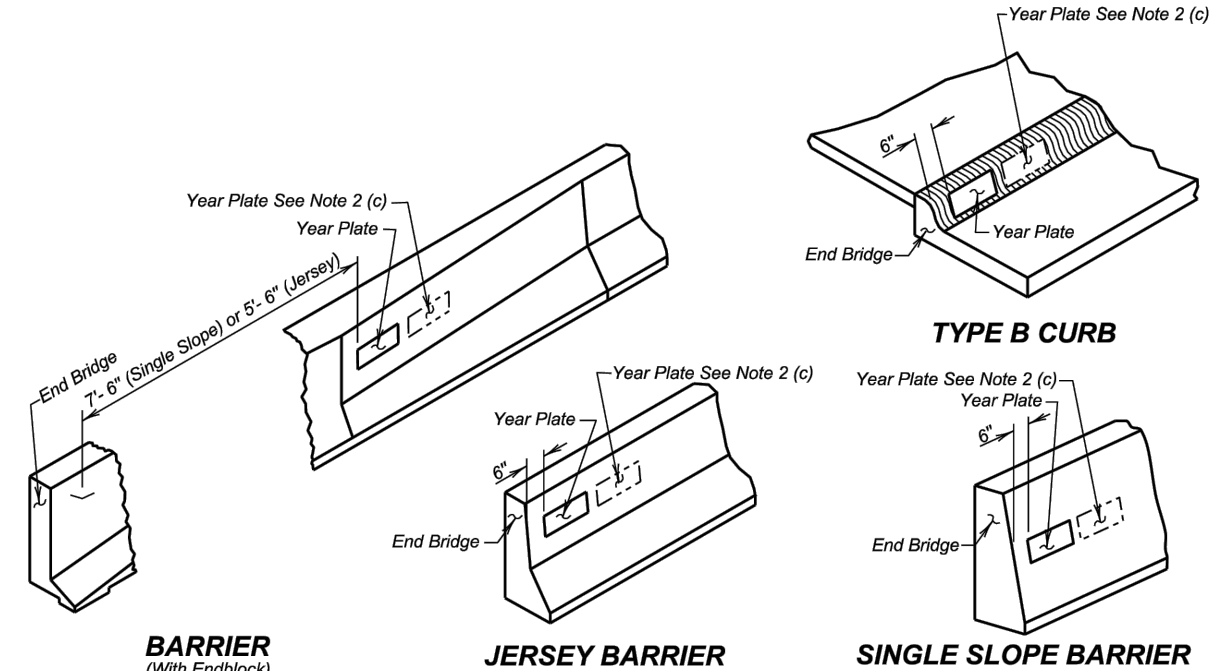
DESIGNED BY CAP	CK. DES. BY TF	DRAFTED BY TCM	BRIDGE ENGINEER
--------------------	-------------------	-------------------	-----------------



YEAR PLATE DETAILS

GENERAL NOTES:

- Year plates of the general dimensions shown will be constructed on all box culverts and bridges. The year plates will be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
- Year plates will be located on structure(s) as follows:
 - On cast-in-place box culverts the year plates will be four and one - half (4 1/2) inches below the top of the upstream parapet wall and centered laterally on the upstream face. On precast box culverts the year plate will be centered laterally on the upstream face of the top slab. Where an extended interior wall interferes with this location, the year plate will be centered in an adjacent barrel.
 - On bridges with six (6) inch curbs, "Jersey" shaped barriers with no endblocks, or "Single Slope" shaped barriers with no endblocks, the year plate will be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with barrier endblocks, the year plate will be centered on the upper sloped portion of the barrier approximately 5'- 6" for "Jersey" shaped barriers from the end of the bridge and 7'-6" for "Single Slope" shaped barriers from the end of bridge, or as designated by the Engineer. There will be one year plate at each end of the bridge on opposite sides.
 - When the plans specify that both the original date of construction and the date of reconstruction are to be shown, one date will be placed as listed above and the other located adjacent to it. Both year plates will be shown at each end of the bridge on opposite sides.
- There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work will be incidental to other contract items.



TYPE B CURB

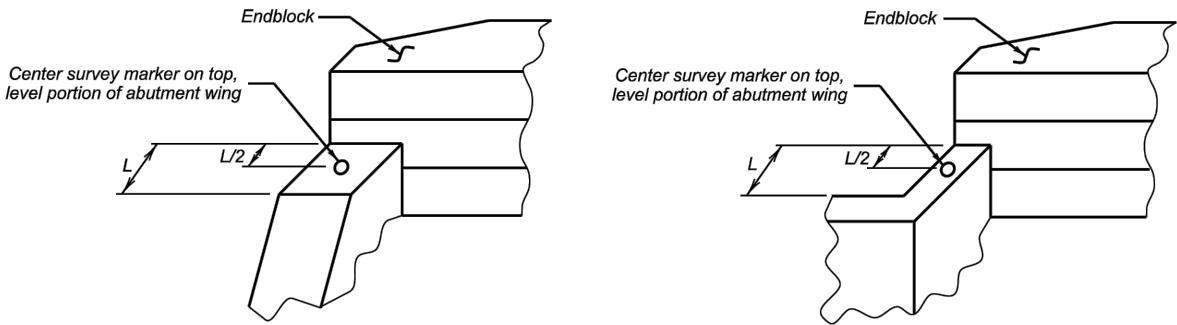
BARRIER
(With Endblock)

JERSEY BARRIER

SINGLE SLOPE BARRIER

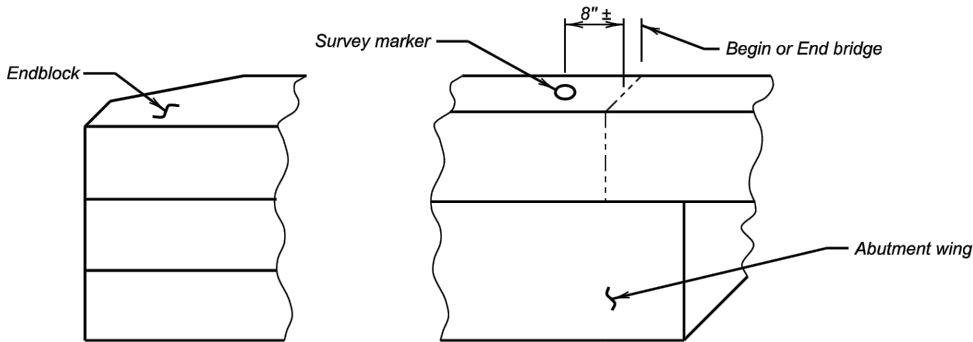
January 22, 2021

Published Date: 2027	S D D O T	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 Of 1



ABUTMENT WITH
"STRAIGHT" WINGS

ABUTMENT WITH
"SWEEP BACK" WINGS



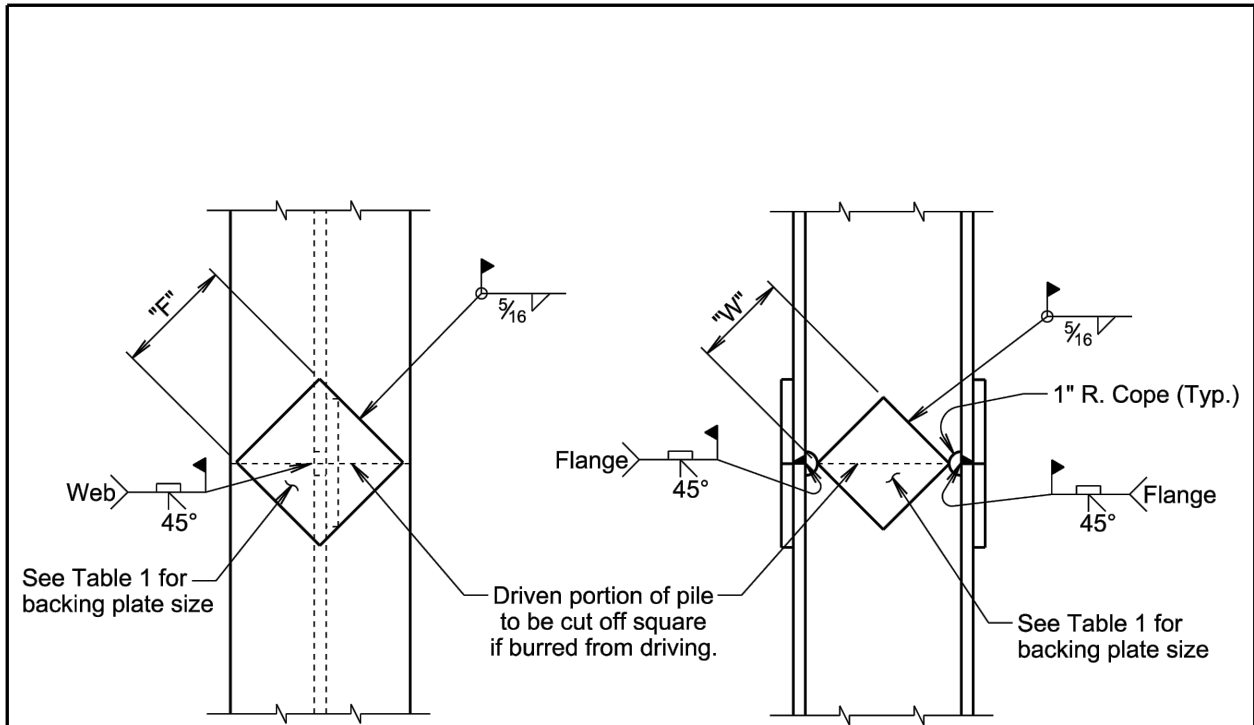
ABUTMENT WITH
"SWEEP BACK" WINGS
(Endblock on top of wings)

GENERAL NOTES:

- Survey markers shall be located at each abutment on the same side of the bridge as the year plate. Place survey markers on abutment wings as shown. Two survey markers will be required at each bridge.
- Survey markers shall be of a type intended for installation in concrete, be made of solid brass or bronze, have a domed top and be either a 3" top diameter (with a 3/4" X 2" long ribbed shank), or a US Army Corps of Engineers Type C Disc with a 3 1/2" top diameter.
- There will be no separate measurement or payment made for survey markers. All costs for this work shall be incidental to the other contract items.

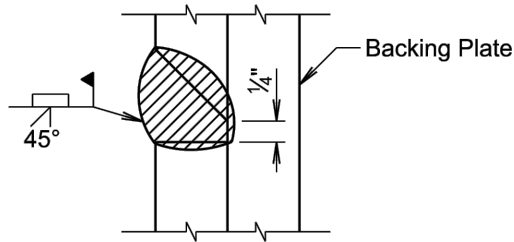
June 26, 2012

Published Date: 2027	S D D O T	BRIDGE SURVEY MARKER	PLATE NUMBER 460.05
			Sheet 1 of 1



NOTE:
Prepare joint surfaces lower end of upper section on the ground and weld on backing plates; then place upper section on lower section and weld.

COMPLETE JOINT PENETRATION WELD DETAIL



GENERAL NOTES:

Steel for backing plates will conform to ASTM A709, Grade 50 or ASTM A572, Grade 50.

Welding and weld inspection will be in conformance with AWS D1.5 (Current Year) Bridge Welding Code - Steel.

Welder must be certified and registered with the SDDOT.

Backing plate will at a minimum be as thick as the web of the pile being spliced.

Web must be coped with 1 inch radius.

Submit Welding Procedure Specification (WPS) to Bridge Construction Engineer for approval prior to pile driving.

