STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	1	34

FOR BIDDING PURPOSES ONLY

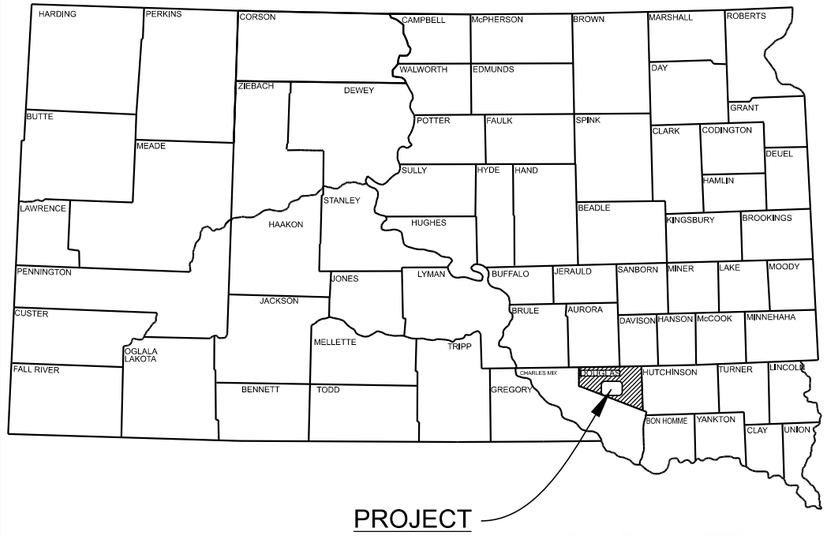
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

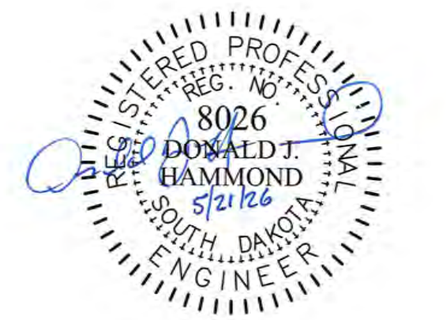
PLANS FOR PROPOSED

PROJECT EM-P 0044(207)290

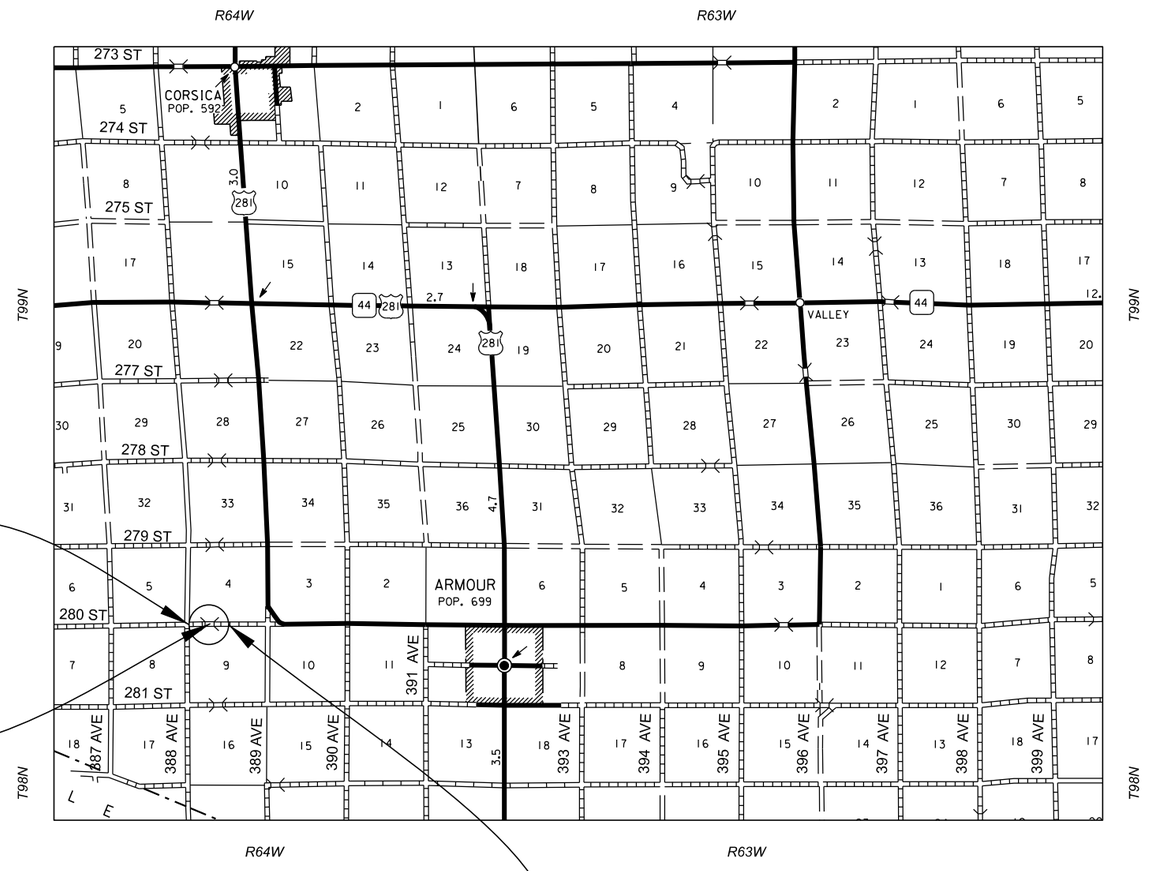
DOUGLAS COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
Str. No. 22-143-120
PCN 0AL0





INDEX OF SHEETS



DESIGN DESIGNATION

ADT (2020)	50
ADT (2040)	70
DHV	11
D	50.0%
T DHV	3.6%
T ADT	8.0%
V	65 mph

STORM WATER PERMIT DATA

Major Receiving Body of Water: Andes Creek
Area Disturbed: 1.07 Acres
Total Project Area: 3.27 Acres
Latitude: 43° 19' 36.2" N
Longitude: -98° 25' 04.0" W

BEGIN PROJECT EM-P 0044(207)290
At Sta. 5+00.00
1024' East of the SW Corner
of Sec. 4 - T98N - R64W

Str. No. 22-143-120

END PROJECT EM-P 0044(207)290
At Sta. 13+00.00
1824' East of the SW Corner
of Sec. 4 - T98N - R64W

Brosz ENGINEERING, INC.

Brosz Project No. 2407063

2

July 29, 2026

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.151	Mile
009E3250	Miscellaneous Staking	0.151	Mile
009E3280	Slope Staking	0.151	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
110E0130	Remove Traffic Sign	4	Each
* 110E0600	Remove Fence	492	Ft
110E1690	Remove Sediment	2.0	CuYd
110E5010	Salvage Delineator	16	Each
110E5020	Salvage Traffic Sign	4	Each
120E0010	Unclassified Excavation	2,770	CuYd
230E0010	Placing Topsoil	430	CuYd
260E3030	Gravel Surfacing, Salvaged	473.0	Ton
270E0110	Salvage and Stockpile Granular Material	473.0	Ton
600E0200	Type II Field Laboratory	1	Each
* 620E0020	Type 2 Right-of-Way Fence	460	Ft
* 620E1020	2 Post Panel	6	Each
632E2510	Type 2 Object Marker Back to Back	4	Each
634E0110	Traffic Control Signs	121.5	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	9	Each
730E0212	Type G Permanent Seed Mixture	59	Lb
731E0200	Fertilizing	1.70	Ton
732E0100	Mulching	6.0	Ton
734E0154	12" Diameter Erosion Control Wattle	905	Ft
734E0602	Low Flow Silt Fence	350	Ft
734E0610	Mucking Silt Fence	25	CuYd
734E0620	Repair Silt Fence	88	Ft

*** - Denotes Non-Participating**

Structure No. 22-143-120

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	143	CuYd
421E0200	Box Culvert Undercut	368	CuYd
460E0120	Class A45 Concrete, Box Culvert	285.2	CuYd
480E0100	Reinforcing Steel	34,608	Lb
700E0210	Class B Riprap	95.8	Ton
831E0110	Type B Drainage Fabric	120	SqYd
831E0300	Reinforcement Fabric (MSE)	535	SqYd

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ENVIRONMENTAL COMMITMENTS

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

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/doing-business/environmental/about-environmental/>

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

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

COMMITMENT A: AQUATIC RESOURCES

COMMITMENT A1: WETLANDS

All efforts to avoid and minimize wetland impacts from the project have resulted in approximately 0.73 acres of wetlands (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted wetlands.

Table of Impacted Wetlands

Wetland No.	Station	Perm. Impact Left (Acres)	Perm. Impact Right (Acres)	Temp. Impact Left (Acres)	Temp. Impact Right (Acres)	Total Impact (Acres)
1	5+00 – 12+00	0.000	0.010	0.488	0.228	0.73

Action Taken/Required:

Mitigation is required in accordance with the "*Statewide Finding Regarding Wetlands for South Dakota Federal-Aid Highway Projects (February 2018)*". Replacement of 0.01 acres of permanent wetland impacts will be completed through another wetland mitigation opportunity in a manner which considers FHWA's program-wide goal of 'net gain' of wetlands through enhancement, creation, and preservation.

Temporary impacts identified in the Table of Impacted Wetlands will not be mitigated as original contours and elevations will be re-established as designated in the plans. Prior to initiating temporary work in wetlands, the Contractor will submit a plan to the Project Engineer in accordance with Section 7.18 of the Specifications.

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

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.21 acres of stream (includes temporary and permanent) becoming impacted. Refer the plans for location and boundaries of the impacted streams.

Table of Impacted Streams

Stream Name	Station	Perm. Impact Left (Acres)	Perm. Impact Right (Acres)	Temp. Impact Left (Acres)	Temp. Impact Right (Acres)	Total Impact (Acres)
Andes Creek	5+00 – 10+50	0.03	0.03	0.10	0.05	0.21

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 as designated in the plans.

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.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA

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.

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

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.

COMMITMENT E: STORM WATER (Cont.)

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

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

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

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

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

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

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

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

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

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

SHPO/THPO 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
5+00 – 10+50	Andes Creek	1505.6’

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.

COMMITMENT J: CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN WATERWAYS OF THE U.S. (Cont.)

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.

DOUGLAS COUNTY REQUIREMENTS

The county will be responsible for the following items without Bridge Improvement Grant participation.

1) Right of way and temporary and permanent easements
2) Coordination of any utility adjustments
3) Furnish and install final surfacing
4) Remove silt fence in permanently seeded areas
5) Wetland Mitigation

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 8.7 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.

TYPE II FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router’s technical data to the Area Office to check for compatibility with the state’s computer equipment. The internet connection is intended for state personnel usage only. The Contractor’s personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items will be incidental to the contract unit price per each for “Type II Field Laboratory”.

CLEARING

All trees and brush will be removed from the right-of-way and permanent easement. Before clearing activities begin, the Contractor will contact the Engineer to determine the limits of clearing. For informational purposes only, it is estimated that 19 trees greater than 6” in diameter will be removed. All other trees, including those located within the temporary easements will not be disturbed.

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.

SD 1 Call: 1-800-781-7474

The County Highway Superintendent is Brad Ellwanger: 605-724-2707

Randall Community Water District
445 E. Main Street
Lake Andes, SD, 57356
605-487-7823

Douglas Electric Cooperative
27913 US Highway 281
Armour, SD 57313
605-724-2323

Golden West Telecommunications
525 E. 4th Street
Dell Rapids, SD 57022
605-428-1125

UTILITY POLES

There are overhead powerlines on the north side of the road. It is not anticipated that construction activities will impact these poles. If the contractor deems that these poles need to be relocated, the cost will be paid for by the contractor. The contractor will not remove more than 1 ft of dirt from around the utility poles.

SHRINKAGE FACTOR: Embankment +35%

UNCLASSIFIED EXCAVATION

All excavation that must be performed to construct the new grade in conformance with the cross sections and plan details will be included in the contract unit price per cubic yards for “Unclassified Excavation”. The plans quantity for “Unclassified Excavation” as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	139
Topsoil	430
Exc. for RCBC Installation	1951
Salvage and Stockpile Granular Material	250
Total	2770

SALVAGE AND STOCKPILE GRANULAR MATERIAL

The existing gravel surfacing for the length of the project will be salvaged and stockpiled as directed by the Engineer.

The stockpile site will be within the project limits.

The Contractor will ensure no vegetation, topsoil, subgrade, or other foreign material is incorporated into the salvaged gravel surfacing.

The salvaged gravel, estimated at approximately 250 cubic yards, is based on a depth of 4 inches.

This work will be incidental to the contract unit price per ton for “Salvage and Stockpile Granular Material”.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA

GRAVEL SURFACING, SALVAGED

"Gravel Surfacing, Salvaged" will be obtained from the Salvaged and Stockpiled Granular Material and may be used without further testing. The salvaged gravel surfacing will be placed on the finished subgrade by the Contractor.

The County will be responsible for additional final surfacing to bring the total depth of gravel surfacing to 6 inches. The County will be responsible for the proper and timely placement of gravel surfacing on the completed placed salvage gravel. Subgrade damage caused by either improper or delayed gravel surfacing placement by the County will be the responsibility of the County.

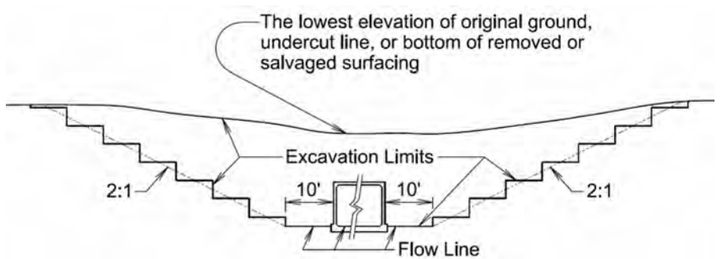
EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 1951 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

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION (Cont.)



SALVAGE TRAFFIC SIGNS AND DELINEATORS

All signs listed for salvage in the Table of Salvage Traffic Sign and Delineator will have the existing posts, bases, and signs dismantled and stockpiled on-site. The Contractor will coordinate with the County for pickup by Douglas County Highway Department. All bolts, nuts, and washers will be placed in individual 5-gallon pails. Wooden posts will be stockpiled separately from steel posts. All signs listed for salvage will be handled with care so that the signs are not damaged during removal. The Contractor will replace and pay for any salvaged signs damaged in their care.

All costs for labor and equipment necessary to remove and dismantle the signs and delineators will be incidental to the contract unit price per each for Salvage Traffic Sign and Salvage Delineator. The quantity of signs and delineators to be salvaged is shown in the Table of Salvage Traffic Sign and Delineator. The plans quantity is shown as per assembly. Payment for salvaging signs and delineators will be paid per assembly at the contract unit price per each for "Salvage Traffic Sign" and "Salvage Delineator."

TABLE OF SALVAGE TRAFFIC SIGN AND DELINEATOR

Station	L/R	Remarks
0.3 Miles W. of Structure	R	Remove & Salvage Weight Limit Sign
7+65 to 12+27	L&R	Remove & Salvage 16 Delineators
7+66	R	Remove & Salvage Weight Limit Sign
12+28	L	Remove & Salvage Weight Limit Sign
0.7 Miles E. of Structure	L	Remove & Salvage Weight Limit Sign

REMOVE TRAFFIC SIGNS

Existing signs that are shown as being removed in the Table of Remove Traffic Signs will become the property of the Contractor. Existing signposts and bases will be removed in their entirety. All existing signs, posts, and/or hardware removed will not be reused. Holes remaining from the removal of wood posts will be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes will be incidental to the contract unit price per each for "Remove Traffic Sign". Quantities will be per assembly at the contract unit price per each.

TABLE OF REMOVE TRAFFIC SIGNS

Station	L/R	Remarks	Quantity
9+75 to 10+25	L&R	Type 3 Object Marker	4
		Total:	4

GENERAL TRAFFIC CONTROL

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.

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)
5+00		13+00	430
		Total:	430

MYCORRHIZAL INOCULUM

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

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

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

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P_2O_5) available phosphate, a minimum of 4% (K_2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The

fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The Fertilizer 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

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PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

Lawn and turf seed, such as the Type D Permanent Seed Mixture, will be tested within 12 months prior to planting, exclusive of the calendar month in which the test was completed.

Type G Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
	Total:	26

MULCHING (GRASS HAY OR STRAW)

An additional 2 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction for temporary stabilization.

EROSION CONTROL WATTLE

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

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles will remain on the project to decompose.

An additional quantity of 12” Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in ditch channels and around stockpiles.

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

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

TABLE OF EROSION CONTROL WATTLE

Station	Location	Diameter (Inch)	Quantity (Ft)
6+00 to 9+25 R	Toe of Fill Slope	12	325
8+00 to 9+25 L	Toe of Fill Slope	12	125
9+25 L & R	Ditch Bottom	12	40
9+70 L & R	Ditch Bottom	12	40
10+30 R	Ditch Bottom	12	40
10+35 L	Ditch Bottom	12	40
10+45 to 11+00 L	Toe of Fill Slope	12	55
10+50 L & R	Ditch Bottom	12	40
10+75 to 11+75 R	Toe of Fill Slope	12	100
	Additional Quantity:	12	100
		Total:	905

REMOVE SEDIMENT

This work will consist of removing sediment collected by the temporary erosion and sediment control devices after a rainfall event.

Any sediment collected on the upstream side of the sediment control device that would render the sediment control device ineffective will be removed by the Contractor and blended back into the cut or fill of the graded area.

The Contractor and Engineer will inspect and maintain the sediment control devices once every week and within 24 hours after every rainfall event greater than 1/2”.

All costs for removing and disposing of sediment collected by the sediment control device will be incidental to the contract unit price per cubic yard for “Remove Sediment”.

CONSTRUCTION STAKING

The control points are shown on the Typical Section and Control Data Sheet

TABLE OF CONSTRUCTION STAKING
(See Special Provision for Contractor 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)
280th Street (2 Lanes Gravel Road)	5+00	13+00	2	800	0.151	1	1	0.151	0.151	0.151	
Structure No. 22-143-120 (CIP RCBC)	9+74.54	10+25.46									1
							Totals:	0.151	0.151	0.151	1

* 1 = Blue Top Stakes Only (Subgrade for Gravel Surface)

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

LOW FLOW SILT FENCE

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

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

Low 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 734.04 for details.

The quantity of Low Flow Silt Fence in the Estimate of Quantities is for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
10+50 to 11+50	L	Storage Pile Perimeter	250
		Additional Quantity:	100
		Total:	350

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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	8	34

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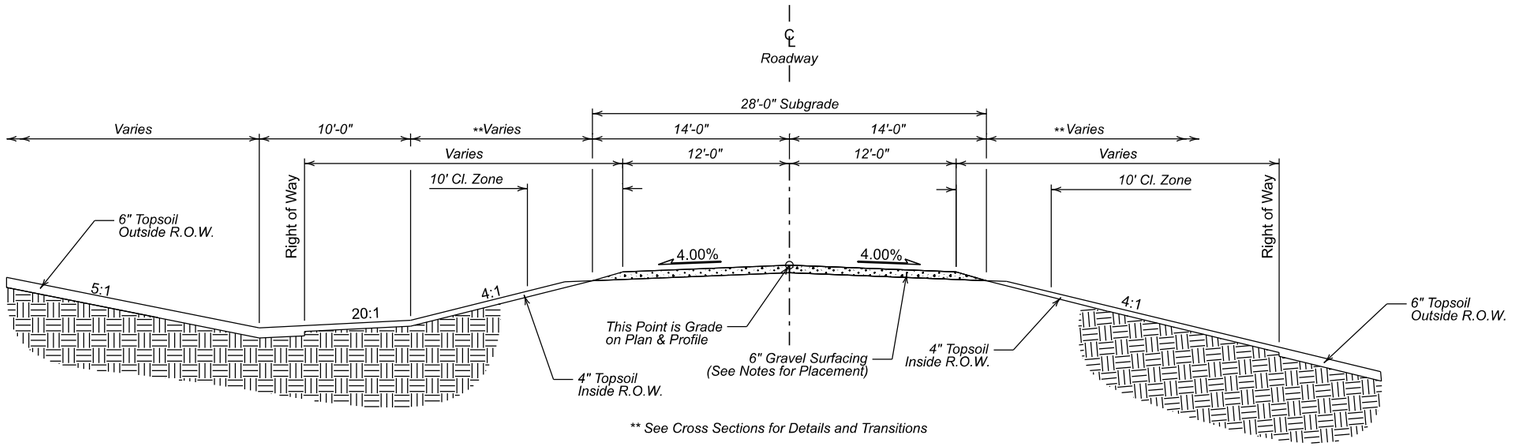
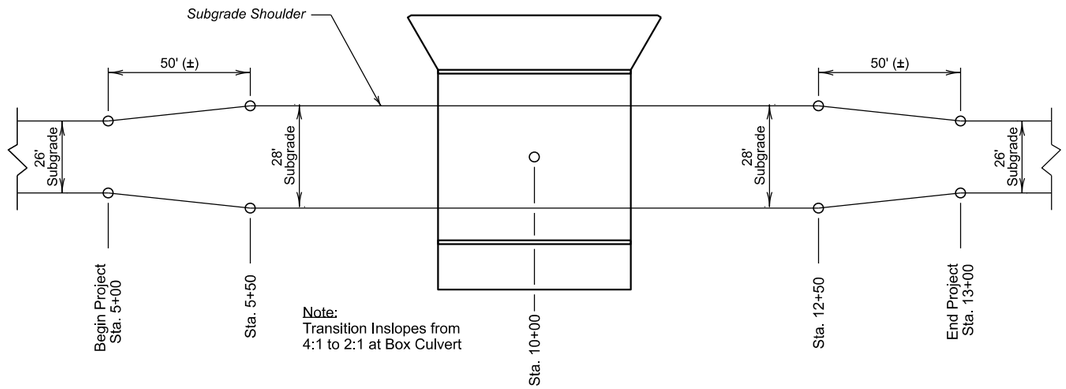
TYPICAL SECTION



** See Cross Sections for Details and Transitions

TYPICAL SECTION
Sta. 5+00 to Sta. 13+00

NOTES:
Sta. 5+00 to Sta. 5+50 transition existing subgrade and surfacing to match proposed section.
Sta. 9+75 to Sta. 10+25 transition roadway in-slope around structure.
Sta. 12+50 to Sta. 13+00 transition existing subgrade and surfacing to match proposed section.



