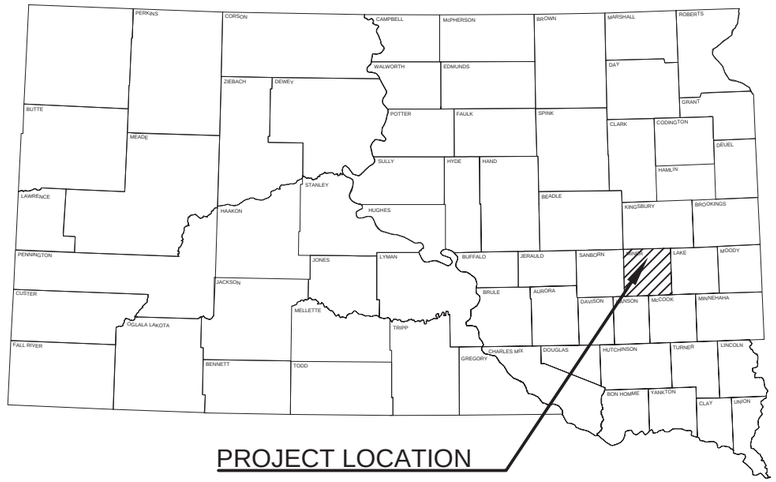
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	1	49

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT BRF-B 6136(01)
MINER COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
STRUCTURE No. 49-093-020
PCN 09MC

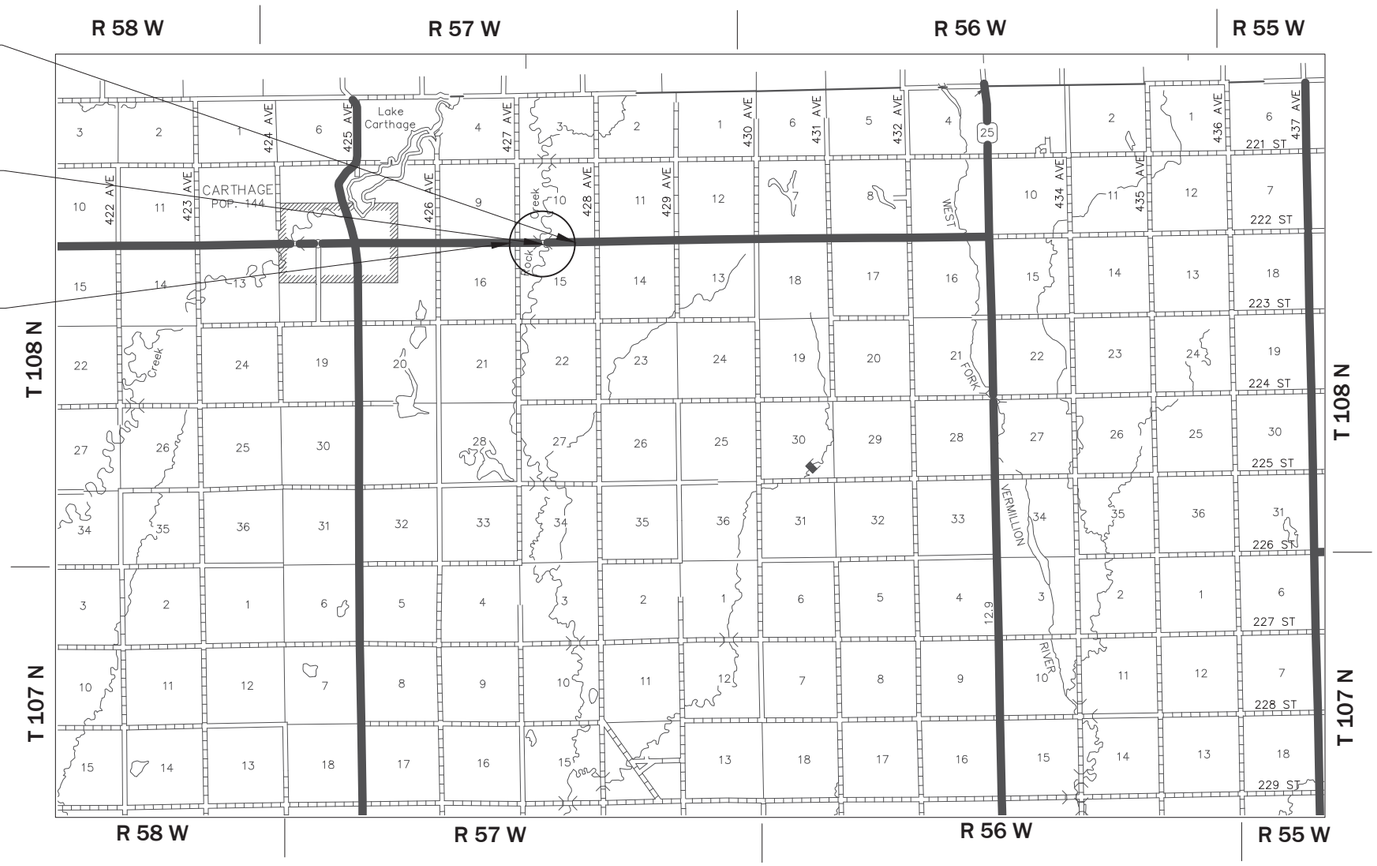


INDEX OF SHEETS

END PROJECT
STA 22+31.42

STRUCTURE NO.
49-093-020

BEGIN PROJECT
STA 11+40.87



DESIGN DESIGNATION

ADT (2019):	290
ADT (2039):	472
DHV:	70
d:	50%
T DHV:	6.0%
T ADT:	13.2%
DESIGN SPEED	55 MPH

STORM WATER PERMIT

MAJOR STREAM:	ROCK CREEK
AREA DISTURBED:	4.19 ACRES
PROJECT AREA:	5.44 ACRES

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10/22/2025

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February 4, 2026

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GRADING

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.200	Mile
009E3250	Miscellaneous Staking	0.200	Mile
009E3280	Slope Staking	0.200	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0500	Remove Pipe Culvert	127	Ft
110E1010	Remove Asphalt Concrete Pavement	3,323.0	SqYd
110E5010	Salvage Delineator	19	Each
110E5020	Salvage Traffic Sign	2	Each
120E0010	Unclassified Excavation	5,535	CuYd
120E0600	Contractor Furnished Borrow Excavation	445	CuYd
230E0010	Placing Topsoil	1,990	CuYd
450E4758	18" CMP 14 Gauge, Furnish	120	Ft
450E4760	18" CMP, Install	120	Ft
450E4768	24" CMP 14 Gauge, Furnish	36	Ft
450E4770	24" CMP, Install	36	Ft
450E5406	18" CMP Safety End, Furnish	4	Each
450E5407	18" CMP Safety End, Install	4	Each
450E5410	24" CMP Safety End, Furnish	2	Each
450E5411	24" CMP Safety End, Install	2	Each
634E0110	Traffic Control Signs	109.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	8	Each
634E1002	Detour and Restriction Signing	88.0	SqFt
734E0010	Erosion Control	Lump Sum	LS
734E0102	Type 2 Erosion Control Blanket	10,335	SqYd
734E0154	12" Diameter Erosion Control Wattle	900	Ft
734E0325	Surface Roughening	1.1	Acre
734E0510	Shaping for Erosion Control Blanket	1,700	Ft
734E0604	High Flow Silt Fence	800	Ft
734E0610	Mucking Silt Fence	56	CuYd
734E0620	Repair Silt Fence	200	Ft
734E0900	Temporary Diversion Channel for Fish Passage	1	Each

STRUCTURE No. 49-093-020

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	104	CuYd
421E0200	Box Culvert Undercut	299	CuYd
460E0120	Class A45 Concrete, Box Culvert	245.1	CuYd
480E0100	Reinforcing Steel	37,970	Lb
700E0210	Class B Riprap	67.3	Ton
831E0110	Type B Drainage Fabric	81	SqYd

ENVIRONMENTAL COMMITMENTS

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

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: https://dot.sd.gov/media/3677d319/EnvironmentalProceduresManual.pdf

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

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

COMMITMENT A: AQUATIC RESOURCES

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.21 acres of stream (includes temporary and permanent) becoming impacted. Refer to 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)
Rock Creek	17+10.15	0.046	0.046	0.066	0.055	0.21

Action Taken/Required:

Final compensatory mitigation requirements will be determined by the USACE during the Section 404 permitting process. It is anticipated that SDDOT will acquire up to 0.736 credits from the Ducks Unlimited stream mitigation bank site or In-Lieu Fee program to mitigate permanent impacts.

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

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

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

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

Table of Topeka Shiner Streams

Station	Stream Name	Ordinary High-Water Elevation
17+10.15	Rock Creek	1,460.46 feet

Action Taken/Required:

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

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

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

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COMMITMENT C: WATER SOURCE

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

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

Action Taken/Required:

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

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

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

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

Rock Creek is classified as warm water, marginal fishery with a total suspended solids standard of less than 150 mg/L 30-day average, less than 263 mg/L daily maximum.

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

Action Taken/Required:

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

COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge 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 cold water permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as cold water 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 SDDANR using the following form:

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

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

The form can be found at:
<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAppendixCCA2023Fillable.pdf >

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

Storm Water Pollution Prevention Plan

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

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

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

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

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

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

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

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COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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

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

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

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

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

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

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

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

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

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

COMMITMENT N: SECTION 404 PERMIT

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

Action Taken/Required:

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

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

SEQUENCE OF OPERATIONS

The Contractor will use the following sequence of operations:

1. Install temporary traffic control signs as shown on the plans.
2. Install erosion control procedures and notify County to remove fence and install temporary fence.
3. Deconstruct and remove existing structure.
4. Undercut box culvert.
5. Construct new structure.
6. Grading operations, place topsoil, install riprap and final erosion control.
7. Notify County to install final surfacing, permanent signing, and permanent fence.
8. Remove temporary traffic control and open the roadway to through traffic.
9. Permanent seeding.
10. Complete miscellaneous cleanup under traffic.

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

COUNTY RESPONSIBILITIES

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

1. Right of way temporary and permanent easements.
2. Coordination of any utility adjustments.
3. Removal of existing fencing, Furnish and install temporary and/or permanent fencing.
4. Furnish and install final surfacing and pavement marking.
5. Furnish and install new permanent signing.
6. Remove silt fence and erosion control wattles in permanently seeded areas.
7. Remove salvaged items.
8. Mitigation for aquatic resources.

GENERAL MAINTENANCE OF TRAFFIC

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

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 20 MGal. No separate payment will be made for the Water for Embankment and all costs associated will be incidental to the contract unit price per cubic yard of "Unclassified Excavation".

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

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

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

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

Compaction of earth embankment and box culvert backfill material will be governed by the Specified Density Method.

UTILITIES

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

Location		Utility	Owner	Phone Number
11+40.87 22+31.42 Lt	to	Underground Communications	Alliance	(605) 594-6411
11+40.87 22+31.42 Rt	to	Overhead Electric	Central Electric Cooperative	(605) 996-7516
11+40.87 22+31.42 Lt	to	Underground Water	Kingsbrook Rural Water District	(605) 983-5074

TABLE OF TEMPORARY DIVERSION CHANNEL FOR FISH PASSAGE

The Contractor will construct a temporary diversion channel in accordance with standard plate 734.30 at the locations listed in the following table:

Station	Quantity (Each)
17+10.15	1
Total:	1

SHRINKAGE FACTOR:

Embankment plus 35%

EARTHWORK BALANCE:

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

Other excavation includes the excavation for Class B Riprap (49 CuYd) and Box Culvert Undercut (299 CuYd).

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

Excavation*	2,285	CuYd		Embankment	1,451	CuYd
Waste	326	CuYd		35% Shrinkage	508	CuYd
Total	1,959				1,959	CuYd

*Asphalt pavement removal volume subtracted from gross excavation quantity.

The Contractor may, at the discretion of the Engineer, use the material from other excavation in the inslopes and as sub-base with the condition that said material meets all requirements as set forth in the Standard Specifications for Roads and Bridges, 2015 Edition.

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

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	2,285
Topsoil	1,990
Excavation for RCBC Installation	1,260
Total Unclassified Excavation:	5,535

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

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

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

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

The volume of in place asphalt surfacing removed will NOT be paid for as Unclassified Excavation.

The Excavation quantities from individual balances and the table above have been reduced by the volume of in place asphalt pavement that will be removed.

The estimated quantity of 494 cubic yards of asphalt pavement removed from the cut sections has been subtracted from the Unclassified Excavation quantity for final payment. The quantity of asphalt pavement from cut sections subtracted from the Unclassified Excavation quantity will be plans quantity and will not be adjusted according to field measurements.

CONTRACTOR FURNISHED BORROW EXCAVATION

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

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

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REV BDS 12-30-2025

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 1,260 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.

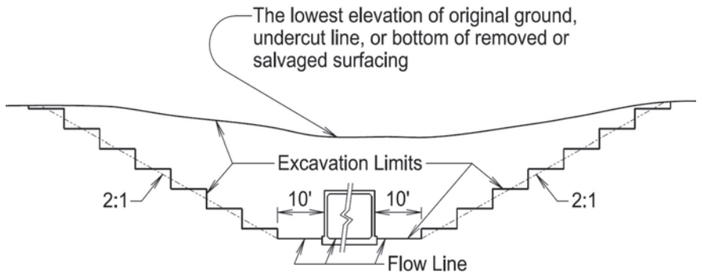


TABLE OF EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Station	Quantity (CuYd)
17+10.15	1,260
Total:	1,260

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 ⅔-inch x ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes will have 3-inch x 1-inch or 5-inch x 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

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

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

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

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

REMOVAL OF EXISTING ASPHALT CONCRETE PAVEMENT STA. 11+40 to STA. 22+31

Existing asphalt concrete and/or existing asphalt concrete patch work that was placed above the existing asphalt concrete pavement is included in the quantity for "Remove Asphalt Concrete Pavement". The Contractor will dispose of the asphalt concrete pavement and asphalt concrete at a site approved by the Engineer.

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
11+40		22+31	L/R	3,323
			Total:	3,323

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)
11+40		22+31	LT	790
11+40		22+31	RT	1,200
		Total:		1,990

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

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

SALVAGE DELINEATORS AND TRAFFIC SIGNS

All signs, object markers, and delineators listed for salvage in the Table of Salvage Delineators and Traffic Signs will become property of Miner County and will have the existing posts, bases, and signs dismantled and stockpiled within the right-of-way. The Contractor will contact the Miner County Highway Superintendent at (605) 772-4721 for pick-up of salvaged materials. All bolts, nuts, and washers will be placed in individual containers. Wooden posts will be stockpiled separately from steel posts. All signs listed for salvage will be handled with care so that the signs are not damaged during removal or transport. The Contractor will replace and pay for any salvaged signs damaged in their care.

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

TABLE OF SALVAGE DELINEATORS AND TRAFFIC SIGNS

Location	Work Item	Salvage Delineator	Salvage Traffic Sign
14+96 – 22' Lt.	Salvage Delineator	1	
14+97– 22' Rt.	Salvage Delineator	1	
15+44 – 22' Lt.	Salvage Delineator	1	
15+46 – 20' Rt.	Salvage Delineator	1	
15+95 – 20' Lt.	Salvage Delineator	1	
15+95 – 19' Rt.	Salvage Delineator	1	
16+46 – 17' Lt.	Salvage Delineator	1	
16+45 – 17' Rt.	Salvage Delineator	1	
16+92 – 17' Lt.	Salvage Object Marker	1	
16+93 – 17' Rt.	Salvage Object Marker	1	
17+30 – 17' Lt.	Salvage Object Marker	1	
17+31 – 17' Rt.	Salvage Object Marker	1	
17+78 – 17' Lt.	Salvage Delineator	1	
17+77 – 17' Rt.	Salvage Delineator	1	
18+27 – 18' Lt.	Salvage Delineator	1	
18+28 – 19' Rt.	Salvage Delineator	1	
18+79 – 21' Rt.	Salvage Delineator	1	
19+28 – 21' Lt.	Salvage Delineator	1	
19+29 – 24' Rt.	Salvage Delineator	1	
15+94 – 24' Rt.	Salvage Weight Limit Sign		1
18+28 – 25' Lt.	Salvage Weight Limit Sign		1
	Total	19	2

EROSION CONTROL

The estimated area requiring erosion control is 3.0 acres with 2.15 acres being seeding and erosion control blanket and 0.85 acres being seeding and mulch. All costs for the erosion control work for furnishing, placing and maintaining erosion control including equipment, labor, seeding, mulching, and mycorrhizal inoculum will be incidental to the contract lump sum price for "Erosion Control".

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

Permanent Seeding

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, and top of riprap.

Permanent Seed Mixture will consist of the following:

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

Application of fertilizer will not be required on this project.

Mulching

Mulch will consist of grass hay or straw and will be blown on and punched in to a 3 inch depth at the rate of 2 tons per acre on all newly seeded areas.

Mycorrhizal Inoculum

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

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract lump sum for "Erosion Control".

The Mycorrhizal Inoculum provided will be from the approved product list. The approved product list may be viewed at the following internet site:

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

EROSION CONTROL WATTLE

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

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds. Erosion control wattles will remain on the project 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 highway ditch channels and as an alternative to low flow or high flow silt fence at wetland areas adjacent to the highway.

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

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

TABLE OF EROSION CONTROL WATTLE

Station	Diameter (Inch)	Quantity (Ft)
12+95.69 L	12	40
12+98.54 R	12	40
14+44.91 R	12	40
14+51.54 L	12	40
16+17.01 L	12	40
16+19.89 R	12	40
16+53.51 L	12	140
16+71.08 R	12	140
17+28.78 L	12	100
17+56.00 L	12	100
17+81.00 L	12	40
19+22.74 L	12	40
Additional :		100
Total:		900

HIGH FLOW SILT FENCE

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

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

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

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

TABLE OF HIGH FLOW SILT FENCE

Station	Location	Quantity (Ft)
17+80.88 to 22+31+41	Rt	451
19+02.72 to 22+31.41	Lt	329
	Additional Quantity:	20
	Total:	800

SURFACE ROUGHENING

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

TABLE OF SURFACE ROUGHENING

Station	Location	Area (Acre)
16+00 to 17+80 R	Inslope/Backslope/Channel	0.4
15+90 to 17+80 L	Inslope/Backslope/ Channel	0.5
	Additional Quantity:	0.2
	Total:	1.1

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA

10/22/2025

EROSION CONTROL BLANKET

Erosion control blanket will be installed as shown in the plans and at locations determined by the Engineer during construction.

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

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

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

TABLE OF EROSION CONTROL BLANKET

Station	Location	Type	Quantity (SqYd)
11+40.87 to 13+26.42	Lt	2	885
11+40.87 to 13+27.46	Rt	2	870
13+42.33 to 16+94.94	Lt	2	2045
13+48.15 to 17+45.39	Rt	2	3155
16+31.51 to 18+87.77	Lt	2	1530
17+25.31 to 22+31.41	Rt	2	1180
19+02.62 to 22+31.41	Lt	2	570
	Additional Quantity:	2	100
Total Type 2 Erosion Control Blanket:			10,335

SHAPING FOR EROSION CONTROL BLANKET

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

TABLE OF SHAPING FOR EROSION CONTROL BLANKET

Station	Location	(Ft)
11+40 to 17+80	Rt	700
11+40 to 18+90	Lt	1,000
	Total:	1,700

TABLE OF CONSTRUCTION STAKING

					Grade Staking							
Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Length (Mile)	Lane Factor	Sets of Stakes	Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
222nd St (2 Lanes Asphalt)	11+40.87	22+31.42	2	1,091	0.2	1	1	0.2	0.2	0.2	1
							Totals:	0.2	0.2	0.2	1

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

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** 5.44 Acres
- **5.3 (3b): Total Area to be Disturbed** 4.19 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 4.19 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 70%
- **5.3 (3d): Description of Vegetative Cover** Native Grasses and Crop Land
- **5.3 (3e): Soil Properties:** AASHTO Soil Class A-6; USDA stratified loam to loamy fine sand to fine sandy loam to silty clay loam to clay loam to silt loam to sandy clay loam
- **5.3 (3f): Name of Receiving Water Body/Bodies** Rock Creek
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

- **Special sequencing requirements (**see notes sheet).

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install temporary traffic control signs.	
Install erosion control procedures and notify County to remove fence and install temporary fence.	
Deconstruct and remove existing structure.	
Undercut box culvert.	
Construct new structure.	
Grading operations, place topsoil, install riprap and final erosion control.	
County to install final surfacing, permanent signing, and install permanent fence.	
Remove temporary traffic control and open the roadway to through traffic.	
Permanent seeding.	
Complete miscellaneous cleanup under traffic.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

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

Perimeter Controls (See Detail Plan Sheets)

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

Structural Erosion and Sediment Controls

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

Dust Controls

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

Dewatering BMPs

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

Stabilization Practices (See Detail Plan Sheets)

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

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

Wetland Avoidance

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

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

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

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➢ **Material Management**

- Housekeeping
  - Only needed products will be stored on-site by the Contractor.
  - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
  - Products must be stored in original containers and labeled.
  - Material mixing will be conducted in accordance with the manufacturer's recommendations.
  - When possible, all products will be completely used before properly disposing of the container off-site.
  - The manufacturer's directions for disposal of materials and containers will be followed.
  - The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
  - Dust generated will be controlled in an environmentally safe manner.

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

➢ **Spill Control Practices**

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

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

➢ **Spill Response**

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

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

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➢ **Waste Disposal**

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

➢ **Hazardous Waste**

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

➢ **Sanitary Waste**

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

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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

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

Product Specific Practices

- **Petroleum Products**
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

- **Fertilizers**
  Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

- **Paints**
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

- **Concrete Trucks**
  Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

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

7.0: SPILL NOTIFICATION

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
  - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
  - The release or spill causes an immediate danger to human health or safety
  - The release or spill exceeds 25 gallons
  - The release or spill causes a sheen on surface water
  - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
  - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
  - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
  - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

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

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

➢ **South Dakota Department of Transportation**

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

_____

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

➢ **Prime Contractor**

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

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

_____

Authorized Signature

CONTACT INFORMATION

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

➢ **Contractor Information**:

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **SDDOT Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **SDDANR Contact Spill Reporting**

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

➢ **SDDANR Contact for Hazardous Materials.**

- (605) 773-3153

➢ **National Response Center Hotline**

- (800) 424-8802.

➢ **SDDANR Stormwater Contact Information**

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

5.5: REQUIRED SWPPP MODIFICATIONS

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

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

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

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

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

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

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

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

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

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

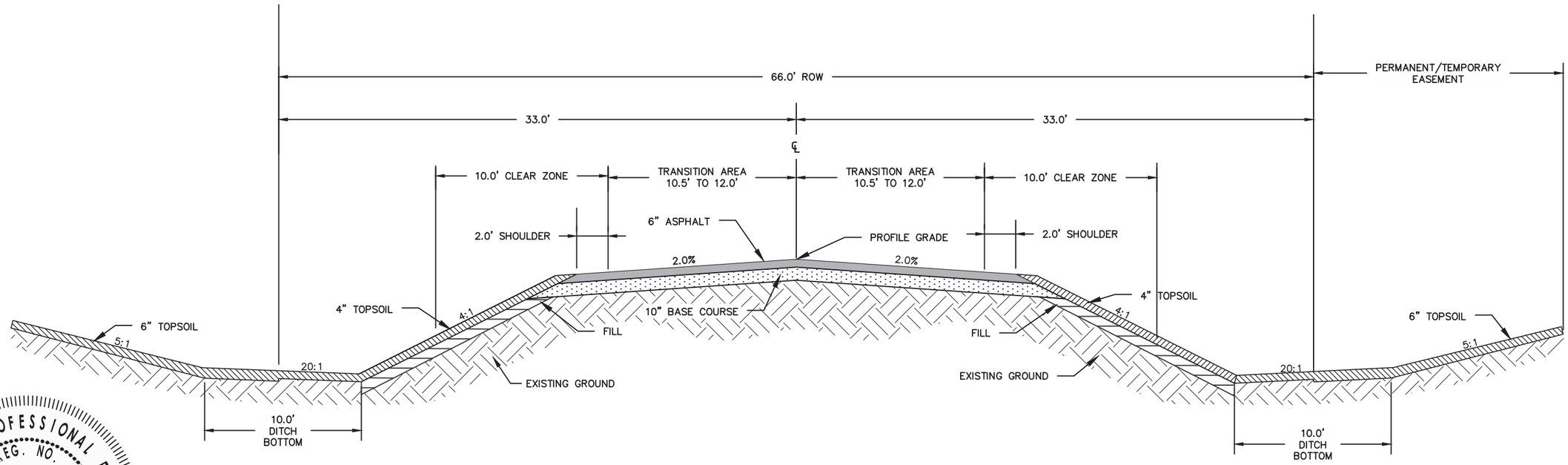
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The 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.

