STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	1	44

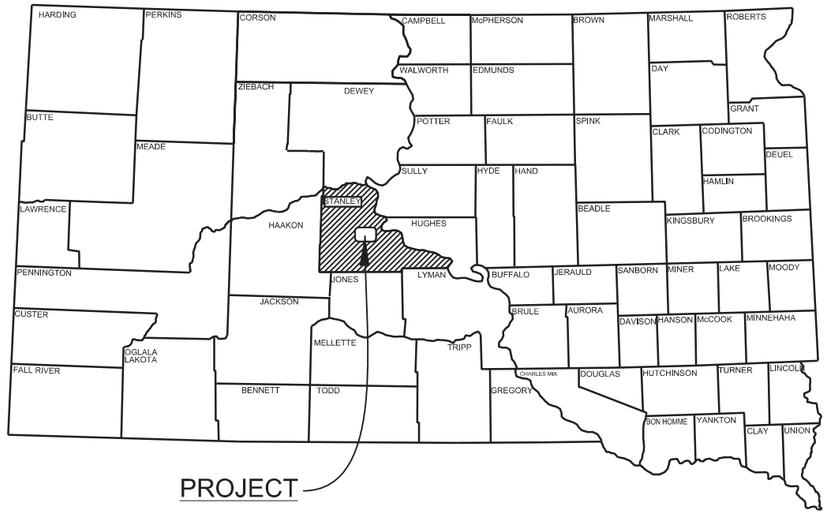
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

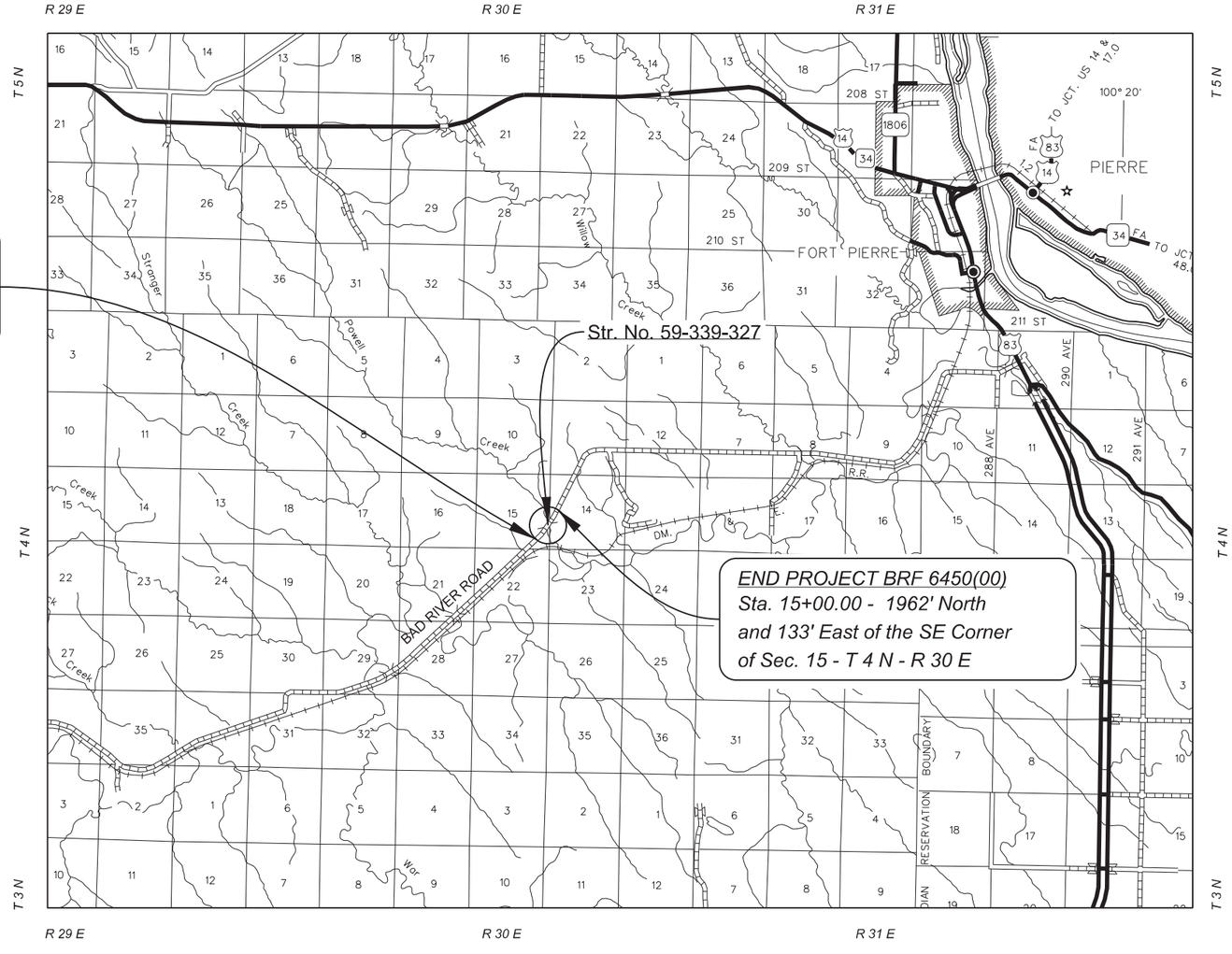
PROJECT BRF 6450(00)
STANLEY COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
Str. No. 59-339-327
PCN 08RR



INDEX OF SHEETS

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
11/21/25
SOUTH DAKOTA



BEGIN PROJECT BRF 6450(00)
Sta. 3+00.00 - 972' North
and 550' West of the SE Corner
of Sec. 15 - T 4 N - R 30 E

END PROJECT BRF 6450(00)
Sta. 15+00.00 - 1962' North
and 133' East of the SE Corner
of Sec. 15 - T 4 N - R 30 E

DESIGN DESIGNATION

ADT (2019)	80
ADT (2039)	115
DHV	17
D	50.0%
T DHV	3.5%
T ADT	7.7%
V	45 mph

STORM WATER PERMIT DATA

Major Receiving Body of Water: Dan Powell Creek
Area Disturbed: 3.28 Acres
Total Project Area: 6.77 Acres
Latitude: 44° 18' 10.3" N
Longitude: -100° 29' 13.1" W

Brosz ENGINEERING, INC.

2

February 4, 2026

Brosz Project No. 2302274

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.454	Mile
009E3250	Miscellaneous Staking	0.454	Mile
009E3280	Slope Staking	0.454	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0135	Remove Delineator	4	Each
120E0010	Unclassified Excavation	7,734	CuYd
230E0010	Placing Topsoil	1,719	CuYd
260E3030	Gravel Surfacing, Salvaged	680.0	Ton
270E0110	Salvage and Stockpile Granular Material	680.0	Ton
450E4758	18" CMP 14 Gauge, Furnish	46	Ft
450E4760	18" CMP, Install	46	Ft
450E5406	18" CMP Safety End, Furnish	2	Each
450E5407	18" CMP Safety End, Install	2	Each
634E0110	Traffic Control Signs	180.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	6	Each
730E0210	Type F Permanent Seed Mixture	164	Lb
731E0200	Fertilizing	4.80	Ton
732E0100	Mulching	15.0	Ton
734E0103	Type 3 Erosion Control Blanket	555	SqYd
734E0154	12" Diameter Erosion Control Wattle	560	Ft
734E0602	Low Flow Silt Fence	500	Ft
734E0610	Mucking Silt Fence	35	CuYd
734E0620	Repair Silt Fence	125	Ft
831E0110	Type B Drainage Fabric	350	SqYd

Structure

Structure No. 59-339-327

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	101	CuYd
421E0200	Box Culvert Undercut	305	CuYd
460E0120	Class A45 Concrete, Box Culvert	224.0	CuYd
480E0100	Reinforcing Steel	25,568	Lb
700E0210	Class B Riprap	175.0	Ton
831E0110	Type B Drainage Fabric	179	SqYd

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
12/18/25

ENVIRONMENTAL COMMITMENTS

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

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

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

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

COMMITMENT A: AQUATIC RESOURCES

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.043 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	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact (Acres)
Dan Powell	10+00	0.023	0.020	0.043

Action Taken/Required:

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

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

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

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

Action Taken/Required:

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

COMMITMENT C: WATER SOURCE

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

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

Action Taken/Required:

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

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx

COMMITMENT C: WATER SOURCE (Cont.)

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

Dan Powell Creek is classified as fish and wildlife propagation, recreation, irrigation, and stock watering waters. Because of these beneficial uses, special construction measures may have to be taken to ensure that this water body is not impacted.

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

Action Taken/Required:

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

COMMITMENT D2: SURFACE WATER DISCHARGE

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

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

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

Action Taken/Required:

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

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

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

Effluent monitoring, as a result of dewatering activities, will be summarized for each month and recorded on a separate Discharge Monitoring Report (DMR) and submitted to DANR monthly. Additional information can be found at:
<
https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/swdpermitting/Ereporting.aspx >

COMMITMENT E: STORM WATER

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

Action Taken/Required:

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

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

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

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

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

Storm Water Pollution Prevention Plan

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

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

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

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

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

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

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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.

1. 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”.

Revised 12-18-25

COMMITMENT H: WASTE DISPOSAL SITE (Cont.)

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

Action Taken/Required:

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

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

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

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

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

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

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

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

Action Taken/Required:

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

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

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

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

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

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

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

Table of U.S. Waterways to Protect

Station	Waterway	Ordinary High-Water Elevation
10+00	Dan Powell Creek	1491.4

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

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

COMMITMENT N: SECTION 404 PERMIT

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

Action Taken/Required:

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

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

STANLEY COUNTY REQUIREMENTS

The County will be responsible for the following items without federal participation:

1) Right of way acquisition.
2) Temporary and permanent easements.
3) Coordination of any utility adjustments.
4) Furnish and install final surfacing.
5) Furnish and install permanent signing.
6) Furnish and install temporary and/or permanent fencing.
7) Remove silt fence in permanently seeded areas.

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 77 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 sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

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

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

UNCLASSIFIED EXCAVATION

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

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation (Mainline)	621
Exc. for RCBC Installation	2983
Salvage and Stockpile Granular Material	1009
Traffic Diversion Excavation	1402
Topsoil (Total)	1719
Total	7734

SHRINKAGE FACTOR: Embankment +40%

TRAFFIC CONTROL SIGNING

Traffic control will be in accordance with Standard Plate 634.28

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-3	REVERSE TURN (L or R)	4	48" x 48"	16.0	64.0
W1-6	LARGE ARROW (one direction)	6	48" x 24"	8.0	48.0
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
-	TYPE 2 OBJECT MARKER BACK TO BACK	2	6" x 12"	1.0	2.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			180.2

TRAFFIC DIVERSION

The traffic diversion is located at Sta. 9+95. The traffic diversion will be constructed according to Section 5.14 B of the Specifications. Installation and removal of the traffic diversion will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion located at Station 9+95 will be constructed according to the geometric layouts shown in the plans with the temporary drainage structure(s) provided in the following table. The temporary structure sizes are designed to pass the design flood frequency flows without overtopping the traffic diversion grade, to minimize potential upstream flooding, and are sized to meet FEMA (Federal Emergency Management Agency) requirements where applicable. The structure(s) will be placed at the flowline elevation and location as stated in the "Table of Temporary Drainage Structures in Traffic Diversions". If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer during the project preconstruction meeting. This information will be forwarded to the DOT Hydraulics Office for review. Construction of the traffic diversion(s) will not be allowed until approval of the proposal is obtained from the Hydraulics Office.

Table of Temporary Drainage Structures in Traffic Diversions

Traffic Diversion Location	Design Flood Frequency	* Flowline Elevation	Ordinary High Water Elevation	Temporary Structure Option 1	Temporary Structure Option 2
9+95	2 year	1489.20	1491.4	1-48" CMP	1-48" CMP Equivalent

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

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

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

The removed traffic diversion embankment will be used in the mainline embankment unless otherwise approved by the Engineer.

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

Traffic Diversion Borrow, as shown on the plans profile sheets, is obtained from the mainline excavation from outside of the traffic diversion cross section work limits. The Traffic Diversion Borrow quantity is included in the mainline excavation quantity in the Table of Excavation Quantities by Balances and in the Table of Unclassified Excavation.

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

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	L/R	Ordinary High Water Elevation	Traffic Diversion Riprap (Ton)	Traffic Diversion Type B Drainage Fabric (SqYd	Structure Class B Riprap (Ton)	Structure Type B Drainage Fabric (SqYd)
9+95	L	1491.40	155	350	175	185
		Totals	155	350	175	185

SALVAGE AND STOCKPILE GRANULAR MATERIAL

The Contractor will salvage and stockpile the existing gravel surfacing from the mainline roadway. The existing surfacing consists of approximately 4 inches of gravel surfacing. Scrapers may be used for removal of the existing surfacing; however, Scrapers will not be driven over top of the existing or new structures. Stockpiling procedures will be done in accordance with the Specifications. Contamination of the gravel will be kept to a minimum, to the satisfaction of the Engineer. Sieve analysis requirements will be waived.

The cost for all labor, materials, and equipment required for removal, haul and stockpile the salvaged surfacing will be included in the contract unit price per ton for "Salvage and Stockpile Granular Material." Plan's quantity will be used for this contract item without further field measurement.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
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12/18/25

SALVAGE AND STOCKPILE GRANULAR MATERIAL (Cont.)

Upon completion of the excavation and construction of the Traffic Diversion subgrade, the Contractor will place and compact the Salvaged and Stockpiled Granular Material on the finished subgrade to serve as temporary surfacing. Compaction will be to the satisfaction of the Engineer. The rate of application of the salvage gravel will be determined in the field by the Engineer. Water may be required to achieve compaction.

"Gravel Surfacing, Salvaged" will be obtained from the Salvaged and Stockpiled Granular Material and may be used without further testing.

The cost for all labor, materials, and equipment needed to haul, install, and compact the salvaged surfacing will be included in the contract unit price per ton for "Gravel Surfacing, Salvaged." Plan's quantity will be used for this contract item without further field measurement.

Prior to removal of the Traffic Diversion the Contractor will salvage any remaining suitable temporary gravel surfacing from the Traffic Diversion for use on the Mainline prior to County installation of new mainline final surfacing at the Engineer's discretion. All costs for this work will be incidental to the bid item Gravel Surfacing, Salvaged.

The County will be responsible for the proper and timely placement of gravel surfacing on the completed placed salvage gravel. Subgrade damage caused by either improper or delayed gravel surfacing placement by the County will be the responsibility of the County.

UTILITIES

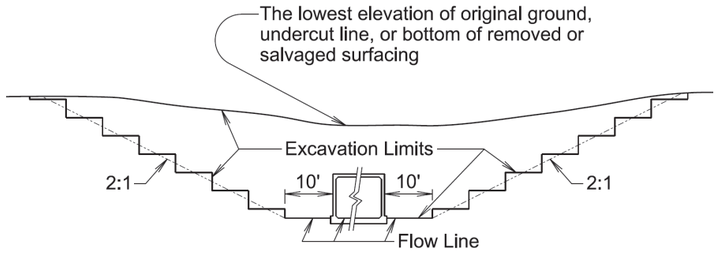
The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the 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. The utility contact information is provided elsewhere in the plans or bidding documents.

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 2,983 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.



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)
4+50		13+50	1719
		Total:	1719

MYCORRHIZAL INOCULUM

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

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

The mycorrhizal inoculum will be as shown below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com
LALRISE Prime and Max WP	Lallemand Specialties Inc. Milwaukee, WI Phone: 1-844-590-7781 www.lallemandplantcare.com

PERMANENT SEEDING

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

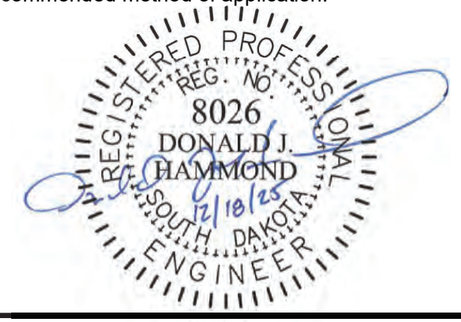
Type F Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
	Total:	26

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

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



FERTILIZING (Cont.)

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com
Nature Safe	Nature Safe Fertilizers Irving, TX Phone: 1-605-759-5622 www.naturesafe.com

MULCHING (GRASS HAY OR STRAW)

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

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.

TABLE OF MULCHING (GRASS HAY OR STRAW)

Station	Location	Quantity (Ton)
4+50 to 13+50 L/R	Inslope/Backslope, Ditch, & Channel Banks	13
	Additional Quantity:	2
	Total:	15

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 estimated quantity of erosion control wattles will remain on the project until vegetation has been established. It is estimated that some of the 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	Location	Diameter (Inch)	Quantity (Ft)
* 13+50 L & R	Ditch Bottom	12	40
* 15+00 L & R	Ditch Bottom	12	40
*16+40 L & R	Ditch Bottom	12	40
* 16+80 L & R	Ditch Bottom	12	40
*18+00 L & R	Ditch Bottom	12	40
*19+50 L & R	Ditch Bottom	12	40
6+50 L	Ditch Bottom	12	40
8+00 L	Ditch Bottom	12	40
9+20 L	Ditch Bottom	12	40
*Traffic Diversion Stationing			
	Additional Quantity:	12	200
	Total:		560

LOW FLOW SILT FENCE

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

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

Low flow silt fence will be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

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

TABLE OF LOW FLOW SILT FENCE

Station	Location	Quantity (Ft)
8+50 to 9+50 R	Perimeter of Storage	300
11+15 L	Pipe Inlet	50
	Additional Quantity:	150
	Total:	500

EROSION CONTROL BLANKET

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

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

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

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

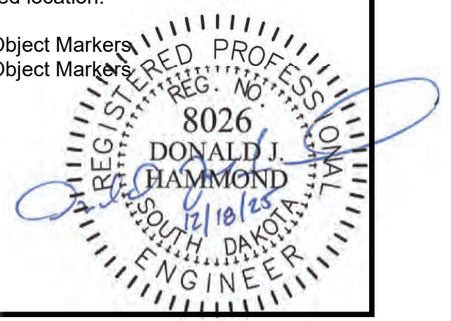
TABLE OF EROSION CONTROL BLANKET

Station	Location	Type	Quantity (SqYd)
9+20 to 9+60 L	Inslope – SW Corner of Box & Channel Bank	3	135
9+80 to 10+00 R	Inslope – SE Corner of Box & Channel Bank	3	70
9+50 to 10+00 L	Inslope – NW Corner of Box & Channel Bank	3	100
10+25 to 10+65 R	Inslope – NE Corner of Box & Channel Bank	3	150
	Additional Quantity:	3	100
	Total Type 2 Erosion Control Blanket:		555

OBJECT MARKERS

At locations shown in the Table below, where Object Markers will be removed, cost for removing the existing Object Markers will be included in the contract unit price per each for Remove Delineator. The object markers and posts will be disposed of in an approved location.

9+75 – Lt. & Rt.	2 Object Markers
10+25 – Lt. & Rt.	2 Object Markers



CONSTRUCTION STAKING

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

TABLE OF CONSTRUCTION STAKING
(See Special Provision for Contractor Staking)

				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)
Bad River Road (2 Lanes Gravel Road)	3+00	15+00	2	1200	0.227	1	1	0.227	0.227	0.227	
Traffic Diversion	10+00	22+00	2	1200	0.227	1	1	0.227	0.227	0.227	
Structure No. 59-339-327 (CIP RCBC)	9+82.30	10+07.69									1
							Totals:	0.454	0.454	0.454	1

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

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

TYPICAL SECTIONS

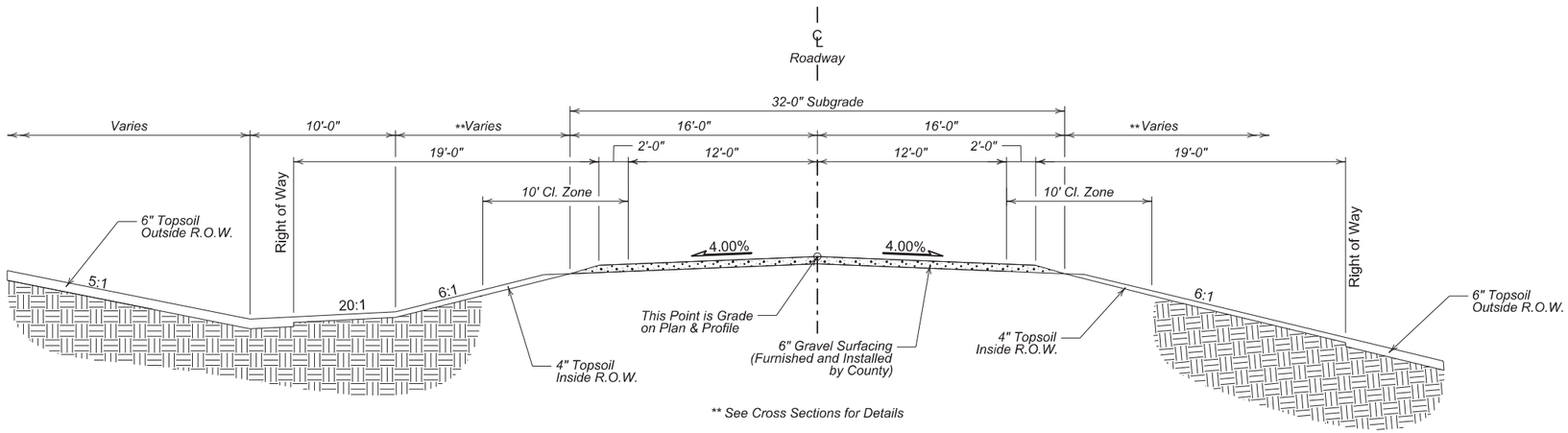
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	9	44

HORIZONTAL ALIGNMENT - MAINLINE				
Element	Curve Data	Station	Northing	Easting
POB		3+00.00	717332.69	1927854.94
PI		4+50.00	717447.46	1927951.52
PC		5+00.02	717486.88	1927982.32
PI		7+16.16	717657.22	1928115.37
PT		9+32.13	717836.36	1928236.29
	Delta=3°58'26"L			
	DOC=0°55'11"			
	R=6230.00'			
	L=432.11'			
	T=216.14'			
PC		9+79.42	717875.55	1928262.75
PI		12+66.03	718113.12	1928423.11
PT		15+51.94	718368.40	1928553.41
	Delta=6°58'46"L			
	DOC=1°13'09"			
	R=4700.00'			
	L=572.53'			
	T=286.62'			
POE		16+99.92	718500.21	1928620.68

HORIZONTAL ALIGNMENT - TRAFFIC DIVERSION				
Element	Curve Data	Station	Northing	Easting
POB		10+00.00	717332.73	1927854.97
PC		10+38.94	717362.39	1927880.20
PI		10+99.94	717408.85	1927919.73
PT		11+58.60	717468.29	1927933.41
	Delta=27°25'29"L			
	DOC=22°55'06"			
	R=250.00'			
	L=119.66'			
	T=61.00'			
PC		12+55.60	717562.82	1927955.17
PI		13+11.36	717617.16	1927967.68
PT		13+65.85	717663.37	1927998.87
	Delta=21°03'26"R			
	DOC=19°05'55"			
	R=300.00'			
	L=110.23'			
	T=55.76'			
PC		18+62.01	718074.61	1928276.46
PI		19+25.20	718126.98	1928311.82
PT		19+86.58	718160.65	1928365.30
	Delta=23°47'25"R			
	DOC=19°05'55"			
	R=300.00'			
	L=124.57'			
	T=63.19'			
PC		20+58.78	718199.11	1928426.40
PI		21+24.66	718234.21	1928482.16
PT		21+87.61	718292.23	1928513.37
	Delta=29°31'38"L			
	DOC=22°55'06"			
	R=250.00'			
	L=128.84'			
	T=65.88'			
POE		22+21.73	718322.27	1928529.54

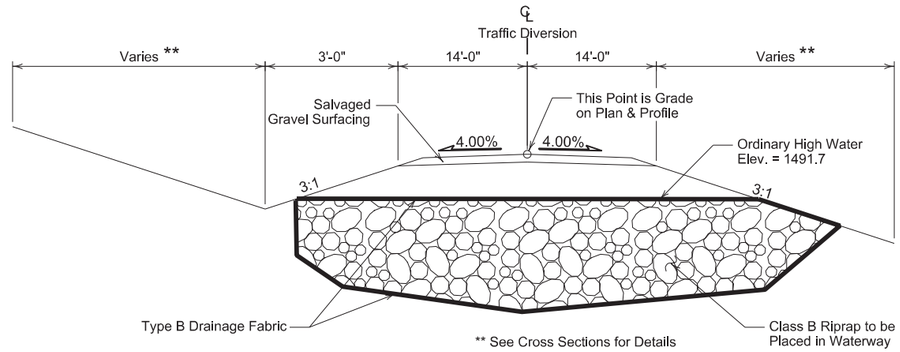
CONTROL DATA						
Point	Station	Offset	Northing	Easting	Elevation	Desc.
CP1	8+81.11	46.09' Rt	717768.092	1928245.569	1501.63	Rebar
CP2	12+12.39	33.66' Lt	718089.233	1928359.455	1505.10	Rebar