TYPICAL ROADWAY TRANSITION DETAIL
(Not to Scale)

CONTROL DATA						
Point	Station	Offset	Northing	Easting	Elevation	Desc.
CP1	8+00.14	29.48' Lt.	367973.507	2477945.666	1511.09	Rebar
CP2	13+10.79	18.95' Rt.	367932.038	2478456.932	1511.22	Rebar

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. South Zone (NAD 83) SF = 0.999889

HORIZONTAL ALIGNMENT				
Element	Station	Northing	Easting	Tangent Direction
POB	3+00.00	367937.09	2477445.98	
				N 89°12'14" E
PI	9+50.00	367946.12	2478095.92	
				N 89°13'36" E
POE	14+00.00	367952.19	2478545.88	

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TRAFFIC CONTROL DETAILS

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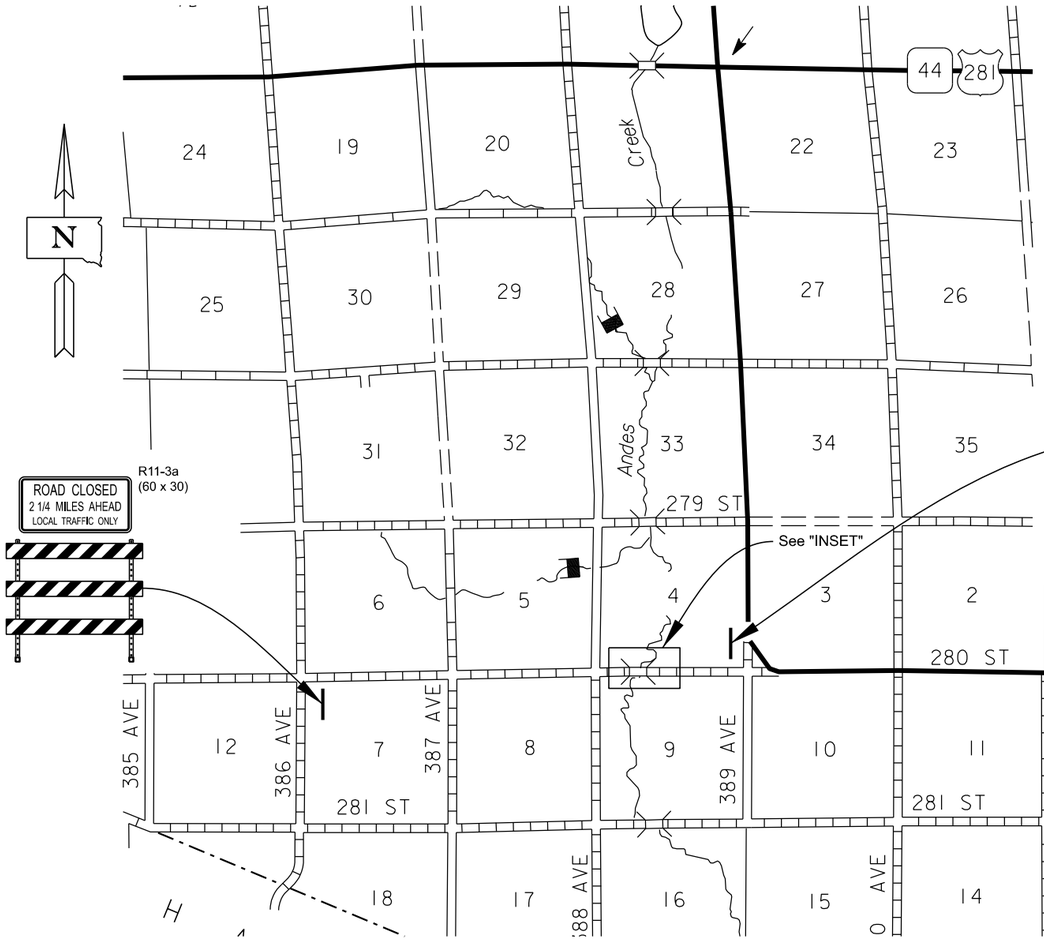
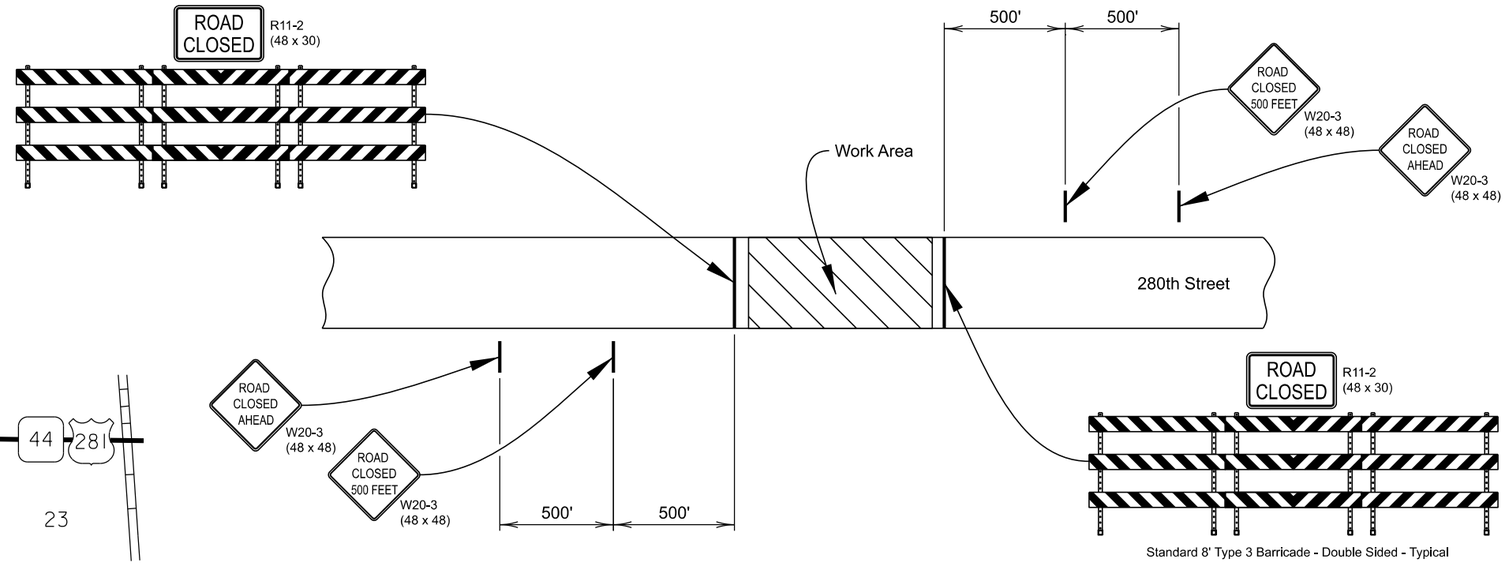
5/21/26



AREA MAP



Standard 8' Type 3 Barricade - Double Sided - Typical

INSET

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
R11-3a	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY	3	60" x 30"	12.5	37.5
W20-3	ROAD CLOSED AHEAD	4	48" x 48"	16.0	64.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			121.5

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	10	34

EASEMENTS

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N

Scale: 1"= 60'

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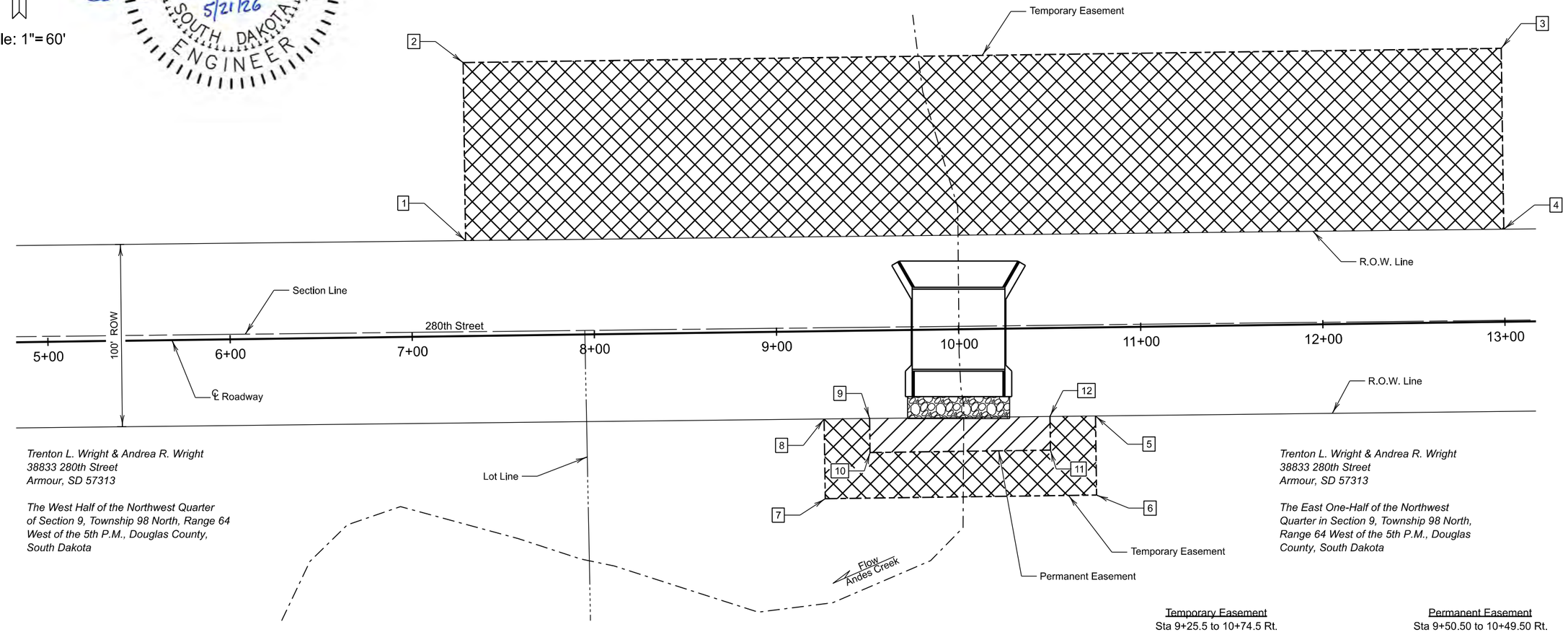
SOUTH DAKOTA

Lelan J. Vanderwerff & Carol J. Vanderwerff
38737 280th Street
Armour, SD 57313

The SW 1/4 of Section (4) Township (98) North, Range (64) West of the 5th P.M.

Temporary Easement
Sta 7+30.00 to 13+00.00 Lt.
SW 1/4 Sec 4 T98N R64W
Containing 1.29 Acres, More or Less
Lelan Vanderwerff & Carol Vanderwerff



Trenton L. Wright & Andrea R. Wright
38833 280th Street
Armour, SD 57313

The West Half of the Northwest Quarter of Section 9, Township 98 North, Range 64 West of the 5th P.M., Douglas County, South Dakota

Trenton L. Wright & Andrea R. Wright
38833 280th Street
Armour, SD 57313

The East One-Half of the Northwest Quarter in Section 9, Township 98 North, Range 64 West of the 5th P.M., Douglas County, South Dakota

Temporary Easement
Sta 9+25.5 to 10+74.5 Rt.
E 1/2 NW 1/4 Sec 9 T98N R64W
Containing 0.11 Acres, More or Less
Trenton Wright & Andrea Wright

Permanent Easement
Sta 9+50.50 to 10+49.50 Rt.
E 1/2 NW 1/4 Sec 9 T98N R64W
Containing 0.04 Acres, More or Less
Trenton Wright & Andrea Wright

TEMPORARY EASEMENT

1	7+30.00	52.27	367995.37	2477875.21
2	7+30.00	150.00	368093.04	2477873.86
3	13+00.00	150.00	368100.83	2478443.86
4	13+00.00	50.78	368001.67	2478445.20
5	10+74.50	48.61	367898.71	2478075.38
6	10+74.50	92.00	367855.80	2478221.65
7	9+25.50	92.00	367853.78	2478072.70
8	9+25.50	48.23	367897.55	2478072.09

PERMANENT EASEMENT

9	9+50.50	48.30	367897.82	2478097.07
10	9+50.50	67.00	367879.13	2478097.33
11	10+49.50	67.00	367880.46	2478196.31
12	10+49.50	48.55	367898.92	2478196.06

LEGEND

Temporary Easement	
Permanent Easement	

NOTE:
Coordinates shown on this sheet are based on the South Dakota Plane Coordinate System, South Zone (NAD83)

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	11	34

EROSION AND SEDIMENT CONTROL DETAILS

FOR BIDDING PURPOSES ONLY

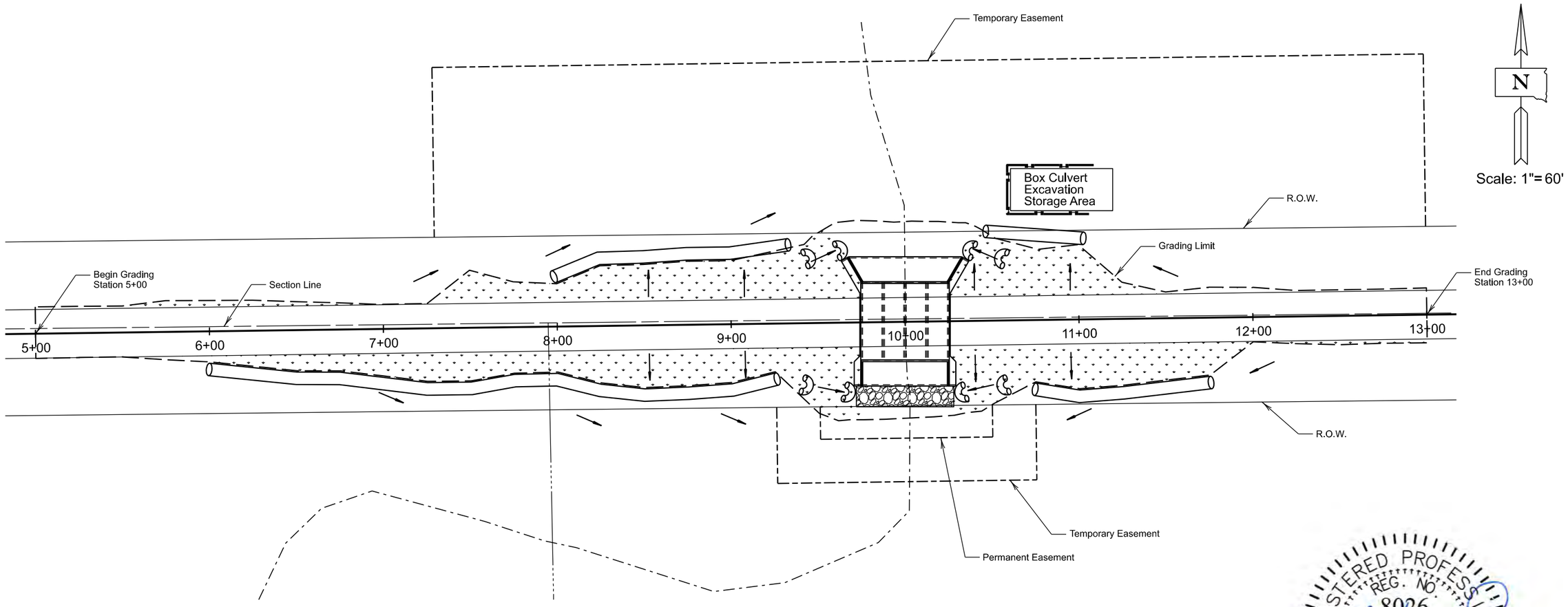


Table of Erosion Control Wattles

Station	L/R	Dia (In.)	Location	Quantity (Ft.)
6+00 to 9+25	R	12	Toe of Fill Slope	325
8+00 to 9+25	L	12	Toe of Fill Slope	125
9+25	L & R	12	Ditch Bottom	40
9+70	L & R	12	Ditch Bottom	40
10+30	R	12	Ditch Bottom	40
10+35	L	12	Ditch Bottom	40
10+45 to 11+00	L	12	Toe of Fill Slope	55
10+50	L & R	12	Ditch Bottom	40
10+75 to 11+75	R	12	Toe of Fill Slope	100
			Engineer's Discretion:	100
			Total:	905

Table of Low Flow Silt Fence

Station to Station	L/R	Location	Quantity (Ft.)
10+50 to 11+50	L	Storage Pile Perimeter	250
		Additional Quantity:	100
		Total:	350

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LEGEND:

- Low Flow Silt Fence
- 12" Dia. Erosion Control Wattle (Ditch)
- 12" Dia. Erosion Control Wattle (Toe of Slope)
- Type G Permanent Seed Mixture*
- Riprap and Drainage Fabric
- Flow Arrow

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

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

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

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

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
  - ☒ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☒ Filling
  - ☐ Other (describe):
- **5.3 (3b): Total Project Area** 3.27 Acres
- **5.3 (3b): Total Area to be Disturbed** 1.07 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 1.07 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 70%
- **5.3 (3d): Description of Vegetative Cover** Grass and Trees/Brush
- **5.3 (3e): Soil Properties:** USDA-NRCS Soil Series Classification Highmore-Walke Silt Loams
- **5.3 (3f): Name of Receiving Water Body/Bodies** Andes Creek
- **5.3 (3g): Location of Construction Support Activity Areas** On-Site

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Remove existing structure.	
Install RCBC and rough grade roadway.	
Install riprap.	
Final grading.	
Replace topsoil.	
Reseed areas disturbed by removal activities.	
Removal of protection devices.	