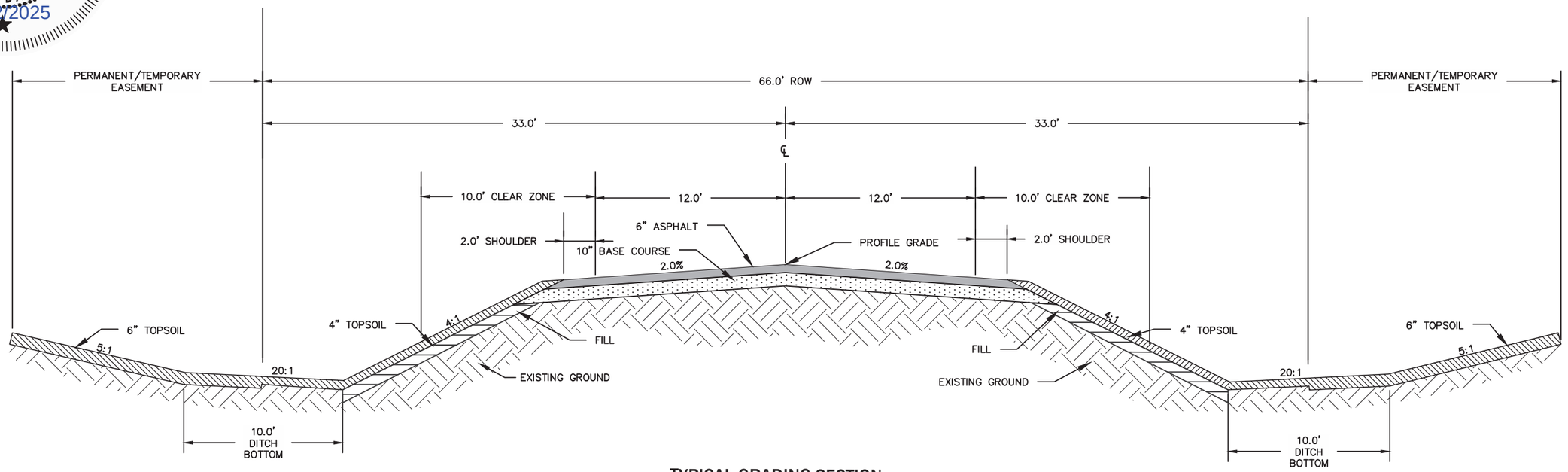
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	13	49

TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY



TYPICAL GRADING SECTION
STA. 11+40.87 to STA. 12+65.93



TYPICAL GRADING SECTION
STA. 12+65.93 to STA. 17+11.02

NOTE: ALL BASE COURSE AND ASPHALT WILL BE FURNISHED AND INSTALLED BY THE COUNTY

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SOUTH DAKOTA
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	BRF-B 6136(01)	14	49

TYPICAL SECTIONS

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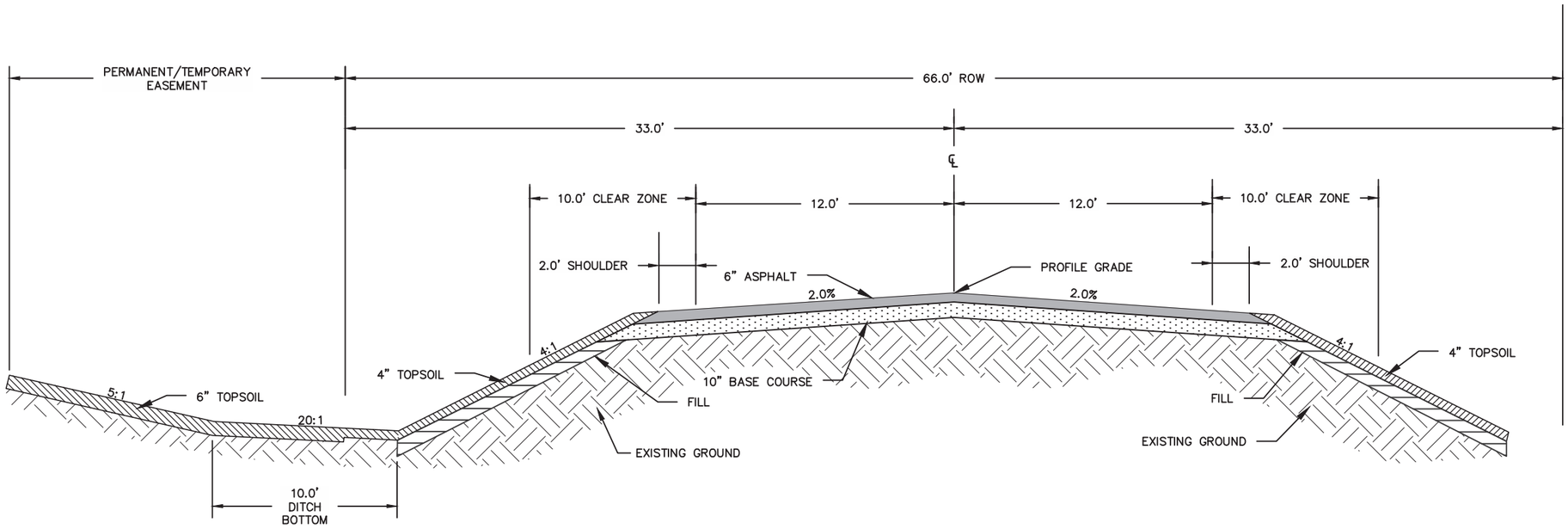
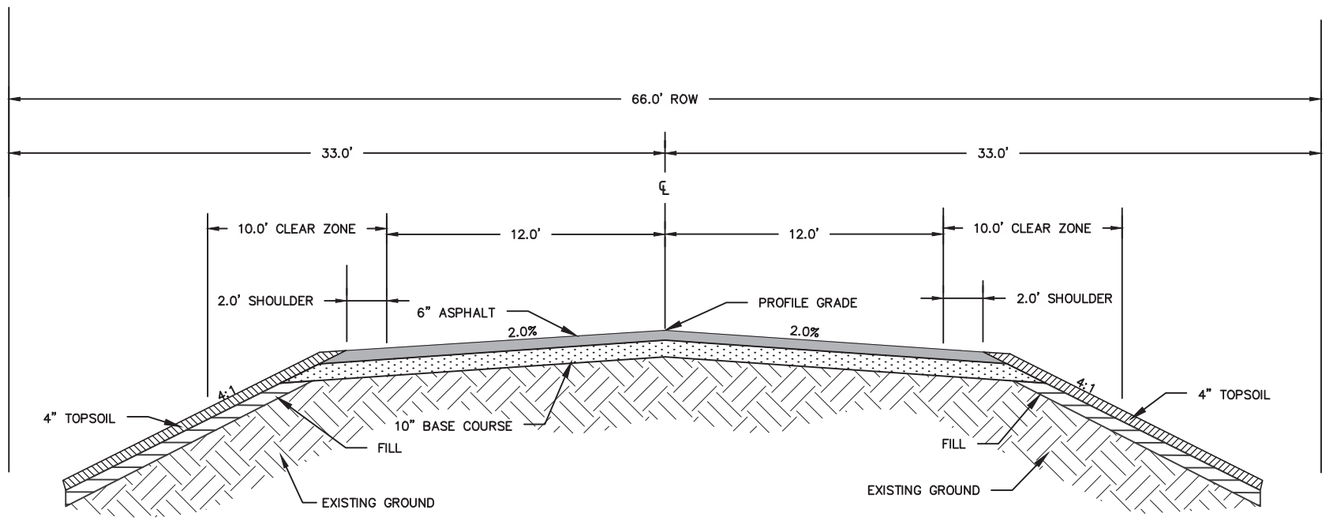


TYPICAL GRADING SECTION
Sta. 17+11.02 to Sta. 19+08.96



TYPICAL GRADING SECTION
Sta. 19+08.96 to Sta. 20+71.49

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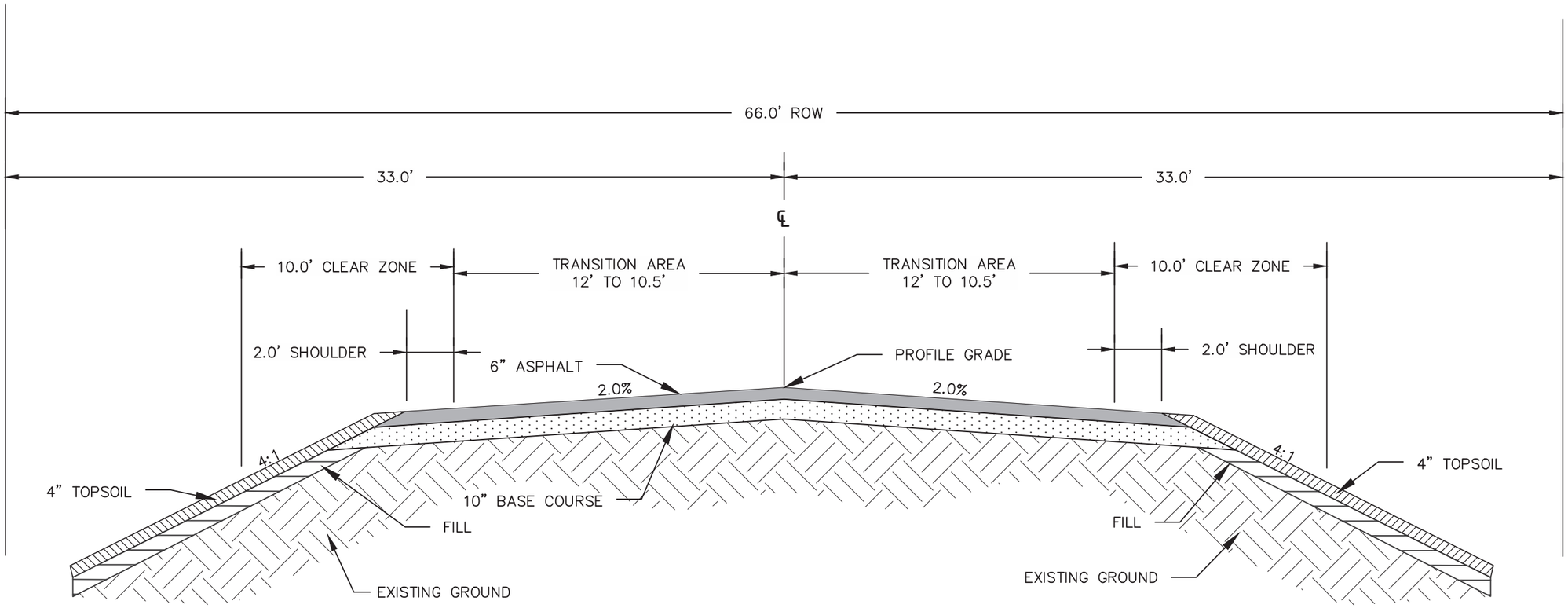
G:\2023\23.24862\C3D Design\Plan Sheets (SDDOT Non-Section Method)\4 - Typical Grading Sections\23.24862-TYP_SECT.dwg PLOT DATE: 10/13/2025 11:07 AM Lane Hillukka Autodesk-MONO.stb

TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	15	49



TYPICAL GRADING SECTION

Sta. 20+71.49 to Sta. 22+31.42

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TRAFFIC CONTROL

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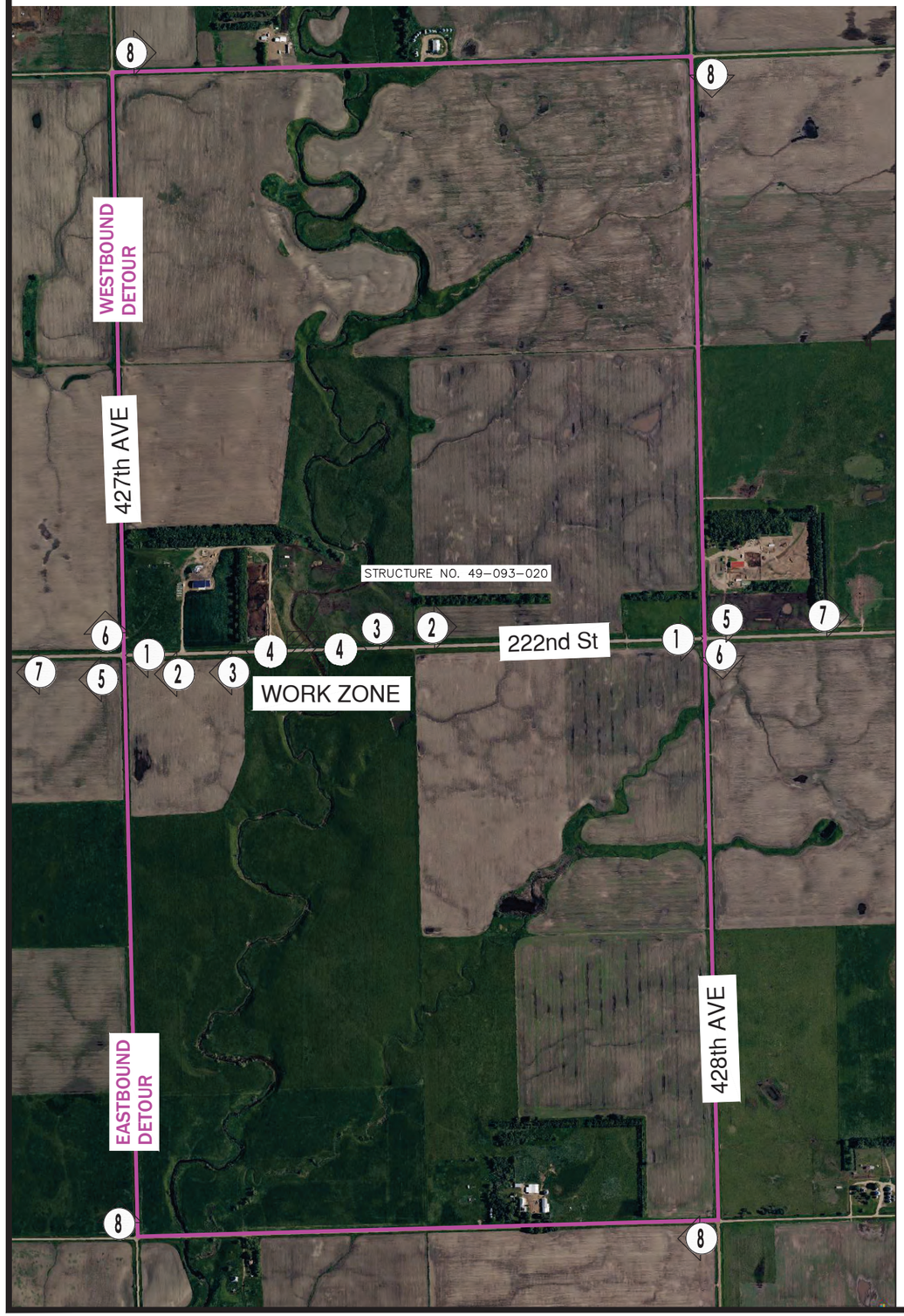
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	16	49



1


R11-3a (60"x30")

TYPE 3 BARRICADE (72"x12")

5


M4-9 (30"x24")

2


W20-3 (48"x48")

3

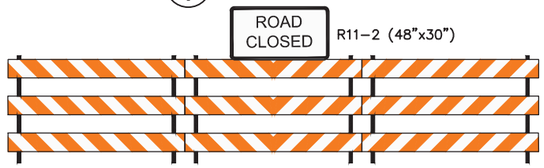

W20-3 (48"x48")

6


M4-8A (24"X18")

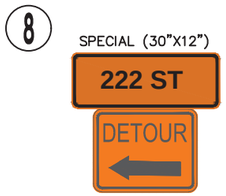
7


W20-2 (48"X48")

4


R11-2 (48"x30")

TYPE 3 BARRICADE (96"x12")

8


M4-9 (30"x24")

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-2	DETOUR AHEAD	2	48" x 48"	16.0	32.0
M4-8a	END DETOUR	2	24" x 18"	3.0	6.0
M4-9	DETOUR (ARROW L or R)	6	30" x 24"	5.0	30.0
SPECIAL	222ND ST	8	30" x 12"	2.5	20.0
		CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT			88.0

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 X MILES AHEAD LOCAL TRAFFIC ONLY	2	60" x 30"	12.5	25.0
W20-3	ROAD CLOSED XXX FEET	4	48" x 48"	16.0	64.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			109.0

TYPE 3 BARRICADES	
ITEM DESCRIPTION	QUANTITY
Type 3 Barricade	8 Each

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	17	49

EROSION CONTROL

FOR BIDDING PURPOSES ONLY

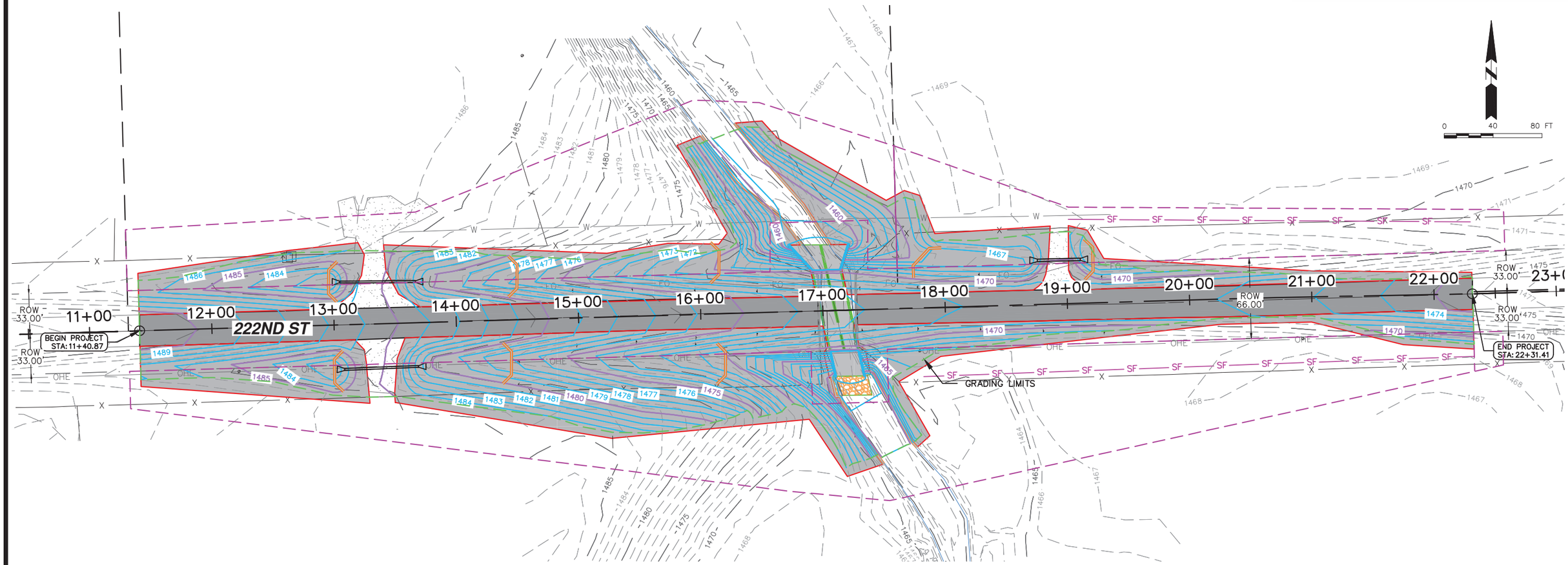

TABLE OF EROSION CONTROL WATTLES

12" Diameter Wattle			
Station	L/R	Diameter (Inch)	Quantity (Ft)
12+95.69	L	12	40
12+98.54	R	12	40
14+44.91	R	12	40
14+51.54	L	12	40
16+17.01	L	12	40
16+19.89	R	12	40
16+53.51	L	12	140
16+71.08	R	12	140
17+28.78	L	12	100
17+56.00	L	12	100
17+81.00	L	12	40
19+22.74	L	12	40
		Miscellaneous	100
		Total	900

TABLE OF HIGH FLOW SILT FENCE

High Flow Silt Fence				
Station		Station	L/R	Quantity (Ft)
17+80.88	To	22+31.41	R	451
19+02.72	To	22+31.41	L	329
			Miscellaneous	20
			Total	800

TABLE OF EROSION CONTROL BLANKET

Type 2 Erosion Control Blanket				
Station		Station	L/R	Quantity (SqYd)
11+40.87	To	13+26.42	L	885
11+40.87	To	13+27.46	R	870
13+42.33	To	16+94.94	L	2045
13+48.15	To	17+45.39	R	3155
16+31.51	To	18+87.77	L	1530
17+25.31	To	22+31.41	R	1180
19+02.62	To	22+31.41	L	570
			Miscellaneous	100
			Total	10335

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LEGEND

- EROSION CONTROL BLANKET
- CLASS B RIPRAP
- TEMPORARY CONSTRUCTION EASEMENT
- SF — HIGH FLOW SILT FENCE
- 12" DIAMETER EROSION CONTROL WATTLE

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	18	49

SURVEY DATA & EASEMENTS

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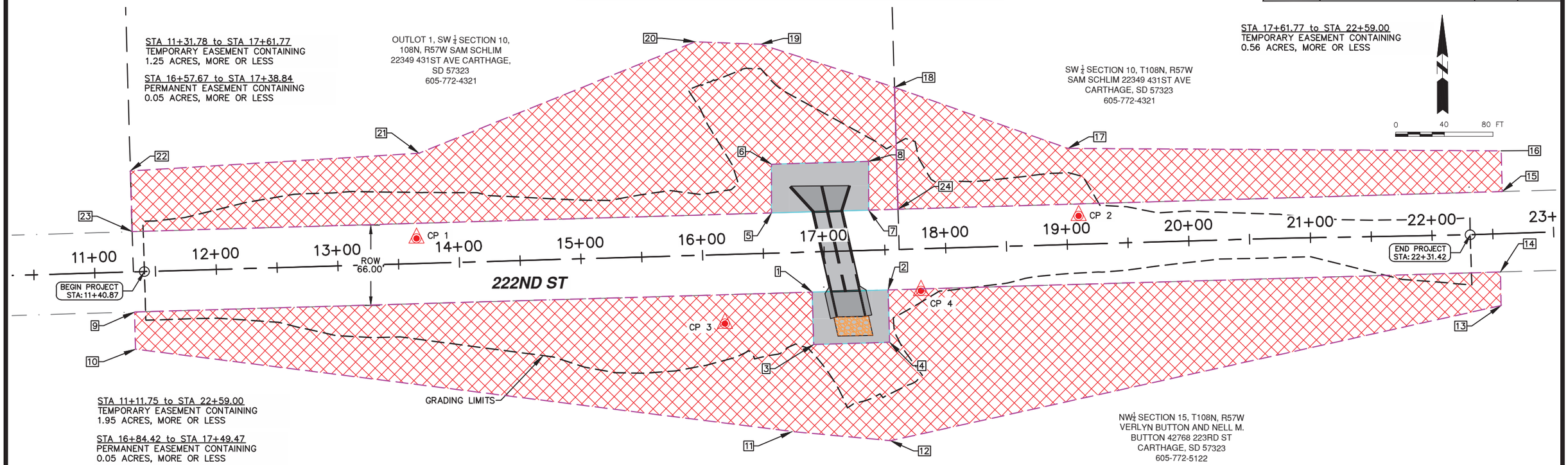

LEGEND — PERMANENT DRAINAGE EASEMENT — TEMPORARY CONSTRUCTION EASEMENT

CONTROL POINT TABLE

Point #	Northing	Easting	Station	Offset	Elevation	Description
1	680030.4020	2668555.8370	13+65.35	21.51' L	1484.00'	100 5BAR W OPC
2	680048.9280	2669100.2390	19+10.04	23.25' L	1469.95'	100 5 BAR AND OPC
3	679960.4250	2668809.4010	16+16.73	56.68' R	1474.72'	100 5BAR W OPC
4	680023.2210	2669803.8380	17+78.66	34.44' R	1485.89'	100 5BAR W OPC

PERMANENT AND TEMPORARY EASEMENTS

#	STATION	OFFSET	SIDE	#	STATION	OFFSET	SIDE
1	16+89.23	32.96'	R	13	22+54.80	58.97'	R
2	17+51.65	32.96'	R	14	22+55.25	31.36'	R
3	16+89.23	76.00'	R	15	22+59.00	34.62'	L
4	17+51.65	76.00'	R	16	22+59.15	68.00'	L
5	16+57.67	33.08'	L	17	19+03.01	78.94'	L
6	16+58.86	73.09'	L	18	17+61.77	133.26'	L
7	17+37.66	33.08'	L	19	16+52.94	173.48'	L
8	17+38.84	73.07'	L	20	15+99.18	175.47'	L
9	11+31.76	32.95'	R	21	13+69.32	90.56'	L
10	11+31.75	63.54'	R	22	11+31.78	82.99'	L
11	16+69.41	146.95	R	23	11+31.78	33.10'	L
12	17+50.08	156.86'	R	24	17+61.77	33.04'	L

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PLAN & PROFILE

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	19	49

STA: 16+95.94 TO STA 17+28.17
REMOVE EXISTING 32.23' X 35.09' SINGLE SPAN STEEL GIRDER BRIDGE (INCIDENTAL WORK, STRUCTURE)

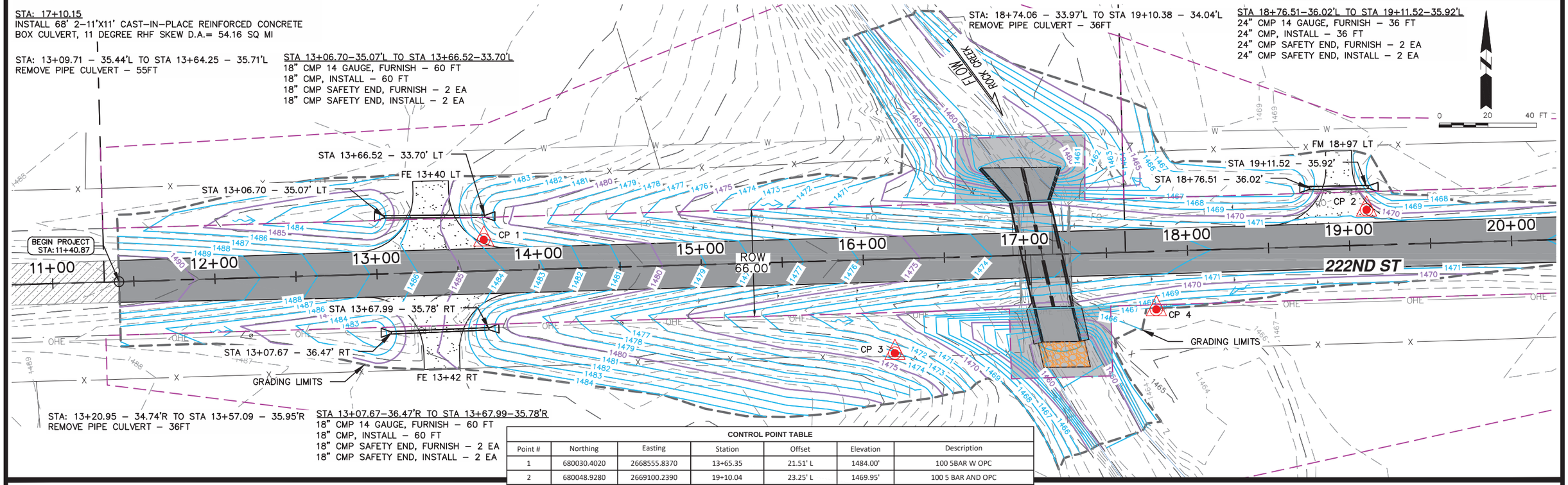
STA: 17+10.15
INSTALL 68' 2–11'X11' CAST–IN–PLACE REINFORCED CONCRETE BOX CULVERT, 11 DEGREE RHF SKEW D.A.= 54.16 SQ MI

STA: 13+09.71 – 35.44'L TO STA 13+64.25 – 35.71'L
REMOVE PIPE CULVERT – 55FT

STA 13+06.70–35.07'L TO STA 13+66.52–33.70'L
18" CMP 14 GAUGE, FURNISH – 60 FT
18" CMP, INSTALL – 60 FT
18" CMP SAFETY END, FURNISH – 2 EA
18" CMP SAFETY END, INSTALL – 2 EA

STA: 18+74.06 – 33.97'L TO STA 19+10.38 – 34.04'L
REMOVE PIPE CULVERT – 36FT

STA 18+76.51–36.02'L TO STA 19+11.52–35.92'L
24" CMP 14 GAUGE, FURNISH – 36 FT
24" CMP, INSTALL – 36 FT
24" CMP SAFETY END, FURNISH – 2 EA
24" CMP SAFETY END, INSTALL – 2 EA