** See Cross Sections for Details

TYPICAL SECTION

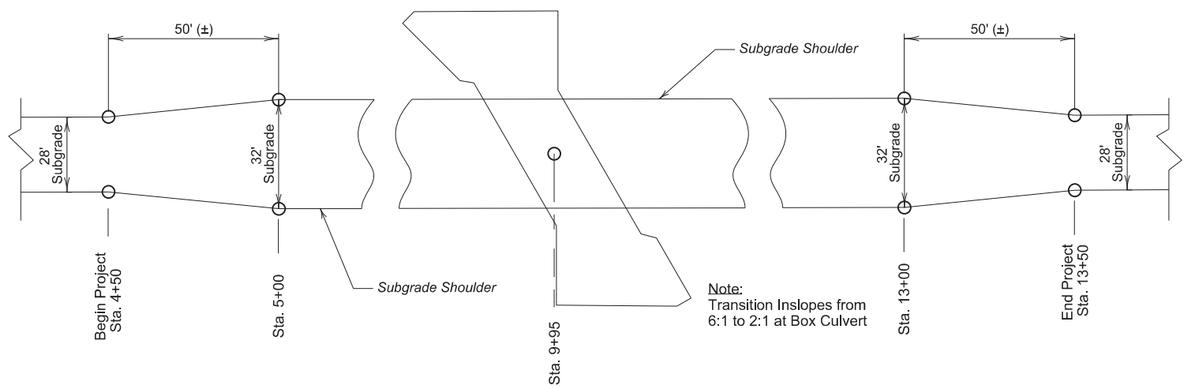
Sta. 4+50 to Sta. 13+50



** See Cross Sections for Details

TYPICAL SECTION - TRAFFIC DIVERSION

Sta. 10+00 to Sta. 22+00



TYPICAL ROADWAY TRANSITION DETAIL

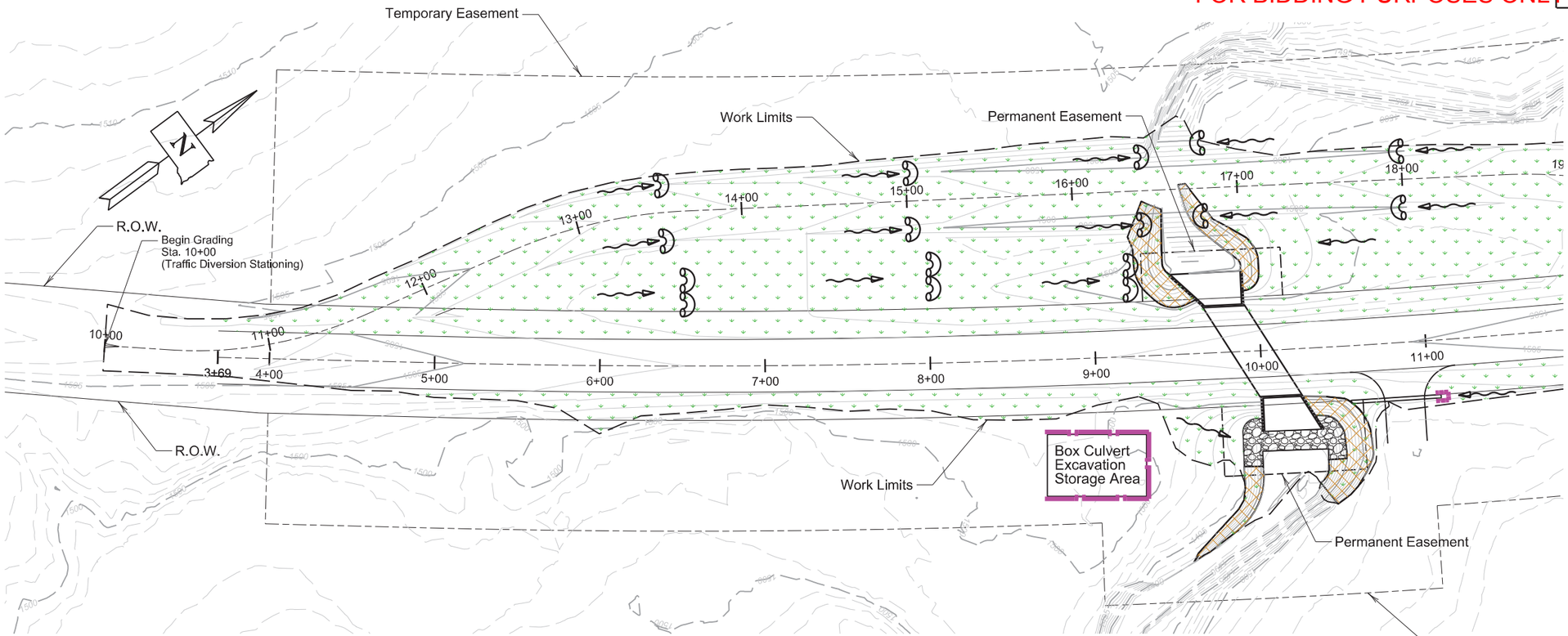
(Not to Scale)

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25

EROSION AND SEDIMENT CONTROL DETAILS

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	10	44



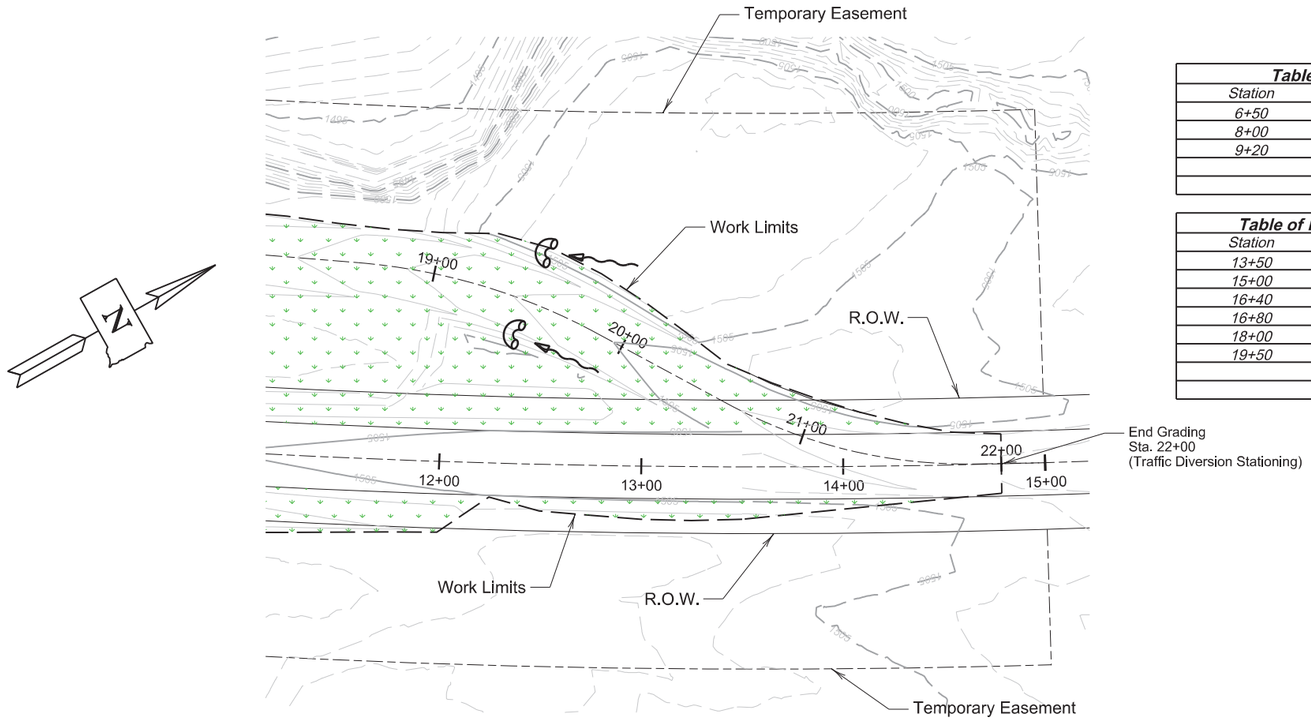


Table of Erosion Control Wattles - Mainline

Station	L/R	Dia (In.)	Location	Quantity (Ft.)
6+50	L	12	Ditch Bottom	40
8+00	L	12	Ditch Bottom	40
9+20	L	12	Ditch Bottom	40
			Engineer's Discretion.	100
			Total:	220

Table of Erosion Control Wattles - Traffic Diversion

Station	L/R	Dia (In.)	Location	Quantity (Ft.)
13+50	L & R	12	Ditch Bottom	40
15+00	L & R	12	Ditch Bottom	40
16+40	L & R	12	Ditch Bottom	40
16+80	L & R	12	Ditch Bottom	40
18+00	L & R	12	Ditch Bottom	40
19+50	L & R	12	Ditch Bottom	40
			Engineer's Discretion.	100
			Total:	340

Table of Low Flow Silt Fence

Station to Station	L/R	Location	Quantity (Ft.)
8+50 to 9+50	R	Storage Pile Perimeter	300
11+15	R	Pipe Inlet	50
		Engineer's Discretion.	150
		Total:	500

Table of Erosion Control Blanket

Station to Station	L/R	Location	Quantity (Sq. Yd.)
9+20 to 9+60	L	SW Quadrant	135
9+80 to 10+00	R	SE Quadrant	70
9+50 to 10+00	L	NW Quadrant	100
10+25 to 10+65	R	NE Quadrant	150
		Engineer's Discretion.	100
		Total:	555

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25

LEGEND:

- Low Flow Silt Fence
- 12" Dia. Erosion Control Wattle
- Type F Permenant Seed Mixture
- Riprap and Drainage Fabric
- Type 2 Erosion Control Blanket

Note: Any areas disturbed within the temporary easement areas will also be seeded as necessary.

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** 7.14 Ac.
- **5.3 (3b): Total Area to be Disturbed** 3.28 Ac.
- **5.3 (3c): Maximum Area Disturbed at One Time** 3.28 Ac.
- **5.3 (3d): Existing Vegetative Cover (%)** 90%
- **5.3 (3d): Description of Vegetative Cover** Prairie Grass
- **5.3 (3e): Soil Properties:** Wendte Clay, Channeled, occasionally flooded.
- **5.3 (3f): Name of Receiving Water Body/Bodies** Dan Powell Creek
- **5.3 (3g): Location of Construction Support Activity Areas** On Site

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install perimeter protection where runoff may exit site.	
Remove and stockpile topsoil.	
Install perimeter protection around stockpiles.	
Install Traffic Diversion including riprap.	
Install ditch bottom protection for Traffic Diversion.	
Install RCBC and rough grade roadway.	
Install riprap for RCBC.	
Final grading.	
Remove Traffic Diversion.	
Install channel and ditch bottom protection.	
Reseed areas disturbed by removal activities.	
Removal of protection devices.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

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

Perimeter Controls (See Detail Plan Sheets)

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

Structural Erosion and Sediment Controls

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

Dust Controls

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

Dewatering BMPs

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

Stabilization Practices (See Detail Plan Sheets)

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

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

Wetland Avoidance

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

5.3 (6): PROCEDURES FOR INSPECTIONS

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

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

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

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➢ **Material Management**

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

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

➢ **Spill Control Practices**

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

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

➢ **Spill Response**

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

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

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➢ **Waste Disposal**

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

➢ **Hazardous Waste**

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

➢ **Sanitary Waste**

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

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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

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

Product Specific Practices

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

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

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

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

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

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

7.0: SPILL NOTIFICATION

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

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

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

5.4: SWPPP CERTIFICATIONS

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

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

➢ **South Dakota Department of Transportation**

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

_____

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

➢ **Prime Contractor**

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

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

_____

Authorized Signature

CONTACT INFORMATION

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

➢ **Contractor Information**:

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

➢ **Erosion Control Supervisor**

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

➢ **SDDOT Project Engineer**

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

➢ **SDDANR Contact Spill Reporting**
- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SDDANR Contact for Hazardous Materials.**
- (605) 773-3153

➢ **National Response Center Hotline**
- (800) 424-8802.

➢ **SDDANR Stormwater Contact Information**
- SDDANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

PLAN AND PROFILE - MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	15	44

Revised 12-18-25

Scale: 1"= 100'

Sta. 9+79.6 to 10+21.2
Remove 42'-0" Single Span
Steel Girder Bridge
(Incidental Work, Structure)

Sta. 9+95.00
Install 2 - 10'x10' RCBC
DA = 12.9 Sq. Miles

Sta. 9+75.00 to 10+25 - L & R
Remove 4 Object Markers
(Remove Delineators)

9+95.00 - ℄
Install Class B Riprap &
Type B Drainage Fabric
See Structure Sheets

10+53 - 34.0' Rt. to
11+07 - 34' Rt.
Install 18" - 46' CMP
w/ 2 Safety Ends

Section 15, T4N, R30E

Temporary Easement
Sta. 4+00.00 to 15+00.00 Lt.
Sec. 15 T04N R30E
Containing 3.19 Acres, More or Less
R.E. Turner

Permanent Easement
Sta 9+30.00 to 10+15.00 Lt.
Sec. 15 T04N R30E
Containing 0.06 Acres, More or Less
R.E. Turner

Temporary Easement
Sta. 12+90.86 to 15+00.00 Lt.
W1/2 Sec. 14 T04N R30E
Containing 0.28 Acres, More or Less
R. E. Turner

Begin Project
Sta. 3+00

End Project
Sta. 15+00

℄ Traffic Diversion

℄ Roadway

Grading Limits

Permanent Easement

Existing Structure

CP 1

CP 2

Section Line

PI 7+16.16
N 717657.22
E 1928115.37
Delta=3°58'26"L
DOC=0°55'11"
T=216.14'
L=432.11'
R=6230.00'

Temporary Easement
Sta. 4+00 to 11+81.22 Rt.
Sec. 15 T04N R30E
Containing 1.21 Acres, More or Less
R. E. Turner

Permanent Easement
Sta. 9+75.00 to 10+60.00 Rt.
Sec. 15 T04N R30E
Containing 0.08 Acres, More or Less
R. E. Turner

Flow
Dan Powell Cr.

Temporary Easement
Sta. 10+03.15 to 15+00.00 Rt.
W1/2 Sec. 14 T04N R30E
Containing 0.65 Acres, More or Less
R. E. Turner

PI 12+66.03
N 718113.12
E 1928423.11
Delta=6°58'46"L
DOC=1°13'09"
T=286.62'
L=572.53'
R=4700.00'

W1/2 Section 14, T4N, R30E

Excav. := 4613 C.Y. Emb. = 3295 C.Y.
Total = 4613 C.Y. (+40%) = 1318 C.Y.
Total: = 4613 C.Y.

Topsoil = 1719 C.Y.

Quantities include approx. 2983 C.Y. of material to be excavated for box culvert construction.

PVI 4+50.00 Elev 1506.14
PVC 5+45.00 Elev 1505.26
PVI 7+35.00 Elev 1503.51
PVT 9+25.00 Elev 1504.57
PVC 11+50.00 Elev 1505.83
PVI 12+00.00 Elev 1506.11
PVT 12+50.00 Elev 1506.20
PVI 13+50.00 Elev 1506.38

-0.9211%
LDG = -0.8680%
LDG = -0.5022%
0.5591%
0.1800%

DG PI 4+50.00
El 1504.30

DG PI 7+00.00
El 1502.13

K 256.28
L 380.00'

DG PI 9+25.00
El 1501.00

10+85 - RT
Construct Approach
300 CuYd Provided

K 265.19
L 100.00'

Inlet El. = 1489.64
Outlet El. = 1489.36

FLOW	ELEVATION
Q_d = 900 cfs	1497.10
Q_{100} = 1615 cfs	1500.00
Q_{OT} = 2625 cfs	1504.20

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

1506.5 1505.68 1506.0 1504.81 1505.7 1504.30 1505.6 1504.18 1505.5 1504.44 1505.2 1504.99 1488.8 1505.55 1506.0 1506.06 1506.0 1506.29 1506.2 1506.6 1507.5 1509.0

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
12/10/25

PLAN AND PROFILE (TRAFFIC DIVERSION)

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	16	44

Scale: 1"= 100'

Section 15, T4N, R30E

PI 10+38.94
N 717362.39
E 1927880.20
Delta=27°25'29" L
DOC=22°55'06"
T=61.00'
L=119.66'
R=250.00'

PI 13+11.36
N 717617.16
E 1927967.68
Delta=21°03'26" R
DOC=19°05'55"
T=55.76'
L=110.23'
R=300.00'

16+60.00 - ℄
Install 48" - 70' CMP
F.L. Elevation = 1489.10
(Maintenance of Traffic Diversion)

PI 19+25.20
N 718126.98
E 1928311.82
Delta=23°47'25" R
DOC=19°05'55"
T=63.19'
L=124.57'
R=300.00'

PI 21+24.66
N 718234.21
E 1928482.16
Delta=29°31'38" L
DOC=22°55'06"
T=65.88'
L=128.84'
R=250.00'

Temporary Easement

℄ Traffic Diversion

Permanent Easement

Existing Structure

Section Line

CP 1

CP 2

33'-0" R/W

Begin Traffic Diversion
Station 10+00.00

End Traffic Diversion
Station 22+00.00

℄ Roadway

Grading Limits

Permanent Easement

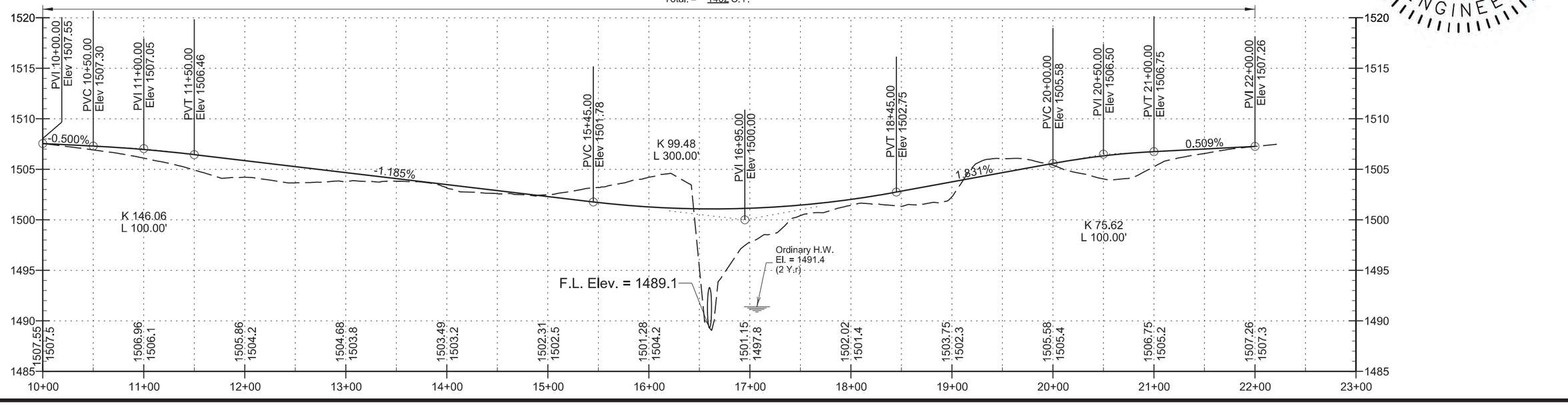
Flow
Dan Powell Cr.

Temporary Easement

W1/2 Section 14, T4N, R30E

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
11/21/25
SOUTH DAKOTA

Excav.:= 1402 C.Y. Emb. = 1002 C.Y.
Total = 1402 C.Y. (+40%) = 400 C.Y.
Total: = 1402 C.Y.



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

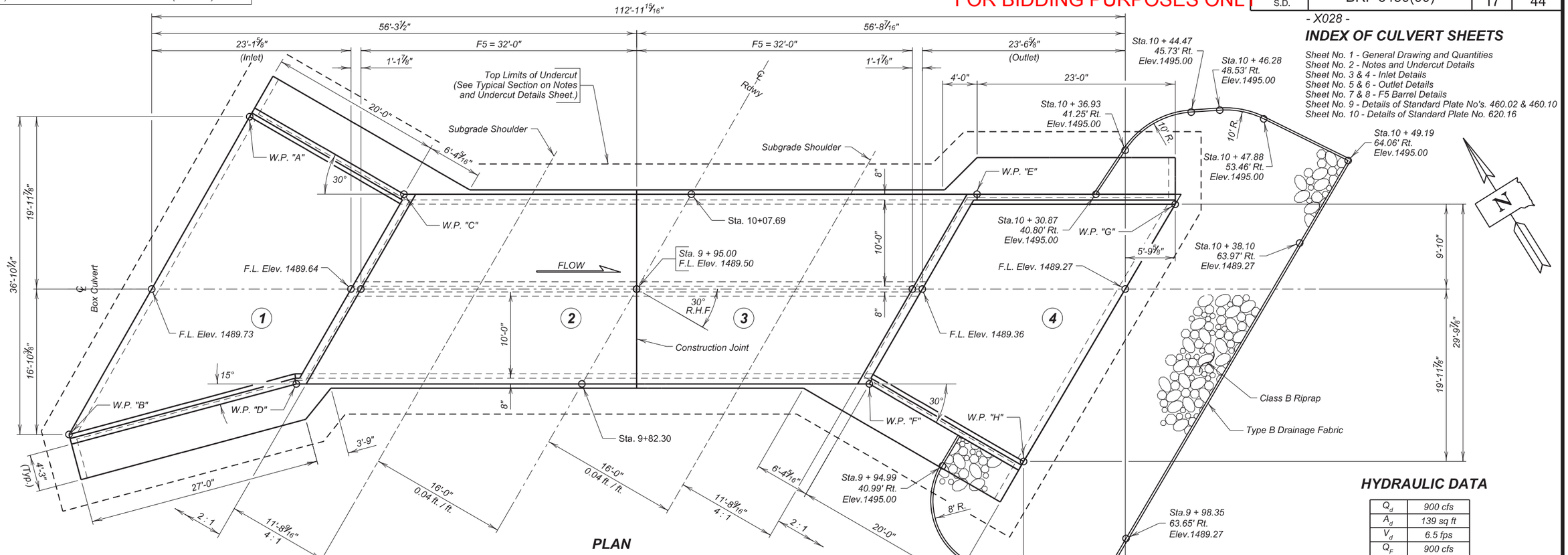
Revised 12-18-25

FOR BIDDING PURPOSES ONLY

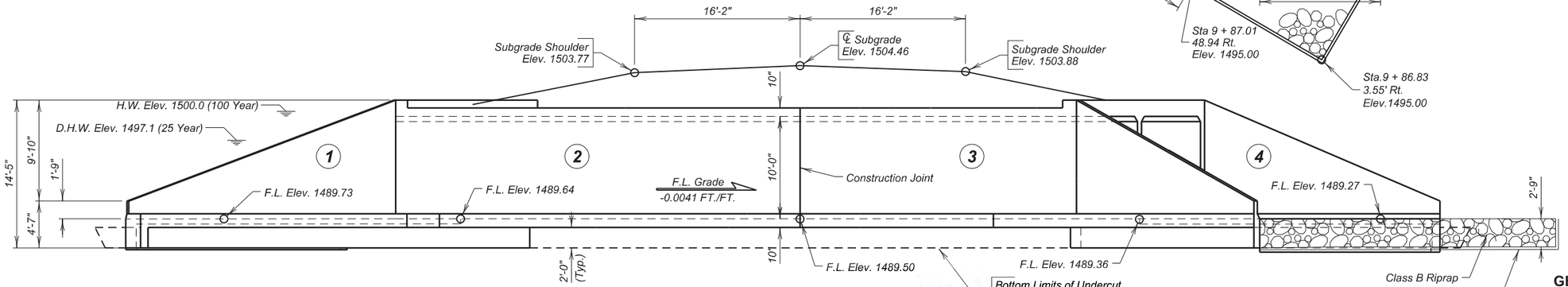
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	17	44

- X028 -

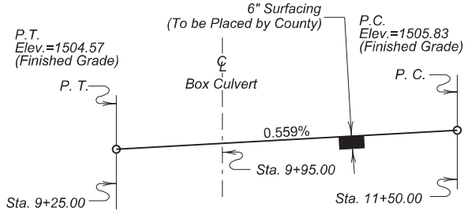
INDEX OF CULVERT SHEETS



PLAN



ELEVATION



GRADELINE DATA

NOTE:
This site was determined to not support aquatic organisms and therefore the Box culvert flow line will NOT be depressed 1' - 0" below channel flow line.

HYDRAULIC DATA

Q_d	900 cfs
A_d	139 sq ft
V_d	6.5 fps
Q_F	900 cfs
Q_{100}	1615 cfs
Q_{OT}	2625 cfs
V_{Max}	9.0 fps

Q_d = Design discharge for the proposed culvert based on 25 year frequency. EI. 1497.1.

Q_{OT} = Overtopping discharge and frequency >100 year recurrence interval. EI. 1504.2 at Station 7+75.

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. EI. 1500.0.