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 SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

PLAN AND PROFILE

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	16	34

Sta. 9+80.6 to 10+23.9
Remove 43'-4" Two Span
Steel Beam Bridge
(Incidental Work, Structure)

Sta. 9+75 to 10+25 - L & R
Remove 4 Object Markers
(Remove Traffic Sign)

Remove Fence at the
Following Locations:
8+08 to 13+00 Lt.
(Remove Fence)

8+40 to 12+00 Rt.
8+00 to 10+00 Lt.
Remove all trees and brush located
within ROW and permanent easement
(Clearing)

Salvage Traffic Signs and Delineators at the Following Locations:

Station/Location	L/R	Remarks
0.3 Mi. W. of Structure	R	Load Posting Sign
7+65 to 12+27	L&R	16 Delineators
7+66	R	Load Posting Sign
12+28	L	Load Posting Sign
0.7 Mi. E. of Structure	L	Load Posting Sign

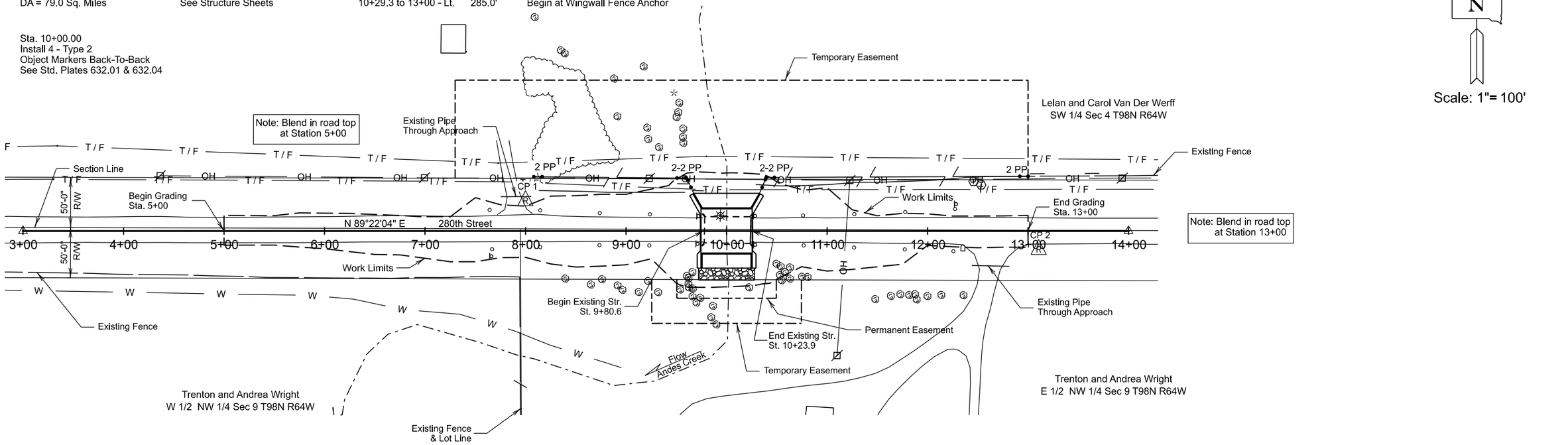
Sta. 10+00.00
Install 4 - 12'x8' Reinforced C.I.P.
Concrete Box Culvert
DA = 79.0 Sq. Miles

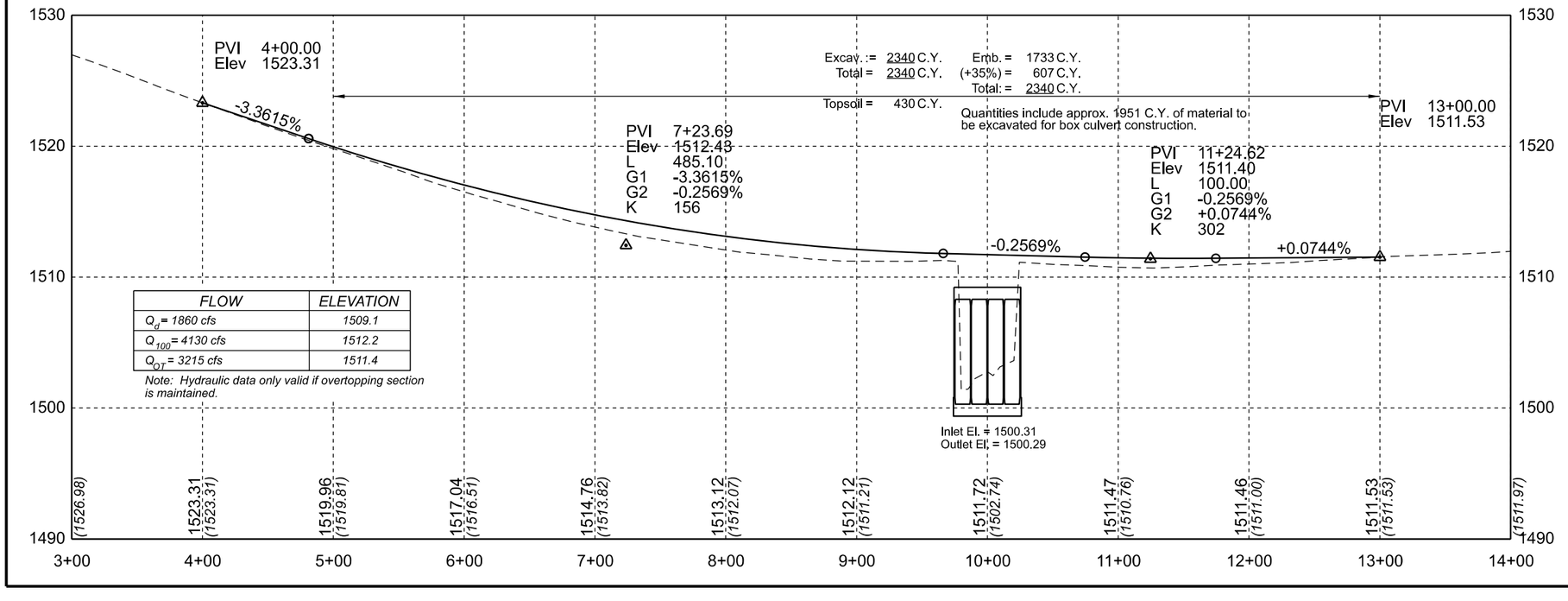
10+00.00 - ℄
Install Class B Riprap &
Type B Drainage Fabric
See Structure Sheets

Install Type 2 Right-of-Way Fence at the following locations:

Station	Length	Remarks
8+08 to 9+70.5 - Lt.	175.0'	End at Wingwall Fence Anchor
10+29.3 to 13+00 - Lt.	285.0'	Begin at Wingwall Fence Anchor

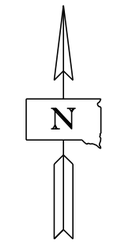
Sta. 10+00.00
Install 4 - Type 2
Object Markers Back-To-Back
See Std. Plates 632.01 & 632.04





FLOW	ELEVATION
Q_d = 1860 cfs	1509.1
Q_{100} = 4130 cfs	1512.2
Q_{OT} = 3215 cfs	1511.4

Note: Hydraulic data only valid if overtopping section is maintained.

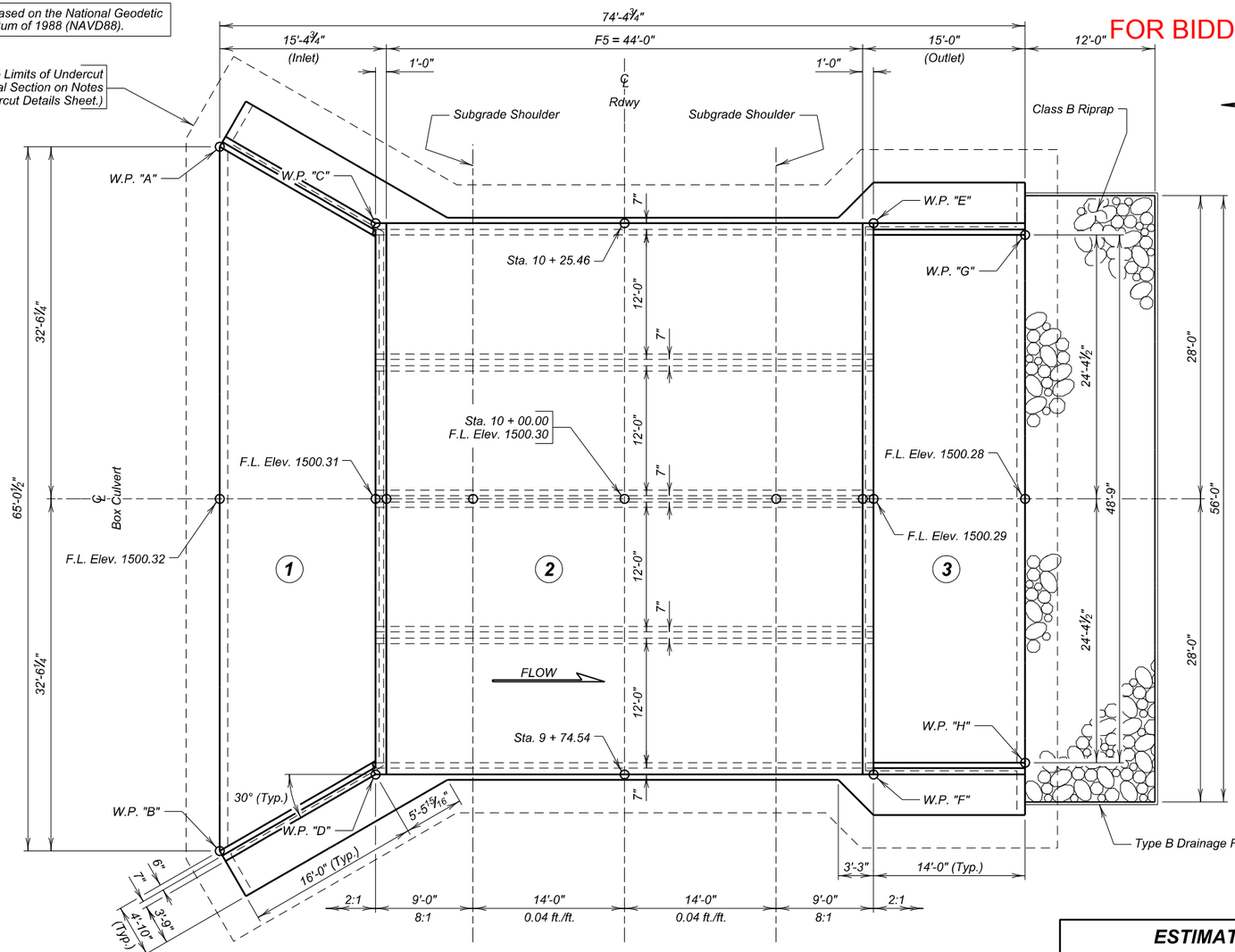


Scale: 1"= 100'

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

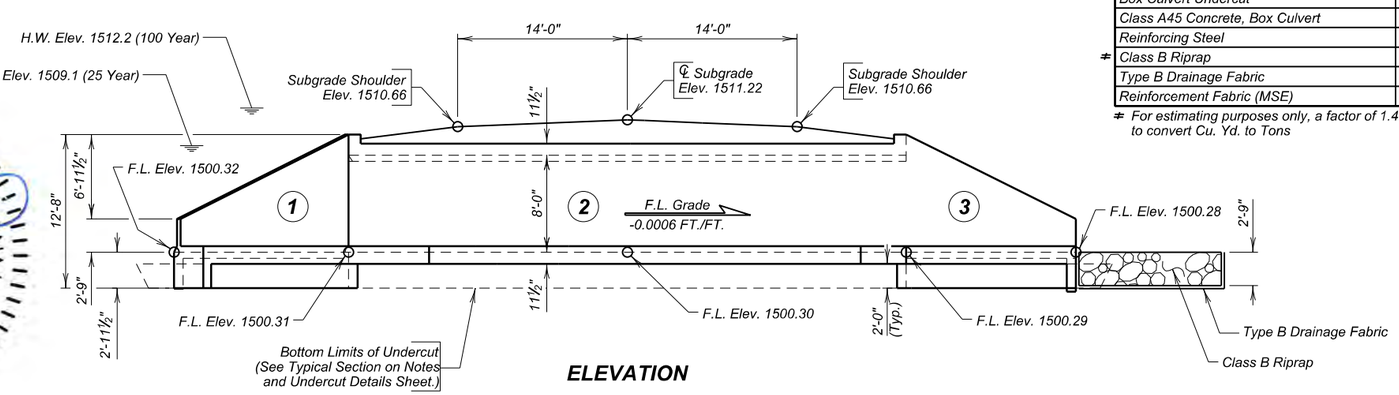
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	17	34



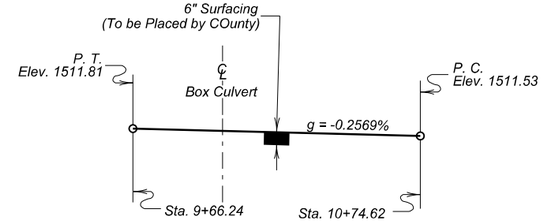
PLAN

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



ELEVATION

-X028-
INDEX OF CULVERT SHEETS



GRADELINE DATA

TABLE OF WORKING POINTS

W.P.	STATION	OFFSET
"A"	10 + 32.52	37.40' L
"B"	9 + 67.48	37.40' L
"C"	10 + 25.46	23.00' L
"D"	9 + 74.54	23.00' L
"E"	10 + 25.46	23.00' R
"F"	9 + 74.54	23.00' R
"G"	10 + 24.38	37.00' R
"H"	9 + 75.62	37.00' R

HYDRAULIC DATA

Q_d	1860 cfs
A_d	405 sq ft
V_d	4.6 fps
Q_F	1860 cfs
Q_{100}	4130 cfs
Q_{OT}	3215 cfs
V_{Max}	10.2 fps

Q_d = Design discharge for the proposed culvert based on 25 year frequency. El. 1509.1.

Q_{OT} = Overtopping discharge and frequency 64.3 year recurrence interval. El. 1511.4 at Station 10+50.

Q_F = Designated peak discharge for the basin approaching proposed project based on 25 year frequency.

Q_{100} = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 1512.2.

V_{Max} = Maximum computed outlet velocity for the proposed culvert based on 64.3 year frequency.

Note: 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 the site to determine its effect on public safety.

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
	Incidental Work, Structure	Lump Sum	LS
	Structure Excavation, Box Culvert	143	CuYd
	Box Culvert Undercut	368	CuYd
	Class A45 Concrete, Box Culvert	285.2	CuYd
	Reinforcing Steel	34608	Lb
≠	Class B Riprap	95.8	Ton
	Type B Drainage Fabric	120	SqYd
	Reinforcement Fabric (MSE)	535	SqYd

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
5/21/26

GENERAL DRAWING AND QUANTITIES

FOR

4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION

- X028 - MAY 2026 (1) OF (9)

Plans By:
Brosz Engineering, Inc.
Consulting Engineers

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	18	34

FOR BIDDING PURPOSES ONLY

SPECIFICATIONS

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

INCIDENTAL WORK, STRUCTURE

1. The in-place structure is a 43'-4" two span steel beam bridge with concrete deck and galvanized w-beam bridge guardrail on steel posts. The abutments and bent consists of reinforced concrete. The Contractor will remove the in-place structure. The bent and abutments will be removed 1' below the bottom of the undercut. All items will be properly disposed of by the Contractor.
2. The foregoing is a general description of the in-place structure and should not be considered complete in all details. Before preparing a bid, it is the Contractor's responsibility to make a visual inspection of the structure to verify the extent of work and materials involved.
3. All costs associated with the aforementioned work will be incidental to the contract lump sum price for "Incidental work, Structure".

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 includes 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 3/4-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. Cost of Preformed Expansion Joint Filler used in apron construction will be incidental to the other contract items.
13. Soils below the bottom of the proposed RCBC consist predominantly of soft gray clay silt with sand.
14. Groundwater was encountered in the borings at an elevation of 1502.8 feet during the subsurface investigation conducted in July 2024. Dewatering will be required during construction.
15. Compaction of earth embankment and box culvert backfill material will be governed by the Ordinary Compaction method.

REINFORCEMENT FABRIC (MSE)

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

GEOTEXTILE SPECIFICATION

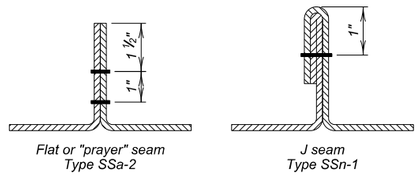
1. Reinforcement Fabric (MSE) will conform to Section 831. The Reinforcement Fabric (MSE) provided will be on the Approved Products List or will be certified by the supplier to meet this specification prior to installation.
2. Reinforcement Fabric (MSE) will be paid for at the contract unit price per 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 INSTALLATIONPROCEDURE

1. Place the Reinforcement Fabric (MSE) on as level and smooth of a 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

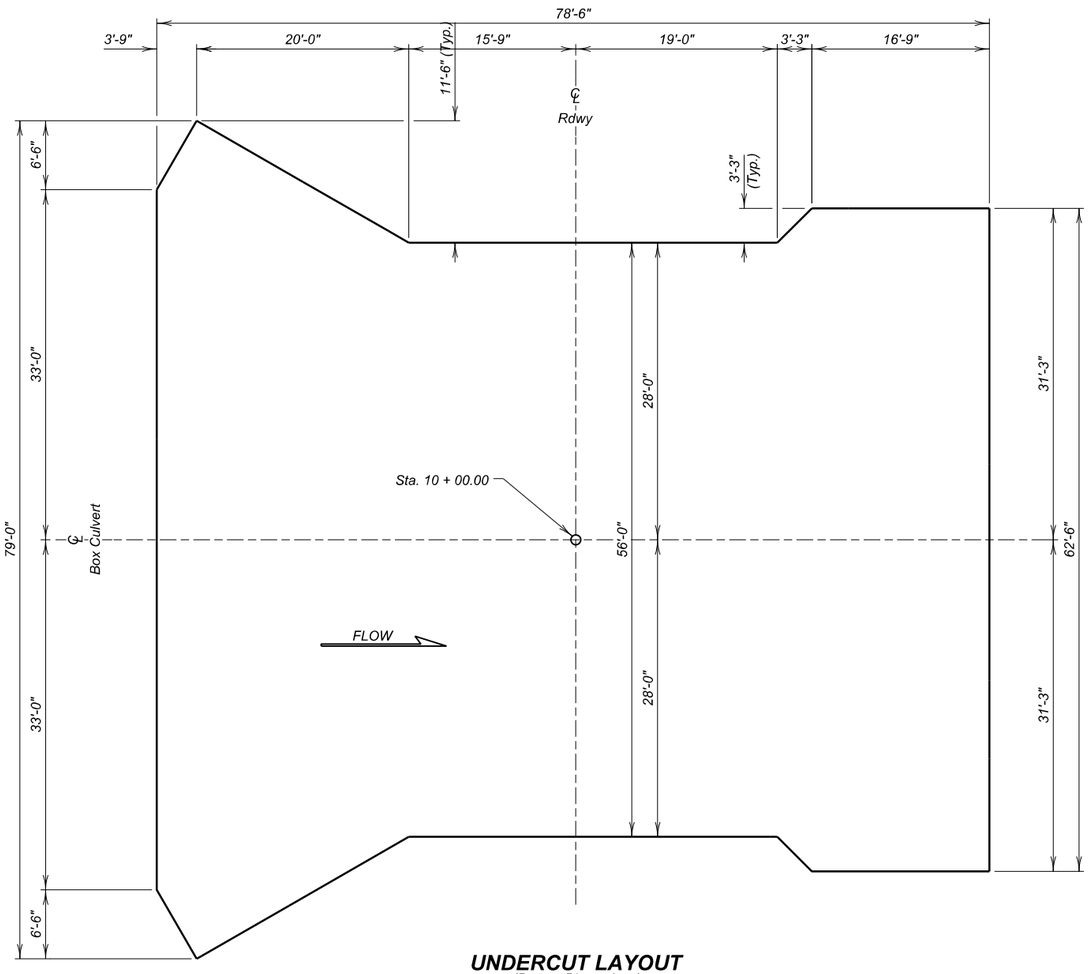
1. The sewn seams will consist of two parallel rows of stitching ("prayer" seam, Type SSa-2), or a J-seam (Type SSn-1), using a single row of stitching. The stitching will be a lock type stitch.
2. If the Type SSa-2 seam is used, the two rows of stitching will be 1" apart with a tolerance of plus or 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".
3. If the J seam (Type SSn-1) is used, the minimum seam allowance will be 1".
4. 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.
5. The thread used will be high-strength polypropylene, polyester, or Kevlar thread. Nylon threads will not be allowed.