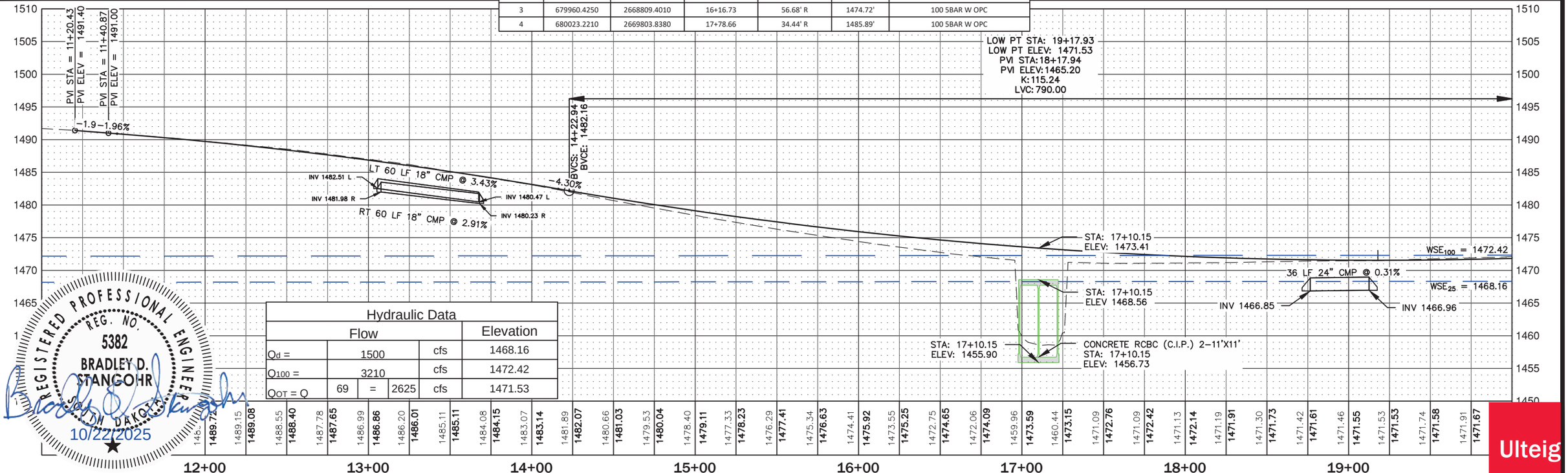


STA: 13+20.95 – 34.74'R TO STA 13+57.09 – 35.95'R
REMOVE PIPE CULVERT – 36FT

STA 13+07.67–36.47'R TO STA 13+67.99–35.78'R
18" CMP 14 GAUGE, FURNISH – 60 FT
18" CMP, INSTALL – 60 FT
18" CMP SAFETY END, FURNISH – 2 EA
18" CMP SAFETY END, INSTALL – 2 EA

CONTROL POINT TABLE

Point #	Northing	Easting	Station	Offset	Elevation	Description
1	680030.4020	2668555.8370	13+65.35	21.51' L	1484.00'	100 5BAR W OPC
2	680048.9280	2669100.2390	19+10.04	23.25' L	1469.95'	100 5 BAR AND OPC
3	679960.4250	2668809.4010	16+16.73	56.68' R	1474.72'	100 5BAR W OPC
4	680023.2210	2669803.8380	17+78.66	34.44' R	1485.89'	100 5BAR W OPC



Hydraulic Data					
	Flow				Elevation
Q_d =	1500			cfs	1468.16
Q_{100} =	3210			cfs	1472.42
Q_{OT} = Q	69	=	2625	cfs	1471.53

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PLAN & PROFILE

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	20	49

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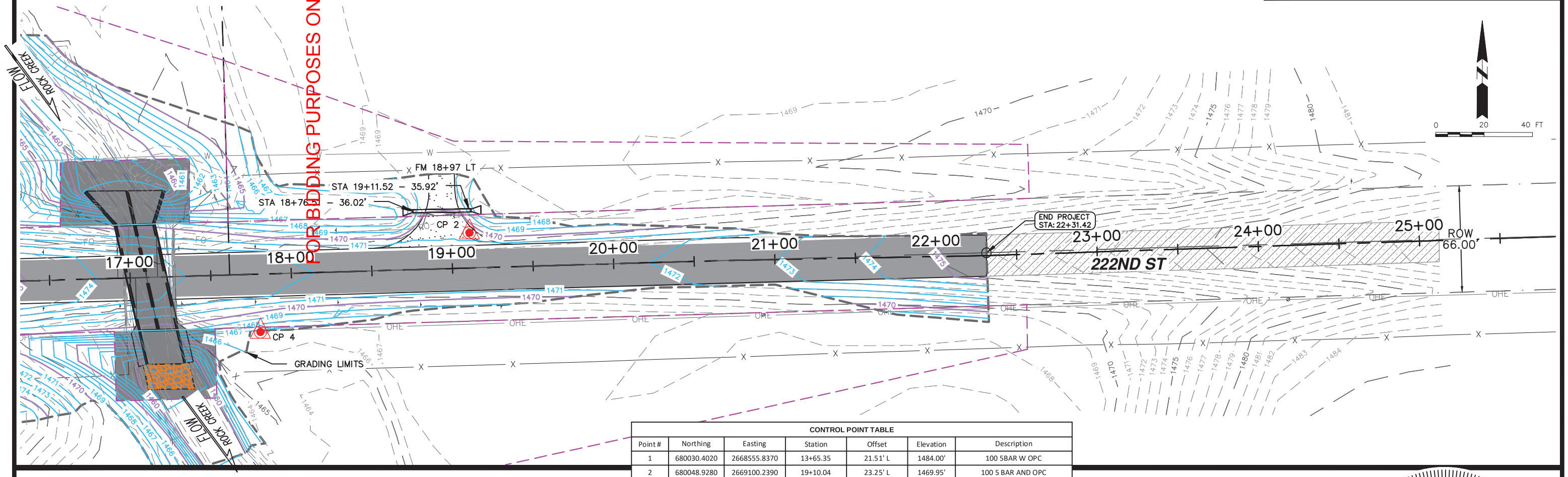

CONTROL POINT TABLE

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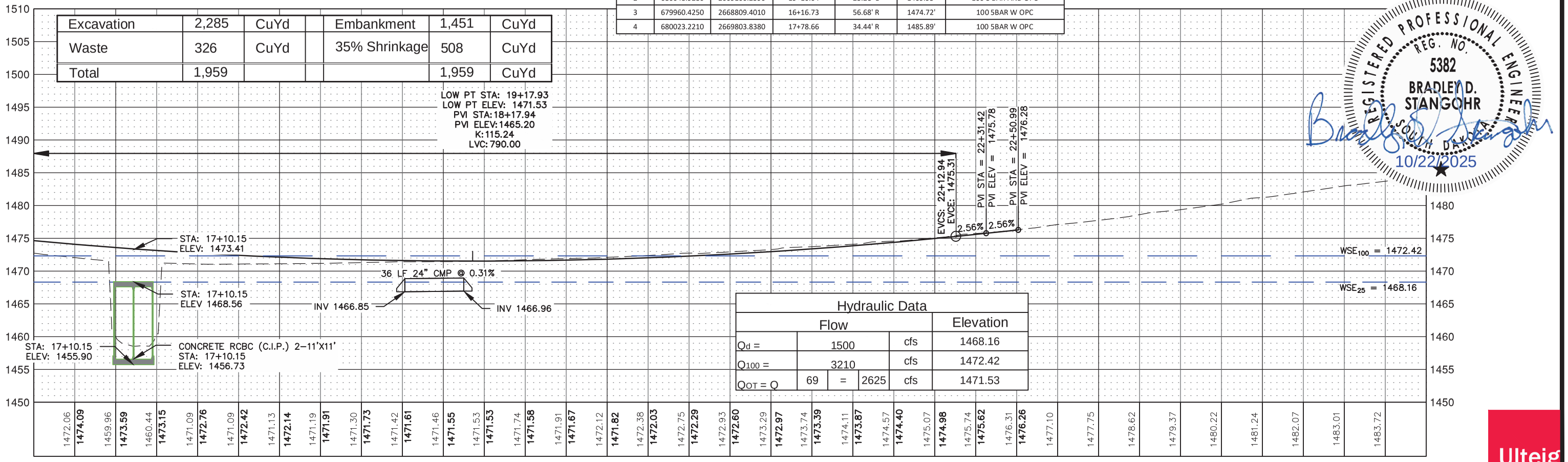
2	680048.9280	2669100.2390	19+10.04	23.25' L	1469.95'	100 5 BAR AND OPC
3	679960.4250	2668809.4010	16+16.73	56.68' R	1474.72'	100 5BAR W OPC
4	680023.2210	2669803.8380	17+78.66	34.44' R	1485.89'	100 5BAR W OPC

Excavation	2,285	CuYd		Embankment	1,451	CuYd
Waste	326	CuYd		35% Shrinkage	508	CuYd
Total	1,959				1,959	CuYd



Hydraulic Data					
	Flow				Elevation
Q_d =	1500			cfs	1468.16
Q_{100} =	3210			cfs	1472.42
Q_{OT} = Q	69	=	2625	cfs	1471.53

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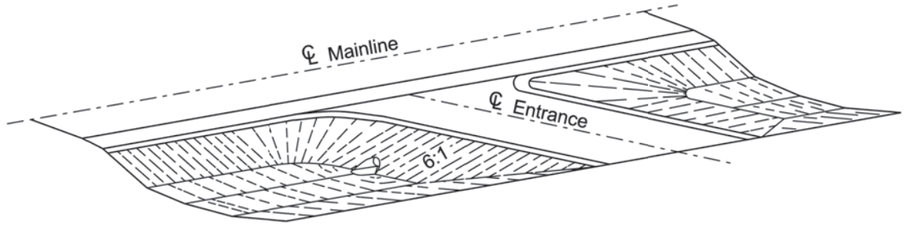
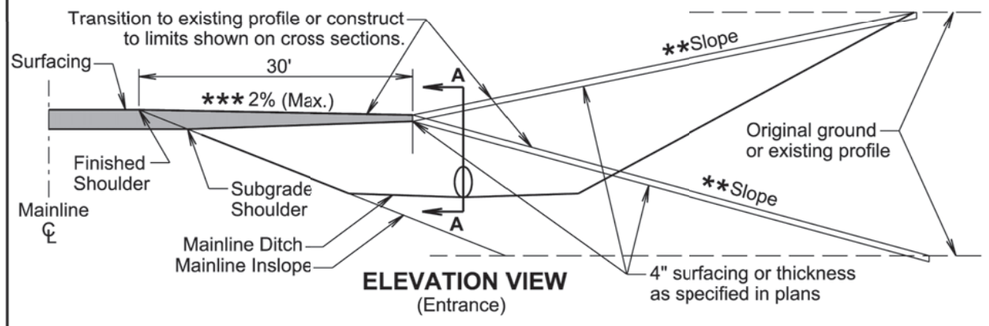
	BRF-B 6136(01)	21	49



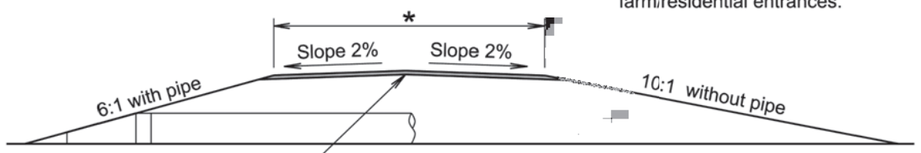
PERSPECTIVE OF ENTRANCE



ELEVATION VIEW
(Entrance)

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

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



SECTION A-A
(Entrance and Intersecting Road)

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

GENERAL NOTES:

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

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

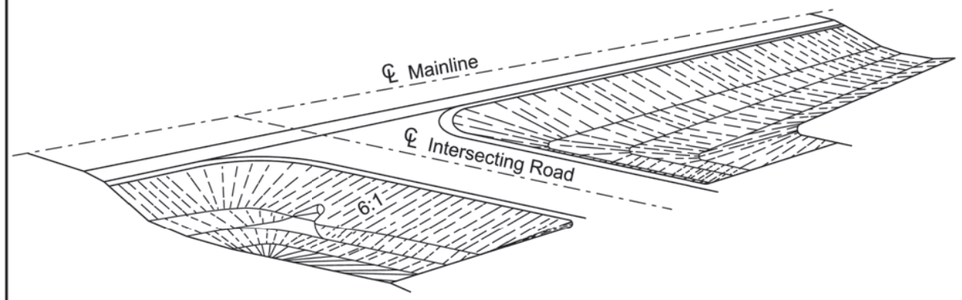
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

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

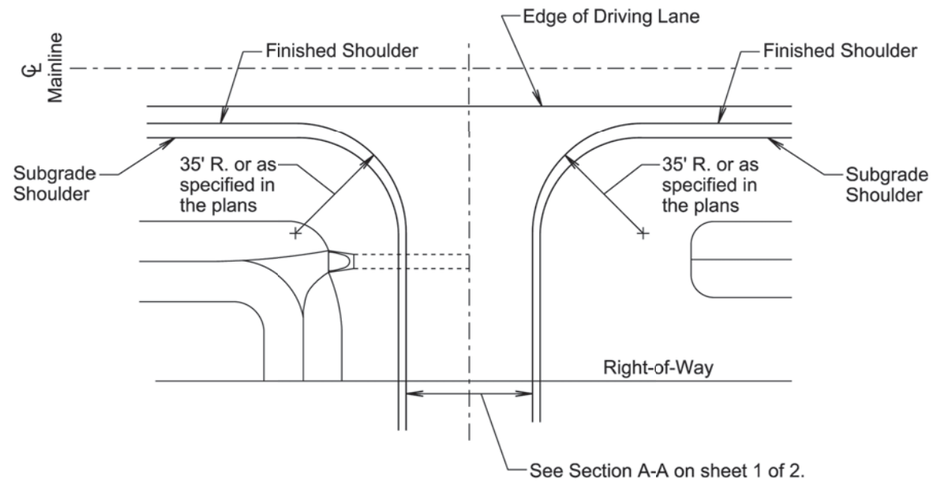
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

November 19, 2021

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



PERSPECTIVE OF INTERSECTING ROAD



PLAN VIEW

GENERAL NOTES:

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

November 19, 2021

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

Published Date: 2026

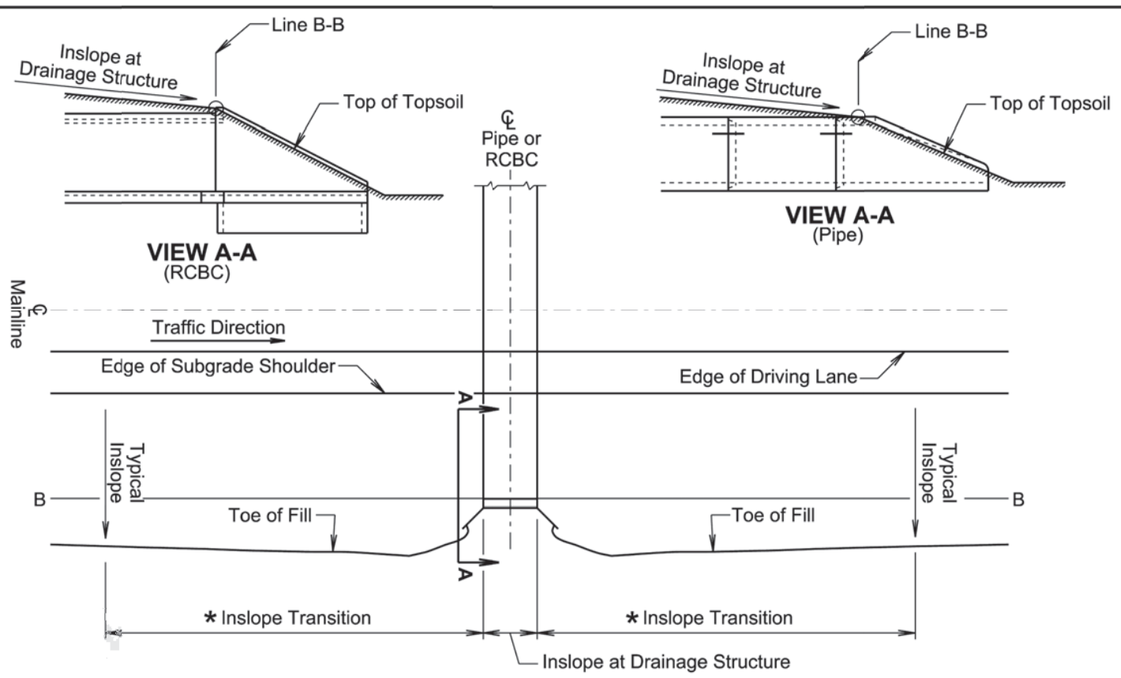
SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 1 of 2

September 14, 2018



TYPE 1 INSLOPE TRANSITION

GENERAL NOTES:

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

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

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

Published Date: 2026

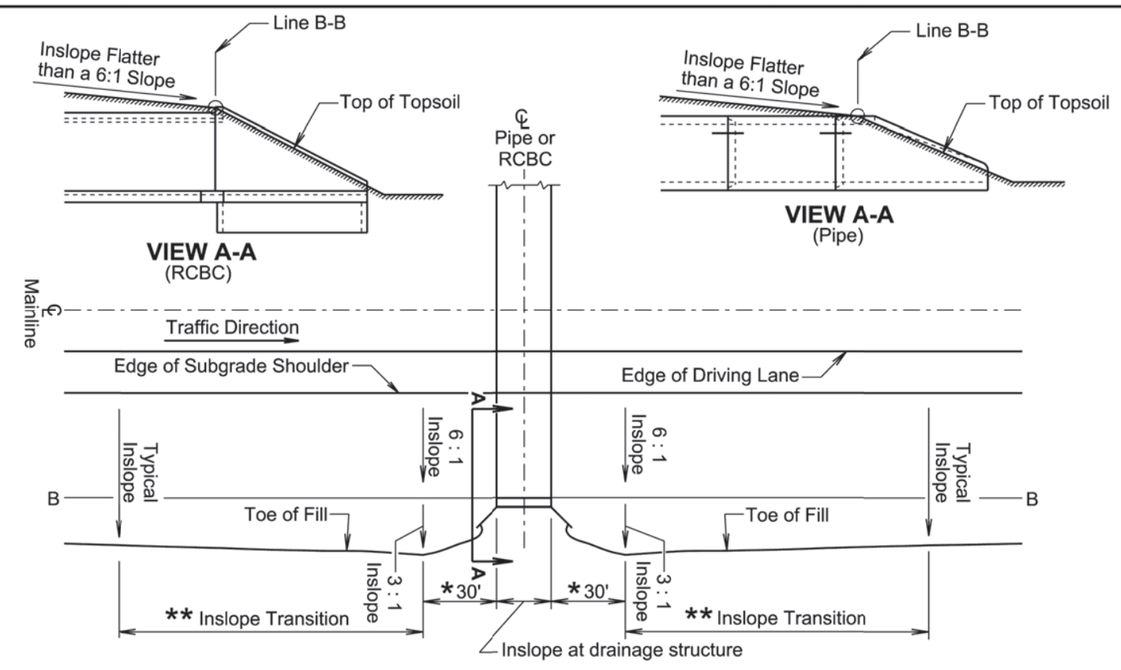
SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 2 of 2

September 14, 2018



TYPE 2 INSLOPE TRANSITION

GENERAL NOTES:

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

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

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

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

STANDARD PLATES

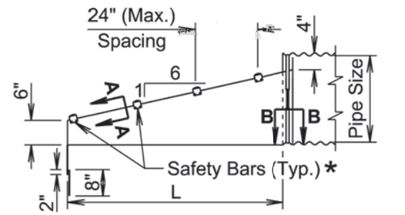
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA

PROJECT BRF-B 6136(01)

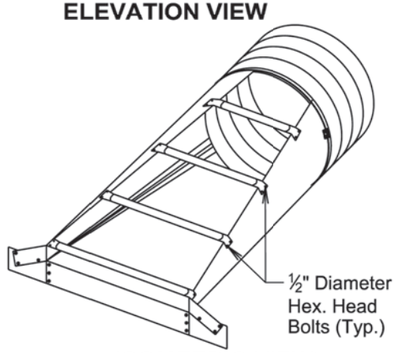
SHEET 22

TOTAL SHEETS 49

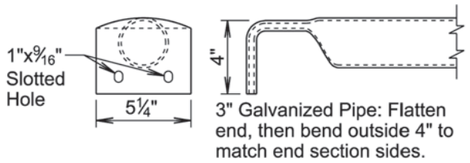


* Number of bars required will vary depending on the length of the end section.

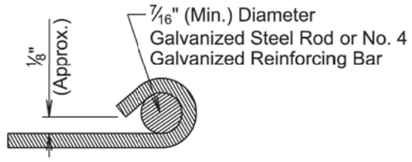
ELEVATION VIEW



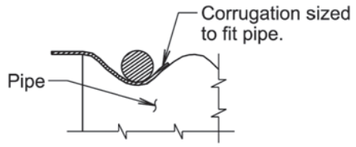
ISOMETRIC VIEW



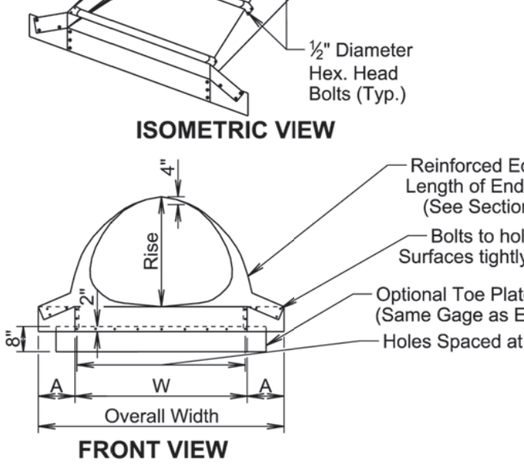
DETAIL OF SAFETY BARS



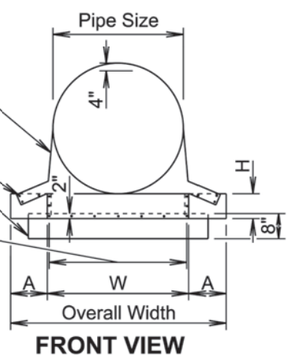
SECTION A-A



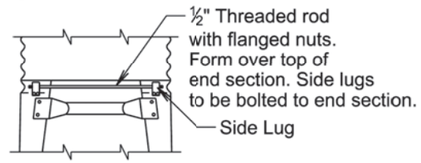
SECTION B-B



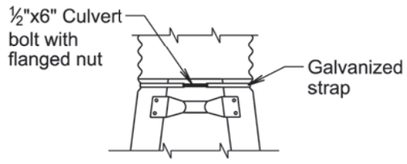
FRONT VIEW



FRONT VIEW



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



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

April 8, 2025

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

ARCH C.M.P. SAFETY ENDS

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

CIRCULAR C.M.P. SAFETY ENDS

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

GENERAL NOTES:

Safety bars will be provided when specified in the plans.

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

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

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

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

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

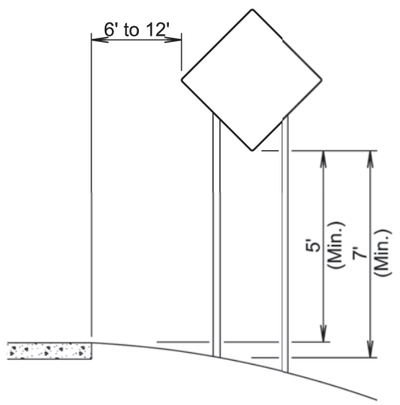
Installation will be performed in accordance with the Specifications.

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

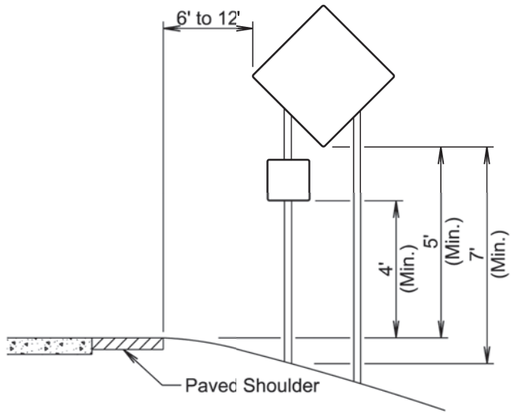
April 8, 2025

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

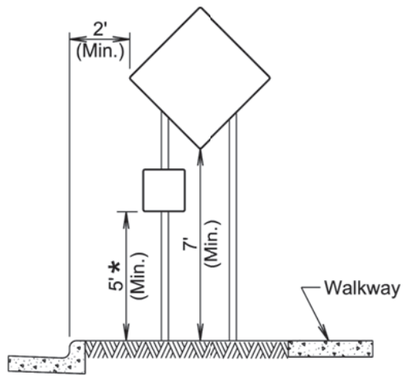
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	24	49



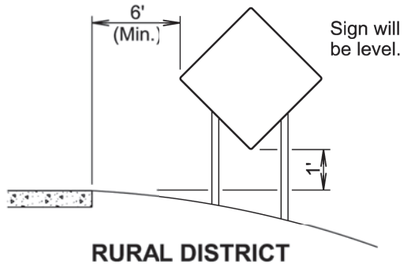
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

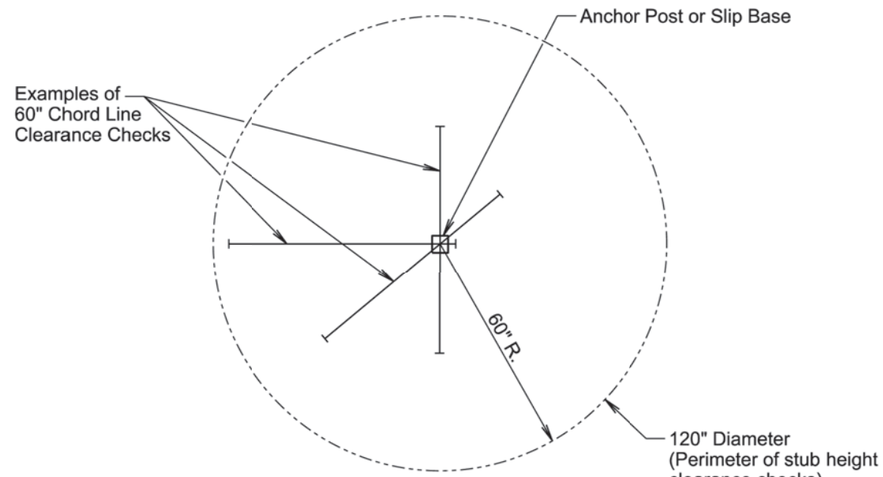


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

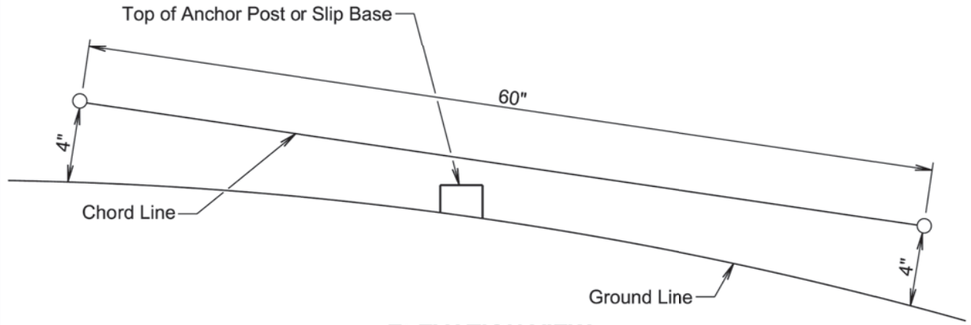
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

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



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

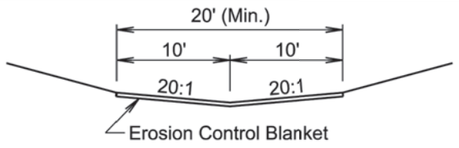
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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

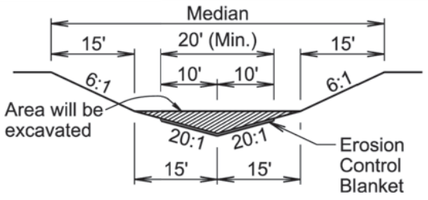
The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

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

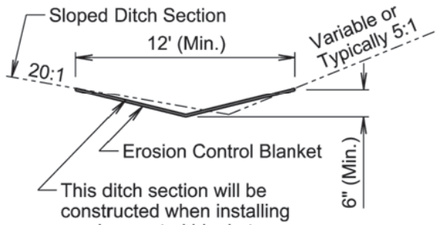


STANDARD DITCH SECTION

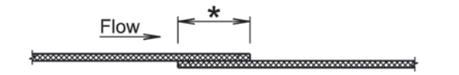


The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.