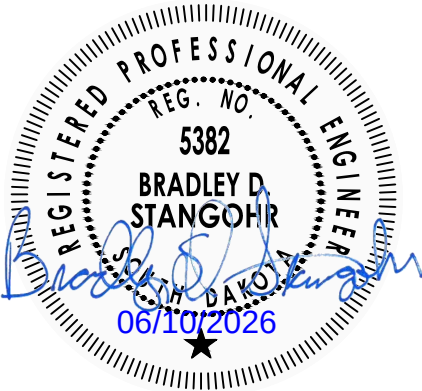
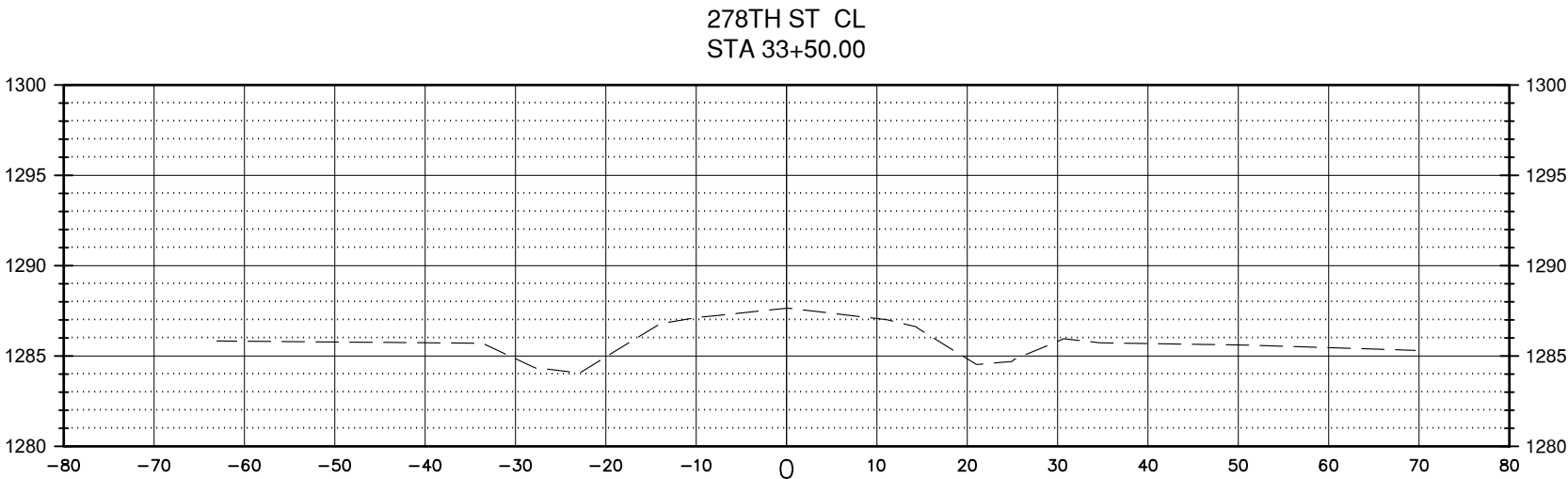
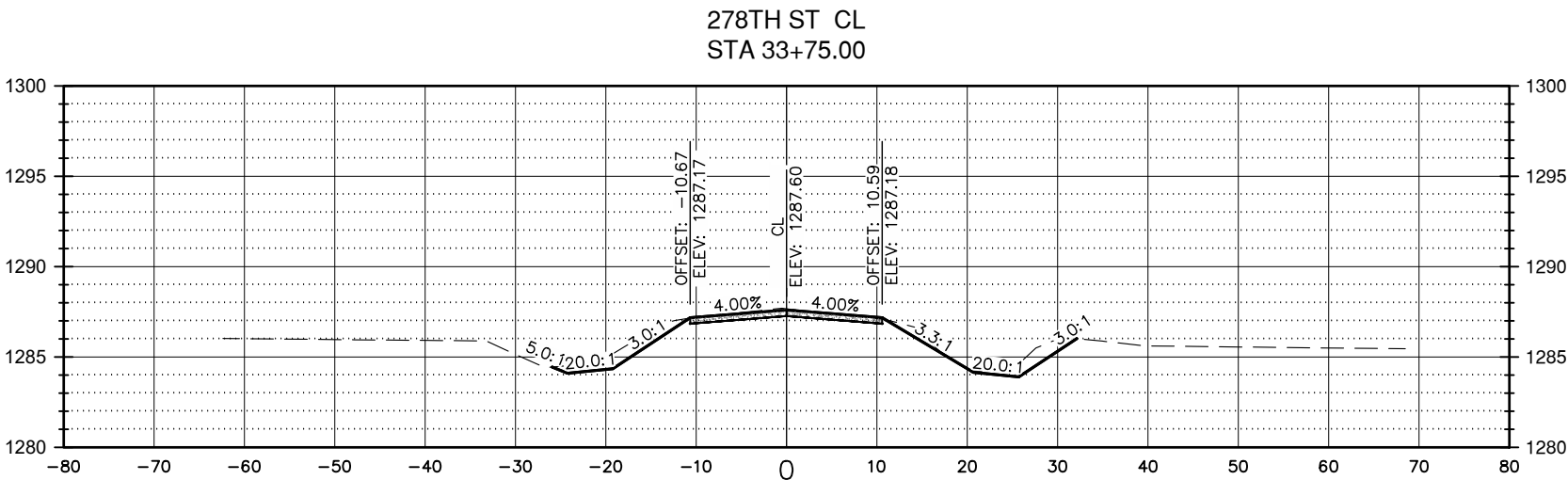
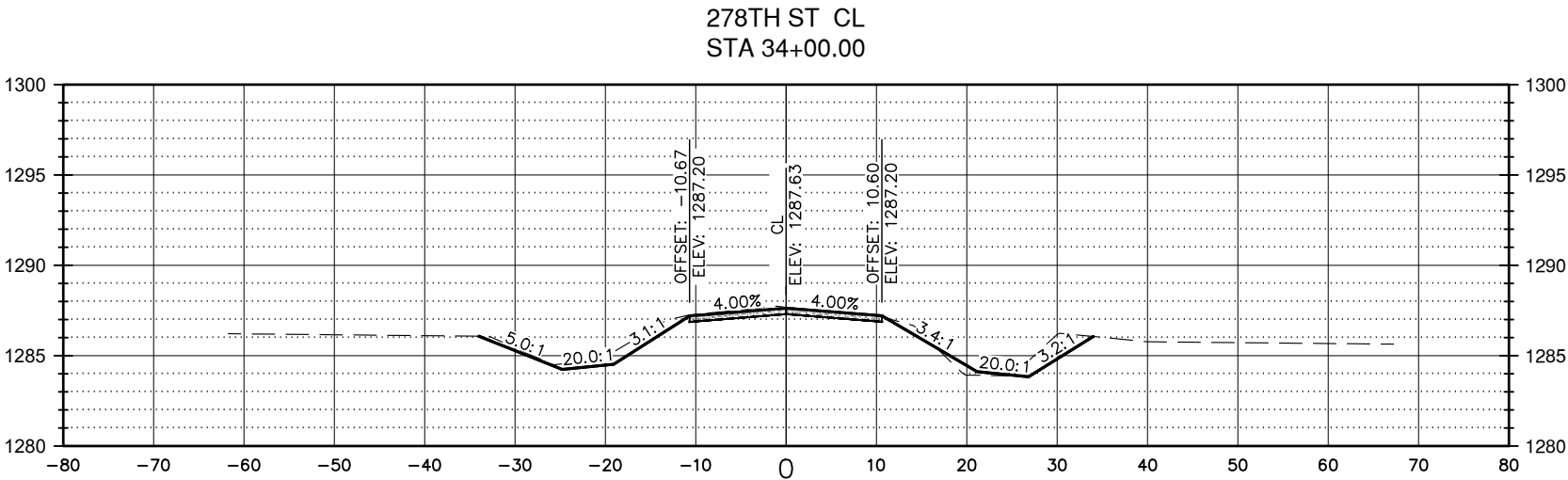
TABLE 1 (BACKING PLATES)			
PILE	10"	12"	14"
"F" FLANGE	6½"	8"	10"
"W" WEB	4¾"	6¼"	7½"

April 17, 2026

Published Date: 2027	S D D O T	H PILE SPLICE DETAILS	PLATE NUMBER 510.40
			Sheet 1 of 1

CROSS SECTIONS

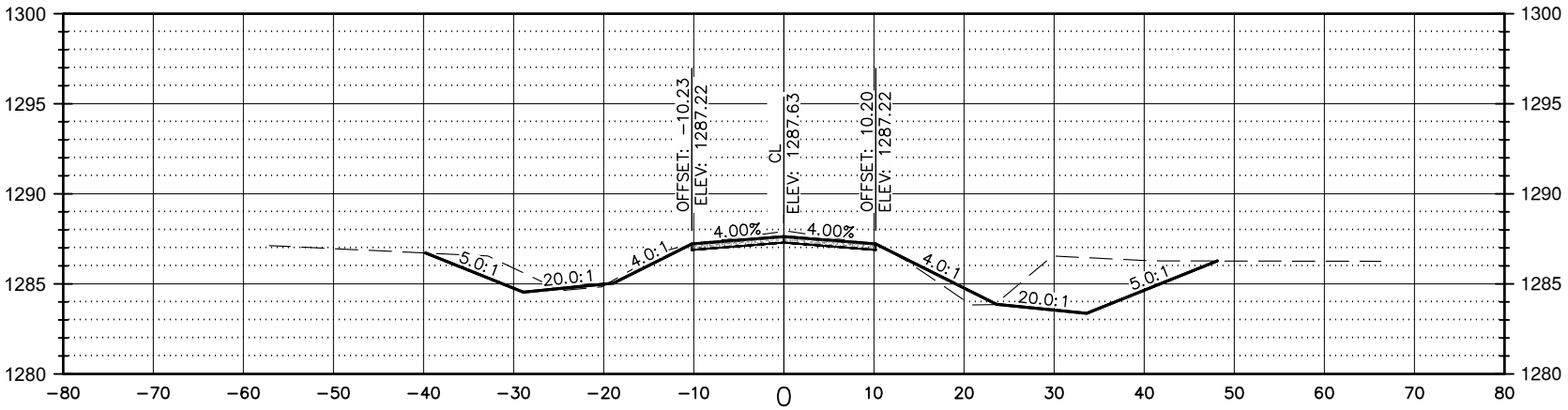
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	47	58



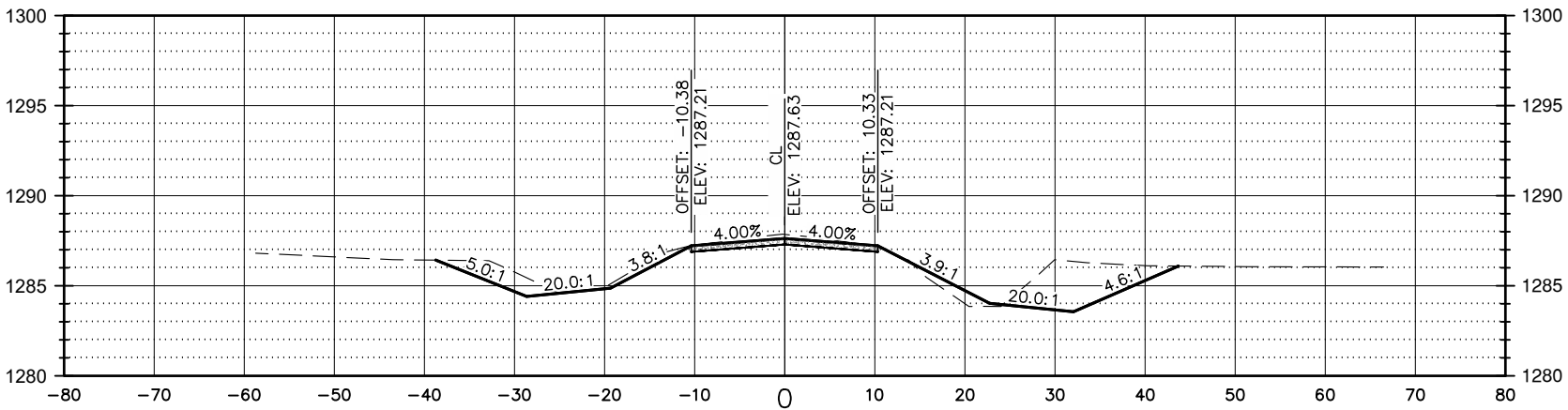
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	48	58