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

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

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
	Incidental Work, Structure	L.S.	L.S.
	Structure Excavation, Box Culvert	Cu. Yd.	101
	Box Culvert Undercut	Cu. Yd.	305
	Class A45 Concrete, Box Culvert	Cu. Yd.	224
	Reinforcing Steel	Lb.	25568
≠	Class B Riprap	Ton	175.0
	Type B Drainage Fabric	Sq. Yd.	179

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
12/10/25

TABLE OF WORKING POINTS

W.P.	STATION	OFFSET
"A"	9 + 89.80	48.89' L
"B"	9 + 47.29	48.50' L
"C"	9 + 91.00	28.71' L
"D"	9 + 65.63	28.64' L
"E"	10 + 24.10	28.80' R
"F"	9 + 98.95	28.89' R
"G"	10 + 34.36	49.38' R
"H"	10 + 00.09	48.89' R

GENERAL DRAWING AND QUANTITIES

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

STANLEY COUNTY

S. D. DEPT. OF TRANSPORTATION

- X028 - NOVEMBER 2025 — 1 OF 10

Plans By:
Brosz Engineering, Inc.
Consulting Engineers

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	18	44

FOR BIDDING PURPOSES ONLY

SPECIFICATIONS

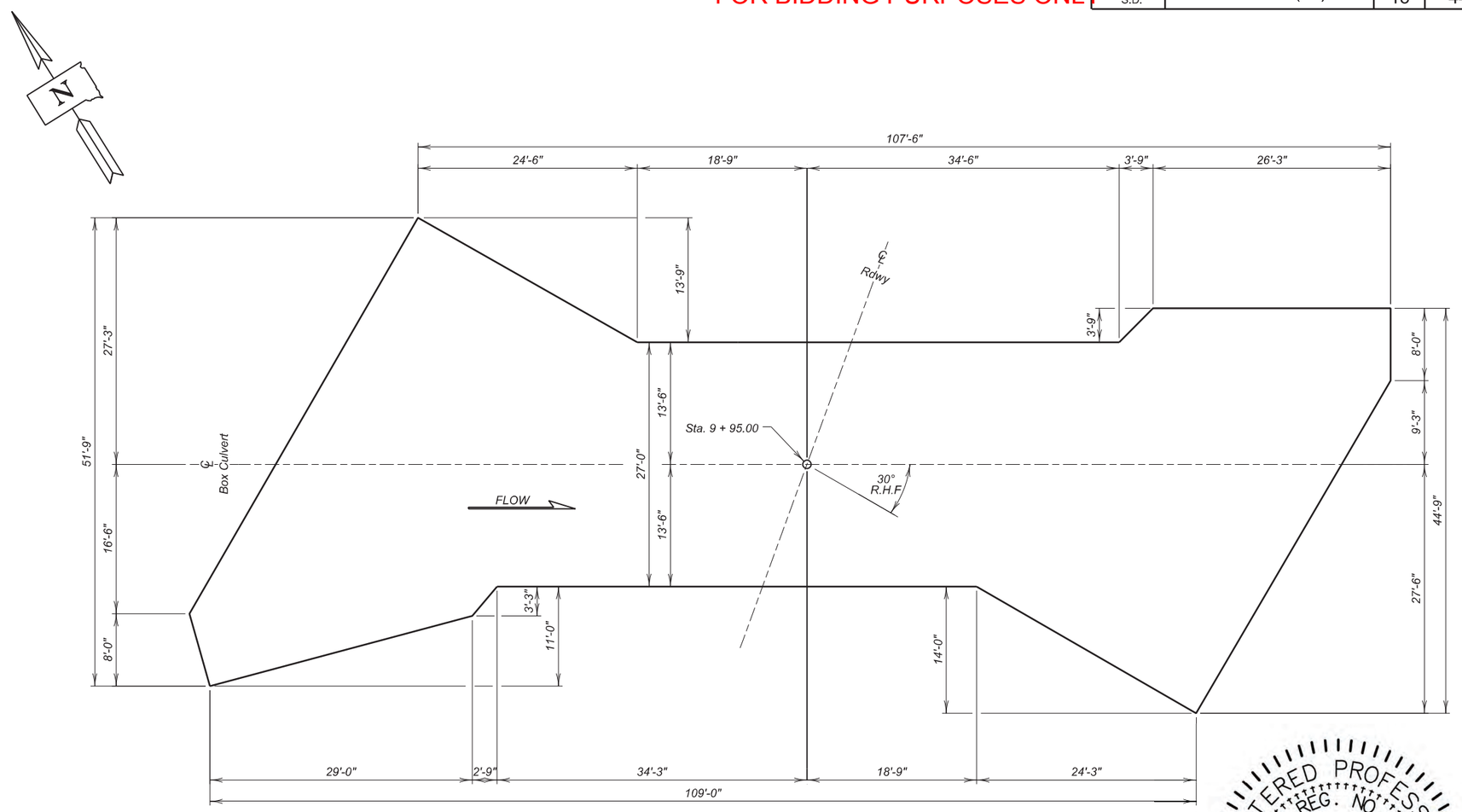
1. *Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.*
2. *Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.*

INCIDENTAL WORK, STRUCTURE

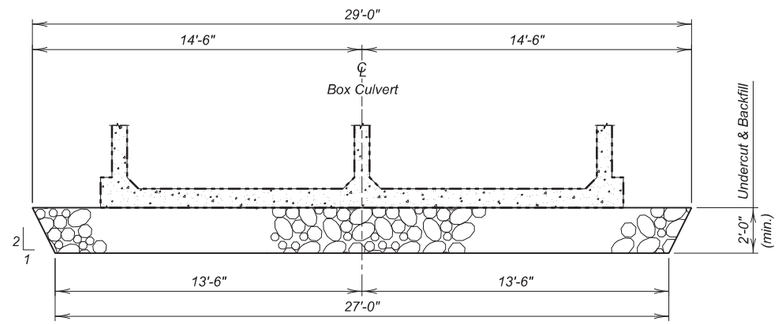
1. *The in-place structure is a 42'-0" single span steel girder bridge with reinforced concrete deck. The abutments consist of reinforced concrete backwalls and wingwalls on timber piling. The Contractor will remove and dispose of the in-place structure. The 24" steel beams will be salvaged for use by Stanley County. The beams will be stockpiled on the site in a location accessible for transport by county forces. The abutments will be removed 1' below the bottom of the undercut.*
2. *The foregoing is a general description of the in-place structure and should not be considered complete in all details. Before preparing a bid, it is the Contractor's responsibility to make a visual inspection of the structure to verify the extent of work and materials involved.*
3. *All costs associated with the aforementioned work will be incidental to the contract lump sum price for "Incidental work, Structure".*

GENERAL NOTES

1. *Design Live Load: HL-93. No construction loading in excess of legal load was considered.*
2. *The design of the barrel section is based on a minimum fill height of 1 foot and includes all subsequent fill heights up to and including the maximum fill height of 5 feet (F5).*
3. *Design Material Strengths: Concrete f'c = 4,500 psi*
   Reinforcing Steel f'y = 60,000 psi
4. *All concrete will be Class A45 Concrete, Box Culvert conforming to Section 460 of the Construction Specifications.*
5. *All reinforcing steel will conform to ASTM A615 Grade 60.*
6. *All lap splices shown are contact lap splices unless noted otherwise.*
7. *All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise in the plans.*
8. *Use 1-inch clear cover on all reinforcing steel EXCEPT as shown.*
9. *The Contractor will imprint on the structure the date of construction as specified and detailed on Standard Plate 460.02.*
10. *Care will be taken to establish Working Points (W.P.) as shown on the wings.*
11. *Circled numbers in PLAN and ELEVATION views on the General Drawing are section I.D. Numbers (see SDDOT Materials Manual).*
12. *Cost of Preformed Expansion Joint Filler used in outlet apron construction will be incidental to the other contract items.*
13. *Soils below the bottom of the proposed RCBC consist of brown clay.*
14. *Surface water was present at the site at an elevation of 1488.3 feet during the subsurface investigation conducted in June 2023. Dewatering will be required to construct the box culvert. All costs incurred for dewatering will be incidental to other contract items.*
15. *Compaction of earth embankment and box culvert backfill material will be governed by the Ordinary Compaction method.*



UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
⌀ Box Culvert Undercut	Cu. Yd.	305

⌀ *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. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25

NOTES AND UNDERCUT DETAILS

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

STANLEY COUNTY

S. D. DEPT. OF TRANSPORTATION

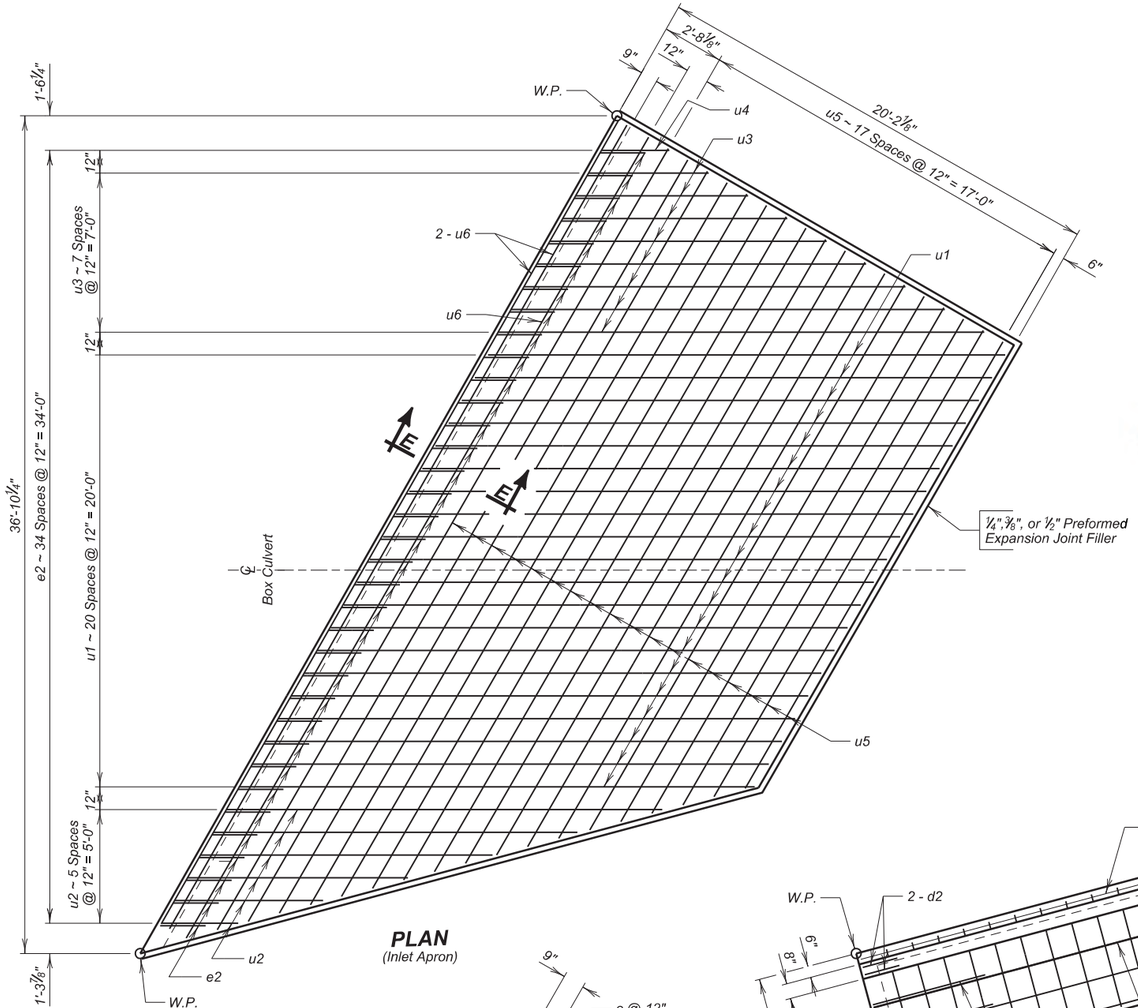
NOVEMBER 2025

2 OF 10

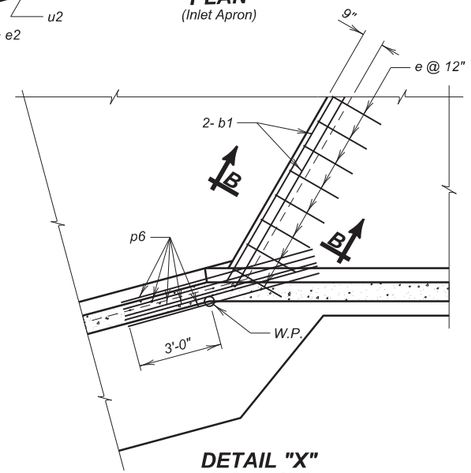
DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	19	44

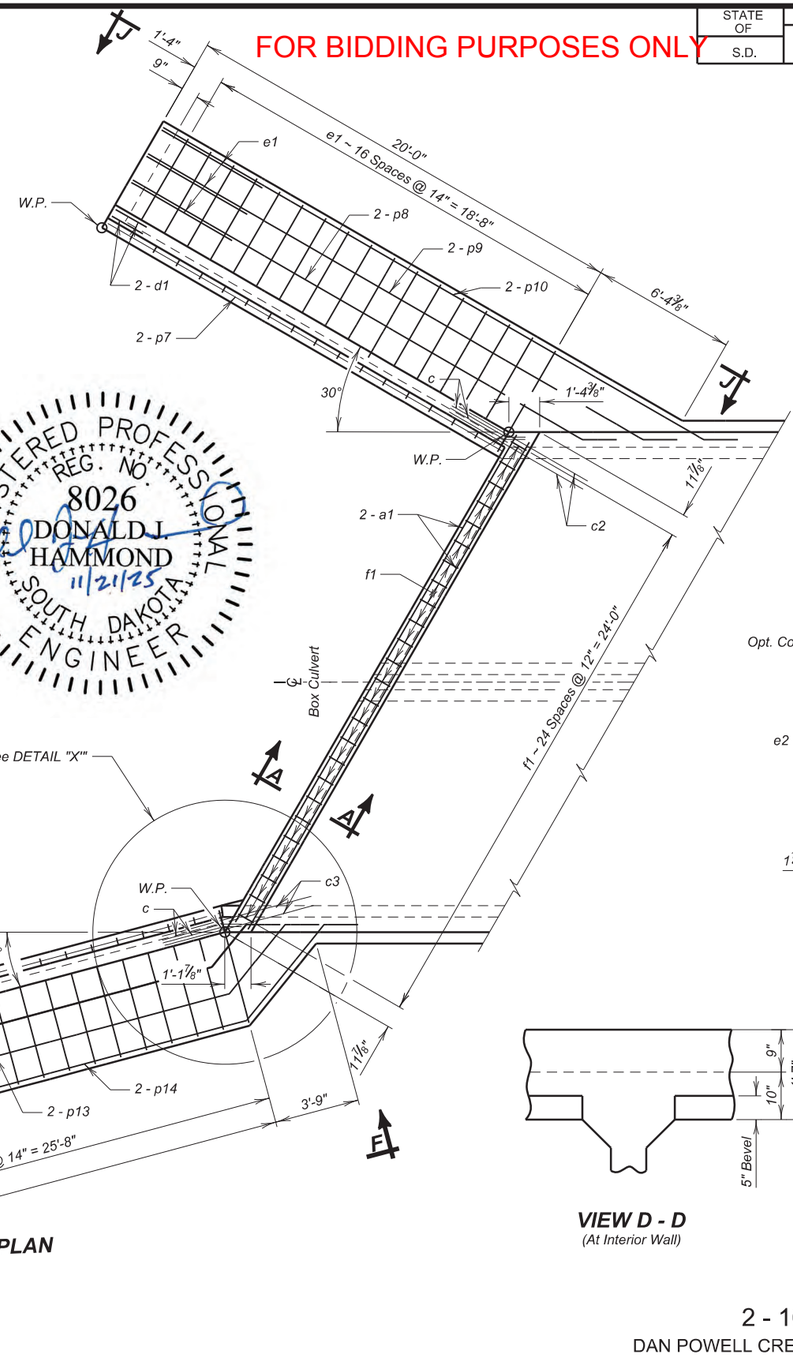
FOR BIDDING PURPOSES ONLY



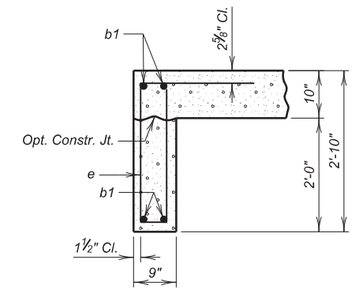
PLAN
(Inlet Apron)



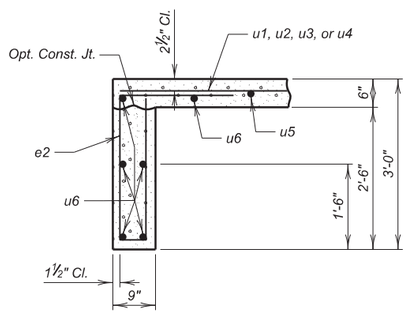
DETAIL "X"
(At Bottom Slab)



PLAN

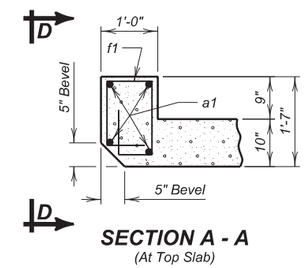


SECTION B - B



SECTION E - E

VIEW D - D
(At Interior Wall)



SECTION A - A
(At Top Slab)

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
11/21/25
SOUTH DAKOTA

ESTIMATED QUANTITIES (Inlet)

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
Inlet	28.6	2958	14.0
Inlet Apron	15.0	811	15.0

INLET DETAILS (A)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

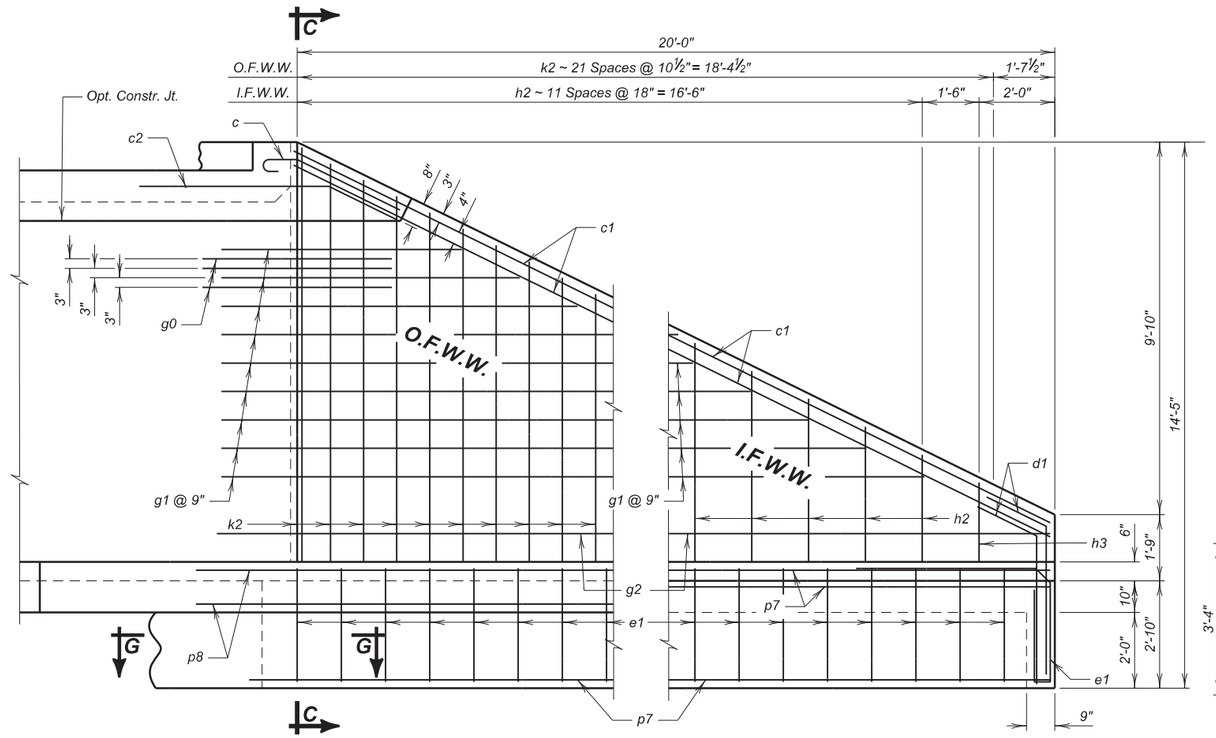
STANLEY COUNTY

S. D. DEPT. OF TRANSPORTATION

NOVEMBER 2025

3 OF 10

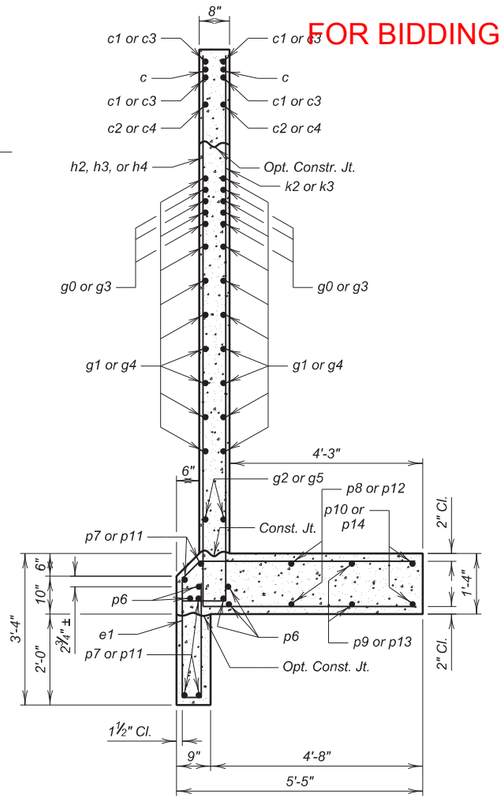
DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER



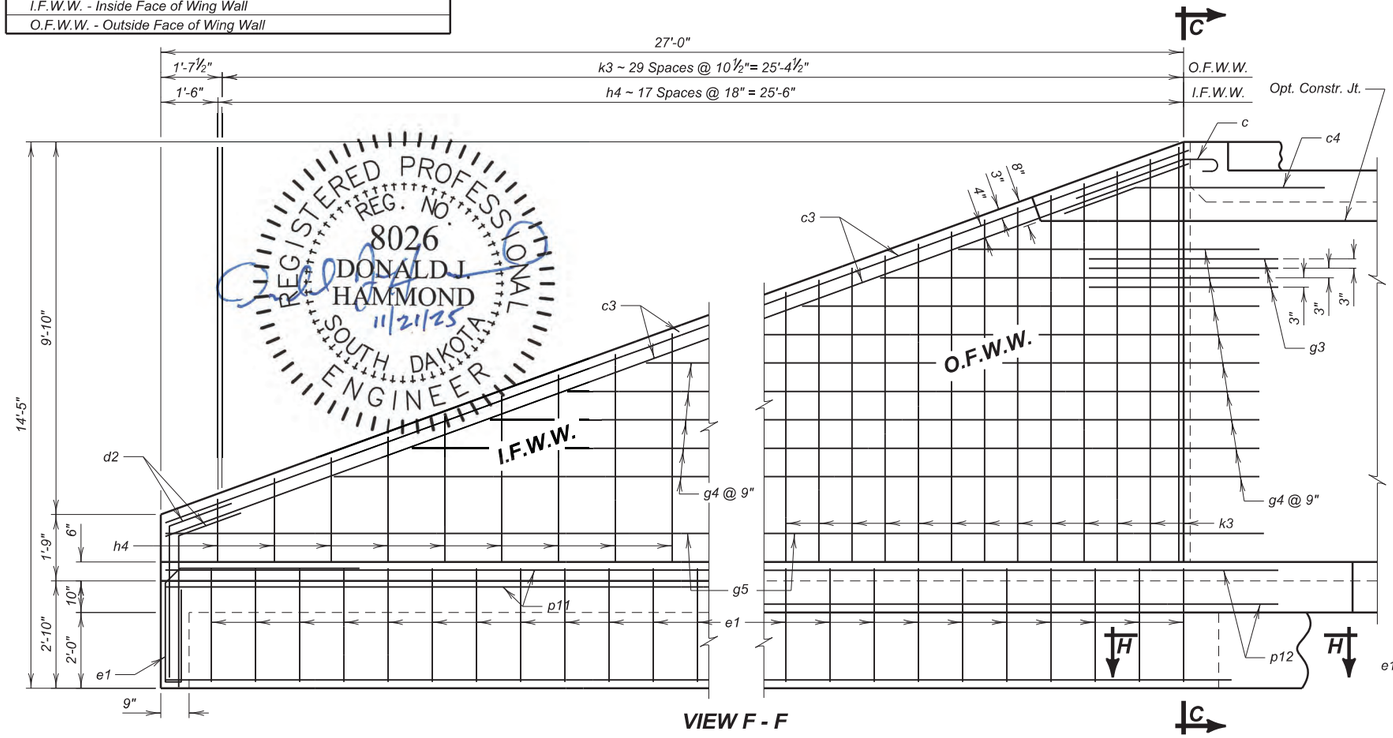
VIEW J - J

LEGEND FOR PLACING RE-STEEL

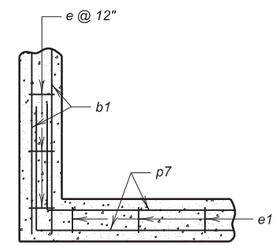
I.F.W.W. - Inside Face of Wing Wall
O.F.W.W. - Outside Face of Wing Wall