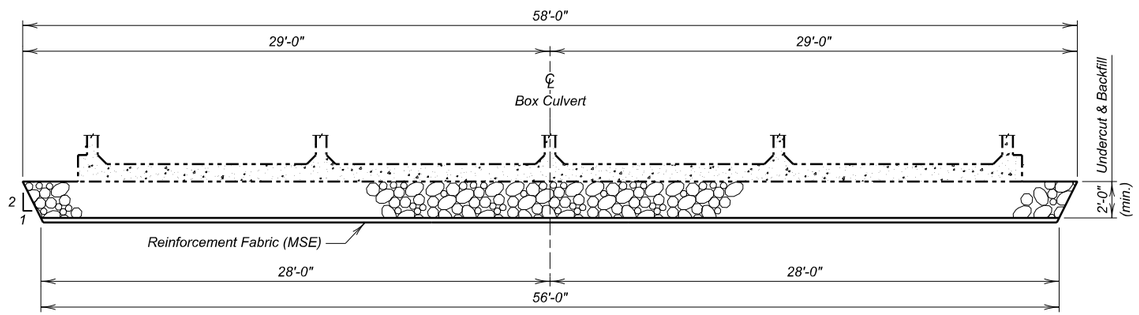
Flat or "prayer" seam
Type SSa-2

J seam
Type SSn-1

GEOTEXTILE SEAM TYPES



UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
⌀ Box Culvert Undercut	Cu. Yd.	368
Reinforcement Fabric (MSE)	Sq. Yd.	535

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

NOTES AND UNDERCUT DETAILS
FOR
4 - 12' X 8' BOX CULVERT

ANDES CREEK
STA 10+00.00
STR. NO. 22-143-120
PCN 0AL0

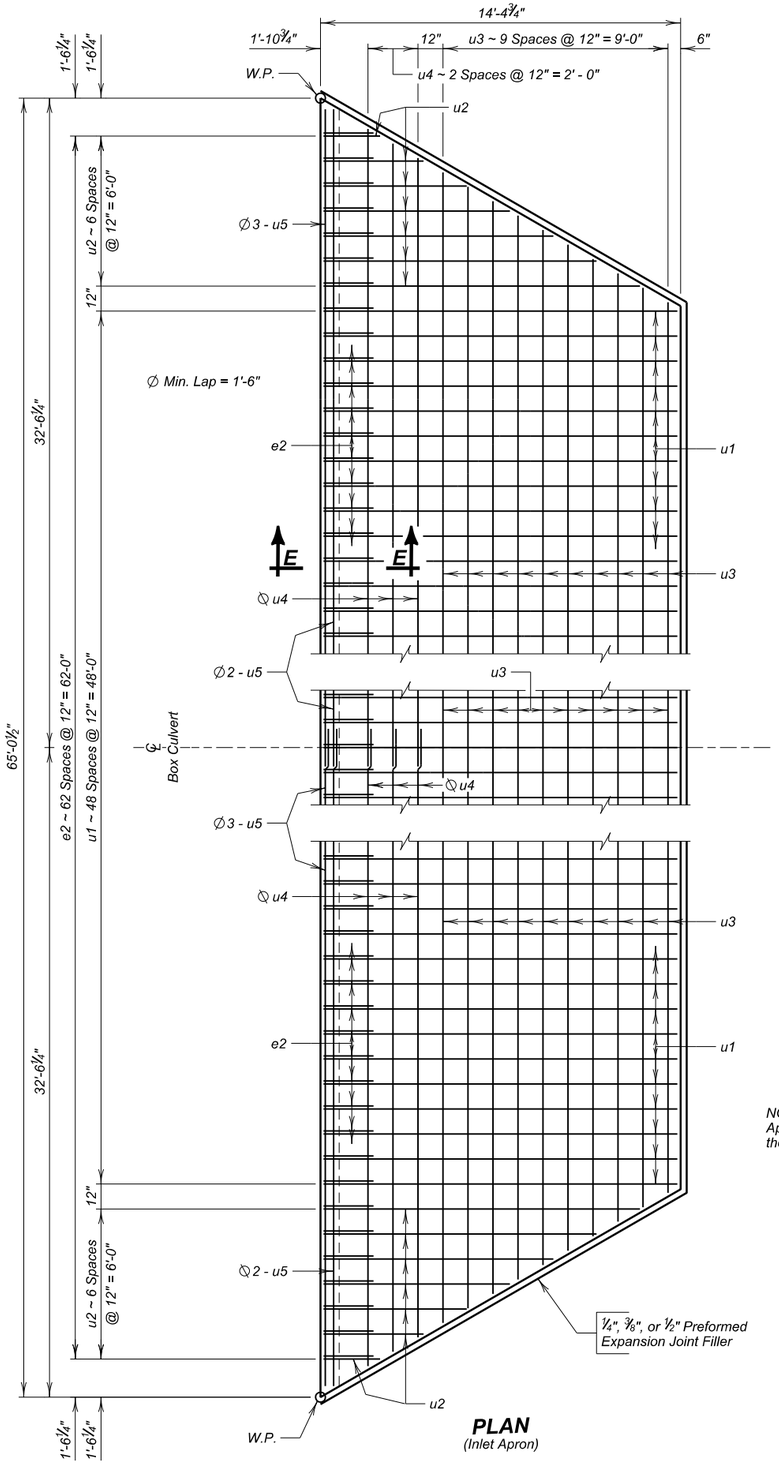
0° SKEW
SEC. 4/9, T98N, R64W
EM-P 0044(207)290
HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

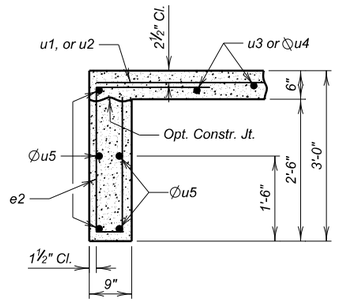
DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

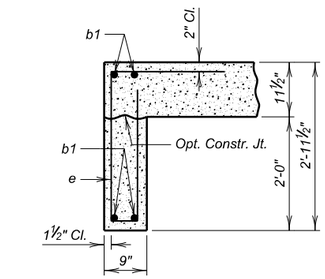
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	19	34



PLAN
(Inlet Apron)

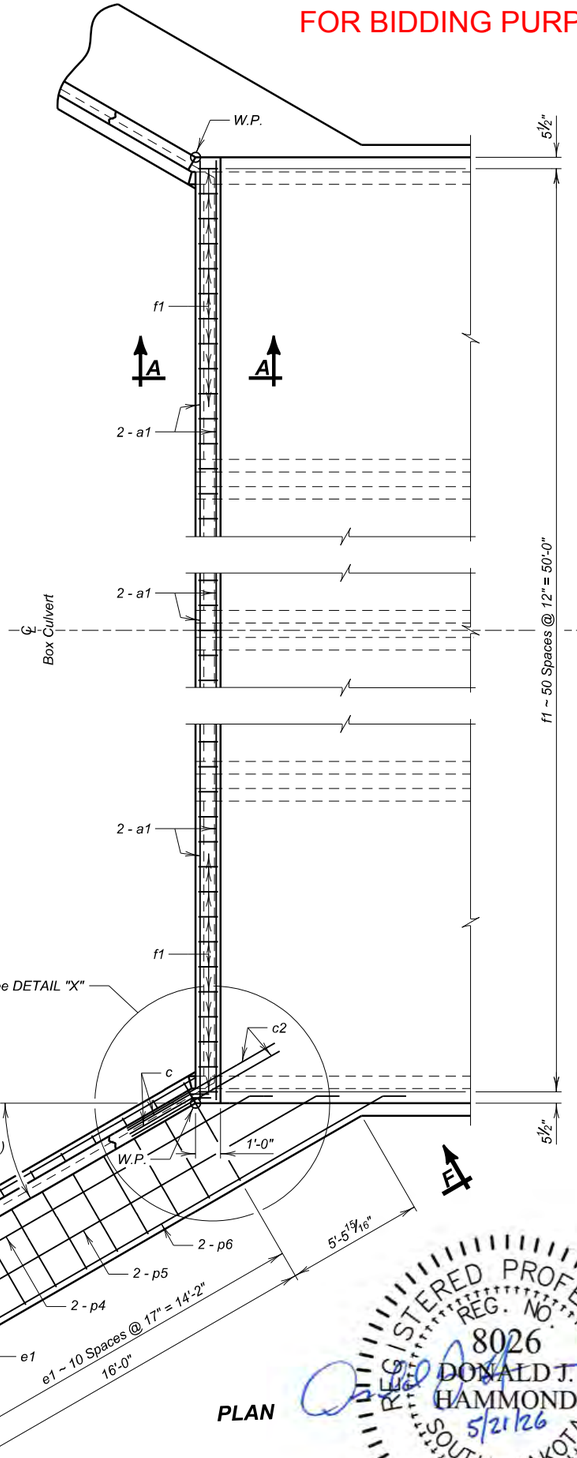


SECTION E - E

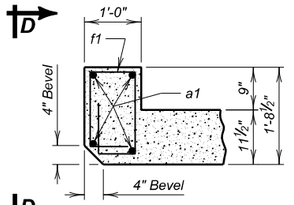


SECTION B - B

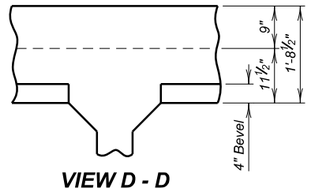
NOTE:
Apron will NOT be built monolithic with the Box Culvert.



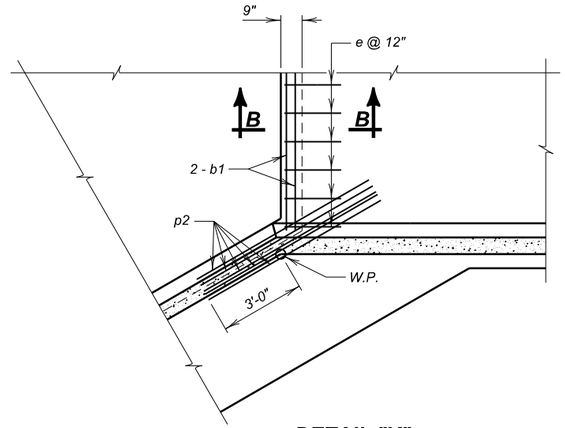
PLAN



SECTION A - A
(At Top Slab)



VIEW D - D
(At Interior Wall)



DETAIL "X"
(At Bottom Slab)

INLET DETAILS (A)
FOR
4 - 12' X 8' BOX CULVERT

ANDES CREEK
STA 10+00.00
STR. NO. 22-143-120
PCN 0AL0

0° SKEW
SEC. 4/9, T98N, R64W
EM-P 0044(207)290
HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

3 OF 9

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

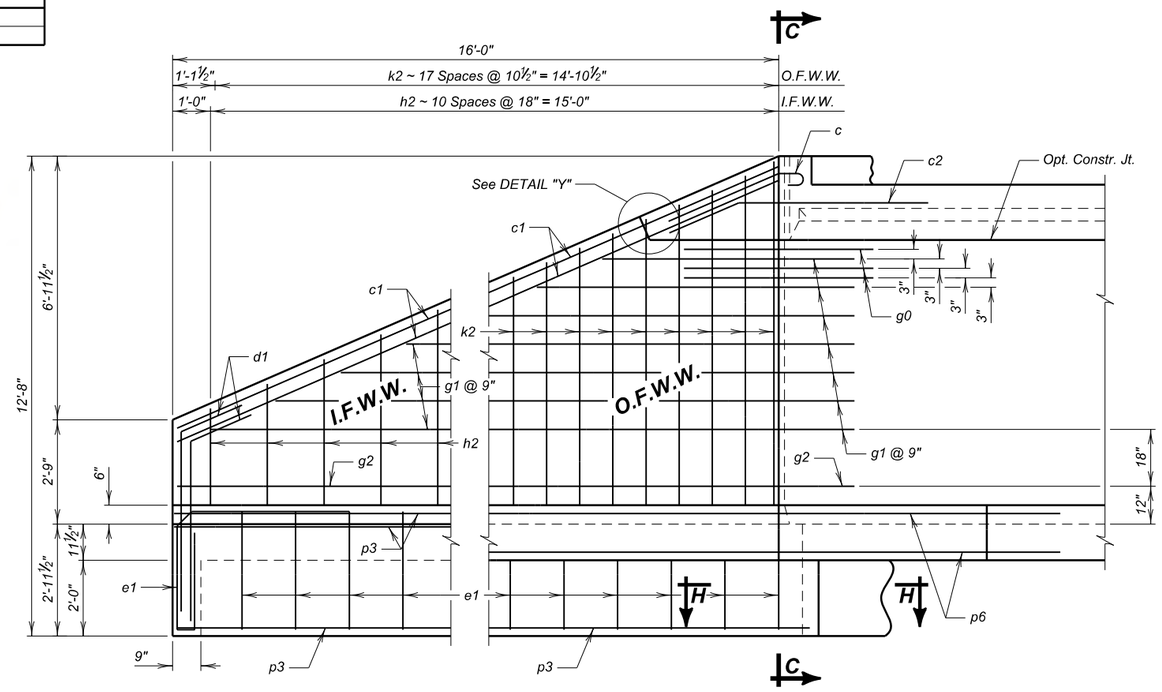
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	20	34

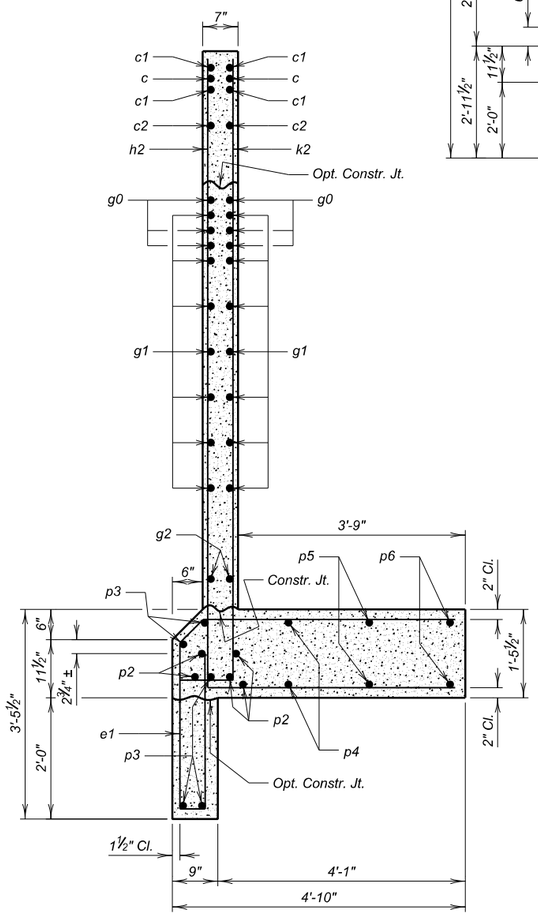
LEGEND FOR PLACING RE-STEEL

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
5/21/26



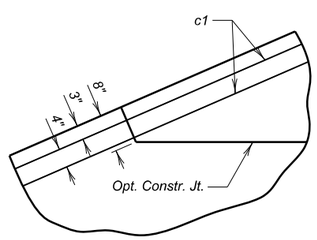
VIEW F - F



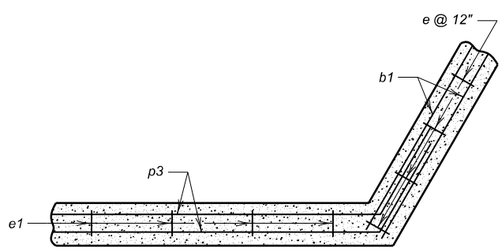
SECTION C - C

ESTIMATED QUANTITIES (Inlet)

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
Inlet	24.6	2567	13.3
Inlet Apron	19.7	1549	19.7



DETAIL "Y"
(c, c2, h2, and k2 bars not shown)

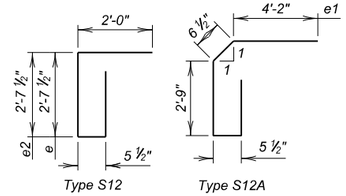


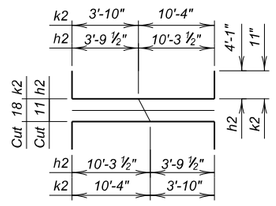
SECTION H - H

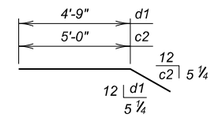
REINFORCING SCHEDULE

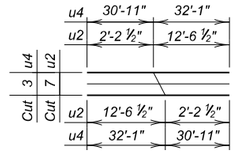
	Mk.	No.	Size	Length	Type
	a1	4	6	50'-6"	Str.
	b1	4	6	49'-3"	Str.
*	c	4	5	4'-6"	1A
	c1	8	5	17'-3"	Str.
	c2	4	5	7'-0"	19B
	d1	8	5	6'-6"	19B
	e	50	4	7'-3"	S12
	e1	28	4	10'-6"	S12A
	f1	51	4	5'-9"	S6A
	g0	12	5	5'-0"	19B
◫	g1	14	4	23'-9"	19B
	g2	4	4	17'-9"	19B
◫	h2	11	4	22'-3"	17A
◫	k2	18	4	16'-0"	17A
	p2	10	6	7'-0"	Str.
*	p3	10	4	18'-6"	Str.
*	p4	4	4	19'-0"	Str.
*	p5	4	4	21'-3"	Str.
*	p6	4	4	23'-6"	Str.
	INLET APRON				
	e2	63	4	7'-6"	S12
	u1	49	4	14'-0"	Str.
◫	u2	7	4	14'-9"	Str.
◫	u3	5	4	107'-9"	Str.
◫	u4	3	4	63'-0"	Str.
	u5	10	4	33'-0"	Str.

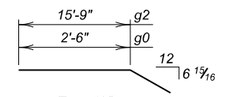
Bending Details

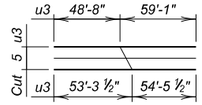


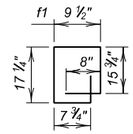


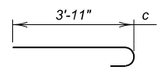


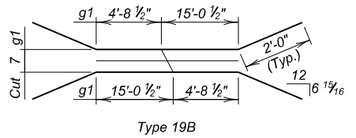












NOTES:
All dimensions are out to out of bars.
◫ See Cutting Diagram.
* Bend in field as necessary to fit.

INLET DETAILS (B)

FOR

4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

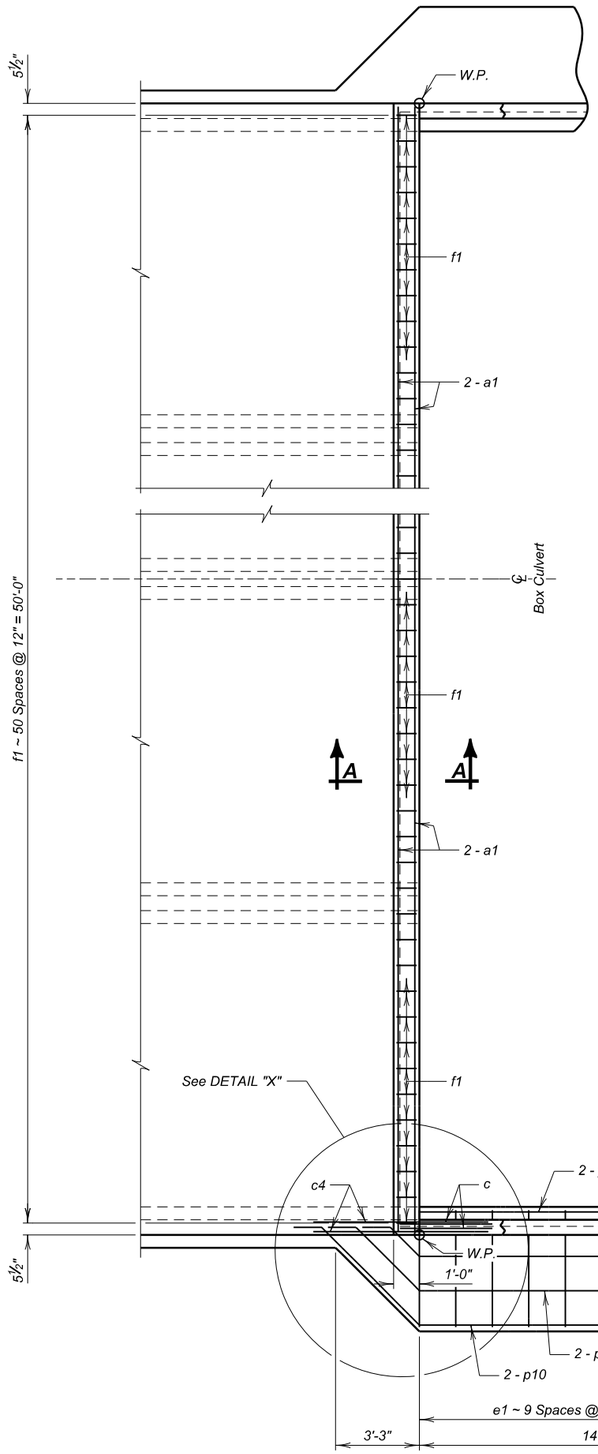
DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

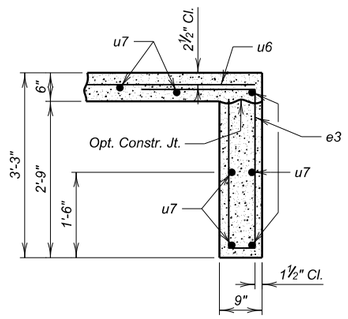
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	21	34

FOR BIDDING PURPOSES ONLY

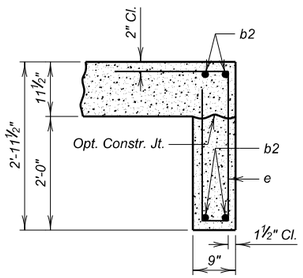
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA



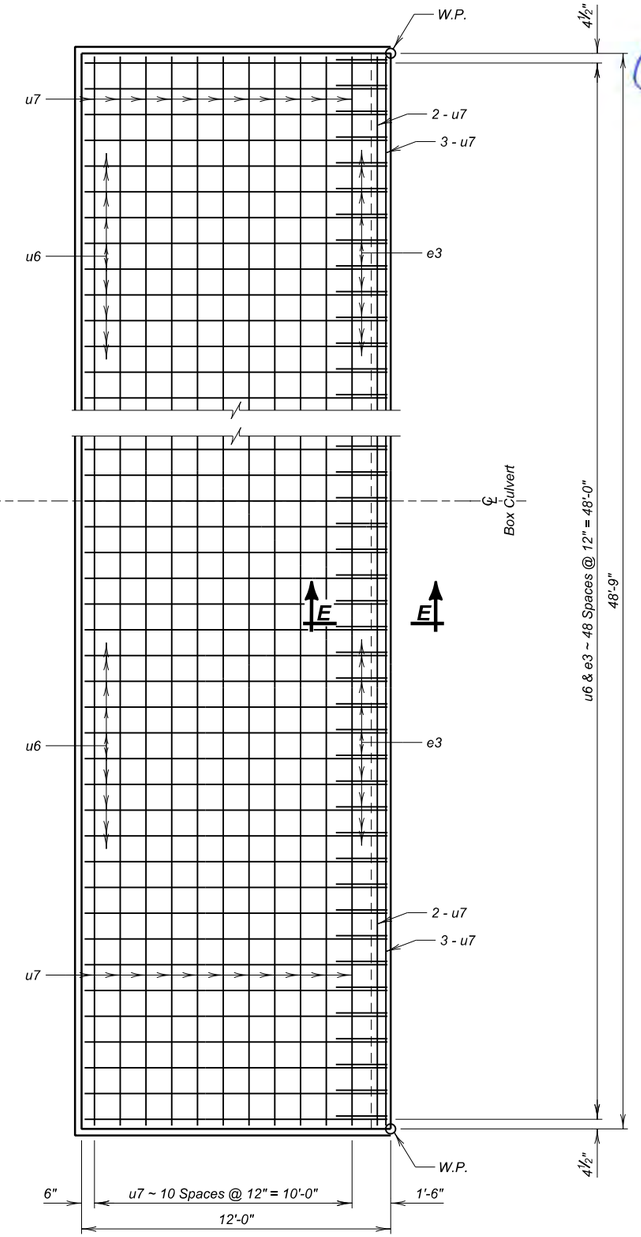
PLAN



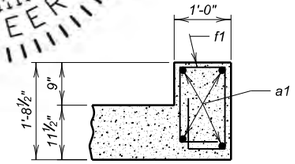
SECTION E - E



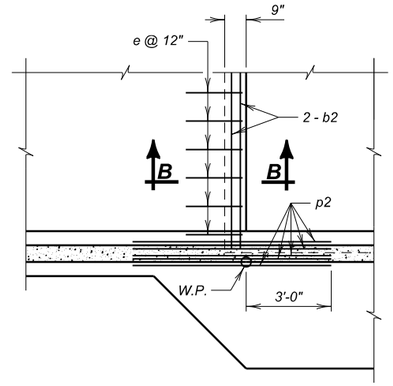
SECTION B - B



PLAN
(Outlet Apron)



SECTION A - A
(At Top Slab)



DETAIL "X"
(At Bottom Slab)

OUTLET DETAILS (A)

FOR

4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

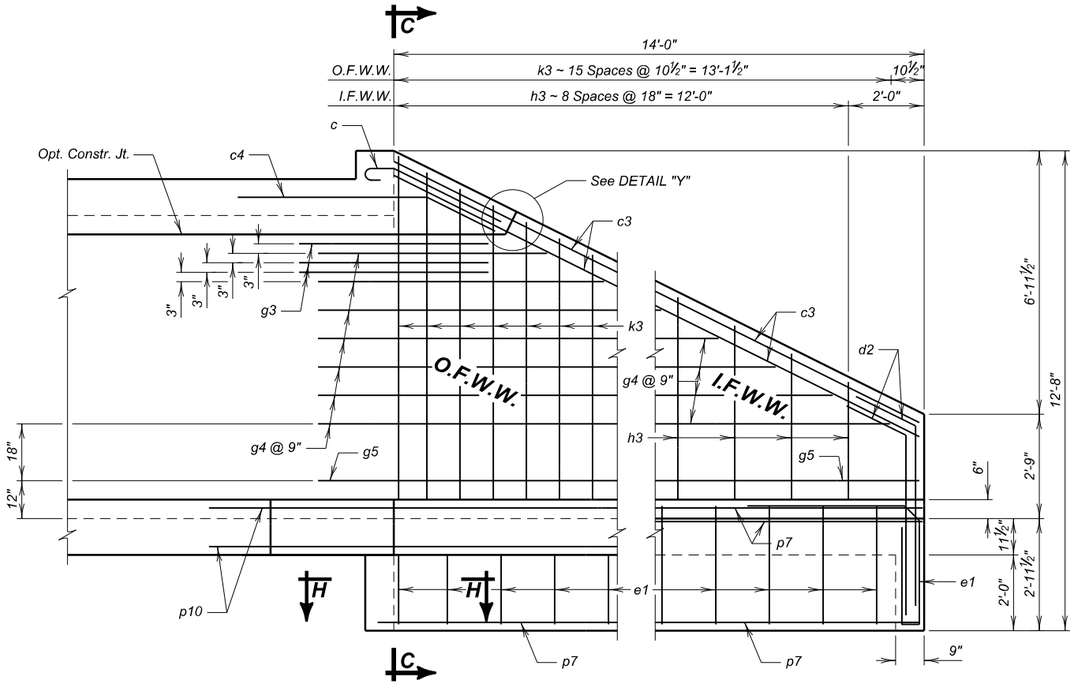
5 OF 9

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	22	34

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
5/21/26
SOUTH DAKOTA

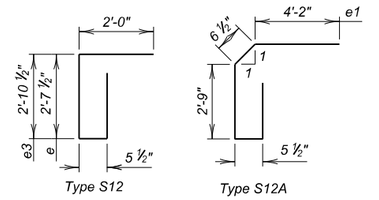


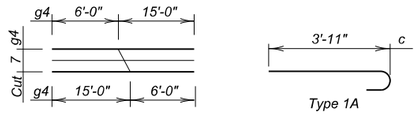
ELEVATION

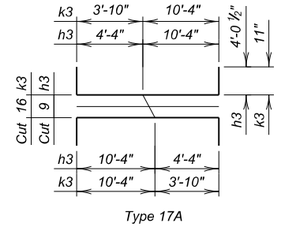
REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
	a1	4	6	50'-6"	Str.
	b2	4	6	50'-0"	Str.
*	c	4	5	4'-6"	1A
	c3	8	5	15'-6"	Str.
	c4	4	5	7'-0"	19B
	d2	8	5	6'-6"	19B
	e	50	4	7'-3"	S12
	e1	26	4	10'-6"	S12A
	f1	51	4	5'-9"	S6A
	g3	12	5	5'-0"	Str.
◫	g4	14	4	21'-0"	Str.
	g5	4	4	15'-9"	Str.
◫	h3	9	4	22'-9"	17A
◫	k3	16	4	16'-0"	17A
	p2	10	6	7'-0"	Str.
*	p7	10	4	16'-6"	Str.
*	p8	4	4	16'-6"	Str.
*	p9	4	4	18'-6"	Str.
*	p10	4	4	20'-6"	Str.
	OUTLET APRON				
	e3	49	4	8'-0"	S12
	u6	49	4	11'-9"	Str.
	u7	16	4	48'-6"	Str.

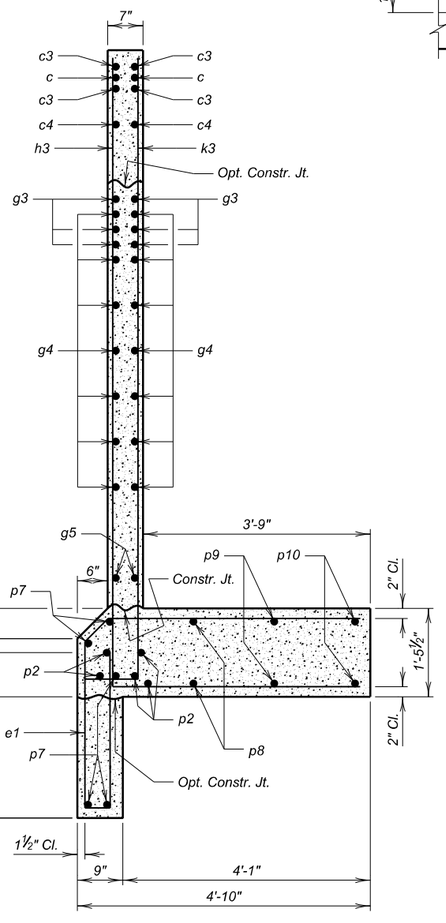
Bending Details







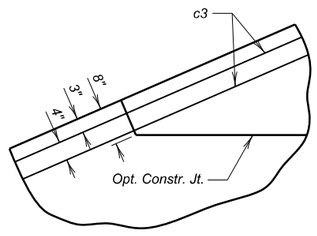
NOTES:
All dimensions are out to out of bars.
◫ See Cutting Diagram.
* Bend in field as necessary to fit.



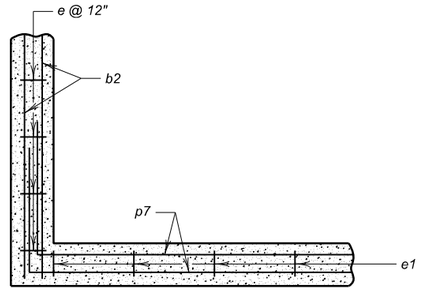
SECTION C - C

LEGEND FOR PLACING RE-STEEL

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



DETAIL "Y"
(c, c4, h3, and k3 bars not shown)



SECTION H - H

ESTIMATED QUANTITIES (Outlet)

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
Outlet	22.2	2428	12.0
Outlet Apron	16.4	1165	16.4

OUTLET DETAILS (B)

FOR

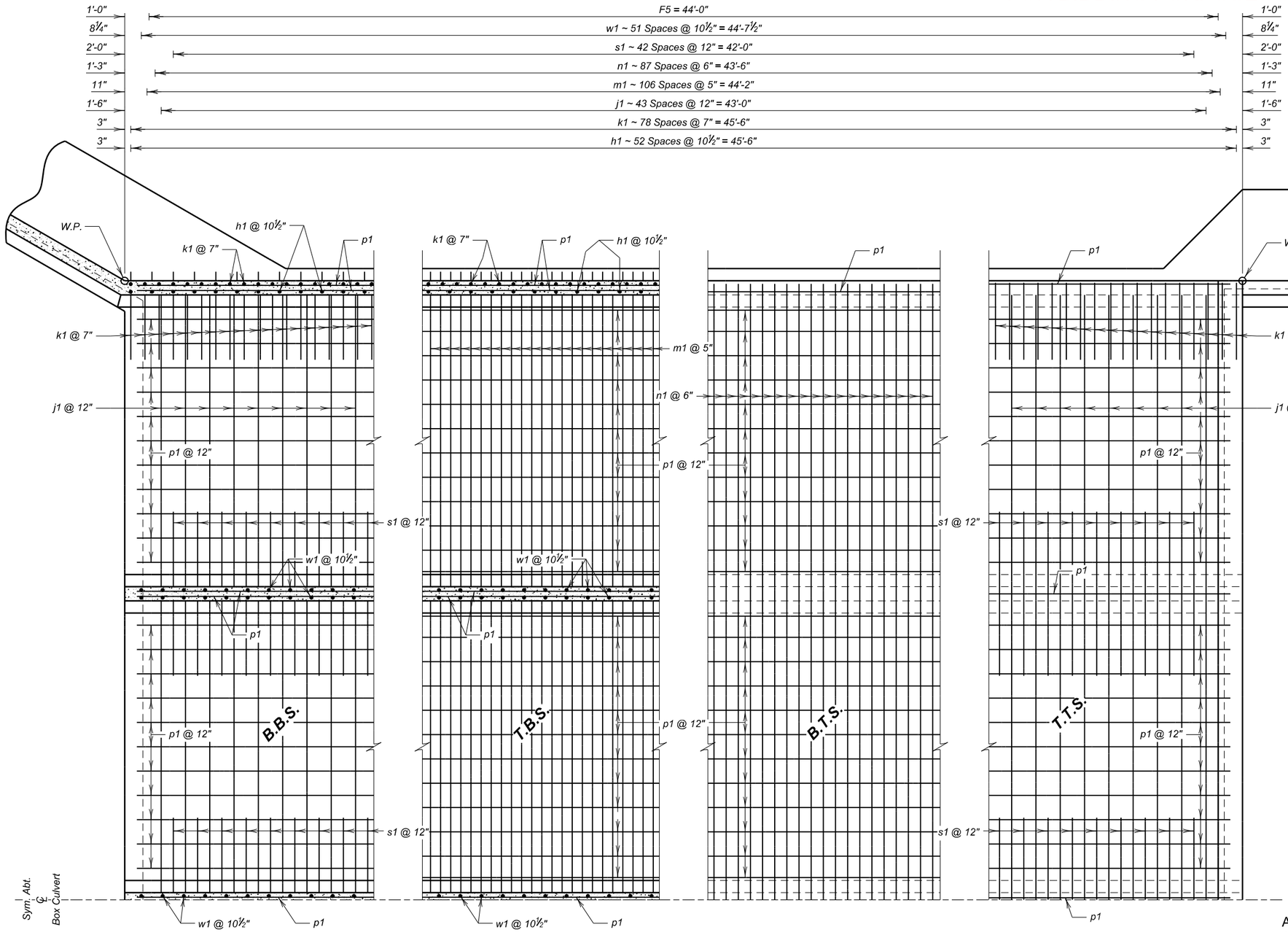
4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	23	34



HALF 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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
5/21/26

F5 BARREL DETAILS (A)

FOR

4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

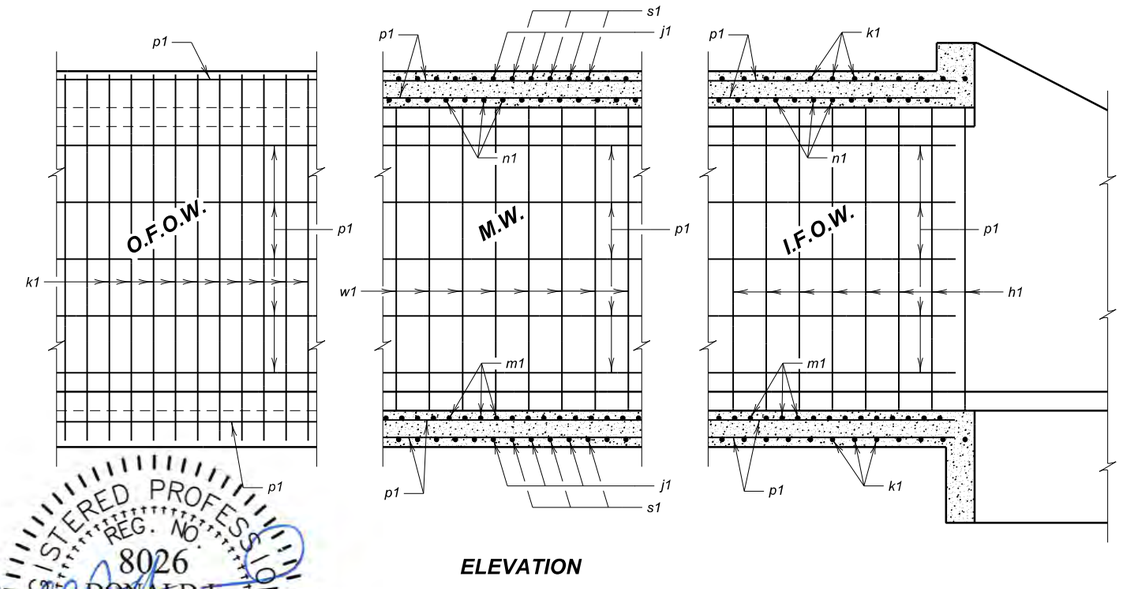
DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

7 OF 9

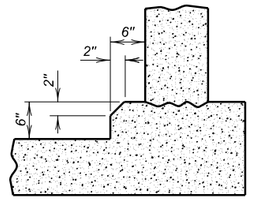
DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	24	34



ELEVATION



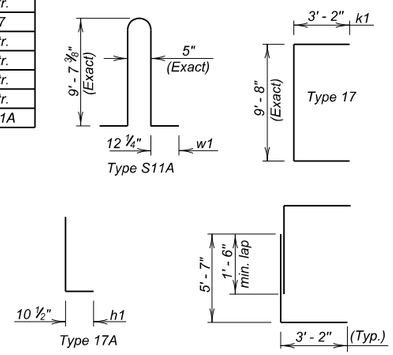
OPTIONAL FILLET DETAIL
(At Bottom Slab)

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

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
h1	106	4	10'-3"	17A
j1	88	5	49'-9"	Str.
k1	158	4	16'-0"	17
m1	107	4	51'-6"	Str.
n1	88	5	50'-6"	Str.
p1	251	4	45'-0"	Str.
s1	258	5	6'-9"	Str.
w1	156	4	21'-6"	S11A

Bending Details

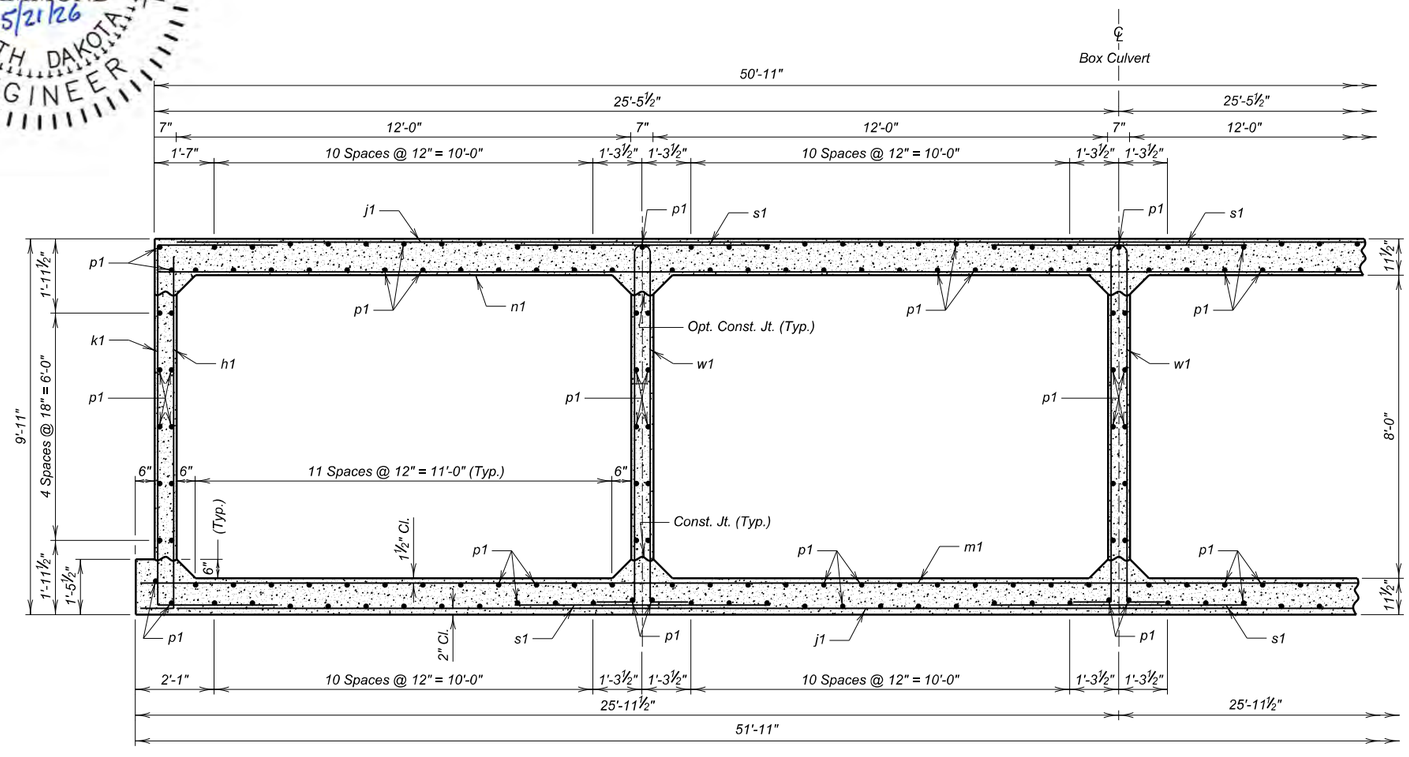


NOTES:

All dimensions are out to out of bars.

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 allowed for the added quantity of reinforcing steel.

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.



