STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	1	52

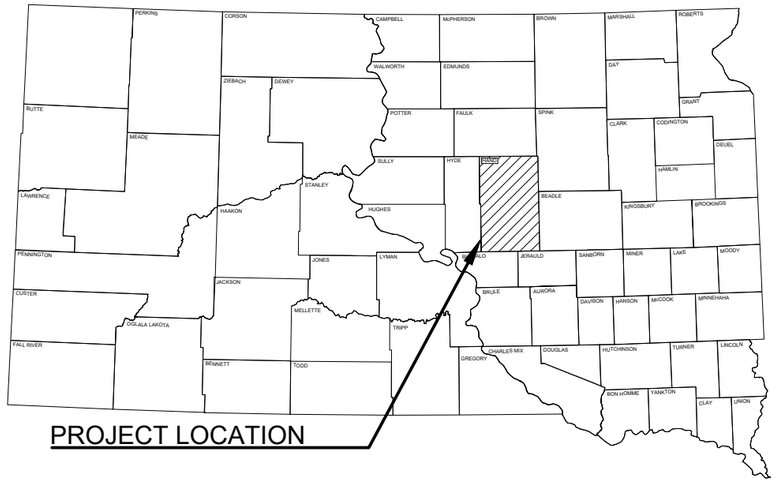
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

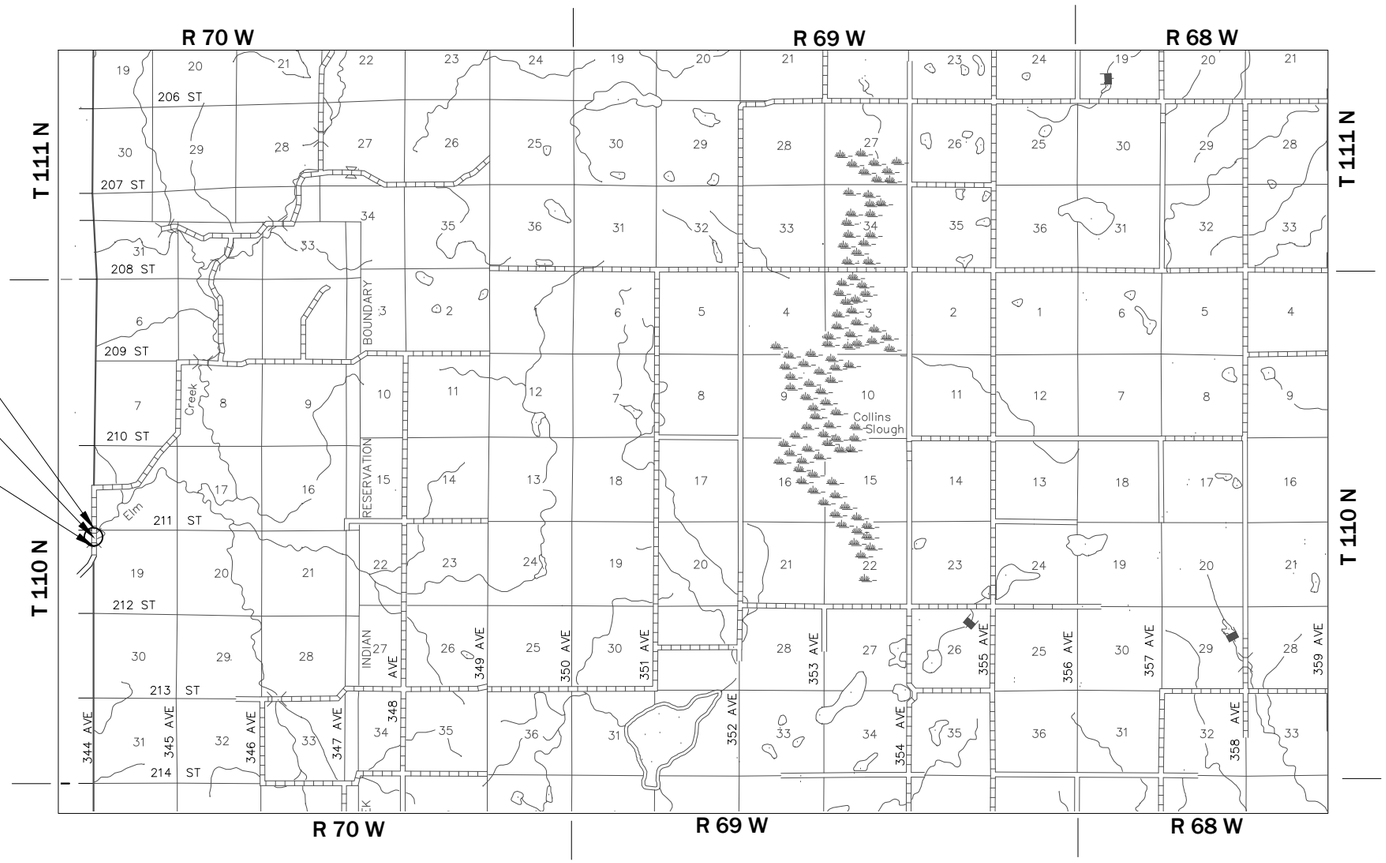
PROJECT BRO-B 8030(30)
HAND COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
STRUCTURE No. 30-000-392
PCN 09MP



PROJECT LOCATION

INDEX OF SHEETS



END PROJECT
STA 29+00.00

STRUCTURE NO.
30-000-392

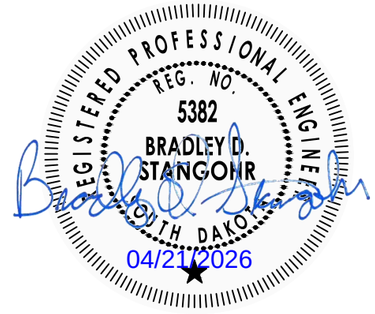
BEGIN PROJECT
STA 25+00.00

DESIGN DESIGNATION

ADT (2020):	35
ADT (2040):	47
DHV:	7
d:	50%
T DHV:	6.0%
T ADT:	13.2%
DESIGN SPEED	55 MPH

STORM WATER PERMIT

MAJOR STREAM:	ELM CREEK
AREA DISTURBED:	1.18 ACRES
PROJECT AREA:	2.01 ACRES



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1

July 15, 2026

FOR BIDDING PURPOSES ONLY

REV. BDS 5/18/2026

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
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	34	Ft
110E5010	Salvage Delineator	18	Each
* 110E5451	Salvage Riprap	219.6	Ton
120E0010	Unclassified Excavation	2,870	CuYd
120E0600	Contractor Furnished Borrow Excavation	425	CuYd
230E0010	Placing Topsoil	485	CuYd
450E4808	48" CMP 14 Gauge, Furnish	42	Ft
450E4810	48" CMP, Install	42	Ft
450E5433	48" CMP Safety End with Bars, Furnish	2	Each
450E5435	48" CMP Safety End, Install	2	Each
634E0110	Traffic Control Signs	281.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	8	Each
700E0210	Class B Riprap	219.6	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0102	Type 2 Erosion Control Blanket	3,760	SqYd
734E0154	12" Diameter Erosion Control Wattle	620	Ft
734E0325	Surface Roughening	0.5	Acre
734E0510	Shaping for Erosion Control Blanket	170	Ft
734E0604	High Flow Silt Fence	1,012	Ft
734E0610	Mucking Silt Fence	71	CuYd
734E0620	Repair Silt Fence	253	Ft
831E0110	Type B Drainage Fabric	590	SqYd

*** - Denotes Non-Participating**

STRUCTURE N0. 30-000-392

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	82	CuYd
421E0200	Box Culvert Undercut	281	CuYd
460E0120	Class A45 Concrete, Box Culvert	173.8	CuYd
480E0100	Reinforcing Steel	23,931	Lb
700E0210	Class B Riprap	57.4	Ton
831E0110	Type B Drainage Fabric	74	SqYd
831E0300	Reinforcement Fabric (MSE)	407	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/media/3677d319/EnvironmentalProceduresManual.pdf>

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

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

COMMITMENT A: AQUATIC RESOURCES

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.13 acres 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)
Elm Creek	26+50 - 28+00 L&R	0.06	0.07	0.13

Action Taken/Required:

It has been determined that project impacts do not require mitigation. Temporary impacts identified in the Table of Impacted Streams will not be mitigated as the finished ground under the bridge will be shaped to match the upstream channel and flood plain and the existing low water channel will be maintained as near as practical to the existing location.

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 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 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.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

COMMITMENT C: WATER SOURCE (CONTINUED)

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 Elm Creek is classified as warmwater, marginal fishery with a total suspended solids standard of less than 150 mg/L 30-day average, less than 263 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.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

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 J: CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN WATERWAYS OF THE U.S.

The Contractor is advised that special construction measures must be taken to ensure that the waterways of the U.S. are not impacted.

Action Taken/Required:

Excavation will not occur below the ordinary high-water elevation in waterways outside of caissons, cribs, cofferdams, steel piling, or sheeting. The natural streambed will not be disturbed unless specified by the plans and under the observation of the Project Engineer. Refer to the Table of U.S. Waterways to Protect for ordinary high-water elevations. Any structure work over or within the waterway will be constructed according to Section 7.18 C of the Specifications.

All dredged or excavated materials will be placed at a site above the ordinary high-water elevation in a confined area (not classified as a wetland) that is a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and inlets to prevent return of such material to the waterway.

The construction of temporary work platforms, crossings, or berms below the ordinary high-water elevation will be allowed if all material placed below the ordinary high-water elevation consists of Class B or larger riprap.

All temporary caissons, cribs, cofferdams, steel piling, sheeting, work platforms, crossings, and berms will be removed with minimal disturbance to the streambed. Proper construction practices will be used to minimize increases in suspended solids and turbidity in the waterway.

Bridge berms, wing dams, traffic diversions, channel reconstruction, stream diversions, grading, etc. will be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.

Temporary waterway crossings required for the Contractor’s construction operations will be constructed with an adequate drainage structure size and minimum fill height to reduce the potential for upstream flooding. The Contractor will be responsible for sizing the temporary drainage structure for these crossings.

All temporary works in waterways of the US are required to be covered in the Corp of Engineers 404 Permit. At the time of the preconstruction meeting, the Contractor will submit documentation for all temporary works for the purpose of complying with the 404 Permit requirements in accordance with Section 423.3 A of the Specifications.

Table of U.S. Waterways to Protect

Station	Waterway	Ordinary High-Water Elevation
26+50 - 28+00 L&R	Elm Creek	1780.31’

Stream channel excavation within “Waters of the US” is subject to USACE regulatory jurisdiction. Stream channel excavation cannot exceed the permitted quantities and/or surface area. The 404 Permit is included in the Special Provisions.

The Contractor will take all precautions necessary to prevent any incidental discharges associated with the excavation and hauling of material from the stream channel. This pertains to any excavation operations such as, foundation, pier, or abutment excavation, channel cleanout, excavation for riprap protection, and removal of any temporary fill associated with construction activities.

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.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

SEQUENCE OF OPERATIONS

The Contractor will use the following sequence of operations:

1. Install temporary traffic control signs as shown on the plans.
2. Install traffic diversion structures, temporary traffic diversion, traffic diversion traffic control.
3. Notify County to install gravel surfacing on traffic diversion, remove fence, and install temporary fence.
4. Install erosion control procedures.
5. Deconstruct and remove existing structure.
6. Undercut box culvert.
7. Construct new box culvert.
8. Perform grading operations, place topsoil, and install erosion control.
9. Notify County to install final surfacing, and permanent signing.
10. Remove temporary traffic control and open the roadway to through traffic.
11. Remove traffic diversion structures, temporary traffic diversion, traffic diversion traffic control, and install riprap.
12. Place permanent seeding and notify County to install permanent fence.
13. 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 Department'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

Hand 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. Removal of existing fencing, furnish and install temporary and/or permanent fencing.
4. Furnish and install temporary gravel surfacing on traffic diversion and final gravel surfacing on roadway.
5. Furnish and install new permanent signing.
6. Remove silt fence and erosion control wattles in permanently seeded areas.
7. Remove salvaged items.
8. Wetland mitigation.

TRAFFIC DIVERSION

The traffic diversion is located at Sta. 27+40 Rt. The traffic diversion will be constructed according to Section 5.14 B of the Specifications. Installation and removal of the traffic diversion will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion located at Station 27+40 Rt will be constructed according to the geometric layouts shown in the plans with the temporary drainage structure(s) provided in the following table. The temporary structure sizes are designed to pass the design flood frequency flows without overtopping the traffic diversion grade, to minimize potential upstream flooding, and are sized to meet FEMA (Federal Emergency Management Agency) requirements where applicable. The structure will be placed at the flowline elevation and location as stated in the "Table of Temporary Drainage Structures in Traffic Diversions". If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer during the project preconstruction meeting.

Table of Temporary Drainage Structures in Traffic Diversions

Traffic Diversion Location (Mainline Station)	Design Flood Frequency	* Flowline Elevation	Ordinary High Water Elevation	Temporary Structure Option 1	Temporary Structure Option 2
27+40 Rt	2 year	1778.10	1780.31	2–48" CMP	2–54" CMP

* The flowline elevation is at the inlet of the traffic diversion structure. The flowline at the outlet of the traffic diversion structure is 1777.90.

Costs to provide temporary drainage structures will be incidental to the contract lump sum price for "Maintenance of Traffic Diversion(s)".

Traffic diversions in waterways will be constructed such that any material placed below the ordinary high water elevation will conform to the requirements of Class B riprap. Type B drainage fabric will be placed under the riprap and under the traffic diversion embankment, which is placed in a wetland. The Type B drainage fabric will also be placed above the riprap. The quantity of riprap and drainage fabric used in the traffic diversion is included in the quantity for "Class B Riprap" in the Structure estimate of quantities. The quantity of riprap used for the traffic diversion will be reused as riprap for the structure and all costs incurred to place and remove the riprap at the traffic diversion and subsequently place the riprap at the structure will be incidental to the contract unit price per ton for "Class B Riprap". The traffic diversions will be built in close conformity to the plan gradeline. Unless otherwise shown in the plans, the traffic diversions will be removed such that the original ground surface contours and elevations are restored and the hydraulic capacity of the waterway is maintained. The removal will be done in such a manner that there is minimal disturbance to the channel bed.

Class B Riprap will also be placed at the outlet of the temporary traffic diversion structure with the dimensions of 12 foot long (measured from the end of the temporary pipe towards downstream) by 17 foot wide by 2.75' deep.

The removed traffic diversion embankment will be used in the mainline embankment unless otherwise approved by the Engineer. Traffic diversion embankment not used in the embankment shall be disposed of by the Contractor at the Waste Disposal site.

Traffic Diversion Excavation as shown on the plans profile sheets is the excavation required to construct the traffic diversion portion that is located inside the mainline cross section work limits. The Traffic Diversion Excavation quantity is included in the mainline excavation quantity in the Table of Unclassified Excavation.

Traffic Diversion Borrow, as shown on the plans profile sheets, is obtained from the mainline excavation from outside of the traffic diversion cross section work limits and a Contractor supplied source approved by the Engineer.

Added Traffic Diversion Excavation as shown on the plans profile sheets is the excavation required to construct the traffic diversion portion that is located outside the mainline cross section work limits. The Added Traffic Diversion Excavation quantity is added to the unclassified excavation quantity in the Table of Unclassified Excavation.

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	L/R	Ordinary High Water Elevation	Traffic Diversion Riprap (Ton)	Structure Class B Riprap (Ton)	Traffic Diversion Type B Drainage Fabric (SqYd)	Structure Type B Drainage Fabric (SqYd)
27+40	Rt	1780.31	277.0	57.4	590	74
		Totals:	277.0	57.4	590	74

SALVAGE RIPRAP

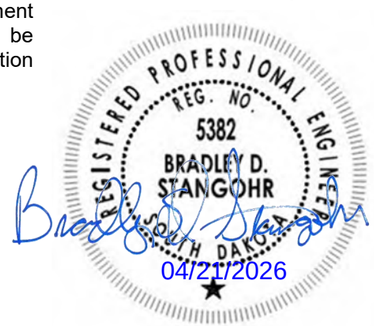
An estimated 219.6 tons of excess Class B Riprap from the traffic diversion, which is not reused for the permanent structure, will be owned by the County. The Contractor will haul the excess riprap approximately 5 miles north of the project site to the drainage structure on Green Valley Road located at Latitude 44.372181N, Longitude 99.269586W. The excess riprap will be stockpiled by the Contractor with one half of the riprap placed on each side of the roadway. The Contractor will coordinate all Salvage Riprap work with the County and the work will be approved by the Engineer.

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 5 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. Special ditch grades and other sections of the roadway different than the typical section(s) 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 box culvert 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
STA 25+00 to STA 29+00 RT	Underground Power Line	Dakota Energy Cooperative	(605) 352-8591
STA 25+00 to STA 29+00 LT	Underground Water Line.	Mid-Dakota Rural Water Systems	(605) 853-3159
STA 25+00 to STA 29+00 LT	Underground Communications Line	Venture Communications Cooperative	(605) 852-2224

SHRINKAGE FACTOR:

Embankment plus 35%

EARTHWORK BALANCE:

Excavation is the quantity of Unclassified Excavation less the quantity of topsoil, excavation for RCBC installation, and gravel surfacing.

Other excavation includes the excavation for Class B Riprap (41 CuYd) and Box Culvert Undercut (231 CuYd).

These quantities are for informational purposes only, compensation for these is accounted for within the various bid items.

Excavation - Mainline*	682	CuYd		Embankment	417	CuYd
Waste	119	CuYd		35% Shrinkage	146	CuYd
Total	563	CuYd		Total	563	CuYd

*Includes existing gravel surfacing

Excavation – Traffic Diversion	203	CuYd		Embankment	465	CuYd
Contractor Furnished Borrow	425	CuYd		35% Shrinkage	163	CuYd
Total	628	CuYd		Total	628	CuYd

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

It is assumed (for the purpose of earthwork balance) that the Contractor will not be able to use any of the material from Other Excavation 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 – Mainline	682
Excavation – Traffic Diversion	203
Topsoil	485
Excavation for RCBC Installation	1500
Total Unclassified Excavation:	2,870

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

Plan quantities will be used for final payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil will not be adjusted according to field measurements.

The following paragraphs are general earthwork information in regard to computing the Unclassified Excavation quantity.

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.

The plans quantity for "Unclassified Excavation" as shown in the Estimate of Quantities will be the basis of final payment for this item.

SALVAGE DELINEATORS

All delineators listed for salvage in the Table of Salvage Delineators will become property of Hand County and will have the existing posts, bases, and signs dismantled and stockpiled within the right-of-way. The Contractor will contact the Hand County Highway Superintendent, Nicole Gortmaker, at 605-853-3292 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. All delineators listed for salvage will be handled with care so that the signs are not damaged during removal or transport. 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
Sta 24+72 – 15' Rt.	Salvage Delineator	1
Sta 25+01 – 13' Lt.	Salvage Delineator	1
Sta 25+28 – 14' Rt.	Salvage Delineator	1
Sta 25+29 – 13' Lt.	Salvage Delineator	1
Sta 25+80 – 12' Rt.	Salvage Delineator	1
Sta 25+81 – 13' Lt.	Salvage Delineator	1
Sta 26+32 – 14' Lt.	Salvage Delineator	1
Sta 26+77 – 13' Lt.	Salvage Object Marker	1
Sta 26+85 – 9' Rt.	Salvage Object Marker	1
Sta 27+22 – 12' Lt.	Salvage Object Marker	1
Sta 27+34 – 8' Rt.	Salvage Object Marker	1
Sta 27+72 – 14' Lt.	Salvage Delineator	1
Sta 27+72 – 11' Rt.	Salvage Delineator	1
Sta 28+10 – 13' Rt.	Salvage Delineator	1
Sta 28+79 – 15' Rt.	Salvage Delineator	1
Sta 28+79 – 20' Lt.	Salvage Delineator	1
Sta 29+31 – 17' Rt.	Salvage Delineator	1
Sta 29+32 – 21' Lt.	Salvage Delineator	1
	Total	**18**

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 payment for this item. Restoration of the Contractor furnished borrow excavation site will be the responsibility of the Contractor.

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 1,500 cubic yards of excavation for installation of reinforced concrete box culverts.

All work necessary to excavate a trench for installation of reinforced concrete box culverts including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for "Unclassified Excavation". Payment for excavation of reinforced concrete box culverts will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

The excavation quantities for installation of reinforced concrete box culverts are not included with the earthwork balance quantities on the plans profile sheets. The quantities computed for excavation of the reinforced concrete box culverts are based on the limits shown in the drawing below.

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04/21/2026

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION (CONTINUED)

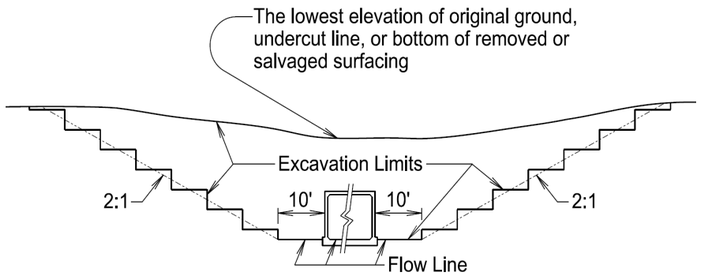

TABLE OF EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Station	Quantity (CuYd)
27+04.00	1,500
Total:	1,500

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 ⅔-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.

This project has soils that are highly corrosive to steel. Corrugated metal pipe on this project will be polymer coated 14 gauge steel as specified in the plans. Any required connection bands, elbows, tees, crosses, wyes, reducers, and transitions will also be polymer coated. The connection bands will be 24 inches wide. All polymer coated corrugated metal pipe and components will be in conformance with AASHTO M245. Riveted pipe will not be allowed.

All damage to the polymer coating will be repaired in accordance with the manufacturer's recommendations prior to installation of the pipe.

All costs associated with the polymer coating including repair of polymer coating will be incidental to the corresponding CMP contract items.

Metal pipe end sections connected to polymer coated CMP will be aluminum-coated (Type 2) in accordance with AASHTO M36 as specified in the plans. All costs associated for gauge, coating, and connections will be incidental to the corresponding CMP End Section contract items.

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)
25+00 L		29+00 L	120
25+00 R		29+00 R	365
		Total:	485

All cost 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.

EROSION CONTROL

The estimated area requiring erosion control is 1.1 acres with 0.77 acres being seeding and erosion control blanket and 0.33 acres being seeding and mulch. 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".

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the 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.

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 areas within the project limits except for the top of roadways and riprap.

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

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.

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 irregularis*. 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 price 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 wattle shown through traffic diversion will be installed after traffic diversion removal. Erosion control wattles will remain on the project until vegetation has been established and then they will be removed by Hand County.

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 low flow or 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

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04/21/2026

TABLE OF EROSION CONTROL WATTLE

12" Diameter Wattle			
Station	L/R	Diameter (Inch)	Quantity (Ft)
25+27	R	12	20
26+18	R	12	20
26+65	L	12	60
27+04	L	12	100
*27+11	R	12	120
*27+74	R	12	120
27+52	L	12	20
27+89	R	12	20
27+99	L	12	20
28+92	L	12	20
		Miscellaneous	100
		Total	620

* Erosion Control Wattle will be installed following removal of Traffic Diversion.

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

High Flow Silt Fence					
Station		Station	L/R		Quantity (Ft)
1+00	To	3+59	R		260
2+59	To	2+81	L		161
4+34	To	5+48	R		166
25+20	To	26+43	L		124
27+14	To	28+35	L		132
28+55	To	29+05	L		49
				Miscellaneous	120
				Total	1012

SHAPING FOR EROSION CONTROL BLANKET

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

Shaping for Erosion Control Blanket					
Station		Station	L/R		Quantity (LF)
26+80	To	26+90	R		30
26+50	To	26+80	L		30
27+20	To	27+30	L		30
27+30	To	27+50	L		30
				Additional	50
				Total	170

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

Erosion Control Blanket in the area of the Traffic Diversion will be installed following removal of the Traffic Diversion to cover the entire disturbed area. 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

Type 2 Erosion Control Blanket					
Station		Station	L/R	Type	Quantity (SqYd)
1+00	To	3+56	R	2	550
4+33	To	5+51	R	2	330
25+20	To	26+84	L	2	440
25+48	To	26+48	R	2	420
26+90	To	26+99	R	2	220
27+04	To	28+40	L	2	680
27+20	To	28+40	R	2	840
28+66	To	29+05	L	2	180
				Miscellaneous	100
				Total	3760

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation. All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer. Unless otherwise stated in these plans, work will not be allowed during hours of darkness. Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made. All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

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

The Contractor will maintain access to any field and farm entrances inside or near 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".

