

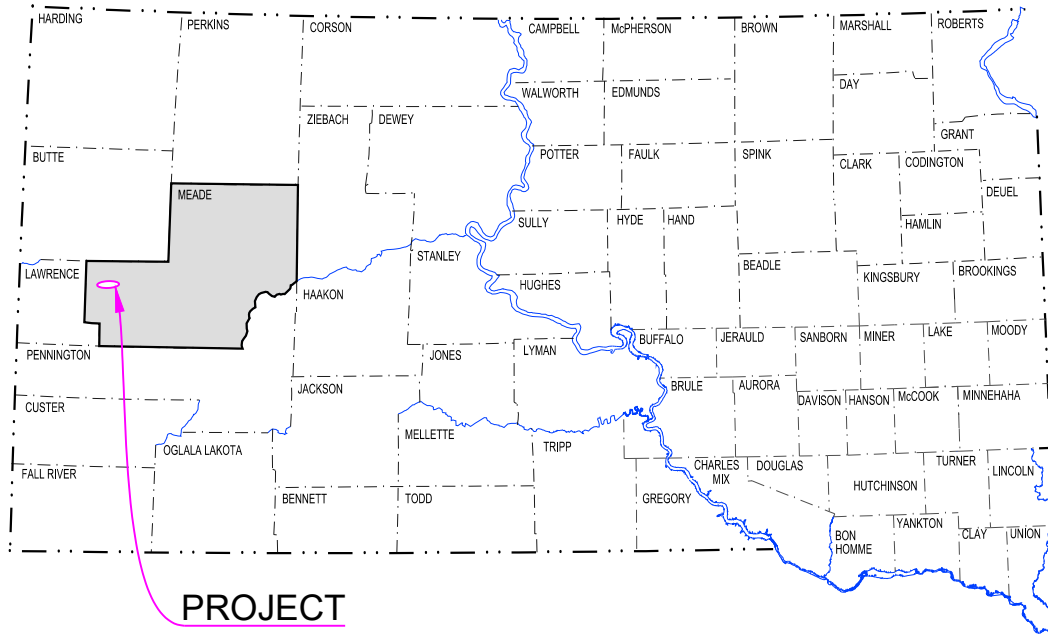
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT BRO-B 8047(32)
MEADE COUNTY

STRUCTURE REMOVAL, PIPE CULVERT, AND GRADING
STRUCTURE NO. 47-074-395
PCN 08NW

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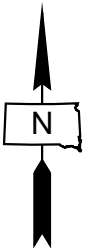
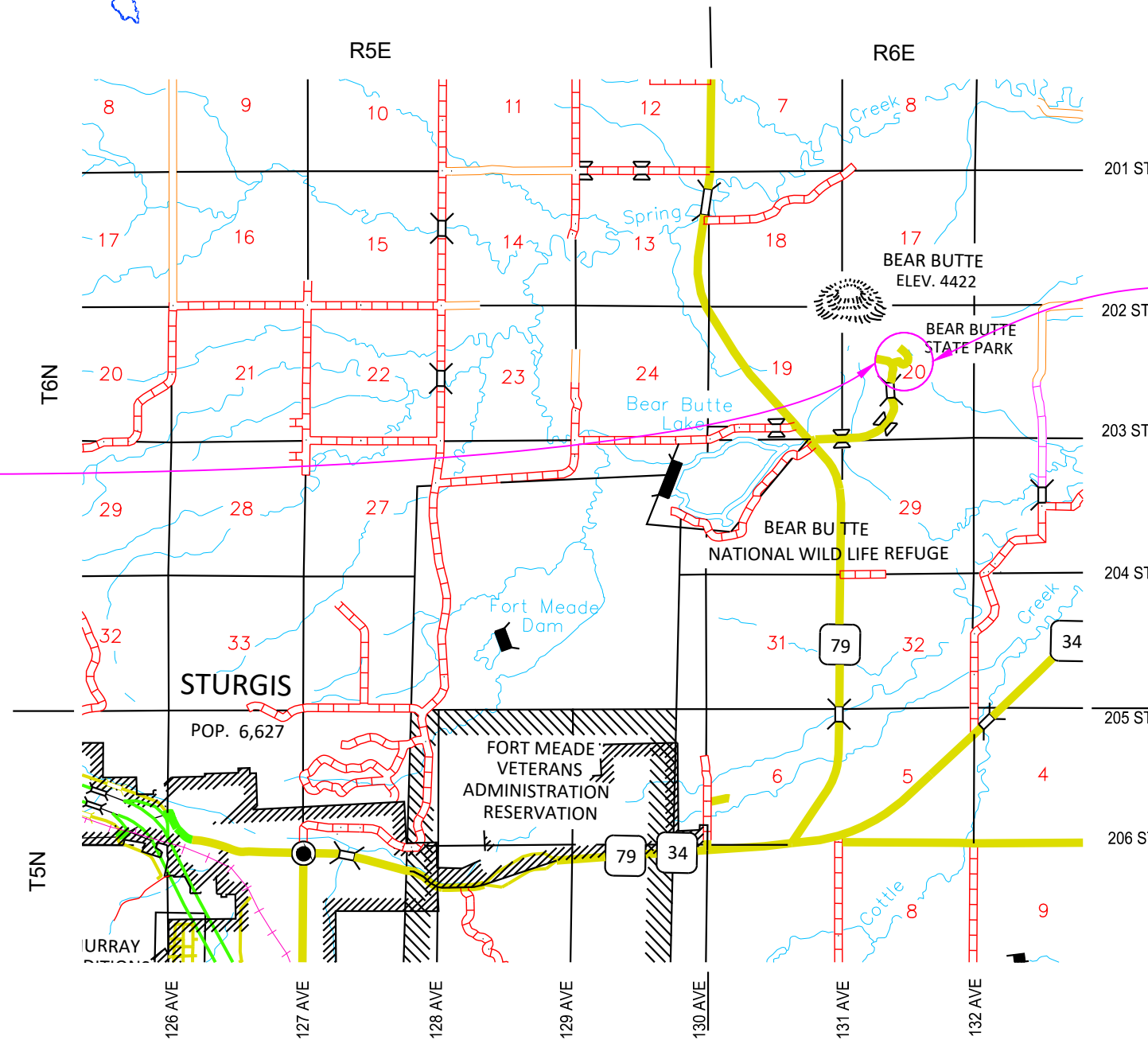
PROJECT

STORM WATER PERMIT
 Major Receiving Body of Water: Tributary to Bear Butte Creek
 Total Project Area: 0.9 Acres
 Area Disturbed: 0.9 Acres
 Approx. Begin Lat/Long: 44.467997° N
 -103.420311° W

DESIGN DESIGNATION
 V 10 mph

BEGIN BRO-B 8047(32)
 Station 1+00.00
 Located in
 Section 20 - Township 6 North - Range 6 East

END BRO-B 8047(32)
 Station 4+32.07
 Located in
 Section 20 - Township 6 North - Range 6 East



BANNER
 engineering a better community

803 S. Dakota St.
 Milbank, SD 57252
 1-855-323-6342

ESTIMATE OF QUANTITIES

Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	553.0	SqYd
110E1690	Remove Sediment	1.0	CuYd
110E5020	Salvage Traffic Sign	5	Each
120E0010	Unclassified Excavation	1,440	CuYd
230E0010	Placing Topsoil	200	CuYd
260E1010	Base Course	277.0	Ton
260E3010	Gravel Surfacing	187.0	Ton
421E0100	Pipe Culvert Undercut	22	CuYd
450E0182	36" RCP Class 2, Furnish	56	Ft
450E0190	36" RCP, Install	56	Ft
450E2028	36" RCP Flared End, Furnish	2	Each
450E2029	36" RCP Flared End, Install	2	Each
634E0110	Traffic Control Signs	10.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
700E0210	Class B Riprap	90.0	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0102	Type 2 Erosion Control Blanket	2,112	SqYd
734E0154	12" Diameter Erosion Control Wattle	200	Ft
734E0165	Remove and Reset Erosion Control Wattle	200	Ft
734E0510	Shaping for Erosion Control Blanket	387	Ft
831E0110	Type B Drainage Fabric	120	SqYd

Structure No. 47-074-395

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

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

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

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

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

COMMITMENT 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

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

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

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

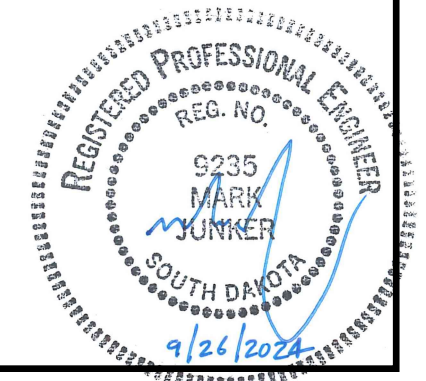
COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

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

Action Taken/Required:

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



COMMITMENT D2: SURFACE WATER DISCHARGE

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

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

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

Action Taken/Required:

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

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

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

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

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

COMMITMENT E: STORM WATER

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

Action Taken/Required:

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

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

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

The form can be found at:

<
https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAppendixCCA2018Fillable.pdf >

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

Storm Water Pollution Prevention Plan

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

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

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

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

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

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

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

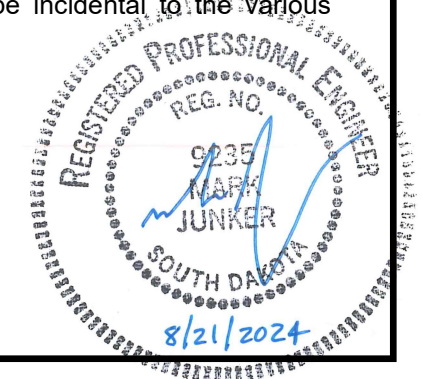
1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation.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

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

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

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

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



COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO 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 M: SECTION 4(f)/6(f) RESOURCES

COMMITMENT M1: SECTION 4(f) PROPERTY

A Section 4(f) Evaluation concluded there are no feasible and prudent alternatives to avoiding Section 4(f) property located within the project.

Station	Section 4(f) Property
Project Area	Bear Butte State Park

Action Taken/Required:

The following measures are required to minimize harm to the above Section 4(f) property.

The contractor must adhere to specified construction start date and duration in the Special Provision for Construction Time.

SDGF&P may provide access to the Ceremonial Area during construction upon request. Contact Jim Jandreau, Bear Butte State Park Manager, SDGF&P, 605-347-5240.

The contractor must adhere to the seed mixture specified in the bid item quantities.

The Contractor is not permitted to stage equipment or materials within Bear Butte State Park which interfere with the attributes, features, or activities of the park. The Contractor will notify the Project Engineer if additional easement is needed to complete the work adjacent to any Section 4(f) property. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any Section 4(f) property.

COMMITMENT M2: SECTION 6(f) PROPERTY

There will be a Temporary Non-Conforming Use of the following properties encumbered by a Land and Water Conservation Fund grant:

Station	Section 6(f) Property
Project Area	Bear Butte State Park

Action Taken/Required:

The following actions are required to ensure there is no 6(f) Conversion of Use requiring replacement lands of equal value and usefulness are achieved:

The contractor must adhere to specified construction start date and duration in the Special Provision for Construction Time.

The Contractor will notify the Project Engineer if additional easement is needed to complete the work adjacent to any Section 6(f) property. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any Section 6(f) property.

SOUTH DAKOTA GAME, FISH AND PARKS (GF&P) REQUIREMENTS

The GF&P will furnish & install permanent signing in accordance with the MUTCD.

EXISTING UTILITIES

Utilities within the limits of the proposed construction are to be adjusted by the utility owner unless otherwise indicated on these plans.

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities. It will be the responsibility of the Contractor to coordinate all utility adjustments with the utility owners.

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.

UTILITY CONTACT INFORMATION

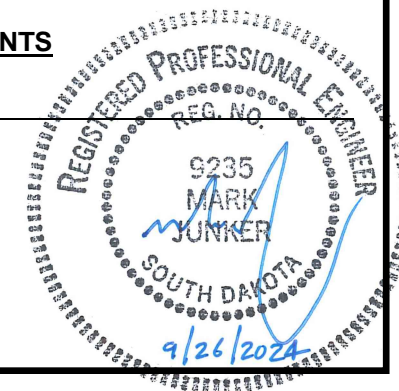
Lumen (formerly Century Link)
No utility lines present as of 9/20/2021.
105 New York St.
Rapid City, SD 57701
Office, 605-923-8442

Butte Electric Cooperative, Inc.
No utility lines present as of 5/26/2023.
109 Dartmouth Ave.
Newell, SD 57760
Brett Fosheim, 605-456-2494 office

South Dakota Game, Fish and Parks
No utility lines present as of 5/26/2023.
Bear Butte State Park
20250 Hwy 79
PO Box 688
Sturgis, SD 57785
Jim Jandreau, 605-347-5240 office

TABLE OF ANTICIPATED UTILITY ADJUSTMENTS

Location	Description
1+00 L to 4+32 L	None anticipated.
1+00 R to 4+32 R	None anticipated.



GENERAL MAINTENANCE OF TRAFFIC

This project will be closed to thru-traffic and the roadway barricaded. The Contractor will keep the existing gate closed at all times.

SALVAGE TRAFFIC SIGN

The Contractor will salvage the existing object marker signs at the corners of the bridge and the weight limit sign. The Contractor will deliver the signs to Jim Jandreau, Bear Butte State Park Manager, SDGF&P, 605-347-5240. The Contractor will remove and dispose of the existing signposts. All costs in performing the forgoing work will be incidental to the contract unit price per each for "Salvage Traffic Sign".

CLEARING

The removal and disposal of trees will be in accordance with Section 100 of the Standard Specifications.

Before preparing a bid it is the responsibility of the Contractor to make a visual inspection of the site to verify the extent of the work involved.

TABLE OF CLEARING

Approximate Location	Description
1+46 L to 2+38 L	0.10 ± acres
1+32 R to 2+79 R	0.12 ± acres
Total:	0.22 ± acres (for informational purposes only)

REMOVAL OF EXISTING ASPHALT CONCRETE PAVEMENT

The Contractor will remove the existing asphalt concrete pavement. The existing mainline asphalt concrete pavement has a variable width with an unknown thickness. For earthwork calculations, a thickness of 3" was assumed. Prior to the removal of the existing asphalt concrete pavement at Station 1+00.00 and 4+32.07, the existing pavement will be sawed full depth to a true line with a vertical face. The asphalt concrete pavement will be disposed of in a manner compliant with the Environmental Conditions and its reuse in grading operations is not permitted. All costs associated with sawing, removal, hauling, and disposal will be incidental to the contract unit price per square yard for "Remove Asphalt Concrete Pavement".