MEDIAN SECTION



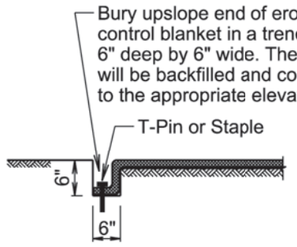
SLOPED DITCH SECTION



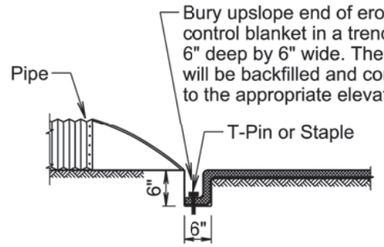
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

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

OVERLAP DETAIL



TRENCH DETAIL



PIPE END DETAIL

GENERAL NOTES:

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

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

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

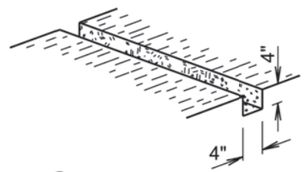
After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

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

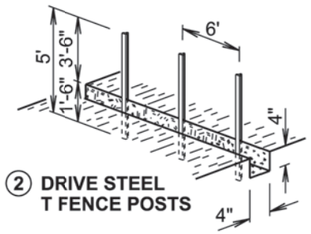
February 14, 2020

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

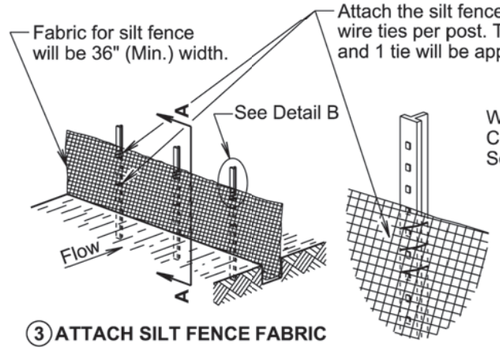
MANUAL HIGH FLOW SILT FENCE INSTALLATION



① **EXCAVATE TRENCH**

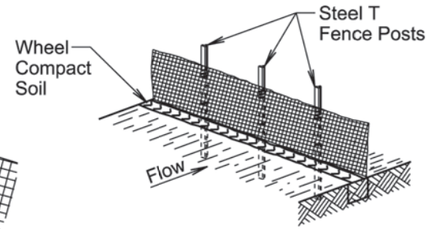


② **DRIVE STEEL T FENCE POSTS**

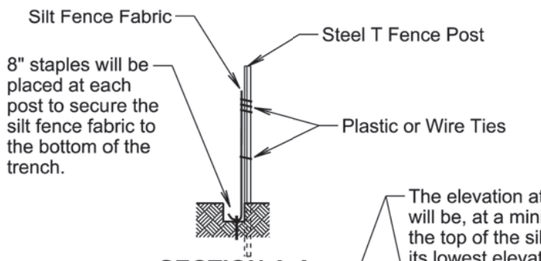


③ **ATTACH SILT FENCE FABRIC**

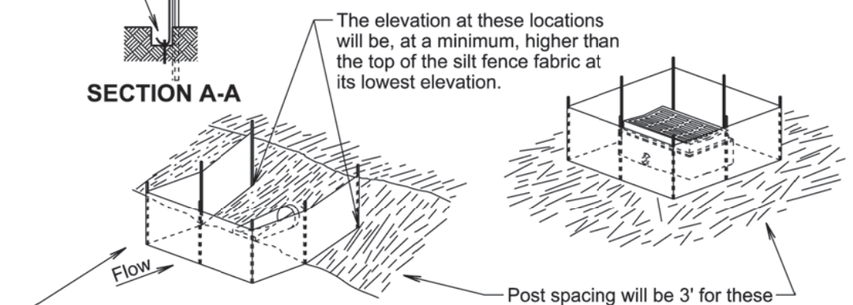
DETAIL B



④ **BACKFILL TRENCH AND WHEEL COMPACT SOIL**



SECTION A-A



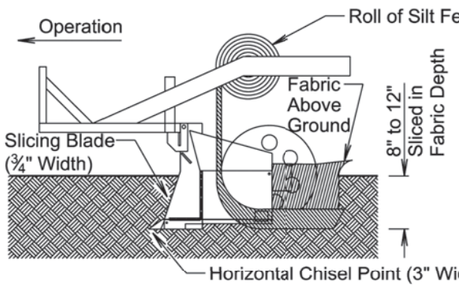
February 14, 2020

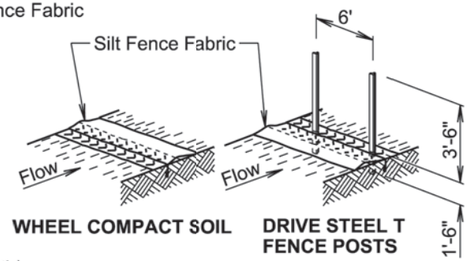
Published Date: 2026	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	26	49

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



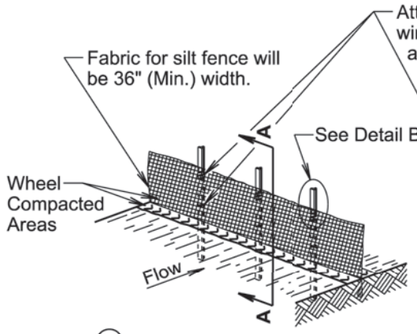


WHEEL COMPACT SOIL

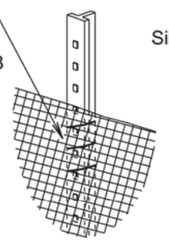
DRIVE STEEL T FENCE POSTS

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

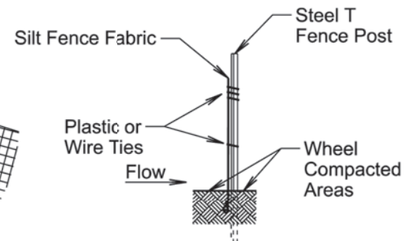
② **WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.**



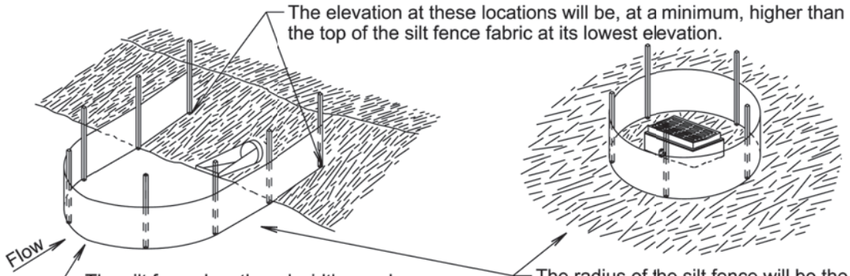
③ **ATTACH SILT FENCE FABRIC**



DETAIL B



SECTION A-A

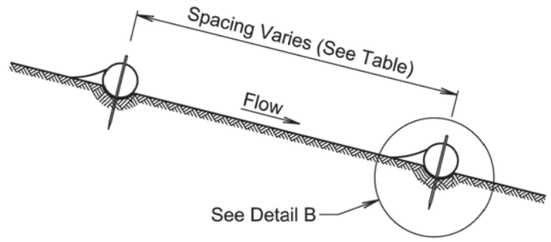


GENERAL NOTE:

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

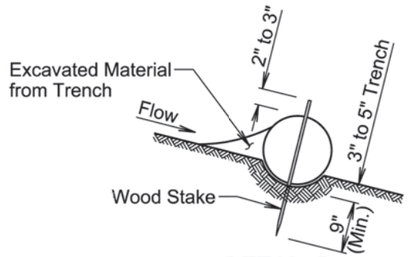
February 14, 2020

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

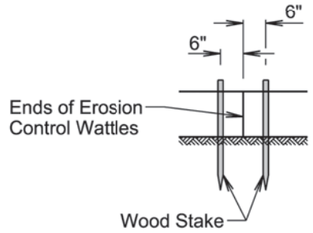


ELEVATION VIEW
(Cut or Fill Slope Installation)

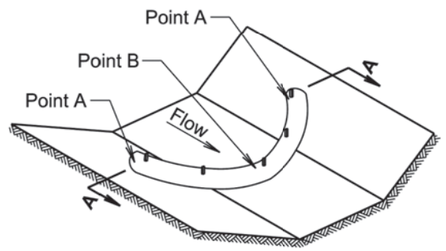
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



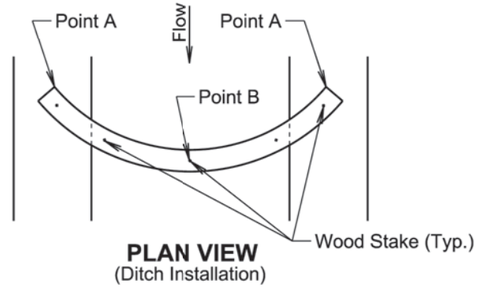
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

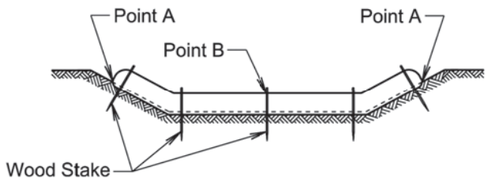


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

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



SECTION A-A

February 14, 2020

Published Date: 2026	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	27	49

GENERAL NOTES:

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

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

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

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

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

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

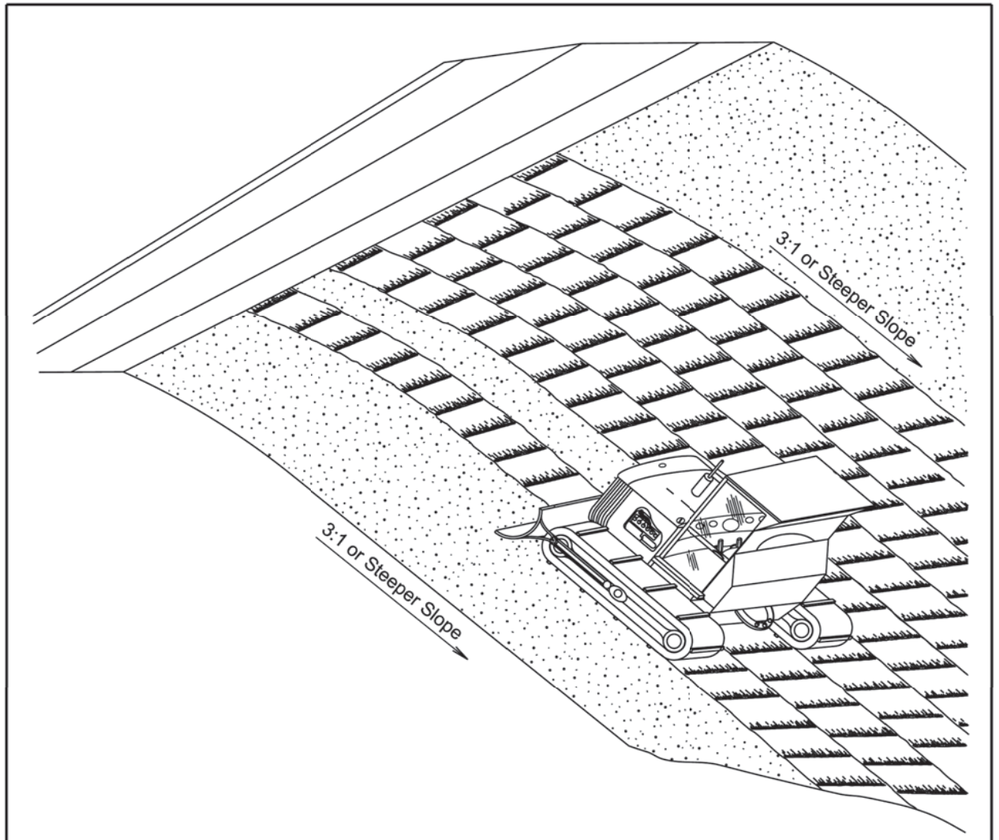
Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

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

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

February 14, 2020

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



GENERAL NOTES:

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

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

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

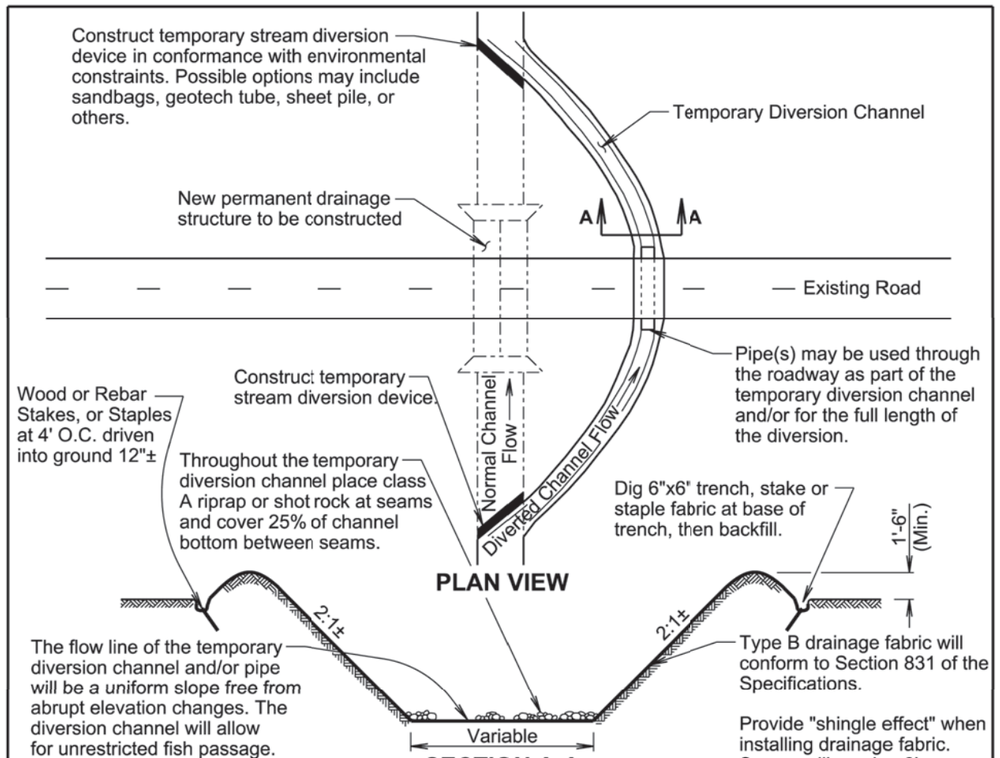
All costs associated with surface roughening including labor, equipment, and materials will be incidental to the contract unit price per acre for "Surface Roughening".

February 14, 2020

Published Date: 2026	SDDOT	SURFACE ROUGHENING	PLATE NUMBER 734.25
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	28	49



GENERAL NOTES:

A temporary diversion channel and/or pipe(s) will be used to divert stream or drainage away from a construction area to provide a dry work area for construction. The diversion of streams and waterways is intended to protect the streams and waterways from various construction contaminants and sediment. Disturbing the existing stream channel and riparian zone should be minimized. Equipment will not cross through the stream outside of the work area.

Sizing of the temporary diversion channel and/or pipe(s) will be the Contractor's responsibility.

The method and materials used to construct the stream diversion device will be the Contractor's responsibility, however, earthen berms are not acceptable since their removal causes siltation problems.

The Contractor will restore the original channel bottom to its original condition prior to returning any flows. Upon completion of the new permanent drainage structure, the temporary stream diversion block or device will be removed in a manner that will not cause violation of water quality standards. The temporary diversion channel will then be backfilled and any pipe(s) (if used) will be removed. The entire work area will be cleaned and restored to smooth/even contours.

All costs for labor, equipment, materials, and incidentals as indicated on this sheet to complete a satisfactory temporary diversion channel and/or pipe(s) will be incidental to the contract unit price per each for "Temporary Diversion Channel For Fish Passage". "Temporary Diversion Channel For Fish Passage" will be paid for once per structure site regardless of the number of times water is diverted at the individual site.

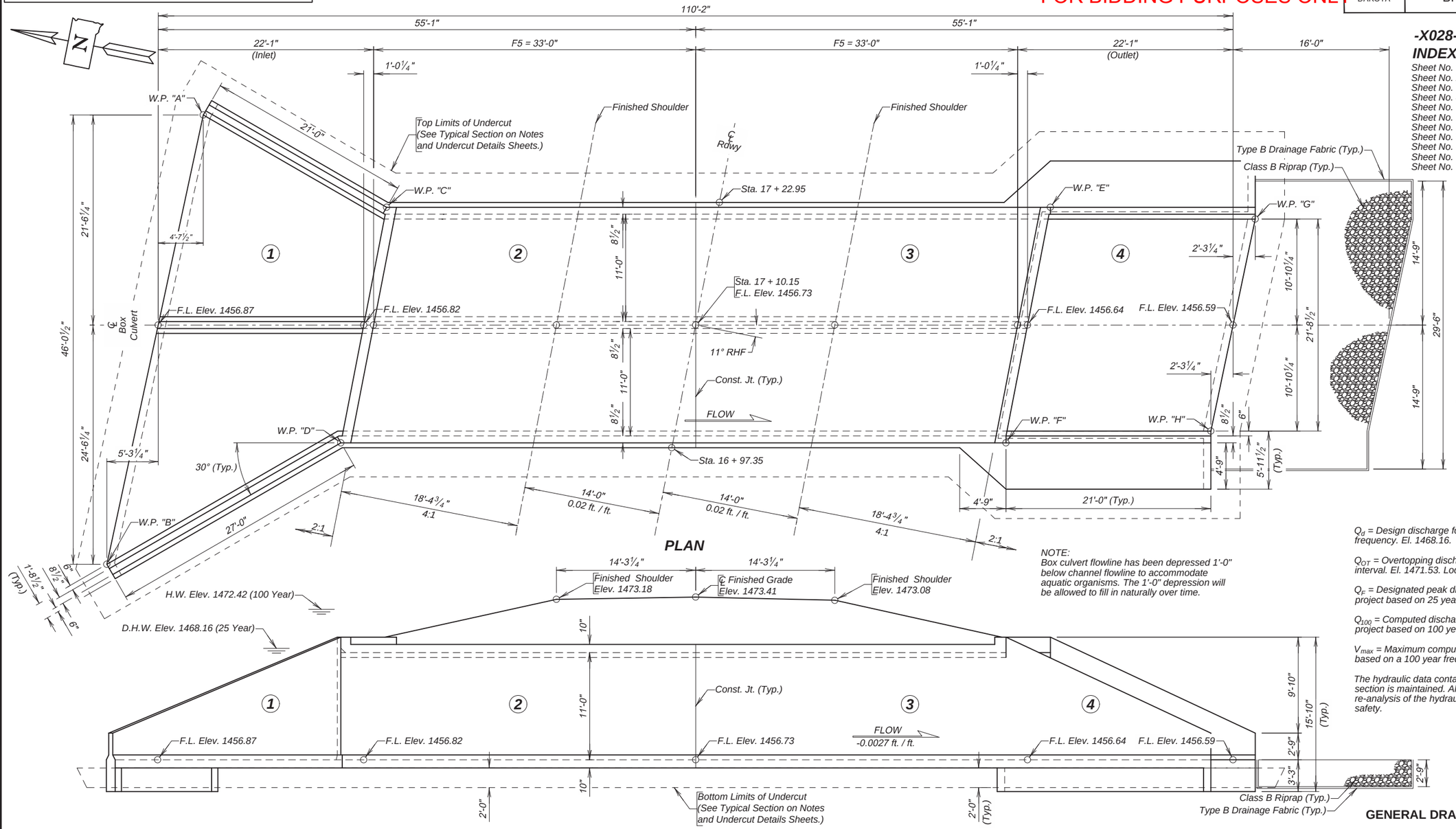
February 14, 2020

Published Date: 2026	SDDOT	***TEMPORARY DIVERSION CHANNEL FOR FISH PASSAGE***	***PLATE NUMBER 734.30***
			Sheet 1 of 1

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

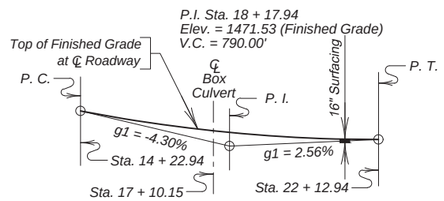
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	29	49



PLAN

ELEVATION



VERTICAL CURVE DATA

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

-X028-
INDEX OF CULVERT SHEETS-

HYDRAULIC DATA

Q_d	1500 cfs
A_d	209 sq. ft.
V_d	7.17 fps
Q_F	1500 cfs
Q_{100}	3210 cfs
Q_{OT}	2625 cfs
V_{max}	12.85 fps

Q_d = Design discharge for the proposed culvert based on 25 year frequency. El. 1468.16.

Q_{OT} = Overtopping discharge and frequency 69 year recurrence interval. El. 1471.53. Location Sta 19+20±.

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. 1472.42.

V_{max} = Maximum computed outlet velocity for the proposed culvert based on a 100 year frequency.

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

Topeka Shiner Stream

TABLE OF WORKING POINTS

W.P.	STATION	OFFSET
"A"	17+21.64	53.65' Lt.
"B"	16+74.57	54.55' Lt.
"C"	17+15.94	33.40' Lt.
"D"	16+91.37	33.38' Lt.
"E"	17+28.93	33.38' Rt.
"F"	17+04.38	33.54' Rt.
"G"	17+31.75	54.23' Rt.
"H"	17+09.58	52.92' Rt.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Incidental Work, Structure	LS	Lump Sum
Structure Excavation, Box Culvert	Cu. Yd.	104
Box Culvert Undercut	Cu. Yd.	299
Class A45 Concrete, Box Culvert	Cu. Yd.	245.1
Reinforcing Steel	Lb.	37970
Class B Riprap	Ton	67.3
Type B Drainage Fabric	Sq. Yd.	81

≠ 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. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

GENERAL DRAWING AND QUANTITIES

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

1 OF 11

-X028-

PLANS BY: ULTEIG ENGINEERS, INC.

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

G:\2023\23.24862\Structure Sheets\23.24862-Structure Sheets-1.dwg PLOT DATE: 10/27/2025 9:21 AM Lane Hillukka Autodesk-MONO.stb

SPECIFICATIONS

1. Design Specifications: AASHTO LRFD Bridge Design Specification, 9th Edition.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges,10-1-2025 Version and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal

GENERAL NOTES

1. Design Live Load: HL-93. No construction loading in excess of legal load was considered.
2. The design of the barrel section is based on a minimum fill height of 2 feet and include all subsequent fill heights up to and including the maximum fill height of 5 feet (F5).
3. Design Material Strengths: Concrete f'_c = 4,500 psi; Reinforcing Steel f_y = 60,000 psi
4. All concrete will be Class A45 Concrete, Box Culvert conforming to Section 460 of the Construction Specifications.
5. All reinforcing steel will conform to ASTM A615 Grade 60.
6. All lap splices shown are contact lap splices unless noted otherwise.
7. All exposed concrete corners and edges will be chamfered $\frac{3}{4}$-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 of brown silt sand.
14. Groundwater is anticipated at an elevation of 1457.85 feet based on the subsurface investigation conducted in June 2022. Dewatering will be required to construct the box culvert. All costs incurred for dewatering will be incidental to other contract items.
15. Compaction of earth embankment and box culvert backfill material will be governed by the Specified Density Method.

INCIDENTAL WORK, STRUCTURE

In place is a 32-0" long, one span steel girder bridge with two precast concrete channel deck units on each side, with a concrete deck, concrete abutments and concrete wingwalls. The bridge has an asphalt overlay on top of the bridge deck.

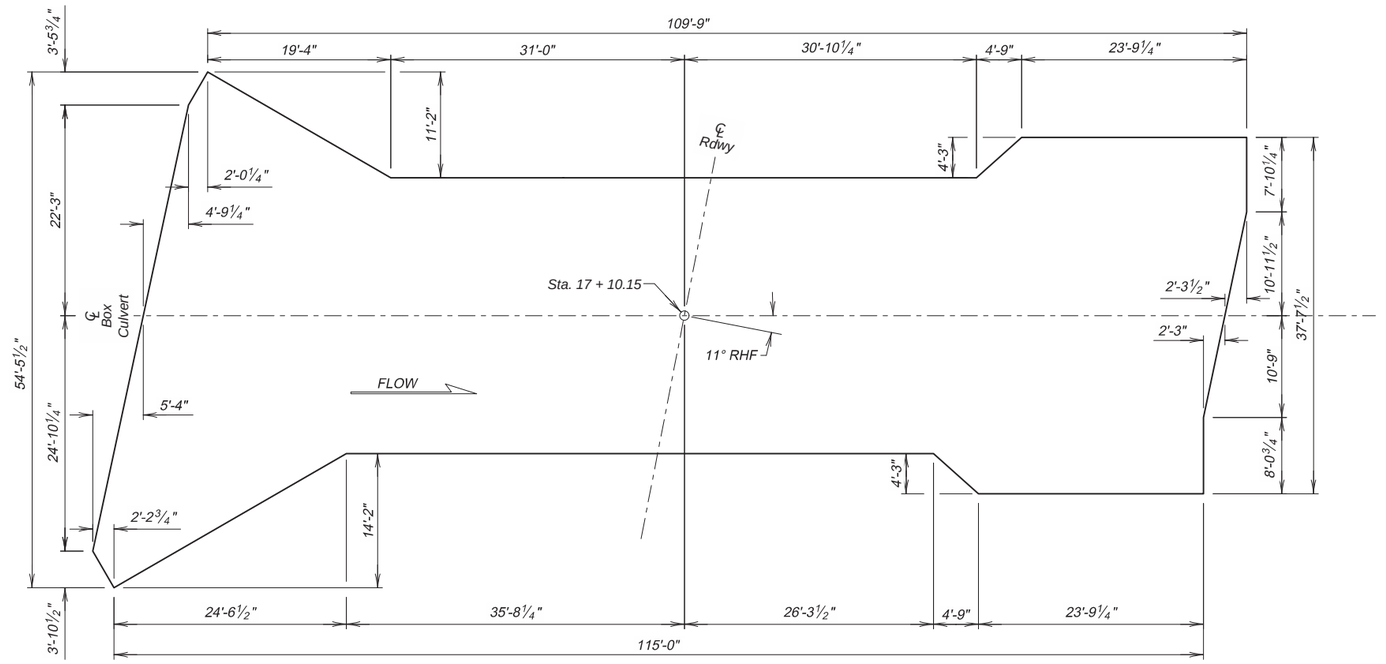
Break down and remove the existing bridge in accordance with Section 110 of the Specifications. The abutments will be removed 1' minimum below the bottom of the undercut.

The Contractor will salvage the metal guard rail for Miner County. All Items not salvaged for the County will become the property of the Contractor and will be properly disposed of by the Contractor.

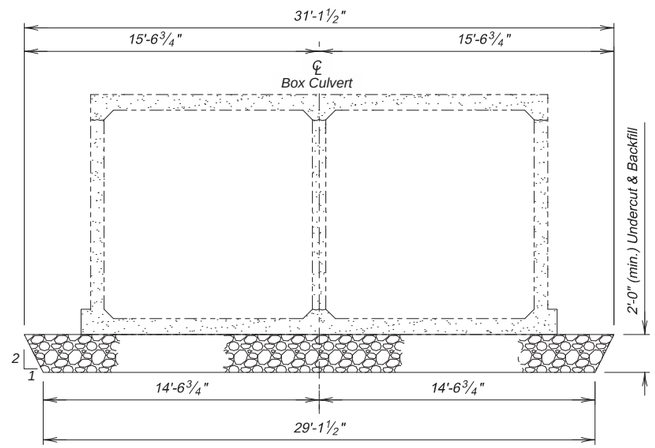
The foregoing is a general description of the in-place bridge and should not be construed to be complete in all details. Before preparing the bid it will be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved. All costs involved in this removal will be incidental to the contract lump sum price for "Incidental Work, Structure".