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)
26+80 to 27+50	R	Inslope/ Channel	0.2
26+60 to 27+30	L	Inslope/Channel	0.2
		Additional Quantity:	0.1
		Total:	0.5

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04/21/2026

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TABLE OF CONSTRUCTION STAKING

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking: Length (Mile)	Grade Staking: Lane Factor	Grade Staking: *Sets of Stakes	Grade Staking: **Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
344th Ave (2 Lanes Gravel)	25+00.00	29+00.00	2	400	0.1	1	1	0.1	0.1	0.1	1
Traffic Diversion (1 Lanes Gravel)	1+00.00	5+55.64	1	456	0.1	1	1	0.1	0.1	0.1	-
							Totals:	0.2	0.2	0.2	1

(See Special Provisions for Contractor Staking)
* 1 = Blue Top Stakes Only (Gravel Surfacing)

** Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

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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): On-site Temporary Traffic Diversion
- **5.3 (3b): Total Project Area** 2.01 Acres
- **5.3 (3b): Total Area to be Disturbed** 1.18 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 1.18 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:** USDA Classification clay and silty clay AASHTO Soil Class A-7-5, A-7-6
- **5.3 (3f): Name of Receiving Water Body/Bodies** Elm Creek
- **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.	
Install traffic diversion with structures, traffic control, and notify County to install gravel surfacing and fence.	
Install erosion control procedures.	
Deconstruct and remove existing structure.	
Undercut box culvert.	
Construct new box culvert.	
Install grading, topsoil, and final erosion control.	
Notify County install final surfacing & signing.	
Remove temporary traffic control and open the roadway to traffic.	
Remove traffic diversion structures, temporary traffic diversion, traffic diversion traffic control, and install riprap.	
Place permanent seeding and notify County to install fence.	
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 ½ 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 SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT 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, de-greasing 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: _____
  - Cell Phone: _____Fax: _____
- **Erosion Control Supervisor**
  - Name: _____
  - Address: _____
  - _____
  - City: _____State: _____Zip: _____
  - Office Phone: _____Field: _____
  - Cell Phone: _____Fax: _____
- **SDDOT Project Engineer**
  - Name: _____
  - Business Address: _____
  - Job Office Location: _____
  - City: _____State: _____Zip: _____
  - Office Phone: _____Field: _____
  - Cell Phone: _____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**

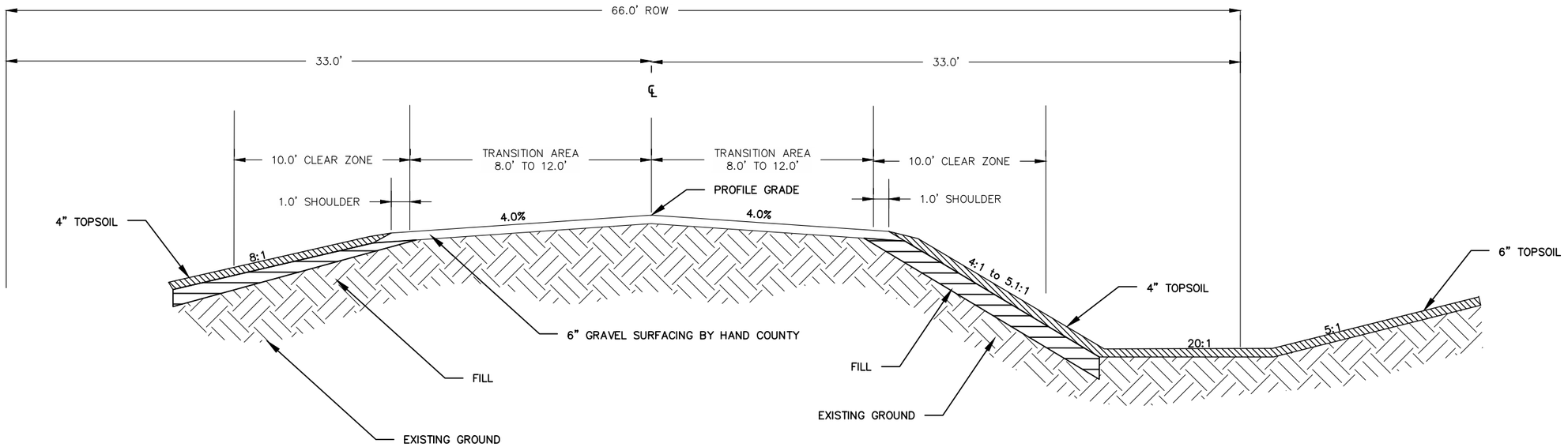
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

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 Project Engineer in accordance with the DOT 298 Form.

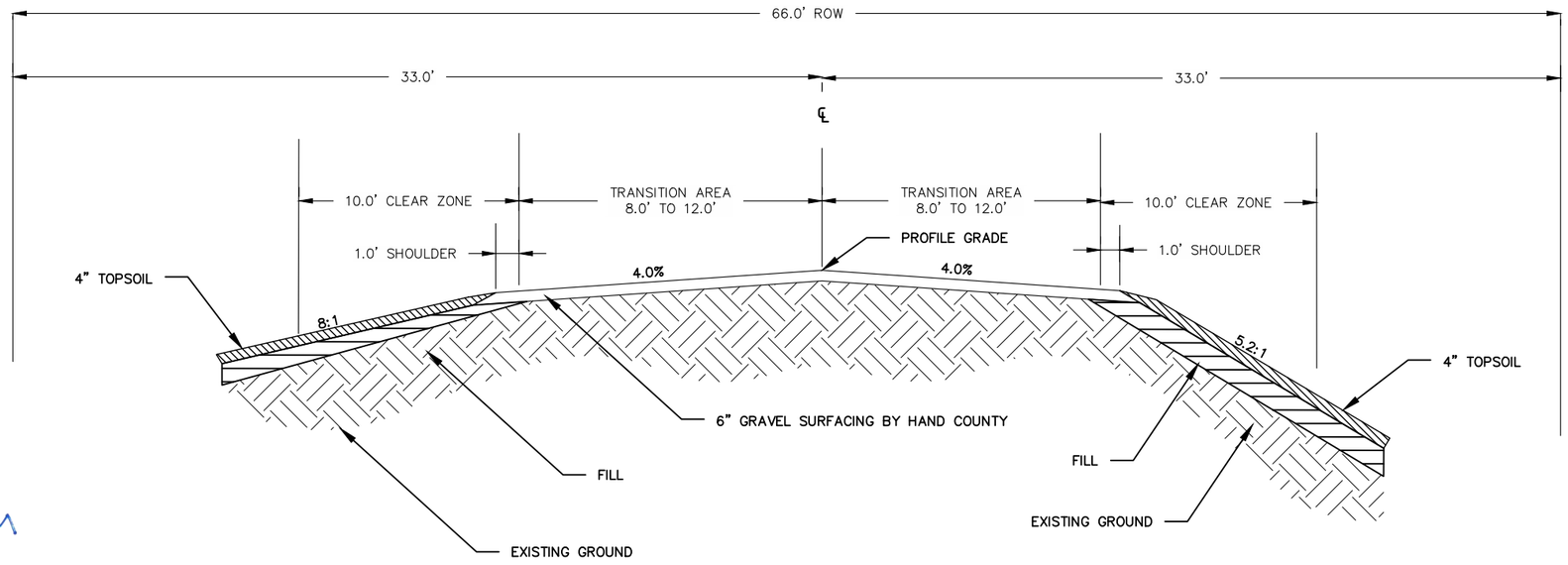
TYPICAL SECTIONS - MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	14	52



TYPICAL GRADING SECTION
STA 25+00.00 to STA 26+33.23



TYPICAL GRADING SECTION
STA 26+33.23 to STA 26+60.00

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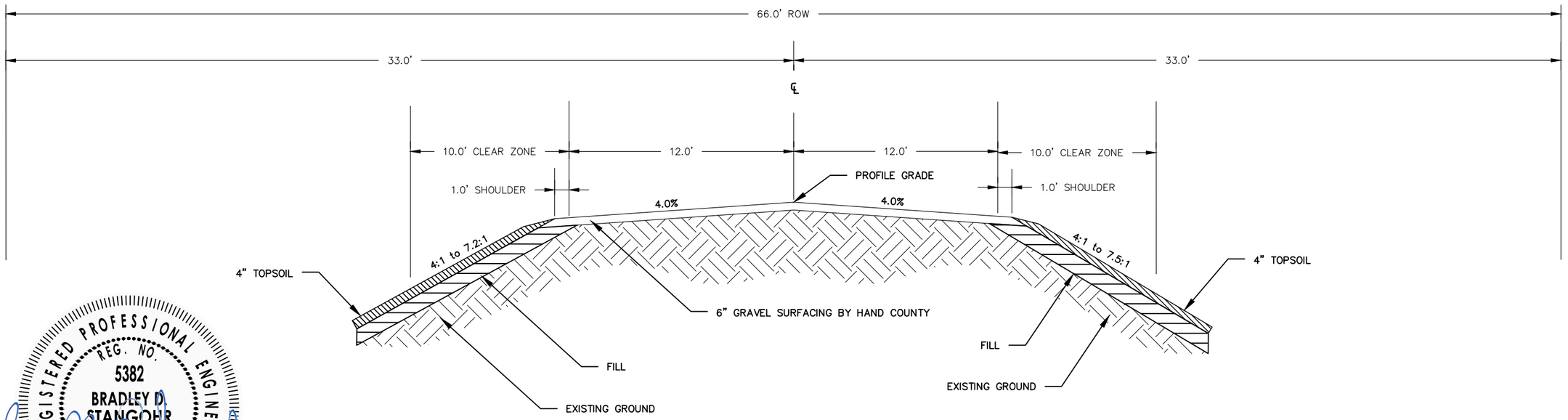
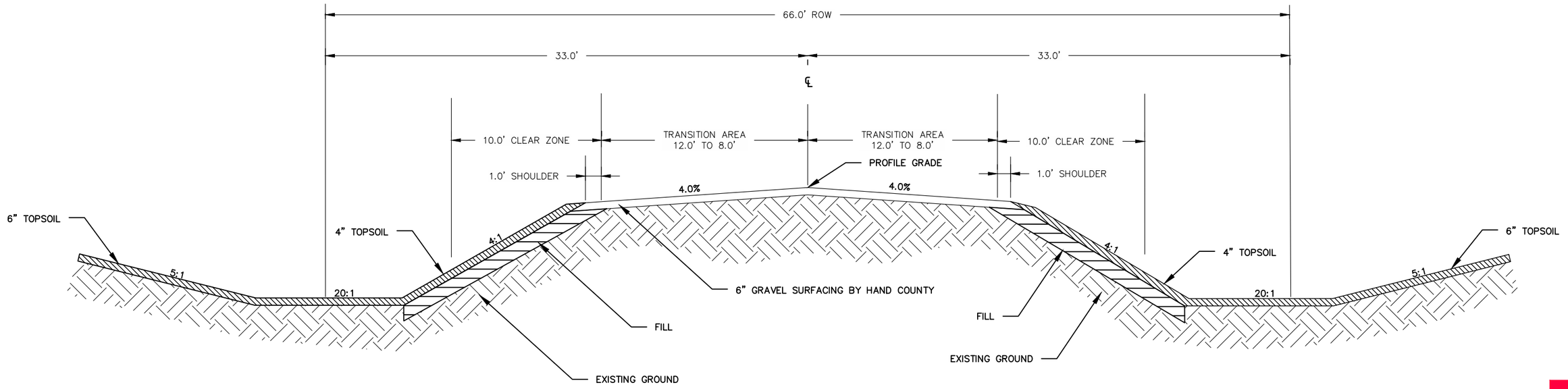
TYPICAL SECTIONS - MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	15	52



TYPICAL GRADING SECTION
STA 26+60.00 to STA 27+55.00



TYPICAL GRADING SECTION
STA 27+55.00 to STA 29+00.00

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TYPICAL SECTION - TRAFFIC DIVERSION

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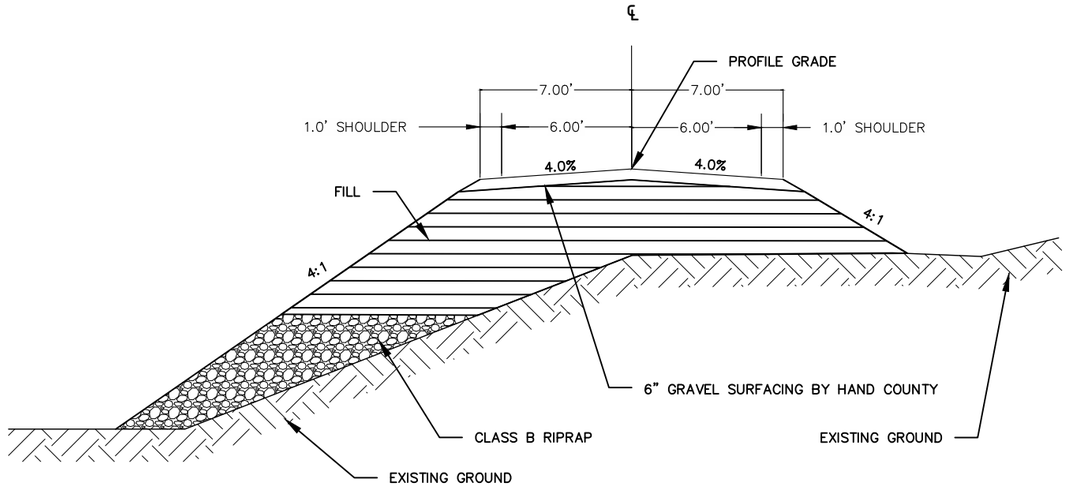
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	16	52



TYPICAL GRADING SECTION - TRAFFIC DIVERSION

STA 1+00.00 to STA 5+55.64

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TRAFFIC CONTROL

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	17	52

1

ROAD CLOSED TO THRU TRAFFIC
LOCAL TRAFFIC ONLY

R11–3a (60"x30")

TYPE 3 BARRICADE (72"x12")

2

ROAD WORK AHEAD

W20-1
48"x48"

3

ONE LANE ROAD AHEAD

W20-4
48"x48"

4

STOP

R1-1
30"x30"

NOTE: The Contractor will provide Traffic Control for a Single Lane Traffic Diversion and utilize the W3–1 (Stop Ahead) signs per SSDOT Standard Plates 634.25 and 634.28

LEGEND

CLOSED TO THRU TRAFFIC

OPEN ROAD

TYPE 3 BARRICADES	
ITEM DESCRIPTION	QUANTITY
Type 3 Barricade	8 Each

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ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30"	5.2	10.4
R11-3a	ROAD CLOSED TO THRU TRAFFIC LOCAL TRAFFIC ONLY	2	60" x 30"	12.5	25.0
W1-3	REVERSE TURN (L or R)	4	48" x 48"	16.0	64.0
W1-6	LARGE ARROW (one direction)	6	48" x 24"	8.0	48.0
W3-1	STOP AHEAD (symbol)	2	48" X 48"	16.0	32.0
W13-1P	ADVISORY SPEED (Plaque) (15 MPH)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
SPECIAL	TYPE 2 OBJECT MARKER BACK TO BACK	4	6" x 12"	1.0	4.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			281.6

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EROSION CONTROL

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	18	52

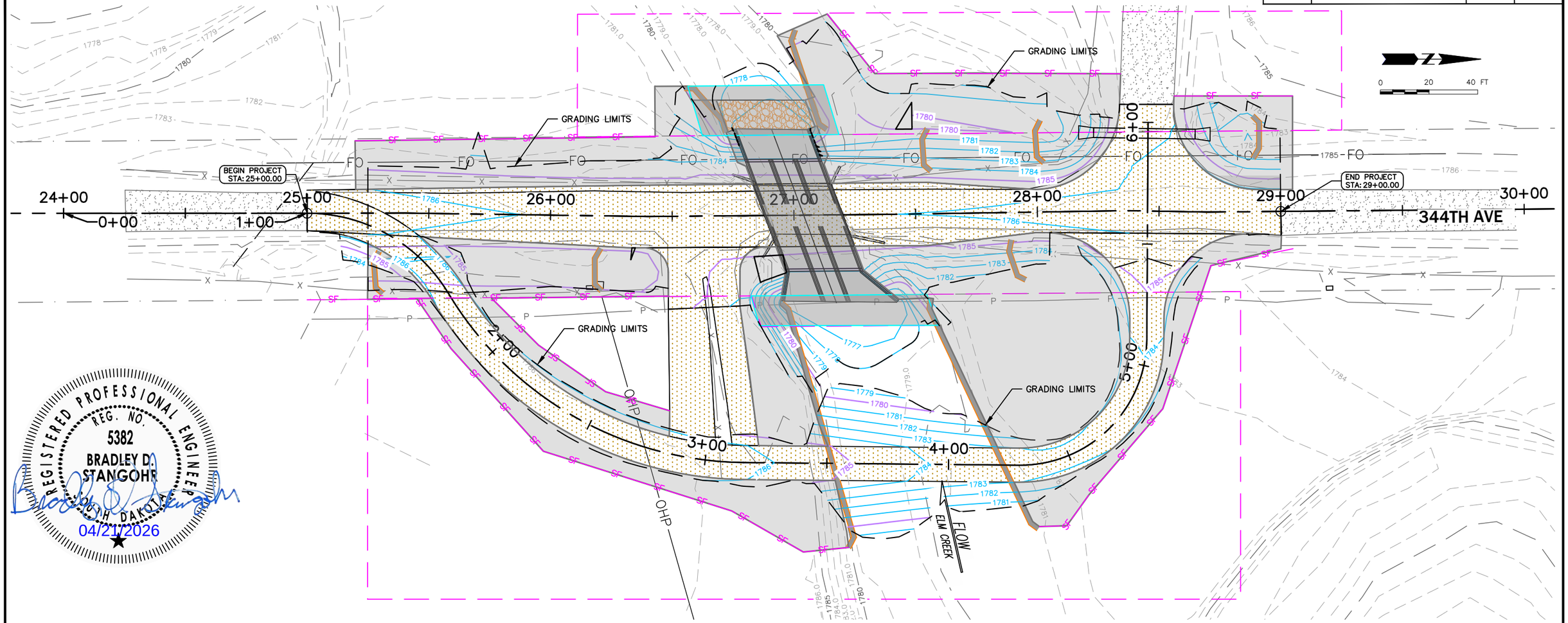

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TABLE OF EROSION CONTROL WATTLES

12" Diameter Wattle			
Station	L/R	Diameter (Inch)	Quantity (Ft)
25+26.77	R	12	20
26+17.53	R	12	20
26+65.44	L	12	60
27+04.13	L	12	100
*27+11.40	R	12	120
*27+74.24	R	12	120
27+52.42	L	12	20
27+88.84	R	12	20
27+98.83	L	12	20
28+92.37	L	12	20
Miscellaneous			100
Total			620

* Erosion Control Wattle shown will be installed following removal of Traffic Diversion, see Grading Notes

TABLE OF HIGH FLOW SILT FENCE

High Flow Silt Fence				
Station		Station	L/R	Quantity (Ft)
1+00.15	To	3+59.31	R	260
2+58.69	To	2+80.73	L	161
4+34.31	To	5+48.42	R	166
25+19.76	To	26+43.28	L	124
27+14.42	To	28+35.10	L	132
28+55.30	To	29+05.29	L	49
			Miscellaneous	120
			Total	1012

TABLE OF EROSION CONTROL BLANKET

Type 2 Erosion Control Blanket				
Station		Station	L/R	Quantity (SqYd)
1+00.08	To	3+55.99	R	550
4+32.83	To	5+51.14	R	330
25+19.87	To	26+83.81	L	440
25+48.00	To	26+48.12	R	420
26+90.06	To	26+98.92	R	220
27+04.11	To	28+40.00	L	680
27+20.00	To	28+40.00	R	840
28+65.75	To	29+05.11	L	180
			Miscellaneous	100
			Total	3760

LEGEND

- EROSION CONTROL BLANKET
- CLASS B RIPRAP
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- SF — HIGH FLOW SILT FENCE
- 12" DIAMETER EROSION CONTROL WATTLE
- PROPOSED GRAVEL ROADWAY SURFACE
- EXISTING GRAVEL ROADWAY SURFACE

SURVEY DATA & EASEMENTS

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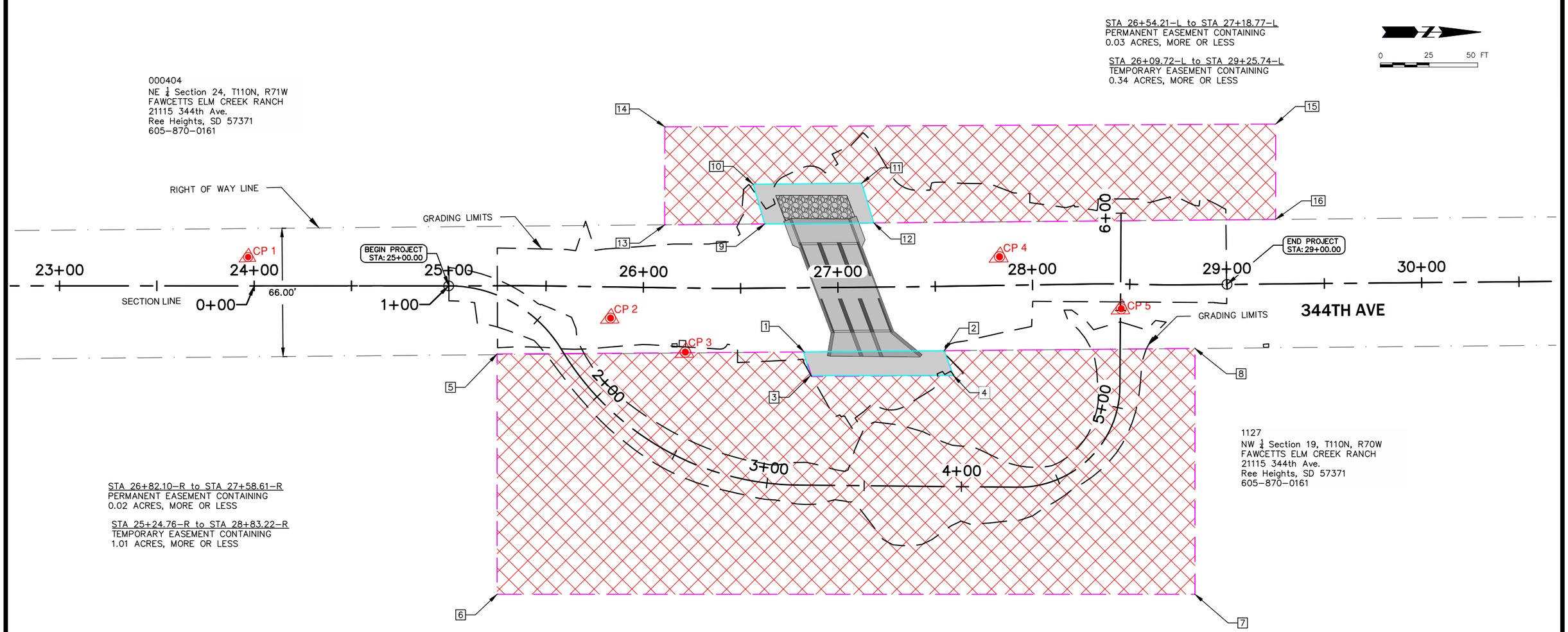
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	19	52



PERMANENT & TEMPORARY EASEMENTS							
#	Station	Offset	Side	#	Station	Offset	Side
1	26+82.10	33.00'	RT	9	26+62.66	32.98'	LT
2	27+54.11	33.11'	RT	10	26+56.89	53.43'	LT
3	26+85.39	45.18'	RT	11	27+12.67	53.50'	LT
4	27+58.61	45.90'	RT	12	27+18.77	33.00'	LT
5	25+24.76	35.08'	RT	13	26+10.54	32.32'	LT
6	25+24.45	158.66'	RT	14	26+09.88	82.69'	LT
7	28+82.05	159.21'	RT	15	29+25.74	82.20'	LT
8	28+82.22	32.79'	RT	16	29+25.31	33.19'	LT

LEGEND — PERMANENT DRAINAGE EASEMENT — TEMPORARY CONSTRUCTION EASEMENT

CONTROL POINTS TABLE						
POINT #	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	23+96.93	14.83' LT	179036.53	2151598.15	1786.53	100 mm RB W PLASTIC CAP
2	25+83.40	16.02' RT	179222.45	2151629.44	1784.12	100 mm RB W PLASTIC CAP
3	26+22.06	32.97' RT	179260.83	2151646.93	1786.14	101 NAIL W PLASTIC CAP IN POWER POLE
4	27+83.30	14.73' LT	179422.34	2151597.93	1785.55	100 mm RB W PLASTIC CAP
5	28+45.85	12.70' RT	179484.87	2151624.69	1784.55	100 mm RB W PLASTIC CAP

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PLAN & PROFILE MAINLINE

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	20	52

STA 26+88.74 TO STA 27+19.34
REMOVE EXISTING 32.2' LONG x 18.8' WIDE MULTI-BEAM STEEL GIRDER SINGLE SPAN BRIDGE
(INCIDENTAL WORK, STRUCTURE)

STA 27+04.00
INSTALL 49'-2" 3-9'x7'
CAST-IN-PLACE
REINFORCED CONCRETE BOX CULVERT WITH 20° RHF SKEW
D.A. = 102.54 MI^2

DO NOT DISTURB 48" CMP CULVERT
STATION. 24+71.80 – 21.86 R
INVERT ELEV. 1781.25
STATION. 25+02.62 – 20.71 L
INVERT ELEV. 1780.57

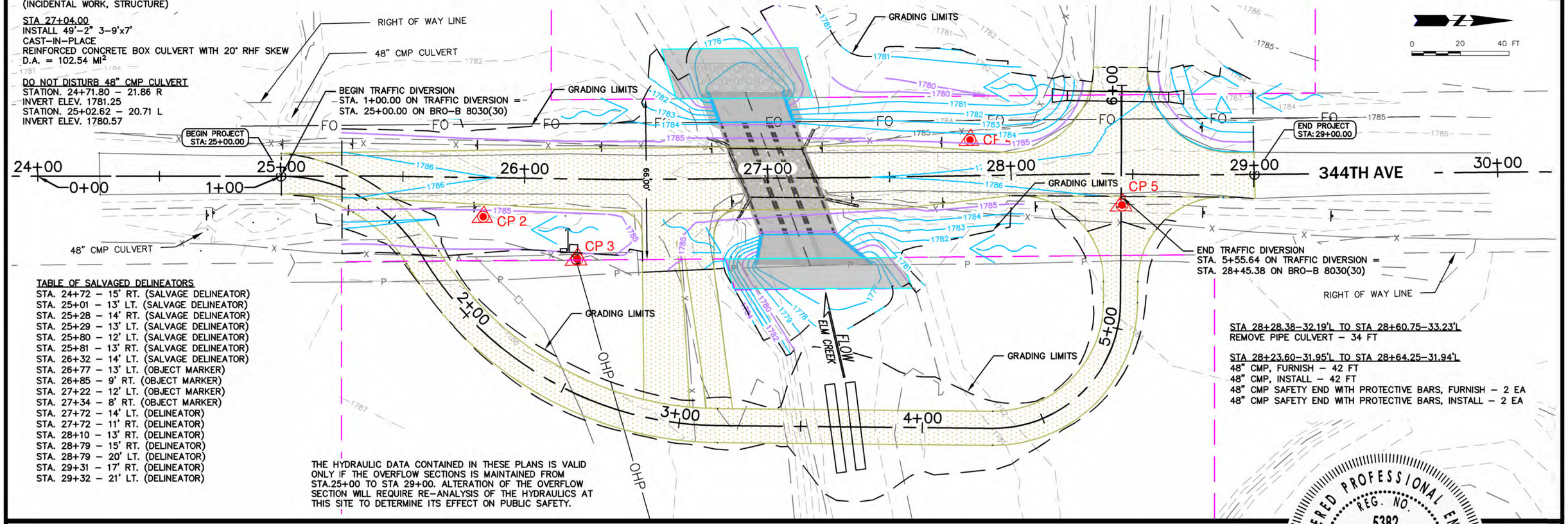
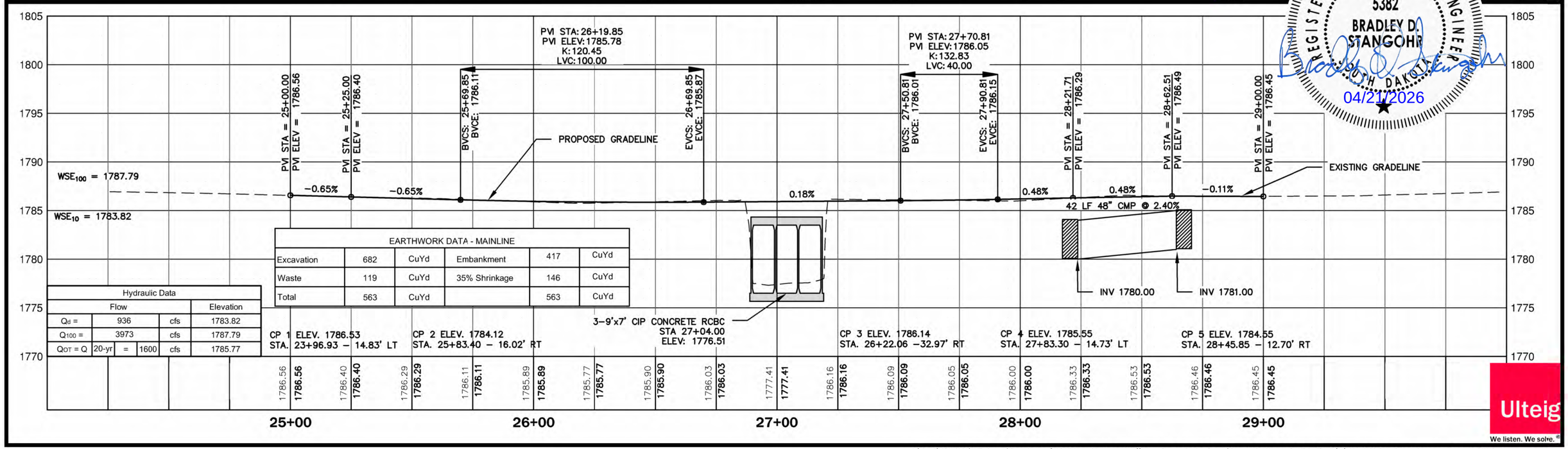


TABLE OF SALVAGED DELINEATORS
STA. 24+72 – 15' RT. (SALVAGE DELINEATOR)
STA. 25+01 – 13' LT. (SALVAGE DELINEATOR)
STA. 25+28 – 14' RT. (SALVAGE DELINEATOR)
STA. 25+29 – 13' LT. (SALVAGE DELINEATOR)
STA. 25+80 – 12' LT. (SALVAGE DELINEATOR)
STA. 25+81 – 13' RT. (SALVAGE DELINEATOR)
STA. 26+32 – 14' LT. (SALVAGE DELINEATOR)
STA. 26+77 – 13' LT. (OBJECT MARKER)
STA. 26+85 – 9' RT. (OBJECT MARKER)
STA. 27+22 – 12' LT. (OBJECT MARKER)
STA. 27+34 – 8' RT. (OBJECT MARKER)
STA. 27+72 – 14' LT. (DELINEATOR)
STA. 27+72 – 11' RT. (DELINEATOR)
STA. 28+10 – 13' RT. (DELINEATOR)
STA. 28+79 – 15' RT. (DELINEATOR)
STA. 28+79 – 20' LT. (DELINEATOR)
STA. 29+31 – 17' RT. (DELINEATOR)
STA. 29+32 – 21' LT. (DELINEATOR)

THE HYDRAULIC DATA CONTAINED IN THESE PLANS IS VALID ONLY IF THE OVERFLOW SECTIONS IS MAINTAINED FROM STA.25+00 TO STA 29+00. ALTERATION OF THE OVERFLOW SECTION WILL REQUIRE RE-ANALYSIS OF THE HYDRAULICS AT THIS SITE TO DETERMINE ITS EFFECT ON PUBLIC SAFETY.