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	Quantity (SqYd)
1+00		1+73	192
2+24		4+32	361
Total:			553

INCIDENTAL WORK, STRUCTURE

In place at Station 1+73 to 2+24 is a 51' long x 16' wide three span bridge. The bridge consists of a timber deck, steel beams, timber/concrete abutments, timber/concrete bents, and timber wingwalls with tie backs.

The Contractor will remove and dispose of the in-place structure. The abutments and wingwalls will be removed to 2' below the existing ground elevation. The bents will be removed to 1' below the bottom of the Pipe Culvert Undercut elevation.

Before preparing a bid, it is the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work involved. All costs for labor, equipment, and materials in performing the forgoing work will be incidental to the contract lump sum price for "Incidental Work, Structure".

GRADING OPERATIONS

Shrinkage factor: Embankment plus 35%.

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

Water for Embankment and Backfill is estimated at the rate of 10 gallons of water per cubic yard of Embankment. The estimated quantity of Water is 9.2 MGal. No separate payment will be made for the Water and all costs associated will be incidental to the contract unit price per cubic yard for "Unclassified Excavation".

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Station to	Station	Total Excavation (CuYd)	** Waste (CuYd)
1+00	4+32	1240	0

** The quantity for this item is for information only.

UNCLASSIFIED EXCAVATION

The plans quantity for "Unclassified Excavation" as shown in the Estimate of Quantities will be the basis for payment for this item unless the Engineer orders a change.

The excavation and embankment for this project is intended to balance on-site.

Any excavation waste material will be wasted on-site by flattening out the roadway in-slopes, as directed by the Engineer.

Any additional embankment material needed will be excavated on-site by widening the ditches and/or flattening the ditch backslopes, as directed by the Engineer.

TABLE OF UNCLASSIFIED EXCAVATION

Excavation		1240
+ Topsoil	+	200
Total Unclassified Excavation	=	1440 CuYd

PLACING TOPSOIL

The topsoil thickness will be approximately 4 inches.

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

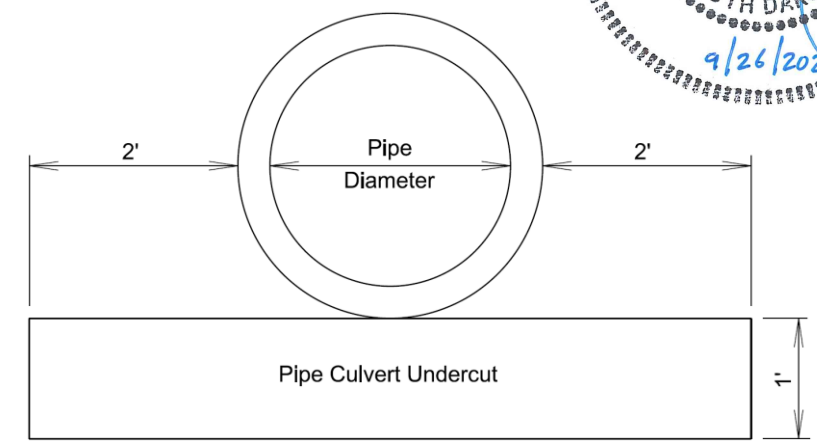
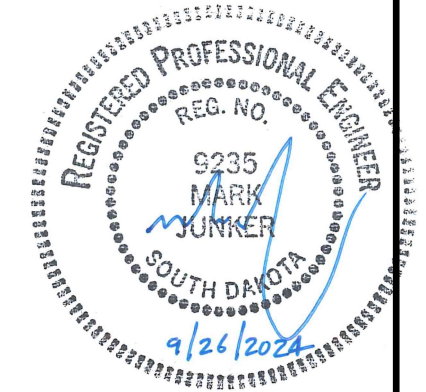
Station	to	Station	Topsoil (CuYd)
1+00		4+32	200
Total:			200

PIPE CULVERT UNDERCUT

The depth of undercut is an estimate and the actual depth necessary will be determined during construction. Undercut will be in accordance with Section 421 of the Specifications. On-site material will be used for backfill material. Rock, sand, and granular material will not be used for backfill material.

Station	Undercut Depth (Ft)	Pipe Culvert Undercut (CuYd)
2+00.86	1	22
Total:		22

Pipe Diameter (In)	Round Pipe Undercut Rate for 1' Depth (CuYd/Ft)
36	0.2840



REINFORCED CONCRETE PIPE

Class C Bedding will be used. Granular material will not be used for bedding. Flexible watertight gaskets will be used in all joints. In addition, each joint will be wrapped with drainage fabric in accordance with Section 450 of the Specifications.

WATER FOR COMPACTION OF GRANULAR MATERIAL

The cost of water for compaction of the Base Course and Gravel Surfacing will be incidental to the various other contract items. A minimum of 4% moisture will be required at the time of compaction unless otherwise directed by the Engineer.

TABLE OF RIPRAP AND DRAINAGE FABRIC

Riprap Station	Class B Riprap (Ton)	Type B Drainage Fabric (SqYd)
0+00 to 0+64.88	90.0	120
Totals:	90.0	120

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table, and as shown on the *Erosion and Sediment Control Plan*, 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.

An additional quantity of 12" Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control during construction.

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

Diameter (Inch)	Location	Quantity (Ft)
12	ditches	100
	Additional Quantity:	100
	Total:	200

EROSION CONTROL

All areas of soil disturbed by construction will require erosion control. For informational purposes only, the estimated area requiring erosion control is **0.9 acre**. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, and fiber mulch will be incidental to the contract lump sum price for "Erosion Control".

Special Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	7
Little Bluestem	Itasca, Blaze	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	8
Sideoats Grama	Butte, Pierre	6
Blue Grama	Bad River	4
Canada Wildrye	Mandan	4
Oats or Spring Wheat: April through May; Winter Wheat: August through November		6
Wildflowers		
	Wild Bergamot (<i>Monarda fistulosa</i>)	1
	Black-eyed Susan (<i>Rudbeckia hirta</i>)	1
	Blue Flax (<i>Linum lewisii</i>)	1
	Pale Purple Coneflower (<i>Echinacea angustifolia</i>)	1
Total:		46

Fiber mulch will be applied to all disturbed areas that are not covered by erosion control blanket. For informational purposes only, the estimated area requiring fiber mulch is 0.3 acre. Fiber mulch will be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier will be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

Fiber mulch will be applied at the rate of 3,000 pounds per acre.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site: <http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

SHAPING FOR EROSION CONTROL BLANKET

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

EROSION CONTROL BLANKET

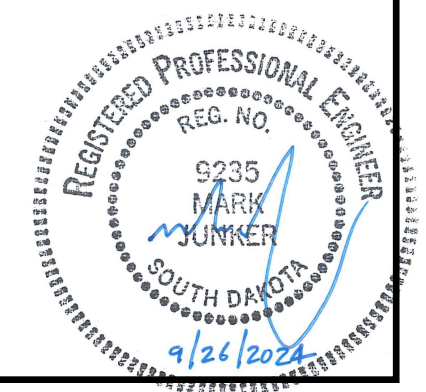
Erosion control blanket will be installed at the locations noted in the table and as shown on the *Erosion and Sediment Control Plan*. Refer to Standard Plate 734.01 for details.

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>

TABLE OF EROSION CONTROL BLANKET

Type	Location	Quantity (SqYd)
2	1+00 L to 4+32 L	1400
2	1+00 R to 4+32 R	712
	Total:	2112



TYPICAL GRADING SECTION

BAI JOB # 23190.66

STATE OF SOUTH DAKOTA

PROJECT
BRO-B 8047(32)

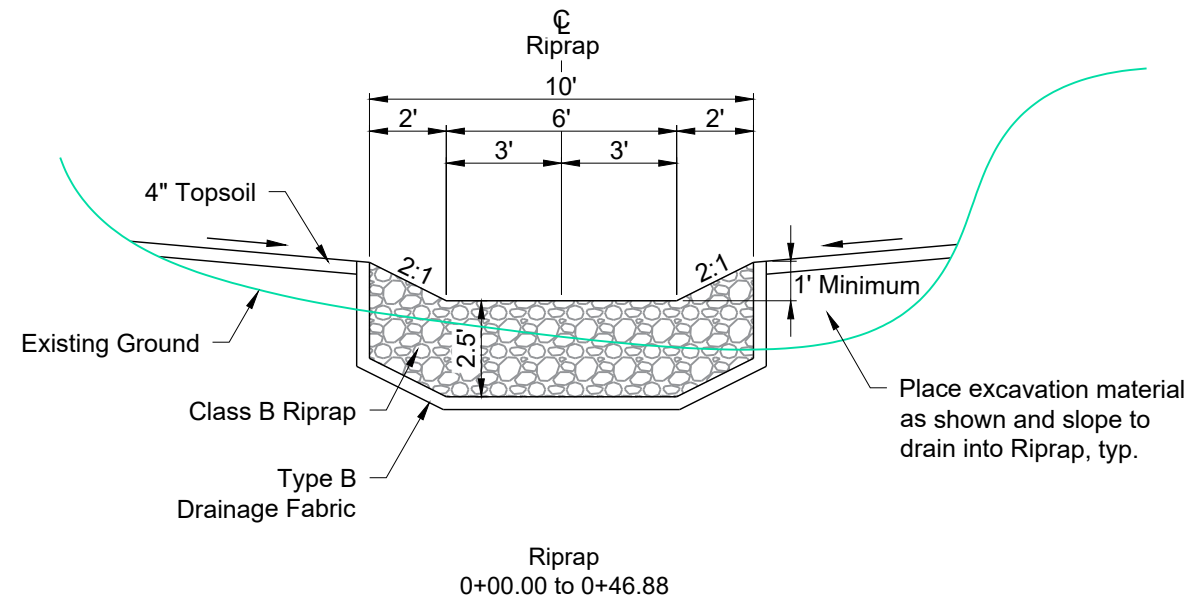
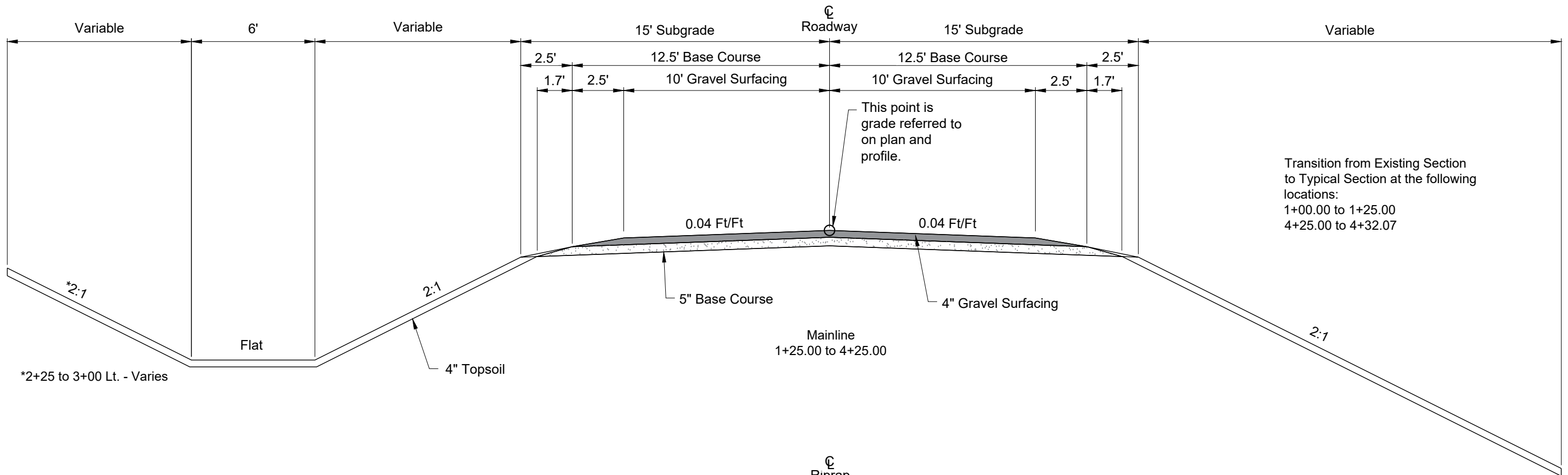
SHEET
7

TOTAL SHEETS
33

Plotting Date:

08/21/2024

Rev: ####



Transition from Existing Section to Typical Section at the following locations:
0+46.88 to 0+64.88

HORIZONTAL ALIGNMENT DATA

MAINLINE

Type	Station			Northing	Easting
POB	0+00.00			250151.011	1075800.718
		TL= 49.18	N 15°43'13" E		
PC	0+49.18			250198.349	1075814.042
PI	0+67.30	R = 200.00	Delta = 10°21'15" L	250215.792	1075818.952
PT	0+85.32			250233.833	1075820.646
		TL= 24.40	N 05°21'58" E		
PC	1+09.72			250258.126	1075822.928
PI	1+73.35	R = 80.00	Delta = 76°59'48" R	250321.478	1075828.879
PT	2+17.23			250329.935	1075891.946
		TL= 78.26	N 82°21'46" E		
PC	2+95.48			250340.335	1075969.508
PI	3+10.71	R = 200.00	Delta = 08°42'36" L	250342.359	1075984.604
PT	3+25.89			250346.646	1075999.219
		TL= 43.61	N 73°39'10" E		
PC	3+69.50			250358.922	1076041.070
PI	4+05.63	R = 50.00	Delta = 71°42'14" R	250369.091	1076075.739
PT	4+32.07			250339.366	1076096.278
		TL= 15.40	S 34°38'36" E		
POE	4+47.48			250326.693	1076105.035

RIPRAP

Type	Station			Northing	Easting
POB	0+00.00			250291.957	1075900.443
		TL= 3.97	S 35°30'55" E		
PC	0+03.97			250288.723	1075902.751
PI	0+07.63	R = 20.00	Delta = 20°43'29" L	250285.746	1075904.876
PT	0+11.21			250283.714	1075907.916
		TL= 53.67	S 56°14'24" E		
POE	0+64.88			250253.889	1075952.535

CONTROL DATA

HORIZONTAL AND VERTICAL CONTROL POINTS						
POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM 40-1	0+74.90	57.87' R	5' Rebar w/ Cap	250215.078	1075876.653	3364.54
CP GPS-BASE	1+07.05	76.42' L	18" Rebar w/ Cap	250262.610	1075746.590	-
CP WEST	1+37.44	45.45' L	18" Rebar w/ Cap	250304.093	1075789.082	-
CP CHADWICK	1+41.95	207.53' L	18" Rebar w/ Cap	250387.607	1075649.767	-
BM 40-2	2+97.29	23.42' L	5' Rebar w/ Cap	250363.763	1075967.973	3370.40
CP EAST	3+32.49	15.62' R	18" Rebar w/ Cap	250333.517	1076009.950	-

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone NAD 83(2011); epoch 2010.00; Geoid 18; SF = 0.9998321283

The elevations shown on this sheet are based on NAVD 88.