F5 BARREL HALF SECTION
(5'-0" Maximum Fill)

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
1 - F5 Barrel Section	202.3	26899	80.8

LEGEND FOR PLACING RE-STEEL

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

F5 BARREL DETAILS (B)

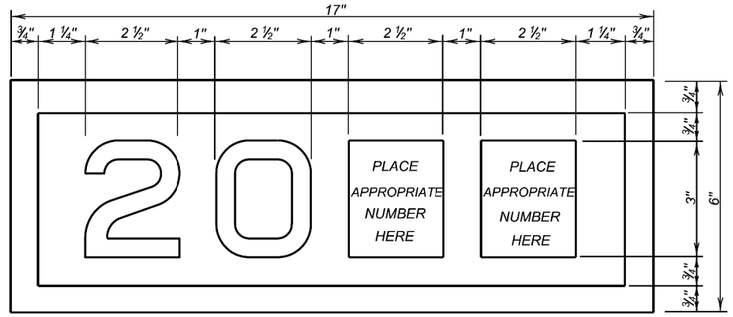
FOR

4 - 12' X 8' BOX CULVERT

ANDES CREEK — 0° SKEW
STA 10+00.00 — SEC. 4/9, T98N, R64W
STR. NO. 22-143-120 — EM-P 0044(207)290
PCN 0AL0 — HL-93

DOUGLAS COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2026

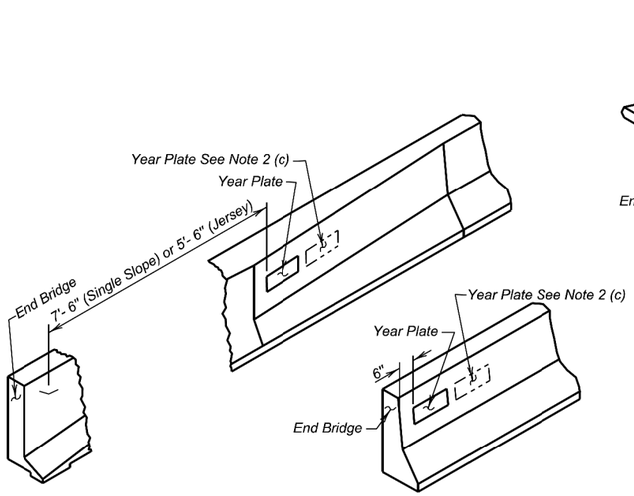
DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	DH	SD	BRIDGE ENGINEER



YEAR PLATE DETAILS

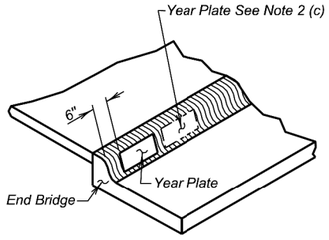
GENERAL NOTES:

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.

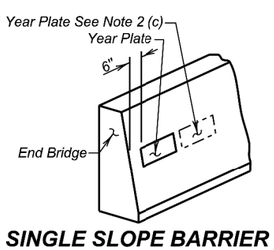


BARRIER
(With Endblock)

JERSEY BARRIER



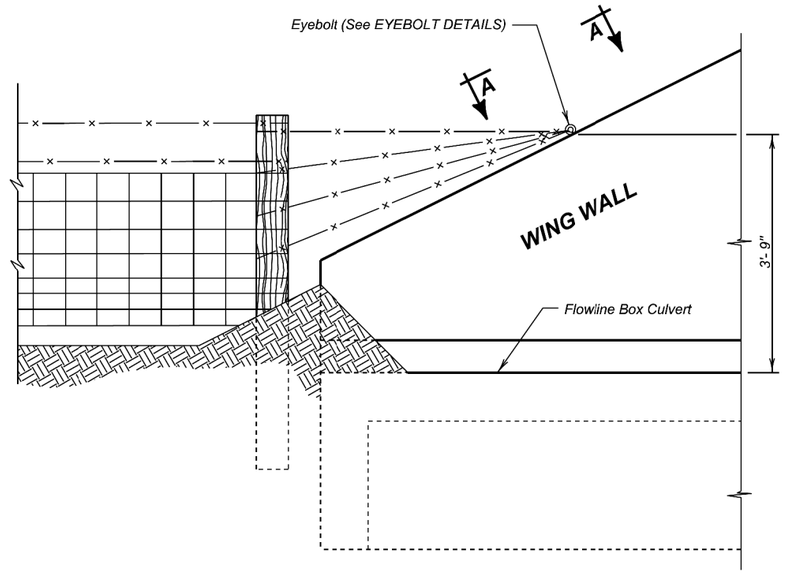
TYPE B CURB



SINGLE SLOPE BARRIER

January 22,2021

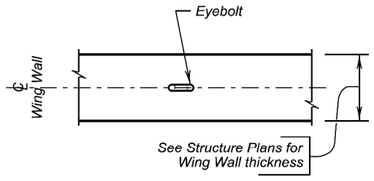
Published Date: 2026	SDDOT	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 Of 1



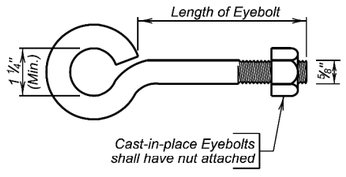
DETAIL FOR FENCE ANCHORS

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.



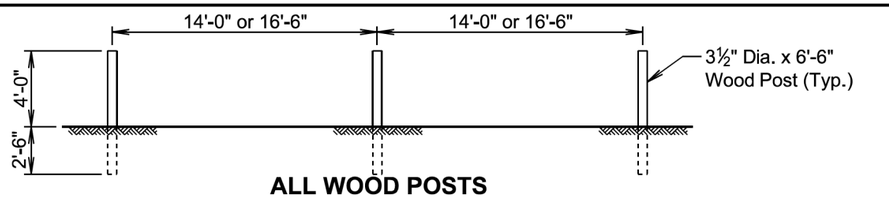
VIEW A - A



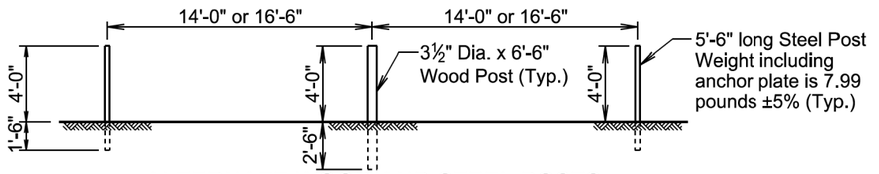
EYEBOLT DETAILS

December 23,2012

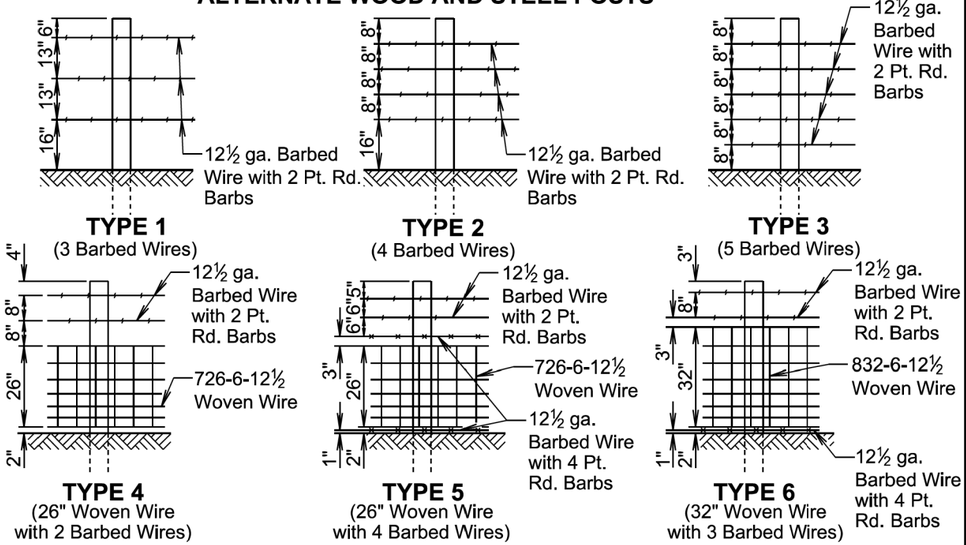
Published Date: 2026	SDDOT	FENCE ANCHORS FOR BOX CULVERT WING WALLS	PLATE NUMBER 620.16
			Sheet 1 of 1



ALL WOOD POSTS



ALTERNATE WOOD AND STEEL POSTS



TYPE OF FENCE		LINE POST SPACING	BARBED WIRE		WOVEN WIRE
TYPE	DESCRIPTION		WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.
1	3 Barbed Wires	16'-6"	12½	2 Point Round	—
2	4 Barbed Wires	16'-6"	12½	2 Point Round	—
3	5 Barbed Wires	16'-6"	12½	2 Point Round	—
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12½	2 Point Round	726-6-12½
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd.	726-6-12½
6	32" Woven Wire with 3 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 1 wire with 4 Pt. Rd.	832-6-12½

GENERAL NOTES:

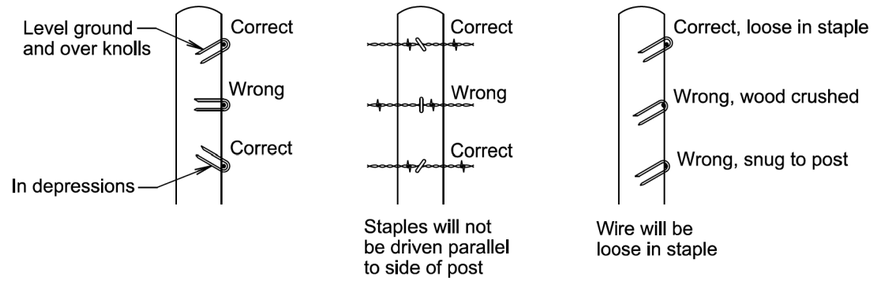
Fence types designated on the plans that are followed by the letter S will have smooth (barbless) wires.

When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.

All radius of curvature stated for fence are at centerline of roadway.

April 8, 2025

Published Date: 2026	SDDOT	*RIGHT-OF-WAY FENCE*	*PLATE NUMBER* 620.01 *Sheet 1 of 1*



STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence will consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire will be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts will be used for brace panels. Gates will be of the type designated in the plans or as otherwise directed by the Engineer. Fence will be constructed conforming to the details on the standard plates and in the plans unless otherwise directed by the Engineer.

Right-of-Way fence on Interstate Projects will be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Right-of-Way fence other than on Interstate Projects will be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

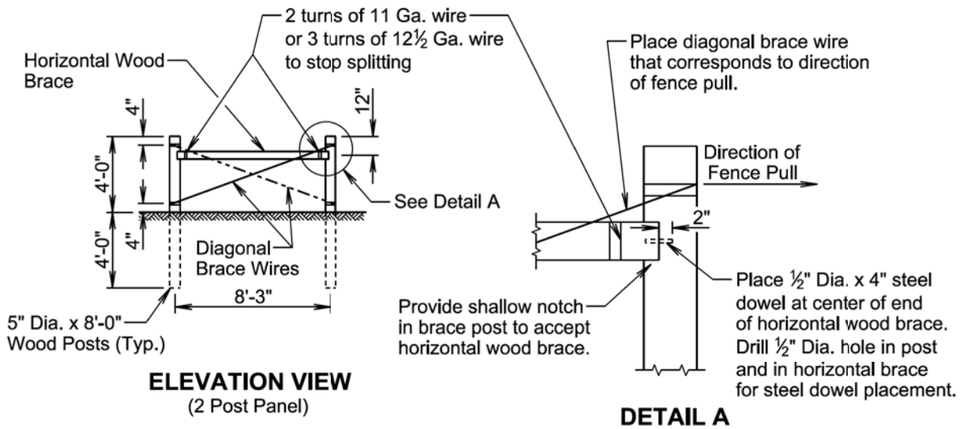
Barbs will be fabricated from zinc coated 14 ga. wire. Two point barbs will be wrapped twice around one main strand at four-inch spacings and the four point barbs will be interlocked and wrapped around both main strands at five-inch spacings.

The gages of wire and wood post lengths and sizes are the minimum acceptable unless otherwise specified in the plans. The tolerances for steel posts will be as stated in AASHTO M281. Woven wire will conform to design and specifications of ASTM A116 and barbed wire will conform to ASTM A121.

June 26, 2019

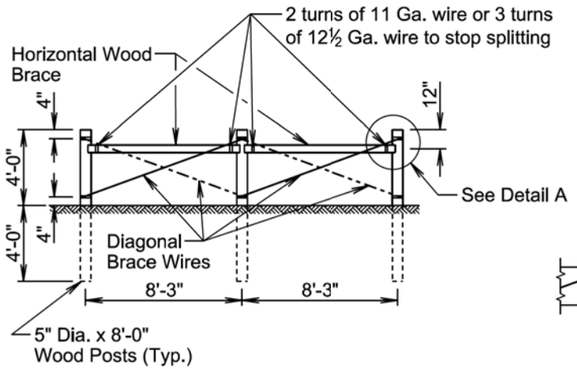
Published Date: 2026	SDDOT	*STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES*	*PLATE NUMBER* 620.02 *Sheet 1 of 1*

FOR BIDDING PURPOSES ONLY

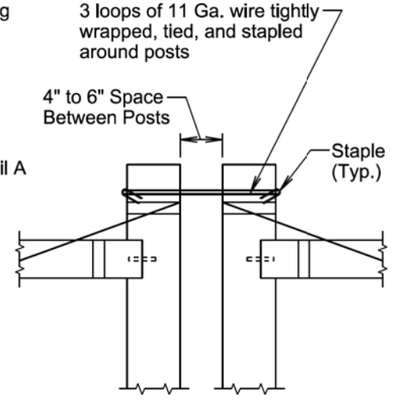


ELEVATION VIEW
(2 Post Panel)

DETAIL A



ELEVATION VIEW
(3 Post Panel)



DETAIL B

GENERAL NOTES:

Two Post Panels will be installed at least every 1320' between corners.

Two Post Panels will be installed at any sharp vertical angle crest points and as directed by the Engineer.

Horizontal wood braces will consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.

Diagonal brace wires will be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires will be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

March 31, 2024

Published Date: 2026	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 1 of 3

SPACING OF 2 POST PANELS WITHIN CURVES	
RADIUS OF CURVE	SPACING OF 2 POST PANEL
Greater than 1800 Ft.	** 1320'
Less than 1800 Ft.	** At P.C., P.T., and at every 1320' between P.C. and P.T.

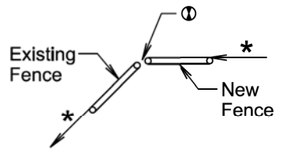
** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.

① See Detail B on Sheet 1 of 3.

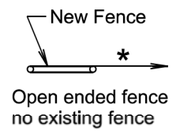
GENERAL NOTE:

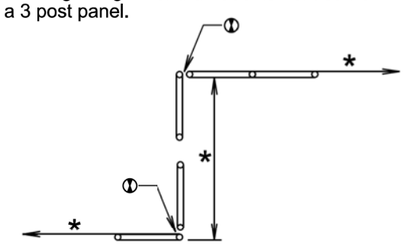
All radius of curvature stated for fence are at centerline of roadway.

If fence length is less than 600' to next corner use a 2 post panel.
* If fence length is greater than 600' to next corner use a 3 post panel.

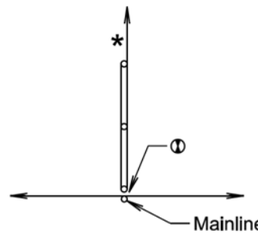


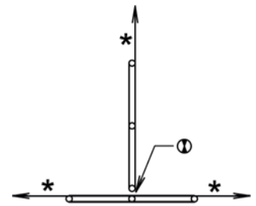
BEGIN OR END FENCE
(Where new fence ties into existing fence)



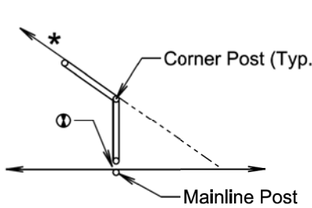


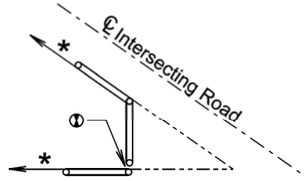
SHORT JOGS IN FENCE

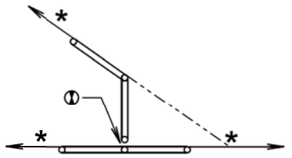




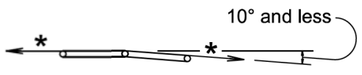
CROSS FENCE



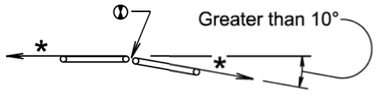




SHARP ANGLES IN CROSS FENCE



Additional fence panel is NOT required when an angle in the mainline fence is 10° and less.

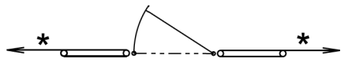


Additional fence panel is required when an angle in the mainline fence is greater than 10°.

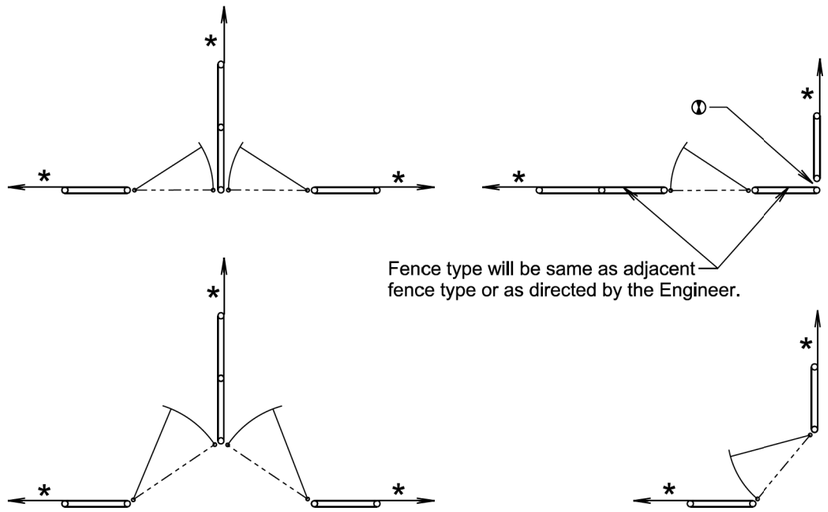
ANGLES IN MAINLINE FENCE

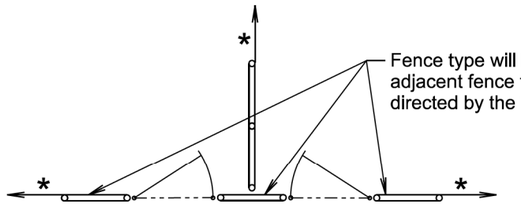
March 31, 2024

Published Date: 2026	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 2 of 3

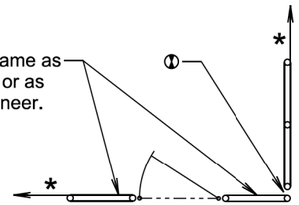


ENTRANCE
(Not on corner)





DOUBLE ENTRANCES



ENTRANCES AT CORNERS

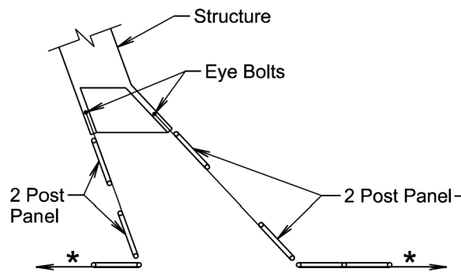
GATES

* If fence length is less than 600' to next corner use a 2 post panel.
If fence length is greater than 600' to next corner use a 3 post panel.

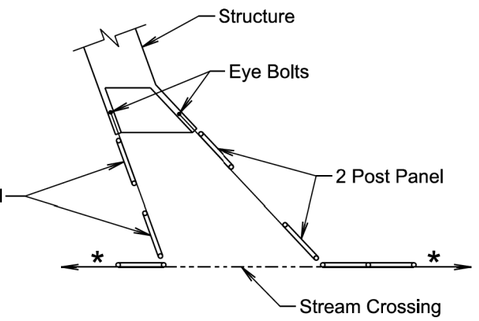
① See Detail B on Sheet 1 of 3.