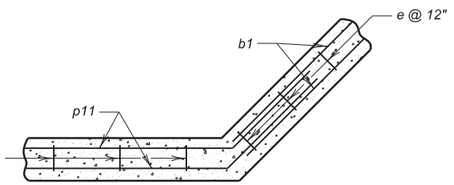
SECTION C-C



VIEW F - F



SECTION G - G

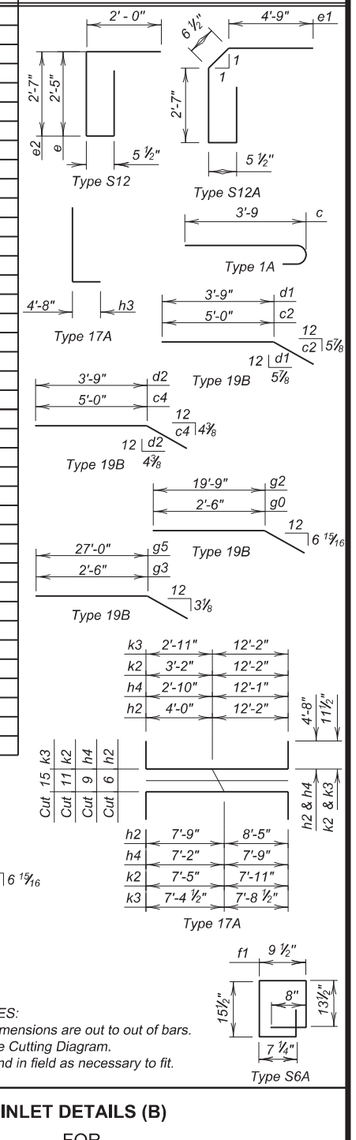


SECTION H - H

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
	a1	4	6	24'-9"	Str.
	b1	4	6	23'-9"	Str.
*	c	4	5	4'-6"	1A
	c1	4	5	22'-3"	Str.
	c2	2	5	7'-0"	19B
	c3	4	5	28'-9"	Str.
	c4	2	5	7'-0"	19B
	d1	4	5	5'-6"	19B
	d2	4	5	5'-6"	19B
	e	24	4	7'-3"	S12
	e1	46	4	10'-9"	S12A
	f1	25	4	5'-3"	S6A
	g0	6	5	5'-0"	19B
◫	g1	9	4	25'-0"	19B
	g2	2	4	21'-9"	19B
	g3	6	5	5'-0"	19B
◫	g4	9	5	32'-6"	19B
	g5	2	4	29'-0"	19B
◫	h2	6	4	25'-6"	17A
	h3	1	4	8'-0"	17A
◫	h4	9	4	24'-3"	17A
◫	k2	11	4	17'-3"	17A
◫	k3	15	4	17'-0"	17A
	p6	10	6	7'-0"	Str.
*	p7	5	4	22'-6"	Str.
*	p8	2	4	24'-9"	Str.
*	p9	2	4	27'-0"	Str.
*	p10	2	4	29'-3"	Str.
*	p11	5	4	29'-6"	Str.
*	p12	2	4	30'-0"	Str.
*	p13	2	4	31'-9"	Str.
*	p14	2	4	33'-9"	Str.
	INLET APRON				
	e2	35	4	7'-6"	S12
◫	u1	21	4	22'-9"	Str.
◫	u2	3	4	22'-6"	Str.
◫	u3	4	4	26'-6"	Str.
◫	u4	1	4	3'-0"	Str.
◫	u5	9	4	62'-3"	Str.

Bending Details



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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25

INLET DETAILS (B)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

STANLEY COUNTY

S. D. DEPT. OF TRANSPORTATION

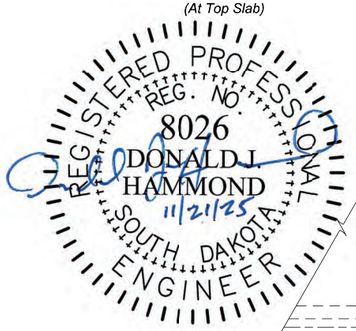
NOVEMBER 2025

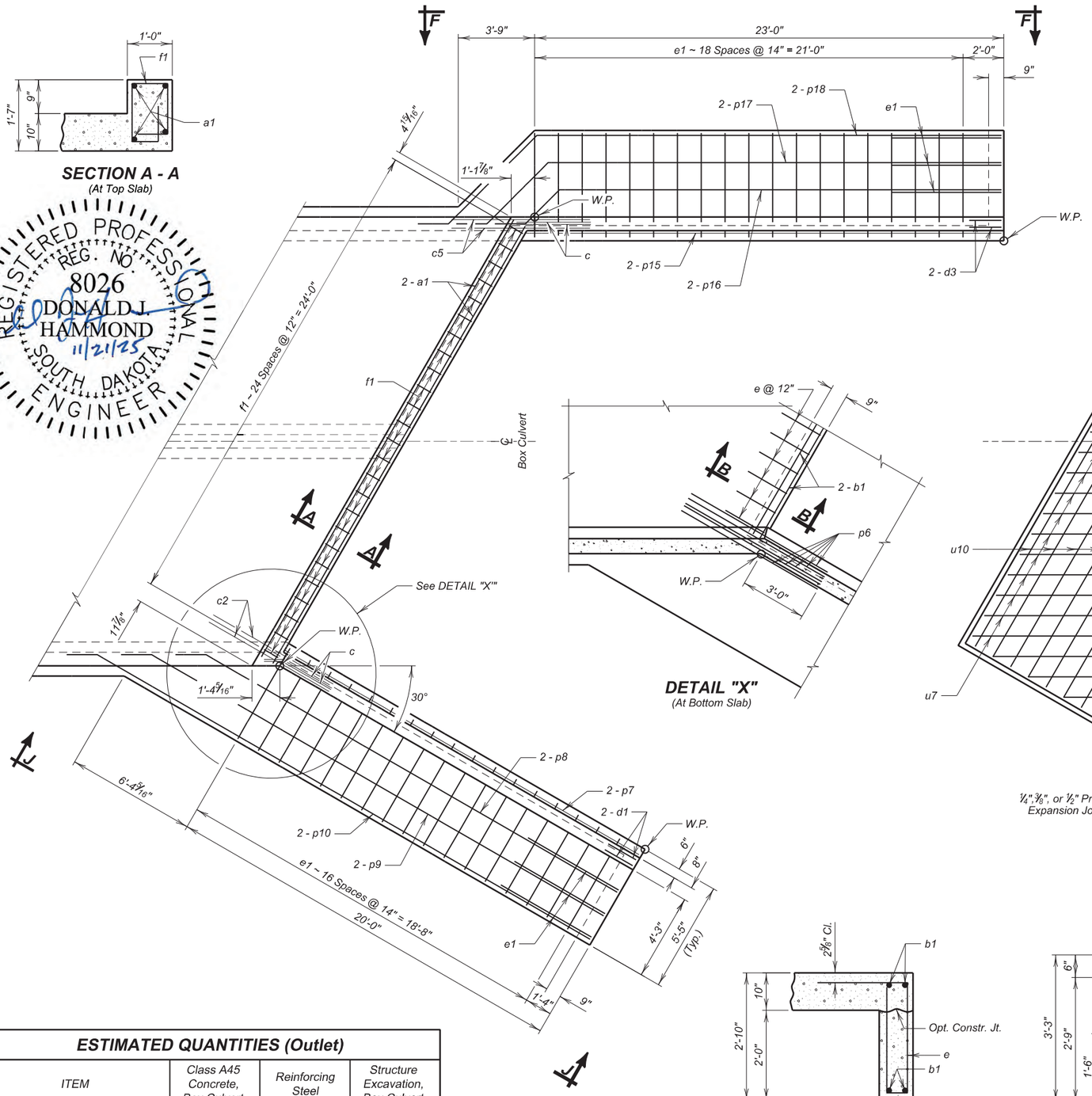
DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	21	44

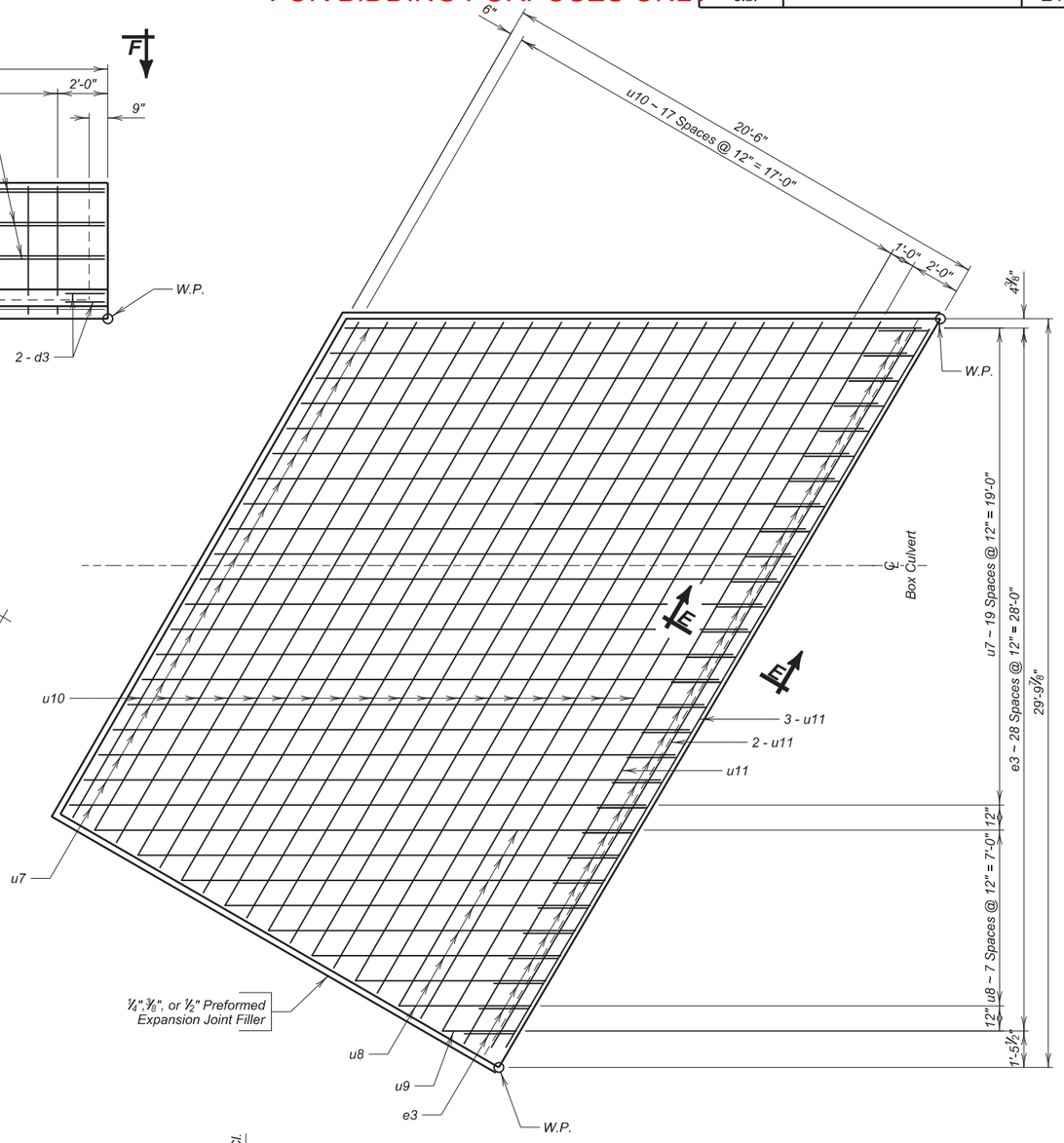
FOR BIDDING PURPOSES ONLY

SECTION A - A
(At Top Slab)

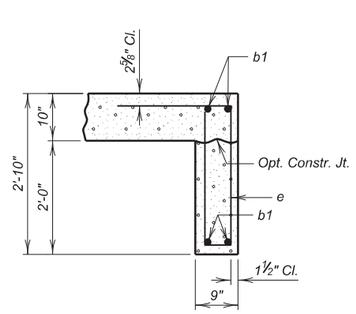




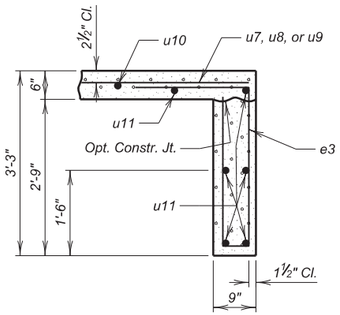
DETAIL "X"
(At Bottom Slab)



ESTIMATED QUANTITIES (Outlet)			
ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
Outlet	27.5	2749	13.4
Outlet Apron	13.5	869	13.5



SECTION B - B



SECTION E - E

OUTLET DETAILS (A)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

STANLEY COUNTY

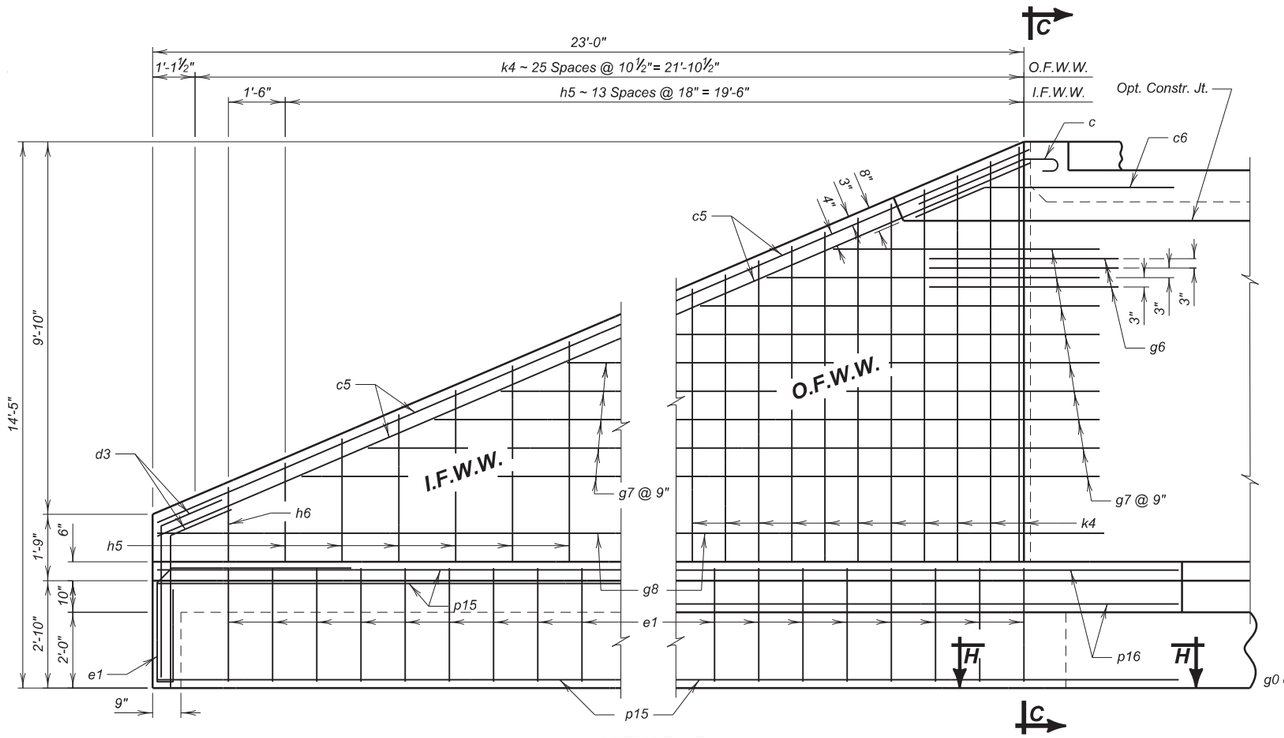
S. D. DEPT. OF TRANSPORTATION

NOVEMBER 2025

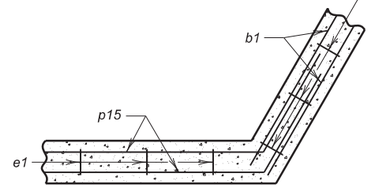
5 OF 10

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	22	44



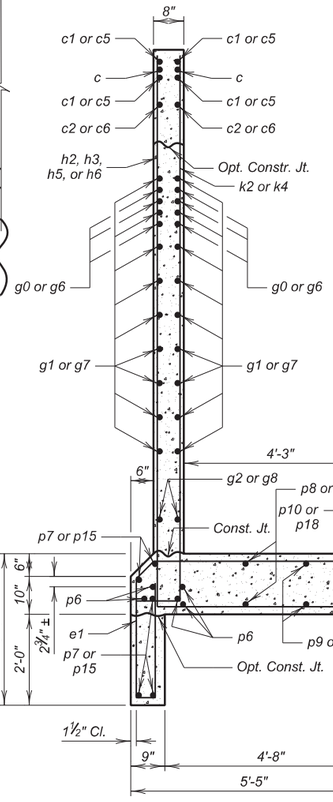
VIEW F - F



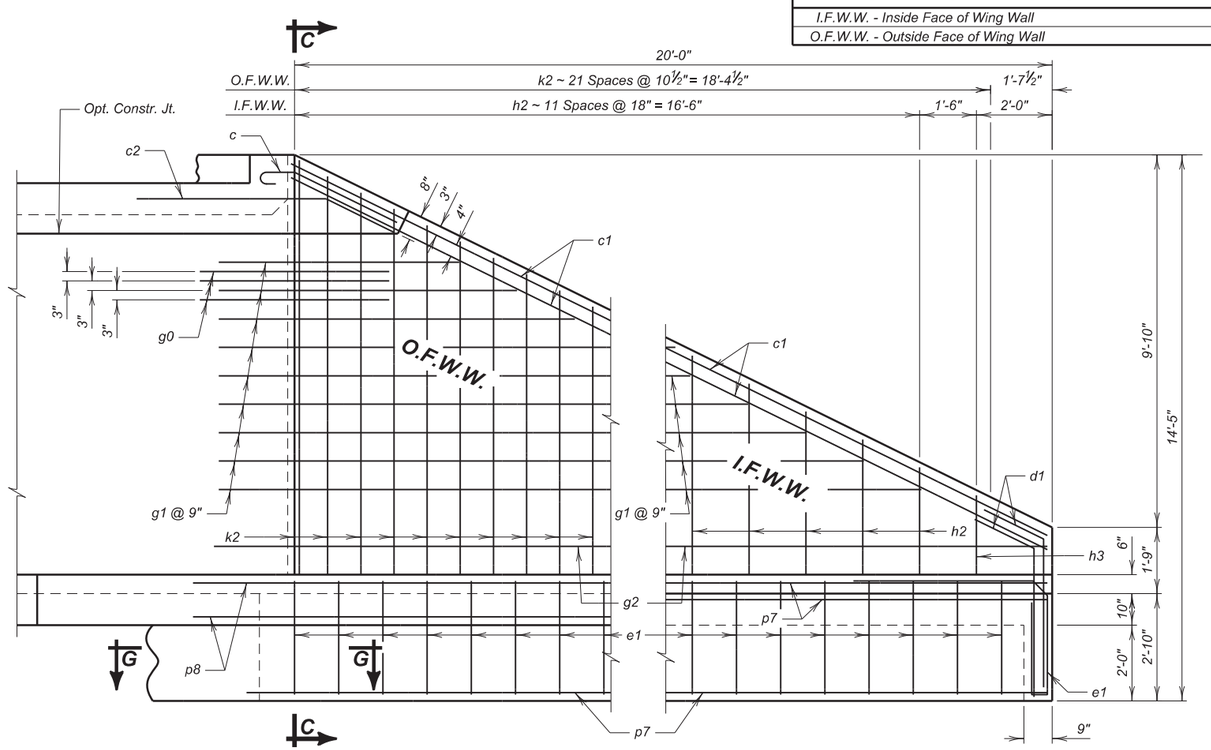
SECTION H - H

LEGEND FOR PLACING RE-STEEL

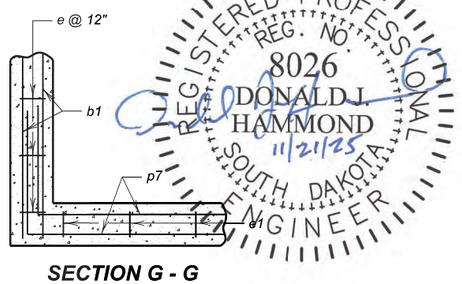
I.F.W.W. - Inside Face of Wing Wall
O.F.W.W. - Outside Face of Wing Wall



SECTION C-C



VIEW J - J



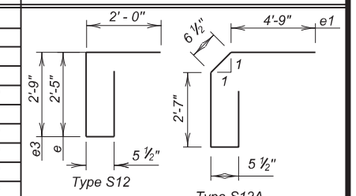
SECTION G - G

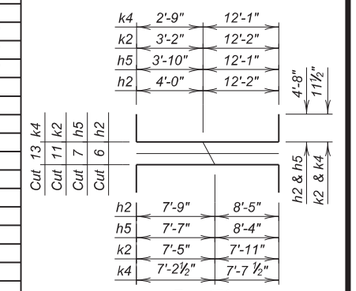
REINFORCING SCHEDULE

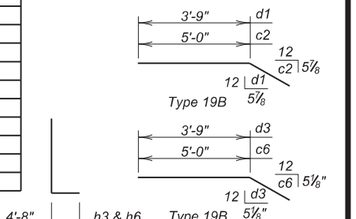
	Mk.	No.	Size	Length	Type
	a1	4	6	24'-9"	Str.
	b1	4	6	23'-9"	Str.
*	c	4	5	4'-6"	1A
	c1	4	5	22'-3"	Str.
	c2	2	5	7'-0"	19B
	c5	4	5	25'-0"	Str.
	c6	2	5	7'-0"	19B
	d1	4	5	5'-6"	19B
	d3	4	5	5'-6"	19B
	e	24	4	7'-3"	S12
	e1	42	4	10'-9"	S12A
	f1	25	4	5'-3"	S6A
	g0	6	5	5'-0"	19B
◫	g1	9	4	25'-0"	19B
	g2	2	4	21'-9"	19B
	g6	6	5	5'-0"	Str.
◫	g7	9	5	28'-0"	Str.
	g8	2	4	25'-0"	Str.
◫	h2	6	4	25'-6"	17A
	h3	1	4	8'-0"	17A
◫	h5	7	4	25'-3"	17A
	h6	1	4	7'-9"	17A
◫	k2	11	4	17'-3"	17A
◫	k4	13	4	16'-9"	17A
	p6	10	6	7'-0"	Str.
*	p7	5	4	22'-6"	Str.
*	p8	2	4	24'-9"	Str.
*	p9	2	4	27'-0"	Str.
*	p10	2	4	29'-3"	Str.
*	p15	5	4	25'-6"	Str.
*	p16	2	4	25'-9"	Str.
*	p17	2	4	28'-0"	Str.
*	p18	2	4	30'-6"	Str.
	OUTLET APRON				
	e3	29	4	8'-0"	S12
	u7	20	4	23'-0"	Str.
◫	u8	4	4	26'-9"	Str.
	u9	1	4	3'-0"	Str.
◫	u10	9	4	55'-6"	Str.

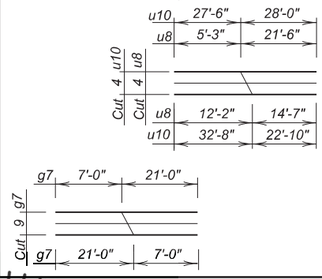
NOTES:
All dimensions are out to out of bars.
◫ See Cutting Diagram.
* Bend in field as necessary to fit.