LEGEND

BAI JOB # 23190.66

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Plotting Date: 08/21/2024

Anchor		Mailbox		Subsurface Utility Exploration Test Hole		State and National Line	
Antenna		Manhole Electric		Telephone Fiber Optics		County Line	
Approach		Manhole Gas		Telephone Junction Box		Section Line	
Assumed Corner		Manhole Miscellaneous		Telephone Pole		Quarter Line	
Azimuth Marker		Manhole Sanitary Sewer		Television Cable Jct Box		Sixteenth Line	
BBQ Grill/ Fireplace		Manhole Storm Sewer		Television Tower		Property Line	
Bearing Tree		Manhole Telephone		Test Wells/Bore Holes		Construction Line	
Bench Mark		Manhole Water		Traffic Sign Double Face		ROW Line	
Box Culvert		Merry-Go-Round		Traffic Sign One Post		New ROW Line	
Bridge		Microwave Radio Tower		Traffic Sign Two Post		Cut and Fill Limits	
Brush/Hedge		Miscellaneous Line		Traffic Signal		Control of Access	
Buildings		Miscellaneous Property Corner		Trash Barrel		New Control of Access	
Bulk Tank		Overhang Or Encroachment		Tree Belt		Proposed ROW (After Property Disposal)	
Cattle Guard		Overhead Utility Line		Tree Coniferous			
Cemetery		Parking Meter		Tree Deciduous			
Centerline		Pedestrian Push Button Pole		Tree Stumps			
Cistern		Pipe With End Section		Triangulation Station		Drainage Arrow	
Clothes Line		Pipe With Headwall		Underground Electric Line			
Concrete Symbol		Pipe Without End Section		Underground Gas Line		Remove Concrete Pavement	
Control Point		Playground Slide		Underground High Pressure Gas Line		Remove Concrete Driveway Pavement	
Creek Edge		Playground Swing		Underground Sanitary Sewer		Remove Asphalt Concrete Pavement	
Curb/Gutter		Power And Light Pole		Underground Storm Sewer		Remove Concrete Sidewalk	
Curb		Power And Telephone Pole		Underground Tank		Remove Concrete Median Pavement	
Dam Grade/Dike/Levee		Power Meter		Underground Telephone Line		Remove Concrete Curb and/or Gutter	
Deck Edge		Power Pole		Underground Television Cable			
Ditch Block		Power Pole And Transformer		Underground Water Line			
Doorway Threshold		Power Tower Structure		Water Fountain			
Drainage Profile		Propane Tank		Water Hydrant			
Drop Inlet		Property Pipe		Water Meter			
Edge Of Asphalt		Property Pipe With Cap		Water Tower			
Edge Of Concrete		Property Stone		Water Valve			
Edge Of Gravel		Public Telephone		Water Well			
Edge Of Other		Railroad Crossing Signal		Weir Rock			
Edge Of Shoulder		Railroad Milepost Marker		Windmill			
Electric Transformer/Power Junction Box		Railroad Profile		Wingwall			
Fence Barbwire		Railroad ROW Marker		Witness Corner			
Fence Chainlink		Railroad Signs					
Fence Electric		Railroad Switch					
Fence Miscellaneous		Railroad Track					
Fence Rock		Railroad Trestle					
Fence Snow		Rebar					
Fence Wood		Rebar With Cap					
Fence Woven		Reference Mark					
Fire Hydrant		Retaining Wall					
Flag Pole		Riprap					
Flower Bed		River Edge					
Gas Valve Or Meter		Rock And Wire Baskets					
Gas Pump Island		Rockpiles					
Grain Bin		Satellite Dish					
Guardrail		Septic Tank					
Gutter		Shrub Tree					
Guy Pole		Sidewalk					
Haystack		Sign Face					
Highway ROW Marker		Sign Post					
Interstate Close Gate		Slough Or Marsh					
Iron Pin		Spring					
Irrigation Ditch		Stream Gauge					
Lake Edge		Street Marker					
Lawn Sprinkler							

Detectable Warning
Pedestrian Push Button Pole
and 30" x 48" Clear Space
with 1.5% slope



TRAFFIC CONTROL

BAI JOB # 23190.66

STATE OF SOUTH DAKOTA

PROJECT

BRO-B 8047(32)

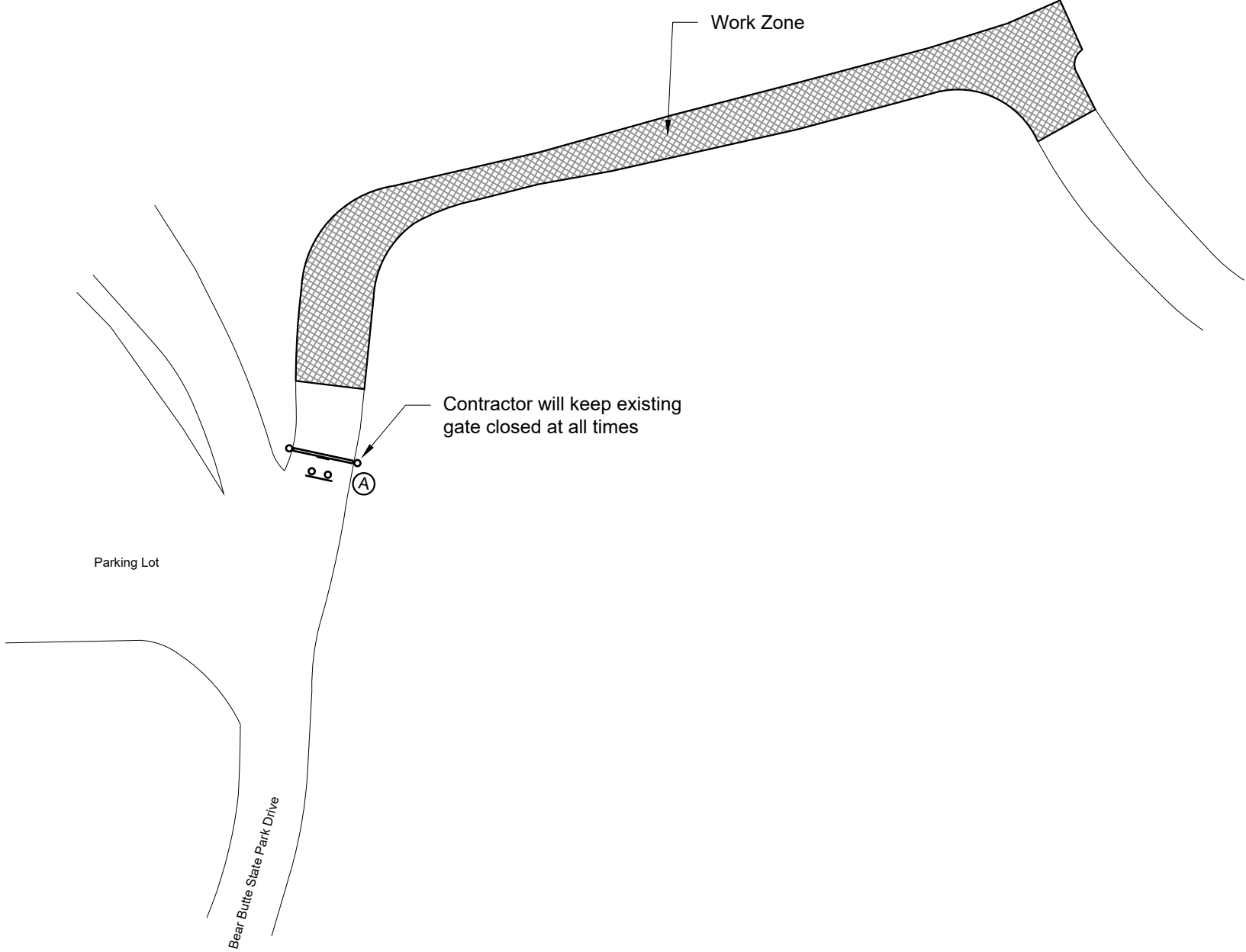
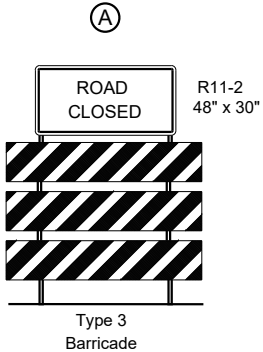
SHEET

10

TOTAL SHEETS

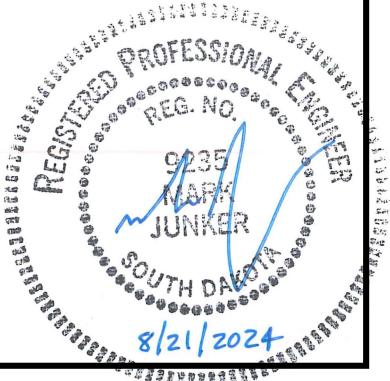
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Plotting Date: 08/21/2024



ITEMIZED LIST FOR TRAFFIC CONTROL					
SIGN CODE	DESCRIPTION	NUMBER REQUIRED	SIGN SIZE	SQ. FT. PER SIGN	SQ. FT.
R11-2	ROAD CLOSED	1	48" x 30"	10.0	10.0
Conventional Road Traffic Control Signs Sq. Ft.					10.0
DESCRIPTION		Each			
Type 3 Barricade		1			

NOTE:
The exact location and spacing of signs shown will be determined in the field by the Engineer.



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** 0.9 Acres
 - **5.3 (3b): Total Area to be Disturbed** 0.9 Acres
 - **5.3 (3c): Maximum Area Disturbed at One Time** 0.9 Acres
 - **5.3 (3d): Existing Vegetative Cover (%)** 80%
 - **5.3 (3d): Description of Vegetative Cover** Grass
 - **5.3 (3e): Soil Properties:** Canyon-Butche association, steep
 - **5.3 (3f): Name of Receiving Water Body/Bodies**
Tributary to Bear Butte Creek
 - **5.3 (3g): Location of Construction Support Activity Areas**
On site near project limits

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install sediment control as needed during construction	
Remove existing bridge	
Install new pipe culvert	
Grade roadway and ditches	
Install wattles, seeding, blankets, and mulch	

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
<input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls

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

Dust Controls

Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other	

Dewatering BMPs

Description	Estimated Start Date
<input type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input type="checkbox"/> Temporary Diversion Channel	
<input type="checkbox"/> 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
<input type="checkbox"/> Vegetation Buffer Strips	
<input type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input type="checkbox"/> Mulching (Grass Hay or Straw)	
<input checked="" type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input checked="" type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> 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 $\frac{1}{3}$ 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 $\frac{1}{2}$ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The 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, degreasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ Spill Control Practices

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

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

➤ Spill Response

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

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

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ Waste Disposal

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

➤ Hazardous Waste

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

➤ Sanitary Waste

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

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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

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

Product Specific Practices

▪ Petroleum Products

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

▪ Fertilizers

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

▪ Paints

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

▪ Concrete Trucks

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

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

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

7.0: SPILL NOTIFICATION

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

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

5.4: SWPPP CERTIFICATIONS

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

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

➤ **South Dakota Department of Transportation**

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



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

➤ **Prime Contractor**

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

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

Authorized Signature

CONTACT INFORMATION

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

➤ **Contractor Information:**

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

EROSION AND SEDIMENT CONTROL

BAI JOB # 23190.66

STATE OF SOUTH DAKOTA

PROJECT

BRO-B 8047(32)

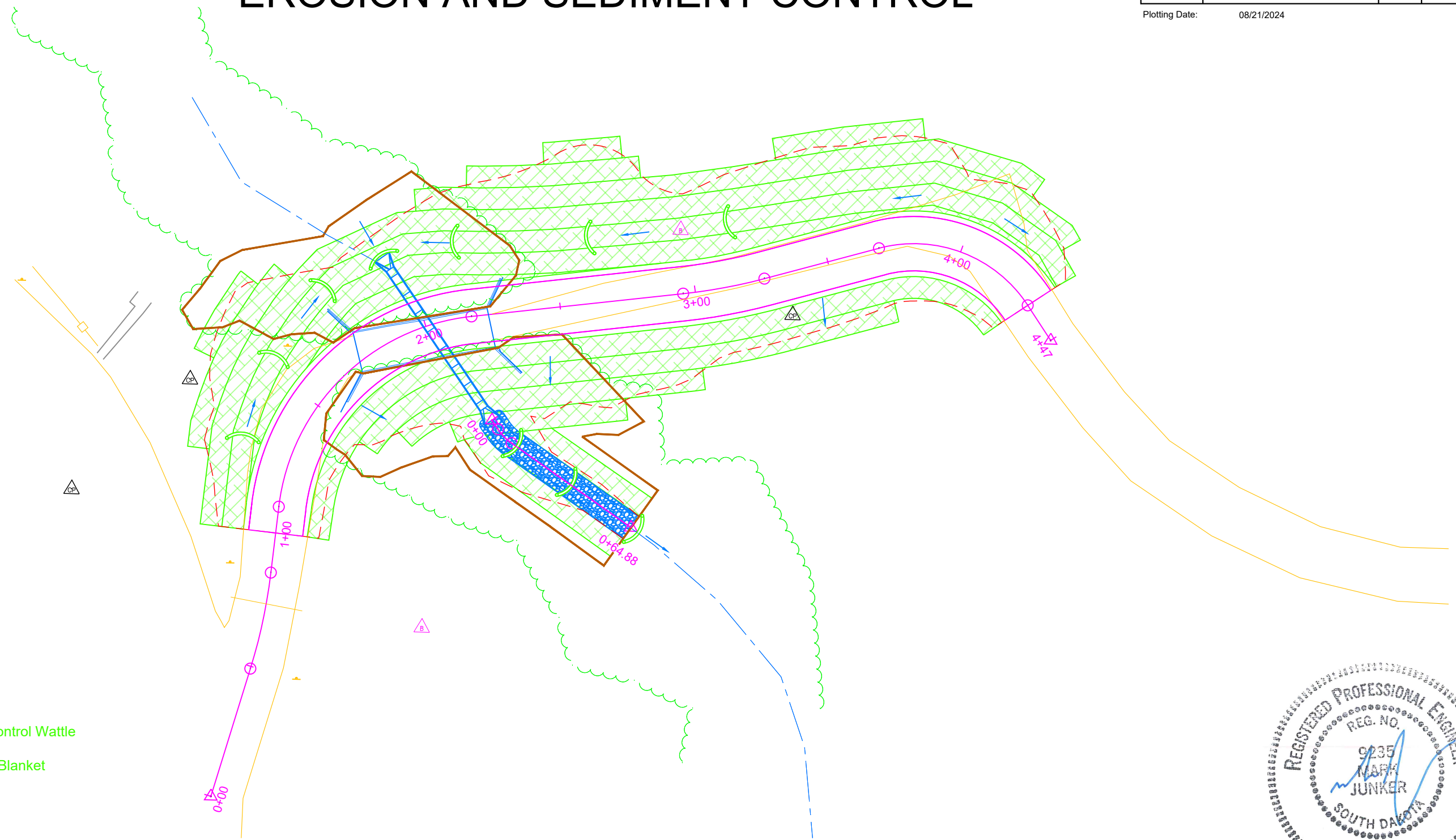
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TOTAL SHEETS