STA 28+28.38–32.19'L TO STA 28+60.75–33.23'L
REMOVE PIPE CULVERT – 34 FT

STA 28+23.60–31.95'L TO STA 28+64.25–31.94'L
48" CMP, FURNISH – 42 FT
48" CMP, INSTALL – 42 FT
48" CMP SAFETY END WITH PROTECTIVE BARS, FURNISH – 2 EA
48" CMP SAFETY END WITH PROTECTIVE BARS, INSTALL – 2 EA



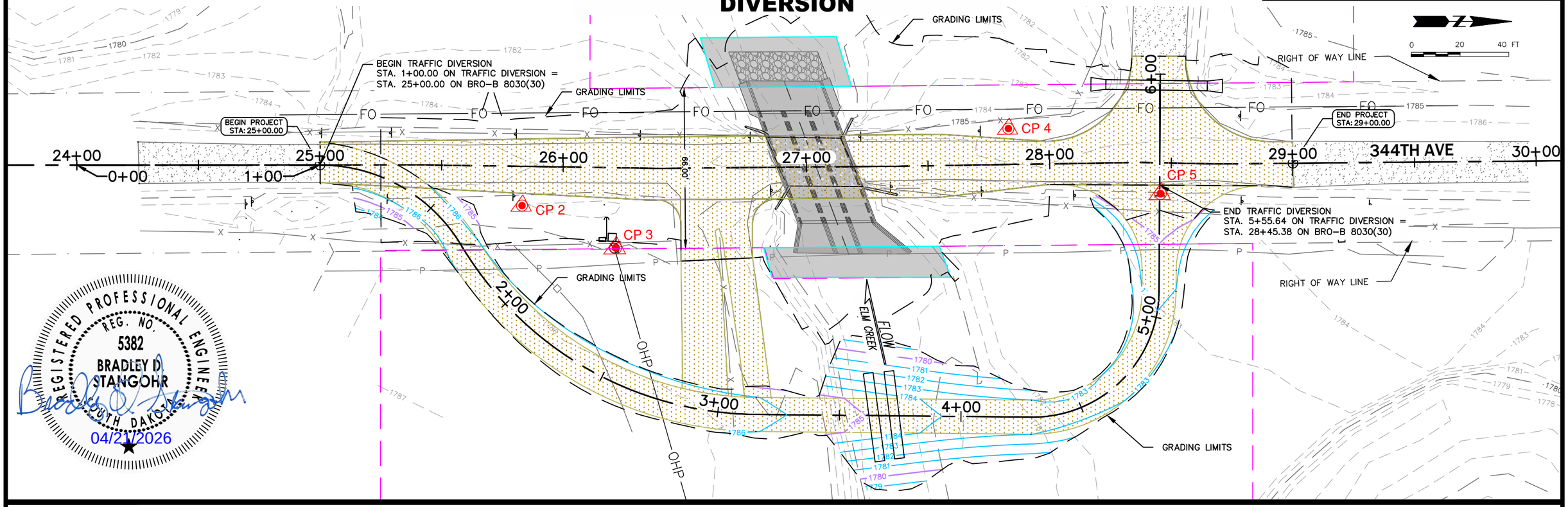
EARTHWORK DATA - MAINLINE					
Excavation	682	CuYd	Embankment	417	CuYd
Waste	119	CuYd	35% Shrinkage	146	CuYd
Total	563	CuYd		563	CuYd

Hydraulic Data				
	Flow			Elevation
Q_d =	936	cfs		1783.82
Q_{100} =	3973	cfs		1787.79
Q_{OT} = Q	20-yr = 1600	cfs		1785.77

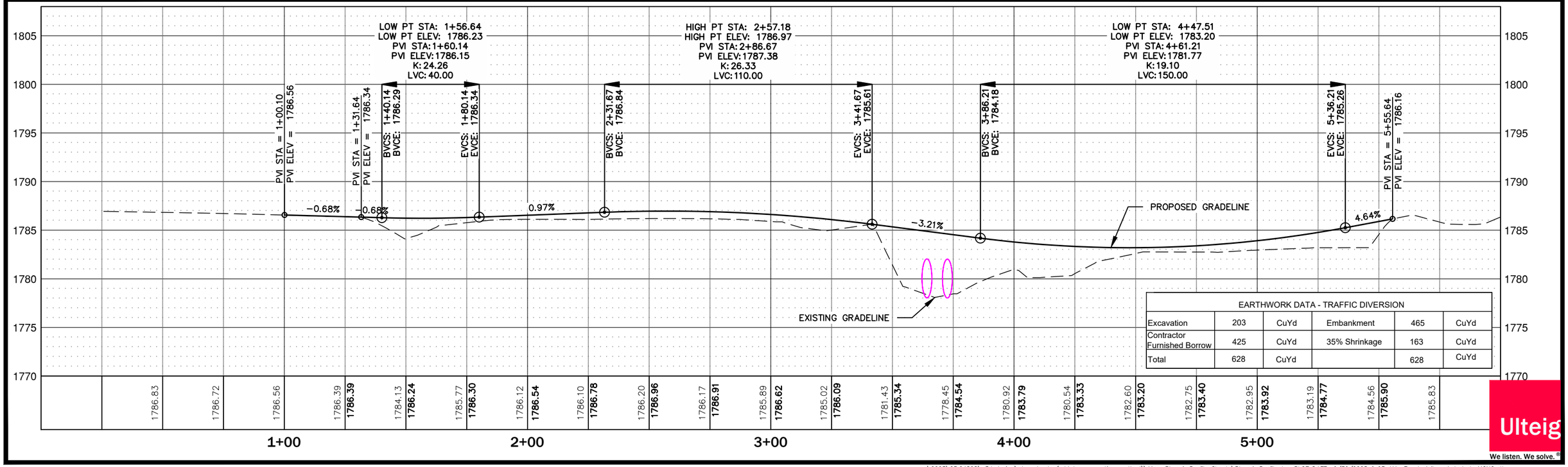
PLAN & PROFILE TRAFFIC DIVERSION

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	21	52



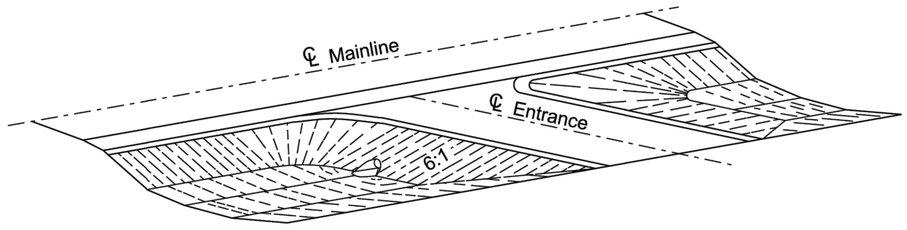
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D STANGOHR
SOUTH DAKOTA
04/21/2026



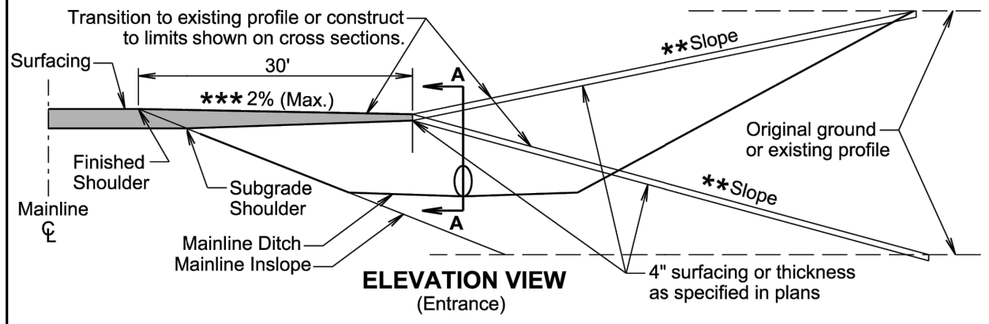
EARTHWORK DATA - TRAFFIC DIVERSION

Excavation	203	CuYd	Embankment	465	CuYd
Contractor Furnished Borrow	425	CuYd	35% Shrinkage	163	CuYd
Total	628	CuYd		628	CuYd

Ulteig
We listen. We solve.®



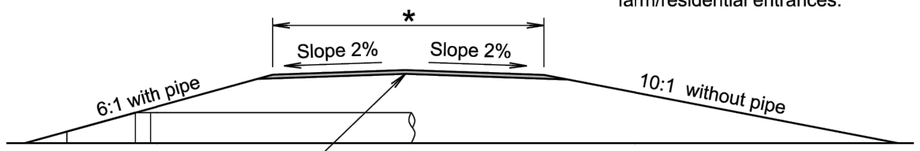
PERSPECTIVE OF ENTRANCE



ELEVATION VIEW
(Entrance)

*** 2% When on the inside of superelevation and 0% or flat when on outside of superelevation.

** Entrance maximum slope is typically 10:1 for field entrances and 15:1 for farm/residential entrances.



SECTION A-A
(Entrance and Intersecting Road)

* The finished surfacing width is stated elsewhere in the plans. The subgrade width is 4' wider than the finished surfacing width unless stated otherwise in the plans.

GENERAL NOTES:

The ditch section shown above in the perspective view is only for illustrative purpose.

The elevation view above is typical for either a ditch cut or fill section. Entrances that vary from above should be specified in the plans.

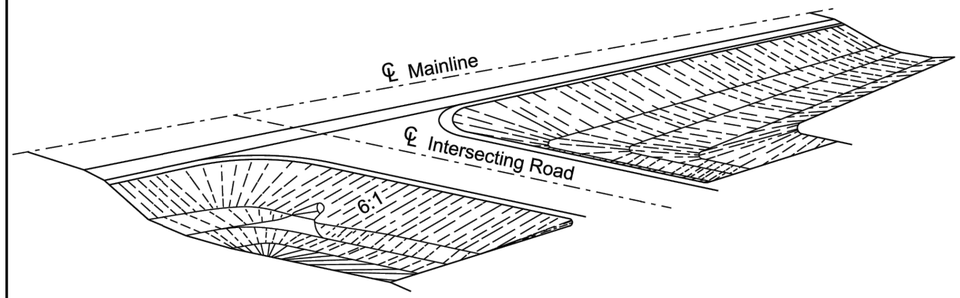
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

The transition area between the mainline inslope and the entrance or intersecting road inslope will be rounded to eliminate an abrupt transition.

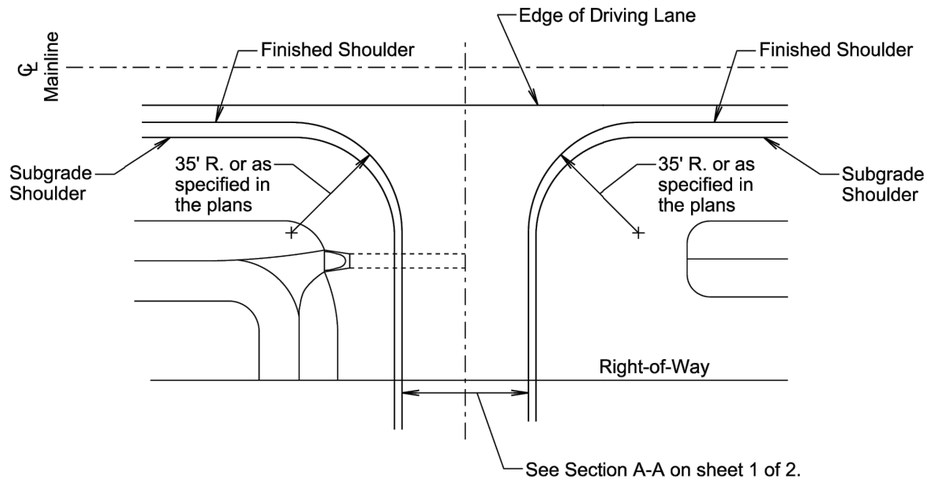
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

November 19, 2021

Published Date: 2026	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2



PERSPECTIVE OF INTERSECTING ROAD



PLAN VIEW

GENERAL NOTES:

The 6:1 or 10:1 intersecting road inslope will transition to the existing intersecting road inslope near the right-of-way or at a location as determined by the Engineer.

November 19, 2021

Published Date: 2026	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	23	52

TYPE 1 INSLOPE TRANSITION

GENERAL NOTES:

This Type 1 Inslope Transition is used when the specified inslope at the drainage structure is flatter than the typical inslope and the inslope at the drainage structure is between a 4:1 slope and 6:1 slope.

Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from the typical inslope to the inslope at the drainage structure. Within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone will be transitioned gradually to the slope necessary adjacent to the RCBC wing wall or pipe culvert end section within the transition length necessary for the transition within the clear zone.

September 14, 2018

Published Date: 2026	SDDOT	INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS	PLATE NUMBER 120.05
			Sheet 1 of 2

TYPE 2 INSLOPE TRANSITION

GENERAL NOTES:

This Type 2 Inslope Transition is used when the specified inslope at the pipe or RCBC is flatter than a 6:1 slope.

Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from Inslope at drainage structure to a 6 : 1 inslope and 3:1 inslope.

** Transition from typical inslope to the inslopes adjacent to the drainage structure. Within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone will be transitioned to a 3:1 inslope within the transition length necessary for the transition within the clear zone.

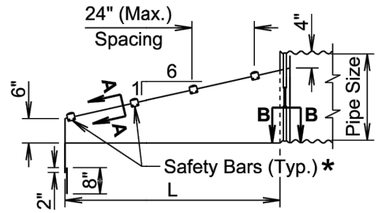
September 14, 2018

Published Date: 2026	SDDOT	INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS	PLATE NUMBER 120.05
			Sheet 2 of 2

STANDARD PLATES

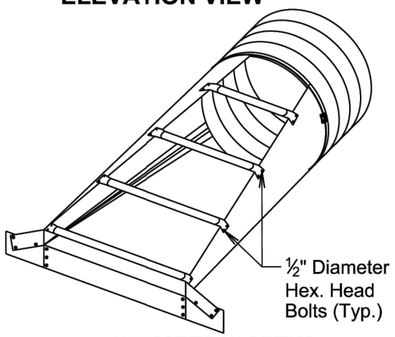
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	24	52

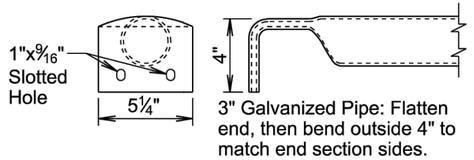


* Number of bars required will vary depending on the length of the end section.

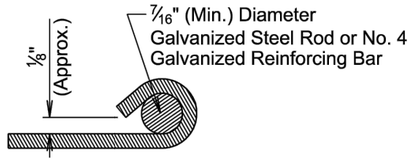
ELEVATION VIEW



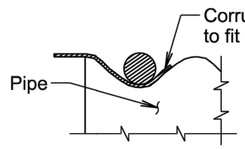
ISOMETRIC VIEW



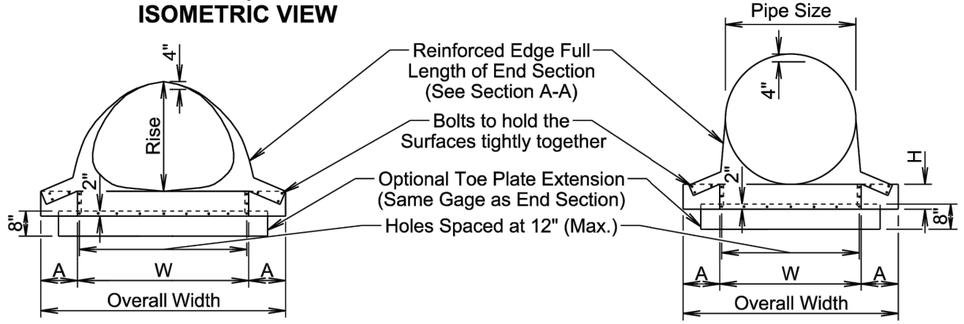
DETAIL OF SAFETY BARS



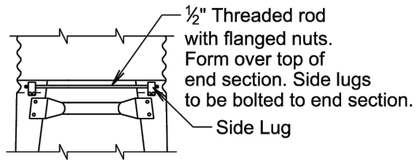
SECTION A-A



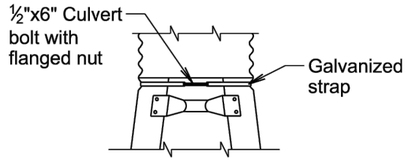
SECTION B-B



FRONT VIEW **FRONT VIEW**



TYPE #2 CONNECTOR DETAIL
(For 30" and Larger)
(For 21"x15" and Larger)



TYPE #1 CONNECTOR DETAIL
(For 15" Through 24")

April 8, 2025

Published Date: 2026	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 1 of 2

ARCH C.M.P. SAFETY ENDS

Equlv. Dia. (Inch)	(Inches) Span	Rise	(Min.) Thick. Inch	Gage	Dimensions (Inches) L Dimensions 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. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions 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.

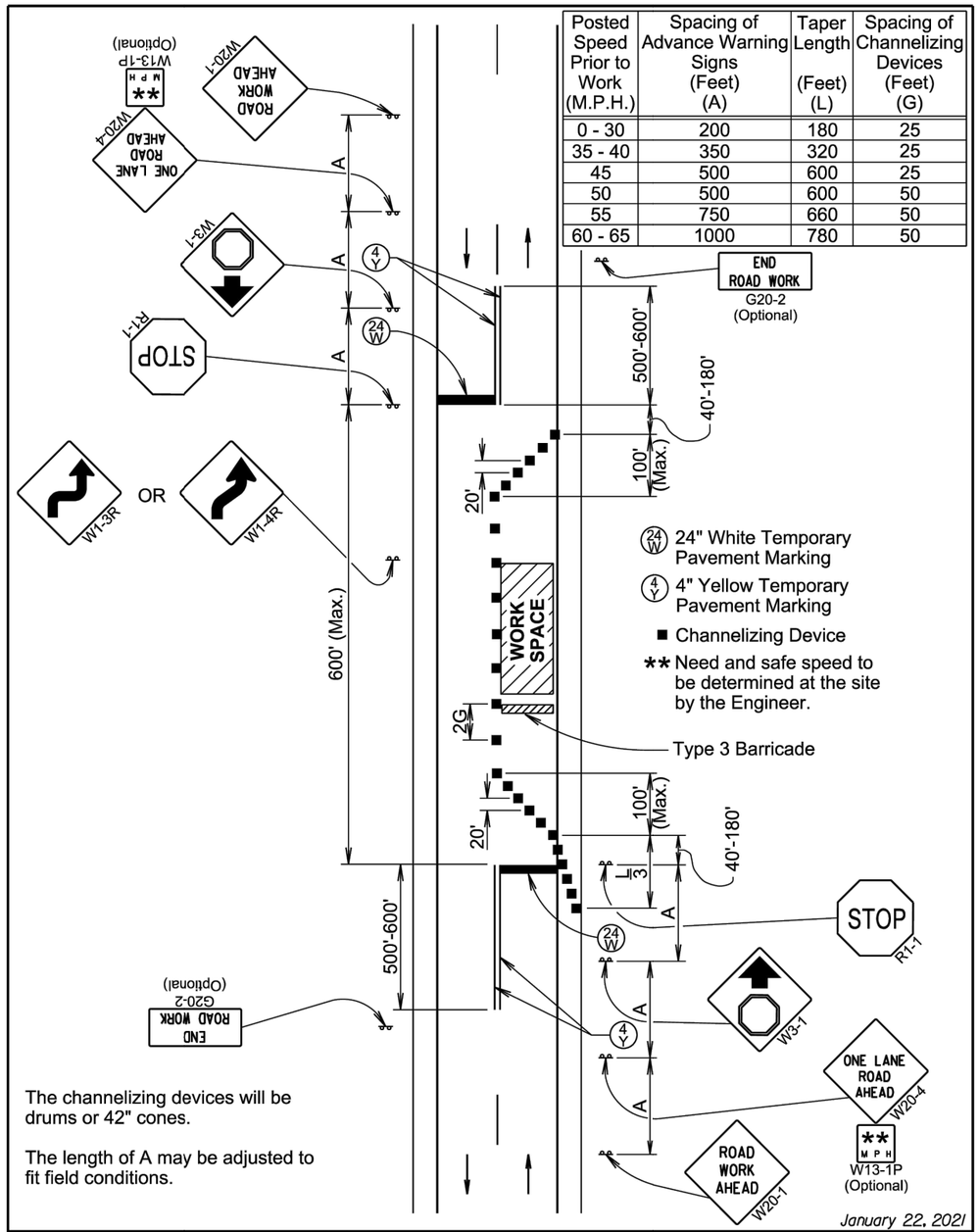
When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

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.