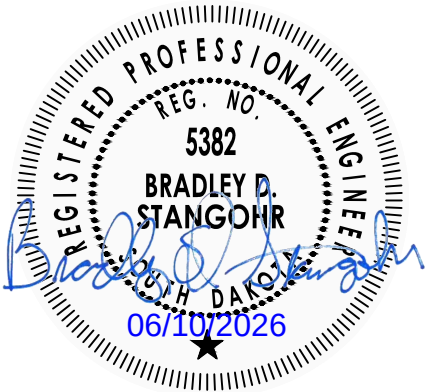
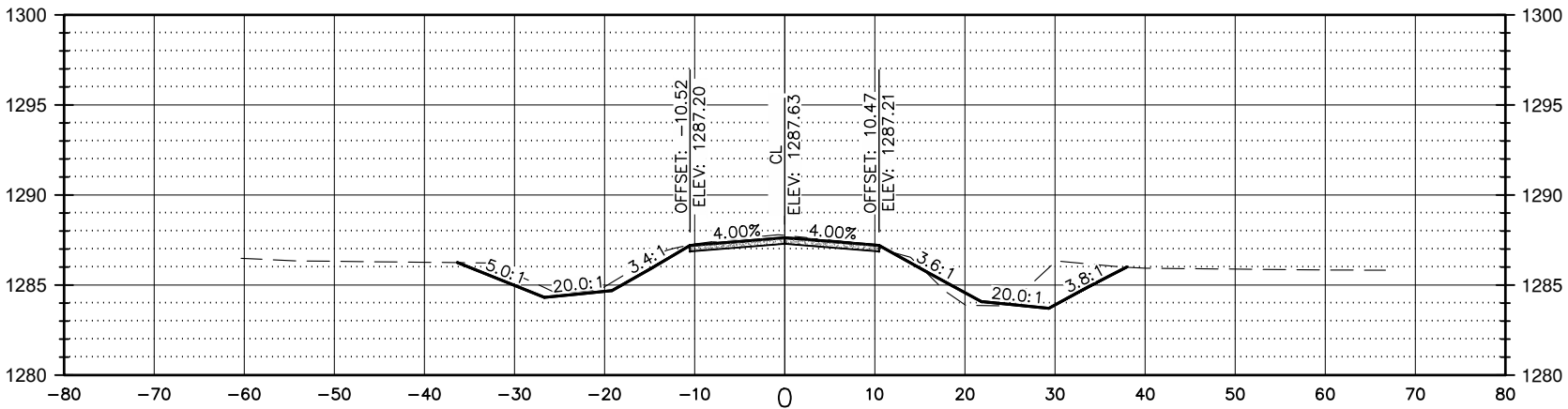
278TH ST CL
STA 34+75.00



278TH ST CL
STA 34+50.00

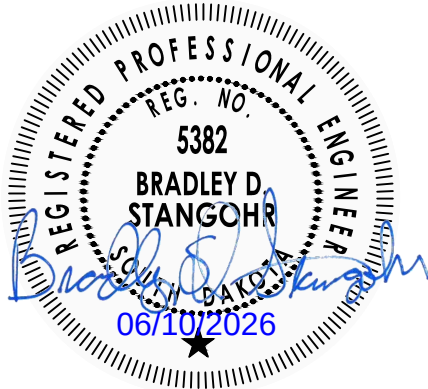
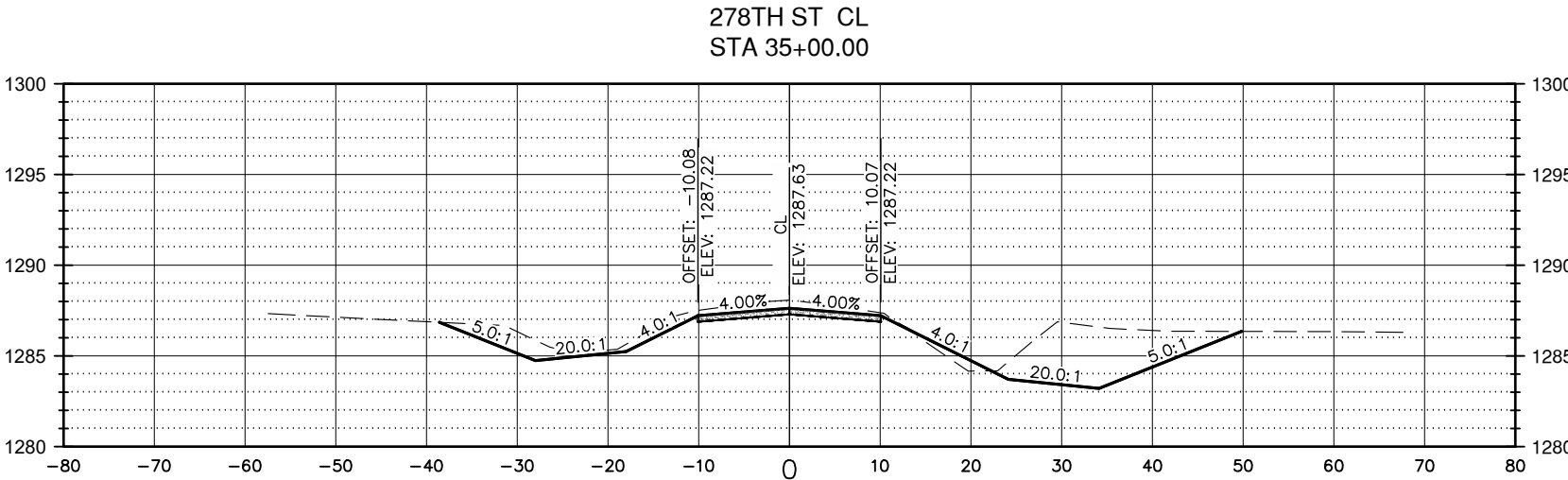
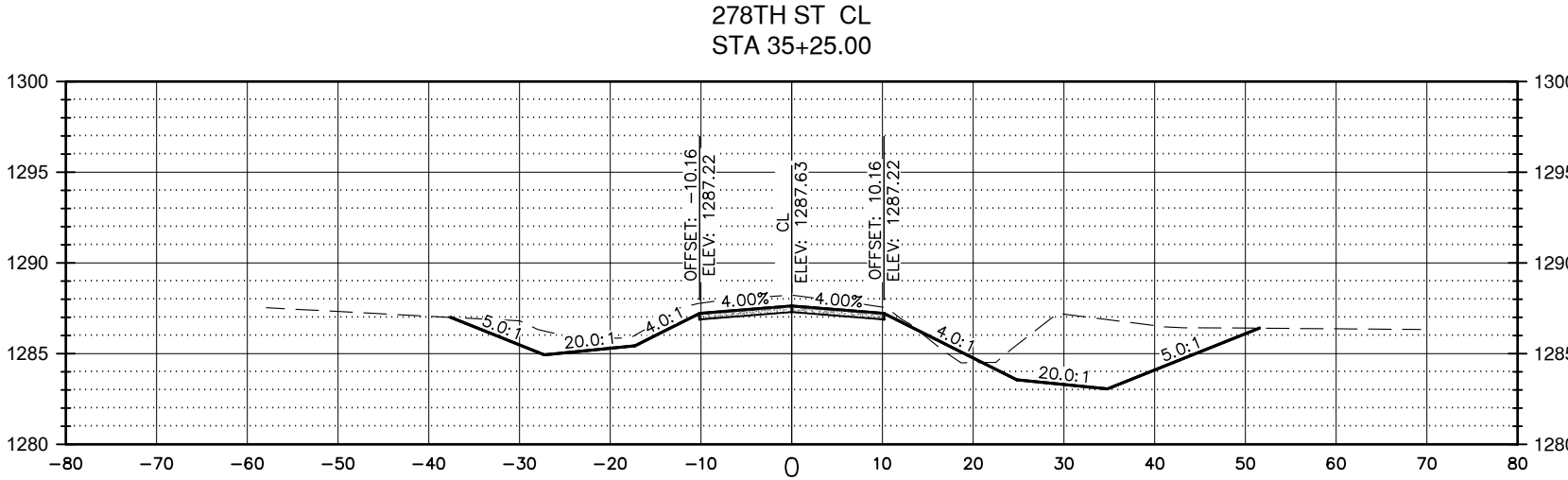
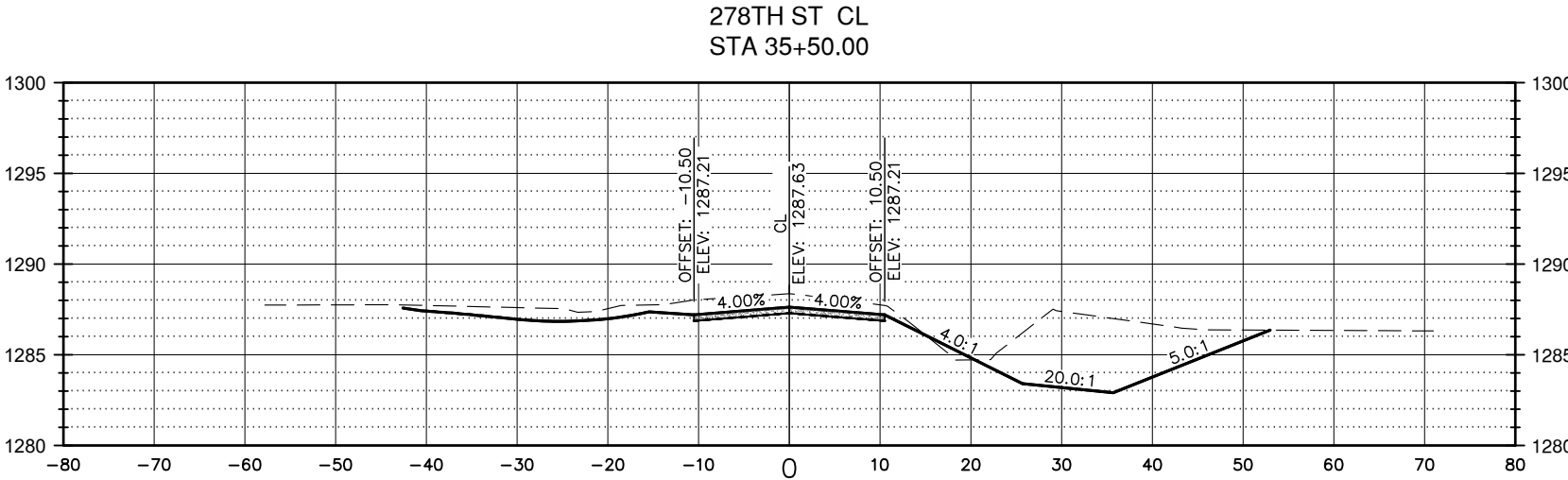