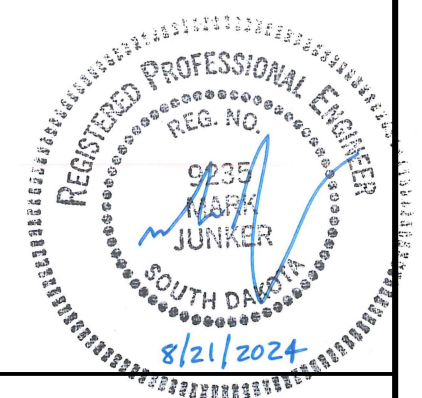
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Plotting Date: 08/21/2024



LEGEND:

- 12" Diameter Erosion Control Wattle
- Type 2 Erosion Control Blanket
- Clearing Limits



NOTES:

1. Maintain as much existing vegetation as possible during construction.
2. The Temporary Wattle placement is shown. Wattles will be installed during construction as determined by the Engineer. An additional 100 Ft is included in the quantities. Wattles will be installed per Standard Plate No. 734.06.
3. Install Erosion Control Blanket as shown and as directed by the Engineer. Erosion Control Blanket will be installed as per Standard Plate No. 734.01.
4. Wattles will be removed from the project once erosion control blanket is installed.

TABLE OF EROSION CONTROL WATTLE

Diameter (Inch)	Location	Quantity (Ft)
12	ditches	100
	Additional Quantity:	100
Total:		200

TABLE OF EROSION CONTROL BLANKET

Type	Location	Quantity (SqYd)
2	1+00 L to 4+32 L	1400
2	1+00 R to 4+32 R	712
Total:		2112

1+00 to 1+73
2+24 to 4+32
Remove Asphalt
Concrete Pavement

1+73 to 2+24
Remove 51' Long x 16' Wide
Three-Span Bridge
(Incidental Work, Structure)

2+00.86 (9.6 AC)
Install 36" - 56' RCP
Skew 16° RHF
& 2 Flared Ends

1+46 L to 2+38 L
Clearing

1+32 R to 2+79 R
Clearing

END PROJECT
STA. 4+32.07

BEGIN PROJECT
STA. 1+00.00

Tributary to Bear Butte Creek

PI 0+00
N = 250151.011
E = 1075800.718

PI 0+67.30
N = 250215.792
E = 1075818.952
Del = 10°21'00" L
Dc = 28°38'52"
T = 18.12'
L = 36.14'
R = 200.00'

PI 1+73.35
N = 250321.478
E = 1075828.879
Del = 76°59'48" R
Dc = 71°37'11"
T = 63.63'
L = 107.51'
R = 80.00'

Riprap
PI 0+07.63
N = 250285.746
E = 1075904.876
Del = 20°43'29" L
Dc = 286°28'44"
T = 3.66'
L = 7.23'
R = 20.00'

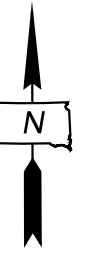
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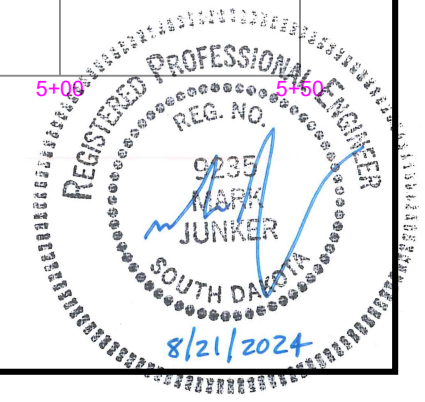
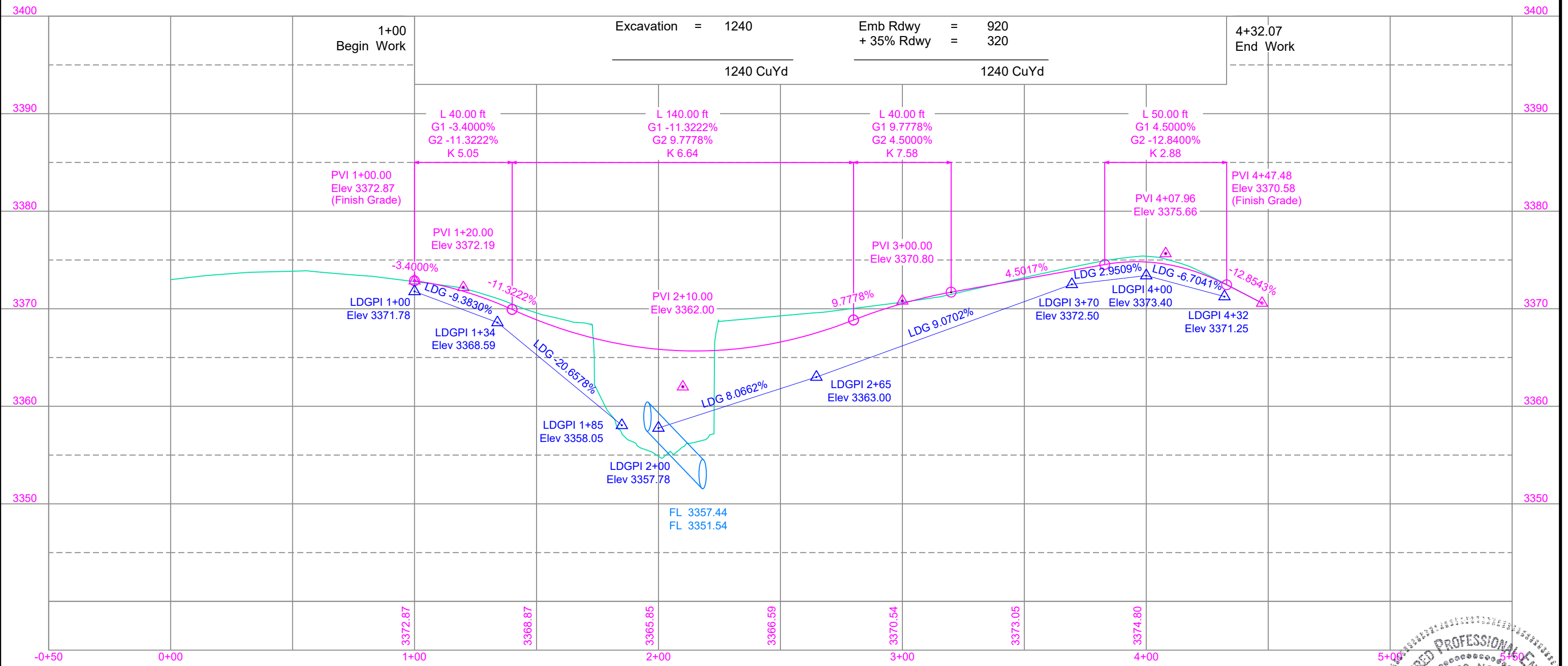
Riprap
PI 0+64.88
N = 250253.889
E = 1075952.535

PI 3+10.71
N = 250342.359
E = 1075984.604
Del = 08°42'36" L
Dc = 28°38'52"
T = 15.23'
L = 30.40'
R = 200.00'

PI 4+05.63
N = 250369.091
E = 1076075.739
Del = 71°42'14" R
Dc = 114°35'29"
T = 36.13'
L = 62.57'
R = 50.00'

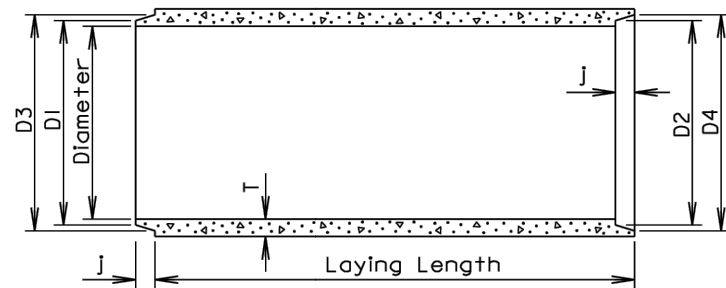
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E = 1076105.035



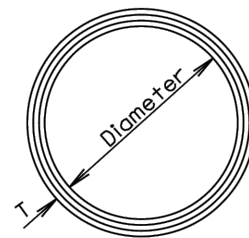


TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
 Diameters at joints: ± 3/16" for 30" Dia. or less and ± 1/4" for 36" or greater.
 Length of joint (J): ± 1/4".
 Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
 Laying length: shall not underrun by more than 1/2".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

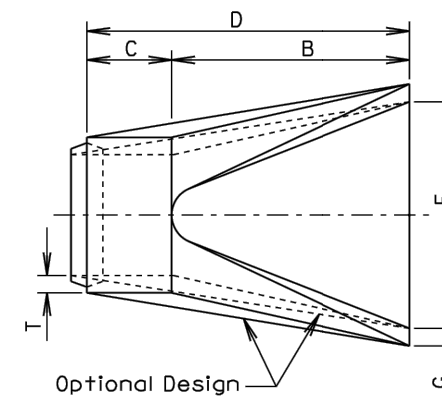
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

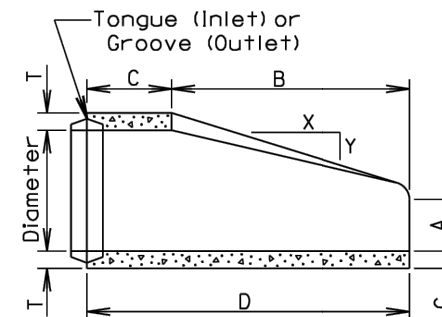
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

June 26, 2015

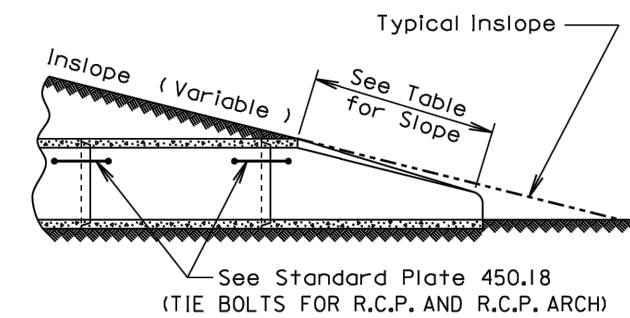
S D D O T	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
	Published Date: 2025	Sheet 1 of 1



TOP VIEW



LONGITUDINAL SECTION

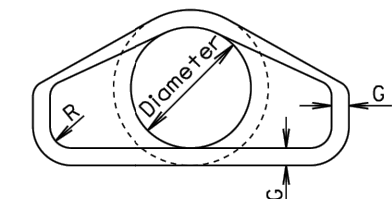


SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on plan sheets are between flared ends only.

Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Specifications.



END VIEW

Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4:1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	1 1/2
24	1520	2.5:1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1930	2.5:1	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	1 1/2
30	2190	2.5:1	3 1/2	12	54	19 3/4	73 3/4	60	3 1/2	1 1/2
36	4100	2.5:1	4	15	63	34 3/4	97 3/4	72	4	1 1/2
42	5380	2.5:1	4 1/2	21	63	35	98	78	4 1/2	1 1/2
48	6550	2.5:1	5	24	72	26	98	84	5	1 1/2
54	8240	2:1	5 1/2	27	65	33 1/4	98 1/4	90	5 1/2	1 1/2
60	8730	1.9:1	6	35	60	39	99	96	5	1 1/2
66	10710	1.7:1	6 1/2	30	72	27	99	102	5 1/2	1 1/2
72	12520	1.8:1	7	36	78	21	99	108	6	1 1/2
78	14770	1.8:1	7 1/2	36	90	21	111	114	6 1/2	1 1/2
84	18160	1.6:1	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2
90	20900	1.5:1	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	6

June 26, 2015

S D D O T	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
	Published Date: 2025	Sheet 1 of 1

Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
< 3/4	5/8	3/4
3/2-6/2	3/4	1
> 7	1	1 1/4

GENERAL NOTES:
 Tie bolts shall conform to ASTM F1554 Grade 36 or ASTM A36. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.
 Pipe Sleeve shall conform to ASTM A500 or A53, Grade B.
 Galvanize adjustable eye bolt tie assembly in accordance with ASTM A153.

ADJUSTABLE EYE BOLT TIE

Pipe Dia. (in.)	"L" (in.)	Bolt Dia. (in.)
< 48	4	3/4
> 48	6	1

GENERAL NOTES:
 Angles shall conform to ASTM A36.
 Bolts shall conform to ASTM A307. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.
 Galvanize angles, bolts, nuts, and washers in accordance with ASTM A153.

ANGLE AND BOLT TIE

GENERAL NOTES:
 In lieu of the tie bolts detailed above other types of tie bolt connections may be installed as approved by the Office of Bridge Design.
 All pipe sections of R.C.P. and R.C.P. Arch shall be tied with tie bolts except for pipe located between drop inlets, manholes, and junction boxes. All pipe sections of pipes that only enter or exit drop inlets, manhole, and junction boxes shall be tied with tie bolts.
 There will be no separate measurement or payment for the tie bolts. The cost for furnishing and installing the tie bolts shall be incidental to the contract unit price per foot for the corresponding bid item for R.C.P. or R.C.P. Arch.