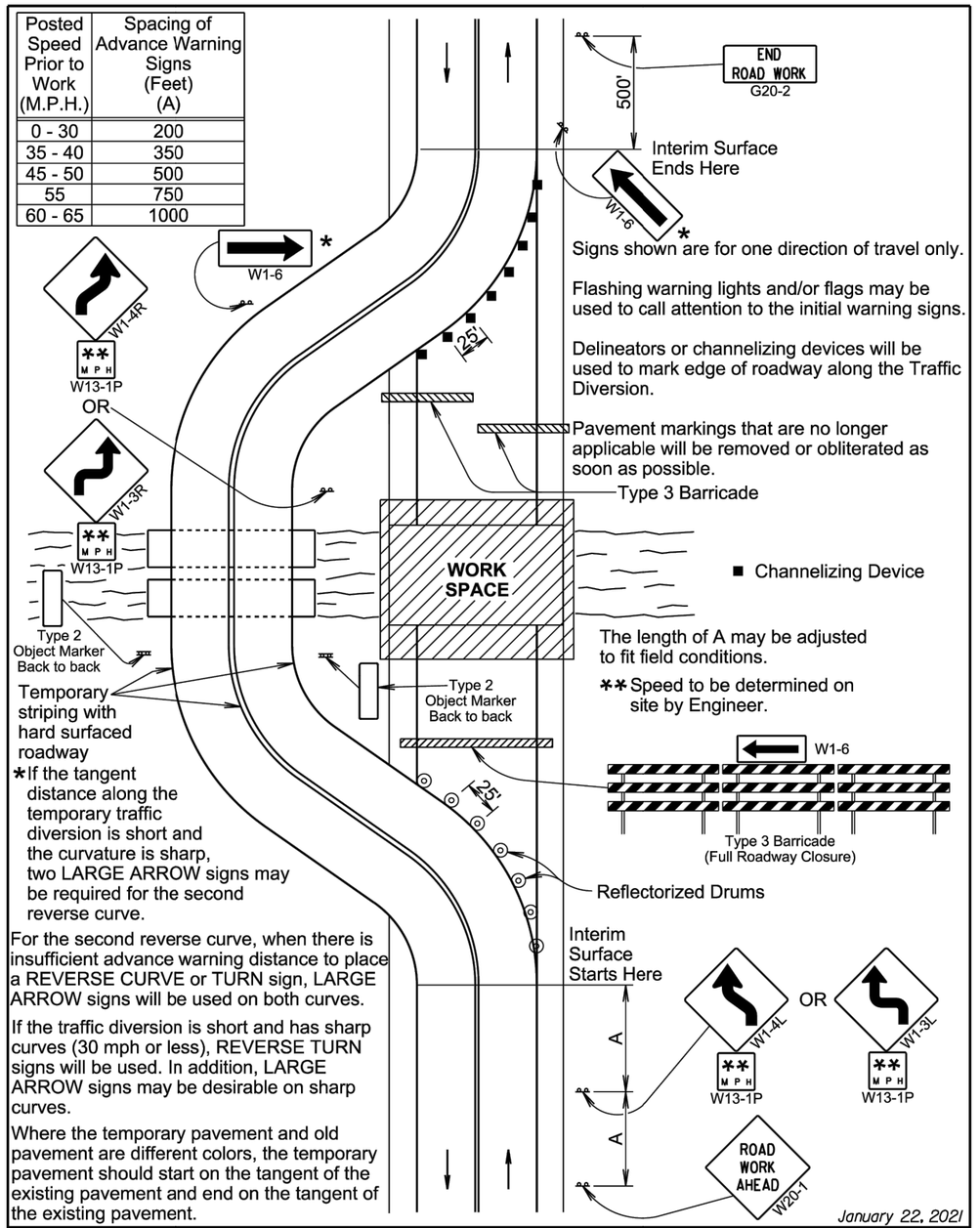
April 8, 2025

Published Date: 2026	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2



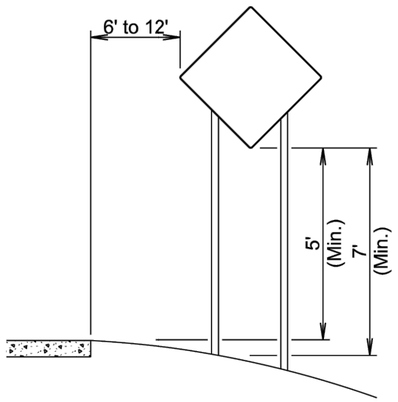
January 22, 2021

Published Date: 2026	SDDOT	LANE CLOSURE USING STOP SIGNS	PLATE NUMBER 634.25
			Sheet 1 of 1

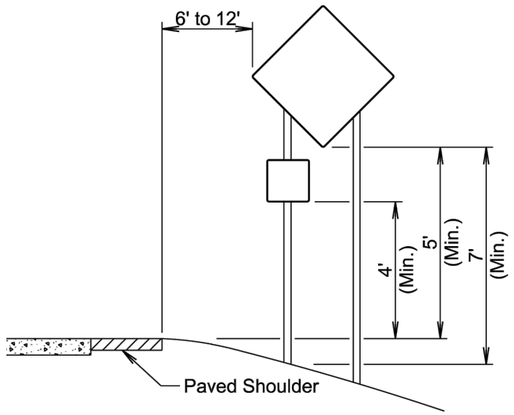


January 22, 2021

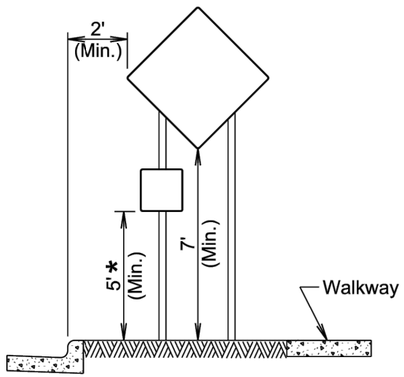
Published Date: 2026	SDDOT	ROAD CLOSED WITH TRAFFIC DIVERTED	PLATE NUMBER 634.28
			Sheet 1 of 1



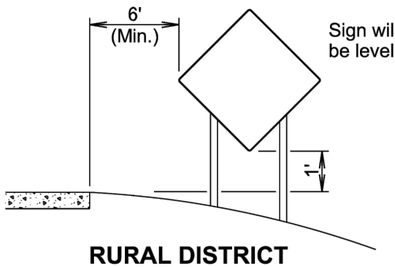
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

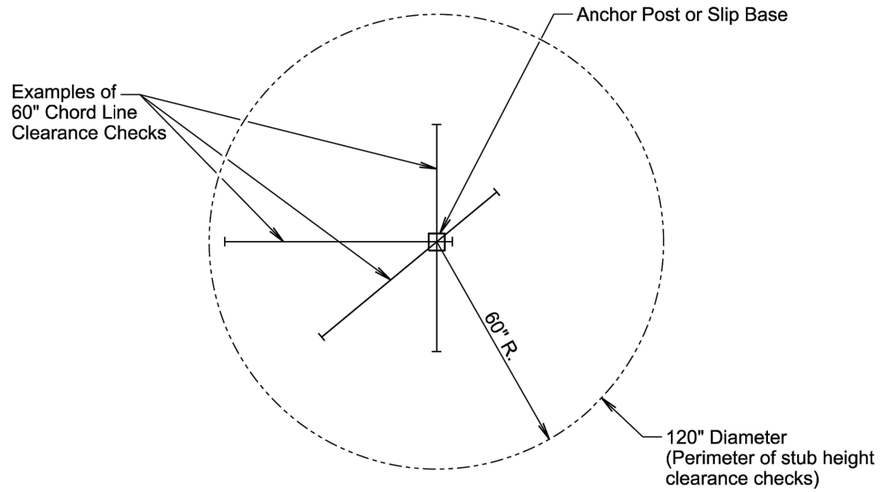


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

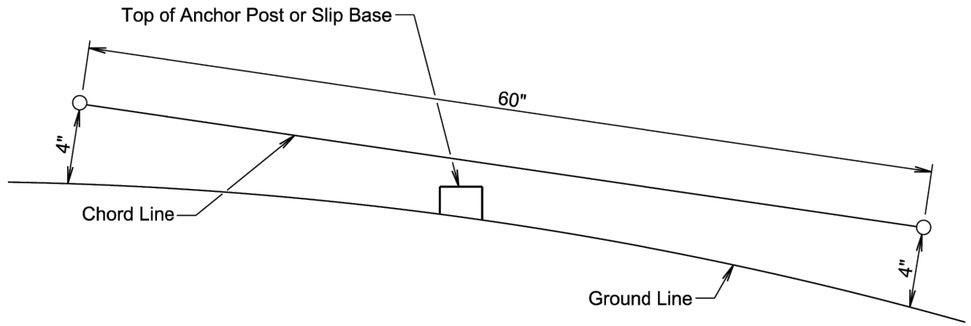
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2026	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

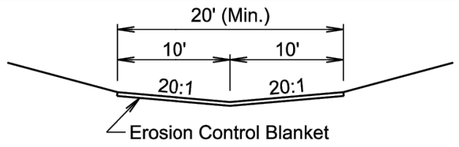
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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.

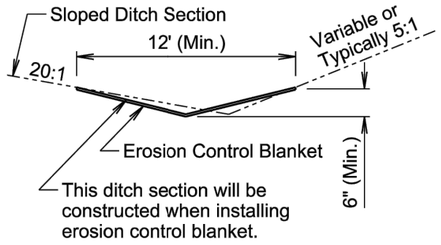
The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

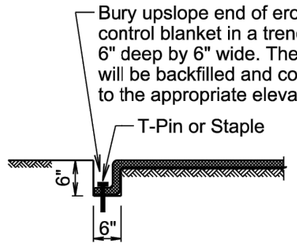
Published Date: 2026	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



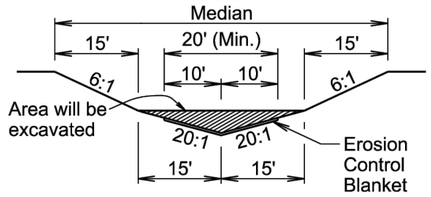
STANDARD DITCH SECTION



SLOPED DITCH SECTION

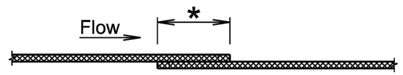


TRENCH DETAIL



The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.

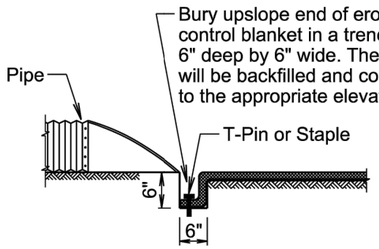
MEDIAN SECTION



* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

* Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins.

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.

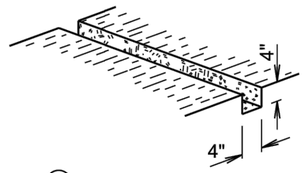
After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

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".

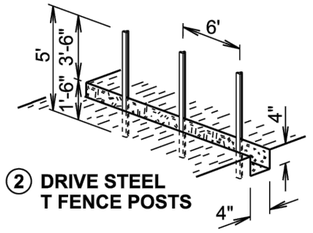
February 14, 2020

Published Date: 2026	SDDOT	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

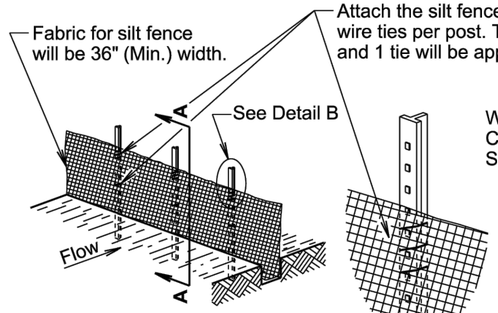
MANUAL HIGH FLOW SILT FENCE INSTALLATION



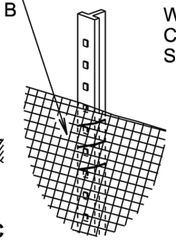
① EXCAVATE TRENCH



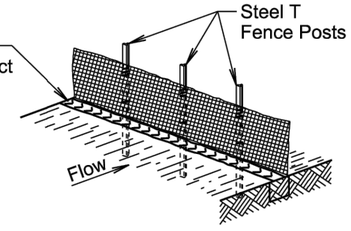
② DRIVE STEEL T FENCE POSTS



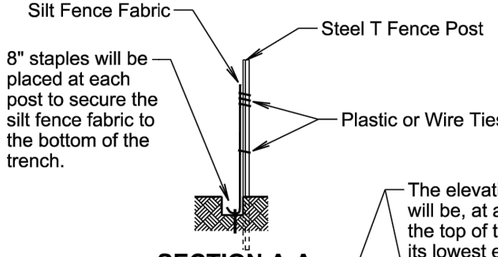
③ ATTACH SILT FENCE FABRIC



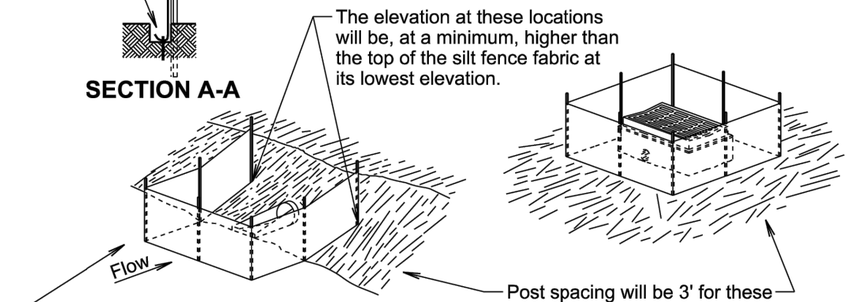
DETAIL B



④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A



February 14, 2020

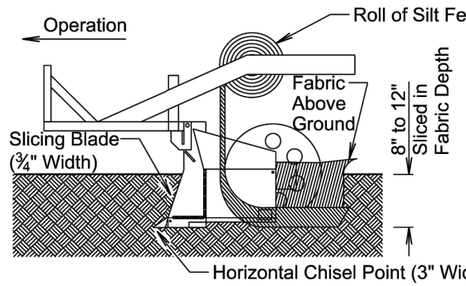
Published Date: 2026	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

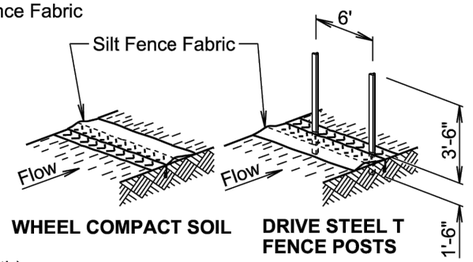
STANDARD PLATES

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	28	52

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



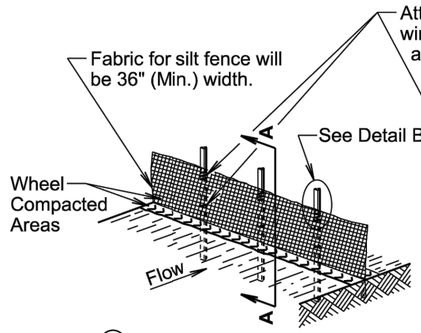


WHEEL COMPACT SOIL

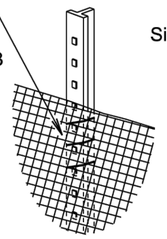
DRIVE STEEL T FENCE POSTS

① **INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.**

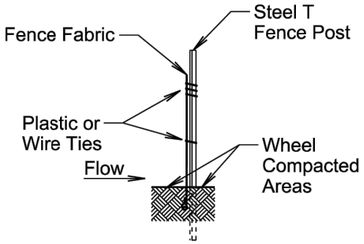
② **WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.**



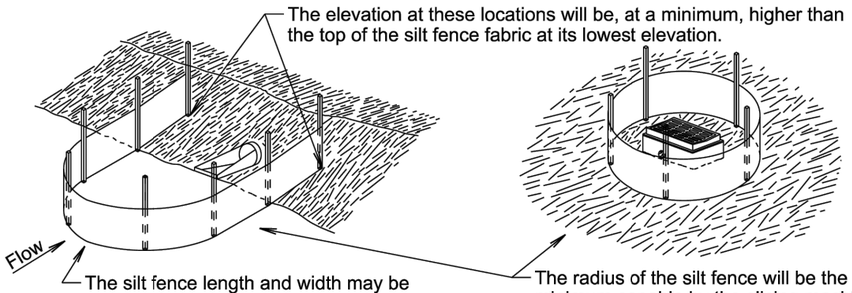
③ **ATTACH SILT FENCE FABRIC**



DETAIL B



SECTION A-A

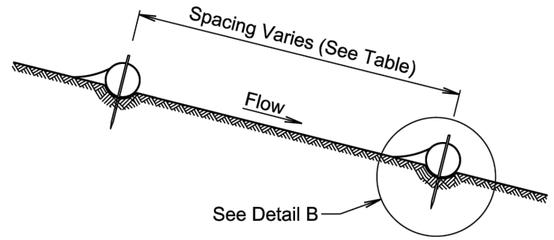


GENERAL NOTE:

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.

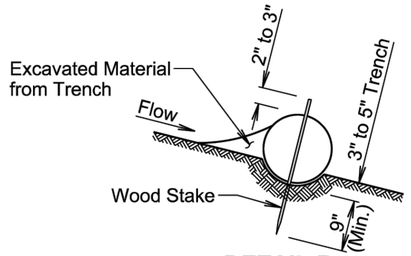
February 14, 2020

Published Date: 2026	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2

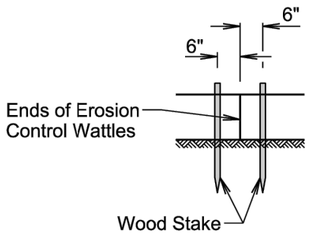


ELEVATION VIEW
(Cut or Fill Slope Installation)

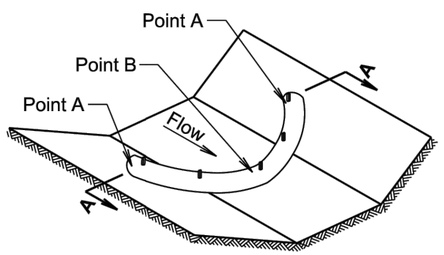
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



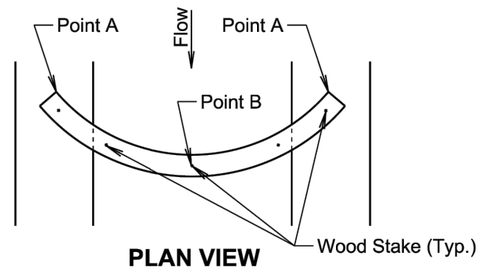
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

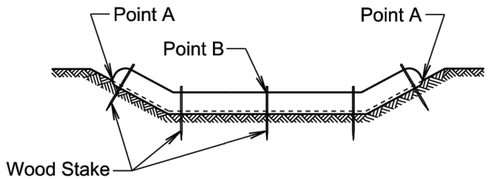


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

DITCH INSTALLATION	
Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

February 14, 2020

Published Date: 2026	SDDOT	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.

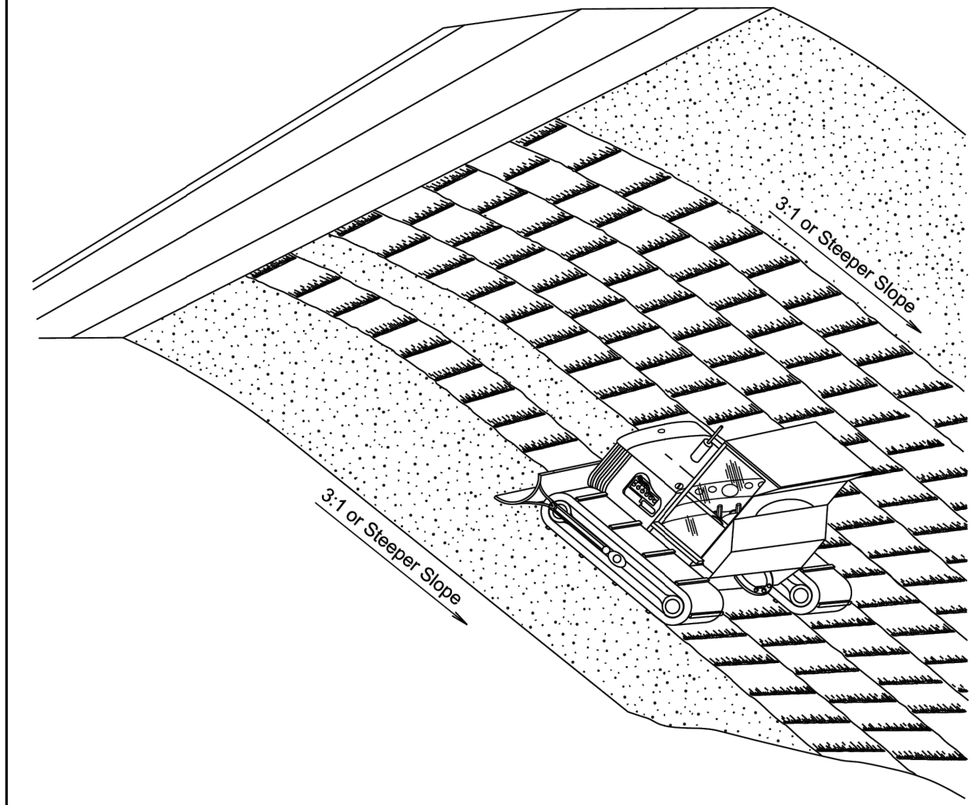
Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

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: 2026	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06 Sheet 2 of 2



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".

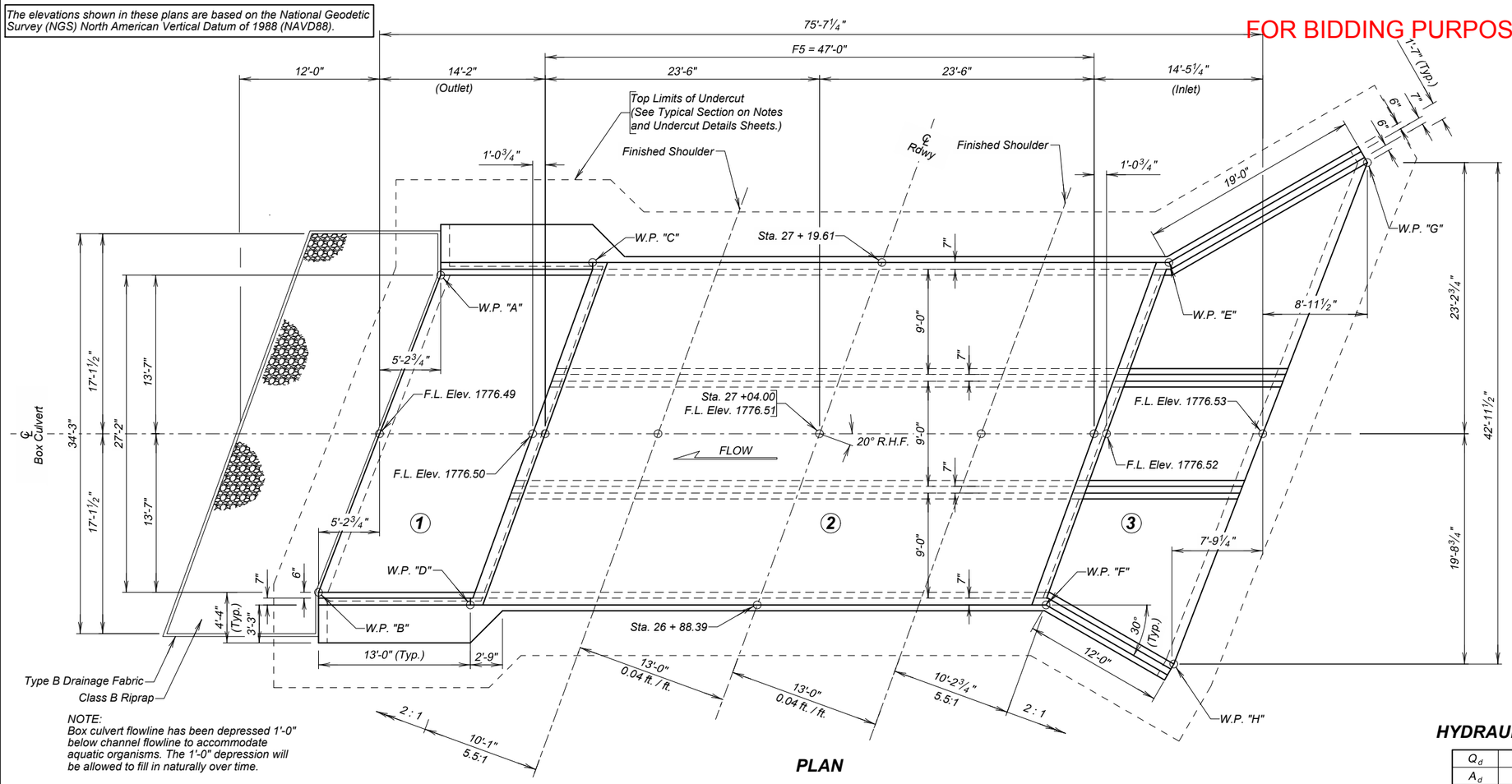
February 14, 2020

Published Date: 2026	SDDOT	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).

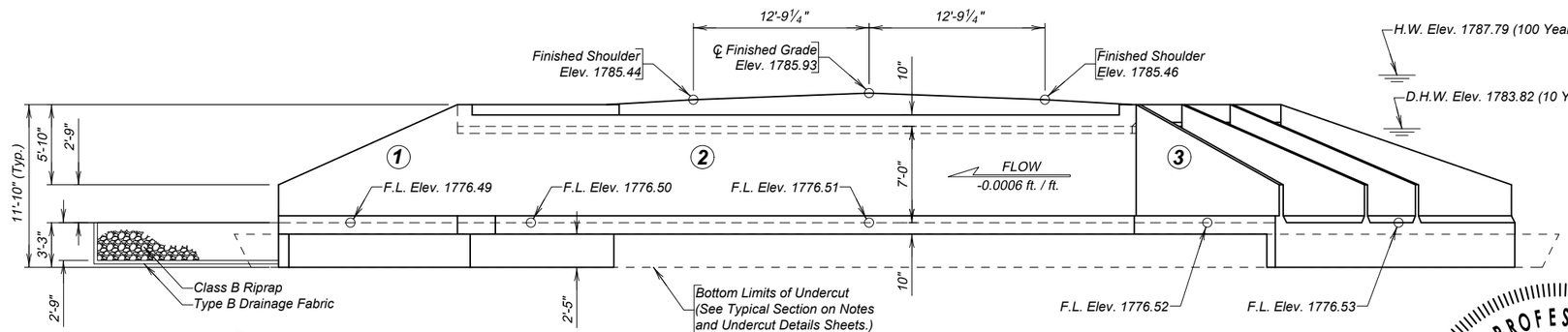
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	30	52

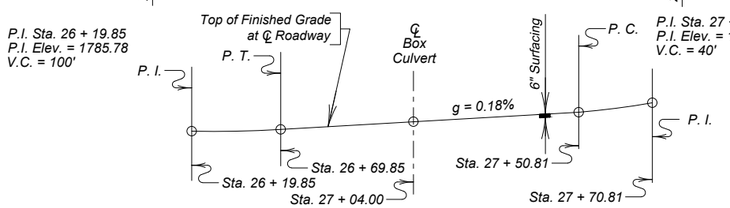


NOTE:
Box culvert flowline has been depressed 1'-0" below channel flowline to accommodate aquatic organisms. The 1'-0" depression will be allowed to fill in naturally over time.

PLAN



ELEVATION



GRADELINE DATA

-X028-
INDEX OF CULVERT SHEETS-

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Incidental Work, Structure	LS	Lump Sum
Structure Excavation, Box Culvert	Cu. Yd.	82
Box Culvert Undercut	Cu. Yd.	281
Class A45 Concrete, Box Culvert	Cu. Yd.	173.8
Reinforcing Steel	Lb.	23931
Class B Riprap	Ton	57.4
Type B Drainage Fabric	Sq. Yd.	74
Reinforcement Fabric (MSE)	Sq. Yd.	407

≠ For estimating purposes only, a factor of 1.4 tons/cu. yd. was used to convert Cu. Yd. to Tons.

TABLE OF WORKING POINTS

W.P.	STATION	OFFSET
"A"	27+05.67	35.13' Lt.
"B"	26+76.56	35.67' Lt.
"C"	27+11.13	23.28' Lt.
"D"	26+79.99	23.08' Lt.
"E"	27+28.01	23.08' Rt.
"F"	26+96.85	23.24' Rt.
"G"	27+41.63	36.15' Rt.
"H"	26+95.83	35.24' Rt.

HYDRAULIC DATA

Q_d	936cfs
A_d	162 sq. ft.
V_d	5.79 fps
Q_F	936 cfs
Q_{100}	3,973 cfs
Q_{OT}	1600 cfs
V_{max}	8.20 fps

Q_d = Design discharge for the proposed culvert based on 10 year frequency. El. 1783.82.

Q_{OT} = Overtopping discharge and frequency 20 year recurrence interval. El. 1785.77. Location 70'± South of the proposed structure.

Q_F = 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. 1787.79.

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

The hydraulic data contained in these plans is valid only if the overflow section is maintained. Alteration of the overflow section will require re-analysis of the hydraulics at this site to determine its effect on public safety.

GENERAL DRAWING AND QUANTITIES

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

-X028-

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

PLANS BY: ULTEIG ENGINEERS, INC.