March 31, 2024

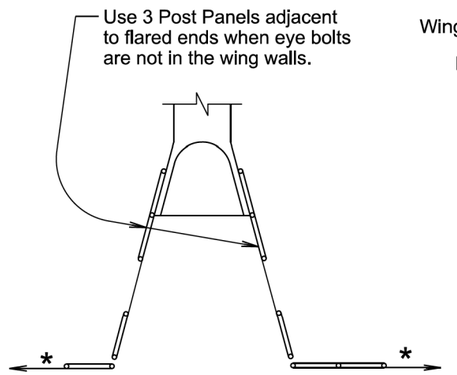
Published Date: 2026	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 3 of 3



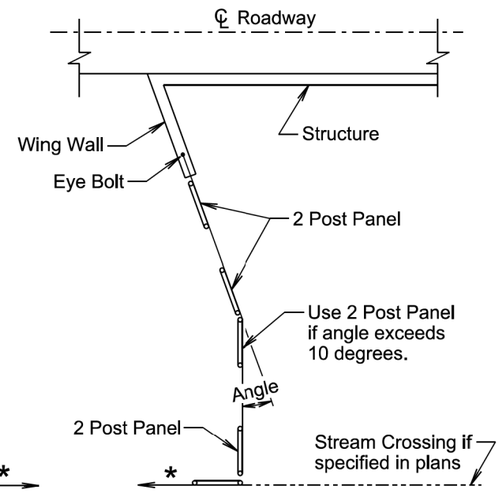
R.C. BOX CULVERT OR CATTLE PASS



STRUCTURE WITH STREAM CROSSING FENCE



R.C. BOX CULVERT OR CATTLE PASS



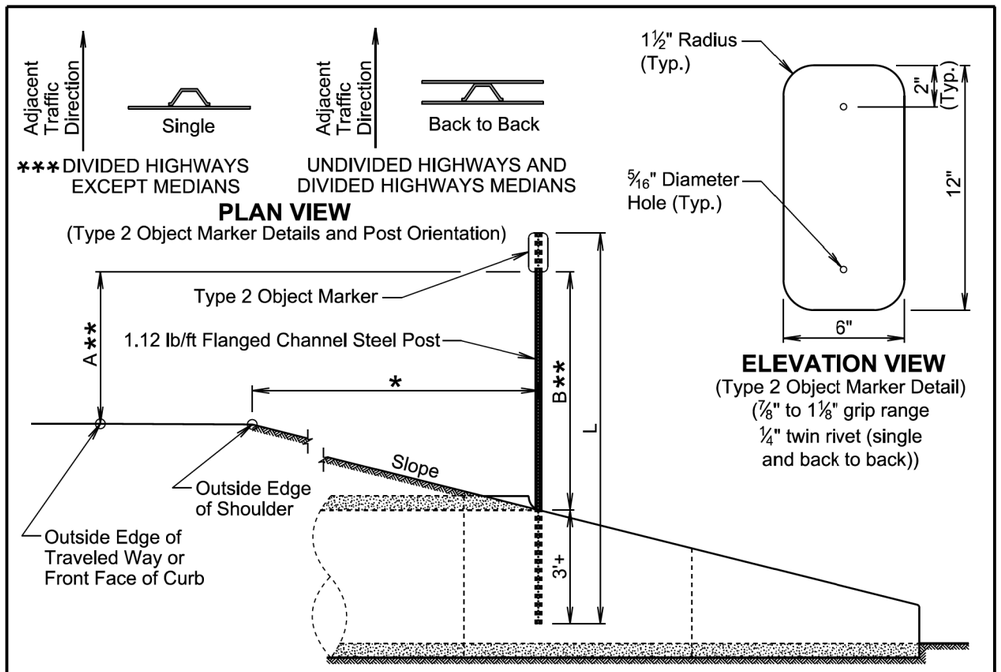
BRIDGE

* If fence length is less than 600' to next corner use a 2 post panel.
If fence length is greater than 600' use a 3 post panel.

June 26, 2019

Published Date: 2026	SDDOT	BRACE PANEL APPLICATIONS AT STRUCTURES	PLATE NUMBER 620.04
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY



TYPE 2 OBJECT MARKER POST LENGTHS									
OFFSET (*)		1'	2'	3'	4'	5'	6'	7'	8'	Greater Than 8'
		POST LENGTH (L)								
SLOPE	3:1	8'-6"	8'-9"	9'-3"	9'-6"	9'-9"	10'-3"	10'-6"	10'-9"	8'-0"
	4:1	8'-6"	8'-9"	9'-0"	9'-3"	9'-9"	9'-9"	10'-0"	10'-3"	8'-0"
	5:1	8'-3"	8'-6"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	9'-9"	8'-0"
	6:1	8'-3"	8'-6"	8'-9"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	8'-0"

GENERAL NOTES:

*** The type 2 object marker may be installed back to back when specified in the plans.

Post Length L was calculated based on a shoulder width of 6 feet at a crosslope of 4 percent and L was rounded up to the nearest 3 inches.

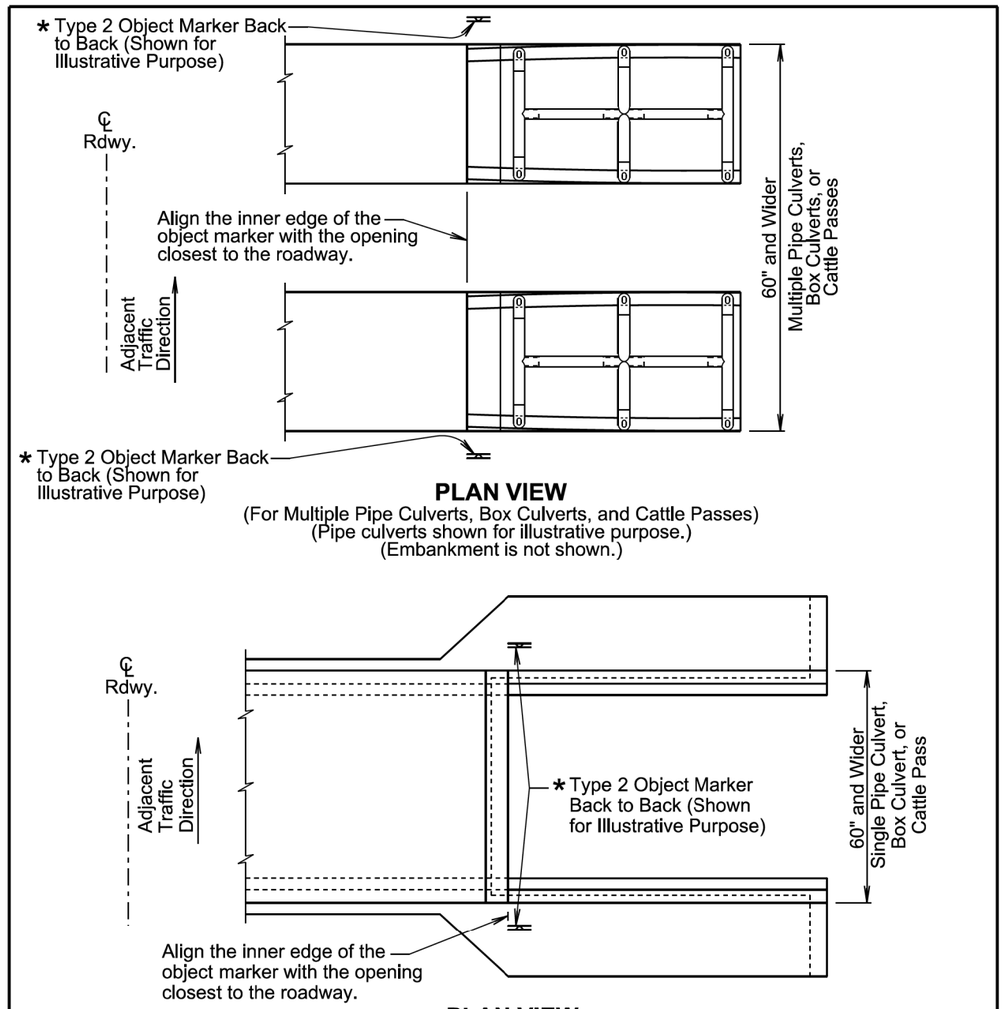
** Dimension A is 4 feet when the Offset * is 8 feet and less. Dimension B is 4 feet when Offset * is greater than 8 feet.

The type 2 object marker and the 1.12 lb/ft flanged channel steel post will be in conformance with Specifications Section 982.2 J.

Payment for the type 2 object marker will be in conformance with Specification Section 632.5 B.

December 23, 2019

Published Date: 2026	SDDOT	TYPE 2 OBJECT MARKER (DIRECT DRIVE)	PLATE NUMBER 632.01 Sheet 1 of 1



GENERAL NOTES:

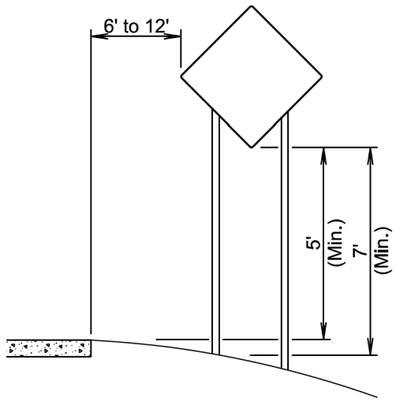
This standard plate will be used in conjunction with standard plate 632.01.

* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

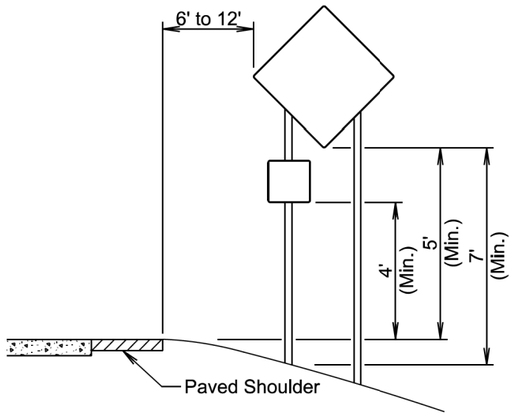
December 23, 2019

Published Date: 2026	SDDOT	TYPE 2 OBJECT MARKER AT PIPE CULVERTS, BOX CULVERTS, AND CATTLE PASSES (60" and Greater Overall Width)	PLATE NUMBER 632.04 Sheet 1 of 1

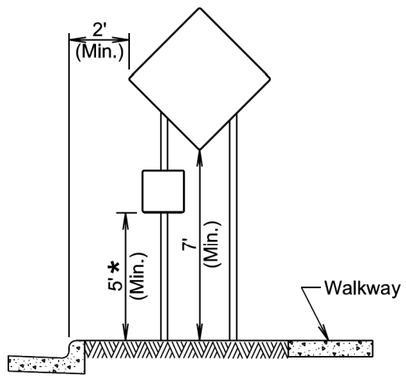
FOR BIDDING PURPOSES ONLY



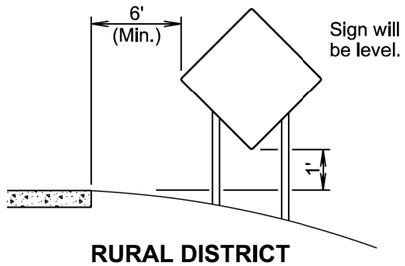
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

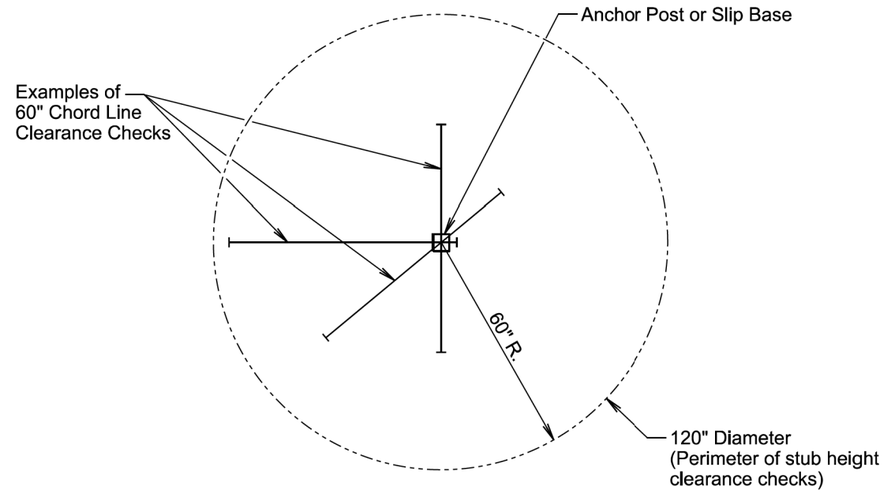


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

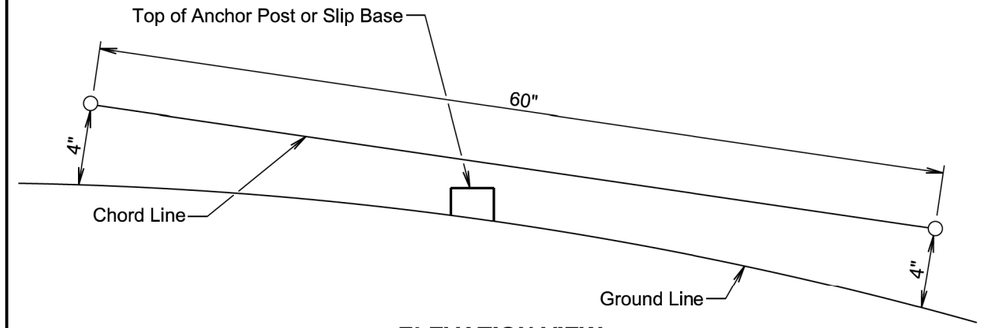
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

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.

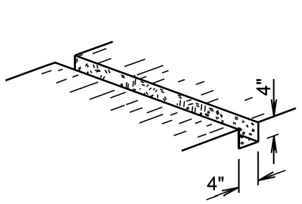
The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

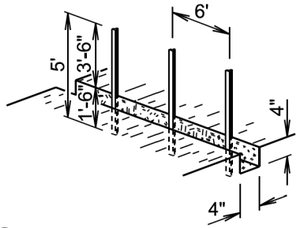
Published Date: 2026	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

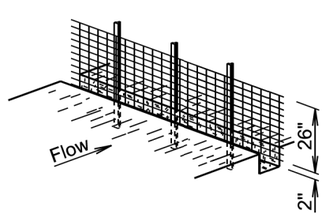
MANUAL LOW FLOW SILT FENCE INSTALLATION



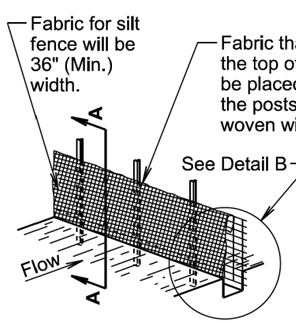
① EXCAVATE TRENCH



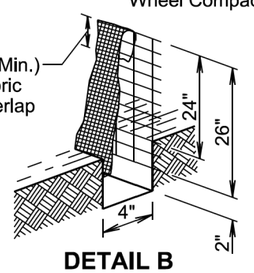
② DRIVE STEEL T FENCE POSTS



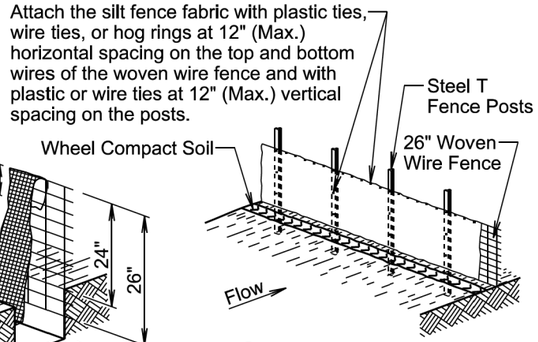
③ ATTACH 26" WOVEN WIRE FENCE TO POSTS



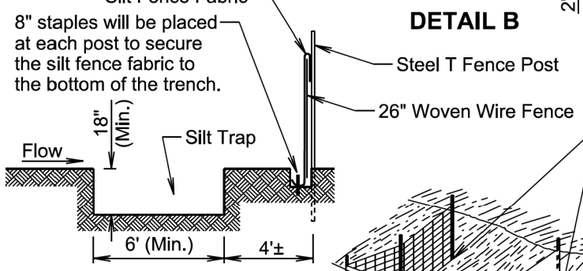
④ ATTACH SILT FENCE FABRIC



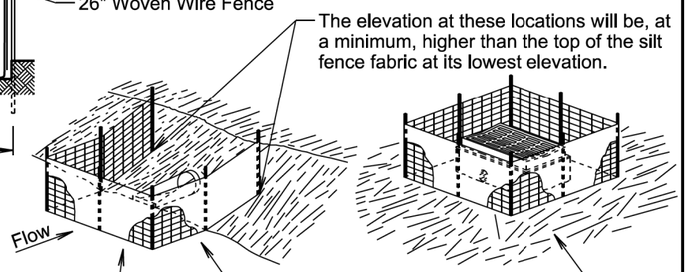
DETAIL B



⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL



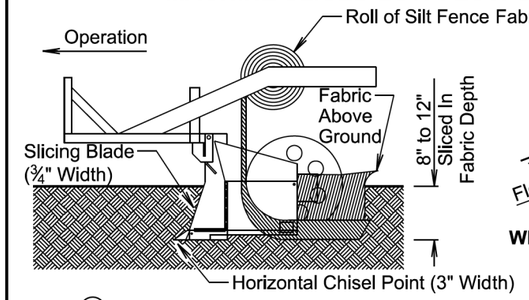
SECTION A-A



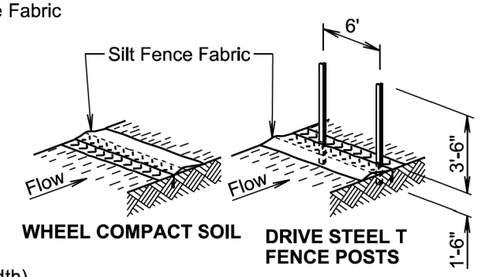
February 14, 2020

Published Date: 2026	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



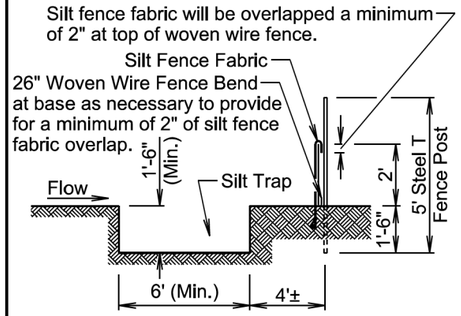
① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

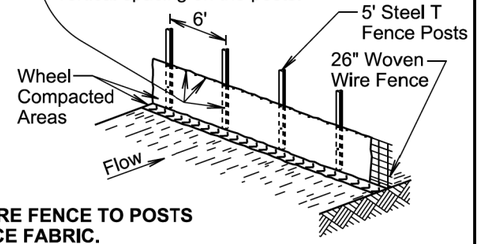


WHEEL COMPACT SOIL

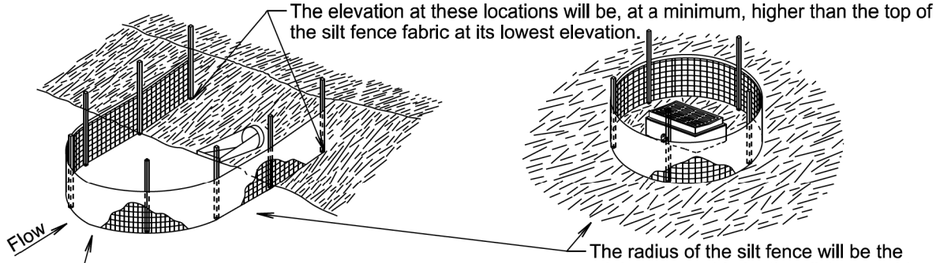
DRIVE STEEL T FENCE POSTS

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





③ ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.