END VIEW "CIRCULAR" **END VIEW "ARCH"**

STANDARD DITCH SECTION

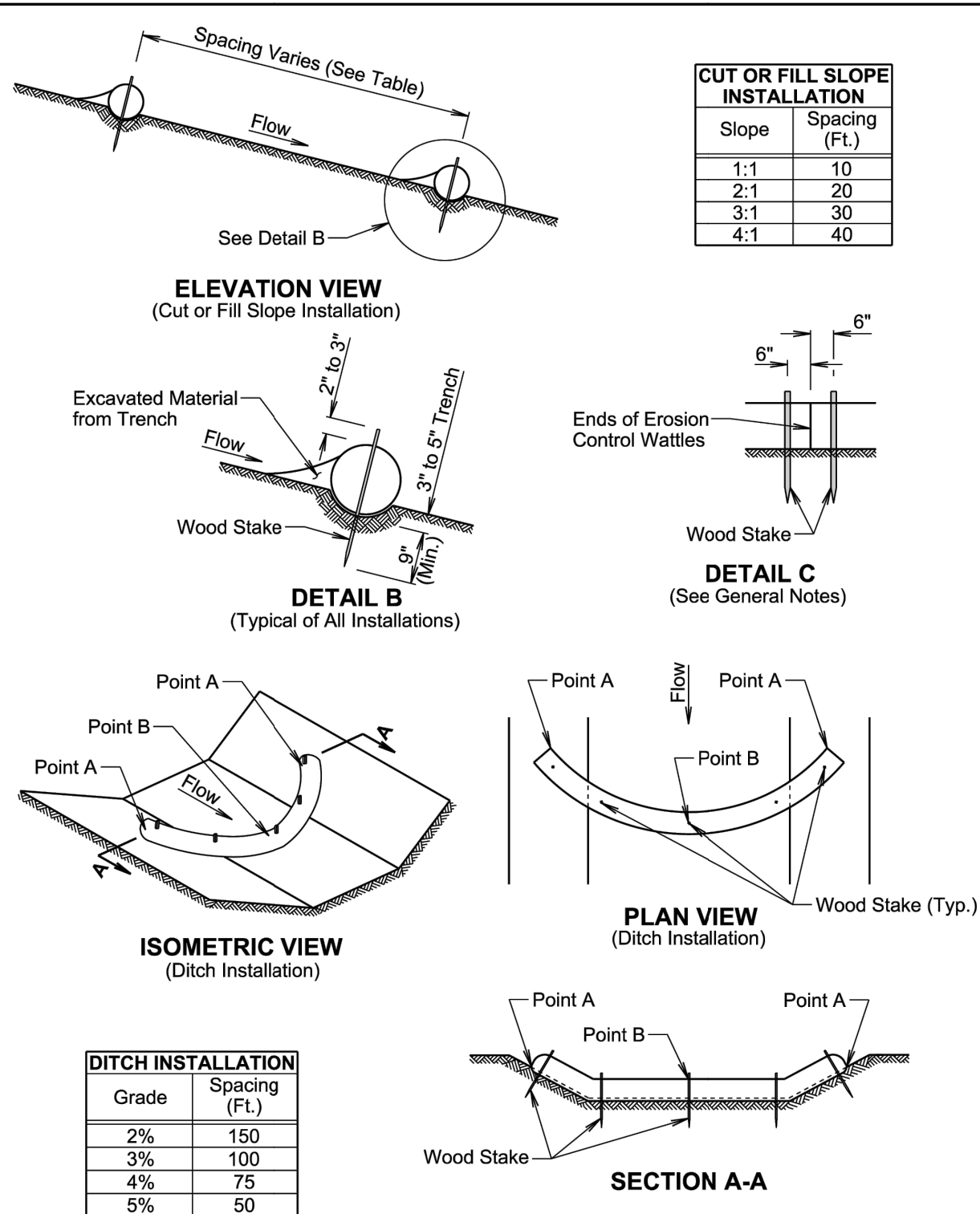
SLOPED DITCH SECTION

TRENCH DETAIL

PIPE END DETAIL

OVERLAP DETAIL
 * 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.

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

February 14, 2020

S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
		Sheet 1 of 2

Published Date: 2025

S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
		Sheet 2 of 2

Published Date: 2025

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".

CROSS SECTIONS

BAI JOB # 23190.66

STATE OF
SOUTH
DAKOTA

PROJECT

BRO-B 8047(32)

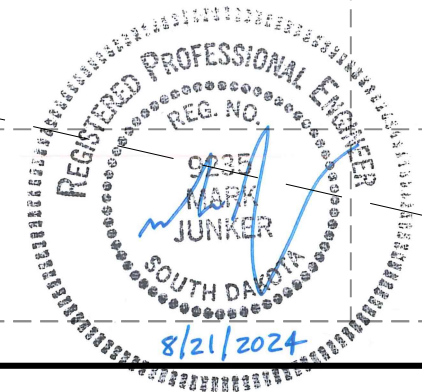
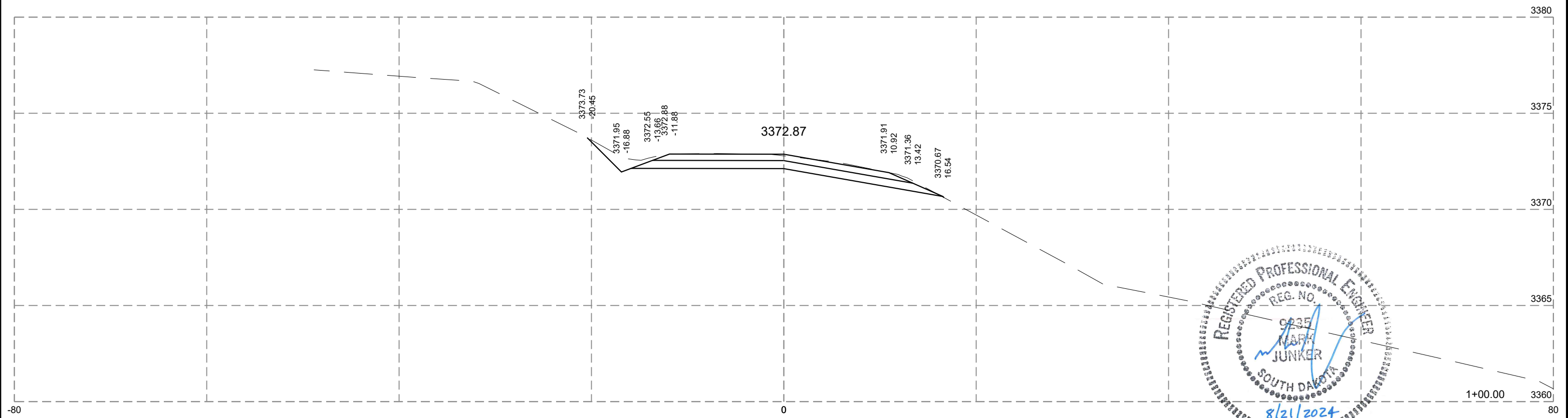
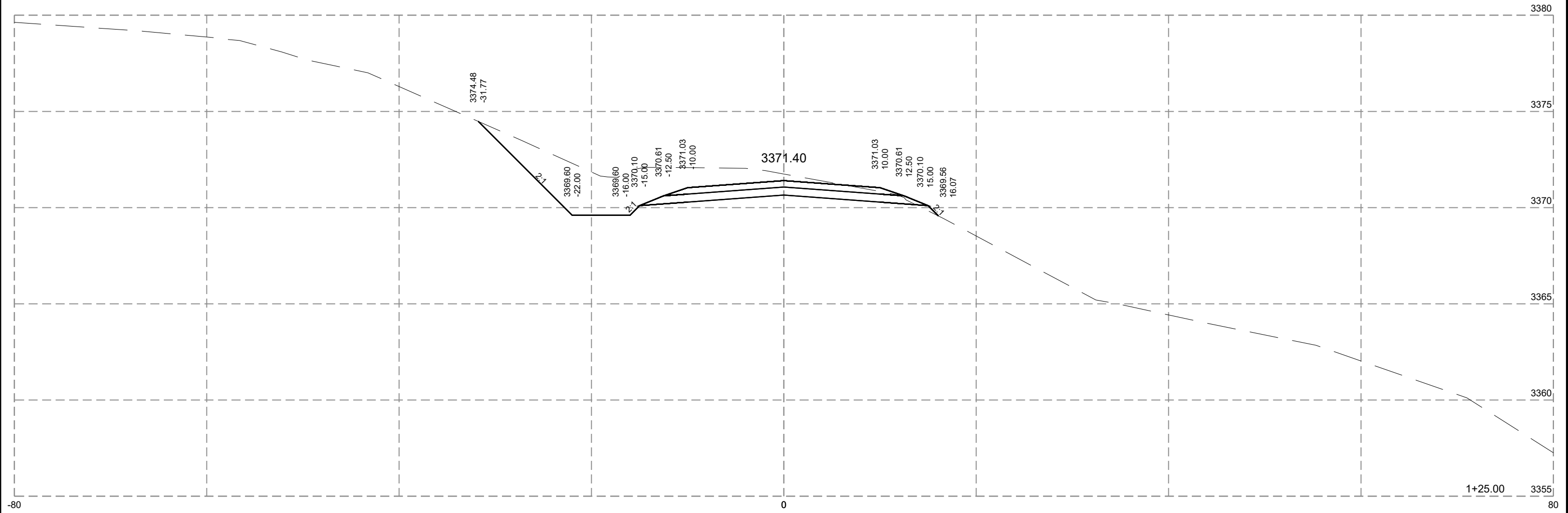
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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STATE OF
SOUTH
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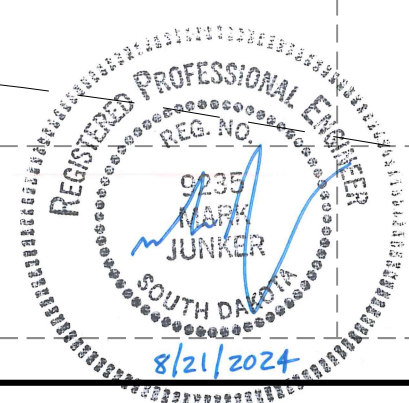
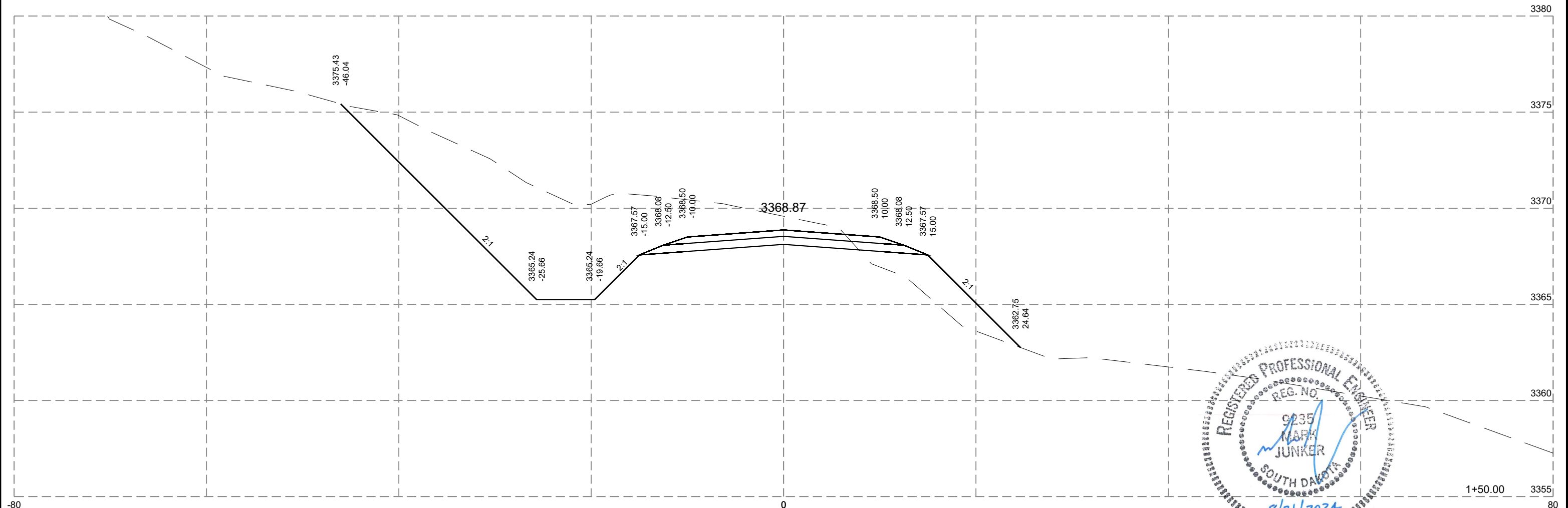
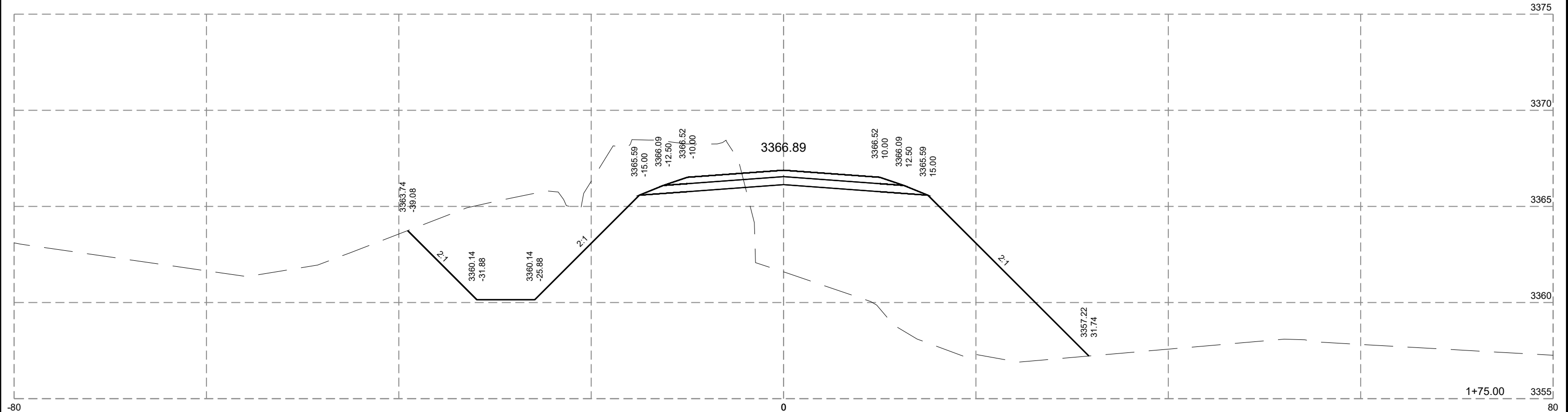
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Plotting Date: 08/21/2024