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

G:\2023\23.24868\C3D Design\Structure Sheets\Structure Sheets-09MP-1.dwg PLOT DATE: 3/5/2026 7:37 AM Daniel Johnson Autodesk-MONO.stb

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	31	52

FOR BIDDING PURPOSES ONLY

SPECIFICATIONS

1. Design Specifications: AASHTO LRFD Bridge Design Specification, 10th Edition.
2. Construction Specifications: South Dakota Standard Specifications and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal

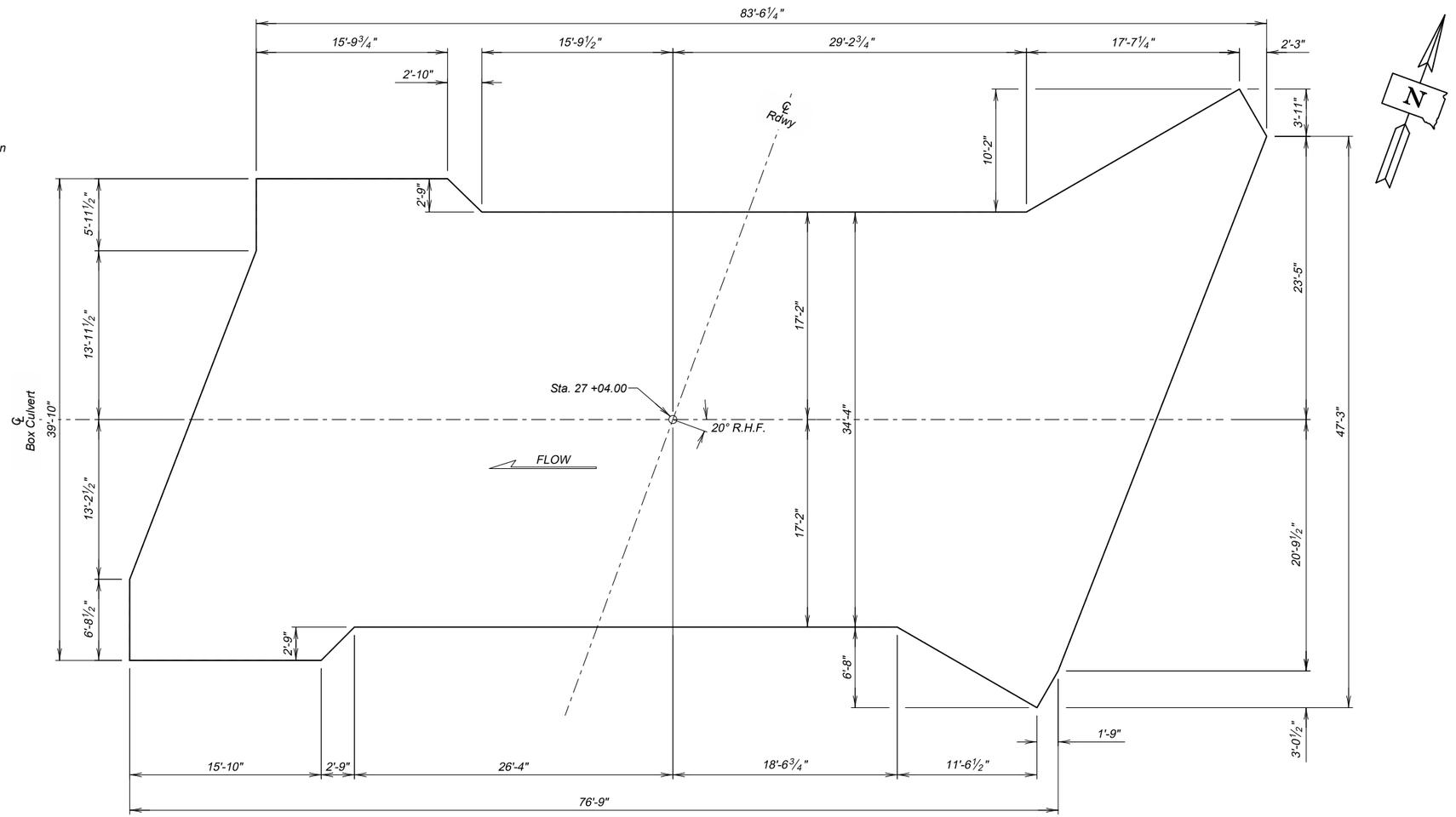
GENERAL NOTES

1. Design Live Load: HL-93. No construction loading in excess of legal load was considered.
2. The design of the barrel section is based on a minimum fill height of 0 feet and include all subsequent fill heights up to and including the maximum fill height of 5 feet (F5).
3. Design Material Strengths: Concrete f'_c = 4,500 psi; Reinforcing Steel f_y = 60,000 psi
4. All concrete will be Class A45 Concrete, Box Culvert conforming to Section 460 of the Construction Specifications.
5. All reinforcing steel will conform to ASTM A615 Grade 60.
6. All lap splices shown are contact lap splices unless noted otherwise.
7. All exposed concrete corners and edges will be chamfered ¾-inch unless noted otherwise in the plans.
8. Use 1-inch clear cover on all reinforcing steel EXCEPT as shown.
9. The Contractor will imprint on the structure the date of construction as specified and detailed on Standard Plate 460.02.
10. Care will be taken to establish Working Points (W.P.) as shown on the wings.
11. Circled numbers in PLAN and ELEVATION views on the General Drawing are section I.D. Numbers (see SDDOT Materials Manual).
12. Soils below the bottom of the proposed RCBC consist of soft brown sandy clay.
13. Cost of Preformed Expansion Joint Filler used in apron construction will be incidental to the other contract items.
14. Surface water was present at the site at an elevation of 1776.4 feet during the subsurface investigation conducted in June 2023. Dewatering will be required to construct the box culvert. All costs incurred for dewatering will be incidental to other contract items.
15. Compaction of earth embankment and box culvert backfill material will be governed by the Ordinary Compaction Method.

ESTIMATED QUANTITIES

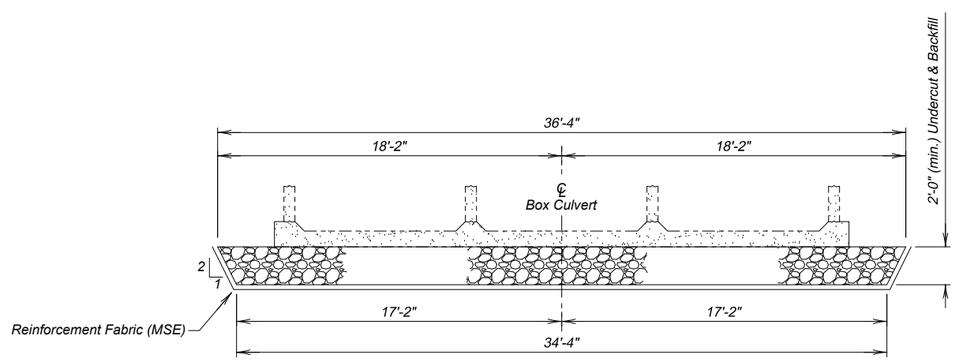
	ITEM	UNIT	QUANTITY
⍁	Box Culvert Undercut	Cu. Yd.	281
⍁	Reinforcement Fabric (MSE)	Sq. Yd.	407

⍁ For payment, quantity is based on plan shown undercut dimensions and will not be measured unless the Engineer orders a change.



UNDERCUT LAYOUT

(Bottom Dimensions)



TYPICAL SECTION

(For Limits of Undercut)

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

NOTES AND UNDERCUT DETAILS (A)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK — 20° RHF SKEW
STA. 27 + 04.00 — SEC.19 -T110N-R70W
STR. NO. 30-000-392 — BRO-B 8030(30)
PCN 09MP — HL-93

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

2 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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REINFORCEMENT FABRIC

A layer of Reinforcement Fabric (MSE) will be placed at the bottom of the undercut prior to backfilling with granular material.

Geotextile Specification:

Reinforcement Fabric (MSE) will conform to Section 831. The Reinforcement Fabric (MSE) provided will be on the Approved Products List or will be certified by the supplier to meet this specification prior to installation.

Reinforcement Fabric (MSE) will be paid for at the contract unit price per sq. yd. for Reinforcement Fabric (MSE). Payment will be full compensation for furnishing and installing the Reinforcement Fabric (MSE) only. Granular backfill materials will be paid for as part of the Box Culvert Undercut bid item.

Geotextile Installation Procedure:

Place the Reinforcement Fabric (MSE) on as level and smooth of surface as possible. Any protrusions that might damage the geotextile will be removed prior to placing the geotextile. All seams in the geotextile will be stitched in accordance with the seaming procedure and as shown on the detail labeled "Seam Types". No equipment will be allowed on the geotextile until the granular backfill material is in place. The geotextile will be kept as taut as possible prior to backfilling. Granular backfill material will be dumped behind the leading edge of the fill and pushed into place with a loader or dozer.

Geotextile Seaming Procedure:

The sewn seams will consist of two parallel rows of stitching ("prayer" seam, Type SSa-2), or a J-seam (Type SSn-1), using a single row of stitching. The stitching will be a lock type stitch.

If the Type SSa-2 seam is used, the two rows of stitching will be 1" apart with a tolerance of plus or minus 0.5" and will not cross, except for restitching. The minimum seam allowance, i.e., minimum distance from the geotextile edge to the stitch line nearest to that edge, will be 1.5".

If the J seam (Type SSn-1) is used, the minimum seam allowance will be 1".

The seam, stitch type, and the equipment used to perform the stitching will be as recommended by the manufacturer of the geotextile and approved by the Engineer. The seams will be sewn in such a manner that the seam can be readily inspected by the Engineer.

The thread used will be high strength polypropylene, polyester, or Kevlar thread. Nylon threads will not be allowed

INCIDENTAL WORK, STRUCTURE

In place is a 32-0" long x 18'-9" wide, one span steel girder bridge with a concrete deck, concrete abutments and concrete wingwalls.

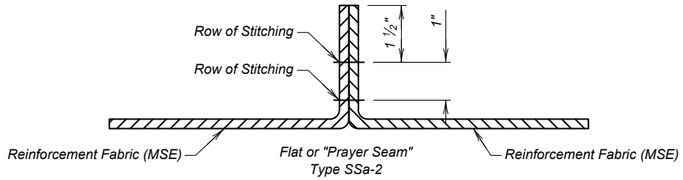
Break down and remove the existing bridge to the bottom of the undercut or as required to construct the new structure in accordance with Section 110 of the Specifications. The abutments will be removed to the bottom of the undercut.

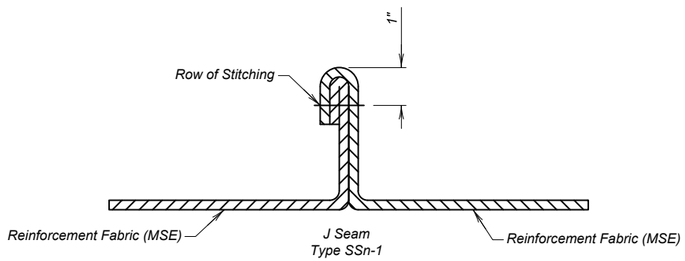
The in place bridge will become the property of the Contractor and will be properly disposed of by the Contractor.

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 shall be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved. All costs involved in this removal will be incidental to the contract lump sum price for "Incidental Work, Structure".

NOTICE - LEAD BASED PAINT

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





SEAM TYPES

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

NOTES AND UNDERCUT DETAILS (B)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK — 20° RHF SKEW
STA. 27 + 04.00 — SEC.19 -T110N-R70W
STR. NO. 30-000-392 — BRO-B 8030(30)
PCN 09MP — HL-93

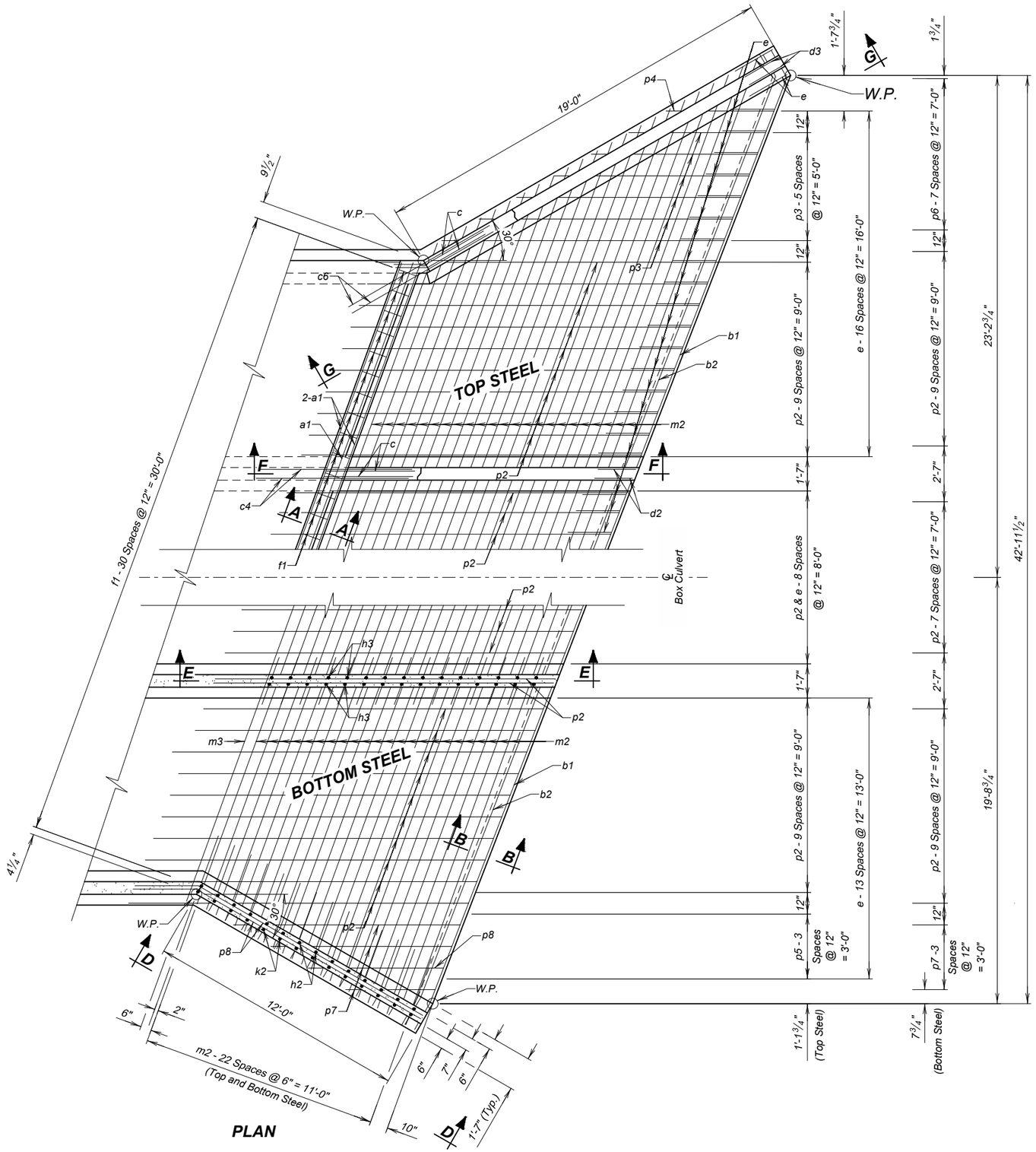
HAND COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 2026

3 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	33	52



PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

INLET DETAILS (A)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

4 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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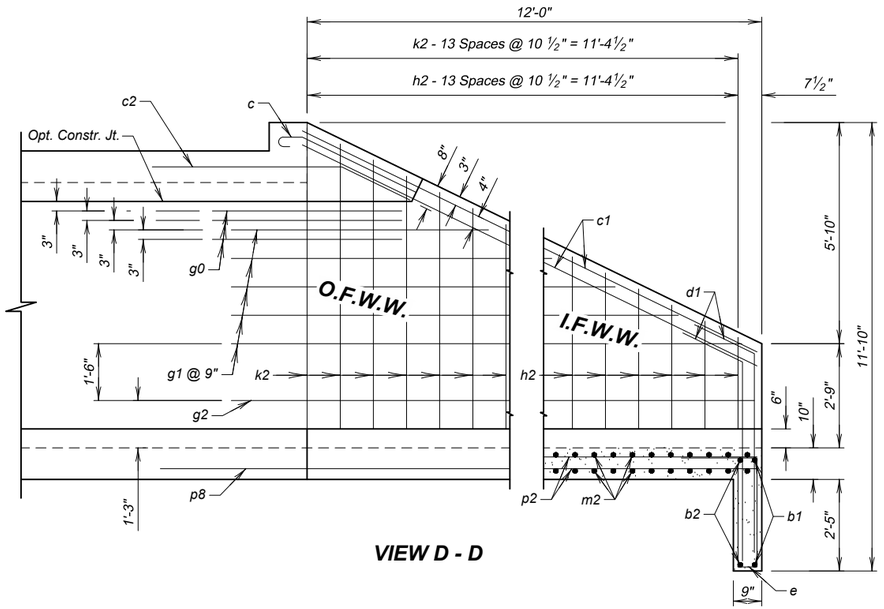
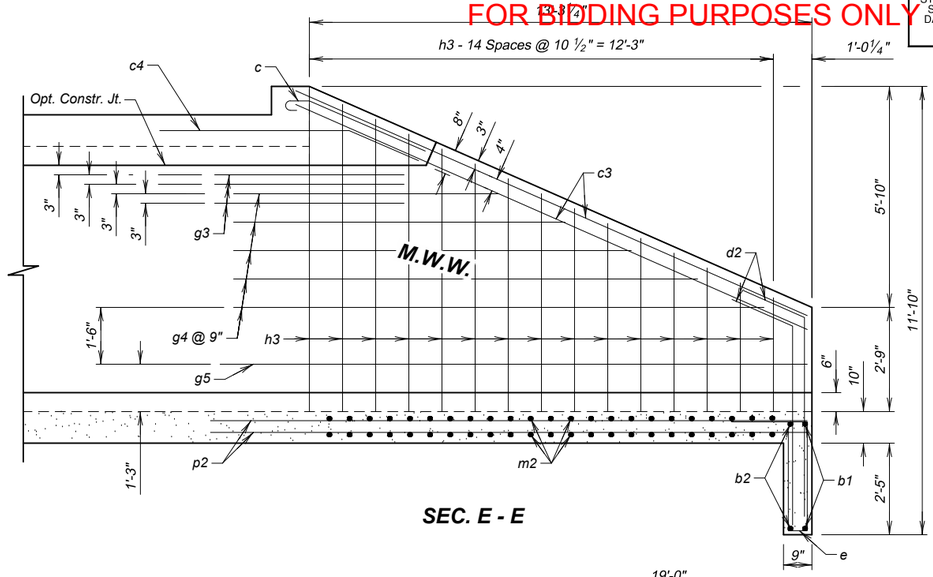
FOR BIDDING PURPOSES ONLY

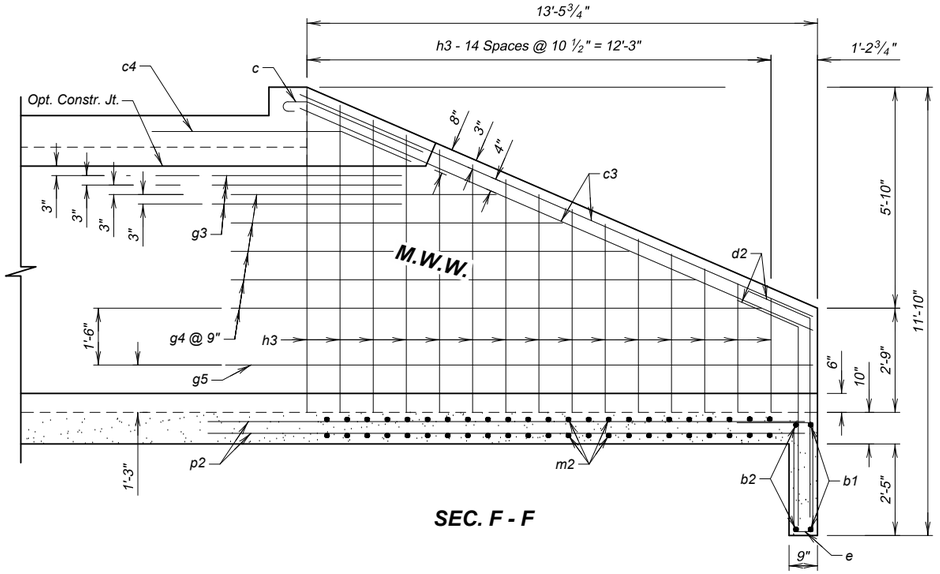
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	34	52



VIEW D - D



SEC. E - E



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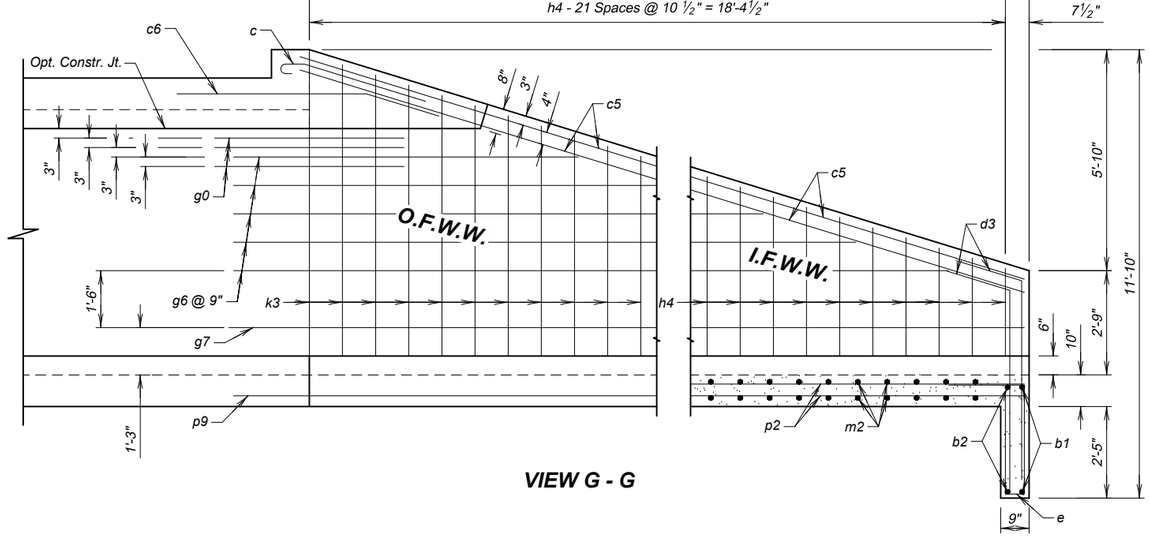


VIEW G - G

LEGEND FOR PLACING RE-STEEL
O.F.W.W. - Outside Face of Wing Wall
I.F.W.W. - Inside Face of Wing Wall
M.W.W. - Middle Wing Wall

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

INLET DETAILS (B)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

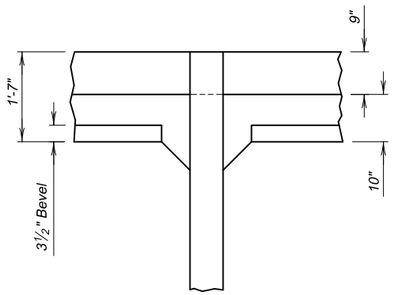
5 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

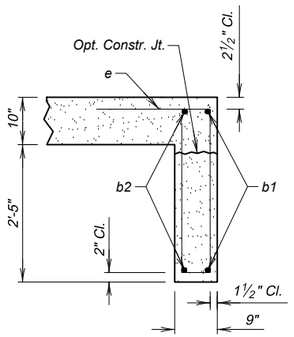
G:\2023\23.24868\C3D Design\Structure Sheets\Structure Sheets-09MP-1.dwg PLOT DATE: 3/5/2026 7:37 AM Daniel Johnson Autodesk-MONO.stb

FOR BIDDING PURPOSES ONLY

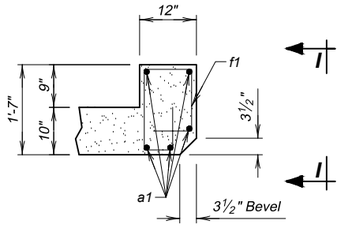
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	35	52



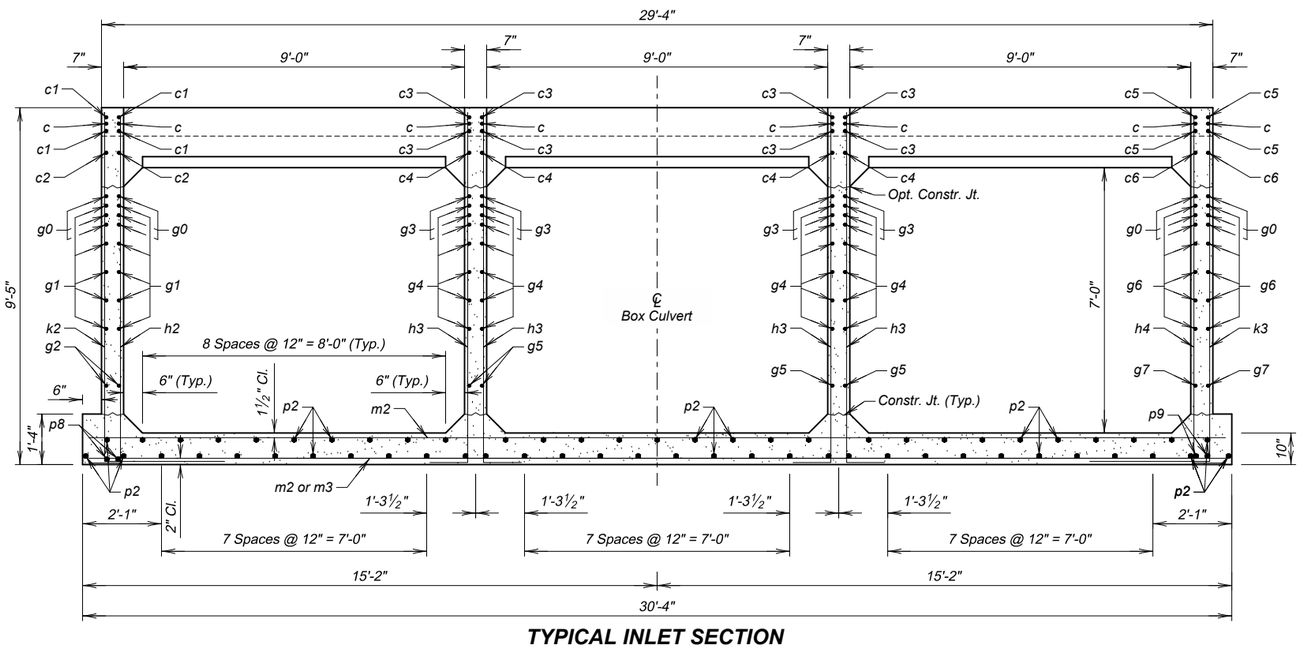
VIEW I - I
(At Interior Wall)