NOTICE - LEAD BASED PAINT

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



UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

PLANS BY: ULTEIG ENGINEERS, INC.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
⍁ Box Culvert Undercut	Cu. Yd.	299

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

NOTES AND UNDERCUT DETAILS
FOR
2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	30	49

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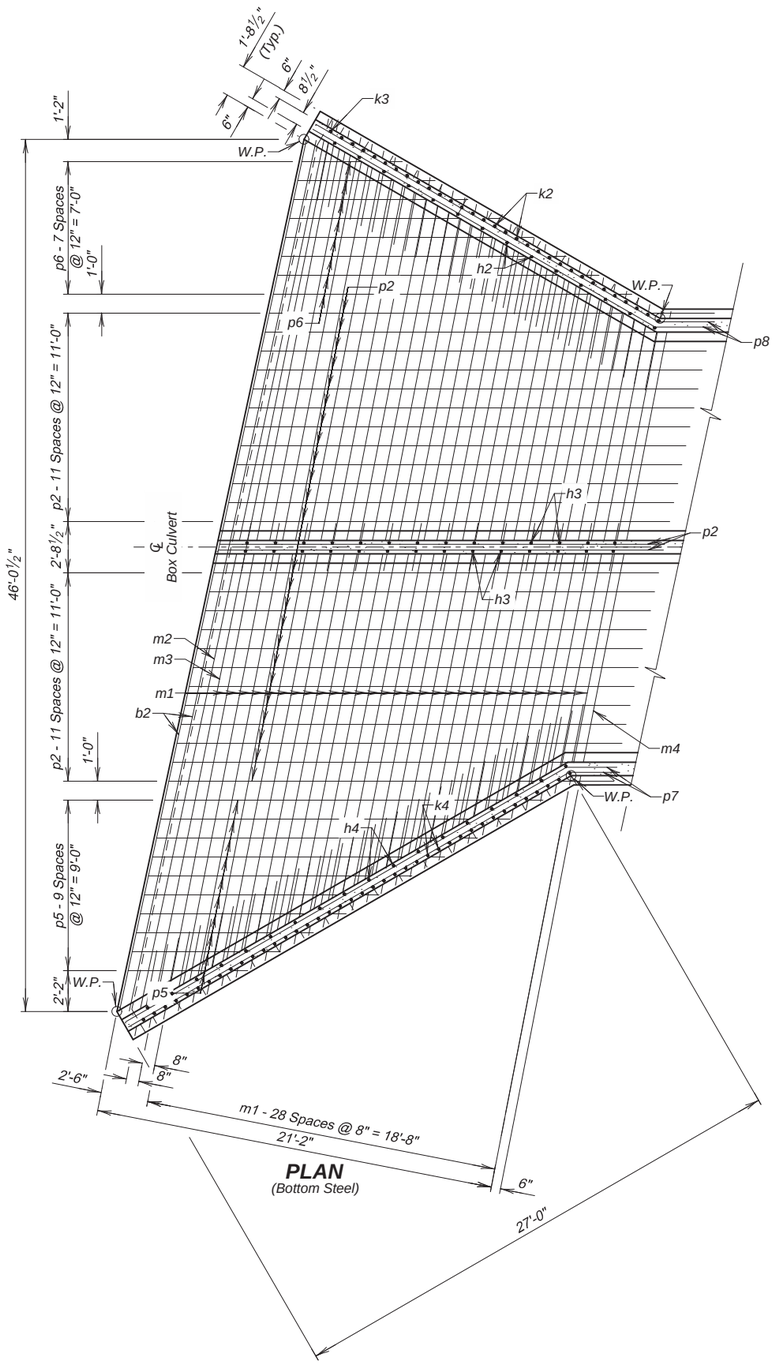
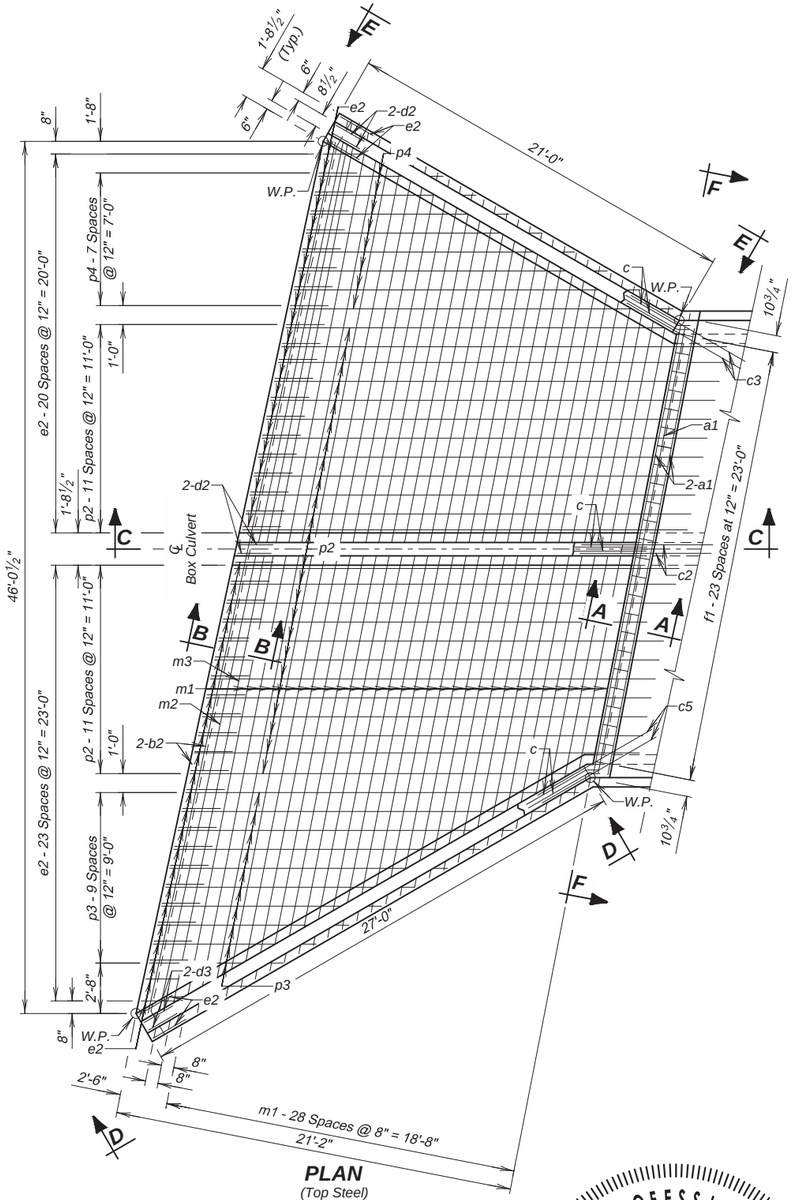
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	31	49





PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

INLET DETAILS (A)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

3 OF 11

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

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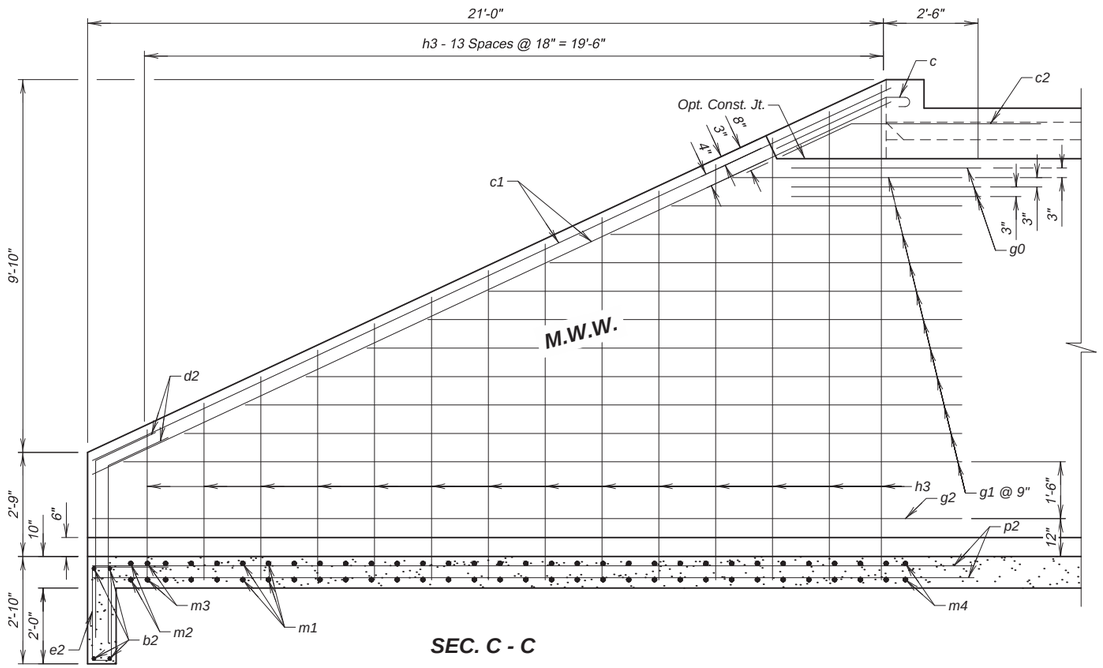
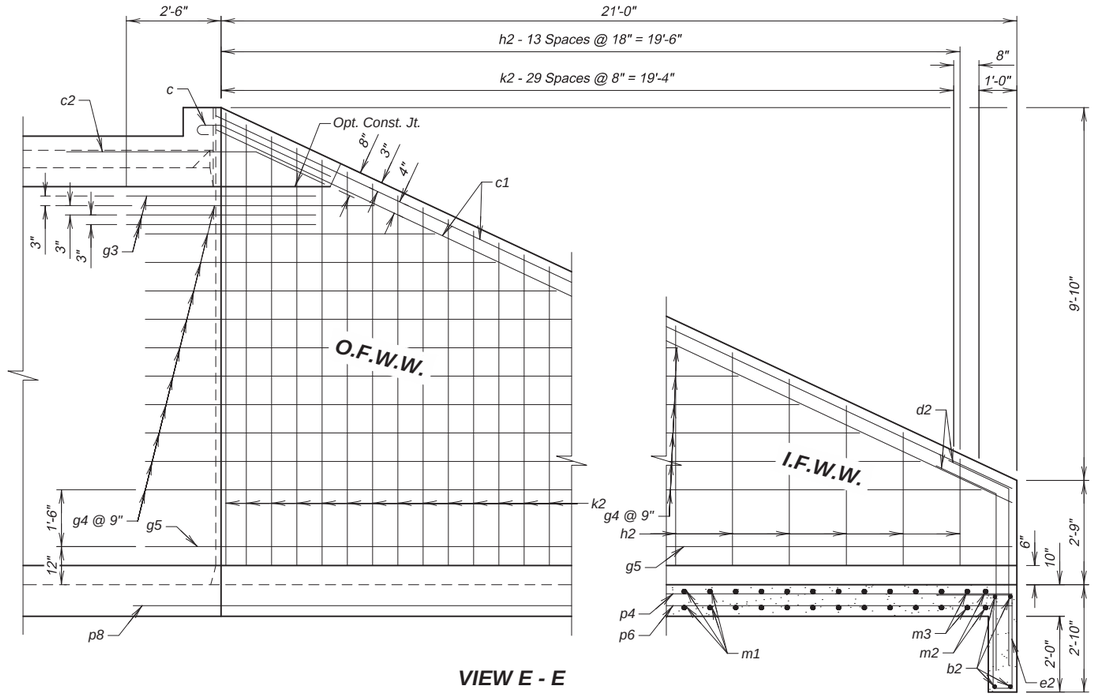
FOR BIDDING PURPOSES ONLY

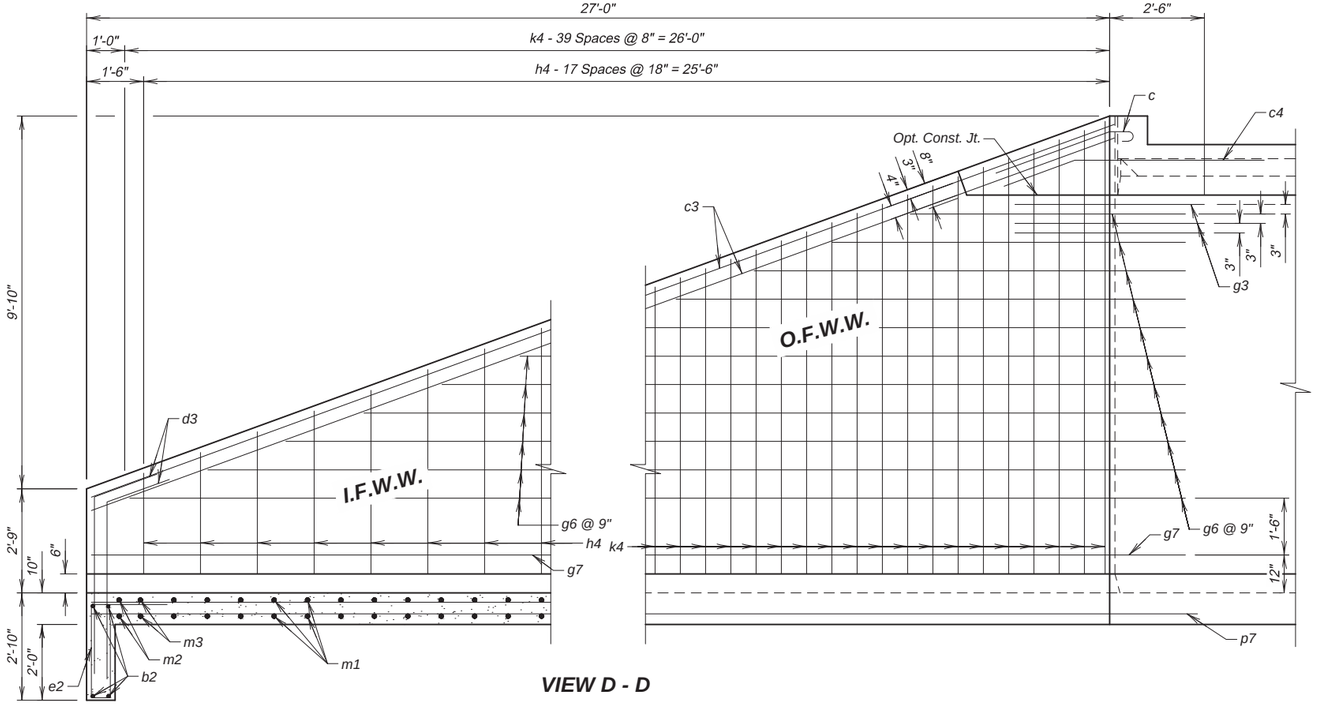
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	32	49



SEC. C - C



VIEW E - E



VIEW D - D

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D STANGOHR
SOUTH DAKOTA
10/22/2025

INLET DETAILS (B)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

4 OF 11

PLANS BY: ULTEIG ENGINEERS, INC.

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

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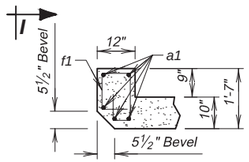
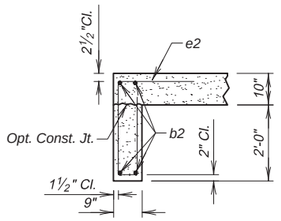
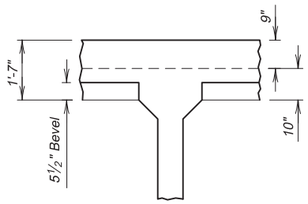
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	33	49



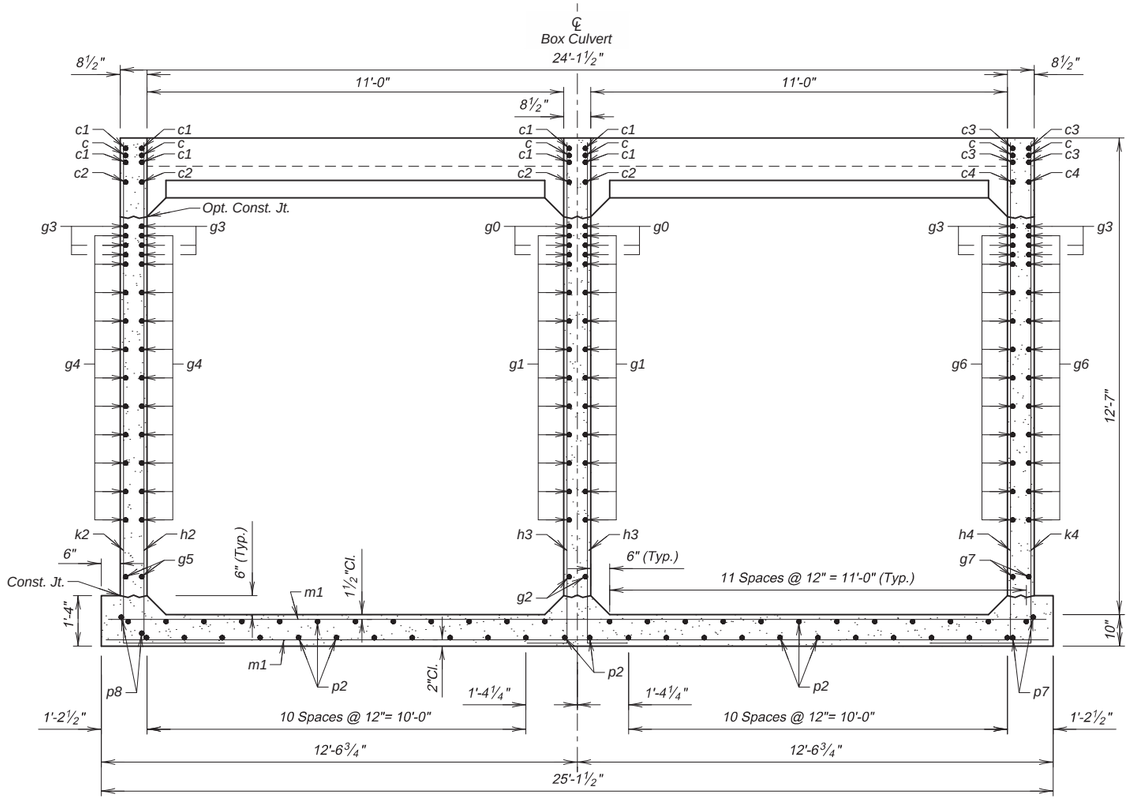
SEC. A - A
(At Top Slab)



SEC. B - B



VIEW I - I
(At Interior Wall)



SEC. F - F

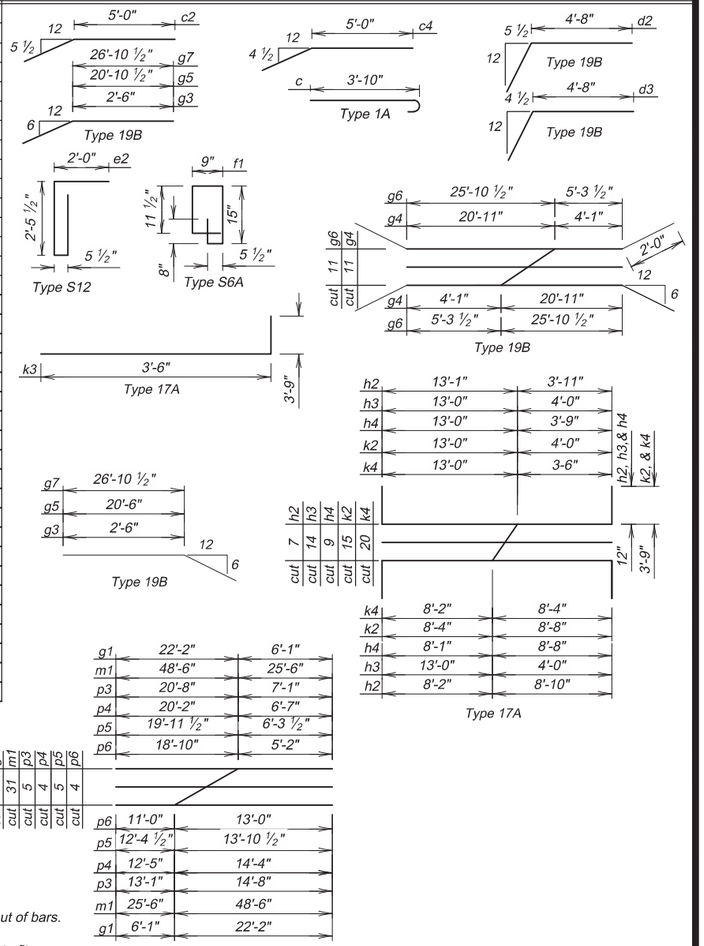
ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Inlet	42.7	7201	27.2

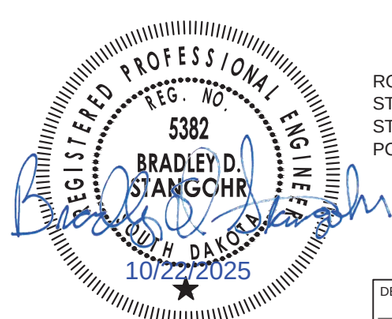
REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
	a1	5	6	24'-0"	Str.
	b2	4	6	47'-0"	Str.
*	c	6	5	4'-3"	1A
	c1	8	5	23'-3"	Str.
	c2	4	5	7'-0"	19B
	c3	4	5	28'-9"	Str.
	c4	2	5	7'-0"	19B
	d2	8	5	6'-6"	19B
	d3	4	5	6'-6"	19B
	e2	49	4	7'-0"	S12
	f1	24	4	4'-9"	S6A
	g0	6	5	5'-0"	Str.
☑	g1	11	4	28'-3"	Str.
	g2	2	4	23'-0"	Str.
	g3	12	5	5'-0"	19B
☑	g4	11	4	29'-0"	19B
	g5	2	4	23'-0"	19B
☑	g6	11	4	35'-3"	19B
	g7	2	4	29'-0"	19B
☑	h2	7	4	19'-0"	17A
☑	h3	14	4	19'-0"	17A
☑	h4	9	4	18'-9"	17A
☑	k2	15	5	24'-6"	17A
	k3	1	5	7'-3"	17A
☑	k4	20	5	24'-0"	17A
☑	m1	31	5	74'-0"	Str.
	m2	2	5	49'-6"	Str.
	m3	2	5	48'-9"	Str.
	m4	2	5	25'-3"	Str.
	p2	50	4	23'-6"	Str.
☑	p3	5	4	27'-9"	Str.
☑	p4	4	4	26'-9"	Str.
☑	p5	5	4	26'-3"	Str.
☑	p6	4	4	24'-0"	Str.
*	p7	2	4	29'-6"	Str.
*	p8	2	4	24'-0"	Str.

Bending Details



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



PLANS BY: ULTEIG ENGINEERS, INC.

INLET DETAILS (C)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

5 OF 11

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

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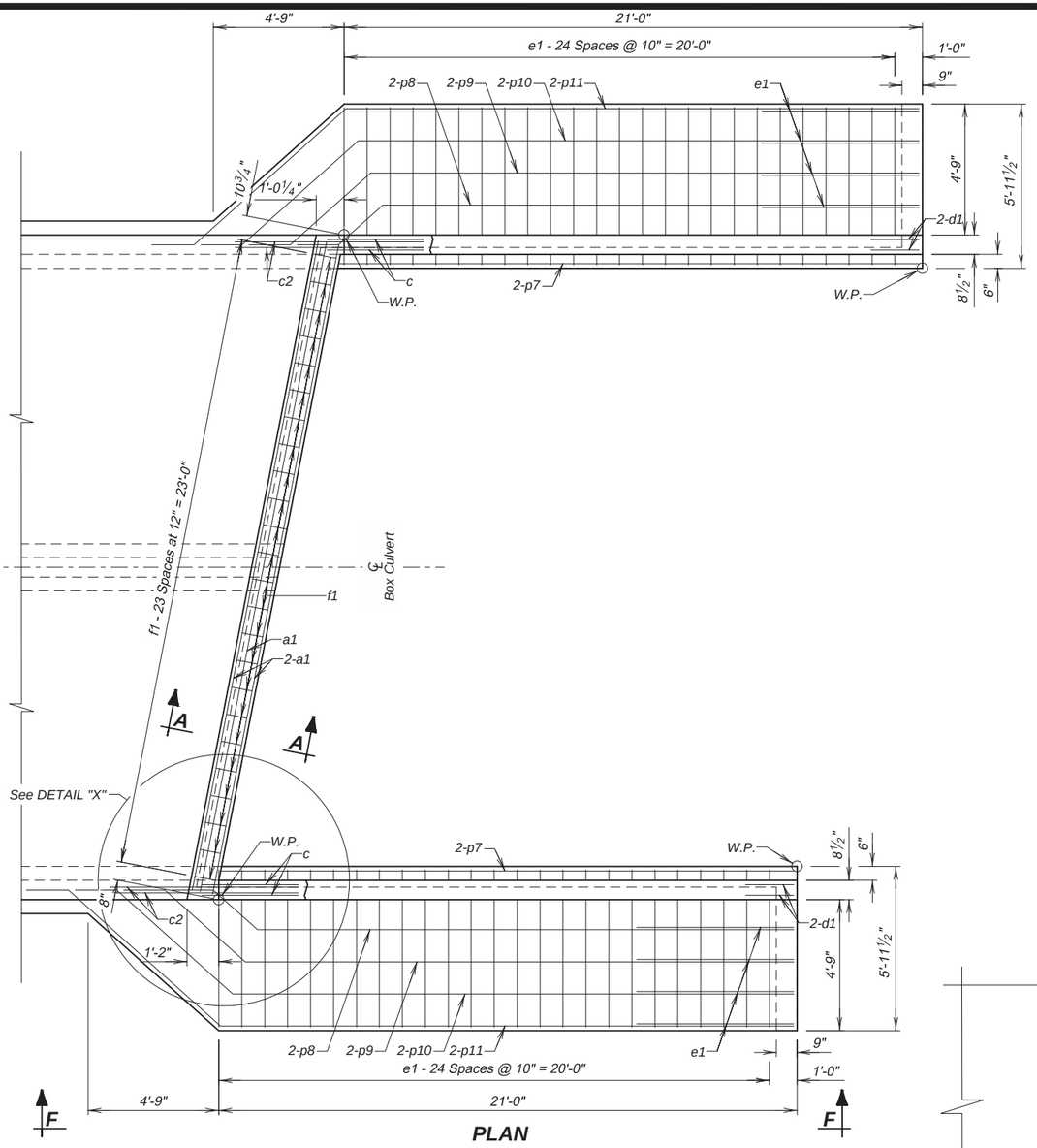
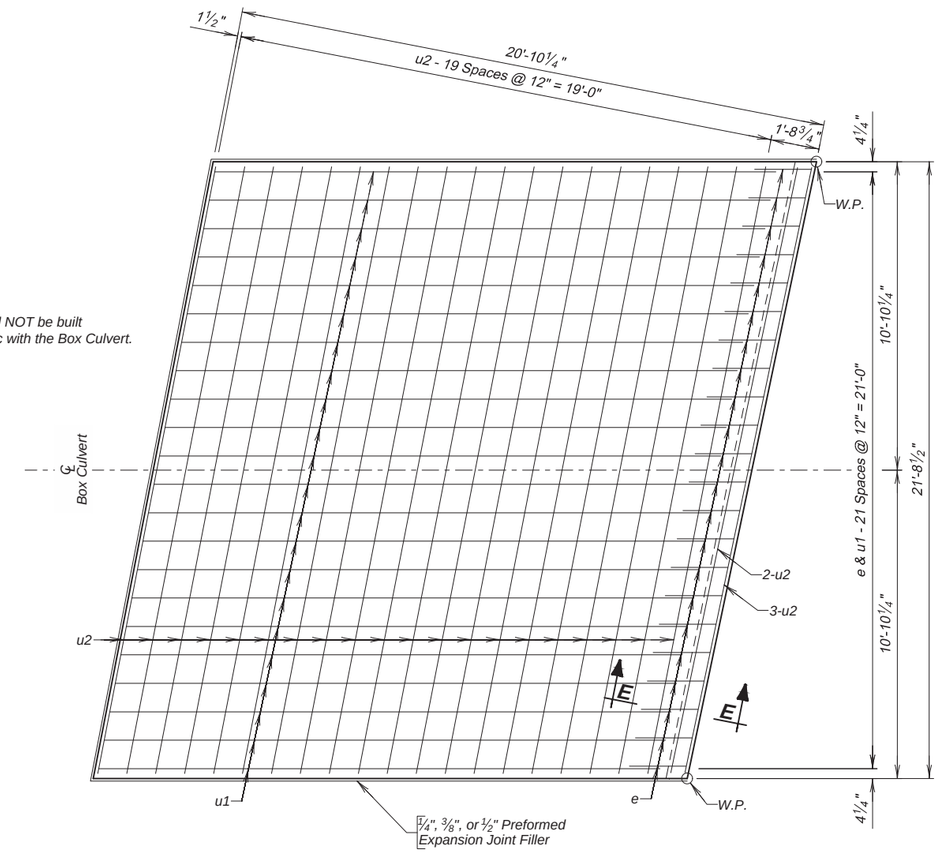
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	34	49