CROSS SECTIONS

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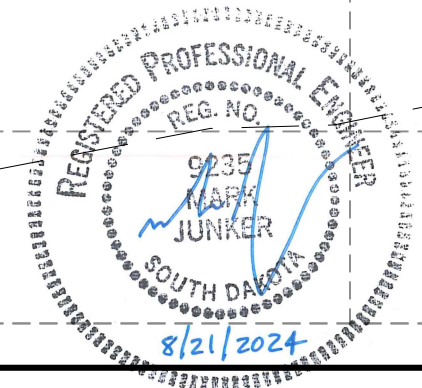
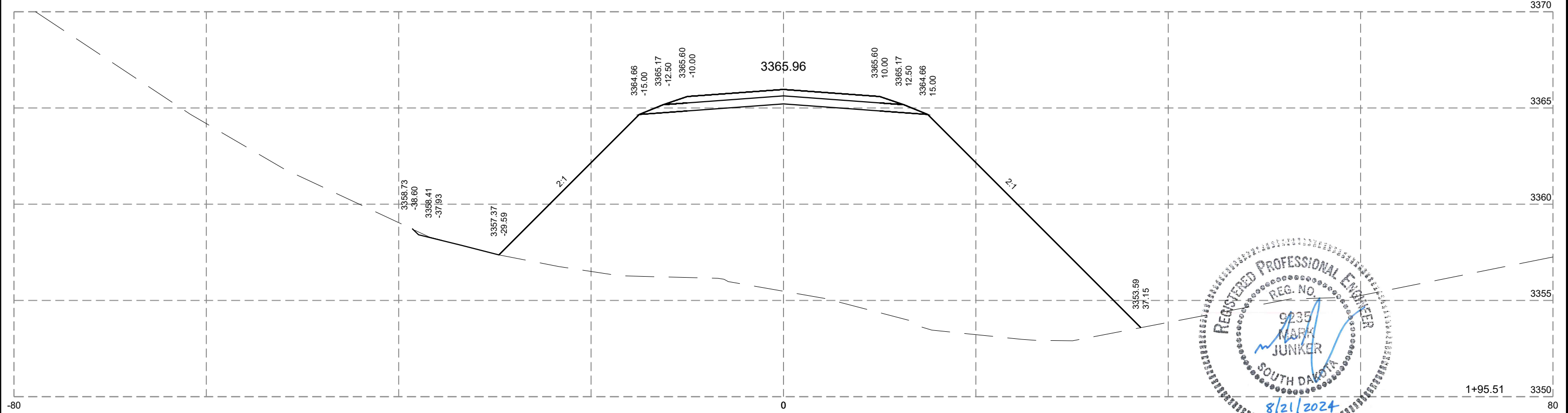
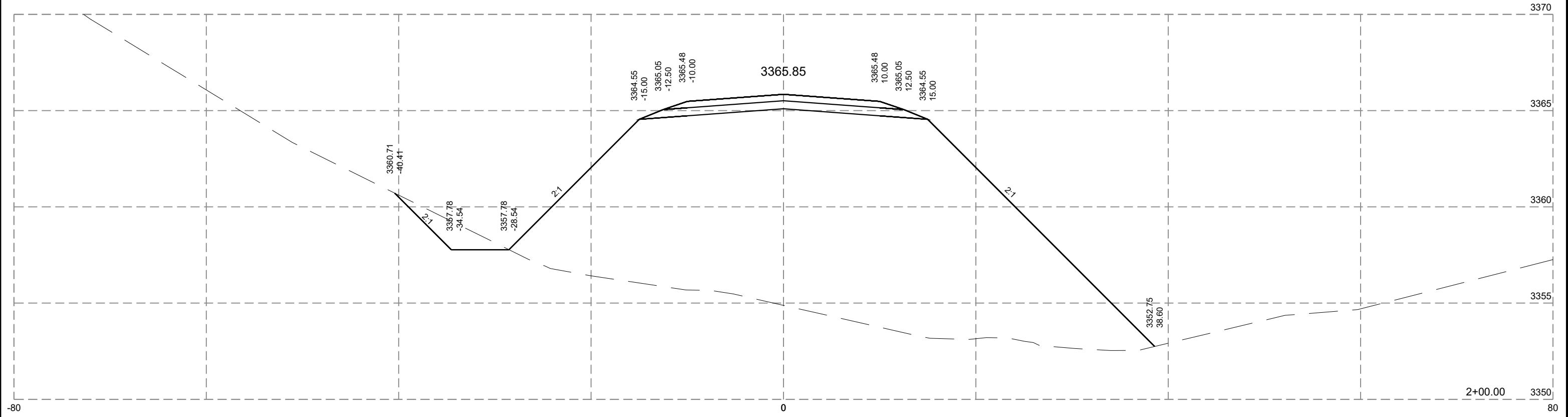
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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STATE OF
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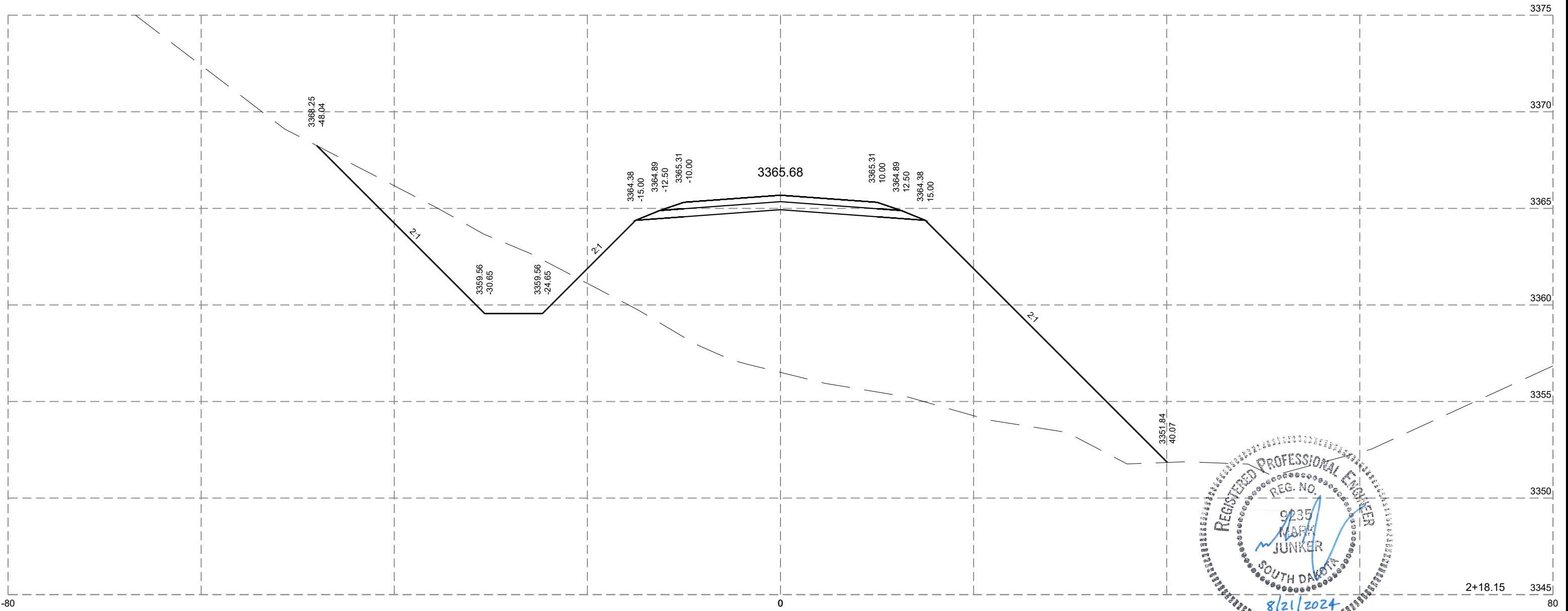
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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STATE OF
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BRO-B 8047(32)

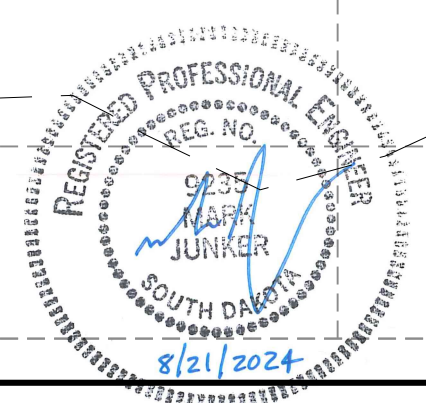
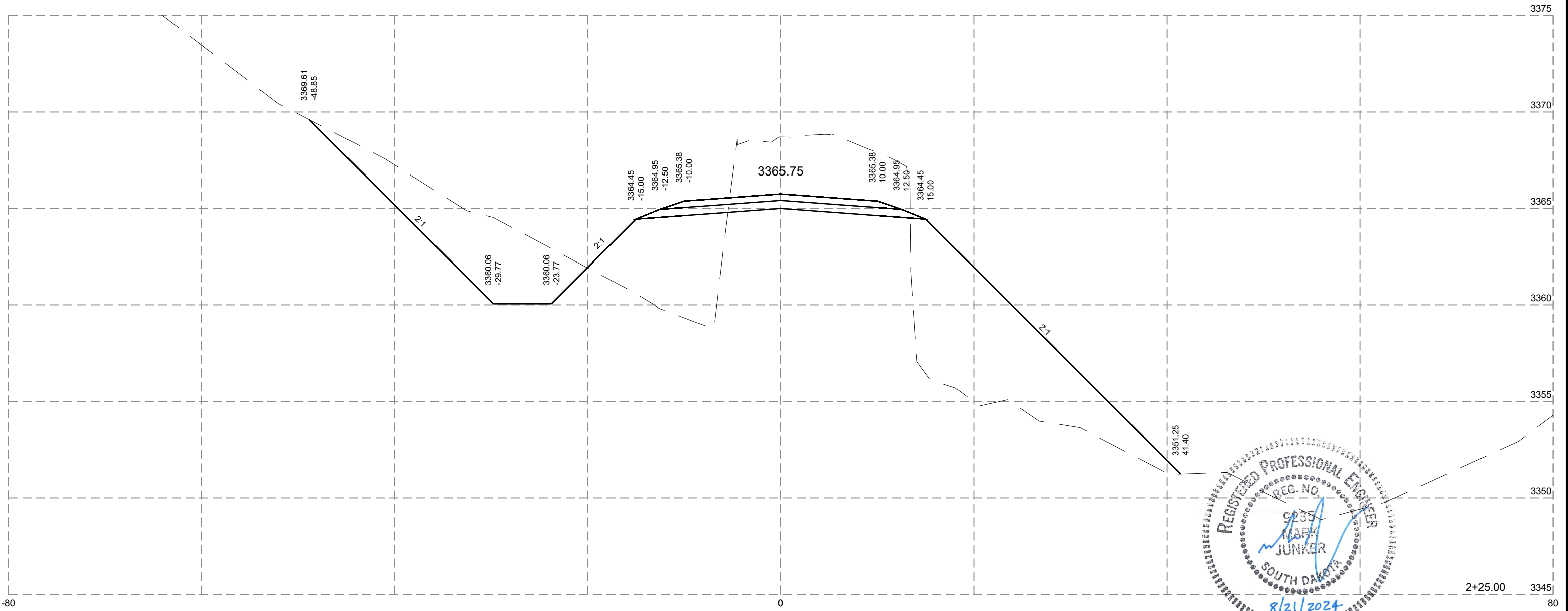
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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STATE OF
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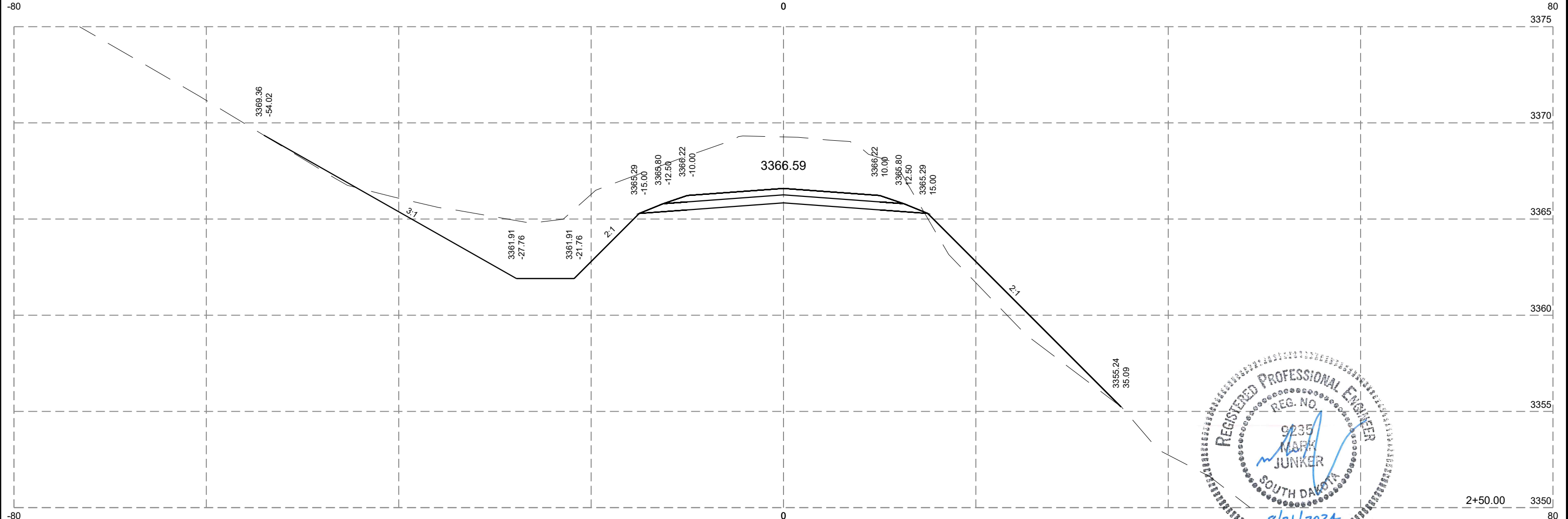
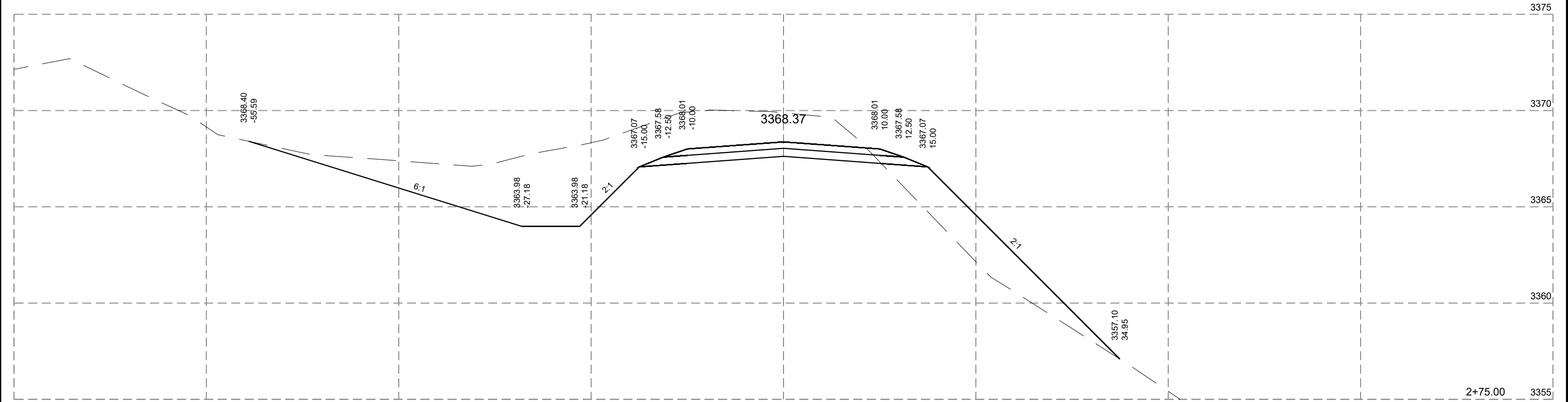
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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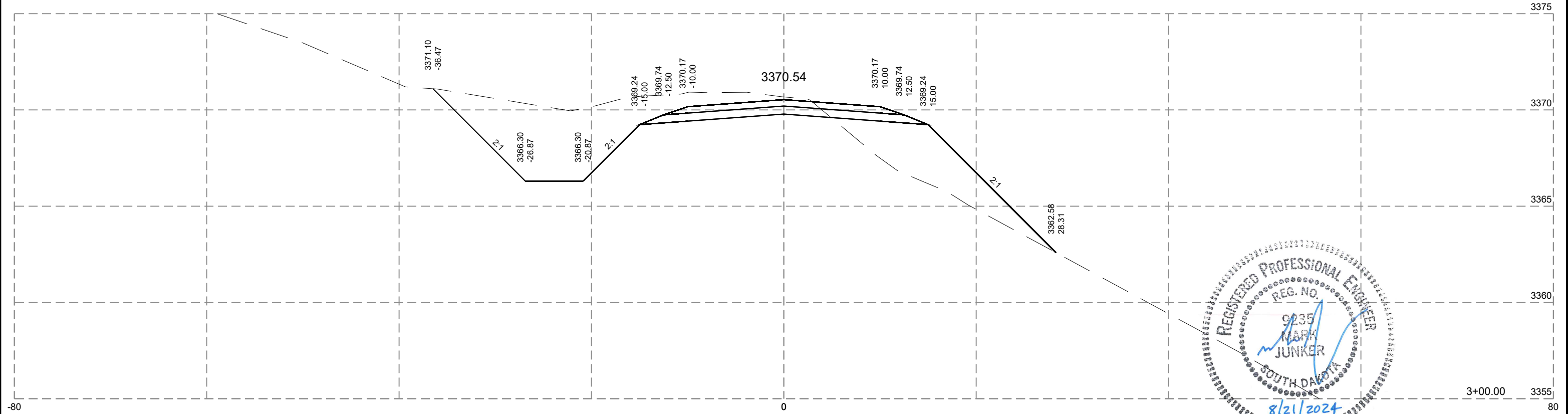
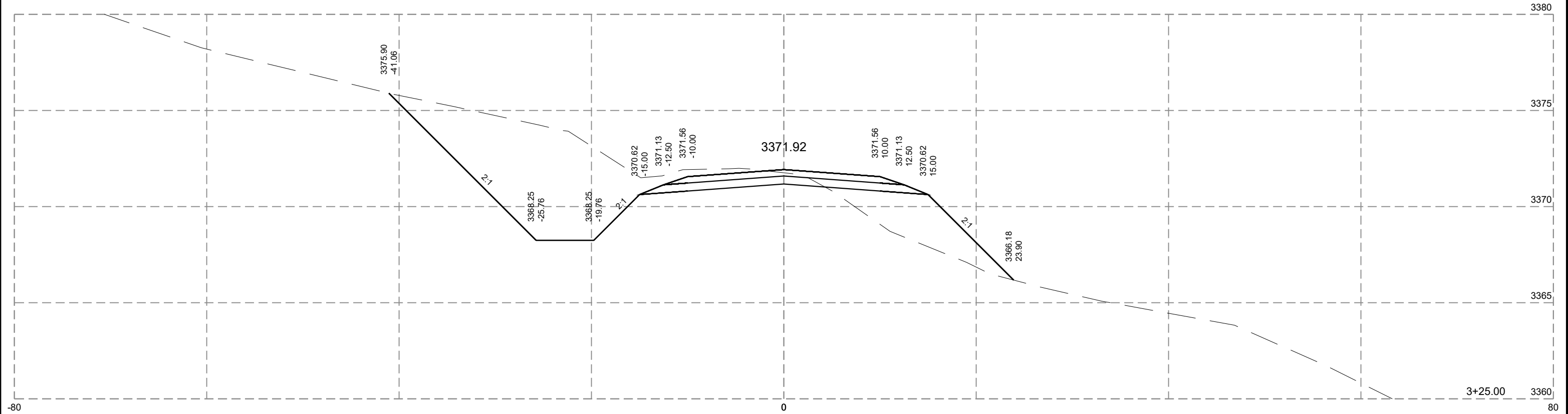
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