SEC. B - B



SECTION A - A
(At Top Slab)



TYPICAL INLET SECTION
(At Parapet)

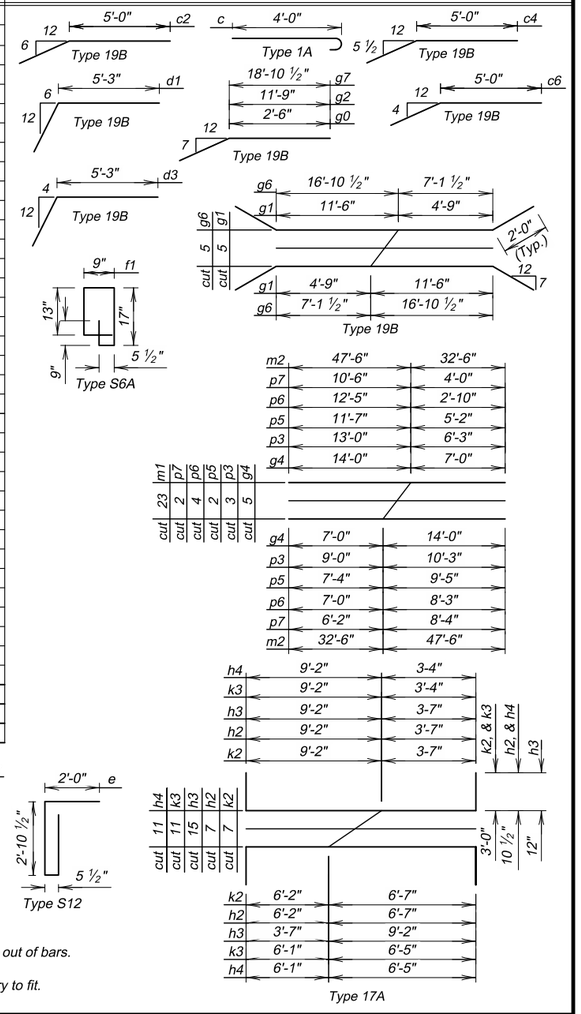
ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Inlet	26.9	5158	19.2

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
	a1	5	6	31'-0"	Str.
✱	b1	2	4	48'-3"	Str.
✱	b2	2	4	48'-9"	Str.
✱	c	8	5	4'-9"	1A
	c1	4	5	13'-6"	Str.
	c2	2	5	7'-0"	19B
	c3	8	5	14'-9"	Str.
	c4	4	5	7'-0"	19B
	c5	4	5	20'-0"	Str.
	c6	2	5	7'-0"	19B
	d1	4	5	7'-0"	19B
	d2	8	5	7'-0"	19B
	d3	4	5	7'-0"	19B
	e	44	4	8'-0"	S12
	f1	31	4	5'-3"	S6A
	g0	12	5	5'-0"	19B
⍁	g1	5	4	20'-3"	19B
	g2	2	4	13'-9"	19B
	g3	12	5	5'-0"	Str.
⍁	g4	10	4	21'-0"	Str.
	g5	4	4	15'-6"	Str.
⍁	g6	5	4	28'-0"	19B
	g7	2	4	21'-0"	19B
⍁	h2	7	4	14'-6"	17A
⍁	h3	30	4	14'-9"	17A
⍁	h4	11	4	14'-3"	17A
⍁	k2	7	4	18'-9"	17A
⍁	k3	11	4	18'-6"	17A
⍁	m2	23	5	80'-0"	Str.
	m3	1	5	32'-0"	Str.
	p2	61	4	15'-9"	Str.
⍁	p3	3	4	19'-3"	Str.
	p4	1	4	5'-0"	Str.
⍁	p5	2	4	16'-9"	Str.
⍁	p6	4	4	15'-3"	Str.
⍁	p7	2	4	14'-6"	Str.
✱	p8	2	4	15'-0"	Str.
✱	p9	2	4	21'-6"	Str.

Bending Details



NOTES:
All dimensions are out to out of bars.
⍁ See cutting diagram.
✱ Bend in field as necessary to fit.

INLET DETAILS (C)
FOR
3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

6 OF 11

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

PLANS BY: ULTEIG ENGINEERS, INC.

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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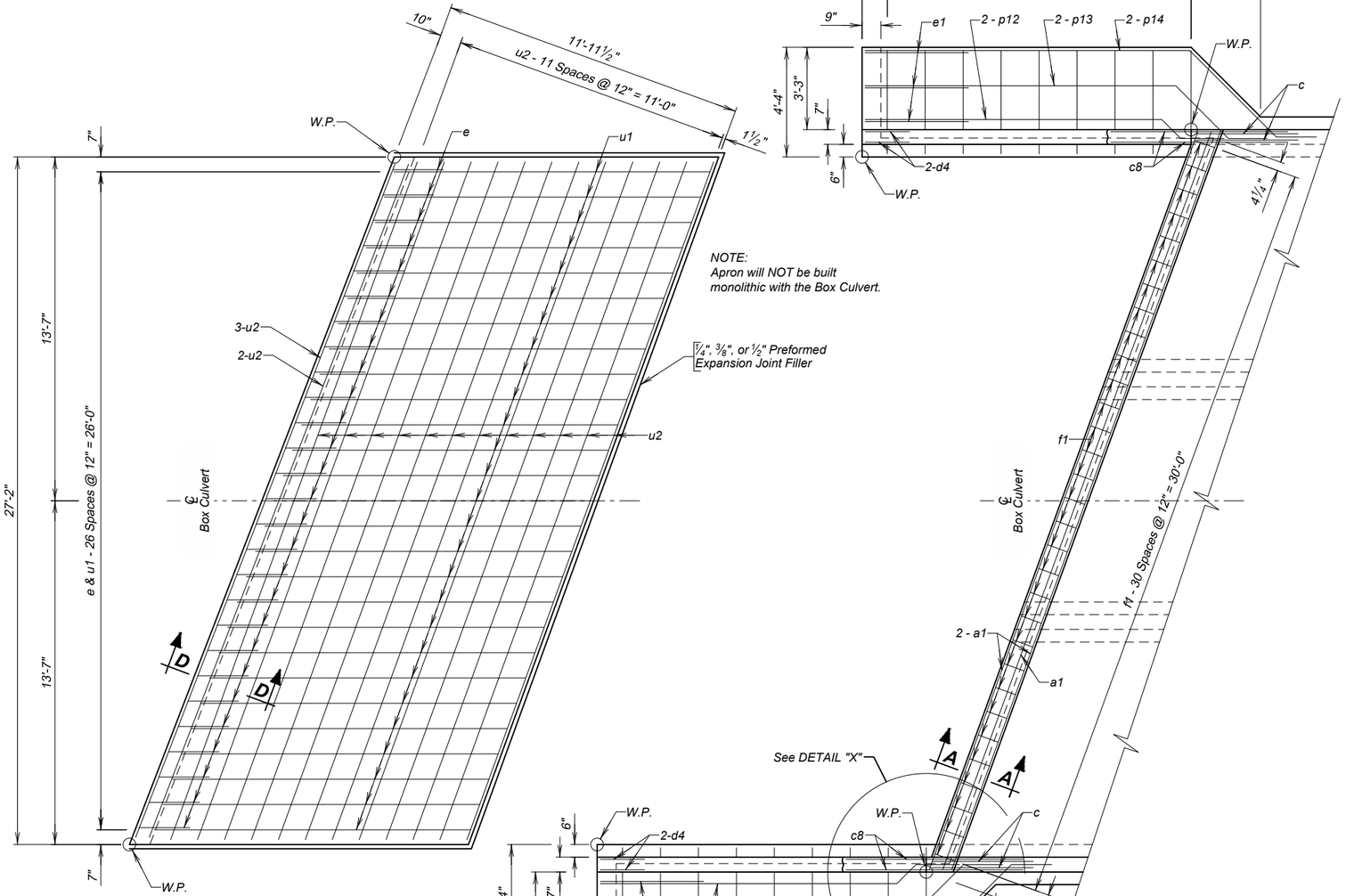
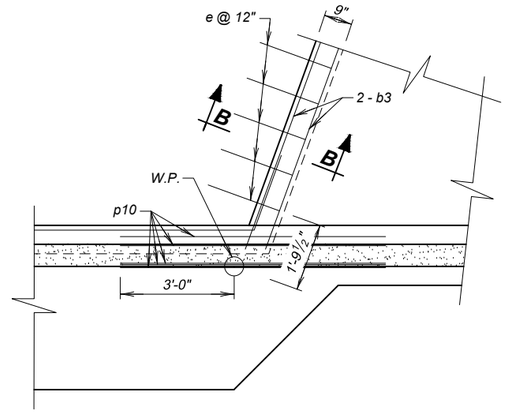
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	36	52



PLAN
(Outlet Apron)

PLAN



DETAIL "X"
(At Bottom Slab)

OUTLET DETAILS (A)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

7 OF 11

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

PLANS BY: ULTEIG ENGINEERS, INC.

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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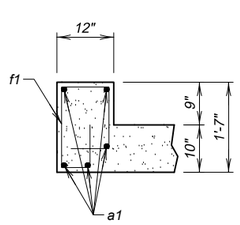
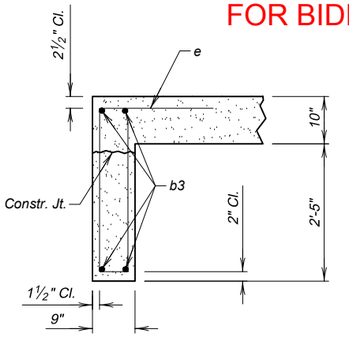
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	37	52

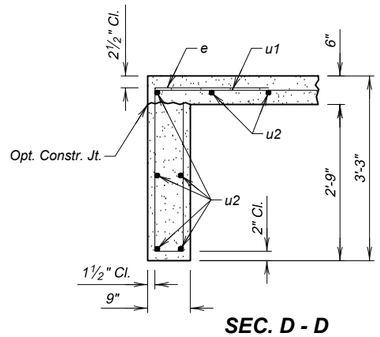
SECTION C - C



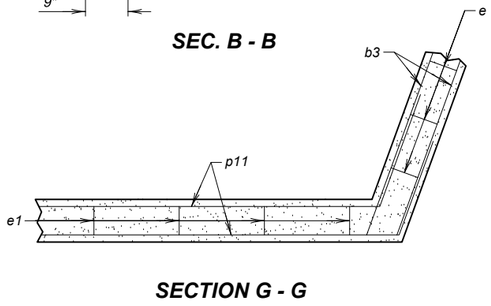
SECTION A - A
(At Top Slab)



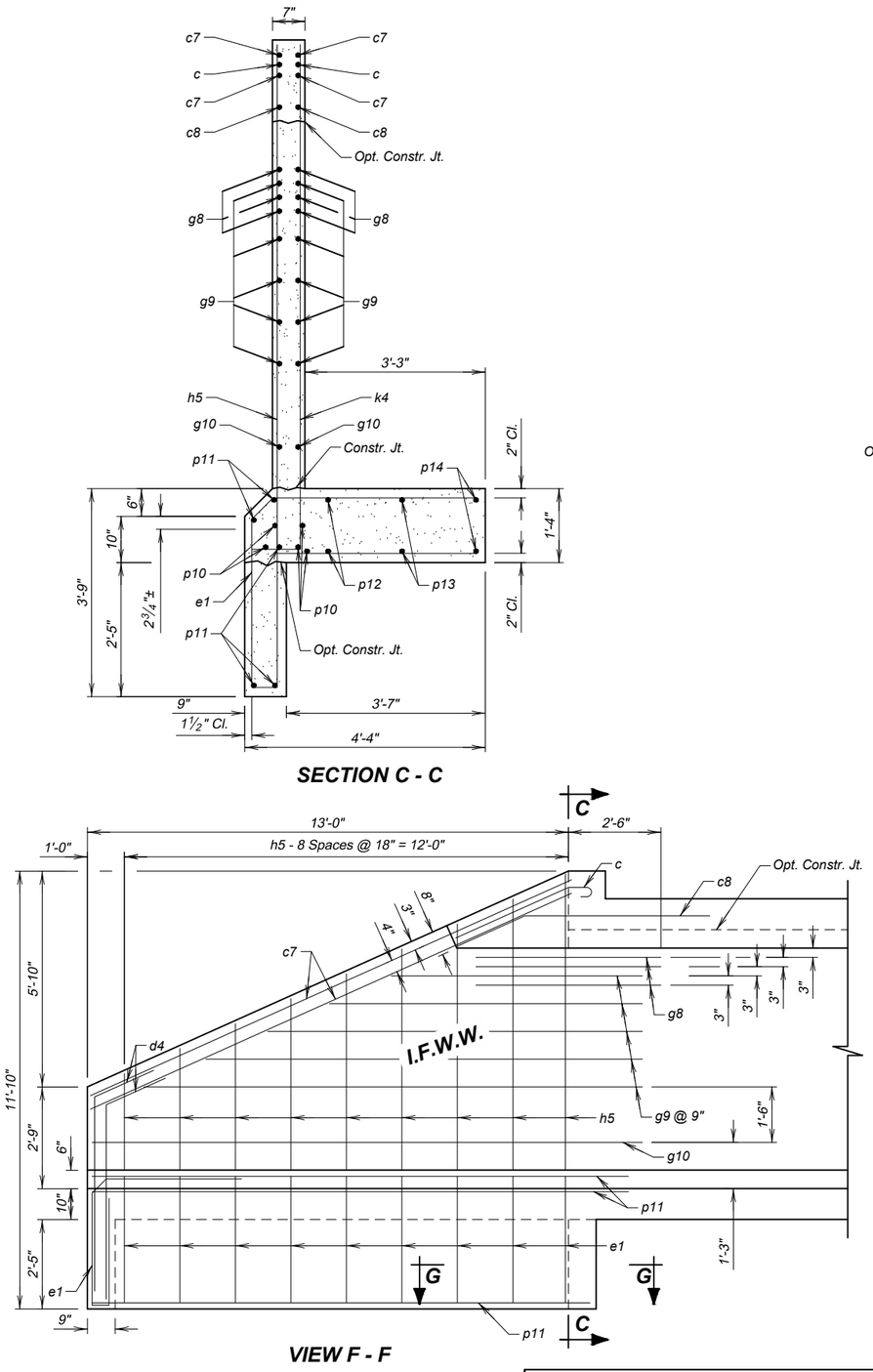
SEC. B - B



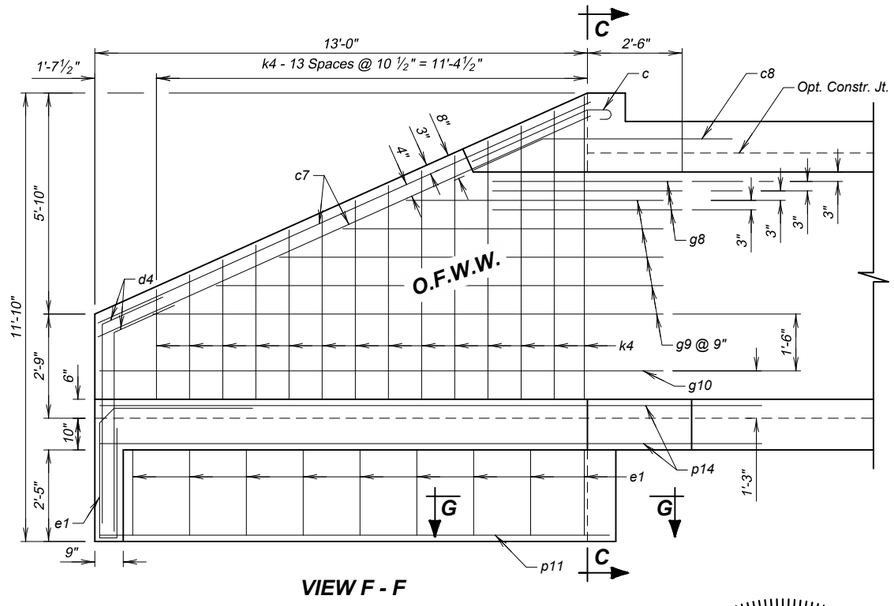
SEC. D - D



SECTION G - G



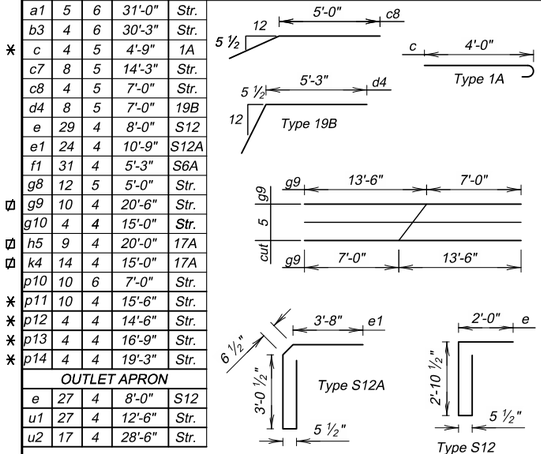
VIEW F - F



VIEW F - F

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type	Bending Details
	a1	5	6	31'-0"	Str.	
	b3	4	6	30'-3"	Str.	
*	c	4	5	4'-9"	1A	
	c7	8	5	14'-3"	Str.	
	c8	4	5	7'-0"	Str.	
	d4	8	5	7'-0"	19B	
	e	29	4	8'-0"	S12	
	e1	24	4	10'-9"	S12A	
	f1	31	4	5'-3"	S6A	
	g8	12	5	5'-0"	Str.	
⧄	g9	10	4	20'-6"	Str.	
⧄	g10	4	4	15'-0"	Str.	
⧄	h5	9	4	20'-0"	17A	
⧄	k4	14	4	15'-0"	17A	
	p10	10	6	7'-0"	Str.	
*	p11	10	4	15'-6"	Str.	
*	p12	4	4	14'-6"	Str.	
*	p13	4	4	16'-9"	Str.	
*	p14	4	4	19'-3"	Str.	
	OUTLET APRON					
	e	27	4	8'-0"	S12	
	u1	27	4	12'-6"	Str.	
	u2	17	4	28'-6"	Str.	



NOTES:
All dimensions are out to out of bars.
⧄ *See cutting diagram.*
* *Bend in field as necessary to fit.*

LEGEND FOR PLACING RE-STEEL

O.F.W.W. - Outside Face of Wing Wall
I.F.W.W. - Inside Face of Wing Wall

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Outlet	13.9	1921	8.0
Outlet Apron	8.8	693	8.8

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

PLANS BY: ULTEIG ENGINEERS, INC.

OUTLET DETAILS (B)
FOR
3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

8 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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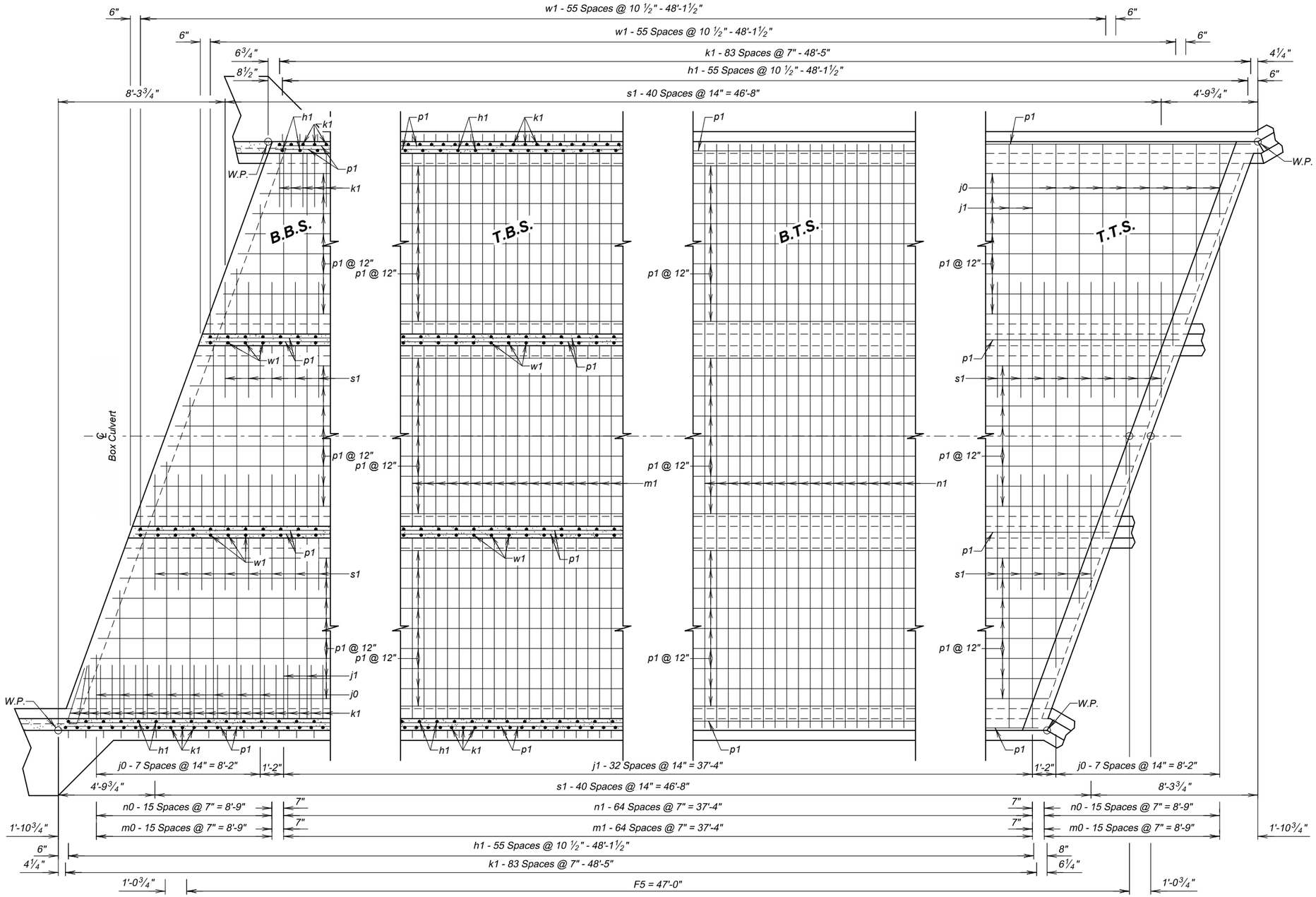
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	38	52



PLAN

LEGEND FOR PLACING RE-STEEL
T. T. S. - Top of Top Slab
B. T. S. - Bottom of Top Slab
T. B. S. - Top of Bottom Slab
B. B. S. - Bottom of Bottom Slab

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

F5 BARREL SECTION DETAILS (47' - 0") (A)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

9 OF 11

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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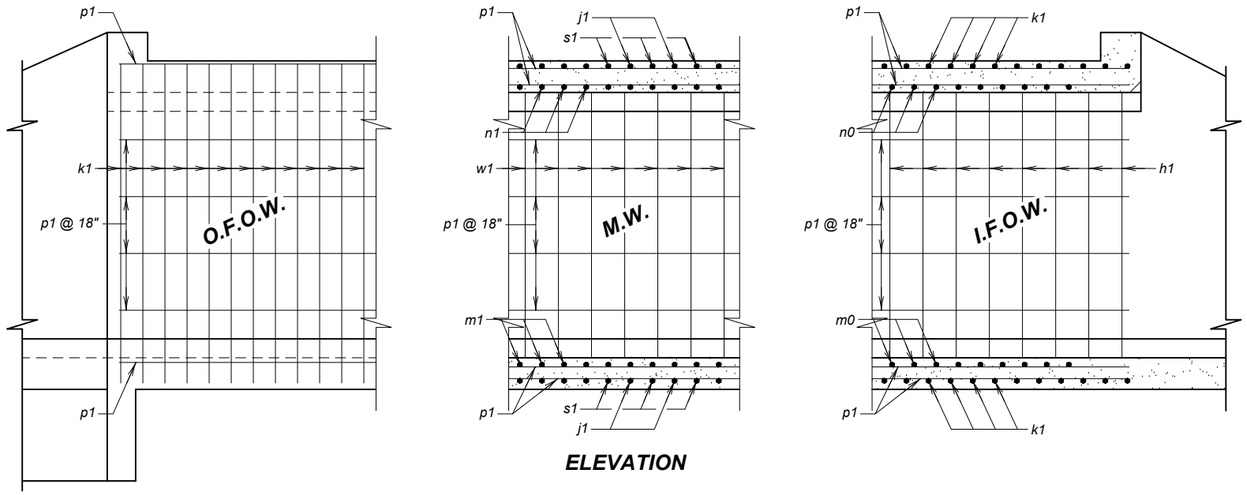
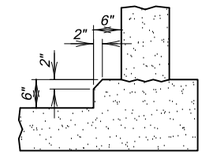
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8030(30)	39	52



ELEVATION



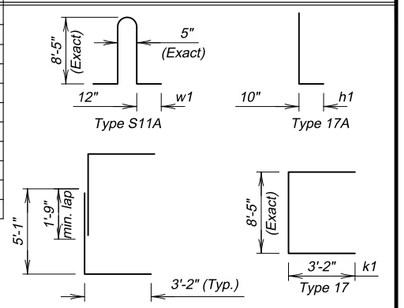
OPTIONAL FILLET DETAIL

(At Bottom Slab)

NOTE: Contractor may form the optional full fillet, with 2" Chamfer, as detailed. The cost of the additional concrete will be borne by the Contractor.