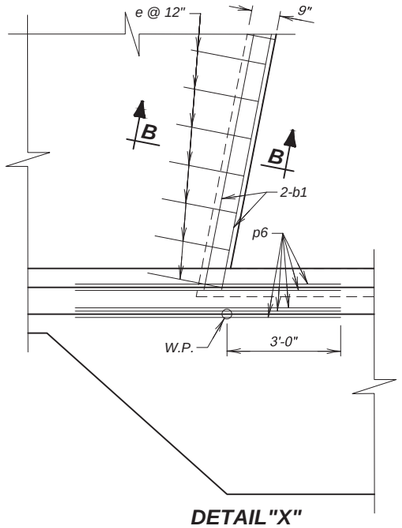


PLAN

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



PLAN
(Outlet Apron)



DETAIL "X"
(At Bottom Slab)

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

OUTLET DETAILS (A)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

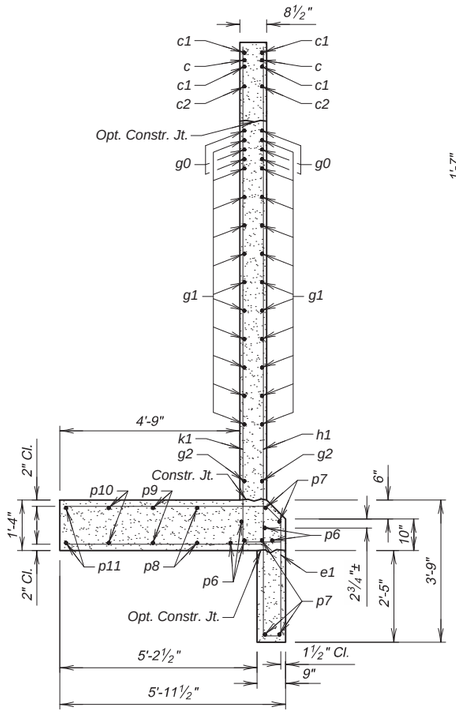
MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

6 OF 11

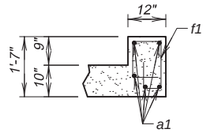
DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

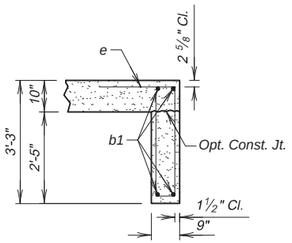
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	35	49



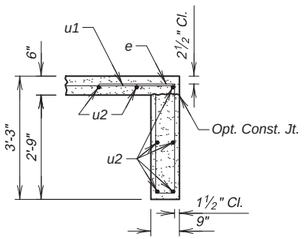
SECTION C - C



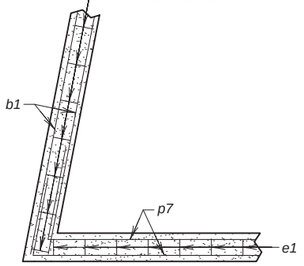
SECTION A - A
(At Top Slab)



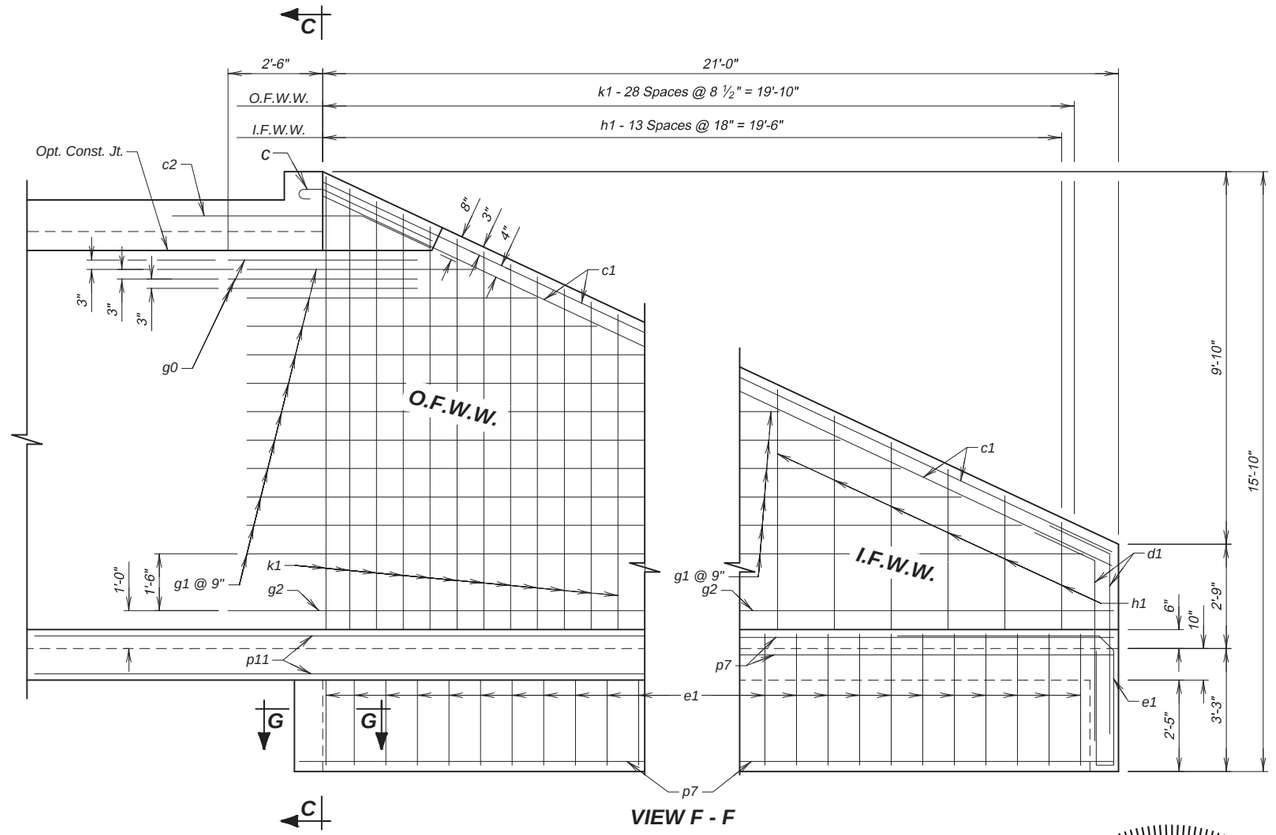
SEC. B - B



SEC. E - E



SECTION G - G

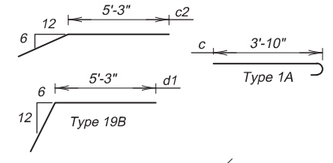


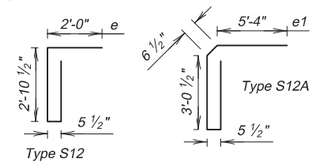
VIEW F - F

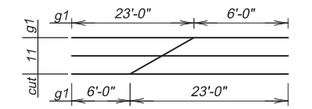
REINFORCING SCHEDULE

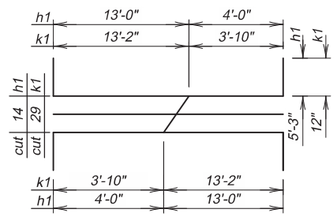
	Mk.	No.	Size	Length	Type
	a1	5	6	24'-0"	Str.
	b1	4	6	23'-3"	Str.
✱	c	4	5	4'-3"	1A
	c1	8	5	23'-0"	Str.
	c2	4	5	7'-0"	Str.
	d1	8	5	6'-6"	19B
	e	24	4	8'-0"	S12
	e1	50	4	12'-6"	S12A
	f1	24	4	4'-9"	S6A
	g0	12	5	5'-0"	Str.
⎅	g1	22	4	29'-0"	Str.
	g2	4	4	23'-6"	Str.
⎅	h1	14	4	27'-6"	17A
⎅	k1	29	4	19'-0"	17A
	p6	10	6	7'-0"	Str.
✱	p7	10	4	23'-6"	Str.
✱	p8	4	4	23'-3"	Str.
✱	p9	4	4	25'-6"	Str.
✱	p10	4	4	27'-9"	Str.
✱	p11	4	4	29'-9"	Str.
	OUTLET APRON				
	e	22	4	8'-0"	S12
	u1	22	4	19'-9"	Str.
	u2	25	4	21'-9"	Str.

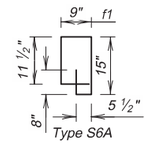
Bending Details











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

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

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Outlet	27.4	2260	13.5
Outlet Apron	10.1	711	10.1

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

PLANS BY: ULTEIG ENGINEERS, INC.

OUTLET DETAILS (B)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

7 OF 11

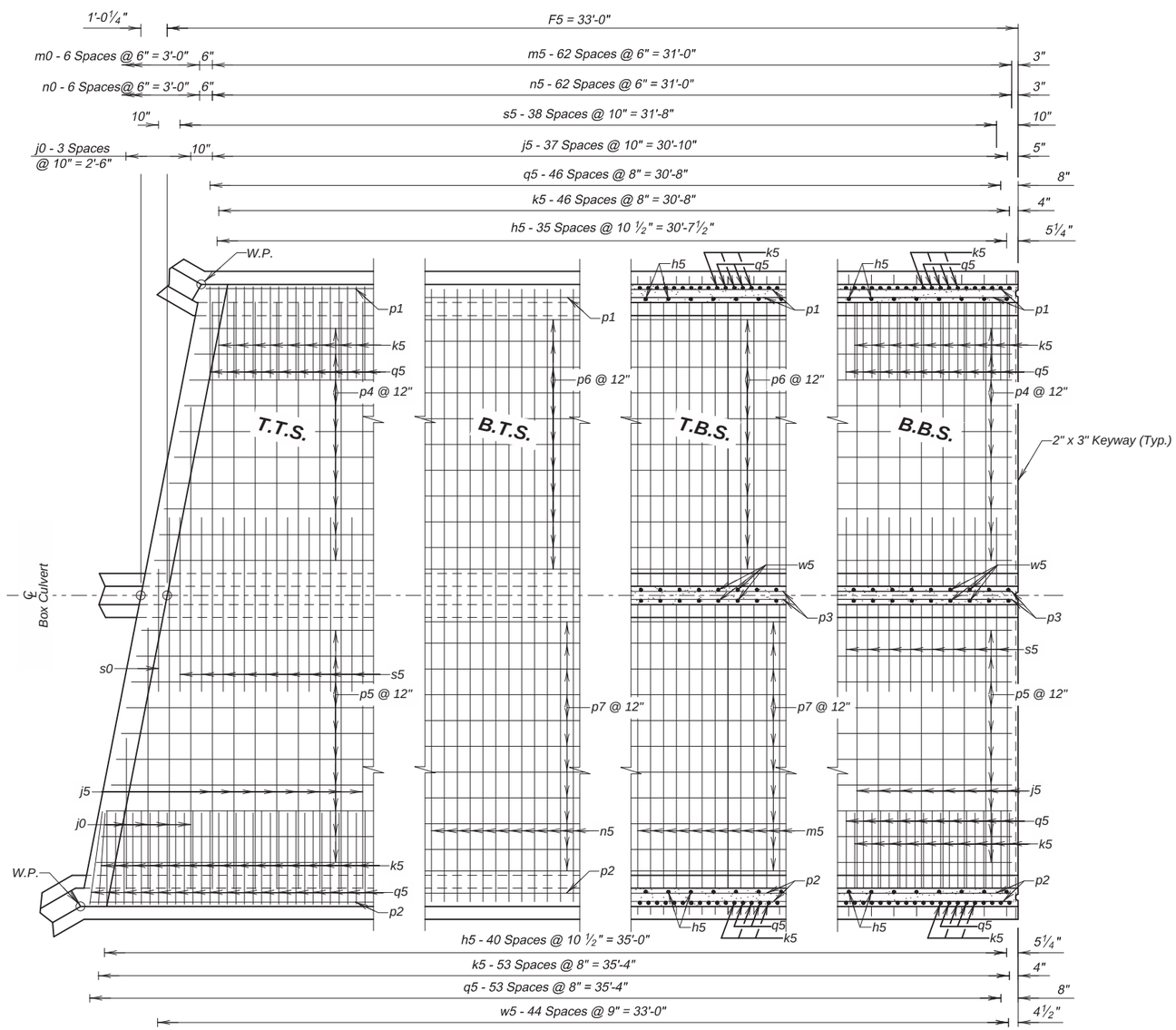
DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	BRIDGE ENGINEER

G:\2023\23.24862\Structure Sheets\23.24862-Structure Sheets-1.dwg PLOT DATE: 10/13/2025 11:11 AM Lane Hillukka Autodesk-MONO.stb

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	36	49

FOR BIDDING PURPOSES ONLY

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



PLAN

(Inlet shown, Outlet similar by rotation)

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/22/2025

F5 BARREL SECTION DETAILS (33' - 0") (A)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

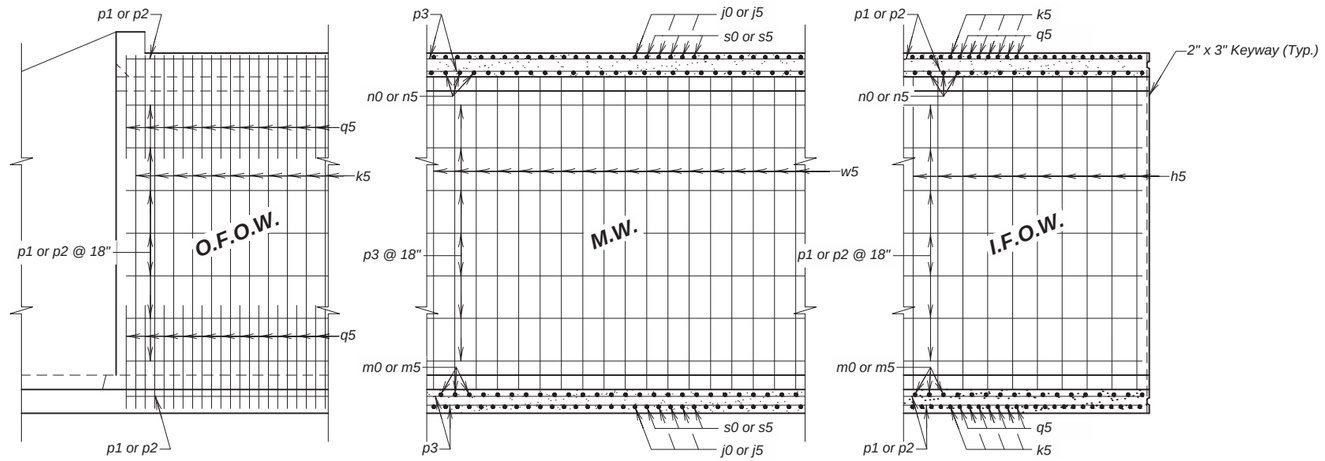
8 OF 11

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

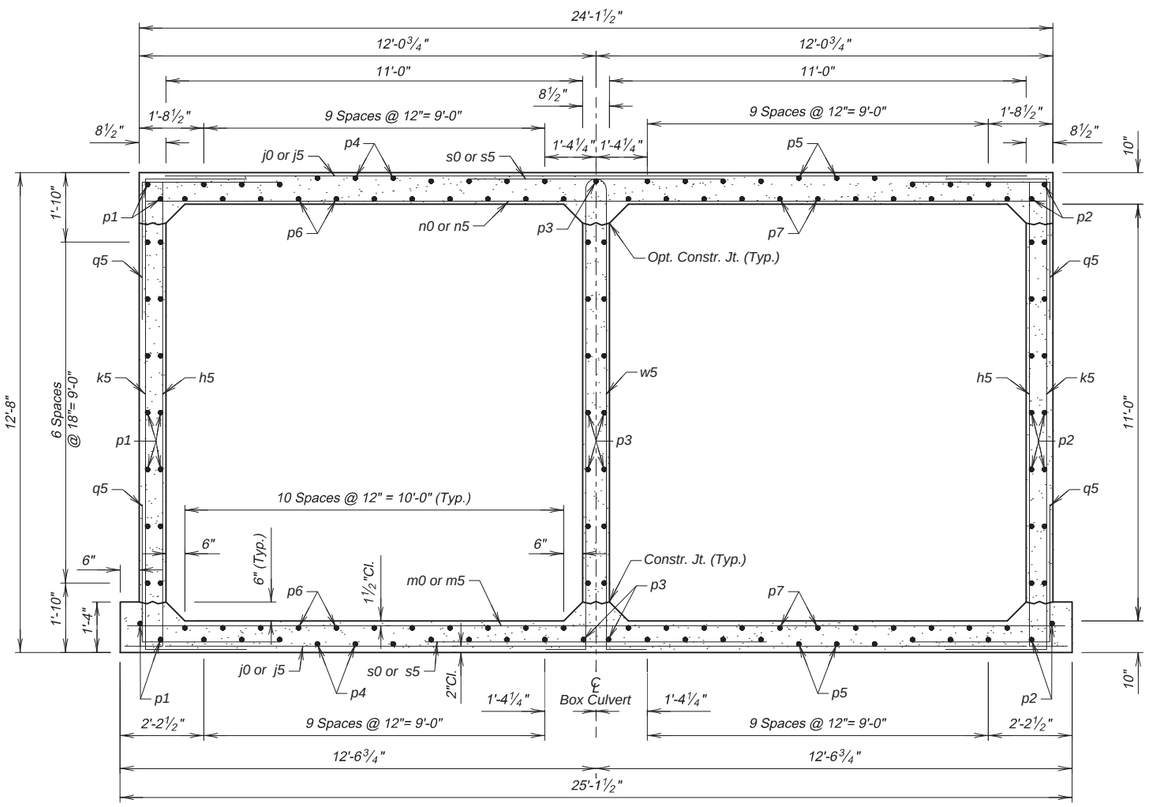
G:\2023\23.24862\Structure Sheets\23.24862-Structure Sheets-1.dwg PLOT DATE: 10/27/2025 9:25 AM Lane Hillukka Autodesk-MONO.stb

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	37	49

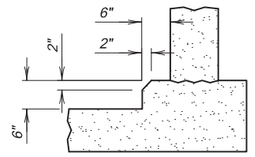


ELEVATION



F5 BARREL SECTION

(5'-0" Maximum Fill)



OPTIONAL FILLET DETAIL

(At Bottom Slab)

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

OPTIONAL POUR - BOTTOM SLAB

The Bottom Slab may be poured continuously, at the option of the Contractor, with the use of Preformed Metal keyway conforming to the keyway dimensions and location as shown on the plans. The keyway length will be full width of the bottom slab. Care will be taken to maintain the proper alignment of the keyway during the pour sequence. All additional costs of this option will be borne by the Contractor.

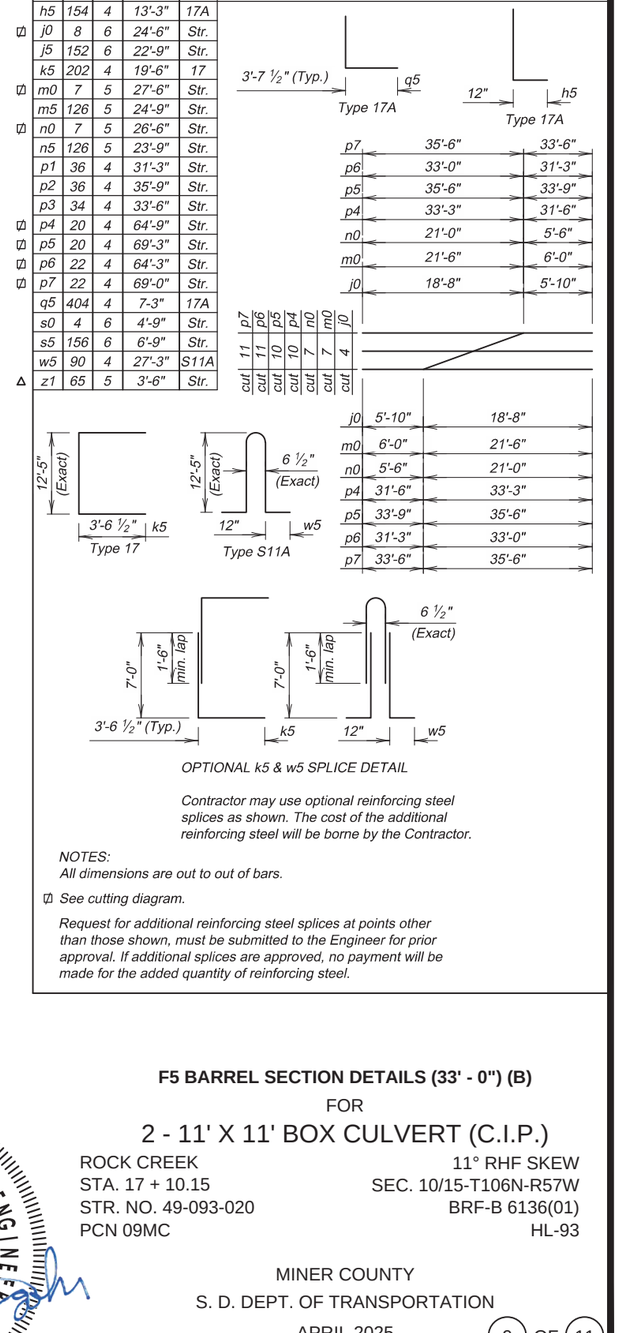
△ Place z1 bars through construction joint between barrel sections a shown on Standard Plate No. 460.10. Quantity of z1 bars is for one construction joint.

REINFORCING SCHEDULE

(For Two F5 Barrel End Sections @ 33'-0")

	Mk.	No.	Size	Length	Type
	h5	154	4	13'-3"	17A
⍁	j0	8	6	24'-6"	Str.
	j5	152	6	22'-9"	Str.
	k5	202	4	19'-6"	17
⍁	m0	7	5	27'-6"	Str.
	m5	126	5	24'-9"	Str.
⍁	n0	7	5	26'-6"	Str.
	n5	126	5	23'-9"	Str.
	p1	36	4	31'-3"	Str.
	p2	36	4	35'-9"	Str.
	p3	34	4	33'-6"	Str.
⍁	p4	20	4	64'-9"	Str.
⍁	p5	20	4	69'-3"	Str.
⍁	p6	22	4	64'-3"	Str.
⍁	p7	22	4	69'-0"	Str.
	q5	404	4	7-3"	17A
	s0	4	6	4'-9"	Str.
	s5	156	6	6'-9"	Str.
	w5	90	4	27'-3"	S11A
△	z1	65	5	3'-6"	Str.

Bending Details



OPTIONAL k5 & w5 SPLICE DETAIL

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

NOTES:
All dimensions are out to out of bars.

⍁ See cutting diagram.

Request for additional reinforcing steel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be made for the added quantity of reinforcing steel.

LEGEND FOR PLACING RE-STEEL

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

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
2 - F5 Barrel Sections @ 33'-0"	164.9	27798	52.8

PLANS BY: ULTEIG ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5382
BRADLEY D. STANGOHR
SOUTH DAKOTA
10/27/2025

F5 BARREL SECTION DETAILS (33' - 0") (B)

FOR

2 - 11' X 11' BOX CULVERT (C.I.P.)

ROCK CREEK
STA. 17 + 10.15
STR. NO. 49-093-020
PCN 09MC

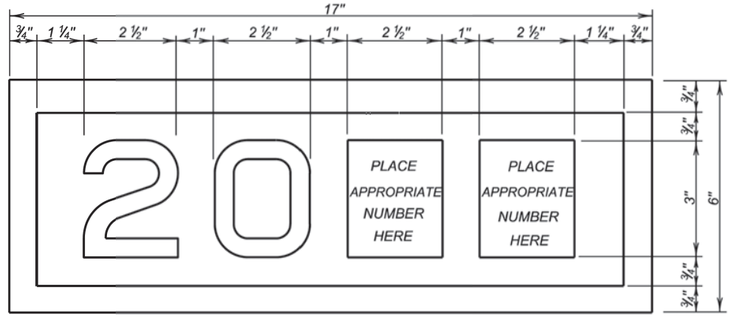
11° RHF SKEW
SEC. 10/15-T106N-R57W
BRF-B 6136(01)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2025

9 OF 11

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

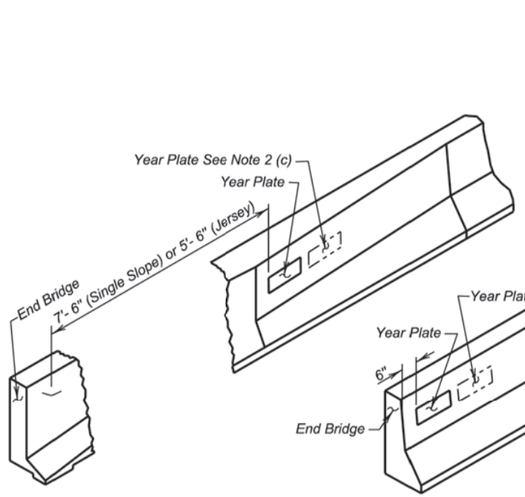
G:\2023\23.24862\Structure Sheets\23.24862-Structure Sheets-1.dwg PLOT DATE: 10/27/2025 9:46 AM Lane Hillukka Autodesk-MONO.stb



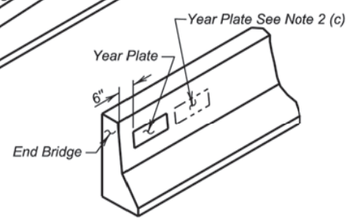
YEAR PLATE DETAILS

GENERAL NOTES:

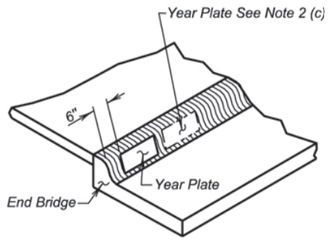
1. Year plates of the general dimensions shown will be constructed on all box culverts and bridges. The year plates will be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
2. Year plates will be 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.