278TH ST CL
STA 34+25.00



CROSS SECTIONS

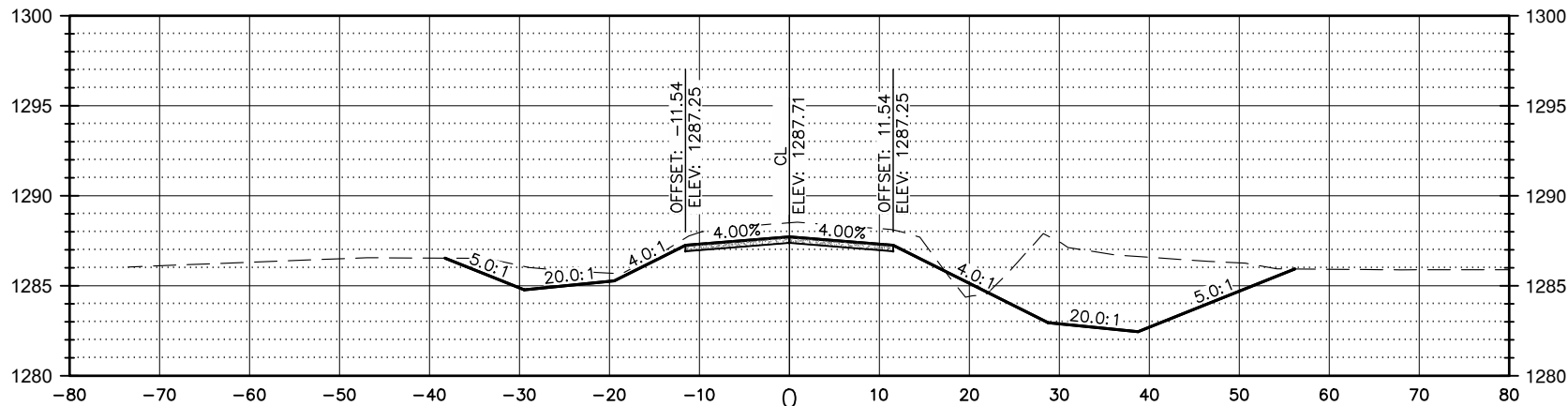
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	49	58



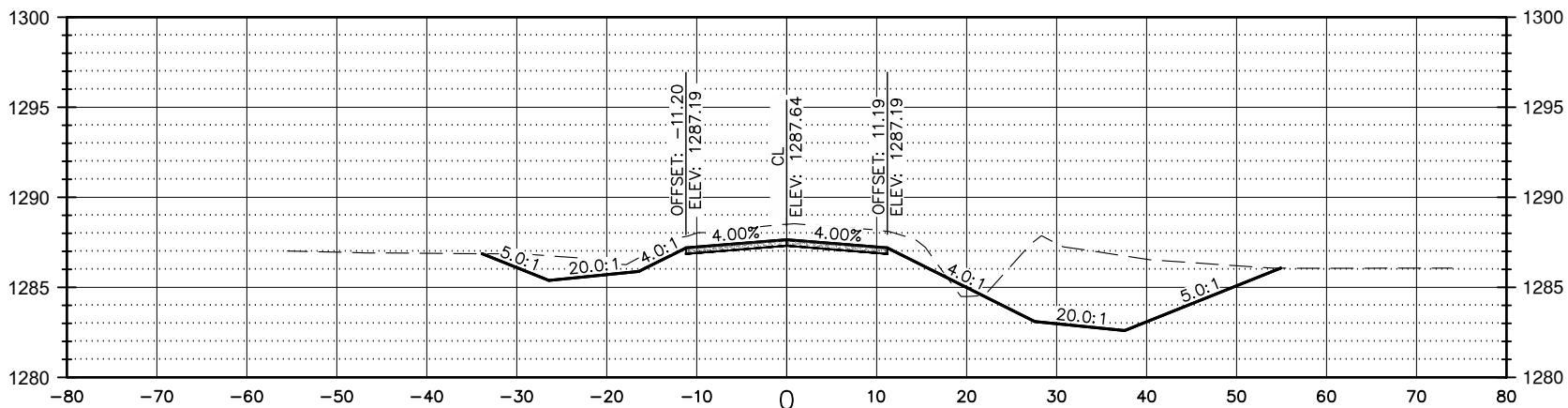
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	50	58

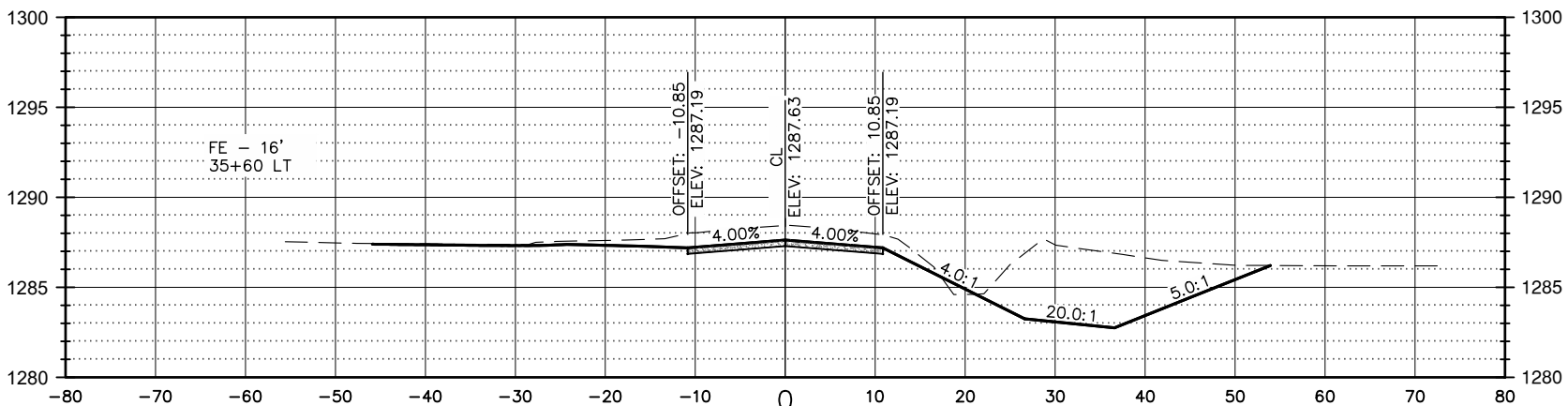
278TH ST CL
STA 36+25.00



278TH ST CL
STA 36+00.00

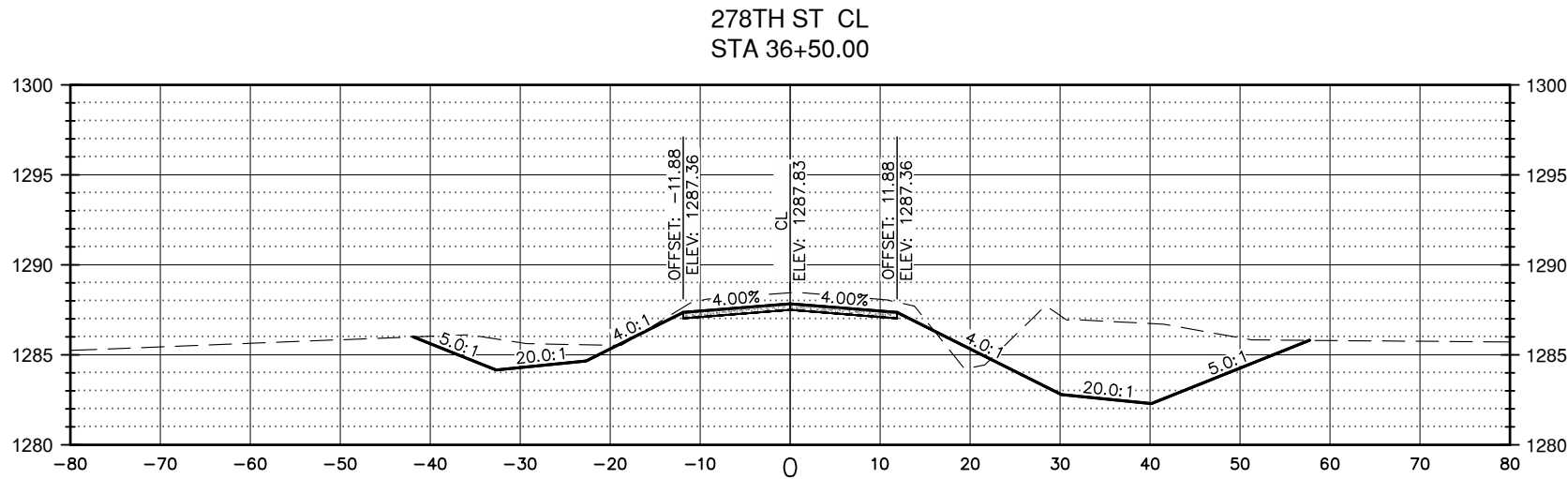
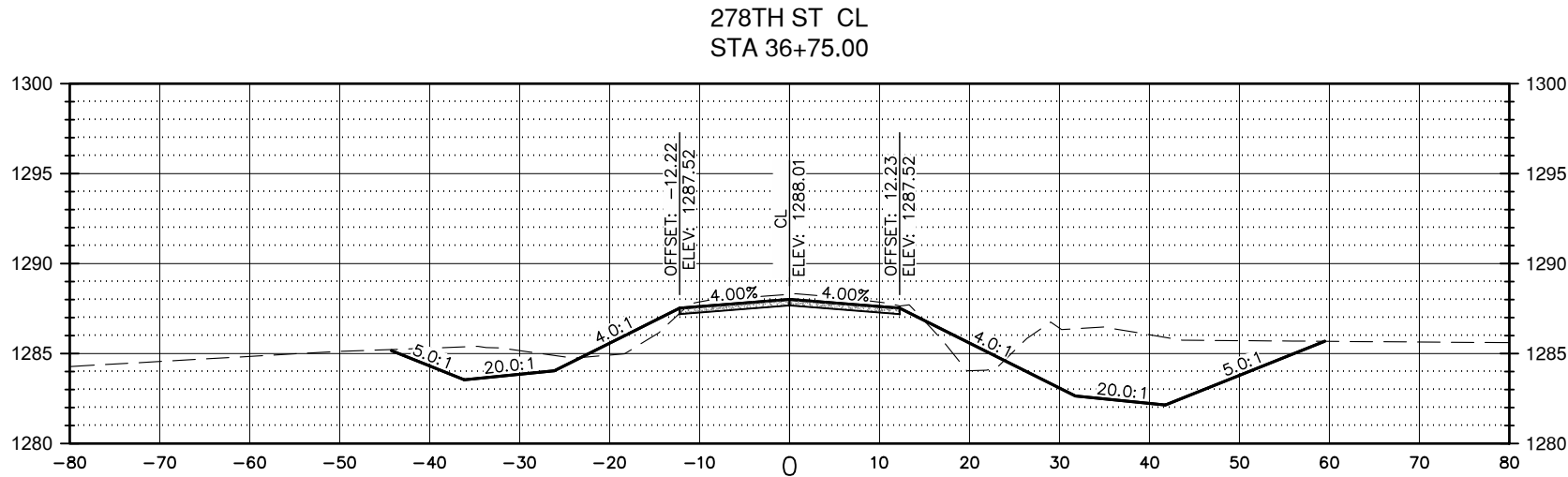
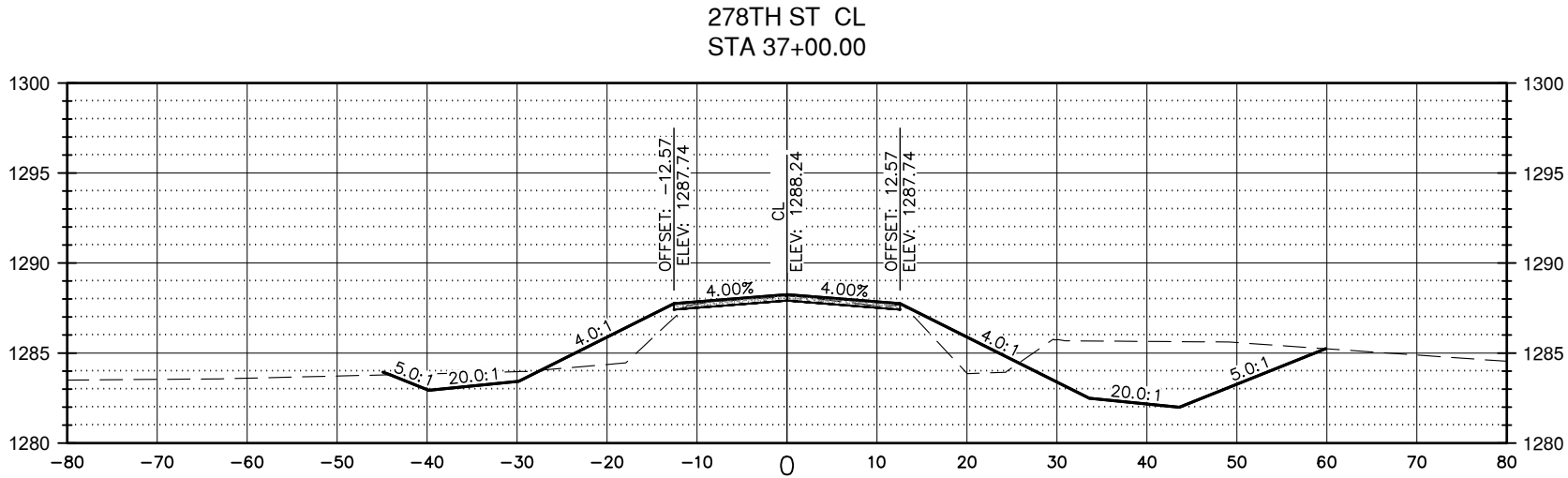