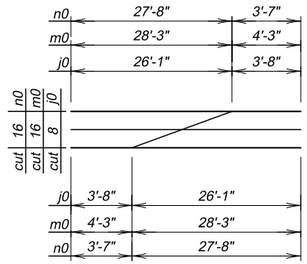
REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type	Bending Details
	h1	112	4	9'-0"	17A	
⍁	j0	16	5	29'-9"	Str.	
	j1	66	5	29'-0"	Str.	
	k1	168	4	14'-9"	17	
⍁	m0	16	4	32'-6"	Str.	
	m1	65	4	30'-0"	Str.	
⍁	n0	16	5	31'-3"	Str.	
	n1	65	5	29'-0"	Str.	
	p1	148	4	48'-6"	Str.	
	s1	164	5	5'-9"	Str.	
	w1	112	4	19'-0"	S11A	



OPTIONAL k1 SPLICE DETAIL

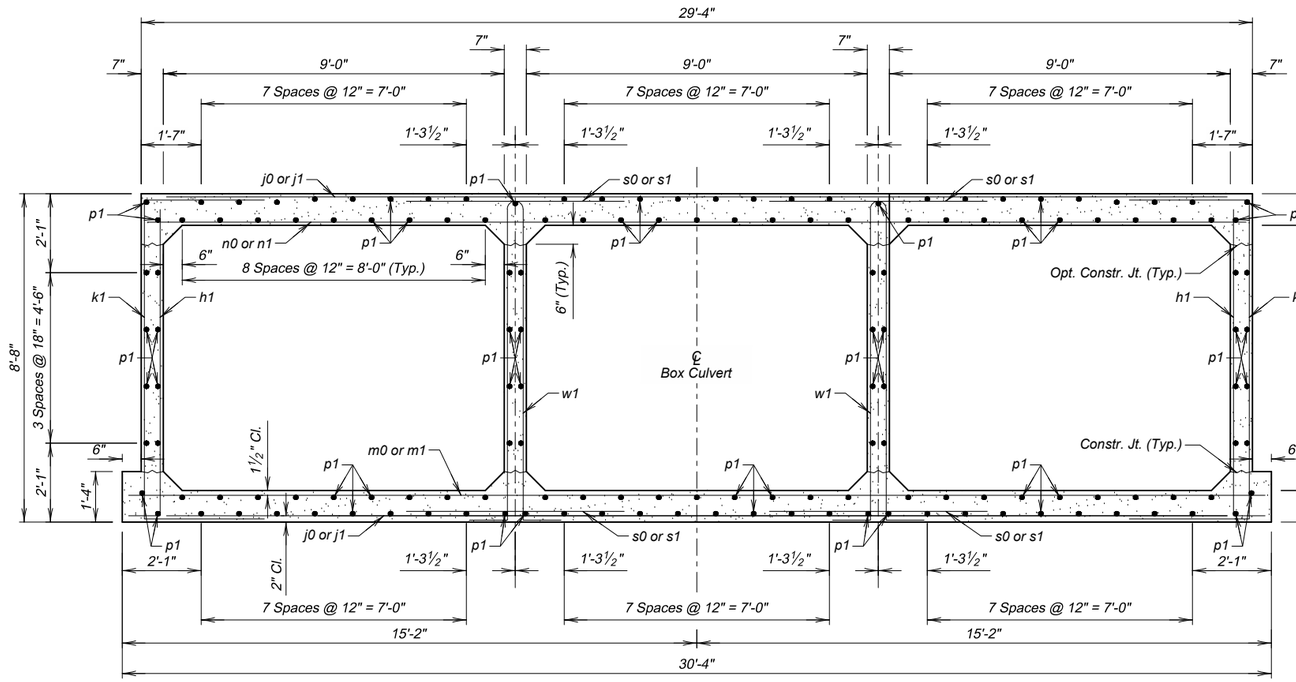
Contractor may use optional reinforcing steel splice as shown. The cost of the additional reinforcing steel will be borne by the Contractor.



NOTES:
All dimensions are out to out of bars.

⍁ *See cutting diagram.*

Request for additional 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 made for the added quantity of reinforcing steel.



F5 BARREL SECTION

(5'-0" Maximum Fill)

F5 BARREL SECTION DETAILS (47' - 0") (B)

FOR

3 - 9' X 7' BOX CULVERT (C.I.P.)

OVER ELM CREEK
STA. 27 + 04.00
STR. NO. 30-000-392
PCN 09MP

20° RHF SKEW
SEC.19 -T110N-R70W
BRO-B 8030(30)
HL-93

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

10 OF 11

LEGEND FOR PLACING RE-STEEL

O. F. O. W. - Outside Face of Outside Wall
I. F. O. W. - Inside Face of Outside Wall
M. W. - Middle Wall

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
1 - F5 Barrel Section @ 47'-0"	124.2	16159	45.8

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
04/21/2026

DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

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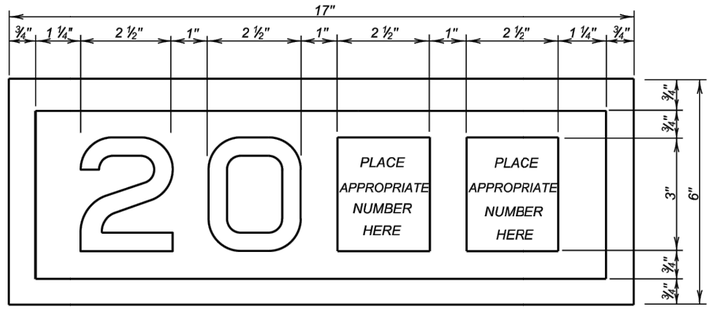
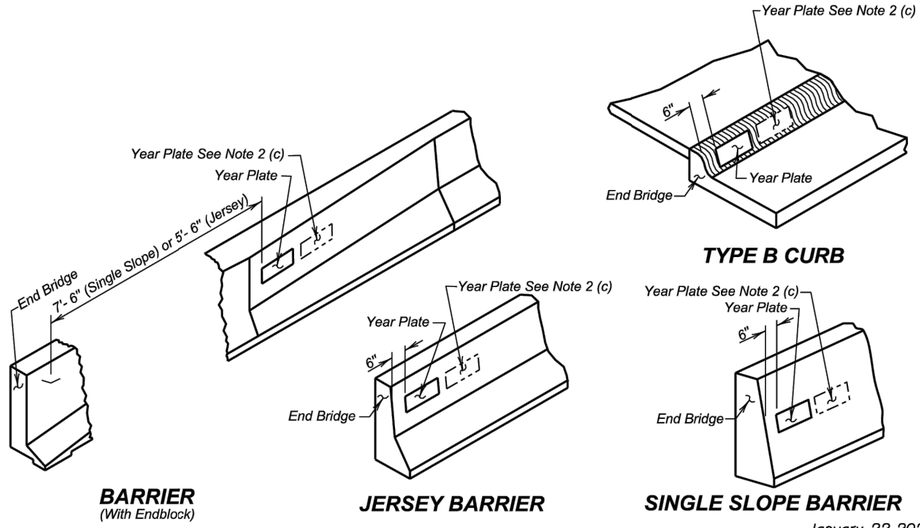
	BRO-B 8030(30)	40	52



YEAR PLATE DETAILS

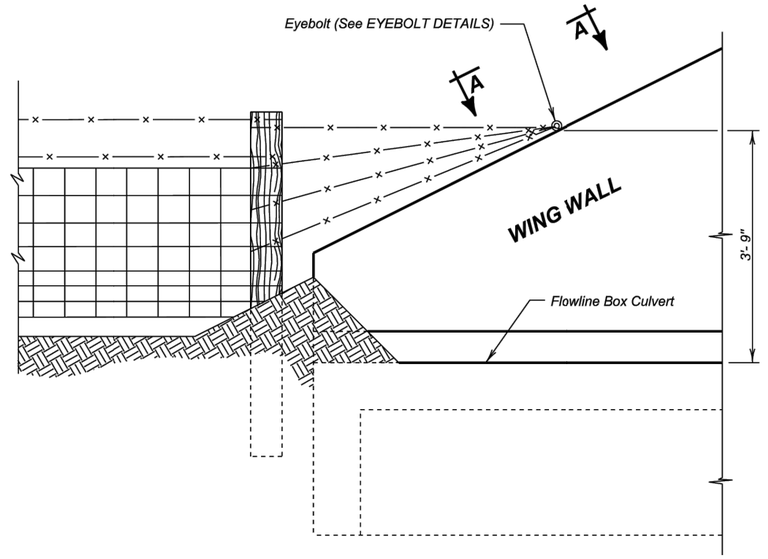
GENERAL NOTES:

1. 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.
2. Year plates will be located on structure(s) as follows:
   a. On cast-in-place box culverts the year plates will be four and one - half (4 ½) 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.
   b. 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.
   c. 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.
3. 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.



January 22,2021

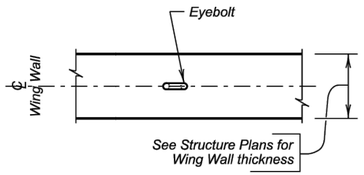
Published Date: 2026	SDDOT	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 Of 1



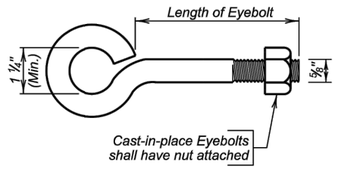
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
2. Eyebolts shall be placed on all of the box culvert wing walls.
3. Eyebolts shall be ⅝ inch diameter and shall conform to ASTM A307.
4. Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
5. Cast-in-place eyebolts shall have a nut attached, be 4 ½ inches (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the ⅝ inch diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
6. The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to various contract items.



VIEW A - A



EYEBOLT DETAILS

December 23,2012

Published Date: 2026	SDDOT	FENCE ANCHORS FOR BOX CULVERT WING WALLS	PLATE NUMBER 620.16
			Sheet 1 of 1

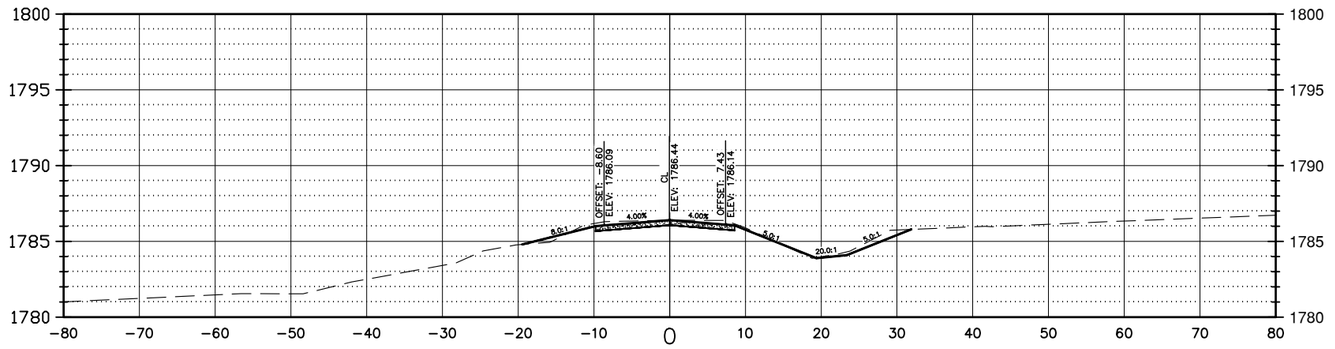
3 - 9' X 7' BOX CULVERT
STR. NO. 30-000-392
MARCH 2026

CROSS SECTIONS MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	41	52

344TH STREET
STA 25+25.00



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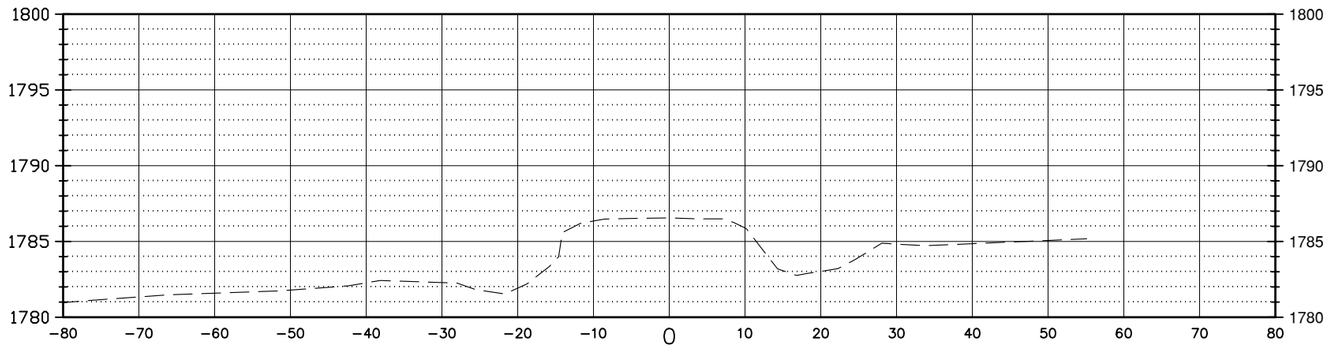
STANGOHR
SOUTH DAKOTA
04/21/2026

344TH STREET
STA 25+00.00



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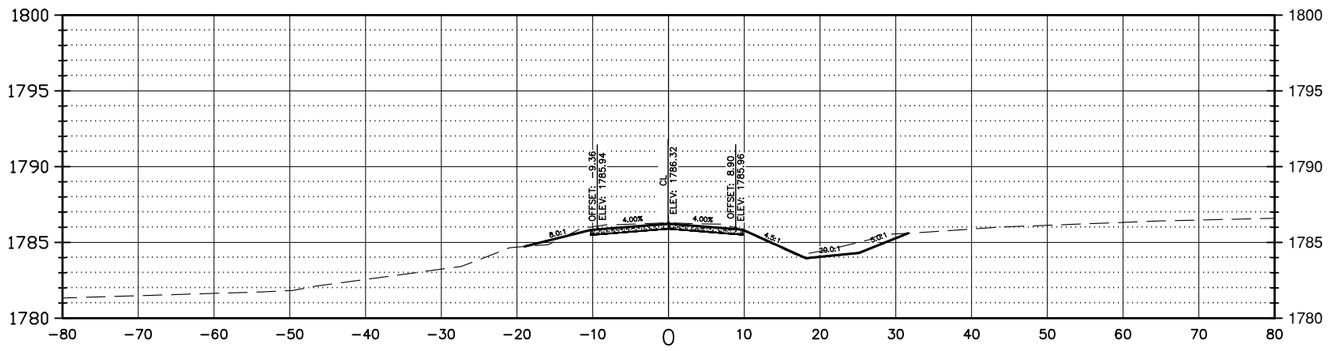
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	42	52

344TH STREET
STA 25+50.00



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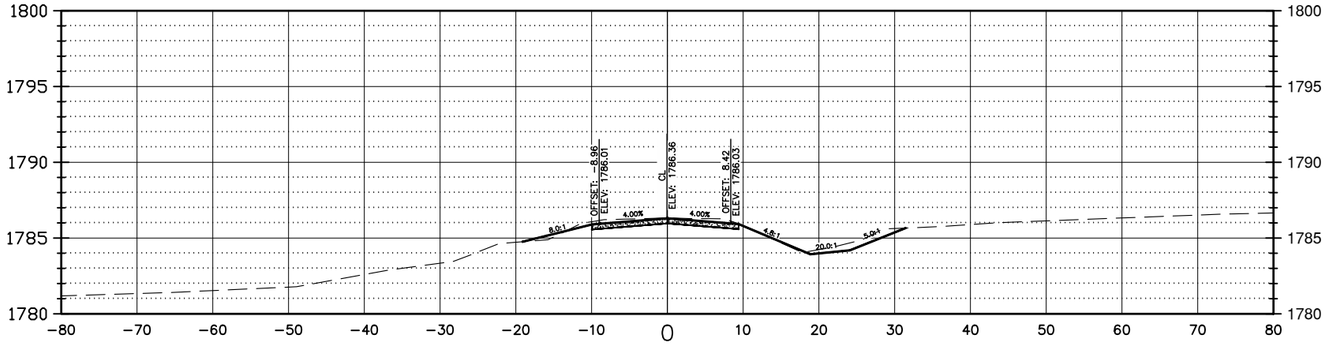
344TH STREET
STA 25+40.00



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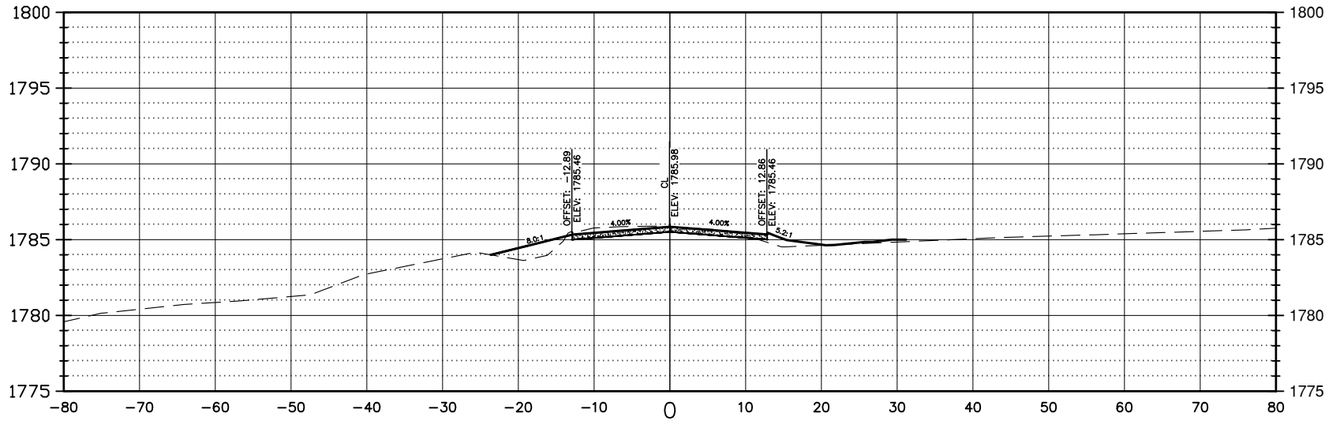
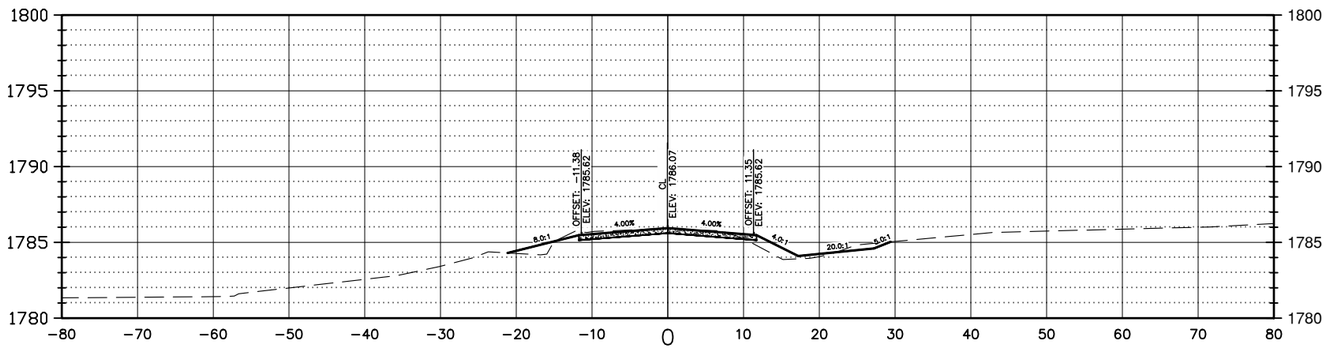
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	43	52

344TH STREET
STA 26+40.00



344TH STREET
STA 26+00.00



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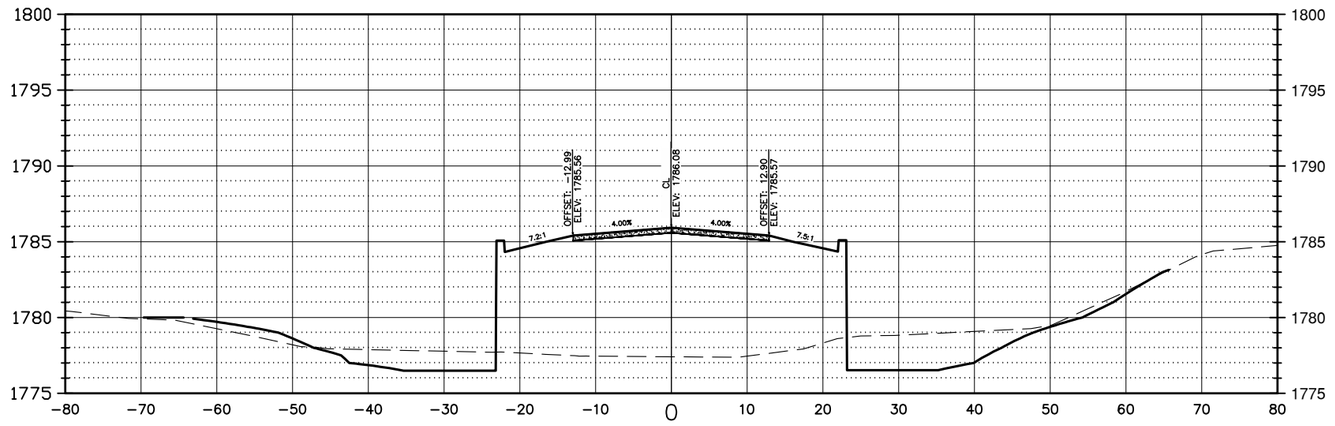
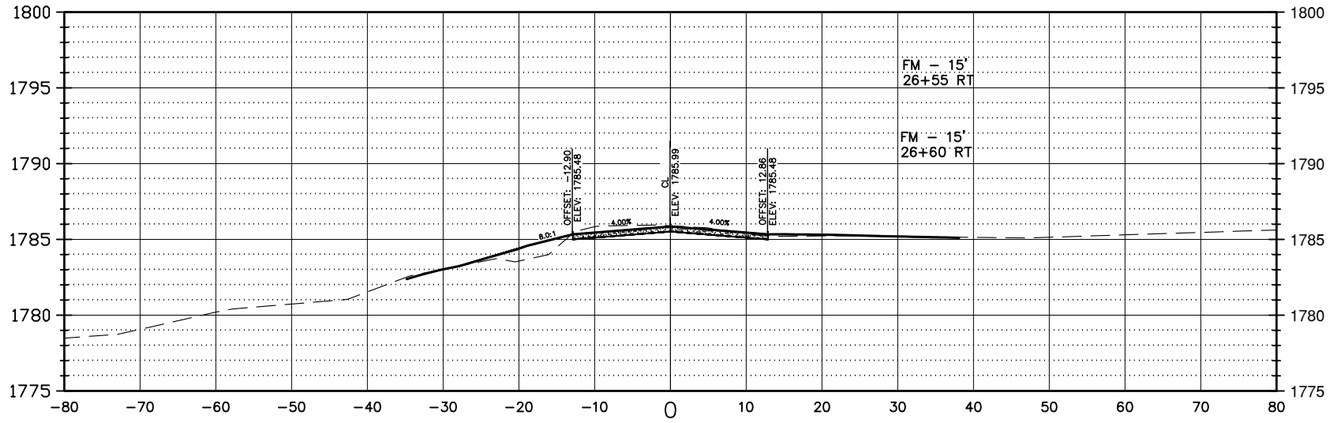
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	44	52

344TH STREET
STA 27+00.00



344TH STREET
STA 26+50.00



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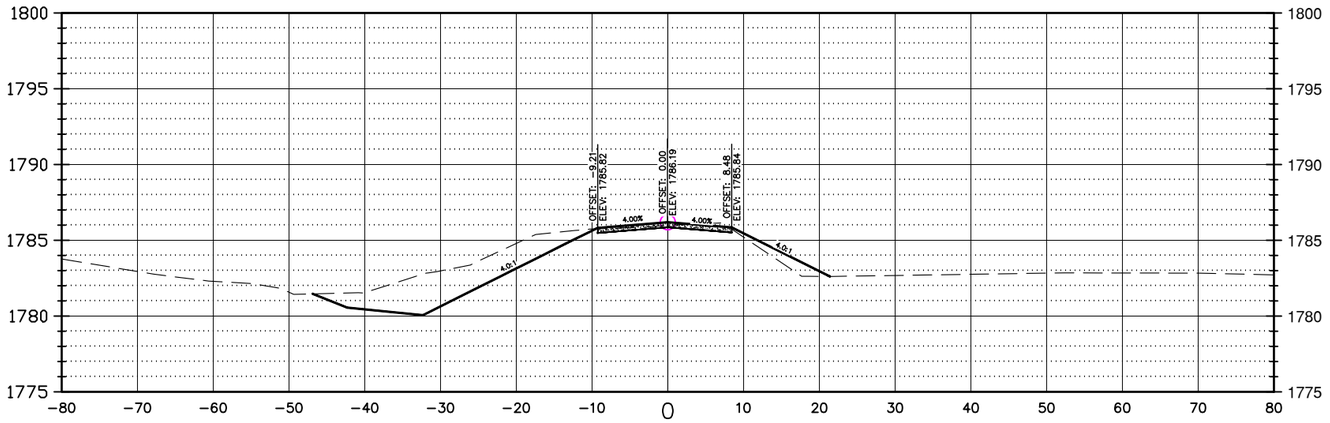
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	45	52

344TH STREET
STA 28+00.00



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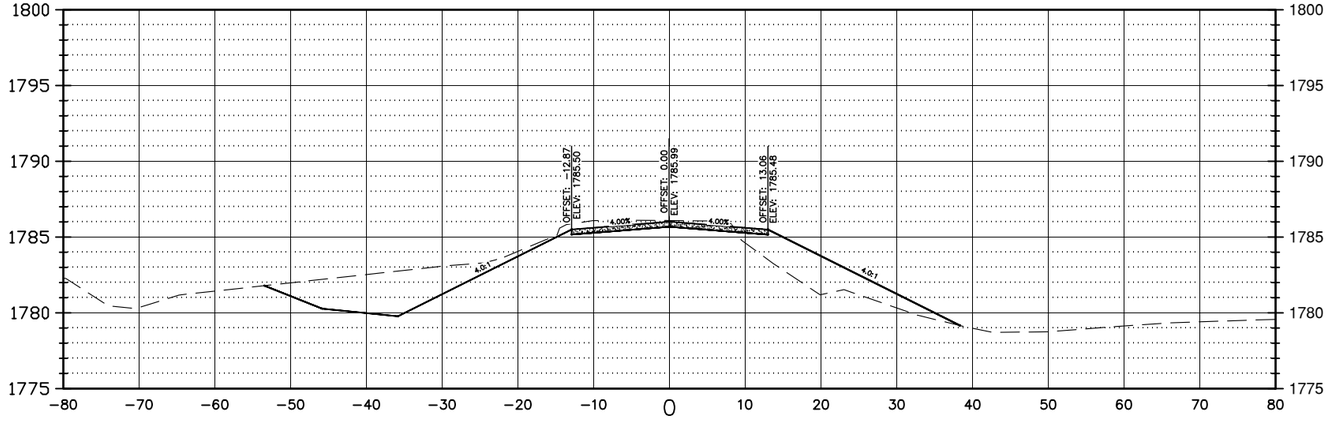
344TH STREET
STA 27+50.00