Bending Details









OUTLET DETAILS (B)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK
STA 9+95.00
STR. NO. 59-339-327
PCN 08RR

30° SKEW RHF
SEC. 15, T04N, R30W
BRF 6450(00)
HL-93

STANLEY COUNTY
S. D. DEPT. OF TRANSPORTATION
NOVEMBER 2025

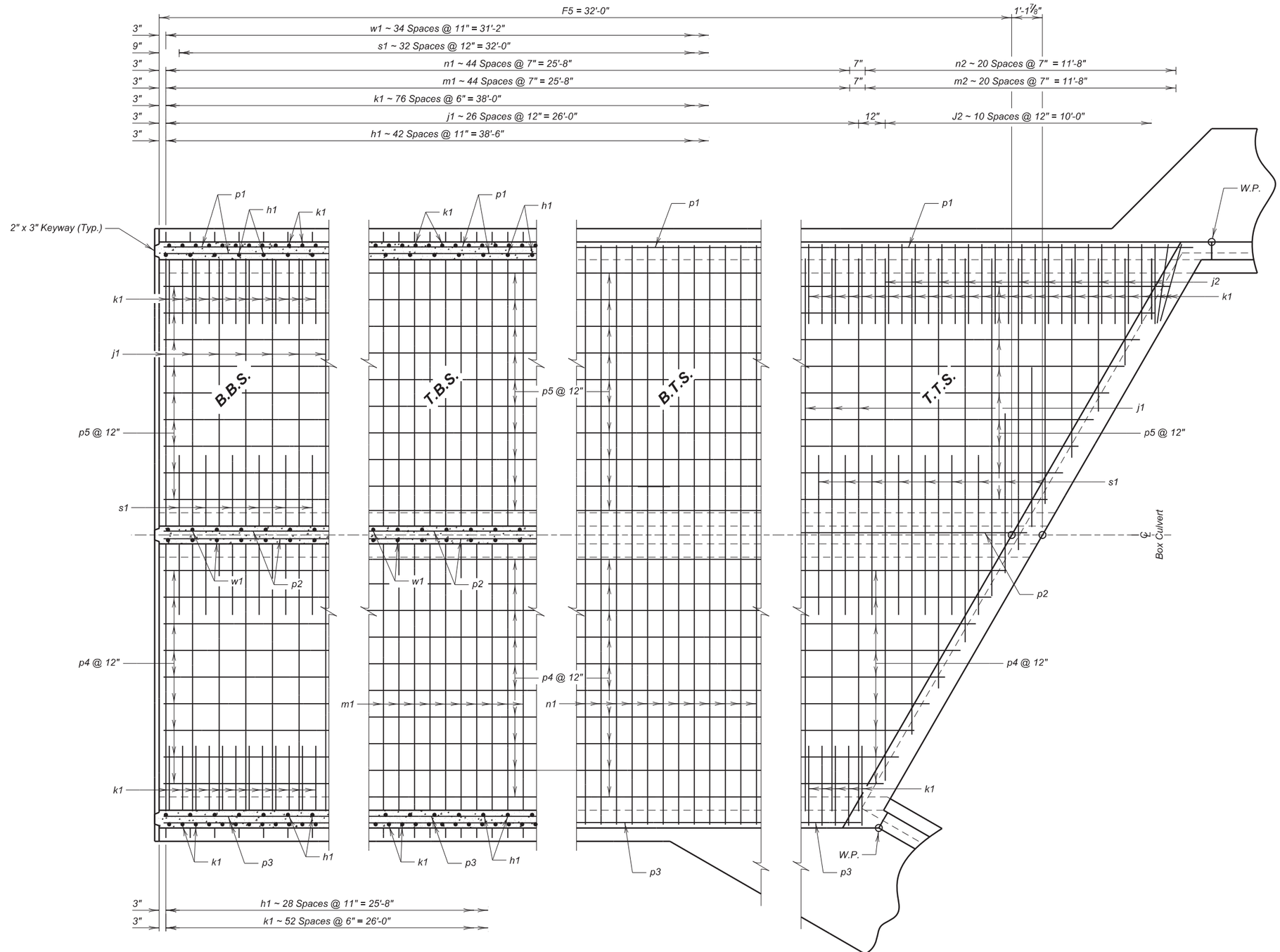
6 OF 10

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
11/21/25
SOUTH DAKOTA

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	23	44

FOR BIDDING PURPOSES ONLY



PLAN

(Outlet End Shown, Inlet End Similar by Rotation)

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
11/21/25
SOUTH DAKOTA

F5 BARREL DETAILS (A)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

STANLEY COUNTY

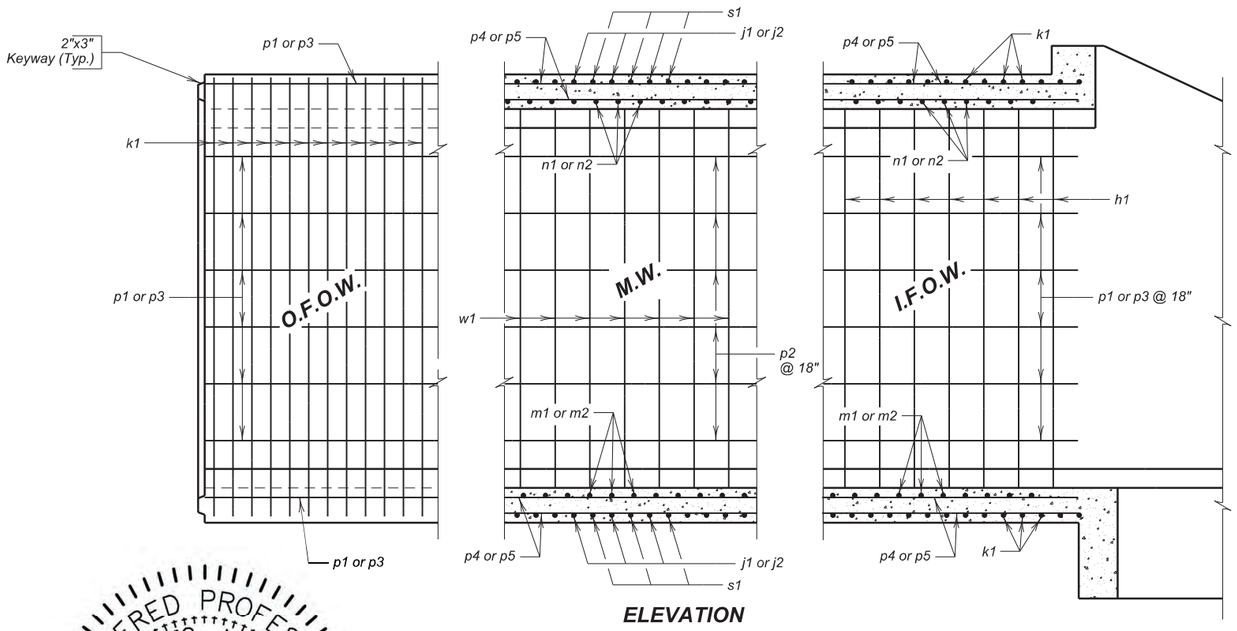
S. D. DEPT. OF TRANSPORTATION

NOVEMBER 2025

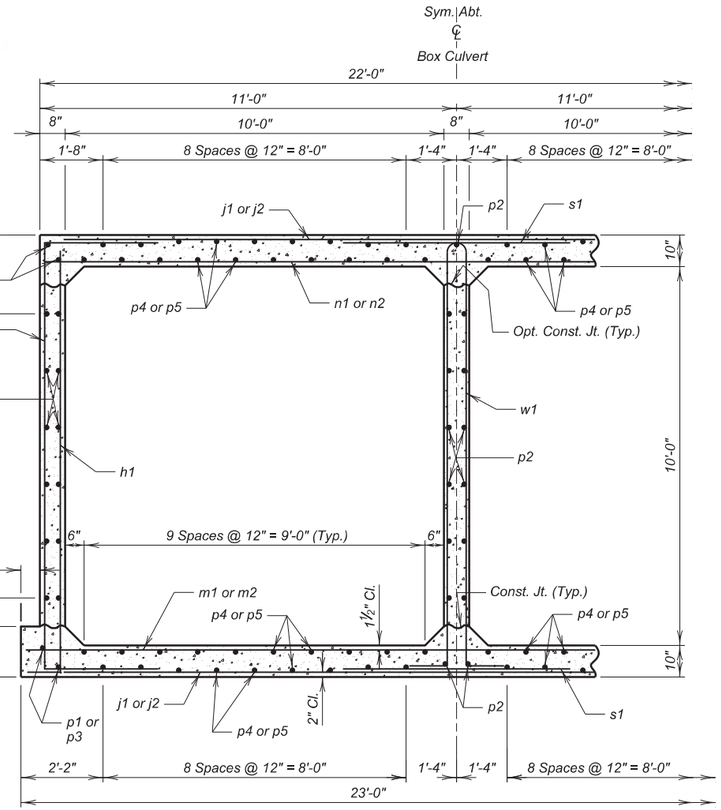
7 OF 10

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY



ELEVATION



F5 BARREL HALF SECTION

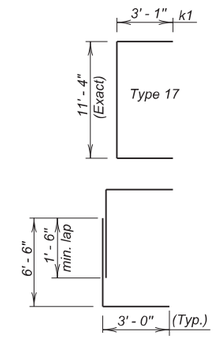
(5'-0" Maximum Fill)

REINFORCING SCHEDULE

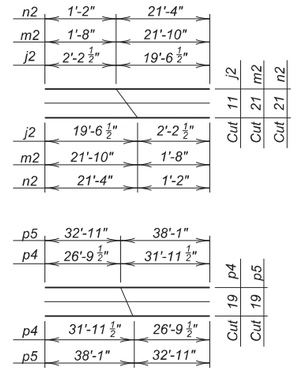
(For 2 - F5 Barrel End Sections)

Mk.	No.	Size	Length	Type
h1	144	4	12'-0"	17A
j1	54	5	20'-9"	Str.
◫ j2	22	5	21'-9"	Str.
k1	260	4	17'-6"	17
m1	90	5	22'-9"	Str.
◫ m2	21	5	23'-6"	Str.
n1	90	5	21'-9"	Str.
◫ n2	21	5	22'-6"	Str.
p1	32	4	38'-6"	Str.
p2	30	4	32'-6"	Str.
p3	32	4	26'-3"	Str.
◫ p4	38	4	58'-9"	Str.
◫ p5	38	4	71'-0"	Str.
s1	66	5	6'-0"	Str.
w1	70	4	25'-3"	S11A
△ z1	58	5	3'-6"	Str.

Bending Details



OPTIONAL k1 SPLICE DETAIL
Contractor may use optional reinforcing steel splice, as shown. The cost of the additional reinforcing steel will be borne by the Contractor.

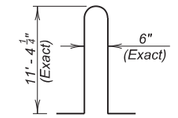


NOTES:

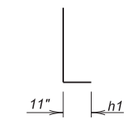
All dimensions are out to out of bars.

◫ See Cutting Diagram.

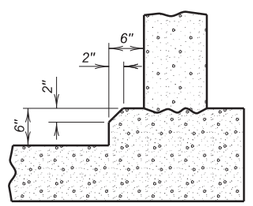
Request for additional reinforcing steel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.



Type S11A



Type 17A



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 a 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 wil be taken to maintain proper alignment of the keyway during the pour sequence. All additional costs of this option will be borne by the Contractor.

△ Place z1 bars thru construction joint between barrel sections as shown on Standard Plate No. 460.10. Quantity of z1 bars are for one construction joint.

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
Unit	Cu. Yd.	Lb.	Cu.Yd.
2 - F5 Barrel Sections @ 32'-0"	139.4	18181	45.1

LEGEND FOR PLACING RE-STEEL

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

F5 BARREL DETAILS (B)

FOR

2 - 10' X 10' BOX CULVERT

DAN POWELL CREEK — 30° SKEW RHF
STA 9+95.00 — SEC. 15, T04N, R30W
STR. NO. 59-339-327 — BRF 6450(00)
PCN 08RR — HL-93

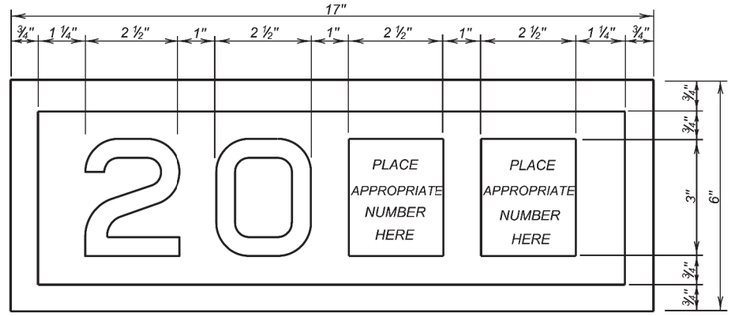
STANLEY COUNTY

S. D. DEPT. OF TRANSPORTATION

NOVEMBER 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CH	DH	BW	BRIDGE ENGINEER

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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.

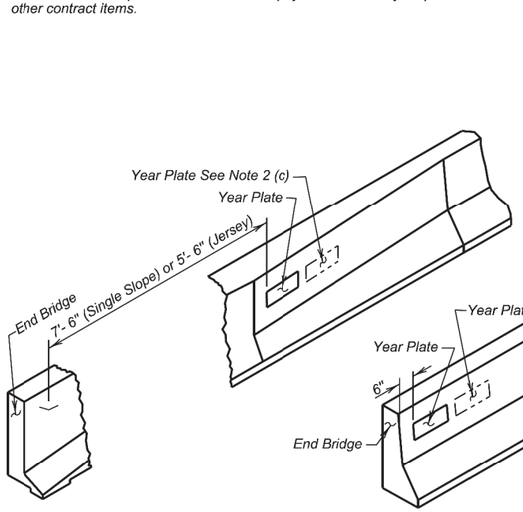
2. Year plates will be located on structure(s) as follows:

   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.

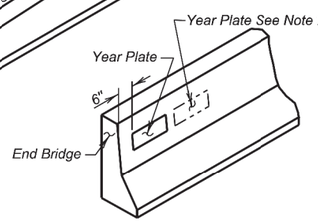
   b. On bridges with six (6) inch curbs, "Jersey" shaped barriers with no endblocks, or "Single Slope" shaped barriers with no endblocks, the year plate will be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with 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.

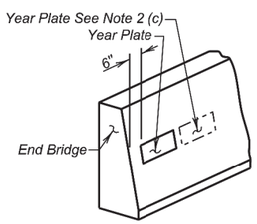
3. There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work will be incidental to other contract items.



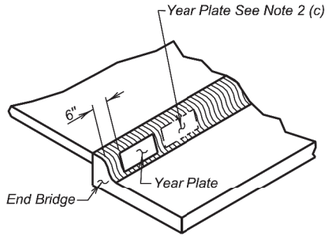
BARRIER
(With Endblock)



JERSEY BARRIER



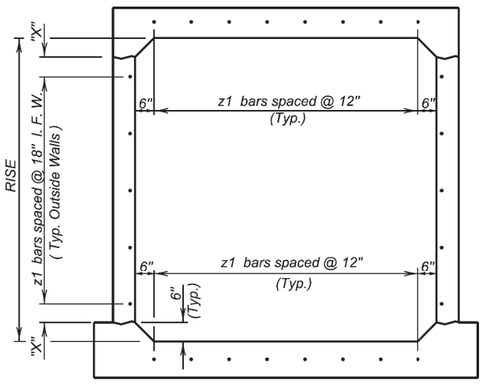
SINGLE SLOPE BARRIER



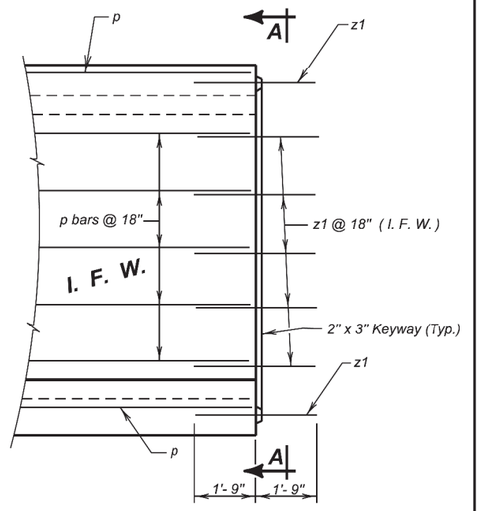
TYPE B CURB

January 22, 2021

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



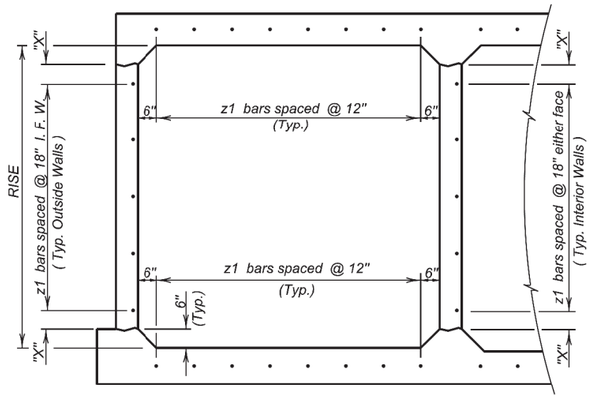
TYPICAL SINGLE BARREL VIEW A - A



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

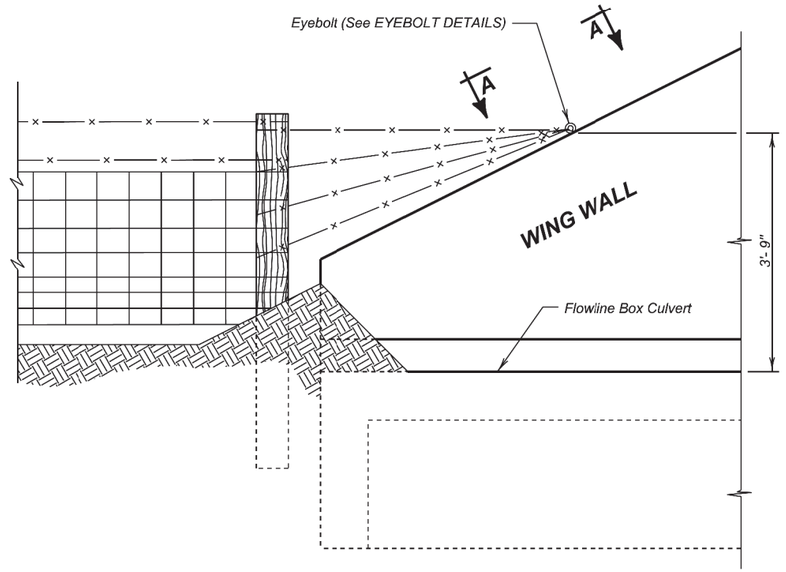
GENERAL NOTES:

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

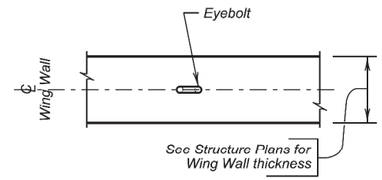
Published Date: 2026	SDDOT	BOX CULVERT BARREL TIE REINFORCEMENT	PLATE NUMBER 460.10
			Sheet 1 of 1



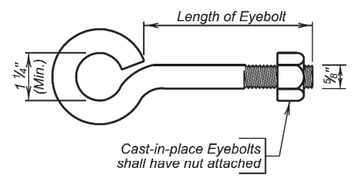
DETAIL FOR FENCE ANCHORS

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 $\frac{5}{8}$ 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 $\frac{5}{8}$ 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.



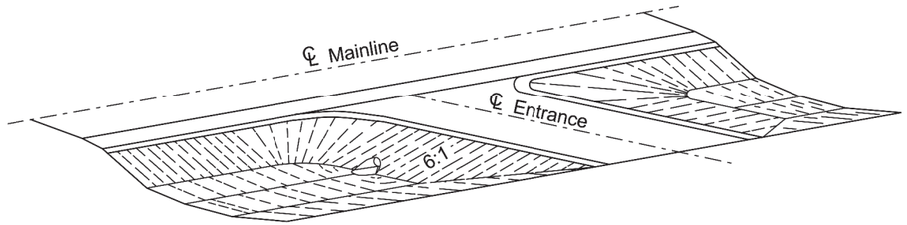
VIEW A - A



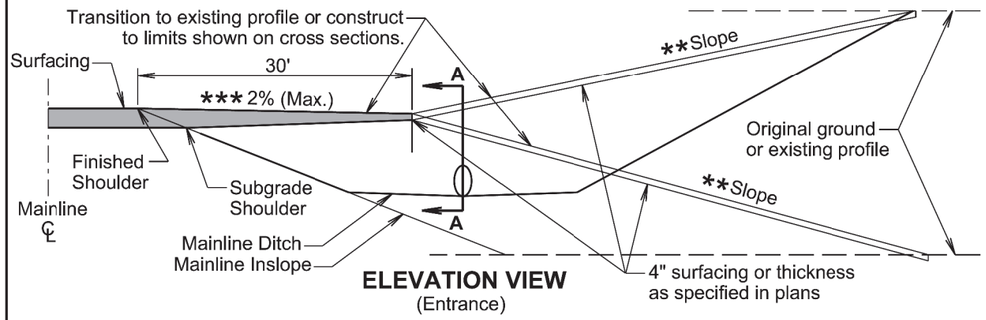
EYEBOLT DETAILS

December 23,2012

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



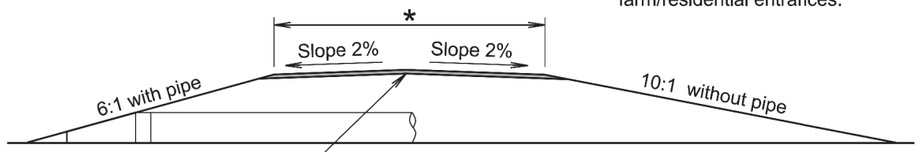
PERSPECTIVE OF ENTRANCE



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.

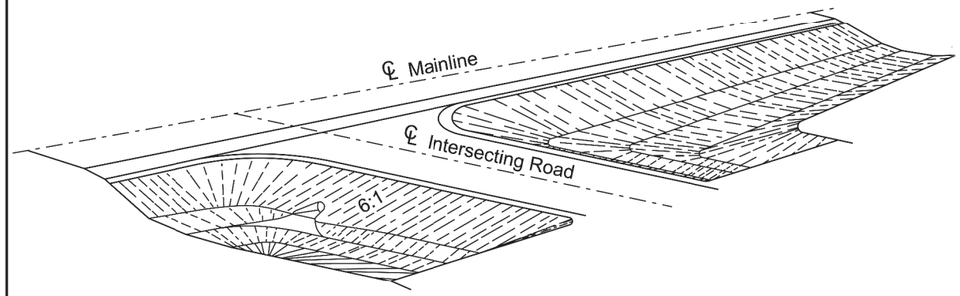
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

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

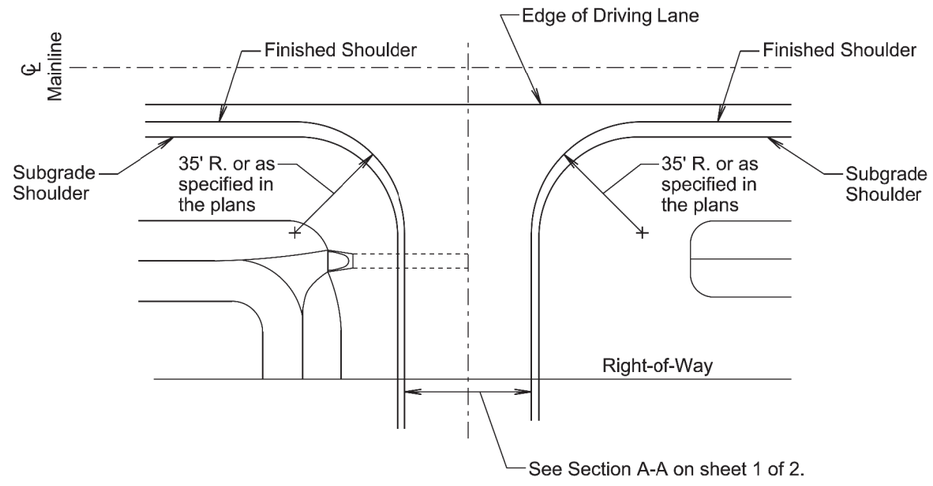
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

November 19, 2021

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



PERSPECTIVE OF INTERSECTING ROAD



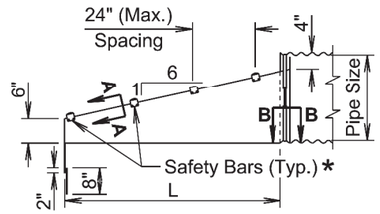
PLAN VIEW

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.

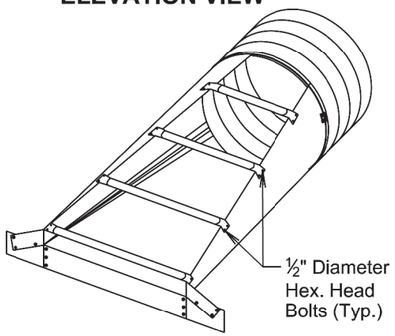
November 19, 2021

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

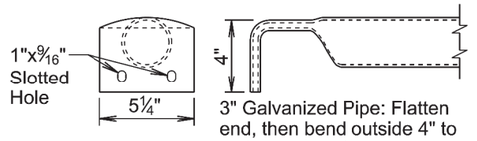


* Number of bars required will vary depending on the length of the end section.

ELEVATION VIEW

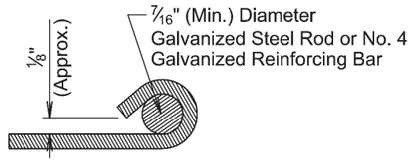


ISOMETRIC VIEW

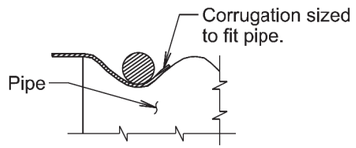


3" Galvanized Pipe: Flatten end, then bend outside 4" to match end section sides.