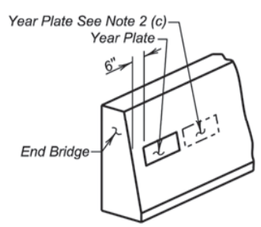
BARRIER
(With Endblock)



JERSEY BARRIER



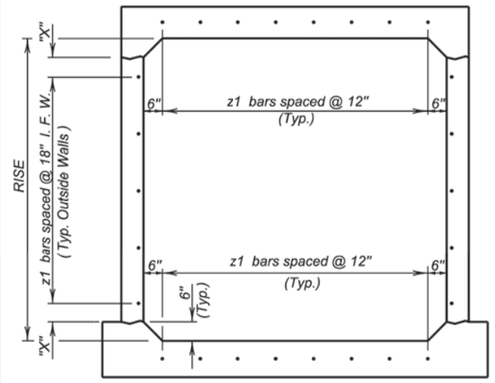
TYPE B CURB



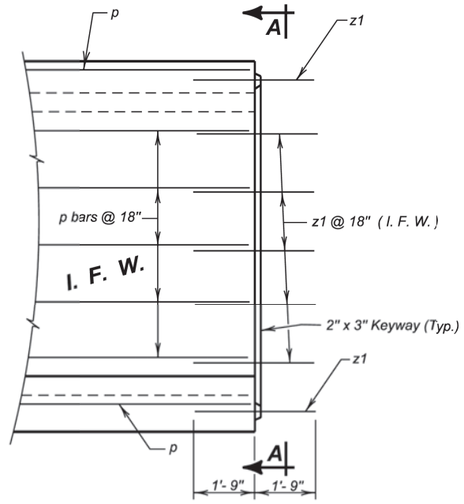
SINGLE SLOPE BARRIER

January 22,2021

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



TYPICAL SINGLE BARREL VIEW A - A

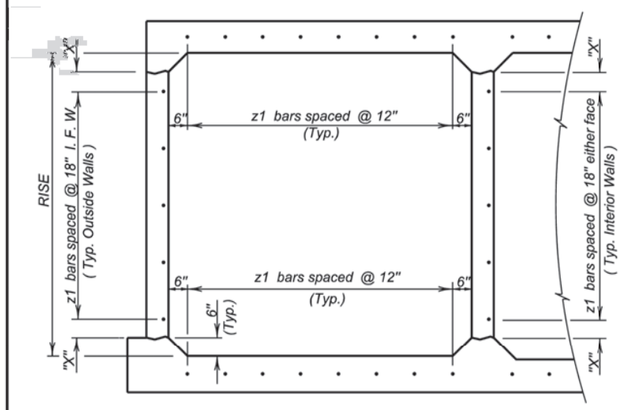


ELEVATION

LEGEND FOR PLACING RE-STEEL

I. F. W. - Inside Face Wall

RISE	" X "
3'- 0"	3"
4'- 0"	9"
5'- 0"	6"
6'- 0"	3"
7'- 0"	9"
8'- 0"	6"
9'- 0"	3"
10'- 0"	9"
11'- 0"	6"
12'- 0"	3"
13'- 0"	9"
14'- 0"	6"



TYPICAL MULTIPLE BARREL VIEW A - A

GENERAL NOTES:

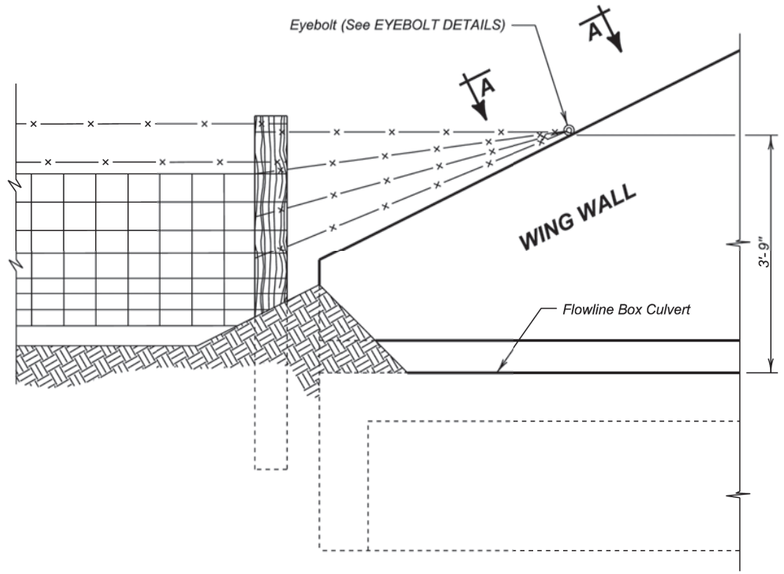
1. z1 bars will be placed in the middle of the 2" X 3" keyway in the top and bottom slabs. z1 bars will be lapped with the longitudinal p bars in the inside face of the wall for outside walls and in either face for interior walls. z1 bars are listed and included elsewhere in plans.
2. Drainage Fabric Protection will be placed in accordance with Section 422, or Section 560, whichever is applicable.

June 1, 2022

Published Date: 2026	SDDOT	BOX CULVERT BARREL TIE REINFORCEMENT	PLATE NUMBER 460.10
			Sheet 1 of 1

2 - 11' X 11' BOX CULVERT
STR. NO. 49-093-020
APRIL 2025

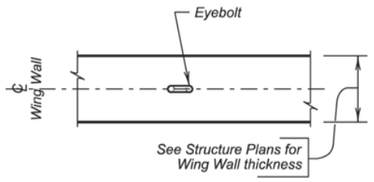
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	39	49



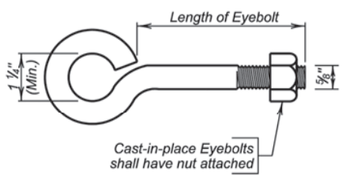
DETAIL FOR FENCE ANCHORS

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 ⅞ 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 ⅞ 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

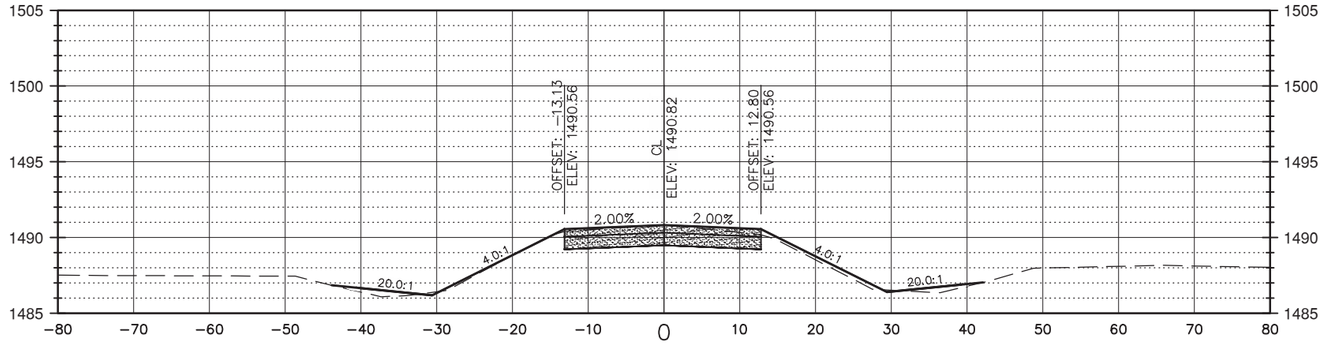
2 - 11' X 11' BOX CULVERT
STR. NO. 49-093-020
APRIL 2025

CROSS-SECTION

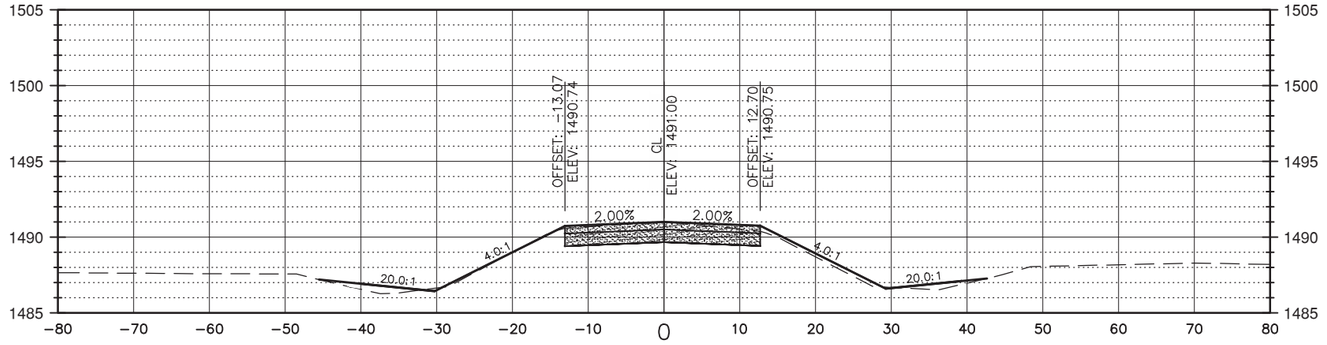
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	40	49

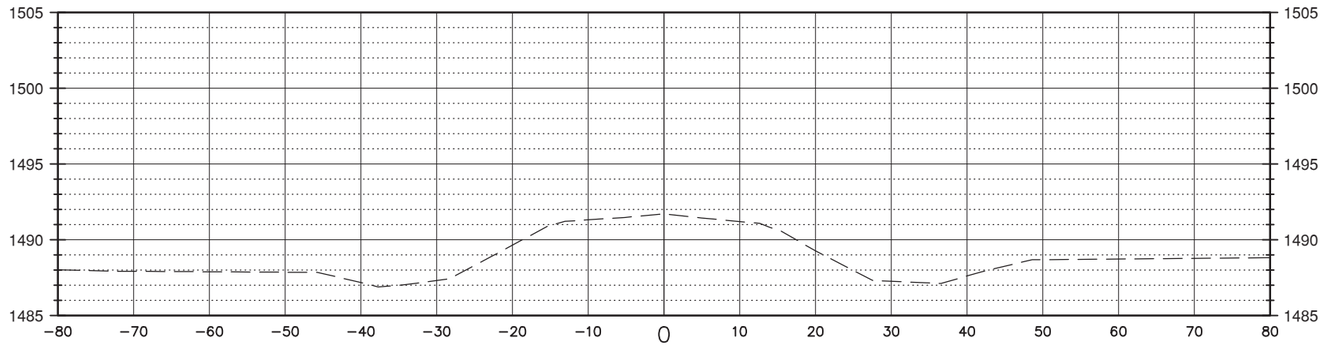
222nd Street
STA 11+50.00



222nd Street
STA 11+40.87



222nd Street
STA 11+00.00



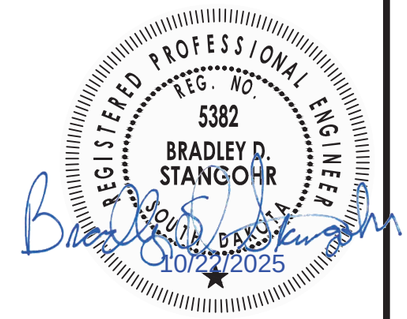
REGISTERED PROFESSIONAL ENGINEER
REG. NO.
5382
BRADLEY D.
STANGOHR
SOUTH DAKOTA
10/22/2025

Ulteig
We listen. We solve.®

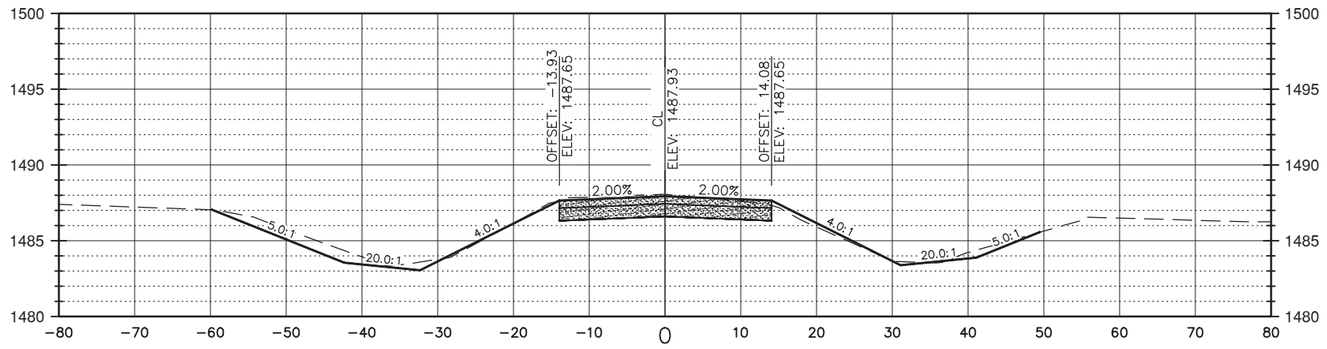
CROSS-SECTION

FOR BIDDING PURPOSES ONLY

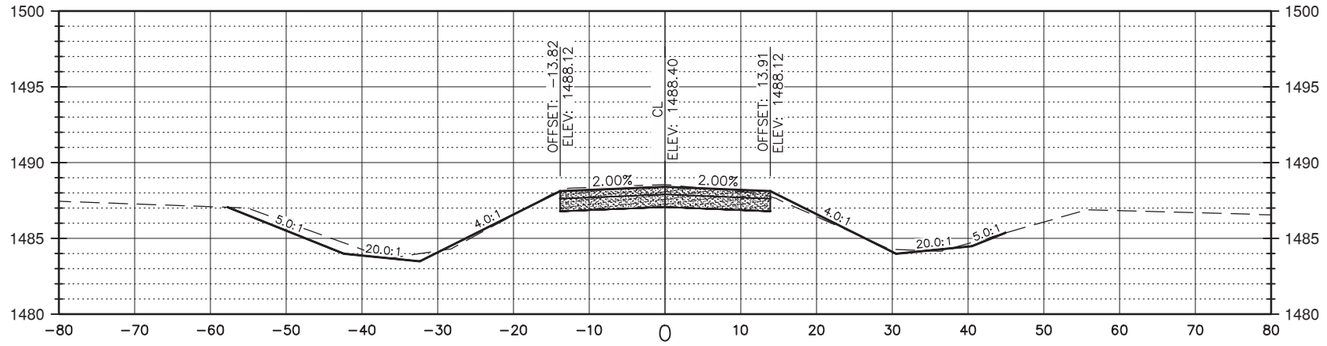
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	41	49



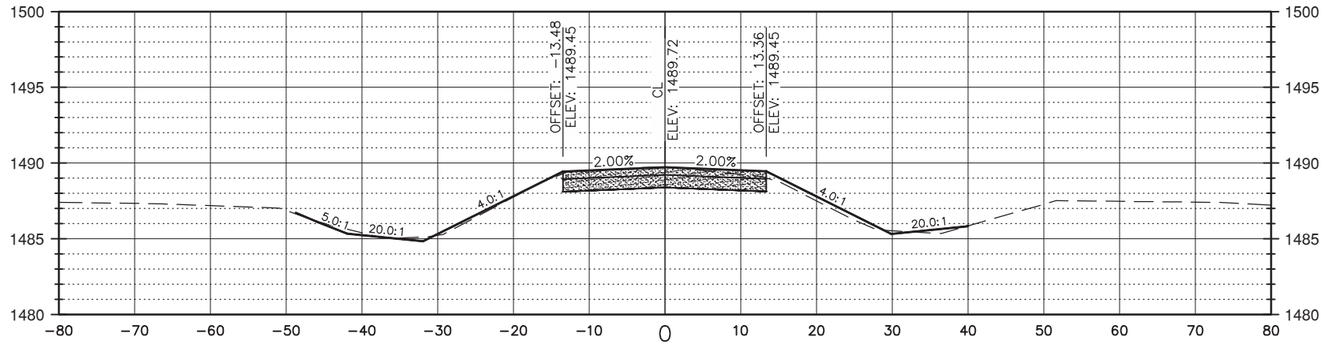
222nd Street
STA 12+65.93



222nd Street
STA 12+50.00



222nd Street
STA 12+00.00



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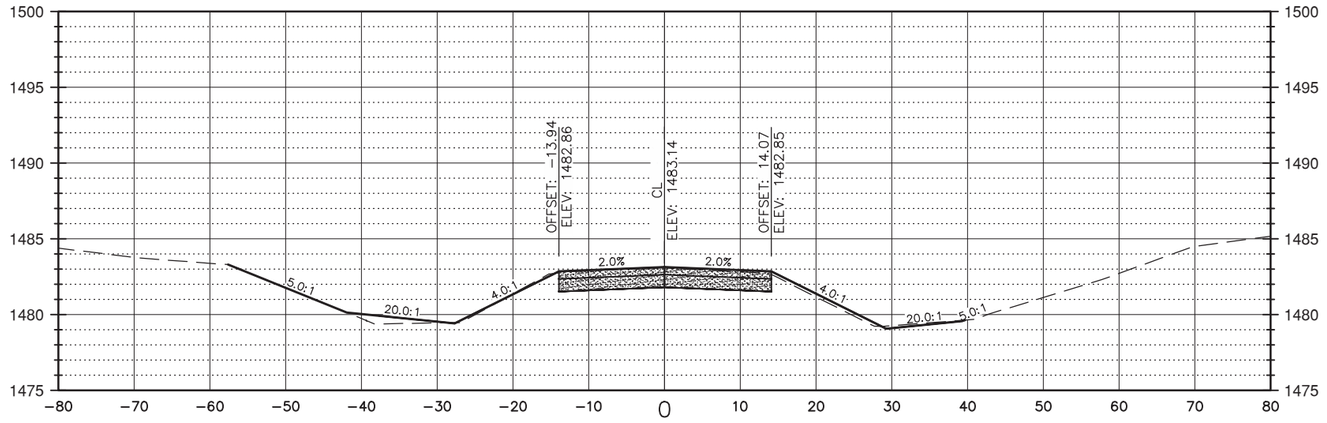
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	42	49

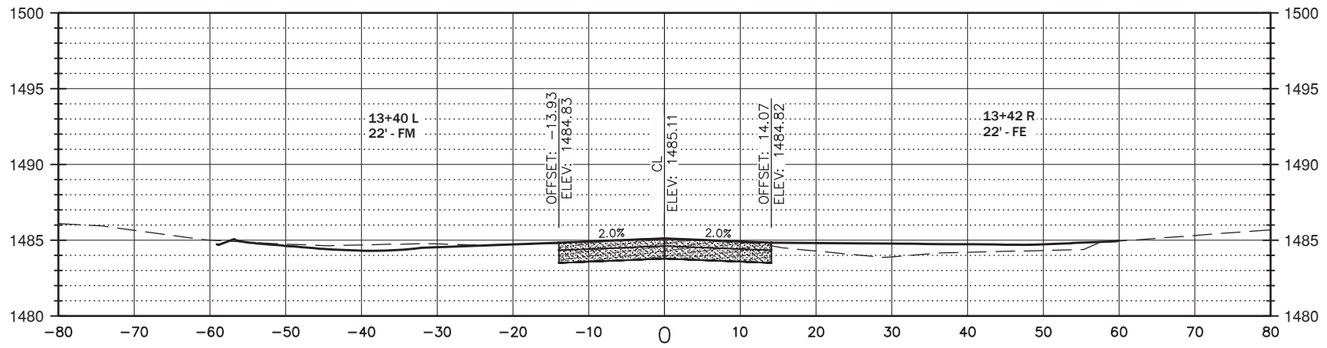
CROSS-SECTION

FOR BIDDING PURPOSES ONLY

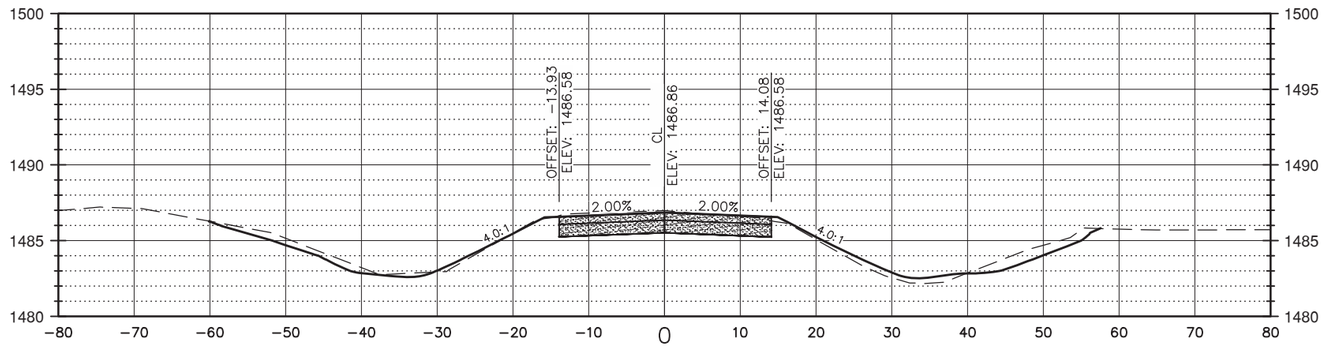
222nd Street
STA 14+00.00



222nd Street
STA 13+50.00



222nd Street
STA 13+00.00



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10/27/2025

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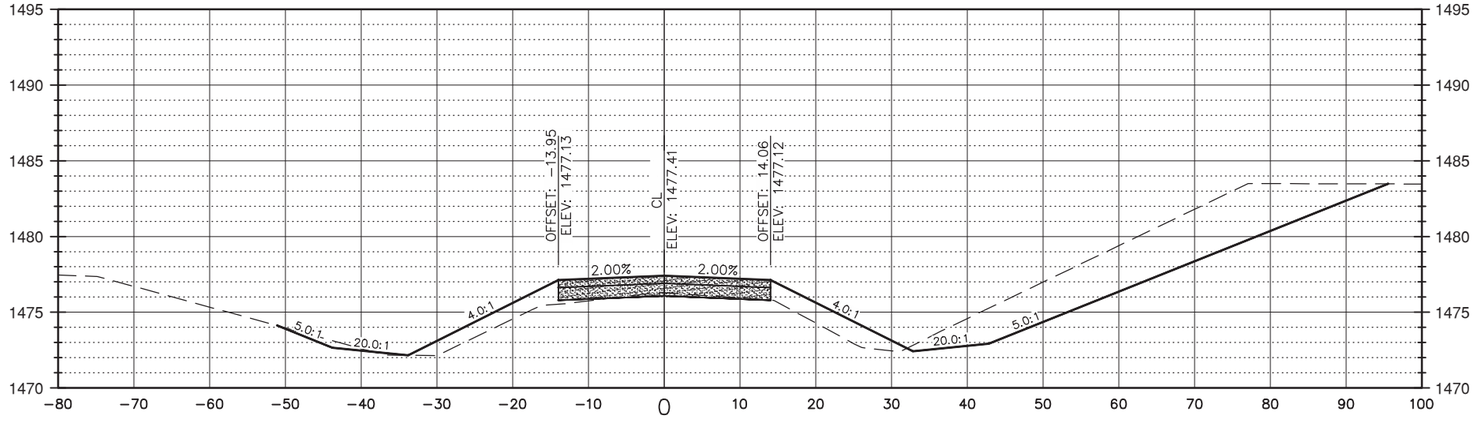
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	43	49

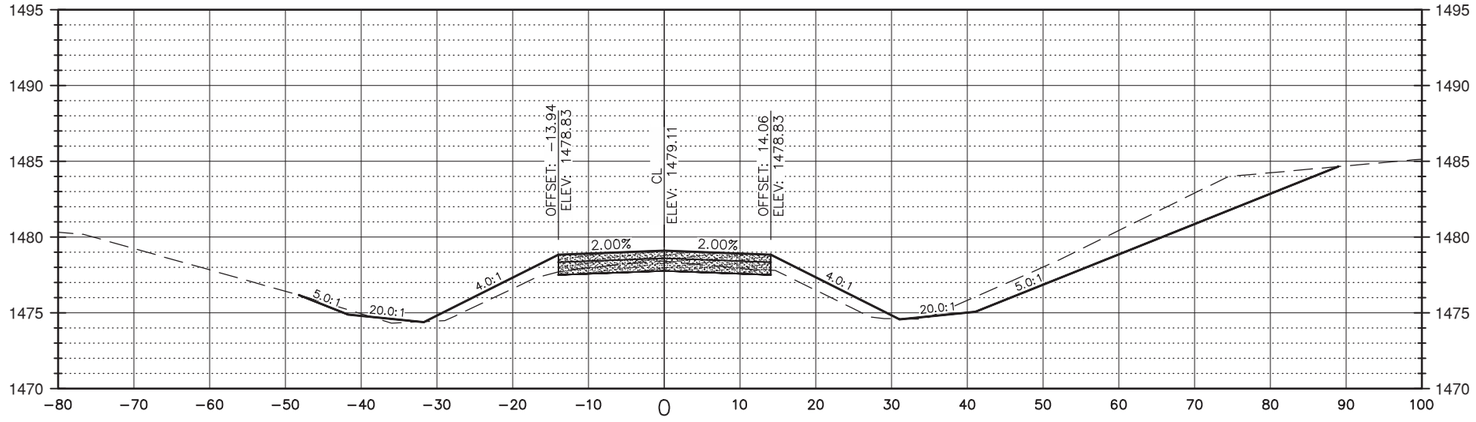
CROSS-SECTION

FOR BIDDING PURPOSES ONLY

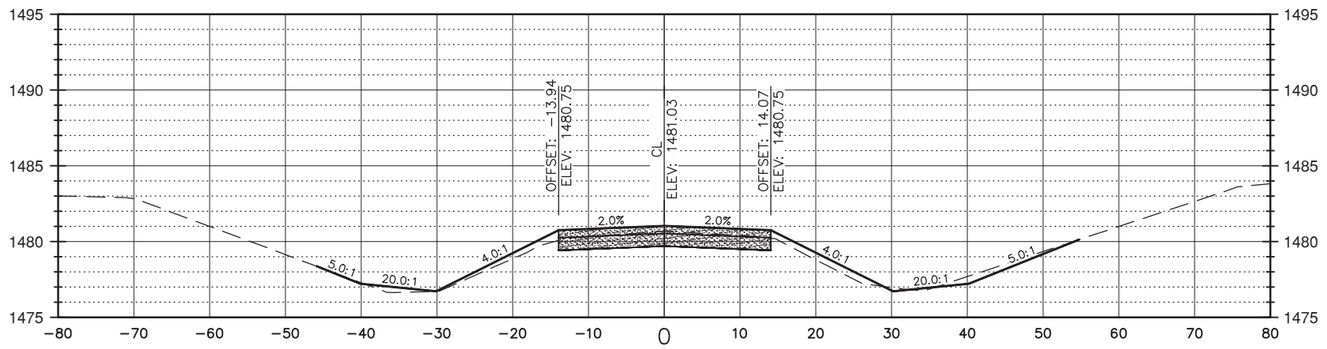
222nd Street
STA 15+50.00



222nd Street
STA 15+00.00



222nd Street
STA 14+50.00



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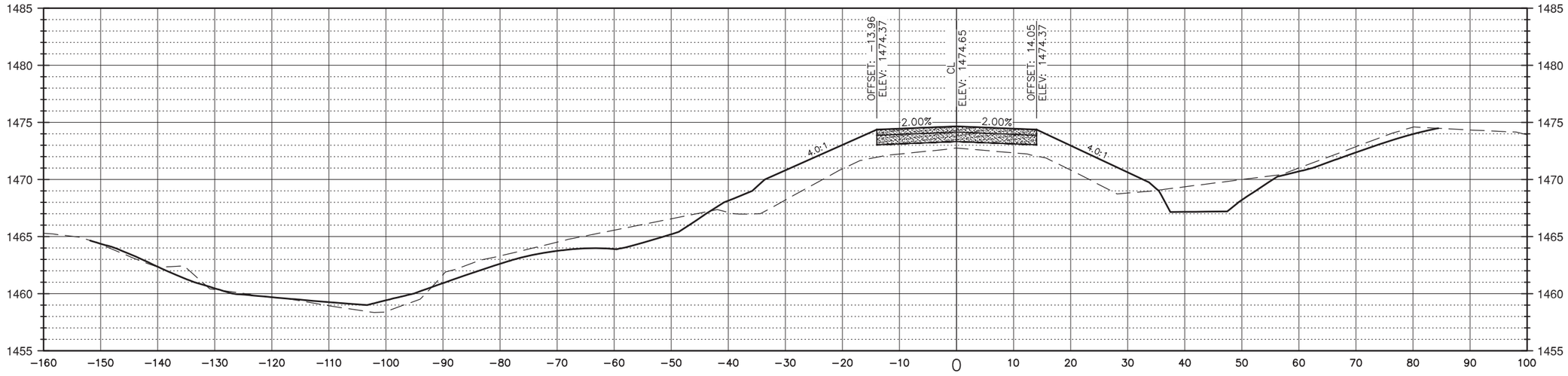
G:\2023\23.24862\C3D Design\Plan Sheets (SDDOT Non-Section Method)\23 - Cross Sections\23.24862-CROSS-SECTION.dwg PLOT DATE: 10/13/2025 11:11 AM Lane Hillukka Autodesk-MONO.stb