278TH ST CL
STA 35+75.00



CROSS SECTIONS

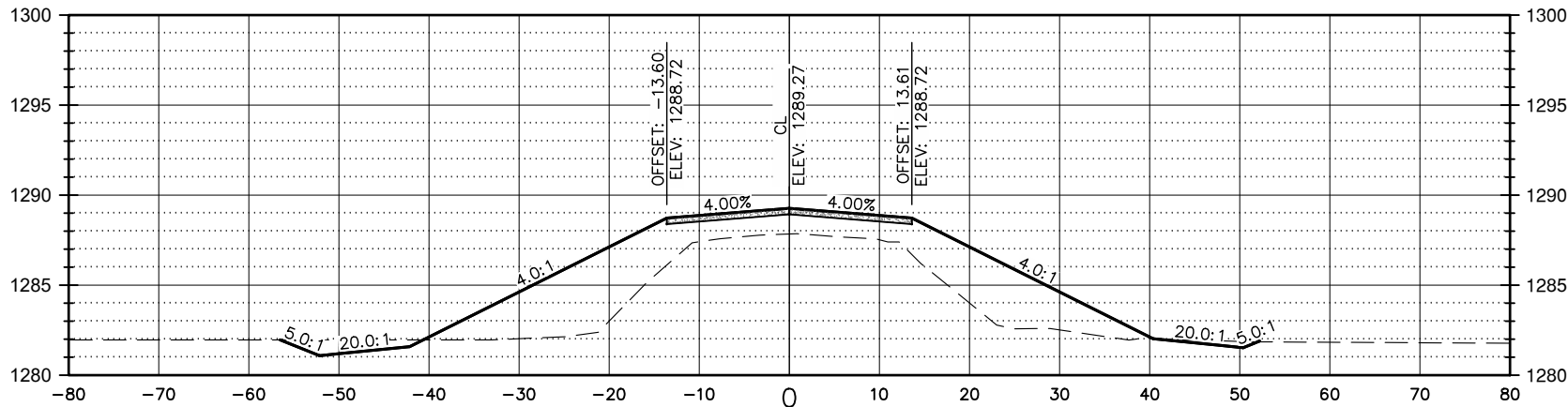
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	51	58



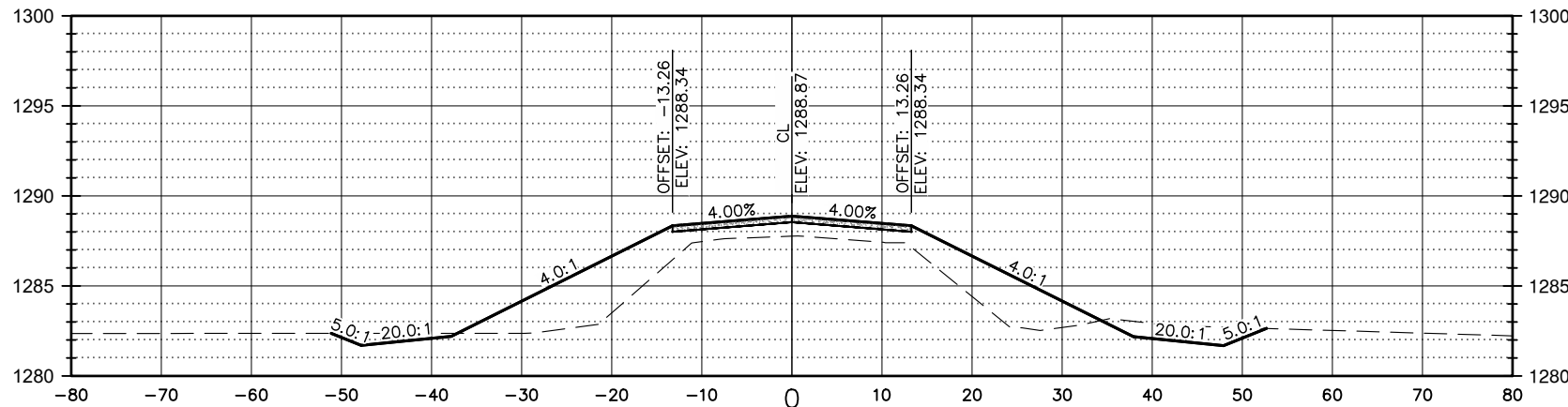
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	52	58