CROSS SECTIONS

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BRO-B 8047(32)

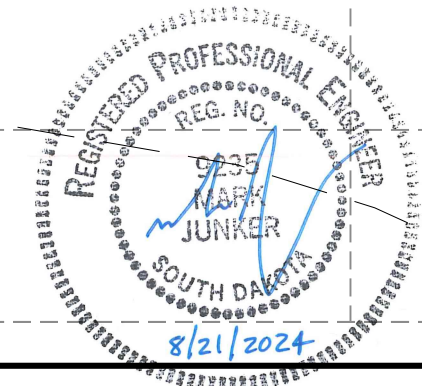
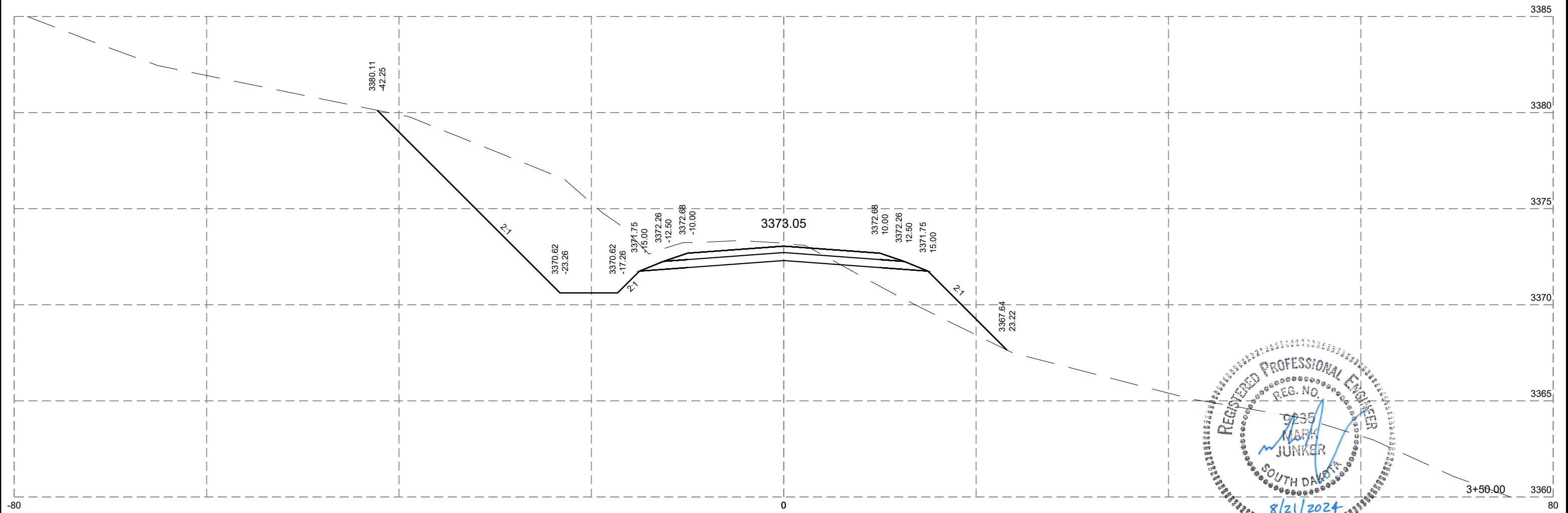
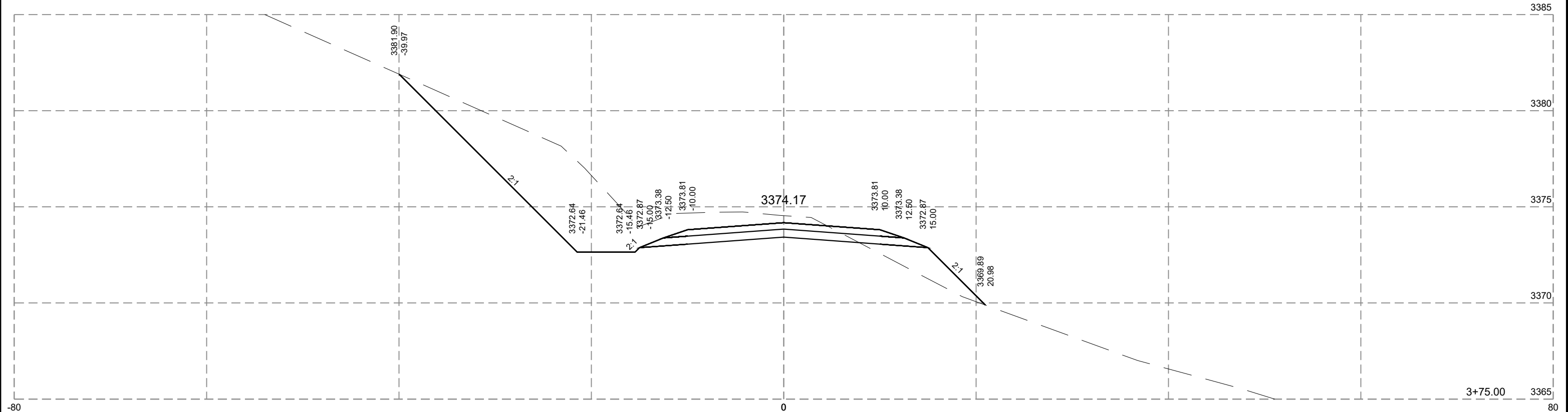
SHEET

28

TOTAL
SHEETS

33

Plotting Date: 08/21/2024



CROSS SECTIONS

BAI JOB # 23190.66

STATE OF
SOUTH
DAKOTA

PROJECT

BRO-B 8047(32)

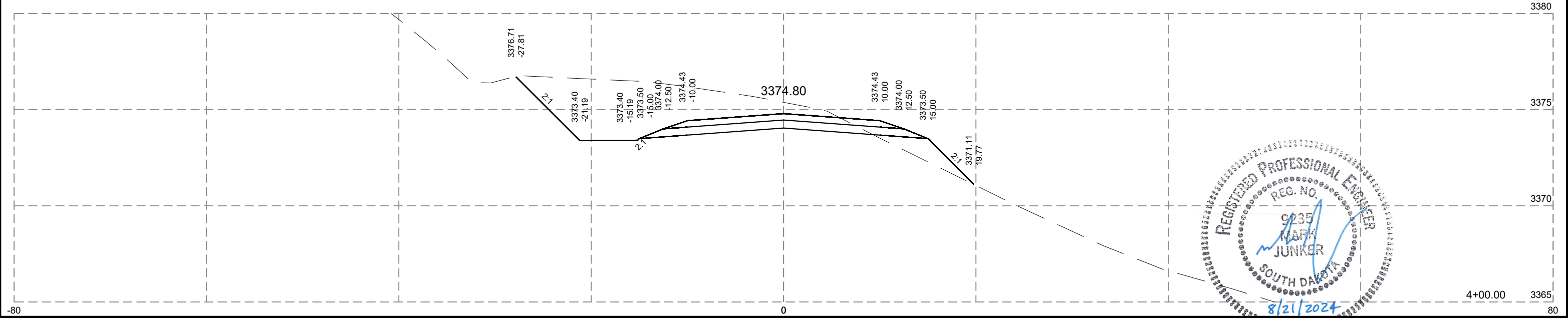
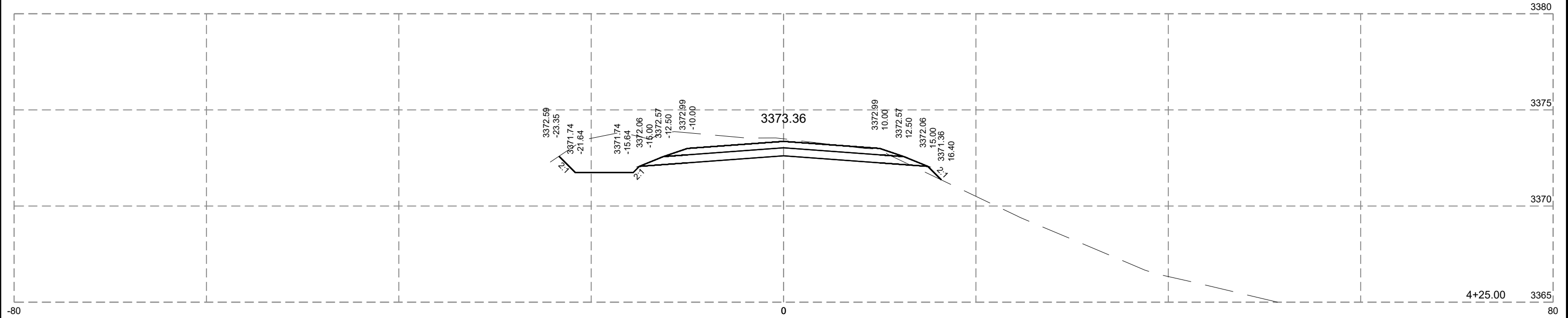
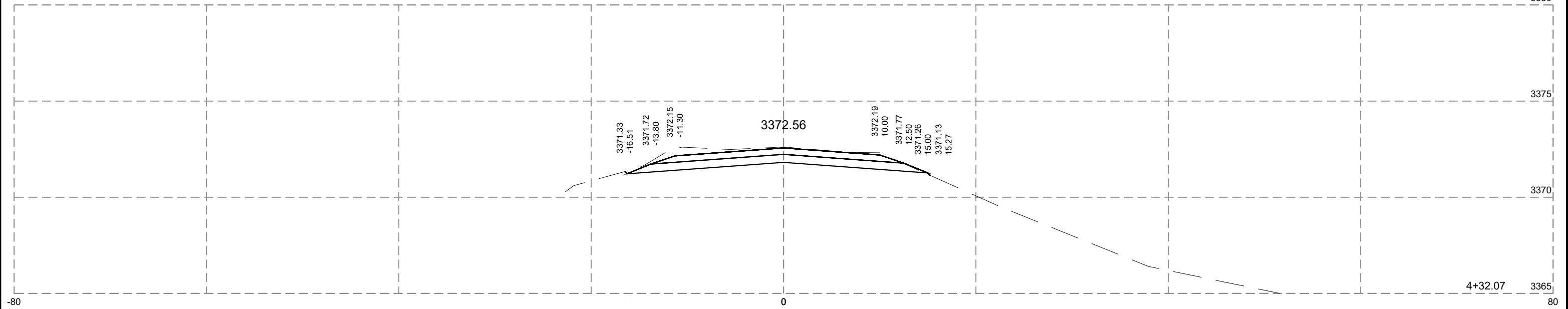
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29