CROSS-SECTION

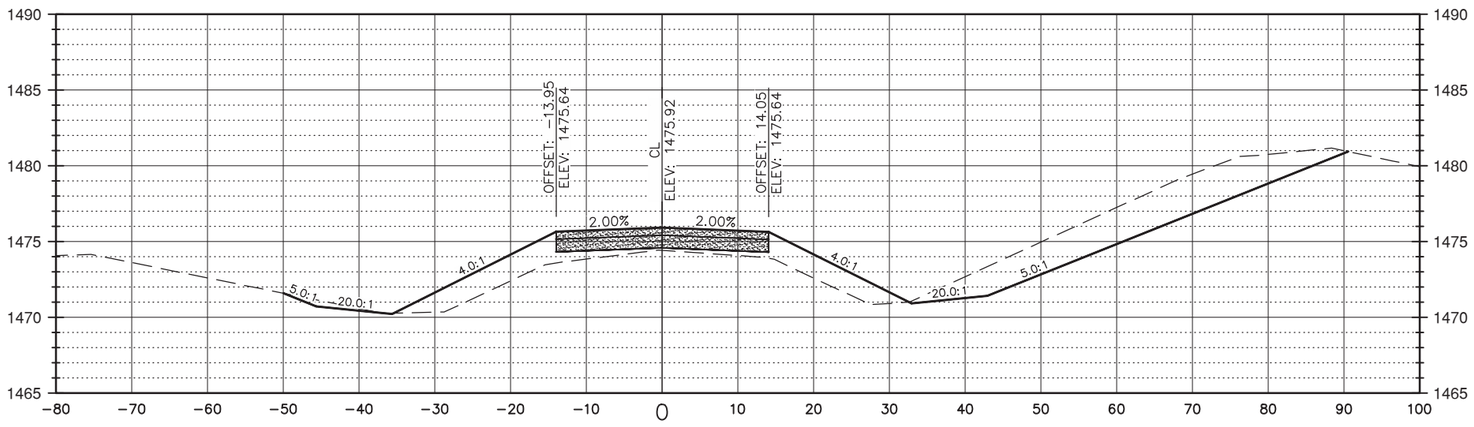
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	44	49

222nd Street
STA 16+50.00



222nd Street
STA 16+00.00



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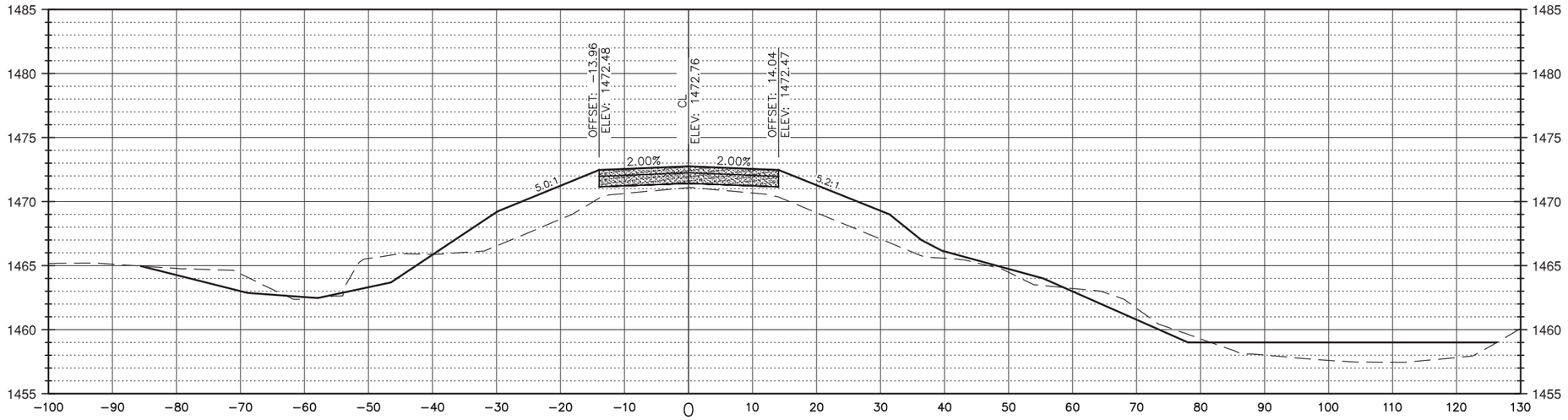
CROSS-SECTION

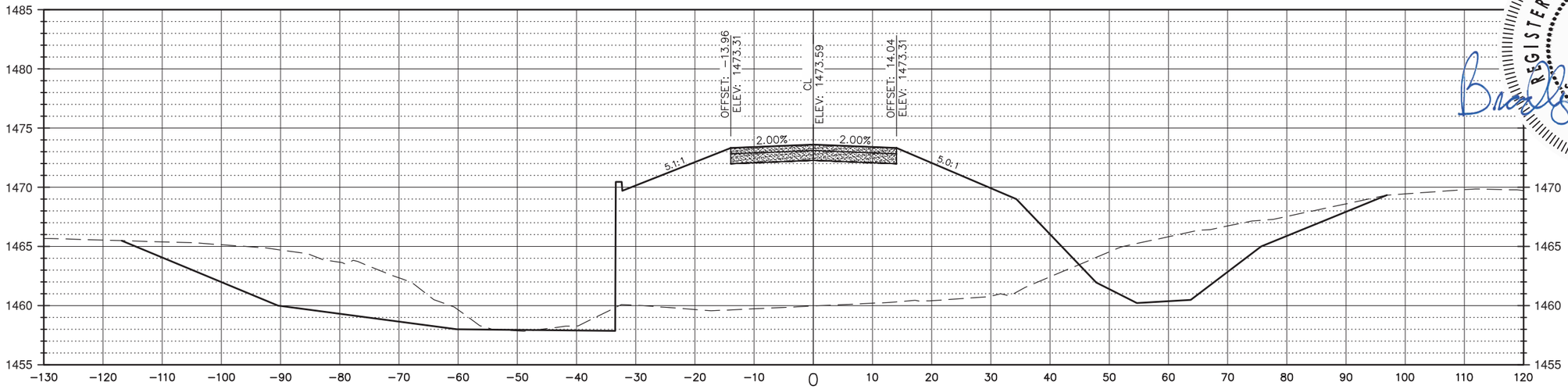
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	45	49

222nd Street
STA 17+50.00



222nd Street
STA 17+00.00



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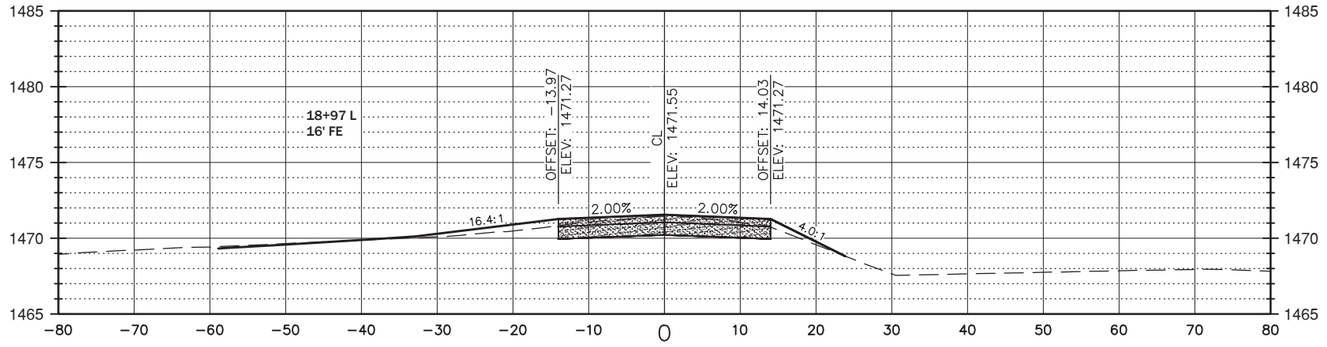
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	46	49

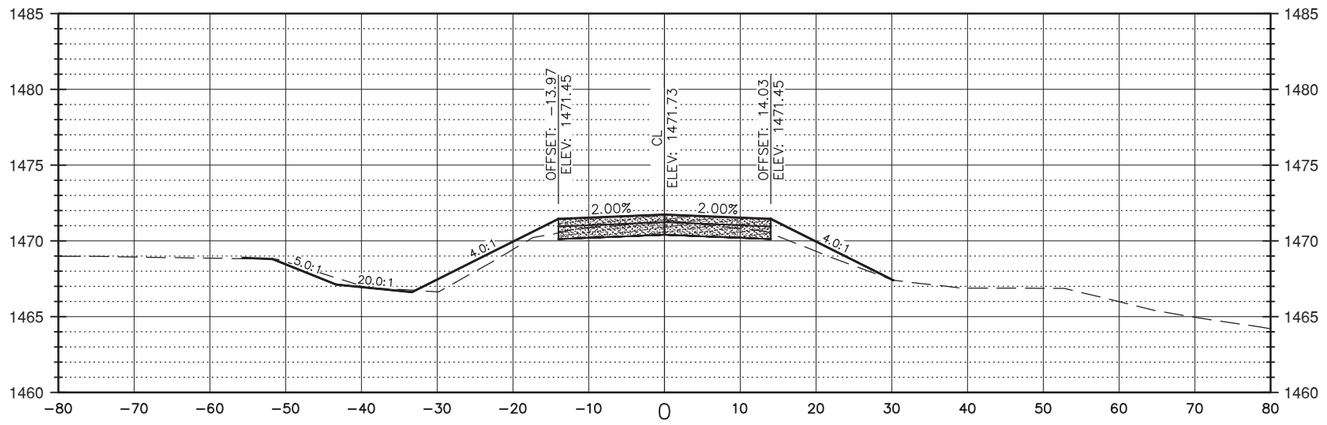
CROSS-SECTION

FOR BIDDING PURPOSES ONLY

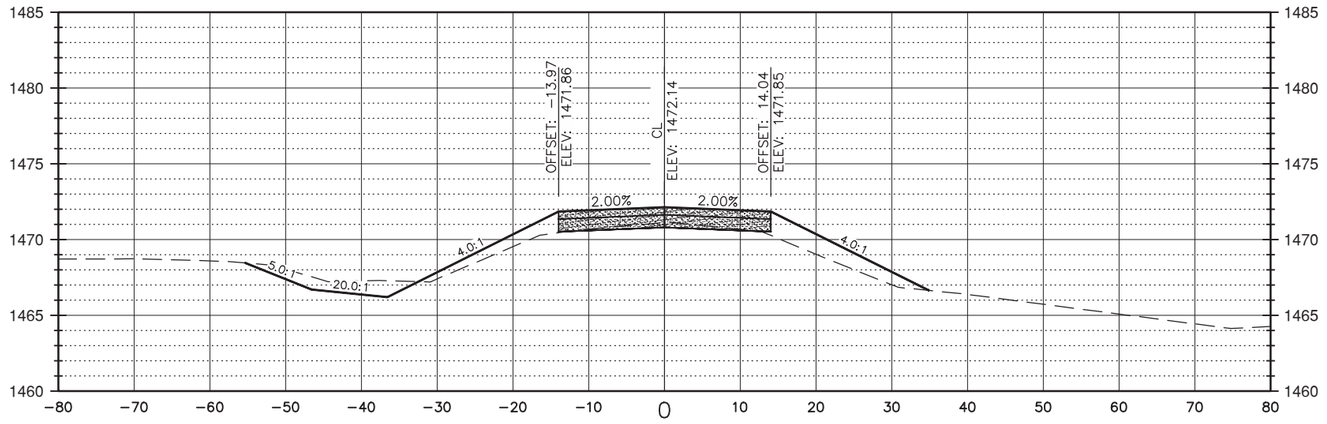
222nd Street
STA 19+00.00



222nd Street
STA 18+50.00



222nd Street
STA 18+00.00



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CROSS-SECTION

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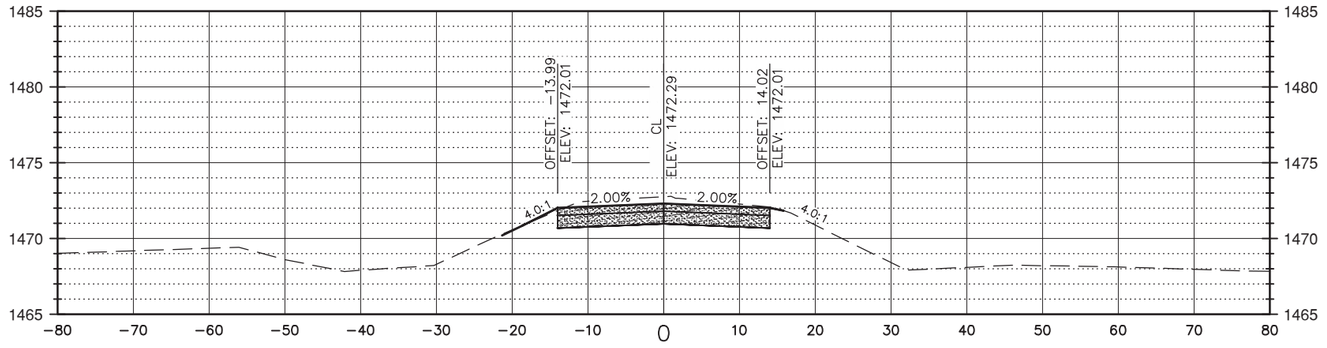
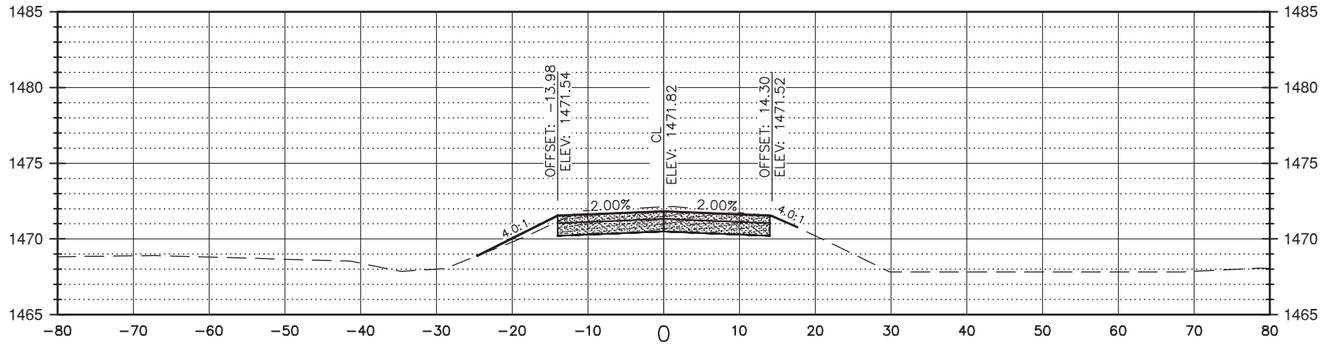
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	47	49

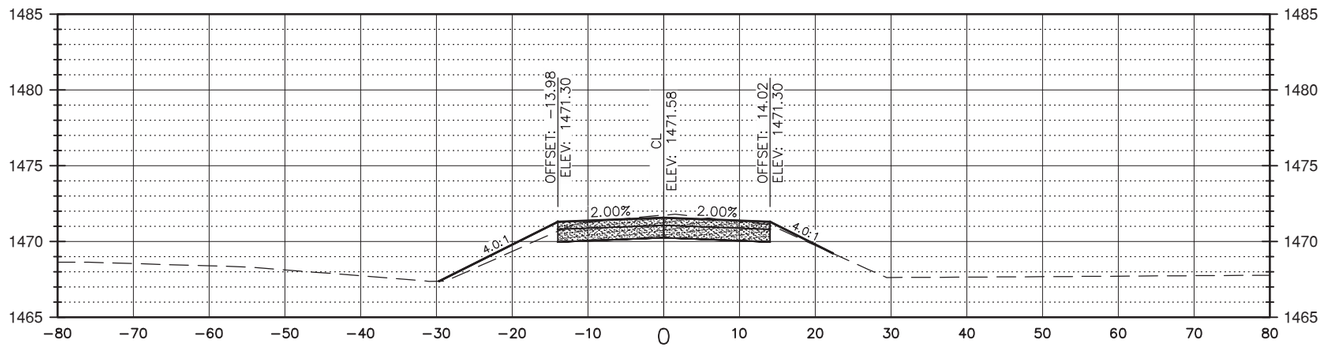
222nd Street
STA 20+50.00



222nd Street
STA 20+00.00



222nd Street
STA 19+50.00



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	48	49

CROSS-SECTION

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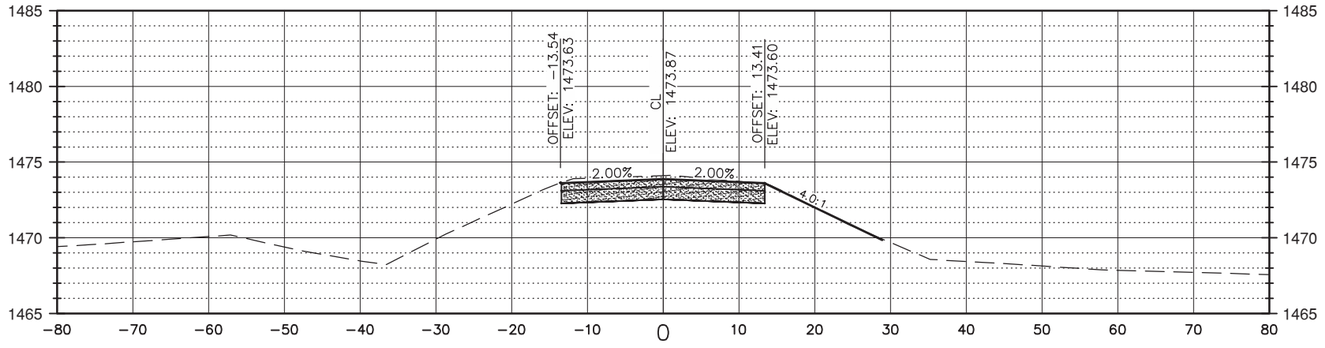
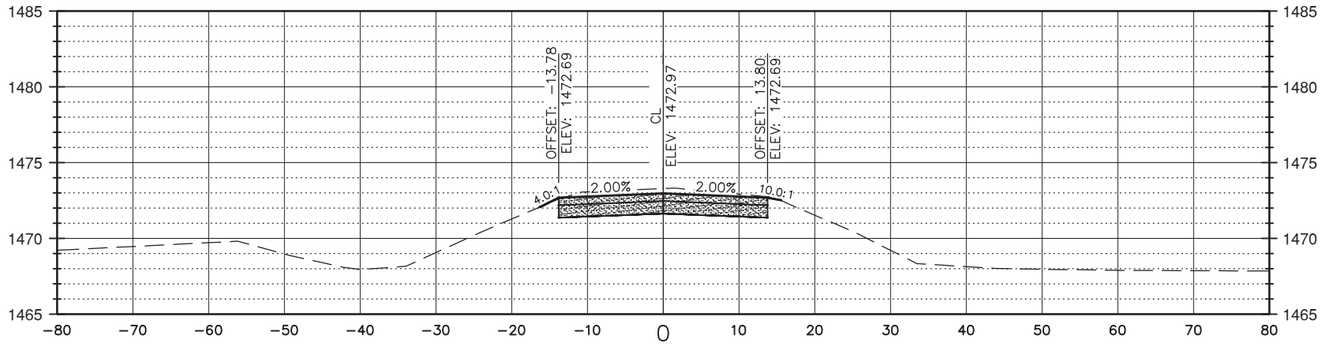
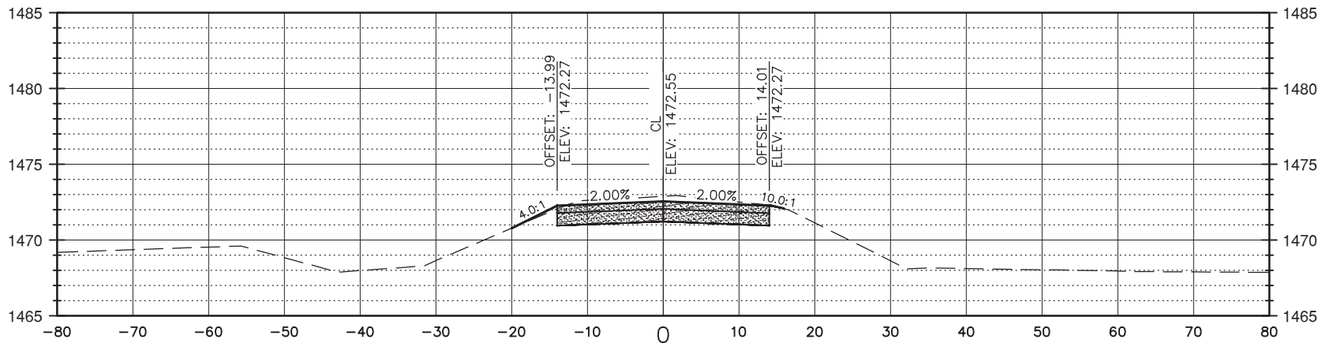
222nd Street
STA 21+50.00



222nd Street
STA 21+00.00



222nd Street
STA 20+71.34



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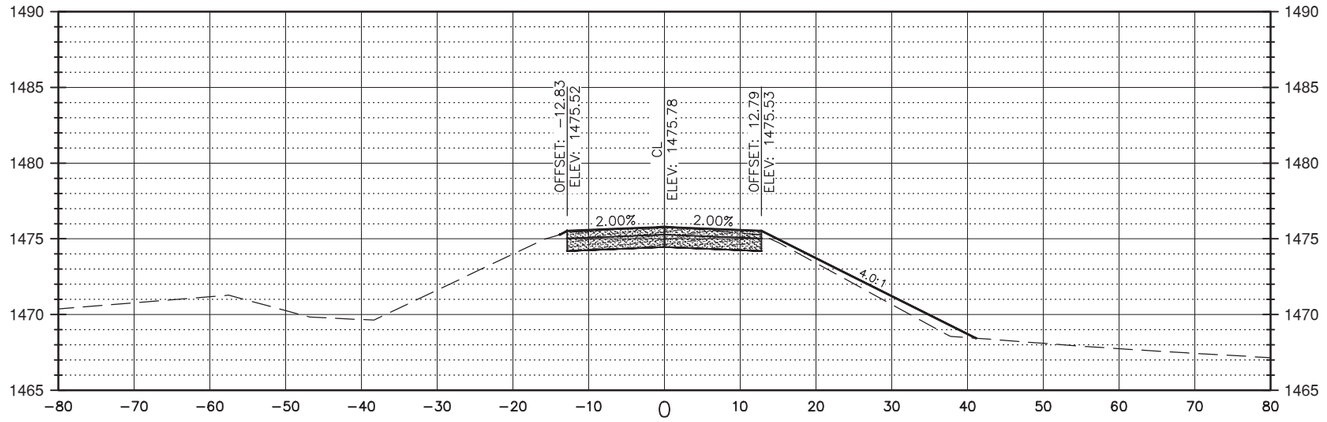
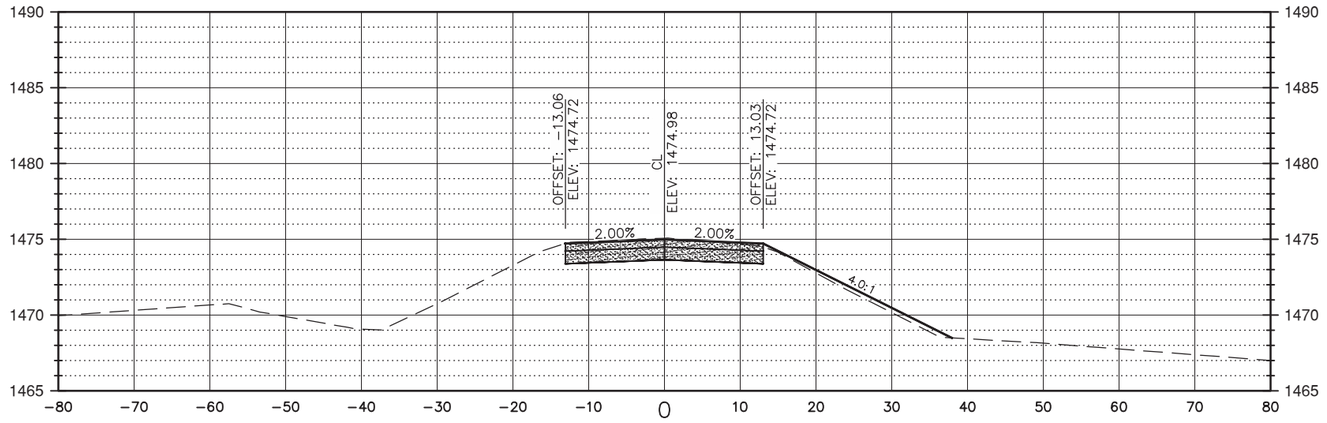
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6136(01)	49	49

222nd Street
STA 22+31.42



222nd Street
STA 22+00.00



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