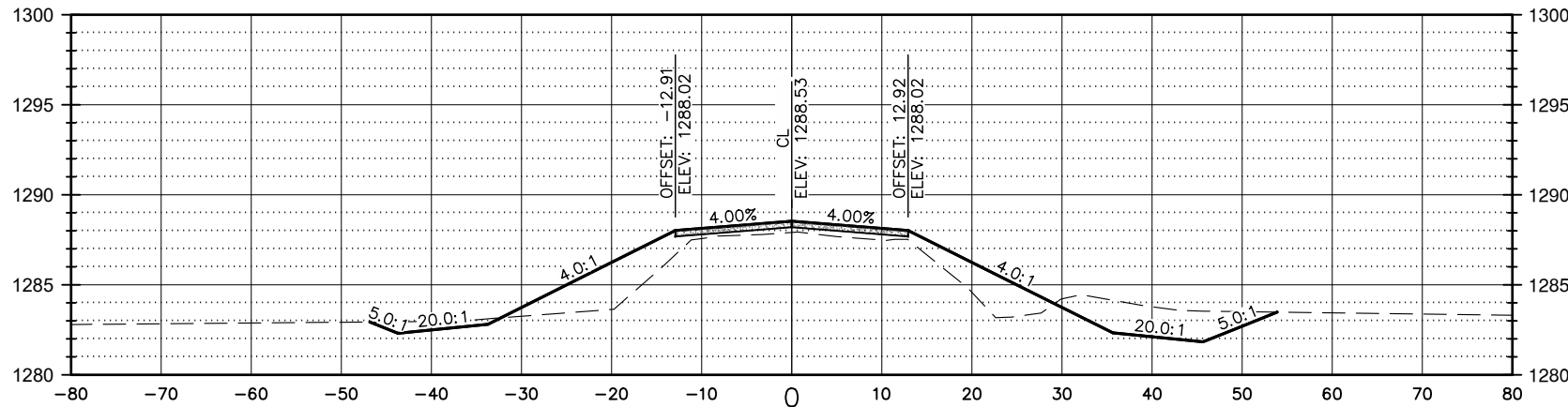
278TH ST CL
STA 37+75.00



278TH ST CL
STA 37+50.00



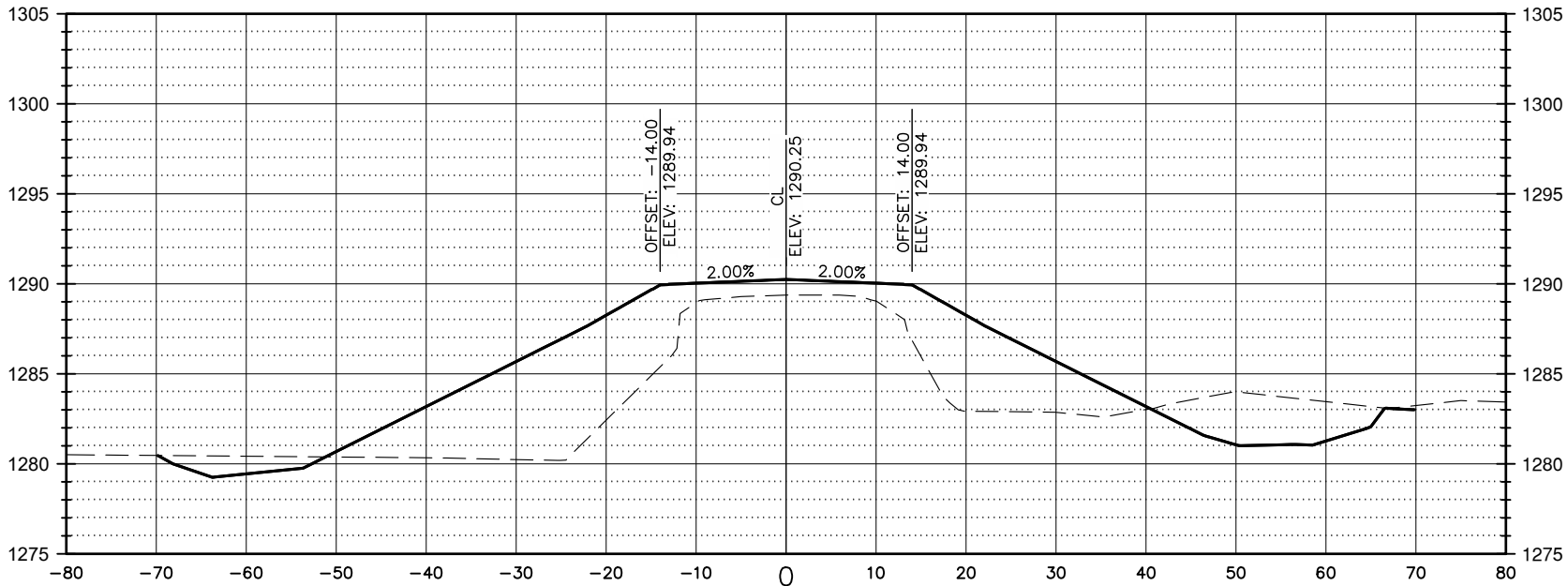
278TH ST CL
STA 37+25.00



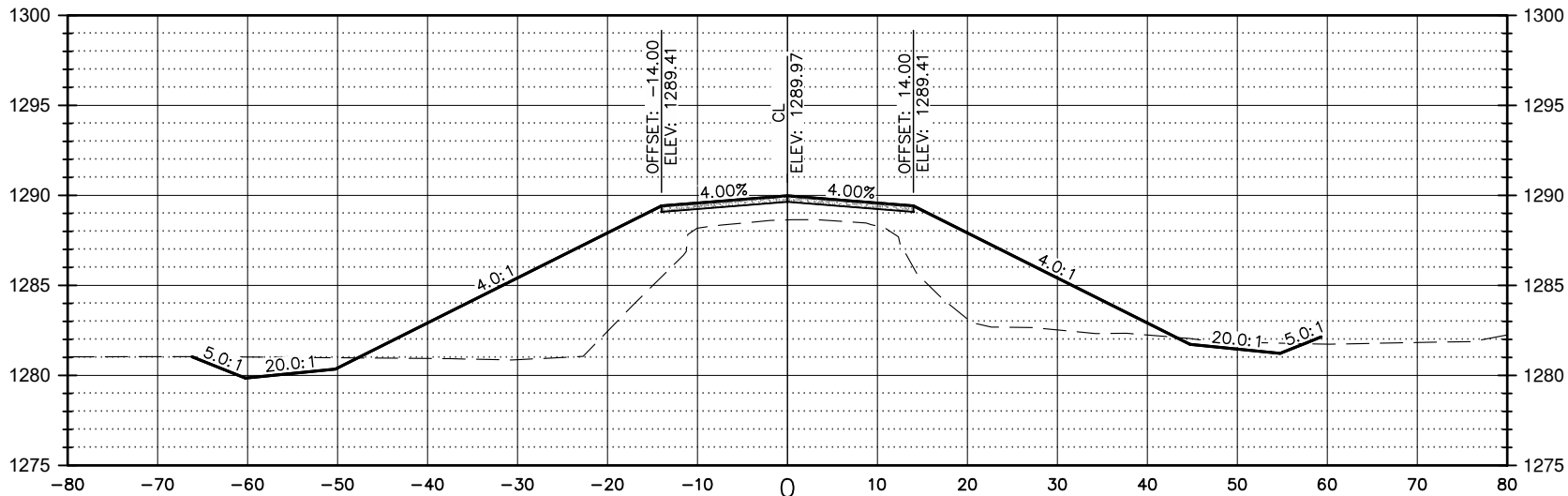
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	53	58

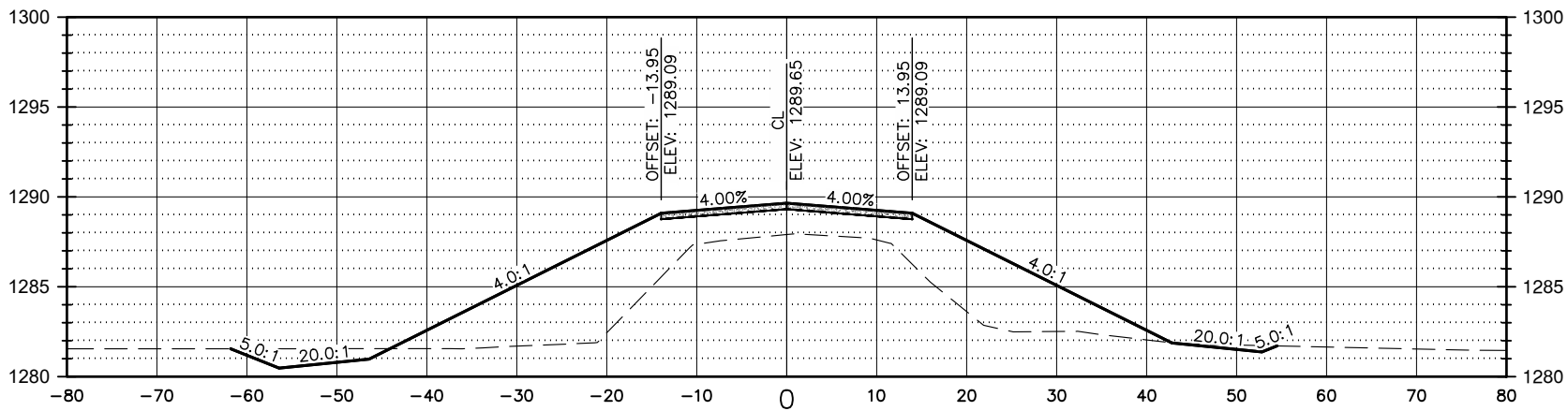
278TH ST CL
STA 38+49.53



278TH ST CL
STA 38+25.00



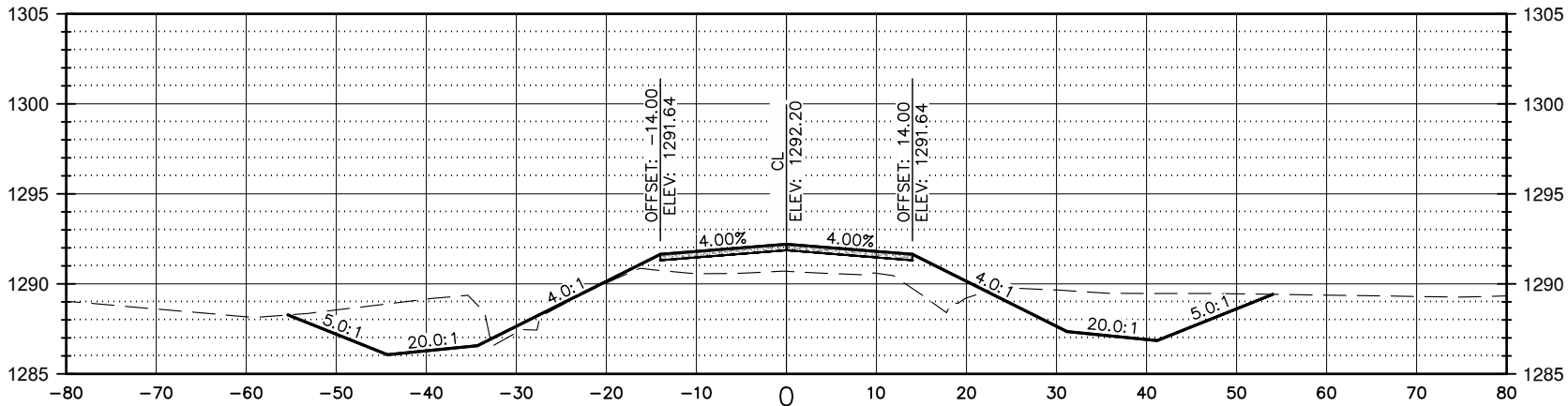
278TH ST CL
STA 38+00.00



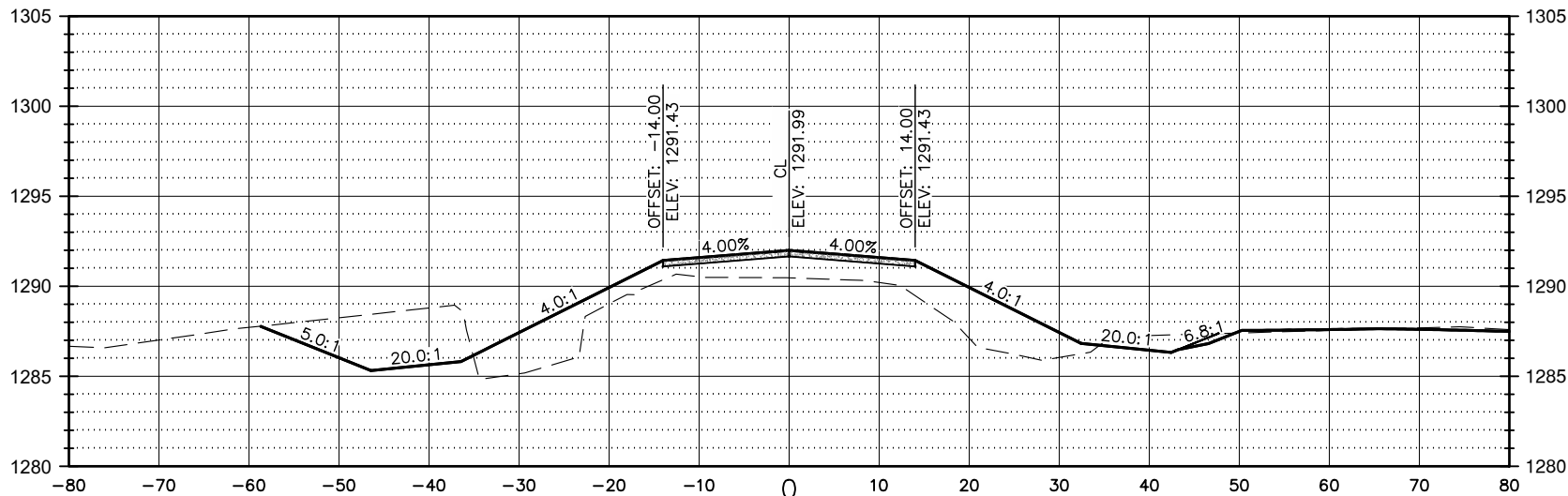
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	54	58