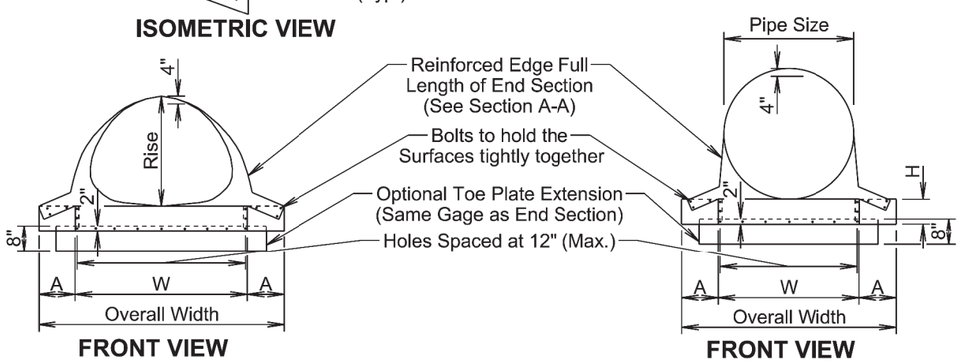
DETAIL OF SAFETY BARS



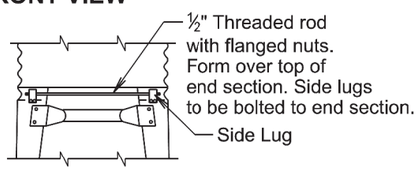
SECTION A-A



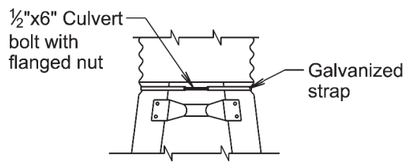
SECTION B-B



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.

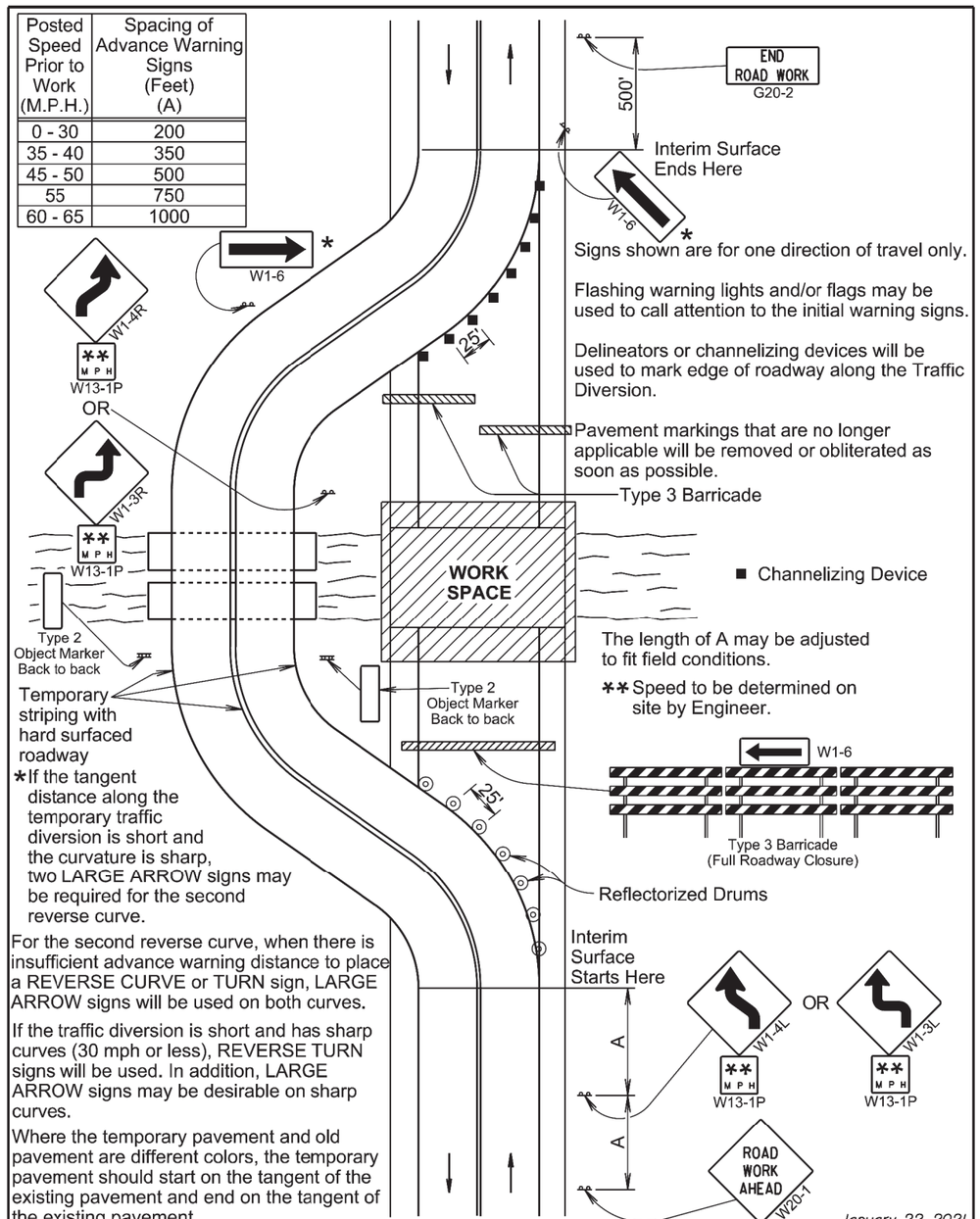
Installation will be performed in accordance with the Specifications.

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

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000



Signs shown are for one direction of travel only.

Flashing warning lights and/or flags may be used to call attention to the initial warning signs.

Delineators or channelizing devices will be used to mark edge of roadway along the Traffic Diversion.

Pavement markings that are no longer applicable will be removed or obliterated as soon as possible.

The length of A may be adjusted to fit field conditions.

** Speed to be determined on site by Engineer.

* If the tangent distance along the temporary traffic diversion is short and the curvature is sharp, two LARGE ARROW signs may be required for the second reverse curve.

For the second reverse curve, when there is insufficient advance warning distance to place a REVERSE CURVE or TURN sign, LARGE ARROW signs will be used on both curves.

If the traffic diversion is short and has sharp curves (30 mph or less), REVERSE TURN signs will be used. In addition, LARGE ARROW signs may be desirable on sharp curves.

Where the temporary pavement and old pavement are different colors, the temporary pavement should start on the tangent of the existing pavement and end on the tangent of the existing pavement.

January 22, 2021

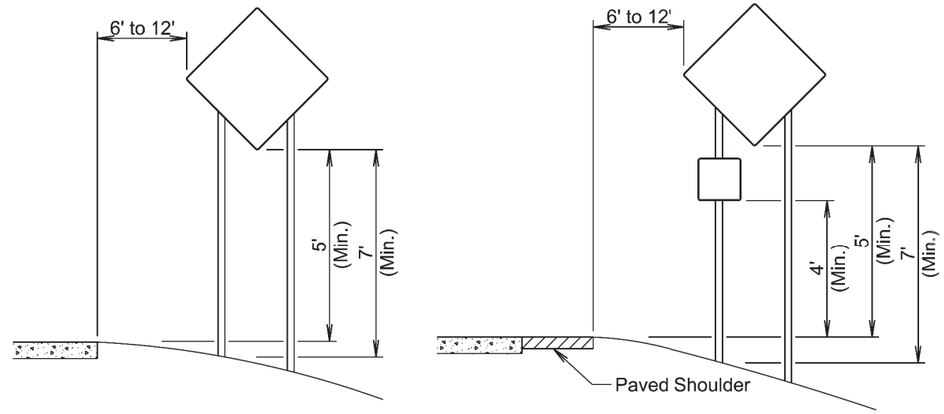
Published Date: 2026

SDDOT

ROAD CLOSED WITH TRAFFIC DIVERTED

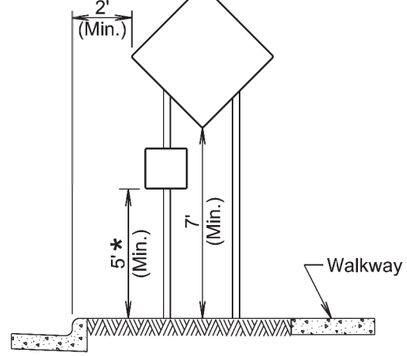
PLATE NUMBER 634.28

Sheet 1 of 1

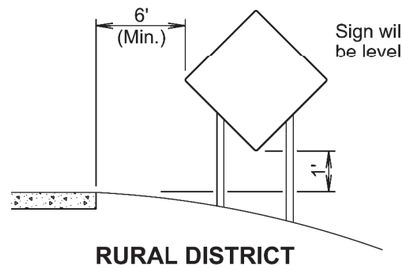


RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT



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

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

January 22, 2021

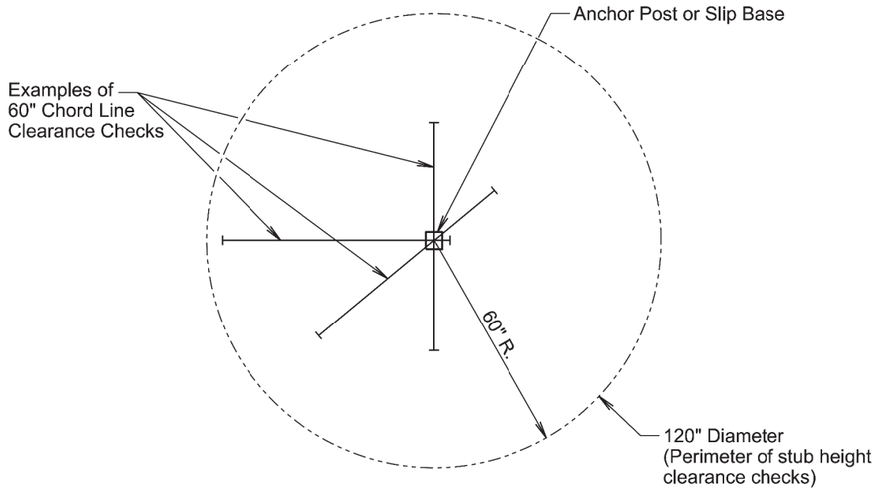
Published Date: 2026

SDDOT

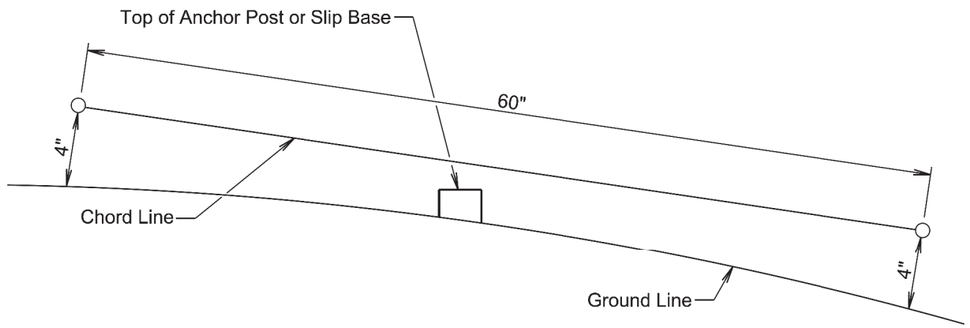
CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)

PLATE NUMBER 634.85

Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

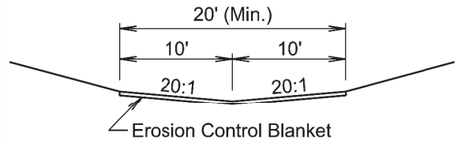
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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

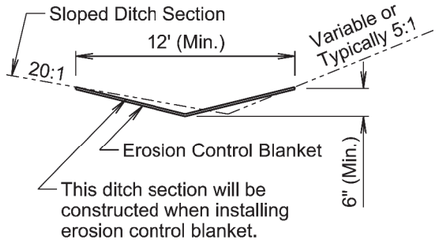
The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

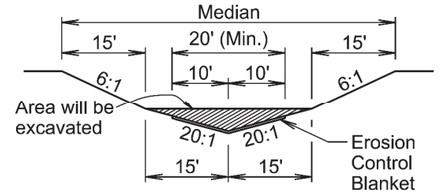
Published Date: 2026	SDDOT	**BREAKAWAY SUPPORT STUB CLEARANCE**	PLATE NUMBER 634.99 Sheet 1 of 1



STANDARD DITCH SECTION

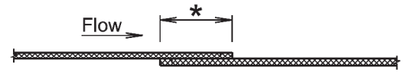


SLOPED DITCH SECTION



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

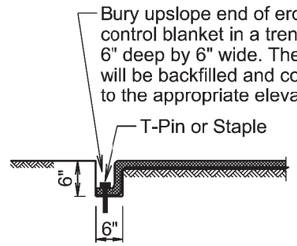
MEDIAN SECTION



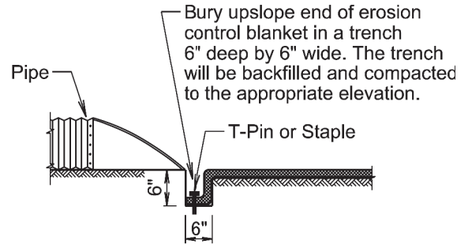
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

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

OVERLAP DETAIL



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.

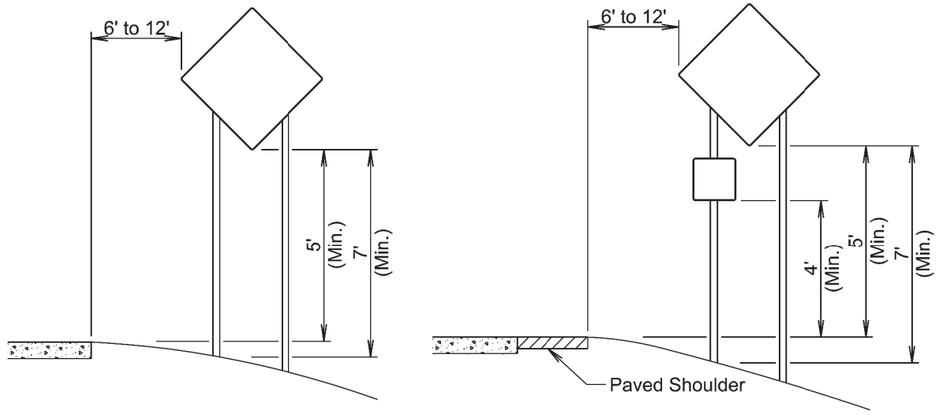
The erosion control blanket will be pinned to the ground according to the manufacturer's installation recommendations.

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".

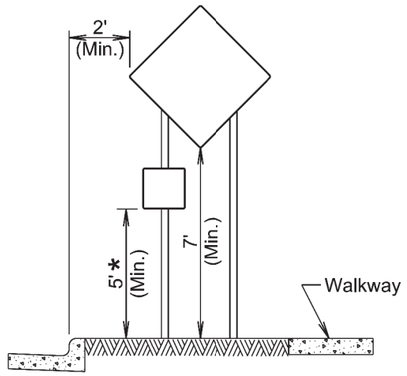
February 14, 2020

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

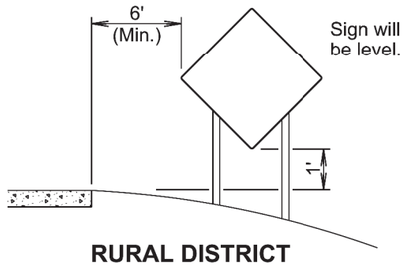


RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

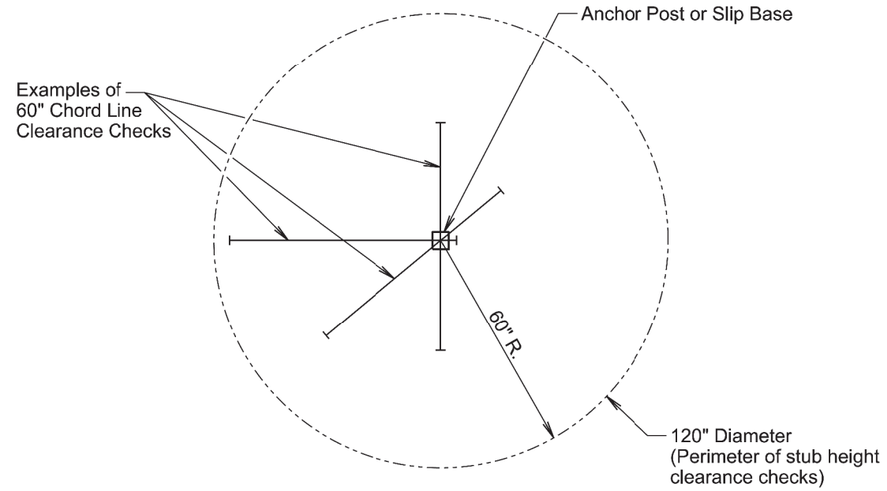


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

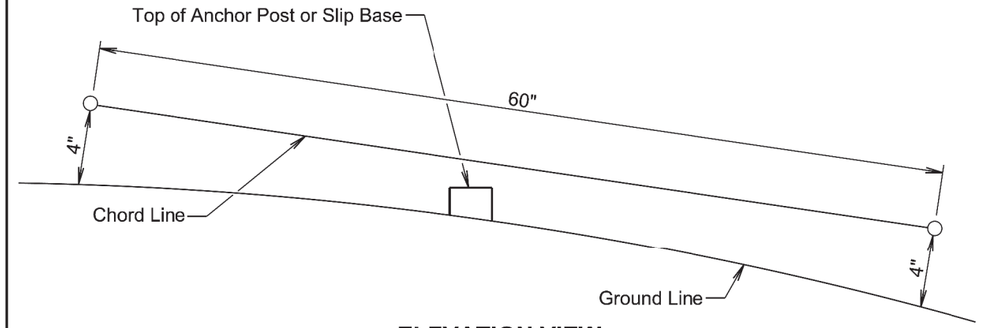
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

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.

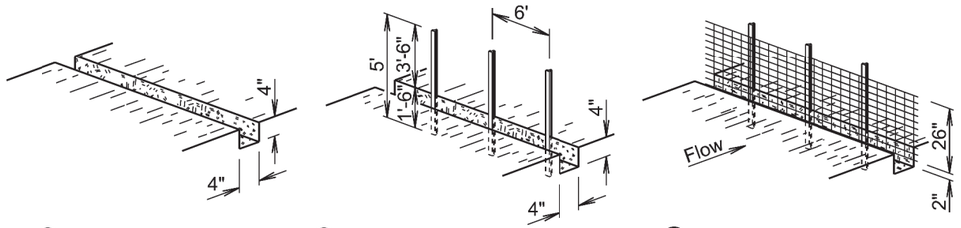
January 22, 2021

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

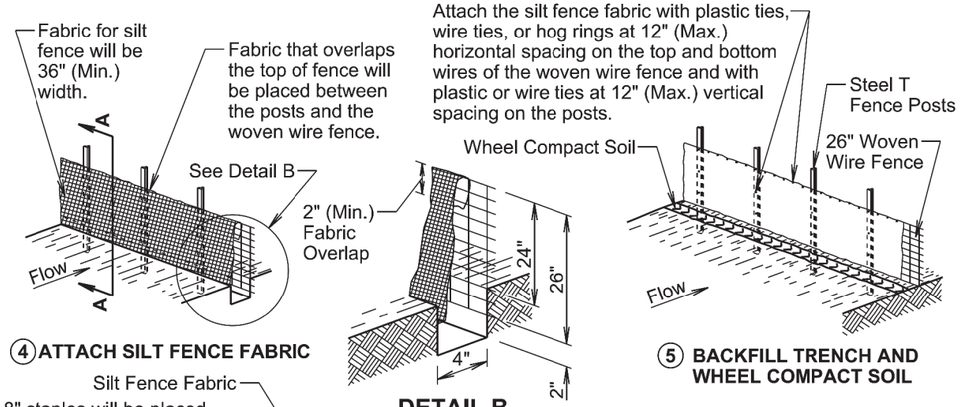
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	32	44

FOR BIDDING PURPOSES ONLY

MANUAL LOW FLOW SILT FENCE INSTALLATION

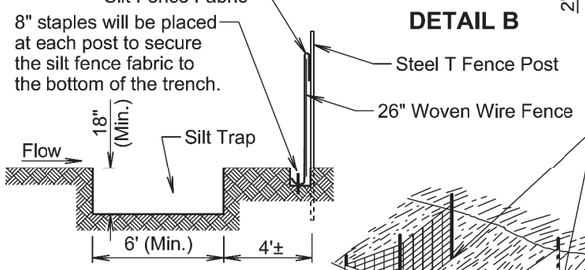


① EXCAVATE TRENCH ② DRIVE STEEL T FENCE POSTS ③ ATTACH 26" WOVEN WIRE FENCE TO POSTS

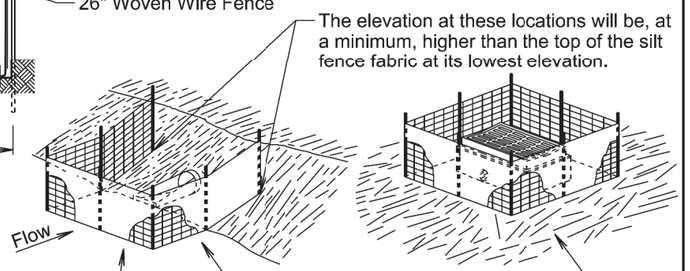


④ ATTACH SILT FENCE FABRIC ⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL

DETAIL B



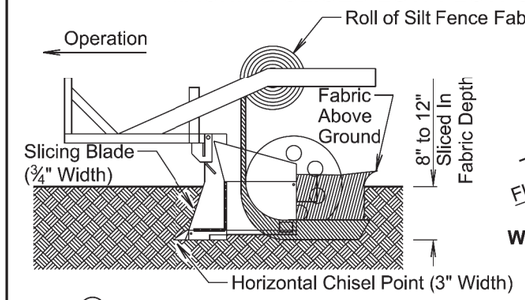
SECTION A-A



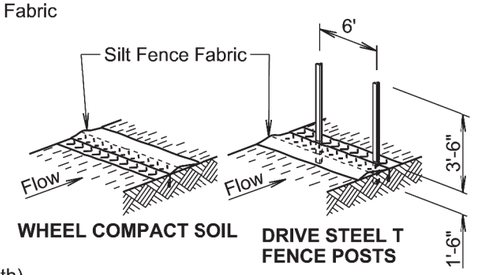
February 14, 2020

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

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION

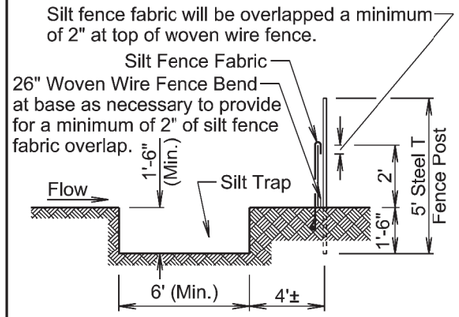


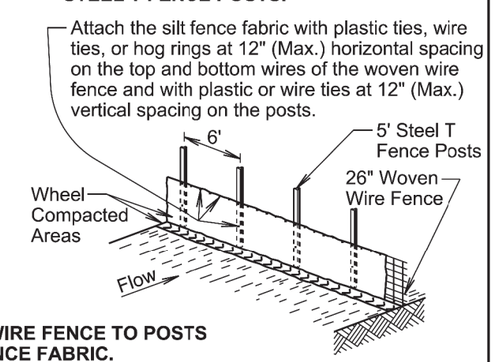
① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



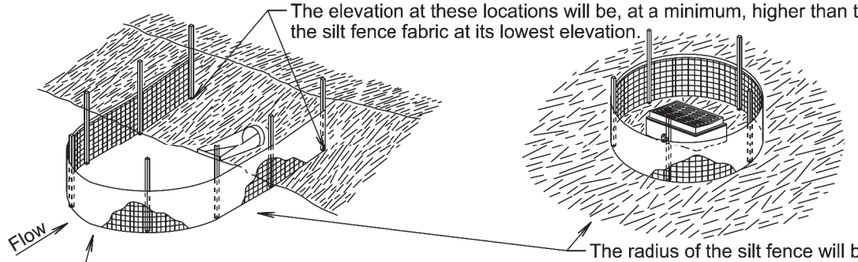
② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

WHEEL COMPACT SOIL DRIVE STEEL T FENCE POSTS





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



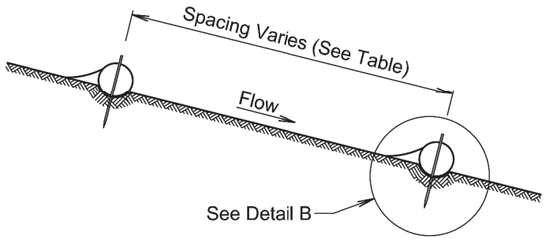
GENERAL NOTES:

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

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

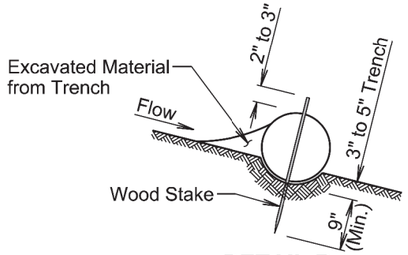
February 14, 2020

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

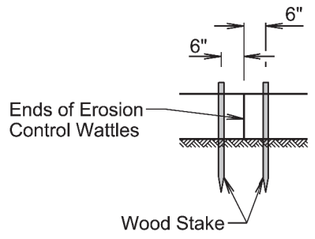


ELEVATION VIEW
(Cut or Fill Slope Installation)

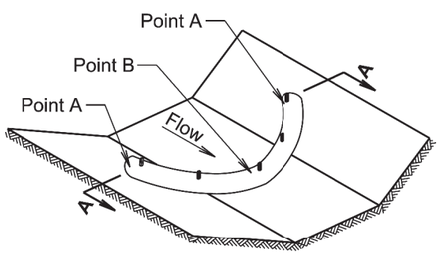
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



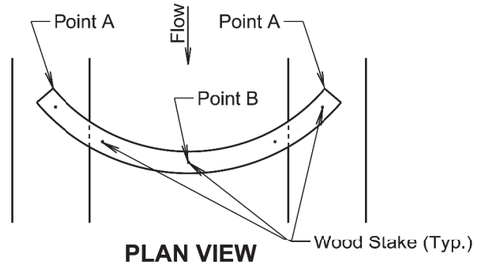
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

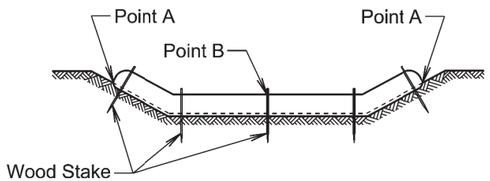


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

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



SECTION A-A

February 14, 2020

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

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

February 14, 2020

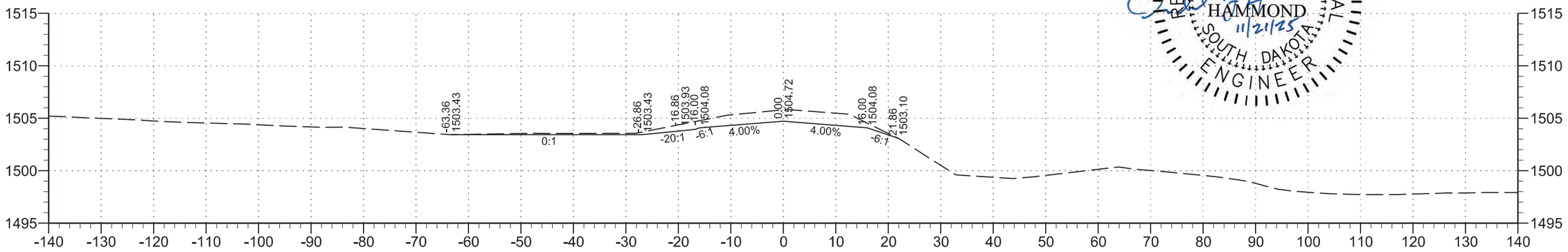
Published Date: 2026	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	34	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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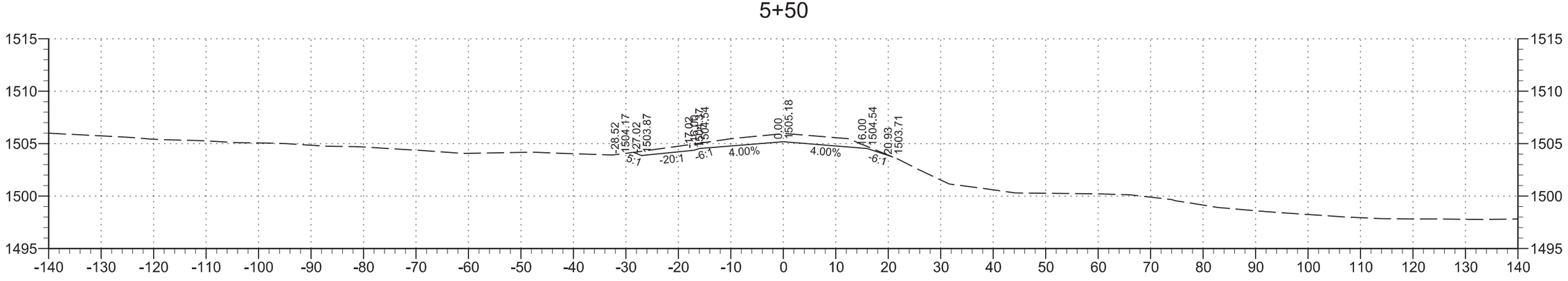

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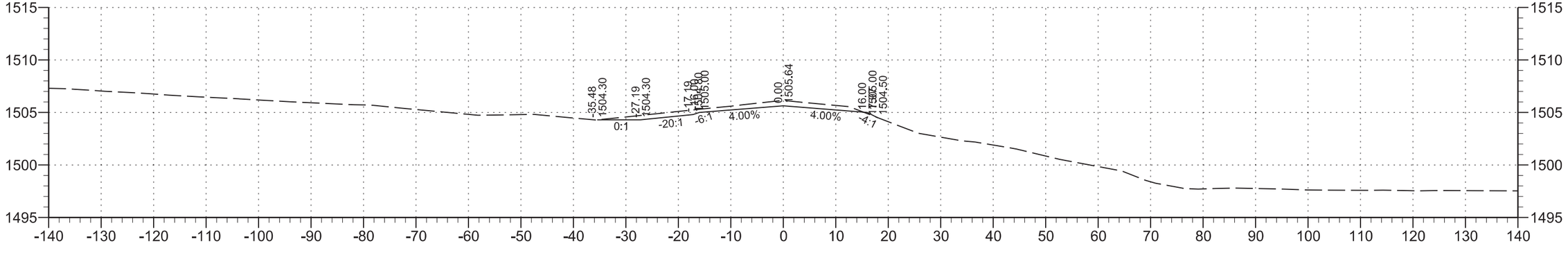


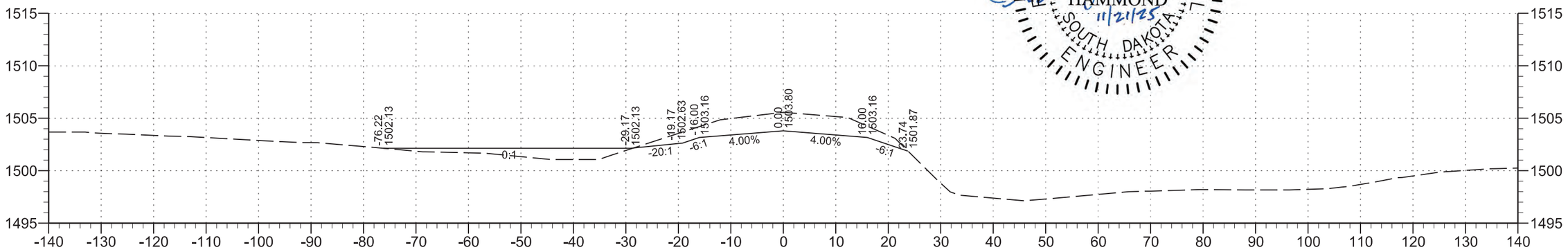
4+50

CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	35	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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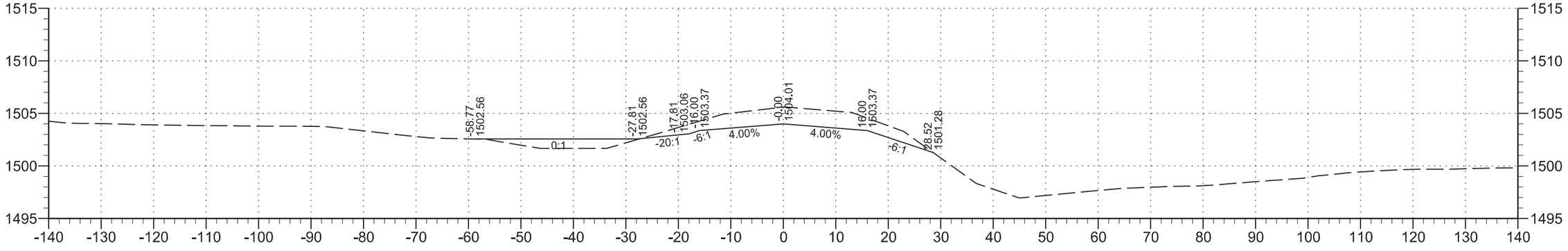

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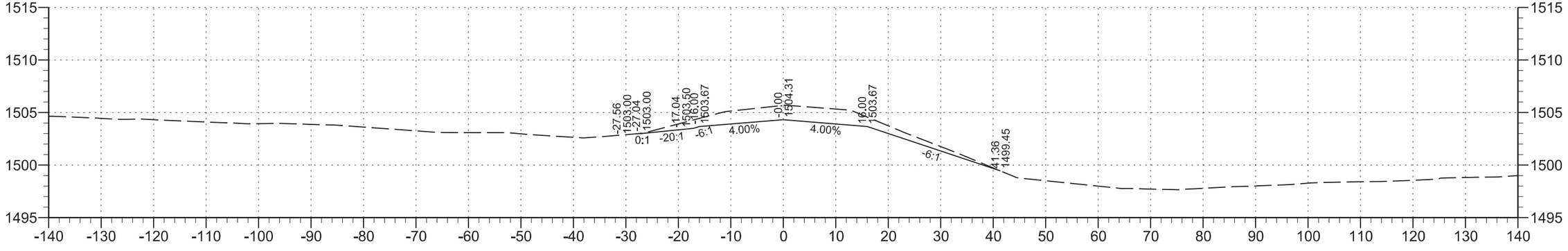

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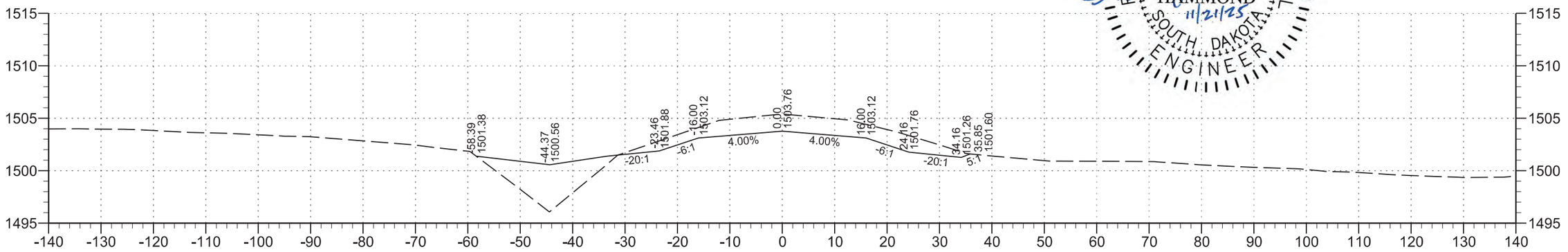
CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	36	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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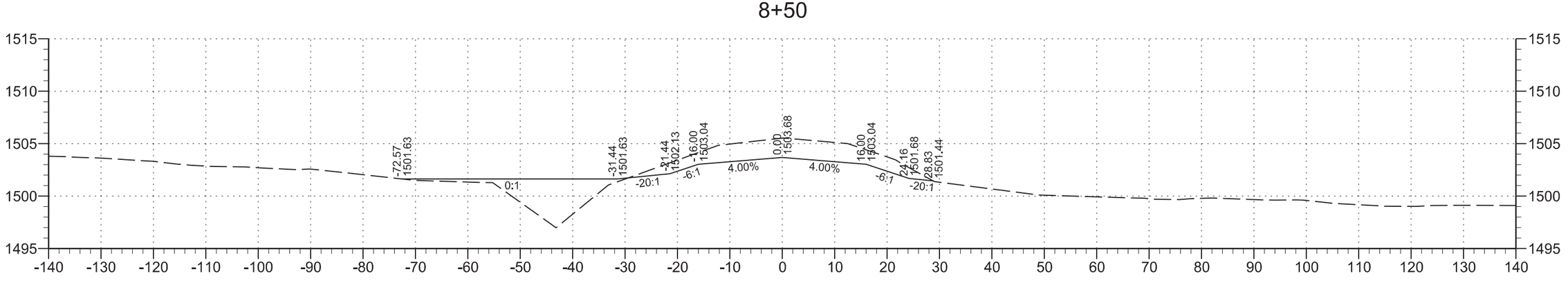

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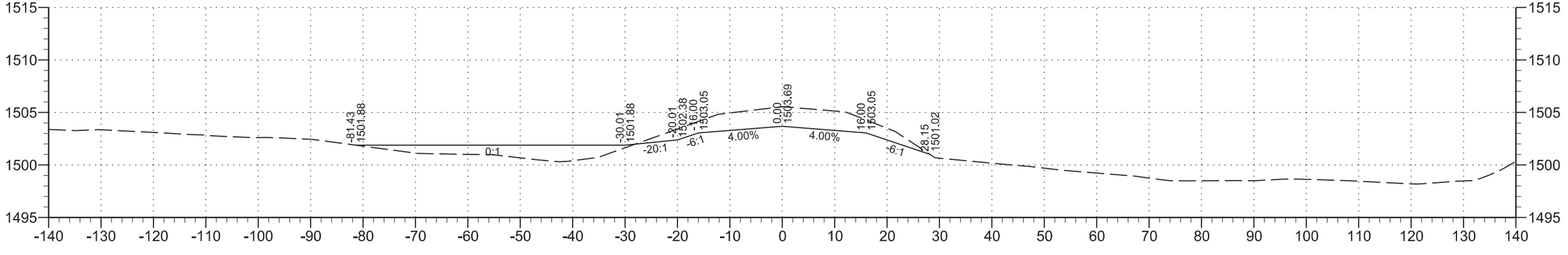


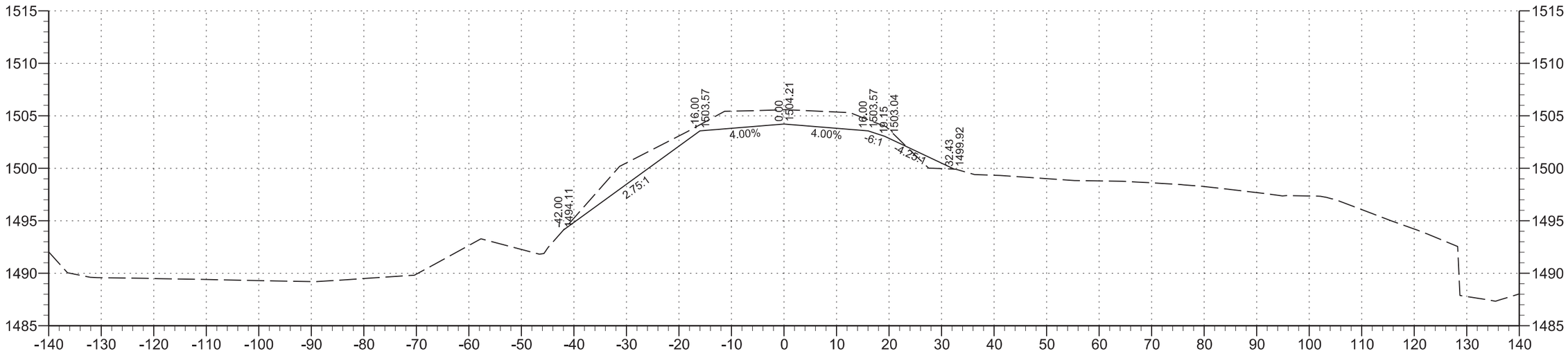
7+50

CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	37	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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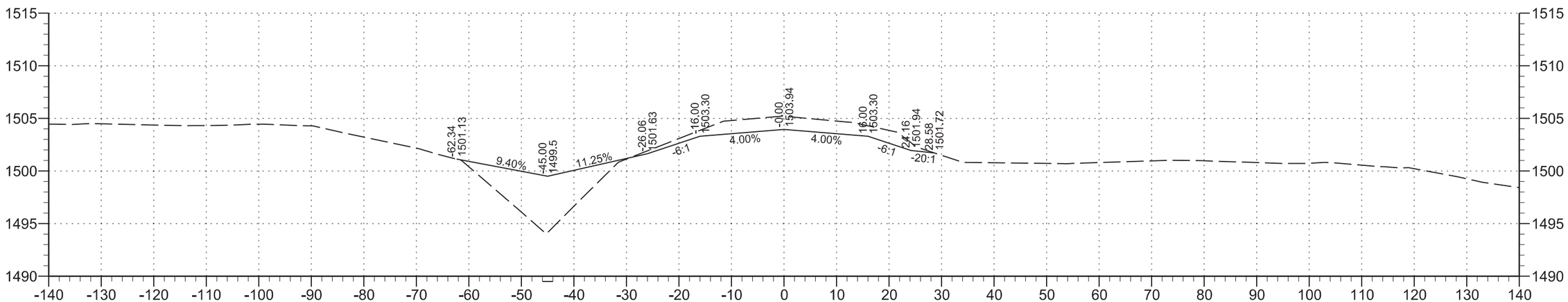


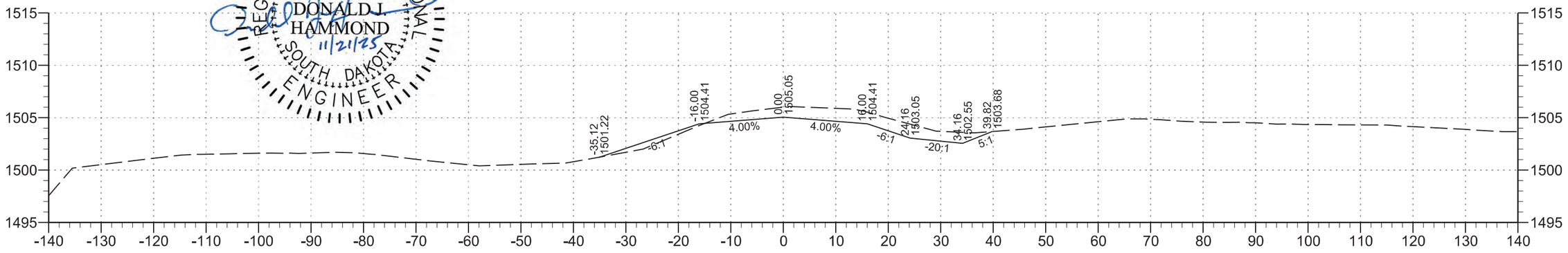
9+00

CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	38	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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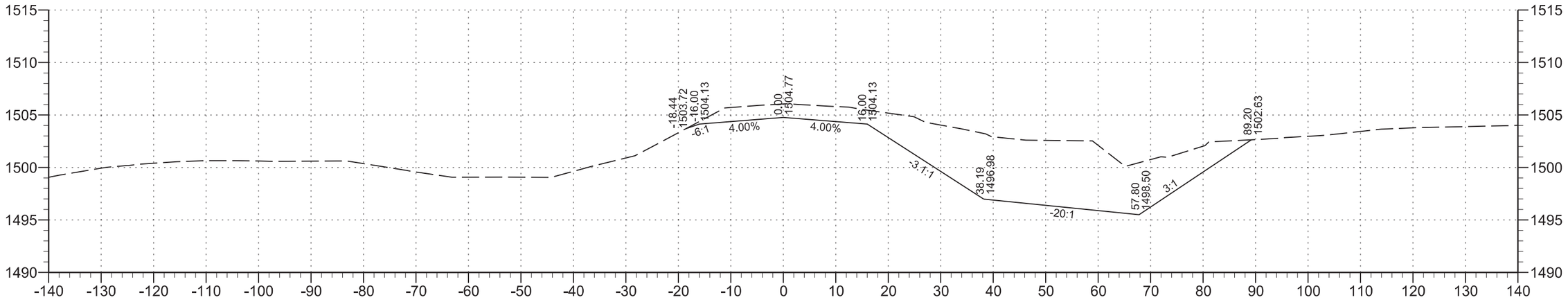

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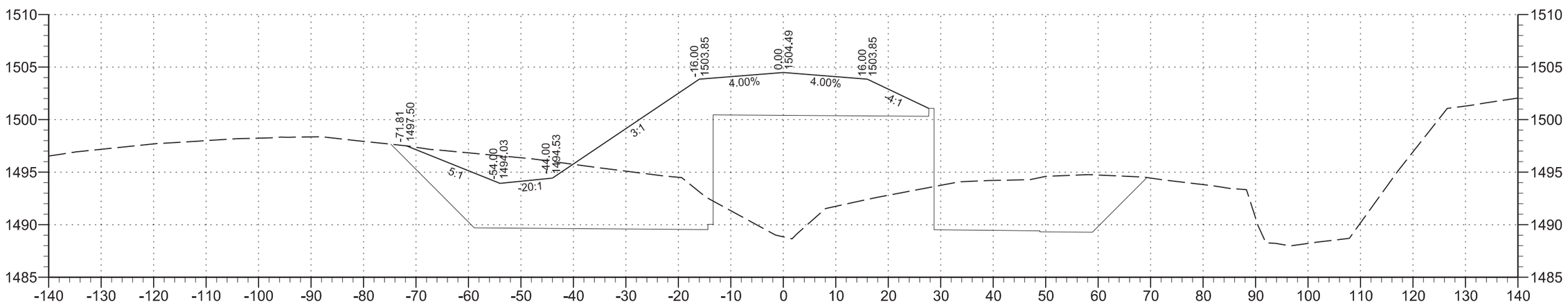


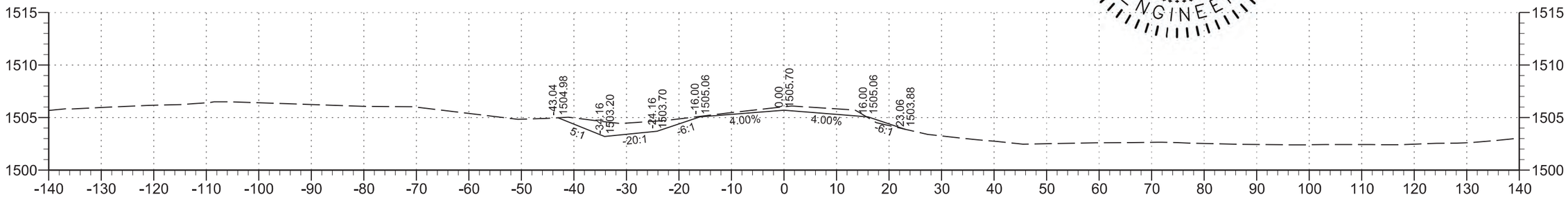
10+00

CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	39	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



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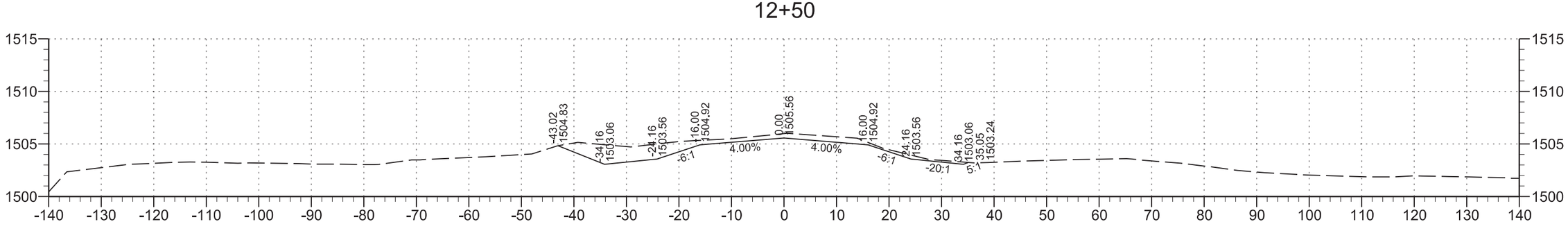