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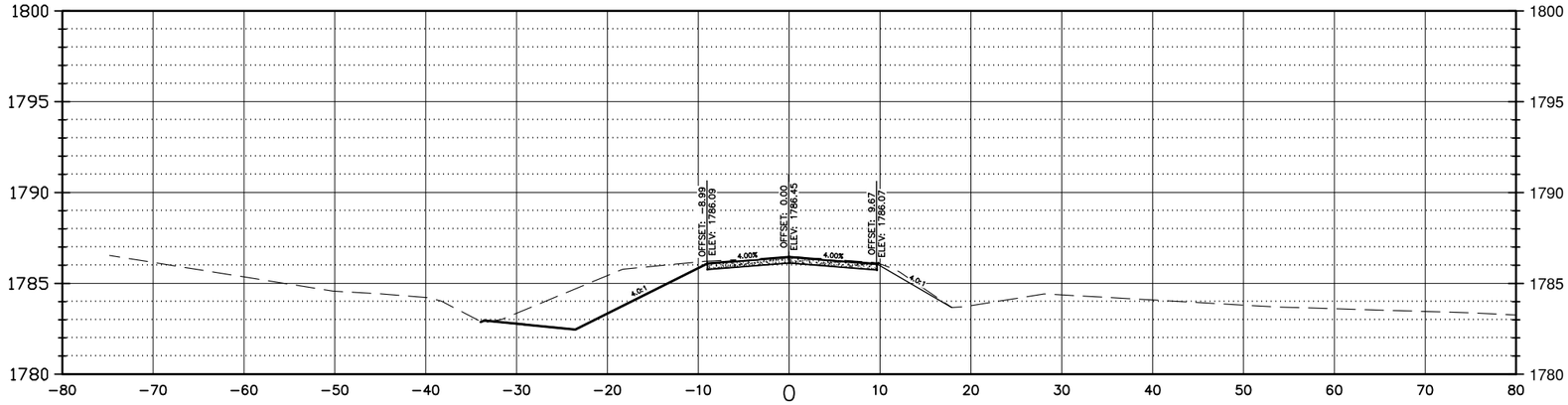
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	46	52

344TH STREET
STA 28+97.81



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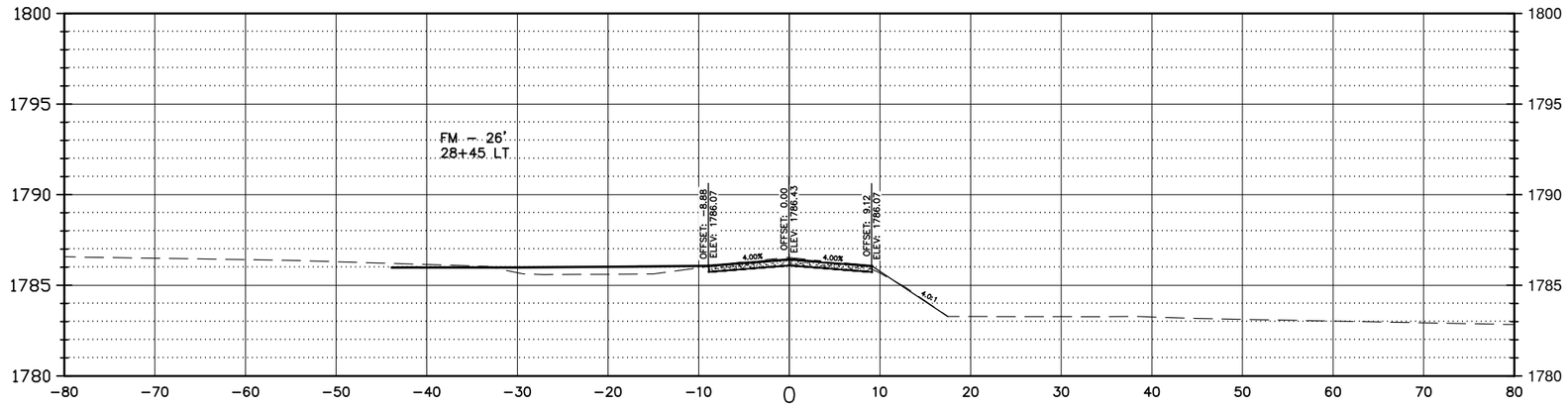
344TH STREET
STA 28+50.00



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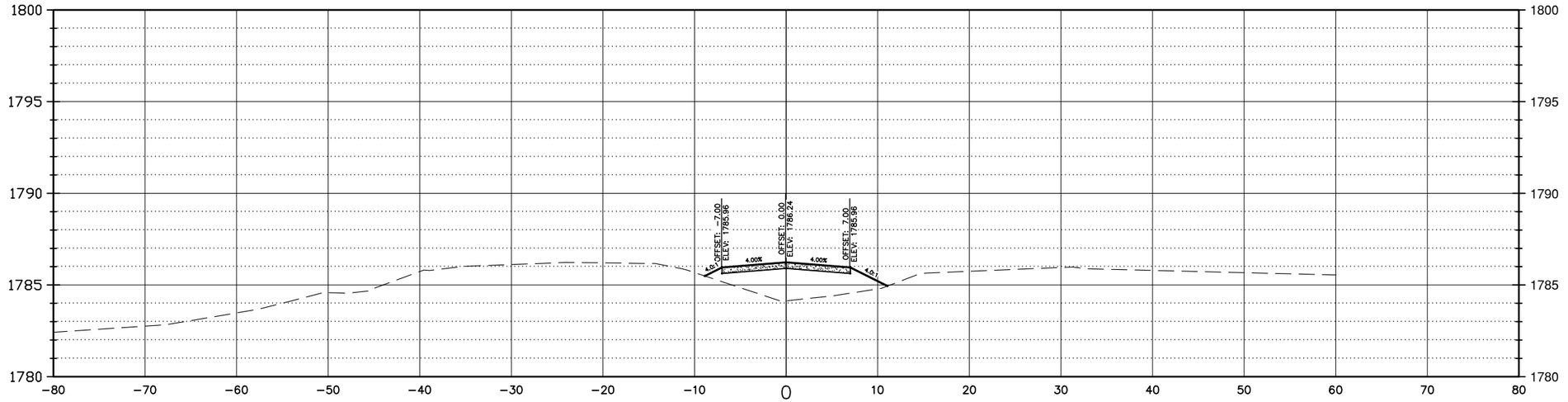
CROSS SECTIONS TRAFFIC DIVERSION

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	47	52

TRAFFIC DIVERSION
STA 1+50.00



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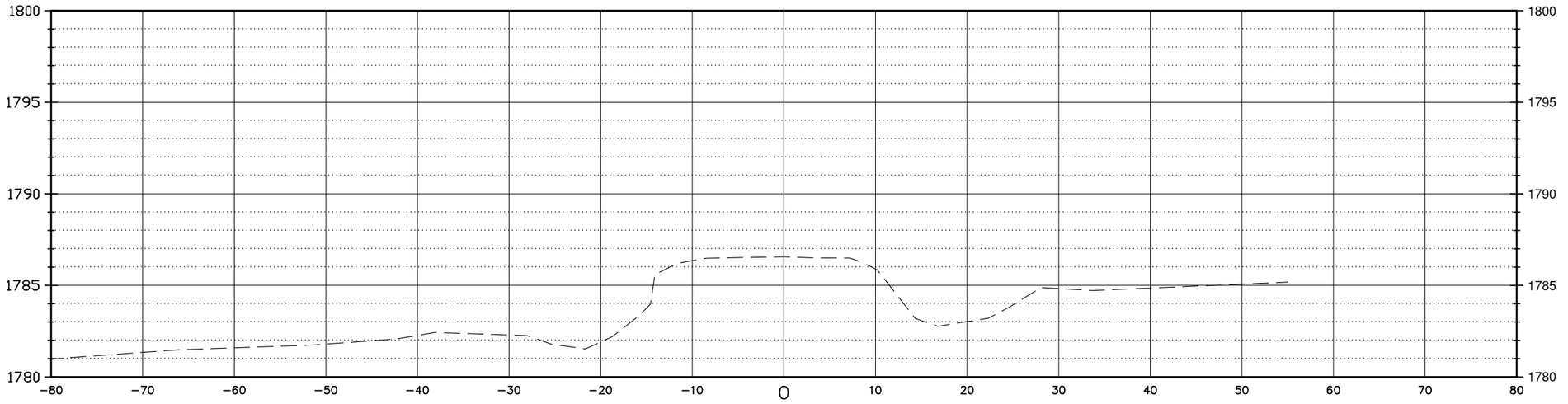
TRAFFIC DIVERSION
STA 1+00.00



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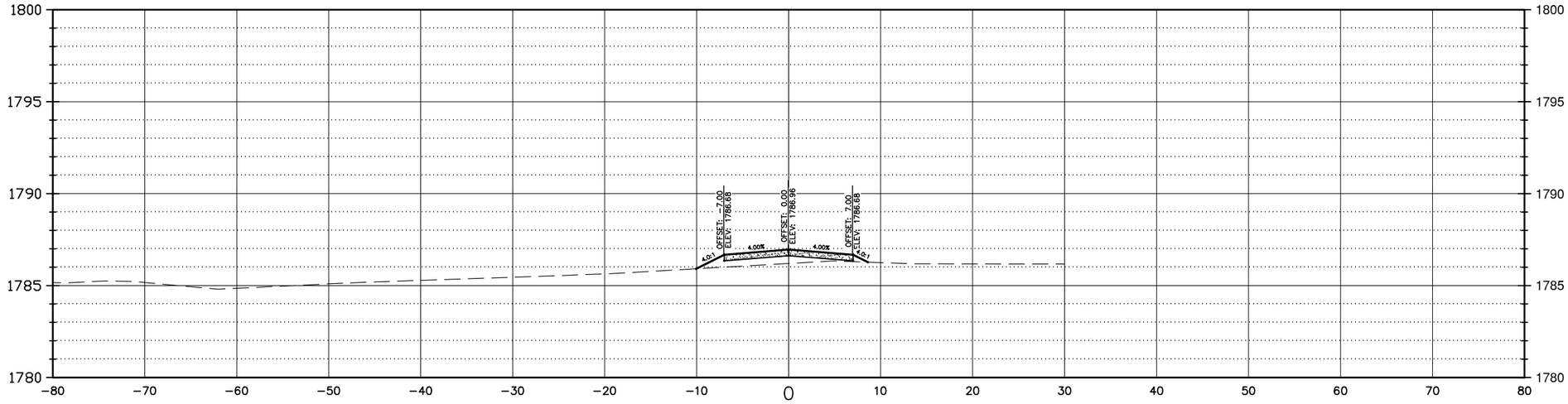
CROSS SECTIONS TRAFFIC DIVERSION

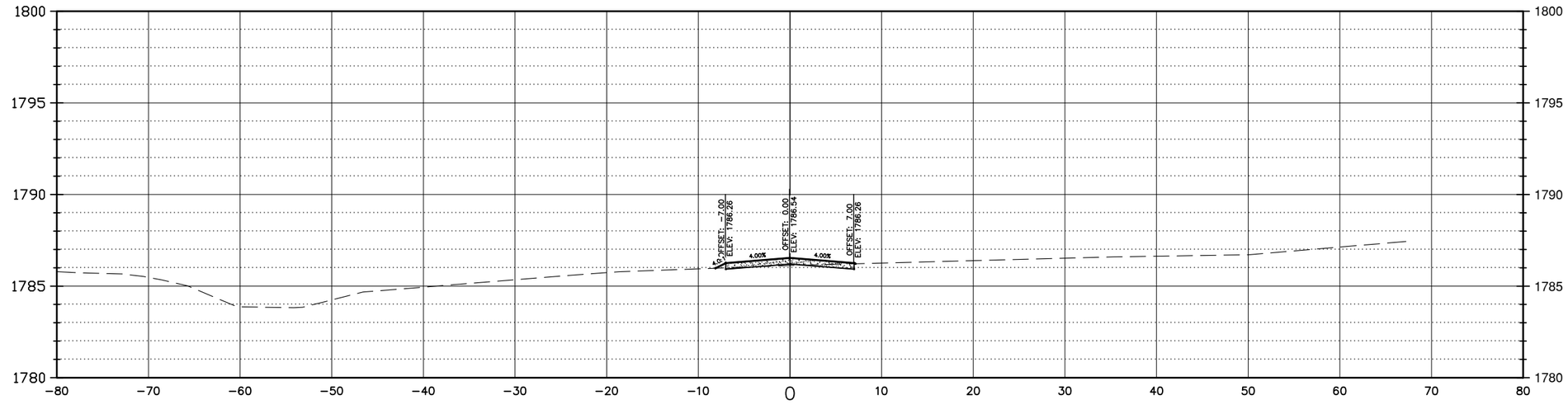
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	48	52

TRAFFIC DIVERSION
STA 2+50.00



TRAFFIC DIVERSION
STA 2+00.00



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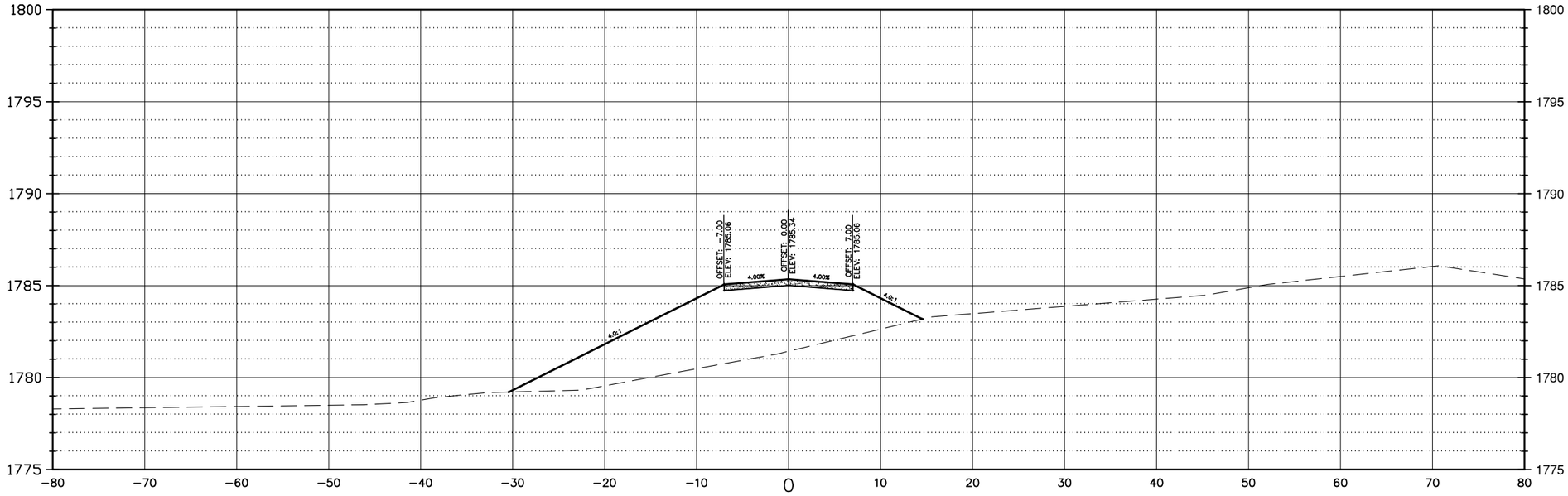
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	49	52

TRAFFIC DIVERSION
STA 3+50.00



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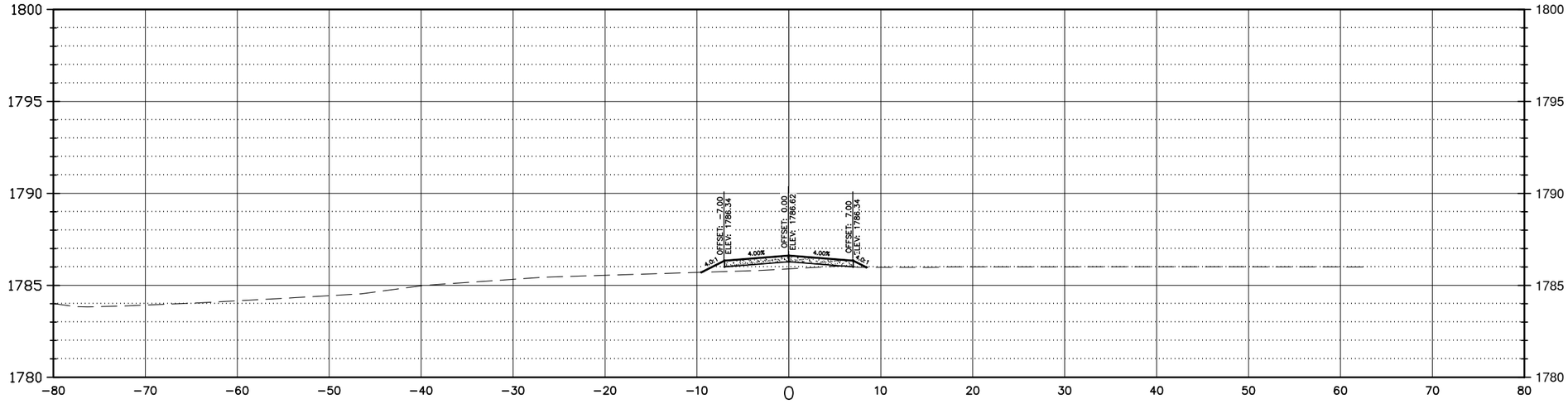
TRAFFIC DIVERSION
STA 3+00.00



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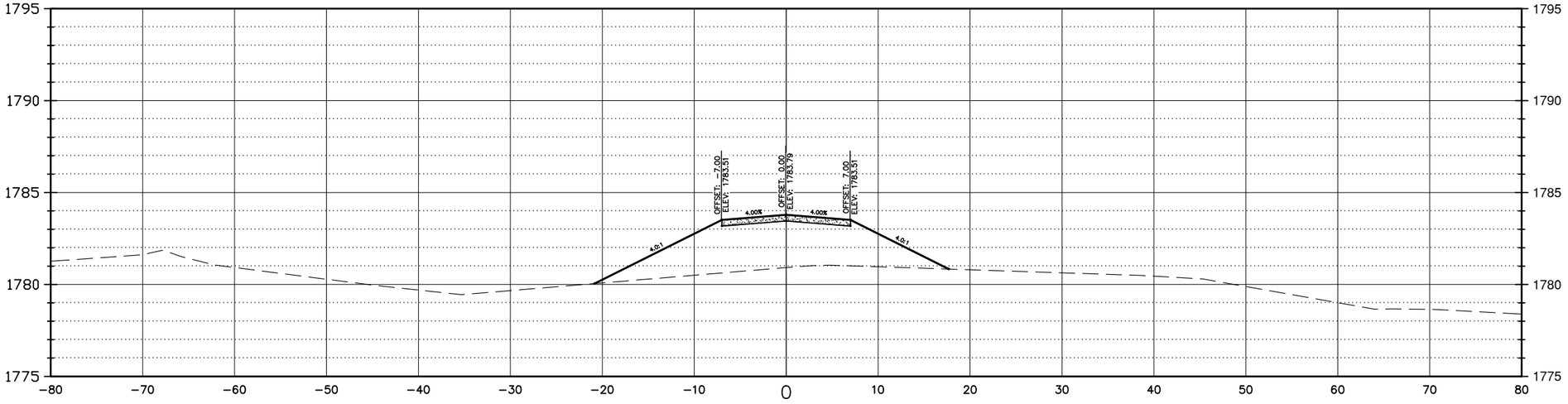
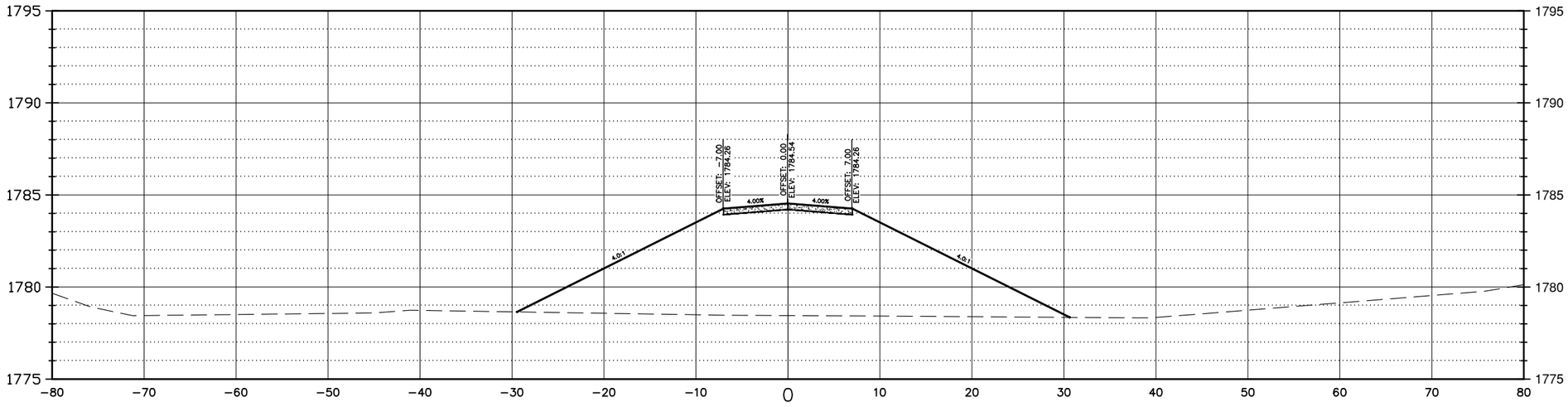
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	50	52

TRAFFIC DIVERSION
STA 4+00.00



TRAFFIC DIVERSION
STA 3+75.00



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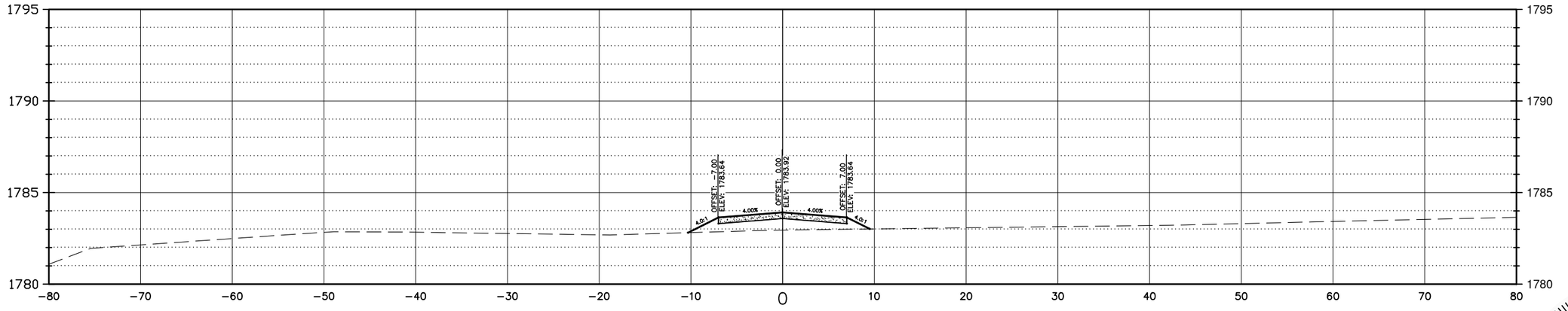
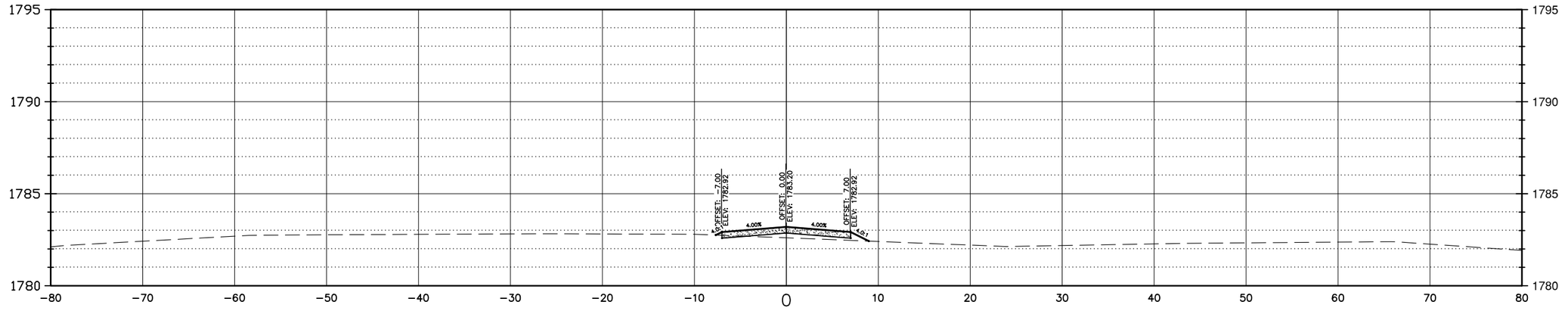
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	51	52

TRAFFIC DIVERSION
STA 5+00.00



TRAFFIC DIVERSION
STA 4+50.00



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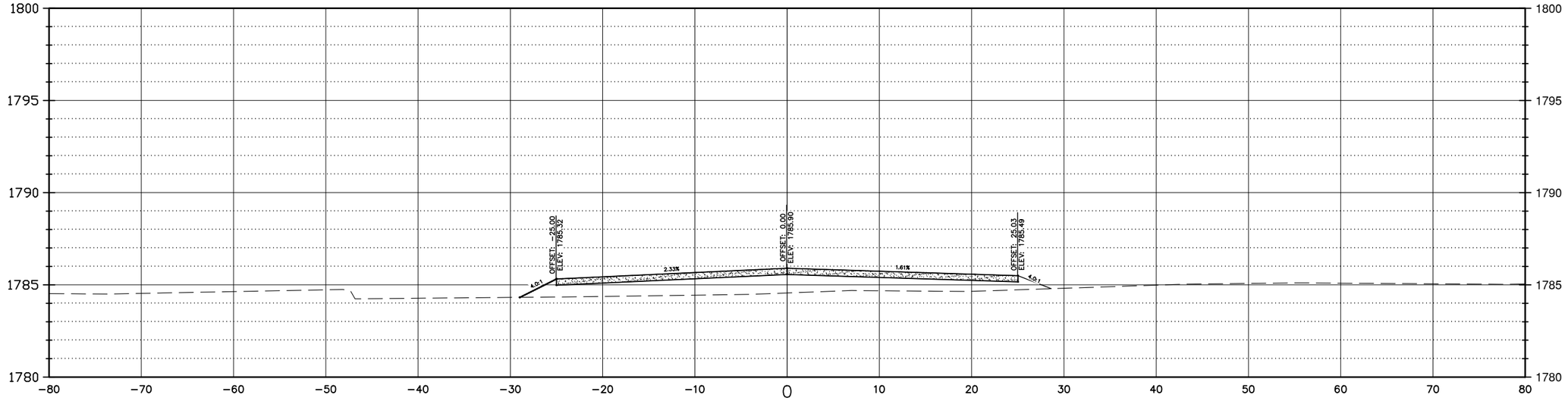
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8030(30)	52	52

TRAFFIC DIVERSION
STA 5+50.00



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