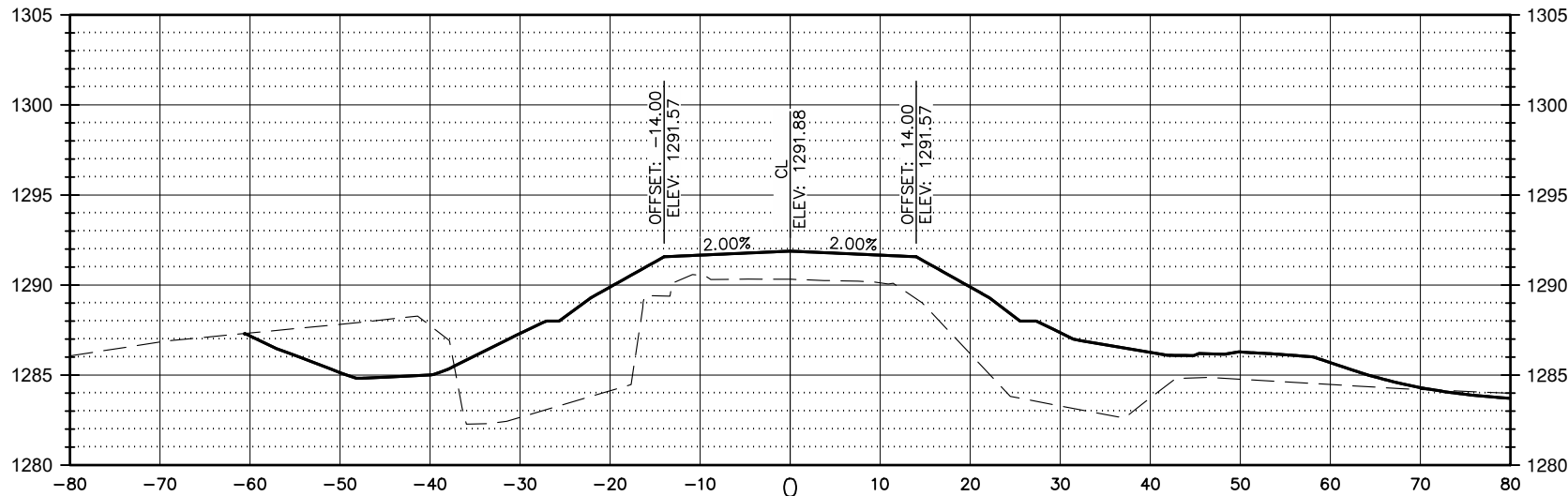
278TH ST CL
STA 40+50.00



278TH ST CL
STA 40+25.00



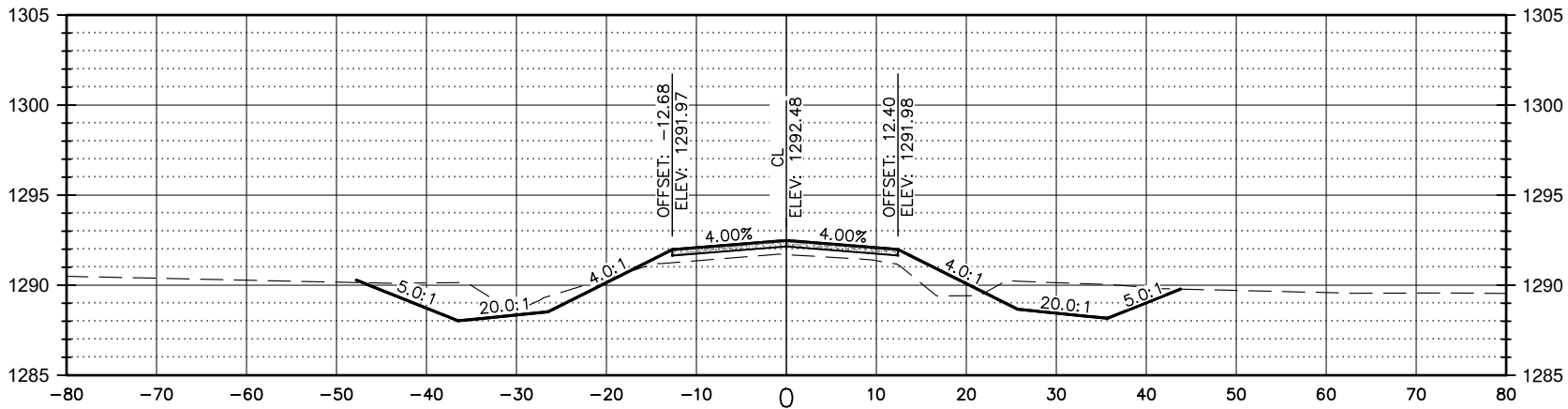
278TH ST CL
STA 40+13.53



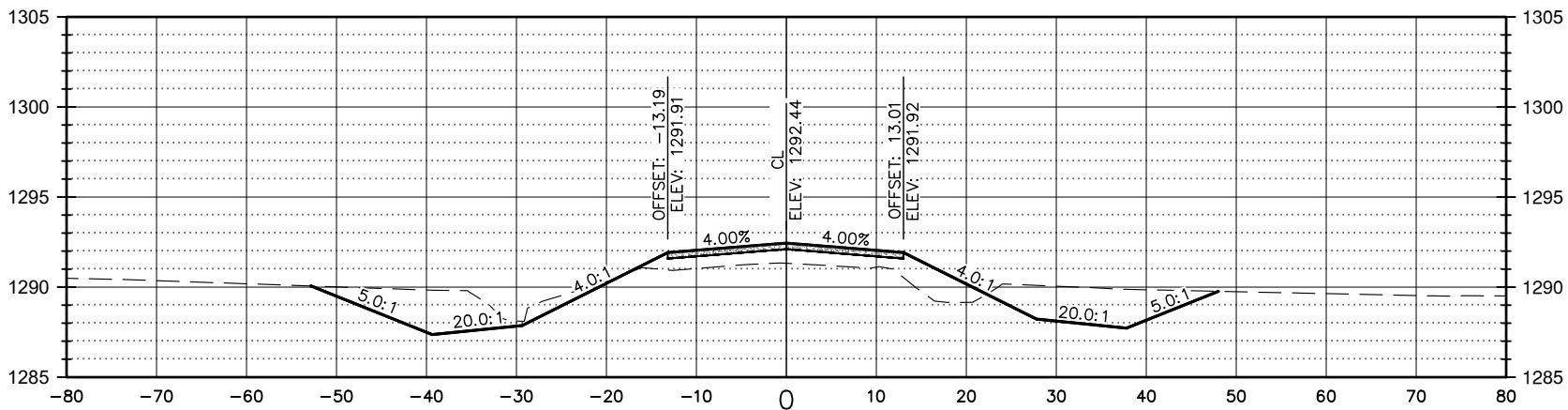
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	55	58

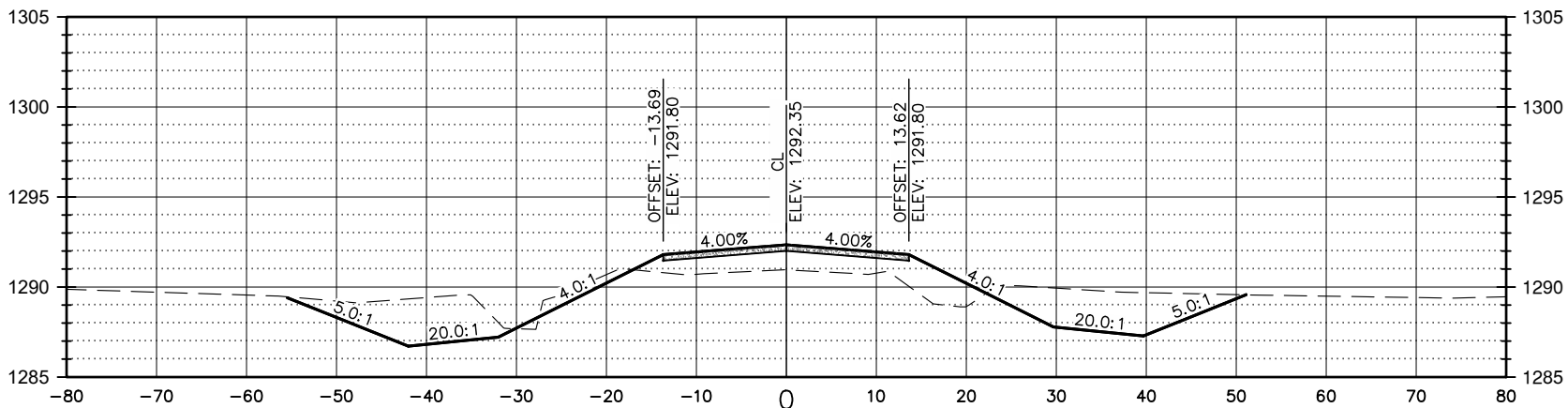
278TH ST CL
STA 41+25.00



278TH ST CL
STA 41+00.00



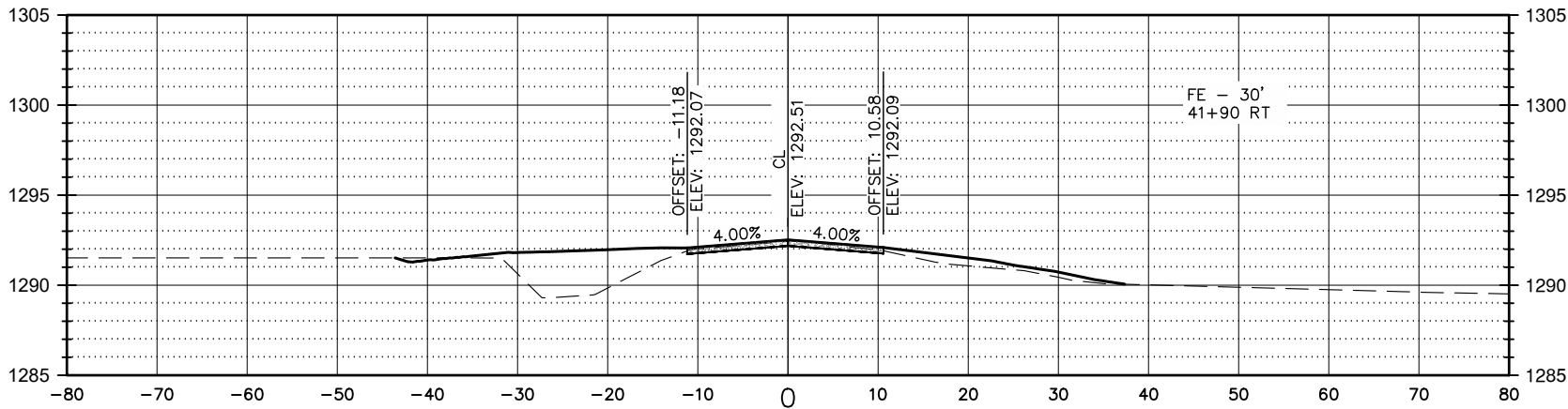
278TH ST CL
STA 40+75.00



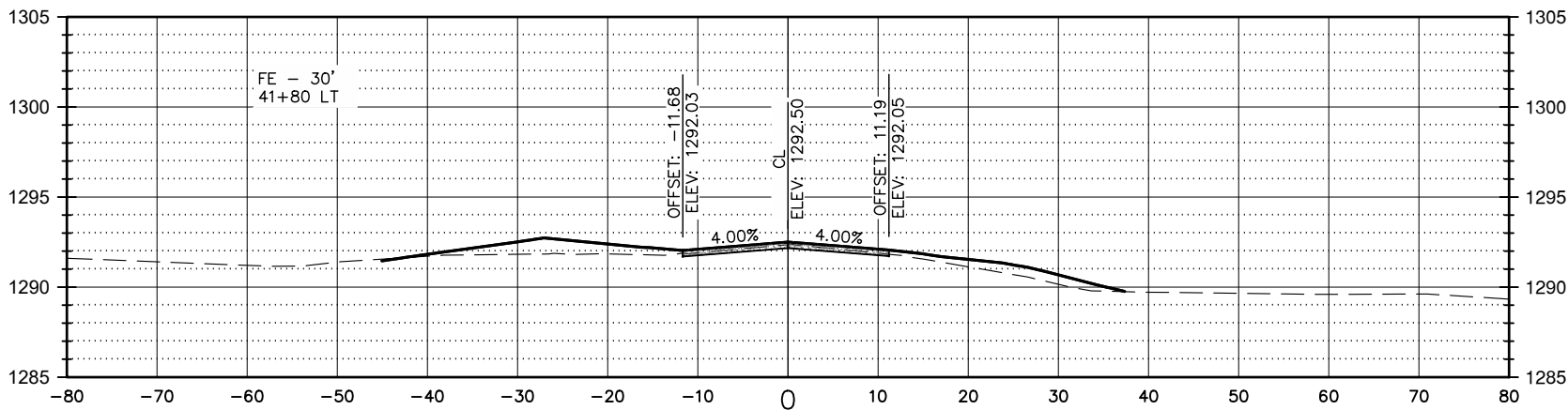
CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	56	58