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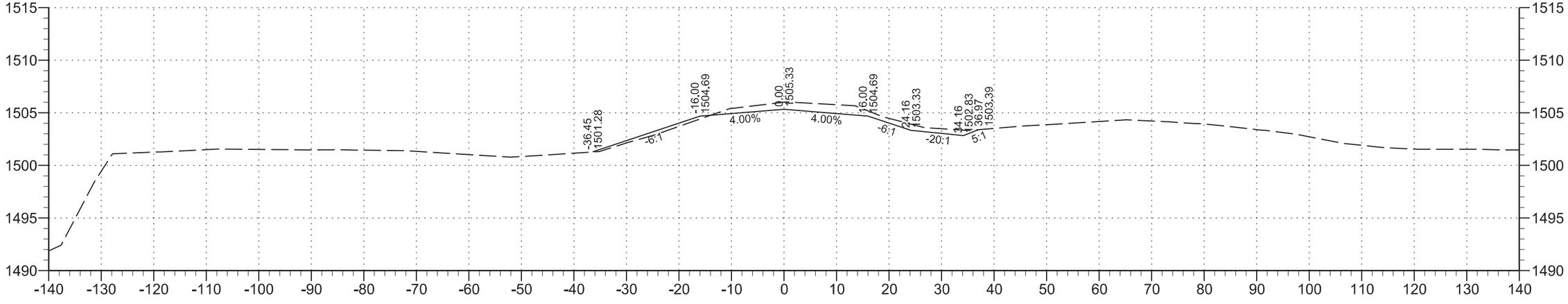
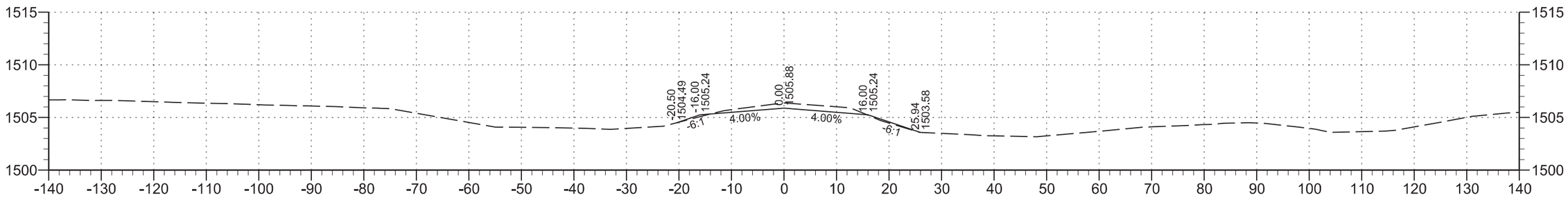


11+50

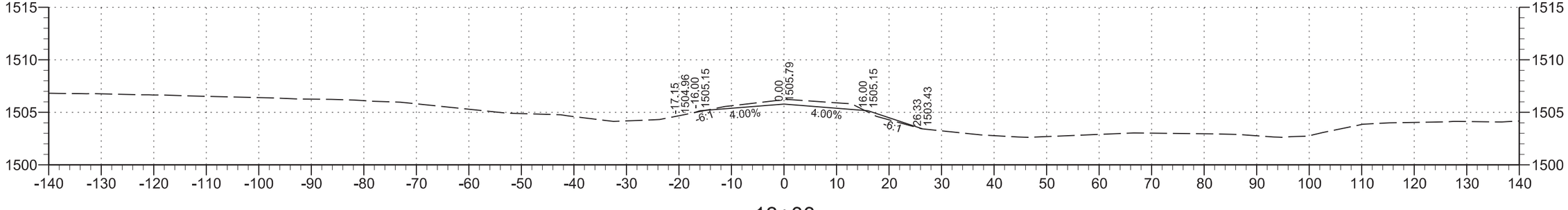
CROSS SECTIONS - BAD RIVER RD.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	40	44



13+50

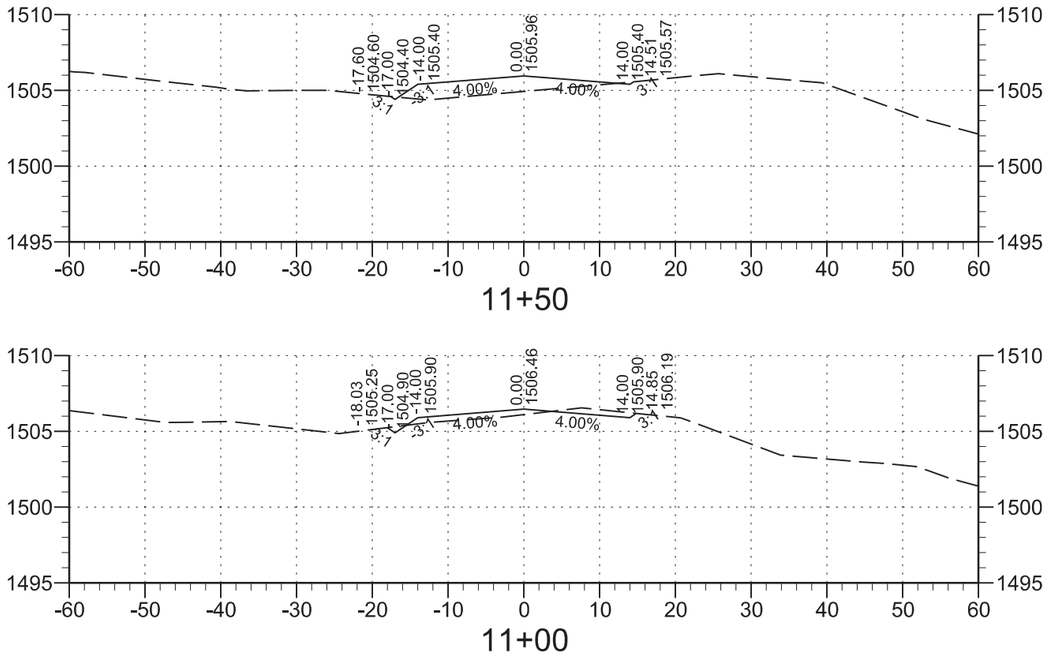


13+00

CROSS SECTIONS - TRAFFIC DIVERSION

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	41	44



CROSS SECTIONS - TRAFFIC DIVERSION

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	42	44

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
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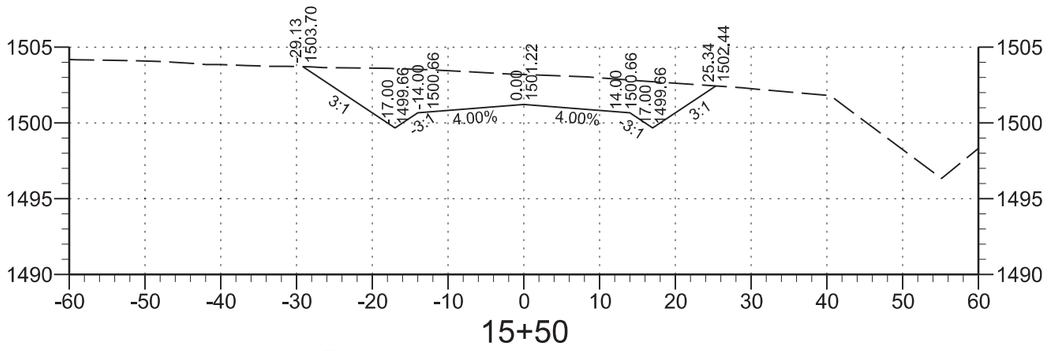

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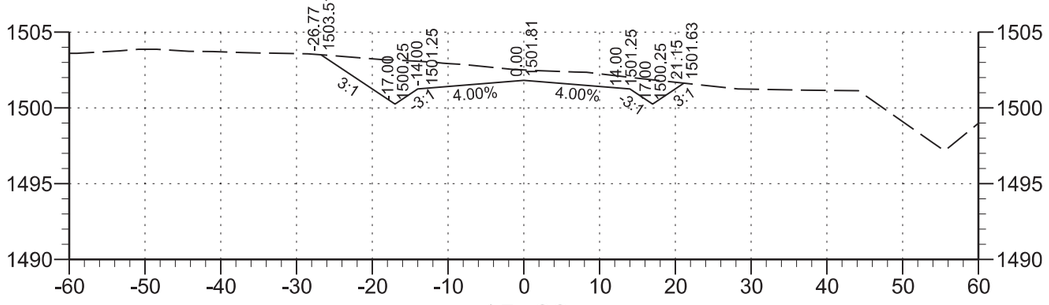

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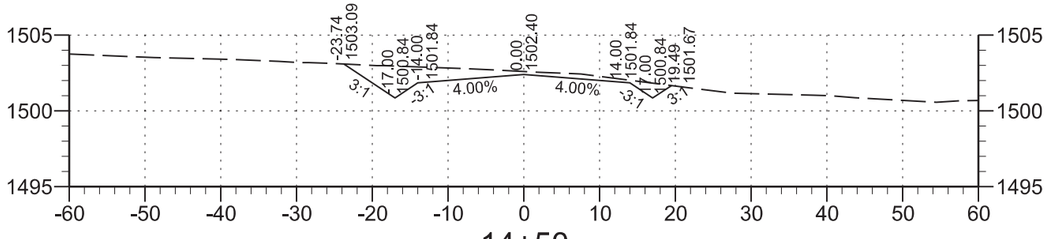

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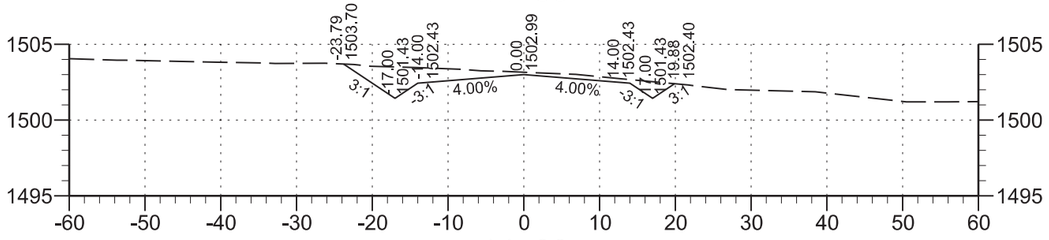

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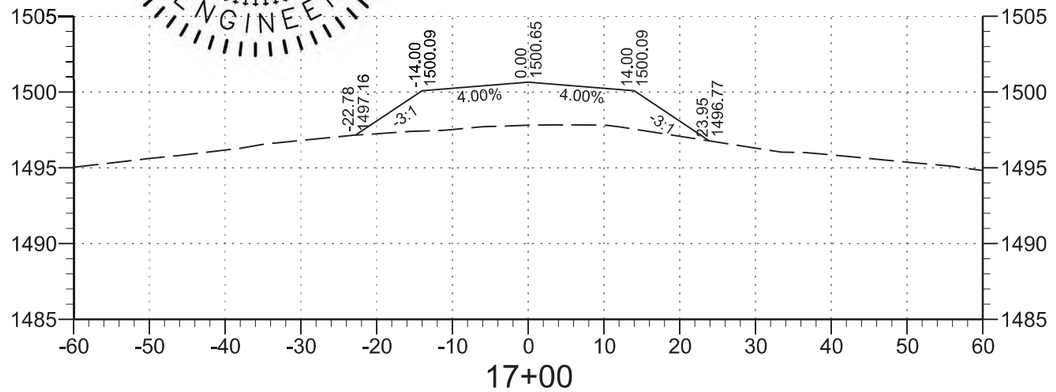
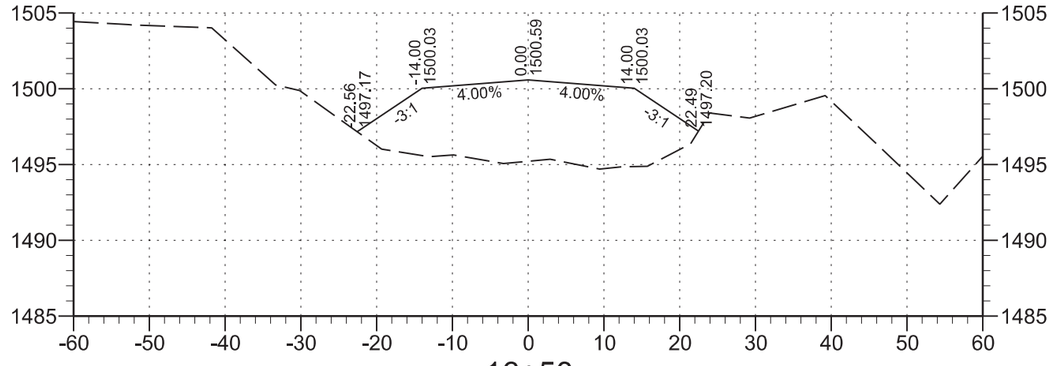


17+00



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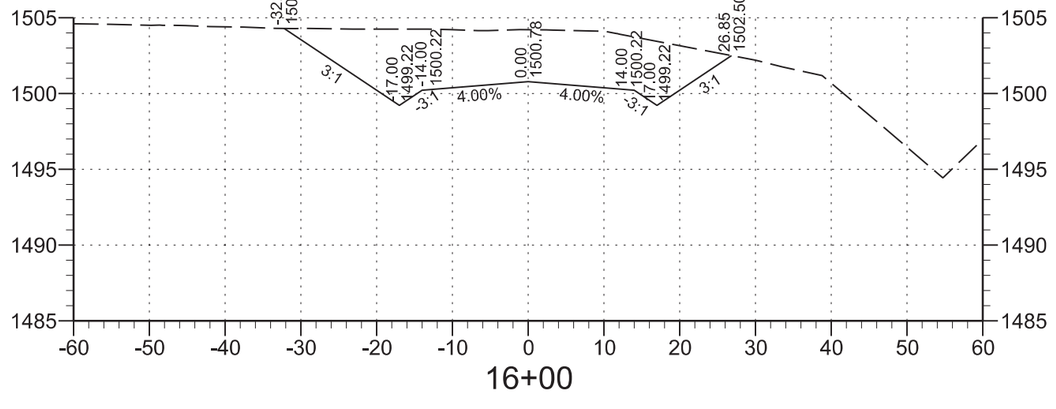


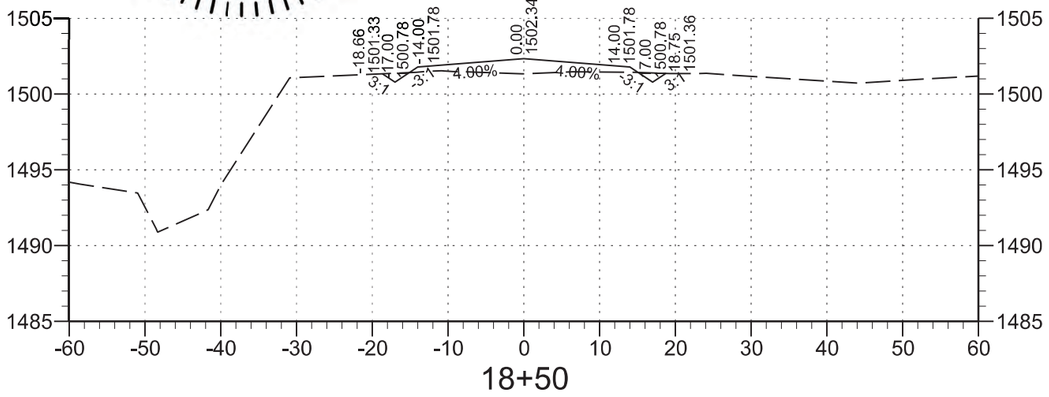
16+00

CROSS SECTIONS - TRAFFIC DIVERSION

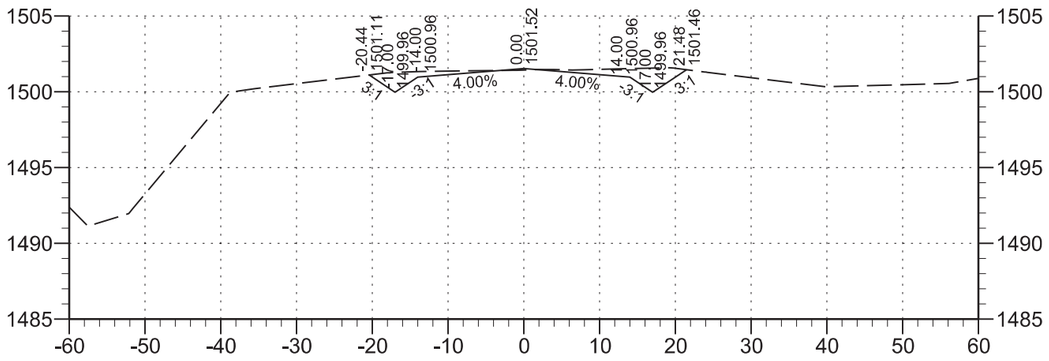
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	43	44

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8026
DONALD J. HAMMOND
SOUTH DAKOTA
11/21/25



18+50



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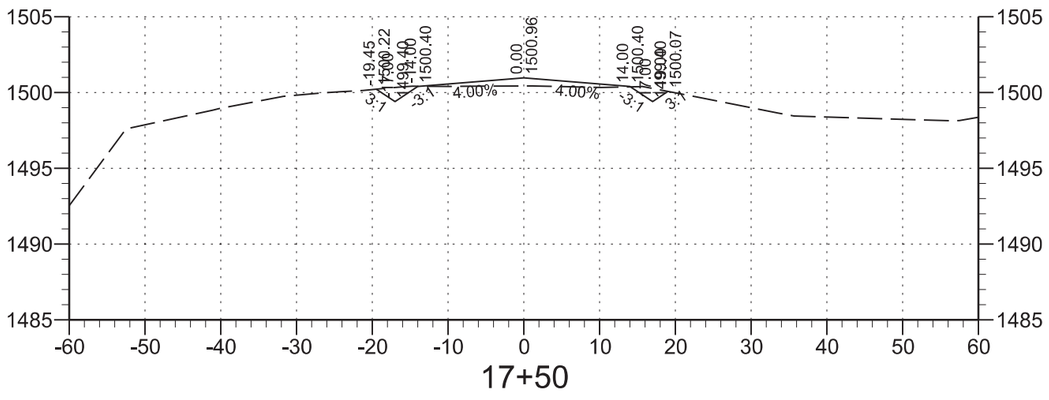

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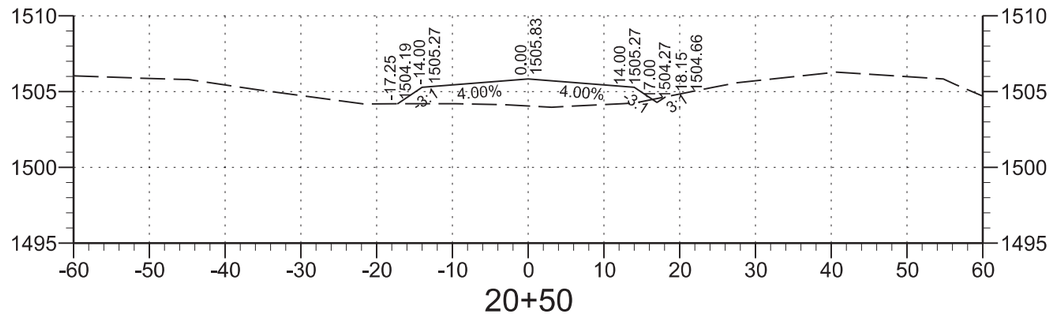

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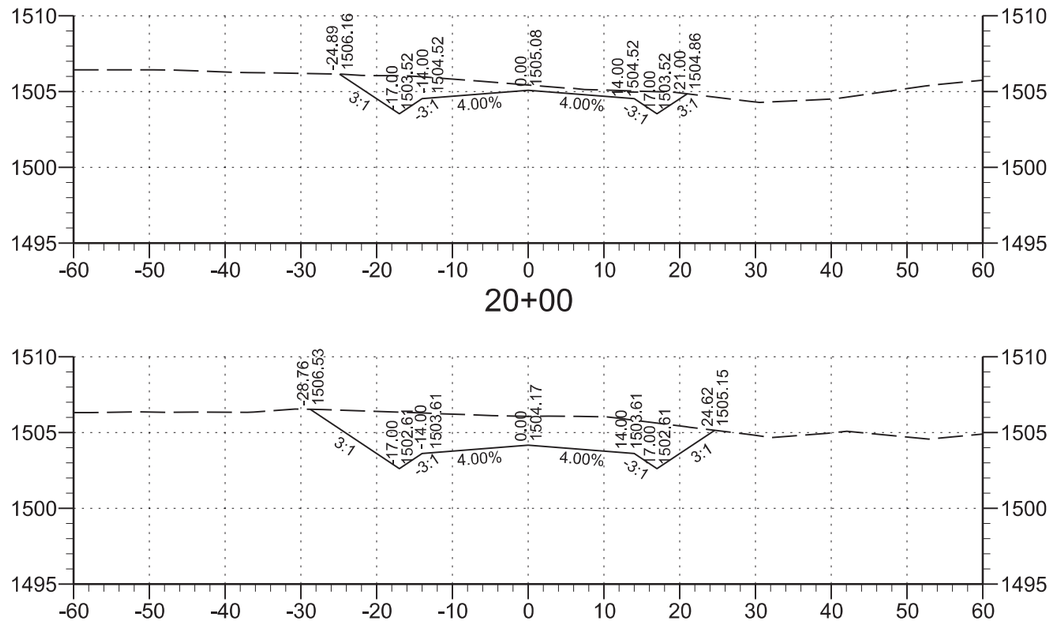
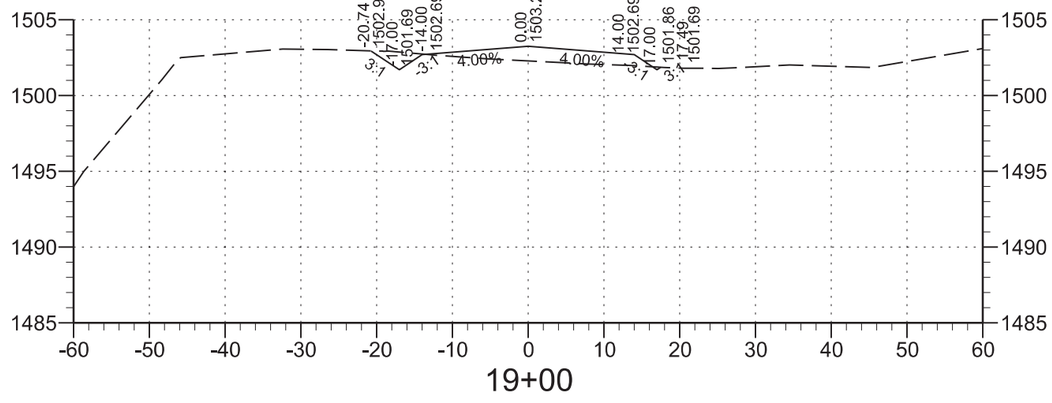


20+00

19+50

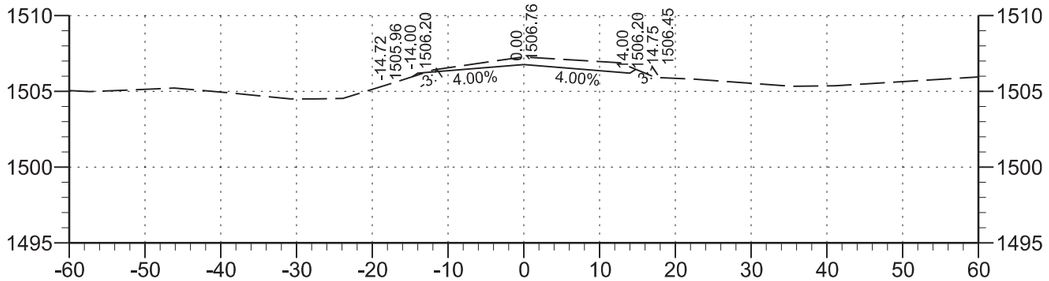


19+00

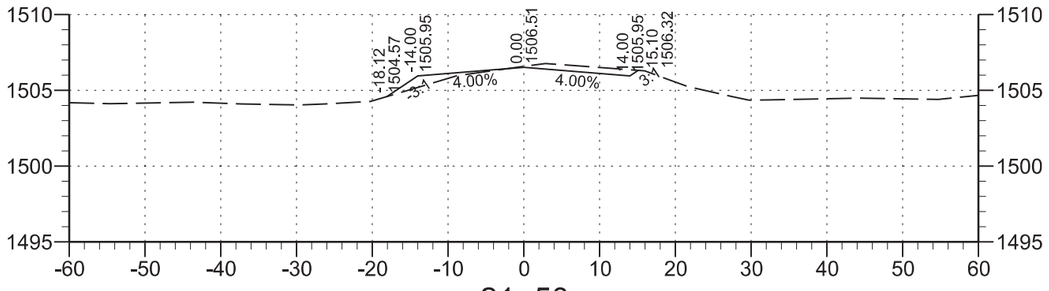
CROSS SECTIONS - TRAFFIC DIVERSION

FOR BIDDING PURPOSES ONLY

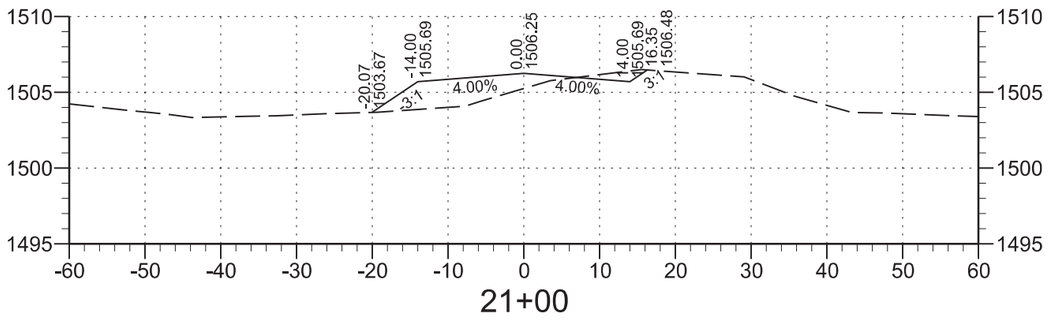
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6450(00)	44	44



22+00



21+50



21+00

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