TOTAL
SHEETS

33

Plotting Date: 08/21/2024



PIPE SECTION

BAI JOB # 23190.66

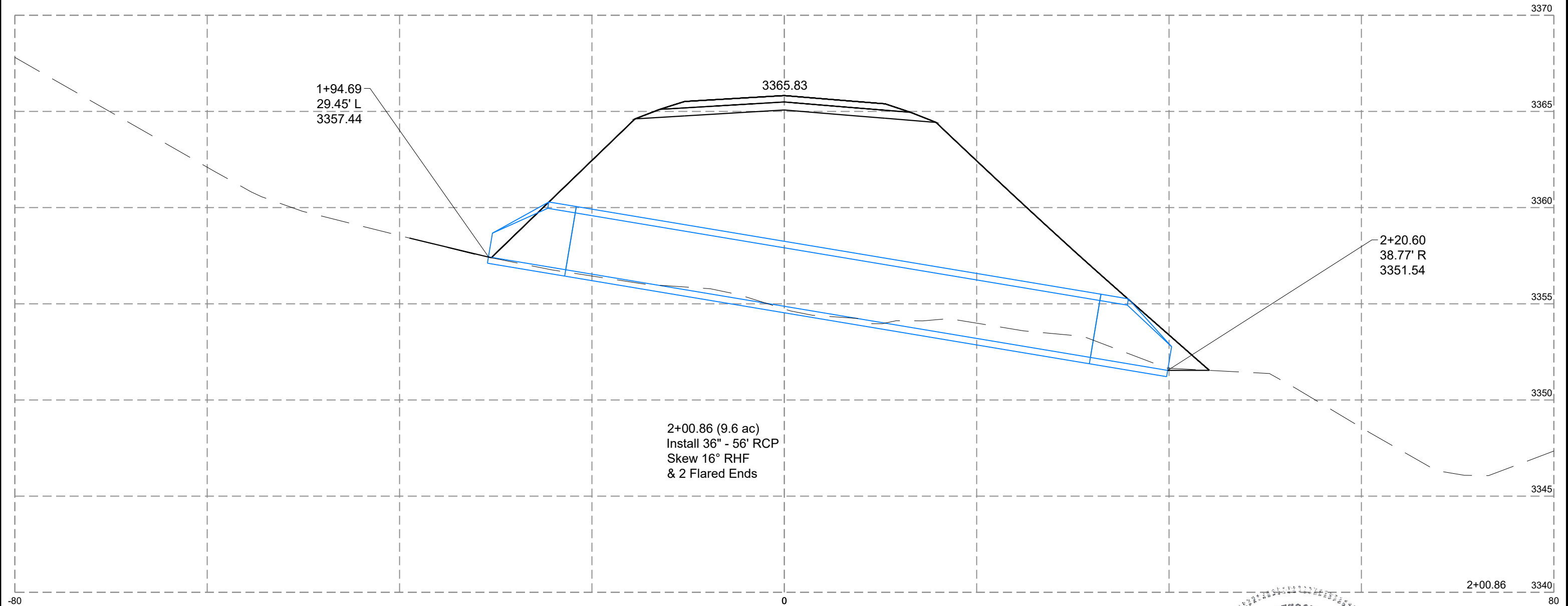
STATE OF
SOUTH
DAKOTA

PROJECT
BRO-B 8047(32)

SHEET
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TOTAL
SHEETS
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Plotting Date: 08/21/2024



RIPRAP SECTIONS

BAI JOB # 23190.66

STATE OF
SOUTH
DAKOTA

PROJECT

BRO-B 8047(32)

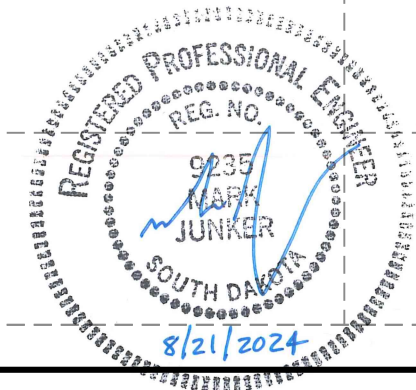
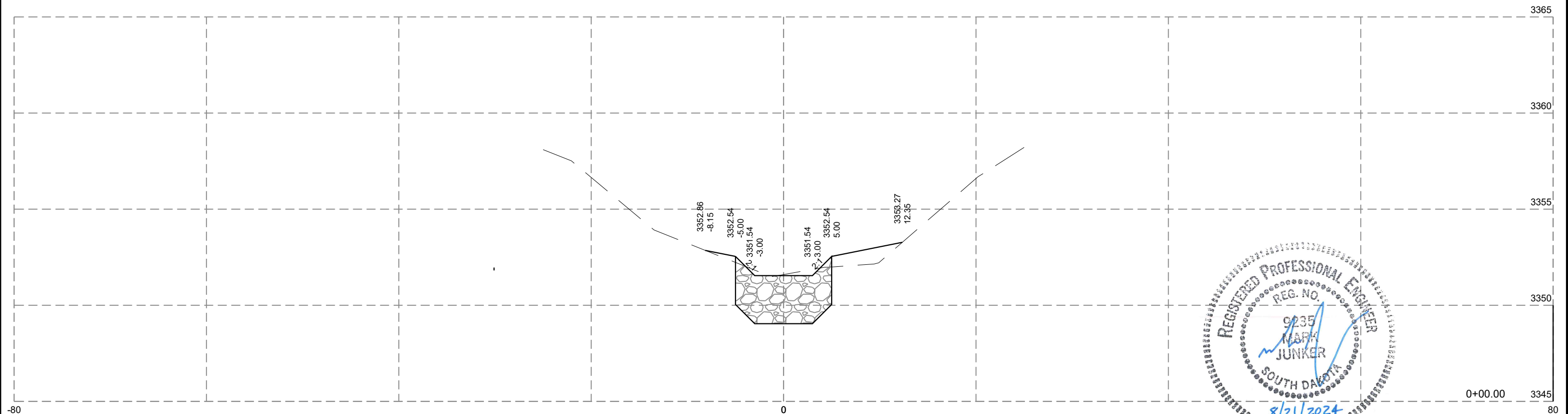
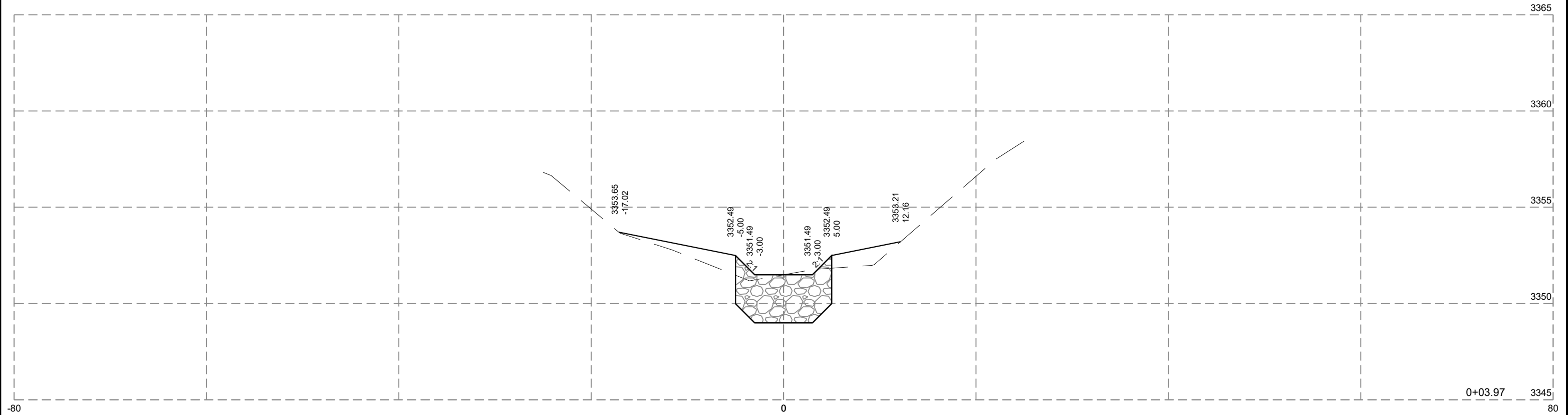
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



RIPRAP SECTIONS

BAI JOB # 23190.66

STATE OF
SOUTH
DAKOTA

PROJECT

BRO-B 8047(32)

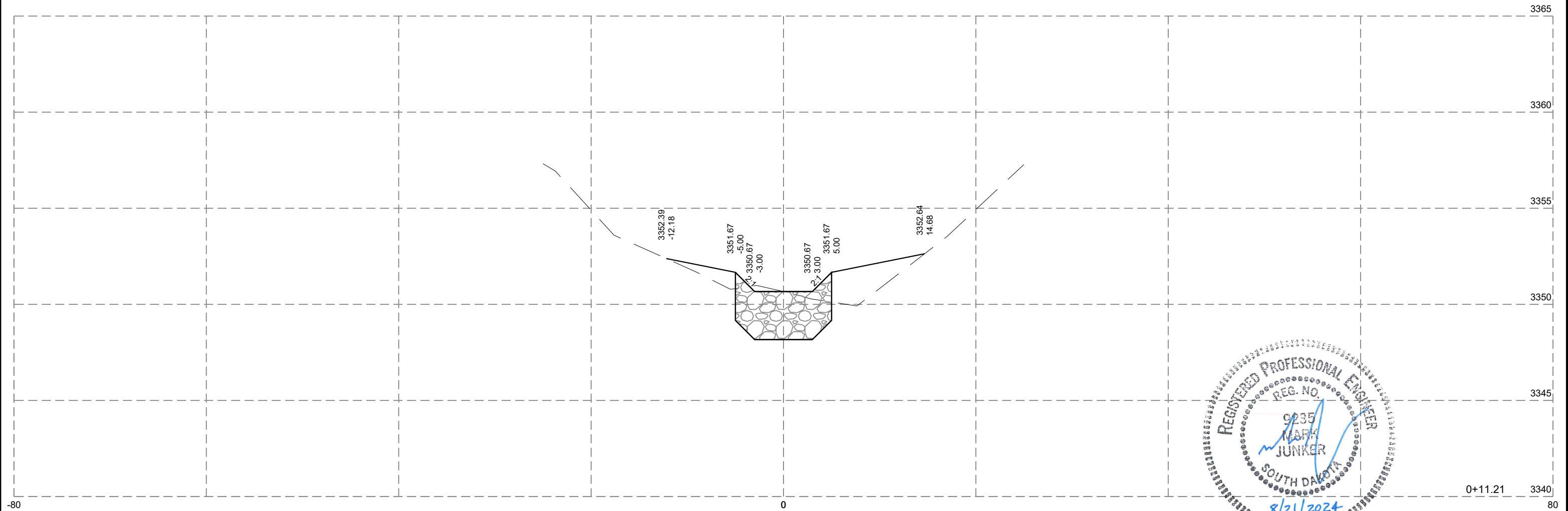
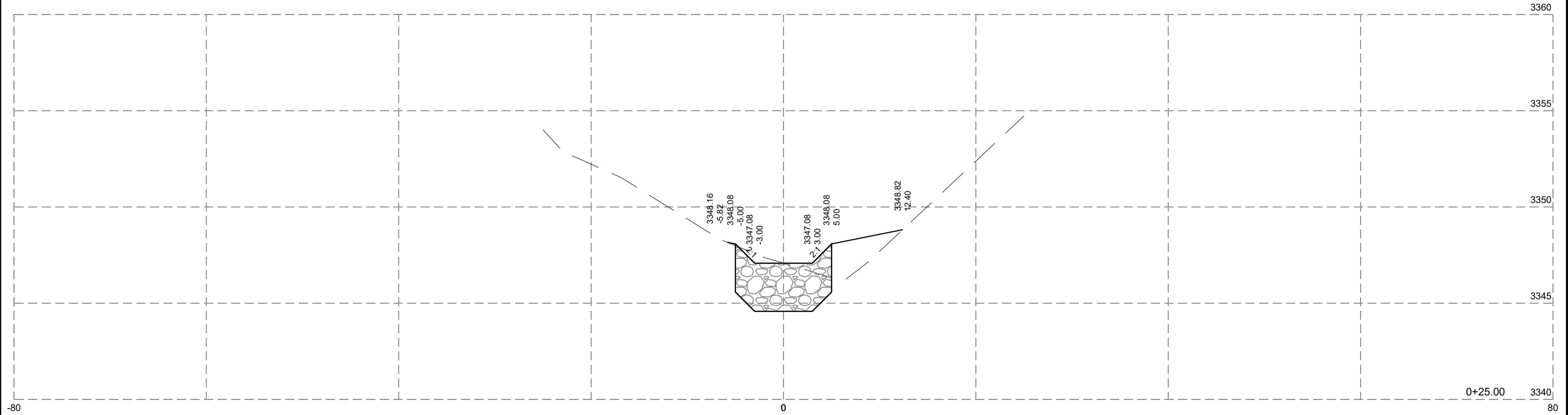
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TOTAL
SHEETS

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Plotting Date: 08/21/2024



RIPRAP SECTIONS

BAI JOB # 23190.66

STATE OF
SOUTH
DAKOTA

PROJECT

BRO-B 8047(32)

SHEET

33

TOTAL
SHEETS

33

Plotting Date: 08/21/2024