GENERAL NOTES:

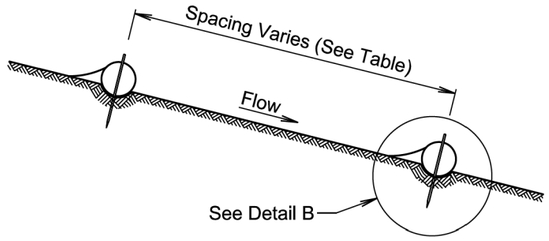
A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

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

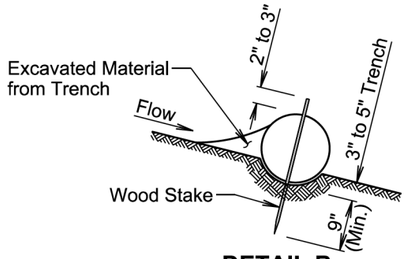
Published Date: 2026	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2

FOR BIDDING PURPOSES ONLY

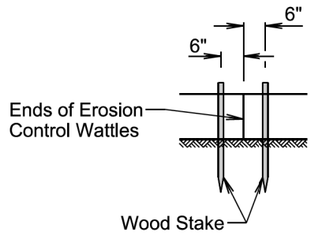


ELEVATION VIEW
(Cut or Fill Slope Installation)

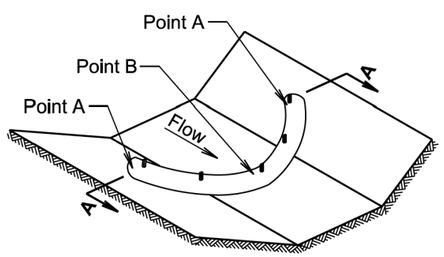
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



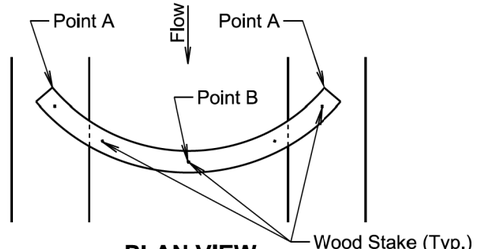
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

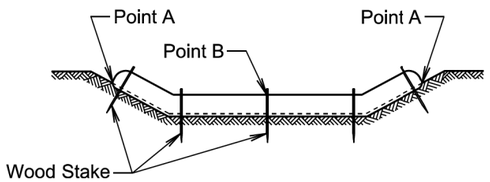


ISOMETRIC VIEW
(Ditch Installation)



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

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	EM-P 0044(207)290	33	34

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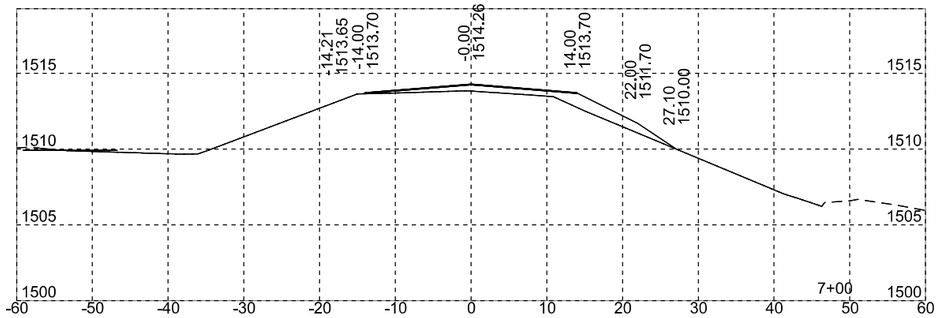
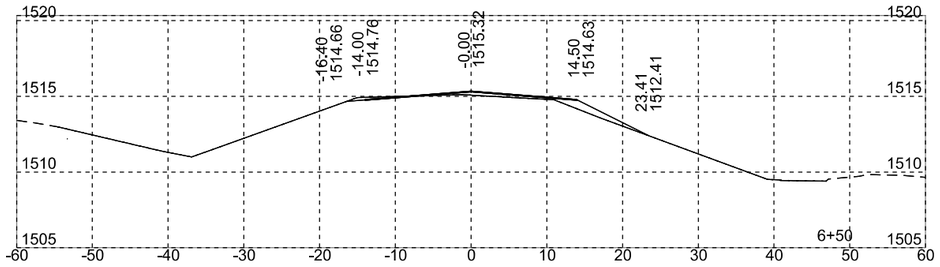
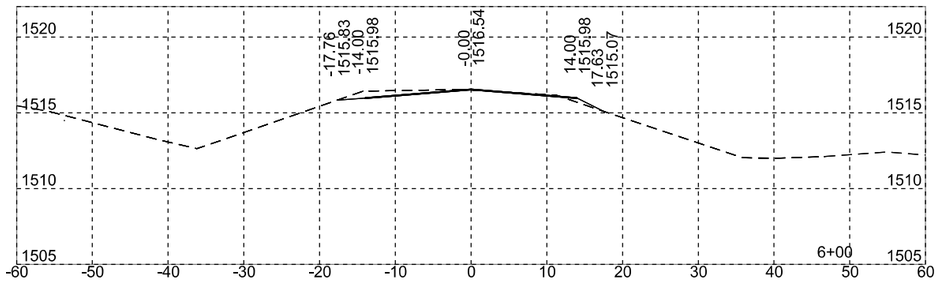
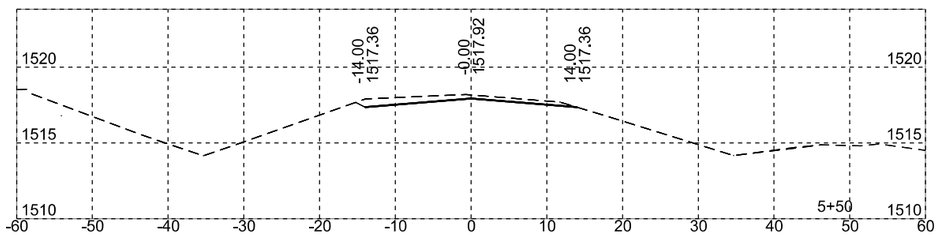
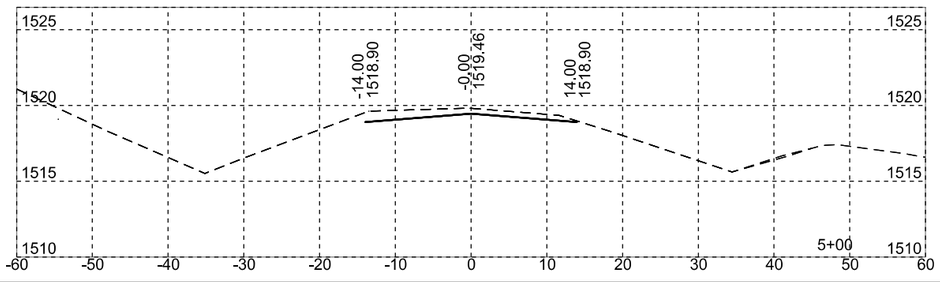
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
5/21/26

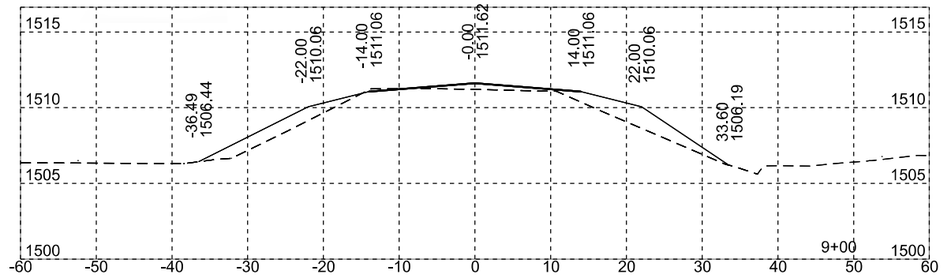


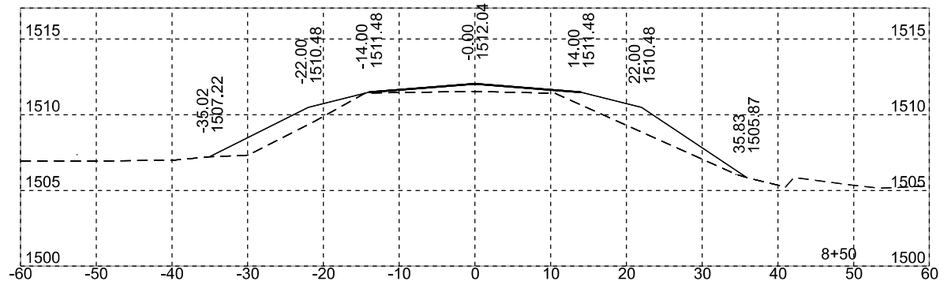


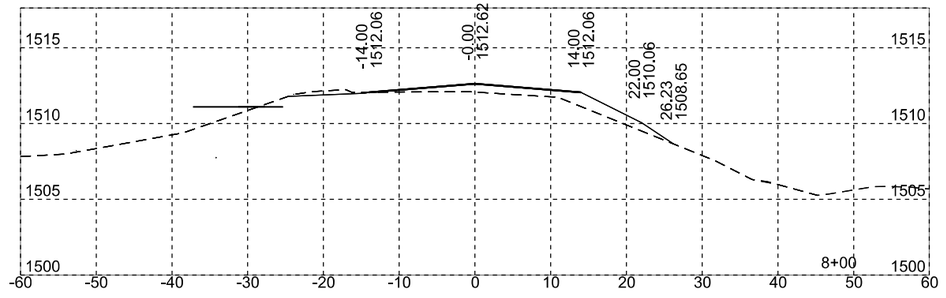


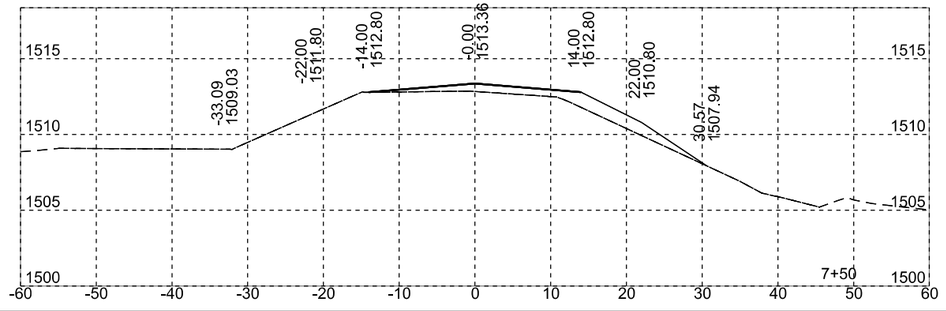


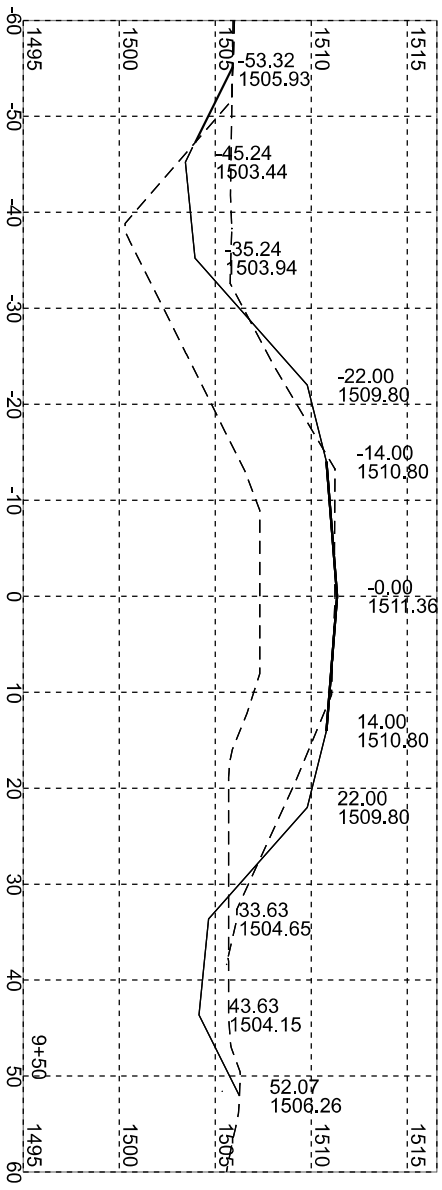


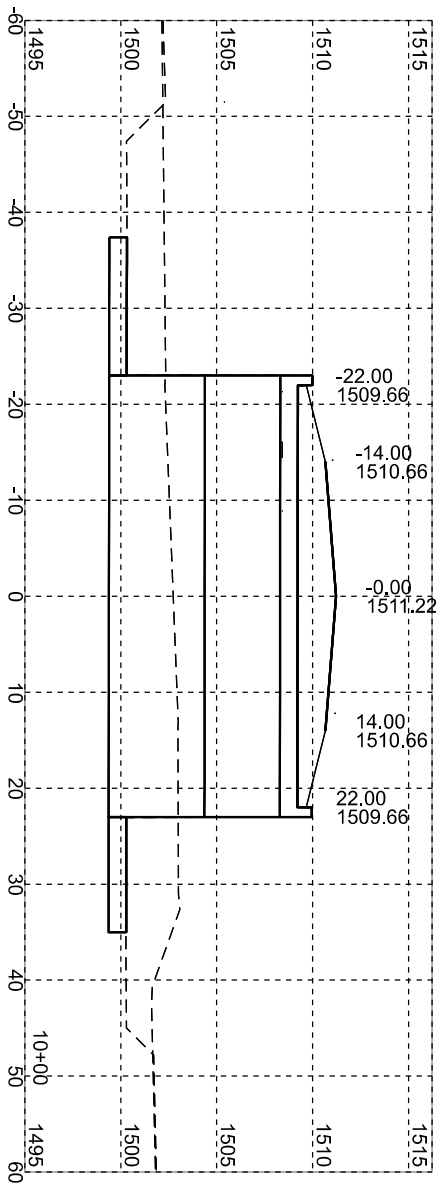


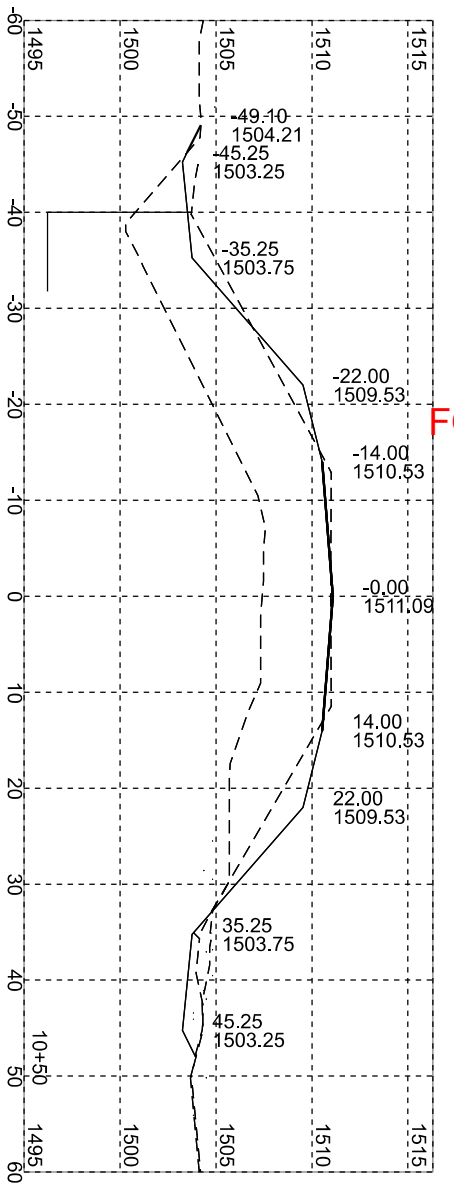


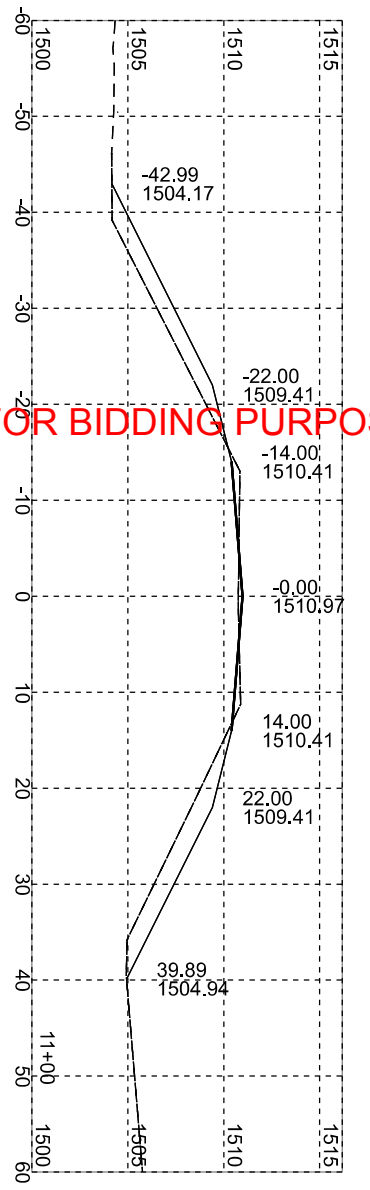


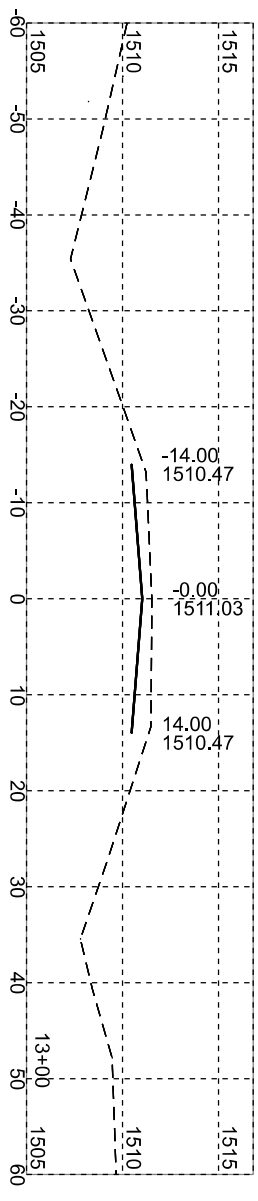


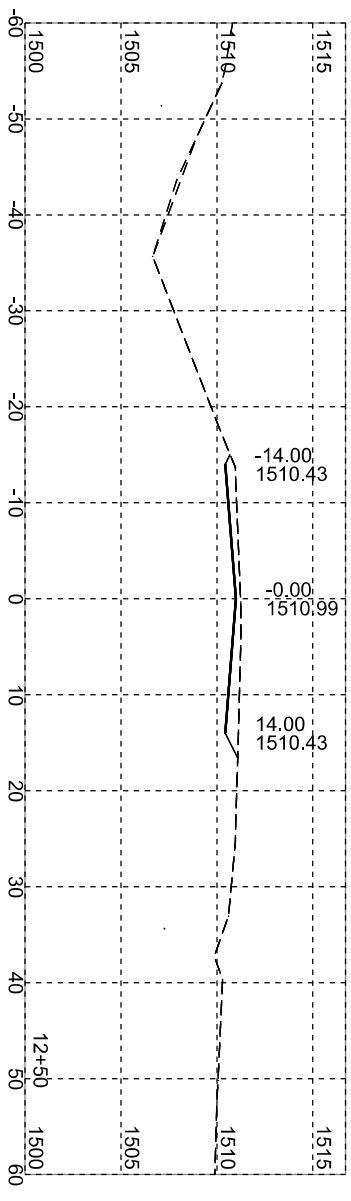


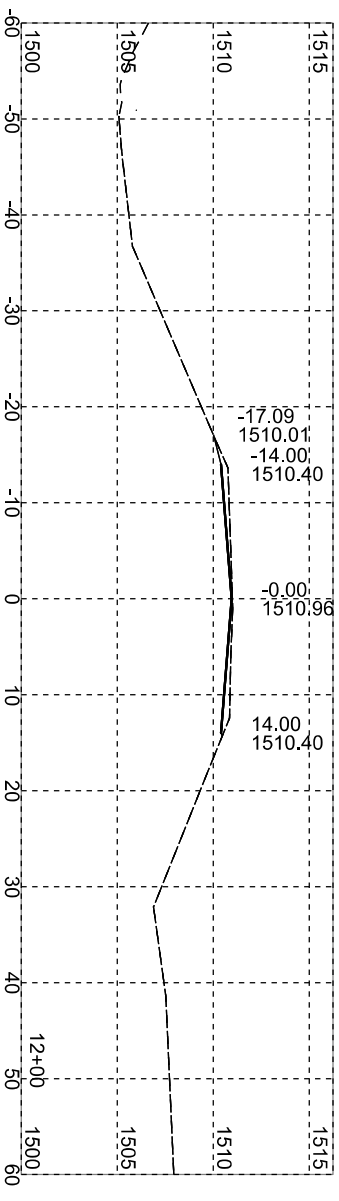


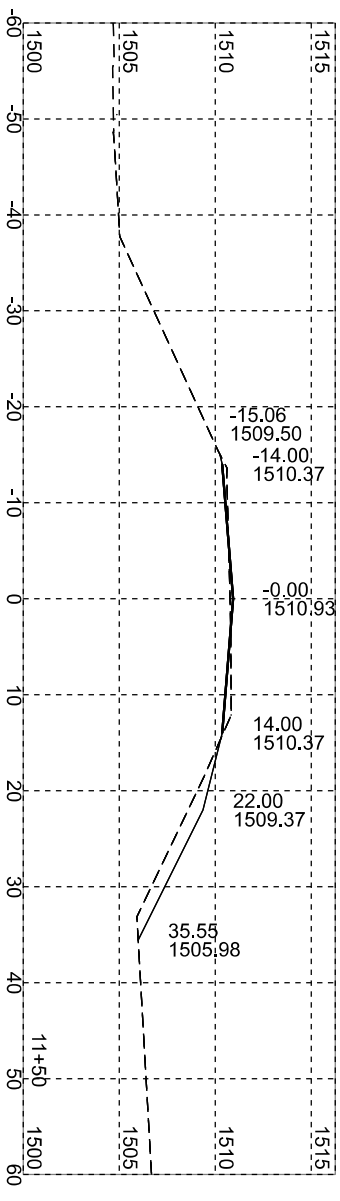


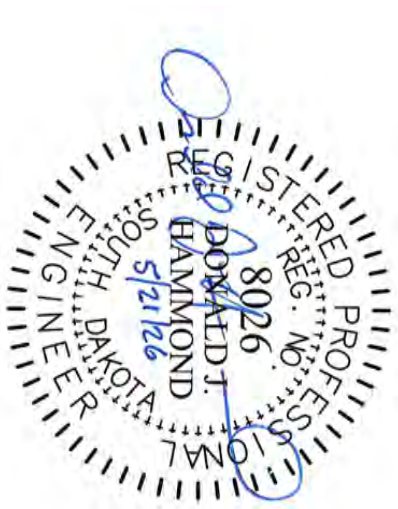












STATE OF S.D.	PROJECT	SHEET NO.	TOTAL SHEETS
	EM-P 0044(207)290	34	34