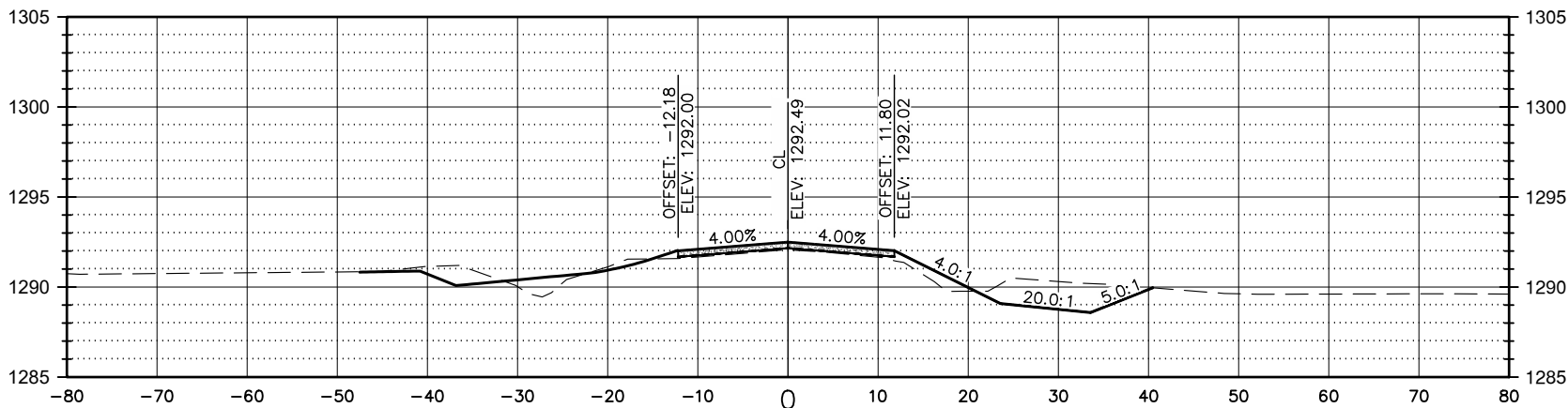
278TH ST CL
STA 42+00.00



278TH ST CL
STA 41+75.00

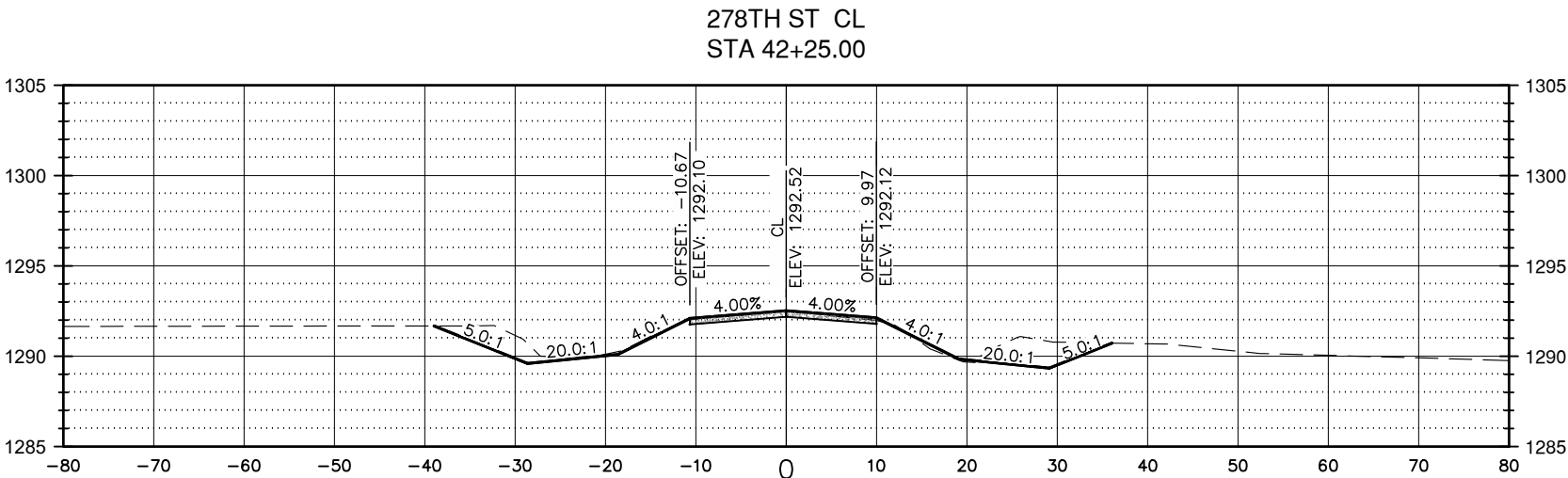
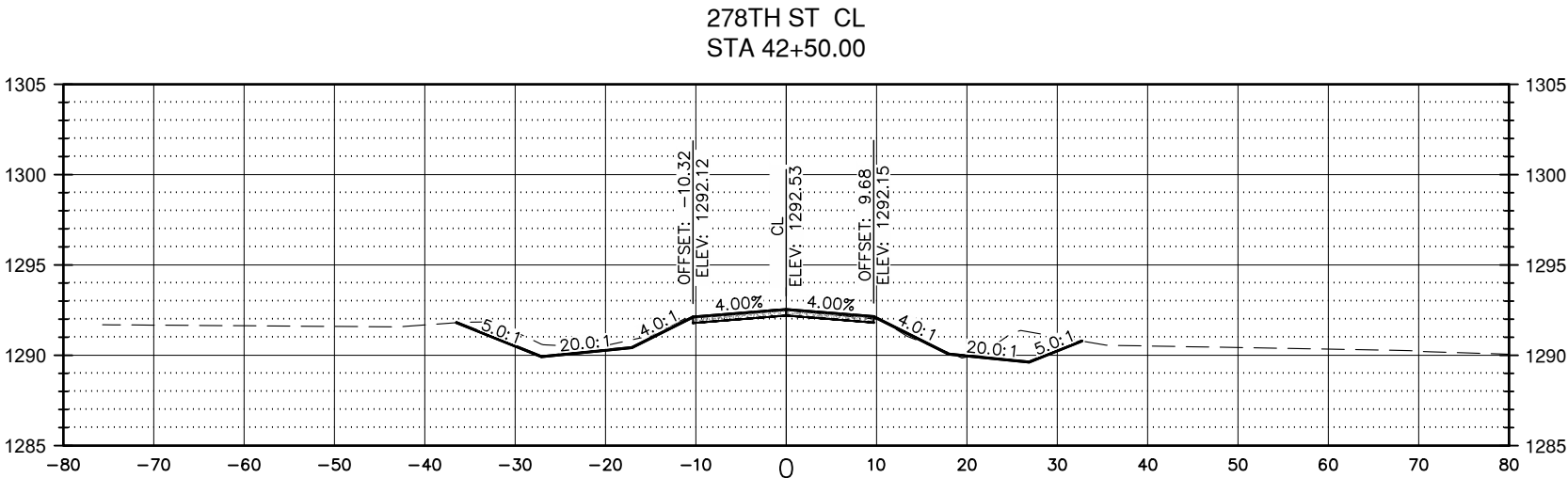
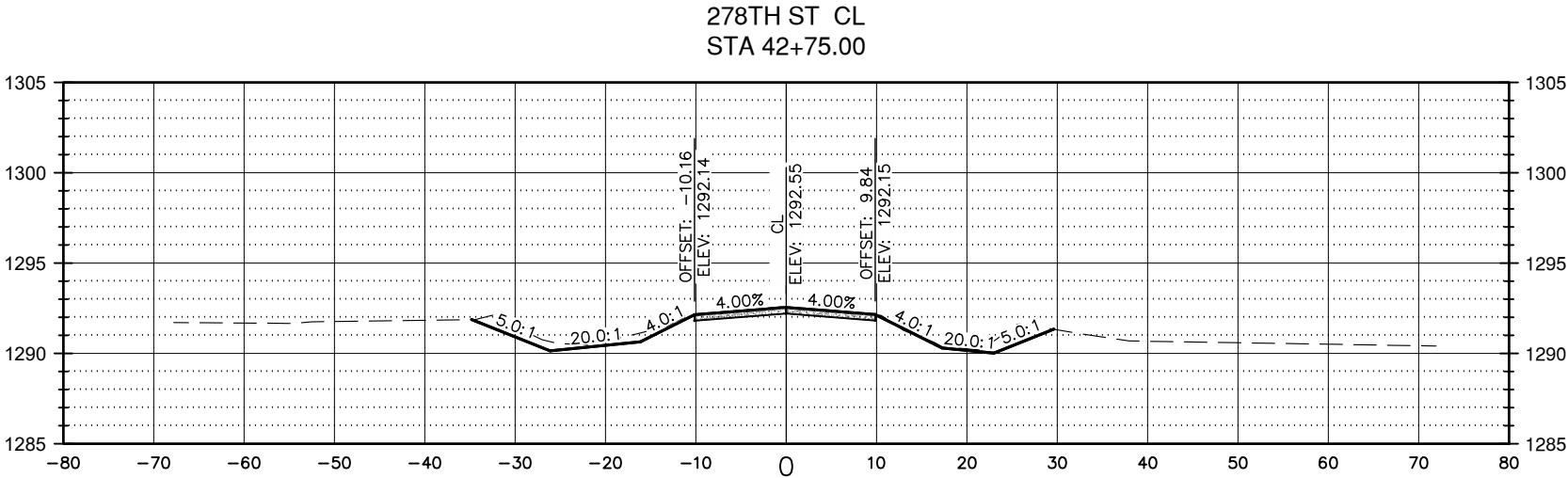


278TH ST CL
STA 41+50.00



CROSS SECTIONS

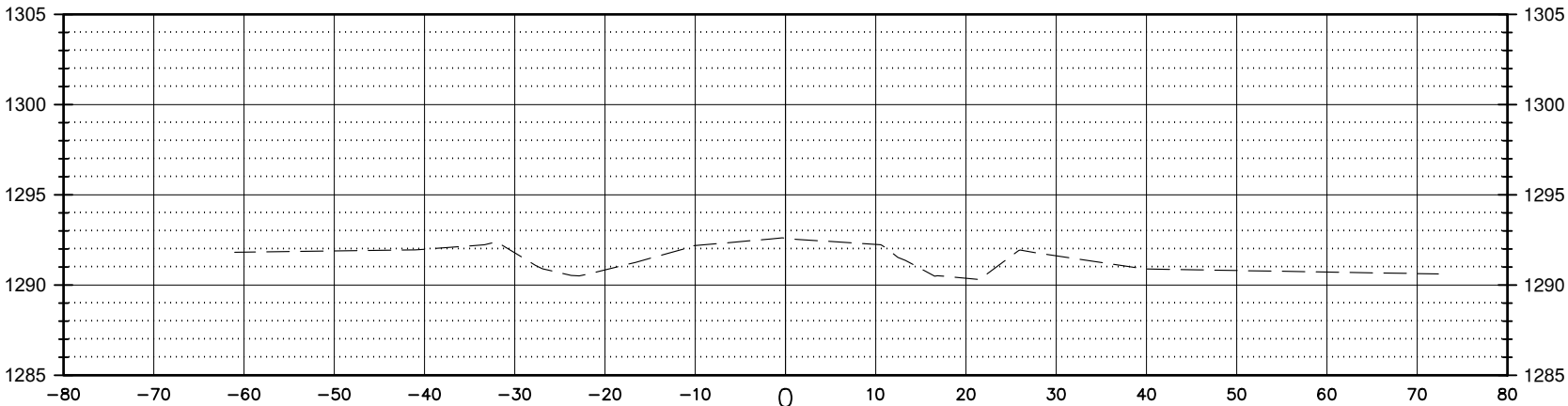
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	57	58



CROSS SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8063(21)	58	58

278TH ST CL
STA 43+00.02



278TH ST CL
STA 43+00.00

